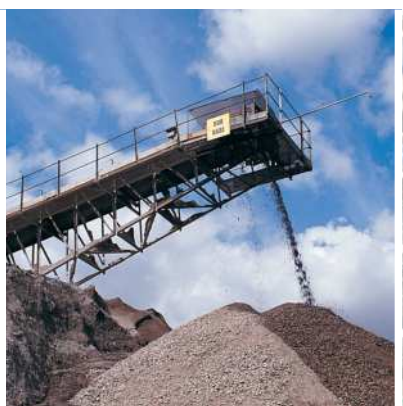
SKF bearings and mounted products

Engineered for long life in the world's most demanding applications



Important notice

For important updates and changes to this catalog, visit our catalog page at catalog.skfusa.com.

You will find corrections, updates and links to related publications such as:

- SKF Maintenance and Lubrication Products PUB MP/P1 03000 EN
- CR Seals handbook PUB 810-701
- MRC Engineering Handbook PUB M190-730
- Bearing Installation and Maintenance Guide PUB 140-710

If you notice a typographical error or other incorrect information, or if you have information to add, we encourage you to submit corrections or additions to pubupdates@skf.com.

For additional technical specification not covered in the catalog, please refer to the website, skf.com/us. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering at 1-888-SKF-2000.

Table of Contents

About this catalog / bearing basics 2

Ball bearings 33

Deep groove ball bearings
Series 16000, 16100, 200, 300, 6000, 61800, 61900, 6200, 6300, 6400 33

Angular contact ball bearings (single and double row)
Series 3200, 3300, 7200, 7300, 7400, BA2B 459000, QJ200, QJ300, QJ1000 57

Self-aligning ball bearings
Series 1200, 1300, 1400, 2200, 2300 89

Thrust ball bearings
Series 51000, 52000, 53000, 54000 105

Roller bearings 123

Spherical roller thrust bearings
Series 29200, 29300, 29400 123

Cylindrical roller bearings
Series N, NCF, NJ, NJG, NNC, NNCF, NNCL, NNF, NU, NUP 127

Spherical roller bearings
Series 21000, 22000, 23000, 24000, 452000, 453000, BS2-2200, I series 153

CARB® (Compact Aligning Roller Bearing)
Series C2200, C2300, C3000, C3100, C3200, C39/000, C4000, C4100, C4900, C5000, C5900, C6000, C6900 185

Needle roller bearings
Series HK, NA, NK, NKI, NKIS, NKS, RNA 201

Taper roller bearings (metric)
Series 30000, 31000, 32000, 33000, T2, T4, T7 225

Mounted products 249

Ball bearing units
Series P2B, F4B, F2B, P2BT, WSTU, YAR, YAT, YEL, YET, YSP 249

Roller bearing units
Series P2BE, P2B, P4BE, P2BA, P4BA, F4BA, F3BR, F4BR, F4BRP, F6BRP, F3BBD, F4BBD, F4B, P4B, WSTU 303

Split pillow blocks (inch series)
Series AN, ASK, N, PL, SAF, SAW, SDAF 337

Accessories (inch series)
Series SK, SNP, SNW, W 447

Split pillow blocks (metric series)
Series AH, AOH, H, HA, HE, HM, KM, MB, OH, SNL 457

Accessories (metric series)
Series AH, AOH, H, HA, HE, HM, KM, MB, OH, SNL 532

Index 577

About this catalog

Catalog format

Inside this catalog, you will find the common range of bearings and mounted products offered by SKF USA Inc. To help you locate SKF products and technical information as easily as possible, we have organized the structure of the catalog as follows:

Bearing basics

This chapter includes general information pertaining to all bearing types included in this catalog, such as designations, bearing types, technical features and characteristics, basic life theory, and materials.

Product chapters

The following type of information typically appears in each chapter:

Product nomenclature

Contains commonly used current nomenclature and descriptions that apply to that specific product type.

Product introduction

Covers information regarding basic design, assortment, and variations within the product type.

Product highlights

Includes information on the benefits and features of the particular product type.

Technical features

Covers boundary dimensions, tolerances and physical characteristics which are common within the product type.

Product specification tables

- Products are sorted by the basic product designation number (excluding the Split pillow blocks metric series) and contain principal dimensions, basic load ratings (dynamic and static), speed ratings, and mass.
- Product designation numbers shown in blue indicate SKF Explorer class bearings. Please see page 25 for details on SKF Explorer class bearings.
- Variants to the basic product range (i.e. shields, seals, etc.) appear as illustrations above each table for quick reference.
- Imperial units of measure appear in the light blue columns and the corresponding metric units appear in the white columns.
- At the top of each page, you will find descriptions of the product assortment included on that specific page (i.e. number of rows, closures, size range, etc.).

Index

The index is the last chapter in this catalog beginning on page 577.

This catalog is intended to be used as a product reference guide only and as such contains only very basic product information. This catalog is not intended to be used as a design manual. The data in this catalog is based on current information at the time of press. The data from earlier catalogs which deviates from those given here are rendered invalid. SKF reserves the right to make changes necessitated by technological developments. Consult SKF USA Inc. prior to design change or order placement.

For additional technical specifications not covered in this catalog, please refer to the SKF website, skfusa.com. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Additional information on mounting, dismounting, lubrication, and maintenance of SKF products can be found in the SKF Bearing Installation and Maintenance Guide (publication #140-710).

Any reference in this catalog to SKF Applications Engineering is making reference to the SKF USA Inc. Applications Engineering Department that can be reached through the SKF Technical Hotline at 1-888-SKF-2000.

SKF does not guarantee the continued performance of any mounted unit where the insert bearing is replaced or modified by the customer.

How to reach SKF USA Inc.

Customer service	1-888-SKF-FIRST (1-888-753-3477)
Technical hotline	1-888-SKF-2000 (1-888-753-2000)
Fax	215-513-4736
E-mail	skfusainfo@skf.com
Company web site	www.skfusa.com
On-line store	www.ptplace.com

Conversions

Quantity	Unit	Conversion			
Length	Inch	1 mm	.000039 in	1 in	25 400 µm
	Inch	1 mm	0.039 in	1 in	25.40 mm
	Foot	1 m	3.281 ft	1 ft	0.3048 m
	Yard	1 m	1.094 yd	1 yd	0.9144 m
	Mile	1 km	0.6214 mile	1 mile	1.609 km
Area	Square inch	1 mm^2	0.00155 sq in	1 sq in	645.16 mm^2
	Square foot	1 m^2	10.76 sq ft	1 sq ft	0.0929 m^2
Volume	Cubic inch	1 cm^3	0.061 cu in	1 cu in	16.387 cm^3
	Cubic foot	1 m^3	35 cu ft	1 cu ft	0.02832 m^3
	Imperial gallon	1 l	0.22 gallon	1 gallon	4.5461 l
	U.S. gallon	1 l	0.2642 US gallon	1 U.S. gallon	3.7854 l
Velocity	Foot per second	1 m/s	3.28 ft/s	1 ft/s	0.30480 m s
Speed	Mile per hour	1 km/h	0.6214 mile/h (mph)	1 mile/h (mph)	1.609 km/h
Mass	Ounce	1 g	0.03527 oz	1 oz	28.350 g
	Pound	1 kg	2.205 lb	1 lb	0.45359 kg
	Short ton	1 tonne	1.1023 short ton	1 short ton	0.90719 tonne
	Long ton	1 tonne	0.9842 long ton	1 long ton	1.0161 tonne
Density	Pound per cubic inch	1 g/cm^3	0.0361 lb/cu in	1 lb/cu in	27.680 g/cm^3
Force	Pound-force	1 N	0.225 lbf	1 lbf	4.4482 N
Pressure	Pounds per	1 MPa	145 psi	1 psi	6.8948 = 10^3 Pa
Stress	Square inch				
Moment	Inch pound-force	1 Nm	8.85 in lbf	1 in lbf	0.113 Nm
Power	Foot-pound per	1 W	0.7376 ft lbf/s	1 ft lbf/s	1.3558 W
	Second				
	Horsepower	1 kW	1.36 HP	1 HP	0.736 kW
Temperature	Degree	Celsius	Tc = 0.555 (T_f) – 32°	Fahrenheit	Tf = 1.8 (T_c) + 32°

Bearing Basics

Basic bearing designations for rolling bearings (excluding housings and units)

Each SKF® bearing of standard design is given a basic designation, which normally consists of three, four or five figures or a combination of letters and figures. The figures shown on page 5 indicate the basic designation system for the most common types of rolling bearings.

These figures identify the following in the order stated:

- The first figure in the basic designation or, alternatively, the first letter or combination of letters, denotes the bearing type. The bearing types identified by these designations can be seen from the diagram on page 6 and in the accompanying text.
- The second and third figures denote the Dimension series (according to ISO); the first identifies the width or height ratio (B or T for width and H for height) and the other the Diameter series (D).
- The two final figures in the basic designation, when multiplied by five, identify the bore diameter d in mm, with the following exceptions.

For bearings with a bore diameter less than 10 mm or equal to or greater than 500 mm, the bore diameter is given uncoded in mm and is separated from the rest of the basic designation by an oblique stroke, e.g. 618 / 8 (d = 8 mm) or 511 / 530 (d = 530mm). The same system also applies to bearings of the ISO dimension series with a bore diameter of 22, 28, or 32 mm, e.g. 322 / 28 (d = 28 mm). Bearings with a bore diameter of 10, 12, 15 or 17 mm are identified as follows:

00 = 10 mm

01 = 12 mm

02 = 15 mm

03 = 17 mm

In the case of certain deep groove ball bearings, self aligning ball bearings and angular contact ball bearings with a bore diameter of less than 10 mm, the bore diameter is also given uncoded in mm, but directly after the first two figures, e.g. 629 or 129 (d = 9 mm).

A non-standard bore diameter is always expressed in mm to a maximum of three decimal places. This bore diameter identification belongs to the basic designation and is separated from the normal basic designation by an oblique stroke, e.g. 6202 / 15.875 (d = 15.875 mm instead of the normal 15 mm).

Supplementary designations

The supplementary designations are placed either in front of the basic designation (prefix) or after the basic designation (suffix). Prefixes serve to identify bearing components. Suffixes are used to identify designs (variants) that differ in some way from the original design or that differ from the design that is the current production standard.

Prefixes

A prefix designates either a bearing component (generally with the same basic designation as that of the complete bearing), taper roller bearing cones and cups corresponding to ABMA standard specifications, or special bearings.

In some cases, a set of "prefix" letters represents part of the standard designation (rather than a prefix depicting a special bearing). The most obvious example of these are the cylindrical roller bearings (NU 320 ECM).

Other examples are needle bearings, CARB, housings, accessories, etc.

Suffixes

A suffix identifies a variant, i.e. a deviation from the standard design or from the original design. These suffixes are grouped according to an established system and are added to the basic designation in a specified order in cases where more than one deviation applies. Where two or more suffixes normally preceded by an oblique stroke are combined, then the oblique stroke will generally appear only before the first suffix. In the following cases, however, the suffixes are separated by oblique strokes:

a) Where two suffixes follow one another, the first ending with a figure and the second tarting with a figure, e.g. 6310 / C4 / 630251;

b) Where a clearance range is followed by a suffix for type of grease and where the meaning would otherwise be ambiguous, e.g. 6205 - 2Z / C2L / HT51 (= C2L + HT51; low range C2 clearance + HT51 grease) but 6205 - 2Z / C2LHT51 (= C2 + LHT51; C2 clearance + LHT51 grease).

Complete product designations (basic designation plus any other supplementary designations) are always marked on the package, whereas the designation on the actual product may be incomplete for practical reasons (i.e. small bearings with very lengthy designations).

Designation

Diagram of the basic designation system for rolling bearings (see page 6)

Above each bearing type symbol is shown a column of the most common bearing series for that particular type. Below each symbol is shown a bearing type figure or letter(s). Parenthesis in the designation indicate figures, which according to the rules of this system, should be included in the basic designation, but have been left out for practical reasons (see explanations below):

0 Ball bearings

- Double row angular contact
- Single row filling slot (maximum capacity) type deep groove

The symbol (0) is not included as part of ball bearing designations.

1 Self aligning ball bearings
The symbol for the type of bearing (1) or the first figure (0 or 1) of the dimension series may be omitted. Bearings with bore diameter less than 10 mm are designated by three figures, where the last figure represents the bore diameter in mm.

2 Spherical roller bearings and spherical roller thrust bearings

3 Taper roller bearings

4 Double row deep groove ball bearings

5 Thrust ball bearings

6 Single row deep groove ball bearings
The symbol for the type of bearing (6) and / or the first figure (0) of the dimension series may be omitted. Bearings with bore diameters less than 10 mm are designated by three figures, where the last figure represents the bore diameter in mm. On sizes 500 and larger mm bore, the actual bore diameter is preceded by a "/" (e.g. 62 / 520).

7 Single row angular contact ball bearings
The first figure (0 or 1) of the dimension series may be omitted.

8 Cylindrical roller thrust bearings

C CARB® toroidal roller bearings
The C prefix denotes a CARB bearing. CARB is SKF's trademarked name for a toroidal roller bearing. The designation for CARB bearings with bore diameters less than 500 mm use four digits. The first two digits designate the dimension series and the final two digits indicate the bore diameter size. Above 500 mm, a "/" separates the series designation from the actual bore size in mm.

N Cylindrical roller bearings
The symbol N, which indicates the type of bearing, may be supplemented by one or two letters to indicate different guide flange combinations. In the dimension series designation that follows, the first figure (0) may be omitted.

NK Needle roller bearings

QJ 4-point contact ball bearings The first figure (0) of the dimension series has been omitted.

Other products

In addition to prefixes and suffixes for roller bearings, prefixes and suffixes are shown for mounted products. For details, please reference the four mounted products chapters that appear in this catalog.

Grease designations

The various available lubricants for pre-lubricated sealed or shielded bearings are identified by suffixes such as MT, LHT, GMB, etc.

Each bearing series has a Standard grease, which is not identified in the designation. If the grease (or the grease fill) in the bearing is Non-standard (suited for high or low temperature), it is part of the designation shown on the bearing and package.

Unique variants

Some standard SKF bearings are modified with unique variants. SKF now uses a 3-letter / number prefix to identify these bearing variants by drawing number.

Position 1:	Product class (ex: B)
Position 2:	Bearing group (ex: A indicates Angular contact ball bearing)
Position 3:	Sub group, if needed
Example:	BA2 6515 (no sub group) indicates a variant Angular contact ball bearing

Current designations include:

BA1, BA2	Angular contact ball bearing
BB1, BB2, BBY	Deep groove ball bearing
BC1, BC2	Cylindrical roller bearing
BS2	Spherical roller bearing
BT1, BT2, BT4	Tapered roller bearing

This system replaces an older system of 6-digit (boxcar) numbers (for example BA2B 630560).

What does "JEM" mean?

In the aftermarket, SKF uses the designation "JEM" for deep groove ball bearings that are primarily used in electric motor applications. The "J" designates a steel cage and "EM" designates electric motor quality as required by electric motor OEMs.

Several characteristics define the "JEM" specification – all of which come standard in the SKF deep groove ball bearing and meet industry requirements.

- C3 radial internal clearance
- Steel cage
- Electric motor noise quality levels
- GJN grease supplied in the double shielded or sealed versions

GJN is a urea-based high temperature grease that offers a wide range of operating temperatures and is quiet running. It is compatible with most other polyurea and lithium based greases.

Tolerance is also an important criteria for running accuracy. SKF deep groove ball bearings up to 110 mm outside diameter have a tolerance equal to ABEC 3 or greater. This means higher running accuracy, cooler running conditions, and quieter performance than the minimum (ABEC 1) typically required by the electric motor industry.

Nomenclature for each product type

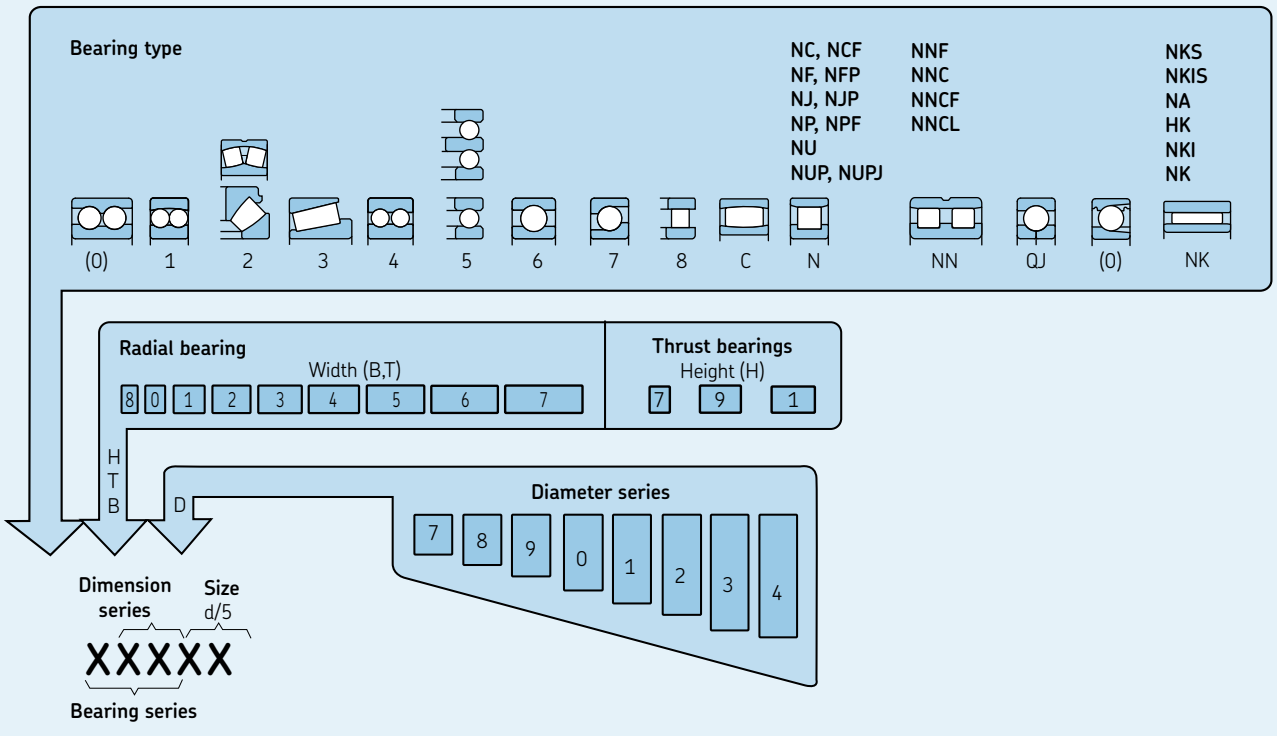
For your convenience, each chapter in this catalog includes the most commonly referenced nomenclature.

Designation

Designation system for SKF standard metric ball and roller bearings

Bearing series

						6(0)4								
						623								
					544	6(0)3				(0)4				
		223			524	622				33				
		213			543	6(0)2				23				
		232			523	630			23	(0)3				
		222			542	6(1)0			32	22				
		241			522	16(0)0			22	12				
		231				639			41	(0)2				
		240	323		534	619			31	31	41			
		230	313		514	609			60	30	31			
		249	303		533	638			50	20	60			
	139	239	332		513	628	7(0)4	814	40	10	50			
	130	248	322		532	618	7(0)3	894	30	39	40	23		
(0)33	(1)23	238	302		512	608	7(0)2	874	69	29	30	(0)3		
(0)32	1(0)3		331		511	637	7(1)0	813	59	19	69	12		
(0)52	(1)22	294	330		510	627	719	893	49	38	49	(0)2		4800
(0)53	1(0)2	293	320	4(2)3	591	617	718	812	39	28	39	10	(0)3	4900
(0)54	1(1)0	292	329	4(2)2	590	607	708	811	29	18	48	19	(0)2	6900



Bearing type

Each bearing type displays characteristic properties, based on its design, which makes it more or less appropriate for a given application. For example, deep groove ball bearings can accommodate moderate radial loads as well as axial loads. They have low friction and can be produced with high precision and in quiet running variants. Therefore they are preferred for small and medium-sized electric motors.

Spherical and toroidal roller bearings can carry very heavy loads and are self-aligning. These properties make them popular for example, in heavy engineering applications, where there are heavy loads, shaft deflections and misalignments.

In many cases, however, several factors have to be considered and weighed against each other when selecting a bearing type, so that no general rules can be given.

The information provided here should serve to indicate which are the most important factors to be considered when selecting a standard bearing type and thus facilitate an appropriate choice:

- Available space
- Loads
- Misalignment
- Precision
- Speed
- Quiet running
- Stiffness
- Axial displacement
- Mounting and dismounting
- Integral seals

An overview of the standard bearing types, their design characteristics and their suitability for the demands placed on a given application will be found in the matrix on pages 12 and 13. Detailed information on the individual bearing types, including their characteristics and the available designs, will be found in the sections dealing with individual bearing types. Bearing types that are not included in the matrix are generally only used for a few well-defined applications.

The matrix permits only a relatively superficial classification of bearing types. The limited number of symbols does not allow an exact differentiation and some properties do not depend solely on bearing design. For example, the stiffness of an arrangement incorporating angular contact ball bearings or taper roller bearings also depends on the applied preload and the operating speed, which is influenced by the precision of the bearing and its associated components as well as by the cage design. In spite of its limitations, the matrix on pages 12 and 13 should enable an appropriate comparison of bearing types. It should also be considered that the total cost of a bearing arrangement and inventory considerations could also influence the final choice.

Other important criteria to be observed when designing a bearing arrangement – load carrying capacity and life, friction, permissible speeds, bearing internal clearance or preload, lubrication, sealing etc. – are dealt with in the SKF Rolling bearings catalog (17000 EN).

Available space

In many cases, one of the principal dimensions of a bearing – the bore diameter – is predetermined by the machine's design and the shaft diameter.

For small-diameter shafts all types of ball bearings can be used, the most popular being deep groove ball bearings; needle roller bearings are also suitable **(Figure 1a).** For large-diameter shafts, cylindrical, taper, spherical and toroidal roller bearings are available, as well as deep groove ball bearings **(Figure 1b).**

When radial space is limited, bearings with a small cross section, particularly those with a low cross-sectional height, should be chosen, i.e. bearings in the 8 or 9 diameter series.

For purely axial loads, needle roller and cage thrust assemblies (with or without washers) as well as thrust ball bearings and cylindrical roller thrust bearings can be used **(Figure 1c).**

Figure 1a

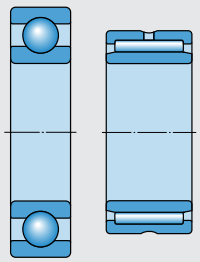


Figure 1b

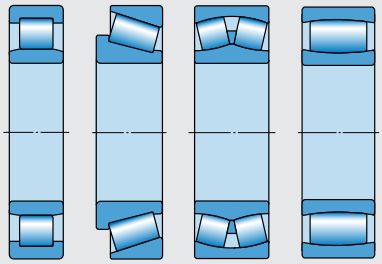
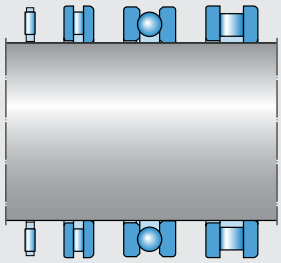


Figure 1c



Loads

Magnitude of load

The magnitude of the load is one of the factors that usually determines the size of the bearing to be used. Generally, roller bearings are able to support heavier loads than similar sized ball bearings and bearings having a full complement of rolling elements can accommodate heavier loads than the corresponding caged bearings. Ball bearings are mostly used where loads are light or moderate.

For heavy loads and where shaft diameters are large, roller bearings are usually the more appropriate choice.

Direction of load

NU and N types cylindrical roller bearings, needle roller bearings and toroidal roller bearings can only support pure radial loads. All other radial bearings can accommodate some axial loads in addition to radial loads ("combined loads").

Axial load - (Figure 2b)

Thrust ball bearings and four-point contact ball bearings are suitable for light or moderate loads that are purely axial. Single direction thrust ball bearings can only accommodate axial loads acting in one direction; for axial loads acting in both directions, double direction thrust ball bearings are needed.

Angular contact thrust ball bearings can support moderate axial loads at high speeds; here the single direction bearings can also accommodate simultaneously acting radial loads, while double direction bearings are normally used only for purely axial loads.

For moderate and heavy axial loads acting in one direction, needle roller thrust bearings, cylindrical and taper roller thrust bearings are suitable, as are spherical roller thrust bearings. Spherical roller thrust bearings can also accommodate simultaneously acting radial loads. For heavy alternating axial loads, two cylindrical roller thrust bearings or two spherical roller thrust bearings can be mounted adjacent to each other.

Single row angular contact ball bearings and taper roller bearings, NJ and NU + HJ type cylindrical roller bearings and spherical roller thrust bearings can only accommodate axial loads acting in one direction. For axial loads of alternating direction these bearings must be combined with a second bearing. For this reason, single row angular contact ball bearings are available as "universal bearings" for paired mounting and single row taper roller bearings can be supplied as matched sets comprising two single row bearings (Single row angular contact ball bearings, page 57, and Taper roller bearings, page 225).

Combined load - (Figure 2c)

A combined load comprises a radial and an axial load acting simultaneously. The ability of a bearing to carry an axial load is determined by the bearing contact angle – the greater the angle, the more suitable the bearing for axial loads. An indication of this is given by the factor Y, which becomes smaller as the contact angle increases. The values of this factor for a bearing type or for individual bearings will be found in the introductory text of the product table sections, or in the actual product tables. The axial load carrying capacity of a deep groove ball bearing depends on its internal design and the internal clearance in the bearing (Deep groove ball bearings, page 33).

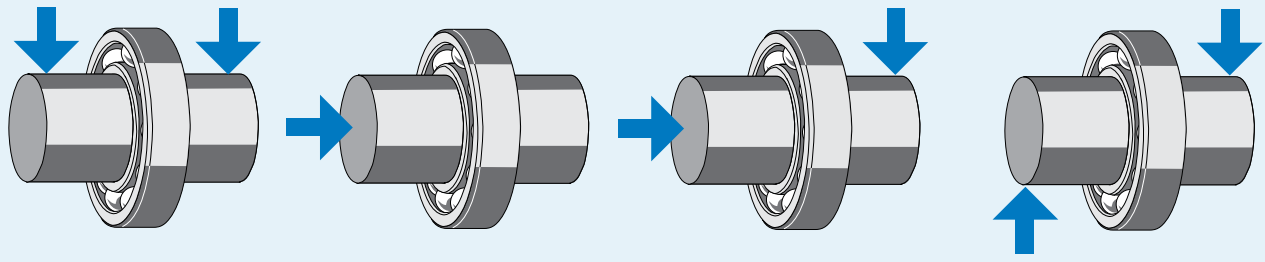
For combined loads, single and double row angular contact ball bearings and single row taper roller bearings are most commonly used although deep groove ball bearings and spherical roller bearings can be suitable. In addition, self-aligning ball bearings and NJ and NUP type cylindrical roller bearings as well as NJ and NU type cylindrical roller bearings with HJ angle rings can be used for combined loads where the axial component is relatively small.

When the axial component of combined loads is large, it may be supported independently from the radial load by a separate bearing. In addition to the thrust bearings, some radial bearings, e.g. deep groove ball bearings or four-point contact ball bearings, are suitable for this task. To make sure that the bearing is only subjected to the axial load in such cases, the bearing outer ring must be mounted with radial clearance.

Moment load - (Figure 2d)

When a load acts eccentrically on a bearing, a tilting moment will occur. Double row bearings, e.g. deep groove or angular contact ball bearings, can accommodate tilting moments, but paired single row angular contact ball bearings or taper roller bearings arranged face-to-face, or better still back-to-back, are more suitable.

Figure 2



Radial load
a

Axial load
b

Combined load
c

Moment load
d

Misalignment

Angular misalignments between the shaft and housing occur when the shaft bends (flexes) under the operating load. For example, when the bearing seatings in the housing are not machined to the same height or when shafts are supported by bearings in separate housings that are too far apart.

Rigid bearings, i.e. deep groove ball bearings and cylindrical roller bearings, can only accommodate very minor misalignments unless by force. Self-aligning bearings, i.e. self-aligning ball bearings, spherical roller bearings, CARB, and spherical roller thrust bearings **(Figure 3)**, on the other hand, can accommodate misalignment produced under operating loads and can also compensate for initial errors of misalignment resulting from machining or mounting errors. Values for the permissible misalignments are given in the introductory text of the table section. If the expected misalignment exceeds the permissible values, please contact the SKF application engineering service.

Thrust ball bearings with sphered housing washers and seating rings, Y-bearing units and alignment needle roller bearings **(Figure 4)** can compensate for initial misalignment arising from machining or mounting errors.

Precision

Bearings with higher precision than Normal are required for arrangements that must have high running accuracy (e.g. machine tool spindle arrangements) as well as those applications where very high speeds are required.

The Technical Features Tables at the beginning of each table section contain information regarding the tolerance classes to which the bearings in that section are produced. SKF produces a comprehensive range of high precision bearings, including single row angular contact ball bearings, single and double row cylindrical roller bearings, and single and double direction angular contact thrust ball bearings.

Figure 3

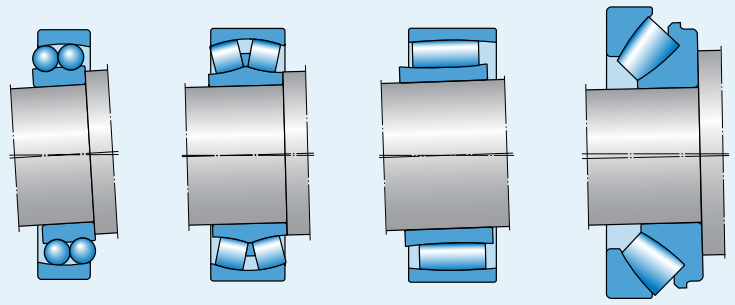
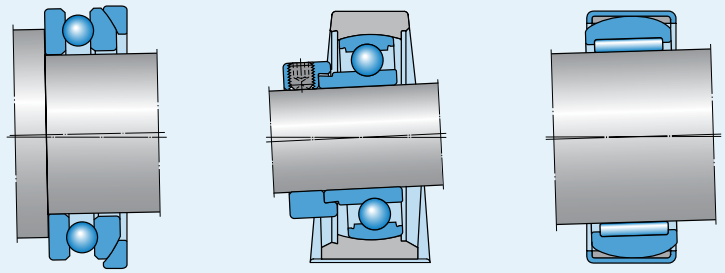


Figure 4



Speed

Speed ratings

There is a limit to the speed at which rolling bearings can be operated. Generally it is the operating temperature that can be permitted with respect to the lubricant being used or to the material of the bearing components that sets the limit. The speed at which this limiting bearing temperature is reached depends on the frictional heat generated in the bearing (including any externally applied heat) and the amount of heat that can be transported away from the bearing. Bearing type and size, internal design, load, lubrication and cooling conditions as well as cage design, accuracy and internal clearance all play a part in determining speed capability. In the product tables two speeds are listed: (thermal) Reference speed and (kinematic) Limiting speed.

Reference speeds

The (thermal) reference speed for a given bearing represents a reference speed value that is used to determine the permissible operating speed of the bearing when subjected to the specific operating conditions of load and lubrication type and method.

The reference speeds listed in the product tables are according to ISO 15312. This Standard has been established for oil lubrication but is valid also for grease and uses the following reference conditions:

- A temperature increase of 90° F (50° C) above an ambient temperature of 68° F (20° C), thus a bearing temperature of 158° F (70° C), measured on the bearing stationary outer ring or housing washer
- Radial bearing: a constant radial load, being 5% of the basic static load rating C_0
- Thrust bearing: a constant axial load, being 2% of the basic static load rating C_0
- Open bearings with Normal clearance

For oil lubricated bearings:

- Lubricant: mineral oil without EP-additives having a kinematic viscosity at 158° F (70° C) equal to:
- Radial bearing: n = 12 mm^2 / s (ISO VG32)
- Thrust roller bearing: n = 24 mm^2 / s (ISO VG68)
- Method of lubrication: oil bath with the oil reaching up to the middle of the rolling element in the lowest position

For grease lubricated bearings:

- Lubricant: regular lithium soap grease with mineral base oil having a viscosity of 100 to 200 mm2 / s at 104° F (40° C) (e.g. ISO VG 150)
- Grease quantity: approximately 30% of the free space in the bearing

Technical Features

The reference speed will be reached after 10 to 20 hours running time. Under these specific conditions the reference speed for oil and grease lubrication will be equal.

Speeds above the reference speed

It is possible to operate bearings at speeds above the reference speed if the bearing friction can be reduced, for example, by lubrication systems with small, accurately measured quantities of lubricant or when heat can be removed from the bearing by circulating oil lubrication with cooling of the oil, by cooling ribs on the housing, or by directed cooling air streams.

Any increase in speed above the reference speed without taking any of these precautions would only cause bearing temperature to rise excessively. An increase of bearing temperature means that lubricant viscosity is lowered and film formation is made more difficult, leading to even higher friction and further temperature increases. If, at the same time, the operational clearance in the bearing is reduced because of increased inner ring temperature, the final consequence could be bearing seizure

Limiting speeds

The speed limit is determined by criteria that include the stability or strength of the cage, lubrication of cage guiding surfaces, centrifugal and gyratory forces acting on the rolling elements and other speed-limiting factors.

Experience gained from laboratory tests and practical applications indicates that there are maximum speeds that should not be exceeded for technical reasons or because of the very high costs involved.

Limiting speeds shown in the bearing tables are based on the demands of high speed running applications and are valid only for the specific design and cage design shown in the tables.

It is possible to run bearings with higher speeds than those shown as limiting speeds but then several speed-limiting factors must be reviewed and improved such as the running accuracy, cage material and design, lubrication and heat dissipation. It is therefore advisable to contact the SKF application engineering for advice. For grease lubrication, additional parameters have to be considered such as lubrication of cage guiding surfaces and the shear strength of the lubricant, which is determined by the base oil and thickener.

Some bearings such as open ball bearings have very low friction and reference speeds may actually be higher than the limiting speed. In these cases the permissible speed must be calculated from the operating conditions and the lower value between the permissible and limiting speed used.

Quiet running

In certain applications, e.g. small electric motors for household appliances or office machinery, the noise produced in operation is an important factor and can influence the bearing choice. SKF deep groove ball bearings are produced specifically for these applications.

Stiffness

The stiffness of a rolling bearing is characterized by the magnitude of the elastic deformation (resilience) in the bearing under load. Generally this deformation is very small and can be neglected. In some cases, however, e.g. spindle bearing arrangements for machine tools or pinion bearing arrangements, stiffness is important.

Because of the contact conditions between the rolling elements and raceways, roller bearings e.g. cylindrical or taper roller bearings, have a higher degree of stiffness than ball bearings. Bearing stiffness can be further enhanced by applying a preload. SKF Application Engineering can assist you with specific calculations regarding stiffness.

Preload

Depending on the application it may be necessary to have either a positive or a negative operational clearance in the bearing arrangement. In the majority of applications, the operational clearance should be positive, i.e. when in operation, the bearing should have a residual clearance, however slight (section “Bearing internal clearance” on page 22).

However, there are many cases, e.g. machine tool spindle bearings, pinion bearings in automotive axle drives, bearing arrangements of small electric motors, or bearing arrangements for oscillating movement, where a negative operational clearance, i.e. a preload, is needed to enhance the stiffness of the bearing arrangement or to increase running accuracy. The application of a preload, e.g. by springs, is also recommended where bearings are to operate without load or under very light load and at high speeds. In these cases, the preload serves to provide a minimum load on the bearing and prevent bearing damage as a result of sliding movements of the rolling elements (section “Requisite minimum load” on page 19).

Types of preload

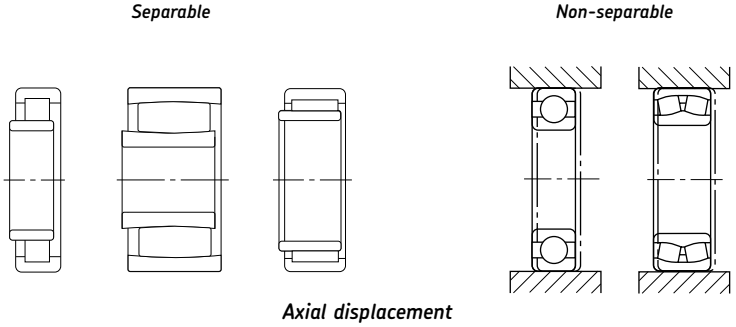
Depending on the type of bearing, the preload may be either radial or axial. Cylindrical roller bearings can only be radially preloaded and thrust ball bearings can only be axially preloaded. Single row angular contact ball bearings and tapered roller bearings, which are generally mounted together with a second bearing of the same type in a back-to-back, face-to-face, or tandem arrangement, are axially preloaded.

Angular contact ball bearings modified for light preloads and universal matching can be purchased utilizing the suffix GA. Other types of preload methods include the use of shims, springs, wavy washers, friction torque, direct force measurements and adjustment procedures.

Effect of preload

- The main effects of bearing preload are to:
- Enhance system stiffness
- Reduce running noise
- Enhance the accuracy of shaft guidance
- Compensate for wear and settling (relaxation) processes in operation, and
- Provide long service life

Figure 5



Axial displacement

Shafts, or other rotating machine components, are generally supported by a locating and a non-locating bearing.

Locating bearings provide axial location for the machine component in both directions. The most suitable bearings for this are those that can accommodate combined loads, or can provide axial guidance in combination with a second bearing (matrix on pages 12 and 13).

Non-locating bearings must permit shaft movement in the axial direction, so that the bearings are not overloaded when, for example, thermal expansion of the shaft occurs. The most suitable bearings for the non-locating position include needle roller bearings and NU and N design cylindrical roller bearings. NJ design cylindrical roller bearings and some full complement design cylindrical roller bearings can also be used.

In applications where the required axial displacement is relatively large and also the shaft may be misaligned, the CARB toroidal roller bearing is the ideal non-locating bearing.

All of these bearings permit axial displacement of the shaft with respect to the housing within the bearing. Values for the permissible axial displacement within the bearing are given in the relevant product tables.

If non-separable bearings, e.g. deep groove ball bearings or spherical roller bearings are used as non-locating bearings, one of the bearing rings must have a loose fit.

Mounting and dismounting

Cylindrical bore

Bearings with a cylindrical bore (Figure 6) are easier to mount and dismount if they are of separable design rather than non-separable, particularly if interference fits are required for both rings. Separable bearings are also preferable if frequent mounting and dismounting are required, because the ring with rolling element and cage assembly of these separable bearings can be fitted independently of the other ring, e.g. four-point contact ball bearings, cylindrical, needle and taper roller bearings as well as ball and roller thrust bearings.

Tapered bore

Bearings with a tapered bore **(Figure 7)** can easily be mounted on a tapered journal or on a cylindrical shaft seating using an adapter or withdrawal sleeve or a stepped sleeve. Care must be taken to obtain the desired mounting clearance.

Details on mounting and dismounting can be found in the SKF Bearing Installation and Maintenance Guide (publication #140-710).

Tolerances

The dimensional and running accuracy of rolling bearings has been standardized internationally. In addition to the Normal tolerances the ISO standards also cover closer tolerances, e.g.

- Tolerance class 6 which corresponds to SKF tolerance class P6
- Tolerance class 5 which corresponds to SKF tolerance class P5

For special applications, such as machine tool spindles, SKF also manufactures bearings with higher accuracy, e.g. to tolerance classes P4, P4A, PA9A, SP and UP.

Tolerance information about each bearing type is contained in the Technical features tables in the beginning of the various product table sections under the heading “Tolerances”.

Dimensions

Manufacturers and users of rolling bearings are, for reasons of price, quality and ease of replacement, only interested in a limited number of bearing sizes. The International Organization for Standardization (ISO) has therefore laid down General Plans for the boundary dimensions of :

- Metric radial rolling bearings in standard ISO 15:1998, except taper roller bearings
- Metric radial taper roller bearings in standard ISO 355:1977
- Metric thrust rolling bearings in standard ISO 104:2002

General Plans for inch-size bearings

A large group of bearings in inch sizes are inch-size taper roller bearings. The dimensions of these bearings conform to ABMA Standard 19-1974 (ANSI B3.19-1975). ANSI / ABMA Standard 19.2-1994 has subsequently replaced this standard, but this later standard no longer includes dimensions.

Figure 6

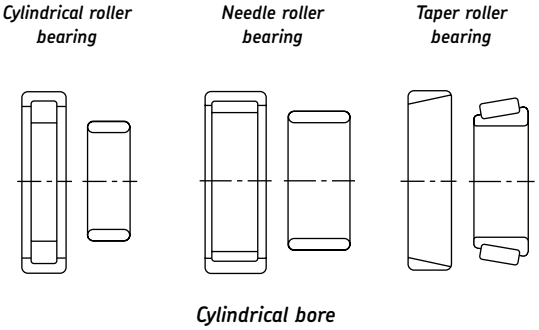
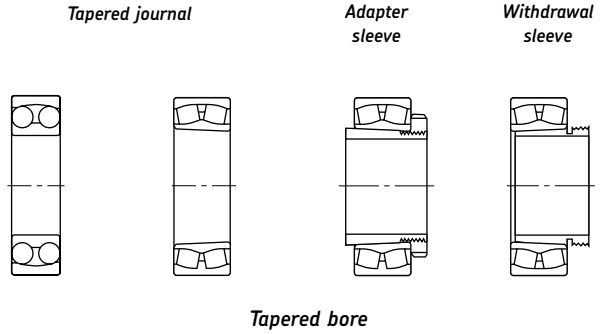


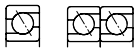
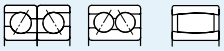
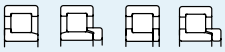
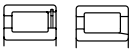
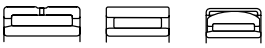
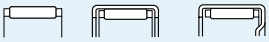
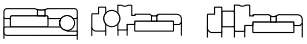
Figure 7



Technical Features

The matrix can only provide a rough guide so that in each individual case it is necessary to make a more qualified selection referring to the information given on the preceding pages or the detailed information in the text preceding each table section.

Key: + Excellent ▲ Good ● Fair ■ Poor – Unsuitable

Bearing type		Series	
Deep groove ball bearings		16000, 200, 300, 6000, 61800, 61900, 6200, 6300, 6400	
Angular contact ball bearings	Single row	7200, 7300, 7400	
	Matched single row, double row	3200, 3300, BA2B 459000	
	Four-point contact	QJ200, QJ300	
Self-aligning ball bearings		1200, 1300, 1400, 2200, 2300	
Cylindrical roller bearings	With cage	N, NJ, NU (200, 300, 400)	
		NUP (200, 300, 400)	
	Full complement, single row	NCF, NJG	
	Full complement, double row	NNC4800, NNCF, NNCL, NNF	
Needle roller bearings	With steel rings	HK, NA, NK, NKI, NKIS, NKS, RNA	
	Assemblies, drawn cups	HK, NA, NK, NKI, NKIS, NKS, RNA	
	Combined bearings	HK, NA, NK, NKI, NKIS, NKS, RNA	
Taper roller bearings	Single row	30000, 31000, 32000, 33000, T2, T4, T7	
	Matched single row	31300DF, 32000DF	
Spherical roller bearings		21000, 22000, 23000, 24000, 452000, 453000, I series	
CARB® toroidal roller bearings	With cage	C2200, C2300, C3000, C3100, C3200,	
	Full complement	C39 / 100, C4000, C5900, C6000	
Thrust ball bearings		51000, 52000	
	With sphered housing washer	53000, 54000	
Spherical roller thrust bearings		29200, 29300, 29400	

Bearing characteristics

Characteristics – suitability of bearing for

Shields or seals	Radial capacity	Axial capacity	Combined load	Moment load	Speed	Running accuracy	Stiffness	Quiet running	Low friction	Compensation for misalignment	Axial displacement possible in bearing	Typical application
+	●	●	●	■	●	●	●	+	+	■	–	Textiles power tools, electric motors, pumps, gearboxes
–	●	●	▲	■	▲	+	●	▲	▲	■	–	Pumps, compressors, centrifuges
▲	▲	●	▲	●	●	▲	▲	●	●	–	–	Pumps, compressors, centrifuges
■	■	▲	●	●	▲	●	●	●	●	–	–	Compressors
▲	●	■	■	–	+	▲	■	▲	+	+	–	Fans, paper making machines
■	▲	–	–	–	▲	▲	▲	▲	▲	■	+	Traction motors, electric motors, gearboxes
■	▲	●	●	–	▲	▲	▲	●	▲	■	●	Traction motors, electric motors, gearboxes
●	+	■	●	–	■	●	+	■	■	■	●	Elevators, gearboxes
●	+	■	●	●	■	●	+	■	■	–	●	Cranes, steel rolling mills, wire ropes, sheaves
■	▲	–	–	–	●	●	▲	●	■	–	+	Gearboxes (planetary), alternators
–	▲	–	–	–	●	●	▲	●	■	–	+	Gearboxes (planetary), alternators
–	●	●	●	■	●	●	▲	●	■	–	–	Gearboxes (planetary), alternators
–	▲	▲	+	■	●	●	▲	●	●	■	–	Gearboxes, cone crushers
–	+	▲	+	●	●	●	+	●	●	■	–	Gearboxes, rail car axle
●	+	●	+	–	●	●	▲	●	●	+	–	Fans, paper, gearboxes, crushers vibrating screens
●	+	–	–	–	●	●	▲	●	●	+	+	Paper making machines, gearboxes, fans, electric motors
●	+	–	–	–	■	●	+	●	●	+	+	Paper making machines, gearboxes, fans, electric motors
–	–	●	–	–	■	▲	●	■	●	■	–	Plastic extruder tools, crane hooks
–	–	●	–	–	■	●	●	■	●	■	–	Plastic extruder tools, crane hooks
–	–	+	●	–	■	●	▲	■	●	+	–	Tunnel boring machines, wind turbines, cranes, pumps, electric motors

Bearing life

Load carrying capacity and life

The bearing size to be used for an application is initially selected on the basis of its load ratings in relation to the applied loads and the requirements regarding service life and reliability. Values for the basic dynamic load rating C and the basic static load rating C_0 are quoted in the product tables. Both static and dynamic bearing load conditions have to be independently verified. Static loads are not only those that are applied with the bearing at rest or at very low rotational speeds (n < 10 r / min), but should include checking the static safety of heavy shock loads (very short duration loads). Dynamic loads should also be checked using a representative spectrum of load conditions on the bearing. The load spectrum should include any peak (heavy) loads that may occur on rare occasions.

In the SKF life rating equation, the stress resulting from the external loads is considered together with stresses originated by the surface topography, lubrication and kinematics of the rolling contact surfaces. The influence on bearing life of this combined stress system provides a better prediction of the actual performance of the bearing in a particular application.

Due to its complexity, a detailed description of the theory is beyond the scope of this catalog. Therefore, a simplified "catalog" approach is presented under the heading "SKF rating life". This enables users to fully recognize the influence of lubrication and contamination on bearing service life.

Metal fatigue of the rolling contact surfaces is generally the dominant failure mechanism in rolling bearings. Therefore, a criterion based on raceway fatigue is generally sufficient for the selection and sizing of a rolling bearing for a given application. International standards such as ISO 281 and ABMA Standards 9 and 11 are based on metal fatigue of the rolling contact surfaces. Nevertheless, it is important to remember that the complete bearing can be viewed as a system in which the life of each component (i.e. cage, lubricant and seal) when present, equally contributes and in some cases dominates the effective endurance of the bearing. In theory, the optimum service life is achieved when all the components reach the same life.

In other words, the calculated life will correspond to the actual service life of the bearing when the service life of other contributing mechanisms is at least as long as the calculated bearing life. Contributing mechanisms can include the cage, seal and lubricant. In practice, metal fatigue is most often the dominating factor.

Basic dynamic load ratings

The basic dynamic load rating C is used for calculations involving dynamically stressed bearings, for example, when selecting a bearing which is to rotate under load. It expresses the bearing load which will give an ISO 281:1990 and ABMA Standards 9 and 11 (1990) basic rating life (defined below) of 1,000,000 revolutions*.

The SKF Explorer class bearings account among others, for improvements in material and manufacturing techniques applied by SKF and use additional factors to calculate the basic dynamic load ratings according to ISO 281:1990.

Static bearing loads

The basic static load rating C0 is used in calculations when the bearings are to rotate at very slow speeds, (less than 10 rpm) are to be subjected to very slow oscillating movements, or are to be stationary under load during certain periods. It is also most important to check the safety factor of short duration loads, such as shock or heavy peak loads, that act on a rotating (dynamically stressed) bearing or with the bearing at rest.

The basic static load rating is defined in accordance with ISO 76-1987 as the static load, which corresponds to a calculated contact stress at the center of the most heavily loaded rolling element / raceway contact of:

- 667,000 psi (4,600 Mpa) for self-aligning ball bearings
- 609,000 psi (4,200 Mpa) for all other ball bearings
- 580,000 psi (4,000 Mpa) for all roller bearings

This stress produces a total permanent deformation of rolling element and raceway, which is approximately 0.0001 of the rolling element diameter. The loads are purely radial for radial bearings and centrically acting axial loads for thrust bearings.

Verification of the static bearing loads is performed checking the static safety factor of the application, which is defined as:

s0 = C0/P0

where

C0 = Basic static load rating, kN (or lbs)

P0 = Equivalent static bearing load, kN (or lbs)

s0 = Static safety factor

The maximum load that can occur on a bearing should be used in the calculation of the equivalent static bearing load. Further information about the advised values for the safety factor and its calculation can be obtained by contacting SKF Application Engineering.

Life

Practical experience shows that seemingly identical bearings operating under identical conditions have different individual endurance lives. A clearer definition of the term "life" is therefore essential for the calculation of the bearing size. All information presented by SKF on dynamic load ratings is based on the life that 90% of a sufficiently large group of apparently identical bearings can be expected to attain or exceed. This is called the basic rating life and agrees with the ISO and ABMA definitions. The median or average life is approximately five times the calculated basic rating life.

There are several other types of bearing life. One of these is "service life" which represents the actual life of a bearing in real operating conditions before it fails. Note that individual bearing life can only be predicted statistically. Life calculations refer only to a bearing population and a given degree of reliability, i.e. 90%. Furthermore, field failures are not generally caused by fatigue, but are more often caused by contamination, wear, misalignment, corrosion, or as a result of cage, lubrication or seal failure.

Another "life" is the "specification life". This is the life specified by an authority, for example, based on hypothetical load and speed data supplied by the same authority. It is generally a requisite L10 basic rating life and based on experience gained from similar applications.

Selecting bearing size using the life equations

Bearing life can be calculated with different degrees of sophistication and hence accuracy, depending on the knowledge of the real operating conditions.

Calculation of dynamic bearing loads

The loads acting on the bearing can be calculated according to the laws of mechanics if the external forces (for example, forces from power transmission, work forces or inertia forces) are known or can be calculated.

When calculating the load components for a single bearing, the shaft is assumed to be a beam resting on rigid, moment-free supports for the sake of simplification. Elastic deformations in the bearing, the housing or the machine frame are not considered, nor are the moments produced in the bearing as a result of shaft deflection. These simplifications are necessary if a bearing arrangement is to be calculated using readily available aids such as pocket calculators. The standardized methods for calculating basic load ratings and equivalent bearing loads are based on similar assumptions.

* The values are based on chromium steel bearings, heat-treated to a minimum hardness of 58 HRC, and operating under normal conditions.

Bearing life

Table 1

Ball bearings - Basic bearing life versus speed for different load ratios

L_{10h}	C/P When n =														
	50	100	125	150	200	250	300	400	500	600	750	900	1 000	1 200	1 500
hours	rpm														
100	0.67	0.84	0.91	0.97	1.06	1.14	1.22	1.34	1.44	1.53	1.65	1.75	1.82	1.93	2.08
500	1.14	1.44	1.55	1.65	1.82	1.96	2.08	2.29	2.47	2.62	2.82	3.00	3.11	3.3	3.56
1 000	1.44	1.82	1.96	2.08	2.29	2.47	2.62	2.88	3.11	3.3	3.56	3.78	3.91	4.16	4.48
1 250	1.55	1.96	2.11	2.24	2.47	2.66	2.82	3.11	3.35	3.56	3.83	4.07	4.22	4.48	4.83
1 600	1.69	2.13	2.29	2.43	2.68	2.88	3.07	3.37	3.63	3.86	4.16	4.42	4.58	4.87	5.24
2 000	1.82	2.29	2.47	2.62	2.88	3.11	3.3	3.63	3.91	4.16	4.48	4.76	4.93	5.24	5.65
2 500	1.96	2.47	2.66	2.82	3.11	3.35	3.56	3.91	4.22	4.48	4.83	5.13	5.31	5.65	6.08
3 200	2.13	2.68	2.88	3.07	3.37	3.63	3.86	4.25	4.58	4.87	5.24	5.57	5.77	6.13	6.60
4 000	2.29	2.88	3.11	3.30	3.63	3.91	4.16	4.58	4.93	5.24	5.65	6.00	6.21	6.6	7.11
5 000	2.47	3.11	3.35	3.56	3.91	4.22	4.48	4.93	5.31	5.65	6.08	6.46	6.69	7.11	7.66
6 300	2.66	3.36	3.62	3.84	4.23	4.55	4.84	5.33	5.74	6.1	6.57	6.98	7.23	7.68	8.28
8 000	2.88	3.63	3.91	4.16	4.58	4.93	5.24	5.77	6.21	6.6	7.11	7.56	7.83	8.32	8.96
10 000	3.11	3.91	4.22	4.48	4.93	5.31	5.65	6.21	6.69	7.11	7.66	8.14	8.43	8.96	9.65
12 500	3.35	4.22	4.54	4.83	5.31	5.72	6.08	6.69	7.21	7.66	8.25	8.77	9.09	9.65	10.4
16 000	3.63	4.58	4.93	5.24	5.77	6.21	6.6	7.27	7.83	8.32	8.96	9.52	9.86	10.5	11.3
20 000	3.91	4.93	5.31	5.65	6.21	6.69	7.11	7.83	8.43	8.96	9.65	10.3	10.6	11.3	12.2
25 000	4.22	5.31	5.72	6.08	6.69	7.21	7.66	8.43	9.09	9.65	10.4	11.1	11.4	12.2	13.1
32 000	4.58	5.77	6.21	6.60	7.27	7.83	8.32	9.16	9.86	10.5	11.3	12.0	12.4	13.2	14.2
40 000	4.93	6.21	6.69	7.11	7.83	8.43	8.96	9.86	10.6	11.3	12.2	12.9	13.4	14.2	15.3
50 000	5.31	6.69	7.21	7.66	8.43	9.09	9.65	10.6	11.4	12.2	13.1	13.9	14.4	15.3	16.5
63 000	5.74	7.23	7.79	8.28	9.11	9.81	10.4	11.5	12.4	13.1	14.2	15.0	15.6	16.6	17.8
80 000	6.21	7.83	8.43	8.96	9.86	10.6	11.3	12.4	13.4	14.2	15.3	16.3	16.9	17.9	19.3
100 000	6.69	8.43	9.09	9.65	10.6	11.4	12.2	13.4	14.4	15.3	16.5	17.5	18.2	19.3	20.8
200 000	8.43	10.6	11.4	12.2	13.4	14.4	15.3	16.9	18.2	19.3	20.8	22.1	22.9	24.3	26.2

L_{10h}	C/P When n =													
	1 800	2 000	2 500	3 000	3 600	4 000	5 000	6 000	8 000	10 000	12 000	15 000	20 000	30 000	40 000
hours	rpm														
100	2.21	2.29	2.47	2.62	2.78	2.88	3.11	3.3	3.63	3.91	4.16	4.48	4.93	5.65	6.21
500	3.78	3.91	4.22	4.48	4.76	4.93	5.31	5.65	6.21	6.69	7.11	7.66	8.43	9.65	10.6
1 000	4.76	4.93	5.31	5.65	6.00	6.21	6.69	7.11	7.83	8.43	8.96	9.65	10.6	12.2	13.4
1 250	5.13	5.31	5.72	6.08	6.46	6.69	7.21	7.66	8.43	9.09	9.65	10.4	11.4	13.1	14.4
1 600	5.57	5.77	6.21	6.60	7.02	7.27	7.83	8.32	9.16	9.86	10.5	11.3	12.4	14.2	15.7
2 000	6.00	6.21	6.69	7.11	7.56	7.83	8.43	8.96	9.86	10.6	11.3	12.2	13.4	15.3	16.9
2 500	6.46	6.69	7.21	7.66	8.14	8.43	9.09	9.65	10.6	11.4	12.2	13.1	14.4	16.5	18.2
3 200	7.02	7.27	7.83	8.32	8.84	9.16	9.86	10.5	11.5	12.4	13.2	14.2	15.7	17.9	19.7
4 000	7.56	7.83	8.43	8.96	9.52	9.86	10.6	11.3	12.4	13.4	14.2	15.3	16.9	19.3	21.3
5 000	8.14	8.43	9.09	9.65	10.3	10.6	11.4	12.2	13.4	14.4	15.3	16.5	18.2	20.8	22.9
6 300	8.80	9.11	9.81	10.4	11.1	11.5	12.4	13.1	14.5	15.6	16.6	17.8	19.6	22.5	24.7
8 000	9.52	9.86	10.6	11.3	12.0	12.4	13.4	14.2	15.7	16.9	17.9	19.3	21.3	24.3	26.8
10 000	10.3	10.6	11.4	12.2	12.9	13.4	14.4	15.3	16.9	18.2	19.3	20.8	22.9	26.2	28.8
12 500	11.1	11.4	12.3	13.1	13.9	14.4	15.5	16.5	18.2	19.6	20.8	22.4	24.7	28.2	31.1
16 000	12.0	12.4	13.4	14.2	15.1	15.7	16.9	17.9	19.7	21.3	22.6	24.3	26.8	30.7	33.7
20 000	12.9	13.4	14.4	15.3	16.3	16.9	18.2	19.3	21.3	22.9	24.3	26.2	28.8	33.0	36.3
25 000	13.9	14.4	15.5	16.5	17.5	18.2	19.6	20.8	22.9	24.7	26.2	28.2	31.1	35.6	39.1
32 000	15.1	15.7	16.9	17.9	19.0	19.7	21.3	22.6	24.9	26.8	28.5	30.7	33.7	38.6	42.5
40 000	16.3	16.9	18.2	19.3	20.5	21.3	22.9	24.3	26.8	28.8	30.7	33.0	36.3	41.6	45.8
50 000	17.5	18.2	19.6	20.8	22.1	22.9	24.7	26.1	28.8	31.1	33.0	35.6	39.1	44.8	49.3
63 000	18.9	19.6	21.1	22.5	23.9	24.7	26.6	28.3	31.2	33.6	35.7	38.4	42.3	48.4	53.3
80 000	20.5	21.3	22.9	24.3	25.9	26.8	28.8	30.7	33.7	36.3	38.6	41.6	45.8	52.4	57.7
100 000	22.1	22.9	24.7	26.2	27.8	28.8	31.1	33.0	36.3	39.1	41.6	44.8	49.3	56.5	62.1
200 000	27.8	28.8	31.1	33.0	35.1	36.3	39.1	41.6	45.8	49.3	52.4	56.5	62.1	71.1	78.3

These tables should not be used as a method to select or design a bearing into an application.

Bearing life

Table 2

Roller bearings - Basic bearing life versus speed for different load ratios

L_{10h}	C/P When n =														
	50	100	125	150	200	250	300	400	500	600	750	900	1 000	1 200	1 500
hours	rpm														
100	0.70	0.86	0.92	0.97	1.06	1.13	1.19	1.30	1.39	1.47	1.57	1.66	1.71	1.81	1.93
500	1.13	1.39	1.49	1.57	1.71	1.83	1.93	2.11	2.25	2.38	2.54	2.69	2.77	2.93	3.13
1 000	1.39	1.71	1.83	1.93	2.11	2.25	2.38	2.59	2.77	2.93	3.13	3.31	3.42	3.61	3.86
1 250	1.49	1.83	1.96	2.07	2.25	2.41	2.54	2.77	2.97	3.13	3.35	3.54	3.65	3.86	4.12
1 600	1.6	1.97	2.11	2.23	2.43	2.59	2.74	2.99	3.19	3.37	3.61	3.81	3.93	4.15	4.44
2 000	1.71	2.11	2.25	2.38	2.59	2.77	2.93	3.19	3.42	3.61	3.86	4.07	4.20	4.44	4.75
2 500	1.83	2.25	2.41	2.54	2.77	2.97	3.13	3.42	3.65	3.86	4.12	4.36	4.50	4.75	5.08
3 200	1.97	2.43	2.59	2.74	2.99	3.19	3.37	3.68	3.93	4.15	4.44	4.69	4.84	5.11	5.47
4 000	2.11	2.59	2.77	2.93	3.19	3.42	3.61	3.93	4.20	4.44	4.75	5.02	5.18	5.47	5.85
5 000	2.25	2.77	2.97	3.13	3.42	3.65	3.86	4.20	4.50	4.75	5.08	5.36	5.54	5.85	6.25
6 300	2.42	2.97	3.18	3.36	3.66	3.91	4.13	4.51	4.82	5.09	5.44	5.75	5.93	6.27	6.70
8 000	2.59	3.19	3.42	3.61	3.93	4.20	4.44	4.84	5.18	5.47	5.85	6.18	6.37	6.73	7.20
10 000	2.77	3.42	3.65	3.86	4.20	4.50	4.75	5.18	5.54	5.85	6.25	6.60	6.81	7.20	7.70
12 500	2.97	3.65	3.90	4.12	4.50	4.81	5.08	5.54	5.92	6.25	6.68	7.06	7.29	7.7	8.23
16 000	3.19	3.93	4.20	4.44	4.84	5.18	5.47	5.96	6.37	6.73	7.20	7.60	7.85	8.29	8.86
20 000	3.42	4.20	4.50	4.75	5.18	5.54	5.85	6.37	6.81	7.20	7.70	8.13	8.39	8.86	9.48
25 000	3.65	4.50	4.81	5.08	5.54	5.92	6.25	6.81	7.29	7.70	8.23	8.69	8.97	9.48	10.1
32 000	3.93	4.84	5.18	5.47	5.96	6.37	6.73	7.34	7.85	8.29	8.86	9.36	9.66	10.2	10.9
40 000	4.20	5.18	5.54	5.85	6.37	6.81	7.20	7.85	8.39	8.86	9.48	10.0	10.3	10.9	11.7
50 000	4.50	5.54	5.92	6.25	6.81	7.29	7.70	8.39	8.97	9.48	10.1	10.7	11.0	11.7	12.5
63 000	4.82	5.93	6.34	6.70	7.30	7.81	8.25	8.99	9.61	10.2	10.9	11.5	11.8	12.5	13.4
80 000	5.18	6.37	6.81	7.20	7.85	8.39	8.86	9.66	10.3	10.9	11.7	12.3	12.7	13.4	14.4
100 000	5.54	6.81	7.29	7.70	8.39	8.97	9.48	10.3	11.0	11.7	12.5	13.2	13.6	14.4	15.4
200 000	6.81	8.39	8.97	9.48	10.3	11.0	11.7	12.7	13.6	14.4	15.4	16.2	16.7	17.7	18.9

L_{10h}	C/P When n =													
	1 800	2 000	2 500	3 000	3 600	4 000	5 000	6 000	8 000	10 000	12 000	15 000	20 000	30 000	40 000
hours	rpm														
100	2.04	2.11	2.25	2.38	2.51	2.59	2.77	2.93	3.19	3.42	3.61	3.86	4.20	4.75	5.18
500	3.31	3.42	3.65	3.86	4.07	4.20	4.50	4.75	5.18	5.54	5.85	6.25	6.81	7.70	8.39
1 000	4.07	4.20	4.50	4.75	5.02	5.18	5.54	5.85	6.37	6.81	7.20	7.70	8.39	9.48	10.3
1 250	4.36	4.50	4.81	5.08	5.36	5.54	5.92	6.25	6.81	7.29	7.70	8.23	8.97	10.1	11.0
1 600	4.69	4.84	5.18	5.47	5.78	5.96	6.37	6.73	7.34	7.85	8.29	8.86	9.66	10.9	11.9
2 000	5.02	5.18	5.54	5.85	6.18	6.37	6.81	7.20	7.85	8.39	8.86	9.48	10.3	11.7	12.7
2 500	5.36	5.54	5.92	6.25	6.60	6.81	7.29	7.70	8.39	8.97	9.48	10.1	11.0	12.5	13.6
3 200	5.78	5.96	6.37	6.73	7.11	7.34	7.85	8.29	9.03	9.66	10.2	10.9	11.9	13.4	14.6
4000	6.18	6.37	6.81	7.20	7.6	7.85	8.39	8.86	9.66	10.3	10.9	11.7	12.7	14.4	15.7
5 000	6.60	6.81	7.29	7.70	8.13	8.39	8.97	9.48	10.3	11.0	11.7	12.5	13.6	15.4	16.7
6 300	7.08	7.30	7.81	8.25	8.71	8.99	9.61	10.2	11.1	11.8	12.5	13.4	14.6	16.5	17.9
8 000	7.60	7.85	8.39	8.86	9.36	9.66	10.3	10.9	11.9	12.7	13.4	14.4	15.7	17.7	19.3
10 000	8.13	8.39	8.97	9.48	10.0	10.3	11.0	11.7	12.7	13.6	14.4	15.4	16.7	18.9	20.6
12 500	8.69	8.97	9.59	10.1	10.7	11.0	11.8	12.5	13.6	14.5	15.4	16.4	17.9	20.2	22.0
16 000	9.36	9.66	10.3	10.9	11.5	11.9	12.7	13.4	14.6	15.7	16.5	17.7	19.3	21.8	23.7
20 000	10.0	10.3	11.0	11.7	12.3	12.7	13.6	14.4	15.7	16.7	17.7	18.9	20.6	23.3	25.4
25 000	10.7	11.0	11.8	12.5	13.2	13.6	14.5	15.4	16.7	17.9	18.9	20.2	22.0	24.9	27.1
32 000	11.5	11.9	12.7	13.4	14.2	14.6	15.7	16.5	18.0	19.3	20.4	21.8	23.7	26.8	29.2
40 000	12.3	12.7	13.6	14.4	15.2	15.7	16.7	17.7	19.3	20.6	21.8	23.3	25.4	28.7	31.2
50 000	13.2	13.6	14.5	15.4	16.2	16.7	17.9	18.9	20.6	22.0	23.3	24.9	27.1	30.6	33.4
63 000	14.1	14.6	15.6	16.5	17.4	17.9	19.2	20.3	22.1	23.6	24.9	26.7	29.1	32.8	35.8
80 000	15.2	15.7	16.7	17.7	18.7	19.3	20.6	21.8	23.7	25.4	26.8	28.7	31.2	35.3	38.5
100 000	16.2	16.7	17.9	18.9	20.0	20.6	22.0	23.3	25.4	27.1	28.7	30.6	33.4	37.7	41.1
200 000	20.0	20.6	22.0	23.3	24.6	25.4	27.1	28.7	31.2	33.4	35.3	37.7	41.1	46.4	50.6

These tables should not be used as a method to select or design a bearing into an application.

Bearing life

It is possible to calculate bearing loads based on the theory of elasticity without making the above simplifications, but this requires the use of a powerful computer and lengthy complex programs.

Those external forces which arise, for example, from the inherent weight of the shaft and the components which it carries, or from the weight of a vehicle, and the other inertia forces, are either known or can be calculated. However, when determining the work forces (rolling forces, cutting forces in machine tools, etc.), shock forces and additional dynamic forces, for example, as a result of unbalance, it is often necessary to rely on estimations based on experience gained with similar machines or bearing arrangements.

With a gear train, for example, the theoretical tooth forces can be calculated from the power transmitted and the design characteristics of the gear teeth. However, there are additional dynamic forces produced either in the gear itself or by the input drive or power take-off. Additional dynamic forces in gears result from errors of form of the teeth and from unbalance of the rotating components. Because of requirements for quiet running, gears are made to high standards of accuracy and these forces are generally so small that they may be neglected when making bearing calculations.

Additional forces arising from the type and mode of operation of the machines coupled to the gear can only be determined when the operating conditions are known. Their influence on the rating lives of the bearings is considered by using an "operation" factor which takes into account shock loads and the efficiency of the gear. Values of this factor for different operating conditions can usually be found in information published by the gear manufacturer.

For belt drives it is necessary to take into account the effective belt pull (circumferential force) which is dependent on the transmitted torque when calculating shaft or bearing loads.

The belt pull must be multiplied by a factor, which is dependent on the type of belt, its preload, belt tension and any additional dynamic forces. Values are usually published by the belt manufacturer.

Equivalent dynamic bearing load

If the calculated bearing load F obtained using the above information is found to fulfill the requirements for the basic dynamic load rating C, i.e. the load is constant in magnitude and direction and acts radially on a radial bearing or axially and centrically on a thrust bearing, then P = F and the load may be inserted directly in the life equations.

In all other cases it is first necessary to calculate the equivalent dynamic bearing load. This is defined as that hypothetical load, constant in magnitude and direction, acting radially on radial bearings or axially on thrust bearings which, if applied, would have the same influence on bearing life as the actual loads to which the bearing is subjected.

Table 3

Guideline values of specification life for different types of machines

Machine type	Specification life
	Operating hours
Household machines, agricultural machines, instruments, technical equipment for medical use	300 ... 3 000
Machines used for short periods or intermittently: electric hand tools, lifting tackle in workshops, construction equipment and machines	3 000 ... 8 000
Machines used for short periods or intermittently where high operational reliability is required: lifts (elevators), cranes for packaged goods or slings of drums, etc.	8 000 ... 12 000
Machines for use 8 hours per day but not always fully utilized: gear drives for general purposes, electric motors for industrial use, rotary crushers	10 000 ... 25 000
Machines for use 8 hours per day and fully utilized: machine tools, woodworking machines, machines for the engineering industry, cranes for bulk materials, ventilator fans, conveyor belts, printing equipment, separators and centrifuges	20 000 ... 30 000
Machines for continuous 24 hour use: rolling mill gear units, medium-sized electrical machinery, compressors, mine hoists, pumps, textile machinery	40 000 ... 50 000
Wind energy machinery, this includes main shaft, yaw, pitching gearbox, generator bearings	30 000 ... 100 000
Water works machinery, rotary furnaces, cable stranding machines, propulsion machinery for ocean-going vessels	60 000 ... 100 000
Large electric machines, power generation plant, mine pumps, mine ventilator fans, tunnel shaft bearings for ocean-going vessels	> 100 000

Table 4

Guideline values of specification life for axlebox bearings and units for railway vehicles

Type of vehicle	Specification life
	Millions of km
Freight wagons to UIC specification based on continuously acting maximum axle load	0.8
Mass transit vehicles: suburban trains, underground carriages, light rail and tramway vehicles	1.5
Main line passenger coaches	3
Main line diesel and electric multiple units	3 ... 4
Main line diesel and electric locomotives	3 ... 5

Bearing life

Constant bearing load

Radial bearings are often subjected to simultaneously acting radial and axial loads. If the resultant load is constant in magnitude and direction, the equivalent dynamic bearing load can be obtained from the general equation:

$P = XFr + YFa$

where
P = Equivalent dynamic bearing load
Fr = Actual radial bearing load
Fa = Actual axial bearing load
X = Radial load factor for the bearing
Y = Axial load factor for the bearing

An additional axial load only influences the equivalent dynamic load P for a single row radial bearing if the ratio Fa / Fr exceeds a certain limiting value. With double row radial bearings even light axial loads are significant.

The same general equation is also applied for thrust bearings which can take both axial and radial loads, for example, spherical roller thrust bearings. For thrust bearings which can carry only purely axial loads, for example, thrust ball bearings, the equation can be simplified, provided the load acts centrically.

$P = Fa$

Contact SKF Application Engineering for specific equivalent load calculations.

Basic rating life equation

The simplest method of life calculation is to use the ISO or ABMA equation for basic non-adjusted rating life, which is:

$$L_{10} = \left(\frac{C}{P}\right)^p \text{ or } \frac{C}{P} = L_{10}^{1/p}$$

where

L_{10} = Basic rating life, millions of revolutions
C = Basic dynamic load rating
P = Equivalent dynamic bearing load
p = Exponent of the life equation
p = 3 for ball bearings
p = 10 / 3 for roller bearings

For bearings operating at constant speed it may be more convenient to deal with a basic rating life expressed in operating hours using the equation:

$$L_{10h} = \frac{1\,000\,000}{60\,n}\left(\frac{C}{P}\right)^p$$

or

$$L_{10h} = \frac{1\,000\,000}{60\,n} L_{10}$$

where

L_{10h} = basic rating, operating hours
n = rotational speed, r / min

For example:

A deep groove ball bearing 6205 in an electric motor, operating at 3,600 rpm, is subjected to a radial load of 100 lbs. To calculate the L_{10h}:

n = 3,600 rpm
P = 100 lbs
C = 3,330 lbs (from table on page 34)
p = 3 for ball bearing
Therefore:

$$L_{10h} = \frac{1\,000\,000}{60 \times 3600} \times \left(\frac{3330}{100}\right)^3$$

L_{10h} = 170,954 hours

Values of L_{10} as a function of load ratio C/P and speed n can be found in **Table 1** (ball bearings) and **Table 2** (roller bearings) on pages 15 and 16.

Requisite basic rating life

When determining the bearing size it is general practice to base the initial selection on the basic rating life (L10), so that it is essential that the required basic rating life or "specification life" for the application under consideration is known. It usually depends on the type of machine and the requirements regarding duration of service and operational reliability. In the absence of previous experience the values given in Tables 3 and 4 for L10 can be used.

SKF rating life

For modern high quality SKF bearings, the basic rating life can deviate significantly from the actual service life in a given application. Service life in a particular application depends on a variety of influencing factors including lubrication, the degree of contamination, misalignment, proper installation and environmental conditions.

Therefore ISO 281:1990 / Amd 2:2000 contains a modified life equation to supplement the basic rating life. This life calculation makes use of a modification factor to account for the lubrication and contamination condition of the bearing and the fatigue limit of the material.

ISO 281:1990 / Amd 2:2000 also makes provisions for bearing manufacturers to recommend a suitable method for calculating the life modification factor to be applied to a bearing based on operating conditions. The SKF life modification factor aSKF applies the concept of a fatigue load limit analogous to that used when calculating other machine components. Furthermore, the SKF life modification factor aSKF makes use of the lubrication conditions (viscosity ratio k), a factor for contamination level to reflect the application's operating conditions and performance level, i.e., SKF Explorer bearings.

The equation for SKF rating life is in accordance with ISO 281:1990 / Amd 2:2000. Contact SKF Application Engineering for more specifics and various factor calculations.

If the speed is constant, the life can be expressed in operating hours, using the equation:

$L_{nm} = a_1\, a_{SKF}\, L_{10}$

where

L_{nm} = SKF rating life (at $_n$% reliability), millions of revolutions
L_{nmh} = SKF rating life (at $_n$% reliability), operating hours
L_{10} = Basic rating life (at 90% reliability), millions of revolutions
a_1 = Life adjustment factor for reliability; 1.0 for 90% reliability (Contact SKF Applications Engineering for other reliability factors)
a_{SKF} = SKF life modification factor (contact SKF Applications Engineering)
C = Basic dynamic load rating
P = Equivalent dynamic bearing load
n = Rotational speed, r / min
p = Exponent of the life equation
= 3 for ball bearings
= 10 / 3 for roller bearings

In some cases it is preferable to express bearing life in units other than millions of revolutions or hours. For example, bearing life for axle bearings used in road and rail vehicles is commonly expressed in terms of distance traveled.

SKF life modification factor a_{SKF}

This factor represents the relationship between the fatigue load limit ratio (Pu / P), the lubrication condition (viscosity ratio k) and the contamination level in the bearing (hc). Values for the factor aSKF are calculated depending on bearing type, as a function of hc (Pu / P) for SKF standard and SKF Explorer bearings and different values of the viscosity ratio k.

SKF has developed sophisticated computer programs incorporating the SKF life method and permitting the factors influencing bearing life to be taken into account. Because of their sophistication, any errors in input data can be magnified in the life predictions. Obviously, if operating conditions are not well defined, little benefit will be gained by making the more complex calculations. SKF Applications Engineering can assist with this type of analysis. More information can be found on SKF.com on Principals of rolling bearing selection under Rolling Bearings (Products) regarding a_{SKF}. Furthermore, SKF has also developed sophisticated computer programs incorporating the SKF rating life equation directly at the rolling contact stress level thus permitting other factors influencing bearing life, such as misalignment, shaft deflection and housing deformation to be taken into account.

Example

A deep groove ball bearing 6309 made of SKF standard steel is to operate at a speed of 5,000 r / min under a constant radial load F_r = 1,800 lbs (8,000 N). Oil lubrication is to be used, the oil having a kinematic viscosity n = 20 mm²/ sec at the operating temperature. The desired reliability is 90% and it is assumed that the conditions are ultra-clean. What will be the L_{10}, L_{na} and L_{naa} lives?

a) Basic rating life L_{10} (for 90% reliability)

$$L_{10} = \left(\frac{C}{P}\right)^p$$

From the bearing tables, the basic dynamic load rating for bearing 6309, C = 12,430 lbs (55,300 N). Since the load is purely radial, P = F_r = 1,800 lbs (8,000 N) (see page 44).

$$L_{10h} = \left(\frac{55{,}300}{8{,}000}\right)^3 = 330 \text{ mill revs}$$

b) L_{nm} life according to SKF life method

$$L_{nm} = a_1 a_{SKF} L_{10}$$

As the desired reliability is 90%, the L_{10aa} life is to be calculated and a_1 = 1. From the bearing tables in the SKF General Catalog (6000 EN) the value of P_u for bearing 6309 is 300 lbs. (1,340 N). P_u / P = 1,340/8000 = 0.17 and as the conditions are ultra-clean, h_C = 1. For bearing 6309, dm = 0.5 (d + D) = 0.5 (45 + 100) = 72.5 mm (values of d and D are obtained from the bearing tables). From Diagram 1, page 20 the requisite oil viscosity at the operating temperature for a speed of 5,000 r / min, v_1 = 7 mm²/ sec
k = n / n_1 = 20 / 7 = 2.9

Therefore, for k = 2.9, the value of a_{SKF} obtained from the SKF General Catalog – 6000 EN, Diagram 1 (for SKF Explorer radial ball bearings) is 25, so that according to the SKF life method

L_{10aa} = 1 x 25 x 330 = 8250 mill revs

To obtain the corresponding lives in operating hours, it is necessary to multiply by (1/60 n) where

n = 5,000 r / min. The different lives are then

L_{10h} = 1,100 operating hours
L_{10aah} = 27,500 operating hours

If the example were to be calculated for contaminated conditions such that h_C = 0.02, then a_{SKF} would be 0.3 and

L_{10aa} = 1 x 0.3 x 330 = 99 mill revs

L_{10aah} = 330 operating hours

Requisite minimum load

If a bearing is to operate satisfactorily it must always be subjected to a given minimum load.

A general "rule of thumb" indicates that loads corresponding to 0.02 C should be imposed on roller bearings and loads corresponding to 0.01 C on ball bearings. The importance of imposing this load increases where accelerations in the bearing are high, and where speeds are in the region of 75% of the speed ratings quoted in the bearing tables or higher.

Contact SKF Application Engineering for more specifics and various factor calculations.

Static load carrying capacity

Bearing size should be selected on the basis of the basic static load rating C_0 instead of on bearing life when one of the following conditions pertains:

- The bearing is stationary and is subjected to continuous or intermittent (shock) loads
- The bearing makes slow oscillating or alignment movements under load
- The bearing rotates under load at very slow speed and is only required to have a short life (the life equation in this case, for a given equivalent load P would give such a low requisite basic dynamic load rating C, that the bearing selected on this basis would be subjected to considerable overloading in service)
- The bearing rotates and, in addition to the normal operating loads, has to sustain heavy shock loads, which act during a fraction of a revolution

In all these cases, the permissible load for a bearing is determined not by material fatigue but by the permanent deformation caused by the load at the rolling element / raceway contacts. Loads acting on a stationary bearing or one which is slowly oscillating, as well as shock loads on a rotating bearing which act for only part of a revolution, produce flattened areas on the rolling elements and indentations in the raceways.

The indentations may be irregularly spaced around the raceway, or they may be evenly spaced at positions corresponding to the spacing of the rolling elements. If the load acts for several revolutions of the bearing, the deformation will be evenly distributed over the whole raceway. The permanent deformations in the bearing can lead to vibration in the bearing, noisy operation and increased friction; it is also possible that the internal clearance will increase or the character of the fits may be changed.

The extent to which these changes are detrimental to bearing performance depends on the demands placed on the bearing in a particular application. It is therefore necessary to ensure that permanent deformations cannot occur, or occur to a very limited extent only, by selecting a bearing with a sufficiently high static load carrying capacity, if one of the following demands has to be satisfied:

- Silent running (for example, electric motors)
- Vibration-free running (for example, machine tools)
- Constant bearing friction torque (for example, measuring equipment and test apparatus)
- Low starting friction under load (for
- example, cranes)

When determining bearing size based on static load carrying capacity, a given safety factor s_0, which represents the relationship between the basic static load rating C_0 and the equivalent static bearing load P_0, is used to calculate the requisite basic static load rating.

Requisite basic static load rating

The requisite basic static load rating C0 can be determined from

$$C_0 = s_0 P_0$$

where

C_0 = Basic static load rating
P_0 = Equivalent static bearing load
s_0 = Static safety factor

Guideline values based on experience are given in **Table 5** for the static safety factor s0 for ball and roller bearings for various types of operation and requirements regarding smooth running.

At elevated temperatures the static load carrying capacity of bearings is reduced; further information will be supplied on request.

Bearing life

Checking the static load carrying capacity

For dynamically loaded bearings, which have been selected with reference to life, it is advisable, where the equivalent static bearing load is known, to check that the static load carrying capacity is adequate using

$$s_0 = \frac{C_0}{P_0}$$

If the s_0 value obtained is less than the recommended guideline value (see **Table 6**) then a bearing having a higher basic static load rating should be selected.

Table 5

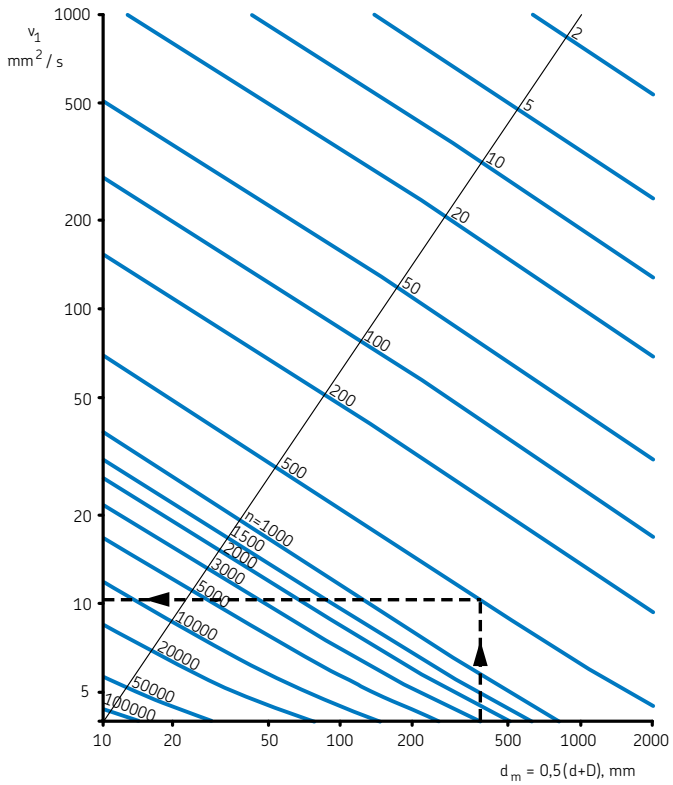
Guideline values for static safety factor s_0

Type of operation	Rotating bearings						Non-rotating bearings	
	Requirements regarding quiet running							
	unimportant		normal		high			
	Ball bearings	Roller bearings	Ball bearings	Roller bearings	Ball bearings	Roller bearings	Ball bearings	Roller bearings
Smooth, vibration-free	0.5	1	1	1.5	2	3	0.4	0.8
Normal	0.5	1	1	1.5	2	3.5	0.5	1
Pronounced shock loads[1)]	≥ 1.5	≥ 2.5	≥ 1.5	≥ 3	≥ 2	≥ 4	≥ 1	≥ 2

For spherical roller thrust bearings it is advisable to use $s_0 \geq 4$

1) Where the magnitude of the load is not known, values of s_0, which are at least as large as those quoted above should be used. If the magnitude of the shock loads is exactly known, smaller values of s_0 can be applied.

Diagram 1



Lubrication selection

Lubrication conditions – the viscosity ratio

The effectiveness of the lubricant is primarily determined by the degree of surface separation between the rolling contact surfaces. If an adequate lubricant film is to be formed, the lubricant must have a given minimum viscosity when the application has reached its normal operating temperature. The condition of the lubricant is described by the viscosity ratio k as the ratio of the actual viscosity n to the rated viscosity n1 for adequate lubrication, both values being considered when the lubricant is at normal operating temperature.

$$k = \frac{n}{n_1}$$

where

k = Viscosity ratio

n = Actual operating viscosity of the lubricant, mm^2/s

n_1 = Rated viscosity depending on the bearing mean diameter and rotational speed, mm^2/s

In order to form an adequate lubricant film between the rolling contact surfaces, the lubricant must retain a certain minimum viscosity when the lubricant is at operating temperature. The rated viscosity n1, required for adequate lubrication, can be determined from **Diagram 1**, using the bearing mean diameter dm = 0.5 (d + D), mm, and the rotational speed of the bearing n, r / min. This diagram has been revised taking the latest findings of tribology in rolling bearings into account.

When the operating temperature is known from experience or can otherwise be determined, the corresponding viscosity at the internationally standardized reference temperature of 40° C can be obtained from **Diagram 2**, page 21, or can be calculated. The diagram is compiled for a viscosity index of 95. Table 6 lists the viscosity grades according to ISO 3448:1992 showing the range of viscosity for each class at 40° C. Certain bearing types, e.g. spherical roller bearings, taper roller bearings, and spherical roller thrust bearings, normally have a higher operating temperature than other bearing types, e.g. deep groove ball bearings and cylindrical roller bearings, under comparable operating conditions.

Table 6

ISO viscosity

Viscosity class acc. to ISO	Kinematic viscosity at 104° F (40° C)		
	mean	min	max
–	mm^2/sec		
ISO VG 2	2.2	1.98	2.42
ISO VG 3	3.2	2.88	3.52
ISO VG 5	4.6	4.14	5.06
ISO VG 7	6.8	6.12	7.48
ISO VG 10	10	9	11
ISO VG 15	15	13.5	16.5
ISO VG 22	22	19.8	24.2
ISO VG 32	32	28.8	35.2
ISO VG 46	46	41.4	50.6
ISO VG 68	68	61.2	74.8
ISO VG 100	100	90	110
ISO VG 150	150	135	165
ISO VG 220	220	198	242
ISO VG 320	320	288	352
ISO VG 460	460	414	506
ISO VG 680	680	612	748
ISO VG 1 000	1 000	900	1 100
ISO VG 1 500	1 500	1 350	1 650

Consideration of EP additives

It is known that some EP additives in the lubricant can extend bearing service life where lubrication might otherwise be poor, e.g. when k < 1 and if the factor for the contamination level hc ≥ 0,2 according to ISO 281 (2007) a value of k = 1 can be used in the calculation if a lubricant with proven effective EP additives is used. In this case the life modification factor a_{SKF} has to be limited to ≤ 3, but not less than a_{SKF} for normal lubricants.

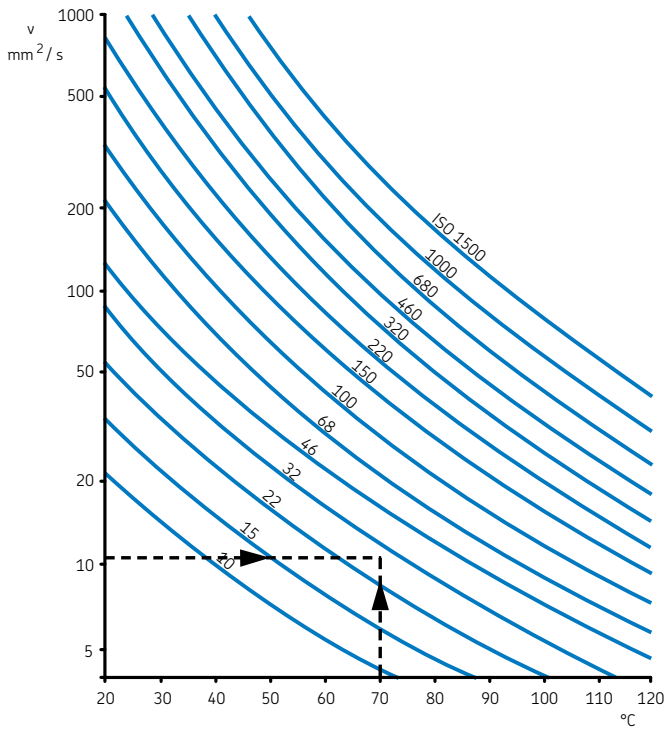
For the remaining range, the life modification factor a_{SKF} can be determined using the actual k of the application. In case of severe contamination, i.e. contamination factor hc < 0.2, the possible benefit of an EP additive has to be proved by testing.

SKF calculation tools

SKF possesses one of the most comprehensive and powerful sets of modeling and simulation packages in the bearing industry. They range from easy-to-use tools based on SKF General Catalog formula to the most sophisticated calculation and simulation systems, running on parallel computers.

The company's philosophy is to develop a range of programs to satisfy a number of customer requirements; from fairly simple design checks, through moderately complex investigations, to the most advanced simulations for bearing and machine design. Wherever possible these programs are available for in-the-field use on customers' or SKF engineers' laptops, desk top PCs or workstations. Moreover, particular care is taken to provide integration and interoperability of the different systems with each other.

Diagram 2



Based on VI (viscosity index) = 95

Bearing data

SKF engineering consultancy services

They can provide support with the complete SKF application know-how. The SKF application specialists will

- Analyze the technical problems
- Suggest the appropriate system solution
- Select the appropriate lubrication and an optimized maintenance practice

SKF Engineering Consultancy Services provides a new approach to services concerning machines and installations for OEM and end users. Some of these service benefits are:

- Faster development processes and reduced time to market
- Reduced implementation costs by virtual testing before production start
- Improved bearing arrangement by lowering noise and vibration levels
- Higher power density by upgrading
- Longer service life by improving lubrication or sealing

Advanced computer programs

Within the SKF Engineering Consultancy Services there are highly advanced computer programs which can be used for

- Analytical modeling of complete bearing arrangements, consisting of shaft, housing, gears, couplings, etc.
- Static analysis, i.e. determination of elastic deformations and stresses in components of mechanical systems
- Dynamic analysis, i.e. determination of the vibration behavior of systems under working conditions ("virtual testing")
- Visual and animated presentation of structural and component deflection
- Optimizing system costs, service life, vibration and noise level

Bearing internal clearance

Bearing internal clearance (**Figure 8**) is defined as the total distance through which one bearing ring can be moved relative to the other in the radial direction (radial internal clearance) or in the axial direction (axial internal clearance).

It is necessary to distinguish between the internal clearance of a bearing before mounting and the internal clearance in a mounted bearing which has reached its operating temperature (operational clearance). The initial internal clearance (before mounting) is greater than the operational clearance because different degrees of interference in the fits and differences in thermal expansion of the bearing rings and the associated components cause the rings to be expanded or compressed.

The radial internal clearance of a bearing is of considerable importance if satisfactory operation is to be obtained. As a general rule, ball bearings should always have an operational clearance that is virtually zero, or there may be a slight preload. Cylindrical, spherical and CARB toroidal roller bearings, on the other hand, should always have some residual clearance – however small – in operation. The same is true of taper roller bearings except in bearing arrangements where stiffness is desired, e.g. pinion bearing arrangements, where the bearings are mounted with a certain amount of preload (Bearing preload, page 10).

The bearing internal clearance referred to as Normal has been selected so that a suitable operational clearance will be obtained when bearings are mounted with the fits usually recommended and operating conditions are normal. Where operating and mounting conditions differ from the normal, e.g. where interference fits are used for both bearing rings, unusual temperatures prevail etc., bearings with greater or smaller internal clearance than Normal are required. In such cases, SKF recommends checking residual clearance in the bearing after it has been mounted.

Bearings having an internal clearance other than Normal are identified by the suffixes C1 to C5 (**Table 7**).

Tables giving the clearance values for the various bearing types will be found in the text preceding the relevant product section. For paired single row angular contact ball bearings and taper roller bearings, double row angular contact ball bearings and four-point contact ball bearings, values for the axial internal clearance are given instead of radial clearance as the axial clearance is of greater importance in application design for these bearing types.

Figure 8

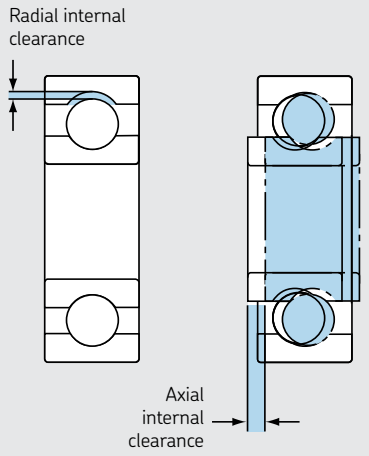


Table 7

Supplementary designation for internal clearance

Suffix	Internal clearance
C1	Less than C2
C2	Less than Normal
CN	Normal, only used in combination with letters indicating reduced or displaced clearance range.
C3	Greater than Normal
C4	Greater than C3
C5	Greater than C4

Materials for rolling bearings

The materials from which the bearing components are made determine to a large extent the performance and reliability of rolling bearings. For the bearing rings and rolling elements typical considerations include hardness for load carrying capacity, fatigue resistance under rolling contact conditions, under clean or contaminated lubrication conditions, and the dimensional stability of the bearing components. For the cage, considerations include friction, strain, inertia forces, and in some cases, the chemical action of certain lubricants, solvents, coolants and refrigerants. The relative importance of these considerations can be affected by other operational parameters such as corrosion, elevated temperatures, shock loads or combinations of these and other conditions.

Because SKF has the competence and facilities to provide a variety of materials, processes and coatings, SKF application engineers can assist in selecting those bearings that will provide superior performance for particular applications.

Contact seals integrated in rolling bearings can also have a considerable impact on the performance and reliability of the bearings. The materials they are made of have to offer excellent oxidation, thermal or chemical resistance.

In order to meet the needs of various applications, SKF uses different materials for bearing rings, rolling elements, cages and seals. Furthermore, in applications where sufficient lubrication cannot be achieved or where an electric current passing through the bearings has to be prevented, SKF bearings can be supplied with special coatings.

Materials for bearing rings and rolling elements

Through-hardening steels

The most common through-hardening bearing steel is a carbon chromium steel containing approximately 1% carbon and 1.5% chromium according to ISO 683-17:1999. Today, carbon-chromium steel is one of the oldest and most intensively investigated steels – due to the continuously increasing demands for extended bearing service life. The composition of this rolling bearing steel provides an optimum balance between manufacturing and application performance. This steel is normally given a martensitic or bainitic heat treatment during which it is hardened to the range of 58 to 65 HRC.

Within the last few years process developments have enabled more stringent cleanliness specifications to be realized, which has had a significant impact on the consistency and quality of SKF's bearing steel. The reduction of oxygen and harmful non-metallic inclusions has led to significantly improved properties of rolling bearing steels – the steels from which the SKF Explorer class bearings are made.

Case-hardening bearing steels

SKF also manufactures bearings from case-hardened steels. Chromium-nickel and manganese-chromium alloyed steels according to ISO 683-17:1999 with a carbon content of approximately 0.15% are those case-hardening steels most commonly used for SKF rolling bearings.

In applications where there are high tensile interference fits and high shock loads, bearings with carburized rings and/or rolling elements may be recommended. Please consult SKF Applications Engineering.

High-temperature bearing steels

Depending on the bearing type, standard bearings made from through hardened and surface-hardened steels have a recommended maximum operating temperature, which differs between 248° F (120° C) and 392° F (200° C). The maximum operating temperature is directly related to the heat treatment process used in manufacturing components.

For operating temperatures up to 482° F (250° C); a special heat treatment (stabilization) can be applied. In this case a reduction of the load carrying capacity of the bearing has to be taken into account.

For bearings operated at elevated temperatures (higher than 482° F (250° C), for extended periods), alloyed steels like the 80MoCrV42-16 manufactured to ISO 683-17:1999 should be used because they retain their hardness and bearing performance characteristics even under extreme temperature conditions.

For additional information about high temperature bearing steels, please contact the SKF Applications Engineering.

Ceramics

The common ceramic used for SKF bearing rings and rolling elements is a bearing grade silicon nitride material. It consists of fine elongated grains of beta-silicon nitride in a glassy phase matrix. It provides a combination of favorable properties for rolling bearings, such as high hardness, low density, low thermal expansion, high electric resistivity, low dielectric constant and no response to magnetic fields.

Stainless bearing steels

For bearings which come into contact with corrosive media during operation, chromium or chromium / molybdenum stainless steels are used. Because of the reduced hardness of these steels, the bearings do not have the same high load carrying capacity as bearings made of conventional steels. The corrosion resistance is only available when the whole surface is perfectly polished and if it is not roughened or damaged during mounting.

The most common stainless steels used for SKF bearing rings and rolling elements are the high chromium content steels X65Cr14 according to ISO 683-17:2000 and X105CrMo17 according to EN 10088-1:1995. It is recommended to seek advice from SKF Applications Engineering regarding the selection and application of stainless steel bearings.

Cage materials

Sheet steel cages (J suffix)

The majority of pressed sheet steel cages are made from continuously hot-rolled low carbon sheet steel according to EN 10111:1998. These lightweight cages have relatively high strength and can be surface treated to further reduce friction and wear.

Pressed cages normally used in stainless steel bearings are made from stainless steel X5CrNi18-10 according to EN 10088-1:1995.

Machined steel cages

Machined steel cages are normally made of non-alloyed structural steel of type S355GT (St 52) according to EN 10 025:1990 + A:1993. To improve sliding and wear resistance properties some machined steel cages are surface treated.

Machined steel cages are used for large-size bearings or in applications where there is a danger that season cracking, caused by a chemical reaction, may occur if a brass cage were used. Steel cages can be used at operating temperatures up to 572° F (300° C). They are not affected by the mineral or synthetic oil-based lubricants normally used for rolling bearings or by the organic solvents used to clean bearings.

Sheet brass cages (Y suffix)

Pressed sheet brass cages are used for some small and medium-sized bearings. The brass used for these cages conforms to EN 1652:1997. In applications such as compressors for refrigeration using ammonia, season cracking in sheet brass might occur, therefore machined brass or steel cages should be used instead.

Bearing materials

Machined brass cages (M suffix)

Most brass cages are machined from a CW612N cast or wrought brass according to EN 1652:1997. They are unaffected by most common bearing lubricants, including synthetic oils and greases, and can be cleaned using normal organic solvents. Brass cages should not be used at temperatures in excess of 482° F (250° C).

Polymer cages

Polyamide 6.6 (TN9 suffix)

For the majority of injection molded cages polyamide 6.6 is used. This material, with or without glass fiber reinforcement is characterized by a favorable combination of strength and elasticity. The mechanical properties like strength and elasticity of polymeric materials are temperature dependent and subject to permanent changes under operating conditions, called aging. The most important factors that play a role in this aging behavior are temperature, time and the medium (lubricant) to which the polymer is exposed. It appears that the cage life decreases with increasing temperature and the aggressiveness of the lubricant.

Please contact SKF Applications Engineering for cage availability.

Polyamide 4.6 (TN9 suffix)

Glass fiber reinforced polyamide 4.6 is used for some small and medium size CARB® toroidal roller bearings as standard. These cages have a 59° F (15°C) higher permissible operating temperature than those made from glass fiber reinforced polyamide 6.6.

Polyether ether ketone

The use of the glass fiber reinforced PEEK for cages has become common within SKF for demanding conditions regarding high speeds, chemical attack or high temperatures. The exceptional properties of PEEK are superior combination of strength and flexibility, high operating temperature range, high chemical and wear resistance and good processability.

Please contact SKF Applications Engineering for cage availability.

Seal materials

Seals integrated in SKF bearings are typically made from elastomer materials. The type of material can depend on the series and size of the bearing as well as the application requirements. SKF seals are generally produced from the materials to follow.

Acrylonitrile butadiene rubber

Acrylonitrile butadiene rubber (NBR) is the "universal" seal material. This copolymer, produced from acrylonitrile and butadiene, shows good resistance to the following media:

- Most mineral oils and greases with a mineral oil base
- Normal fuels: petrol, diesel and light heating oils
- Animal and vegetable oils and fats
- Hot water

It also tolerates short-term dry running of the sealing lip. The permissible operating temperature range is -40° to +212° F (-40° to +100° C); for brief periods temperatures of up to +248° F (+120° C) can be tolerated. At higher temperatures the material hardens.

Hydrogenated acrylonitrile butadiene rubber

Hydrogenated acrylonitrile butadiene rubber (HNBR) has appreciably better wear characteristics than nitrile rubber so that seals made of this material have a longer service life. Hydrogenated acrylonitrile butadiene rubber is also more resistant to heat, aging and hardening in hot oil or ozone.

Mixtures of oil in air may have a negative impact on seal life. The upper operating temperature limit is +302° F (+150° C), which is appreciably higher than that of normal nitrile rubber.

Fluoro rubber

Fluoro rubbers (FKM or FPM) are characterized by their high thermal and chemical resistance. Their resistance to aging and ozone is very good and their gas permeability is very slight. They have exceptionally good wear characteristics even under harsh environmental conditions and can withstand operating temperatures up to +392° F (+200° C). Seals made from this material can tolerate dry running of the lip for short periods.

Fluoro rubbers are also resistant to oils and hydraulic fluids, fuels and lubricants, mineral acids and aliphatic as well as aromatic hydrocarbons which would cause seals made from other materials to fail. In the presence of esters, ethers, ketones, certain amines and hot anhydrous hydrofluorides, fluoro rubbers should not be used.

At temperatures above 572° F (300° C), fluoro rubber gives off dangerous fumes. As handling seals made of fluoro rubber constitutes a potential safety risk, the safety precautions mentioned hereafter must always be considered.

WARNING!

Safety precautions for fluoro rubber:

Fluoro rubber is very stable and harmless in normal operating conditions up to +392° F (+200° C). However, if exposed to extreme temperatures above 572° F (300° C), e.g. fire or the flame of a cutting torch, fluoro rubber seals give off hazardous fumes. These fumes can be harmful if inhaled, as well as to the eyes. In addition, once the seals have been heated to such temperatures, they are dangerous to handle even after they have cooled and should not touch the skin. If it is necessary to handle bearings with seals that have been subjected to high temperatures, such as when dismounting the bearing, the following safety precautions should be observed:

- ***Always wear protective goggles, gloves and appropriate breathing apparatus***
- ***Place the remains of the seals in an air tight plastic container marked with a symbol for "material will etch"***
- ***Follow the safety precautions in the appropriate material safety data sheet (MSDS)***

If there is unintentional contact with the seals, wash hands with soap and plenty of water and flush eyes with plenty of water and consult a doctor immediately. If the fumes have been inhaled, consult a doctor immediately.

The user is responsible for the correct use of the product during its service life and its proper disposal. SKF takes no responsibility for the improper handling of fluoro rubber seals or for any injury resulting from their use.

Coatings

Coating is a well-established method to upgrade materials and to provide bearings with additional features for specific application conditions. Two different coating methods developed by SKF are available and already successfully proven in many applications.

The surface coating, trademarked NoWear®, applies a low friction ceramic coating on the bearing inner surfaces to withstand long periods of operation under marginal lubrication.

The SKF INSOCOAT® coating, which can be applied to the exterior of the outer ring or inner ring of a bearing, offers resistance to the damage that can be caused by the passage of electric current through the bearing.

Lubrication

If rolling bearings are to operate reliably they must be adequately lubricated to prevent direct metal-to-metal contact between the rolling elements, raceways and cages. The lubricant also inhibits wear and protects the bearing surfaces against corrosion. The choice of a suitable lubricant and method of lubrication for each individual bearing application is therefore important, as is correct maintenance.

A wide selection of greases and oils is available for the lubrication of rolling bearings and there are also solid lubricants for extreme temperature conditions. The actual choice of a lubricant depends primarily on the operating conditions, the temperature range and speeds as well as the influence of the surroundings.

The most favorable operating temperatures will be obtained when the minimum amount of lubricant needed for reliable bearing lubrication is provided. However, when the lubricant has additional functions, such as sealing or the removal of heat, additional amounts of lubricant may be required.

The lubricant in a bearing arrangement gradually loses its lubricating properties as a result of mechanical work, aging and the build-up of contamination. It is therefore necessary for grease to be replenished or renewed and for oil to be filtered and changed at regular intervals.

The information and recommendations in this section relate to bearings without integral seals or shields. SKF bearings and bearing units with integral seals and shields at both sides are supplied greased. Information about the greases used by SKF as standard for these products can be found in the text preceding the relevant product tables together with a brief description of the performance data.

The service life of the grease in sealed bearings most often exceeds bearing life so that, with some exceptions, no provision is made for the relubrication of these bearings.

Grease lubrication

Grease can be used to lubricate rolling bearings under normal operating conditions in the majority of applications.

Grease has the advantage over oil that it is more easily retained in the bearing arrangement, particularly where shafts are inclined or vertical, and it also contributes to sealing the arrangement against contaminants, moisture or water.

Excessive amounts of grease will cause the operating temperature within the bearing to rise rapidly particularly when running at high speeds. As a general rule, when starting up, only the bearing should be completely filled, while the free space in the housing should be partly filled with grease. Before operating at full speed, the excess grease in the bearing must be allowed to settle or escape during a running-in period. At the end of the running-in period the operating temperature will drop considerably indicating that the grease has been distributed in the bearing arrangement.

However, where bearings are to operate at very low speeds and good protection against contamination and corrosion is required, it is advisable to fill the housing completely with grease.

Contact SKF Applications Engineering for more details.

Lubricating greases

Lubricating greases consist of a mineral or synthetic oil combined with a thickener. The thickeners are usually metallic soaps. However, other thickeners, e.g. polyurea, can be used for superior performance in certain areas like high temperature applications. Additives can also be included to enhance certain properties of the grease. The consistency of the grease depends largely on the type and concentration of the thickener used and on the operating temperature of the application. When selecting a grease, the consistency, operating temperature range, viscosity of the base oil, rust inhibiting properties and the load carrying ability are the most important factors to be considered.

Contact SKF Applications Engineering for more details.

SKF greases

The SKF range of lubricating greases for rolling bearings comprises many types of grease and covers virtually all application requirements. These greases have been developed based on the latest information regarding rolling bearing lubrication and have been thoroughly tested both in the laboratory and in the field. Their quality is continuously monitored by SKF.

Further information on SKF greases can be found in the catalog SKF Maintenance and Lubrication Products (publication #03000) or online at **www.mapro.skf.com.**

For a more detailed selection of the appropriate grease for a specific bearing type and application, use the Internet based SKF grease selection program "LubeSelect". This program can be found online at **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Note: Differences in the lubricating properties of seemingly identical lubricants – particularly grease – produced at different locations can exist. Therefore, SKF cannot accept liability for any lubricant or its performance. The user is therefore advised to specify lubricant properties in detail so as to obtain the most suitable lubricant for the application.

SKF Explorer bearings

The performance class from SKF

SKF Explorer is a performance class of rolling bearings, of the types angular contact ball bearings, cylindrical roller bearings, spherical roller bearings, CARB toroidal roller bearings and spherical roller thrust bearings, which provide a substantial improvement in key operational parameters relevant to the bearing type and its typical applications. This new level of superior performance represents the blending of SKF's applications knowledge with its expertise in tribology, materials development, design optimization and manufacturing.

Using advanced analytical and modeling techniques and supporting testing, SKF engineers were able to confirm that SKF Explorer bearings provide a significant improvement in key operational parameters. These parameters, according to bearing type and application, include noise, vibration, service life, dimensional stability, dynamic load carrying ability and heat generation (friction torque). Because these parameters are not adequately factored into standardized life calculations, SKF Explorer bearing life is calculated with modified factors, which takes key operational parameters into account.

SKF Explorer bearings are interchangeable with previously specified SKF standard bearings of the same type and size. In the product tables, the SKF Explorer bearing designations are **printed in blue.**

The making of an SKF Explorer bearing

Achieving the outstanding levels of SKF Explorer bearings has only been possible due to the basic sound engineering design of SKF products and by further improving the manufacturing of bearings to these designs. By studying the interrelationship between each bearing component, SKF engineers were able to maximize the effects of lubrication and minimize the effects of friction, wear and contamination. To do this, an international research team looked at each component at micro level and then developed new procedures to consistently manufacture this new standard of excellence.

SKF Explorer bearings are characterized by a number of technical improvements some of which are listed below. Depending on the type of SKF Explorer bearing, one or several of these examples have been applied:

Improved bearing steel

SKF Explorer bearings feature an extremely clean and homogenous steel with a minimum number of inclusions. This improved steel is so much cleaner than the highest grades covered by present classification methods that SKF has developed new calculation methods to take this factor into account.

SKF Explorer bearings

The unique SKF heat treatment procedures

To maximize the benefits of SKF's ultra-clean steel, engineers incorporated unique heat treatment procedures. These new procedures optimize the bearing's resistance to operational damage without affecting heat stabilization. Wear resistance was improved so dramatically that SKF engineers were not able to accurately predict life expectancy using existing life factors for calculation methods.

Improved surface finish

The surface finish on all contact surfaces (rolling elements and raceways) has been improved to maximize the effects of the lubricant and reduce vibrations and noise. This has lead to a smoother, cooler running bearing that uses less lubricant and consequently the arrangement, including the seals, requires less maintenance.

Deep groove ball bearings

For the rolling bearing types deep groove ball bearings and taper roller bearings there have been many performance improvements since the last SKF General Catalog. In line with the SKF product strategy, improvements for deep groove ball bearings and taper roller bearings have sufficiently been implemented for certain sizes to qualify as SKF Explorer class bearings. For these selected deep groove ball bearings sizes improved sealing, precision and surface finish, give reduced noise and vibration levels and improved running accuracy. Similarly for selected taper roller bearing sizes, improved surfaces for better lubrication and significantly reduced noise and vibration levels, cleaner steel in combination with improved heat treatment give significantly longer life. Because all these parameters are not adequately factored into standardized life calculations, the bearing life of selected sizes SKF deep groove ball bearings and taper roller bearings is calculated with modified factors in line with all SKF Explorer class bearings.

Improved materials enhance performance

Developments in the steel making process have created an extremely clean and homogenous steel with a minimum number of inclusions. This improved steel is so much cleaner than the highest grades covered by present classification methods that SKF experts developed new specifications with a view toward standardization.

To maximize the benefits of this improved steel, SKF developed new heat treatment procedures. These new procedures further improved the wear resistance of SKF Explorer bearings. In fact, wear resistance was improved so dramatically that SKF Engineers were not able to accurately predict life expectancy using existing life calculation methods. To enable users to predict bearing life more accurately, SKF has done the following:

- Increased basic dynamic load ratings
- Added a factor to be considered when calculating life using the SKF Life Method

For more information, please contact SKF Applications Engineering or visit www.skfusa.com.

What SKF Explorer does for your machine

Existing machine

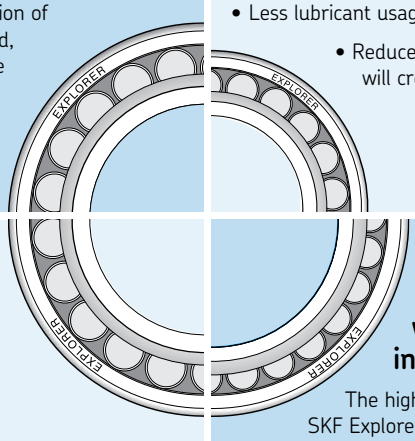
Switching to SKF Explorer bearings give:

- Several times the service life previously achieved
- More machine uptime
- Higher safety factor
- An appreciable reduction of machine cycle cost and, therefore, added value

New machine with same power

SKF Explorer makes it possible to use a smaller bearing size which allows:

- More compact machines
- Higher speeds
- Smoother and quieter running
- Less lubricant usage
- Reduced friction and will create added value



Existing machine with increased power

Same size SKF Explorer bearings allow power increases of 15 to 25% with:

- Same service life
- Same machine uptime
- Same machine design and higher added value

New machine with same or increased power

The higher carrying capacity of SKF Explorer bearings allows the use of a lighter series with same outside diameter and increased bore diameter, so that:

- A stronger, or even hollow shaft can be used
- The total design can be stiffer and also cheaper
- System life is increased due to higher stiffness and machine cycle cost is significantly reduced

Reengineered for endurance

By studying the interrelationship of each bearing component's design, molecular structure and finish, SKF scientists and engineers were able to maximize the effects of lubrication and minimize the effects of friction, wear, contamination and vibration. To do this, the SKF research team had to literally reengineer each component at either the micro or molecular level, and then develop new procedures to consistently manufacture this new standard of excellence. These new procedures have tightened the manufacturing tolerance for all components used in SKF Explorer bearings.

A new level of performance

Over the years, manufacturing and materials research and process improvements have enabled machine components to get smaller without decreasing power output. With each developmental milestone, engineers were given a choice: either downsize the application or increase power output. The new generation of SKF Explorer bearings represents the next significant improvement in performance. But this is not just a short hop to the next level. This is a quantum leap in bearing performance. Tests have shown that these bearings will last significantly longer than the bearing you are currently using.

Notes

Notes

Notes

Notes

Notes

Notes

Deep groove ball bearings

6200-2Z J/C3 HC5 GJN

1 2 3 4 5

1. Seals, shields & snap rings:

RSH	Contact seal of synthetic rubber (NBR) on one side for bearings up to 52 mm O.D.
RS1	Contact seal of synthetic rubber (NBR) on one side for bearings above 52 mm O.D.
RS2	Contact seal of synthetic rubber (FRM) on one side for high temperature capability
RSL	Low friction seal of synthetic rubber (NBR) on one side for bearings up to 52 mm O.D.
RZ	Low friction seal of synthetic rubber (NBR) on one side for bearings above 52 mm O.D.
Z	Shield on one side
2RSH	Contact seal of synthetic rubber (NBR) on both sides for bearings up to 52 mm O.D.
2RS2	Contact seal of synthetic rubber (FPM) on both sides for high temperature capability
2RSL	Low friction seal of synthetic rubber (NBR) on both sides for bearings up to 52 mm O.D.
2RZ	Low friction seal of synthetic rubber (NBR) on both sides for bearings above 52 mm O.D.
2Z	Shields on both sides
NR	Snap ring groove and snap ring on outer ring
N	Snap ring groove
ZNBR	Snap ring on opposite side of shield
JEM	C3 clearance, Pressed steel cage, electric motor quietness specification, GJN grease for "bearings with closures.

2. Cage designs:

J	Pressed steel cage, ball guided (not marked on bearings)
M/MA	Machined brass cage, rolling element guided
TC	Phenolic cage, inner ring guided
Y	Pressed brass cage, ball guided
TN9	Cage of glass fiber reinforced polyamide 6.6, ball guided

3. Clearance/tolerance:

C1	Clearance < C2
C2	Clearance < Normal
(C0)*	Normal clearance
C3	Clearance > Normal
C4	Clearance > C3
C08	ABEC5 running accuracy inner and outer
C78	Combination of C70 and C08
C70	Reduced I.R. and O.R. diameter
C782	C78 and C2 clearance
C783	C78 and C3 clearance

* Not marked on bearing or package.

Note: C3 clearance, J-steel cages and quiet running characteristics available in JEM bearings. See page 35.

4. Suffix:

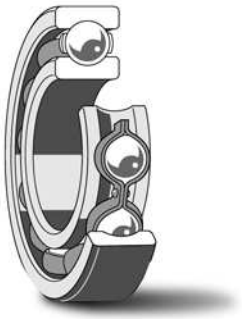
HC5	Ceramic ball set
VA201, VA208, VA228	Special specifications for high temperature applications

5. Lubrication:

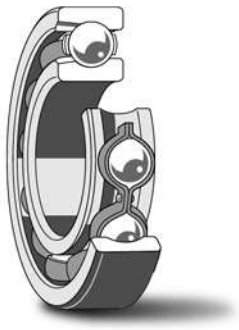
GJN	High temperature, long life NLGI 2 grease with urea thickener and mineral oil (HT51 no longer available, replaced by GJN)
WT	Wide temperature range, long life NLGI 2-3 grease with urea thickener and ester oil
LHT23	Long life, quiet running NLGI 2 grease with lithium thickener and ester oil
MT47	Medium temperature, quiet running NLGI 2 grease with lithium thickener and mineral oil
MT33	Medium temperature, quiet running NLGI 3 grease with lithium thickener and mineral oil
LHT30	Dow Corning Molykote® 44 Medium
LHT64	Shell Aeroshell® #7, MIL-G-23827
W64	Solid Oil
LT10	Low temperature NLGI 2 grease with lithium thickener and diester oil

Introduction

		Technical Features
Boundary dimensions		In accordance with ISO 15
Tolerances		Normal, ABEC 1
		P6 (SKF Explorer)
Running accuracy		Up to 52 mm O.D. – P5, ABEC 5
		52 mm to 110 mm O.D. – P6, ABEC 3
		>110 mm O.D. – Normal, ABEC 1
Heat stabilization		250° F (120° C)
Misalignment		2-10 minutes of arc
Cage material	Standard	Steel
	Optional	Machined brass (M)
Axial load – max		0.5 x C0 for 6200, 6300 and 6400 series
		0.25 x C0 for 61800, 61900 and 6000 series
Seals		2RS1 – Synthetic rubber (NBR) seals
		2RS2 – Synthetic rubber (FKM) seals
Shields		2Z – Stamped steel



Single row deep groove ball bearing (data tables on page 40) and ABEC 5 (data tables on page 54)



Single row deep groove ball bearing Max type (data tables on page 55)

Introduction

Deep groove ball bearings are used in a particularly wide variety of applications. They are relatively simple in design, non-separable, capable of operating at high and even very high speeds, and require little attention or maintenance in service provided the customer selects the appropriate bearing specifications for his application. These characteristics coupled with a price advantage make deep groove ball bearings the most popular of all rolling bearings.

SKF produces deep groove ball bearings in a large number of designs and sizes. The most numerous are the single row bearings without filling slots (Conrad assembly). The bearings with filling slots described in the section starting on page 55 are used in special applications and consequently only a limited range is produced.

Basic design

Deep groove ball bearings, single row

SKF single row deep groove ball bearings have deep, uninterrupted raceways and a high degree of conformity between balls and raceways. This enables them to carry axial loads in both directions in addition to radial loads even at high speeds. Single row deep groove ball bearings are suitable for a wide variety of applications and are therefore produced in a large number of sizes and designs.

Single row deep groove ball bearings of the basic design, i.e. open at both sides, **(Figure 1)** are produced by SKF in several series and in a very wide range of diameters. Those bearings of the basic design which are also produced as shielded or sealed bearings may, for manufacturing reasons, have recessed outer ring shoulders to take the shields or seals.

ABEC 5 single row bearings

SKF produces single row deep groove ball bearings in a higher precision class (ABEC 5). These products are most frequently used in high-speed applications or where precision is critical as in cutting tools, electric motors, handheld tools, and spindles. ABEC 5 bearings are produced in the 6200 and 6300 series and are available in an open version only. They can be supplied with either a brass (Y) or phenolic (TC) cage.

Deep groove ball bearings with filling slots (Max type)

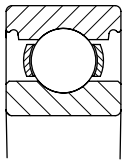
Single row deep groove ball bearings with filling slots incorporate a greater number of balls than the corresponding size without filling slot, and have a filling slot in both outer and inner rings. The radial load carrying capacity is higher than that of bearings without filling slot, but their axial load carrying capacity is small. They are also unable to operate at the high speeds normally associated with deep groove ball bearings.

SKF deep groove ball bearings with filling slots are available in various designs to meet market demands. The most common are described below **(Figure 2)** and are listed in the tables on page 55.

SKF Explorer class bearings

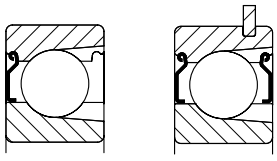
High performance SKF Explorer deep groove ball bearings are printed in blue in the product tables. The higher performance of SKF Explorer deep groove ball bearings also includes quieter running. SKF Explorer bearings retain the designation of the earlier standard bearings. However, each bearing and its box are marked with the name "SKF Explorer". Additional details on SKF Explorer performance class bearings can be found on page 25.

Figure 1



Deep groove ball bearing single row

Figure 2



Deep groove ball bearing with filling slots (Max type)

Product highlights

Fast, quiet, robust bearings

If the application is demanding and quiet running, smoothness, strength and low heat generation are mandatory–SKF deep groove ball bearings fit the bill.

Quiet running

High precision balls and specially designed raceway grinding equipment are used by SKF to produce some of the quietest running bearings available.

Quality performance in demanding applications

Capable of meeting the severest demands in terms of operating speed, operating temperature, vibration, high running accuracy, low friction, and the ability to function in a contaminated environment with available seals and shields.

Optimized internal geometry

The internal geometry has been optimized for longer life, quieter running, improved seal attachment, low friction and increased ability to accommodate slight misalignments without reducing bearing life.

Large product assortment

Available in a wide range (2.5 to 800 mm inside bore diameter), the basic SKF design is available with a choice of shields, seals and snap rings. In addition, SKF produces max-type deep groove ball bearings with a filling slot.

JEM bearings

In the USA, SKF offers bearings with C3 internal clearance, steel cages and quiet running characteristics packaged as JEM bearings.

JEM packaging

The box will be marked "JEM" while the bearing is marked C3 and/or GJN pending if the bearing is open or capped.

GJN grease provided as standard in JEM bearings

SKF provides GJN, a high temperature urea based grease, as the standard for all JEM deep groove ball bearings. GJN is accepted by major OEM electric motor manufactures in the U.S. and offers a wide range of operating temperature and is quiet running.

Introduction

Variations

Bearings with shields

Bearings with shields, designation suffix Z or 2Z, are produced in one of two designs, depending on the bearing series and size **(Figure 3)**. The shields are made of sheet steel and normally have a cylindrical extension in the shield bore to form a long sealing gap with the inner ring shoulder.

Shielded bearings are primarily intended for applications where the inner ring rotates. If the outer ring rotates, there is a risk that the grease will leak from the bearing at high speeds.

Bearings with low friction seals

SKF deep groove ball bearings with low-friction seals, designation suffixes RSL, 2RSL or RZ, 2RZ are manufactured in two designs depending on bearing series and size **(Figure 4)**.

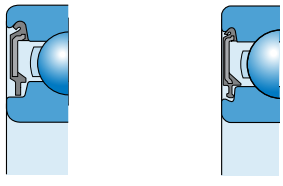
- Bearings in the 60, 62 and 63 series up to 52 mm outside diameter are equipped with RSL seals to design **(a)**.
- Other bearings have RZ seals **(b)**.

The seals form an extremely narrow gap with the cylindrical surface of the inner ring shoulder or recess profile and are practically non-contracting. Because of this, bearings fitted with low-friction seals can be operated at the same high speeds as bearings with Z shields, but with improved seal performance.

The low-friction seals are made of oil and wear-resistant acrylonitrile butadiene rubber (NBR) with a sheet steel reinforcement. The permissible operating temperature range for these seals is -40° to +212° F (-40° to +100° C) and up to +250° F (+120° C) for brief periods.

Figure 3

Figure 4



a b

Bearings with contact seals

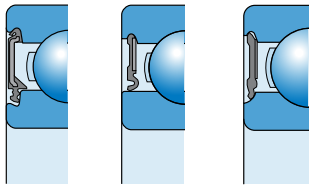
Bearings with contact seals, designation suffixes RSH, 2RSH or RS1, 2RS1 are manufactured in three designs depending on bearing series and size **(Figure 5)**.

- Bearings in the 60, 62 and 63 series up to 52 mm outside diameter are equipped with RSH seals to design **(a)**.
- Other bearings have RS1 seals, which seal against the cylindrical surface of the inner ring shoulder **(b)** indicated by dimension d1 in the product table or against a recess in the inner ring side face **(c)** indicated by dimension d2 in the product table.
- The seals are inserted in recesses in the outer ring and provide good sealing at this position without deforming the outer ring. Standard seals are made of acrylonitrile butadiene rubber (NBR) with a sheet steel reinforcement. The permissible operating temperature range for these seals is -40° to 212° F (-40° to +100° C) and up to +250° F (+120° C) for brief periods.
- When sealed bearings are operated under extreme conditions, e.g. very high speeds or high temperatures, grease leakage may occur at the inner ring. For bearing arrangements where this would be detrimental, special design steps must be undertaken, please consult SKF Applications Engineering.

Bearings with snap ring groove

Deep groove ball bearings with a snap ring groove can simplify arrangement design as the bearings can be axially located in the housing by a snap (or retaining) ring **(Figure 6).** This saves space. Appropriate snap rings are shown in the product table with designation and dimensions and may be supplied separately or already mounted on the bearing.

Figure 5



a b c

Warning!

Safety precautions for fluoro rubber

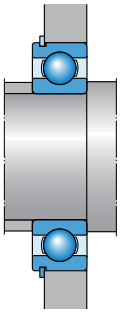
Fluoro rubber is very stable and harmless in normal operating conditions up to +392° F (+200° C). However, if exposed to extreme temperatures above +572° F (+300° C), e.g. fire or the flame of a cutting torch, fluoro rubber seals give off hazardous fumes. These fumes can be harmful if inhaled, as well as to the eyes. In addition, once the seals have been heated to such temperatures, they are dangerous to handle even after they have cooled and should not touch the skin. If it is necessary to handle bearings with seals that have been subjected to high temperatures, such as when dismounting the bearing, the following safety precautions should be observed:

- *Always wear protective goggles, gloves and appropriate breathing apparatus,*
- *Place the remains of the seals in an airtight plastic container marked with a symbol for "material will etch",*
- *Follow the safety precautions in the appropriate material safety data sheet (MSDS).*

If there is unintentional contact with the seals, wash hands with soap and plenty of water and flush eyes with plenty of water and consult a doctor immediately. If the fumes have been inhaled, consult a doctor immediately.

The user is responsible for the correct use of the product during its service life and its proper disposal. SKF takes no responsibility for the improper handling of fluoro rubber seals or for any injury resulting from their use.

Figure 6



Lubrication

Bearings with shields or seals at both sides are supplied as standard filled with a grease which has good rust inhibiting properties and which is suitable for operating temperatures between -22° and +230° F (-30° to +110° C). The bearings are lubricated for life and are maintenance free. **They should on no account be heated to temperatures above 250° F (120° C), nor should they be washed.** By special order, bearings with shields or seals can be supplied with other greases, e.g. for a temperature range of -40° to +300° F (-40° to +150° C).

The quantity of grease supplied is appropriate to the size of the bearing and normally fills between 25 and 35% of the free space in the bearing. Open bearings are supplied with a rust preservative that is compatible with most standard greases and should not be removed prior to mounting or lubricating.

Masses

The masses given in the tables are for the basic design of the bearing. The mass of bearings with shield(s), seal(s) or snap ring groove differs only slightly from that of the basic bearing.

Internal clearance

Radial internal clearance (Table 1)

SKF single row deep groove ball bearings are produced with Normal radial internal clearance (CN or C0 not marked on bearing) as standard. Radial clearance selection is based on factors such as high speed, operating temperature, shaft fits and axial movement limitations. The availability of bearings with clearances other than Normal should be checked before ordering. The suffix JEM indicates an internal clearance greater than Normal (C3). Many of the bearings, particularly the smaller sizes, are also available with radial internal clearance, which is greater than (C3) or less than (C2) Normal.

The values of the clearance limits for single row deep groove ball bearings are shown in Table 1 and the values of the clearance limits for max type ball bearings are shown in Table 3 on page 38. Both conform to ISO 5753-1991 (ABMA standard 20-1996) for the size range covered by this standard. The values apply to unmounted bearings under zero measuring load.

Table 1

Radial internal clearance of deep groove ball bearings

Bore diameter d		Radial internal clearance																			
		C2				Normal				C3				C4				C5			
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		µm		in		µm		in		µm		in		µm		in	
2.5	6	0	7	0.0000	0.0003	2	13	0.0001	0.0005	8	23	0.0003	0.0009	–	–	–	–	–	–	–	–
6	10	0	7	0.0000	0.0003	2	13	0.0001	0.0005	8	23	0.0003	0.0009	14	29	0.0006	0.0011	20	37	0.0008	0.0015
10	18	0	9	0.0000	0.0004	3	18	0.0001	0.0007	11	25	0.0004	0.0010	18	33	0.0007	0.0013	25	45	0.0010	0.0018
18	24	0	10	0.0000	0.0004	5	20	0.0002	0.0008	13	28	0.0005	0.0011	20	36	0.0008	0.0014	28	48	0.0011	0.0019
24	30	1	11	0.0000	0.0004	5	20	0.0002	0.0008	13	28	0.0005	0.0011	23	41	0.0009	0.0016	30	53	0.0012	0.0021
30	40	1	11	0.0000	0.0004	6	20	0.0002	0.0008	15	33	0.0006	0.0013	28	46	0.0011	0.0018	40	64	0.0016	0.0025
40	50	1	11	0.0000	0.0004	6	23	0.0002	0.0009	18	36	0.0007	0.0014	30	51	0.0012	0.0020	45	73	0.0018	0.0029
50	65	1	15	0.0000	0.0006	8	28	0.0003	0.0011	23	43	0.0009	0.0017	38	61	0.0015	0.0024	55	90	0.0022	0.0035
65	80	1	15	0.0000	0.0006	10	30	0.0004	0.0012	25	51	0.0010	0.0020	46	71	0.0018	0.0028	65	105	0.0026	0.0041
80	100	1	18	0.0000	0.0007	12	36	0.0005	0.0014	30	58	0.0012	0.0023	53	84	0.0021	0.0033	75	120	0.0030	0.0047
100	120	2	20	0.0001	0.0008	15	41	0.0006	0.0016	36	66	0.0014	0.0026	61	97	0.0024	0.0038	90	140	0.0035	0.0055
120	140	2	23	0.0001	0.0009	18	48	0.0007	0.0019	41	81	0.0016	0.0032	71	114	0.0028	0.0045	105	160	0.0041	0.0063
140	160	2	23	0.0001	0.0009	18	53	0.0007	0.0021	46	91	0.0018	0.0036	81	130	0.0032	0.0051	120	180	0.0047	0.0071
160	180	2	25	0.0001	0.0010	20	61	0.0008	0.0024	53	102	0.0021	0.0040	91	147	0.0036	0.0058	135	200	0.0053	0.0079
180	200	2	30	0.0001	0.0012	25	71	0.0010	0.0028	63	117	0.0025	0.0046	107	163	0.0042	0.0064	150	230	0.0059	0.0091
200	225	2	35	0.0001	0.0014	25	85	0.0010	0.0033	75	140	0.0030	0.0055	125	195	0.0049	0.0077	175	265	0.0069	0.0104
225	250	2	40	0.0001	0.0016	30	95	0.0012	0.0037	85	160	0.0033	0.0063	145	225	0.0057	0.0089	205	300	0.0081	0.0118
250	280	2	45	0.0001	0.0018	35	105	0.0014	0.0041	90	170	0.0035	0.0067	155	245	0.0061	0.0096	225	340	0.0089	0.0134
280	315	2	55	0.0001	0.0022	40	115	0.0016	0.0045	100	190	0.0039	0.0075	175	270	0.0069	0.0106	245	370	0.0096	0.0146
315	355	3	60	0.0001	0.0024	45	125	0.0018	0.0049	110	210	0.0043	0.0083	195	300	0.0077	0.0118	275	410	0.0108	0.0161
355	400	3	70	0.0001	0.0028	55	145	0.0022	0.0057	130	240	0.0051	0.0094	225	340	0.0089	0.0134	315	460	0.0124	0.0181
400	450	3	80	0.0001	0.0031	60	170	0.0024	0.0067	150	270	0.0059	0.0106	250	380	0.0098	0.0150	350	520	0.0138	0.0205
450	500	3	90	0.0001	0.0035	70	190	0.0028	0.0075	170	300	0.0067	0.0118	280	420	0.0110	0.0165	390	570	0.0154	0.0224
500	560	10	100	0.0004	0.0039	80	210	0.0031	0.0083	190	330	0.0075	0.0130	310	470	0.0122	0.0185	440	630	0.0173	0.0248
560	630	10	110	0.0004	0.0043	90	230	0.0035	0.0091	210	360	0.0083	0.0142	340	520	0.0134	0.0205	490	700	0.0193	0.0276
630	710	20	130	0.0008	0.0051	110	260	0.0043	0.0102	240	400	0.0094	0.0157	380	570	0.0150	0.0224	540	780	0.0213	0.0307
710	800	20	140	0.0008	0.0055	120	290	0.0047	0.0114	270	450	0.0106	0.0177	430	630	0.0169	0.0248	600	860	0.0236	0.0339
800	900	20	160	0.0008	0.0063	140	320	0.0055	0.0126	300	500	0.0118	0.0197	480	700	0.0189	0.0276	670	960	0.0264	0.0378
900	1 000	20	170	0.0008	0.0067	150	350	0.0059	0.0138	330	550	0.0130	0.0217	530	770	0.0209	0.0303	740	1040	0.0291	0.0409
1 000	1 120	20	180	0.0008	0.0071	160	380	0.0063	0.0150	360	600	0.0142	0.0236	580	850	0.0228	0.0335	820	1150	0.0323	0.0453
1 120	1 250	20	190	0.0008	0.0075	170	410	0.0067	0.0161	390	650	0.0154	0.0256	630	920	0.0248	0.0362	890	1260	0.0350	0.0496
1 250	1 400	30	200	0.0012	0.0079	190	440	0.0075	0.0173	420	700	0.0165	0.0276	680	1000	0.0268	0.0394	–	–	–	–
1 400	1 600	30	210	0.0012	0.0083	210	470	0.0083	0.0185	450	750	0.0177	0.0295	730	1060	0.0287	0.0417	–	–	–	–

Introduction

Loads

Equivalent dynamic bearing load for single bearings, Conrad type

$P = F_r$ when $F_a / F_r \leq e$

$P = XF_r + YF_a$ when $F_a / F_r > e$

where

P = equivalent dynamic bearing load

F_r = radial load acting on the bearing

F_a = axial load acting on the bearing

X, Y and e = factors from **Table 2**

The X and Y factors required for the calculation of the equivalent bearing load of deep groove ball bearings are dependent on the ratio of the axial load Fa to the basic static load rating C0 They are also influenced by the magnitude of the radial internal clearance; increased clearance enables heavier axial loads to be carried.

If the bearings are mounted with the usual fits (tolerance j5 to n6 depending on shaft diameter, and J7 for the housing) the values of e, X and Y given in **Table 2** can be used to calculate the equivalent load. If a clearance greater than Normal is chosen because a reduction in clearance will be obtained in operation, for example, as a result of strong heating of the inner ring, then the values of the factors under Normal clearance should be used.

Equivalent dynamic bearing load for single row deep groove ball bearings with filling slots

$P = F_r + F_a$

provided $F_a / F_r \leq 0.6$

Bearings with filling slots are unsuitable for axial loads F_a greater than 0.6 F_r and deep groove ball bearings without filling slot should be used instead.

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 deep groove ball bearings, particularly if they run at high speeds where the inertia forces of the balls 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 balls and the raceways.

The requisite minimum radial load to be applied in such cases can be determined by using the 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, by applying a preload to the inner or outer rings, or by using springs.

Frequency vibration data

Frequency vibration data is available on the SKF website skfusa.com. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Special solutions using deep groove ball bearings

- Bearings with inch boundary dimensions
- High temperature (kiln truck) bearings for extreme temperatures
- Stainless steel bearings for water/moist environments
- INSOCOAT for electrically insulating a bearing from stray current
- Bearings with ceramic balls for extreme speed or electrical insulation
- Double row deep groove (4200 series) for increased load

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

Table 2

Calculation factors for single row deep groove ball bearings

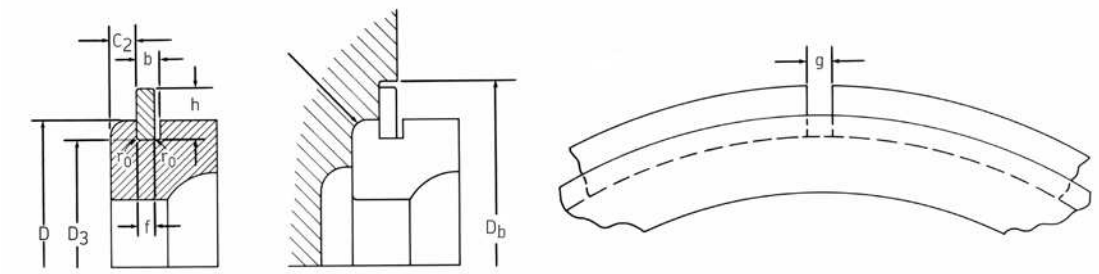
Single bearings and bearing pairs in tandem

	Normal clearance			C3 clearance			C4 clearance		
F_a/C_0	e	X	Y	e	X	Y	e	X	Y
0.025	0.22	0.56	2.0	0.31	0.46	1.75	0.4	0.44	1.42
0.04	0.24	0.56	1.8	0.33	0.46	1.62	0.42	0.44	1.36
0.07	0.27	0.56	1.6	0.36	0.46	1.46	0.44	0.44	1.27
0.13	0.31	0.56	1.4	0.41	0.46	1.30	0.48	0.44	1.16
0.25	0.37	0.56	1.2	0.46	0.46	1.14	0.53	0.44	1.05
0.5	0.44	0.56	1.0	0.54	0.46	1.00	0.56	0.44	1.00

Table 3

Radial internal clearance of deep groove ball bearings with filling slots

Bore diameter d		**Radial internal clearance**											
		C2				**Normal**				**C3**			
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		µm		in		µm		in	
18	**24**	0	10	0.0000	0.0004	5	20	0.0002	0.0008	13	28	0.0005	0.0011
24	**30**	1	11	0.0000	0.0004	5	20	0.0002	0.0008	13	28	0.0005	0.0011
30	**40**	1	11	0.0000	0.0004	6	20	0.0002	0.0008	15	33	0.0006	0.0013
40	**50**	1	11	0.0000	0.0004	6	23	0.0002	0.0009	18	36	0.0007	0.0014
50	**65**	1	15	0.0000	0.0006	8	28	0.0003	0.0011	23	43	0.0009	0.0017
65	**80**	1	15	0.0000	0.0006	10	30	0.0004	0.0012	25	51	0.0010	0.0020
80	**100**	1	18	0.0000	0.0007	12	36	0.0005	0.0014	30	58	0.0012	0.0023



Snap ring and snap ring groove dimensions

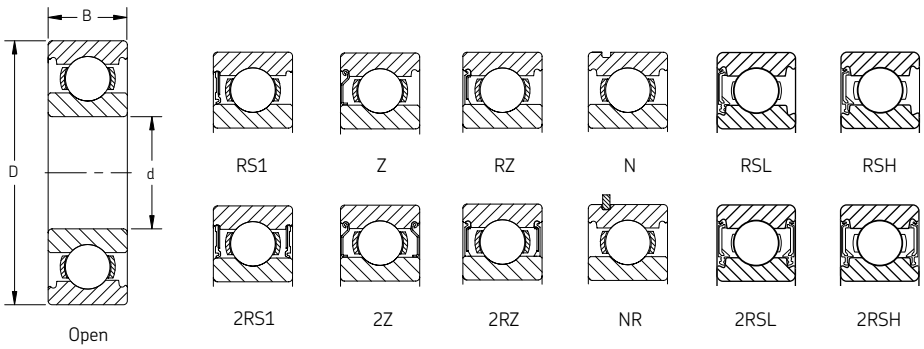
Table 4

Snap ring and groove dimensions - ball bearings

Outer ring O.D. D		Groove dia. max. D_3		Groove location max. C_2		Groove width min. b		Fillet radius max. r_0		Ring thickness max. f		Ring section height max. h		Ring gap g		End cover D_b	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
40	**1.5748**	38.10	1.500	2.06	0.081	1.35	0.053	0.4	0.016	1.12	0.044	3.25	0.128	3	0.12	45	1.8
47	**1.8504**	44.60	1.756	2.46	0.097	1.35	0.053	0.4	0.016	1.12	0.044	4.04	0.159	4	0.15	53	2.1
52	**2.0472**	49.73	1.958	2.46	0.097	1.35	0.053	0.4	0.016	1.12	0.044	4.04	0.159	4	0.15	58	2.3
62	**2.4409**	59.61	2.347	3.28	0.129	1.90	0.075	0.6	0.024	1.70	0.067	4.04	0.159	4	0.15	68	2.7
72	**2.8346**	68.81	2.709	3.28	0.129	1.90	0.075	0.6	0.024	1.70	0.067	4.85	0.191	5	0.19	80	3.1
80	**3.1496**	76.81	3.024	3.28	0.129	1.90	0.075	0.6	0.024	1.70	0.067	4.85	0.191	5	0.19	88	3.5
85	**3.3464**	81.81	3.221	3.28	0.129	1.90	0.075	0.6	0.024	1.70	0.067	4.85	0.191	5	0.19	93	3.7
90	**3.5400**	86.79	3.417	3.28	0.129	2.70	0.106	0.6	0.024	2.46	0.097	4.85	0.191	5	0.19	98	3.9
100	**3.9370**	96.80	3.811	3.28	0.129	2.70	0.106	0.6	0.024	2.46	0.097	4.85	0.191	5	0.19	108	4.3
110	**4.3307**	106.81	4.205	3.28	0.129	2.70	0.106	0.6	0.024	2.46	0.097	4.85	0.191	5	0.19	118	4.6
120	**4.7244**	115.21	4.536	4.06	0.160	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	131	5.2
125	**4.9210**	120.22	4.733	4.06	0.160	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	136	5.4
130	**5.1181**	125.22	4.930	4.06	0.160	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	141	5.6
140	**5.5118**	135.23	5.324	4.90	0.193	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	151	5.9
150	**5.9055**	145.24	5.718	4.90	0.193	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	161	6.3
160	**6.2992**	155.22	6.111	4.90	0.193	3.10	0.122	0.6	0.024	2.82	0.111	7.21	0.284	7	0.28	171	6.7
170	**6.6929**	163.65	6.443	5.69	0.224	3.50	0.138	0.6	0.024	3.10	0.122	9.60	0.378	10	0.39	184	7.2
180	**7.0866**	173.66	6.837	5.69	0.224	3.50	0.138	0.6	0.024	3.10	0.122	9.60	0.378	10	0.39	194	7.6
190	**7.4803**	183.64	7.230	5.69	0.224	3.50	0.138	0.6	0.024	3.10	0.122	9.60	0.378	10	0.39	204	8.0
200	**7.8740**	193.65	7.624	5.69	0.224	3.50	0.138	0.6	0.024	3.10	0.122	9.60	0.378	10	0.39	214	8.4

Note: Does not include 6000 series bearings

Single row
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 604 – 6026
Size: 4 mm – 140 mm
0.1575 in – 5.1118 in

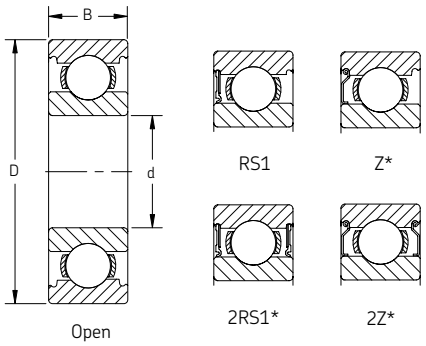


Designation	Principal dimensions						Basic load ratings				Speed rating[1]			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Refer-ence speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
604	4	0.1575	12	0.4724	4	0.1575	806	180	280	60	120000	75000	–	0.00	0.01
607	7	0.2756	19	0.7480	6	0.2362	2340	530	950	210	85000	53000	24000	0.01	0.02
608	8	0.3150	22	0.8661	7	0.2756	3450	780	1370	310	75000	48000	22000	0.01	0.03
609	9	0.3543	24	0.9449	7	0.2756	3900	880	1660	370	70000	43000	19000	0.01	0.03
6000	10	0.3937	26	1.0236	8	0.3150	4750	1070	1960	440	67000	40000	19000	0.02	0.04
6001	12	0.4724	28	1.1024	8	0.3150	5400	1210	2360	530	60000	38000	17000	0.02	0.05
6002	15	0.5906	32	1.2598	9	0.3543	5850	1310	2850	640	50000	32000	14000	0.03	0.07
6003	17	0.6693	35	1.3780	10	0.3937	6370	1430	3250	730	45000	28000	13000	0.04	0.08
6004	20	0.7874	42	1.6535	12	0.4724	9950	2240	5000	1120	38000	24000	11000	0.07	0.15
6005	25	0.9843	47	1.8504	12	0.4724	11900	2670	6550	1470	32000	20000	9500	0.08	0.17
6006	30	1.1811	55	2.1654	13	0.5118	13800	3100	8300	1870	28000	17000	8000	0.12	0.26
6007	35	1.3780	62	2.4409	14	0.5512	16800	3780	10200	2290	24000	15000	7000	0.15	0.34
6008	40	1.5748	68	2.6772	15	0.5906	17800	4000	11000	2470	22000	14000	6300	0.19	0.42
6009	45	1.7717	75	2.9528	16	0.6299	22100	4970	14600	3280	20000	12000	5600	0.24	0.54
6010	50	1.9685	80	3.1496	16	0.6299	22900	5150	16000	3600	18000	11000	5000	0.26	0.58
6011	55	2.1654	90	3.5433	18	0.7087	29600	6650	21200	4760	16000	10000	4500	0.38	0.85
6012	60	2.3622	95	3.7402	18	0.7087	30700	6900	23200	5210	15000	9500	4300	0.41	0.91
6013	65	2.5591	100	3.9370	18	0.7087	31900	7170	25000	5620	14000	9000	4000	0.44	0.96
6014	70	2.7559	110	4.3307	20	0.7874	39700	8920	31000	6970	13000	8000	3600	0.61	1.35
6015	75	2.9528	115	4.5276	20	0.7874	41600	9350	33500	7530	12000	7500	3400	0.65	1.43
6016	80	3.1496	125	4.9213	22	0.8661	49400	11100	40000	8990	11000	7000	3200	0.86	1.89
6017	85	3.3465	130	5.1181	22	0.8661	52000	11690	43000	9660	11000	6700	3000	0.90	1.99
6018	90	3.5433	140	5.5118	24	0.9449	60500	13600	50000	11240	10000	6300	2800	1.16	2.56
6019	95	3.7402	145	5.7087	24	0.9449	63700	14310	54000	12130	9500	6000	2800	1.21	2.67
6020	100	3.9370	150	5.9055	24	0.9449	63700	14310	54000	12130	9500	5600	2600	1.26	2.78
6021	105	4.1339	160	6.2992	26	1.0236	76100	17100	65500	14720	8500	5300	2400	1.60	3.53
6022	110	4.3307	170	6.6929	28	1.1024	85200	19150	73500	16520	8000	5000	2400	1.97	4.34
6024	120	4.7244	180	7.0866	28	1.1024	88400	19870	80000	17980	7500	4800	2200	2.10	4.64
6026	130	5.1181	200	7.8740	33	1.2992	112000	25170	100000	22470	7000	4300	2000	3.28	7.23

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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

Single row
Conrad
Open, sealed, shielded and snap ring
Standard
Series: 6028 – 60/800 N1MAS
Size: 150 mm – 800 mm
5.9055 in – 31.4961 in



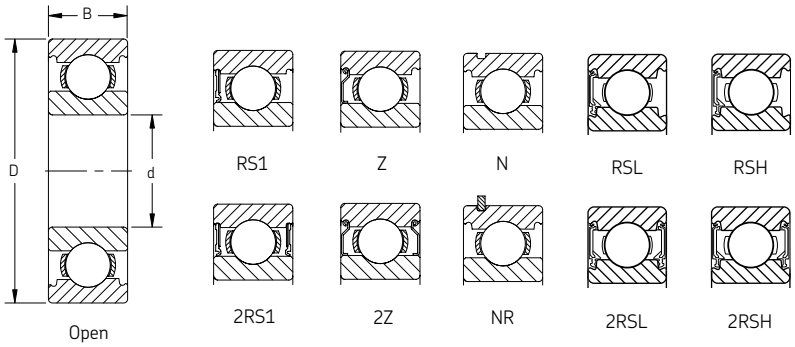
Designation	Principal dimensions						Basic load ratings				Speed rating[1]			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
6028	140	5.5118	210	8.2677	33	1.2992	111000	24940	108000	24270	6700	4000	1800	3.45	7.61
6030	150	5.9055	225	8.8583	35	1.3780	125000	28090	125000	28090	6000	3800	1700	4.29	9.46
6032	160	6.2992	240	9.4488	38	1.4961	143000	32130	143000	32130	5600	3600	1600	5.21	11.48
6034 M	170	6.6929	260	10.2362	42	1.6535	168000	37750	173000	38880	5300	4300	–	8.14	17.95
6036 M	180	7.0866	280	11.0236	46	1.8110	190000	42700	200000	44940	4800	4000	–	10.31	22.73
6038 M	190	7.4803	290	11.4173	46	1.8110	195000	43820	216000	48540	4800	3800	–	10.81	23.84
6040 M	200	7.8740	310	12.2047	51	2.0079	216000	48540	245000	55060	4300	3600	–	13.96	30.78
6044 M	220	8.6614	340	13.3858	56	2.2047	247000	55510	290000	65170	4000	3200	–	18.32	40.40
6048 M	240	9.4488	360	14.1732	56	2.2047	255000	57300	315000	70790	3600	3000	–	19.60	43.22
6052 M	260	10.2362	400	15.7480	65	2.5591	291000	65390	375000	84270	3200	2800	–	29.04	64.04
6056 M	280	11.0236	420	16.5354	65	2.5591	302000	67870	405000	91010	3000	2600	–	30.78	67.87
6060 M	300	11.8110	460	18.1102	74	2.9134	358000	80450	500000	112360	2800	2400	–	44.00	97.02
6064 M	320	12.5984	480	18.8976	74	2.9134	371000	83370	540000	121350	2600	2200	–	46.00	101.43
6068 M	340	13.3858	520	20.4724	82	3.2283	423000	95060	640000	143820	2400	2200	–	62.00	136.71
6072 M	360	14.1732	540	21.2598	82	3.2283	442000	99330	695000	156180	2400	1900	–	64.50	142.22
6076 M	380	14.9606	560	22.0472	82	3.2283	436000	97980	695000	156180	2200	1800	–	70.40	155.23
6080 M	400	15.7480	600	23.6220	90	3.5433	520000	116850	865000	194380	2000	1700	–	87.50	192.94
6084 M	420	16.5354	620	24.4094	90	3.5433	507000	113930	880000	197750	2000	1600	–	91.50	201.76
6088 M	440	17.3228	650	25.5906	94	3.7008	553000	124270	965000	216850	1900	1500	–	105.00	231.53
6092 MB	460	18.1102	680	26.7717	100	3.9370	582000	130790	1060000	238200	1800	1500	–	120.00	264.60
6096 M	480	18.8976	700	27.5591	100	3.9370	618000	138880	1140000	256180	1700	1400	–	125.00	275.63
60/500 N1MAS	500	19.6850	720	28.3465	100	3.9370	605000	135960	1140000	256180	1600	1300	–	135.00	297.68
60/530 N1MAS	530	20.8661	780	30.7087	112	4.4094	650000	146070	1270000	285390	1500	1200	–	185.00	407.93
60/560 N1MAS	560	22.0472	820	32.2835	115	4.5276	663000	148990	1370000	307870	1400	1200	–	210.00	463.05
60/ 600 MA	600	23.6220	870	34.2520	118	4.6457	728000	163600	1500000	337080	1300	1100	–	230.00	507.15
60/630 N1MBS	630	24.8031	920	36.2205	128	5.0394	819000	184040	1760000	395510	1200	1000	–	285.00	628.43
60/670 N1MAS	670	26.3780	980	38.5827	136	5.3543	904000	203150	2039999	458430	1100	900	–	345.00	760.73
60/710 N1MAS	710	27.9528	1030	40.5512	140	5.5118	956000	214830	2199999	494380	1000	850	–	394.00	868.77
60/750 MA	750	29.5276	1090	42.9134	150	5.9055	995000	223600	2360000	530340	950	800	–	485.00	1069.43
60/800 N1MAS	800	31.4961	1150	45.2756	155	6.1024	1010000	226970	2550000	573030	900	750	–	523.00	1153.22

* Feature may not be available in all sizes.

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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

Single row
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 623 – 6222
Size: 3 mm – 110 mm
0.1181 in – 4.3307 in

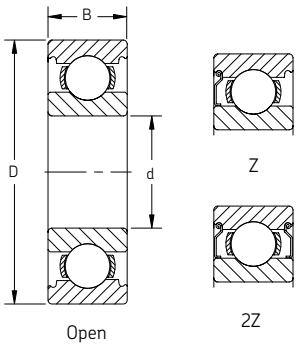


Designation	Principal dimensions						Basic load ratings				Speed rating[1]			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
623	3	0.1181	10	0.3937	4	0.1575	540	120	180	40	130000	80000	40000	0.00	0.00
624	4	0.1575	13	0.5118	5	0.1969	936	210	290	70	110000	67000	–	0.00	0.01
625	5	0.1969	16	0.6299	5	0.1969	1140	260	380	90	95000	60000	–	0.01	0.01
626	6	0.2362	19	0.7480	6	0.2362	2340	530	950	210	80000	50000	24000	0.01	0.02
627	7	0.2756	22	0.8661	7	0.2756	3450	780	1370	310	70000	45000	22000	0.01	0.03
628	8	0.3150	24	0.9449	8	0.3150	3900	880	1660	370	63000	40000	19000	0.02	0.04
629	9	0.3543	26	1.0236	8	0.3150	4750	1070	1960	440	60000	38000	19000	0.02	0.04
6200	10	0.3937	30	1.1811	9	0.3543	5400	1210	2360	530	56000	36000	17000	0.03	0.07
6201	12	0.4724	32	1.2598	10	0.3937	7280	1640	3100	700	50000	32000	15000	0.04	0.08
6202	15	0.5906	35	1.3780	11	0.4331	8060	1810	3750	840	43000	28000	13000	0.04	0.10
6203	17	0.6693	40	1.5748	12	0.4724	9950	2240	4750	1070	38000	24000	12000	0.06	0.14
6204	20	0.7874	47	1.8504	14	0.5512	13500	3030	6550	1470	32000	20000	10000	0.11	0.23
6205	25	0.9843	52	2.0472	15	0.5906	14800	3330	7800	1750	28000	18000	8500	0.13	0.28
6206	30	1.1811	62	2.4409	16	0.6299	20300	4560	11200	2520	24000	15000	7500	0.20	0.44
6207	35	1.3780	72	2.8346	17	0.6693	27000	6070	15300	3440	20000	13000	6300	0.29	0.64
6208	40	1.5748	80	3.1496	18	0.7087	32500	7300	19000	4270	18000	11000	5600	0.37	0.80
6209	45	1.7717	85	3.3465	19	0.7480	35100	7890	21600	4850	17000	11000	5000	0.42	0.92
6210	50	1.9685	90	3.5433	20	0.7874	37100	8340	23200	5210	15000	10000	4800	0.46	1.01
6211	55	2.1654	100	3.9370	21	0.8268	46200	10380	29000	6520	14000	9000	4300	0.61	1.35
6212	60	2.3622	110	4.3307	22	0.8661	55300	12430	36000	8090	13000	8000	4000	0.78	1.72
6213	65	2.5591	120	4.7244	23	0.9055	58500	13150	40500	9100	12000	7500	3600	1.02	2.25
6214	70	2.7559	125	4.9213	24	0.9449	63700	14310	45000	10110	11000	7000	3400	1.09	2.40
6215	75	2.9528	130	5.1181	25	0.9843	68900	15480	49000	11010	10000	6700	3200	1.19	2.62
6216	80	3.1496	140	5.5118	26	1.0236	72800	16360	55000	12360	9500	6000	3000	1.47	3.23
6217	85	3.3465	150	5.9055	28	1.1024	87100	19570	64000	14380	9000	5600	2800	1.80	3.98
6218	90	3.5433	160	6.2992	30	1.1811	101000	22700	73500	16520	8500	5300	2600	2.22	4.89
6219	95	3.7402	170	6.6929	32	1.2598	114000	25620	81500	18310	8000	5000	2400	2.63	5.79
6220	100	3.9370	180	7.0866	34	1.3386	127000	28540	93000	20900	7500	4800	2400	3.18	7.01
6221	105	4.1339	190	7.4803	36	1.4173	140000	31460	104000	23370	7000	4500	2200	3.79	8.36
6222	110	4.3307	200	7.8740	38	1.4961	151000	33930	118000	26520	6700	4300	2000	4.45	9.80

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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

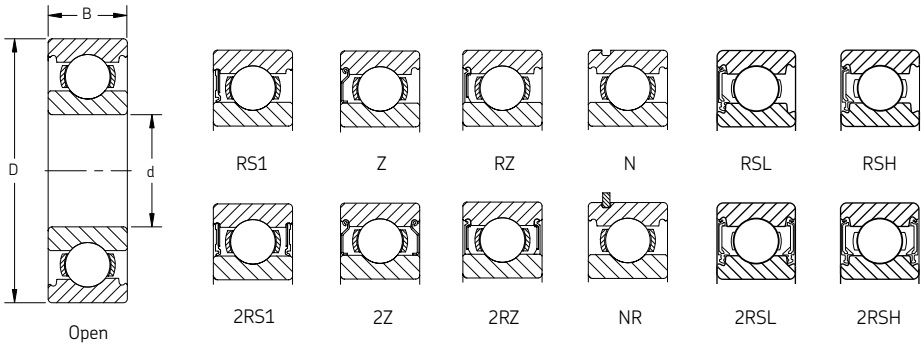
Single row
Conrad
Open and shielded
Standard
Series: 6224 – 6260 M
Size: 120 mm – 300 mm
4.7244 in – 11.8110 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
6224	120	4.7244	215	8.4646	40	1.5748	146000	32810	118000	26520	6300	4000	5.27	11.62
6226	130	5.1181	230	9.0551	40	1.5748	156000	35060	132000	29660	5600	3600	5.86	12.92
6228	140	5.5118	250	9.8425	42	1.6535	165000	37080	150000	33710	5300	3400	7.77	17.14
6230	150	5.9055	270	10.6299	45	1.7717	174000	39100	166000	37300	5000	3200	10.14	22.35
6232	160	6.2992	290	11.4173	48	1.8898	186000	41800	186000	41800	4500	3000	12.90	28.44
6234 M	170	6.6929	310	12.2047	52	2.0472	212000	47640	224000	50340	4300	3800	17.50	38.58
6236 M	180	7.0866	320	12.5984	52	2.0472	229000	51460	240000	53930	4000	3800	17.83	39.31
6238 M	190	7.4803	340	13.3858	55	2.1654	255000	57300	280000	62920	3800	3400	21.66	47.75
6240 M	200	7.8740	360	14.1732	58	2.2835	270000	60670	310000	69660	3600	3200	26.18	57.73
6244 M	220	8.6614	400	15.7480	65	2.5591	296000	66520	365000	82020	3200	3000	36.56	80.61
6248 M	240	9.4488	440	17.3228	72	2.8346	358000	80450	465000	104490	3000	2600	51.00	112.46
6252 M	260	10.2362	480	18.8976	80	3.1496	390000	87640	530000	119100	2600	2400	65.50	144.43
6256 M	280	11.0236	500	19.6850	80	3.1496	423000	95060	600000	134830	2600	2200	72.00	158.76
6260 M	300	11.8110	540	21.2598	85	3.3465	462000	103820	670000	150560	2400	2000	88.50	195.14

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

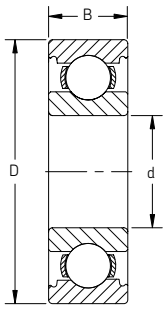
Single row
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 634 – 6324 M
Size: 4 mm – 120 mm
0.1575 in – 4.7244 in



Designation	Principal dimensions						Basic load ratings				Speed rating[1]			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Refer-ence speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
634	4	0.1575	16	0.6299	5	0.1969	1110	250	380	90	95000	60000	28000	0.01	0.01
635	5	0.1969	19	0.7480	6	0.2362	2340	530	950	210	80000	50000	24000	0.01	0.02
6300	10	0.3937	35	1.3780	11	0.4331	8520	1910	3400	760	50000	32000	15000	0.05	0.12
6301	12	0.4724	37	1.4567	12	0.4724	10100	2270	4150	930	45000	28000	14000	0.06	0.13
6302	15	0.5906	42	1.6535	13	0.5118	11900	2670	5400	1210	38000	24000	12000	0.08	0.18
6303	17	0.6693	47	1.8504	14	0.5512	14300	3210	6550	1470	34000	22000	11000	0.11	0.25
6304	20	0.7874	52	2.0472	15	0.5906	16800	3780	7800	1750	30000	19000	9500	0.14	0.32
6305	25	0.9843	62	2.4409	17	0.6693	23400	5260	11600	2610	24000	16000	7500	0.23	0.50
6306	30	1.1811	72	2.8346	19	0.7480	29600	6650	16000	3600	20000	13000	6300	0.35	0.77
6307	35	1.3780	80	3.1496	21	0.8268	35100	7890	19000	4270	19000	12000	6000	0.46	1.01
6308	40	1.5748	90	3.5433	23	0.9055	42300	9510	24000	5390	17000	11000	5000	0.63	1.38
6309	45	1.7717	100	3.9370	25	0.9843	55300	12430	31500	7080	15000	9500	4500	0.84	1.84
6310	50	1.9685	110	4.3307	27	1.0630	65000	14610	38000	8540	13000	8500	4300	1.08	2.38
6311	55	2.1654	120	4.7244	29	1.1417	74100	16650	45000	10110	12000	8000	3800	1.37	3.03
6312	60	2.3622	130	5.1181	31	1.2205	85200	19150	52000	11690	11000	7000	3400	1.72	3.80
6313	65	2.5591	140	5.5118	33	1.2992	97500	21910	60000	13480	10000	6700	3200	2.11	4.64
6314	70	2.7559	150	5.9055	35	1.3780	111000	24940	68000	15280	9500	6300	3000	2.55	5.62
6315	75	2.9528	160	6.2992	37	1.4567	119000	26740	76500	17190	9000	5600	2800	3.06	6.74
6316	80	3.1496	170	6.6929	39	1.5354	130000	29210	86500	19440	8500	5300	2600	3.63	8.00
6317	85	3.3465	180	7.0866	41	1.6142	140000	31460	96500	21690	8000	5000	2400	4.25	9.38
6318	90	3.5433	190	7.4803	43	1.6929	151000	33930	108000	24270	7500	4800	2400	4.97	10.96
6319	95	3.7402	200	7.8740	45	1.7717	159000	35730	118000	26520	7000	4500	2200	5.75	12.67
6320	100	3.9370	215	8.4646	47	1.8504	174000	39100	140000	31460	6700	4300	2000	7.08	15.60
6321	105	4.1339	225	8.8583	49	1.9291	182000	40900	153000	34380	6300	4000	–	8.18	18.03
6322	110	4.3307	240	9.4488	50	1.9685	203000	45620	180000	40450	6000	3800	1800	9.66	21.31
6324	120	4.7244	260	10.2362	55	2.1654	208000	46740	186000	41800	5600	3400	1700	12.66	27.92

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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



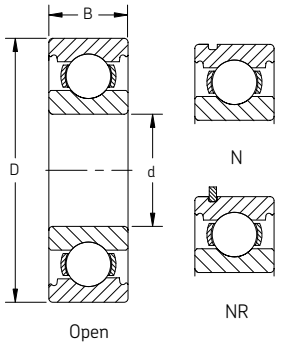
Open

Single row
Conrad
Open
Series: 6326 M – 6348 M
Standard
Size: 130 mm – 240 mm
5.1181 in – 9.4488 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
6326 M	130	5.1181	280	11.0236	58	2.2835	229000	51460	216000	48540	5000	4500	17.26	38.05
6328 M	140	5.5118	300	11.8110	62	2.4409	251000	56400	245000	55060	4800	4300	21.07	46.46
6330 M	150	5.9055	320	12.5984	65	2.5591	276000	62020	285000	64040	4300	4000	25.50	56.23
6332 M	160	6.2992	340	13.3858	68	2.6772	276000	62020	285000	64040	4000	3800	29.85	65.82
6334 M	170	6.6929	360	14.1732	72	2.8346	312000	70110	340000	76400	3800	3400	34.93	77.03
6336 M	180	7.0866	380	14.9606	75	2.9528	351000	78880	405000	91010	3600	3200	40.90	90.19
6338 M	190	7.4803	400	15.7480	78	3.0709	371000	83370	430000	96630	3400	3000	47.44	104.60
6344 M	220	8.6614	460	18.1102	88	3.4646	410000	92130	520000	116850	3000	2600	73.00	160.97
6348 M	240	9.4488	500	19.6850	95	3.7402	442000	99330	585000	131460	2600	2400	96.80	213.44

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

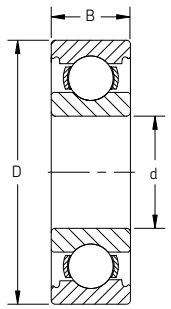
Single row
Conrad
Open and snap ring
Standard
Series: 6403 – 6418
Size: 17 mm – 90 mm
0.6693 in – 3.5433 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
6403	17	0.6693	62	2.4409	17	0.6693	22900	5150	10800	2430	28000	18000	0.27	0.60
6404	20	0.7874	72	2.8346	19	0.7480	30700	6900	15000	3370	24000	15000	0.41	0.90
6405	25	0.9843	80	3.1496	21	0.8268	35800	8040	19300	4340	20000	13000	0.54	1.20
6406	30	1.1811	90	3.5433	23	0.9055	43600	9800	23600	5300	18000	11000	0.75	1.65
6407	35	1.3780	100	3.9370	25	0.9843	55300	12430	31000	6970	16000	10000	0.97	2.14
6408	40	1.5748	110	4.3307	27	1.0630	63700	14310	36500	8200	14000	9000	1.26	2.78
6409	45	1.7717	120	4.7244	29	1.1417	76100	17100	45000	10110	13000	8500	1.57	3.47
6410	50	1.9685	130	5.1181	31	1.2205	87100	19570	52000	11690	12000	7500	1.94	4.27
6411	55	2.1654	140	5.5118	33	1.2992	99500	22360	62000	13930	11000	7000	2.35	5.19
6412	60	2.3622	150	5.9055	35	1.3780	108000	24270	69500	15620	10000	6300	2.83	6.24
6413	65	2.5591	160	6.2992	37	1.4567	119000	26740	78000	17530	9500	6000	3.37	7.43
6414	70	2.7559	180	7.0866	42	1.6535	143000	32130	104000	23370	8500	5300	4.93	10.87
6415	75	2.9528	190	7.4803	45	1.7717	153000	34380	114000	25620	8000	5000	5.81	12.80
6416	80	3.1496	200	7.8740	48	1.8898	163000	36630	125000	28090	7500	4800	6.86	15.12
6417	85	3.3465	210	8.2677	52	2.0472	174000	39100	137000	30790	7000	4500	8.05	17.75
6418	90	3.5433	225	8.8583	54	2.1260	186000	41800	150000	33710	6700	4300	9.78	21.56

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

Single row
Conrad
Open, shielded and snap ring
Standard and SKF Explorer
Series: 16002 – 16044
Size: 15 mm – 220 mm
0.5906 in – 8.6614 in



Open

2Z*

NR*

Designation	Principal dimensions						Basic load ratings				Speed rating[1]		Mass	
	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
16002	15	0.5906	32	1.2598	8	0.3150	5850	1310	2850	640	50000	32000	0.03	0.06
16003	17	0.6693	35	1.3780	8	0.3150	6370	1430	3250	730	45000	28000	0.03	0.07
16005	25	0.9843	47	1.8504	8	0.3150	8060	1810	4750	1070	32000	20000	0.06	0.12
16006	30	1.1811	55	2.1654	9	0.3543	11900	2670	7350	1650	28000	17000	0.09	0.20
16007	35	1.3780	62	2.4409	9	0.3543	13000	2920	8150	1830	24000	15000	0.11	0.25
16008	40	1.5748	68	2.6772	9	0.3543	13800	3100	10200	2290	22000	14000	0.13	0.29
16009	45	1.7717	75	2.9528	10	0.3937	16500	3710	10800	2430	20000	12000	0.17	0.37
16010	50	1.9685	80	3.1496	10	0.3937	16800	3780	11400	2560	18000	11000	0.18	0.40
16011	55	2.1654	90	3.5433	11	0.4331	20300	4560	14000	3150	16000	10000	0.26	0.58
16012	60	2.3622	95	3.7402	11	0.4331	20800	4670	15000	3370	15000	9500	0.29	0.63
16013	65	2.5591	100	3.9370	11	0.4331	22500	5060	19600	4400	14000	9000	0.30	0.66
16014	70	2.7559	110	4.3307	13	0.5118	29100	6540	25000	5620	13000	8000	0.44	0.97
16015	75	2.9528	115	4.5276	13	0.5118	30200	6790	27000	6070	12000	7500	0.46	1.02
16016	80	3.1496	125	4.9213	14	0.5512	35100	7890	31500	7080	11000	7000	0.61	1.34
16017	85	3.3465	130	5.1181	14	0.5512	35800	8040	33500	7530	11000	6700	0.64	1.41
16018	90	3.5433	140	5.5118	16	0.6299	43600	9800	39000	8760	10000	6300	0.85	1.88
16019	95	3.7402	145	5.7087	16	0.6299	44900	10090	41500	9330	9500	6000	0.89	1.97
16020	100	3.9370	150	5.9055	16	0.6299	46200	10380	44000	9890	9500	5600	0.94	2.06
16021	105	4.1339	160	6.2992	18	0.7087	54000	12130	51000	11460	8500	5300	1.19	2.63
16022	110	4.3307	170	6.6929	19	0.7480	60500	13600	57000	12810	8000	5000	1.47	3.23
16024	120	4.7244	180	7.0866	19	0.7480	63700	14310	64000	14380	7500	4800	1.57	3.45
16026	130	5.1181	200	7.8740	22	0.8661	83200	18700	81500	18310	7000	4300	2.39	5.26
16028	140	5.5118	210	8.2677	22	0.8661	80600	18110	86500	19440	6700	4000	2.53	5.57
16030	150	5.9055	225	8.8583	24	0.9449	92300	20740	98000	22020	6000	3800	3.14	6.93
16032	160	6.2992	240	9.4488	25	0.9843	99500	22360	108000	24270	5600	3600	3.66	8.08
16034	170	6.6929	260	10.2362	28	1.1024	119000	26740	129000	28990	5300	3200	5.02	11.06
16036	180	7.0866	280	11.0236	31	1.2205	138000	31010	146000	32810	4800	3000	6.51	14.35
16038	190	7.4803	290	11.4173	31	1.2205	148000	33260	166000	37300	4800	3000	6.89	15.20
16040	200	7.8740	310	12.2047	34	1.3386	168000	37750	190000	42700	4300	2800	8.78	19.37
16044	220	8.6614	340	13.3858	37	1.4567	174000	39100	204000	45840	4000	2400	11.49	25.33

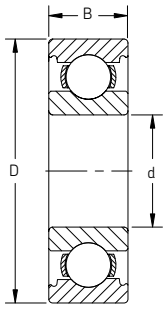
* Feature may not be available in all sizes.

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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

Single row
Conrad
Open and sealed
Standard
Series: 16048 – 16076
Size: 240 mm – 380 mm
9.4488 in – 14.9606 in

Series: 16100 – 16101
Size: 10 mm – 12 mm
0.3937 in – 0.4724 in

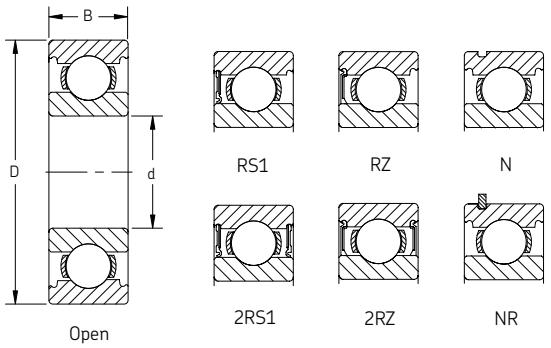


Open

Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Refer-ence speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
16048	240	9.4488	360	14.1732	37	1.4567	203000	45620	255000	57300	3600	2200	–	12.30	27.12
16052	260	10.2362	400	15.7480	44	1.7323	238000	53480	310000	69660	3200	2000	–	18.00	39.69
16056	280	11.0236	420	16.5354	44	1.7323	242000	54380	335000	75280	3000	1900	–	19.00	41.90
16060 MA	300	11.8110	460	18.1102	50	1.9685	286000	64270	405000	91010	2800	1800	–	32.00	70.56
16064 MA	320	12.5984	480	18.8976	50	1.9685	281000	63150	405000	91010	2600	2200	–	34.00	74.97
16068 MA	340	13.3858	520	20.4724	57	2.2441	345000	77530	520000	116850	2400	2000	–	45.00	99.23
16072 MA	360	14.1732	540	21.2598	57	2.2441	351000	78880	550000	123600	1800	1400	–	49.00	108.05
16076 MA	380	14.9606	560	22.0472	57	2.2441	377000	84720	620000	139330	2200	1400	–	51.00	112.46
16100	10	0.3937	28	1.1024	8	0.3150	5070	1140	2360	530	60000	38000	–	0.02	0.05
16101	12	0.4724	30	1.1811	8	0.3150	5070	1140	2360	530	60000	38000	16000	0.03	0.06

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

Single row
Conrad
Open, sealed and snap ring
Standard
Series: 61800 – 61830
Size: 10 mm – 150 mm
0.3937 in – 5.9055 in

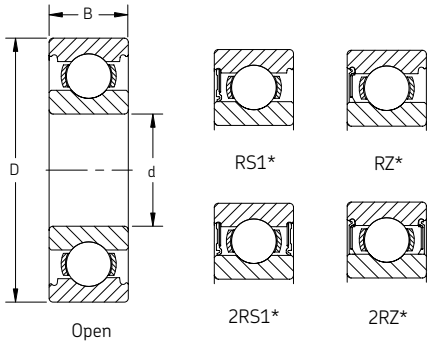


Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
61800	10	0.3937	19	0.7480	5	0.1969	1720	390	830	190	80000	48000	22000	0.01	0.01
61801	12	0.4724	21	0.8268	5	0.1969	1740	390	915	210	70000	43000	20000	0.01	0.01
61802	15	0.5906	24	0.9449	5	0.1969	1900	430	1100	250	60000	38000	17000	0.01	0.01
61803	17	0.6693	26	1.0236	5	0.1969	2030	460	1270	290	56000	34000	16000	0.01	0.02
61804	20	0.7874	32	1.2598	7	0.2756	4030	910	2320	520	45000	28000	13000	0.02	0.04
61805	25	0.9843	37	1.4567	7	0.2756	4360	980	2600	580	38000	24000	11000	0.02	0.05
61806	30	1.1811	42	1.6535	7	0.2756	4490	1010	2900	650	32000	20000	9500	0.03	0.06
61807	35	1.3780	47	1.8504	7	0.2756	4360	980	3350	750	30000	18000	8500	0.03	0.06
61808	40	1.5748	52	2.0472	7	0.2756	4490	1010	3750	840	26000	16000	7500	0.03	0.07
61809	45	1.7717	58	2.2835	7	0.2756	6630	1490	6100	1370	22000	14000	6700	0.04	0.09
61810	50	1.9685	65	2.5591	7	0.2756	6760	1520	6800	1530	20000	13000	6000	0.05	0.11
61811	55	2.1654	72	2.8346	9	0.3543	9040	2030	8800	1980	19000	12000	5300	0.08	0.18
61812	60	2.3622	78	3.0709	10	0.3937	11900	2670	11400	2560	17000	11000	4800	0.11	0.24
61813	65	2.5591	85	3.3465	10	0.3937	12400	2790	12700	2850	16000	10000	4500	0.13	0.29
61814	70	2.7559	90	3.5433	10	0.3937	12400	2790	13200	2970	15000	9000	4300	0.14	0.31
61815	75	2.9528	95	3.7402	10	0.3937	12500	2810	10800	2430	14000	8500	4000	0.15	0.32
61816	80	3.1496	100	3.9370	10	0.3937	12700	2850	11200	2520	13000	8000	3600	0.15	0.34
61817	85	3.3465	110	4.3307	13	0.5118	19500	4380	16600	3730	12000	7500	3400	0.26	0.58
61818	90	3.5433	115	4.5276	13	0.5118	19500	4380	17000	3820	11000	7000	3200	0.28	0.61
61819	95	3.7402	120	4.7244	13	0.5118	19900	4470	17600	3960	11000	6700	3000	0.29	0.64
61820	100	3.9370	125	4.9213	13	0.5118	17800	4000	18300	4110	10000	6300	3000	0.30	0.67
61821	105	4.1339	130	5.1181	13	0.5118	20800	4670	19600	4400	10000	6300	2800	0.31	0.68
61822	110	4.3307	140	5.5118	16	0.6299	28100	6310	26000	5840	9500	5600	2600	0.47	1.04
61824	120	4.7244	150	5.9055	16	0.6299	29100	6540	28000	6290	8500	5300	2400	0.51	1.13
61826	130	5.1181	165	6.4961	18	0.7087	37700	8470	43000	9660	8000	4800	2200	0.75	1.65
61828	140	5.5118	175	6.8898	18	0.7087	39000	8760	46500	10450	7500	4500	2000	0.82	1.82
61830	150	5.9055	190	7.4803	20	0.7874	48800	10970	61000	13710	6700	4300	–	1.19	2.62

* 61808-2RZ NR and 61812 NR are made to order products.

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

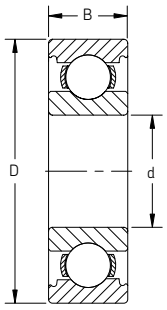
Single row
Conrad
Open and sealed
Standard
Series: 61832 – 618/800 MA
Size: 160 mm – 800 mm
6.2992 in – 31.4961 in



Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
61832	160	6.2992	200	7.8740	20	0.7874	49400	11100	64000	14380	6300	4000	–	1.25	2.76
61834	170	6.6929	215	8.4646	22	0.8661	61800	13890	78000	17530	6000	3600	–	1.63	3.60
61836	180	7.0866	225	8.8583	22	0.8661	62400	14020	81500	18310	5600	3400	–	1.73	3.82
61838	190	7.4803	240	9.4488	24	0.9449	76100	17100	98000	22020	5300	3200	–	2.24	4.93
61840	200	7.8740	250	9.8425	24	0.9449	76100	17100	102000	22920	5000	3200	–	2.34	5.16
61844	220	8.6614	270	10.6299	24	0.9449	78000	17530	110000	24720	4500	2800	–	2.54	5.60
61848	240	9.4488	300	11.8110	28	1.1024	108000	24270	150000	33710	4000	2600	–	3.88	8.55
61852	260	10.2362	320	12.5984	28	1.1024	111000	24940	163000	36630	3800	2400	–	4.17	9.19
61856 MA	280	11.0236	350	13.7795	33	1.2992	138000	31010	200000	44940	3400	2800	–	7.25	15.98
61860 MA	300	11.8110	380	14.9606	38	1.4961	172000	38650	245000	55060	3200	2600	–	10.35	22.83
61864 MA	320	12.5984	400	15.7480	38	1.4961	172000	38650	255000	57300	3000	2400	–	10.95	24.16
61868 MA	340	13.3858	420	16.5354	38	1.4961	178000	40000	275000	61800	2800	2400	–	11.57	25.51
61872 MA	360	14.1732	440	17.3228	38	1.4961	182000	40900	285000	64040	2600	2200	–	12.00	26.46
61876 MA	380	14.9606	480	18.8976	46	1.8110	242000	54380	390000	87640	2400	2000	–	20.00	44.10
61880 MA	400	15.7480	500	19.6850	46	1.8110	247000	55510	405000	91010	2400	1900	–	20.50	45.20
61884 MA	420	16.5354	520	20.4724	46	1.8110	251000	56400	425000	95510	2200	1800	–	21.50	47.41
61888 MA	440	17.3228	540	21.2598	46	1.8110	255000	57300	440000	98880	2200	1800	–	22.50	49.61
61892 MA	460	18.1102	580	22.8346	56	2.2047	319000	71690	570000	128090	2000	1600	–	35.00	77.18
61896 MA	480	18.8976	600	23.6220	56	2.2047	325000	73030	600000	134830	1900	1600	–	36.50	80.48
618/500 MA	500	19.6850	620	24.4094	56	2.2047	332000	74610	620000	139330	1800	1500	–	40.50	89.30
618/530 MA	530	20.8661	650	25.5906	56	2.2047	332000	74610	655000	147190	1700	1400	–	39.50	87.10
618/560 MA	560	22.0472	680	26.7717	56	2.2047	345000	77530	695000	156180	1600	1300	–	42.00	92.61
618/600 MA	600	23.6220	730	28.7402	60	2.3622	364000	81800	765000	171910	1500	1200	–	52.00	114.66
618/630 MA	630	24.8031	780	30.7087	69	2.7165	442000	99330	965000	216850	1400	1100	–	73.00	160.97
618/710 MA	710	27.9528	870	34.2520	74	2.9134	475000	106740	1100000	247190	1200	1000	–	93.50	206.17
618/750 MA	750	29.5276	920	36.2205	78	3.0709	527000	118430	1250000	280900	1100	900	–	110.00	242.55
618/800 MA	800	31.4961	980	38.5827	82	3.2283	559000	125620	1370000	307870	1000	850	–	130.00	286.65

* Feature may not be available in all sizes.

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



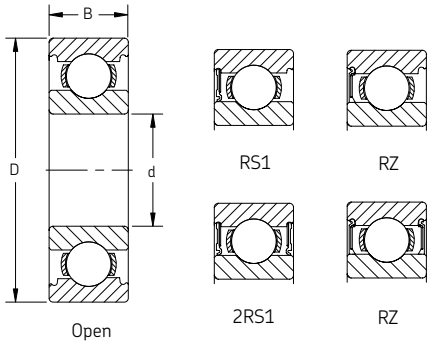
Open

Single row
Conrad
Open
Standard
Series: 618/850 MA – 618/1500 MA
Size: 850 mm – 1 500 TN
33.4646 in – 59.0551 in

Designation	Principal dimensions						Basic load ratings				Speed rating[1]		Mass	
	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
618/850 MA	850	33.4646	1030	40.5512	82	3.2283	559000	125620	1430000	321350	950	750	140.00	308.70
618/900 MA	900	35.4331	1090	42.9134	85	3.3465	618000	138880	1599999	359550	850	700	167.00	368.24
618/950 MA	950	37.4016	1150	45.2756	90	3.5433	637000	143150	1729999	388760	800	670	196.50	433.28
618/1000 MA	1000	39.3701	1220	48.0315	100	3.9370	637000	143150	1800000	404490	750	600	245.00	540.23
618/1060 MA	1060	41.7323	1280	50.3937	100	3.9370	728000	163600	2119999	476400	670	560	260.00	573.30
618/1120 MA	1120	44.0945	1360	53.5433	106	4.1732	741000	166520	2200000	494380	630	530	315.00	694.58
618/1180 MB	1180	46.4567	1420	55.9055	106	4.1732	761000	171010	2359999	530340	560	480	337.00	743.09
618/1320 MA	1320	51.9685	1600	62.9921	122	4.8031	956000	214830	3149999	707860	480	400	500.00	1102.50
618/1500 TN	1500	59.0551	1820	71.6535	140	5.5118	1170000	262920	4149999	932580	380	240	638.00	1406.79

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

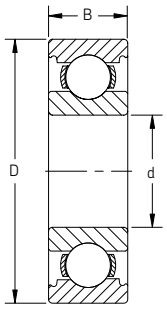
Single row
Conrad
Open and sealed
Standard
Series: 61900 – 61936 MA
Size: 10 mm – 180 mm
0.3937 in – 7.0866 in



Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
61900	10	0.3937	22	0.8661	6	0.2362	2700	610	1270	290	70000	45000	20000	0.01	0.02
61901	12	0.4724	24	0.9449	6	0.2362	2910	650	1460	330	67000	40000	19000	0.01	0.02
61902	15	0.5906	28	1.1024	7	0.2756	4360	980	2240	500	56000	34000	16000	0.02	0.04
61903	17	0.6693	30	1.1811	7	0.2756	4620	1040	2550	570	50000	32000	14000	0.02	0.04
61904	20	0.7874	37	1.4567	9	0.3543	6370	1430	3650	820	43000	26000	12000	0.04	0.08
61905	25	0.9843	42	1.6535	9	0.3543	7020	1580	4300	970	36000	22000	10000	0.05	0.10
61906	30	1.1811	47	1.8504	9	0.3543	7280	1640	4550	1020	30000	19000	8500	0.05	0.11
61907	35	1.3780	55	2.1654	10	0.3937	10800	2430	7800	1750	26000	16000	7500	0.08	0.18
61908	40	1.5748	62	2.4409	12	0.4724	13800	3100	10000	2250	24000	14000	6700	0.12	0.26
61909	45	1.7717	68	2.6772	12	0.4724	14000	3150	10800	2430	20000	13000	6000	0.14	0.31
61910	50	1.9685	72	2.8346	12	0.4724	14600	3280	11800	2650	19000	12000	5600	0.14	0.31
61911	55	2.1654	80	3.1496	13	0.5118	16500	3710	14000	3150	17000	11000	5000	0.19	0.42
61912	60	2.3622	85	3.3465	13	0.5118	16500	3710	12000	2700	16000	10000	4500	0.20	0.43
61913	65	2.5591	90	3.5433	13	0.5118	17400	3910	16000	3600	15000	9500	4300	0.22	0.49
61914	70	2.7559	100	3.9370	16	0.6299	23800	5350	18300	4110	14000	8500	4000	0.34	0.74
61915	75	2.9528	105	4.1339	16	0.6299	24200	5440	19300	4340	13000	8000	3600	0.36	0.79
61916	80	3.1496	110	4.3307	16	0.6299	25100	5640	20400	4580	12000	7500	3400	0.38	0.85
61917	85	3.3465	120	4.7244	18	0.7087	31900	7170	30000	6740	11000	7000	–	0.55	1.22
61918	90	3.5433	125	4.9213	18	0.7087	33200	7460	31500	7080	11000	6700	–	0.59	1.30
61919	95	3.7402	130	5.1181	18	0.7087	33800	7600	33500	7530	10000	6300	3000	0.61	1.35
61920	100	3.9370	140	5.5118	20	0.7874	42300	9510	41500	9330	9500	6000	–	0.83	1.83
61921	105	4.1339	145	5.7087	20	0.7874	44200	9930	44000	9890	9500	5600	–	0.87	1.92
61922	110	4.3307	150	5.9055	20	0.7874	43600	9800	45000	10110	9000	5600	–	0.90	1.99
61924	120	4.7244	165	6.4961	22	0.8661	55300	12430	57000	12810	8000	5000	–	1.20	2.65
61926	130	5.1181	180	7.0866	24	0.9449	65000	14610	67000	15060	7500	4500	–	1.60	3.53
61928	140	5.5118	190	7.4803	24	0.9449	66300	14900	72000	16180	7000	4300	–	1.70	3.75
61930 MA	150	5.9055	210	8.2677	28	1.1024	88400	19870	93000	20900	6300	5300	–	3.03	6.69
61932 MA	160	6.2992	220	8.6614	28	1.1024	92300	20740	98000	22020	6000	5000	–	3.20	7.06
61934 MA	170	6.6929	230	9.0551	28	1.1024	93600	21030	106000	23820	5600	4800	–	3.37	7.43
61936 MA	180	7.0866	250	9.8425	33	1.2992	119000	26740	134000	30110	5300	4300	–	4.99	11.00

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

Single row
Conrad
Open
Standard
Series: 61938 MA – 619/850
Size: 190 mm – 850 mm
7.4803 in – 33.4646 in



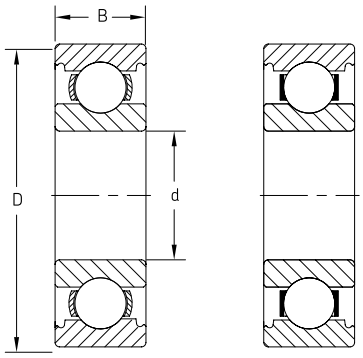
Open

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
61938 MA	190	7.4803	260	10.2362	33	1.2992	117000	26290	134000	30110	5000	4300	5.21	11.50
61940 MA	200	7.8740	280	11.0236	38	1.4961	148000	33260	166000	37300	4800	3800	7.32	16.15
61944 MA	220	8.6614	300	11.8110	38	1.4961	151000	33930	180000	40450	4300	3600	7.93	17.49
61948 MA	240	9.4488	320	12.5984	38	1.4961	159000	35730	200000	44940	4000	3200	8.54	18.84
61952 MA	260	10.2362	360	14.1732	46	1.8110	212000	47640	270000	60670	3600	3000	14.42	31.80
61956 MA	280	11.0236	380	14.9606	46	1.8110	216000	48540	285000	64040	3200	2800	15.34	33.83
61960 MA	300	11.8110	420	16.5354	56	2.2047	270000	60670	375000	84270	3000	2400	24.35	53.69
61964 MA	320	12.5984	440	17.3228	56	2.2047	276000	62020	400000	89890	2800	2400	25.50	56.23
61968 MA	340	13.3858	460	18.1102	56	2.2047	281000	63150	425000	95510	2600	2200	26.50	58.43
61972 MA	360	14.1732	480	18.8976	56	2.2047	291000	65390	450000	101120	2600	2200	28.00	61.74
61976 MA	380	14.9606	520	20.4724	65	2.5591	338000	75960	540000	121350	2400	1900	40.00	88.20
61980 MA	400	15.7480	540	21.2598	65	2.5591	345000	77530	570000	128090	2200	1800	41.50	91.51
61984 MA	420	16.5354	560	22.0472	65	2.5591	351000	78880	600000	134830	2200	1800	43.00	94.82
61988 MA	440	17.3228	600	23.6220	74	2.9134	410000	92130	720000	161800	2000	1600	60.50	133.40
61992 MA	460	18.1102	620	24.4094	74	2.9134	423000	95060	750000	168540	1900	1600	62.50	137.81
61996 MA	480	18.8976	650	25.5906	78	3.0709	449000	100900	815000	183150	1800	1500	74.00	163.17
619/500 MA	500	19.6850	670	26.3780	78	3.0709	462000	103820	865000	194380	1700	1400	81.50	179.71
619/530 MA	530	20.8661	710	27.9528	82	3.2283	488000	109660	930000	208990	1600	1300	90.50	199.55
619/560 MA	560	22.0472	750	29.5276	85	3.3465	494000	111010	980000	220220	1500	1200	105.00	231.53
619/600 MA	600	23.6220	800	31.4961	90	3.5433	585000	131460	1220000	274160	1400	1100	125.00	275.63
619/670 MA	670	26.3780	900	35.4331	103	4.0551	676000	151910	1500000	337080	1200	1000	192.00	423.36
619/710 MA	710	27.9528	950	37.4016	106	4.1732	663000	148990	1500000	337080	1100	900	220.00	485.10
619/750 MA	750	29.5276	1000	39.3701	112	4.4094	761000	171010	1799999	404490	1000	850	255.00	562.28
619/800 MA	800	31.4961	1060	41.7323	115	4.5276	832000	186970	2039999	458430	950	800	275.00	606.38
619/850 MA	850	33.4646	1120	44.0945	118	4.6457	852000	191460	2119999	476400	850	750	320.00	705.60

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

Single row
ABEC 5
Open
Standard
Series: 6205/C78 – 6218/C78
Size: 25 mm – 90 mm
0.9843 in – 3.5433 in

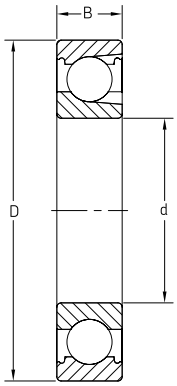
Series: 6303/C78 – 6317/C78
Size: 17 mm – 85 mm
0.6693 in – 3.3465 in



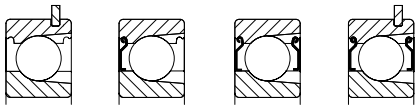
Y/C78 TC/C78

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
6205/C78	25	0.9843	52	2.0472	15	0.5906	14 800	3 330	7 800	1 750	28 000	18 000	0.13	0.29
6206/C78	30	1.1811	62	2.4409	16	0.6299	20 300	4 560	11 200	2 520	24 000	15 000	0.20	0.44
6207/C78	35	1.3780	72	2.8346	17	0.6693	27 000	6 070	15 300	3 440	20 000	13 000	0.28	0.62
6208/C78	40	1.5748	80	3.1496	18	0.7087	32 500	7 310	19 000	4 270	18 000	11 000	0.36	0.79
6209/C78	45	1.7717	85	3.3465	19	0.748	35 100	7 890	21 600	4 860	17 000	11 000	0.41	0.90
6210/C78	50	1.9685	90	3.5433	20	0.7874	37 100	8 340	23 200	5 220	15 000	10 000	0.46	1.01
6211/C78	55	2.1654	100	3.9370	21	0.8268	46 200	10 390	29 000	6 520	14 000	9 000	0.60	1.32
6212/C78	60	2.3622	110	4.3307	22	0.8661	55 300	12 430	36 000	8 090	13 000	8 000	0.78	1.72
6213/C78	65	2.5591	120	4.7244	23	0.9055	58 500	13 150	40 500	9 100	12 000	7 500	0.99	2.18
6214/C78	70	2.7559	125	4.9213	24	0.9449	63 700	14 320	45 000	10 120	11 000	7 000	1.07	2.40
6215/C78	75	2.9528	130	5.1181	25	0.9843	68 900	15 490	49 000	11 020	10 000	6 700	1.20	2.60
6216/C78	80	3.1496	140	5.5118	26	1.0236	72 800	16 370	55 000	12 360	9 500	6 000	1.42	3.10
6217/C78	85	3.3465	150	5.9055	28	1.1024	87 100	19 580	64 000	14 390	9 000	5 600	1.80	4.00
6218/C78	90	3.5433	160	6.2992	30	1.1811	101 000	22 700	73 500	16 520	8 500	5 300	2.15	4.70
6303/C78	17	0.6693	47	1.8504	14	0.5512	14 300	3 210	6 550	1 470	34 000	22 000	0.12	0.26
6304/C78	20	0.7874	52	2.0472	15	0.5906	16 800	3 780	7 800	1 750	30 000	19 000	0.14	0.31
6305/C78	25	0.9843	62	2.4409	17	0.6693	23 400	5 260	11 600	2 610	24 000	16 000	0.23	0.50
6306/C78	30	1.1811	72	2.8346	19	0.748	29 600	6 650	16 000	3 600	20 000	13 000	0.34	0.70
6307/C78	35	1.3780	80	3.1496	21	0.8268	35 100	7 890	19 000	4 270	19 000	12 000	0.46	1.00
6308/C78	40	1.5748	90	3.5433	23	0.9055	42 300	9 510	24 000	5 400	17 000	11 000	0.63	1.40
6309/C78	45	1.7717	100	3.9370	25	0.9843	55 300	12 430	31 500	7 080	15 000	9 500	0.84	1.90
6310/C78	50	1.9685	110	4.3307	27	1.063	65 000	14 610	38 000	8 540	13 000	8 500	1.10	2.40
6311/C78	55	2.1654	120	4.7244	29	1.1417	74 100	16 660	45 000	10 120	12 000	8 000	1.39	3.10
6312/C78	60	2.3622	130	5.1181	31	1.2205	85 200	19 150	52 000	11 690	11 000	7 000	1.75	3.90
6313/C78	65	2.5591	140	5.5118	33	1.2992	97 500	21 920	60 000	13 490	10 000	6 700	2.10	4.60
6314/C78	70	2.7559	150	5.9055	35	1.378	111 000	24 950	68 000	15 290	9 500	6 300	2.55	5.60
6315/C78	75	2.9528	160	6.2992	37	1.4567	119 000	26 750	76 500	17 200	9 000	5 600	3.05	6.70
6316/C78	80	3.1496	170	6.6929	39	1.5354	130 000	29 220	86 500	19 450	8 500	5 300	3.59	7.90
6317/C78	85	3.3465	180	7.0866	41	1.6142	140 000	31 470	96 500	21 690	8 000	5 000	4.30	9.50

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



Open



NR Z 2Z 2ZNR

Single row
Max type
Open, shielded, snap ring
Standard
Series: 206 – 220
Size: 30 mm – 100 mm
1.1811 in – 3.9370 in

Series: 305 – 318
Size: 25 mm – 90 mm
0. 9843 in – 3.5433 in

Designation	Principal dimensions						Basic load ratings				Speed rating[1]		Mass	
	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
206	30	1.1811	62	2.4409	16	0.6299	21 000	4 800	14 510	3 300	20 000	12 000	0.21	0.46
207	35	1.3780	72	2.8346	17	0.6693	27 760	6 300	19 740	4 500	17 000	11 000	0.31	0.68
208	40	1.5748	80	3.1496	18	0.7087	33 370	7 600	24 200	5 500	15 000	9 500	0.39	0.86
209	45	1.7717	85	3.3465	19	0.7480	35 100	7 900	26 070	5 900	14 000	9 000	0.44	0.97
210	50	1.9685	90	3.5433	20	0.7874	38 920	8 800	29 760	6 700	13 000	8 000	0.50	1.10
211	55	2.1654	100	3.9370	21	0.8268	48 110	10 900	37 670	8 500	12 000	7 500	0.66	1.50
212	60	2.3622	110	4.3307	22	0.8661	55 540	12 500	43 400	9 800	11 000	6 700	0.85	1.90
213	65	2.5591	120	4.7244	23	0.9055	60 500	13 700	58 500	13 200	10 000	6 000	1.05	2.30
214	70	2.7559	125	4.9213	24	0.9449	66 000	14 900	65 500	14 800	9 500	6 000	1.15	2.50
215	75	2.9528	130	5.1181	25	0.9843	72 100	16 300	72 000	16 200	9 000	5 600	1.25	2.80
216	80	3.1496	140	5.5118	26	1.0236	88 000	19 800	85 000	19 200	8 500	5 300	1.55	3.40
217	85	3.3465	150	5.9055	28	1.1024	96 800	21 800	100 000	22 500	7 500	4 800	1.95	4.30
218	90	3.5433	160	6.2992	30	1.1811	112 000	25 200	114 000	25 700	7 000	4 500	2.35	5.20
219	95	3.7402	170	6.6929	32	1.2598	121 000	27 300	122 000	27 500	6 700	4 300	2.70	6.00
220	100	3.9370	180	7.0866	34	1.3386	134 000	30 200	140 000	31 500	6 300	4 000	3.45	7.60
305	25	0.9843	62	2.4409	17	0.6693	22 900	5 200	15 600	3 600	20 000	13 000	0.24	0.50
306	30	1.1811	72	2.8346	19	0.7480	29 490	6 700	20 480	4 700	18 000	11 000	0.37	0.80
307	35	1.3780	80	3.1496	21	0.8268	34 860	7 900	24 640	5 600	16 000	10 000	0.48	1.10
308	40	1.5748	90	3.5433	23	0.9055	45 200	10 200	33 570	7 600	14 000	9 000	0.64	1.40
309	45	1.7717	100	3.9370	25	0.9843	55 260	12 500	41 260	9 300	13 000	8 000	0.88	1.90
310	50	1.9685	110	4.3307	27	1.0630	64 730	14 600	49 100	11 100	11 000	7 000	1.15	2.50
311	55	2.1654	120	4.7244	29	1.1417	79 200	17 800	67 000	15 100	10 000	6 700	1.50	3.30
312	60	2.3622	130	5.1181	31	1.2205	91 300	20 500	78 000	17 600	9 500	6 000	1.85	4.10
313	65	2.5591	140	5.5118	33	1.2992	102 000	22 900	90 000	20 300	9 000	5 600	2.30	5.10
314	70	2.7559	150	5.9055	35	1.3780	114 000	25 600	102 000	23 000	8 000	5 000	2.75	6.10
315	75	2.9528	160	6.2992	37	1.4567	125 000	28 100	116 000	26 100	7 500	4 800	3.25	7.20
316	80	3.1496	170	6.6929	39	1.5354	138 000	31 000	129 000	29 000	7 000	4 500	3.95	8.70
317	85	3.3465	180	7.0866	41	1.6142	147 000	33 100	146 000	32 900	6 700	4 300	4.60	10.10
318	90	3.5433	190	7.4803	43	1.6929	157 000	35 300	160 000	36 000	6 300	4 000	5.40	11.90

[1] For shielded limiting speed ratings, contact SKF Applications Engineering.

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

Notes

Angular contact ball bearings

7205 BE CB Y HC5

SRACBB – single row

A	30° contact angle
B	40° contact angle
BE	40° contact angle, high capacity, all ISO corners
C	25° contact angle
CA	Designed for duplex mounting with lower than normal (CB) axial clearance
CB	Designed for duplex mounting with normal axial clearance
CC	Designed for duplex mounting with larger than normal (CB) axial clearance
DGA	Duplex ground for a light preload
DGB	Duplex ground for a medium preload
GA	Designed for duplex mounting with a light axial preload
GB	Designed for duplex mounting with a medium axial preload
GC	Designed for duplex mounting with a heavy axial preload
G###	Designed for duplex mounting with a non-standard preload in dN
N1	One locating slot in outer ring side face
N2	Two locating slots in outer ring side face 180° apart
W64	Solid Oil lubricants
2RZP	Two seals
F	Machined steel cage
J	Pressed steel cage
M	Machined brass cage
P	Glass fiber reinforced PA66 cage
PH	Glass fiber reinforced PEEK cage
Y	Pressed brass cage

3200 A-2RS1 TN9

DRACBB – double row

A	Conrad design (no filling slot) with outwardly converging contact angles
AW	Conrad design (no filling slot) with inwardly converging contact angles
E	Max type design (filling slot), with outwardly converging contact angles
EW	Max type design (filling slot), with inwardly converging contact angles
D	Two piece inner ring design
DMA	Two piece inner ring design with a machined brass cage
NR	Snap ring groove and snap ring in the OD of the bearing
Z	Metal shield on one side
2Z	Metal shield on both side
RS1	Rubber seal on one side
2RS1	Rubber seal on both sides
W64	Solid Oil lubricants
TN9	Glass fiber reinforced PA66 cage
M	Machined brass cage
MT33	Lithium thickened grease with mineral base oil
C2	Less than normal (C0) axial internal clearance
C0	Normal axial internal clearance (not designated in part number)
C3	Greater than normal axial internal clearance

QJ 203 N2MA

FPACBB – four point

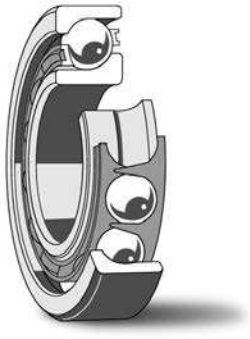
C2	Less than normal (C0) axial internal clearance
C2L	Lower half of C2 axial internal clearance
C0	Normal axial internal clearance (not designated in part number)
C3	Greater than normal (C0) axial internal clearance
C4	Greater than C3 axial internal clearance
F	Machined steel cage
MA	Machined brass cage, outer ring centered
N2	Two locating slots in outer ring side face 180° apart
PHAS	Glass fiber reinforced PEEK cage
P63	ABEC-3 precision and C3 internal clearance
LA	Machined light alloy cage, outer ring centered

Special features:

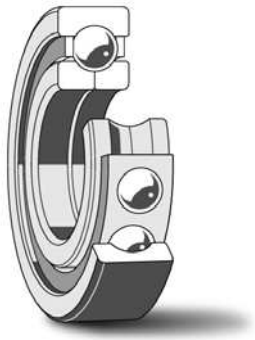
HC5	Ceramic ball set
W64	Solid Oil lubricants

Technical features

	Single row ACBB	Double row ACBB	Four-point contact ACBB
Boundary dimensions	In accordance with ISO 15 and ISO 12044	In accordance with ISO 15	In accordance with ISO 15
Tolerances	ABEC 3 (P6, dimension) ABEC 5 (P5, running accuracy)	ABEC 3	ABEC 3
Heat stabilization	302° F (150° C)	302° F (150° C)	302° F (150° C)
Misalignment	2 minutes of arc	2 minutes of arc	2 minutes of arc
Cage materials	Polyamide (P) Machined brass (M) Pressed brass (Y) Pressed steel (J)	Polyamide (TN9) Pressed steel (not designated)	Machined brass (M, MA)
Axial load – max	1.4 x C_0 for single or tandem mounted bearings 0.7 x C_0 for duplex mounted bearings	0.7 x C_0 – Conrad $F_a / F_r \leq 0.3$	0.7 x C_0
Seals	2RZP – Synthetic rubber (NBR)	2RS1 – Synthetic rubber (NBR)	Not available
Shields	Consult SKF for NILOS ring options	2Z – Stamped steel	Consult SKF for NILOS ring options

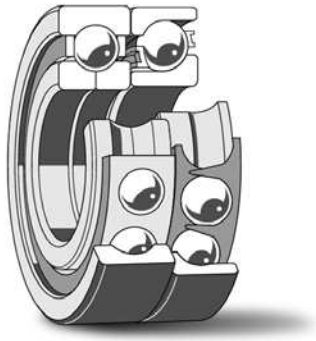


Single row angular contact ball bearing
(data tables on page 68)



Four-point angular contact ball bearing
(data tables on page 74)

Double row angular contact ball bearing
(data tables on page 81)



Thrust pack angular contact ball bearing
(data tables on page 80)

Introduction

SKF standard angular contact ball bearings are available with axial clearances, preloads and high precision. Single row angular contact ball bearings are designed to accommodate axial loads acting in one direction. Under radial loads, an induced force acting in the axial direction is produced which must be counteracted. Consequently, the single bearings are normally adjusted against a second bearing.

SKF angular contact ball bearings are produced in a wide variety of designs and sizes. Those commonly used in general engineering are shown in this catalog:

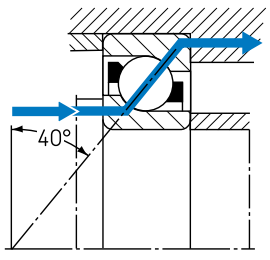
- Single row bearings
- Double row bearings
- Four-point contact ball bearings
- Thrust pack

Basic design

Angular contact ball bearings have raceways in the inner and outer rings that are displaced with respect to each other in the direction of the bearing axis. This means that they are suitable to accommodate combined loads; for example, simultaneously acting radial and axial loads.

The axial load carrying capacity of angular contact ball bearings increases with increasing contact angle a. This is defined as the angle between the line joining the points of contact between the ball and the raceways in the radial plane, along which the load is transmitted from one raceway to the other, and a line perpendicular to the bearing axis. For single row bearings, the magnitude of the contact angle is indicated by a suffix in the designation (B = 40 degrees) (Figure 1). For double row angular contact ball bearings, the contact angle is 30 degrees and for QJ four-point angular contact ball bearings the contact angle is 35 degrees and neither is indicated in the nomenclature.

Figure 1



Angular contact ball bearings, single row

Single row angular contact ball bearings can accommodate combined loads however the axial loads can only act in one direction (Figure 1). Under radial loads, a force acting in the axial direction is produced which must be counteracted. Consequently, the bearings are normally adjusted against a second bearing.

The single row angular contact ball bearings shown in the tables have one high and one low shoulder on each ring, enabling a large number of balls to be incorporated. This gives the bearings relatively high load carrying capacity. The contact angle is 40° (suffix B) and the bearings are therefore suitable for heavy axial loads. They are of non-separable design and permit relatively high-speed operation.

Bearings of the BE design feature an increased load carrying capacity, and either machined brass (M), glass fiber reinforced polyamide 6-6 (P), or pressed brass (Y) cages as standard.

The single row angular contact ball bearings are produced in two standard versions for different design purposes. The standard design (no additional designation suffix such as BEP) is intended for arrangements where only one bearing is used at each bearing position (Figure 4, page 66).

The most common version, identified by suffix CB (universal matching) is designed for arrangements where two or more bearings are mounted immediately adjacent to each other in random order (back-to-back, face-to-face or tandem, Figure 5, page 66). Because of demand, the larger sized bearings are only produced with universal matching (suffix CB).

SKF offers sealed single row 40° ACBB in both the 7200 and 7300 series. Consult SKF Engineering for specifications.

SKF Explorer class bearings

High performance SKF Explorer angular contact ball bearings are **printed in blue** in the product tables. SKF Explorer bearings retain the designation of the earlier standard bearings, e.g. 7208 BECBP. However, each bearing and its box are marked with the name “SKF Explorer”. Additional details on SKF Explorer performance class bearings can be found on page 25.

Product highlights

High running accuracy and speed capabilities
Angular contact ball bearings feature high radial and axial load capacity combined with high speed capabilities. SKF ACBB are made as standard to ISO P6 or ABMA ABEC 3 precision as standard.

Universal matching
Angular contact ball bearings are manufactured for universal mounting in multiple arrangements, including face-to-face, back-to-back and tandem.

Large product assortment
Available in a wide range (10 to 240 mm inside bore diameter) with cage and clearance / preload combinations. The double row design is available with a choice of shields, seals and snap rings as well as max-type bearings with a filling slot. Special application designs include 4-point contact and thrust pack.

Machined brass cage for heavy duty applications
The machined brass cage provides better performance and longer service life under harsh conditions and can be used in applications where a standard metal or plastic cage is normally used.

Meets ANSI and API pump requirements
Angular contact ball bearings are widely used in centrifugal pump applications and are manufactured in accordance with ANSI and API pump standards.

Introduction

Angular contact ball bearings, double row (Figure 1a)

SKF double row ball bearings are designed with solid or one-piece inner and outer rings with contact angles converging outside the bearing providing overall system rigidity.

The double row angular contact ball bearings are available in two styles, Conrad (suffix A) and Max type (suffix E). The more popular style is the Conrad type. This assembly uses a slight elastic deflection of the outer ring to insert the "last ball". This results in uninterrupted raceways with smooth running, and significant thrust carrying capacity in both directions.

Bearings of the Max type design (suffix E) have a filling slot for inserting the balls. This permits assembly with a greater number of balls than in the previously described Conrad type bearings.

Filling slot bearing features are similar to those of the Conrad type; however, because of the greater number of balls (with the exception of a few sizes) their radial load carrying capacity is often higher than that of the Conrad type. On the other hand, heavy thrust loads can be accommodated in only one direction. These bearings should be mounted so that the predominant axial load acting on the shaft is directed away from the filling slot (**Figure 1a**). Thrust loads in the direction of the filling slot **should not** exceed a thrust to radial load ratio of Fa / Fr = 0.3.

Part number markings are normally located on either the side face or the O.D. The side face marking is always on the side opposite the filling slot, and the O.D. marking is offset from the center away from the side with the filling slot. Therefore, even double sealed or shielded bearings with the filling slot covered from view can be oriented correctly.

Angular contact ball bearings, four-point (Figure 1b)

Four-point contact ball bearings are single row angular contact ball bearings having raceways which are designed to enable axial loads to be accommodated in both directions. They need less axial space than double row bearings. The four-point contact ball bearings shown in the following tables have a contact angle of 35° and a two-part inner ring, allowing a large number of balls to be incorporated, thus providing a high axial load carrying capacity. The bearings are separable, i.e. the inner ring halves and the outer ring with ball and cage assembly can be mounted individually.

Angular contact ball bearings, thrust pack

A thrust pack bearing consists of a standard QJ bearing and a single row angular contact bearing (BEGAM version) matched together and are intended for applications having predominate axial load in one direction. The axial load should not reverse direction during operation except for transient conditions such as at machine start up or shut-down, else the BEGAM bearing may become unloaded and have possible skidding problems. These bearings are matched in sets and are serialized and therefore **are not** interchangeable amongst sets.

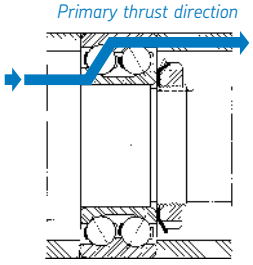
Variations

Angular contact ball bearings, single row for universal matching

These bearings are specially manufactured so that when mounted in random order (back-to-back, face-to-face or tandem) (**Figure 2**), but immediately adjacent to each other, the predetermined value of axial internal clearance or preload will be attained. An even distribution of load will occur without shims or similar devices.

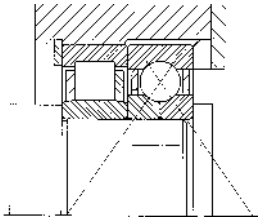
The standard bearings for universal matching carry the suffix CB where C indicates clearance and B the magnitude of the clearance (**Figure 3**). Bearings with a smaller or greater clearance are also available (suffixes CA and CC, respectively) as are bearings with light, moderate or heavy preload, (suffixes GA, GB and GC, respectively where G = preload or negative clearance). When ordering bearings for universal matching; for example 7206 BECB, it is necessary to indicate the number of individual bearings required since SKF does not stock these in sets.

Figure 1a



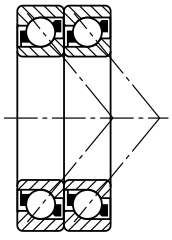
Double row, angular contact ball bearing

Figure 1b

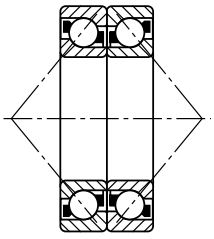


Four-point contact ball bearing

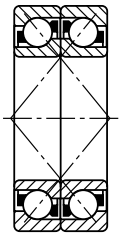
Figure 2



Tandem arrangement



Back-to-back arrangement



Face-to-face arrangement

Limiting speeds

The limiting speeds listed in the bearing tables are guideline values and are valid for single row bearings. The values under oil lubrication are maximum values and the values under grease lubrication are maximum values that can be attained using a good quality grease of a soft consistency.

If single bearings are to be adjusted against each other in matched sets of two, three or four bearings, the limiting speed values given in the bearing tables must be reduced. Reduction factors are given in the table below.

Reduction factors for limiting speeds angular contact ball bearings, single row

Bearing arrangement	Reduction factors
Two bearings	0.80
Three bearings	0.70
Four bearings	0.65

Load carrying capacity of bearing sets

The values given in the bearing tables for the basic dynamic load ratings apply to single bearings. The basic dynamic and static load ratings for sets of bearings arranged back-to-back, face-to-face or in tandem is obtained by multiplying the C value for a single bearings by:

Two bearings	1.62 x C
Three bearings	2.16 x C
Four bearings	2.64 x C

Where the basic static load rating is concerned, the table value C_0 should be multiplied by the number of bearings in the set, 2, 3 or 4.

For example, a pair of 7205 BEGAP angular contact ball bearings will have the following values:

C (single) = 3,510 lbs
C (pair) = 3,510 x 1.62 = 5,690 lbs

C_0 (single) = 2,290 lbs
C_0 (pair) = 2,290 x 2 = 4,580 lbs

Grease speed (single) = 10,000 rpm
Grease speed (pair) = 10,000 x 0.8 = 8,000 rpm

The C, C_0 and speed limits of the pair of bearings must be used for calculation purposes in this case.

Special solutions using angular contact ball bearings

- Precision angular contact ball bearings for machine tools
- Large-size single and double row bearings for heavy engineering applications
- Hub units produced for the automotive industry

The precision angular contact ball bearings are available with a contact angle of 15° (suffix CD) or 25° (suffix ACD) and can be supplied either individually or in matched sets of two, three or four bearings.

Details on these special solution products are available in publication BU/P1 13383 EN, Super-precision bearings.

Figure 3

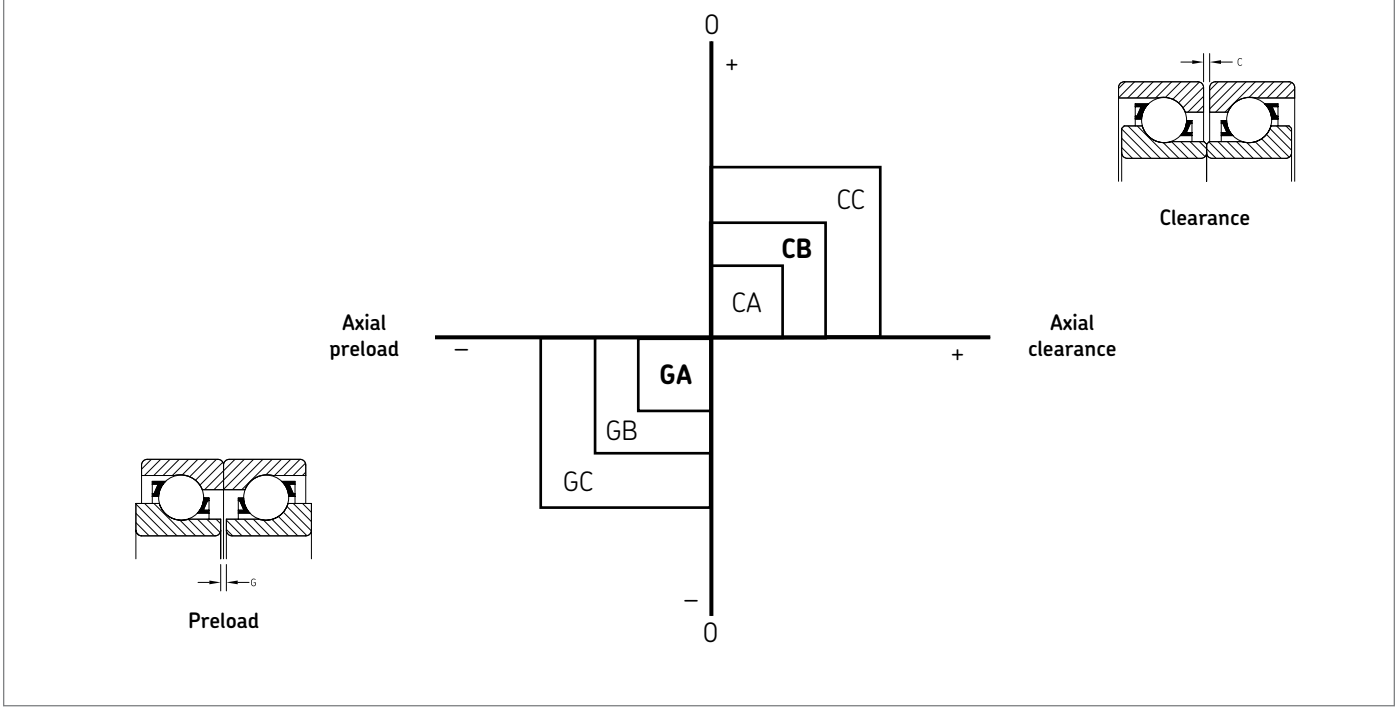
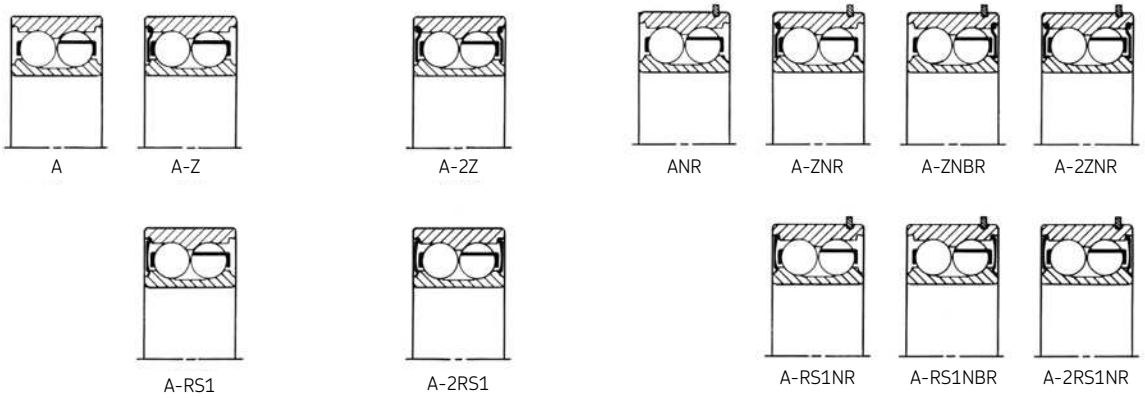


Figure 3a

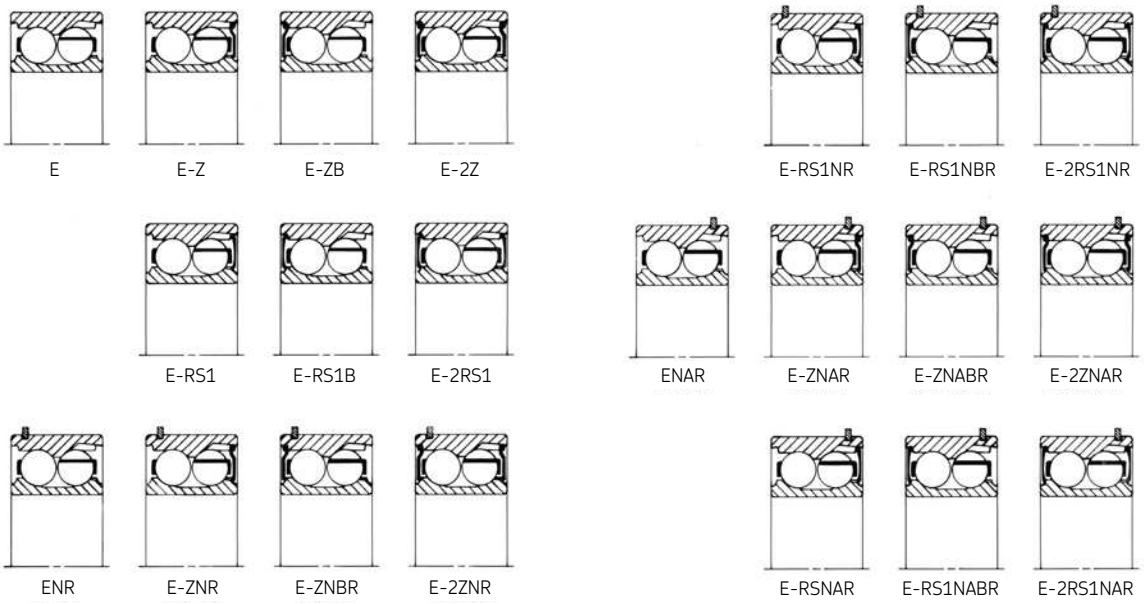
Conrad type

Designations for Conrad type double-row ball bearings with various combinations of seals, shields and snap rings



Max type

Designations for Max type (single slot) filling slot double-row ball bearings with various combinations of seals, shields and snap rings



Angular contact ball bearings, double row

Shielded (Z) and sealed (RS1) bearings

In addition to the open designs, most SKF double row ball bearings are offered with shields or seals, on either one or both sides. In most sizes, open bearings also contain seal grooves on the inner and/or outer rings.

Shields (suffix Z and 2Z) are non-contacting. They form a small gap with a chamfer on the inner ring. They are made from pressed steel and are fixed into an outer ring groove. This non-contacting closure is designed to retain lubricant and exclude larger particles of foreign matter. These shielded bearings are primarily intended for applications with inner ring rotation. Single shielded bearings can be used with oil or grease lubrication, while double shielded bearings are packed with a predetermined quantity of grease, providing maintenance-free operation for the life of the bearings.

Most bearings are also available with either one or two contacting seals, (suffix -RS1 and -2RS1). The seals consist of an oil and wear resistant elastomer bonded to a metal plate. The O.D. of either of the seal is firmly fixed into an outer ring groove. The lip at the I.D. of the seal contacts an inner ring seal chamfer for effective closure. This seal effectively excludes solid contaminants and moisture from the inside surfaces of the bearing. The permissible operating temperature range for the seals with a proper lubricant is -40° to +250° F (-40° to +120° C). Single sealed bearings can be regreased while double sealed bearings are greased for life.

They should not be heated at temperatures greater than 250° F (120° C) prior to mounting and must on no account be washed.

Snap rings

Snap rings (suffix NR) in the outer ring can provide an easy method of locating the bearing in the application. The snap rings and the snap ring grooves in the outer rings generally conform to ABMA Standard 20 and ISO standard 464. Important snap ring dimensions are shown in the deep groove ball bearings section, **Table 4** page 65.

Combination of seals, shields and snap rings

Most bearings are available in various combinations of seals, shields and snap rings. **Figure 3a** illustrates the designations for Conrad type bearings in various configurations and shows the same for max-type filling slot bearings.

In a single sealed or shielded Conrad type bearing with snap ring, the snap ring is normally on the opposite side of the seal or shield. An additional suffix B indicates the snap ring is on the same side as the seal or shield, e.g. NBR.

Max type bearings use a suffix A to indicate that the snap ring is on the side of the filling slot (NAR). Suffix B in single seal or shield designation indicates that the seal or shield is on the opposite side of the filling slot (RS1B or ZB).

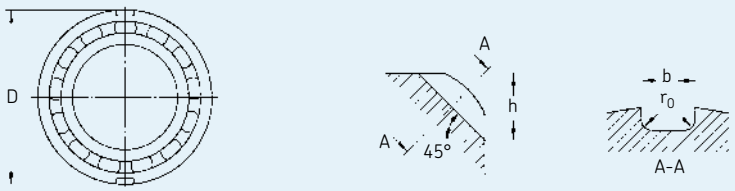
Angular contact ball bearings, four-point

Locating slots

Four-point contact ball bearings are designed to accommodate predominantly axial loads and are arranged as thrust bearings with radial clearance in the housing in many applications. To permit simple location and prevent rotation of the outer ring, all bearings with an outside diameter of 160 mm and above are provided with two locating slots in the outer ring (N2 design). The dimensions of these locating slots are given in **Table 1**.

Table 1

Locating slots in outer ring of four-point contact ball bearings



Outside diameter D				Dimensions Diameter series 2						Diameter series 3						Tolerance[1]	
over		incl.		h		b		r_0		h		b		r_0		t max.	
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
35	**1.3779**	**45**	**1.7116**	2.5	0.0398	3.5	0.1378	0.5	0.0197	–	–	–		–		0.2	0.0079
45	**1.7116**	**60**	**2.3622**	3.0	0.2953	4.5	0.1771	0.5	0.0197	3.5	0.1378	4.5	0.1771	0.5	0.0197	0.2	0.0079
60	**2.3622**	**72**	**2.8346**	3.5	0.1378	4.5	0.1771	0.5	0.0197	3.5	0.1378	4.5	0.1771	0.5	0.0197	0.2	0.0079
72	**2.8346**	**95**	**3.7401**	4.0	0.1575	5.5	0.2165	0.5	0.0197	4.0	0.1575	5.5	0.2165	0.5	0.0197	0.2	0.0079
95	**3.7401**	**115**	**4.5276**	5.0	0.1968	6.5	0.2559	0.5	0.0197	5.0	0.1968	6.5	0.2559	0.5	0.0197	0.2	0.0079
115	**4.5276**	**130**	**5.1181**	6.5	0.2559	6.5	0.2559	0.5	0.0197	8.1	0.3189	6.5	0.2559	1.0	0.0394	0.2	0.0079
130	**5.1181**	**145**	**5.7087**	8.1	0.3189	6.5	0.2559	1.0	0.0394	8.1	0.3189	6.5	0.2559	1.0	0.0394	0.2	0.0079
145	**5.7087**	**170**	**6.6929**	8.1	0.3189	6.5	0.2559	1.0	0.0394	10.1	0.3976	8.5	0.3346	2.0	0.0787	0.2	0.0079
170	**6.6929**	**190**	**7.4803**	10.1	0.3976	8.5	0.3346	2.0	0.0787	11.7	0.4606	10.5	0.4134	2.0	0.0787	0.2	0.0079
190	**7.4803**	**210**	**8.2677**	10.1	0.3976	8.5	0.3346	2.0	0.0787	11.7	0.4606	10.5	0.4134	2.0	0.0787	0.2	0.0079
210	**8.2677**	**240**	**9.4488**	11.7	0.4606	10.5	0.4134	2.0	0.0787	11.7	0.4606	10.5	0.4134	2.0	0.0787	0.2	0.0079
240	**9.4488**	**270**	**10.6299**	11.7	0.4606	10.5	0.4134	2.0	0.0787	11.7	0.4606	10.5	0.4134	2.0	0.0787	0.2	0.0079
270	**10.6299**	**400**	**15.7480**	12.7	0.5000	10.5	0.4134	2.0	0.0787	12.7	0.5000	10.5	0.4134	2.0	0.0787	0.4	0.0157

1) Other tolerances are in accordance with ISO 20515.
mm x 0.0394 = inches

Internal clearance

Axial internal clearance single row angular contact ball bearings

Internal clearance in a single row angular contact ball bearing is only obtained after mounting and is dependent on adjustment against a second bearing that provides axial location in the opposite direction.

Bearings for universal pairing (suffix CB) are the standard SKF bearings for paired mounting in random order (back-to-back, face-to-face or tandem). Bearings can be supplied with smaller axial internal clearance (suffix CA) or larger (suffix CC) or with preload (suffixes GA, GB and GC) for universal pairing.

Bearings identified by suffix CA, CB or CC can be mounted immediately adjacent to each other in any order and two or more bearings may be used. Bearings with preload of the GA, GB and GC designs can only be arranged in pairs, otherwise the preload will increase.

The values of axial internal clearance for the classes CA, CB and CC can be found in **Table 2**. They are valid for bearings arranged back-to-back or face-to-face before mounting and under zero measuring load. Preload values for classes GA, GB and GC are given in **Table 2a. Table 3** shows a conversion from the old preload suffices to the current suffix.

Table 2

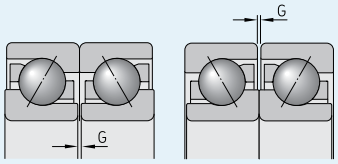
Unmounted axial internal clearance of single row angular contact ball bearings of series 72B (E), 73B (E) and 74B (B) when arranged in random pairs (back-to-back or face-to-face)

Bore diameter		Axial internal clearance													
		CA				CB				CC					
d															
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max		
mm		µm		in		µm		in		µm		in			
–	18	5	13	0.1969	0.5118	15	23	0.5906	0.9055	24	32	0.9449	1.2598		
18	30	7	15	0.2756	0.5906	18	26	0.7087	1.0236	32	40	1.2598	1.5748		
30	50	9	17	0.3543	0.6693	22	30	0.8661	1.1811	40	48	1.5748	1.8898		
50	80	11	23	0.4331	0.9055	26	38	1.0236	1.4961	48	60	1.8898	2.3622		
80	120	14	26	0.5512	1.0236	32	44	1.2598	1.7323	55	67	2.1654	2.6378		
120	160	17	29	0.6693	1.1417	35	47	1.3780	1.8504	62	74	2.4409	2.9134		
160	180	17	29	0.6693	1.1417	35	47	1.3780	1.8504	62	74	2.4409	2.9134		
180	250	21	37	0.8268	1.4567	45	61	1.7717	2.4016	74	90	2.9134	3.5433		
250	315	26	42	1.0236	1.6535	52	68	2.0472	2.6772	90	106	3.5433	4.1732		

Radial clearance [~=] 0.85 axial clearance.
µm x 0.00004 = inches

Table 2a

Unmounted preload of single row angular contact ball bearings of series 72B (E), 73B (E) and 74 (B) when arranged in random pairs (back-to-back or face-to-face)



Bore diameter		Preload																			
		GA						GB						GC							
d																					
over	incl.	min	max	min	max	max	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		N	lbf	µm		in		N		lbf		µm		in		N		lbf	
10	**18**	4	-4	0.0002	-0.0002	80	18	-2	-10	-0.0001	-0.0004	30	330	7	74	-8	-16	-0.0003	-0.0006	230	660	52	149
18	**30**	4	-4	0.0002	-0.0002	120	27	-2	-10	-0.0001	-0.0004	40	480	9	108	-8	-16	-0.0003	-0.0006	340	970	76	218
30	**50**	4	-4	0.0002	-0.0002	160	36	-2	-10	-0.0001	-0.0004	60	630	13	142	-8	-16	-0.0003	-0.0006	450	1 280	101	288
50	**80**	6	-6	0.0002	-0.0002	380	86	-3	-15	-0.0001	-0.0006	140	1 500	31	338	-12	-24	-0.0005	-0.0009	1 080	3 050	243	686
80	**120**	6	-6	0.0002	-0.0002	410	92	-3	-15	-0.0001	-0.0006	150	1 600	34	360	-12	-24	-0.0005	-0.0009	1 150	3 250	259	731
120	**180**	6	-6	0.0002	-0.0002	540	122	-3	-15	-0.0001	-0.0006	200	2 150	45	484	-12	-24	-0.0005	-0.0009	1 500	4 300	337	968
180	**250**	8	-8	0.0003	-0.0003	940	212	-4	-20	-0.0002	-0.0008	330	3 700	74	833	-16	-32	-0.0006	-0.0013	2 650	7 500	596	1 688

µm x 0.00004 = inches

Axial internal clearance double row angular contact ball bearings

Internal clearances for double row angular contact ball bearings differ from deep groove ball bearings in that axial rather than radial clearance is specified. **Table 4** shows the axial clearance of the SKF double row angular contact bearings in four standard clearance ranges; C2 (less than normal clearance), normal clearance, C3 (greater than normal clearance), and C4 (greater than C3 clearance). These are valid for bearings before mounting under zero measuring load.

Axial internal clearance four-point contact ball bearings

Standard manufacture SKF four-point contact ball bearings have Normal axial internal clearance. Most sizes can also be supplied with greater or smaller internal clearance than Normal. Availability should be checked before ordering.

The values for the axial internal clearance are shown in **Table 5** and are for bearings before mounting under zero measuring load.

Old versus current designations on SRACBB (Table 3)

Use this table to determine which current preload designations replace old preload designations. Simply find the bearing bore size/diameter on the left, and the old preload across the top. The current designation is at the point where the bore size/diameter row intersects with the old preload column.

***Example:** 73**08** BEAG1Y = 08 bore size,
40 mm bore diameter
G1 (100 lbs) preload
Replace with: 73**08** BE**GB**Y

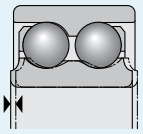
Table 3

Old/current preload designation interchange, single row angular contact ball bearings 72xx, 73xx and 74xx series

Bore size	Bore diameter (mm)	Old preload suffix					
		G02	G05	G1*	G2	G3	G5
00	10	GB	GB	GC	–	–	–
01	12	GB	GB	GC	–	–	–
02	15	GB	GB	GC	–	–	–
03	17	GB	GB	GC	–	–	–
04	20	GA	GB	GC	–	–	–
06	30	GA	GB	GC	–	–	–
07	35	GA	GB	GB	GC	–	–
08*	**40***	**GA**	**GB**	**GB***	**GC**	**–**	**–**
09	45	GA	GB	GB	GC	–	–
10	50	GA	GB	GB	GC	–	–
11	55	GA	GA	GB	GB	GB	GC
12	60	GA	GA	GB	GB	GB	GC
13	65	GA	GA	GB	GB	GB	GC
14	70	GA	GA	GB	GB	GB	GC
15	75	GA	GA	GB	GB	GB	GC
16	80	GA	GA	GB	GB	GB	GC
17	85	GA	GA	GB	GB	GB	GC
18	90	GA	GA	GB	GB	GB	GC
19	95	GA	GA	GB	GB	GB	GC
20	100	GA	GA	GB	GB	GB	GC
21	105	GA	GA	GB	GB	GB	GC
22	110	GA	GA	GB	GB	GB	GC
24	120	GA	GA	GB	GB	GB	GC
26	130	GA	GA	GB	GB	GB	GC
28	140	GA	GA	GB	GB	GB	GC
30	150	GA	GA	GB	GB	GB	GC
32	160	GA	GA	GB	GB	GB	GC
34	170	GA	GA	GB	GB	GB	GC
36	180	GA	GA	GB	GB	GB	GC

Table 4

Axial internal clearance of Conrad type and filling slot double row angular contact ball bearings 32 and 33 series (values in 0.001 mm)



Bore diameter d		Axial internal clearance															
		C2				Normal (not designated)				C3				C4			
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		µm		in		µm		in		µm		in	
-	10	1	11	0.0000	0.0004	5	21	0.0002	0.0008	12	28	0.0005	0.0011	25	45	0.0010	0.0018
10	18	1	12	0.0000	0.0005	6	23	0.0002	0.0009	13	31	0.0005	0.0012	27	47	0.0011	0.0019
18	24	2	14	0.0001	0.0006	7	25	0.0003	0.0010	16	34	0.0006	0.0013	28	48	0.0011	0.0019
24	30	2	15	0.0001	0.0006	8	27	0.0003	0.0011	18	37	0.0007	0.0015	30	50	0.0012	0.0020
30	40	2	16	0.0001	0.0006	9	29	0.0004	0.0011	21	40	0.0008	0.0016	33	54	0.0013	0.0021
40	50	2	18	0.0001	0.0007	11	33	0.0004	0.0013	23	44	0.0009	0.0017	36	58	0.0014	0.0023
50	65	3	22	0.0001	0.0009	13	36	0.0005	0.0014	26	48	0.0010	0.0019	40	63	0.0016	0.0025
65	80	3	24	0.0001	0.0009	15	40	0.0006	0.0016	30	54	0.0012	0.0021	46	71	0.0018	0.0028
80	100	3	26	0.0001	0.0010	18	46	0.0007	0.0018	35	63	0.0014	0.0025	55	83	0.0022	0.0033
100	110	4	30	0.0002	0.0012	22	53	0.0009	0.0021	42	73	0.0017	0.0029	65	96	0.0026	0.0038

Table 5

Axial internal clearance of four-point contact ball bearings

Bore diameter d				Axial internal clearance															
				C2				Normal (not designated)				C3				C4			
over		incl.		min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm	in	mm	in	µm		in		µm		in		µm		in		µm		in	
10	**18**	**0.3937**	**0.7087**	15	65	0.0006	0.0026	50	95	0.0020	0.0038	85	130	0.0034	0.0052	120	165	0.0048	0.0066
18	**40**	**0.7087**	**1.5748**	25	75	0.0010	0.0030	65	110	0.0026	0.0044	100	150	0.0040	0.0060	135	185	0.0054	0.0074
40	**60**	**1.5748**	**2.3622**	35	85	0.0014	0.0034	75	125	0.0030	0.0050	110	165	0.0044	0.0066	150	200	0.0060	0.0080
60	**80**	**2.3622**	**3.1496**	45	100	0.0018	0.0040	85	140	0.0034	0.0056	125	175	0.0050	0.0070	165	215	0.0066	0.0086
80	**100**	**3.1496**	**3.9370**	55	110	0.0022	0.0044	95	150	0.0038	0.0060	135	190	0.0054	0.0076	180	235	0.0072	0.0094
100	**140**	**3.9370**	**5.5118**	70	130	0.0028	0.0052	115	175	0.0046	0.0070	160	220	0.0064	0.0088	205	265	0.0082	0.0106
140	**180**	**5.5118**	**7.0866**	90	155	0.0036	0.0062	135	200	0.0054	0.0080	185	250	0.0074	0.0100	235	300	0.0094	0.0120
180	**220**	**7.0866**	**8.6614**	105	175	0.0042	0.0070	155	225	0.0062	0.0102	210	280	0.0084	0.0112	260	330	0.0104	0.0132

Radial clearance ≈0.7 axial clearance.

Design of bearing arrangements

When designing bearing arrangements using single row angular contact ball bearings it is necessary to pay attention to the special characteristics of the bearings. Because of their internal design they cannot be used singly and must be used either with a second bearing **(Figure 4)** or as bearing sets **(Figure 5)**.

As already mentioned under "Internal clearance", it is necessary to adjust the two single row angular contact ball bearings of an arrangement against each other until the operational clearance or requisite preload is obtained.

Arrangements using bearings for universal mounting, where the bearings are immediately adjacent to each other, do not require adjustment. Here, the required operational preload or clearance is obtained by choosing an appropriate preload or clearance class as well as suitable fits for the bearings in the housing and on the shaft.

For more specific mounting instructions visit the SKF website at www.skf.com/mount or contact SKF Applications Engineering.

Figure 4

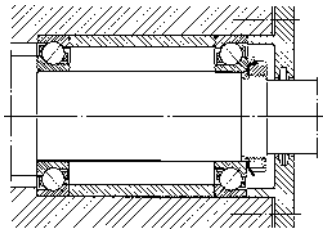


Figure 5

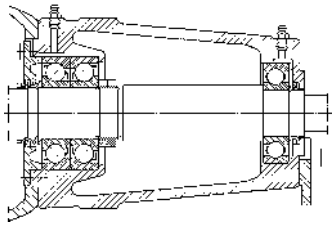


Table 6

Calculation factors for double row angular contact ball bearings

Bearing series	Calculation factors				
	e	X	Y1	Y2	Y0
32 A, 33 A	0.80	0.63	0.78	1.24	0.66
33 D	1.34	0.54	0.47	0.81	0.44
33 DNRCBM	1.14	0.57	0.55	0.93	0.52

Loads

Equivalent dynamic bearing load for single row bearings of the B and BE designs when mounted as single bearings or paired in tandem

$P = F_r$ when $F_a / F_r \leq 1.14$
$P = 0.35\ F_r + 0.57\ F_a$ when $F_a / F_r > 1.14$

where
P = equivalent dynamic bearing load
F_r = radial load acting on the bearing
F_a = axial load acting on the bearing

When determining the axial force Fa reference should be made to the following section.

Equivalent dynamic bearing load for bearings mounted in pairs, back-to-back or face-to-face

$P = F_r + 0.55\ F_a$
when $F_a / F_r \leq 1.14$

$P = 0.57\ F_r + 0.93\ F_a$
when $F_a / F_r > 1.14$

F_a and F_r are the forces acting on the bearing pair.

Equivalent dynamic bearing load for double row bearings

For the double row angular contact bearings described in this catalog, the equivalent dynamic bearing load is

$F_a / F_r \leq e \rightarrow P = F_r + Y_1 F_a$
$F_a / F_r > e \rightarrow P = XF_r + Y_2 F_a$

where
P = equivalent dynamic bearing load
X, Y_1, Y_2, Y_0 = calculation factors (see **Table 6**)
F_r = actual radial bearing load
F_a = actual axial bearing load

Equivalent dynamic bearing load for four-point contact bearings

When four-point contact ball bearings with a contact angle of 35° are used as locating bearings to accommodate radial and axial loads, the equivalent dynamic bearing load can be obtained from

$P = F_r + 0.66\ F_a$
when $F_a / F_r \leq 0.95$

$P = 0.6\ F_r + 1.07\ F_a$
when $F_a / F_r > 0.95$

It should be remembered that satisfactory performance of the ball set of four-point contact ball bearings is only obtained when the balls are in contact with the raceways at two points, i.e. when the axial load

$F_a \geq 1.27\ F_r$

If the four-point contact ball bearing is used as a thrust bearing in combination with other radial bearings, and it is mounted with radial clearance in the housing, the equivalent dynamic bearing load becomes

$P = 1.07\ F_a$

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 angular contact ball bearings, particularly if they run at high speeds where the inertia forces of the balls 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 balls and the raceways.

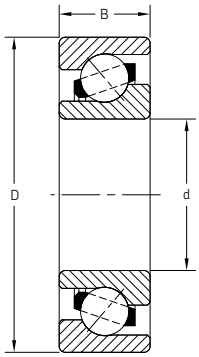
The requisite minimum radial load to be applied in such cases can be determined by using the tools available on the SKF website **skfusa.com**. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

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, by applying a preload to the inner or outer rings, or by using springs.

Frequency vibration data

Frequency vibration data is available on the SKF website, **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

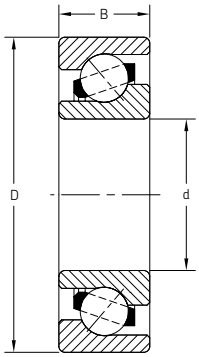
Single row
Standard
Series: 7024 B – 70/1250 AMB
Size: 120 mm – 1250 mm
4.2744 in – 49.2126 in



These bearings are typically used in pairs and require additional suffix letters to define the end play and preload values as well as cage type for the specific application conditions. Refer to page 60 for details.

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
7024 B	120	4.7244	180	7.0866	28	1.1024	87 100	19 570	93 000	20 900	3 000	4 000	2.4	5.29
7028 B	140	5.5118	210	8.2677	33	1.2992	114 000	25 620	129 000	28 990	2 400	3 400	3.85	8.49
7030 B	150	5.9055	225	8.8583	35	1.3780	133 000	29 890	146 000	32 810	2 400	3 200	4.7	10.36
7034 B	170	6.6929	260	10.2362	42	1.6535	172 000	38 650	204 000	45 840	2 000	2 800	7.65	16.87
7036 B	180	7.0866	280	11.0236	46	1.8110	195 000	43 820	240 000	53 900	1 900	2 600	10	22.05
7038 B	190	7.4803	290	11.4173	46	1.8110	199 000	44 720	255 000	57 300	1 800	2 400	10.5	23.15
7040 B	200	7.8740	310	12.2047	51	2.0079	225 000	50 600	290 000	65 200	1 700	2 200	18	39.69
7044 B	220	8.6614	340	13.3858	56	2.2047	255 000	57 300	355 000	79 800	1 600	2 000	18	39.69
7048 B	240	9.4488	360	14.1732	56	2.2047	260 000	58 400	375 000	84 300	1 500	1 900	19	41.90
7052 B	260	10.2362	400	15.7480	65	2.5591	332 000	74 600	510 000	114 600	1 300	1 700	30	66.15
7056 B	280	11.0236	420	16.5354	65	2.5591	338 000	76 000	540 000	121 300	1 200	1 600	30	66.15
7060 B	300	11.8110	460	18.1102	74	2.9134	377 000	84 700	630 000	141 600	1 400	1 500	42.5	93.71
7064 B	320	12.5984	480	18.8976	74	2.9134	390 000	87 600	670 000	150 600	1 300	1 400	44.5	98.12
7068 B	340	13.3858	520	20.4724	82	3.2283	449 000	100 900	815 000	183 100	1 200	1 300	59.5	131.20
7072 B	360	14.1732	540	21.2598	82	3.2283	462 000	103 800	850 000	191 000	1 200	1 200	61.8	136.27
7076 B	380	14.9606	560	22.0472	82	3.2283	468 000	105 200	850 000	191 000	1 100	1 200	64.7	142.66
7080 B	400	15.7480	600	23.6220	90	3.5433	527 000	118 400	1 020 000	229 200	1 000	1 100	90.5	199.55
7084 B	420	16.5354	620	24.4094	90	3.5433	540 000	121 300	1 060 000	238 200	1 000	1 000	88	194.04
7088 B	440	17.3228	650	25.5906	94	3.7008	572 000	128 500	1 180 000	265 200	950	950	100	220.50
7092 B	460	18.1102	680	26.7717	100	3.9370	618 000	138 900	1 290 000	289 900	900	900	120	264.60
7096 B	480	18.8976	700	27.5591	100	3.9370	624 000	140 200	1 340 000	301 100	850	900	125	275.63
70/500 B	500	19.6850	720	28.3465	100	3.9370	637 000	143 100	1 400 000	314 600	800	850	130	286.65
70/530 B	530	20.8661	780	30.7087	112	4.4094	741 000	166 500	1 700 000	382 000	750	800	180	396.90
70/560 AMB	560	22.0472	820	32.2835	115	4.5276	793 000	178 200	1 900 000	427 000	700	700	203	447.62
708/600 AMB	600	23.6220	730	28.7402	42	1.6535	338 000	76 000	735 000	165 200	800	850	38.5	84.89
70/600 AGMB	600	23.6220	870	34.2520	118	4.6457	884 000	198 700	2 160 000	485 400	700	750	236	520.38
70/630 AMB	630	24.8031	920	36.2205	128	5.0394	956 000	214 800	2 450 000	550 600	560	700	270	595.35
70/670 AMB	670	26.3780	980	38.5827	136	5.3543	1 170 000	262 900	3 100 000	696 600	560	560	353	778.37
70/710 AMB	710	27.9528	1 030	40.5512	140	5.5118	1 190 000	267 400	3 250 000	730 300	560	600	370	815.85
70/750 AMB	750	29.5276	1 090	42.9134	150	5.9055	1 300 000	292 100	3 650 000	820 200	530	560	445	981.23
70/800 AMB	800	31.4961	1 150	45.2756	155	6.1024	1 250 000	280 900	3 650 000	820 200	450	450	524	1155.42
70/850 AMB	850	33.4646	1 220	48.0315	165	6.4961	1 380 000	310 100	4 150 000	932 600	400	400	626	1380.33
70/900 AMB	900	35.4331	1 280	50.3937	170	6.6929	1 560 000	350 600	4 900 000	1 101 100	400	430	665	1466.33
70/950 AMB	950	37.4016	1 360	53.5433	180	7.0866	1 630 000	366 300	5 200 000	1 168 500	380	400	805	1775.03
70/1000 AMB	1 000	39.3701	1 420	55.9055	185	7.2835	1 630 000	366 300	5 400 000	1 213 500	360	380	890	1962.45
70/1060 AMB	1 060	41.7323	1 500	59.0551	195	7.6772	1 680 000	377 500	5 700 000	1 280 900	320	340	1 050	2315.25
70/1120 AMB	1 120	44.0945	1 580	62.2047	200	7.8740	1 720 000	386 500	5 850 000	1 314 600	300	320	1 150	2535.75
70/1180 AMB	1 180	46.4567	1 660	65.3543	212	8.3465	1 740 000	391 000	6 200 000	1 393 300	280	280	1 350	2976.75
708/1250 AMB	1 250	49.2126	1 500	59.0551	80	3.1496	806 000	181 100	2 700 000	606 700	280	300	295	650.48
70/1250 AMB	1 250	49.2126	1 750	68.8976	218	8.5827	1 780 000	400 000	6 550 000	1 471 900	240	260	1 600	3528.00

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



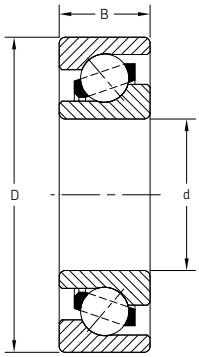
Single row
Standard and SKF Explorer
Series: 7200 BE – 7280 B
Size: 10 mm – 400 mm
0.3937 in – 15.7480 in

These bearings are typically used in pairs and require additional suffix letters to define the end play and preload values as well as cage type for the specific application conditions. Refer to page 60 for details.

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
7200 BE	10	0.3937	30	1.1811	9	0.3543	7 020	1 580	3 350	750	22 000	30 000	0.03	0.07
7201 BE	12	0.4724	32	1.2598	10	0.3937	7 610	1 710	3 800	850	20 000	26 000	0.036	0.08
7202 BE	15	0.5906	35	1.3780	11	0.4331	8 320	1 870	4 400	990	18 000	24 000	0.045	0.10
7203 BE	17	0.6693	40	1.5748	12	0.4724	10 400	2 340	5 500	1 240	15 000	20 000	0.065	0.14
7204 BE	20	0.7874	47	1.8504	14	0.5512	13 300	2 990	7 650	1 720	13 000	18 000	0.11	0.24
7205 BE	25	0.9843	52	2.0472	15	0.5906	14 800	3 330	9 300	2 090	11 000	15 000	0.13	0.29
7206 BE	30	1.1811	62	2.4409	16	0.6299	22 500	5 060	14 300	3 210	9 500	13 000	0.2	0.44
7207 BE	35	1.3780	72	2.8346	17	0.6693	29 100	6 540	19 000	4 270	8 000	11 000	0.28	0.62
7208 BE	40	1.5748	80	3.1496	18	0.7087	34 500	7 750	24 000	5 390	7 000	10 000	0.37	0.82
7209 BE	45	1.7717	85	3.3465	19	0.7480	35 800	8 040	26 000	5 840	6 700	9 000	0.42	0.93
7210 BE	50	1.9685	90	3.5433	20	0.7874	37 700	8 470	28 500	6 400	6 300	8 500	0.47	1.04
7211 BE	55	2.1654	100	3.9370	21	0.8268	46 200	10 380	36 000	8 090	5 600	7 500	0.62	1.37
7212 BE	60	2.3622	110	4.3307	22	0.8661	57 200	12 850	45 500	10 220	5 000	7 000	0.8	1.76
7213 BE	65	2.5591	120	4.7244	23	0.9055	66 300	14 900	54 000	12 130	4 800	6 300	1	2.21
7214 BE	70	2.7559	125	4.9213	24	0.9449	67 600	15 190	56 000	12 580	4 500	6 000	1.1	2.43
7215 BE	75	2.9528	130	5.1181	25	0.9843	70 200	15 780	60 000	13 480	5 600	5 600	1.2	2.65
7216 BE	80	3.1496	140	5.5118	26	1.0236	80 600	18 110	69 500	15 620	4 000	5 300	1.45	3.20
7217 BE	85	3.3465	150	5.9055	28	1.1024	95 600	21 480	83 000	18 650	3 800	5 000	1.85	4.08
7218 BE	90	3.5433	160	6.2992	30	1.1811	108 000	24 270	96 500	21 690	3 600	4 500	2.3	5.07
7219 BE	95	3.7402	170	6.6929	32	1.2598	124 000	27 870	108 000	24 270	3 200	4 300	2.7	5.95
7220 BE	100	3.9370	180	7.0866	34	1.3386	135 000	30 340	122 000	27 420	3 200	4 000	3.3	7.28
7221 BE	105	4.1339	190	7.4803	36	1.4173	148 000	33 260	137 000	30 790	3 000	3 800	3.95	8.71
7222 BE	110	4.3307	200	7.8740	38	1.4961	153 000	34 380	143 000	32 130	2 800	3 600	4.6	10.14
7224 B	120	4.7244	215	8.4646	40	1.5748	165 000	37 080	163 000	36 630	2 600	3 600	5.89	12.99
7226 B	130	5.1181	230	9.0551	40	1.5748	186 000	41 800	193 000	43 370	2 400	3 400	6.95	15.32
7228 B	140	5.5118	250	9.8425	42	1.6535	199 000	44 720	212 000	47 640	2 200	3 000	8.85	19.51
7230 B	150	5.9055	270	10.6299	45	1.7717	216 000	48 540	240 000	53 900	2 000	3 200	11.5	25.36
7232 B	160	6.2992	290	11.4173	48	1.8898	255 000	57 300	300 000	67 400	2 000	3 000	14	30.87
7234 B	170	6.6929	310	12.2047	52	2.0472	281 000	63 100	345 000	77 500	1 800	2 800	17.5	38.59
7236 B	180	7.0866	320	12.5984	52	2.0472	291 000	65 400	375 000	84 300	1 800	2 600	18	39.69
7238 B	190	7.4803	340	13.3858	55	2.1654	307 000	69 000	405 000	91 000	1 800	2 600	22	48.51
7240 B	200	7.8740	360	14.1732	58	2.2835	325 000	73 000	430 000	96 600	1 600	2 400	25	55.13
7244 B	220	8.6614	400	15.7480	65	2.5591	390 000	87 600	560 000	125 800	1 400	2 200	37	81.59
7248 B	240	9.4488	440	17.3228	72	2.8346	449 000	100 900	670 000	150 600	1 600	2 600	49	108.05
7252 B	260	10.2362	480	18.8976	80	3.1496	507 000	113 900	780 000	175 300	1 400	1 500	66	145.53
7256 B	280	11.0236	500	19.6850	80	3.1496	507 000	113 900	830 000	186 500	1 400	1 400	67.5	148.84
7260 B	300	11.8110	540	21.2598	85	3.3465	553 000	124 300	930 000	209 000	1 300	1 300	85	187.43
7264 B	320	12.5984	580	22.8346	92	3.6220	572 000	128 500	1 020 000	229 200	1 200	1 200	110	242.55
7268 B	340	13.3858	620	24.4094	92	3.6220	702 000	157 800	1 340 000	301 100	1 100	1 100	125	275.63
7272 B	360	14.1732	650	25.5906	95	3.7402	806 000	181 100	1 559 999	350 600	1 900	1 700	145	319.73
7280 B	400	15.7480	720	28.3465	103	4.0551	728 000	163 600	1 500 000	337 100	900	950	190	418.95

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

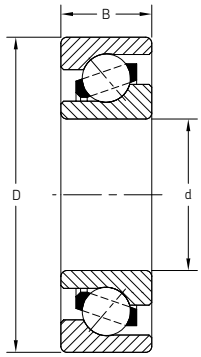
Single row
Standard and SKF Explorer
Series: 7301 BE – 7348 B
Size: 12 mm – 240 mm
0.4724 in – 9.4488 in



These bearings are typically used in pairs and require additional suffix letters to define the end play and preload values as well as cage type for the specific application conditions. Refer to page 60 for details.

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
7301 BE	12	0.4724	37	1.4567	12	0.4724	10 600	2 380	5 000	1 120	18 000	24 000	0.06	0.13
7302 BE	15	0.5906	42	1.6535	13	0.5118	13 000	2 920	6 700	1 510	15 000	20 000	0.08	0.18
7303 BE	17	0.6693	47	1.8504	14	0.5512	15 900	3 570	8 300	1 870	14 000	19 000	0.11	0.24
7304 BE	20	0.7874	52	2.0472	15	0.5906	17 400	3 910	9 500	2 130	12 000	16 000	0.14	0.31
7305 BE	25	0.9843	62	2.4409	17	0.6693	24 200	5 440	14 000	3 150	10 000	14 000	0.23	0.51
7306 BE	30	1.1811	72	2.8346	19	0.7480	32 500	7 300	19 300	4 340	8 500	12 000	0.34	0.75
7307 BE	35	1.3780	80	3.1496	21	0.8268	39 000	8 760	24 500	5 510	7 500	10 000	0.45	0.99
7308 BE	40	1.5748	90	3.5433	23	0.9055	46 200	10 380	30 500	6 850	6 700	9 000	0.62	1.37
7309 BE	45	1.7717	100	3.9370	25	0.9843	55 900	12 560	37 500	8 430	6 000	8 000	0.82	1.81
7310 BE	50	1.9685	110	4.3307	27	1.0630	68 900	15 480	47 500	10 670	5 300	7 500	1.1	2.43
7311 BE	55	2.1654	120	4.7244	29	1.1417	79 300	17 820	55 000	12 360	5 000	6 700	1.4	3.09
7312 BE	60	2.3622	130	5.1181	31	1.2205	95 600	21 480	69 500	15 620	4 500	6 000	1.75	3.86
7313 BE	65	2.5591	140	5.5118	33	1.2992	108 000	24 270	80 000	17 980	4 300	5 600	2.15	4.74
7314 BE	70	2.7559	150	5.9055	35	1.3780	119 000	26 740	90 000	20 220	4 000	5 300	2.65	5.84
7315 BE	75	2.9528	160	6.2992	37	1.4567	125 000	28 090	98 000	22 020	3 800	5 000	3.2	7.06
7316 BE	80	3.1496	170	6.6929	39	1.5354	135 000	30 340	110 000	24 720	3 600	4 500	3.8	8.38
7317 BE	85	3.3465	180	7.0866	41	1.6142	146 000	32 810	122 000	27 420	3 200	4 300	4.45	9.81
7318 BE	90	3.5433	190	7.4803	43	1.6929	156 000	35 060	134 000	30 110	3 200	4 000	5.2	11.47
7319 BE	95	3.7402	200	7.8740	45	1.7717	168 000	37 750	150 000	33 710	3 000	3 800	6.05	13.34
7320 BE	100	3.9370	215	8.4646	47	1.8504	203 000	45 620	190 000	42 700	2 800	3 600	7.5	16.54
7321 BE	105	4.1339	225	8.8583	49	1.9291	203 000	45 620	193 000	43 370	2 600	3 400	8.55	18.85
7322 BE	110	4.3307	240	9.4488	50	1.9685	225 000	50 600	224 000	50 300	2 400	3 200	10	22.05
7324 B	120	4.7244	260	10.2362	55	2.1654	238 000	53 500	250 000	56 200	2 200	3 600	14.5	31.97
7326 B	130	5.1181	280	11.0236	58	2.2835	276 000	62 000	305 000	68 500	2 000	2 800	17.1	37.71
7328 B	140	5.5118	300	11.8110	62	2.4409	302 000	67 900	345 000	77 500	2 000	3 000	21.5	47.41
7330 B	150	5.9055	320	12.5984	65	2.5591	332 000	74 600	390 000	87 600	1 900	2 800	26	57.33
7332 B	160	6.2992	340	13.3858	68	2.6772	358 000	80 400	440 000	98 900	1 800	2 600	30.32	66.86
7334 B	170	6.6929	360	14.1732	72	2.8346	390 000	87 600	490 000	110 100	1 600	2 600	36	79.38
7336 B	180	7.0866	380	14.9606	75	2.9528	410 000	92 100	540 000	121 300	1 600	2 400	42	92.61
7338 B	190	7.4803	400	15.7480	78	3.0709	442 000	99 300	600 000	134 800	1 500	2 200	48.5	106.94
7340 B	200	7.8740	420	16.5354	80	3.1496	462 000	103 800	655 000	147 200	1 400	2 200	53	116.87
7344 B	220	8.6614	460	18.1102	88	3.4646	494 000	111 000	720 000	161 800	1 600	1 700	70	154.35
7348 B	240	9.4488	500	19.6850	95	3.7402	559 000	125 600	800 000	179 800	1 400	1 500	89.4	197.13

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



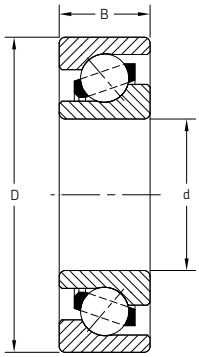
Single row
Series: 7405 B – 7420
Standard
Size: 25 mm – 100 mm
0.9843 in – 3.9370 in

Series: AMS 22 ABP – ALS 40 ABM
Standard
Size: 69.85 mm – 127 mm
2.75 in – 5.00 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
7405 B	25	0.9843	80	3.1496	21	0.8268	39 700	8 920	23 600	5 300	11 000	11 000	0.61	1.35
7406 B	30	1.1811	90	3.5433	23	0.9055	47 500	10 670	29 000	6 520	10 000	10 000	0.83	1.83
7407 B	35	1.3780	100	3.9370	25	0.9843	60 500	13 600	38 000	8 540	8 500	9 000	1.10	2.43
7408 B	40	1.5748	110	4.3307	27	1.0630	70 200	15 780	45 000	10 110	8 000	8 000	1.40	3.09
7409 B	45	1.7717	120	4.7244	29	1.1417	85 200	19 150	55 000	12 360	7 000	7 500	1.55	3.42
7410 B	50	1.9685	130	5.1181	31	1.2205	95 600	21 480	64 000	14 380	6 300	6 700	2.25	4.96
7411 B	55	2.1654	140	5.5118	33	1.2992	111 000	24 940	76 500	17 190	6 000	6 300	2.35	5.18
7412 B	60	2.3622	150	5.9055	35	1.3780	119 000	26 740	86 500	19 440	5 600	6 000	3.30	7.28
7413 B	65	2.5591	160	6.2992	37	1.4567	130 000	29 210	96 500	21 690	5 000	5 300	4.00	8.82
7414 B	70	2.7559	180	7.0866	42	1.6535	159 000	35 730	127 000	28 540	4 500	4 800	5.00	11.03
7415 B	75	2.9528	190	7.4803	45	1.7717	168 000	37 750	140 000	31 460	4 300	4 500	6.85	15.10
7416 B	80	3.1496	200	7.8740	48	1.8898	178 000	40 000	153 000	34 380	4 000	4 300	8.10	17.86
7417 B	85	3.3465	210	8.2677	52	2.0472	190 000	42 700	166 000	37 300	3 800	4 000	9.60	21.17
7418	90	3.5433	225	8.8583	54	2.1260	212 000	47 640	193 000	43 370	3 600	3 800	11.50	25.36
7419	95	3.7402	250	9.8425	55	2.1654	242 000	54 400	236 000	53 000	3 400	3 400	13.50	29.77
7420	100	3.9370	265	10.4331	60	2.3622	265 000	59 600	270 000	60 700	3 200	3 200	15.50	34.18
AMS 22 ABP	69.85	2.7500	158.75	6.2500	34.92	1.3750	138 000	31 010	104 000	23 370	6 000	6 000	3.60	7.94
AMS 24 ABP	76.20	3.0000	177.80	7.0000	39.69	1.5625	163 000	36 630	137 000	30 790	5 000	5 000	5.21	11.49
ALS 28 ABP	88.90	3.5000	165.10	6.5000	28.57	1.1250	127 000	28 540	112 000	25 170	5 000	5 000	2.89	6.37
ALS 32 ABP	101.60	4.0000	184.15	7.2500	31.75	1.2500	159 000	35 730	143 000	32 130	4 500	4 500	3.15	6.95
ALS 40 ABM	127.00	5.0000	228.60	9.0000	34.92	1.3750	186 000	41 800	190 000	42 700	3 600	3 600	6.10	13.45

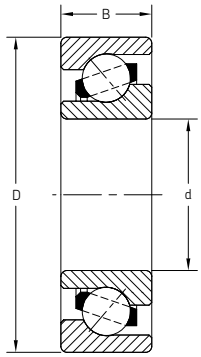
Consult SKF USA Inc. prior to design change or order placement.

Single row
Standard
Series: 71964 AC – 719/710 ACMB
Size: 320 mm – 710 mm
12.5894 in – 27.9528 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
71964 AC	320	12.5984	440	17.3228	56	2.2047	351 000	78 900	585 000	131 500	1 500	1 600	25.5	56.23
71968 AC	340	13.3858	460	18.1102	56	2.2047	338 000	76 000	585 000	131 500	1 500	1 500	24	52.92
71972 B	360	14.1732	480	18.8976	56	2.2047	302 000	67 900	550 000	123 600	1 400	1 500	28.5	62.84
71972 A	360	14.1732	480	18.8976	56	2.2047	338 000	76 000	610 000	137 100	1 400	1 500	28.5	62.84
71972 AC	360	14.1732	480	18.8976	56	2.2047	351 000	78 900	630 000	141 600	1 400	1 500	28	61.74
71976 AC	380	14.9606	520	20.4724	65	2.5591	410 000	92 100	735 000	165 200	1 300	1 300	40.5	89.30
71980 A	400	15.7480	540	21.2598	65	2.5591	403 000	90 600	735 000	165 200	1 200	1 200	39	86.00
71984 B	420	16.5354	560	22.0472	65	2.5591	364 000	81 800	670 000	150 600	1 200	1 200	44.5	98.12
71984 A	420	16.5354	560	22.0472	65	2.5591	410 000	92 100	765 000	171 900	1 200	1 200	42	92.61
71988 AC	440	17.3228	600	23.6220	74	2.9134	507 000	113 900	1 040 000	233 700	1 000	1 100	61	134.51
71992 AC	460	18.1102	620	24.4094	74	2.9134	507 000	113 900	1 040 000	233 700	100	1 100	58	127.89
719/500 AGMB	500	19.6850	670	26.3780	78	3.0709	553 000	124 300	1 220 000	274 200	950	1 000	78	171.99
719/530 ACM	530	20.8661	710	27.9528	82	3.2283	618 000	138 900	1 340 000	301 100	850	900	92	202.86
719/560 AMB	560	22.0472	750	29.5276	85	3.3465	592 000	133 000	1 290 000	289 900	800	850	105	231.53
719/600 ACM	600	23.6220	800	31.4961	90	3.5433	715 000	160 700	1 730 000	388 800	750	800	125	275.63
719/710 ACMB	710	27.9528	950	37.4016	106	4.1732	852 000	191 500	2 200 000	494 400	600	630	195	429.98

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

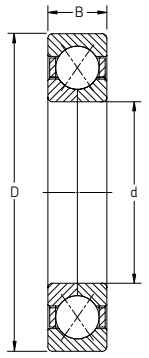


Single row
Standard
Series: 71872 AC – 718/1250 AMB
Size: 360 mm – 1250 mm
14.1732 in – 49.2126 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
71872 AC	360	14.1732	440	17.3228	38	1.4961	234 000	52 600	425 000	95 500	1 500	1 500	12	26.46
71876 AC	380	14.9606	480	18.8976	46	1.8110	291 000	65 400	500 000	112 400	1 300	1 400	18	39.69
71892 AG	460	18.1102	580	22.8346	56	2.2047	371 000	83 400	765 000	171 900	1 100	1 100	35	77.18
718/500 AM	500	19.6850	620	24.4094	56	2.2047	390 000	87 600	850 000	191 000	1 000	1 000	38	83.79
718/530 AMB	530	20.8661	650	25.5906	56	2.2047	390 000	87 600	900 000	202 200	950	1 000	39.5	87.10
718/560 AMB	560	22.0472	680	26.7717	56	2.2047	397 000	89 200	930 000	209 000	850	900	41.5	91.51
718/600 AMB	600	23.6220	730	28.7402	60	2.3622	449 000	100 900	1 100 000	247 200	800	850	52	114.66
718/670 AMB	670	26.3780	820	32.2835	69	2.7165	527 000	118 400	1 250 000	280 900	700	750	77	169.79
718/670 ACMB	670	26.3780	820	32.2835	69	2.7165	553 000	124 300	1 290 000	289 900	700	750	77	169.79
718/710 AMB	710	27.9528	870	34.2520	74	2.9134	572 000	128 500	1 560 000	350 600	630	670	93.5	206.17
718/710 ACMB	710	27.9528	870	34.2520	74	2.9134	605 000	136 000	1 630 000	366 300	630	630	92.4	203.74
718/750 AGMB	750	29.5276	920	36.2205	78	3.0709	618 000	138 900	1 730 000	388 800	600	630	110	242.55
718/750 ACMB	750	29.5276	920	36.2205	78	3.0709	650 000	146 100	1 800 000	404 500	600	630	110	242.55
718/850 AMB	850	33.4646	1 030	40.5512	82	3.2283	689 000	154 800	1 860 000	418 000	500	530	140	308.70
718/1000 AMB	1 000	39.3701	1 220	48.0315	100	3.9370	923 000	207 400	2 750 000	618 000	400	430	243	535.82
718/1120 AMB	1 120	44.0945	1 360	53.5433	106	4.1732	1 060 000	238 200	3 750 000	842 700	340	360	320	705.60
718/1250 AMB	1 250	49.2126	1 500	59.0551	112	4.4094	1 140 000	256 200	3 900 000	876 400	280	300	390	859.95

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

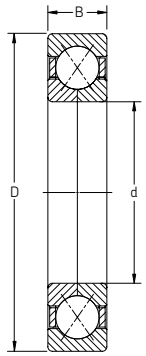
Single row
Four-point ACBB
SKF Explorer
Series: QJ 202 N2MA – QJ 215 MA
Size: 15 mm – 75 mm
0.5906 in – 2.9528 in



N2 Design

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 202 N2MA	15	0.5906	35	1.3780	11	0.4331	12 700	2 850	8 300	1 870	36 000	0.06	0.1
QJ 203 N2MA	17	0.6693	40	1.5748	12	0.4724	17 000	3 820	11 400	2 560	30 000	0.08	0.2
QJ 205 MA	25	0.9843	52	2.0472	15	0.5906	27 000	6 070	21 200	4 760	22 000	0.16	0.4
QJ 205 N2MA	25	0.9843	52	2.0472	15	0.5906	27 000	6 070	21 200	4 760	22 000	0.16	0.4
QJ 206 MA	30	1.1811	62	2.4409	16	0.6299	37 500	8 430	30 500	6 850	19 000	0.24	0.5
QJ 206 N2MA	30	1.1811	62	2.4409	16	0.6299	37 500	8 430	30 500	6 850	19 000	0.24	0.5
QJ 207 N2MA	35	1.3780	72	2.8346	17	0.6693	49 000	11 010	41 500	9 330	17 000	0.35	0.8
QJ 208 MA	40	1.5748	80	3.1496	18	0.7087	56 000	12 580	49 000	11 010	15 000	0.45	1.0
QJ 208 N2MA	40	1.5748	80	3.1496	18	0.7087	56 000	12 580	49 000	11 010	15 000	0.45	1.0
QJ 209 MA	45	1.7717	85	3.3465	19	0.7480	63 000	14 160	56 000	12 580	14 000	0.52	1.1
QJ 210 MA	50	1.9685	90	3.5433	20	0.7874	65 500	14 720	61 000	13 710	13 000	0.59	1.3
QJ 211 MA	55	2.1654	100	3.9370	21	0.8268	85 000	19 100	83 000	18 650	11 000	0.77	1.7
QJ 211 N2MA	55	2.1654	100	3.9370	21	0.8268	85 000	19 100	83 000	18 650	11 000	0.77	1.7
QJ 212 MA	60	2.3622	110	4.3307	22	0.8661	96 500	21 690	93 000	20 900	10 000	0.99	2.2
QJ 212 N2MA	60	2.3622	110	4.3307	22	0.8661	96 500	21 690	93 000	20 900	10 000	0.99	2.2
QJ 213 MA	65	2.5591	120	4.7244	23	0.9055	110 000	24 720	112 000	25 170	9 500	1.20	2.6
QJ 213 N2MA	65	2.5591	120	4.7244	23	0.9055	110 000	24 720	112 000	25 170	9 500	1.20	2.6
QJ 214 MA	70	2.7559	125	4.9213	24	0.9449	120 000	26 970	122 000	27 420	9 000	1.30	2.9
QJ 214 N2MA	70	2.7559	125	4.9213	24	0.9449	120 000	26 970	122 000	27 420	9 000	1.30	2.9
QJ 215 MA	75	2.9528	130	5.1181	25	0.9843	125 000	28 090	132 000	29 660	8 500	1.45	3.2

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



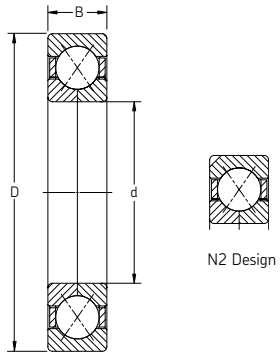
N2 Design

Single row
Four-point ACBB
Standard and SKF Explorer
Series: QJ 215 N2MA – QJ 260 N2MA
Size: 75 mm – 260 mm
2.9528 in – 10.2362 in

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 215 N2MA	75	2.9528	130	5.1181	25	0.9843	125 000	28 090	132 000	29 660	8 500	1.45	3.2
QJ 216 MA	80	3.1496	140	5.5118	26	1.0236	146 000	32 810	156 000	35 060	8 000	1.85	4.1
QJ 216 N2MA	80	3.1496	140	5.5118	26	1.0236	146 000	32 810	156 000	35 060	8 000	1.85	4.1
QJ 217 MA	85	3.3465	150	5.9055	28	1.1024	156 000	35 060	173 000	38 880	7 500	2.25	5.0
QJ 217 N2MA	85	3.3465	150	5.9055	28	1.1024	156 000	35 060	173 000	38 880	7 500	2.25	5.0
QJ 218 N2MA	90	3.5433	160	6.2992	30	1.1811	186 000	41 800	200 000	44 940	7 000	2.75	6.1
QJ 219 N2MA	95	3.7402	170	6.6929	32	1.2598	212 000	47 640	232 000	52 100	6 700	3.35	7.4
QJ 220 N2MA	100	3.9370	180	7.0866	34	1.3386	236 000	53 000	265 000	59 600	6 300	4.05	8.9
QJ 222 N2MA	110	4.3307	200	7.8740	38	1.4961	280 000	62 900	325 000	73 000	5 600	5.60	12.3
QJ 224 N2MA	120	4.7244	215	8.4646	40	1.5748	300 000	67 400	365 000	82 000	5 000	6.95	15.3
QJ 226 N2MA	130	5.1181	230	9.0551	40	1.5748	310 000	69 700	400 000	89 900	4 800	7.75	17.1
QJ 228 N2MA	140	5.5118	250	9.8425	42	1.6535	345 000	77 500	475 000	106 700	4 300	9.85	21.7
QJ 230 N2MA	150	5.9055	270	10.6299	45	1.7717	400 000	89 900	570 000	128 100	4 000	12.50	27.6
QJ 232 N2MA	160	6.2992	290	11.4173	48	1.8898	450 000	101 100	670 000	150 600	3 800	15.50	34.2
QJ 234 N2MA	170	6.6929	310	12.2047	52	2.0472	455 000	102 200	720 000	161 800	3 400	19.50	43.0
QJ 236 N2MA	180	7.0866	320	12.5984	52	2.0472	475 000	106 700	765 000	171 900	3 400	20.50	45.2
QJ 238 N2MA	190	7.4803	340	13.3858	55	2.1654	510 000	114 600	850 000	191 000	3 200	23.30	51.4
QJ 240 N2MA	200	7.8740	360	14.1732	58	2.2835	540 000	121 300	915 000	205 600	3 000	28.50	62.8
QJ 248 N2MA	240	9.4488	440	17.3228	72	2.8346	650 000	146 100	1 200 000	269 700	2 400	53.20	117.3
QJ 252 N2MA	260	10.2362	480	18.8976	80	3.1496	728 000	163 600	1 430 000	321 300	2 200	68.00	149.9

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

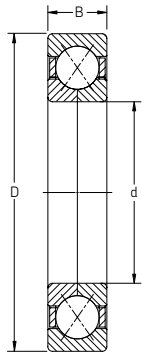
Single row
Four-point ACBB
SKF Explorer
Series: QJ 303 N2MA – QJ 313 MA
Size: 17 mm – 65 mm
0.6693 in – 2.5591 in



N2 Design

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 303 N2MA	17	0.6693	47	1.8504	14	0.5512	23 400	5 260	15 000	3 370	28 000	0.14	0.3
QJ 304 MA	20	0.7874	52	2.0472	15	0.5906	32 000	7 190	21 600	4 850	24 000	0.18	0.4
QJ 304 N2MA	20	0.7874	52	2.0472	15	0.5906	32 000	7 190	21 600	4 850	24 000	0.18	0.4
QJ 305 MA	25	0.9843	62	2.4409	17	0.6693	42 500	9 550	30 000	6 740	20 000	0.29	0.6
QJ 305 N2MA	25	0.9843	62	2.4409	17	0.6693	42 500	9 550	30 000	6 740	20 000	0.29	0.6
QJ 306 MA	30	1.1811	72	2.8346	19	0.7480	53 000	11 910	41 500	9 330	17 000	0.42	0.9
QJ 306 N2MA	30	1.1811	72	2.8346	19	0.7480	53 000	11 910	41 500	9 330	17 000	0.42	0.9
QJ 307 MA	35	1.3780	80	3.1496	21	0.8268	64 000	14 380	51 000	11 460	15 000	0.57	1.3
QJ 307 N2MA	35	1.3780	80	3.1496	21	0.8268	64 000	14 380	51 000	11 460	15 000	0.57	1.3
QJ 308 MA	40	1.5748	90	3.5433	23	0.9055	78 000	17 530	64 000	14 380	14 000	0.78	1.7
QJ 308 N2MA	40	1.5748	90	3.5433	23	0.9055	78 000	17 530	64 000	14 380	14 000	0.78	1.7
QJ 309 MA	45	1.7717	100	3.9370	25	0.9843	100 000	22 470	83 000	18 650	12 000	1.05	2.3
QJ 309 N2MA	45	1.7717	100	3.9370	25	0.9843	100 000	22 470	83 000	18 650	12 000	1.05	2.3
QJ 310 MA	50	1.9685	110	4.3307	27	1.0630	118 000	26 520	100 000	22 470	11 000	1.35	3.0
QJ 311 MA	55	2.1654	120	4.7244	29	1.1417	137 000	30 790	118 000	26 520	10 000	1.75	3.9
QJ 311 N2MA	55	2.1654	120	4.7244	29	1.1417	137 000	30 790	118 000	26 520	10 000	1.75	3.9
QJ 312 MA	60	2.3622	130	5.1181	31	1.2205	156 000	35 060	137 000	30 790	9 000	2.15	4.7
QJ 312 N2MA	60	2.3622	130	5.1181	31	1.2205	156 000	35 060	137 000	30 790	9 000	2.15	4.7
QJ 313 MA	65	2.5591	140	5.5118	33	1.2992	176 000	39 550	156 000	35 060	8 500	2.70	6.0

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



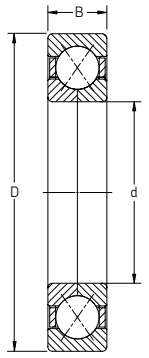
N2 Design

Single row
Four-point ACBB
Standard and SKF Explorer
Series: QJ 314 MA – QJ 344 N2MA
Size: 70 mm – 220 mm
2.7559 in – 8.6614 in

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 314 MA	70	2.7559	150	5.9055	35	1.3780	200 000	44 940	180 000	40 450	8 000	3.15	6.9
QJ 314 N2MA	70	2.7559	150	5.9055	35	1.3780	200 000	44 940	180 000	40 450	8 000	3.15	6.9
QJ 315 N2MA	75	2.9528	160	6.2992	37	1.4567	216 000	48 540	200 000	44 940	7 500	3.90	8.6
QJ 316 N2MA	80	3.1496	170	6.6929	39	1.5354	232 000	52 100	228 000	51 200	7 000	4.60	10.1
QJ 317 N2MA	85	3.3465	180	7.0866	41	1.6142	250 000	56 200	255 000	57 300	6 700	5.45	12.0
QJ 318 N2MA	90	3.5433	190	7.4803	43	1.6929	285 000	64 000	305 000	68 500	6 300	6.45	14.2
QJ 319 N2MA	95	3.7402	200	7.8740	45	1.7717	305 000	68 500	340 000	76 400	6 000	7.45	16.4
QJ 320 N2MA	100	3.9370	215	8.4646	47	1.8504	345 000	77 500	400 000	89 900	5 600	9.30	20.5
QJ 322 N2MA	110	4.3307	240	9.4488	50	1.9685	390 000	87 600	480 000	107 900	4 800	12.50	27.6
QJ 324 N2MA	120	4.7244	260	10.2362	55	2.1654	415 000	93 300	530 000	119 100	4 500	16.00	35.3
QJ 326 N2MA	130	5.1181	280	11.0236	58	2.2835	455 000	102 200	610 000	137 100	4 000	19.50	43.0
QJ 328 N2MA	140	5.5118	300	11.8110	62	2.4409	500 000	112 400	695 000	156 200	3 800	24.00	52.9
QJ 330 N2MA	150	5.9055	320	12.5984	65	2.5591	530 000	119 100	765 000	171 900	3 600	29.00	63.9
QJ 332 N2MA	160	6.2992	340	13.3858	68	2.6772	570 000	128 100	880 000	197 800	3 400	34.50	76.1
QJ 334 N2MA	170	6.6929	360	14.1732	72	2.8346	655 000	147 200	1 040 000	233 700	3 200	41.50	91.5
QJ 336 N2MA	180	7.0866	380	14.9606	75	2.9528	680 000	152 800	1 100 000	247 200	3 000	47.50	104.7
QJ 338 N2MA	190	7.4803	400	15.7480	78	3.0709	702 000	157 800	1 159 999	260 700	2 800	49.00	108.0
QJ 344 N2MA	220	8.6614	460	18.1102	88	3.4646	780 000	175 300	1 399 999	314 600	2 400	78.00	172.0

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

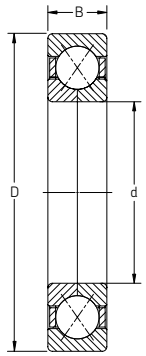
Single row
Four-point ACBB
Standard and SKF Explorer
Series: QJ 1017 N2MA – QJ 1096 N2MA
Size: 85 mm – 480 mm
3.3465 in – 18.8976 in



N2 Design

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 1017 N2MA	85	3.3465	130	5.1181	22	0.8661	99 500	22 360	114 000	25 620	8 000	1.10	2.40
QJ 1021 N2MA	105	4.1339	160	6.2992	26	1.0236	135 000	30 340	170 000	38 200	6 700	2.00	4.40
QJ 1022 N2MA	110	4.3307	170	6.6929	28	1.1024	153 000	34 380	193 000	43 370	6 300	2.50	5.50
QJ 1030 N2MA	150	5.9055	225	8.8583	35	1.3780	242 000	54 400	335 000	75 300	4 500	5.25	11.60
QJ 1032 N2MA	160	6.2992	240	9.4488	38	1.4961	270 000	60 700	380 000	85 400	4 300	6.45	14.20
QJ 1038 N2MA	190	7.4803	290	11.4173	46	1.8110	364 000	81 800	560 000	125 800	3 400	11.50	25.40
QJ 1040 N2MA	200	7.8740	310	12.2047	51	2.0079	390 000	87 600	620 000	139 300	3 200	15.00	33.10
QJ 1056 N2MA	280	11.0236	420	16.5354	65	2.5591	585 000	131 500	1 139 999	256 200	2 400	33.50	73.90
QJ 1060 MA	300	11.8110	460	18.1102	74	2.9134	702 000	157 800	1 429 999	321 300	2 200	47.00	103.60
QJ 1060 N2MA	300	11.8110	460	18.1102	74	2.9134	650 000	146 100	1 340 000	301 100	2 200	47.50	104.70
QJ 1064 MA	320	12.5984	480	18.8976	74	2.9134	715 000	160 700	1 529 999	343 800	2 000	50.00	110.30
QJ 1064 N2MA	320	12.5984	480	18.8976	74	2.9134	715 000	160 700	1 530 000	343 800	2 000	50.00	110.30
QJ 1068 N2MA	340	13.3858	520	20.4724	82	3.2283	780 000	175 300	1 700 000	382 000	1 800	67.50	148.80
QJ 1072 N2MA	360	14.1732	540	21.2598	82	3.2283	852 000	191 500	1 930 000	433 700	1 700	70.50	155.50
QJ 1076 N2MA	380	14.9606	560	22.0472	82	3.2283	884 000	198 700	2 039 999	458 400	1 600	72.50	159.90
QJ 1080 N2MA	400	15.7480	600	23.6220	90	3.5433	904 000	203 100	2 160 000	485 400	1 500	95.00	209.50
QJ 1084 N2MA	420	16.5354	620	24.4094	90	3.5433	923 000	207 400	2 280 000	512 400	1 500	99.50	219.40
QJ 1088 N2MA	440	17.3228	650	25.5906	94	3.7008	995 000	223 600	2 500 000	561 800	1 400	115.00	253.60
QJ 1092 N2MA	460	18.1102	680	26.7717	100	3.9370	1 040 000	233 700	2 650 000	595 500	1 300	130.00	286.70
QJ 1096 N2MA	480	18.8976	700	27.5591	100	3.9370	1 060 000	238 200	2 799 999	629 200	1 300	135.00	297.70

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



N2 Design

Single row
Four-point ACBB
Standard and SKF Explorer
Series: QJ 1096 N2MA – QJ 1296 N2MA
Size: 200 mm – 480 mm
7.8740 in – 18.8976 in

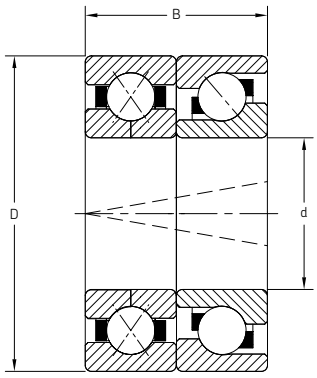
Series: QJ 1984 N2MA – QJ 1988 N2MA
Size: 420 mm – 440 mm
16.5354 in – 17.3228 in

Designation	Principal dimensions						Basic load ratings				Speed rating	Mass	
	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
QJ 1240 N2MA	200	7.8740	360	14.1732	70	2.7559	520 000	116 900	865 000	194 400	3 000	32.50	71.70
QJ 1244 N2MA	220	8.6614	400	15.7480	78	3.0709	592 000	133 000	1 020 000	229 200	2 600	45.50	100.30
QJ 1248 MA/344524	240	9.4488	440	17.3228	85	3.3465	663 000	149 000	1 220 000	274 200	2 400	61.00	134.50
QJ 1252 MA	260	10.2362	480	18.8976	90	3.5433	741 000	166 500	1 460 000	328 100	2 200	78.50	173.10
QJ 1252 N2MA	260	10.2362	480	18.8976	90	3.5433	741 000	166 500	1 459 999	328 100	2 200	78.00	172.00
QJ 1256 N2MA	280	11.0236	500	19.6850	90	3.5433	728 000	163 600	1 460 000	328 100	2 000	82.00	180.80
QJ 1260 N2MA	300	11.8110	540	21.2598	98	3.8583	832 000	187 000	1 760 000	395 500	1 900	105.00	231.50
QJ 1264 N2MA	320	12.5984	580	22.8346	105	4.1339	956 000	214 800	2 080 000	467 400	1 700	130.00	286.70
QJ 1268 MA/344524	340	13.3858	620	24.4094	118	4.6457	1 060 000	238 200	2 450 000	550 600	1 600	165.00	363.80
QJ 1272 N2MA	360	14.1732	650	25.5906	122	4.8031	1 110 000	249 400	2 600 000	584 300	1 500	190.00	419.00
QJ 1276 N2MA	380	14.9606	680	26.7717	132	5.1969	1 170 000	262 900	2 850 000	640 400	1 400	220.00	485.10
QJ 1280 N2MA	400	15.7480	720	28.3465	140	5.5118	1 300 000	292 100	3 250 000	730 300	1 300	265.00	584.30
QJ 1284 N2MA	420	16.5354	760	29.9213	150	5.9055	1 430 000	321 300	3 750 000	842 700	1 300	315.00	694.60
QJ 1288 N2MA	440	17.3228	790	31.1024	155	6.1024	1 400 000	314 600	3 750 000	842 700	1 200	350.00	771.80
QJ 1292 N2MA	460	18.1102	830	32.6772	165	6.4961	1 530 000	343 800	4 250 000	955 100	1 100	415.00	915.10
QJ 1296 N2MA	480	18.8976	870	34.2520	170	6.6929	1 680 000	377 500	4 750 000	1 067 400	1 100	470.00	1036.40
QJ 1984 MA	420	16.5354	560	22.0472	65	2.5591	637 000	143 100	1 600 000	359 600	1 600	51.00	112.50
QJ 1988 N2MA	440	17.3228	600	23.6220	74	2.9134	761 000	171 000	1 900 000	427 000	1 500	65.00	143.30

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

Thrust pack
Double row
Four-point ACBB and Single row ACBB
Standard
Series: BA2B 459304 – BA2B 459328
Size: 20 mm – 140 mm
0.7874 in – 5.5118 in

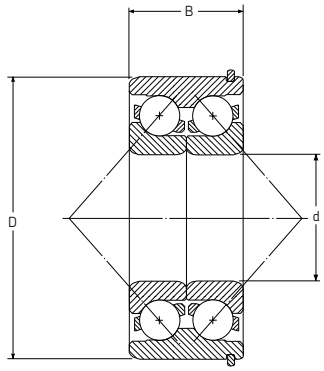
Series: BA2B 459418 – BA2B 459430
Size: 90 mm – 150 mm
3.5433 in – 5.9055 in



BA2B 4593XX

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
BA2B 459304	20	0.7874	52	2.0472	30	1.1811	30 700	6 900	20 800	4 680	9 000	13 000	0.28	0.62
BA2B 459306	30	1.1811	72	2.8346	38	1.4961	55 900	12 600	42 500	9 550	6 700	9 000	0.68	1.50
BA2B 459307	35	1.3780	80	3.1496	42	1.6535	62 400	14 000	49 000	11 000	6 000	8 000	0.90	2.00
BA2B 459308	40	1.5748	90	3.5433	46	1.8110	79 300	17 800	65 500	14 700	5 300	7 000	1.25	2.75
BA2B 459309	45	1.7717	100	3.9370	50	1.9685	97 500	21 900	81 500	18 300	4 800	6 300	1.70	3.75
BA2B 459310	50	1.9685	110	4.3307	54	2.1260	119 000	26 800	102 000	22 900	4 300	5 600	2.20	4.85
BA2B 459311	55	2.1654	120	4.7244	58	2.2835	138 000	31 000	120 000	27 000	3 800	5 000	2.80	6.15
BA2B 459312	60	2.3622	130	5.1181	62	2.4409	156 000	35 100	140 000	31 500	3 600	4 800	3.50	7.70
BA2B 459313	65	2.5591	140	5.5118	65	2.5984	174 000	39 100	160 000	36 000	3 200	4 300	4.30	9.50
BA2B 459314	70	2.7559	150	5.9055	70	2.7559	195 000	43 800	180 000	40 500	3 000	4 000	5.30	11.50
BA2B 459317	85	3.3465	180	7.0866	82	3.2283	251 000	56 400	265 000	59 600	2 400	3 400	8.90	19.50
BA2B 459318	90	3.5433	190	7.4803	86	3.3858	270 000	60 700	290 000	65 200	2 200	3 200	10.50	23.00
BA2B 459320	100	3.9370	215	8.4646	94	3.7008	325 000	73 100	380 000	85 400	1 900	2 800	15.00	33.00
BA2B 459322	110	4.3307	240	9.4488	100	3.9370	364 000	81 800	450 000	101 000	1 700	2 400	20.00	44.00
BA2B 459326	130	5.1181	280	11.0236	116	4.5669	403 000	90 600	540 000	121 000	1 500	2 000	35.00	77.00
BA2B 459328	140	5.5118	300	11.8110	124	4.8819	449 000	101 000	620 000	139 000	1 400	1 900	43.00	95.00
BA2B 459418	90	3.5433	160	6.2992	60	2.3622	178 000	40 000	193 000	43 400	2 600	3 600	4.60	10.00
BA2B 459420	100	3.9370	180	7.0866	68	2.6772	221 000	49 700	245 000	55 100	2 200	3 200	6.60	14.50
BA2B 459422	110	4.3307	200	7.8740	76	2.9921	260 000	58 500	310 000	69 700	1 900	2 800	9.20	20.50
BA2B 459424	120	4.7244	215	8.4646	80	3.1496	270 000	60 700	325 000	73 100	1 700	2 400	12.20	27.00
BA2B 459428	140	5.5118	250	9.8425	84	3.3071	296 000	66 500	390 000	87 700	1 600	2 200	17.70	39.00
BA2B 459430	150	5.9055	270	10.6299	90	3.5433	319 000	71 700	44 0000	98 900	1 500	2 000	23.00	50.50

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

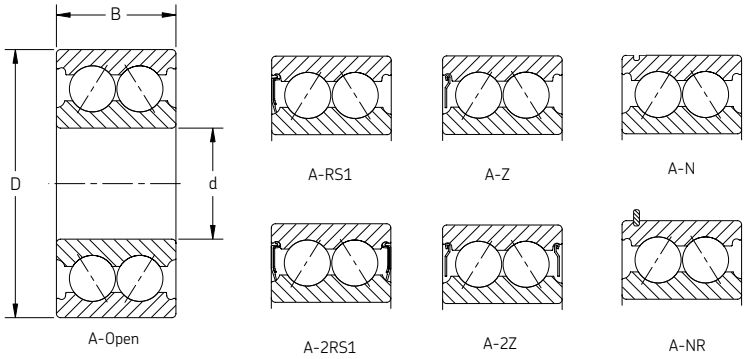


Double row, 40° contact angle
Standard
Series: 3308 DNRCBM – 3313 DNRCBM
Size: 40 mm – 65 mm
1.5748 in – 2.5591 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	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
3308 DNRCBM	40	1.5748	90	3.5433	36.5	1.4370	49 400	11 100	41 500	9 330	6 700	7 000	1.20	2.60
3309 DNRCBM	45	1.7716	100	3.9370	39.7	1.5630	61 800	13 890	52 000	11 690	6 000	6 300	1.50	3.30
3310 DNRCBM	50	1.9685	110	4.3307	44.4	1.7480	81 900	18 400	69 500	15 620	5 300	5 600	1.95	4.30
3311 DNRCBM	55	2.1653	120	4.7244	49.2	1.9370	95 600	21 480	83 000	18 650	5 000	5 300	2.55	5.60
3313 DNRCBM	65	2.5591	140	5.5118	58.7	2.3110	138 000	31 010	122 000	27 420	4 300	4 500	4.00	8.80

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

Double row, 30° contact angle
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 3200 A – 3220 A
Size: 10 mm – 100 mm
0.3937 in – 3.9370 in

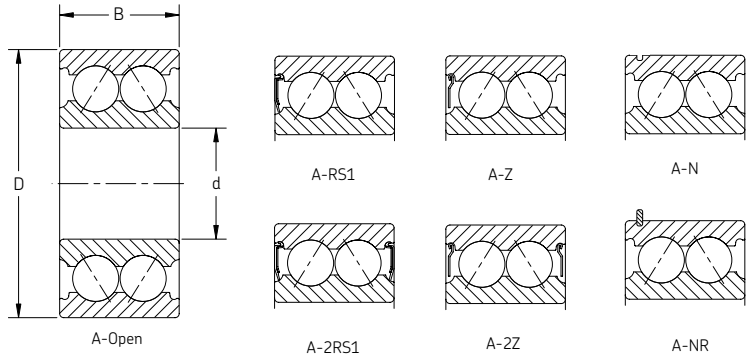


Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed imiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
3200 A	10	0.3937	30	1.1811	14.0	0.5625	7 610	1 700	4 300	1 000	22 000	24 000	17 000	0.05	0.11
3201 A	12	0.4724	32	1.2598	15.9	0.6250	10 100	2 300	5 600	1 300	20 000	22 000	15 000	0.06	0.13
3202 A	15	0.5906	35	1.3780	15.9	0.6250	11 200	2 500	6 800	1 500	17 000	18 000	14 000	0.07	0.15
3203 A	17	0.6693	40	1.5748	17.5	0.6875	14 300	3 200	8 800	2 000	15 000	16 000	12 000	0.10	0.21
3204 A	20	0.7874	47	1.8504	20.6	0.8125	20 000	4 500	12 000	2 700	14 000	14 000	10 000	0.16	0.35
3205 A	25	0.9843	52	2.0472	20.6	0.8125	21 600	4 900	14 300	3 200	12 000	12 000	8 500	0.19	0.42
3206 A	30	1.1811	62	2.4409	23.8	0.9375	30 000	6 700	20 400	4 600	10 000	10 000	7 500	0.29	0.64
3207 A	35	1.3780	72	2.8346	27.0	1.0625	40 000	9 000	28 000	6 300	9 000	9 000	6 300	0.40	0.88
3208 A	40	1.5748	80	3.1496	30.2	1.1875	47 500	10 700	34 000	7 600	8 000	8 000	5 600	0.58	1.28
3209 A	45	1.7717	85	3.3465	30.2	1.1875	51 000	11 500	39 000	8 800	7 500	7 500	5 300	0.64	1.41
3210 A	50	1.9685	90	3.5433	30.2	1.1875	51 000	11 500	39 000	8 800	7 000	7 000	4 800	0.66	1.46
3211 A	55	2.1654	100	3.9370	33.3	1.3125	60 000	13 500	47 500	10 700	6 300	6 300	4 500	1.05	2.31
3212 A	60	2.3622	110	4.3307	36.5	1.4375	73 500	16 500	58 500	13 200	5 600	5 600	4 000	1.40	3.09
3213 A	65	2.5591	120	4.7244	38.1	1.5000	80 600	18 100	73 500	16 500	4 500	4 800	3 600	1.75	3.86
3214 A	70	2.7559	125	4.9213	39.7	1.5625	88 400	19 900	80 000	18 000	4 300	4 500	–	1.90	4.19
3215 A	75	2.9528	130	5.1181	41.3	1.6250	95 600	21 500	88 000	19 800	4 300	4 500	3 200	2.10	4.63
3216 A	80	3.1496	140	5.5118	44.4	1.7500	106 000	23 800	95 000	21 400	4 000	4 300	3 000	2.65	5.84
3217 A	85	3.3465	150	5.9055	49.2	1.9375	124 000	27 900	110 000	24 700	3 600	3 800	–	3.40	7.50
3218 A	90	3.5433	160	6.2992	52.4	2.0625	130 000	29 200	120 000	27 000	3 400	3 600	–	4.15	9.15
3219 A	95	3.7402	170	6.6929	55.6	2.1875	159 000	35 700	146 000	32 800	3 200	3 400	–	5.00	11.02
3220 A	100	3.9370	180	7.0866	60.3	2.3750	178 000	40 000	166 000	37 300	3 000	3 200	–	6.10	13.45

Note: The 5200/5300 series DRACBB have been replaced with the 3200/3300 series designation.
The product design has not changed; therefore, the fit, form and function remain the same.

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

Double row, 30° contact angle
Conrad
Open, sealed, shielded and snap ring
Standard and SKF Explorer
Series: 3302 A – 3322 A
Size: 15 mm – 110 mm
0.5905 in – 4.3307 in



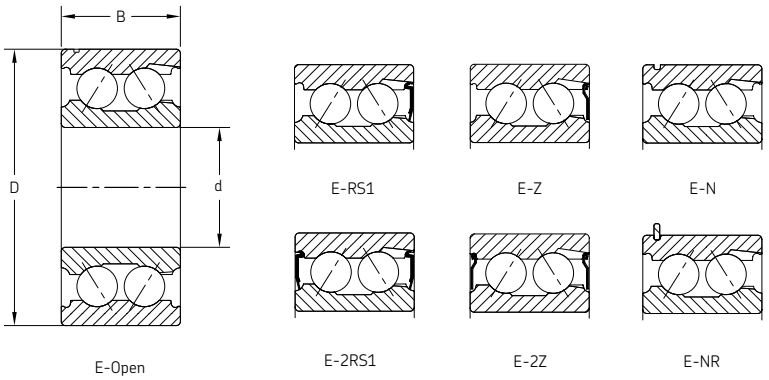
Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed imiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
3302 A	15	0.5905	42	1.6535	19	0.7480	15 100	3 390	9 300	2 090	15 000	16 000	12 000	0.13	0.3
3303 A	17	0.6692	47	1.8504	22.2	0.8740	21 600	4 850	12 700	2 850	14 000	14 000	11 000	0.18	0.4
3304 A	20	0.7874	52	2.0472	22.2	0.8740	23 600	5 300	14 600	3 280	13 000	13 000	9 000	0.22	0.5
3305 A	25	0.9842	62	2.4409	25.4	1.0000	32 000	7 190	20 400	4 580	11 000	11 000	7 500	0.35	0.8
3306 A	30	1.1811	72	2.8346	30.2	1.1890	42 500	9 550	30 000	6 740	9 000	9 000	6 300	0.52	1.1
3307 A	35	1.3779	80	3.1496	34.9	1.3740	52 000	11 690	35 500	7 980	8 500	8 500	6 000	0.73	1.6
3308 A	40	1.5748	90	3.5433	36.5	1.4370	64 000	14 380	44 000	9 890	7 500	7 500	5 000	0.93	2.1
3309 A	45	1.7716	100	3.9370	39.7	1.5630	75 000	16 850	53 000	11 910	6 700	6 700	4 800	1.25	2.8
3310 A	50	1.9685	110	4.3307	44.4	1.7480	90 000	20 220	64 000	14 380	6 000	6 000	4 300	1.70	3.7
3311 A	55	2.1653	120	4.7244	49.2	1.9370	112 000	25 170	81 500	18 310	5 300	5 300	–	2.65	5.8
3312 A	60	2.3622	130	5.1181	54	2.1260	127 000	28 540	95 000	21 350	5 000	5 000	–	2.80	6.2
3313 A	65	2.5590	140	5.5118	58.7	2.3110	146 000	32 810	110 000	24 720	4 500	4 500	–	4.10	9.0
3314 A	70	2.7559	150	5.9055	63.5	2.5000	163 000	36 630	125 000	28 090	4 300	4 300	–	5.05	11.1
3315 A	75	2.9527	160	6.2992	68.3	2.6890	176 000	39 550	140 000	31 460	4 000	4 000	–	5.55	12.2
3316 A	80	3.1496	170	6.6929	68.3	2.6890	193 000	43 370	156 000	35 060	3 800	3 800	–	6.80	15.0
3317 A	85	3.3464	180	7.0866	73	2.8740	208 000	46 740	176 000	39 550	3 600	3 600	–	8.30	18.3
3318 A	90	3.5433	190	7.4803	73	2.8740	208 000	46 740	180 000	40 450	3 400	3 400	–	9.25	20.4
3319 A	95	3.7401	200	7.8740	77.8	3.0630	240 000	53 900	216 000	48 540	3 200	3 200	–	11.00	24.3
3320 A	100	3.9370	215	8.4646	82.6	3.2520	255 000	57 300	255 000	57 300	2 600	2 800	–	13.50	29.8
3322 A	110	4.3307	240	9.4488	92.1	3.6260	291 000	65 400	305 000	68 500	2 400	2 600	–	19.00	41.9

Note: The 5200/5300 series DRACBB have been replaced with the 3200/3300 series designation. The product design has not changed; therefore, the fit, form and function remain the same. The "AH" features have been incorporated into the standard design, and that suffix has been eliminated.

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

Double row, 30° contact angle
Max type
Open, sealed, shielded and snap ring
Standard
Series: 3205 E – 3218 E
Size: 25 mm – 90 mm
0.9843 in – 3.5433 in

Series: 3305 E – 3316 E
Size: 25 mm – 80 mm
0.9843 in – 3.1496 in



Designation	Principal dimensions						Basic load ratings				Speed rating			Mass	
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Sealed imiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	r/min	kg	lb
3205 E	25	0.9843	52	2.0472	20.6	0.8125	22 900	5 150	21 200	4 770	11 000	12 000	8 500	0.25	0.55
3206 E	30	1.1811	62	2.4409	23.8	0.9375	30 300	6 810	28 000	6 290	9 500	10 000	7 500	0.35	0.8
3207 E	35	1.378	72	2.8346	27	1.0625	39 100	8 790	36 500	8 210	8 000	8 500	6 300	0.54	1.2
3208 E	40	1.5748	80	3.1496	30.2	1.1875	49 500	11 130	49 000	11 020	7 500	8 000	5 600	0.73	1.6
3209 E	45	1.7717	85	3.3465	30.2	1.1875	51 200	11 510	54 000	12 140	6 700	7 000	5 300	0.77	1.7
3210 E	50	1.9685	90	3.5433	30.2	1.1875	53 900	12 120	58 500	13 150	6 300	6 700	4 800	0.82	1.8
3211 E	55	2.1654	100	3.937	33.3	1.3125	66 000	14 840	76 500	17 200	5 600	6 000	4 500	1.15	2.5
3212 E	60	2.3622	110	4.3307	36.5	1.4375	78 100	17 560	88 000	19 780	5 000	5 300	4 000	1.5	3.3
3213 E	65	2.5591	120	4.7244	38.1	1.5	88 000	19 780	106 000	23 800	4 800	5 000	3 600	1.95	4.3
3214 E	70	2.7559	125	4.9213	39.7	1.5625	101 000	22 700	125 000	28 100	4 500	4 800	3 200	2.15	4.7
3215 E	75	2.9528	130	5.1181	41.3	1.625	108 000	24 300	137 000	30 800	4 300	4 500	3 000	2.5	5.5
3216 E	80	3.1496	140	5.5118	44.4	1.75	128 000	28 800	160 000	36 000	4 000	4 000	–	3	6.6
3217 E	85	3.3465	150	5.9055	49.2	1.9375	142 000	31 900	176 000	39 600	3 600	3 800	–	3.7	8.16
3218 E	90	3.5433	160	6.2992	52.4	2.0625	151 000	33 900	193 000	43 400	3 400	3 600	–	4.55	10
3305 E	25	0.9843	62	2.4409	25.4	1	34 100	7 670	30 500	6 860	10 000	10 000	7 500	0.39	0.9
3306 E	30	1.1811	72	2.8346	30.2	1.1875	46 800	10 520	43 000	9 670	8 500	9 000	6 300	0.59	1.3
3307 E	35	1.378	80	3.1496	34.9	1.375	52 300	11 760	48 000	10 790	7 500	8 000	6 000	0.86	1.9
3308 E	40	1.5748	90	3.5433	36.5	1.4375	67 100	15 080	65 500	14 720	6 700	7 000	5 000	1.15	2.5
3309 E	45	1.7717	100	3.937	39.7	1.5625	80 900	18 190	80 000	17 980	6 000	6 300	4 800	1.5	3.3
3310 E	50	1.9685	110	4.3307	44.4	1.75	95 200	21 400	95 000	21 360	5 300	5 600	–	2	4.4
3311 E	55	2.1654	120	4.7244	49.2	1.9375	119 000	26 800	122 000	27 400	5 000	5 300	–	2.65	5.8
3312 E	60	2.3622	130	5.1181	54	2.125	134 000	30 100	143 000	32 100	4 500	4 800	–	3.3	7.3
3313 E	65	2.5591	140	5.5118	58.7	2.3125	182 000	40 900	163 000	36 600	4 300	4 500	–	4.2	9.3
3314 E	70	2.7559	150	5.9055	63.5	2.5	172 000	38 700	186 000	41 800	4 000	4 300	–	5	11
3315 E	75	2.9528	160	6.2992	68.3	2.6875	187 000	42 000	208 000	46 800	3 600	3 800	–	6.35	14
3316 E	80	3.1496	170	6.6929	68.3	2.6875	201 000	45 200	236 000	53 100	3 400	3 600	–	7.25	16

Note: The 5200/5300 series DRACBB have been replaced with the 3200/3300 series designation.
The product design has not changed; therefore, the fit, form and function remain the same.

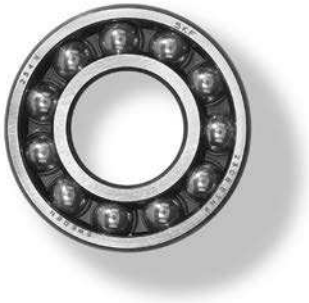
Consult SKF USA Inc. prior to design change or order placement.

Notes

Notes

Notes

Notes



Self-aligning ball bearings

1220 _ K M C3 W64

1 – 2 – 3 – 4 – 5

1. Internal design:

–	Standard internal design
E	Optimized internal design

2. Variations:

K	Bearing with 1 to 12 tapered bore
2RS1	Contact seal of acrylonitrile butadine rubber (NBR) with sheet steel backing on both sides of bearing

3. Cage designs:

TN9	Injection molded polyamide PA66 cage with glass fiber reinforcement
M	Machined brass cage
–	Pressed steel cage (standard)
TN	Injection molded polyamide PA66 cage

4. Clearance:

C2	Radial internal clearance < Normal
(C0)*	Normal radial internal clearance
C3	Radial internal clearance > Normal
C4	Radial internal clearance > C3

*Not marked on bearing or package

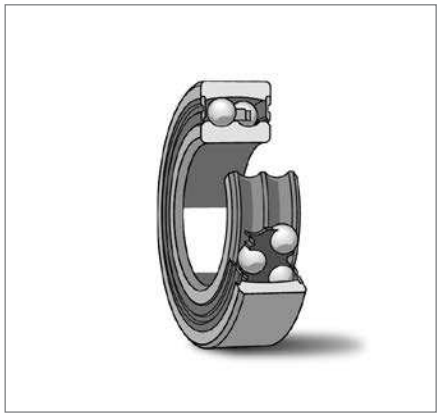
5. Lubrication:

W64	Solid Oil lubricants

Technical features

Boundary dimensions	In accordance with ISO 15	
Tolerances	ABEC 1, ISO 492	
Max. temperature	248° F (120° C) for open bearings only	
Misalignment	Series 108, 126, 127, 129, 135	3.0 degrees
	Series 12 (E)	2.5 degrees
	Series 13 (E)	3.0 degrees
	Series 22 (E)	2.5 degrees
	Series 22 E-2RS1	1.5 degrees
	Series 23 (E)	3.0 degrees
	Series 23 E-2RS1	1.5 degrees
	Series 112 (E)	2.5 degrees
	Series 130, 139	3.0 degrees
Cage material		
Standard	Polyamide (TN) Glass fiber reinforced polyamide (TN9)	
Optional	Machined brass (M) for large bearings	
Axial load – max for adapter sleeve mounting	F_{ap} = 3 x B x d where B = bearing width in mm d = bearing bore in mm F_{ap} = axial load in Newtons	
Seals	2RS1 synthetic rubber (NBR) seals	
Grease	Lithium soap with mineral oil	

Self-aligning ball bearing (open design) (data tables on page 96)



Self-aligning ball bearing (sealed design) (data tables on page 100)

Introduction

Self-aligning ball bearings have two rows of balls with a common sphered raceway in the outer ring. This feature gives the bearings their self-aligning property, permitting angular misalignment of the shaft relative to the housing. Therefore, they are particularly suitable for applications where misalignment can arise from errors in mounting or from shaft deflection.

For applications where the load carrying capacity of self-aligning ball bearings is insufficient; spherical roller bearings, which have the same self-aligning property, should be used.

SKF self-aligning ball bearings of the E design have higher load carrying capacity than bearings of the original standard design because of improvements to the internal design. This makes them suitable for a wider range of applications than their predecessors; i.e., the same size of bearing can be used to carry heavier loads, or if the loads remain the same, operational reliability is enhanced and bearing life is longer. Self-aligning ball bearings of the E design are fitted with a glass fiber reinforced polyamide PA66 cage (TN9) as standard.

SKF self-aligning ball bearings are available in several designs of which the most common are shown in this catalog:

- Basic open (unsealed) design bearings
- Bearings with seals on both sides

Basic design

Self-aligning ball bearings of the basic design are available with a cylindrical bore as well as with a tapered bore (taper 1:12).

For self-aligning ball bearings with a tapered bore, SKF supplies appropriate adapter sleeves with which the bearings can be secured simply and rapidly to smooth or stepped shafts. The adapter sleeves are supplied complete with nut and locking device. Additional information can be found in the Split Pillow Block sections (inch and metric) under "Mounted Accessories".

Variations

Sealed bearings

SKF self-aligning ball bearings are also available in a sealed (2RS1) version with rubbing seals on both sides. The seals are made of oil and acrylonitrile butadiene rubber (NBR) and have a sheet steel reinforcement. The operating temperature range for the seal material is -40° to +248° F (-40° to +120° C). The outside diameter of the seal is retained in a recess in the outer ring giving a tight seal without deformation, while the lip of the seal exerts a slight pressure against a recess in the inner ring shoulder.

The sealed bearings are supplied as standard filled with a lithium base grease which is suitable for the operating temperature range -22° to +230° F (-30° to +110° C). The bearings are lubricated for life and are maintenance free. **They should not be heated at temperatures greater than 250° F (120° C) prior to mounting and must on no account be washed.**

SKF self-aligning ball bearings with seals are available with a cylindrical bore or with a tapered bore, the taper being 1:12 as for the basic bearings.

Special solutions for bearings with extended inner ring

Self-aligning ball bearings with extended inner ring (series 11200) are used for applications employing commercial ground shafting. The special bore tolerance of these bearings allows easy mounting and dismounting.

Self-aligning ball bearings with extended inner ring are located axially by pins or shouldered screws which engage in a slot at one side of the inner ring. The pins or screws also prevent the inner ring from turning on the shaft. When these bearings are used in pairs, the slots of the inner rings must either be adjacent or at the outboard positions. Otherwise, the shaft will be located in one direction only.

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

Product highlights

Optimum performance

SKF self-aligning ball bearings have been designed to provide optimum performance in a wide range of machinery and equipment applications. They are particularly suitable for applications where misalignment can arise from errors in shaft and housing alignment or shaft deflection and where high speed is a requirement.

Capacity for resistance-free, self-alignment

In the event of minor angular misalignment, the problems which beset many other bearing types do not occur – allowing for increased operational life, lower friction and temperature, less wear and noise during operation, and reduced stress on both the cages and lubricants.

Sealed bearings – greased for life

SKF self-aligning ball bearings are available with contact seals on both sides which protect the bearing from contaminants during handling and operation. This allows for longer bearing service life, is environmentally friendly, and requires no relubrication – making the bearing maintenance free.

Large product assortment

Available in a wide range (5 to 130 mm bore diameter), the basic SKF design is available with a choice of seals, cage materials, and extended inner rings.

Application flexibility

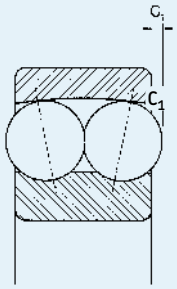
Self-aligning bearings are used in high speed applications where alignments may be a problem and running accuracy is required. Examples include fans and blowers, textile equipment and general conveyor equipment.

Introduction

Special feature

Self-aligning ball bearings of series 12 (K) and 13 (K) have balls which protrude somewhat from the bearing; the actual values are given in the adjacent table. This should be remembered when designing adjacent components.

Protrusion of balls from bearing side faces



Bearing	Protrusion C1	
	mm	in
1224(K)	1.3	0.0512
1226	1.4	0.0551
1318(K)	1.1	0.0433
1319(K)	1.5	0.0591
1320(K)	2.5	0.0984
1322(K)	2.6	0.1024

Clearance

Radial internal clearance

SKF self-aligning ball bearings are produced with Normal radial internal clearance (CN or C0, not marked on bearing) as standard. Radial clearance selection is based on factors such as high speed, operating temperature, shaft fits and axial movement limitations. Bearings with a tapered bore are normally supplied with a C3 radial internal clearance (marked on the bearing). Bearings having clearances that are greater than (C3 or C4) or less than (C2) Normal are available on request.

The clearance values are given in **Table 1**. They are valid for unmounted bearings without measuring load, and conform to ISO 5753-1991.

Loads

Equivalent dynamic bearing loads

$P = F_r + Y_1 F_a$ where $F_a / F_r \leq e$
$P = 0.65\ F_r + Y_2\ F_a$ when $F_a / F_r > e$

Values of factors e, Y_1 and Y_2 for each individual bearing are given in the bearing **Table 2**, page 96.

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 self-aligning ball bearings, particularly if they run at high speeds where the inertia forces of the balls 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 balls and the raceways.

The requisite minimum radial load to be applied in such cases can be determined by using the 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.

Mounting bearings with tapered bore

Bearings with a tapered bore are always mounted with an interference fit on the shaft, adapter sleeve or withdrawal sleeve. As a measure of the degree of interference of the fit, either the reduction in radial internal clearance of the bearing or the axial displacement of the inner ring on the tapered bearing seating can be used.

The mounting of self-aligning ball bearings with tapered bore calls for experience and skill as they have a relatively small internal clearance, and a reliable measurement of the clearance reduction is not always possible. There are specific mounting instructions for these bearings in the SKF Bearing Installation and Maintenance Guide (140-710) or by visiting the SKF website www.skf.com/mount for exact mounting instructions.

Frequency vibration data

Frequency vibration data is available on the SKF website **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Table 1

Radial internal clearance of self-aligning ball bearings

Bore diameter		Radial internal clearance															
d		C2				Normal				C3				C4			
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		µm		in		µm		in		µm		in	
Bearings with cylindrical bore																	
2.5	**6**	1	8	0.0000	0.0003	5	15	0.0002	0.0006	10	20	0.0004	0.0008	15	25	0.0006	0.0010
6	**10**	2	9	0.0001	0.0004	6	17	0.0002	0.0007	12	25	0.0005	0.0010	19	33	0.0007	0.0013
10	**14**	2	10	0.0001	0.0004	6	19	0.0002	0.0007	13	26	0.0005	0.0010	21	35	0.0008	0.0014
14	**18**	3	12	0.0001	0.0005	8	21	0.0003	0.0008	15	28	0.0006	0.0011	23	37	0.0009	0.0015
18	**24**	4	14	0.0002	0.0006	10	23	0.0004	0.0009	17	30	0.0007	0.0012	25	39	0.0010	0.0015
24	**30**	5	16	0.0002	0.0006	11	24	0.0004	0.0009	19	35	0.0007	0.0014	29	46	0.0011	0.0018
30	**40**	6	18	0.0002	0.0007	13	29	0.0005	0.0011	23	40	0.0009	0.0016	34	53	0.0013	0.0021
40	**50**	6	19	0.0002	0.0007	14	31	0.0006	0.0012	25	44	0.0010	0.0017	37	57	0.0015	0.0022
50	**65**	7	21	0.0003	0.0008	16	36	0.0006	0.0014	30	50	0.0012	0.0020	45	69	0.0018	0.0027
65	**80**	8	24	0.0003	0.0009	18	40	0.0007	0.0016	35	60	0.0014	0.0024	54	83	0.0021	0.0033
80	**100**	9	27	0.0004	0.0011	22	48	0.0009	0.0019	42	70	0.0017	0.0028	64	96	0.0025	0.0038
100	**120**	10	31	0.0004	0.0012	25	56	0.0010	0.0022	50	83	0.0020	0.0033	75	114	0.0030	0.0045
120	**140**	10	38	0.0004	0.0015	30	68	0.0012	0.0027	60	100	0.0024	0.0039	90	135	0.0035	0.0053
Bearings with tapered bore																	
18	**24**	7	17	0.0003	0.0007	13	26	0.0005	0.0010	20	33	0.0008	0.0013	28	42	0.0011	0.0017
24	**30**	9	20	0.0004	0.0008	15	28	0.0006	0.0011	23	39	0.0009	0.0015	33	50	0.0013	0.0020
30	**40**	12	24	0.0005	0.0009	19	35	0.0007	0.0014	29	46	0.0011	0.0018	40	59	0.0016	0.0023
40	**50**	14	27	0.0006	0.0011	22	39	0.0009	0.0015	33	52	0.0013	0.0020	45	65	0.0018	0.0026
50	**65**	18	32	0.0007	0.0013	27	47	0.0011	0.0019	41	61	0.0016	0.0024	56	80	0.0022	0.0031
65	**80**	23	39	0.0009	0.0015	35	57	0.0014	0.0022	50	75	0.0020	0.0030	69	98	0.0027	0.0039
80	**100**	29	47	0.0011	0.0019	42	68	0.0017	0.0027	62	90	0.0024	0.0035	84	116	0.0033	0.0046
100	**120**	35	56	0.0014	0.0022	50	81	0.0020	0.0032	75	108	0.0030	0.0043	100	139	0.0039	0.0055

Table 2

Calculation factors for self-aligning ball bearings

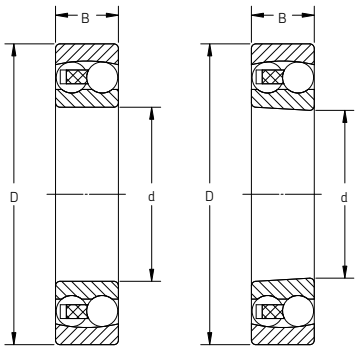
Designation	Calculation factors		
Bearings with cylindrical bore	e	Y1	Y2
126	0.33	1.9	3.0
127	0.33	1.9	3.0
129	0.33	1.9	3.0
1200 E	0.33	1.9	3.0
1201 E	0.33	1.9	3.0
1202 E	0.33	1.9	3.0
1203 E	0.31	2.0	3.1
1204 E	0.30	2.1	3.3
1205 E	0.28	2.2	3.5
1206 E	0.25	2.5	3.9
1207 E	0.23	2.7	4.2
1208 E	0.22	2.9	4.5
1209 E	0.21	3.0	4.6
1210 E	0.21	3.0	4.6
1211 E	0.19	3.3	5.1
1212 E	0.19	3.3	5.1
1213 E	0.18	3.5	5.4
1214 E	0.18	3.5	5.4
1215	0.17	3.7	5.7
1216	0.16	3.9	6.1
1217	0.17	3.7	5.7
1218	0.17	3.7	5.7
1219	0.17	3.7	5.7
1220	0.17	3.7	5.7
1221	0.17	3.7	5.7
1222	0.17	3.7	5.7
1224	0.19	3.3	5.1
1226	0.19	3.3	5.1
135	0.33	1.9	3.0
1301 E	0.35	1.8	2.8
1302 E	0.31	2.0	3.1
1303 E	0.30	2.1	3.3
1304 E	0.28	2.2	3.5
1305 E	0.28	2.2	3.5
1306 E	0.25	2.5	3.9
1307 E	0.25	2.5	3.9
1308 E	0.23	2.7	4.2
1309 E	0.23	2.7	4.2
1310 E	0.24	2.6	4.1
1311 E	0.23	2.7	4.2
1312 E	0.22	2.9	4.5
1313 E	0.22	2.9	4.5
1314	0.22	2.9	4.5
1315	0.22	2.9	4.5
1316	0.22	2.9	4.5
1317	0.22	2.9	4.5
1318	0.22	2.9	4.5
1319	0.23	2.7	4.2
1320	0.23	2.7	4.2
1322	0.22	2.9	4.5

Table 2

Calculation factors for self-aligning ball bearings

Designation	Calculation factors		
Bearings with cylindrical bore	e	Y1	Y2
1412	0.33	1.90	3.0
2200 E	0.54	1.15	1.8
2201 E	0.50	1.25	2.0
2202 E	0.43	1.50	2.3
2203 E	0.43	1.50	2.3
2204 E	0.40	1.60	2.4
2205 E	0.35	1.80	2.8
2206 E	0.33	1.90	3.0
2207 E	0.31	2.00	3.1
2208 E	0.28	2.20	3.5
2209 E	0.26	2.40	3.7
2210 E	0.23	2.70	4.2
2211 E	0.23	2.70	4.2
2212 E	0.24	2.60	4.1
2213 E	0.24	2.60	4.1
2214	0.27	2.30	3.6
2215 E	0.22	2.90	4.5
2216 E	0.22	2.90	4.5
2217	0.25	2.50	3.9
2218	0.27	2.30	3.6
2219	0.27	2.30	3.6
2220	0.27	2.30	3.6
2221	0.28	2.20	3.5
2222	0.28	2.20	3.5
2301	0.60	1.05	1.6
2302	0.52	1.20	1.9
2303	0.52	1.20	1.9
2304	0.52	1.20	1.9
2305 E	0.44	1.40	2.2
2306	0.44	1.40	2.2
2307 E	0.46	1.35	2.1
2308 E	0.40	1.60	2.4
2309 E	0.33	1.90	3.0
2310	0.43	1.50	2.3
2311	0.40	1.60	2.4
2312	0.33	1.90	3.0
2313	0.37	1.70	2.6
2314	0.37	1.70	2.6
2315	0.37	1.70	2.6
2316	0.37	1.70	2.6
2317	0.37	1.70	2.6
2318	0.37	1.70	2.6
2319	0.37	1.70	2.6
2320	0.37	1.70	2.6
2322	0.37	1.70	2.6

Double row
Open, cylindrical and tapered bore
Series: 126 – 1226 M
Size: 6 mm – 130 mm
0.2362 in – 5.1181 in

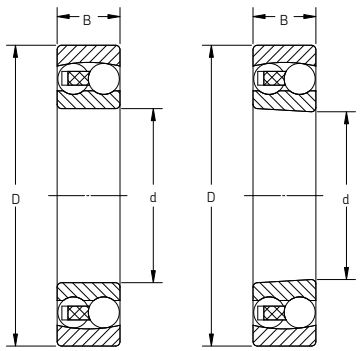


Cylindrical bore Tapered bore

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
126	6	0.2362	19	0.7480	6	0.2362	2 510	560	480	110	70 000	45 000	0.01	0.02	–	–	–	–
127	7	0.2756	22	0.8661	7	0.2756	2 650	600	560	130	63 000	40 000	0.01	0.03	–	–	–	–
108	8	0.3150	22	0.8661	7	0.2756	2 650	600	560	130	60 000	40 000	0.01	0.03	–	–	–	–
129	9	0.3543	26	1.0236	8	0.3150	3 900	880	820	180	60 000	38 000	0.02	0.05	–	–	–	–
1200 E	10	0.3937	30	1.1811	9	0.3543	5 530	1 240	1 180	270	56 000	36 000	0.03	0.07	–	–	–	–
1201 E	12	0.4724	32	1.2598	10	0.3937	6 240	1 400	1 430	320	50 000	32 000	0.04	0.09	–	–	–	–
1202 E	15	0.5906	35	1.3780	11	0.4331	7 410	1 670	1 760	400	45 000	28 000	0.05	0.11	–	–	–	–
1203 E	17	0.6693	40	1.5748	12	0.4724	8 840	1 990	2 200	490	38 000	24 000	0.07	0.16	–	–	–	–
1204 E	20	0.7874	47	1.8504	14	0.5512	12 700	2 850	3 400	760	32 000	20 000	0.12	0.26	1204 EK	H 204	0.0	0.1
1205 E	25	0.9843	52	2.0472	15	0.5906	14 300	3 210	4 000	900	28 000	18 000	0.14	0.31	1205 EK	H 205	0.1	0.1
1206 E	30	1.1811	62	2.4409	16	0.6299	15 600	3 510	4 650	1 040	24 000	15 000	0.22	0.49	1206 EK	H 206	0.1	0.2
1207 E	35	1.3780	72	2.8346	17	0.6693	19 000	4 270	6 000	1 350	20 000	13 000	0.32	0.71	1207 EK	H 207	0.1	0.3
1208 E	40	1.5748	80	3.1496	18	0.7087	19 900	4 470	6 950	1 560	18 000	11 000	0.42	0.93	1208 EK	H 208	0.2	0.3
1209 E	45	1.7717	85	3.3465	19	0.7480	22 900	5 150	7 800	1 750	17 000	11 000	0.47	1.04	1209 EK	H 209	0.2	0.4
1210 E	50	1.9685	90	3.5433	20	0.7874	26 500	5 960	9 150	2 060	16 000	10 000	0.53	1.17	1210 EK	H 210	0.2	0.5
1211 E	55	2.1654	100	3.9370	21	0.8268	27 600	6 200	10 600	2 380	14 000	9 000	0.71	1.57	1211 EK	H 211	0.3	0.6
1212 E	60	2.3622	110	4.3307	22	0.8661	31 200	7 010	12 200	2 740	12 000	8 500	0.90	1.98	1212 EK	H 212	0.3	0.7
1213 E	65	2.5591	120	4.7244	23	0.9055	35 100	7 890	14 000	3 150	11 000	7 000	1.15	2.54	1213 EK	H 213	0.4	0.8
1214 E	70	2.7559	125	4.9213	24	0.9449	35 800	8 040	14 600	3 280	11 000	7 000	1.25	2.76	–	–	–	–
1215	75	2.9528	130	5.1181	25	0.9843	39 000	8 760	15 600	3 510	10 000	6 700	1.35	2.98	1215 K	H 215	0.7	1.5
1216	80	3.1496	140	5.5118	26	1.0236	39 700	8 920	17 000	3 820	9 500	6 000	1.65	3.64	1216 K	H 216	0.8	1.8
1217	85	3.3465	150	5.9055	28	1.1024	48 800	10 970	20 800	4 670	9 000	5 600	2.05	4.52	1217 K	H 217	1.0	2.2
1218	90	3.5433	160	6.2992	30	1.1811	57 200	12 850	23 600	5 300	8 500	5 300	2.50	5.51	1218 K	H 218	1.1	2.5
1219	95	3.7402	170	6.6929	32	1.2598	63 700	14 310	27 000	6 070	8 000	5 000	3.10	6.84	1219 K	H 219	1.2	2.7
1220	100	3.9370	180	7.0866	34	1.3386	68 900	15 480	30 000	6 740	7 500	4 800	3.70	8.16	1220 K	H 220	1.5	3.3
1222	110	4.3307	200	7.8740	38	1.4961	88 400	19 870	39 000	8 760	6 700	4 300	5.15	11.36	1222 K	H 222	1.9	4.1
1224 M	120	4.7244	215	8.4646	42	1.6535	119 000	26 740	53 000	11 910	6 300	4 000	6.75	14.88	1224 KM	H 3024	1.9	4.2
1226 M	130	5.1181	230	9.0551	46	1.8110	127 000	28 540	58 500	13 150	5 600	3 600	8.30	18.30	1226 KM	H 3026	2.8	6.1

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

Double row
Open, cylindrical and tapered bore
Series: 135 – 1322 M
Size: 5 mm – 110 mm
0.1969 in – 4.3307 in

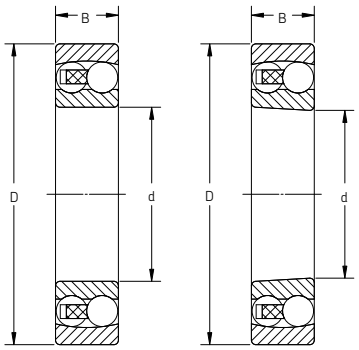


Cylindrical bore Tapered bore

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
135	5	0.1969	19	0.7480	6	0.2362	2 510	560	480	110	63 000	45 000	0.01	0.02	–	–	–	–
1301 E	12	0.4724	37	1.4567	12	0.4724	9 360	2 100	2 160	490	40 000	28 000	0.07	0.15	–	–	–	–
1302 E	15	0.5906	42	1.6535	13	0.5118	10 800	2 430	2 600	580	34 000	24 000	0.09	0.21	–	–	–	–
1303 E	17	0.6693	47	1.8504	14	0.5512	12 700	2 850	3 400	760	28 000	20 000	0.12	0.26	–	–	–	–
1304 E	20	0.7874	52	2.0472	15	0.5906	14 300	3 210	4 000	900	26 000	18 000	0.16	0.35	–	–	–	–
1305 E	25	0.9843	62	2.4409	17	0.6693	19 000	4 270	5 400	1 210	22 000	15 000	0.26	0.57	1305 EK	H 305	0.1	0.2
1306 E	30	1.1811	72	2.8346	19	0.7480	22 500	5 060	6 800	1 530	19 000	13 000	0.39	0.86	1306 EK	H 306	0.1	0.2
1307 E	35	1.3780	80	3.1496	21	0.8268	26 500	5 960	8 500	1 910	16 000	11 000	0.51	1.12	1307 EK	H 307	0.1	0.3
1308 E	40	1.5748	90	3.5433	23	0.9055	33 800	7 600	11 200	2 520	14 000	9 500	0.68	1.50	1308 EK	H 308	0.2	0.4
1309 E	45	1.7717	100	3.9370	25	0.9843	39 000	8 760	13 400	3 010	12 000	8 500	0.96	2.12	1309 EK	H 309	0.2	0.5
1310 E	50	1.9685	110	4.3307	27	1.0630	43 600	9 800	14 000	3 150	12 000	8 000	1.20	2.65	1310 EK	H 310	0.3	0.6
1311 E	55	2.1654	120	4.7244	29	1.1417	50 700	11 390	18 000	4 040	11 000	7 500	1.60	3.53	1311 EK	H 311	0.3	0.7
1312 E	60	2.3622	130	5.1181	31	1.2205	58 500	13 150	22 000	4 940	9 000	6 300	1.95	4.30	1312 EK	H 312	0.4	0.8
1313 E	65	2.5591	140	5.5118	33	1.2992	65 000	14 610	25 500	5 730	8 500	6 000	2.45	5.40	1313 EK	H 313	0.4	0.9
1314	70	2.7559	150	5.9055	35	1.3780	74 100	16 650	27 500	6 180	8 500	6 000	3.00	6.62	–	–	–	–
1315	75	2.9528	160	6.2992	37	1.4567	79 300	17 820	30 000	6 740	8 000	5 600	3.55	7.83	1315 K	H 315	0.8	1.8
1316	80	3.1496	170	6.6929	39	1.5354	88 400	19 870	33 500	7 530	7 500	5 300	4.20	9.26	1316 K	H 316	1.0	2.2
1317	85	3.3465	180	7.0866	41	1.6142	97 500	21 910	38 000	8 540	7 000	4 800	5.00	11.03	1317 K	H 317	1.1	2.5
1318	90	3.5433	190	7.4803	43	1.6929	117 000	26 290	44 000	9 890	6 700	4 500	5.80	12.79	1318 K	H 318	1.3	3.0
1319	95	3.7402	200	7.8740	45	1.7717	133 000	29 890	51 000	11 460	6 300	4 300	6.70	14.77	1319 K	H 319	1.4	3.1
1320	100	3.9370	215	8.4646	47	1.8504	143 000	32 130	57 000	12 810	6 000	4 000	8.30	18.30	1320 K	H 320	1.7	3.7
1322 M	110	4.3307	240	9.4488	50	1.9685	163 000	36 630	72 000	16 180	5 300	3 600	12.00	26.46	1322 KM	H 322	2.2	4.8

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

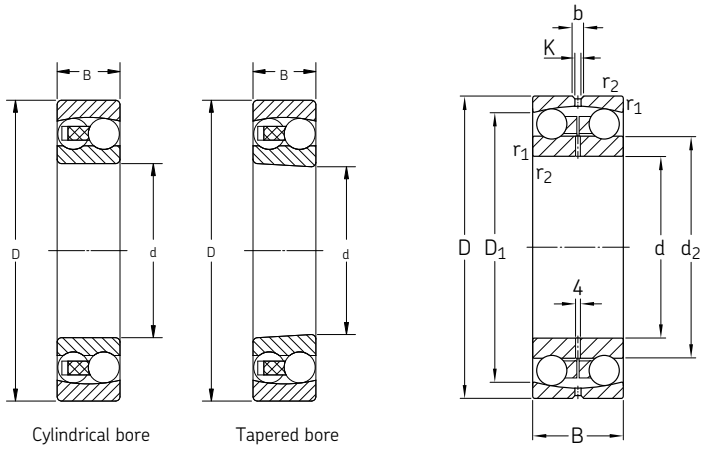
Double row
Open, cylindrical and tapered bore
Series: 2200 E – 2222
Size: 10 mm – 110 mm
0.3937 in – 4.3307 in



Cylindrical bore Tapered bore

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
2200 E	10	0.3937	30	1.1811	14	0.5512	8 060	1 810	1 730	390	50 000	34 000	0.05	0.10	–	–	–	–
2201 E	12	0.4724	32	1.2598	14	0.5512	8 520	1 910	1 900	430	45 000	30 000	0.05	0.12	–	–	–	–
2202 E	15	0.5906	35	1.3780	14	0.5512	8 710	1 960	2 040	460	38 000	26 000	0.06	0.13	–	–	–	–
2203 E	17	0.6693	40	1.5748	16	0.6299	10 600	2 380	2 550	570	34 000	24 000	0.09	0.19	–	–	–	–
2204 E	20	0.7874	47	1.8504	18	0.7087	16 800	3 780	4 150	930	28 000	20 000	0.14	0.31	–	–	–	–
2205 E	25	0.9843	52	2.0472	18	0.7087	16 800	3 780	4 400	990	26 000	18 000	0.16	0.35	2205 EK	H 305	0.1	0.2
2206 E	30	1.1811	62	2.4409	20	0.7874	23 800	5 350	6 700	1 510	22 000	15 000	0.26	0.57	2206 EK	H 306	0.1	0.2
2207 E	35	1.3780	72	2.8346	23	0.9055	30 200	6 790	8 800	1 980	18 000	12 000	0.40	0.88	2207 EK	H 307	0.1	0.3
2208 E	40	1.5748	80	3.1496	23	0.9055	31 900	7 170	10 000	2 250	16 000	11 000	0.51	1.12	2208 EK	H 308	0.2	0.4
2209 E	45	1.7717	85	3.3465	23	0.9055	32 500	7 300	10 600	2 380	15 000	10 000	0.55	1.21	2209 EK	H 309	0.2	0.5
2210 E	50	1.9685	90	3.5433	23	0.9055	33 800	7 600	11 200	2 520	14 000	9 500	0.60	1.32	2210 EK	H 310	0.3	0.6
2211 E	55	2.1654	100	3.9370	25	0.9843	39 000	8 760	13 400	3 010	12 000	8 500	0.81	1.79	2211 EK	H 311	0.3	0.7
2212 E	60	2.3622	110	4.3307	28	1.1024	48 800	10 970	17 000	3 820	11 000	8 000	1.10	2.43	2212 EK	H 312	0.4	0.8
2213 E	65	2.5591	120	4.7244	31	1.2205	57 200	12 850	20 000	4 490	10 000	7 000	1.45	3.20	2213 EK	H 313	0.4	0.9
2214	70	2.7559	125	4.9213	31	1.2205	44 200	9 930	17 000	3 820	10 000	6 700	1.50	3.31	–	–	–	–
2215 E	75	2.9528	130	5.1181	31	1.2205	58 500	13 150	22 000	4 940	9 000	6 300	1.60	3.53	2215 EK	H 315	0.8	1.8
2216 E	80	3.1496	140	5.5118	33	1.2992	65 000	14 610	25 500	5 730	8 500	6 000	2.00	4.41	2216 EK	H 316	1.0	2.2
2217	85	3.3465	150	5.9055	36	1.4173	58 500	13 150	23 600	5 300	8 000	5 600	2.50	5.51	2217 K	H 317	1.1	2.5
2218	90	3.5433	160	6.2992	40	1.5748	70 200	15 780	28 500	6 400	7 500	5 300	3.40	7.50	2218 K	H 318	1.3	3.0
2219	95	3.7402	170	6.6929	43	1.6929	83 200	18 700	34 500	7 750	7 000	5 000	4.10	9.04	2219 K	H 319	1.4	3.1
2220	100	3.9370	180	7.0866	46	1.8110	97 500	21 910	40 500	9 100	6 700	4 800	5.00	11.03	2220 K	H 320	1.7	3.7
2222	110	4.3307	200	7.8740	53	2.0866	124 000	27 870	52 000	11 690	6 000	4 300	7.10	15.66	2222 K	H 322	2.2	4.8

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



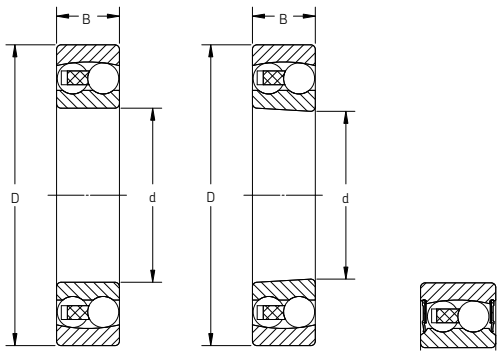
Double row
Open, cylindrical and tapered bore
Series: 2301 – 2320 M
Size: 12 mm – 100 mm
0.4724 in – 3.9370 in

Series: 13030 – 13948
Size: 150 mm – 240 mm
5.9055 in – 9.4488 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
2301	12	0.4724	37	1.4567	17	0.6693	11 700	2 630	2 700	610	38 000	28 000	0.10	0.21	–	–	–	–
2302	15	0.5906	42	1.6535	17	0.6693	11 900	2 670	2 900	650	32 000	24 000	0.12	0.26	–	–	–	–
2303	17	0.6693	47	1.8504	19	0.7480	14 300	3 210	3 550	800	30 000	22 000	0.18	0.40	–	–	–	–
2304	20	0.7874	52	2.0472	21	0.8268	18 200	4 090	4 750	1 070	26 000	19 000	0.22	0.49	–	–	–	–
2305 E	25	0.9843	62	2.4409	24	0.9449	27 000	6 070	7 100	1 600	22 000	16 000	0.34	0.75	2305 EK	H 2305	0.1	0.2
2306	30	1.1811	72	2.8346	27	1.0630	31 200	7 010	8 800	1 980	18 000	13 000	0.50	1.10	2306 K	H 2306	0.1	0.3
2307 E	35	1.3780	80	3.1496	31	1.2205	39 700	8 920	11 200	2 520	16 000	12 000	0.68	1.50	2307 EK	H 2307	0.2	0.4
2308 E	40	1.5748	90	3.5433	33	1.2992	54 000	12 130	16 000	3 600	14 000	10 000	0.93	2.05	2308 EK	H 2308	0.2	0.5
2309 E	45	1.7717	100	3.9370	36	1.4173	63 700	14 310	19 300	4 340	13 000	9 000	1.25	2.76	2309 EK	H 2309	0.3	0.6
2310	50	1.9685	110	4.3307	40	1.5748	63 700	14 310	20 000	4 490	14 000	9 500	1.65	3.64	2310 K	H 2310	0.3	0.8
2311	55	2.1654	120	4.7244	43	1.6929	76 100	17 100	24 000	5 390	11 000	7 500	2.10	4.63	2311 K	H 2311	0.4	0.9
2312	60	2.3622	130	5.1181	46	1.8110	87 100	19 570	28 500	6 400	9 500	7 000	2.60	5.73	2312 K	H 2312	0.5	1.0
2313	65	2.5591	140	5.5118	48	1.8898	95 600	21 480	32 500	7 300	9 000	6 300	3.25	7.17	2313 K	H 2313	0.5	1.1
2314	70	2.7559	150	5.9055	51	2.0079	111 000	24 940	37 500	8 430	8 000	6 000	3.90	8.60	–	–	–	–
2315	75	2.9528	160	6.2992	55	2.1654	124 000	27 870	43 000	9 660	7 500	5 600	4.70	10.36	2315 K	H 2315	1.0	2.2
2316	80	3.1496	170	6.6929	58	2.2835	135 000	30 340	49 000	11 010	7 000	5 300	6.10	13.45	2316 K	H 2316	1.2	2.7
2317 M	85	3.3465	180	7.0866	60	2.3622	140 000	31 460	51 000	11 460	6 700	4 800	7.05	15.55	2317 KM	H 2317	1.4	3.1
2318	90	3.5433	190	7.4803	64	2.5197	151 000	33 930	57 000	12 810	6 300	4 500	8.45	18.63	2318 K	H 2318	1.7	3.7
2319 M	95	3.7402	200	7.8740	67	2.6378	165 000	37 080	64 000	14 380	6 000	4 500	9.80	21.61	2319 KM	H 2319	1.8	4.0
2320	100	3.9370	215	8.4646	73	2.8740	190 000	42 700	80 000	17 980	5 600	4 000	12.50	27.56	2320 K	H 2320	2.1	4.6
13 030	150	5.9055	225	8.8583	56	2.2047	57 200	12 850	23 600	5 300	5 600	3 400	7.50	16.54	–	–	–	–
13 036	180	7.0866	280	11.0236	74	2.9134	95 600	21 480	40 000	8 990	4 500	2 800	16.00	35.28	–	–	–	–
13 940	200	7.8740	280	11.0236	60	2.3622	60 500	13 600	29 000	6 520	4 300	2 600	10.70	23.59	–	–	–	–
13 944	220	8.6614	300	11.8110	60	2.3622	60 500	13 600	30 500	6 850	3 800	2 400	11.00	24.26	–	–	–	–
13 948	240	9.4488	320	12.5984	60	2.3622	60 500	13 600	32 000	7 190	3 800	2 200	11.30	24.92	–	–	–	–

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

Double row
Sealed, cylindrical and tapered bore
Series: 2200 E 2RS1 – 2214 E 2RS1
Size: 10 mm – 70 mm
0.3937 in – 2.7559 in

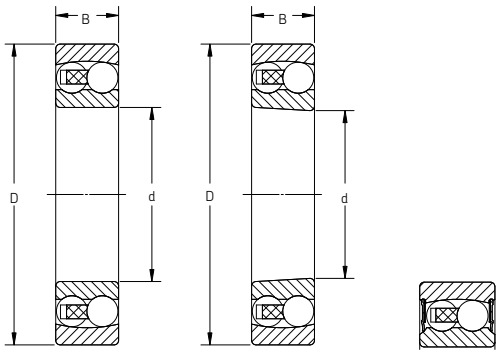


Cylindrical bore | Tapered bore | 2RS1

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
2200 E-2RS1TN9	10	0.3937	30	1.1811	14	0.5512	5530	1 240	1 180	270	5 530	17 000	0.048	0.11	–	–	–	–
2201 E-2RS1TN9	12	0.4724	32	1.2598	14	0.5512	6240	1 400	1 430	320	6 240	16 000	0.053	0.12	–	–	–	–
2202 E-2RS1TN9	15	0.5906	35	1.3780	14	0.5512	7410	1 670	1 760	400	7 410	14 000	0.058	0.13	–	–	–	–
2203 E-2RS1TN9	17	0.6693	40	1.5748	16	0.6299	8840	1 990	2 200	490	8 840	12 000	0.089	0.20	–	–	–	–
2204 E-2RS1TN9	20	0.7874	47	1.8504	18	0.7087	12700	2 850	3 400	760	12 700	10 000	0.14	0.31	–	–	–	–
2205 E-2RS1TN9	25	0.9843	52	2.0472	18	0.7087	14300	3 210	4 000	900	14 300	9 000	0.16	0.35	2205 E-2RS1K	H 305 E	0.07	0.20
2206 E-2RS1TN9	30	1.1811	62	2.4409	20	0.7874	15600	3 510	4 650	1 040	15 600	7 500	0.26	0.57	2206 E-2RS1K	H 306 E	0.10	0.30
2207 E-2RS1TN9	35	1.3780	72	2.8346	23	0.9055	19000	4 270	6 000	1 350	19 000	6 300	0.41	0.90	2207 E-2RS1K	H 307 E	0.14	0.40
2208 E-2RS1TN9	40	1.5748	80	3.1496	23	0.9055	19900	4 470	6 950	1 560	19 900	5 600	0.5	1.10	2208 E-2RS1K	H 308 E	0.17	0.40
2209 E-2RS1TN9	45	1.7717	85	3.3465	23	0.9055	22900	5 150	7 800	1 750	22 900	5 300	0.53	1.17	2209 E-2RS1K	H 309 E	0.23	0.60
2210 E-2RS1TN9	50	1.9685	90	3.5433	23	0.9055	22900	5 150	8 150	1 830	22 900	4 800	0.57	1.26	2210 E-2RS1K	H 310 E	0.27	0.60
2211 E-2RS1TN9	55	2.1654	100	3.9370	25	0.9843	27600	6 200	10 600	2 380	27 600	4 300	0.79	1.74	2211 E-2RS1K	H 311 E	0.32	0.80
2212 E-2RS1TN9	60	2.3622	110	4.3307	28	1.1024	31200	7 010	12 200	2 740	31 200	3 800	1.05	2.32	2212 E-2RS1K	H 312 E	–	–
2213 E-2RS1TN9	65	2.5591	120	4.7244	31	1.2205	35100	7 890	14 000	3 150	35 100	3 600	1.4	3.09	2213 E-2RS1K	H 313 E	0.42	1.00
2214 E-2RS1TN9	70	2.7559	125	4.9213	31	1.2205	35800	8 040	14 600	3 280	35 800	3 400	1.45	3.20	–	–	–	–

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

Double row
Sealed, cylindrical and tapered bore
Series: 2302 E 2RS1 – 2310 E 2RS1
Size: 15 mm – 50 mm
0.5906 in – 1.9685 in



Cylindrical bore Tapered bore 2RS1

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Designation		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed			Tapered bore	Adapter sleeve		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb			kg	lb
2302 E-2RS1TN9	15	0.5906	42	1.6535	17	0.6693	10800	2 430	2 600	580	10 800	12 000	0.11	0.24	–	–	–	–
2303 E-2RS1TN9	17	0.6693	47	1.8504	19	0.7480	12700	2 850	3 400	760	12 700	11 000	0.16	0.35	–	–	–	–
2304 E-2RS1TN9	20	0.7874	52	2.0472	21	0.8268	14300	3 210	4 000	900	14 300	9 000	0.21	0.46	–	–	–	–
2305 E-2RS1TN9	25	0.9843	62	2.4409	24	0.9449	19000	4 270	5 400	1 210	19 000	7 500	0.34	0.75	2305 E-2RS1K	H 2305	–	–
2306 E-2RS1TN9	30	1.1811	72	2.8346	27	1.0630	22500	5 060	6 800	1 530	22 500	6 700	0.51	1.12	2306 E-2RS1K	H 2306	–	–
2307 E-2RS1TN9	35	1.3780	80	3.1496	31	1.2205	26500	5 960	8 500	1 910	26 500	5 600	0.7	1.54	2307 E-2RS1K	H 2307 E	–	–
2308 E-2RS1TN9	40	1.5748	90	3.5433	33	1.2992	33800	7 600	11 200	2 520	33 800	5 000	0.96	2.12	2308 E-2RS1K	H 2309	–	–
2309 E-2RS1TN9	45	1.7717	100	3.9370	36	1.4173	39000	8 760	13 400	3 010	39 000	4 500	1.3	2.87	2309 E-2RS1K	H 2309	–	–
2310 E-2RS1TN9	50	1.9685	110	4.3307	40	1.5748	43600	9 800	14 000	3 150	43 600	4 000	1.65	3.64	2310 E-2RS1K	H 2310	–	–

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

Notes

Notes

Notes

Thrust bearings

Thrust ball bearing

53210 U210*
M

1

with seating washer

Spherical roller thrust bearing

29430 E

2

1. Features

M	Machined brass cage, roller guided
J9	Internal design change to J cage
F	Machined steel or special cast iron cage, roller guided
P5	Dimensional and running accuracy to ISO tolerance class 5 (approximately ABEC 5)

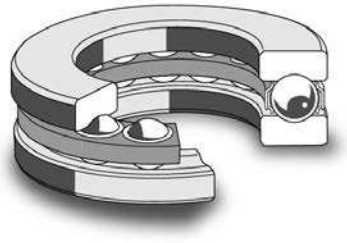
2. Features

E	Optimized internal design, window-type steel cage
–	Machined brass cage (no symbol)
EF	Optimized internal design, machined steel cage
EM	Optimized internal design, machined brass cage
RD	Spacer sleeve
W64	Solid Oil lubricants

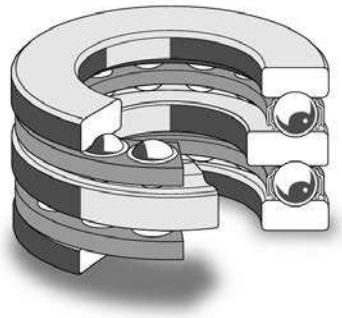
*** The sphered seating washer must be ordered separately**. See **Table 1** on page 110 for designations and dimensions.

Technical features

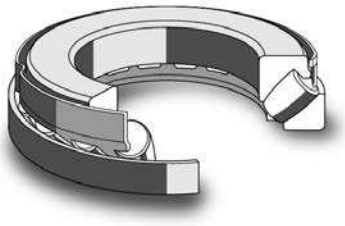
	Thrust ball bearing	Spherical roller thrust bearing
Boundary dimensions	Bearings with flat housing washers are in accordance with ISO 104. The bearings with sphered housing washers have dimensions in accordance with ISO 20516.	In accordance with ISO 104
Tolerances	ABEC 1	RBEC 1
Heat stabilization	250° F (125° C)	392° F (200° C)
Misalignment	None – contact SKF	**Normal load conditions** $F_a + 2.7 \times F_r \leq 0.05\ C_0$ series 29200 – 2 degrees series 29300 – 2.5 degrees series 29400 – 3 degrees **Heavy load conditions** $F_a + 2.7 \times F_r > 0.05\ C_0$ 1.5 degrees for all series **Extreme load conditions** $F_a + 2.7 \times F_r > 0.3\ C_0$ series 29200 – 1 degree series 29300 – 0.3 degrees series 29400 – 0.3 degrees
Cage materials		
Standard	Pressed steel	Steel
Optional	Machined brass (M)	Machined brass (larger bearings only)
Seals	Not available	Not available



Single direction thrust ball bearing
(data tables on page 112)



Double direction thrust ball bearing
(data tables on page 118)



Spherical roller thrust bearing
(data tables on page 123)

Introduction

SKF produces two types of thrust bearings – ball and roller – both of the separable design. The thrust ball bearings are manufactured in single direction and double direction designs and are specifically designed into applications in which there is no radial load.

The spherical roller thrust bearings are capable of handling shaft misalignment, very heavy axial loads, small radial loads and relatively high speeds.

Basic design

Single direction thrust ball bearings

Thrust ball bearings of this type are suitable for the accommodation of axial loads in one direction only and can locate a shaft in one direction; **they may not, however, be subjected to any radial load.**

Single direction thrust ball bearings comprise a shaft washer with raceway groove, a ball and cage thrust assembly and a housing washer with raceway groove. The housing washer can have a flat or sphered seating surface as required. Bearings with a sphered housing washer can compensate for initial misalignment if they are used together with a seating washer which has a correspondingly sphered surface.

The bearings are separable and mounting is simple as the components can be mounted individually.

Double direction thrust ball bearings

Thrust ball bearings of this type can accommodate axial loads acting in both directions and consequently can be used to locate a shaft in both directions. They should not be subjected to any radial load.

Double direction thrust ball bearings comprise one shaft washer with a raceway groove in each face, two ball and cage thrust assemblies and two housing washers with raceway groove. The housing washers can have a flat or sphered seating surface as required. Bearings with sphered housing washers can compensate for initial misalignments if they are used together with seating washers which have a correspondingly sphered surface. The sphered seating washers must be ordered separately. See bearing tables for designations.

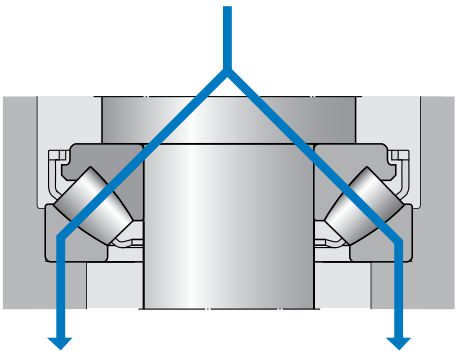
The bearings are separable. The housing washers and ball and cage thrust assemblies are the same as those of the corresponding single direction bearings.

Spherical roller thrust bearings

In spherical roller thrust bearings the load is transmitted from one raceway to the other at an angle to the bearing axis **(Figure 1)**. They are therefore suitable, in contrast to the other thrust bearings shown in this catalog, for the accommodation of radial loads in addition to simultaneously acting axial loads. Another important characteristic of spherical roller thrust bearings is their self-aligning capability. This makes the bearings insensitive to shaft deflection and to errors of alignment of the shaft relative to the housing.

Spherical roller thrust bearings are of separable design; the shaft washer with roller and cage assembly, and the housing washer, can be mounted individually.

Figure 1



Product highlights

Thrust ball

Purely for thrust loads
SKF thrust ball bearings are designed for purely thrust loads and are used in applications in which there is no radial load. These bearings are separable to facilitate easy mounting.

High speed capabilities
SKF thrust ball bearings offer higher speed capabilities than the spherical roller thrust bearings.

Large product assortment
Single and double direction designs are available also with sphered seating washers to compensate for alignment errors. Size range includes 10 to 800 mm inside diameter.

Spherical roller thrust

Accommodates heavy combined load at high speeds
Spherical roller thrust bearings are used extensively in applications where heavy axial and simultaneous radial loads need to be supported. These heavy loads are often accompanied by relatively high speeds.

Unaffected by misalignment
Spherical roller thrust bearings are also insensitive to misalignments allowing for equipment machining error without reduced service life.

Application flexibility
Used in a wide range of machinery including gearboxes, water turbines, steering propellers and propeller thrust blocks, wind power stations, electric motors, pumps, fans, crushers, machine tools, rolling mills, extrusion machines refiners, injection molding machines, hydraulic motors, cranes and tunneling.

Introduction

SKF spherical roller thrust bearings incorporate a large number of asymmetrical rollers and have specially designed raceways with an optimum conformity. They are therefore suitable for very heavy axial loads and also permit relatively high speed operation.

SKF spherical roller thrust bearings are manufactured in two designs depending on size and series. Bearings identified by the designation suffix E up to and including size 68 – except bearing 29238 E – have a pressed steel window-type cage which forms a non-separable assembly with the rollers and the shaft washer. All other bearings have a machined cage of brass which is guided by a sleeve fixed in the shaft washer bore. Here again, the shaft washer, cage and rollers form a non-separable unit.

The E design bearings represent a new generation of SKF spherical roller thrust bearings. They have the same boundary dimensions, but because of improvements to the internal design, their load carrying capacity is much higher and their friction much lower than that of the earlier bearings.

If bearings of earlier design with a machined cage, where axial forces were transmitted via the cage-guiding sleeve, are to be replaced by E design bearings with a pressed steel cage, it is necessary to insert a spacer sleeve between the shaft washer and the existing abutment **(Figure 2).** If bearings of the earlier B design are to be replaced, the spacer sleeve used with the B design generally needs machining **(Figure 3)**. The sleeves must be hardened and should have ground faces. These sleeves may be purchased through SKF using the designation RD + the basic part number, i.e. RD 29434 B. Appropriate outside diameters for the sleeves and detailed drawings can be obtained from SKF Applications Engineering.

Loads

Minimum load – thrust ball

In order to provide satisfactory operation, thrust ball bearings, like all ball and roller bearings, must always be subjected to a given minimum load, particularly if they are to operate at high speeds or are subjected to high accelerations or rapid changes in the direction of load. Under such conditions the inertia forces of the balls and cage(s), and the friction in the lubricant, can have a detrimental influence on the rolling conditions in the bearing arrangement and may cause damaging sliding movements to occur between the balls and raceways.

The requisite minimum axial load to be applied to thrust ball bearings can be estimated using

$$F_{am} = A \left(\frac{n}{1\,000} \right)^2$$

where
F_{am} = minimum axial load, N
A = minimum load factor, (see product tables)
n = rotational speed, r/min

When starting up at low temperatures or when the lubricant is highly viscous, even greater minimum loads may be required. The weight of the components supported by the bearing, particularly when the shaft is vertical, together with external forces, generally exceeds the requisite minimum load. If this is not the case, the thrust ball bearing must be preloaded, e.g. by springs.

Minimum load – spherical roller thrust

In order to provide satisfactory operation, spherical roller thrust bearings, like all ball and roller bearings, must always be subjected to a given minimum load, particularly if they are to operate at high speeds or are subjected to high accelerations or rapid changes in the direction of the load. Under such conditions, 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 arrangement and may cause damaging sliding movements to occur between the rollers and raceways.

The requisite minimum axial load to be applied to spherical roller thrust bearings can be estimated using

$$F_{am} = 1.8\, F_r + A \left(\frac{n}{1\,000} \right)^2$$

where
F_{am} = minimum axial load, N
F_r = radial component of load for bearings subjected to combined load, N
C_0 = basic static load rating, N (see product tables)
A = minimum load factor, (see product tables)
n = rotational speed, r/min

If $1.8\, F_r < 0.0005\, C_0$ then $0.0005\, C_0$ should be used in the above equation instead of $1.8\, F_r$.

At speeds higher than the reference speed or when starting up at low temperatures, or when the lubricant is highly viscous, even greater minimum loads may be required. The weight of the components supported by the bearing, together with external forces, generally exceeds the requisite minimum load. If this is not the case, the spherical roller thrust bearing must be preloaded, e.g. by springs. For a more accurate calculation of minimum load requirement that factors in lubrication, visit **skfusa.com** and choose Engineering Tools under the Support menu.

Figure 2

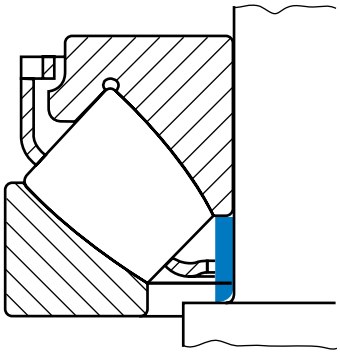
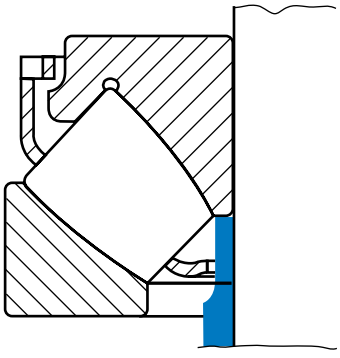


Figure 3



Equivalent dynamic bearing load – thrust ball

For single and double direction thrust ball bearings

$P = F_a$

Equivalent dynamic bearing load – spherical roller thrust

For spherical roller thrust bearings, provided $F_r \leq 0.55\ F_a$

$P = F_a + 1.2\ F_r$

If, however, the bearing is arranged so that it can compensate for axial and radial runouts by relative movements between the washers and provided $Fr \leq 0.55\ F_a$ then

$P = 0.88\ (F_a + 1.2\ F_r)$

can be used.

If $F_r > 0.55\ F_a$ please contact SKF Applications Engineering.

Design of associated components for roller thrust bearings

For E design bearings with pressed steel cage it is recommended that the housing bore be relieved to prevent the cage from rubbing against the housing if the shaft should be misaligned **(Figure 4)**. Recommended guideline values for the diameter of this relief are D + 15 mm for bearings with outside diameters up to and including 380 mm and D + 20 mm for larger bearings. Contact SKF Applications Engineering for additional information.

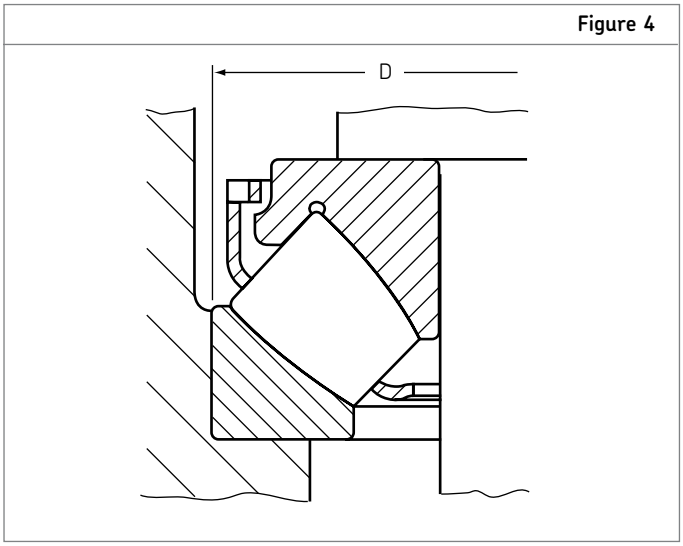
SKF Explorer class bearings

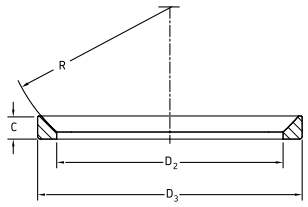
High performance SKF Explorer spherical roller thrust bearings are shown in blue in the product tables. SKF Explorer bearings retain the designation of the earlier standard bearings, e.g. 29330 E. However, each bearing and its box are marked with the name "SKF Explorer". Additional details on the Explorer performance class bearings can be found on page 25.

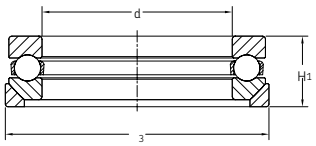
Frequency vibration data

Frequency vibration data is available on the SKF website **skfusa.com**. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Figure 4







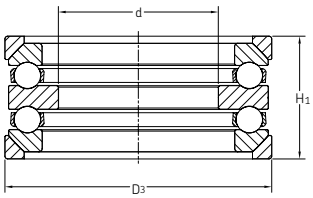
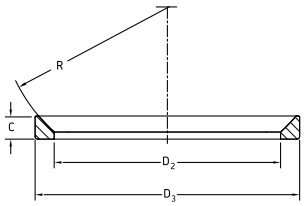
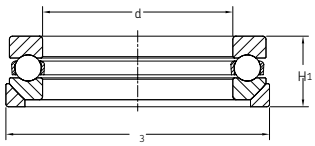


Table 1

Ball thrust bearing seating washer dimensions

Designation		Dimensions - seating washer										Mass	
Seating washer	Bearing	D2		D3		C		R		H1		Seating washer	
		mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
U 201	53201	20	0.7874	30	1.1811	3.5	0.1378	25	0.9843	13	0.5118	0.01	0.03
U 202	53202	24	0.9449	35	1.3780	4	0.1575	28	1.1024	15	0.5906	0.01	0.03
U 203	53203	26	1.0236	38	1.4961	4	0.1575	32	1.2598	15	0.5906	0.02	0.03
U 204	53204	30	1.1811	42	1.6535	5	0.1969	36	1.4173	17	0.6693	0.02	0.04
U 205	53205	36	1.4173	50	1.9685	5.5	0.2165	40	1.5748	19	0.7480	0.03	0.07
U 206	53206	42	1.6535	55	2.1654	5.5	0.2165	45	1.7717	20	0.7874	0.04	0.08
U 207	53207	48	1.8898	65	2.5591	7	0.2756	50	1.9685	22	0.8661	0.06	0.13
U 207	54207	48	1.8898	65	2.5591	7	0.2756	50	1.9685	42	1.6535	0.06	0.13
U 208	53208	55	2.1654	72	2.8346	7	0.2756	56	2.2047	23	0.9055	0.07	0.15
U 208	54208	55	2.1654	72	2.8346	7	0.2756	56	2.2047	44	1.7323	0.07	0.15
U 209	53209	60	2.3622	78	3.0709	7.5	0.2953	56	2.2047	24	0.9449	0.09	0.19
U 210	53210	62	2.4409	82	3.2283	7.5	0.2953	64	2.5197	26	1.0236	0.10	0.22
U 211	53211	72	2.8346	95	3.7402	9	0.3543	72	2.8346	30	1.1811	0.15	0.33
U 211	54211	72	2.8346	95	3.7402	9	0.3543	72	2.8346	55	2.1654	0.15	0.33
U 212	53212	78	3.0709	100	3.9370	9	0.3543	72	2.8346	31	1.2205	0.16	0.35
U 213	53213	82	3.2283	105	4.1339	9	0.3543	80	3.1496	32	1.2598	0.18	0.40
U 214	53214	88	3.4646	110	4.3307	9	0.3543	80	3.1496	32	1.2598	0.19	0.42
U 215	53215	92	3.6220	115	4.5276	9.5	0.3740	90	3.5433	32	1.2598	0.21	0.46
U 216	53216	98	3.8583	120	4.7244	10	0.3937	90	3.5433	33	1.2992	0.22	0.48
U 217	53217	105	4.1339	130	5.1181	11	0.4331	100	3.9370	37	1.4567	0.29	0.64
U 218	53218	110	4.3307	140	5.5118	13.5	0.5315	100	3.9370	42	1.6535	0.42	0.92
U 220	53220	125	4.9213	155	6.1024	14	0.5512	112	4.4094	45	1.7717	0.50	1.10
U 222	53222	135	5.3150	165	6.4961	14	0.5512	125	4.9213	45	1.7717	0.56	1.23
U 224	53224	145	5.7087	175	6.8898	15	0.5906	125	4.9213	46	1.8110	0.65	1.43
U 226	53226	160	6.2992	195	7.6772	17	0.6693	140	5.5118	53	2.0866	0.90	1.98
U 228	53228	170	6.6929	210	8.2677	17	0.6693	160	6.2992	55	2.1654	1.20	2.64
U 306	53306	45	1.7717	62	2.4409	7	0.2756	50	1.9685	25	0.9843	0.06	0.12
U 306	54306	45	1.7717	62	2.4409	7	0.2756	50	1.9685	46	1.8110	0.06	0.12
U 307	53307	52	2.0472	72	2.8346	7.5	0.2953	56	2.2047	28	1.1024	0.08	0.18
U 307	54307	52	2.0472	72	2.8346	7.5	0.2953	56	2.2047	52	2.0472	0.08	0.18
U 308	53308	60	2.3622	82	3.2283	8.5	0.3346	64	2.5197	31	1.2205	0.12	0.26
U 308	54308	60	2.3622	82	3.2283	8.5	0.3346	64	2.5197	59	2.3228	0.12	0.26





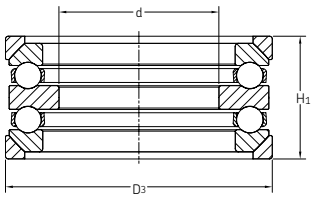


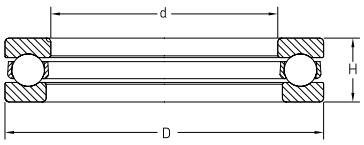
Table 1

Ball thrust bearing seating washer dimensions

Designation		Dimensions - seating washer										Mass	
Seating washer	Bearing	D2		D3		C		R		H1		Seating washer	
		mm	in	mm	in	mm	in	mm	in	mm	in	kg	lb
U 309	53309	65	2.5591	90	3.5433	10	0.3937	64	2.5197	33	1.2992	0.17	0.37
U 309	54309	65	2.5591	90	3.5433	10	0.3937	64	2.5197	62	2.4409	0.17	0.37
U 310	53310	72	2.8346	100	3.9370	11	0.4331	72	2.8346	37	1.4567	0.23	0.51
U 310	54310	72	2.8346	100	3.9370	11	0.4331	72	2.8346	70	2.7559	0.23	0.51
U 311	53311	80	3.1496	110	4.3307	11.5	0.4528	80	3.1496	42	1.6535	0.28	0.62
U 312	53312	85	3.3465	115	4.5276	11.5	0.4528	90	3.5433	42	1.6535	0.31	0.68
U 312	54312	85	3.3465	115	4.5276	11.5	0.4528	90	3.5433	78	3.0709	0.31	0.68
U 313	53313	90	3.5433	120	4.7244	12.5	0.4921	90	3.5433	43	1.6929	0.34	0.75
U 314	53314	98	3.8583	130	5.1181	13	0.5118	100	3.9370	48	1.8898	0.41	0.90
U 315	53315	105	4.1339	140	5.5118	15	0.5906	100	3.9370	52	2.0472	0.55	1.21
U 316	53316	110	4.3307	145	5.7087	15	0.5906	112	4.4094	52	2.0472	0.57	1.25
U 316	54316	110	4.3307	145	5.7087	15	0.5906	112	4.4094	95	3.7402	0.57	1.25
U 317	53317	115	4.5276	155	6.1024	17.5	0.6890	112	4.4094	58	2.2835	0.81	1.78
U 317	54317	115	4.5276	155	6.1024	17.5	0.6890	112	4.4094	105	4.1339	0.81	1.78
U 318	53318	120	4.7244	160	6.2992	18	0.7087	112	4.4094	59	2.3228	0.84	1.85
U 320	53320	135	5.3150	175	6.8898	18	0.7087	125	4.9213	64	2.5197	0.95	2.09
U 322	53322	150	5.9055	195	7.6772	20.5	0.8071	140	5.5118	72	2.8346	1.30	2.86
U 324	53324	165	6.4961	220	8.6614	22	0.8661	160	6.2992	80	3.1496	2.00	4.40
U 408	53408	65	2.5591	95	3.7402	12	0.4724	72	2.8346	42	1.6535	0.25	0.55
U 409	53409	72	2.8346	105	4.1339	12.5	0.4921	80	3.1496	46	1.8110	0.32	0.70
U 409	54409	72	2.8346	105	4.1339	12.5	0.4921	80	3.1496	86	3.3858	0.32	0.70
U 410	53410	80	3.1496	115	4.5276	14	0.5512	90	3.5433	50	1.9685	0.41	0.90
U 410	54410	80	3.1496	115	4.5276	14	0.5512	90	3.5433	92	3.6220	0.41	0.90
U 412	53412	95	3.7402	135	5.3150	16	0.6299	100	3.9370	58	2.2835	0.71	1.56
U 414	53414	110	4.3307	155	6.1024	19.5	0.7677	112	4.4094	69	2.7165	1.00	2.20
U 415	53415	115	4.5276	165	6.4961	21	0.8268	125	4.9213	75	2.9528	1.25	2.75
U 416	53416	125	4.9213	175	6.8898	22	0.8661	125	4.9213	78	3.0709	1.40	3.08
U 416	54416	125	4.9213	175	6.8898	22	0.8661	125	4.9213	140	5.5118	1.40	3.08
U 418	53418	140	5.5118	195	7.6772	25.5	1.0039	140	5.5118	88	3.4646	1.90	4.18
U 420	53420	155	6.1024	220	8.6614	27	1.0630	160	6.2992	98	3.8583	2.90	6.38
U 420	54420	155	6.1024	220	8.6614	27	1.0630	160	6.2992	176	6.9291	2.90	6.38

Thrust ball bearings
Single direction
Standard
Series: BA 3 – BA 9
Size: 3 mm – 9 mm
0.1181 in – 0.3543 in

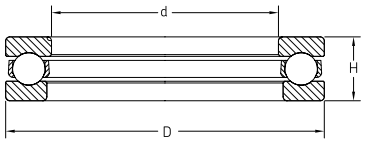
Series: 51100 – 51132 M
Size: 10 mm – 160 mm
0.3937 in – 6.2292 in



Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
BA 3	3	0.1181	8	0.3150	3.5	0.1378	806	180	720	160	0.003	26 000	36 000	0.0009	0.00
BA 4	4	0.1575	10	0.3937	4	0.1575	761	170	720	160	0.003	22 000	30 000	0.0015	0.00
BA 5	5	0.1969	12	0.4724	4	0.1575	852	190	965	220	0.005	20 000	28 000	0.0021	0.00
BA 6	6	0.2362	14	0.5512	5	0.1969	1 780	400	1 920	430	0.019	17 000	24 000	0.0035	0.01
BA 7	7	0.2756	17	0.6693	6	0.2362	2 510	560	2 900	650	0.044	14 000	19 000	0.0065	0.01
BA 8	8	0.3150	19	0.7480	7	0.2756	3 190	720	3 800	850	0.075	12 000	17 000	0.0091	0.02
BA 9	9	0.3543	20	0.7874	7	0.2756	3 120	700	3 800	850	0.075	12 000	16 000	0.0100	0.02
51100	10	0.3937	24	0.9449	9	0.3543	9 950	2 240	15 300	3 440	1.2	9 500	13 000	0.02	0.04
51101	12	0.4724	26	1.0236	9	0.3543	10 400	2 340	16 600	3 730	1.4	9 000	13 000	0.02	0.05
51102	15	0.5906	28	1.1024	9	0.3543	10 600	2 380	18 300	4 110	1.7	8 500	12 000	0.02	0.05
51103	17	0.6693	30	1.1811	9	0.3543	11 400	2 560	21 200	4 760	2.3	8 500	12 000	0.03	0.06
51104	20	0.7874	35	1.3780	10	0.3937	15 100	3 390	29 000	6 520	4.4	7 500	10 000	0.04	0.08
51105	25	0.9843	42	1.6535	11	0.4331	18 200	4 090	39 000	8 760	7.9	6 300	9 000	0.06	0.12
51106	30	1.1811	47	1.8504	11	0.4331	19 000	4 270	43 000	9 660	9.6	6 000	8 500	0.06	0.14
51107	35	1.3780	52	2.0472	12	0.4724	19 900	4 470	51 000	11 460	13	5 600	7 500	0.08	0.18
51108	40	1.5748	60	2.3622	13	0.5118	25 500	5 730	63 000	14 160	20	5 000	7 000	0.12	0.26
51109	45	1.7717	65	2.5591	14	0.5512	26 500	5 960	69 500	15 620	25	4 500	6 300	0.14	0.31
51110	50	1.9685	70	2.7559	14	0.5512	27 000	6 070	75 000	16 850	29	4 300	6 300	0.16	0.35
51111	55	2.1654	78	3.0709	16	0.6299	30 200	6 790	81 500	18 310	39	3 800	5 300	0.23	0.51
51112	60	2.3622	85	3.3465	17	0.6693	41 600	9 350	122 000	27 420	77	3 600	5 000	0.27	0.60
51113	65	2.5591	90	3.5433	18	0.7087	37 700	8 470	108 000	24 270	60	3 400	4 800	0.33	0.73
51114	70	2.7559	95	3.7402	18	0.7087	40 300	9 060	120 000	26 970	74	3 400	4 500	0.35	0.77
51115	75	2.9528	100	3.9370	19	0.7480	44 200	9 930	134 000	30 110	110	3 200	4 300	0.40	0.88
51116	80	3.1496	105	4.1339	19	0.7480	44 900	10 090	140 000	31 460	120	3 000	4 300	0.42	0.93
51117	85	3.3465	110	4.3307	19	0.7480	44 900	10 090	146 000	32 810	140	3 000	4 300	0.44	0.97
51118	90	3.5433	120	4.7244	22	0.8661	59 200	13 300	208 000	46 740	220	2 600	3 800	0.67	1.48
51120	100	3.9370	135	5.3150	25	0.9843	80 600	18 110	265 000	59 600	440	2 400	3 200	0.97	2.14
51122	110	4.3307	145	5.7087	25	0.9843	83 200	18 700	285 000	64 000	520	2 200	3 200	1.05	2.32
51124	120	4.7244	155	6.1024	25	0.9843	85 200	19 150	305 000	68 500	580	2 200	3 000	1.15	2.54
51126	130	5.1181	170	6.6929	30	1.1811	119 000	26 740	440 000	98 900	940	1 900	2 600	1.85	4.08
51128	140	5.5118	180	7.0866	31	1.2205	111 000	24 940	440 000	98 900	1 000	1 800	2 600	2.05	4.52
51130 M	150	5.9055	190	7.4803	31	1.2205	111 000	24 940	440 000	98 900	1 000	1 700	2 400	2.20	4.85
51132 M	160	6.2992	200	7.8740	31	1.2205	112 000	25 170	465 000	104 500	1 100	1 700	2 400	2.35	5.18

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

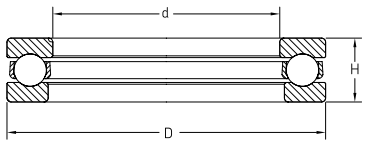


Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
51122	110	4.3307	145	5.7087	25	0.9843	83 200	18 700	285 000	64 000	520	2 200	3 200	1.05	2.32
51124	120	4.7244	155	6.1024	25	0.9843	85 200	19 150	305 000	68 500	580	2 200	3 000	1.15	2.54
51126	130	5.1181	170	6.6929	30	1.1811	119 000	26 740	440 000	98 900	940	1 900	2 600	1.85	4.08
51128	140	5.5118	180	7.0866	31	1.2205	111 000	24 940	440 000	98 900	1 000	1 800	2 600	2.05	4.52
51130 M	150	5.9055	190	7.4803	31	1.2205	111 000	24 940	440 000	98 900	1 000	1 700	2 400	2.20	4.85
51132 M	160	6.2992	200	7.8740	31	1.2205	112 000	25 170	465 000	104 500	1 100	1 700	2 400	2.35	5.18
51134 M	170	6.6929	215	8.4646	34	1.3386	133 000	29 890	540 000	121 300	1 500	1 600	2 200	3.30	7.28
51136 M	180	7.0866	225	8.8583	34	1.3386	135 000	30 340	570 000	128 100	1 700	1 500	2 200	3.50	7.72
51138 M	190	7.4803	240	9.4488	37	1.4567	172 000	38 650	710 000	159 600	2 600	1 400	2 000	4.05	8.93
51140 M	200	7.8740	250	9.8425	37	1.4567	168 000	37 750	710 000	159 600	2 600	1 400	1 900	4.25	9.37
51144 M	220	8.6614	270	10.6299	37	1.4567	178 000	40 000	800 000	179 800	3 300	1 300	1 900	4.60	10.14
51148 M	240	9.4488	300	11.8110	45	1.7717	234 000	52 600	1 040 000	233 700	5 600	1 100	1 600	7.55	16.65
51152 M	260	10.2362	320	12.5984	45	1.7717	238 000	53 500	1 100 000	247 200	6 300	1 100	1 500	8.10	17.86
51156 M	280	11.0236	350	13.7795	53	2.0866	319 000	71 700	1 460 000	328 100	11 000	950	1 300	12.00	26.46
51160 M	300	11.8110	380	14.9606	62	2.4409	364 000	81 800	1 760 000	395 500	16 000	850	1 200	17.50	38.59
51164 M	320	12.5984	400	15.7480	63	2.4803	371 000	83 400	1 860 000	418 000	18 000	800	1 100	19.00	41.90
51168 M	340	13.3858	420	16.5354	64	2.5197	377 000	84 700	1 960 000	440 400	20 000	800	1 100	20.50	45.20
51172 F	360	14.1732	440	17.3228	65	2.5591	390 000	87 600	2 080 000	467 400	22 000	750	1 100	22.00	48.51
51176 F	380	14.9606	460	18.1102	65	2.5591	397 000	89 200	2 200 000	494 400	25 000	750	1 000	23.00	50.72
51180 F	400	15.7480	480	18.8976	65	2.5591	403 000	90 600	2 280 000	512 400	27 000	700	1 000	24.00	52.92
51184 F	420	16.5354	500	19.6850	65	2.5591	410 000	92 100	2 400 000	539 300	30 000	700	1 000	25.50	56.23
51188 F	440	17.3228	540	21.2598	80	3.1496	527 000	118 400	3 250 000	730 300	55 000	600	850	42.00	92.61
51192 F	460	18.1102	560	22.0472	80	3.1496	527 000	118 400	3 250 000	730 300	55 000	600	800	43.50	95.92
51196 F	480	18.8976	580	22.8346	80	3.1496	540 000	121 300	3 550 000	797 800	66 000	560	800	45.50	100.33
511/500 F	500	19.6850	600	23.6220	80	3.1496	553 000	124 300	3 600 000	809 000	67 000	560	800	47.00	103.64
511/530 F	530	20.8661	640	25.1969	85	3.3465	650 000	146 100	4 400 000	988 800	100 000	530	750	58.50	128.99
511/560 F	560	22.0472	670	26.3780	85	3.3465	650 000	146 100	4 650 000	1 044 900	110 000	500	700	61.00	134.51
511/600 F	600	23.6220	710	27.9528	85	3.3465	663 000	149 000	4 800 000	1 078 700	120 000	500	700	65.00	143.33
511/630 F	630	24.8031	750	29.5276	95	3.7402	728 000	163 600	5 400 000	1 213 500	150 000	450	630	84.00	185.22
511/670 F	670	26.3780	800	31.4961	105	4.1339	852 000	191 500	6 700 000	1 505 600	230 000	400	560	105.00	231.53
511/670 M	670	26.3780	800	31.4961	105	4.1339	852 000	191 500	6 700 000	1 505 600	230 000	400	560	105.00	231.53

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

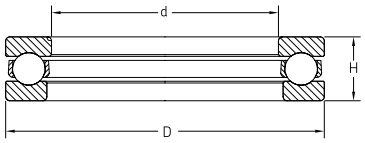
Thrust ball bearings
Single direction
Standard
Series: 51200 – 51228
Size: 10 mm – 140 mm
0.3937 in – 5.5118 in



Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
51200	10	0.3937	26	1.0236	11	0.4331	12 700	2 850	18 600	4 180	1.8	8 000	11 000	0.03	0.07
51201	12	0.4724	28	1.1024	11	0.4331	13 300	2 990	20 800	4 670	2.2	8 000	11 000	0.03	0.07
51202	15	0.5906	32	1.2598	12	0.4724	15 900	3 570	25 000	5 620	3.8	7 000	10 000	0.04	0.10
51203	17	0.6693	35	1.3780	12	0.4724	16 300	3 660	27 000	6 070	4.7	6 700	9 500	0.05	0.12
51204	20	0.7874	40	1.5748	14	0.5512	21 200	4 760	37 500	8 430	8.5	6 000	8 000	0.08	0.18
51205	25	0.9843	47	1.8504	15	0.5906	26 500	5 960	50 000	11 240	15	5 300	7 500	0.11	0.24
51206	30	1.1811	52	2.0472	16	0.6299	25 100	5 640	51 000	11 460	13	4 800	6 700	0.13	0.29
51207	35	1.3780	62	2.4409	18	0.7087	35 100	7 890	73 500	16 520	28	4 000	5 600	0.22	0.49
51208	40	1.5748	68	2.6772	19	0.7480	44 200	9 930	96 500	21 690	58	3 800	5 300	0.28	0.62
51209	45	1.7717	73	2.8740	20	0.7874	39 000	8 760	86 500	19 440	38	3 600	5 000	0.30	0.66
51210	50	1.9685	78	3.0709	22	0.8661	49 400	11 100	116 000	26 070	69	3 400	4 500	0.37	0.82
51211	55	2.1654	90	3.5433	25	0.9843	58 500	13 150	134 000	30 110	110	2 800	4 000	0.59	1.30
51212	60	2.3622	95	3.7402	26	1.0236	59 200	13 300	140 000	31 460	120	2 800	3 800	0.65	1.43
51213	65	2.5591	100	3.9370	27	1.0630	60 500	13 600	150 000	33 710	140	2 600	3 600	0.72	1.59
51214	70	2.7559	105	4.1339	27	1.0630	62 400	14 020	160 000	35 960	160	2 600	3 600	0.79	1.74
51215	75	2.9528	110	4.3307	27	1.0630	63 700	14 310	170 000	38 200	170	2 400	3 400	0.83	1.83
51216	80	3.1496	115	4.5276	28	1.1024	76 100	17 100	208 000	46 740	220	2 400	3 400	0.91	2.01
51217	85	3.3465	125	4.9213	31	1.2205	97 500	21 910	275 000	61 800	390	2 200	3 000	1.20	2.65
51218	90	3.5433	135	5.3150	35	1.3780	112 000	25 170	290 000	65 170	550	2 000	2 800	1.70	3.75
51220	100	3.9370	150	5.9055	38	1.4961	119 000	26 740	325 000	73 030	620	1 800	2 400	2.20	4.85
51222	110	4.3307	160	6.2992	38	1.4961	125 000	28 090	365 000	82 020	790	1 700	2 400	2.40	5.29
51224	120	4.7244	170	6.6929	39	1.5354	127 000	28 540	390 000	87 640	1 000	1 600	2 200	2.65	5.84
51226	130	5.1181	190	7.4803	45	1.7717	186 000	41 800	585 000	131 460	1 800	1 400	2 000	4.00	8.82
51228	140	5.5118	200	7.8740	46	1.8110	190 000	42 700	620 000	139 330	2 000	1 400	1 900	4.35	9.59

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

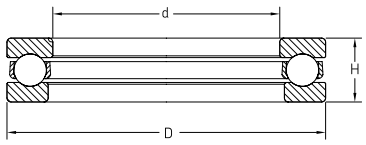


Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
51230 M	150	5.9055	215	8.4646	50	1.9685	238 000	53 480	800 000	179 780	3 300	1 300	1 800	6.10	13.45
51232 M	160	6.2992	225	8.8583	51	2.0079	238 000	53 480	830 000	186 520	3 800	1 200	1 700	6.55	14.44
51234 M	170	6.6929	240	9.4488	55	2.1654	270 000	60 670	930 000	208 990	5 400	1 200	1 700	8.15	17.97
51236 M	180	7.0866	250	9.8425	56	2.2047	302 000	67 870	1 120 000	251 690	6 100	1 200	1 600	8.60	18.96
51238 M	190	7.4803	270	10.6299	62	2.4409	332 000	74 610	1 270 000	285 390	8 400	1 100	1 600	12.00	26.46
51240 M	200	7.8740	280	11.0236	62	2.4409	338 000	75 960	1 320 000	296 630	9 100	1 100	1 500	12.00	26.46
51244 M	220	8.6614	300	11.8110	63	2.4803	358 000	80 450	1 460 000	328 090	11 000	950	1 300	13.00	28.67
51248 M	240	9.4488	340	13.3858	78	3.0709	449 000	100 900	1 960 000	440 450	21 000	800	1 100	23.00	50.72
51252 M	260	10.2362	360	14.1732	79	3.1102	488 000	109 660	2 240 000	503 370	24 000	750	1 100	25.00	55.13
51256 M	280	11.0236	380	14.9606	80	3.1496	488 000	109 660	2 320 000	521 350	28 000	750	1 000	26.50	58.43
51260 M	300	11.8110	420	16.5354	95	3.7402	585 000	131 460	3 000 000	674 160	47 000	630	850	42.00	92.61
51264 F	320	12.5984	440	17.3228	95	3.7402	572 000	128 540	3 000 000	674 160	47 000	600	850	45.50	100.33
51264 M		12.5984	440	17.3228	95	3.7402	572 000	128 540	3 000 000	674 160	47 000	600	850	45.00	99.23
51268 F	340	13.3858	460	18.1102	96	3.7795	371 000	83 370	1 370 000	307 870	53 000	600	800	48.50	106.94
51272 F	360	14.1732	500	19.6850	110	4.3307	741 000	166 520	4 150 000	932 580	90 000	500	700	70.00	154.35
51276 F	380	14.9606	520	20.4724	112	4.4094	728 000	163 600	4 150 000	932 580	90 000	500	700	73.00	160.97

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

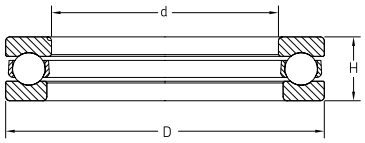
Thrust ball bearings
Single direction
Standard
Series: 51305 – 51340 M
Size: 25 mm – 200 mm
0.9843 in – 7.8740 in



Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
51305	25	0.9843	52	2.0472	18	0.7087	34 500	7 750	60 000	13 480	18	4 500	6 300	0.17	0.37
51306	30	1.1811	60	2.3622	21	0.8268	35 800	8 040	65 500	14 720	26	3 800	5 300	0.26	0.57
51307	35	1.3780	68	2.6772	24	0.9449	49 400	11 100	96 500	21 690	48	3 400	4 800	0.39	0.86
51308	40	1.5748	78	3.0709	26	1.0236	61 800	13 890	122 000	27 420	77	3 000	4 300	0.53	1.17
51309	45	1.7717	85	3.3465	28	1.1024	76 100	17 100	153 000	34 380	120	2 800	4 000	0.66	1.46
51310	50	1.9685	95	3.7402	31	1.2205	81 900	18 400	170 000	38 200	190	2 600	3 600	0.94	2.07
51311	55	2.1654	105	4.1339	35	1.3780	101 000	22 700	224 000	50 340	260	2 200	3 200	1.30	2.87
51312	60	2.3622	110	4.3307	35	1.3780	101 000	22 700	224 000	50 340	260	2 200	3 000	1.35	2.98
51313	65	2.5591	115	4.5276	36	1.4173	106 000	23 820	240 000	53 930	300	2 000	3 000	1.50	3.31
51314	70	2.7559	125	4.9213	40	1.5748	135 000	30 340	320 000	71 910	530	1 900	2 600	2.00	4.41
51315	75	2.9528	135	5.3150	44	1.7323	163 000	36 630	390 000	87 640	790	1 700	2 400	2.60	5.73
51316	80	3.1496	140	5.5118	44	1.7323	159 000	35 730	390 000	87 640	790	1 700	2 400	2.70	5.95
51317	85	3.3465	150	5.9055	49	1.9291	174 000	39 100	405 000	91 010	1 100	1 600	2 200	3.55	7.83
51318	90	3.5433	155	6.1024	50	1.9685	182 000	40 900	440 000	98 880	1 300	1 500	2 200	3.80	8.38
51320	100	3.9370	170	6.6929	55	2.1654	225 000	50 560	570 000	128 090	1 900	1 400	1 900	4.95	10.91
51322 M	110	4.3307	190	7.4803	63	2.4803	281 000	63 150	815 000	183 150	3 200	1 200	1 700	7.85	17.31
51324 M	120	4.7244	210	8.2677	70	2.7559	325 000	73 030	980 000	220 220	5 000	1 100	1 500	11.00	24.26
51326 M	130	5.1181	225	8.8583	75	2.9528	358 000	80 450	1 140 000	256 180	6 800	1 000	1 400	13.0	28.67
51328 M	140	5.5118	240	9.4488	80	3.1496	377 000	84 720	1 220 000	274 160	9 100	950	1 300	15.50	34.18
51330 M	150	5.9055	250	9.8425	80	3.1496	390 000	87 640	1 290 000	289 890	10 000	900	1 300	16.50	36.38
51332 M	160	6.2992	270	10.6299	87	3.4252	449 000	100 900	1 660 000	373 030	14 000	850	1 200	21.00	46.31
51334 M	170	6.6929	280	11.0236	87	3.4252	468 000	105 170	1 760 000	395 510	16 000	800	1 100	22.00	48.51
51336 M	180	7.0866	300	11.8110	95	3.7402	520 000	116 850	2 000 000	449 440	21 000	750	1 100	28.50	62.84
51338 M	190	7.4803	320	12.5984	105	4.1339	559 000	125 620	2 200 000	494 380	30 000	700	950	36.50	80.48
51340 M	200	7.8740	340	13.3858	110	4.3307	624 000	140 220	2 600 000	584 270	35 000	630	900	44.50	98.12

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

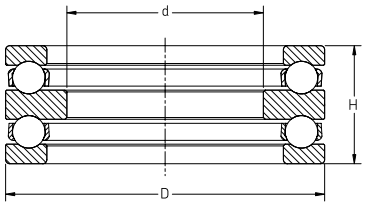


Single direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
51405	25	0.9843	60	2.3622	24	0.9449	42 300	9 510	67 000	15 060	48	3 600	5 000	0.34	0.75
51406	30	1.1811	70	2.7559	28	1.1024	70 200	15 780	122 000	27 420	97	3 000	4 300	0.52	1.15
51407	35	1.3780	80	3.1496	32	1.2598	76 100	17 100	137 000	30 790	150	2 600	3 600	0.79	1.74
51408	40	1.5748	90	3.5433	36	1.4173	95 600	21 480	183 000	41 120	260	2 400	3 400	1.10	2.43
51409	45	1.7717	100	3.9370	39	1.5354	124 000	27 870	240 000	53 930	370	2 200	3 000	1.40	3.09
51410	50	1.9685	110	4.3307	43	1.6929	159 000	35 730	340 000	76 400	600	2 000	2 800	2.00	4.41
51411	55	2.1654	120	4.7244	48	1.8898	195 000	43 820	400 000	89 890	790	1 800	2 400	2.55	5.62
51412 M	60	2.3622	130	5.1181	51	2.0079	199 000	44 720	430 000	96 630	960	1 600	2 200	3.10	6.84
51413 M	65	2.5591	140	5.5118	56	2.2047	216 000	48 540	490 000	110 110	1 200	1 500	2 200	4.00	8.82
51414 M	70	2.7559	150	5.9055	60	2.3622	234 000	52 580	550 000	123 600	1 600	1 400	2 000	5.00	11.03
51415 M	75	2.9528	160	6.2992	65	2.5591	251 000	56 400	610 000	137 080	1 900	1 300	1 800	6.75	14.88
51416 M	80	3.1496	170	6.6929	68	2.6772	302 000	67 870	750 000	168 540	2 300	1 200	1 700	7.95	17.53
51417 M	85	3.3465	180	7.0866	72	2.8346	286 000	64 270	750 000	168 540	2 900	1 200	1 600	9.45	20.84
51418 M	90	3.5433	190	7.4803	77	3.0315	307 000	68 990	815 000	183 150	3 500	1 100	1 500	11.00	24.26
51420 M	100	3.9370	210	8.2677	85	3.3465	371 000	83 370	1 060 000	238 200	5 800	950	1 400	15.00	33.08
51422 M	110	4.3307	230	9.0551	95	3.7402	410 000	92 130	1 220 000	274 160	7 700	900	1 300	20.00	44.10
51424 M	120	4.7244	250	9.8425	102	4.0157	432 000	97 080	1 320 000	296 630	16 000	800	1 100	25.50	56.23
51426 M	130	5.1181	270	10.6299	110	4.3307	520 000	116 850	1 730 000	388 760	16 000	750	1 000	32.00	70.56
51428 M	140	5.5118	280	11.0236	112	4.4094	520 000	116 850	1 730 000	388 760	16 000	700	1 000	34.50	76.07
51430 M	150	5.9055	300	11.8110	120	4.7244	559 000	125 620	1 960 000	440 450	20 000	670	950	42.50	93.71

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

Thrust ball bearings
Double direction
Standard
Series: 52202 – 52236 M
Size: 15 mm – 180 mm
0.3937 in – 5.9055 in



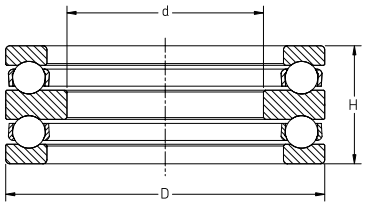
Double direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
52202	15	0.3937	32	1.2598	22	0.8661	15 900	3 570	25 000	5 620	3.8	5 300	7 500	0.08	0.18
52204	20	0.5906	40	1.5748	26	1.0236	21 200	4 760	37 500	8 430	8.5	4 300	6 000	0.15	0.33
52205	25	0.7874	47	1.8504	28	1.1024	26 500	5 960	50 000	11 240	15	3 800	5 300	0.22	0.49
52206	30	0.9843	52	2.0472	29	1.1417	25 100	5 640	51 000	11 460	13	3 600	5 000	0.25	0.55
52207	35	1.1811	62	2.4409	34	1.3386	35 100	7 890	73 500	16 520	28	3 000	4 300	0.41	0.90
52208	40	1.1811	68	2.6772	36	1.4173	44 200	9 930	96 500	21 690	58	2 800	3 800	0.55	1.21
52209	45	1.3780	73	2.8740	37	1.4567	39 000	8 760	86 500	19 440	38	2 600	3 600	0.60	1.32
52210	50	1.5748	78	3.0709	39	1.5354	49 400	11 100	116 000	26 070	69	2 400	3 400	0.71	1.57
52211	55	1.7717	90	3.5433	45	1.7717	58 500	13 150	134 000	30 110	110	2 200	3 000	1.10	2.43
52212	60	1.9685	95	3.7402	46	1.8110	59 200	13 300	140 000	31 460	120	2 000	2 800	1.20	2.65
52213	65	2.1654	100	3.9370	47	1.8504	60 500	13 600	150 000	33 710	140	2 000	2 800	1.35	2.98
52214	70	2.1654	105	4.1339	47	1.8504	62 400	14 020	160 000	35 960	160	1 900	2 600	1.50	3.31
52215	75	2.3622	110	4.3307	47	1.8504	63 700	14 310	170 000	38 200	170	1 900	2 600	1.55	3.42
52216	80	2.5591	115	4.5276	48	1.8898	76 100	17 100	208 000	46 740	220	2 400	3 400	1.70	3.75
52217	85	2.7559	125	4.9213	55	2.1654	97 500	21 910	275 000	61 800	390	1 600	2 200	2.40	5.29
52218	90	2.9528	135	5.3150	62	2.4409	112 000	25 170	290 000	65 170	550	1 500	2 000	3.20	7.06
52220	100	3.3465	150	5.9055	67	2.6378	119 000	26 740	325 000	73 030	620	1 300	1 800	4.20	9.26
52222	110	3.7402	160	6.2992	67	2.6378	125 000	28 090	365 000	82 020	790	1 300	1 800	4.65	10.25
52224	120	3.9370	170	6.6929	68	2.6772	127 000	28 540	390 000	87 640	1 000	1 200	1 700	5.25	11.58
52226	130	4.3307	190	7.4803	80	3.1496	182 000	40 900	585 000	131 460	1 800	1 100	1 500	8.00	17.64
52228	140	4.7244	200	7.8740	81	3.1890	190 000	42 700	620 000	139 330	2 000	1 000	1 400	8.65	19.07
52230 M	150	5.1181	215	8.4646	89	3.5039	238 000	53 480	800 000	179 780	3 300	950	1 300	11.50	25.36
52232 M	160	5.5118	225	8.8583	90	3.5433	238 000	53 480	830 000	186 520	3 800	900	1 300	12.00	26.46
52234 M	170	5.9055	240	9.4488	97	3.8189	270 000	60 670	930 000	208 990	5 400	850	1 200	15.00	33.08
52236 M	180	5.9055	250	9.8425	98	3.8583	302 000	67 870	1 120 000	251 690	6 100	800	1 100	16.00	35.28

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

Thrust ball bearings
Double direction
Standard
Series: 52305 – 52320
Size: 25 mm – 100 mm
0.7874 in – 3.3465 in

Series: 52406 – 52414 M
Size: 30 mm – 70 mm
0.7874 in – 2.1654 in

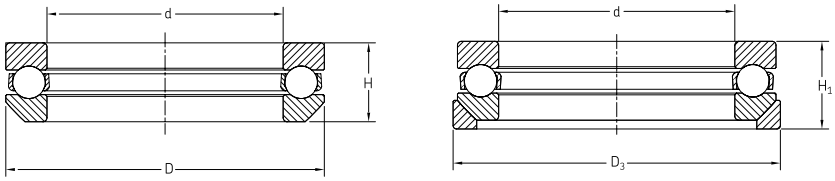


Double direction

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
52305	25	0.7874	52	2.0472	34	1.3386	34 500	7 750	60 000	13 480	18	3 200	4 500	0.33	0.73
52306	30	0.9843	60	2.3622	38	1.4961	35 800	8 040	65 500	14 720	26	2 800	4 000	0.47	1.04
52307	35	1.1811	68	2.6772	44	1.7323	49 400	11 100	96 500	21 690	48	2 400	3 400	0.68	1.50
52308	40	1.1811	78	3.0709	49	1.9291	61 800	13 890	122 000	27 420	77	2 200	3 000	1.05	2.32
52309	45	1.3780	85	3.3465	52	2.0472	76 100	17 100	153 000	34 380	120	2 000	2 800	1.25	2.76
52310	50	1.5748	95	3.7402	58	2.2835	81 900	18 400	170 000	38 200	190	1 800	2 600	1.75	3.86
52311	55	1.7717	105	4.1339	64	2.5197	101 000	22 700	224 000	50 340	260	1 600	2 200	2.40	5.29
52312	60	1.9685	110	4.3307	64	2.5197	101 000	22 700	224 000	50 340	260	1 600	2 200	2.55	5.62
52313	65	2.1654	115	4.5276	64	2.5197	106 000	23 820	240 000	53 930	300	1 600	2 200	2.75	6.06
52314	70	2.1654	125	4.9213	72	2.8346	135 000	30 340	320 000	71 910	530	1 400	2 000	3.65	8.05
52315	75	2.3622	135	5.3150	79	3.1102	163 000	36 630	390 000	87 640	790	1 300	1 800	4.80	10.58
52316	80	2.5591	140	5.5118	79	3.1102	159 000	35 730	390 000	87 640	790	1 300	1 800	4.94	10.89
52320	100	3.3465	170	6.6929	97	3.8189	225 000	50 560	570 000	128 090	1 900	1 000	1 400	8.95	19.73
52406	30	0.7874	70	2.7559	52	2.0472	70 200	15 780	122 000	27 420	97	2 200	3 200	1.00	2.21
52407	35	0.9843	80	3.1496	59	2.3228	76 100	17 100	137 000	30 790	150	2 000	2 800	1.45	3.20
52408	40	1.1811	90	3.5433	65	2.5591	95 600	21 480	183 000	41 120	260	1 800	2 400	2.05	4.52
52409	30	1.3780	100	3.9370	72	2.8346	124 000	27 870	240 000	53 930	370	1 600	2 200	2.70	5.95
52411	35	1.7717	120	4.7244	87	3.4252	195 000	43 820	400 000	89 890	790	1 300	1 800	4.70	10.36
52412 M	40	1.9685	130	5.1181	93	3.6614	199 000	44 720	430 000	96 630	960	1 200	1 700	6.35	14.00
52414 M	70	2.1654	250	9.8425	107	4.2126	234 000	52 580	550 000	123 600	1 600	800	1 100	9.70	21.39

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

Thrust ball bearings
Single direction, sphered housing washer
Standard
Series: 53201 – 53228
Size: 12 mm – 140 mm
0.4724 in – 5.5118 in



Single direction with sphered housing washer

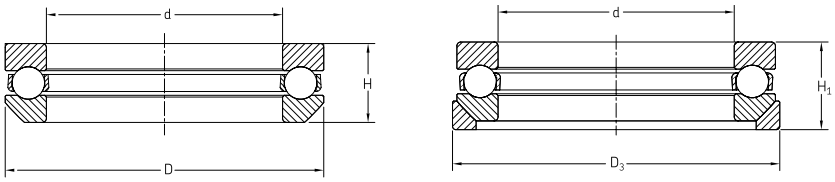
For D_3 and H_1 dimension refer to table 1 on pages 110 and 111.

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass		Seating washer	Mass	
	Bore d		Outside diameter D		Height H_1		Dynamic C		Static C_0			Reference speed	Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb	–	kg	lb
53201	12	0.4724	28	1.1024	13	0.5118	13 300	2 990	20 800	4 670	2.2	8 000	11 000	0.05	0.10	U 201	0.0	0.0
53202	15	0.5906	32	1.2598	15	0.5906	15 900	3 570	25 000	5 620	3.8	7 000	10 000	0.06	0.14	U 202	0.0	0.0
53203	17	0.6693	35	1.3780	15	0.5906	16 300	3 660	27 000	6 070	4.7	6 700	9 500	0.07	0.16	U 203	0.0	0.0
53204	20	0.7874	40	1.5748	17	0.6693	21 200	4 760	37 500	8 430	8.5	5 600	8 000	0.10	0.22	U 204	0.0	0.0
53205	25	0.9843	47	1.8504	19	0.7480	26 500	5 960	50 000	11 240	15	5 000	7 000	0.15	0.33	U 205	0.0	0.1
53206	30	1.1811	52	2.0472	20	0.7874	25 100	5 640	51 000	11 460	13	4 500	6 300	0.18	0.40	U 206	0.0	0.1
53207	35	1.3780	62	2.4409	22	0.8661	35 100	7 890	73 500	16 520	28	4 000	5 600	0.28	0.62	U 207	0.1	0.1
53208	40	1.5748	68	2.6772	23	0.9055	44 200	9 930	96 500	21 690	58	3 600	5 300	0.35	0.77	U 208	0.1	0.2
53209	45	1.7717	73	2.8740	24	0.9449	39 000	8 760	86 500	19 440	38	3 400	4 800	0.39	0.86	U 209	0.1	0.2
53210	50	1.9685	78	3.0709	26	1.0236	49 400	11 100	116 000	26 070	69	3 200	4 500	0.47	1.04	U 210	0.1	0.2
53211	55	2.1654	90	3.5433	30	1.1811	58 500	13 150	134 000	30 110	110	2 800	3 800	0.75	1.65	U 211	0.2	0.3
53212	60	2.3622	95	3.7402	31	1.2205	59 200	13 300	140 000	31 460	120	2 600	3 600	0.82	1.81	U 212	0.2	0.4
53213	65	2.5591	100	3.9370	32	1.2598	60 500	13 600	150 000	33 710	140	2 600	3 600	0.91	2.01	U 213	0.2	0.4
53214	70	2.7559	105	4.1339	32	1.2598	62 400	14 020	160 000	35 960	160	2 600	3 600	0.97	2.14	U 214	0.2	0.4
53215	75	2.9528	110	4.3307	32	1.2598	63 700	14 310	170 000	38 200	170	2 400	3 400	1.00	2.21	U 215	0.2	0.5
53216	80	3.1496	115	4.5276	33	1.2992	76 100	17 100	208 000	46 740	220	2 400	3 200	1.10	2.43	U 216	0.2	0.5
53217	85	3.3465	125	4.9213	37	1.4567	97 500	21 910	275 000	61 800	390	2 000	3 000	1.50	3.31	U 217	0.3	0.6
53218	90	3.5433	135	5.3150	42	1.6535	112 000	25 170	290 000	65 170	550	1 900	2 600	2.10	4.63	U 218	0.4	0.9
53220	100	3.9370	150	5.9055	45	1.7717	119 000	26 740	325 000	73 030	620	1 700	2 400	2.70	5.95	U 220	0.5	1.1
53222	110	4.3307	160	6.2992	45	1.7717	125 000	28 090	365 000	82 020	790	1 700	2 400	2.91	6.42	U 222	0.6	1.2
53224	120	4.7244	170	6.6929	46	1.8110	127 000	28 540	390 000	87 640	1 000	1 500	2 200	3.20	7.06	U 224	–	–
53226	130	5.1181	190	7.4803	53	2.0866	186 000	41 800	585 000	131 460	1 800	1 300	1 800	4.85	10.69	U 226	0.9	1.9
53228	140	5.5118	200	7.8740	55	2.1654	190 000	42 700	620 000	139 330	2 000	1 300	1 800	5.45	12.02	U 228	1.2	2.7

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

Thrust ball bearings
Single direction, sphered housing washer
Standard
Series: 53306 – 53324 M
Size: 30 mm – 120 mm
1.1811 in – 4.7244 in

Series: 53408 – 53420 M
Size: 40 mm – 100 mm
1.5748 in – 3.9370 in



Single direction with sphered housing washer

For D_3 and H_1 dimension refer to table 1 on pages 110 and 111.

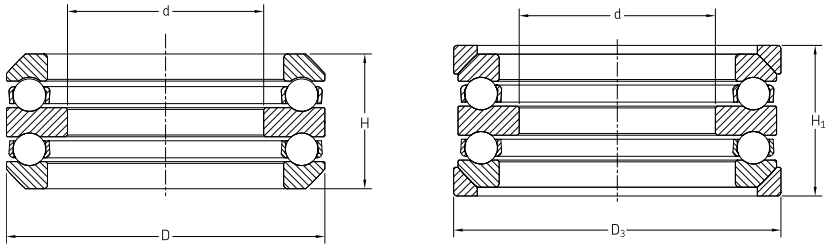
Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass		Seating washer	Mass	
	Bore d		Outside diameter D		Height H_1		Dynamic C		Static C_0			Reference speed	Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb	–	kg	lb
53306	30	1.1811	60	2.3622	25	0.9843	35 800	8 040	65 500	14 720	26	3 800	5 300	0.33	0.73	U 306	0.1	0.1
53307	35	1.3780	68	2.6772	28	1.1024	49 400	11 100	96 500	21 690	48	3 200	4 500	0.46	1.01	U 307	0.1	0.2
53308	40	1.5748	78	3.0709	31	1.2205	61 800	13 890	122 000	27 420	77	2 800	4 000	0.67	1.48	U 308	0.1	0.2
53309	45	1.7717	85	3.3465	33	1.2992	76 100	17 100	153 000	34 380	120	2 600	3 800	0.83	1.83	U 309	0.2	0.4
53310	50	1.9685	95	3.7402	37	1.4567	81 900	18 400	170 000	38 200	190	2 400	3 400	1.20	2.65	U 310	0.2	0.5
53311	55	2.1654	105	4.1339	42	1.6535	101 000	22 700	224 000	50 340	260	2 200	3 000	1.68	3.70	U 311	–	–
53312	60	2.3622	110	4.3307	42	1.6535	101 000	22 700	224 000	50 340	260	2 000	3 000	1.71	3.77	U 312	0.3	0.7
53313	65	2.5591	115	4.5276	43	1.6929	106 000	23 820	240 000	53 930	300	2 000	2 800	1.89	4.17	U 313	0.3	0.7
53314	70	2.7559	125	4.9213	48	1.8898	135 000	30 340	320 000	71 910	530	1 800	2 600	2.50	5.51	U 314	0.4	0.9
53315	75	2.9528	135	5.3150	52	2.0472	163 000	36 630	390 000	87 640	790	1 700	2 400	3.20	7.06	U 315	0.5	1.2
53316	80	3.1496	140	5.5118	52	2.0472	159 000	35 730	390 000	87 640	790	1 600	2 200	3.20	7.06	U 316	0.6	1.2
53317	85	3.3465	150	5.9055	58	2.2835	174 000	39 100	405 000	91 010	1 100	1 500	2 000	4.35	9.59	U 317	0.8	1.8
53318	90	3.5433	155	6.1024	59	2.3228	182 000	40 900	440 000	98 880	1 300	1 400	2 000	4.70	10.36	U 318	0.8	1.9
53320	100	3.9370	170	6.6929	64	2.5197	225 000	50 560	570 000	128 090	1 900	1 300	1 800	5.95	13.12	U 320	1.0	2.1
53322 M	110	4.3307	190	7.4803	72	2.8346	281 000	63 150	815 000	183 150	3 200	1 100	1 600	9.10	20.07	U 322	–	–
53324 M	120	4.7244	210	8.2677	80	3.1496	325 000	73 030	980 000	220 220	5 000	1 000	1 400	12.50	27.56	U 324	–	–
53408	40	1.5748	90	3.5433	42	1.6535	95 600	21 480	183 000	41 120	260	2 400	3 200	1.35	2.98	U 408	0.3	0.6
53410	50	1.9685	110	4.3307	50	1.9685	159 000	35 730	340 000	76 400	600	1 900	2 600	2.31	5.09	U 410	0.4	0.9
53411	55	2.1654	120	4.7244	55	2.1654	195 000	43 820	400 000	89 890	790	1 700	2 400	3.08	6.79	U 411	–	–
53412 M	60	2.3622	130	5.1181	58	2.2835	199 000	44 720	430 000	96 630	960	1 600	2 200	3.80	8.38	U 412	–	–
53414 M	70	2.7559	150	5.9055	69	2.7165	234 000	52 580	550 000	123 600	1 600	1 400	2 000	6.50	14.33	U 414	–	–
53415 M	75	2.9528	160	6.2992	75	2.9528	251 000	56 400	610 000	137 080	1 900	1 300	1 800	8.10	17.86	U 415	–	–
53418 M	90	3.5433	190	7.4803	88	3.4646	307 000	68 990	815 000	183 150	3 500	1 100	1 500	13.00	28.67	U 418	–	–
53420 M	100	3.9370	210	8.2677	98	3.8583	371 000	83 370	1 060 000	238 200	5 800	950	1 300	18.00	39.69	U 420	2.8	6.2

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

Thrust ball bearings
Double direction, sphered housing washer
Standard
Series: 54207 – 54211
Size: 35 mm – 55 mm
1.1811 in – 1.7717 in

Series: 54306 – 54317
Size: 30 mm – 85 mm
0.9843 in – 2.7559 in

Series: 54409 – 54420
Size: 45 mm – 100 mm
1.3780 in – 3.1496 in

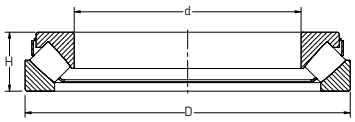


Double direction with sphered housing washer

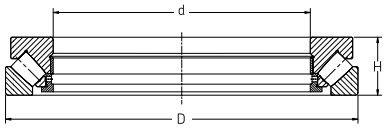
For D_3 and H_1 dimension refer to table 1 on pages 110 and 111.

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass		Seating washer	Mass	
	Bore d		Outside diameter D		Height H_1		Dynamic C		Static C_0			Reference speed	Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb	–	kg	lb
54207	35	1.1811	62	2.4409	42	1.6535	35 100	7 890	73 500	16 520	28	2 800	4 000	0.53	1.17	U 207	0.1	0.1
54208	40	1.1811	68	2.6772	44	1.7323	44 200	9 930	96 500	21 690	58	2 800	3 800	0.63	1.39	U 208	0.1	0.2
54209	45	1.3780	73	2.8740	45	1.7717	39 000	8 760	86 500	19 440	38	2 600	3 600	0.78	1.72	U 209	0.1	0.2
54211	55	1.7717	90	3.5433	55	2.1654	58 500	13 150	134 000	30 110	110	2 200	3 000	1.30	2.87	U 211	0.2	0.3
54306	30	0.9843	60	2.3622	46	1.8110	35 800	8 040	65 500	14 720	26	2 800	3 800	0.58	1.28	U 306	0.1	0.1
54307	35	1.1811	68	2.6772	52	2.0472	49 400	11 100	96 500	21 690	48	2 400	3 400	0.85	1.87	U 307	0.1	0.2
54308	40	1.1811	78	3.0709	59	2.3228	61 800	13 890	122 000	27 420	77	2 200	3 000	1.17	2.58	U 308	0.1	0.2
54309	45	1.3780	85	3.3465	62	2.4409	76 100	17 100	153 000	34 380	120	1 900	2 800	1.60	3.53	U 309	0.2	0.4
54310	50	1.5748	95	3.7402	70	2.7559	81 900	18 400	170 000	38 200	190	1 700	2 400	2.30	5.07	U 310	0.2	0.5
54410	50	1.5748	110	4.3307	92	3.6220	148 000	33 260	305 000	68 540	600	1 400	1 900	4.45	9.81	U 410	0.4	0.9
54312	60	1.9685	110	4.3307	78	3.0709	101 000	22 700	224 000	50 340	260	1 500	2 200	2.90	6.39	U 312	0.3	0.7
54316	80	2.5591	140	5.5118	95	3.7402	159 000	35 730	390 000	87 640	790	1 300	1 800	5.57	12.28	U 316	0.6	1.2
54317	85	2.7559	150	5.9055	105	4.1339	174 000	39 100	405 000	91 010	1 100	1 100	1 500	7.95	17.53	U 317	0.8	1.8
54409	45	1.3780	100	3.9370	86	3.3858	124 000	27 870	240 000	53 930	370	1 500	2 000	3.00	6.62	U 409	–	–
54416 M	80	2.5591	170	6.6929	140	5.5118	307 000	68 990	750 000	168 540	2 300	850	1 200	17.50	38.59	U 416	–	–
54420 M	100	3.1496	210	8.2677	176	6.9291	371 000	83 370	1 060 000	238 200	5 800	700	950	29.00	63.95	U 420	2.8	6.2

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



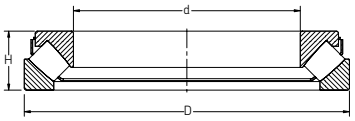
E design



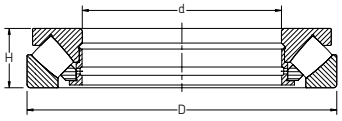
Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
29230 E	150	5.9055	215	8.4646	39	1.5354	408 000	91 700	1 600 000	359 600	240	1 800	2 800	4.3	9.5
29236 E	180	7.0866	250	9.8425	42	1.6535	495 000	111 200	2 040 000	458 400	400	1 600	2 600	5.8	12.8
29240 E	200	7.8740	280	11.0236	48	1.8898	656 000	147 400	2 650 000	595 500	670	1 400	2 200	9.3	20.5
29244 E	220	8.6614	300	11.8110	48	1.8898	690 000	155 100	3 000 000	674 200	860	1 300	2 200	10.0	22.1
29248	240	9.4488	340	13.3858	60	2.3622	799 000	179 600	3 450 000	775 300	1 100	1 100	1 800	16.5	36.4
29252	260	10.2362	360	14.1732	60	2.3622	817 000	183 600	3 650 000	820 200	1 300	1 100	1 700	18.5	40.8
29256	280	11.0236	380	14.9606	60	2.3622	863 000	193 900	4 000 000	898 900	1 500	1 000	1 700	19.5	43.0
29260	300	11.8110	420	16.5354	73	2.8740	1 070 000	240 400	4 800 000	1 078 700	2 200	900	1 400	30.5	67.3
29264	320	12.5984	440	17.3228	73	2.8740	1 110 000	249 400	5 100 000	1 146 100	2 500	850	1 400	33.0	72.8
29268	340	13.3858	460	18.1102	73	2.8740	1 130 000	253 900	5 400 000	1 213 500	2 800	850	1 300	33.5	73.9
29272	360	14.1732	500	19.6850	85	3.3465	1 460 000	328 100	6 800 000	1 528 100	4 400	750	1 200	52.0	114.7
29276	380	14.9606	520	20.4724	85	3.3465	1 580 000	355 100	7 650 000	1 719 100	5 600	700	1 100	53.0	116.9
29280	400	15.7480	540	21.2598	85	3.3465	1 610 000	361 800	8 000 000	1 797 800	6 100	700	1 100	55.5	122.4
29284	420	16.5354	580	22.8346	95	3.7402	1 990 000	447 200	9 800 000	2 202 200	9 100	630	1 000	75.5	166.5
29288	440	17.3228	600	23.6220	95	3.7402	2 070 000	465 200	10 400 000	2 337 100	10 000	630	1 000	78.0	172.0
29292	460	18.1102	620	24.4094	95	3.7402	2 070 000	465 200	10 600 000	2 382 000	11 000	600	950	81.0	178.6
29296	480	18.8976	650	25.5906	103	4.0551	2 350 000	528 100	11 800 000	2 651 700	13 000	560	900	98.0	216.1
292/500	500	19.6850	670	26.3780	103	4.0551	2 390 000	537 100	12 500 000	2 809 000	15 000	560	900	100.0	220.5
292/530 EM	530	20.8661	710	27.9528	109	4.2913	3 110 000	698 900	15 300 000	3 438 200	22 000	530	850	115.0	253.6
292/560	560	22.0472	750	29.5276	115	4.5276	2 990 000	671 900	16 000 000	3 595 500	24 000	480	800	140.0	308.7
292/600 EM	600	23.6220	800	31.4961	122	4.8031	3 740 000	840 400	18 600 000	4 179 800	33 000	450	700	170.0	374.9
292/630 EM	630	24.8031	850	33.4646	132	5.1969	4 770 000	1 071 900	23 600 000	5 303 400	53 000	400	670	210.0	463.1
292/800 EM	800	31.4961	1 060	41.7323	155	6.1024	6 560 000	1 474 200	34 500 000	7 752 800	110 000	320	530	380.0	837.9

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

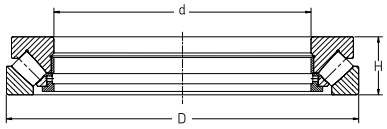
Spherical roller thrust bearings
Standard and SKF Explorer
Series: 29317 E – 293/800 EM
Size: 85 mm – 800 mm
3.3465 in – 31.4961 in



E design

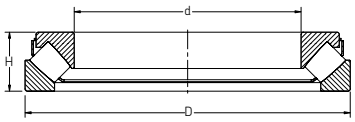


EM design

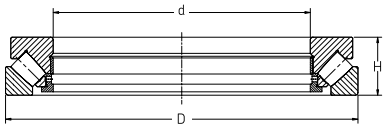


Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
29317 E	85	3.3465	150	5.9055	39	1.5354	380 000	85 400	1 060 000	238 200	110	2 400	4 000	2.8	6.1
29318 E	90	3.5433	155	6.1024	39	1.5354	400 000	89 900	1 080 000	242 700	110	2 400	4 000	2.9	6.3
29320 E	100	3.9370	170	6.6929	42	1.6535	465 000	104 500	1 290 000	289 900	160	2 200	3 600	3.7	8.0
29322 E	110	4.3307	190	7.4803	48	1.8898	610 000	137 100	1 730 000	388 800	280	1 900	3 200	5.3	11.7
29324 E	120	4.7244	210	8.2677	54	2.1260	765 000	171 900	2 120 000	476 400	430	1 700	2 800	7.4	16.2
29326 E	130	5.1181	225	8.8583	58	2.2835	865 000	194 400	2 500 000	561 800	590	1 600	2 600	9.0	19.8
29328 E	140	5.5118	240	9.4488	60	2.3622	980 000	220 200	2 850 000	640 400	770	1 500	2 600	10.5	23.2
29330 E	150	5.9055	250	9.8425	60	2.3622	1 000 000	224 700	2 850 000	640 400	770	1 500	2 400	11.0	24.3
29332 E	160	6.2992	270	10.6299	67	2.6378	1 180 000	265 200	3 450 000	775 300	1 100	1 300	2 200	14.5	32.0
29334 E	170	6.6929	280	11.0236	67	2.6378	1 200 000	269 700	3 550 000	797 800	1 200	1 300	2 200	15.0	33.1
29336 E	180	7.0866	300	11.8110	73	2.8740	1 430 000	321 300	4 300 000	966 300	1 800	1 200	2 000	19.5	43.0
29338 E	190	7.4803	320	12.5984	78	3.0709	1 630 000	366 300	4 750 000	1 067 400	2 100	1 100	1 900	23.5	51.8
29340 E	200	7.8740	340	13.3858	85	3.3465	1 860 000	418 000	5 500 000	1 236 000	2 900	1 000	1 700	28.4	62.6
29344 E	220	8.6614	360	14.1732	85	3.3465	2 000 000	449 400	6 300 000	1 415 700	3 800	1 000	1 700	31.2	68.8
29348 E	240	9.4488	380	14.9606	85	3.3465	2 040 000	458 400	6 550 000	1 471 900	4 100	1 000	1 600	35.5	78.3
29352 E	260	10.2362	420	16.5354	95	3.7402	2 550 000	573 000	8 300 000	1 865 200	6 500	850	1 400	49.0	108.0
29356 E	280	11.0236	440	17.3228	95	3.7402	2 550 000	573 000	8 650 000	1 943 800	7 100	850	1 400	53.0	116.9
29360 E	300	11.8110	480	18.8976	109	4.2913	3 100 000	696 600	10 600 000	2 382 000	11 000	750	1 200	75.0	165.4
29364 E	320	12.5984	500	19.6850	109	4.2913	3 350 000	752 800	11 200 000	2 516 900	12 000	750	1 200	78.0	172.0
29368	340	13.3858	540	21.2598	122	4.8031	2 710 000	609 000	11 000 000	2 471 900	11 000	600	1 100	105.0	231.5
29372	360	14.1732	560	22.0472	122	4.8031	2 760 000	620 200	11 600 000	2 606 700	13 000	600	1 100	110.0	242.6
29376	380	14.9606	600	23.6220	132	5.1969	3 340 000	750 600	14 000 000	3 146 100	19 000	530	1 000	140.0	308.7
29380	400	15.7480	620	24.4094	132	5.1969	3 450 000	775 300	14 600 000	3 280 900	20 000	530	950	150.0	330.8
29384	420	16.5354	650	25.5906	140	5.5118	3 740 000	840 400	16 000 000	3 595 500	24 000	500	900	170.0	374.9
29388 EM	440	17.3228	680	26.7717	145	5.7087	5 200 000	1 168 500	19 300 000	4 337 100	34 000	530	850	180.0	396.9
29392	460	18.1102	710	27.9528	150	5.9055	4 310 000	968 500	19 000 000	4 269 700	34 000	450	800	215.0	474.1
293 / 500	500	19.6850	750	29.5276	150	5.9055	4 490 000	1 009 000	20 400 000	4 584 300	40 000	430	800	235.0	518.2
293 / 530 EM	530	20.8661	800	31.4961	160	6.2992	5 870 000	1 319 100	26 500 000	5 955 100	67 000	400	750	265.0	584.3
293 / 630 EM	630	24.8031	950	37.4016	190	7.4803	8 450 000	1 898 900	38 000 000	8 539 300	140 000	320	600	485.0	1069.4
293 / 710 EM	710	27.9528	1 060	41.7323	212	8.3465	9 950 000	2 236 000	45 500 000	10 224 700	200 000	280	500	610.0	1345.1
293 / 800 EM	800	31.4961	1 180	46.4567	230	9.0551	11 300 000	2 539 300	55 000 000	12 359 600	290 000	240	450	810.0	1786.1

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

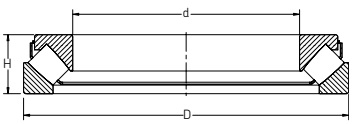


E design

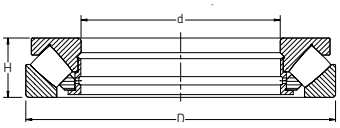


Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
29412 E	60	2.3622	130	5.1181	42	1.6535	390 000	87 600	915 000	205 600	80	2 800	5 000	2.6	5.7
29413 E	65	2.5591	140	5.5118	45	1.7717	455 000	102 200	1 080 000	242 700	110	2 600	4 800	3.2	7.1
29414 E	70	2.7559	150	5.9055	48	1.8898	520 000	116 900	1 250 000	280 900	150	2 400	4 300	3.9	8.6
29415 E	75	2.9528	160	6.2992	51	2.0079	600 000	134 800	1 430 000	321 300	190	2 400	4 000	4.7	10.4
29416 E	80	3.1496	170	6.6929	54	2.1260	670 000	150 600	1 630 000	366 300	250	2 200	3 800	5.6	12.3
29417 E	85	3.3465	180	7.0866	58	2.2835	735 000	165 200	1 800 000	404 500	310	2 000	3 600	6.8	14.9
29418 E	90	3.5433	190	7.4803	60	2.3622	815 000	183 100	2 000 000	449 400	380	1 900	3 400	7.8	17.1
29420 E	100	3.9370	210	8.2677	67	2.6378	980 000	220 200	2 500 000	561 800	590	1 700	3 000	10.5	23.2
29422 E	110	4.3307	230	9.0551	73	2.8740	1 180 000	265 200	3 000 000	674 200	860	1 600	2 800	13.5	29.8
29424 E	120	4.7244	250	9.8425	78	3.0709	1 370 000	307 900	3 450 000	775 300	1 100	1 500	2 600	17.5	38.6
29426 E	130	5.1181	270	10.6299	85	3.3465	1 560 000	350 600	4 050 000	910 100	1 600	1 300	2 400	22.0	48.5
29428 E	140	5.5118	280	11.0236	85	3.3465	1 630 000	366 300	4 300 000	966 300	1 800	1 300	2 400	23.0	50.7
29430 E	150	5.9055	300	11.8110	90	3.5433	1 860 000	418 000	5 100 000	1 146 100	2 500	1 200	2 200	28.0	61.7
29432 E	160	6.2992	320	12.5984	95	3.7402	2 080 000	467 400	5 600 000	1 258 400	3 000	1 100	2 000	32.0	70.6
29434 E	170	6.6929	340	13.3858	103	4.0551	2 360 000	530 300	6 550 000	1 471 900	4 100	1 100	1 900	44.5	98.1
29436 E	180	7.0866	360	14.1732	109	4.2913	2 600 000	584 300	7 350 000	1 651 700	5 100	1 000	1 800	52.5	115.8
29438 E	190	7.4803	380	14.9606	115	4.5276	2 850 000	640 400	8 000 000	1 797 800	6 100	950	1 700	60.5	133.4
29440 E	200	7.8740	400	15.7480	122	4.8031	3 200 000	719 100	9 000 000	2 022 500	7 700	850	1 600	72.0	158.8
29444 E	220	8.6614	420	16.5354	122	4.8031	3 350 000	752 800	9 650 000	2 168 500	8 800	850	1 500	75.0	165.4
29448 E	240	9.4488	440	17.3228	122	4.8031	3 400 000	764 000	10 200 000	2 292 100	9 900	850	1 500	80.0	176.4
29452 E	260	10.2362	480	18.8976	132	5.1969	4 050 000	910 100	12 900 000	2 898 900	16 000	750	1 300	105.0	231.5
29456 E	280	11.0236	520	20.4724	145	5.7087	4 900 000	1 101 100	15 300 000	3 438 200	22 000	670	1 200	135.0	297.7
29460 E	300	11.8110	540	21.2598	145	5.7087	5 000 000	1 123 600	16 600 000	3 730 300	24 000	670	1 200	140.0	308.7

Spherical roller thrust bearings
Standard and SKF Explorer
Series: 29464 E – 294/1060 EF
Size: 320 mm – 1060 mm
12.5984 in – 41.7322 in



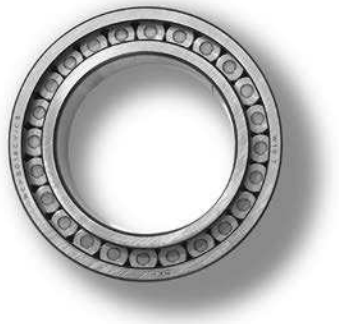
E design



EM design

Designation	Principal dimensions						Basic load ratings				Minimum load factor	Speed rating		Mass	
	Bore d		Outside diameter D		Height H		Dynamic C		Static C_0			Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	A	r/min	r/min	kg	lb
29464 E	320	12.5984	580	22.8346	155	6.1024	5 700 000	1 280 900	19 000 000	4 269 700	32 000	600	1 100	175.0	385.9
29468 E	340	13.3858	620	24.4094	170	6.6929	6 700 000	1 505 600	22 400 000	5 033 700	46 000	560	1 000	220.0	485.1
29472 EM	360	14.1732	640	25.1969	170	6.6929	6 200 000	1 393 300	21 200 000	4 764 000	41 000	560	950	230.0	507.2
29476 EM	380	14.9606	670	26.3780	175	6.8898	6 800 000	1 528 100	24 000 000	5 393 300	53 000	530	900	260.0	573.3
29480 EM	400	15.7480	710	27.9528	185	7.2835	7 650 000	1 719 100	26 500 000	5 955 100	62 000	480	850	310.0	683.6
29484 EM	420	16.5354	730	28.7402	185	7.2835	7 800 000	1 752 800	27 500 000	6 179 800	69 000	480	850	325.0	716.6
29488 EM	440	17.3228	780	30.7087	206	8.1102	9 000 000	2 022 500	32 000 000	7 191 000	91 000	430	750	410.0	904.1
29492 EM	460	18.1102	800	31.4961	206	8.1102	9 300 000	2 089 900	33 500 000	7 528 100	100 000	430	750	425.0	937.1
29496 EM	480	18.8976	850	33.4646	224	8.8189	9 550 000	2 146 100	39 000 000	8 764 000	140 000	340	670	550.0	1212.8
294/500 EM	500	19.6850	870	34.2520	224	8.8189	9 370 000	2 105 600	40 000 000	8 988 800	150 000	340	670	560.0	1234.8
294/530 EM	530	20.8661	920	36.2205	236	9.2913	10 500 000	2 359 600	44 000 000	9 887 600	180 000	320	630	650.0	1433.3
294/560 EM	560	22.0472	980	38.5827	250	9.8425	12 000 000	2 696 600	51 000 000	11 460 700	250 000	300	560	810.0	1786.1
294/600 EM	600	23.6220	1 030	40.5512	258	10.1575	13 100 000	2 943 800	56 000 000	12 584 300	300 000	280	530	845.0	1863.2
294/630 EM	630	24.8031	1 090	42.9134	280	11.0236	14 400 000	3 236 000	62 000 000	13 932 600	370 000	260	500	1040.0	2293.2
294/670 EM	670	26.3780	1 150	45.2756	290	11.4173	15 400 000	3 460 700	68 000 000	15 280 900	440 000	240	450	1210.0	2668.1
294/710 EF	710	27.9528	1 220	48.0315	308	12.1260	17 600 000	3 955 100	76 500 000	17 191 000	560 000	220	430	1500.0	3307.5
294/750 EF	750	29.5276	1 280	50.3937	315	12.4016	18 700 000	4 202 200	85 000 000	19 101 100	690 000	200	400	1650.0	3638.3
294/800 EF	800	31.4961	1 360	53.5433	335	13.1890	20 200 000	4 539 300	93 000 000	20 898 900	820 000	190	360	2025.0	4465.1
294/850 EF	850	33.4646	1 440	56.6929	354	13.9370	23 900 000	5 370 800	108 000 000	24 269 700	1 100 000	170	340	2390.0	5270.0
294/900 EF	900	35.4331	1 520	59.8425	372	14.6457	26 700 000	6 000 000	122 000 000	27 415 700	1 400 000	160	300	2650.0	5843.3
294/950 EF	950	37.4016	1 600	62.9921	390	15.3543	28 200 000	6 337 100	132 000 000	29 662 900	1 700 000	140	280	3065.0	6758.3
294/1000 EF	1 000	39.3701	1 670	65.7480	402	15.8268	31 100 000	6 988 800	140 000 000	31 460 700	1 900 000	130	260	3383.0	7459.5
294/1060 EF	1 060	41.7323	1 770	69.6850	426	16.7717	33 400 000	7 505 600	156 000 000	35 056 200	2 300 000	120	240	4280.0	9437.4

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



Cylindrical roller bearings

N 310 EC M / C3 V W23B

1 2 3 4 5 6

1. Basic design:

N	Two integral flanges on inner ring, flangeless outer ring
NU	Two integral flanges on outer ring, flangeless inner ring
NJ	One flange on inner ring, two flanges on outer ring
NUP	Two integral flanges on outer ring, one integral flange on inner ring and one loose flange on inner ring
NCF	Full complement, two flanges on inner ring, one flange on outer ring, with snap ring
NJG	Full complement with one flange on inner ring, and two flanges on outer ring
NNCF	Two-row, full complement, three flanges on inner ring, one flange on outer ring, with snap ring
NNF	Two-row, full complement
NNCL	Double row CRB with no outer ring integral flanges, only one centrally located snap ring
NNC	Double row CRB with one outer ring integral flange and one flange ring
BC4	Four row CRB
HJ	Angle ring
L	Separate inner or outer ring of a separable bearing
R	Inner or outer ring with roller and cage assembly of a separable bearing

2. Internal design:

EC	Increased capacity plus improved roller end to flange contact
CV	Modified internal design, full complement roller set

3. Cage designs:

M	Two piece machined brass cage, rolling element guided
MA	Two piece machined brass cage, outer ring flange guided
MB	Machined brass cage, inner ring flange guided
ML/MP	One piece window-type brass cage, inner or outer ring centered
M2	Solid brass drilled cage, roller guided for traction motor bearings
HB1	Bainite hardened inner and outer ring
J	Pressed steel cage, rolling element guided
P	Molded glass fiber reinforced polyamide 6.6 cage, roller centered
PHA	Injection molded cage of polyetheretherketone (PEEK), outer ring centered

4. Radial internal clearance:

C1	Clearance < C2
C2	Clearance < Normal
(C0)*	Normal internal clearance
C3	Clearance > Normal
C4	Clearance > C3

* Not marked on bearing or package

5. Variations:

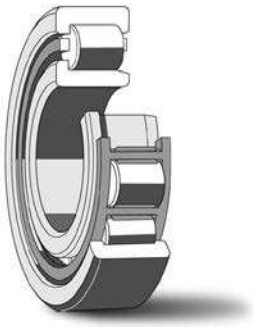
C	Surface treated rollers
CV	V + surface treated rollers
F	Hardened steel cage with MnPh coating
V	Full complement bearing without cage
VH	Full complement rollers (no cage), self-retaining
2LS	Two land riding contact seals

6. Special features:

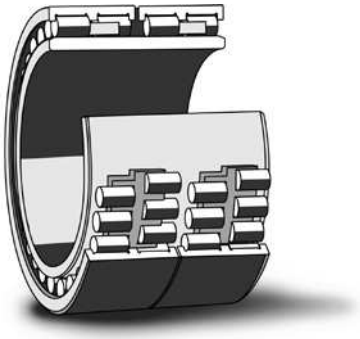
W23B	Special features for traction motor bearings
VA301	Special bearing specifications for traction motors
VL0241	INSOCOAT® coating on outer ring for electrical insulation
W64	Solid Oil lubricants

Technical features

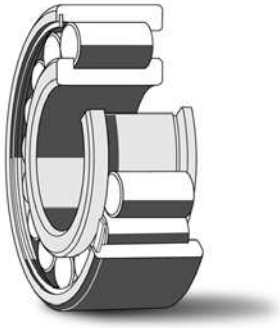
Boundary dimensions	In accordance with ISO 15
Tolerances	ABMA RBEC 3, ISO P6 running accuracy ABMA RBEC 1, ISO Normal dimensional
Heat stabilization	302° F (150° C)
Misalignment	4 minutes of arc for series N200, 300, 400, 1000 and 1800 3 minutes of arc for series N2200, 2300, 2900 and 3000
Cage material	
Standard	Molded glass fiber reinforced polyamide (P)
Optional	Machined brass (M) and pressed steel (J)
Axial load – max	Contact SKF Applications Engineering
Seals	2LS seals on NNF series only



Single row cylindrical roller bearing (data tables on page 138)



Four row cylindrical roller bearing (data-s on page 144)



Full complement, single row cylindrical roller bearing (data tables on page 148)

Introduction

SKF manufactures many types and sizes of cylindrical roller bearings, the majority being single row bearings with a cage, but also single or double row bearings with a full complement of rollers.

All SKF cylindrical roller bearings represent the latest state of the art. The contact geometry between roller and raceway has been much improved by the introduction of the "logarithmic" profile that provides for optimum stress distribution in the bearing. Optimized surface finishes favor lubricant film formation and the correct rolling motion of the cylindrical rollers. These improvements have considerably increased the performance of SKF cylindrical roller bearings as well as their operational reliability in comparison with conventional bearings, and have made them less sensitive to misalignment.

Full complement cylindrical roller bearings incorporate the maximum number of rollers and, as a rule, have a low sectional height in relation to their width. This produces an extremely high load carrying capacity and permits space-saving designs to be achieved. Full complement cylindrical roller bearings are suitable for very heavy radial loads; however, the different kinematic conditions in the bearing mean that they cannot operate at the same high speeds as cylindrical roller bearings of the conventional caged type.

SKF produces single and double row full complement cylindrical roller bearings as part of the standard product range. The bearings shown in the tables are standard range bearings but represent only part of the actual manufactured range.

Basic design

Single row cylindrical roller bearings

The rollers of single row cylindrical roller bearings with cages are guided between integral flanges on one of the bearing rings. The ring with integral flanges and the roller and cage assembly can be withdrawn from the other ring (i.e., separable). This facilitates mounting and dismounting particularly where both rings need to have interference fits because of the load conditions.

SKF single row cylindrical roller bearings have high radial load carrying capacity and also high speed capability. They are produced in different designs that differ in the configuration of the flanges (**Figure 1**).

The most popular of these bearings is the NU type which has two integral flanges on the outer ring and an inner ring without flanges (**Figure 1a**). The N type has two integral flanges on the inner ring and an outer ring without flanges (**Figure 1b**).

Axial displacement of the shaft with respect to the housing is permitted in both directions within certain limits (**Table 3a**, page 135 for dimension code "s"). For example, changes in length because of thermal expansion can be accommodated, and the bearings are therefore suitable as non-locating bearings.

Cylindrical roller bearings of the NJ type have two integral flanges on the outer ring and one integral flange on the inner ring, so that axial location can be provided for the shaft in one direction (**Figure 1c**).

Type NUP cylindrical roller bearings have two integral flanges on the outer ring and the inner ring has one integral and one loose flange, enabling the bearings to locate a shaft axially in both directions (**Figure 1d**).

SKF Explorer class bearings

SKF Explorer cylindrical roller bearings retain the designation of earlier standard bearings, e.g. NU 216 ECP. However, each bearing and its box are marked with the name "SKF Explorer", to avoid confusion. In the product tables, the SKF Explorer bearing designations are printed in blue. Additional details on the SKF Explorer performance class bearings can be found on page 25.

Product highlights

Logarithmically crowned rollers... sets SKF apart

SKF cylindrical roller bearings feature logarithmically "crowned" rollers. This roller profile reduces stresses under high load conditions, while simultaneously providing excellent performance under misaligned conditions.

High speed performance

Extended benefits of the logarithmic profile roller are the cooler running conditions and reliable performance which allow for high speed running conditions.

Precision-honed rolling contact surfaces

SKF cylindrical roller bearings also feature precision-honed inner and outer rings, raceways and rollers. The SKF honing process results in optimum bearing performance and improved lubricant effectiveness... and quieter, cooler, more reliable performance.

Large product assortment

SKF manufactures cylindrical roller bearings in single, double and multiple row designs which differ in the arrangement, design and construction of the flanges. While caged bearings are most common, several series with a full compliment of rollers are also available. Size range includes 25 to 1,000 mm inside diameter.

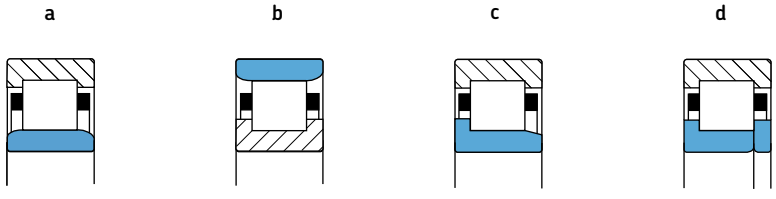
Application flexibility

The large variety of sizes and types of cylindrical roller bearings available from SKF provides a wide degree of application flexibility. Typical applications include compressors, industrial gearboxes, transmissions, and final drives in both on-road and off-road vehicles.

Customized solutions

Special cages are available from SKF for special application conditions such as ammonia compressors and railroad applications.

Figure 1



Introduction

EC–design bearings

The EC design contains improvements in the guiding surfaces of the flanges and of the roller ends which means that the EC bearings have a high axial load carrying capacity. The favorable contact conditions also contribute to better lubrication of the roller end/flange contact zone and to lower operating temperatures. These characteristics make SKF cylindrical roller bearings of the EC design particularly useful. They represent the standard design for the most popular sizes of bearing series 10, 2, 22, 3 and 23.

Single row full complement cylindrical roller bearings

SKF full complement cylindrical roller bearings are produced as standard in the single row NCF and NJG designs. **(Figure 2).**

Bearings of the NCF design are the most popular and have two integral flanges on the inner ring and one integral flange in the outer ring and can thus locate the shaft in one direction **(Figure 2a).** A retaining ring at the flangeless side of the outer ring holds the bearing together. The axial internal clearance in the bearing is designed to permit small axial displacements of the shaft in relation to the housing to be accommodated within the bearing (**Table 3b**, page 136).

Bearings of the NJG design all belong to the heavy dimension series 23 and are intended for very heavily loaded, slow-speed applications **(Figure 2b).** In contrast to the other full complement bearings, the NJG bearings have a self-retaining roller complement. The outer ring with its two integral flanges, together with the roller complement, can be withdrawn from the inner ring and there is no need to provide any extra retention for the rollers. Mounting and dismounting of these bearings are therefore simple operations. NJG design bearings can support axial loads acting in one direction and can consequently locate the shaft in one direction.

Double row full complement cylindrical roller bearings

There are several designs of SKF double row full complement cylindrical roller bearings, all of which have an annular groove and lubrication holes in the outer ring. This feature facilitates the provision of efficient lubrication.

Double row full complement cylindrical roller bearings of the NNC, NNCL, and NNCF designs differ only in the number of flanges on the outer ring. The inner ring with its three integral flanges between which the two rows of rollers are accurately guided is common to all three designs. Outer ring flanges or retaining rings inserted in the outer ring bore prevent the bearing from falling apart.

Bearings of the NNCL design **(Figure 2c)** have no integral flanges on the outer ring. Axial displacements of the shaft relative to the housing are thus permitted, within certain limits.

Bearings of the NNCF and NNC designs **(Figure 2d and 2e)** have one integral flange and a retaining ring in the outer ring. They can accommodate axial loads in one direction and can locate the shaft in one direction. Axial displacements of the shaft relative to the housing are permitted.

The rollers of bearings of the NNF design (series NNF 50) are guided between the integral flanges of the two-part inner ring, which is held together by a retaining ring. The outer ring has a central integral flange. The bearings can be used as locating bearings as they can accommodate axial loads acting in both directions. Because of the large distance between the roller rows, they are also suitable for the accommodation of tilting moments.

The outer ring of the bearing is 1 mm narrower than the inner ring and has two snap ring grooves in the outside diameter. It is thus possible to dispense with spacer rings between the inner ring and adjacent components without affecting outer ring rotation; for example in pulleys, or the housing (or hub) can be made narrower than the bearing and axial space saved.

Bearings of the NNF design (Figure 2f) are produced as standard with outer ring contacting seals at both sides. NNF design bearings are supplied filled with rust inhibiting lithium grease having a diester oil base, which is suitable for operation at temperatures between -58° and +230° F (-50° and +110° C). However, the permissible operating temperature for these bearings is limited to -40° to +176° F (-40° to +80° C) by the material used for the seals.

Under certain conditions, the sealed NNF bearings are maintenance-free. However, where they operate in the presence of moisture or contaminants, or where speeds are moderate or high, they must be relubricated. This can be achieved via both bearing rings. If bearings are required without one or both seals, they may be removed quite simply, for example, using a screwdriver.

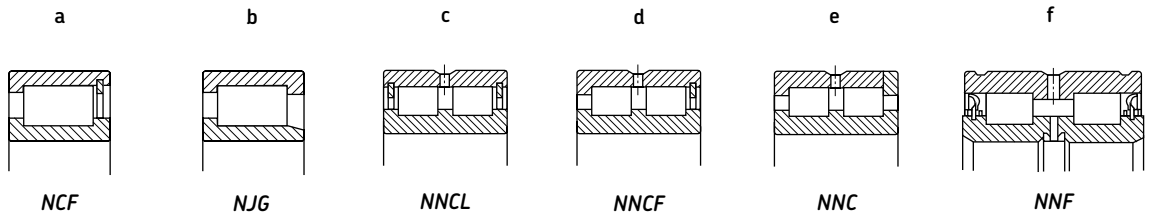
For applications where oil lubrication is to be employed, the bearings can be delivered without seals and grease if economic quantities are involved. Otherwise the seals should be removed and the bearings washed before use. If oil lubrication is adopted, the speed ratings can be increased by approximately 30%.

The new line of SKF Explorer 4rCRB work roll bearings

The new Explorer design offers extended service life under the harsh operating conditions of bar, wire and section mills.

- Size range with an outer diameter of up to 420mm
- Brass cage for significantly longer service life and higher reliability
- Optional hardened steel cage with MnPh coating as a problem solver for exceptional operating conditions
- The potential to downsize applications
- Better accommodation for heavier loads
- Reduced noise, vibration and sensitivity to misalignment
- Improved robustness against contamination and lubrication issues
- Increased asset uptime and productivity

Figure 2



Internal clearance

Radial internal clearance

SKF single row cylindrical bearings are produced with Normal radial internal clearance as standard; the majority of the bearings are also available with C3 radial internal clearance and some with the appreciably greater C4 clearance.

The values for the clearance correspond to DIN 620, Part 4 for the size range covered by this standard and are given in **Table 1**. The values apply to bearings before mounting and under zero measuring load.

SKF full complement cylindrical roller bearings are manufactured with Normal or C3 radial internal clearance as standard. The values for the clearance limits correspond to ISO and are shown in **Table 1**.

Axial internal clearance

Cylindrical roller bearings of the NUP type can serve to locate shafts in both directions, and are manufactured by SKF with axial internal clearance according to **Table 2**.

The values given in **Table 2** for axial internal clearance should be considered as guideline values. Because of roller tilting during measurement of the axial internal clearance, increases in the clearance are possible. These correspond:

- For bearings of series 10, 2, 3 and 4 to approximately the radial internal clearance, and
- For bearings of series 22 and 23 to approximately 2/3 of the radial internal clearance

Special solutions using cylindrical roller bearings

SKF also manufactures:

- Precision single and double row cylindrical roller bearings for machine tool applications
- Double and multi-row cylindrical roller bearings for rolling mill and other heavy engineering applications
- Special traction roller bearings for railroad applications

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

Table 1

Radial internal clearance of cylindrical roller bearings

Bore diameter		Radial internal clearance															
d		C2				Normal				C3				C4			
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm		in		µm		in		µm		in		µm		in	
-	24	0	25	0.0000	0.0010	20	45	0.0008	0.0018	35	60	0.0014	0.0024	50	75	0.0020	0.0030
24	30	0	25	0.0000	0.0010	20	45	0.0008	0.0018	35	60	0.0014	0.0024	50	75	0.0020	0.0030
30	40	5	30	0.0002	0.0012	25	50	0.0010	0.0020	45	70	0.0018	0.0028	60	85	0.0024	0.0033
40	50	5	35	0.0002	0.0014	30	60	0.0012	0.0024	50	80	0.0020	0.0031	70	100	0.0028	0.0039
50	65	10	40	0.0004	0.0016	40	70	0.0016	0.0028	60	90	0.0024	0.0035	80	110	0.0031	0.0043
65	80	10	45	0.0004	0.0018	40	75	0.0016	0.0030	65	100	0.0026	0.0039	90	125	0.0035	0.0049
80	100	15	50	0.0006	0.0020	50	85	0.0020	0.0033	75	110	0.0030	0.0043	105	140	0.0041	0.0055
100	120	15	55	0.0006	0.0022	50	90	0.0020	0.0035	85	125	0.0033	0.0049	125	165	0.0049	0.0065
120	140	15	60	0.0006	0.0024	60	105	0.0024	0.0041	100	145	0.0039	0.0057	145	190	0.0057	0.0075
140	160	20	70	0.0008	0.0028	70	120	0.0028	0.0047	115	165	0.0045	0.0065	165	215	0.0065	0.0085
160	180	25	75	0.0010	0.0030	75	125	0.0003	0.0049	120	170	0.0047	0.0067	170	220	0.0067	0.0087
180	200	35	90	0.0014	0.0035	90	145	0.0035	0.0057	140	195	0.0055	0.0077	195	250	0.0077	0.0098
200	225	45	105	0.0018	0.0041	105	165	0.0041	0.0065	160	220	0.0063	0.0087	220	280	0.0087	0.0110
225	250	45	110	0.0018	0.0043	110	175	0.0043	0.0069	170	235	0.0067	0.0093	235	300	0.0093	0.0118
250	280	55	125	0.0022	0.0049	125	195	0.0049	0.0077	190	260	0.0075	0.0102	260	330	0.0102	0.0130
280	315	55	130	0.0022	0.0051	130	205	0.0051	0.0081	200	275	0.0079	0.0108	275	350	0.0108	0.0138
315	355	65	145	0.0026	0.0057	145	225	0.0057	0.0089	225	305	0.0089	0.0120	305	385	0.0120	0.0152
355	400	100	190	0.0039	0.0075	190	280	0.0075	0.0110	280	370	0.0110	0.0146	370	460	0.0146	0.0181
400	450	110	210	0.0043	0.0083	210	310	0.0083	0.0122	310	410	0.0122	0.0161	410	510	0.0161	0.0201
450	500	110	220	0.0043	0.0087	220	330	0.0087	0.0130	330	440	0.0130	0.0173	440	550	0.0173	0.0217
500	560	120	240	0.0047	0.0094	240	360	0.0094	0.0142	360	480	0.0142	0.0189	480	600	0.0189	0.0236
560	630	140	260	0.0055	0.0102	260	380	0.0102	0.0150	380	500	0.0150	0.0197	500	620	0.0197	0.0244
630	710	145	285	0.0057	0.0112	285	425	0.0112	0.0167	425	565	0.0167	0.0222	565	705	0.0222	0.0278
710	800	150	310	0.0059	0.0122	310	470	0.0122	0.0185	470	630	0.0185	0.0248	630	790	0.0248	0.0311

Loads

Equivalent dynamic bearing load for single row cylindrical roller bearings

When cylindrical roller bearings are used as non-locating bearings and are only subjected to radial loads, the equivalent dynamic bearing load is

$P = F_r$

If cylindrical roller bearings with flanges on inner and outer rings are used to axially locate the shaft in one or both directions, as is frequently the case, the equivalent dynamic bearing load should be calculated using

$P = F_r$ when $F_a / F_r \leq e$

$P = 0.92\ F_r + YF_a$ when $F_a / F_r > e$

where

e = calculation factor
  = 0.2 bearings of series 10, 2, 3 and 4
  = 0.3 for bearings of series 22 and 23

Y = axial load factor
  = 0.6 for bearings of series 10, 2, 3 and 4
  = 0.4 for bearings of series 22 and 23

Since axially loaded cylindrical roller bearings will only operate satisfactorily when they are subjected to a simultaneously acting radial load, the ratio Fa / Fr should not exceed 0.5 for EC designed bearings and 0.4 for the other bearings.

Equivalent dynamic bearing load for full complement cylindrical roller bearings

When cylindrical roller bearings are used as non-locating bearings and are only subjected to radial loads, the equivalent dynamic bearing load

$P = F_r$

If cylindrical roller bearings with flanges on inner and outer rings are used to axially locate the shaft in one or both directions, as is frequently the case, the equivalent dynamic bearing load should be calculated using

Table 2

Axial internal clearance of single row cylindrical roller bearings

Bore diameter	Axial internal clearance																			
d	NUP 2				NUP 3				NUP 4				NUP 22				NUP 23			
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
mm	µm		in		µm		in		µm		in		µm		in		µm		in	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	37	140	0.0015	0.0055	37	140	0.0015	0.0055	-	-	-	-	37	140	0.0015	0.0055	47	155	0.0019	0.0061
20	37	140	0.0015	0.0000	37	140	0.0015	0.0055	-	-	-	-	47	155	0.0019	0.0061	47	155	0.0019	0.0061
25	37	140	0.0015	0.0055	47	155	0.0019	0.0061	-	-	-	-	47	155	0.0019	0.0061	47	155	0.0019	0.0061
30	37	140	0.0015	0.0055	47	155	0.0019	0.0061	-	-	-	-	47	155	0.0019	0.0061	47	155	0.0019	0.0061
35	47	155	0.0019	0.0061	47	155	0.0019	0.0061	55	155	0.0022	0.0061	47	155	0.0019	0.0061	62	180	0.0024	0.0071
40	47	155	0.0019	0.0061	47	155	0.0019	0.0061	55	155	0.0022	0.0061	47	155	0.0019	0.0061	62	180	0.0024	0.0071
45	47	155	0.0019	0.0061	47	155	0.0019	0.0061	55	155	0.0022	0.0061	47	155	0.0019	0.0061	62	180	0.0024	0.0071
50	47	155	0.0019	0.0061	47	155	0.0019	0.0061	70	185	0.0028	0.0073	47	155	0.0019	0.0061	62	180	0.0024	0.0071
55	47	155	0.0019	0.0061	47	155	0.0019	0.0061	70	185	0.0028	0.0073	47	155	0.0019	0.0061	62	180	0.0024	0.0071
60	47	155	0.0019	0.0061	62	180	0.0024	0.0071	70	185	0.0028	0.0073	62	180	0.0024	0.0071	87	230	0.0034	0.0091
65	47	155	0.0019	0.0061	62	180	0.0024	0.0071	70	185	0.0028	0.0073	62	180	0.0024	0.0071	87	230	0.0034	0.0091
70	47	155	0.0019	0.0061	62	180	0.0024	0.0071	70	185	0.0028	0.0073	62	180	0.0024	0.0071	87	230	0.0034	0.0091
75	47	155	0.0019	0.0061	62	180	0.0024	0.0071	70	185	0.0028	0.0073	62	180	0.0024	0.0071	87	230	0.0034	0.0091
80	47	155	0.0019	0.0061	62	180	0.0024	0.0071	-	-	-	-	62	180	0.0024	0.0071	87	230	0.0034	0.0091
85	62	180	0.0024	0.0071	62	180	0.0024	0.0071	-	-	-	-	62	180	0.0024	0.0071	87	230	0.0034	0.0091
90	62	180	0.0024	0.0071	62	180	0.0024	0.0071	-	-	-	-	62	180	0.0024	0.0071	87	230	0.0034	0.0091
95	62	180	0.0024	0.0071	62	180	0.0024	0.0071	-	-	-	-	62	180	0.0024	0.0071	87	230	0.0034	0.0091
100	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
105	62	180	0.0024	0.0071	-	-	-	-	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
110	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
120	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
130	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
140	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
150	62	180	0.0024	0.0071	87	230	0.0034	0.0091	-	-	-	-	87	230	0.0034	0.0091	120	315	0.0047	0.0124
160	87	230	0.0034	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
170	87	230	0.0034	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
180	87	230	0.0034	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
190	87	230	0.0034	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
200	87	230	0.0034	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
220	95	230	0.0037	0.0091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

$P = F_r$ when $F_a / F_r \leq e$

$P = 0.92\ F_r + YF_a$ when $F_a / F_r > e$

where

e = calculation factor
- = 0.15 for double row bearings
- = 0.2 for bearings of series 18
- = 0.3 for all other single row bearings

Y = axial load factor
- = 0.6 for bearings of series 18
- = 0.53 for double row bearings
- = 0.4 for all other single row bearings

Since axially loaded full complement cylindrical roller bearings will only operate satisfactorily when they are subjected to a simultaneously acting radial load, the ratio Fa / Fr should not exceed 0.5 for single row bearings or 0.25 for double row bearings.

Table 3a

Axial displacement(s) of NU, NJ and N bearing ring relative to opposite ring

Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s	
	mm	in		mm	in		mm	in		mm	in
1005	2	0.079	**208 EC**	1.4	0.055	**2222 EC**	3.7	0.146	**302 EC**	1	0.039
1006	2.1	0.083	**209 EC**	1.2	0.047	**2224 EC**	3.8	0.150	**303 EC**	1	0.039
1007 EC	1	0.039	**210 EC**	1.5	0.059	**2226 EC**	4.3	0.169	**304 EC**	0.9	0.035
1008	2.4	0.094	**211 EC**	1	0.039	**2228 EC**	4.4	0.173	**305 EC**	1.3	0.051
1009 EC	0.9	0.035	**212 EC**	1.4	0.055	**2230 EC**	4.9	0.193	**306 EC**	1.4	0.055
1010	2.5	0.098	**213 EC**	1.4	0.055	**2232 EC**	4.5	0.177	**307 EC**	1.2	0.047
1011 EC	0.5	0.020	**214 EC**	1.2	0.047	**2234 EC**	4.2	0.165	**308 EC**	1.4	0.055
1012	2.9	0.114	**215 EC**	1.2	0.047	**2236 EC**	4.2	0.165	**309 EC**	1.7	0.067
1013	2.9	0.114	**216 EC**	1.4	0.055	**2238 EC**	5	0.197	**310 EC**	1.9	0.075
1014	3	0.118	**217 EC**	1.5	0.059	**2240 EC**	5.1	0.201	**311 EC**	2	0.079
1015	3	0.118	**218 EC**	1.8	0.071	**2244 EC**	7.9	0.311	**312 EC**	2.1	0.083
1016	3.3	0.130	**219 EC**	1.7	0.067	**2248**	4.3	0.169	**313 EC**	2.2	0.087
1017	3.3	0.130	**220 EC**	1.7	0.067	**2252**	4.3	0.169	**314 EC**	1.8	0.071
1018	3.5	0.138	**221 EC**	2	0.079	**2256 EC**	10.2	0.402	**315 EC**	1.8	0.071
1019	3.5	0.138	**222 EC**	2.1	0.083	**2260**	5.6	0.220	**316 EC**	2.1	0.083
1020	3.5	0.138	**224 EC**	1.9	0.075	**2264**	5.9	0.232	**317 EC**	2.3	0.091
1021	3.8	0.150	**226 EC**	2.1	0.083	**2268**	8	0.315	**318 EC**	2.5	0.098
1022	3.8	0.150	**228 EC**	2.4	0.094	**2272**	16.7	0.657	**319 EC**	2.9	0.114
1024	3.8	0.150	**N 228**	2.5	0.098	**2276**	8.3	0.327	**320 EC**	2.9	0.114
1026	4.7	0.185	**230 EC**	2.5	0.098				**321 EC**	3.4	0.134
1028	4.4	0.173	**232 EC**	2.7	0.106				**322 EC**	3	0.118
1030	4.9	0.193	**234 EC**	2.9	0.114	**2304 EC**	1.9	0.075	**324 EC**	3.7	0.146
1032	5.2	0.205	**236 EC**	2.9	0.114	**2305 EC**	2.3	0.091	**326 EC**	3.7	0.146
1034	5.8	0.228	**238 EC**	3	0.118	**2306 EC**	2.4	0.094	**328 EC**	3.7	0.146
1038	6.1	0.240	**240 EC**	2.6	0.102	**2307 EC**	2.7	0.106	**N 328**	4.2	0.165
1040	7	0.276	**244**	2.3	0.091	**2308 EC**	2.9	0.114	**330 EC**	4	0.157
1044	7.5	0.295	**248**	3.4	0.134	**2309 EC**	3.2	0.126	**332 EC**	4	0.157
1048	7.5	0.295	**252**	4.4	0.134	**2310 EC**	3.4	0.134	**334**	4.6	0.181
1052	8.8	0.346	**256**	3.8	0.150	**2311 EC**	3.5	0.138	**336**	4.4	0.173
1056	8.8	0.346	**260**	4.8	0.189	**2312 EC**	3.6	0.142	**338 EC**	4.3	0.169
1060	6	0.382	**264**	5.3	0.209	**2313 EC**	4.7	0.185	**340**	4	0.157
1064	13.5	0.382				**2314 EC**	4.8	0.189	**344**	5.2	0.205
1068	6.5	0.425				**2315 EC**	4.8	0.189	**348**	5.6	0.220
1072	6.5	0.425	**2203 EC**	1.5	0.059	**2316 EC**	5.1	0.201			
1076	6.5	0.425	**2204 EC**	2	0.079	**2317 EC**	5.8	0.228			
1080	7	0.551	**2205 EC**	1.8	0.071	**2318 EC**	6	0.382	**406**	1.6	0.063
1084	11	0.551	**2206 EC**	1.8	0.071	**2319 EC**	6.9	0.272	**407**	1.7	0.067
1088	7	0.579	**2207 EC**	2.8	0.110	**2320 EC**	5.9	0.232	**408**	2.5	0.098
1092	7.8	0.626	**2208 EC**	1.9	0.075	**2322 EC**	7.5	0.295	**409**	2.5	0.098
1096	7.8	0.626	**2209 EC**	1.7	0.067	**2324 EC**	7.2	0.283	**410**	2.6	0.102
10/500	11.2	0.441	**2210 EC**	1.5	0.059	**2326 EC**	8.7	0.343	**411**	2.6	0.102
10/530	10.4	0.409	**2211 EC**	1.5	0.059	**2328 EC**	9.7	0.382	**412**	2.5	0.098
10/560	10	0.484	**2212 EC**	1.4	0.055	**2330 EC**	10.5	0.413	**413**	2.6	0.102
10/600	8.5	0.547	**2213 EC**	1.9	0.075	**2332 EC**	11	0.433	**414**	3.5	0.138
10/710 EC	8	0.673	**2214 EC**	1.7	0.067	**2334**	5.2	0.205	**415**	3.8	0.150
			2215 EC	1.7	0.067	**2336**	5.1	0.201	**416**	3.7	0.146
			2216 EC	1.4	0.055	**2338 EC**	9.5	0.374	**417**	3.8	0.150
202 EC	1	0.039	**2217 EC**	2	0.079	**2340 EC**	9.4	0.370	**418**	4.9	0.193
203 EC	1	0.039	**2218 EC**	2.6	0.102	**2344 EC**	10.4	0.409	**419**	5	0.197
204 EC	1	0.039	**2219 EC**	3	0.118	**2348**	6.4	0.252	**420**	4.9	0.193
205 EC	1.3	0.051	**2220 EC**	2.5	0.098	**2356**	6.6	0.260	**421**	4.9	0.193
206 EC	1.3	0.051							**422**	4.8	0.189
207 EC	1.3	0.051							**424**	6.3	0.248

Minimum load

In order to provide the satisfactory operation of all ball and roller bearings they must always be subjected to a given minimum load. This is also true of cylindrical 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 found by accessing **skfusa.com.** Select Engineering Tools under the Support menu. Or contact 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.

Table 3b

Axial displacement(s) of full complement NCF and NJG bearing ring relative to opposite ring

Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s	
	mm	in		mm	in		mm	in		mm	in
1830 V	1.5	0.059	**2305 VH**	1.7	0.067	**2944 V**	2.5	0.098	**3020 V**	2	0.079
1832 V	1.5	0.059	**2306 VH**	1.8	0.071	**2948 V**	2.5	0.098	**3022 V**	3	0.118
1834 V	1.5	0.059	**2307 VH**	2	0.079	**2952 V**	5	0.197	**3024 V**	3.5	0.138
1836 V	1.5	0.059	**2308 VH**	2.4	0.094	**2956 V**	4	0.157	**3026 V**	3.5	0.138
1838 V	1.8	0.071	**2309 VH**	2.4	0.094	**2960 V**	5	0.197	**3028 V**	3.5	0.138
1840 V	1.8	0.071	**2310 VH**	2.6	0.102	**2964 V**	5	0.197	**3030 V**	3.5	0.138
1844 V	1.8	0.071	**2311 VH**	2.6	0.102	**2968 V**	5	0.197	**3032 V**	4	0.157
1848 V	1.8	0.071	**2313 VH**	3	0.118	**2972 V**	5	0.197	**3034 V**	7	0.276
1852 V	1.8	0.071	**2314 VH**	3	0.118	**2976 V**	5	0.197	**3036 V**	5	0.197
1856 V	2.5	0.098	**2315 VH**	3	0.118	**2980 V**	5	0.197	**3038 V**	6	0.236
1860 V	3	0.118	**2316 VH**	4	0.157	**2984 V**	5	0.197	**3040 V**	6.5	0.256
1864 V	3	0.118	**2317 VH**	4	0.157	**2988 V**	6	0.236	**3044 V**	7	0.276
1868 V	3	0.118	**2318 VH**	4	0.157	**2992 V**	6	0.236	**3048 V**	7	0.276
1872 V	3	0.118	**2320 VH**	4.5	0.177	**2996 V**	7	0.276	**3052 V**	8	0.315
1876 V	3.5	0.138	**2322 VH**	5	0.197	**29/500 V**	7	0.276	**3056 V**	9	0.354
1880 V	3.5	0.138	**2324 VH**	5.5	0.217	**29/530 V**	7	0.276	**3060 V**	10	0.394
1884 V	3.5	0.138	**2326 VH**	6	0.236	**29/560 V**	7	0.276	**3064 V**	12	0.472
1888 V	3.5	0.138	**2328 VH**	6.5	0.256	**29/600 V**	7	0.276	**3068 V**	12	0.472
1892 V	5	0.197	**2330 VH**	6.5	0.256				**3072 V**	12	0.472
1896 V	5	0.197							**3076 V**	12	0.472
18/500 V	5	0.197				**3004 V**	0.5	0.020	**3080 V**	14	0.551
18/530 V	5	0.197	**2912 V**	0.5	0.020	**3005 V**	0.5	0.020			
18/560 V	5	0.197	**2914 V**	0.75	0.030	**3006 V**	0.8	0.031			
18/600 V	7	0.276	**2916 V**	0.75	0.030	**3007 V**	1	0.039			
18/630 V	8	0.315	**2918 V**	0.75	0.030	**3008 V**	1	0.039			
18/670 V	8	0.315	**2920 V**	0.75	0.030	**3009 V**	1	0.039			
18/710 V	8	0.315	**2922 V**	0.75	0.030	**3010 V**	1	0.039			
18/750 V	8	0.315	**2924 V**	0.75	0.030	**3011 V**	1.2	0.047			
			2926 V	0.75	0.030	**3012 V**	1.2	0.047			
2207 V	1	0.039	**2928 V**	0.75	0.030	**3013 V**	1.2	0.047			
2209 V	1	0.039	**2930 V**	0.8	0.031	**3014 V**	1.5	0.059			
2210 V	1	0.039	**2932 V**	0.8	0.031	**3015 V**	1.5	0.059			
2218 V	2.5	0.098	**2934 V**	0.8	0.031	**3016 V**	1.8	0.071			
2220 V	2.5	0.098	**2936 V**	1	0.039	**3017 V**	1.8	0.071			
2224 V	4	0.157	**2938 V**	1	0.039	**3018 V**	2	0.079			
			2940 V	3	0.118						

Frequency vibration data

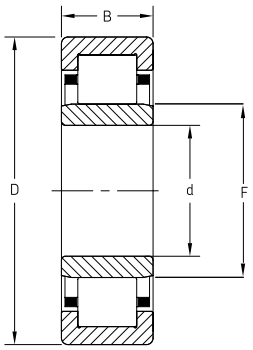
Frequency vibration data is available on the SKF website **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Table 3c

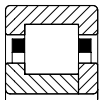
Axial displacement (s) of full complement NNC, NNCF and NNCL bearing ring relative to opposite ring

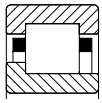
Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s		Designation	Axial displacement s	
	mm	in		mm	in		mm	in		mm	in
4830 V	1.1	0.043	**4912 V**	1	0.039	**4940 V**	2.1	0.083	**5013 V**	1.1	0.043
4832 V	1.1	0.043	**4914 V**	1	0.039	**4944 V**	2.1	0.083	**5015 V**	1.1	0.043
4834 V	1.1	0.043	**4916 V**	1	0.039	**4948 V**	2.1	0.083	**5017 V**	1.1	0.043
4836 V	1.1	0.043	**4918 V**	1.1	0.043	**4952 V**	2.1	0.083	**5024 V**	2	0.079
4838 V	1.5	0.059	**4920 V**	1.1	0.043	**4956 V**	2.1	0.083	**5056 V**	4	0.157
4840 V	1.5	0.059	**4922 V**	1.1	0.043	**4960 V**	3	0.118			
4844 V	1.5	0.059	**4924 V**	1.1	0.043	**4964 V**	3	0.118			
4848 V	2	0.079	**4926 V**	1.5	0.059	**4968 V**	3	0.118			
4852 V	2	0.079	**4926 V**	1.5	0.059	**4972 V**	3	0.118			
4856 V	2	0.079	**4928 V**	1.5	0.059	**4976 V**	4	0.157			
4860 V	2.1	0.083	**4930 V**	2	0.079	**4980 V**	4	0.157			
4864 V	2.1	0.083	**4932 V**	2	0.079	**4984 V**	4	0.157			
4872 V	2.1	0.083	**4934 V**	2	0.079	**4988 V**	4	0.157			
4876 V	2.1	0.083	**4936 V**	2	0.079	**4992 V**	4	0.157			
			4938 V	2	0.079	**4996 V**	5	0.197			
						49/500 V	5	0.197			

Single row
Standard
Series: 1005 – 1052
Size: 25 mm – 260 mm
0.9843 in – 10.2362 in



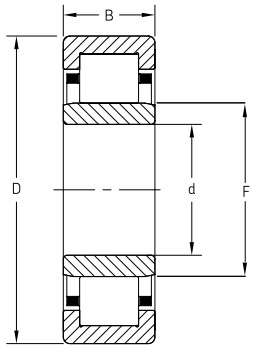
Type NU


Type NUP

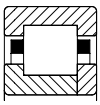

Type NJ

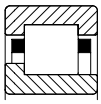
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
1005	25	0.9843	47	1.8504	12	0.4724	14 200	3 190	13 200	2 970	18 000	18 000	0.1	0.2	30.5	1.20	41.5	1.63
1006	30	1.1811	55	2.1654	13	0.5118	17 900	4 020	17 300	3 890	15 000	15 000	0.1	0.2	36.5	1.44	48.5	1.91
1007 EC	35	1.3780	62	2.4409	14	0.5512	35 800	8 040	38 000	8 540	13 000	13 000	0.2	0.3	42.0	1.65	57.0	2.24
1008	40	1.5748	68	2.6772	15	0.5906	25 100	5 640	26 000	5 840	12 000	18 000	0.2	0.5	47.0	1.85	61.0	2.40
1009 EC	45	1.7717	75	2.9528	16	0.6299	44 600	10 020	52 000	11 690	11 000	11 000	0.3	0.6	52.5	2.07	68.5	2.70
1010 EC	50	1.9685	80	3.1496	16	0.6299	46 800	10 520	56 000	12 580	9 500	9 500	0.3	0.6	57.5	2.26	73.5	2.89
1011 EC	55	2.1654	90	3.5433	18	0.7087	57 200	12 850	69 500	15 620	8 500	8 500	0.4	0.9	64.5	2.54	82.5	3.25
1012	60	2.3622	95	3.7402	18	0.7087	37 400	8 400	44 000	9 890	8 000	13 000	0.5	1.1	69.5	2.74	85.5	3.37
1013 EC	65	2.5591	100	3.9370	18	0.7087	62 700	14 090	81 500	18 310	7 500	7 500	0.4	1.0	74.0	2.91	92.0	3.62
1013	65	2.5591	100	3.9370	18	0.7087	38 000	8 540	46 500	10 450	7 500	12 000	0.5	1.1	74.5	2.93	90.5	3.56
1014 EC	70	2.7559	110	4.3307	20	0.7874	76 500	17 190	93 000	20 900	7 000	7 000	0.6	1.3	79.5	3.13	101.5	4.00
1014	70	2.7559	110	4.3307	20	0.7874	56 100	12 610	67 000	15 060	7 000	11 000	0.7	1.5	80.0	3.15	100.0	3.94
1015	75	2.9528	115	4.5276	20	0.7874	58 300	13 100	71 000	15 960	6 700	10 000	0.8	1.7	85.0	3.35	105.0	4.13
1016	80	3.1496	125	4.9213	22	0.8661	64 400	14 470	78 000	17 530	6 300	6 300	0.9	1.9	91.5	3.60	113.5	4.47
1016 EC	80	3.1496	125	4.9213	22	0.8661	99 000	22 250	127 000	28 540	6 000	9 500	1.0	2.3	91.5	3.60	115.5	4.55
1017	85	3.3465	130	5.1181	22	0.8661	68 200	15 330	86 500	19 440	6 000	9 000	1.1	2.3	96.5	3.80	118.5	4.67
1018	90	3.5433	140	5.5118	24	0.9449	80 900	18 180	104 000	23 370	5 600	8 500	1.4	3.0	103.0	4.06	127.0	5.00
1019	95	3.7402	145	5.7087	24	0.9449	84 200	18 920	110 000	24 720	5 300	8 000	1.5	3.2	108.0	4.25	132.0	5.20
1020	100	3.9370	150	5.9055	24	0.9449	85 800	19 280	114 000	25 620	5 000	7 500	1.5	3.2	113.0	4.45	137.0	5.39
1021	105	4.1339	160	6.2992	26	1.0236	101 000	22 700	137 000	30 790	4 800	7 500	1.9	4.1	119.5	4.70	145.5	5.73
1022	110	4.3307	170	6.6929	28	1.1024	128 000	28 760	166 000	37 300	4 500	7 000	2.3	5.0	125.0	4.92	155.0	6.10
1024	120	4.7244	180	7.0866	28	1.1024	134 000	30 110	183 000	41 120	4 000	6 300	2.5	5.6	135.0	5.31	165.0	6.50
1026	130	5.1181	200	7.8740	33	1.2992	165 000	37 080	224 000	50 300	3 800	5 600	3.8	8.5	148.0	5.83	182.0	7.17
1028	140	5.5118	210	8.2677	33	1.2992	179 000	40 220	255 000	57 300	3 600	5 300	4.1	9.0	158.0	6.22	192.0	7.56
1030	150	5.9055	225	8.8583	35	1.3780	198 000	44 490	290 000	65 200	3 200	5 000	4.9	10.8	169.5	6.67	205.5	8.09
1032	160	6.2992	240	9.4488	38	1.4961	229 000	51 500	325 000	73 000	3 000	4 800	6.0	13.2	180.0	7.09	220.0	8.66
1034	170	6.6929	260	10.2362	42	1.6535	275 000	61 800	400 000	89 900	2 800	4 300	8.0	17.6	193.0	7.60	237.0	9.33
1036	180	7.0866	280	11.0236	46	1.8110	336 000	75 500	475 000	106 700	2 600	4 000	10.4	23.0	205.0	8.07	255.0	10.04
1038	190	7.4803	290	11.4173	46	1.8110	347 000	78 000	500 000	112 400	2 600	3 800	10.9	23.9	215.0	8.46	265.0	10.43
1040	200	7.8740	310	12.2047	51	2.0079	380 000	85 400	570 000	128 100	2 400	3 600	14.1	31.0	229.0	9.02	281.0	11.06
1044	220	8.6614	340	13.3858	56	2.2047	495 000	111 200	735 000	165 200	2 200	3 200	18.3	40.4	250.0	9.84	310.0	12.20
1048	240	9.4488	360	14.1732	56	2.2047	523 000	117 500	800 000	179 800	2 000	3 000	19.4	42.7	270.0	10.63	330.0	12.99
1052	260	10.2362	400	15.7480	65	2.5591	627 000	140 900	965 000	216 900	1 800	2 800	29.3	64.6	296.0	11.65	364.0	14.33

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



Type NU


Type NUP

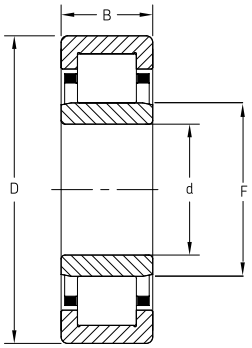

Type NJ

Single row
Standard
Series: 1056 MA – 10/750 EC
Size: 280 mm – 750 mm
11.0236 in – 29.5276 in

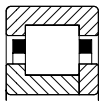
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
1056	280	11.0236	420	16.5354	65	2.5591	660 000	148 300	1 060 000	238 200	1 700	2 600	31.0	68.4	316.0	12.44	384.0	15.12
1060	300	11.8110	460	18.1102	74	2.9134	858 000	192 800	1 370 000	307 900	1 500	2 000	46.0	101.4	340.0	13.39	420.0	16.54
1064	320	12.5984	480	18.8976	74	2.9134	880 000	197 800	1 430 000	321 300	1 400	1 400	48.0	105.8	360.0	14.17	440.0	17.32
1068	340	13.3858	520	20.4724	82	3.2283	1 080 000	242 700	1 760 000	395 500	1 300	1 700	63.5	140.0	385.0	15.16	475.0	18.70
1072	360	14.1732	540	21.2598	82	3.2283	1 100 000	247 200	1 830 000	411 200	1 300	1 600	67.5	148.8	405.0	15.94	495.0	19.49
1076	380	14.9606	560	22.0472	82	3.2283	1 140 000	256 200	1 930 000	433 700	1 200	1 600	70.0	154.4	425.0	16.73	515.0	20.28
1080	400	15.7480	600	23.6220	90	3.5433	1 380 000	310 100	2 320 000	521 300	1 100	1 500	90.0	198.5	450.0	17.72	550.0	21.65
1084	420	16.5354	620	24.4094	90	3.5433	1 420 000	319 100	2 450 000	550 600	1 100	1 400	94.0	207.3	470.0	18.50	570.0	22.44
1088	440	17.3228	650	25.5906	94	3.7008	1 510 000	339 300	2 650 000	595 500	1 000	1 300	105.0	231.5	493.0	19.41	597.0	23.50
1092	460	18.1102	680	26.7717	100	3.9370	1 650 000	370 800	2 850 000	640 400	950	1 200	115.0	253.6	516.0	20.31	624.0	24.57
1096	480	18.8976	700	27.5591	100	3.9370	1 680 000	377 500	3 000 000	674 200	900	1 200	130.0	286.7	536.0	21.10	644.0	25.35
10/500	500	19.6850	720	28.3465	100	3.9370	1 720 000	386 500	3 100 000	696 600	900	1 100	135.0	297.7	556.0	21.89	664.0	26.14
10/530	530	20.8661	780	30.7087	112	4.4094	2 290 000	514 600	4 050 000	910 100	800	1 000	190.0	419.0	593.0	23.35	721.0	28.39
10/560	560	22.0472	820	32.2835	115	4.5276	2 330 000	523 600	4 250 000	955 100	750	1 000	210.0	463.1	625.0	24.61	753.0	29.65
10/600	600	23.6220	870	34.2520	118	4.6457	2 750 000	618 000	5 100 000	1 146 100	700	900	240.0	529.2	667.0	26.26	807.0	31.77
10/630 EC	630	24.8031	920	36.2205	128	5.0394	3 410 000	766 300	6 200 000	1 393 300	630	850	285.0	628.4	702.0	27.64	862.0	33.94
10/670 EC	670	26.3780	980	38.5827	136	5.3543	3 740 000	840 400	6 800 000	1 528 100	600	800	350.0	771.8	747.0	29.41	917.0	36.10
10/710 EC	710	27.9528	1 030	40.5512	140	5.5118	4 680 000	1 051 700	8 500 000	1 910 100	560	750	415.0	915.1	778.0	30.63	968.0	38.11
10/750 EC	750	29.5276	1 090	42.9134	150	5.9055	4 730 000	1 062 900	8 800 000	1 977 500	430	670	487.0	1073.8	830.0	32.68	1020.0	40.16

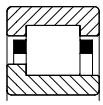
Consult SKF USA Inc. prior to design change or order placement.

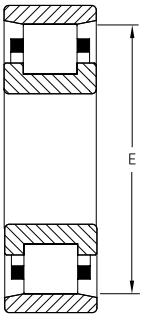
Single row
Standard and SKF Explorer
Series: 202 EC – 244 EC
Size: 15 mm – 220 mm
0.5906 in – 8.6614 in



Type NU


Type NUP

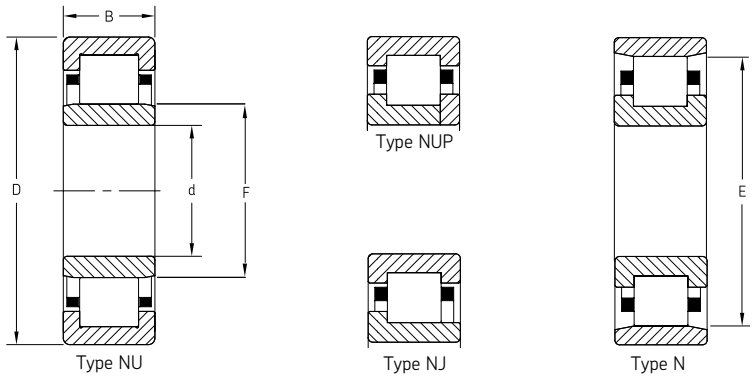

Type NJ



Type N

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
202 EC	15	0.5906	35	1.3780	11	0.4331	12 500	2 810	10 200	2 290	22 000	26 000	0.0	0.1	19.3	0.76	30.3	1.19
203 EC	17	0.6693	40	1.5748	12	0.4724	20 000	4 490	14 300	3 210	20 000	22 000	0.1	0.1	22.1	0.87	35.1	1.38
204 EC	20	0.7874	47	1.8504	14	0.5512	28 500	6 400	22 000	4 940	17 000	19 000	0.1	0.2	26.5	1.04	41.5	1.63
205 EC	25	0.9843	52	2.0472	15	0.5906	32 500	7 300	27 000	6 070	15 000	16 000	0.1	0.3	31.5	1.24	46.5	1.83
206 EC	30	1.1811	62	2.4409	16	0.6299	44 000	9 890	36 500	8 200	13 000	14 000	0.2	0.4	37.5	1.48	55.5	2.19
207 EC	35	1.3780	72	2.8346	17	0.6693	56 000	12 580	48 000	10 790	11 000	12 000	0.3	0.6	44.0	1.73	64.0	2.52
208 EC	40	1.5748	80	3.1496	18	0.7087	62 000	13 930	53 000	11 910	9 500	11 000	0.4	0.8	49.5	1.95	71.5	2.81
209 EC	45	1.7717	85	3.3465	19	0.7480	69 500	15 620	64 000	14 380	9 000	9 500	0.4	0.9	54.5	2.15	76.5	3.01
210 EC	50	1.9685	90	3.5433	20	0.7874	73 500	16 520	69 500	15 620	8 500	9 000	0.5	1.0	59.5	2.34	81.5	3.21
211 EC	55	2.1654	100	3.9370	21	0.8268	96 500	21 690	95 000	21 350	7 500	8 000	0.7	1.4	66.0	2.60	90.0	3.54
212 EC	60	2.3622	110	4.3307	22	0.8661	108 000	24 270	102 000	22 920	6 700	7 500	0.8	1.7	72.0	2.83	100.0	3.94
213 EC	65	2.5591	120	4.7244	23	0.9055	122 000	27 420	118 000	26 520	6 300	6 700	1.0	2.2	78.5	3.09	108.5	4.27
214 EC	70	2.7559	125	4.9213	24	0.9449	137 000	30 790	137 000	30 790	6 000	6 300	1.1	2.5	83.5	3.29	113.5	4.47
215 EC	75	2.9528	130	5.1181	25	0.9843	150 000	33 710	156 000	35 060	5 600	6 000	1.2	2.7	88.5	3.48	118.5	4.67
216 EC	80	3.1496	140	5.5118	26	1.0236	160 000	35 960	166 000	37 300	5 300	5 600	1.5	3.4	95.3	3.75	127.3	5.01
217 EC	85	3.3465	150	5.9055	28	1.1024	190 000	42 700	200 000	44 940	4 800	5 300	1.9	4.1	100.5	3.96	136.5	5.37
218 EC	90	3.5433	160	6.2992	30	1.1811	208 000	46 740	220 000	49 440	4 500	5 000	2.3	5.0	107.0	4.21	145.0	5.71
219 EC	95	3.7402	170	6.6929	32	1.2598	255 000	57 300	265 000	59 600	4 300	4 800	2.8	6.2	112.5	4.43	154.5	6.08
220 EC	100	3.9370	180	7.0866	34	1.3386	285 000	64 000	305 000	68 500	4 000	4 500	3.4	7.4	119.0	4.69	163.0	6.42
221 EC	105	4.1339	190	7.4803	36	1.4173	300 000	67 400	315 000	70 800	3 800	4 300	3.9	8.5	125.0	4.92	173.0	6.81
222 EC	110	4.3307	200	7.8740	38	1.4961	335 000	75 300	365 000	82 000	3 600	4 000	4.7	10.4	132.5	5.22	180.5	7.11
224 EC	120	4.7244	215	8.4646	40	1.5748	390 000	87 600	430 000	96 600	3 400	3 600	5.7	12.6	143.5	5.65	195.5	7.70
226 EC	130	5.1181	230	9.0551	40	1.5748	415 000	93 300	455 000	102 200	3 200	3 400	6.4	14.2	153.5	6.04	209.5	8.25
228 EC	140	5.5118	250	9.8425	42	1.6535	450 000	101 100	510 000	114 600	2 800	3 200	8.5	18.6	169.0	6.65	225.0	8.86
230 EC	150	5.9055	270	10.6299	45	1.7717	510 000	114 600	600 000	134 800	2 600	2 800	10.7	23.6	182.0	7.17	242.0	9.53
232 EC	160	6.2992	290	11.4173	48	1.8898	585 000	131 500	680 000	152 800	2 400	2 600	14.2	31.3	195.0	7.68	259.0	10.20
234 EC	170	6.6929	310	12.2047	52	2.0472	695 000	156 200	815 000	183 100	2 200	3 800	17.3	38.2	207.0	8.15	279.0	10.98
236 EC	180	7.0866	320	12.5984	52	2.0472	720 000	161 800	850 000	191 000	2 200	3 600	18.5	40.7	217.0	8.54	289.0	11.38
238 EC	190	7.4803	340	13.3858	55	2.1654	800 000	179 800	965 000	216 900	2 000	3 400	22.2	48.9	230.0	9.06	306.0	12.05
240 EC	200	7.8740	360	14.1732	58	2.2835	880 000	197 800	1 060 000	238 200	1 900	3 200	26.5	58.5	243.0	9.57	323.0	12.72
244 EC	220	8.6614	400	15.7480	65	2.5591	1 059 999	238 200	1 290 000	289 900	1 700	3 000	36.8	81.0	268.0	10.55	358.0	14.09

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



Single row
Standard and SKF Explorer
Series: 248 – 264
Size: 240 mm – 320 mm
9.4488 in – 12.5984 in

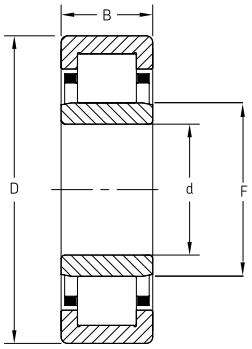
Standard and SKF Explorer
Series: 2203 EC – 2226 EC
Size: 17 mm – 130 mm
0.6693 in – 5.1181 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
248	240	9.4488	440	17.3228	72	2.8346	952 000	213 900	1 370 000	307 900	1 600	2 200	51.5	113.6	295.0	11.61	385.0	15.16
252	260	10.2362	480	18.8976	80	3.1496	1 170 000	262 900	1 700 000	382 000	1 400	2 000	68.5	151.0	320.0	12.60	420.0	16.54
256	280	11.0236	500	19.6850	80	3.1496	1 140 000	256 200	1 800 000	404 500	1 400	1 900	73.0	161.0	340.0	13.39	440.0	17.32
260	300	11.8110	540	21.2598	85	3.3465	1 420 000	319 100	2 120 000	476 400	1 300	1 400	89.5	197.3	364.0	14.33	476.0	18.74
264 EC	320	12.5984	580	22.8346	92	3.6220	1 830 000	411 200	2 750 000	618 000	1 000	1 200	115.0	253.6	392.0	15.43	520.0	20.47
264	320	12.5984	580	22.8346	92	3.6220	1 610 000	361 800	2 450 000	550 600	1 200	1 600	115.0	253.6	390.0	15.35	510.0	20.08
2203 EC	17	0.6693	40	1.5748	16	0.6299	27 500	6 180	21 600	4 850	20 000	22 000	0.1	0.2	22.1	0.87	35.1	1.38
2204 EC	20	0.7874	47	1.8504	18	0.7087	34 500	7 750	27 500	6 180	17 000	19 000	0.1	0.3	26.5	1.04	41.5	1.63
2205 EC	25	0.9843	52	2.0472	18	0.7087	39 000	8 760	34 000	7 640	15 000	16 000	0.2	0.4	31.5	1.24	46.5	1.83
2206 EC	30	1.1811	62	2.4409	20	0.7874	55 000	12 360	49 000	11 010	13 000	14 000	0.3	0.6	37.5	1.48	55.5	2.19
2207 EC	35	1.3780	72	2.8346	23	0.9055	69 500	15 620	63 000	14 160	11 000	12 000	0.4	0.9	44.0	1.73	64.0	2.52
2208 EC	40	1.5748	80	3.1496	23	0.9055	81 500	18 310	75 000	16 850	9 500	11 000	0.5	1.1	49.5	1.95	71.5	2.81
2209 EC	45	1.7717	85	3.3465	23	0.9055	85 000	19 100	81 500	18 310	9 000	9 500	0.5	1.2	54.5	2.15	76.5	3.01
2210 EC	50	1.9685	90	3.5433	23	0.9055	90 000	20 220	88 000	19 780	8 500	9 000	0.6	1.2	59.5	2.34	81.5	3.21
2211 EC	55	2.1654	100	3.9370	25	0.9843	114 000	25 620	118 000	26 520	7 500	8 000	0.8	1.7	66.0	2.60	90.0	3.54
2212 EC	60	2.3622	110	4.3307	28	1.1024	146 000	32 810	153 000	34 380	6 700	7 500	1.0	2.3	72.0	2.83	100.0	3.94
2213 EC	65	2.5591	120	4.7244	31	1.2205	170 000	38 200	180 000	40 450	6 300	6 700	1.4	3.1	78.5	3.09	108.5	4.27
2214 EC	70	2.7559	125	4.9213	31	1.2205	180 000	40 450	193 000	43 370	6 000	6 300	1.5	3.3	83.5	3.29	113.5	4.47
2215 EC	75	2.9528	130	5.1181	31	1.2205	186 000	41 800	208 000	46 740	5 600	6 000	1.6	3.5	88.5	3.48	118.5	4.67
2216 EC	80	3.1496	140	5.5118	33	1.2992	212 000	47 640	245 000	55 100	5 300	5 600	2.0	4.3	95.3	3.75	127.3	5.01
2217 EC	85	3.3465	150	5.9055	36	1.4173	250 000	56 200	280 000	62 900	4 800	5 300	2.5	5.5	100.5	3.96	136.5	5.37
2218 EC	90	3.5433	160	6.2992	40	1.5748	280 000	62 900	315 000	70 800	4 500	5 000	3.1	6.9	107.0	4.21	145.0	5.71
2219 EC	95	3.7402	170	6.6929	43	1.6929	325 000	73 000	375 000	84 300	4 300	4 800	3.8	8.3	112.5	4.43	154.5	6.08
2220 EC	100	3.9370	180	7.0866	46	1.8110	380 000	85 400	450 000	101 100	4 000	4 500	4.7	10.5	119.0	4.69	163.0	6.42
2222 EC	110	4.3307	200	7.8740	53	2.0866	440 000	98 900	520 000	116 900	3 600	4 000	6.7	14.7	132.5	5.22	180.5	7.11
2224 EC	120	4.7244	215	8.4646	58	2.2835	520 000	116 900	630 000	141 600	3 400	3 600	8.2	18.1	143.5	5.65	195.5	7.70
2226 EC	130	5.1181	230	9.0551	64	2.5197	610 000	137 100	735 000	165 200	3 200	3 400	10.1	22.2	153.5	6.04	209.5	8.25

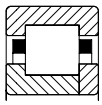
Consult SKF USA Inc. prior to design change or order placement.

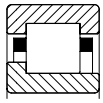
Single row
Standard and SKF Explorer
Series: 2228 EC – 22/560 EC
Size: 140 mm – 560 mm
5.5118 in – 22.0472 in

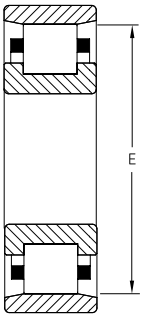
SKF Explorer
Series: 2304 EC – 2312 EC
Size: 20 mm – 60 mm
0.7874 in – 2.3622 in



Type NU


Type NUP


Type NJ

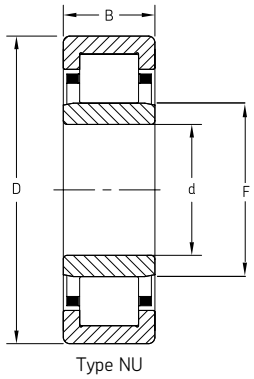


Type N

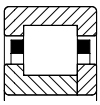
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
2228 EC	140	5.5118	250	9.8425	68	2.6772	655 000	147 200	830 000	186 500	2 800	4 800	15.0	33.0	169.0	6.65	225.0	8.86
2230 EC	150	5.9055	270	10.6299	73	2.8740	735 000	165 200	930 000	209 000	2 600	2 800	18.5	40.8	182.0	7.17	242.0	9.53
2232 EC	160	6.2992	290	11.4173	80	3.1496	930 000	209 000	1 200 000	269 700	2 400	4 000	23.1	50.9	193.0	7.60	261.0	10.28
2234 EC	170	6.6929	310	12.2047	86	3.3858	1 059 999	238 200	1 340 000	301 100	2 200	3 800	28.1	62.0	205.0	8.07	281.0	11.06
2236 EC	180	7.0866	320	12.5984	86	3.3858	1 099 999	247 200	1 430 000	321 300	2 200	3 600	29.9	65.9	215.0	8.46	291.0	11.46
2238 EC	190	7.4803	340	13.3858	92	3.6220	1 219 999	274 200	1 600 000	359 600	2 000	3 400	35.7	78.7	228.0	8.98	308.0	12.13
2240 EC	200	7.8740	360	14.1732	98	3.8583	1 369 999	307 900	1 800 000	404 500	1 900	3 200	43.8	96.6	241.0	9.49	325.0	12.80
2244 EC	220	8.6614	400	15.7480	108	4.2520	1 570 000	352 800	2 280 000	512 400	1 600	3 000	58.2	128.4	259.0	10.20	367.0	14.45
2248	240	9.4488	440	17.3228	120	4.7244	1 450 000	325 800	2 360 000	530 300	1 500	2 200	84.0	185.2	295.0	11.61	385.0	15.16
2252	260	10.2362	480	18.8976	130	5.1181	1 790 000	402 200	3 000 000	674 200	1 300	2 000	112.0	247.0	320.0	12.60	420.0	16.54
2256 EC	280	11.0236	500	19.6850	130	5.1181	2 200 000	494 400	3 450 000	775 300	1 200	1 900	115.0	253.6	333.0	13.11	453.0	17.83
2260	300	11.8110	540	21.2598	140	5.5118	2 090 000	469 700	3 450 000	775 300	1 200	1 800	145.0	319.7	364.0	14.33	476.0	18.74
2264 EC	320	12.5984	580	22.8346	150	5.9055	3 190 000	716 900	5 000 000	1 123 600	1 000	1 600	180.0	396.9	380.0	14.96	530.0	20.87
2268	340	13.3858	620	24.4094	165	6.4961	2 640 000	593 300	4 500 000	1 011 200	1 000	1 200	226.0	498.3	416.0	16.38	544.0	21.42
2272	360	14.1732	650	25.5906	170	6.6929	2 920 000	656 200	4 900 000	1 101 100	950	1 400	257.0	566.7	437.0	17.20	573.0	22.56
2276 EC	380	14.9606	680	26.7717	175	6.8898	3 960 000	889 900	6 400 000	1 438 200	850	1 300	288.0	635.0	451.0	17.76	621.0	24.45
2292	460	18.1102	830	32.6772	212	8.3465	5 120 000	1 150 600	8 650 000	1 943 800	700	1 100	527.0	1162.0	554.0	21.81	744.0	29.29
22/560 EC	560	22.0472	1 030	40.5512	272	10.7087	9 900 000	2 224 700	16 600 000	3 730 300	530	800	1086.0	2394.6	664.0	26.14	944.0	37.17
2304 EC	20	0.7874	52	2.0472	21	0.8268	47 500	10 670	38 000	8 540	15 000	18 000	0.2	0.5	27.5	1.08	45.5	1.79
2305 EC	25	0.9843	62	2.4409	24	0.9449	64 000	14 380	55 000	12 360	12 000	15 000	0.3	0.7	34.0	1.34	54.0	2.13
2306 EC	30	1.1811	72	2.8346	27	1.0630	83 000	18 650	75 000	16 850	11 000	12 000	0.5	1.2	40.5	1.59	62.5	2.46
2307 EC	35	1.3780	80	3.1496	31	1.2205	106 000	23 820	98 000	22 020	9 500	11 000	0.7	1.6	46.2	1.82	70.2	2.76
2308 EC	40	1.5748	90	3.5433	33	1.2992	129 000	28 990	120 000	26 970	8 000	9 500	0.9	2.1	52.0	2.05	80.0	3.15
2309 EC	45	1.7717	100	3.9370	36	1.4173	160 000	35 960	153 000	34 380	7 500	8 500	1.3	2.8	58.5	2.30	88.5	3.48
2310 EC	50	1.9685	110	4.3307	40	1.5748	186 000	41 800	186 000	41 800	6 700	8 000	1.7	3.8	65.0	2.56	97.0	3.82
2311 EC	55	2.1654	120	4.7244	43	1.6929	232 000	52 100	232 000	52 100	6 000	7 000	2.2	4.9	70.5	2.78	106.5	4.19
2312 EC	60	2.3622	130	5.1181	46	1.8110	260 000	58 400	265 000	59 600	5 600	6 700	2.7	6.1	77.0	3.03	115.0	4.53

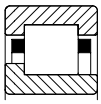
Consult SKF USA Inc. prior to design change or order placement.

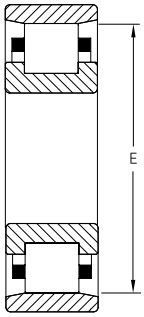
Single row
Standard and SKF Explorer
Series: 2313 EC – 2372 EC
Size: 65 mm – 360 mm
2.5591 in – 14.1732 in



Type NU


Type NUP


Type NJ

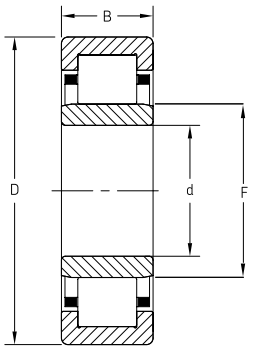


Type N

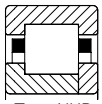
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
2313 EC	65	2.5591	140	5.5118	48	1.8898	285 000	64 000	290 000	65 200	5 300	6 000	3.2	7.1	82.5	3.25	124.5	4.90
2314 EC	70	2.7559	150	5.9055	51	2.0079	315 000	70 800	325 000	73 000	4 800	5 600	3.9	8.7	89.0	3.50	133.0	5.24
2315 EC	75	2.9528	160	6.2992	55	2.1654	380 000	85 400	400 000	89 900	4 500	5 300	4.8	10.6	95.0	3.74	143.0	5.63
2316 EC	80	3.1496	170	6.6929	58	2.2835	415 000	93 300	440 000	98 900	4 300	5 000	5.7	12.7	101.0	3.98	151.0	5.94
2317 EC	85	3.3465	180	7.0866	60	2.3622	455 000	102 200	490 000	110 100	4 000	4 800	6.8	15.1	108.0	4.25	160.0	6.30
2318 EC	90	3.5433	190	7.4803	64	2.5197	500 000	112 400	540 000	121 300	3 800	4 500	8.0	17.6	113.5	4.47	169.5	6.67
2319 EC	95	3.7402	200	7.8740	67	2.6378	530 000	119 100	585 000	131 500	3 600	4 300	9.3	20.6	121.5	4.78	177.5	6.99
2320 EC	100	3.9370	215	8.4646	73	2.8740	670 000	150 600	735 000	165 200	3 200	3 800	11.8	26.0	127.5	5.02	191.5	7.54
2322 EC	110	4.3307	240	9.4488	80	3.1496	780 000	175 300	900 000	202 200	3 000	3 400	16.9	37.2	143.0	5.63	211.0	8.31
2324 EC	120	4.7244	260	10.2362	86	3.3858	915 000	205 600	1 040 000	233 700	2 800	5 000	22.4	49.4	154.0	6.06	230.0	9.06
2326 EC	130	5.1181	280	11.0236	93	3.6614	1 059 999	238 200	1 250 000	280 900	2 400	4 500	28.4	62.6	167.0	6.57	247.0	9.72
2328 EC	140	5.5118	300	11.8110	102	4.0157	1 199 999	269 700	1 430 000	321 300	2 400	4 300	35.9	79.1	180.0	7.09	264.0	10.39
2330 EC	150	5.9055	320	12.5984	108	4.2520	1 369 999	307 900	1 630 000	366 300	2 200	4 000	42.4	93.6	193.0	7.60	283.0	11.14
2332 EC	160	6.2992	340	13.3858	114	4.4882	1 250 000	280 900	1 730 000	388 800	1 800	3 600	49.9	110.1	204.0	8.03	300.0	11.81
2334 EC	170	6.6929	360	14.1732	120	4.7244	1 450 000	325 800	2 040 000	458 400	1 700	3 400	60.5	133.4	216.0	8.50	316.0	12.44
2336 EC	180	7.0866	380	14.9606	126	4.9606	1 610 000	361 800	2 240 000	503 400	1 600	3 200	69.4	153.0	227.0	8.94	339.0	13.35
2338 EC	190	7.4803	400	15.7480	132	5.1969	1 830 000	411 200	2 550 000	573 000	1 500	3 000	80.3	177.0	240.0	9.45	360.0	14.17
2340 EC	200	7.8740	420	16.5354	138	5.4331	1 980 000	444 900	2 800 000	629 200	1 400	2 800	92.4	203.7	253.0	9.96	377.0	14.84
2344 EC	220	8.6614	460	18.1102	145	5.7087	2 380 000	534 800	3 450 000	775 300	1 300	2 200	124.0	273.4	277.0	10.91	413.0	16.26
2348 EC	240	9.4488	500	19.6850	155	6.1024	2 600 000	584 300	3 650 000	820 200	1 200	2 000	155.0	341.8	299.0	11.77	449.0	17.68
2352 EC	260	10.2362	540	21.2598	165	6.4961	3 140 000	705 600	4 550 000	1 022 500	1 100	1 900	196.0	432.2	324.0	12.76	484.0	19.06
2356	280	11.0236	580	22.8346	175	6.8898	2 700 000	606 700	4 300 000	966 300	1 000	1 700	230.0	507.2	362.0	14.25	498.0	19.61
2360 EC	300	11.8110	620	24.4094	185	7.2835	4 020 000	903 400	5 850 000	1 314 600	950	1 600	270.0	595.4	371.0	14.61	561.0	22.09
2364 EC	320	12.5984	670	26.3780	200	7.8740	4 730 000	1 062 900	7 500 000	1 685 400	850	1 500	369.2	814.1	405.0	15.94	595.0	23.43
2368 EC	340	13.3858	710	27.9528	212	8.3465	5 610 000	1 260 700	8 650 000	1 943 800	800	1 400	439.0	968.0	425.0	16.73	635.0	25.00
2372 EC	360	14.1732	750	29.5276	224	8.8189	5 010 000	1 125 800	8 150 000	1 831 500	850	1 300	510.0	1124.6	465.0	18.31	655.0	25.79

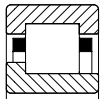
Consult SKF USA Inc. prior to design change or order placement.

Single row
Standard and SKF Explorer
Series: 303 EC – 360 EC
Size: 17 mm – 300 mm
0.6693 in – 11.8110 in



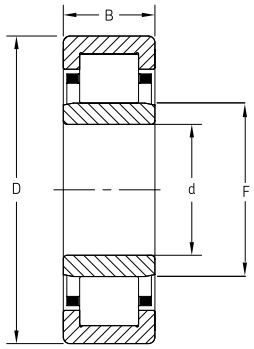
Type NU


Type NUP

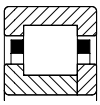

Type NJ

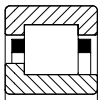
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
303 EC	17	0.6693	47	1.8504	14	0.5512	28 500	6 400	20 400	4 580	17 000	20 000	0.1	0.3	24.2	0.95	40.2	1.58
304 EC	20	0.7874	52	2.0472	15	0.5906	35 500	7 980	26 000	5 840	15 000	18 000	0.1	0.3	27.5	1.08	45.5	1.79
305 EC	25	0.9843	62	2.4409	17	0.6693	46 500	10 450	36 500	8 200	12 000	15 000	0.2	0.5	34.0	1.34	54.0	2.13
306 EC	30	1.1811	72	2.8346	19	0.7480	58 500	13 150	48 000	10 790	11 000	12 000	0.4	0.8	40.5	1.59	62.5	2.46
307 EC	35	1.3780	80	3.1496	21	0.8268	75 000	16 850	63 000	14 160	9 500	11 000	0.5	1.0	46.2	1.82	70.2	2.76
308 EC	40	1.5748	90	3.5433	23	0.9055	93 000	20 900	78 000	17 530	8 000	9 500	0.6	1.4	52.0	2.05	80.0	3.15
309 EC	45	1.7717	100	3.9370	25	0.9843	112 000	25 170	100 000	22 470	7 500	8 500	0.9	1.9	58.5	2.30	88.5	3.48
310 EC	50	1.9685	110	4.3307	27	1.0630	127 000	28 540	112 000	25 170	6 700	8 000	1.1	2.4	65.0	2.56	97.0	3.82
311 EC	55	2.1654	120	4.7244	29	1.1417	156 000	35 060	143 000	32 130	6 000	7 000	1.4	3.2	70.5	2.78	106.5	4.19
312 EC	60	2.3622	130	5.1181	31	1.2205	173 000	38 880	160 000	35 960	5 600	6 700	1.8	3.9	77.0	3.03	115.0	4.53
313 EC	65	2.5591	140	5.5118	33	1.2992	212 000	47 640	196 000	44 040	5 300	6 000	2.2	4.8	82.5	3.25	124.5	4.90
314 EC	70	2.7559	150	5.9055	35	1.3780	236 000	53 000	228 000	51 200	4 800	5 600	2.7	5.9	89.0	3.50	133.0	5.24
315 EC	75	2.9528	160	6.2992	37	1.4567	280 000	62 900	265 000	59 600	4 500	5 300	3.3	7.3	95.0	3.74	143.0	5.63
316 EC	80	3.1496	170	6.6929	39	1.5354	300 000	67 400	290 000	65 200	4 300	5 000	3.9	8.5	101.0	3.98	151.0	5.94
317 EC	85	3.3465	180	7.0866	41	1.6142	340 000	76 400	335 000	75 300	4 000	4 800	4.5	10.0	108.0	4.25	160.0	6.30
318 EC	90	3.5433	190	7.4803	43	1.6929	365 000	82 000	360 000	80 900	3 800	4 500	5.3	11.6	113.5	4.47	169.5	6.67
319 EC	95	3.7402	200	7.8740	45	1.7717	390 000	87 600	390 000	87 600	3 600	4 300	6.2	13.6	121.5	4.78	177.5	6.99
320 EC	100	3.9370	215	8.4646	47	1.8504	450 000	101 100	440 000	98 900	3 200	3 800	7.4	16.3	127.5	5.02	191.5	7.54
321 EC	105	4.1339	225	8.8583	49	1.9291	500 000	112 400	500 000	112 400	3 200	3 800	8.5	18.7	133.0	5.24	201.0	7.91
322 EC	110	4.3307	240	9.4488	50	1.9685	530 000	119 100	540 000	121 300	3 000	3 400	10.2	22.5	143.0	5.63	211.0	8.31
324 EC	120	4.7244	260	10.2362	55	2.1654	610 000	137 100	620 000	139 300	2 800	3 200	12.8	28.2	154.0	6.06	230.0	9.06
326 EC	130	5.1181	280	11.0236	58	2.2835	720 000	161 800	750 000	168 500	2 400	3 000	16.1	35.4	167.0	6.57	247.0	9.72
328 EC	140	5.5118	300	11.8110	62	2.4409	780 000	175 300	830 000	186 500	2 400	2 800	20.0	44.1	180.0	7.09	264.0	10.39
330 EC	150	5.9055	320	12.5984	65	2.5591	900 000	202 200	965 000	216 900	2 200	2 600	26.3	58.0	193.0	7.60	283.0	11.14
332 EC	160	6.2992	340	13.3858	68	2.6772	1 000 000	224 700	1 080 000	242 700	2 000	3 600	30.9	68.1	204.0	8.03	300.0	11.81
334 EC	170	6.6929	360	14.1732	72	2.8346	952 000	213 900	1 180 000	265 200	1 700	2 200	33.2	73.1	218.0	8.58	318.0	12.52
336 EC	180	7.0866	380	14.9606	75	2.9528	1 020 000	229 200	1 290 000	289 900	1 600	2 200	42.7	94.1	231.0	9.09	335.0	13.19
338 EC	190	7.4803	400	15.7480	78	3.0709	1 140 000	256 200	1 500 000	337 100	1 500	2 000	50.0	110.3	245.0	9.65	353.0	13.90
340 EC	200	7.8740	420	16.5354	80	3.1496	1 230 000	276 400	1 630 000	366 300	1 400	2 800	56.3	124.1	258.0	10.16	370.0	14.57
344	220	8.6614	460	18.1102	88	3.4646	1 210 000	271 900	1 630 000	366 300	1 500	1 700	73.5	162.1	284.0	11.18	396.0	15.59
348	240	9.4488	500	19.6850	95	3.7402	1 450 000	325 800	2 000 000	449 400	1 300	1 600	94.5	208.4	310.0	12.20	430.0	16.93
352 EC	260	10.2362	540	21.2598	102	4.0157	1 940 000	436 000	2 700 000	606 700	1 100	1 800	120.5	265.7	337.0	13.27	477.0	18.78
360 EC	300	11.8110	620	24.4094	109	4.2913	2 330 000	523 600	3 350 000	752 800	950	1 200	174.0	383.7	385.0	15.16	535.0	21.06

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



Type NU


Type NUP


Type NJ

Single row
Standard
Series: 406 – 424
Size: 30 mm – 120 mm
1.1811 in – 4.7244 in

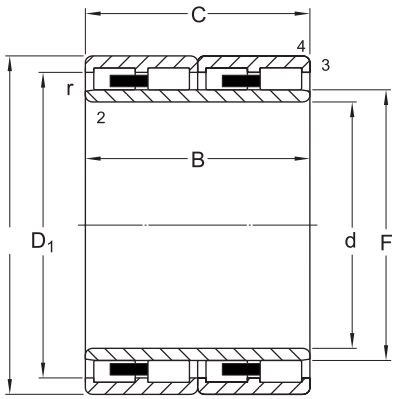
Series: 1292 – 12/630 EC
Size: 460 mm – 630 mm
18.1102 in – 24.8031 in

Series: 1876 EC – 18/1000
Size: 380 mm – 1000 mm
14.9606 in – 39.3701 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
406	30	1.1811	90	3.5433	23	0.9055	60 500	13 600	53 000	11 910	9 000	11 000	0.8	1.7	45.0	1.77	73.0	2.87
407	35	1.3780	100	3.9370	25	0.9843	76 500	17 190	69 500	15 620	8 000	9 500	1.0	2.2	53.0	2.09	83.0	3.27
408	40	1.5748	110	4.3307	27	1.0630	96 800	21 750	90 000	20 220	7 000	8 500	1.3	2.8	58.0	2.28	92.0	3.62
409	45	1.7717	120	4.7244	29	1.1417	106 000	23 820	102 000	22 920	6 700	7 500	1.6	3.6	64.5	2.54	100.5	3.96
410	50	1.9685	130	5.1181	31	1.2205	130 000	29 210	127 000	28 540	6 000	7 000	2.0	4.5	70.8	2.79	110.8	4.36
411	55	2.1654	140	5.5118	33	1.2992	142 000	31 910	140 000	31 460	5 600	6 300	2.5	5.5	77.2	3.04	117.2	4.61
412	60	2.3622	150	5.9055	35	1.3780	168 000	37 750	173 000	38 880	5 000	6 000	3.0	6.7	83.0	3.27	127.0	5.00
413	65	2.5591	160	6.2992	37	1.4567	183 000	41 120	190 000	42 700	4 800	5 600	3.6	7.9	89.3	3.52	135.3	5.33
414	70	2.7559	180	7.0866	42	1.6535	229 000	51 500	240 000	53 900	4 300	5 000	5.2	11.6	100.0	3.94	152.0	5.98
415	75	2.9528	190	7.4803	45	1.7717	264 000	59 300	280 000	62 900	4 000	4 800	6.2	13.7	104.5	4.11	160.5	6.32
416	80	3.1496	200	7.8740	48	1.8898	303 000	68 100	320 000	71 900	3 800	4 500	7.2	16.0	110.0	4.33	170.0	6.69
417	85	3.3465	210	8.2677	52	2.0472	319 000	71 700	335 000	75 300	3 600	4 300	8.9	19.6	113.0	4.45	177.0	6.97
418	90	3.5433	225	8.8583	54	2.1260	380 000	85 400	415 000	93 300	3 400	4 000	10.2	22.5	123.5	4.86	191.5	7.54
419	95	3.7402	240	9.4488	55	2.1654	413 000	92 800	455 000	102 200	3 200	3 600	13.4	29.6	133.5	5.26	201.5	7.93
420	100	3.9370	250	9.8425	58	2.2835	457 000	102 700	520 000	116 900	3 000	3 600	15.7	34.6	139.0	5.47	211.0	8.31
421	105	4.1339	260	10.2362	60	2.3622	501 000	112 600	570 000	128 100	2 800	3 400	17.3	38.1	144.5	5.69	220.5	8.68
422	110	4.3307	280	11.0236	65	2.5591	550 000	123 600	630 000	141 600	2 600	3 200	22.7	50.0	155.0	6.10	235.0	9.25
424	120	4.7244	310	12.2047	72	2.8346	644 000	144 700	735 000	165 200	2 400	2 800	27.3	60.2	170.0	6.69	260.0	10.24
1292	460	18.1102	830	32.6772	165	6.4961	4 180 000	939 300	6 800 000	1 528 100	750	1 100	415.0	915.1	554.0	21.81	744.0	29.29
12/500	500	19.6850	920	36.2205	185	7.2835	5 280 000	1 186 500	8 500 000	1 910 100	670	950	575.0	1267.9	603.1	23.74	823.1	32.41
12/560	560	22.0472	1 030	40.5512	206	8.1102	7 210 000	1 620 200	11 200 000	2 516 900	560	800	805.0	1775.0	668.0	26.30	948.0	37.32
12/630 EC	630	24.8031	1 150	45.2756	230	9.0551	8 580 000	1 928 100	13 700 000	3 078 700	450	700	1109.0	2445.3	751.0	29.57	1051.0	41.38
1876 EC	380	14.9606	480	18.8976	46	1.8110	561 000	126 100	1 120 000	251 700	1 300	2 000	20.0	44.1	406.0	15.98	458.0	18.03
1880	400	15.7480	500	19.6850	46	1.8110	572 000	128 500	1 180 000	265 200	1 300	1 900	21.5	47.4	423.0	16.65	475.0	18.70
1884	420	16.5354	520	20.4724	46	1.8110	572 000	128 500	1 200 000	269 700	1 200	1 800	22.0	48.5	447.0	17.60	499.0	19.65
18/600 EC	600	23.6220	730	28.7402	60	2.3622	897 000	201 600	2 080 000	467 400	800	1 000	54.0	119.1	632.0	24.88	696.0	27.40
18/630 EC	630	24.8031	780	30.7087	69	2.7165	1 100 000	247 200	2 500 000	561 800	750	950	75.0	165.4	667.0	26.26	739.0	29.09
18/800 EC	800	31.4961	980	38.5827	82	3.2283	1 720 000	386 500	4 150 000	932 600	530	700	137.0	302.1	846.0	33.31	936.0	36.85
18/900 EC	900	35.4331	1 090	42.9134	85	3.3465	1 980 000	444 900	4 900 000	1 101 100	450	600	169.0	372.6	948.0	37.32	1044.0	41.10
18/1000	1 000	39.3701	1 220	48.0315	100	3.9370	2 640 000	593 300	6 550 000	1 471 900	400	530	265.0	584.3	1053.0	41.46	1165.0	45.87

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

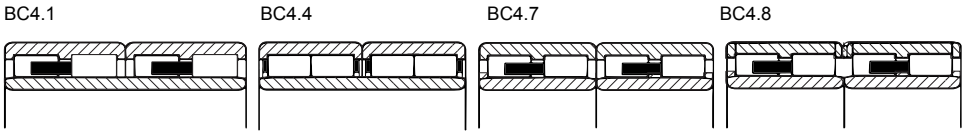
Four row
SKF Explorer
Series: BC4 0093 – BC4 0124
Size: 127 mm – 300 mm
5.000 in – 11.8110 in



Designation	Principal dimensions								Basic load ratings				Speed rating		Mass	
BC Full bearing	Bore d		Outside diameter D		Height B		F^1		Dynamic C		Static C_0		Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb
BC4-0093	127.0	5.000	174.65	6.8760	151	5.9375	139.50	5.4921	780,000	175,350	1,320,000	296,750	2 800	4 000	10.6	23.3
BC4-0105	145.0	5.7087	225.00	8.8583	156	6.1417	169.00	6.6535	1,100,000	247,290	1,630,000	366,440	2 200	3 200	23.7	52.2
BC4-0101	145.0	5.7087	210.00	8.2677	155	6.1024	166.00	6.5354	980,000	220,310	1,560,000	350,700	2 400	3 400	18.0	39.7
BC4-0096	150.0	5.9055	230.00	9.0551	156	6.1417	174.00	6.8504	1,120,000	251,790	1,660,000	373,180	2 200	3 200	24.1	53.1
BC4-0108	160.0	6.2992	230.00	9.0551	130	5.1181	180.00	7.0866	965,000	216,940	1,340,000	301,240	2 000	3 000	17.3	38.1
BC4-0103	160.0	6.2992	230.00	9.0551	168	6.6142	179.00	7.0472	1,290,000	290,000	2,200,000	494,580	2 200	3 200	23.8	52.4
BC4-0111	165.1	6.5000	225.45	8.8760	168	6.6260	181.00	7.1260	1,250,000	281,010	2,240,000	503,570	2 200	3 200	20.0	44.1
BC4-0118	170.0	6.6929	230.00	9.0551	160	6.2992	185.50	7.3031	1,370,000	307,990	2,360,000	530,550	2 000	3 000	19.3	42.4
BC4-0119	170.0	6.6929	240.00	9.4488	130	5.1181	187.00	7.3622	1,140,000	256,280	1,830,000	411,400	2 000	3 000	19.0	41.9
BC4-0114	180.0	7.0866	260.00	10.2362	168	6.6142	202.00	7.9528	1,560,000	350,700	2,500,000	562,020	1 900	2 800	30.1	66.2
BC4-0098	190.0	7.4803	260.00	10.2362	168	6.6142	212.00	8.3465	1,430,000	321,480	2,600,000	584,500	1 800	2 600	26.7	58.9
BC4-0116	190.0	7.4803	280.00	11.0236	200	7.8740	214.00	8.4252	2,080,000	467,600	3,250,000	730,630	1 700	2 600	41.8	92.2
BC4-0109	190.0	7.4803	270.00	10.6299	200	7.8740	212.00	8.3465	1,800,000	404,660	3,150,000	708,150	1 800	2 600	37.2	82.0
BC4-0106	200.0	7.8740	290.00	11.4173	192	7.5591	226.00	8.8976	1,900,000	427,140	3,350,000	753,110	1 600	2 400	43.0	94.8
BC4-0092	200.0	7.8740	280.00	11.0236	200	7.8740	222.00	8.7402	1,860,000	418,140	3,350,000	753,110	1 700	2 600	39.2	86.5
BC4-0095	200.0	7.8740	280.00	11.0236	170	6.6929	222.00	8.7402	1,700,000	382,180	3,000,000	674,430	1 700	2 600	33.4	73.6
BC4-0113	200.0	7.8740	270.00	10.6299	170	6.6929	222.00	8.7402	1,430,000	321,480	2,700,000	606,980	1 700	2 600	28.5	62.7
BC4-0051	200.0	7.8740	270.00	10.6299	200	7.8740	222.25	8.7500	1,730,000	388,920	3,350,000	753,110	1 700	2 600	33.0	72.8
BC4-0102	210.0	8.26877	290.00	11.4173	192	7.5591	236.00	9.2913	1,760,000	395,660	3,350,000	753,110	1 600	2 400	39.4	86.9
BC4-0117	220.0	8.6614	310.00	12.2047	192	7.5591	246.00	9.6850	1,900,000	427,140	3,550,000	798,070	1 500	2 200	49.0	108.1
BC4-0097	220.0	8.6614	310.00	12.2047	225	8.8583	244.00	9.6063	2,280,000	512,560	4,050,000	910,480	1 500	2 200	55.6	122.6
BC4-0115	230.0	9.0551	365.00	14.3701	250	9.8425	266.00	10.4724	3,350,000	753,110	5,000,000	1,124,040	1 300	2 000	69.3	152.8
BC4-0112	230.0	9.0551	330.00	12.9921	206	8.1102	260.00	10.2362	2,320,000	521,560	4,000,000	899,240	1 400	2 200	58.6	129.1
BC4-0099	240.0	9.4488	330.00	12.9921	220	8.6614	270.00	10.6299	2,160,000	485,590	4,300,000	966,680	1 400	2 000	64.1	141.3
BC4-0104	240.0	9.4488	330.00	12.992	180	7.0866	265.00	10.4331	2,120,000	476,590	3,800,000	854,270	1 400	2 000	50.5	111.2
BC4-0110	260.0	10.2362	370.00	14.5669	220	8.6614	292.00	11.4961	2,700,000	606,980	4,650,000	1,045,360	1 300	1 900	77.9	171.7
BC4-0107	280.0	11.0236	390.00	15.3543	220	8.6614	312.00	12.2835	2,800,000	629,460	5,000,000	1,124,040	1 200	1 700	87.2	192.1
BC4-0100	280.0	11.0236	390.00	15.3543	275	10.8268	308.00	12.1260	3,750,000	843,030	6,950,000	1,562,420	1 200	1 700	101.8	224.4
BC4-0128	280.0	11.0236	390.00	15.3543	275	10.8268	308.00	12.1260	3,750,000	843,030	6,950,000	1,562,420	1 200	1 700	102.2	225.4
BC4-0094	300.0	11.8110	420.00	16.5354	300	11.8110	332.00	13.0709	4,400,000	989,160	8,300,000	1,865,910	1 100	1 600	130.2	287.0
BC4-0124	300.0	11.8110	420.00	16.5354	300	11.8110	332.00	13.0709	4,400,000	989,160	8,300,000	1,865,910	1 100	1 600	130.4	287.4

[1] F = Diameter under rollers
[2] R-Part = Outer ring with roller and cage assembly of a separable BC4 bearing assembly
[3] L-Part = Separate inner ring of a separable BC4 bearing assembly

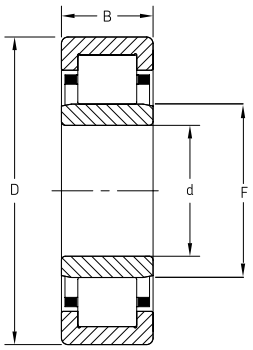
Consult SKF USA Inc. prior to design change or order placement.



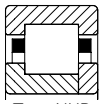
Designation				Design & Features			
BC Full bearing	R-Part[2]	L-Part[3]	BC4	Performance	Clearance	Radial side face lube grooves	Cage
	Designation	Designation	Design	Class	Class	Lube	Execution
BC4-0093	RBC4-0093	LBC4-0093	BC4.1	Explorer	C4P	both sides	Brass
BC4-0105	RBC4-0105	LBC4-0105	BC4.1	Explorer	C4	both sides	Brass
BC4-0101	RBC4-0101	LBC4-0101	BC4.1	Explorer	C4	both sides	Brass
BC4-0096	RBC4-0096	LBC4-0096	BC4.1	Explorer	0,18-0,23	both sides	Brass
BC4-0108	RBC4-0108	LBC4-0108	BC4.1	Explorer	C4	both sides	Brass
BC4-0103	RBC4-0103	LBC4-0103	BC4.1	Explorer	C4	both sides	Brass
BC4-0111	RBC4-0111	LBC4-0111	BC4.1	Explorer	C4P	both sides	Brass
BC4-0118	RBC4-0118	LBC4-0118	BC4.7	Explorer	C4	-	Brass
BC4-0119	RBC4-0119	LBC4-0119	BC4.1	Explorer	C4	both sides	Brass
BC4-0114	RBC4-0114	LBC4-0114	BC4.1	Explorer	C4	both sides	Brass
BC4-0098	RBC4-0098	LBC4-0098	BC4.1	Explorer	C4	both sides	Brass
BC4-0116	RBC4-0116	LBC4-0116	BC4.1	Explorer	C4	both sides	Brass
BC4-0109	RBC4-0109	LBC4-0109	BC4.1	Explorer	C4	both sides	Brass
BC4-0106	RBC4-0106	LBC4-0106	BC4.1	Explorer	C4	both sides	Brass
BC4-0092	RBC4-0092	LBC4-0092	BC4.1	Explorer	C4	both sides	Brass
BC4-0095	RBC4-0095	LBC4-0095	BC4.1	Explorer	C4	both sides	Brass
BC4-0113	RBC4-0113	LBC4-0095	BC4.1	Explorer	C4	both sides	Brass
BC4-0051	RBC4-0051	LBC4-0051	BC4.1	Explorer	C4	both sides	Brass
BC4-0102	RBC4-0102	LBC4-0102	BC4.1	Explorer	C3	both sides	Brass
BC4-0117	RBC4-0117	LBC4-0117	BC4.1	Explorer	C4	both sides	Brass
BC4-0097	RBC4-0097	LBC4-0097	BC4.1	Explorer	C4	both sides	Brass
BC4-0115	RBC4-0115	LBC4-0115	BC4.8	Explorer	C3	-	Brass
BC4-0112	RBC4-0112	LBC4-0112	BC4.1	Explorer	C4	both sides	Brass
BC4-0099	RBC4-0099	LBC4-0099	BC4.1	Explorer	C3	both sides	Brass
BC4-0104	RBC4-0104	LBC4-0104	BC4.4	Explorer	C4	both sides	Brass
BC4-0110	RBC4-0110	LBC4-0110	BC4.1	Explorer	C4	both sides	Brass
BC4-0107	RBC4-0107	LBC4-0107	BC4.1	Explorer	C4	both sides	Brass
BC4-0100	RBC4-0100	LBC4-0100	BC4.8	Explorer	C4	-	Brass
BC4-0128	RBC4-0128	LBC4-0100	BC4.7	Explorer	C4	-	Brass
BC4-0094	RBC4-0094	LBC4-0094	BC4.8	Explorer	C4	both sides	Brass
BC4-0124	RBC4-0124	LBC4-0094	BC4.7	Explorer	C4	both sides	Brass

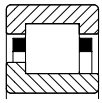
Consult SKF USA Inc. prior to design change or order placement.

Full complement
Single row
Standard
Series: 1964 EC – 3992 EC
Size: 320 mm – 460 mm
12.5984 in – 18.1102 in



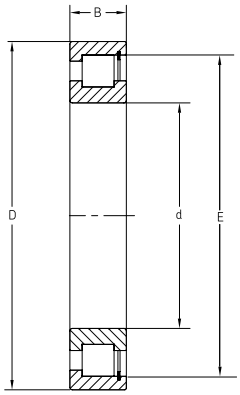
Type NU


Type NUP


Type NJ

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
1964 EC	320	12.5984	440	17.3228	56	2.2047	693 000	155 700	1 200 000	269 700	1 500	2 000	26.0	57.3	348.0	13.70	412.0	16.22
1968 EC	340	13.3858	460	18.1102	56	2.2047	682 000	153 300	1 200 000	269 700	1 400	1 900	27.5	60.6	370.0	14.57	434.0	17.09
1972 EC	360	14.1732	480	18.8976	56	2.2047	781 000	175 500	1 460 000	328 100	1 400	2 000	29.0	63.9	387.5	15.26	451.5	17.78
1988	440	17.3228	600	23.6220	74	2.9134	1 060 000	238 200	2 000 000	449 400	1 100	1 400	53.0	116.9	482.0	18.98	562.0	22.13
1996	480	18.8976	650	25.5906	78	3.0709	1 170 000	262 900	2 240 000	503 400	950	1 300	76.0	167.6	525.0	20.67	609.0	23.98
2060 EC	300	11.8110	460	18.1102	95	3.7402	1 510 000	339 300	2 600 000	584 300	1 300	2 000	62.0	136.7	341.0	13.43	425.0	16.73
2088 EC	440	17.3228	650	25.5906	122	4.8031	2 550 000	573 000	4 900 000	1 101 100	8 500	1 300	145.0	319.7	487.0	19.17	599.0	23.58
2096 EC	480	18.8976	700	27.5591	128	5.0394	2 860 000	642 700	5 600 000	1 258 400	750	1 200	179.0	394.7	533.0	20.98	653.0	25.71
20/500 EC	500	19.6850	720	28.3465	128	5.0394	2 920 000	656 200	5 850 000	1 314 600	750	1 100	180.0	396.9	553.0	21.77	673.0	26.50
20/530 EC	530	20.8661	780	30.7087	145	5.7087	3 740 000	840 400	7 350 000	1 651 700	670	1 000	253.0	557.9	591.0	23.27	727.0	28.62
20/560 EC	560	22.0472	820	32.2835	150	5.9055	3 800 000	853 900	7 650 000	1 719 100	630	1 000	290.0	639.5	626.0	24.65	762.0	30.00
20/600 EC	600	23.6220	870	34.2520	155	6.1024	4 180 000	939 300	8 000 000	1 797 800	600	900	325.0	716.6	661.0	26.02	821.0	32.32
20/630 EC	630	24.8031	920	36.2205	170	6.6929	4 730 000	1 062 900	9 500 000	2 134 800	560	850	400.0	882.0	699.0	27.52	859.0	33.82
20/670 EC	670	26.3780	980	38.5827	180	7.0866	5 390 000	1 211 200	11 000 000	2 471 900	500	800	480.0	1058.4	746.0	29.37	916.0	36.06
20/710 EC	710	27.9528	1 030	40.5512	185	7.2835	5 940 000	1 334 800	12 000 000	2 696 600	480	700	540.0	1190.7	787.0	30.98	967.0	38.07
20/750 EC	750	29.5276	1 090	42.9134	195	7.6772	7 040 000	1 582 000	14 600 000	3 280 900	430	670	635.0	1400.2	832.0	32.76	1022.0	40.24
20/800 EC	800	31.4961	1 150	45.2756	200	7.8740	7 040 000	1 582 000	14 600 000	3 280 900	400	630	715.0	1576.6	882.0	34.72	1082.0	42.60
20/850 EC	850	33.4646	1 220	48.0315	212	8.3465	8 420 000	1 892 100	18 600 000	4 179 800	360	560	880.0	1940.4	942.0	37.09	1142.0	44.96
3068	340	13.3858	520	20.4724	133	5.2362	2 200 000	494 400	4 150 000	932 600	1 100	1 700	109.0	240.3	385.0	15.16	481.0	18.94
3076 EC	380	14.9606	560	22.0472	135	5.3150	2 380 000	534 800	4 750 000	1 067 400	1 000	1 800	108.5	239.2	425.0	16.73	521.0	20.51
30/500 EC	500	19.6850	720	28.3465	167	6.5748	3 800 000	853 900	7 350 000	1 651 700	750	1 100	233.0	513.8	540.8	21.29	676.8	26.65
3168 EC	340	13.3858	580	22.8346	190	7.4803	3 470 000	779 800	5 850 000	1 314 600	950	1 600	217.0	478.5	390.5	15.37	526.5	20.73
3172 EC	360	14.1732	600	23.6220	192	7.5591	3 410 000	766 300	6 100 000	1 370 800	900	1 500	226.0	498.3	420.0	16.54	548.0	21.57
3184 EC	420	16.5354	700	27.5591	224	8.8189	4 950 000	1 112 400	9 000 000	2 022 500	750	1 300	365.0	804.8	485.0	19.09	645.0	25.39
3188 EC	440	17.3228	720	28.3465	226	8.8976	5 120 000	1 150 600	10 000 000	2 247 200	700	1 200	388.0	855.5	509.0	20.04	669.0	26.34
3192 EC	460	18.1102	760	29.9213	240	9.4488	5 280 000	1 186 500	9 650 000	2 168 500	670	1 100	450.0	992.3	529.3	20.84	695.3	27.37
3196 EC	480	18.8976	790	31.1024	248	9.7638	5 940 000	1 334 800	10 800 000	2 427 000	630	1 100	507.0	1117.9	547.0	21.54	727.0	28.62
3984 EC	420	16.5354	560	22.0472	106	4.1732	1 680 000	377 500	3 650 000	820 200	950	1 500	79.7	175.7	455.0	17.91	531.0	20.91
3992 EC	460	18.1102	620	24.4094	118	4.6457	2 050 000	460 700	4 550 000	1 022 500	850	1 300	111.5	245.9	501.0	19.72	585.0	23.03

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



Type NCF

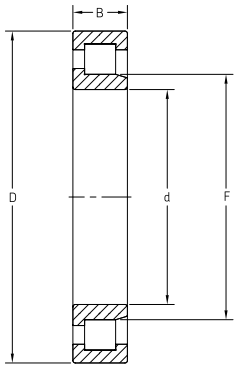
Full complement
Single row
Series: NCF 1840 V – NCF 18/1120 V
Size: 200 mm – 1120 mm
7.8740 in – 44.0945 in

Series: NCF 2224 V – NCF 2244 V
Size: 120 mm – 220 mm
4.7244 in – 8.6614 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NCF 1840 V	200	7.8740	250	9.8425	24	0.9449	176 000	39 550	335 000	75 300	1 100	1 400	2.6	5.7	237.5	9.35	211.5	8.33
NCF 1844 V	220	8.6614	270	10.6299	24	0.9449	183 000	41 120	365 000	82 000	1 000	1 200	2.9	6.3	258.0	10.16	232.0	9.13
NCF 1848 V	240	9.4488	300	11.8110	28	1.1024	260 000	58 400	510 000	114 600	900	1 100	4.4	9.7	287.0	11.30	255.0	10.04
NCF 1852 V	260	10.2362	320	12.5984	28	1.1024	270 000	60 700	550 000	123 600	800	1 000	4.6	10.0	307.2	12.09	275.2	10.83
NCF 1856 V	280	11.0236	350	13.7795	33	1.2992	341 000	76 600	695 000	156 200	750	950	7.1	15.7	334.0	13.15	298.0	11.73
NCF 1860 V	300	11.8110	380	14.9606	38	1.4961	418 000	93 900	850 000	191 000	670	850	10.0	22.1	363.0	14.29	321.0	12.64
NCF 1864 V	320	12.5984	400	15.7480	38	1.4961	440 000	98 900	900 000	202 200	630	800	10.5	23.2	383.0	15.08	341.0	13.43
NCF 1868 V	340	13.3858	420	16.5354	38	1.4961	446 000	100 200	950 000	213 500	600	750	11.0	24.3	403.0	15.87	361.0	14.21
NCF 1872 V	360	14.1732	440	17.3228	38	1.4961	402 000	90 300	900 000	202 200	560	700	11.5	25.4	418.9	16.49	380.9	15.00
NCF 1876 V	380	14.9606	480	18.8976	46	1.8110	627 000	140 900	1 290 000	289 900	530	670	19.5	43.0	458.0	18.03	406.0	15.98
NCF 1880 V	400	15.7480	500	19.6850	46	1.8110	627 000	140 900	1 340 000	301 100	500	630	20.5	45.2	475.0	18.70	423.0	16.65
NCF 1884 V	420	16.5354	520	20.4724	46	1.8110	660 000	148 300	1 430 000	321 300	480	600	20.7	45.6	499.0	19.65	447.0	17.60
NCF 1888 V	440	17.3228	540	21.2598	46	1.8110	671 000	150 800	1 460 000	328 100	450	560	22.0	48.5	516.0	20.31	464.0	18.27
NCF 1896 V	480	18.8976	600	23.6220	56	2.2047	935 000	210 100	2 040 000	458 400	400	500	35.5	78.3	573.5	22.58	509.5	20.06
NCF 18/500 V	500	19.6850	620	24.4094	56	2.2047	952 000	213 900	2 120 000	476 400	380	480	35.4	78.1	594.0	23.39	530.0	20.87
NCF 18/530 V	530	20.8661	650	25.5906	56	2.2047	990 000	222 500	2 240 000	503 400	360	450	38.5	84.9	624.5	24.59	560.5	22.07
NCF 18/600 V	600	23.6220	730	28.7402	60	2.3622	1 050 000	236 000	2 550 000	573 000	320	400	51.5	113.6	696.0	27.40	632.0	24.88
NCF 18/630 V	630	24.8031	780	30.7087	69	2.7165	1 250 000	280 900	2 900 000	651 700	300	360	72.5	159.9	739.0	29.09	667.0	26.26
NCF 18/670 V	670	26.3780	820	32.2835	69	2.7165	1 300 000	292 100	3 150 000	707 900	280	340	74.0	163.2	783.0	30.83	711.0	27.99
NCF 18/710 V	710	27.9528	870	34.2520	74	2.9134	1 540 000	346 100	3 750 000	842 700	260	320	92.5	204.0	831.0	32.72	751.0	29.57
NCF 18/750 V	750	29.5276	920	36.2205	78	3.0709	1 760 000	395 500	4 300 000	966 300	240	300	105.0	231.5	880.0	34.65	794.0	31.26
NCF 18/800 V	800	31.4961	980	38.5827	82	3.2283	1 940 000	436 000	4 800 000	1 078 700	220	280	126.0	277.8	936.0	36.85	846.0	33.31
NCF 18/850 V	850	33.4646	1 030	40.5512	82	3.2283	2 050 000	460 700	5 200 000	1 168 500	200	260	131.0	288.9	986.0	38.82	894.0	35.20
NCF 18/950 V	950	37.4016	1 150	45.2756	90	3.5433	2 420 000	543 800	6 300 000	1 415 700	170	220	185.0	407.9	1103.0	43.43	1003.0	39.49
NCF 18/1000 V	1 000	39.3701	1 220	48.0315	100	3.9370	2 920 000	656 200	7 500 000	1 685 400	160	200	230.0	507.2	1165.0	45.87	1053.0	41.46
NCF 18/1120 V	1 120	44.0945	1 360	53.5433	106	4.1732	3 740 000	840 400	9 650 000	2 168 500	130	170	298.0	657.1	1310.0	51.57	1182.0	46.54
NCF 2224 V	120	4.7244	215	8.4646	58	2.2835	512 000	115 100	735 000	165 200	1 400	1 700	9.1	20.0	192.3	7.57	140.3	5.52
NCF 2228 V	140	5.5118	250	9.8425	68	2.6772	693 000	155 700	1 020 000	229 200	1 200	1 500	14.4	31.8	221.9	8.74	161.9	6.37
NCF 2230 V	150	5.9055	270	10.6299	73	2.8740	781 000	175 500	1 220 000	274 200	950	1 200	18.4	40.6	236.7	9.32	172.7	6.80
NCF 2232 V	160	6.2992	290	11.4173	80	3.1496	990 000	222 500	1 500 000	337 100	950	1 200	23.0	50.7	266.4	10.49	194.4	7.65
NCF 2234 V	170	6.6929	310	12.2047	86	3.3858	1 100 000	247 200	1 700 000	382 000	900	1 100	28.7	63.3	281.1	11.07	205.1	8.07
NCF 2238 V	190	7.4803	340	13.3858	92	3.6220	1 250 000	280 900	1 900 000	427 000	800	1 000	35.7	78.7	310.7	12.23	226.7	8.92
NCF 2244 V	220	8.6614	400	15.7480	108	4.2520	1 830 000	411 200	2 750 000	618 000	700	850	58.0	127.9	366.0	14.41	258.0	10.16

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

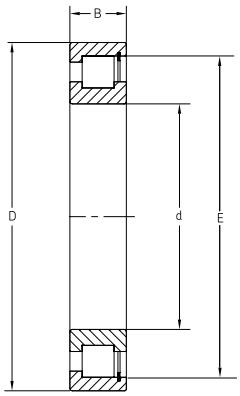
Full complement
Single row
Series: NJG 2305 VH – NJG 2352 VH
Size: 25 mm – 260 mm
0.9843 in – 10.2362 in



Type NJG

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NJG 2305 VH	25	0.9843	62	2.4409	24	0.9449	68 200	15 330	68 000	15 280	4 500	5 600	0.4	0.8	53.7	2.12	31.7	1.25
NJG 2306 VH	30	1.1811	72	2.8346	27	1.0630	84 200	18 920	86 500	19 440	4 000	4 800	0.6	1.2	62.4	2.46	38.4	1.51
NJG 2307 VH	35	1.3780	80	3.1496	31	1.2205	108 000	24 270	114 000	25 620	3 400	4 300	0.8	1.7	72.8	2.86	44.8	1.76
NJG 2308 VH	40	1.5748	90	3.5433	33	1.2992	145 000	32 580	156 000	35 060	3 000	3 600	1.0	2.2	83.2	3.27	51.2	2.01
NJG 2309 VH	45	1.7717	100	3.9370	36	1.4173	172 000	38 650	196 000	44 040	2 800	3 400	1.4	3.1	88.1	3.47	56.1	2.21
NJG 2311 VH	55	2.1654	120	4.7244	43	1.6929	233 000	52 400	260 000	58 400	2 200	2 800	2.3	5.1	109.1	4.30	67.1	2.64
NJG 2313 VH	65	2.5591	140	5.5118	48	1.8898	303 000	68 100	360 000	80 900	1 900	2 400	3.6	7.8	126.7	4.99	80.7	3.18
NJG 2314 VH	70	2.7559	150	5.9055	51	2.0079	336 000	75 500	400 000	89 900	1 800	2 200	4.4	9.7	132.2	5.20	84.2	3.31
NJG 2315 VH	75	2.9528	160	6.2992	55	2.1654	396 000	89 000	480 000	107 900	1 600	2 000	5.4	11.8	143.2	5.64	91.2	3.59
NJG 2316 VH	80	3.1496	170	6.6929	58	2.2835	457 000	102 700	570 000	128 100	1 500	1 900	6.4	14.1	154.3	6.07	98.3	3.87
NJG 2317 VH	85	3.3465	180	7.0866	60	2.3622	484 000	108 800	620 000	139 300	1 400	1 800	7.4	16.3	163.0	6.42	107.0	4.21
NJG 2318 VH	90	3.5433	190	7.4803	64	2.5197	550 000	123 600	680 000	152 800	1 400	1 700	8.8	19.3	170.8	6.72	108.8	4.28
NJG 2320 VH	100	3.9370	215	8.4646	73	2.8740	704 000	158 200	900 000	202 200	1 200	1 500	13.0	28.7	192.8	7.59	122.8	4.83
NJG 2322 VH	110	4.3307	240	9.4488	80	3.1496	858 000	192 800	1 060 000	238 200	1 100	1 300	17.5	38.6	218.3	8.59	134.3	5.29
NJG 2324 VH	120	4.7244	260	10.2362	86	3.3858	952 000	213 900	1 250 000	280 900	1 000	1 200	22.7	50.1	231.4	9.11	147.4	5.80
NJG 2326 VH	130	5.1181	280	11.0236	93	3.6614	1 080 000	242 700	1 430 000	321 300	950	1 200	28.0	61.7	247.9	9.76	157.9	6.22
NJG 2328 VH	140	5.5118	300	11.8110	102	4.0157	1 230 000	276 400	1 660 000	373 000	850	1 100	35.5	78.3	264.5	10.41	168.5	6.63
NJG 2330 VH	150	5.9055	320	12.5984	108	4.2520	1 450 000	325 800	1 930 000	433 700	800	1 000	42.5	93.7	286.5	11.28	182.5	7.19
NJG 2334 VH	170	6.6929	360	14.1732	120	4.7244	1 760 000	395 500	2 450 000	550 600	700	900	59.5	131.2	319.6	12.58	203.6	8.01
NJG 2336 VH	180	7.0866	380	14.9606	126	4.9606	1 870 000	420 200	2 650 000	595 500	670	800	69.5	153.2	337.7	13.30	221.7	8.73
NJG 2338 VH	190	7.4803	400	15.7480	132	5.1969	2 160 000	485 400	3 000 000	674 200	630	800	80.0	176.4	352.5	13.88	224.5	8.84
NJG 2340 VH	200	7.8740	420	16.5354	138	5.4331	2 290 000	514 600	3 200 000	719 100	600	750	92.0	202.9	374.7	14.75	238.7	9.40
NJG 2344 VH	220	8.6614	460	18.1102	145	5.7087	2 700 000	606 700	3 750 000	842 700	530	670	111.0	244.8	418.7	16.48	266.7	10.50
NJG 2348 VH	240	9.4488	500	19.6850	155	6.1024	3 140 000	705 600	4 400 000	988 800	480	600	147.0	324.1	451.8	17.79	287.8	11.33
NJG 2352 VH	260	10.2362	540	21.2598	165	6.4961	3 580 000	804 500	5 000 000	1 123 600	430	530	177.0	390.3	495.9	19.52	315.9	12.44

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



Type NCF

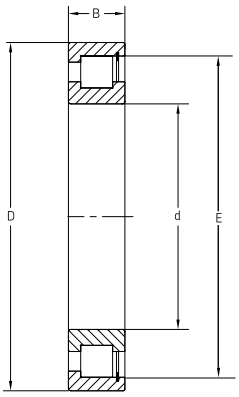
Full complement
Single row
Series: NCF 2888 V – NCF 28/1000 V
Size: 440 mm – 1000 mm
17.3228 in – 39.3701 in

Series: NCF 2912 CV – NCF 2934 CV
Size: 60 mm – 170 mm
2.3622 in – 6.6929 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NCF 2888 V	440	17.3228	540	21.2598	60	2.3622	1 060 000	238 200	2 700 000	606 700	450	560	30.0	66.2	516.0	20.31	464.0	18.27
NCF 2892 V	460	18.1102	580	22.8346	72	2.8346	1 300 000	292 100	3 050 000	685 400	430	530	44.0	97.0	553.0	21.77	489.0	19.25
NCF 2896 V	480	18.8976	600	23.6220	72	2.8346	1 320 000	296 600	3 150 000	707 900	400	500	46.0	101.4	573.5	22.58	509.5	20.06
NCF 28/500 V	500	19.6850	620	24.4094	72	2.8346	1 340 000	301 100	3 350 000	752 800	380	480	47.0	103.6	594.0	23.39	530.0	20.87
NCF 28/530 V	530	20.8661	650	25.5906	72	2.8346	1 400 000	314 600	3 450 000	775 300	360	450	49.3	108.7	624.5	24.59	560.5	22.07
NCF 28/560 V	560	22.0472	680	26.7717	72	2.8346	1 420 000	319 100	3 650 000	820 200	340	430	54.0	119.1	655.0	25.79	591.0	23.27
NCF 28/600 V	600	23.6220	730	28.7402	78	3.0709	1 570 000	352 800	4 300 000	966 300	320	400	67.5	148.8	696.0	27.40	632.0	24.88
NCF 28/630 V	630	24.8031	780	30.7087	88	3.4646	1 940 000	436 000	5 000 000	1 123 600	300	360	92.2	203.3	741.4	29.19	665.4	26.20
NCF 28/670 V	670	26.3780	820	32.2835	88	3.4646	1 940 000	436 000	5 300 000	1 191 000	280	340	98.0	216.1	783.0	30.83	711.0	27.99
NCF 28/710 V	710	27.9528	870	34.2520	95	3.7402	2 330 000	523 600	6 300 000	1 415 700	260	320	115.0	253.6	831.0	32.72	751.0	29.57
NCF 28/750 V	750	29.5276	920	36.2205	100	3.9370	2 640 000	593 300	6 950 000	1 561 800	240	300	139.0	306.5	878.0	34.57	788.0	31.02
NCF 28/800 V	800	31.4961	980	38.5827	106	4.1732	2 750 000	618 000	7 500 000	1 685 400	220	280	169.0	372.6	936.0	36.85	846.0	33.31
NCF 28/850 V	850	33.4646	1 030	40.5512	106	4.1732	2 860 000	642 700	8 000 000	1 797 800	200	260	175.0	385.9	986.0	38.82	894.0	35.20
NCF 28/900 V	900	35.4331	1 090	42.9134	112	4.4094	3 190 000	716 900	9 150 000	2 056 200	190	240	210.0	463.1	1044.0	41.10	948.0	37.32
NCF 28/950 V	950	37.4016	1 150	45.2756	118	4.6457	3 410 000	766 300	9 800 000	2 202 200	170	220	240.0	529.2	1103.0	43.43	1003.0	39.49
NCF 28/1000 V	1 000	39.3701	1 220	48.0315	128	5.0394	4 130 000	928 100	11 600 000	2 606 700	160	200	309.0	681.3	1165.0	45.87	1053.0	41.46
NCF 2912 CV	60	2.3622	85	3.3465	16	0.6299	55 000	12 360	80 000	17 980	3 600	4 500	0.3	0.6	78.7	3.10	64.7	2.55
NCF 2913 CV	65	2.5591	90	3.5433	16	0.6299	58 300	13 100	88 000	19 780	3 200	4 000	0.3	0.7	85.2	3.36	71.2	2.80
NCF 2914 CV	70	2.7559	100	3.9370	19	0.7480	76 500	17 190	116 000	26 070	3 000	3 800	0.5	1.1	92.5	3.64	76.5	3.01
NCF 2915 CV	75	2.9528	105	4.1339	19	0.7480	79 200	17 800	125 000	28 090	2 800	3 600	0.5	1.1	97.5	3.84	81.5	3.21
NCF 2916 CV	80	3.1496	110	4.3307	19	0.7480	80 900	18 180	132 000	29 660	2 600	3 400	0.6	1.2	102.7	4.04	86.7	3.41
NCF 2917 CV	85	3.3465	120	4.7244	22	0.8661	102 000	22 920	166 000	37 300	6 300	6 300	0.8	1.8	109.5	4.31	91.5	3.60
NCF 2918 CV	90	3.5433	125	4.9213	22	0.8661	105 000	23 600	176 000	39 550	2 400	3 000	0.8	1.9	115.6	4.55	97.6	3.84
NCF 2920 CV	100	3.9370	140	5.5118	24	0.9449	128 000	28 760	200 000	44 940	2 000	2 600	1.1	2.4	130.6	5.14	108.6	4.28
NCF 2922 CV	110	4.3307	150	5.9055	24	0.9449	134 000	30 110	220 000	49 440	1 900	2 400	1.2	2.6	141.1	5.56	119.1	4.69
NCF 2924 CV	120	4.7244	165	6.4961	27	1.0630	172 000	38 650	290 000	65 200	4 300	4 300	1.7	3.8	154.3	6.07	130.3	5.13
NCF 2926 CV	130	5.1181	180	7.0866	30	1.1811	205 000	46 070	360 000	80 900	1 600	2 000	2.3	5.1	167.1	6.58	141.1	5.56
NCF 2928 CV	140	5.5118	190	7.4803	30	1.1811	220 000	49 440	390 000	87 600	1 500	1 900	2.4	5.3	180.0	7.09	152.0	5.98
NCF 2930 CV	150	5.9055	210	8.2677	36	1.4173	292 000	65 600	490 000	110 100	1 400	1 700	3.8	8.3	196.4	7.73	162.4	6.39
NCF 2932 CV	160	6.2992	220	8.6614	36	1.4173	303 000	68 100	530 000	119 100	1 300	1 600	4.0	8.8	207.2	8.16	173.2	6.82
NCF 2934 CV	170	6.6929	230	9.0551	36	1.4173	314 000	70 600	560 000	125 800	1 200	1 500	4.3	9.5	218.0	8.58	184.0	7.24

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

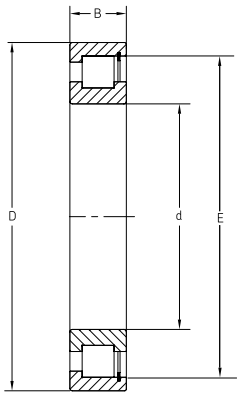
Full complement
Single row
Series: NCF 2936 CV – NCF 29/1000 V
Size: 180 mm – 1000 mm
7.0866 in – 39.3701 in



Type NCF

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NCF 2936 CV	180	7.0866	250	9.8425	42	1.6535	391 000	87 900	695 000	156 200	1 100	1 400	6.2	13.7	232.0	9.13	194.0	7.64
NCF 2938 CV	190	7.4803	260	10.2362	42	1.6535	440 000	98 900	780 000	175 300	1 100	1 400	6.5	14.3	244.0	9.61	204.0	8.03
NCF 2940 CV	200	7.8740	280	11.0236	48	1.8898	528 000	118 700	965 000	216 900	1 000	1 300	9.1	20.1	262.0	10.31	218.0	8.58
NCF 2944 CV	220	8.6614	300	11.8110	48	1.8898	550 000	123 600	1 060 000	238 200	900	1 200	9.9	21.8	283.0	11.14	239.0	9.41
NCF 2948 CV	240	9.4488	320	12.5984	48	1.8898	583 000	131 000	1 140 000	256 200	850	1 100	10.6	23.4	303.0	11.93	259.0	10.20
NCF 2952 CV	260	10.2362	360	14.1732	60	2.3622	737 000	165 600	1 430 000	321 300	750	950	18.2	40.2	333.7	13.14	281.7	11.09
NCF 2956 CV	280	11.0236	380	14.9606	60	2.3622	880 000	197 800	1 730 000	388 800	700	900	19.3	42.6	359.1	14.14	303.1	11.93
NCF 2960 CV	300	11.8110	420	16.5354	72	2.8346	1 120 000	251 700	2 200 000	494 400	630	800	31.2	68.8	390.5	15.37	326.5	12.85
NCF 2964 V	320	12.5984	440	17.3228	72	2.8346	1 140 000	256 200	2 360 000	530 300	600	750	33.0	72.8	411.0	16.18	347.0	13.66
NCF 2968 V	340	13.3858	460	18.1102	72	2.8346	1 190 000	267 400	2 500 000	561 800	560	700	35.0	77.2	431.0	16.97	367.0	14.45
NCF 2972 CV	360	14.1732	480	18.8976	72	2.8346	1 230 000	276 400	2 600 000	584 300	530	670	36.5	80.5	451.5	17.78	387.5	15.26
NCF 2976 V	380	14.9606	520	20.4724	82	3.2283	1 570 000	352 800	3 250 000	730 300	500	630	52.0	114.7	488.0	19.21	412.0	16.22
NCF 2980 CV	400	15.7480	540	21.2598	82	3.2283	1 650 000	370 800	3 450 000	775 300	480	600	54.5	120.2	511.0	20.12	435.0	17.13
NCF 2984 V	420	16.5354	560	22.0472	82	3.2283	1 650 000	370 800	3 600 000	809 000	450	560	57.0	125.7	524.0	20.63	448.0	17.64
NCF 2988 V	440	17.3228	600	23.6220	95	3.7402	2 010 000	451 700	4 400 000	988 800	430	530	80.0	176.4	565.5	22.26	481.5	18.96
NCF 2992 V	460	18.1102	620	24.4094	95	3.7402	2 050 000	460 700	4 500 000	1 011 200	400	500	83.0	183.0	579.0	22.80	495.0	19.49
NCF 2996 V	480	18.8976	650	25.5906	100	3.9370	2 290 000	514 600	4 900 000	1 101 100	380	480	93.0	205.1	615.0	24.21	519.0	20.43
NCF 29/500 V	500	19.6850	670	26.3780	100	3.9370	2 380 000	534 800	5 300 000	1 191 000	360	450	100.0	220.5	634.5	24.98	544.5	21.44
NCF 29/530 V	530	20.8661	710	27.9528	106	4.1732	2 700 000	606 700	6 000 000	1 348 300	340	430	120.0	264.6	673.0	26.50	573.0	22.56
NCF 29/560 V	560	22.0472	750	29.5276	112	4.4094	3 030 000	680 900	6 700 000	1 505 600	320	400	140.0	308.7	709.0	27.91	601.0	23.66
NCF 29/600 V	600	23.6220	800	31.4961	118	4.6457	3 360 000	755 100	7 500 000	1 685 400	300	380	170.0	374.9	754.0	29.69	642.0	25.28
NCF 29/630 V	630	24.8031	850	33.4646	128	5.0394	3 740 000	840 400	8 650 000	1 943 800	280	340	205.0	452.0	807.0	31.77	687.0	27.05
NCF 29/670 V	670	26.3780	900	35.4331	136	5.3543	3 910 000	878 700	9 000 000	2 022 500	260	320	245.0	540.2	846.0	33.31	726.0	28.58
NCF 29/710 V	710	27.9528	950	37.4016	140	5.5118	4 290 000	964 000	10 000 000	2 247 200	240	300	275.0	606.4	896.0	35.28	766.0	30.16
NCF 29/750 V	750	29.5276	1 000	39.3701	145	5.7087	4 460 000	1 002 200	10 600 000	2 382 000	220	280	313.0	690.2	938.0	36.93	808.0	31.81
NCF 29/800 V	800	31.4961	1 060	41.7323	150	5.9055	4 950 000	1 112 400	12 000 000	2 696 600	200	260	359.0	791.6	1002.0	39.45	866.0	34.09
NCF 29/850 V	850	33.4646	1 120	44.0945	155	6.1024	5 230 000	1 175 300	12 700 000	2 853 900	190	240	406.0	895.2	1061.0	41.77	917.0	36.10
NCF 29/900 V	900	35.4331	1 180	46.4567	165	6.4961	5 940 000	1 334 800	14 600 000	3 280 900	170	220	472.0	1040.8	1120.0	44.09	968.0	38.11
NCF 29/950 V	950	37.4016	1 250	49.2126	175	6.8898	6 600 000	1 483 100	16 300 000	3 662 900	160	200	565.0	1245.8	1179.0	46.42	1019.0	40.12
NCF 29/1000 V	1 000	39.3701	1 320	51.9685	185	7.2835	7 480 000	1 680 900	18 600 000	4 179 800	150	180	680.0	1499.4	1252.0	49.29	1082.0	42.60

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



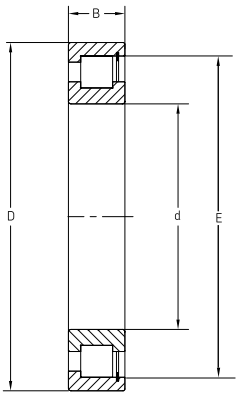
Type NCF

Full complement
Single row
Series: NCF 3004 CV – NCF 3034 CV
Size: 20 mm – 170 mm
0.7874 in – 6.6929 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NCF 3004 CV	20	0.7874	42	1.6535	16	0.6299	28 100	6 310	28 500	6 400	8 500	10 000	0.1	0.2	36.8	1.45	24.8	0.98
NCF 3005 CV	25	0.9843	47	1.8504	16	0.6299	31 900	7 170	35 500	7 980	7 000	9 000	0.1	0.3	42.5	1.67	30.5	1.20
NCF 3006 CV	30	1.1811	55	2.1654	19	0.7480	39 600	8 900	44 000	9 890	13 000	15 000	0.2	0.4	49.6	1.95	35.6	1.40
NCF 3007 CV	35	1.3780	62	2.4409	20	0.7874	48 400	10 880	56 000	12 580	5 300	6 700	0.3	0.6	55.5	2.19	40.5	1.60
NCF 3008 CV	40	1.5748	68	2.6772	21	0.8268	57 200	12 850	69 500	15 620	4 800	6 000	0.3	0.7	61.7	2.43	45.7	1.80
NCF 3009 CV	45	1.7717	75	2.9528	23	0.9055	60 500	13 600	78 000	17 530	4 300	5 300	0.4	0.9	66.9	2.63	50.9	2.00
NCF 3010 CV	50	1.9685	80	3.1496	23	0.9055	76 500	17 190	98 000	22 020	4 000	5 000	0.4	0.9	72.3	2.85	54.3	2.14
NCF 3011 CV	55	2.1654	90	3.5433	26	1.0236	105 000	23 600	140 000	31 460	3 400	4 300	0.6	1.4	83.5	3.29	63.5	2.50
NCF 3012 CV	60	2.3622	95	3.7402	26	1.0236	106 000	23 820	146 000	32 810	3 400	4 000	0.7	1.5	86.7	3.41	66.7	2.63
NCF 3013 CV	65	2.5591	100	3.9370	26	1.0236	112 000	25 170	163 000	36 630	3 000	3 800	0.7	1.6	93.1	3.66	73.1	2.88
NCF 3014 CV	70	2.7559	110	4.3307	30	1.1811	128 000	28 760	173 000	38 880	6 000	7 000	1.0	2.2	100.3	3.95	76.3	3.00
NCF 3015 CV	75	2.9528	115	4.5276	30	1.1811	134 000	30 110	190 000	42 700	2 600	3 200	1.1	2.3	107.9	4.25	83.9	3.30
NCF 3016 CV	80	3.1496	125	4.9213	34	1.3386	165 000	37 080	228 000	51 200	2 400	3 000	1.4	3.2	117.0	4.61	89.0	3.50
NCF 3017 CV	85	3.3465	130	5.1181	34	1.3386	172 000	38 650	236 000	53 000	2 400	3 000	1.5	3.3	121.4	4.78	93.4	3.68
NCF 3018 CV	90	3.5433	140	5.5118	37	1.4567	198 000	44 490	280 000	62 900	2 200	2 800	2.0	4.3	130.1	5.12	100.1	3.94
NCF 3020 CV	100	3.9370	150	5.9055	37	1.4567	209 000	46 970	310 000	69 700	2 000	2 600	2.2	4.7	139.7	5.50	109.7	4.32
NCF 3022 CV	110	4.3307	170	6.6929	45	1.7717	275 000	61 800	400 000	89 900	3 800	4 500	3.5	7.7	156.1	6.15	120.1	4.73
NCF 3024 CV	120	4.7244	180	7.0866	46	1.8110	292 000	65 600	440 000	98 900	1 700	2 000	3.8	8.4	167.6	6.60	131.6	5.18
NCF 3026 CV	130	5.1181	200	7.8740	52	2.0472	413 000	92 800	620 000	139 300	1 500	1 900	5.8	12.8	183.8	7.24	139.8	5.50
NCF 3028 CV	140	5.5118	210	8.2677	53	2.0866	440 000	98 900	680 000	152 800	1 400	1 800	6.1	13.5	197.8	7.79	153.8	6.06
NCF 3030 CV	150	5.9055	225	8.8583	56	2.2047	457 000	102 700	710 000	159 600	1 300	1 700	7.5	16.5	206.8	8.14	160.8	6.33
NCF 3032 CV	160	6.2992	240	9.4488	60	2.3622	512 000	115 100	800 000	179 800	1 200	1 500	9.1	20.1	224.9	8.85	174.9	6.88
NCF 3034 CV	170	6.6929	260	10.2362	67	2.6378	671 000	150 800	1 060 000	238 200	1 100	1 400	12.5	27.6	242.9	9.56	186.9	7.36

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

Full complement
Single row
Series: NCF 3036 CV – NCF 30/530 V
Size: 180 mm – 560 mm
7.0866 in – 22.0472 in



Type NCF

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Diameter			
	Bore d		Outside diameter D		Height B		Dynamic C		Static C_0		Reference speed	Limiting speed			Under roller F		Over roller E	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in	mm	in
NCF 3036 CV	180	7.0866	280	11.0236	74	2.9134	781 000	175 500	1 250 000	280 900	1 100	1 300	16.5	36.4	260.2	10.24	200.2	7.88
NCF 3038 CV	190	7.4803	290	11.4173	75	2.9528	792 000	178 000	1 290 000	289 900	1 000	1 300	17.0	37.5	269.8	10.62	209.8	8.26
NCF 3040 CV	200	7.8740	310	12.2047	82	3.2283	913 000	205 200	1 530 000	343 800	950	1 200	22.5	49.6	287.8	11.33	223.8	8.81
NCF 3044 CV	220	8.6614	340	13.3858	90	3.5433	1 080 000	242 700	1 800 000	404 500	850	1 100	29.5	65.0	312.2	12.29	240.2	9.46
NCF 3048 CV	240	9.4488	360	14.1732	92	3.6220	1 140 000	256 200	1 960 000	440 400	800	1 000	32.0	70.6	335.1	13.19	263.1	10.36
NCF 3052 CV	260	10.2362	400	15.7480	104	4.0945	1 540 000	346 100	2 550 000	573 000	700	900	46.5	102.5	376.0	14.80	286.0	11.26
NCF 3060 CV	300	11.8110	460	18.1102	118	4.6457	1 900 000	427 000	3 250 000	730 300	600	750	65.5	144.4	433.0	17.05	333.0	13.11
NCF 3064 CV	320	12.5984	480	18.8976	121	4.7638	1 980 000	444 900	3 450 000	775 300	560	700	71.0	156.6	449.5	17.70	349.5	13.76
NCF 3068 CV	340	13.3858	520	20.4724	133	5.2362	2 380 000	534 800	4 150 000	932 600	530	670	95.0	209.5	485.7	19.12	373.7	14.71
NCF 3072 CV	360	14.1732	540	21.2598	134	5.2756	2 420 000	543 800	4 300 000	966 300	500	630	105.0	231.5	503.5	19.82	391.5	15.41
NCF 3076 V	380	14.9606	560	22.0472	135	5.3150	2 700 000	606 700	5 100 000	1 146 100	480	600	110.0	242.6	520.5	20.49	412.5	16.24
NCF 3080 CV	400	15.7480	600	23.6220	148	5.8268	2 970 000	667 400	5 500 000	1 236 000	450	560	145.0	319.7	558.0	21.97	438.0	17.24
NCF 3084 CV	420	16.5354	620	24.4094	150	5.9055	3 030 000	680 900	5 700 000	1 280 900	430	530	150.0	330.8	577.6	22.74	457.6	18.02
NCF 3092 CV	460	18.1102	680	26.7717	163	6.4173	3 690 000	829 200	6 950 000	1 561 800	380	480	195.0	430.0	633.0	24.92	497.0	19.57
NCF 3096 CV	500	19.6850	720	28.3465	167	6.5748	3 800 000	853 900	7 500 000	1 685 400	360	450	215.0	474.1	676.0	26.61	540.0	21.26
NCF 30/500 CV	530	20.8661	780	30.7087	185	7.2835	5 230 000	1 175 300	10 600 000	2 382 000	320	400	300.0	661.5	732.0	28.82	580.0	22.83
NCF 30/530 V	560	22.0472	820	32.2835	195	7.6772	5 830 000	1 310 100	11 800 000	2 651 700	300	380	345.0	760.7	770.0	30.31	610.0	24.02

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

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 ≤ 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
C3H	[Reduced clearance range corresponding to] the upper half of the C3 clearance range
C4	Clearance > C3
C08	RBEC 5 running accuracy, inner & outer rings
C083	C08 + C3 *Not marked on bearing or package
C084	C08 + C4

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)
VA9A1	Bearings for billet and bloom caster applications
VA9B1	Bearing for continuous slab caster applications
VA991	Bearing for high-speed applications
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
GEA8	Filled 60 – 80% with SKF LGEV 2 grease, optional grease fill for large SRBs for extremely slow speeds
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)

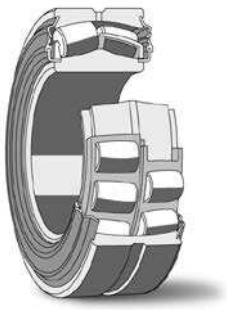
F_{ap} = axial load in Newtons

For cylindrical mounts contact SKF

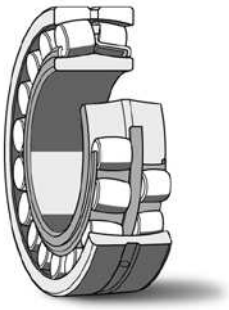
Seals
-2CS – Contact seal, NBR, on both sides
-2CS2 – Contact seal, FKM, on both sides
-2CS5 – Contact seal, HNBR, on both sides
-2RS – Improved design contact seal, NBR, on both sides
-2RS2 – Contact seal, FKM, on both sides
-2RS5 – Improved design contact seal, HNBR, on both sides

* See width tolerances in SKF Rolling Bearings catalog.

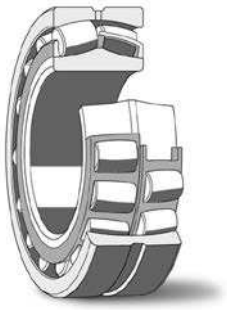
Standard spherical roller bearing (data tables on page 162)



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.

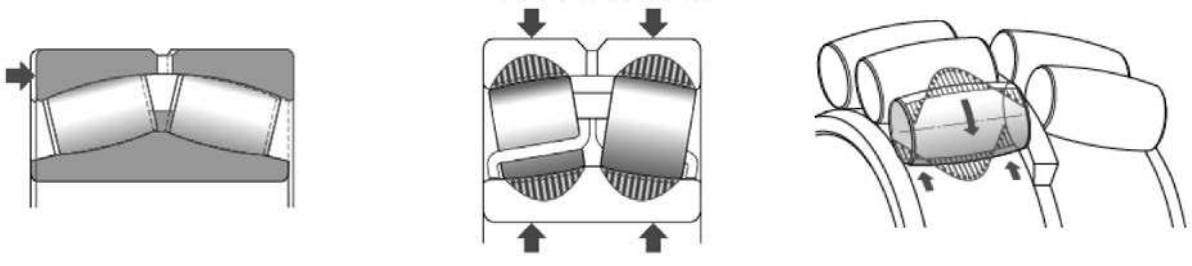
SKF upgraded bearing steel can extend the service life of SKF Explorer self-aligning roller bearings regardless of the application. However, the benefits are most noticeable in applications where bearings are subjected to contaminated or poor lubrication conditions.

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.

Variations

SKF offers an unmatched range of sealed spherical roller bearings with market-leading performance, in the SKF Explorer performance class. Sealed SRB can significantly increase bearing service life in contaminated environments. They 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. Eliminating or extending relubrication intervals, can significantly reduce the cost to purchase, apply and dispose of grease. Reduced maintenance costs and increased uptime will substantially reduce the total cost of ownership.

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.

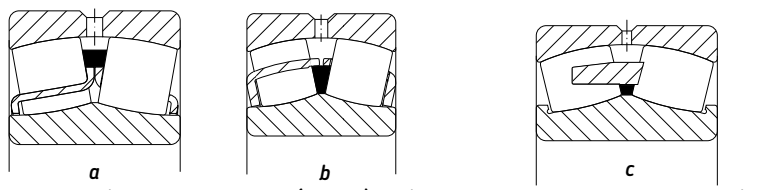
The three current designs of seals will be replaced by one design, with an improved seal recess to facilitate efficient mounting, a seal lip with an optimized contact pressure and a rubberized side face. The new seal design (suffix RS) replaces the current design (suffix CS) for the small sealed SRB (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 2

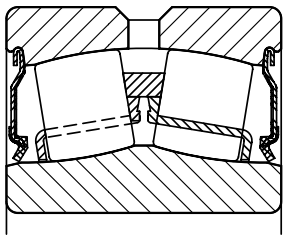


a *E design*

b *CC and E (d ≤ 65) designs*

c *CAC, ECAC, CA and ECA designs*

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)

For efficient bearing lubrication, 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 with 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 in vibrating applications, has been an ongoing 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 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

Bearings for continuous casters

SKF has tapped into our years of experience in the steel industry to develop the SKF Spherical roller bearings for continuous casters. The bearings are designed to provide excellent performance, wear resistance and cost efficiency in the extreme operating conditions.

Designed specifically for continuous casting applications, they provide numerous advantages, including:

- High static load carrying capacity
- Good wear resistance
- Superior crack resistance
- Optimized for lubrication
- Fully interchangeable with standard spherical roller bearings

The bearing is designed for robust performance. Superior, high-grade steel helps to prevent unplanned downtime and catastrophic machinery failure. The cage design is optimized for low-speed rotation. The internal design of the bearing includes a larger grease reservoir that provides an average of 10% increase in grease capacity as well as enhanced oil flow for air-oil lubrication.

During its life cycle, the bearing design reduces grease consumption, making the SKF Spherical roller bearings for continuous casters an environmentally friendly and cost-effective choice. The sum of these improvements contribute to increased uptime and a lower total cost of ownership.

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 **skfusa.com**. Select Engineering Tools under the Support menu. Or contact 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.

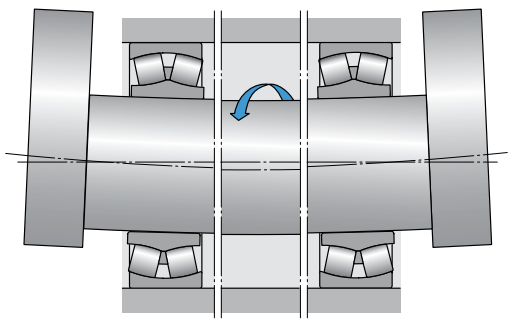
Table 3

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



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

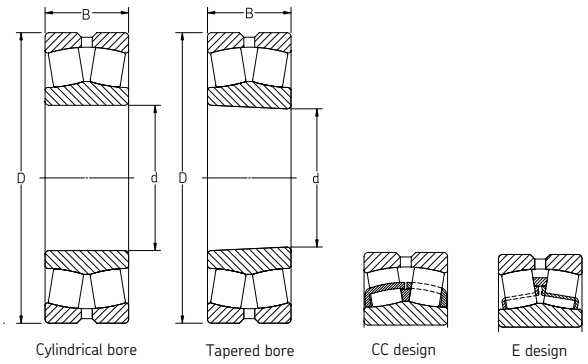
Radial internal clearance of spherical roller bearings with tapered bore

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



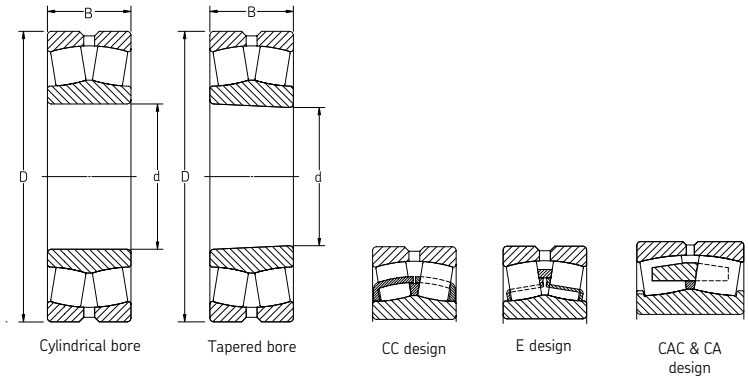
Cylindrical bore | Tapered bore | CC design | E design

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

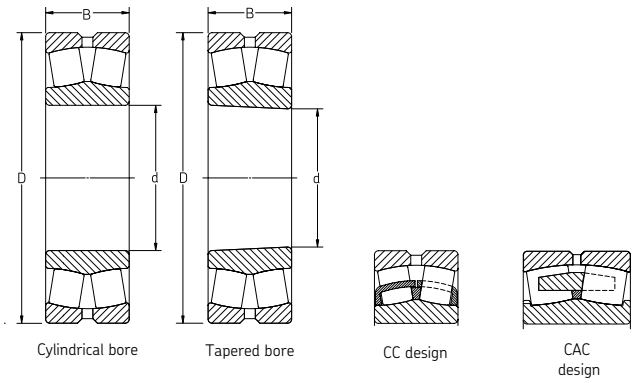
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Calculation factors		
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y_1	Y_2
22226 E	130	5.1181	230	9.0551	64	2.5197	758 000	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: 229750 J/C3R505
Size: 130 mm
5.1181 in

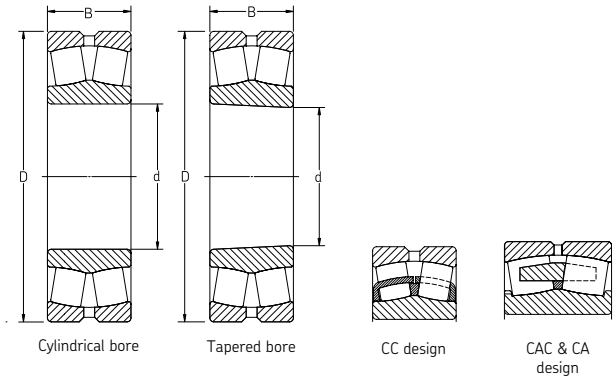
Series: 23022 CC/W33 – 23072 CC/W33
Size: 110 mm – 360 mm
4.3307 in – 14.1732 in



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		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
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.

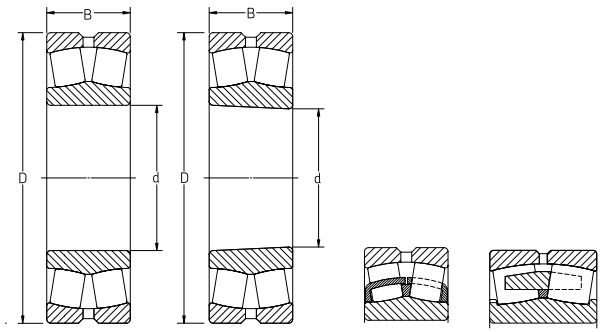


Cylindrical bore | Tapered bore | CC design | CAC & CA design

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.

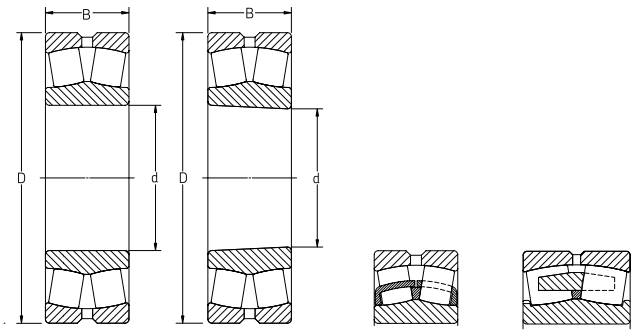
SKF Explorer
Series: 23120 CC/W33 – 231/530 CA/W33
Size: 100 mm – 530 mm
3.9370 in – 20.8661 in



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.



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 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 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 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 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

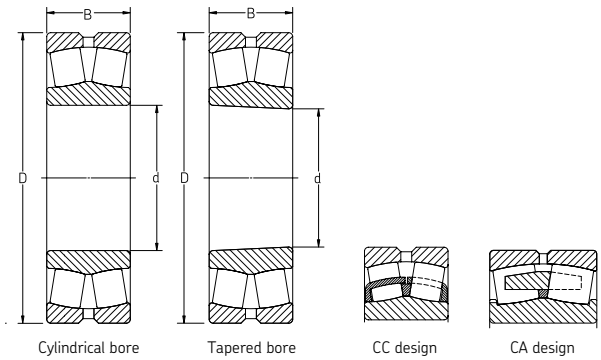
Consult SKF USA Inc. prior to design change or order placement.

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

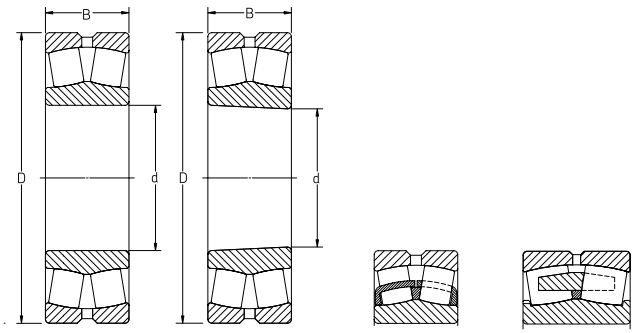
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Calculation factors		
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y_1	Y_2
23276 CA/W33	380	14.9606	680	26.7717	240	9.4488	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



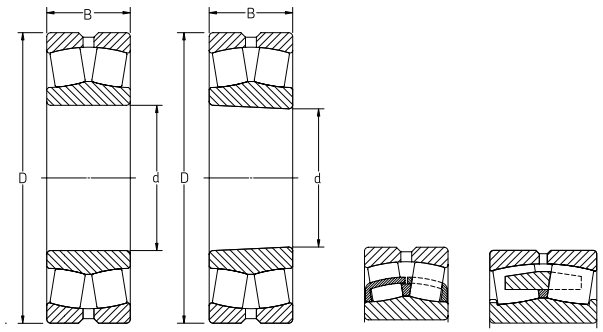
Cylindrical bore | Tapered bore | CC design | CA design

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

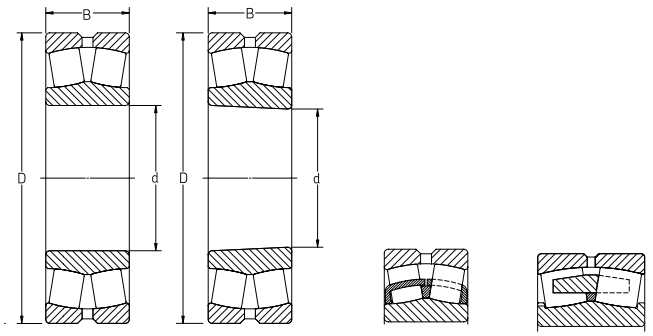
Series: 24040 CC/W33 – 240/1180 CAF/W33
Size: 380 mm – 1180 mm
14.9606 in – 46.4567 in



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	200	7.8740	310	12.2047	109	4.2913	12:10 PM	304 000	2 120 000	476 400	1 300	1 900	31.00	68.36	0.33	2.0	3.0
24044 CC/W33	220	8.6614	340	13.3858	118	4.6457	1 628 000	365 800	2 600 000	584 300	1 200	1 700	40.00	88.20	0.33	2.0	3.0
24048 CC/W33	240	9.4488	360	14.1732	118	4.6457	1 663 000	373 700	2 700 000	606 700	1 100	1 600	43.00	94.82	0.30	2.3	3.4
24052 CC/W33	260	10.2362	400	15.7480	140	5.5118	2 135 000	479 800	3 450 000	775 300	1 000	1 400	65.50	144.43	0.33	2.0	3.0
24056 CC/W33	280	11.0236	420	16.5354	140	5.5118	2 248 000	505 200	3 800 000	853 900	950	1 400	69.50	153.25	0.31	2.2	3.3
24060 CC/W33	300	11.8110	460	18.1102	160	6.2992	2 821 000	633 900	4 750 000	1 067 400	850	1 200	97.00	213.89	0.33	2.0	3.0
24060 CAC/W33						13.2283	2 735 000	614 600	4 500 000	1 011 200	850	1 200	97.00	213.89	0.33	2.0	3.0
24064 CC/W33	320	12.5984	480	18.8976	160	6.2992	2 969 000	667 200	5 100 000	1 146 100	800	1 200	100.00	220.50	0.31	2.2	3.3
24068 CC/W33	340	13.3858	520	20.4724	180	7.0866	3 621 000	813 700	6 200 000	1 393 300	750	1 100	140.00	308.70	0.33	2.0	3.0
24072 CC/W33	360	14.1732	540	21.2598	180	7.0866	3 705 000	832 600	6 550 000	1 471 900	700	1 000	145.00	319.73	0.31	2.2	3.3
24076 CC/W33	380	14.9606	560	22.0472	180	7.0866	3 786 000	850 800	6 800 000	1 528 100	670	950	150.00	330.75	0.30	2.3	3.4
24080 ECCJ/W33	400	15.7480	600	23.6220	200	7.8740	4 507 000	1 012 800	8 000 000	1 797 800	630	900	205.00	452.03	0.30	2.3	3.4
24084 ECA/W33	420	16.5354	620	24.4094	200	7.8740	4 610 000	1 036 000	8 300 000	1 865 200	530	900	210.00	463.05	0.30	2.3	3.4
24088 ECA/W33	440	17.3228	650	25.5906	212	8.3465	4 987 000	1 120 700	9 150 000	2 056 200	500	850	245.00	540.23	0.30	2.3	3.4
24092 ECA/W33	460	18.1102	680	26.7717	218	8.5827	5 401 000	1 213 700	10 000 000	2 247 200	480	800	275.00	606.38	0.28	2.4	3.6
24096 ECA/W33	480	18.8976	700	27.5591	218	8.5827	5 524 000	1 241 300	10 400 000	2 337 100	450	750	285.00	628.43	0.28	2.4	3.6
240/500 ECA/W33	500	19.6850	720	28.3465	218	8.5827	5 777 000	1 298 200	11 000 000	2 471 900	430	700	295.00	650.48	0.26	2.6	3.9
240/530 ECA/W33	530	20.8661	780	30.7087	250	9.8425	6 973 000	1 567 000	13 200 000	2 966 300	400	670	410.00	904.05	0.28	2.4	3.6
240/560 ECA/W33	560	22.0472	820	32.2835	258	10.1575	7 621 000	1 712 600	14 600 000	3 280 900	380	630	465.00	1025.33	0.28	2.4	3.6
240/600 ECA/W33	600	23.6220	870	34.2520	272	10.7087	8 580 000	1 928 100	17 000 000	3 820 200	340	560	520.00	1146.60	0.30	2.3	3.4
240/630 ECJ/W33	630	24.8031	920	36.2205	290	11.4173	9 150 000	2 056 200	18 000 000	4 044 900	320	530	645.00	1422.23	0.28	2.4	3.6
240/670 ECA/W33	670	26.3780	980	38.5827	308	12.1260	10 435 000	2 344 900	20 400 000	4 584 300	300	500	790.00	1741.95	0.28	2.4	3.6
240/710 ECA/W33	710	27.9528	1 030	40.5512	315	12.4016	11 164 000	2 508 800	22 800 000	5 123 600	260	450	895.00	1973.48	0.27	2.5	3.7
240/750 ECA/W33	750	29.5276	1 090	42.9134	335	13.1890	12 235 000	2 749 400	25 000 000	5 618 000	240	430	1065.00	2348.33	0.28	2.4	3.6
240/800 ECA/W33	800	31.4961	1 150	45.2756	345	13.5827	13 431 000	3 018 200	28 500 000	6 404 500	220	400	1200.00	2646.00	0.27	2.5	3.7
240/850 ECA/W33	850	33.4646	1 220	48.0315	365	14.3701	15 183 000	3 411 900	31 500 000	7 078 700	200	360	1410.00	3109.05	0.27	2.5	3.7
240/900 ECA/W33	900	35.4331	1 280	50.3937	375	14.7638	16 185 000	3 637 100	34 500 000	7 752 800	190	340	1570.00	3461.85	0.26	2.6	3.9
240/950 CAF/W33	950	37.4016	1 360	53.5433	412	16.2205	17 847 000	4 010 600	39 000 000	8 764 000	170	300	1990.00	4387.95	0.27	2.5	3.7
240/1000 CAF/W33	1 000	39.3701	1 420	55.9055	412	16.2205	18 592 000	4 178 000	40 500 000	9 101 100	160	280	2140.00	4718.70	0.26	2.6	3.9
240/1060 CAF/W33	1 060	41.7323	1 500	59.0551	438	17.2441	20 724 000	4 657 100	45 500 000	10 224 700	150	260	2515.00	5545.58	0.26	2.6	3.9
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

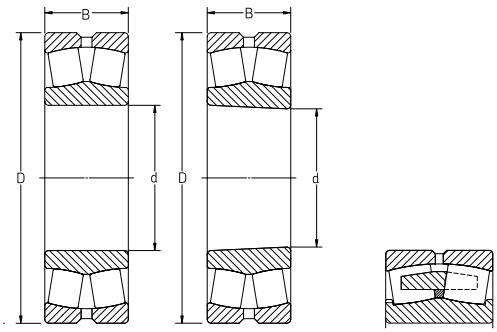
Consult SKF USA Inc. prior to design change or order placement.

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

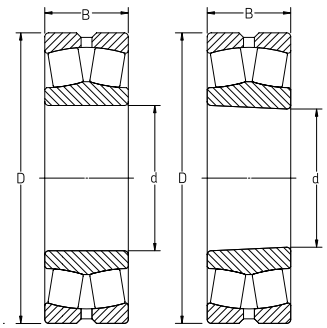
Series: 249/710 CA/W33 – 249/1320 CAF/W33
Size: 710 mm – 1320 mm
27.9528 in – 51.9685 in



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.



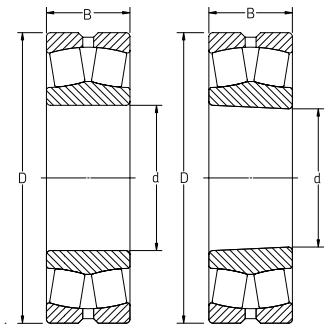
Cylindrical bore Tapered bore

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



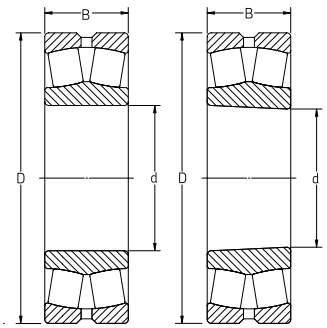
Cylindrical bore Tapered bore

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.

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



Cylindrical bore Tapered bore

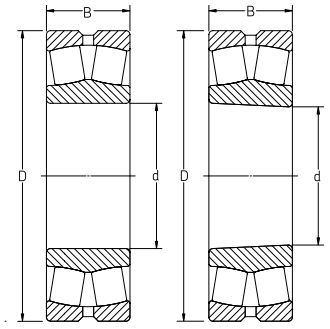
Designation	Principal dimensions						Basic load ratings				Speed rating	Mass		Calculation factors		
	Bore d		Outside dimeter D		Width B		Dynamic C		Static C_0		Limiting speed					
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	kg	lb	e	Y_1	Y_2
23048-2CS5	240	9.4488	360	14.1732	92	3.6220	1 341 000	301 300	2 080 000	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

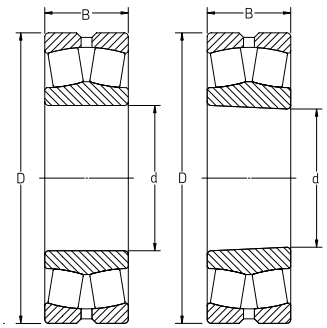
Series: 24013-2RS5W – 24060-2CS5
Size: 65 mm – 300 mm
2.5591 in – 11.8110 in



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.



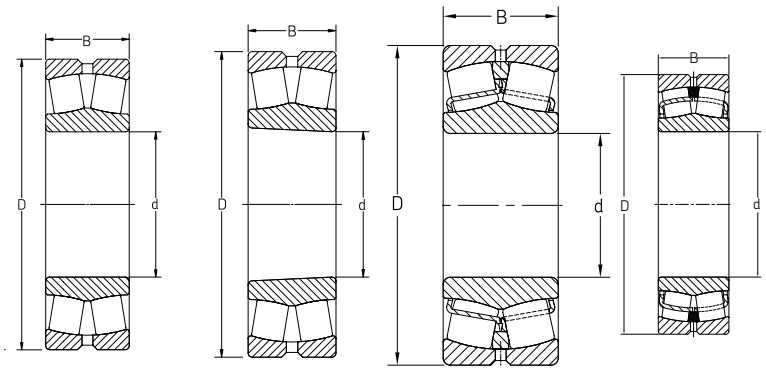
Cylindrical bore Tapered bore

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: 40 mm – 110 mm
1.5748 in – 4.3307 in

Series: 22324 CCJA/W33VA405 – 22348 CCJA/W33VA405
Size: 120 mm – 240 mm
4.7224 in – 19.6850 in



Cylindrical bore | Tapered bore* | E/VA405 | CCJA/VA405

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	-	-	-
22308 E/VA405	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	1.80	2.70
22309 E/VA405	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	1.80	2.70
22310 E/VA405	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	1.80	2.70
22311 E/VA405	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	1.90	2.90
22312 E/VA405	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	1.90	2.90
22313 E/VA405	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	1.90	2.90
22314 E/VA405	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	2.00	3.00
22315 EJA/VA405	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	1.90	2.90
22316 EJA/VA405	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	1.90	2.90
22317 EJA/VA405	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	2.00	3.00
22318 EJA/VA405	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	2.00	3.00
22319 EJA/VA405	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	2.00	3.00
22320 EJA/VA405	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	2.00	3.00
22322 EJA/VA405	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	2.00	3.00
22324 CCJA/W33VA405	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	1.90	2.90
22326 CCJA/W33VA405	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	1.90	2.90
22328 CCJA/W33VA405	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	1.90	2.90
22330 CCJA/W33VA405	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	1.90	2.90
22332 CCJA/W33VA405	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	1.90	2.90
22334 CCJA/W33VA405	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	2.00	3.00
22336 CCJA/W33VA405	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	1.90	2.90
22338 CCJA/W33VA405	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	1.90	2.90
22340 CCJA/W33VA405	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	2.00	3.00
22344 CCJA/W33VA405	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	2.20	3.30
22348 CCJA/W33VA405	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	2.20	3.30

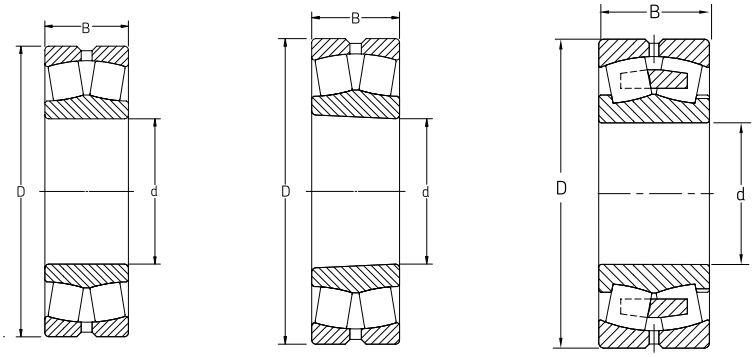
*** Tapered (K) bore available on limited sizes.**

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

Shaker screen
Series: 452319 M2/W502 – 452340 M2/W502
Size: 95 mm – 200 mm
3.7402 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



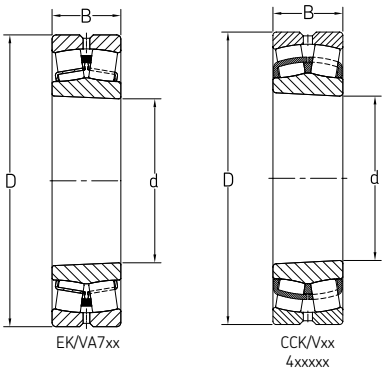
Cylindrical bore | Tapered bore* | M2/W502

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	-	-	-
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

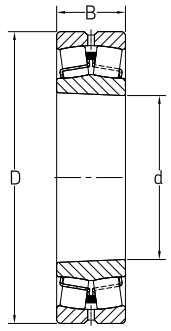


Please contact SKF Applications Engineering for tapered journal (X drawings) details.

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

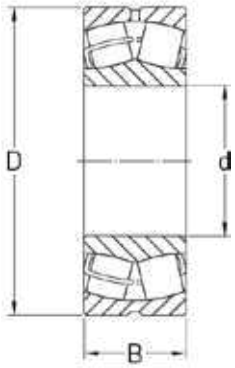
Please contact SKF Applications Engineering for tapered journal (X drawings) details.

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

Continuous caster applications
Series: 22214/C3W33VA9A1 – 24122/C4W33VA9B1
Size: 70 mm – 110 mm
2.756 in – 4.331 in

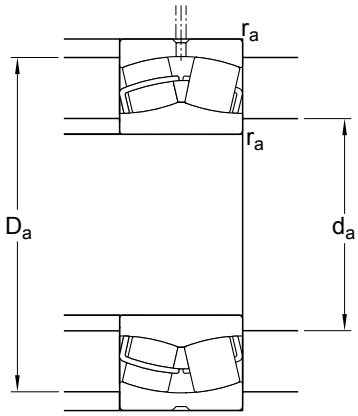
Series: BS2B 243359C/VA9B1
Size: 90 mm
3.543 in



Designation	Principal dimensions						Basic static load ratings		Abutment		Fillet	Mass	
	Bore d		Outside diameter D		B		C_0		$d_a$min	$D_a$max	$r_a$max		
	mm	in	mm	in	mm	in	N	lbf	mm	mm	mm	kg	lb
22214/C3W33VA9A1	70	2.756	125	4.921	31.0	1.220	224 000	50 357	79	116	1.5	1.60	3.53
22214/C4W33VA9A1	70	2.756	125	4.921	31.0	1.220	224 000	50 357	79	116	1.5	1.60	3.53
22215/C3W33VA9A1	75	2.953	130	5.118	31.0	1.220	232 000	52 156	84	121	1.5	1.65	3.64
22215/C4W33VA9A1	75	2.953	130	5.118	31.0	1.220	232 000	52 156	84	121	1.5	1.65	3.64
22216/C3W33VA9A1	80	3.150	140	5.512	33.0	1.299	265 000	59 574	91	129	2.0	2.05	4.52
22216/C4W33VA9A1	80	3.150	140	5.512	33.0	1.299	265 000	59 574	91	129	2.0	2.05	4.52
22217/C3W33VA9A1	85	3.346	150	5.906	36.0	1.417	320 000	71 939	96	139	1.5	2.65	5.84
22217/C4W33VA9A1	85	3.346	150	5.906	36.0	1.417	320 000	71 939	96	139	2.0	2.65	5.84
BS2B 243359C/VA9B1	90	3.543	150	5.906	72.0	2.835	455 000	102 288	97	143	2.0	4.60	10.14
22218/C3W33VA9A1	90	3.543	160	6.299	40.0	1.575	360 000	80 931	101	149	2.0	3.35	7.39
22218/C4W33VA9A1	90	3.543	160	6.299	40.0	1.575	360 000	80 931	101	149	2.0	3.35	7.39
22219/C3W33VA9A1	95	3.740	170	6.693	43.0	1.693	430 000	96 668	107	158	1.0	4.10	9.04
22219/C4W33VA9A1	95	3.740	170	6.693	43.0	1.693	430 000	96 668	107	158	2.0	4.10	9.04
23120/C3W33VA9B1	100	3.937	165	6.496	52.0	2.047	490 000	110 156	111	154	2.0	4.30	9.48
23120/C4W33VA9B1	100	3.937	165	6.496	52.0	2.047	490 000	110 156	111	154	2.0	4.30	9.48
22220/C3W33VA9A1	100	3.937	180	7.087	46.0	1.811	465 000	106 784	112	168	2.0	4.85	10.69
22220/C4W33VA9A1	100	3.937	180	7.087	46.0	1.811	465 000	106 784	112	168	2.0	4.85	10.69
23220/C3W33VA9B1	100	3.937	180	7.087	60.3	2.374	600 000	134 885	112	168	2.0	6.71	14.79
23220/C4W33VA9B1	100	3.937	180	7.087	60.3	2.374	600 000	134 885	112	168	2.0	6.71	14.79
24022/C3W33VA9B1	110	4.331	170	6.693	60.0	2.362	620 000	139 382	119	161	2.0	4.92	10.85
24022/C4W33VA9B1	110	4.331	170	6.693	60.0	2.362	620 000	139 382	119	161	2.0	4.92	10.85
22222/C3W33VA9A1	110	4.331	200	7.874	53.0	2.087	620 000	139 382	122	188	2.0	6.95	15.32
22222/C4W33VA9A1	110	4.331	200	7.874	53.0	2.087	620 000	139 382	122	188	2.0	6.95	15.32
23122/C3W33VA9B1	110	4.331	180	7.087	56.0	2.205	585 000	131 513	121	169	2.0	5.40	11.90
23122/C4W33VA9B1	110	4.331	180	7.087	56.0	2.205	585 000	131 513	121	169	2.0	5.40	11.90
24122/C3W33VA9B1	110	4.331	180	7.087	69.0	2.717	750 000	168 607	121	169	2.0	7.00	15.43
24122/C4W33VA9B1	110	4.331	180	7.087	69.0	2.717	750 000	168 607	121	169	2.0	7.00	15.43

Heat treatment: Stabilization class S1, up to 392°F (200°C)
Recommended speed limit for continuous caster operations is <50 rpm

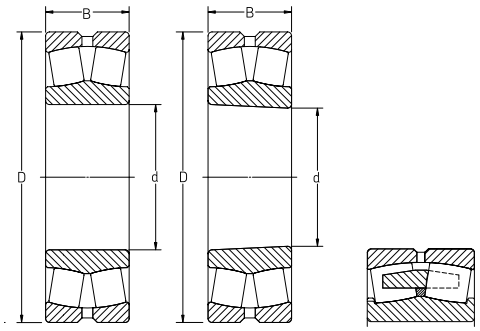
Consult SKF USA Inc. prior to design change or order placement.



Designation	Principal dimensions						Basic static load ratings		Abutment		Fillet	Mass	
	Bore d		Outside diameter D		B		C_0		$d_a$min	$D_a$max	$r_a$max		
	mm	in	mm	in	mm	in	N	lbf	mm	mm	mm	kg	lb
22224/C3W33VA9A1	120	4.724	215	8.465	58	2.283	750 000	168 607	132	203	2.0	8.80	19.40
22224/C4W33VA9A1	120	4.724	215	8.465	58	2.283	750 000	168 607	132	203	2.0	8.80	19.40
22324/C3W33VA9B1	120	4.724	260	10.236	86	3.386	1 120 000	251 786	134	246	2.5	22.00	48.50
22324/C4W33VA9B1	120	4.724	260	10.236	86	3.386	1 120 000	251 786	134	246	2.5	22.00	48.50
24024/C3W33VA9B1	120	4.724	180	7.087	60	2.362	670 000	150 622	129	171	2.0	5.36	11.82
24024/C4W33VA9B1	120	4.724	180	7.087	60	2.362	670 000	150 622	129	171	2.0	5.36	11.82
24026/C3W33VA9B1	130	5.118	200	7.874	69	2.717	815 000	183 219	139	191	2.0	7.93	17.48
24026/C4W33VA9B1	130	5.118	200	7.874	69	2.717	815 000	183 219	139	191	2.0	7.93	17.48
24126/C3W33VA9B1	130	5.118	210	8.268	80	3.150	1 000 000	224 809	141	199	2.0	10.50	23.15
24126/C4W33VA9B1	130	5.118	210	8.268	80	3.150	1 000 000	224 809	141	199	2.0	10.50	23.15
24028/C3W33VA9B1	140	5.512	210	8.268	69	2.717	900 000	202 328	149	201	2.0	8.43	18.58
24028/C4W33VA9B1	140	5.512	210	8.268	69	2.717	900 000	202 328	149	201	2.0	8.43	18.58
24128/C3W33VA9B1	140	5.512	225	8.858	85	3.346	1 160 000	260 778	152	213	2.0	12.50	27.56
24128/C4W33VA9B1	140	5.512	225	8.858	85	3.346	1 160 000	260 778	152	213	2.0	12.50	27.56
23030/C3W33VA9B1	150	5.906	225	8.858	56	2.205	750 000	168 607	161	214	2.0	7.45	16.42
23030/C4W33VA9B1	150	5.906	225	8.858	56	2.205	750 000	168 607	161	214	2.0	7.45	16.42
24030/C3W33VA9B1	150	5.906	225	8.858	75	2.953	1 040 000	233 801	161	214	2.0	10.34	22.80
24030/C4W33VA9B1	150	5.906	225	8.858	75	2.953	1 040 000	233 801	161	214	2.0	10.34	22.80
24130/C3W33VA9B1	150	5.906	250	9.843	100	3.937	1 530 000	343 958	162	238	2.0	19.79	43.63
24130/C4W33VA9B1	150	5.906	250	9.843	100	3.937	1 530 000	343 958	162	238	2.0	19.79	43.63
22332/C3W33VA9B1	160	6.299	340	13.386	114	4.488	1 960 000	440 626	177	323	3.0	49.00	108.03
22332/C4W33VA9B1	160	6.299	340	13.386	114	4.488	1 960 000	440 626	177	323	3.0	49.00	108.03
24032/C3W33VA9B1	160	6.299	240	9.449	80	3.150	1 200 000	269 771	171	229	2.0	12.82	28.26
24032/C4W33VA9B1	160	6.299	240	9.449	80	3.150	1 200 000	269 771	171	229	2.0	12.82	28.26
24034/C3W33VA9B1	170	6.693	260	10.236	90	3.543	1 460 000	328 221	181	249	2.0	17.26	38.05
24034/C4W33VA9B1	170	6.693	260	10.236	90	3.543	1 460 000	328 221	181	249	2.0	17.26	38.05

Heat treatment: Stabilization class S1, up to 392°F (200°C)
Recommended speed limit for continuous caster operations is <50 rpm

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.

CARB®
Toroidal roller bearings

C2222 KV TN9 / C3

1 2 3 4

1. Variations:

K	Bearing with 1 to 12 tapered bore
K30	Bearing with 1 to 30 tapered bore

2. Internal design:

V	Full complement bearing (without cage)

3. Cage designs:

TN9	Nylon cage, rolling element guided
M	Machined brass cage (large bore > 500 mm only)
–	No cage suffix indicates window-type sheet steel cage

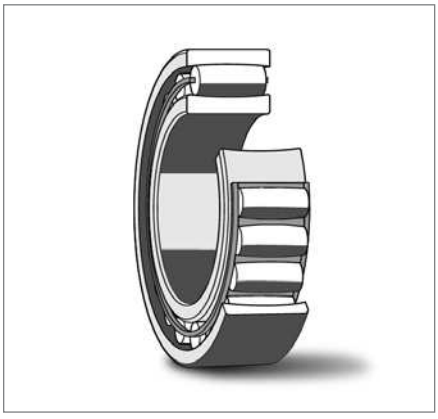
4. Clearance & features:

C2	Radial internal clearance < Normal
(C0)*	Normal radial internal clearance
C3	Radial internal clearance > Normal
C4	Radial internal clearance > C3
C08	RBEC class 5 (ISO class P5) running accuracy
HA3	Case hardened inner ring
VE240	Bearing modified for greater axial displacement
2CS5	Two synthetic rubber seals with Kluber grease
VG114	Hardened steel cage
VQ424	Closer tolerances than C08
GEM9	70% - 100% fill of SKF grease LGHB 2

*Not marked on bearing or package

Technical features

Boundary dimensions	In accordance with ISO 15
Tolerances	In accordance with ISO 492 SKF CARB® bearings up to 300 mm bore diameter are produced to higher precision than ISO Normal tolerances; the width tolerance is 50% better than the ISO Normal tolerance. The running accuracy is to tolerance class P5 as standard. For larger bearings (>300mm), P5 tolerances are also available with the suffix C08 or even closer tolerances are available with the suffix VQ424.
Heat stabilization	392° F (200° C)
Misalignment	0.5 degrees between the inner and outer rings
Cage material	
Standard	Steel
Optional	Nylon (TN9) Brass (M, MB, MBI)
Axial load – max	None
Seals	2CS5 – 2 synthetic rubber (HNBR) seals with SKF high temperature grease (70-100% fill) LGHB 2 (GEM9)



CARB bearing
(data tables on page 192)

Introduction

The CARB toroidal roller bearing can support very heavy radial loads. It is intended exclusively as a non-locating bearing and as such is ideal with its combination of self-aligning and axial alignment properties, to open up completely new opportunities to save space, weight and arrangement costs. By deliberately displacing the rings axially with respect to each other, it is possible to accurately set the internal radial clearance in the bearing.

These bearings permit smaller and lighter bearing arrangement designs offering the same or heightened performance in a particularly impressive manner; for example, in planetary gearboxes. They also simplify the bearing arrangement design for long shafts, which are subjected to temperature variations and also reduce vibrations; for example, in papermaking machines or ship propulsion arrangements. CARB does not pass axial vibrations in the shaft to the housing. The list of applications where CARB is appropriate is long. SKF Applications Engineering can supply additional information and special publications on request.

Basic design

The CARB toroidal roller bearing is a single row bearing with long, slightly crowned rollers. The raceways of both inner and outer rings are concave and symmetrical about a line through the bearing center. The optimum combination of raceway profiles guarantees a favorable load distribution in the bearings as well as low friction.

The rollers of the CARB are self-guiding, i.e. they will always adopt the position where the load is evenly distributed over the roller length – irrespective of whether the inner ring is axially displaced and/or misaligned with respect to the outer ring.

The load carrying capacity of the CARB is very high even when it has to compensate for angular misalignments or axial displacements. This results in operationally reliable bearing arrangements with long service life. The load carrying capacity of the full complement CARB is appreciably higher than that of the caged bearing.

The CARB is produced in a caged design **(Figure 1)** as well as a full complement version **(Figure 2)** and is available with a cylindrical or tapered bore. Depending on bearing width, the tapered bore has a taper of either 1:12 (designation suffix K) which is the most popular or 1:30 (suffix K30) which is limited to only a few sizes.

SKF Explorer class bearings

All CARB bearings are manufactured to the SKF Explorer performance class. In the product tables, the SKF Explorer bearing designations are printed in blue.

Product highlights

A breakthrough in bearing technology
The CARB (Compact Aligning Roller Bearing) toroidal roller bearing is a major breakthrough in bearing technology. This is the first new bearing type in over 50 years.

Three-in-one bearing
The CARB toroidal roller bearing is space-saving like a needle roller bearing, self-aligning like a spherical roller bearing, and axially free like a cylindrical bearing– combining the application and performance advantages of all three bearings.

Longer service life, increased uptime, reduced costs
A toroidal roller bearing adapts to both angular misalignment and axial displacement simultaneously. Because the CARB tolerates more than any other bearing, it can help extend service life, increase machine uptime, and reduce maintenance costs where conventional bearings now experience premature failure.

Large product assortment
CARB is available with a cage or in a full complement design without a cage, with a choice of cylindrical or tapered bore.

Application flexibility
The low minimum load requirement makes the CARB a good candidate for fans while the higher running accuracy makes it suitable for precision equipment.

Figure 1

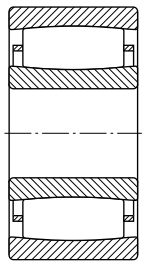
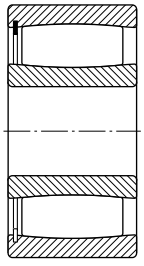


Figure 2



Variations

Bearings on adapter or withdrawal sleeve
A CARB with tapered bore can be mounted on an adapter sleeve with a low profile locknut (KML) (**Figure 3**) or a withdrawal sleeve (**Figure 4**) in the same way as a self-aligning ball bearing or a spherical roller bearing on straight or stepped shafts in an easy and rapid manner. If large axial displacements are expected, care should be taken to see that they take place towards the same side of the arrangement as the sleeve locknut (**Figure 5**).

Bearings on adapter sleeve

The use of an adapter sleeve is the most popular means of securing a bearing with a tapered bore on a cylindrical seating. Adapter sleeves can be used both with straight and stepped shafts. They are simple to mount and require no additional fixation on the shaft.

On straight shafts CARB can be mounted at any position. Where stepped shafts are used together with a support ring, the bearing position can be accurately defined and dismounting of the bearing is also simplified (**Figure 6**).

Where appropriate, adapter sleeves of the E and L variants are available, e.g. H 310 E. Adapter sleeves of the E type are supplied with a spacer ring which should be arranged between the bearing and the locking nut to prevent the nut from contacting the cage when axial displacement occurs. Where adapter sleeves of the L type are concerned, the standard locking arrangement (KM + MB) has been replaced by the lower section nut KML with MBL locking washer. Any contacting of the cage by the sleeve locking device is thus prevented.

Mounting and dismounting of bearings on adapter sleeves can be greatly facilitated by the use of an hydraulic nut (**Figure 6**) or adapter sleeves for oil injection mounting. For details, please reference the SKF Bearing Installation and Maintenance Guide (140-710).

Appropriate housings

Any CARB toroidal roller bearing belonging to C22xx, C23xx can be mounted in almost any SKF standard bearing housing, irrespective of whether the bearing is mounted on a cylindrical stepped shaft or on an adapter sleeve on a straight shaft. **Figure 7** shows a CARB C 2220 in a SNL plummer block housing.

The extensive range of SKF housings can be found in other SKF publications that can be supplied on request.

Figure 3

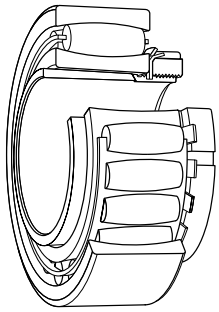


Figure 4

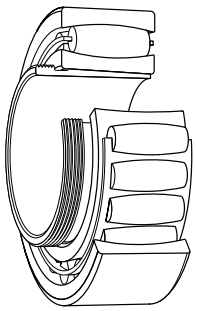


Figure 5

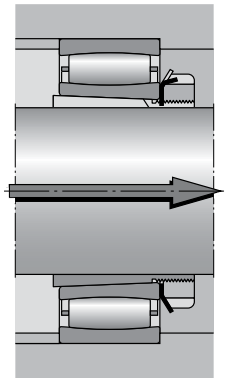


Figure 6

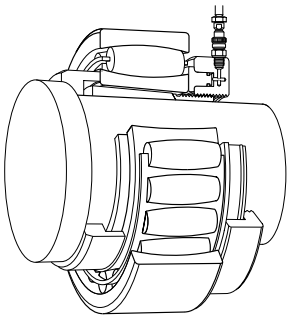
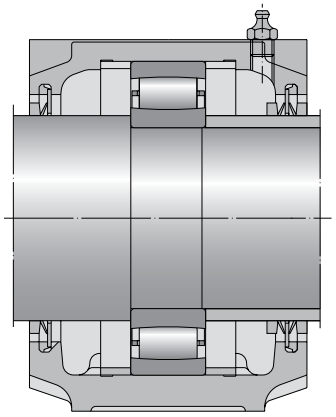


Figure 7



Internal clearance

Radial internal clearance

The CARB is produced as standard with Normal radial internal clearance. Many of the bearings are also available with C3 clearance and some with the smaller C2 or the much larger C4 clearance. The availability of bearings with clearance other than Normal should be checked prior to design change or order placement.

The radial internal clearance limits for bearings with cylindrical bore are given in Table 1 and for bearings with tapered bore in Table 2. They are valid for bearings before mounting and under zero measuring load.

Axial displacement of the one ring in relation to the other will reduce the clearance in a CARB. This is why the clearance for a CARB is larger than a comparably sized spherical roller bearing having the same clearance class.

Axial displacement

The permissible axial displacement of the CARB inner ring with respect to the outer ring depends on the radial internal clearance. The relationship between the radial internal clearance and the permissible axial displacement from the central position is shown in Diagram 1, page 191. In fact, the bearing rings can be further displaced with respect to each other, even into the gray region, without any effect on bearing life. Bearing friction, however, will be increased by up to 50% as a result.

The axial displacement, "s", guideline values given in the product tables represent the theoretically possible axial displacement of one ring in relation to the other from the central position under zero misalignment where the rollers

- of bearings with a cage will not protrude from the bearing rings, and
- of full complement bearings will not contact the retaining ring in the outer ring raceway.

A rough estimate of the permissible axial displacement for bearings having Normal radial internal clearance, one ring mounted with an interference fit, and an operating temperature of approximately 158° F (70° C), is 0.5 s. If the bearing has C3 radial internal clearance, the corresponding estimate is 0.65 s.

Table 1

Radial internal clearance of CARB bearings with cylindrical bore

Bore diameter d		Radial internal clearance									
		C2		Normal		C3		C4		C5	
over	incl.	min	max	max	min	max	min	max	min	max	min
mm		µm		µm		µm		µm		µm	
18	**24**	15	30	25	40	35	55	50	65	65	85
24	**30**	15	35	30	50	45	60	60	80	75	95
30	**40**	20	40	35	55	55	75	70	95	90	120
40	**50**	25	45	45	65	65	85	85	110	105	140
50	**65**	30	55	50	80	75	105	100	140	135	175
65	**80**	40	70	65	100	95	125	120	165	160	210
80	**100**	50	85	80	120	120	160	155	210	205	260
100	**120**	60	100	100	145	140	190	185	245	240	310
120	**140**	75	120	115	170	165	215	215	280	280	350
140	**160**	85	140	135	195	195	250	250	325	320	400
160	**180**	95	155	150	220	215	280	280	365	360	450
180	**200**	105	175	170	240	235	310	305	395	390	495
200	**225**	115	190	185	265	260	340	335	435	430	545
225	**250**	125	205	200	285	280	370	365	480	475	605
250	**280**	135	225	220	310	305	410	405	520	515	655
280	**315**	150	240	235	330	330	435	430	570	570	715
315	**355**	160	260	255	360	360	485	480	620	620	790
355	**400**	175	280	280	395	395	530	525	675	675	850
400	**450**	190	310	305	435	435	580	575	745	745	930
450	**500**	205	335	335	475	475	635	630	815	810	1 015
500	**560**	220	360	360	520	510	690	680	890	890	1 110
560	**630**	240	400	390	570	560	760	750	980	970	1 220
630	**710**	260	440	430	620	610	840	830	1 080	1 070	1 340
710	**800**	300	500	490	680	680	920	920	1 200	1 200	1 480
800	**900**	320	540	530	760	750	1 020	1 010	1 330	1 320	1 660
900	**1 000**	370	600	590	830	830	1 120	1 120	1 460	1 460	1 830
1 000	**1 120**	410	660	660	930	930	1 260	1 260	1 640	1 640	2 040
1 120	**1 250**	450	720	720	1 020	1 020	1 380	1 380	1 800	1 800	2 240
1 250	**1 400**	490	800	800	1 130	1 130	1 510	1 510	1 970	1 970	2 460
1 400	**1 600**	570	890	890	1 250	1 250	1 680	1 680	2 200	2 200	2 740
1 600	**1 800**	650	1 010	1 010	1 390	1 390	1 870	1 870	2 430	2 430	3 000

The permissible axial displacement is limited in operation by the operating clearance in the bearing and the actual angular misalignment. The influence of the operating clearance is shown in Diagram 1, page 191.

If the axial movement exceeds 50% of the permissible axial displaceability "s", it should be checked, whether the residual radial internal clearance is sufficiently large.

If the axial movement exceeds 50% of the axial displaceability "s", and the misalignment attains approximately 0.5°, the actual axial displacement of the rollers is to also be checked.

For additional information, please visit the SKF website **skfusa.com**. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Table 2

Radial internal clearance of CARB bearings with tapered bore

Bore diameter d		Radial internal clearance									
		C2		Normal		C3		C4		C5	
over	incl.	min	max	max	min	max	min	max	min	max	min
mm		µm		µm		µm		µm		µm	
18	**24**	15	35	30	45	40	55	55	70	65	85
24	**30**	20	40	35	55	50	65	65	85	80	100
30	**40**	25	50	45	65	60	80	80	100	100	125
40	**50**	30	55	50	75	70	95	90	120	115	145
50	**65**	40	65	60	90	85	115	110	150	145	185
65	**80**	50	80	75	110	105	140	135	180	175	220
80	**100**	60	100	95	135	130	175	170	220	215	275
100	**120**	75	115	115	155	155	205	200	255	255	325
120	**140**	90	135	135	180	180	235	230	295	290	365
140	**160**	100	155	155	215	210	270	265	340	335	415
160	**180**	115	175	170	240	235	305	300	385	380	470
180	**200**	130	195	190	260	260	330	325	420	415	520
200	**225**	140	215	210	290	285	365	360	460	460	575
225	**250**	160	235	235	315	315	405	400	515	510	635
250	**280**	170	260	255	345	340	445	440	560	555	695
280	**315**	195	285	280	380	375	485	480	620	615	765
315	**355**	220	320	315	420	415	545	540	680	675	850
355	**400**	250	350	350	475	470	600	595	755	755	920
400	**450**	280	385	380	525	525	655	650	835	835	1 005
450	**500**	305	435	435	575	575	735	730	915	910	1 115
500	**560**	330	480	470	640	630	810	800	1 010	1 000	1 230
560	**630**	380	530	530	710	700	890	880	1 110	1 110	1 350
630	**710**	420	590	590	780	770	990	980	1 230	1 230	1 490
710	**800**	480	680	670	860	860	1 100	1 100	1 380	1 380	1 660
800	**900**	520	740	730	960	950	1 220	1 210	1 530	1 520	1 860
900	**1 000**	580	820	810	1 040	1 040	1 340	1 340	1 670	1 670	2 050
1 000	**1 120**	640	900	890	1 170	1 160	1 500	1 490	1 880	1 870	2 280
1 120	**1 250**	700	980	970	1 280	1 270	1 640	1 630	2 060	2 050	2 500
1 250	**1 400**	770	1 080	1 080	1 410	1 410	1 790	1 780	2 250	2 250	2 740
1 400	**1 600**	870	1 200	1 200	1 550	1 550	1 990	1 990	2 500	2 500	3 050
1 600	**1 800**	950	1 320	1 320	1 690	1 690	2 180	2 180	2 730	2 730	3 310

Loads

Minimum load

In order to provide satisfactory operation, the CARB, like all ball and roller bearings, must always be subjected to a given minimum load, particularly if it is to operate at high speeds or is subjected to high accelerations or rapid changes in the direction of load. Under such conditions the inertia forces of the rollers and cage, and the friction in the lubricant, can have a detrimental effect on the rolling conditions in the bearing arrangement 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 Bearing Calculator 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.

Equivalent bearing loads

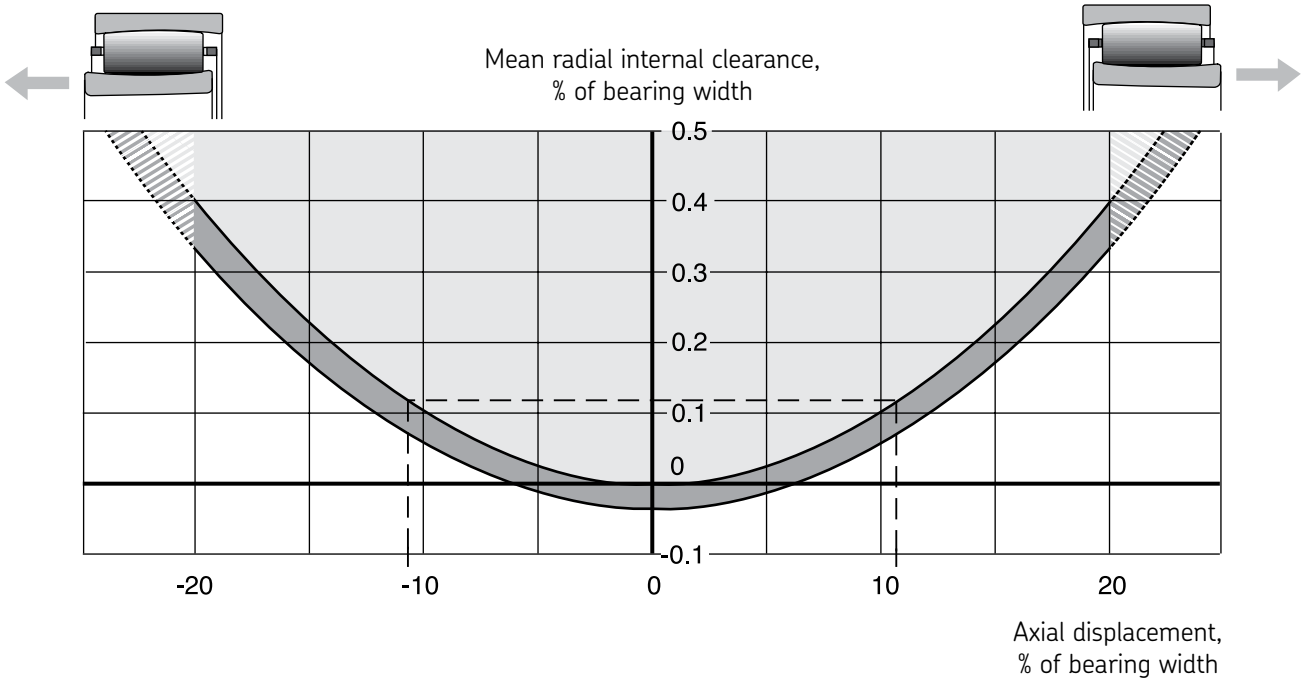
As the CARB can only accept radial loads

$P = F_r$

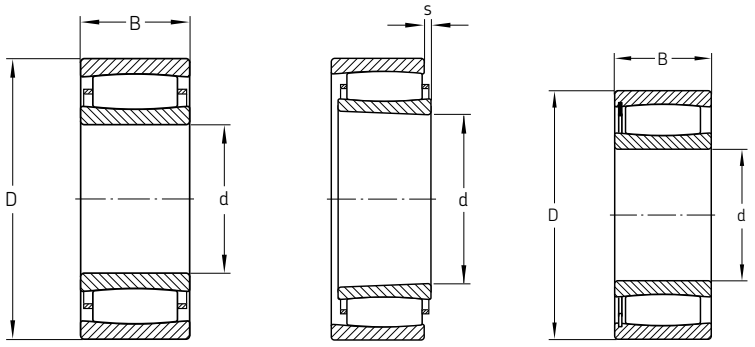
Frequency vibration data

Frequency vibration data is available on the SKF website, **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Diagram 1



Single row
SKF Explorer
Series: C 2206 TN9 – C 2215 V
Size: 30 mm – 75 mm
1.181 in – 2.953 in



with cage

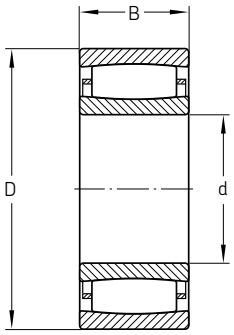
full complement
suffix V

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter 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	mm	in
C 2206 TN9	30	1.1811	62	2.4409	20	0.7874	69 500	15 620	62 000	13 930	11 000	15 000	0.28	0.62	4.5	0.177
C 2206 V	30	1.1811	62	2.4409	20	0.7874	76 500	17 190	71 000	15 960		6 000	0.29	0.64	4.5	0.177
C 2207 TN9	35	1.3780	72	2.8346	23	0.9055	83 000	18 650	80 000	17 980	9 500	13 000	0.44	0.97	5.7	0.224
C 2207 V	35	1.3780	72	2.8346	23	0.9055	95 000	21 350	96 000	21 570		5 300	0.46	1.01	5.7	0.224
C 2208 TN9	40	1.5748	80	3.1496	23	0.9055	90 000	20 220	86 500	19 440	8 000	11 000	0.51	1.12	7.1	0.280
C 2208 V	40	1.5748	80	3.1496	23	0.9055	102 000	22 920	104 000	23 370		4 500	0.53	1.17	7.1	0.280
C 2209 TN9	45	1.7717	85	3.3465	23	0.9055	93 000	20 900	93 000	20 900	7 500	11 000	0.56	1.23	7.1	0.280
C 2209 V	45	1.7717	85	3.3465	23	0.9055	106 000	23 820	110 000	24 720		4 300	0.58	1.28	7.1	0.280
C 2210 TN9	50	1.9685	90	3.5433	23	0.9055	98 000	22 020	100 000	22 470	7 000	9 500	0.60	1.32	7.1	0.280
C 2210 V	50	1.9685	90	3.5433	23	0.9055	114 000	25 620	122 000	27 420		3 800	0.63	1.39	7.1	0.280
C 2211 TN9	55	2.1654	100	3.9370	25	0.9843	116 000	26 070	114 000	25 620	6 300	9 000	0.80	1.76	8.6	0.339
C 2211 V	55	2.1654	100	3.9370	25	0.9843	132 000	29 660	134 000	30 110		3 400	0.82	1.81	8.6	0.339
C 2212 TN9	60	2.3622	110	4.3307	28	1.1024	143 000	32 130	156 000	35 060	5 600	7 500	1.10	2.43	8.5	0.335
C 2212 V	60	2.3622	110	4.3307	28	1.1024	166 000	37 300	190 000	42 700		2 800	1.15	2.54	8.5	0.335
C 2213 TN9	65	2.5591	120	4.7244	31	1.2205	180 000	40 450	180 000	40 450	5 300	7 500	1.45	3.20	9.6	0.378
C 2213 V	65	2.5591	120	4.7244	31	1.2205	204 000	45 840	216 000	48 540		2 400	1.50	3.31	9.6	0.378
C 2214 TN9	70	2.7559	125	4.9213	31	1.2205	186 000	41 800	196 000	44 040	5 000	7 000	1.50	3.31	9.6	0.378
C 2214 V	70	2.7559	125	4.9213	31	1.2205	212 000	47 640	228 000	51 200		2 400	1.55	3.42	9.6	0.378
C 2215	75	2.9528	130	5.1181	31	1.2205	196 000	44 040	208 000	46 740	4 800	6 700	1.60	3.53	9.6	0.378
C 2215 V	75	2.9528	130	5.1181	31	1.2205	220 000	49 440	240 000	53 900		2 200	1.65	3.64	9.6	0.378

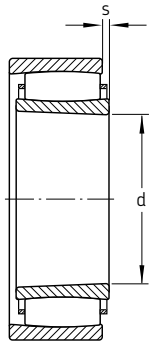
1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

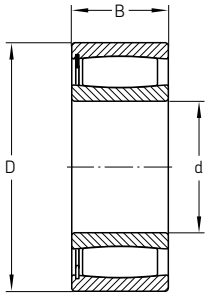
Consult SKF USA Inc. prior to design change or order placement.

Single row
SKF Explorer
Series: C 2216 – C 2320
Size: 80 mm – 100 mm
3.150 in – 3.937 in



with cage





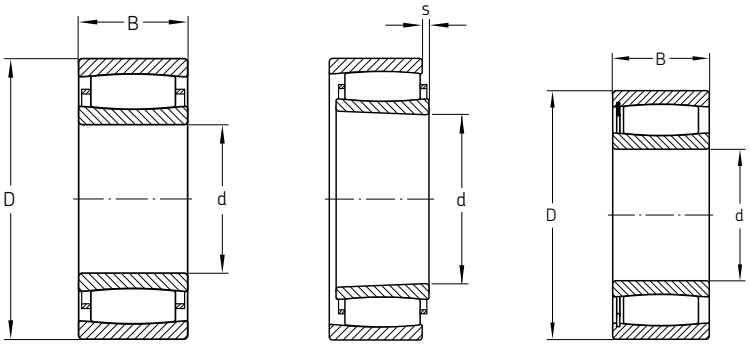
full complement
suffix V

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter 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	mm	in
C 2216	80	3.1496	140	5.5118	33	1.2992	220 000	49 440	250 000	56 200	4 300	6 000	2.05	4.52	9.1	0.358
C 2216 V	80	3.1496	140	5.5118	33	1.2992	255 000	57 300	305 000	68 500		2 000	2.15	4.74	9.1	0.358
C 2217	85	3.3465	150	5.9055	36	1.4173	275 000	61 800	320 000	71 900	4 000	5 600	2.65	5.84	7.1	0.280
C 2218	90	3.5433	160	6.2992	40	1.5748	325 000	73 000	380 000	85 400	3 800	5 300	3.30	7.28	9.5	0.374
C 2220	100	3.9370	180	7.0866	46	1.8110	415 000	93 300	465 000	104 500	3 600	4 800	4.95	10.91	10.1	0.398
C 2222	110	4.3307	200	7.8740	53	2.0866	530 000	119 100	620 000	139 300	3 200	4 300	7.00	15.44	11.1	0.437
C 2226	130	5.1181	230	9.0551	64	2.5197	735 000	165 200	930 000	209 000	2 800	3 800	11.50	25.36	9.6	0.378
C 2228	140	5.5118	250	9.8425	68	2.6772	830 000	186 500	1 060 000	238 200	2 400	3 200	14.00	30.87	13.7	0.539
C 2230	150	5.9055	270	10.6299	73	2.8740	980 000	220 200	1 220 000	274 200	2 400	3 200	18.00	39.69	11.2	0.441
C 2234	170	6.6929	310	12.2047	86	3.3858	1 270 000	285 400	1 630 000	366 300	1 900	2 600	28.00	61.74	16.4	0.646
C 2238	190	7.4803	340	13.3858	92	3.6220	1 370 000	307 900	1 730 000	388 800	1 800	2 400	34.50	76.07	22.5	0.886
C 2244	220	8.6614	400	15.7480	108	4.2520	2 000 000	449 400	2 500 000	561 800	1 500	2 000	57.50	126.79	20.5	0.807
C 2314	70	2.7559	150	5.9055	51	2.0079	405 000	91 000	430 000	96 600	3 800	5 000	4.30	9.48	9.1	0.358
C 2315	75	2.9528	160	6.2992	55	2.1654	425 000	95 500	465 000	104 500	3 600	4 800	5.30	11.69	13.1	0.516
C 2316	80	3.1496	170	6.6929	58	2.2835	510 000	114 600	550 000	123 600	3 400	4 500	6.30	13.89	10.1	0.398
C 2317	85	3.3465	180	7.0866	60	2.3622	540 000	121 300	600 000	134 800	3 200	4 300	7.40	16.32	12.1	0.476
C 2318	90	3.5433	190	7.4803	64	2.5197	610 000	137 100	695 000	156 200	2 800	4 000	8.65	19.07	9.6	0.378
C 2319	95	3.7402	200	7.8740	67	2.6378	610 000	137 100	695 000	156 200	2 800	4 000	10.00	22.05	12.6	0.496
C 2320	100	3.9370	215	8.4646	73	2.8740	800 000	179 800	880 000	197 800	2 600	3 600	12.50	27.56	11.0	0.433

1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

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

Single row
SKF Explorer
Series: C 3024 V – C 30/1000 MB
Size: 120 mm – 1000 mm
4.724 in – 39.370 in



with cage

full complement
suffix V

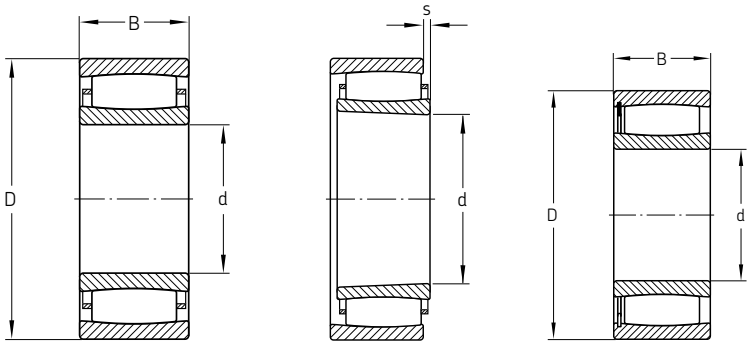
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in
C 3024 V	120	4.7244	180	7.0866	46	1.8110	430 000	96 600	640 000	143 800	–	1 400	4.10	9.04	10.6	0.417
C 3030 MB	150	5.9055	225	8.8583	56	2.2047	540 000	121 300	850 000	191 000	2 400	3 200	8.45	18.63	8.7	0.343
C 3030 V	150	5.9055	225	8.8583	56	2.2047	585 000	131 500	960 000	215 700	–	1 000	8.00	17.64	14.1	0.555
C 3034 M	170	6.6929	260	10.2362	67	2.6378	750 000	168 500	1 080 000	242 700	2 200	2 800	12.40	27.34	19.0	0.748
C 3036	180	7.0866	280	11.0236	74	2.9134	880 000	197 800	1 340 000	301 100	2 000	2 600	17.00	37.49	15.1	0.594
C 3038	190	7.4803	290	11.4173	75	2.9528	930 000	209 000	1 460 000	328 100	1 800	2 400	17.50	38.59	16.1	0.634
C 3040	200	7.8740	310	12.2047	82	3.2283	1 120 000	251 700	1 730 000	388 800	1 700	2 400	22.50	49.61	15.2	0.598
C 3044	220	8.6614	340	13.3858	90	3.5433	1 320 000	296 600	2 040 000	458 400	1 600	2 200	29.50	65.05	17.2	0.677
C 3048	240	9.4488	360	14.1732	92	3.6220	1 340 000	301 100	2 160 000	485 400	1 500	2 000	32.00	70.56	19.2	0.756
C 3052	260	10.2362	400	15.7480	104	4.0945	1 760 000	395 500	2 850 000	640 400	1 300	1 800	47.00	103.64	19.3	0.760
C 3056	280	11.0236	420	16.5354	106	4.1732	1 860 000	418 000	3 100 000	696 600	1 200	1 600	50.50	111.35	21.3	0.839
C 3060 M	300	11.8110	460	18.1102	118	4.6457	2 160 000	485 400	3 750 000	842 700	1 100	1 500	72.00	158.76	20.0	0.787
C 3064 M	320	12.5984	480	18.8976	121	4.7638	2 280 000	512 400	4 000 000	898 900	1 000	1 400	78.00	171.99	23.3	0.917
C 3068 M	340	13.3858	520	20.4724	133	5.2362	2 900 000	651 700	5 000 000	1 123 600	950	1 300	100.00	220.50	25.0	0.984
C 3072 M	360	14.1732	540	21.2598	134	5.2756	2 900 000	651 700	5 000 000	1 123 600	900	1 300	106.00	233.73	26.4	1.039
C 3076 M	380	14.9606	560	22.0472	135	5.3150	3 000 000	674 200	5 200 000	1 168 500	900	1 200	110.00	242.55	27.0	1.063
C 3080 M	400	15.7480	600	23.6220	148	5.8268	3 650 000	820 200	6 200 000	1 393 300	800	1 100	145.00	319.73	30.6	1.205
C 3084 M	420	16.5354	620	24.4094	150	5.9055	3 800 000	853 900	6 400 000	1 438 200	800	1 100	150.00	330.75	32.6	1.283
C 3088 MB	440	17.3228	650	25.5906	157	6.1811	3 750 000	842 700	6 400 000	1 438 200	750	1 000	190.00	418.95	24.6	0.969
C 3092 M	460	18.1102	680	26.7717	163	6.4173	4 000 000	898 900	7 500 000	1 685 400	700	950	205.00	452.03	33.5	1.319
C 3096 M	480	18.8976	700	27.5591	165	6.4961	4 050 000	910 100	7 800 000	1 752 800	670	900	215.00	474.08	35.5	1.398
C 30/500 M	500	19.6850	720	28.3465	167	6.5748	4 250 000	955 100	8 300 000	1 865 200	630	900	225.00	496.13	37.5	1.476
C 30/530 M	530	20.8661	780	30.7087	185	7.2835	5 100 000	1 146 100	9 500 000	2 134 800	600	800	300.00	661.50	35.7	1.406
C 30/560 M	560	22.0472	820	32.2835	195	7.6772	5 600 000	1 258 400	11 000 000	2 471 900	530	750	350.00	771.75	45.7	1.799
C 30/600 M	600	23.6220	870	34.2520	200	7.8740	6 300 000	1 415 700	12 200 000	2 741 600	500	700	395.00	870.98	35.9	1.413
C 30/630 M	630	24.8031	920	36.2205	212	8.3465	6 800 000	1 528 100	12 900 000	2 898 900	480	670	470.00	1036.35	48.1	1.894
C 30/670 M	670	26.3780	980	38.5827	230	9.0551	8 150 000	1 831 500	16 300 000	3 662 900	430	600	590.00	1300.95	41.1	1.618
C 30/710 M	710	27.9528	1 030	40.5512	236	9.2913	8 800 000	1 977 500	17 300 000	3 887 600	400	560	655.00	1444.28	47.3	1.862
C 30/750 MB	750	29.5276	1 090	42.9134	250	9.8425	9 500 000	2 134 800	19 300 000	4 337 100	380	530	838.00	1847.79	28.6	1.126
C 30/800 MB	800	31.4961	1 150	45.2756	258	10.1575	9 300 000	2 089 900	19 300 000	4 337 100	360	480	941.00	2074.91	45.9	1.807
C 30/850 MB	850	33.4646	1 220	48.0315	272	10.7087	11 600 000	2 606 700	24 500 000	5 505 600	320	450	1 105	2436.53	24.0	0.945
C 30/900 MB	900	35.4331	1 280	50.3937	280	11.0236	12 700 000	2 853 900	26 500 000	5 955 100	300	400	1 200	2646.00	24.8	0.976
C 30/950 MB	950	37.4016	1 360	53.5433	300	11.8110	13 200 000	2 966 300	28 500 000	6 404 500	280	380	1 475	3252.38	37.8	1.488
C 30/1000 MB	1 000	39.3701	1 420	55.9055	308	12.1260	13 700 000	3 078 700	30 500 000	6 853 900	260	360	1 680	3704.40	44.9	1.768

1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

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

Single row
SKF Explorer
Series: C 3120 V – C 30/1000 MB
Size: 100 mm – 1000 mm
3.937 in – 39.370 in

Series: C 3224 – C 3236
Size: 120 mm – 180 mm
4.724 in – 7.087 in



with cage

full complement suffix V

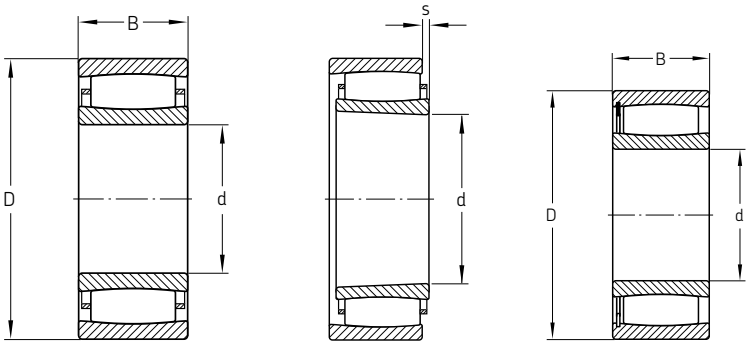
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in
C 3120 V	100	3.9370	165	6.4961	52	2.0472	475 000	106 700	655 000	147 200	–	1 300	4.50	9.81	10.1	0.398
C 3130	150	5.9055	250	9.8425	80	3.1496	880 000	197 800	1 290 000	289 900	2 000	2 800	15.50	34.18	13.9	0.547
C 3132	160	6.2992	270	10.6299	86	3.3858	1 000 000	224 700	1 400 000	314 600	1 900	2 600	21.50	47.41	10.3	0.406
C 3136	180	7.0866	300	11.8110	96	3.7795	1 250 000	280 900	1 730 000	388 800	1 700	2 400	26.50	58.43	23.2	0.913
C 3138 V	190	7.4803	320	12.5984	104	4.0945	1 700 000	382 000	2 550 000	573 000	–	190	34.00	74.97	19.0	0.748
C 3140	200	7.8740	340	13.3858	112	4.4094	1 600 000	359 600	2 320 000	521 300	1 500	2 000	41.00	90.41	27.3	1.075
C 3144	220	8.6614	370	14.5669	120	4.7244	1 900 000	427 000	2 900 000	651 700	1 400	1 800	52.00	114.66	22.3	0.878
C 3148	240	9.4488	400	15.7480	128	5.0394	2 320 000	521 300	3 450 000	775 300	1 300	1 700	64.00	141.12	20.4	0.803
C 3152	260	10.2362	440	17.3228	144	5.6693	2 650 000	595 500	4 050 000	910 100	1 100	1 500	88.00	194.04	26.4	1.039
C 3156	280	11.0236	460	18.1102	146	5.7480	2 850 000	640 400	4 500 000	1 011 200	1 100	1 400	94.50	208.37	28.4	1.118
C 3160	300	11.8110	500	19.6850	160	6.2992	3 250 000	730 300	5 200 000	1 168 500	950	1 300	125.00	275.63	30.5	1.201
C 3164 M	320	12.5984	540	21.2598	176	6.9291	4 150 000	932 600	6 300 000	1 415 700	900	1 300	164.00	361.62	26.7	1.051
C 3168 M	340	13.3858	580	22.8346	190	7.4803	4 900 000	1 101 100	7 500 000	1 685 400	850	1 100	205.00	452.03	25.9	1.020
C 3172 M	360	14.1732	600	23.6220	192	7.5591	5 000 000	1 123 600	8 000 000	1 797 800	800	1 100	220.00	485.10	27.9	1.098
C 3176 MB	380	14.9606	620	24.4094	194	7.6378	4 400 000	988 800	7 200 000	1 618 000	750	1 000	243.00	535.82	25.4	1.000
C 3180 M	400	15.7480	650	25.5906	200	7.8740	4 800 000	1 078 700	8 300 000	1 865 200	700	950	258.00	568.89	50.7	1.996
C 3184 M	420	16.5354	700	27.5591	224	8.8189	6 000 000	1 348 300	10 400 000	2 337 100	670	900	355.00	782.78	34.8	1.370
C 3188 MB	440	17.3228	720	28.3465	226	8.8976	6 700 000	1 505 600	11 400 000	2 561 800	630	850	385.00	848.93	16.0	0.630
C 3192 M	460	18.1102	760	29.9213	240	9.4488	6 800 000	1 528 100	12 000 000	2 696 600	600	800	435.00	959.18	51.0	2.008
C 3196 MB	480	18.8976	790	31.1024	248	9.7638	6 950 000	1 561 800	12 500 000	2 809 000	560	750	523.00	1153.22	35.1	1.382
C 31/500 M	500	19.6850	830	32.6772	264	10.3937	7 500 000	1 685 400	12 700 000	2 853 900	530	750	560.00	1234.80	75.3	2.965
C 31/530 M	530	20.8661	870	34.2520	272	10.7087	8 800 000	1 977 500	15 600 000	3 505 600	500	670	636.00	1402.38	44.4	1.748
C 31/600 MB	600	23.6220	980	38.5827	300	11.8110	10 200 000	2 292 100	18 000 000	4 044 900	430	600	929.00	2048.45	26.1	1.028
C 31/630 MB	630	24.8031	1 030	40.5512	315	12.4016	11 800 000	2 651 700	20 800 000	4 674 200	400	560	1 089	2401.25	23.8	0.937
C 31/670 MB	670	26.3780	1 090	42.9134	336	13.2283	11 800 000	2 651 700	21 200 000	4 764 000	380	500	1 300	2866.50	41.0	1.614
C 31/710 MB	710	27.9528	1 150	45.2756	345	13.5827	13 400 000	3 011 200	25 500 000	5 730 300	340	480	1 470	3241.35	47.8	1.882
C 31/750 MB	750	29.5276	1 220	48.0315	365	14.3701	16 000 000	3 595 500	30 500 000	6 853 900	320	450	1 802	3973.41	33.0	1.299
C 31/1000 MB	1 000	39.3701	1 580	62.2047	462	18.1890	20 400 000	4 584 300	45 500 000	10 224 700	220	300	3 800	8379.00	70.1	2.760
C 3224	120	4.7244	215	8.4646	76	2.9921	750 000	168 500	980 000	220 200	2 400	3 200	12.00	26.46	17.1	0.673
C 3232	160	6.2992	290	11.4173	104	4.0945	1 370 000	307 900	1 830 000	411 200	1 800	2 400	29.50	65.05	19.3	0.760
C 3236	180	7.0866	320	12.5984	112	4.4094	1 530 000	343 800	2 200 000	494 400	1 500	2 000	38.00	83.79	27.3	1.075

1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

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

Single row
SKF Explorer
Series: C 3972 M – C 39/1700 MB
Size: 360 mm – 1700 mm
14.173 in – 66.929 in

Series: C 4010 TN9 – C 40/710 M
Size: 50 mm – 710 mm
1.969 in – 27.953 in



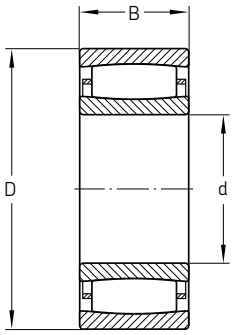
with cage

full complement
suffix V

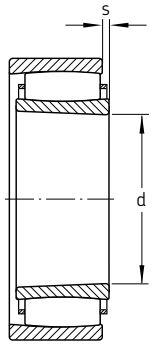
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	mm	in
C 3972 M	360	14.1732	480	18.8976	90	3.5433	1 760 000	395 500	3 250 000	730 300	1 000	1 400	45.00	99.23	17.2	0.677
C 3984 M	420	16.5354	560	22.0472	106	4.1732	2 160 000	485 400	4 250 000	955 100	850	1 200	72.00	158.76	21.3	0.839
C 3996 M	480	18.8976	650	25.5906	128	5.0394	3 100 000	696 600	6 100 000	1 370 800	750	1 000	120.00	264.6	20.4	0.803
C 39/500 M	500	19.6850	670	26.3780	128	5.0394	3 150 000	707 900	6 300 000	1 415 700	700	950	125.00	275.63	20.4	0.803
C 39/560 M	560	22.0472	750	29.5276	140	5.5118	3 600 000	809 000	7 350 000	1 651 700	600	850	175.00	385.88	32.4	1.276
C 39/630 M	630	24.8031	850	33.4646	165	6.4961	4 650 000	1 044 900	10 000 000	2 247 200	530	700	275.00	606.38	35.5	1.398
C 39/710 M	710	27.9528	950	37.4016	180	7.0866	6 000 000	1 348 300	12 500 000	2 809 000	450	630	360.00	793.8	30.7	1.209
C 39/750 M	750	29.5276	1 000	39.3701	185	7.2835	6 100 000	1 370 800	13 400 000	3 011 200	430	560	410.00	904.05	35.7	1.406
C 39/800 M	800	31.4961	1 060	41.7323	195	7.6772	6 400 000	1 438 200	14 600 000	3 280 900	380	530	480.00	1058.4	45.7	1.799
C 39/850 M	850	33.4646	1 120	44.0945	200	7.8740	7 350 000	1 651 700	16 300 000	3 662 900	360	480	540.00	1190.7	35.9	1.413
C 39/1060 MB	1 060	41.7323	1 400	55.1181	250	9.8425	11 000 000	2 471 900	26 000 000	5 842 700	260	360	1 119	2467.4	38.4	1.512
C 39/1180 MB	1 180	46.4567	1 540	60.6299	272	10.7087	13 400 000	3 011 200	33 500 000	7 528 100	220	300	1 400	3 087	19.6	0.772
C 39/1500 MB	1 500	59.0551	1 950	76.7717	335	13.1890	19 600 000	4 404 500	48 000 000	10 786 500	140	200	2 710	5975.55	35.0	1.378
C 39/1700 MB	1 700	66.9291	2 180	85.8268	355	13.9764	24 000 000	5 393 300	62 000 000	13 932 600	110	150	3 510	7739.55	40.6	1.598
C 4010 TN9	50	1.9685	80	3.1496	30	1.1811	116 000	26 070	140 000	31 460	5 600	7 500	0.55	1.21	6.0	0.236
C 4010 V	50	1.9685	80	3.1496	30	1.1811	137 000	30 790	176 000	39 550		3 000	0.58	1.28	6.0	0.236
C 4015 V	75	2.9528	115	4.5276	40	1.5748	208 000	46 740	345 000	77 500		2 000	1.60	3.53	9.4	0.370
C 4020 V	100	3.9370	150	5.9055	50	1.9685	355 000	79 800	530 000	119 100		1 400	3.05	6.73	14.0	0.551
C 4022 MB	110	4.3307	170	6.6929	60	2.3622	430 000	96 600	655 000	147 200	2 600	3 400	5.30	11.69	4.8	0.189
C 4022 V	110	4.3307	170	6.6929	60	2.3622	500 000	112 400	800 000	179 800		1 200	5.20	11.47	12.0	0.472
C 4024 V	120	4.7244	180	7.0866	60	2.3622	530 000	119 100	880 000	197 800		1 100	5.55	12.24	12.0	0.472
C 4024 V/VE240	120	4.7244	180	7.0866	60	2.3622	430 000	96 600	640 000	143 800		1 400	5.05	11.14	17.8	0.701
C 4026	130	5.1181	200	7.8740	69	2.7165	620 000	139 300	930 000	209 000	2 200	2 800	7.85	17.31	11.4	0.449
C 4026 V	130	5.1181	200	7.8740	69	2.7165	720 000	161 800	1 120 000	251 700		850	8.15	17.97	11.4	0.449
C 4028 V	140	5.5118	210	8.2677	69	2.7165	750 000	168 500	1 220 000	274 200		800	8.60	18.96	11.4	0.449
C 4030 V	150	5.9055	225	8.8583	75	2.9528	780 000	175 300	1 320 000	296 600		750	10.50	23.15	17.4	0.685
C 4032	160	6.2992	240	9.4488	80	3.1496	765 000	171 900	1 160 000	260 700	1 700	2 400	12.50	27.56	18.1	0.713
C 4032 V	160	6.2992	240	9.4488	80	3.1496	915 000	205 600	1 460 000	328 100		600	13.00	28.67	18.1	0.713
C 4034 V	170	6.6929	260	10.2362	90	3.5433	1 140 000	256 200	1 860 000	418 000		500	17.50	38.59	17.1	0.673
C 4036 V	180	7.0866	280	11.0236	100	3.9370	1 320 000	296 600	2 120 000	476 400		430	23.50	51.82	20.1	0.791
C 4040 V	200	7.8740	310	12.2047	109	4.2913	1 630 000	366 300	2 650 000	595 500		260	30.50	67.25	21.0	0.827
C 4044 V	220	8.6614	340	13.3858	118	4.6457	1 930 000	433 700	3 250 000	730 300		200	40.00	88.20	20.0	0.787
C 4060 M	300	11.8110	460	18.1102	160	6.2992	2 900 000	651 700	4 900 000	1 101 100	900	1 200	95.50	210.58	30.4	1.197
C 40/710 M	710	27.9528	1 030	40.5512	315	12.4016	10 600 000	2 382 000	21 600 000	4 853 900	320	430	865.00	1907.33	51.2	2.016

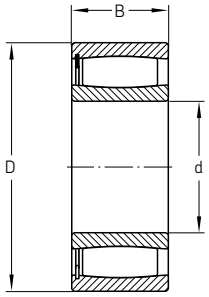
1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

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



with cage





full complement
suffix V

Single row
SKF Explorer
Series: C 4120 V/VE240 – C 41/670 MB
Size: 100 mm – 670 mm
3.937 in – 26.378 in

Series: C 4908 V – C 49/1120 MB1
Size: 40 mm – 1120 mm
1.575 in – 44.094 in

Series: C 5915 V – C 5918 V
Size: 75 mm – 90 mm
2.953 in – 3.543 in

Series: C 6909 V – C 6915 V/VE240
Size: 45 mm – 75 mm
1.772 in – 2.953 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Axial Displacement +/- s[1]	
	Bore d		Outside diameter 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	mm	in
C 4120 V/VE240	100	3.9370	165	6.4961	65	2.5591	475 000	106 700	655 000	147 200		1 300	5.30	11.69	17.7	0.697
C 4122 V	110	4.3307	180	7.0866	69	2.7165	670 000	150 600	1 000 000	224 700		900	7.10	15.66	11.4	0.449
C 4124 V	120	4.7244	200	7.8740	80	3.1496	780 000	175 300	1 120 000	251 700		750	10.00	22.05	18.0	0.709
C 4128 V/VE240	140	5.5118	225	8.8583	85	3.3465	780 000	175 300	1 200 000	269 700		800	12.50	27.56	9.7	0.382
C 4130 V	150	5.9055	250	9.8425	100	3.9370	1 220 000	274 200	1 860 000	418 000		450	20.0	44.10	20.0	0.787
C 4136 V	180	7.0866	300	11.8110	118	4.6457	1 760 000	395 500	2 700 000	606 700		220	34.50	76.07	20.0	0.787
C 4188 MB	440	17.3228	720	28.3465	280	11.0236	7 500 000	1 685 400	12 900 000	2 898 900	500	670	471	1038.56	27.8	1.094
C 4192 MB	460	18.1102	760	29.9213	300	11.8110	8 650 000	1 943 800	15 000 000	3 370 800	480	630	571	1259.06	23.3	0.917
C 41/500 M	500	19.6850	830	32.6772	325	12.7953	9 800 000	2 202 200	17 600 000	3 955 100	430	560	710	1565.55	46.3	1.823
C 41/600 MB	600	23.6220	980	38.5827	375	14.7638	12 900 000	2 898 900	23 200 000	5 213 500	340	450	1 150	2535.75	24.6	0.969
C 41/670 MB	670	26.3780	1 090	42.9134	412	16.2205	16 000 000	3 595 500	29 000 000	6 516 900	300	400	1 570	3461.85	37.2	1.465
C 4908 V	40	1.5748	62	2.4409	22	0.8661	76 500	17 190	100 000	22 470		4 300	0.25	0.55	4.7	0.185
C 4910 V	50	1.9685	72	2.8346	22	0.8661	86 500	19 440	125 000	28 090		3 600	0.29	0.64	4.7	0.185
C 49/1120 MB1	1 120	44.0945	1 460	57.4803	335	13.1890	13 200 000	2 966 300	31 500 000	7 078 700	200	260	1 628	3589.74	76.1	2.996
C 5020 V	100	3.9370	150	5.9055	67	2.6378	510 000	114 600	865 000	194 400		1 100	4.30	9.48	9.3	0.366
C 5915 V	75	2.9528	105	4.1339	40	1.5748	204 000	45 840	325 000	73 000		1 900	1.10	2.43	9.4	0.370
C 5918 MB	90	3.5433	125	4.9213	46	1.8110	193 000	43 370	325 000	73 000	2 600	4 000	1.75	3.86	2.9	0.114
C 5918 V	90	3.5433	125	4.9213	46	1.8110	224 000	50 300	400 000	89 900		1 600	1.75	3.86	15.4	0.606
C 6006 V	30	1.1811	55	2.1654	45	1.7717	134 000	30 110	180 000	40 450		3 200	0.49	1.08	7.9	0.311
C 6909 V	45	1.7717	68	2.6772	40	1.5748	132 000	29 660	200 000	44 940		2 600	0.53	1.17	9.4	0.370
C 6910 V	50	1.9685	72	2.8346	40	1.5748	140 000	31 460	224 000	50 300		2 400	0.54	1.19	9.4	0.370
C 6911 V	55	2.1654	80	3.1496	45	1.7717	180 000	40 450	300 000	67 400		2 200	0.78	1.72	7.9	0.311
C 6912 V	60	2.3622	85	3.3465	45	1.7717	190 000	42 700	335 000	75 300		1 900	0.83	1.83	7.9	0.311
C 6915 V/VE240	75	2.9528	105	4.1339	54	2.1260	204 000	45 840	325 000	73 000		1 900	1.40	3.09	9.2	0.362

1) Permissible axial displacement from Normal position of one bearing ring in relation to the other.

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

Notes

Notes

Notes

Needle roller bearings

RNA 4900 2RS M V C3

1 2 3 4 5

1. Basic design:

BK	Closed end drawn cup
HK	Drawn cup needle roller with open ends
NA	Bearing with flanges and inner ring
NK	Bearing with flanges without inner ring
NKI	Bearing with flanges and inner rings
NKIS	Bearing with flanges and inner rings
NKS	Bearing with flanges without inner ring
RNA	Bearing without inner ring

2. Seals, shields and snap rings:

RS	Seal of plate and synthetic rubber on one side
2RS	Seal of plate and synthetic rubber on both sides

3. Cage designs:

TN	Nylon cage, rolling element guided
M	Machined brass cage, rolling element guided
IS1	One lubrication hole in the inner ring

4. Features:

V	Full complement bearing without cage
H...	Reduced tolerance for the inside diameter of the roller and cage assembly; the figures following the letter H indicate the tolerance limits in mm
W64	Solid Oil lubricants

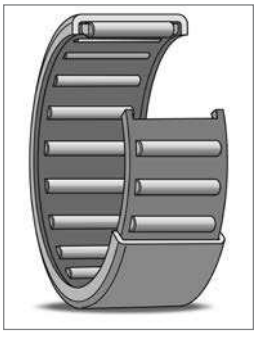
5. Clearance and tolerance:

(C0)*	Normal radial internal clearance
C3	Radial internal clearance > normal
C4	Radial internal clearance > C3
CNR	Reduced normal radial clearance corresponding to earlier standard (ISO 5753-1981)
P5	Dimensional and running accuracy to ISO tolerance class 5 specifications (better than P6)
P6	Dimensional and running accuracy to ISO tolerance class 6 specifications (better than normal)

* Not marked on bearing or package

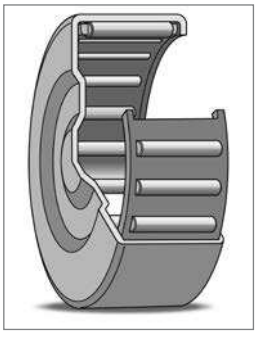
Technical features

Boundary dimensions	In accordance with ISO 3245-1974 (ABMA std 18.1)
Tolerances	Normal
Heat stabilization	302° F (150° C)
Misalignment	None to very minor (contact SKF for further details)
Cage Material	
Standard	Steel
Optional	Polyamide (TN)
Axial load – max	None
Seals	2RS1 – 2 synthetic rubber (NBR) seals only available on RNA 49 and NA 49 series



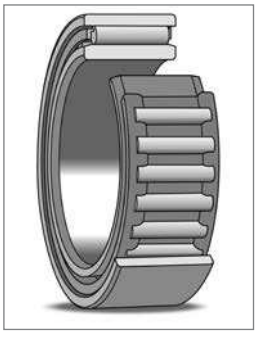
HK

Drawn cup needle roller bearing with open ends (data tables on page 206)



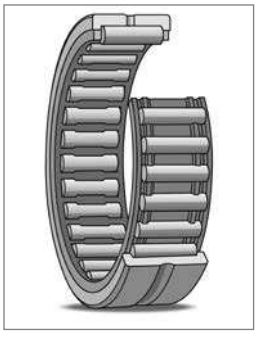
BK

Drawn cup needle roller bearing with closed ends (data tables on page 206)



NA

Needle roller bearing with inner ring (data tables on page 210)



NK

Needle roller bearing without inner ring (data tables on page 214)

Introduction

Needle roller bearings are roller bearings with cylindrical rollers, which are thin and long in relation to their diameter. They are referred to as needle rollers. In spite of their low cross section, the bearings have a high load carrying capacity and are thus eminently suitable for bearing arrangements where radial space is limited.

The needle rollers have a profile, which is slightly relieved towards the roller ends. The resultant modified line contact between needle rollers and raceways means that damaging edge stresses are minimized.

SKF supplies many different types of needle roller bearings, including drawn cup needle roller bearings with open ends and with closed ends, and needle roller bearings with and without inner rings.

Basic design

Needle roller bearings with carbon chromium steel rings have a low sectional height and very high load carrying capacity. Depending on the application, they may be used with or without an inner ring.

Needle roller bearings without inner ring are the better alternative where it is possible to harden and grind the necessary raceways on the shaft. As the inner ring is not needed the shaft can have a larger diameter and will therefore be stiffer. The amount by which the shaft can be axially displaced relative to the housing is also only limited by the width of the raceway on the shaft. By machining the shaft raceways to appropriate accuracies of dimension and form, it is possible to achieve bearing arrangements having enhanced running accuracy.

Needle roller bearings with inner ring are used for arrangements where it is impossible, or uneconomical, to harden and grind the shaft. Bearings with inner ring only permit axial displacements of the shaft relative to the housing within the limits quoted in the bearing tables. If greater displacements have to be accommodated, extended inner rings can be used instead of the standard inner rings. For details on these extended rings, please consult SKF Applications Engineering.

Drawn cup needle roller bearings

Drawn cup needle roller bearings are needle roller bearings with thin, deep drawn outer rings. Their principal characteristics are their very low cross section and their high load carrying capacity. They are mainly used where particularly compact and economic bearing arrangements are desired but where the housing bore cannot serve as a raceway for a needle roller and cage assembly. The bearings must be mounted with an interference fit in the housing. If axial location by means of shoulders, snap rings, etc. is dispensed with, the housing bores can be produced simply and economically.

Drawn cup needle roller bearings are available with open ends **(Figure 1a),** or with one closed end **(Figure 1b)** for mounting on shaft ends. The profiled base (end) of the closed drawn cup enables minor axial guiding forces to be accommodated.

Drawn cup needle roller bearings are generally used without an inner ring. For applications where it is not possible to harden and grind the shaft seating, the inner rings listed in the tables can be used.

The outer ring of hardened sheet steel and the needle roller and cage assembly of drawn cup needle roller bearings form a non-separable unit. The free space available for lubricant means that long relubrication intervals can be applied. The bearings are generally of the single row design with the exception of the relatively wide sizes 1522, 1622, 2030, 2538 and 3038, which incorporate two needle roller and cage assemblies and have a lubrication hole in the outer ring.

Product highlights

Suitable for limited radial space
Low sectional height makes needle roller bearings suitable for applications when heavy radial loads and a limited radial space exist. Depending on the application, they may be used with or without an inner ring, with a roller cage assembly running directly on the shaft.

Drawn cup series – the popular choice
The popular drawn cup series have an extremely thin-walled outer ring and are intended to operate directly on the shaft without use of an inner ring.

Large product assortment
A wide variety of designs include combined bearings for radial and axial loads allowing for compact and economical bearing arrangements. Size range includes 3 to 360 mm inside diameter.

Seals integration
SKF needle roller bearings are also available with seals on one or two sides making external seals unnecessary. The seals are made of synthetic rubber and provide efficient protection to the bearings against contaminants.

Figure 1

Open ends (HK)

a

Closed ends (BK)

b

Introduction

Variations

Sealed drawn cup needle roller bearings
For applications where an adequate seal is not available or cannot be provided for space reasons, sealed drawn cup needle roller bearings with open and closed ends (c,d,e) can be supplied. These incorporate rubbing seals of synthetic rubber and are filled with a lithium base grease having good rust inhibiting properties. The bearings are suitable for operating temperatures in the range –4° to +212° F (-20° to +100° C). For further information on sealed drawn cup needle roller bearings, please consult SKF Applications Engineering.

Needle roller bearings with machined rings

The basic design of SKF needle roller bearings in the size range up to and including 19 mm outside diameter has an outer ring with either integral or inserted flanges **(Figure 2a).** The larger bearings have integral flanges and an annular groove and lubrication hole in the outer ring **(Figure 2b)**. Needle roller bearings with flanged outer rings are mainly produced as single row bearings. The exceptions are bearings of series RNA 69 and NA 69 having outside diameters of 55 mm and above where two needle roller and cage assemblies are guided between integral flanges on the outer ring **(Figure 2c)**. The outer ring, needle rollers and cage of all bearings form a non-separable unit.

Sealed bearings

Single row needle roller bearings of series RNA 49 and NA 49 are also available with rubbing seals at one side, RS design **(Figure 2d)**, or at both sides, 2RS design **(Figure 2e)**. The seals are made of synthetic rubber and provide efficient protection to the bearings against contaminants. All bearings are supplied as standard filled with a lithium base grease having good rust inhibiting properties. The bearings are suitable for operating temperatures in the range of -4° to +212° F (-20° to +100° C). The inner rings of the sealed bearings are 1 mm wider than the outer rings. This will allow the seals to provide adequate protection against contaminants even where the shaft is slightly displaced axially relative to the housing.

The inner rings also have a lubrication hole so that, depending on the arrangement, it is possible to relubricate the bearings via the outer or inner rings.

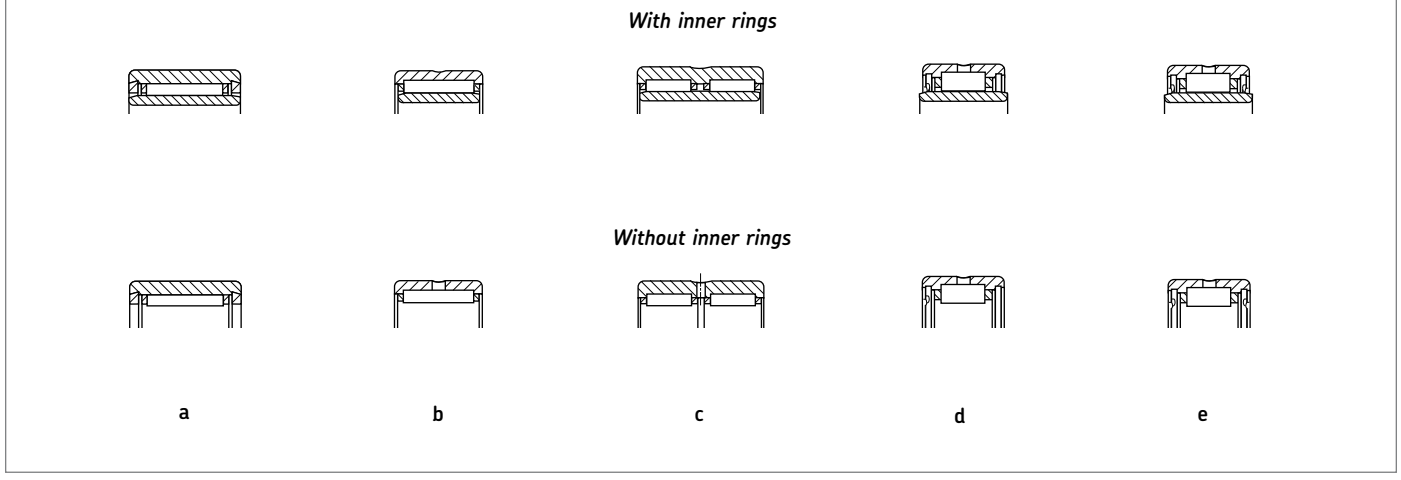
Special solutions using needle roller bearings

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

- Needle roller and cage assemblies
- Needle roller bearings without flanges
- Alignment needle roller bearings
- Combined needle roller / ball bearings
- Combined needle roller / thrust ball bearings
- Combined needle roller / cylindrical roller thrust bearings

Details on these special solution products are available in the Needle roller bearings catalog (PUB 06003 EN), which can be supplied upon request.

Figure 2



Internal Clearance

Radial internal clearance

SKF needle roller bearings with inner ring are supplied with Normal radial internal clearance as standard. Bearings with greater or smaller clearance may be available but this should be checked before ordering.

The clearance values correspond to ISO 5753-1 and are shown in **Table 1**.

Loads

Equivalent dynamic bearing load

Needle roller bearings and standard needle roller bearing assemblies can only accommodate radial loads. Therefore:

P = Fr

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 needle 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. It may also 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 found on the SKF website, skfusa.com. Select Engineering Tools under the Support menu. Or contact 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

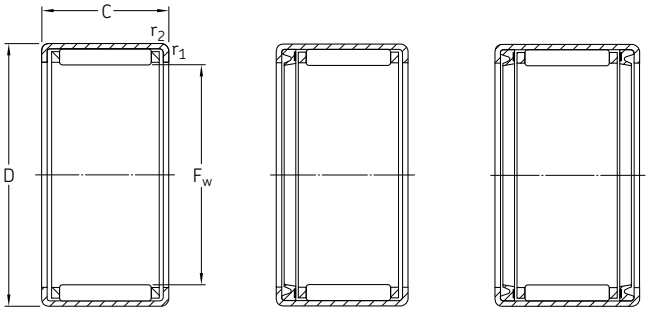
Frequency vibration data is available on the SKF website, skfusa.com. Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Table 1

Radial internal clearance of needle roller bearings

Bore diameter d				Radial internal clearance															
				C2				Normal				C3				C4			
over	incl.			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	
-	24	0	0.9449	0	25	0.0000	0.0010	20	45	0.0008	0.0018	35	60	0.0014	0.0024	50	75	0.0020	0.0030
24	30	0.9449	1.1811	0	25	0.0000	0.0010	20	45	0.0008	0.0018	35	60	0.0014	0.0024	50	75	0.0020	0.0030
30	40	1.1811	1.5748	5	30	0.0002	0.0012	25	50	0.0010	0.0020	45	70	0.0018	0.0028	60	85	0.0024	0.0033
40	50	1.5748	1.9685	5	35	0.0002	0.0014	30	60	0.0012	0.0024	50	80	0.0020	0.0031	70	100	0.0028	0.0039
50	65	1.9685	2.5591	10	40	0.0004	0.0016	40	70	0.0016	0.0028	60	90	0.0024	0.0035	80	110	0.0031	0.0043
65	80	2.5591	3.1496	10	45	0.0004	0.0018	40	75	0.0016	0.0030	65	100	0.0026	0.0039	90	125	0.0035	0.0049
80	100	3.1496	3.9370	15	50	0.0006	0.0020	50	85	0.0020	0.0033	75	110	0.0030	0.0043	105	140	0.0041	0.0055
100	120	3.9370	4.7244	15	55	0.0006	0.0022	50	90	0.0020	0.0035	85	125	0.0033	0.0049	125	165	0.0049	0.0065
120	140	4.7244	5.5118	15	60	0.0006	0.0024	60	105	0.0024	0.0041	100	145	0.0039	0.0057	145	190	0.0057	0.0075
140	160	5.5118	6.2992	20	70	0.0008	0.0028	70	120	0.0028	0.0047	115	165	0.0045	0.0065	165	215	0.0065	0.0085
160	180	6.2992	7.0866	25	75	0.0010	0.0030	75	125	0.0030	0.0049	120	170	0.0047	0.0067	170	220	0.0067	0.0087
180	200	7.0866	7.8740	35	90	0.0014	0.0035	90	145	0.0035	0.0057	140	195	0.0055	0.0077	195	250	0.0077	0.0098
200	225	7.8740	8.8583	45	105	0.0018	0.0041	105	165	0.0041	0.0065	160	220	0.0063	0.0087	220	280	0.0087	0.0110
225	250	8.8583	9.8425	45	110	0.0018	0.0043	110	175	0.0043	0.0069	170	235	0.0067	0.0093	235	300	0.0093	0.0118
250	280	9.8425	11.0236	55	125	0.0022	0.0049	125	195	0.0049	0.0077	190	260	0.0075	0.0102	260	330	0.0102	0.0130
280	315	11.0236	12.4016	55	130	0.0022	0.0051	130	205	0.0051	0.0081	200	275	0.0079	0.0108	275	350	0.0108	0.0138
315	355	12.4016	13.9764	65	145	0.0026	0.0057	145	225	0.0057	0.0089	225	305	0.0089	0.0120	305	385	0.0120	0.0152
355	400	13.9764	15.7480	100	190	0.0039	0.0075	190	280	0.0075	0.0110	280	370	0.0110	0.0146	370	460	0.0146	0.0181

Single row
Drawn cup, open and closed end
Series: HK 0306 TN – HK 1614 RS
Size: 3 mm – 16 mm
0.1181 in – 0.6299 in



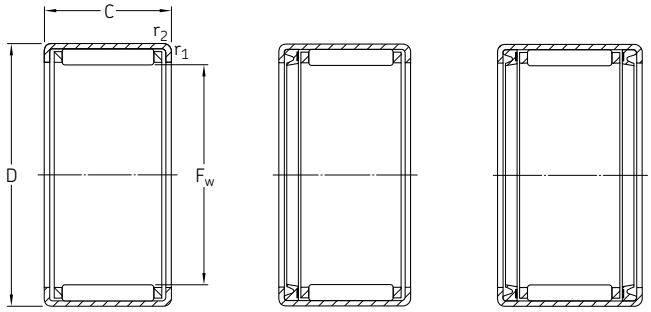
Series HK | Series HK ...RS | Series HK ...2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass			
	Bore F_w		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Open end (HK)		Closed end (BK)	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	g	oz	g	oz
HK 0306 TN	3	0.1181	6.5	0.2559	6	0.2362	1 230	280	880	200	24 000	26 000	1.0	0.04	1.0	0.04
HK 0408	4	0.1575	8	0.3150	8	0.3150	1 760	400	1 370	310	22 000	26 000	2.0	0.07	2.1	0.07
HK 0509	5	0.1969	9	0.3543	9	0.3543	2 380	530	2 080	470	22 000	24 000	2.0	0.07	2.1	0.07
HK 0606	6	0.2362	10	0.3937	6	0.2362	1 720	390	1 290	290	20 000	22 000	1.5	0.05	-	-
HK 0608	6	0.2362	10	0.3937	8	0.3150	2 010	450	1 730	390	20 000	22 000	2.1	0.07	-	-
HK 0609	6	0.2362	10	0.3937	9	0.3543	2 810	630	2 700	610	20 000	22 000	2.5	0.09	2.6	0.09
HK 0709	7	0.2756	11	0.4331	9	0.3543	3 030	680	3 050	690	20 000	22 000	2.6	0.09	2.9	0.10
HK 0808	8	0.3150	12	0.4724	8	0.3150	2 700	610	2 750	620	19 000	22 000	2.7	0.10	3.0	0.11
HK 0810	8	0.3150	12	0.4724	10	0.3937	3 690	830	4 050	910	19 000	22 000	3.0	0.11	3.4	0.12
HK 0812 2RS	8	0.3150	12	0.4724	12	0.4724	2 700	610	2 750	620	-	13 000	3.3	0.12	-	-
HK 0908	9	0.3543	13	0.5118	8	0.3150	3 520	790	3 900	880	18 000	20 000	3.0	0.11	-	-
HK 0910	9	0.3543	13	0.5118	10	0.3937	4 130	930	4 800	1 080	18 000	20 000	4.0	0.14	4.3	0.15
HK 0912	9	0.3543	13	0.5118	12	0.4724	5 120	1 150	6 400	1 440	18 000	20 000	4.6	0.16	4.9	0.17
HK 1010	10	0.3937	14	0.5512	10	0.3937	4 290	960	5 300	1 190	18 000	20 000	4.1	0.14	4.3	0.15
HK 1012	10	0.3937	14	0.5512	12	0.4724	5 390	1 210	6 950	1 560	18 000	20 000	4.8	0.17	5.0	0.18
HK 1014 2RS	10	0.3937	14	0.5512	14	0.5512	4 290	960	5 300	1 190	-	12 000	4.6	0.16	-	-
HK 1015	10	0.3937	14	0.5512	15	0.5906	6 600	1 480	9 000	2 020	18 000	20 000	6.0	0.21	6.2	0.22
HK 1210	12	0.4724	16	0.6299	10	0.3937	4 840	1 090	6 400	1 440	16 000	18 000	4.6	0.16	5.2	0.18
HK 1212	12	0.4724	18	0.7087	12	0.4724	6 270	1 410	7 350	1 650	16 000	18 000	9.5	0.34	10.0	0.35
HK 1214 2RS	12	0.4724	16	0.6299	14	0.5512	4 840	1 090	6 400	1 440	-	10 000	8.0	0.28	-	-
HK 1216 2RS	12	0.4724	18	0.7087	16	0.6299	6 270	1 410	7 350	1 650	-	10 000	11.0	0.39	-	-
HK 1312	13	0.5118	19	0.7480	12	0.4724	6 600	1 480	8 000	1 800	16 000	17 000	10.3	0.36	11.0	0.39
HK 1412	14	0.5512	20	0.7874	12	0.4724	6 820	1 530	8 650	1 940	15 000	17 000	10.5	0.37	12.0	0.42
HK 1414 RS	14	0.5512	20	0.7874	14	0.5512	6 820	1 530	8 650	1 940	-	9 500	12.0	0.42	13.0	0.46
HK 1416 2RS	14	0.5512	20	0.7874	16	0.6299	6 820	1 530	8 650	1 940	-	9 500	13.0	0.46	-	-
HK 1512	15	0.5906	21	0.8268	12	0.4724	7 650	1 720	9 500	2 130	15 000	16 000	11.0	0.39	13.0	0.46
HK 1514 RS	15	0.5906	21	0.8268	14	0.5512	7 480	1 680	10 000	2 250	-	9 500	12.0	0.42	14.0	0.49
HK 1516	15	0.5906	21	0.8268	16	0.6299	10 100	2 270	14 600	3 280	15 000	16 000	15.0	0.53	17.0	0.60
HK 1518 RS	15	0.5906	21	0.8268	18	0.7087	10 100	2 270	14 600	3 280	-	9 500	16.0	0.56	-	-
HK 1520 2RS	15	0.5906	21	0.8268	20	0.7874	10 100	2 270	14 600	3 280	-	9 500	18.0	0.63	-	-
HK 1522 [1)]	15	0.5906	21	0.8268	22	0.8661	13 000	2 920	20 000	4 490	15 000	16 000	20.0	0.71	-	-
HK 1612	16	0.6299	22	0.8661	12	0.4724	7 370	1 660	9 800	2 200	14 000	16 000	12.0	0.42	14.0	0.49
HK 1614 RS	16	0.6299	22	0.8661	14	0.5512	7 370	1 660	9 800	2 200	-	9 000	13.0	0.46	15.0	0.53

1) Double row

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

Single row
Drawn cup, open and closed end
Series: HK 1616 – HK 3018 RS
Size: 16 mm – 30 mm
0.6299 in – 1.1811 in



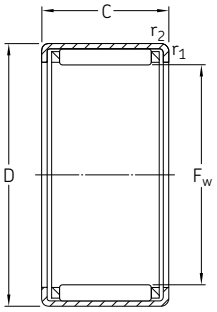
Series HK | Series HK ...RS | Series HK ...2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass			
	Bore F_w		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Open end (HK)		Closed end (BK)	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	g	oz	g	oz
HK 1616	16	0.6299	22	0.8661	16	0.6299	10 500	2 360	15 600	3 510	14 000	16 000	16.0	0.56	18.0	0.63
HK 1620 2RS	16	0.6299	22	0.8661	20	0.7874	10 500	2 360	15 600	3 510	-	9 000	18.0	0.63		
HK 1622 [1)]	16	0.6299	22	0.8661	22	0.8661	12 800	2 880	19 600	4 400	14 000	16 000	24.0	0.85	24.0	0.85
HK 1712	17	0.6693	23	0.9055	12	0.4724	7 650	1 720	10 600	2 380	14 000	15 000	13.0	0.46	-	-
HK 1812	18	0.7087	24	0.9449	12	0.4724	7 920	1 780	11 200	2 520	13 000	15 000	13.0	0.46	15.0	0.53
HK 1814 RS	18	0.7087	24	0.9449	14	0.5512	7 920	1 780	11 200	2 520	-	8 500	14.0	0.49	-	-
HK 1816	18	0.7087	24	0.9449	16	0.6299	11 200	2 520	17 600	3 960	13 000	15 000	18.0	0.63	20.0	0.71
HK 2010	20	0.7874	26	1.0236	10	0.3937	6 160	1 380	8 500	1 910	12 000	14 000	12.0	0.42	-	-
HK 2012	20	0.7874	26	1.0236	12	0.4724	8 420	1 890	12 500	2 810	12 000	14 000	14.0	0.49	-	-
HK 2016	20	0.7874	26	1.0236	16	0.6299	12 300	2 760	20 400	4 580	12 000	14 000	19.0	0.67	22.0	0.78
HK 2018 RS	20	0.7874	26	1.0236	18	0.7087	12 300	2 760	20 400	4 580	-	8 000	21.0	0.74	24.0	0.85
HK 2020	20	0.7874	26	1.0236	20	0.7874	15 100	3 390	26 500	5 960	12 000	14 000	24.0	0.85	27.0	0.95
HK 2030 [1)]	20	0.7874	26	1.0236	30	1.1811	20 900	4 700	40 500	9 100	12 000	14 000	35.0	1.23	-	-
HK 2210	22	0.8661	28	1.1024	10	0.3937	7 210	1 620	10 600	2 380	11 000	12 000	13.0	0.46	-	-
HK 2212	22	0.8661	28	1.1024	12	0.4724	8 800	1 980	13 700	3 080	11 000	12 000	15.0	0.53	18.0	0.63
HK 2214 RS	22	0.8661	28	1.1024	14	0.5512	8 800	1 980	13 700	3 080	-	7 500	16.0	0.56	-	-
HK 2216	22	0.8661	28	1.1024	16	0.6299	13 000	2 920	22 400	5 030	11 000	12 000	21.0	0.74	24.0	0.85
HK 2218 RS	22	0.8661	28	1.1024	18	0.7087	13 000	2 920	22 400	5 030	-	7 500	24.0	0.85	-	-
HK 2220	22	0.8661	28	1.1024	20	0.7874	15 700	3 530	29 000	6 520	11 000	12 000	26.0	0.92	-	-
HK 2512	25	0.9843	32	1.2598	12	0.4724	10 500	2 360	15 300	3 440	9 500	11 000	20.0	0.71	-	-
HK 2516	25	0.9843	32	1.2598	16	0.6299	15 100	3 390	24 000	5 390	9 500	11 000	25.3	0.89	32.0	1.13
HK 2518 RS	25	0.9843	32	1.2598	18	0.7087	15 100	3 390	24 000	5 390	-	6 700	29.0	1.02	34.0	1.20
HK 2520	25	0.9843	32	1.2598	20	0.7874	19 000	4 270	32 500	7 300	9 500	11 000	33.0	1.16	38.0	1.34
HK 2524 2RS	25	0.9843	32	1.2598	24	0.9449	19 000	4 270	32 500	7 300	-	6 700	40.0	1.41		
HK 2526	25	0.9843	32	1.2598	26	1.0236	24 200	5 440	45 000	10 110	9 500	11 000	44.0	1.55	48.0	1.69
HK 2530 2RS	25	0.9843	32	1.2598	30	1.1811	24 200	5 440	45 000	10 110	-	6 700	47.0	1.66	-	-
HK 2538 [1)]	25	0.9843	32	1.2598	38	1.4961	33 000	7 420	65 500	14 720	9 500	11 000	64.0	2.26	68.0	2.40
HK 2816	28	1.1024	35	1.3780	16	0.6299	15 700	3 530	26 500	5 960	9 000	9 500	26.6	0.94	-	-
HK 2818 RS	28	1.1024	35	1.3780	18	0.7087	15 700	3 530	26 500	5 960	-	6 300	31.0	1.09	-	-
HK 2820	28	1.1024	35	1.3780	20	0.7874	20 100	4 520	36 500	8 200	9 000	9 500	36.0	1.27	-	-
HK 3012	30	1.1811	37	1.4567	12	0.4724	11 700	2 630	18 300	4 110	8 000	9 000	23.0	0.81	28.0	0.99
HK 3016	30	1.1811	37	1.4567	16	0.6299	16 500	3 710	29 000	6 520	8 000	9 000	31.0	1.09	38.0	1.34
HK 3018 RS	30	1.1811	37	1.4567	18	0.7087	16 500	3 710	29 000	6 520	-	5 600	37.0	1.31	-	-

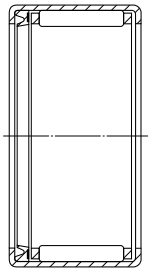
1) Double row

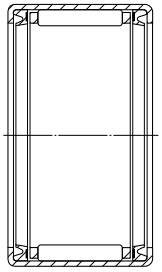
Consult SKF USA Inc. prior to design change or order placement.

Single row
Drawn cup, open and closed end
Series: HK 3020 – HK 4020
Size: 30 mm – 40 mm
1.1811 in – 1.5748 in



Series HK


Series HK ...RS

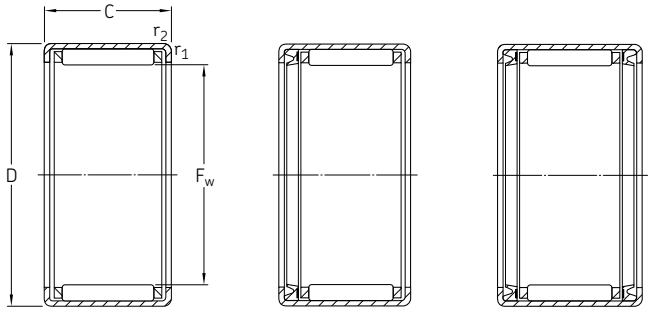

Series HK ...2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass			
	Bore F_w		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Open end (HK)		Closed end (BK)	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	g	oz	g	oz
HK 3020	30	1.1811	37	1.4567	20	0.7874	20 900	4 700	40 000	8 990	8 000	9 000	38.0	1.34	47.0	1.66
HK 3022	30	1.1811	37	1.4567	22	0.8661	23 800	5 350	46 500	10 450	8 000	9 000	42.0	1.48		
HK 3024 2RS	30	1.1811	37	1.4567	24	0.9449	20 900	4 700	40 000	8 990	–	5 600	44.0	1.55		
HK 3026	30	1.1811	37	1.4567	26	1.0236	27 000	6 070	54 000	12 130	8 000	9 000	51.0	1.80	58.0	2.05
HK 3038 [1]	30	1.1811	37	1.4567	38	1.4961	35 800	8 040	80 000	17 980	8 000	9 000	76.0	2.68	84.0	2.96
HK 3220	32	1.2598	39	1.5354	20	0.7874	22 000	4 940	43 000	9 660	7 500	8 500	40.6	1.43		
HK 3224	32	1.2598	39	1.5354	24	0.9449	26 400	5 930	54 000	12 130	7 500	8 500	49.0	1.73		
HK 3512	35	1.3780	42	1.6535	12	0.4724	12 500	2 810	21 600	4 850	7 000	8 000	27.0	0.95		
HK 3516	35	1.3780	42	1.6535	16	0.6299	17 900	4 020	34 000	7 640	7 000	8 000	36.0	1.27		
HK 3518 RS	35	1.3780	42	1.6535	18	0.7087	17 900	4 020	34 000	7 640	–	5 000	39.0	1.38		
HK 3520	35	1.3780	42	1.6535	20	0.7874	22 900	5 150	46 500	10 450	7 000	8 000	44.0	1.55	53.0	1.87
HK 4012	40	1.5748	47	1.8504	12	0.4724	13 400	3 010	24 500	5 510	6 300	7 000	30.0	1.06		
HK 4016	40	1.5748	47	1.8504	16	0.6299	19 000	4 270	39 000	8 760	6 300	7 000	39.0	1.38		
HK 4018 RS	40	1.5748	47	1.8504	18	0.7087	19 000	4 270	39 000	8 760	–	4 500	45.0	1.59		
HK 4020	40	1.5748	47	1.8504	20	0.7874	24 200	5 440	53 000	11 910	6 300	7 000	54.0	1.90	62.0	2.19

1) Double row

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

Single row
Drawn cup, open and closed end
Series: HK 4512 – HK 6032
Size: 45 mm – 60 mm
1.7717 in – 2.3622 in



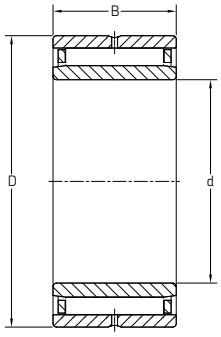
Series HK | Series HK ...RS | Series HK ...2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass			
	Bore F_w		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed	Open end (HK)		Closed end (BK)	
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	g	oz	g	oz
HK 4512	45	1.7717	52	2.0472	12	0.4724	14 200	3 190	27 500	6 180	5 600	6 300	33.0	1.16		
HK 4516	45	1.7717	52	2.0472	16	0.6299	20 500	4 610	43 000	9 660	5 600	6 300	46.9	1.65		
HK 4518 RS	45	1.7717	52	2.0472	18	0.7087	20 500	4 610	43 000	9 660	–	4 000	50.0	1.76		
HK 4520	45	1.7717	52	2.0472	20	0.7874	26 000	5 840	60 000	13 480	5 600	6 300	56.0	1.98	72.0	2.54
HN 4525	45	1.7717	52	2.0472	25	0.9843	44 000	44 000	140 000	31 460	4 500	5 600	85.0	3.00		
HK 5020	50	1.9685	58	2.2835	20	0.7874	29 200	6 560	63 000	14 160	5 000	5 600	70.0	2.47		
HK 5022 RS	50	1.9685	58	2.2835	22	0.8661	29 200	6 560	63 000	14 160	–	3 600	76.0	2.68		
HK 5024 2RS	50	1.9685	58	2.2835	24	0.9449	29 200	6 560	63 000	14 160	–	3 600	81.0	2.86		
HK 5025	50	1.9685	58	2.2835	25	0.9843	36 900	8 290	85 000	19 100	5 000	5 600	85.0	3.00		
HK 5520	55	2.1654	63	2.4803	20	0.7874	30 300	6 810	67 000	15 060	4 500	5 000	74.0	2.61		
HK 5528	55	2.1654	63	2.4803	28	1.1024	41 800	9 390	104 000	23 370	4 500	5 000	105.0	3.70		
HK 6012	60	2.3622	68	2.6772	12	0.4724	17 600	3 960	32 000	7 190	4 300	4 800	49.0	1.73		
HK 6020	60	2.3622	68	2.6772	20	0.7874	31 900	7 170	75 000	16 850	4 300	4 800	81.0	2.86		
HK 6032	60	2.3622	68	2.6772	32	1.2598	51 200	11 510	137 000	30 790	4 300	4 800	136.0	4.80		

1) Double row

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

Single row
with inner ring
Series: NA 4822 – NA 4876
Size: 110 mm – 380 mm
4.3307 in – 14.9606 in



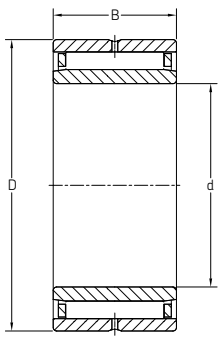
Series NA 48

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NA 4822	110	4.3307	140	5.5118	30	1.1811	93 500	21 010	232 000	52 100	3 400	3 800	1.08	2.38
NA 4824	120	4.7244	150	5.9055	30	1.1811	99 000	22 250	255 000	57 300	3 200	3 600	1.17	2.58
NA 4826	130	5.1181	165	6.4961	35	1.3780	119 000	26 740	325 000	73 000	2 800	3 200	1.81	3.99
NA 4828	140	5.5118	175	6.8898	35	1.3780	121 000	27 190	345 000	77 500	2 600	3 000	1.92	4.23
NA 4830	150	5.9055	190	7.4803	40	1.5748	147 000	33 030	415 000	93 300	2 400	2 800	2.72	6.00
NA 4832	160	6.2992	200	7.8740	40	1.5748	157 000	35 280	450 000	101 100	2 200	2 600	2.87	6.33
NA 4834	170	6.6929	215	8.4646	45	1.7717	179 000	40 220	520 000	116 900	2 200	2 400	3.96	8.73
NA 4836	180	7.0866	225	8.8583	45	1.7717	190 000	42 700	570 000	128 100	2 000	2 400	4.20	9.26
NA 4838	190	7.4803	240	9.4488	50	1.9685	220 000	49 440	710 000	159 600	1 900	2 200	5.55	12.24
NA 4840	200	7.8740	250	9.8425	50	1.9685	224 000	50 300	735 000	165 200	1 800	2 000	5.80	12.79
NA 4844	220	8.6614	270	10.6299	50	1.9685	238 000	53 500	815 000	183 100	1 700	1 900	6.33	13.96
NA 4848	240	9.4488	300	11.8110	60	2.3622	347 000	78 000	1 119 999	251 700	1 500	1 700	9.88	21.79
NA 4852	260	10.2362	320	12.5984	60	2.3622	358 000	80 400	1 199 999	269 700	1 400	1 500	10.60	23.37
NA 4856	280	11.0236	350	13.7795	69	2.7165	429 000	96 400	1 319 999	296 600	1 300	1 400	15.30	33.74
NA 4860	300	11.8110	380	14.9606	80	3.1496	594 000	133 500	1 799 999	404 500	1 100	1 300	21.80	48.07
NA 4864	320	12.5984	400	15.7480	80	3.1496	605 000	136 000	1 899 999	427 000	1 100	1 200	23.00	50.72
NA 4868	340	13.3858	420	16.5354	80	3.1496	616 000	138 400	1 959 999	440 400	1 000	1 200	23.80	52.48
NA 4872	360	14.1732	440	17.3228	80	3.1496	627 000	140 900	2 039 999	458 400	950	1 100	25.60	56.45
NA 4876	380	14.9606	480	18.8976	100	3.9370	968 000	217 500	3 000 000	674 200	900	1 000	42.60	93.93

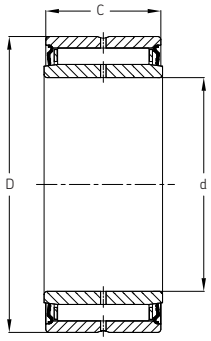
Consult SKF USA Inc. prior to design change or order placement.

Single row
with inner ring
Open and sealed
Series: NA 4900 – NA 4915
Size: 10 mm – 75 mm
0.3937 in – 2.9528 in

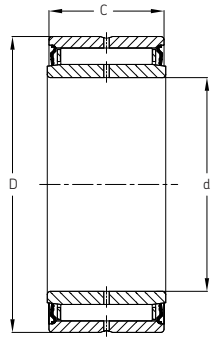
Series: NA 4900 – NA 4907 2RS
Size: 10 mm – 35 mm
0.3937 in – 1.3780 in



Series NA 49



Series NA 49 RS

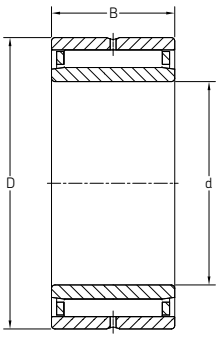


Series NA 2RS

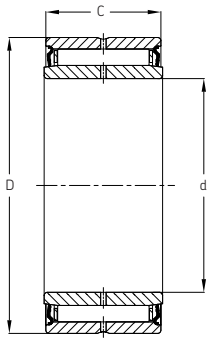
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb
NA 49/22	22	0.8661	39	1.5354	17	0.6693	23 300	5 240	32 000	7 190	14 000	15 000	0.0800	0.18
NA 49/28	28	1.1024	45	1.7717	17	0.6693	25 100	5 640	36 500	8 200	12 000	14 000	0.0977	0.22
NA 49/32	32	1.2598	52	2.0472	20	0.7874	30 800	6 920	51 000	11 460	10 000	11 000	0.1580	0.35
NA 4900	10	0.3937	22	0.8661	13	0.5118	8 800	1 980	10 400	2 340	24 000	28 000	0.0237	0.05
NA 4900 RS	10	0.3937	22	0.8661	14	0.5512	7 370	1 660	8 150	1 830	–	12 000	0.0245	0.05
NA 4900 2RS	10	0.3937	22	0.8661	14	0.5512	7 370	1 660	8 150	1 830	–	12 000	0.0245	0.05
NA 4901	12	0.4724	24	0.9449	13	0.5118	9 900	2 220	12 200	2 740	22 000	26 000	0.0260	0.06
NA 4901 2RS	12	0.4724	24	0.9449	14	0.5512	8 090	1 820	9 650	2 170	–	11 000	0.0275	0.06
NA 4902	15	0.5906	28	1.1024	13	0.5118	11 200	2 520	15 300	3 440	19 000	22 000	0.0340	0.07
NA 4902 2RS	15	0.5906	28	1.1024	14	0.5512	9 130	2 050	12 000	2 700	–	9 500	0.0370	0.08
NA 4903	17	0.6693	30	1.1811	13	0.5118	11 400	2 560	16 300	3 660	18 000	20 000	0.0380	0.08
NA 4903 2RS	17	0.6693	30	1.1811	14	0.5512	9 520	2 140	12 900	2 900	–	9 000	0.0400	0.09
NA 4904	20	0.7874	37	1.4567	17	0.6693	21 600	4 850	28 000	6 290	15 000	17 000	0.0752	0.17
NA 4904 2RS	20	0.7874	37	1.4567	18	0.7087	19 400	4 360	22 400	5 030	–	7 500	0.0800	0.18
NA 4905	25	0.9843	42	1.6535	17	0.6693	24 200	5 440	34 500	7 750	13 000	15 000	0.0880	0.19
NA 4905 2RS	25	0.9843	42	1.6535	18	0.7087	21 600	4 850	27 500	6 180	–	6 300	0.0895	0.20
NA 4906	30	1.1811	47	1.8504	17	0.6693	25 500	5 730	39 000	8 760	11 000	13 000	0.1010	0.22
NA 4906 RS	30	1.1811	47	1.8504	18	0.7087	23 300	5 240	32 000	7 190	–	5 600	0.1040	0.23
NA 4906 2RS	30	1.1811	47	1.8504	18	0.7087	23 300	5 240	32 000	7 190	–	5 600	0.1040	0.23
NA 4907	35	1.3780	55	2.1654	20	0.7874	31 900	7 170	54 000	12 130	9 500	11 000	0.1700	0.37
NA 4907 RS	35	1.3780	55	2.1654	21	0.8268	27 000	6 070	43 000	9 660	–	4 800	0.1750	0.39
NA 4907 2RS	35	1.3780	55	2.1654	21	0.8268	27 000	6 070	43 000	9 660	–	4 800	0.1750	0.39

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

Single row
with inner ring
Open and sealed
Series: NA 4908 – NA 4928
Size: 40 mm – 140 mm
1.5748 in – 5.5118 in



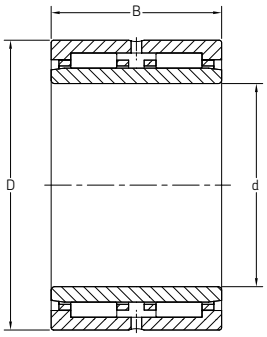
Series NA 49



Series NA 2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NA 4908	40	1.5748	62	2.4409	22	0.8661	42 900	9 640	71 000	15 960	8 000	9 500	0.230	0.51
NA 4908 2RS	40	1.5748	62	2.4409	23	0.9055	36 900	8 290	58 500	13 150		4 000	0.252	0.56
NA 4909	45	1.7717	68	2.6772	22	0.8661	45 700	10 270	78 000	17 530	7 500	8 500	0.271	0.60
NA 4909 2RS	45	1.7717	68	2.6772	23	0.9055	39 100	8 790	64 000	14 380		3 800	0.290	0.64
NA 4910	50	1.9685	72	2.8346	22	0.8661	47 300	10 630	85 000	19 100	7 000	8 000	0.274	0.60
NA 4910 2RS	50	1.9685	72	2.8346	23	0.9055	40 200	9 030	69 500	15 620		3 400	0.295	0.65
NA 4911	55	2.1654	80	3.1496	25	0.9843	57 200	12 850	106 000	23 820	6 300	7 000	0.393	0.87
NA 4912	60	2.3622	85	3.3465	25	0.9843	60 500	13 600	114 000	25 620	6 000	6 700	0.426	0.94
NA 4913	65	2.5591	90	3.5433	25	0.9843	61 600	13 840	120 000	26 970	5 600	6 300	0.456	1.01
NA 4914	70	2.7559	100	3.9370	30	1.1811	84 200	18 920	163 000	36 630	5 000	5 600	0.728	1.61
NA 4915	75	2.9528	105	4.1339	30	1.1811	84 200	18 920	170 000	38 200	4 800	5 300	0.775	1.71
NA 4916	80	3.1496	110	4.3307	30	1.1811	88 000	19 780	183 000	41 120	4 500	5 000	0.878	1.94
NA 4917	85	3.3465	120	4.7244	35	1.3780	108 000	24 270	250 000	56 200	4 000	4 500	1.250	2.76
NA 4918	90	3.5433	125	4.9213	35	1.3780	112 000	25 170	265 000	59 600	3 800	4 300	1.312	2.89
NA 4919	95	3.7402	130	5.1181	35	1.3780	114 000	25 620	270 000	60 700	3 600	4 000	1.371	3.02
NA 4920	100	3.9370	140	5.5118	40	1.5748	125 000	28 090	280 000	62 900	3 400	4 000	1.900	4.19
NA 4922	110	4.3307	150	5.9055	40	1.5748	130 000	29 210	300 000	67 400	3 200	3 600	2.070	4.56
NA 4924	120	4.7244	165	6.4961	45	1.7717	176 000	39 550	405 000	91 000	3 000	3 400	2.860	6.31
NA 4926	130	5.1181	180	7.0866	50	1.9685	198 000	44 490	480 000	107 900	2 600	3 000	3.900	8.60
NA 4928	140	5.5118	190	7.4803	50	1.9685	205 000	46 070	510 000	114 600	2 400	2 800	4.150	9.15

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



Series NA 69

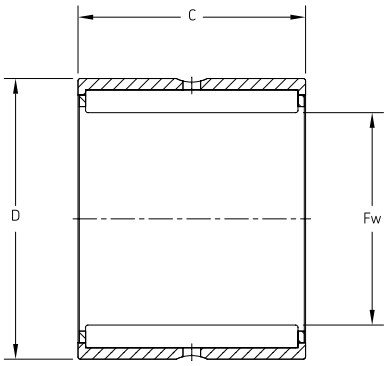
Double row
with inner ring
Series: NA 69/22 – NA 69/32
Size: 22 mm – 32 mm
0.8661 in – 1.2598 in

Series: NA 6901 – NA 6919
Size: 12 mm – 95 mm
0.4724 in – 3.7402 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NA 69/22	22	0.8661	39	1.5354	30	1.1811	36 900	8 290	57 000	12 810	14 000	15 000	0.150	0.33
NA 69/28	28	1.1024	45	1.7717	30	1.1811	39 600	8 900	65 500	14 720	12 000	14 000	0.182	0.40
NA 69/32	32	1.2598	52	2.0472	36	1.4173	47 300	10 630	90 000	20 220	10 000	11 000	0.288	0.64
NA 6901	12	0.4724	24	0.9449	22	0.8661	16 100	3 620	23 200	5 210	22 000	26 000	0.046	0.10
NA 6902	15	0.5906	28	1.1024	23	0.9055	17 200	3 870	27 000	6 070	19 000	22 000	0.064	0.14
NA 6903	17	0.6693	30	1.1811	23	0.9055	18 700	4 200	30 500	6 850	18 000	20 000	0.072	0.16
NA 6904	20	0.7874	37	1.4567	30	1.1811	35 200	7 910	53 000	11 910	15 000	17 000	0.141	0.31
NA 6905	25	0.9843	42	1.6535	30	1.1811	38 000	8 540	62 000	13 930	13 000	15 000	0.161	0.36
NA 6906	30	1.1811	47	1.8504	30	1.1811	42 900	9 640	75 000	16 850	11 000	13 000	0.192	0.42
NA 6907	35	1.3780	55	2.1654	36	1.4173	48 400	10 880	93 000	20 900	9 500	11 000	0.310	0.68
NA 6908	40	1.5748	62	2.4409	40	1.5748	67 100	15 080	125 000	28 090	8 000	9 500	0.430	0.95
NA 6909	45	1.7717	68	2.6772	40	1.5748	70 400	15 820	137 000	30 790	7 500	8 500	0.495	1.09
NA 6910	50	1.9685	72	2.8346	40	1.5748	73 700	16 560	150 000	33 710	7 000	8 000	0.515	1.14
NA 6911	55	2.1654	80	3.1496	45	1.7717	89 700	20 160	190 000	42 700	6 300	7 000	0.780	1.72
NA 6912	60	2.3622	85	3.3465	45	1.7717	93 500	21 010	204 000	45 840	6 000	6 700	0.808	1.78
NA 6913	65	2.5591	90	3.5433	45	1.7717	95 200	21 390	212 000	47 640	5 600	6 300	0.833	1.84
NA 6914	70	2.7559	100	3.9370	54	2.1260	128 000	28 760	285 000	64 000	5 000	5 600	1.340	2.95
NA 6915	75	2.9528	105	4.1339	54	2.1260	130 000	29 210	290 000	65 200	4 800	5 300	1.450	3.20
NA 6916	80	3.1496	110	4.3307	54	2.1260	134 000	30 110	315 000	70 800	4 500	5 000	1.522	3.36
NA 6917	85	3.3465	120	4.7244	63	2.4803	165 000	37 080	425 000	95 500	4 000	4 500	2.200	4.85
NA 6918	90	3.5433	125	4.9213	63	2.4803	172 000	38 650	450 000	101 100	3 800	4 300	2.310	5.09
NA 6919	95	3.7402	130	5.1181	63	2.4803	172 000	38 650	465 000	104 500	3 600	4 000	2.500	5.51

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

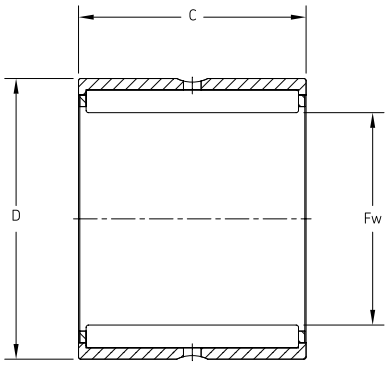
Single row
without inner ring
Series: NK 5/10 TN – NK 21/20
Size: 5 mm – 21 mm
0.1969 in – 0.8268 in



Series NK

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
NK 5/10 TN	5	0.1969	10	0.3937	10	0.3937	2 290	510	2 000	450	36 000	40 000	0.00	0.01
NK 5/12 TN	5	0.1969	10	0.3937	12	0.4724	2 920	660	2 700	610	36 000	40 000	0.00	0.01
NK 6/10 TN	6	0.2362	12	0.4724	10	0.3937	2 550	570	2 360	530	34 000	38 000	0.00	0.01
NK 6/12 TN	6	0.2362	12	0.4724	12	0.4724	3 300	740	3 200	720	34 000	38 000	0.01	0.01
NK 7/10 TN	7	0.2756	14	0.5512	10	0.3937	2 810	630	2 750	620	32 000	36 000	0.01	0.02
NK 7/12 TN	7	0.2756	14	0.5512	12	0.4724	3 580	800	3 750	840	32 000	36 000	0.01	0.02
NK 8/12 TN	8	0.3150	15	0.5906	12	0.4724	3 800	850	4 250	960	32 000	36 000	0.01	0.02
NK 8/16 TN	8	0.3150	15	0.5906	16	0.6299	5 010	1 130	5 850	1 310	32 000	36 000	0.01	0.03
NK 9/12 TN	9	0.3543	16	0.6299	12	0.4724	4 400	990	5 200	1 170	30 000	34 000	0.01	0.02
NK 9/16 TN	9	0.3543	16	0.6299	16	0.6299	5 720	1 290	7 200	1 620	30 000	34 000	0.01	0.03
NK 10/12 TN	10	0.3937	17	0.6693	12	0.4724	4 570	1 030	5 700	1 280	28 000	32 000	0.01	0.02
NK 10/16 TN	10	0.3937	17	0.6693	16	0.6299	5 940	1 330	8 000	1 800	28 000	32 000	0.01	0.03
NK 12/16	12	0.4724	19	0.7480	16	0.6299	9 130	2 050	12 000	2 700	26 000	30 000	0.02	0.04
NK 12/12	12	0.4724	19	0.7480	12	0.4724	6 710	1 510	8 150	1 830	26 000	30 000	0.01	0.03
NK 14/16	14	0.5512	22	0.8661	16	0.6299	10 200	2 290	12 500	2 810	24 000	28 000	0.02	0.05
NK 14/20	14	0.5512	22	0.8661	20	0.7874	12 800	2 880	16 600	3 730	24 000	28 000	0.03	0.06
NK 15/16	15	0.5906	23	0.9055	16	0.6299	11 000	2 470	14 000	3 150	24 000	26 000	0.02	0.05
NK 15/20	15	0.5906	23	0.9055	20	0.7874	13 800	3 100	18 300	4 110	24 000	26 000	0.03	0.06
NK 16/16	16	0.6299	24	0.9449	16	0.6299	11 700	2 630	15 300	3 440	22 000	26 000	0.02	0.05
NK 16/20	16	0.6299	24	0.9449	20	0.7874	14 500	3 260	20 000	4 490	22 000	26 000	0.03	0.06
NK 17/16	17	0.6693	25	0.9843	16	0.6299	12 100	2 720	16 600	3 730	22 000	26 000	0.02	0.05
NK 17/20	17	0.6693	25	0.9843	20	0.7874	15 100	3 390	22 000	4 940	22 000	26 000	0.03	0.07
NK 18/20	18	0.7087	26	1.0236	20	0.7874	16 100	3 620	23 600	5 300	22 000	24 000	0.03	0.07
NK 18/16	18	0.7087	26	1.0236	16	0.6299	12 800	2 880	17 600	3 960	22 000	24 000	0.02	0.05
NK 19/16	19	0.7480	27	1.0630	16	0.6299	13 400	3 010	19 000	4 270	20 000	24 000	0.03	0.06
NK 19/20	19	0.7480	27	1.0630	20	0.7874	16 500	3 710	25 500	5 730	20 000	24 000	0.03	0.07
NK 20/16	20	0.7874	28	1.1024	16	0.6299	13 200	2 970	19 300	4 340	19 000	22 000	0.03	0.06
NK 20/20	20	0.7874	28	1.1024	20	0.7874	16 500	3 710	25 500	5 730	19 000	22 000	0.03	0.07
NK 21/16	21	0.8268	29	1.1417	16	0.6299	13 800	3 100	20 400	4 580	19 000	22 000	0.03	0.06
NK 21/20	21	0.8268	29	1.1417	20	0.7874	17 200	3 870	27 000	6 070	19 000	22 000	0.04	0.08

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



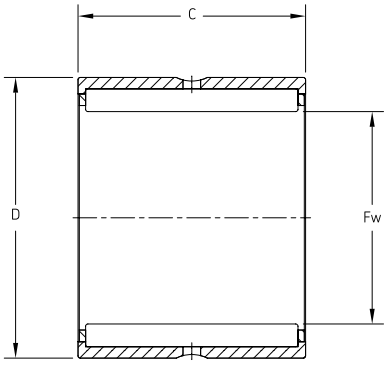
Series NK

Single row
without inner ring
Series: NK 22/16 – NK 45/30 TN
Size: 22 mm – 45 mm
0.8661 in – 1.7717 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
NK 22/16	22	0.8661	30	1.1811	16	0.6299	14 200	3 190	21 600	4 850	18 000	20 000	0.03	0.07
NK 22/20	22	0.8661	30	1.1811	20	0.7874	17 900	4 020	29 000	6 520	18 000	20 000	0.04	0.08
NK 24/16	24	0.9449	32	1.2598	16	0.6299	15 400	3 460	24 500	5 510	16 000	19 000	0.03	0.07
NK 24/20	24	0.9449	32	1.2598	20	0.7874	19 000	4 270	32 500	7 300	16 000	19 000	0.04	0.09
NK 25/16	25	0.9843	33	1.2992	16	0.6299	15 100	3 390	24 500	5 510	16 000	18 000	0.03	0.07
NK 25/20	25	0.9843	33	1.2992	20	0.7874	19 000	4 270	32 500	7 300	16 000	18 000	0.04	0.09
NK 26/16	26	1.0236	34	1.3386	16	0.6299	15 700	3 530	26 000	5 840	15 000	17 000	0.03	0.07
NK 26/20	26	1.0236	34	1.3386	20	0.7874	19 400	4 360	34 500	7 750	15 000	17 000	0.04	0.09
NK 28/20	28	1.1024	37	1.4567	20	0.7874	22 000	4 940	36 500	8 200	14 000	16 000	0.05	0.12
NK 28/30	28	1.1024	37	1.4567	30	1.1811	31 900	7 170	60 000	13 480	14 000	16 000	0.08	0.18
NK 29/30	29	1.1417	38	1.4961	30	1.1811	31 900	7 170	60 000	13 480	14 000	15 000	0.08	0.19
NK 29/20 TN	29	1.1417	38	1.4961	20	0.7874	24 600	5 530	42 500	9 550	14 000	15 000	0.05	0.11
NK 30/20 TN	30	1.1811	40	1.5748	20	0.7874	25 100	5 640	44 000	9 890	13 000	15 000	0.06	0.13
NK 30/30 TN	30	1.1811	40	1.5748	30	1.1811	36 900	8 290	72 000	16 180	13 000	15 000	0.09	0.20
NK 32/30	32	1.2598	42	1.6535	30	1.1811	34 100	7 660	65 500	14 720	12 000	14 000	0.10	0.22
NK 32/20 TN	32	1.2598	42	1.6535	20	0.7874	26 400	5 930	48 000	10 790	12 000	14 000	0.06	0.14
NK 35/20 TN	35	1.3780	45	1.7717	20	0.7874	27 500	6 180	52 000	11 690	11 000	13 000	0.07	0.15
NK 35/30 TN	35	1.3780	45	1.7717	30	1.1811	40 200	9 030	85 000	19 100	11 000	13 000	0.11	0.23
NK 37/20	37	1.4567	47	1.8504	20	0.7874	25 100	5 640	46 500	10 450	11 000	12 000	0.08	0.17
NK 37/30	37	1.4567	47	1.8504	30	1.1811	36 900	8 290	76 500	17 190	11 000	12 000	0.11	0.25
NK 38/20	38	1.4961	48	1.8898	20	0.7874	25 500	5 730	49 000	11 010	11 000	12 000	0.08	0.18
NK 38/30	38	1.4961	48	1.8898	30	1.1811	37 400	8 400	80 000	17 980	11 000	12 000	0.12	0.26
NK 40/30	40	1.5748	50	1.9685	30	1.1811	38 000	8 540	83 000	18 650	10 000	11 000	0.13	0.28
NK 40/20 TN	40	1.5748	50	1.9685	20	0.7874	29 700	6 670	60 000	13 480	10 000	11 000	0.08	0.17
NK 42/20	42	1.6535	52	2.0472	20	0.7874	27 000	6 070	53 000	11 910	9 500	11 000	0.09	0.19
NK 42/30	42	1.6535	52	2.0472	30	1.1811	39 100	8 790	86 500	19 440	9 500	11 000	0.13	0.29
NK 43/20	43	1.6929	53	2.0866	20	0.7874	27 500	6 180	55 000	12 360	9 500	11 000	0.09	0.19
NK 43/30	43	1.6929	53	2.0866	30	1.1811	40 200	9 030	90 000	20 220	9 500	11 000	0.13	0.29
NK 45/20 TN	45	1.7717	55	2.1654	20	0.7874	31 400	7 060	65 500	14 720	9 000	10 000	0.09	0.19
NK 45/30 TN	45	1.7717	55	2.1654	30	1.1811	45 700	10 270	108 000	24 270	9 000	10 000	0.13	0.29

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

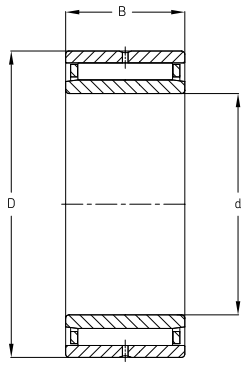
Single row
without inner ring
Series: NK 47/20 – NK 110/40
Size: 47 mm – 110 mm
1.8504 in – 4.3307 in



Series NK

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
NK 47/20	47	1.8504	57	2.2441	20	0.7874	29 200	6 560	61 000	13 710	8 500	10 000	0.09	0.21
NK 47/30	47	1.8504	57	2.2441	30	1.1811	41 800	9 390	98 000	22 020	8 500	10 000	0.14	0.31
NK 50/25 TN	50	1.9685	62	2.4409	25	0.9843	42 900	9 640	91 500	20 560	8 000	9 000	0.15	0.32
NK 50/35 TN	50	1.9685	62	2.4409	35	1.3780	58 300	13 100	137 000	30 790	8 000	9 000	0.21	0.46
NK 55/35	55	2.1654	68	2.6772	35	1.3780	52 300	11 750	122 000	27 420	7 500	8 500	0.25	0.55
NK 55/25	55	2.1654	68	2.6772	25	0.9843	40 200	9 030	88 000	19 780	7 500	8 500	0.18	0.40
NK 60/35	60	2.3622	72	2.8346	35	1.3780	55 000	12 360	134 000	30 110	6 700	7 500	0.26	0.57
NK 60/25 TN	60	2.3622	72	2.8346	25	0.9843	46 800	10 520	110 000	24 720	6 700	7 500	0.17	0.37
NK 65/25	65	2.5591	78	3.0709	25	0.9843	44 000	9 890	104 000	23 370	6 300	7 000	0.22	0.49
NK 65/35	65	2.5591	78	3.0709	35	1.3780	58 300	13 100	146 000	32 810	6 300	7 000	0.31	0.68
NK 68/25	68	2.6772	82	3.2283	25	0.9843	44 000	9 890	95 000	21 350	6 000	6 700	0.24	0.53
NK 68/35	68	2.6772	82	3.2283	35	1.3780	60 500	13 600	146 000	32 810	6 000	6 700	0.34	0.75
NK 70/25	70	2.7559	85	3.3465	25	0.9843	44 600	10 020	98 000	22 020	6 000	6 700	0.26	0.57
NK 70/35	70	2.7559	85	3.3465	35	1.3780	61 600	13 840	150 000	33 710	6 000	6 700	0.37	0.82
NK 73/25	73	2.8740	90	3.5433	25	0.9843	52 800	11 870	106 000	23 820	5 600	6 300	0.30	0.67
NK 73/35	73	2.8740	90	3.5433	35	1.3780	73 700	16 560	163 000	36 630	5 600	6 300	0.43	0.94
NK 75/25	75	2.9528	92	3.6220	25	0.9843	53 900	12 110	110 000	24 720	5 300	6 000	0.32	0.69
NK 75/35	75	2.9528	92	3.6220	35	1.3780	74 800	16 810	170 000	38 200	5 300	6 000	0.45	0.98
NK 80/25	80	3.1496	95	3.7402	25	0.9843	56 100	12 610	127 000	28 540	5 000	5 600	0.30	0.66
NK 80/35	80	3.1496	95	3.7402	35	1.3780	76 500	17 190	190 000	42 700	5 000	5 600	0.43	0.94
NK 85/25	85	3.3465	105	4.1339	25	0.9843	69 300	15 570	132 000	29 660	4 800	5 300	0.43	0.94
NK 85/35	85	3.3465	105	4.1339	35	1.3780	96 800	21 750	200 000	44 940	4 800	5 300	0.60	1.32
NK 90/25	90	3.5433	110	4.3307	25	0.9843	72 100	16 200	140 000	31 460	4 500	5 000	0.45	0.99
NK 90/35	90	3.5433	110	4.3307	35	1.3780	101 000	22 700	216 000	48 540	4 500	5 000	0.63	1.39
NK 95/26	95	3.7402	115	4.5276	26	1.0236	73 700	16 560	146 000	32 810	4 300	4 800	0.49	1.08
NK 95/36	95	3.7402	115	4.5276	36	1.4173	105 000	23 600	232 000	52 100	4 300	4 800	0.68	1.50
NK 100/26	100	3.9370	120	4.7244	26	1.0236	76 500	17 190	156 000	35 060	4 000	4 500	0.52	1.14
NK 100/36	100	3.9370	120	4.7244	36	1.4173	108 000	24 270	250 000	56 200	4 000	4 500	0.72	1.58
NK 105/26	105	4.1339	125	4.9213	26	1.0236	78 100	17 550	166 000	37 300	3 800	4 300	0.54	1.19
NK 105/36	105	4.1339	125	4.9213	36	1.4173	112 000	25 170	265 000	59 600	3 800	4 300	0.71	1.57
NK 110/30	110	4.3307	130	5.1181	30	1.1811	96 800	21 750	220 000	49 440	3 600	4 000	0.65	1.43
NK 110/40	110	4.3307	130	5.1181	40	1.5748	123 000	27 640	305 000	68 500	3 600	4 000	0.83	1.83

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



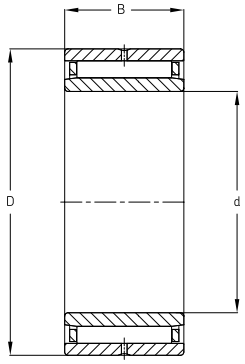
Series NKI

Single row
with inner ring
Series: NKI 5/12 TN – NKI 35/30
Size: 5 mm – 35 mm
0.1969 in – 1.3780 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NKI 5/12 TN	5	0.1969	15	0.5906	12	0.4724	3 800	850	4 250	960	32 000	36 000	0.011	0.03
NKI 5/16 TN	5	0.1969	15	0.5906	16	0.6299	5 010	1 130	5 850	1 310	32 000	36 000	0.015	0.03
NKI 6/12 TN	6	0.2362	16	0.6299	12	0.4724	4 400	990	5 200	1 170	30 000	34 000	0.013	0.03
NKI 6/16 TN	6	0.2362	16	0.6299	16	0.6299	5 720	1 290	7 200	1 620	30 000	34 000	0.017	0.04
NKI 7/12 TN	7	0.2756	17	0.6693	12	0.4724	4 570	1 030	5 700	1 280	28 000	32 000	0.014	0.03
NKI 7/16 TN	7	0.2756	17	0.6693	16	0.6299	5 940	1 330	8 000	1 800	28 000	32 000	0.018	0.04
NKI 9/12	9	0.3543	19	0.7480	12	0.4724	6 710	1 510	8 150	1 830	26 000	30 000	0.017	0.04
NKI 9/16	9	0.3543	19	0.7480	16	0.6299	9 130	2 050	12 000	2 700	26 000	30 000	0.022	0.05
NKI 10/16	10	0.3937	22	0.8661	16	0.6299	10 200	2 290	12 500	2 810	24 000	28 000	0.029	0.06
NKI 10/20	10	0.3937	22	0.8661	20	0.7874	12 800	2 880	16 600	3 730	24 000	28 000	0.037	0.08
NKI 12/16	12	0.4724	24	0.9449	16	0.6299	11 700	2 630	15 300	3 440	22 000	26 000	0.033	0.07
NKI 12/20	12	0.4724	24	0.9449	20	0.7874	14 500	3 260	20 000	4 490	22 000	26 000	0.042	0.09
NKI 15/16	15	0.5906	27	1.0630	16	0.6299	13 400	3 010	19 000	4 270	20 000	24 000	0.039	0.09
NKI 15/20	15	0.5906	27	1.0630	20	0.7874	16 500	3 710	25 500	5 730	20 000	24 000	0.049	0.11
NKI 17/16	17	0.6693	29	1.1417	16	0.6299	13 800	3 100	20 400	4 580	19 000	22 000	0.042	0.09
NKI 17/20	17	0.6693	29	1.1417	20	0.7874	17 200	3 870	27 000	6 070	19 000	22 000	0.053	0.12
NKI 20/16	20	0.7874	32	1.2598	16	0.6299	15 400	3 460	24 500	5 510	16 000	19 000	0.048	0.11
NKI 20/20	20	0.7874	32	1.2598	20	0.7874	19 000	4 270	32 500	7 300	16 000	19 000	0.060	0.13
NKI 22/16	22	0.8661	34	1.3386	16	0.6299	15 700	3 530	26 000	5 840	15 000	17 000	0.052	0.11
NKI 22/20	22	0.8661	34	1.3386	20	0.7874	19 400	4 360	34 500	7 750	15 000	17 000	0.065	0.14
NKI 25/30	25	0.9843	38	1.4961	30	1.1811	31 900	7 170	60 000	13 480	14 000	15 000	0.115	0.25
NKI 25/20 TN	25	0.9843	38	1.4961	20	0.7874	24 600	5 530	42 500	9 550	14 000	15 000	0.080	0.18
NKI 28/30	28	1.1024	42	1.6535	30	1.1811	34 100	7 660	65 500	14 720	12 000	14 000	0.141	0.31
NKI 28/20 TN	28	1.1024	42	1.6535	20	0.7874	26 400	5 930	48 000	10 790	12 000	14 000	0.092	0.20
NKI 30/20 TN	30	1.1811	45	1.7717	20	0.7874	27 500	6 180	52 000	11 690	11 000	13 000	0.112	0.25
NKI 30/30 TN	30	1.1811	45	1.7717	30	1.1811	40 200	9 030	85 000	19 100	11 000	13 000	0.165	0.36
NKI 32/20	32	1.2598	47	1.8504	20	0.7874	25 100	5 640	46 500	10 450	11 000	12 000	0.114	0.25
NKI 32/30	32	1.2598	47	1.8504	30	1.1811	36 900	8 290	76 500	17 190	11 000	12 000	0.173	0.38
NKI 35/20 TN	35	1.3780	50	1.9685	20	0.7874	29 700	6 670	60 000	13 480	10 000	11 000	0.123	0.27
NKI 35/30	35	1.3780	50	1.9685	30	1.1811	38 000	8 540	83 000	18 650	10 000	11 000	0.193	0.43

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

Single row
with inner ring
Series: NKI 38/20 – NKI 100/40
Size: 38 mm – 100 mm
1.4961 in – 3.9370 in

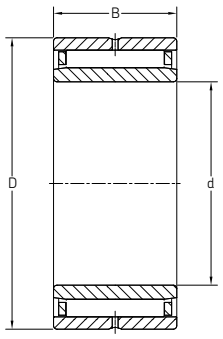


Series NKI

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NKI 38/20	38	1.4961	53	2.0866	20	0.7874	27 500	6 180	55 000	12 360	9 500	11 000	0.132	0.29
NKI 38/30	38	1.4961	53	2.0866	30	1.1811	40 200	9 030	90 000	20 220	9 500	11 000	0.207	0.46
NKI 40/20 TN	40	1.5748	55	2.1654	20	0.7874	31 400	7 060	65 500	14 720	9 000	10 000	0.138	0.30
NKI 40/30 TN	40	1.5748	55	2.1654	30	1.1811	45 700	10 270	108 000	24 270	9 000	10 000	0.216	0.48
NKI 42/20	42	1.6535	57	2.2441	20	0.7874	29 200	6 560	61 000	13 710	8 500	10 000	0.144	0.32
NKI 42/30	42	1.6535	57	2.2441	30	1.1811	41 800	9 390	98 000	22 020	8 500	10 000	0.218	0.48
NKI 45/25 TN	45	1.7717	62	2.4409	25	0.9843	42 900	9 640	91 500	20 560	8 000	9 000	0.220	0.49
NKI 45/35 TN	45	1.7717	62	2.4409	35	1.3780	58 300	13 100	137 000	30 790	8 000	9 000	0.305	0.67
NKI 50/25	50	1.9685	68	2.6772	25	0.9843	40 200	9 030	88 000	19 780	7 500	8 500	0.262	0.58
NKI 50/35	50	1.9685	68	2.6772	35	1.3780	52 300	11 750	122 000	27 420	7 500	8 500	0.364	0.80
NKI 55/35	55	2.1654	72	2.8346	35	1.3780	55 000	12 360	134 000	30 110	6 700	7 500	0.364	0.80
NKI 55/25 TN	55	2.1654	72	2.8346	25	0.9843	46 800	10 520	110 000	24 720	6 700	7 500	0.262	0.58
NKI 60/25	60	2.3622	82	3.2283	25	0.9843	44 000	9 890	95 000	21 350	6 000	6 700	0.394	0.87
NKI 60/35	60	2.3622	82	3.2283	35	1.3780	60 500	13 600	146 000	32 810	6 000	6 700	0.553	1.22
NKI 65/25	65	2.5591	90	3.5433	25	0.9843	52 800	11 870	106 000	23 820	5 600	6 300	0.463	1.02
NKI 65/35	65	2.5591	90	3.5433	35	1.3780	73 700	16 560	163 000	36 630	5 600	6 300	0.659	1.45
NKI 70/25	70	2.7559	95	3.7402	25	0.9843	56 100	12 610	127 000	28 540	5 000	5 600	0.511	1.13
NKI 70/35	70	2.7559	95	3.7402	35	1.3780	76 500	17 190	190 000	42 700	5 000	5 600	0.718	1.58
NKI 75/25	75	2.9528	105	4.1339	25	0.9843	69 300	15 570	132 000	29 660	4 800	5 300	0.641	1.41
NKI 75/35	75	2.9528	105	4.1339	35	1.3780	96 800	21 750	200 000	44 940	4 800	5 300	0.908	2.00
NKI 80/25	80	3.1496	110	4.3307	25	0.9843	72 100	16 200	140 000	31 460	4 500	5 000	0.679	1.50
NKI 80/35	80	3.1496	110	4.3307	35	1.3780	101 000	22 700	216 000	48 540	4 500	5 000	0.956	2.11
NKI 85/26	85	3.3465	115	4.5276	26	1.0236	73 700	16 560	146 000	32 810	4 300	4 800	0.738	1.63
NKI 85/36	85	3.3465	115	4.5276	36	1.4173	105 000	23 600	232 000	52 100	4 300	4 800	1.040	2.29
NKI 90/26	90	3.5433	120	4.7244	26	1.0236	76 500	17 190	156 000	35 060	4 000	4 500	0.777	1.71
NKI 90/36	90	3.5433	120	4.7244	36	1.4173	108 000	24 270	250 000	56 200	4 000	4 500	1.090	2.40
NKI 95/26	95	3.7402	125	4.9213	26	1.0236	78 100	17 550	166 000	37 300	3 800	4 300	0.816	1.80
NKI 95/36	95	3.7402	125	4.9213	36	1.4173	112 000	25 170	265 000	59 600	3 800	4 300	1.145	2.52
NKI 100/30	100	3.9370	130	5.1181	30	1.1811	96 800	21 750	220 000	49 440	3 600	4 000	0.991	2.19
NKI 100/40	100	3.9370	130	5.1181	40	1.5748	123 000	27 640	305 000	68 500	3 600	4 000	1.330	2.93

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

Single row
with inner ring
Series: NKIS 15 – NKIS 65
Size: 15 mm – 65 mm
0.5906 in – 2.5591 in

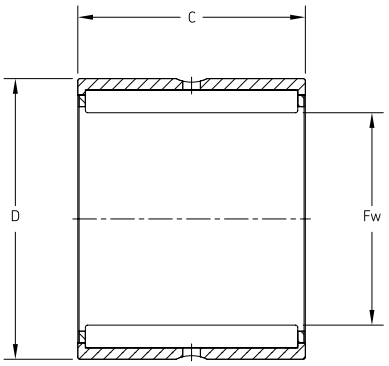


Series NKIS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
NKIS 15	15	0.5906	35	1.3780	20	0.7874	24 600	5 530	30 000	6 740	16 000	19 000	0.092	0.20
NKIS 17	17	0.6693	37	1.4567	20	0.7874	26 000	5 840	33 500	7 530	15 000	17 000	0.098	0.22
NKIS 20	20	0.7874	42	1.6535	20	0.7874	28 600	6 430	39 000	8 760	13 000	15 000	0.129	0.28
NKIS 25	25	0.9843	47	1.8504	22	0.8661	34 100	7 660	46 500	10 450	12 000	13 000	0.162	0.36
NKIS 30	30	1.1811	52	2.0472	22	0.8661	36 900	8 290	54 000	12 130	10 000	12 000	0.184	0.41
NKIS 35	35	1.3780	58	2.2835	22	0.8661	39 100	8 790	61 000	13 710	9 000	10 000	0.220	0.49
NKIS 40	40	1.5748	65	2.5591	22	0.8661	42 900	9 640	72 000	16 180	8 000	9 000	0.281	0.62
NKIS 45	45	1.7717	72	2.8346	22	0.8661	44 600	10 020	78 000	17 530	7 000	8 000	0.336	0.74
NKIS 50	50	1.9685	80	3.1496	28	1.1024	62 700	14 090	104 000	23 370	6 300	7 500	0.518	1.14
NKIS 55	55	2.1654	85	3.3465	28	1.1024	66 000	14 830	114 000	25 620	6 000	6 700	0.558	1.23
NKIS 60	60	2.3622	90	3.5433	28	1.1024	68 200	15 330	120 000	26 970	5 600	6 300	0.560	1.23
NKIS 65	65	2.5591	95	3.7402	28	1.1024	70 400	15 820	132 000	29 660	5 300	6 000	0.641	1.41

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

Single row
without inner ring
Series: NKS 20 – NKS 75
Size: 20 mm – 75 mm
0.7874 in – 2.9528 in

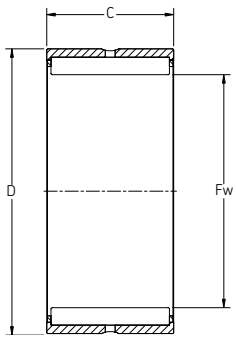


Series NKS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
NKS 20	20	0.7874	32	1.2598	20	0.7874	23 300	5 240	27 000	6 070	18 000	20 000	0.05	0.11
NKS 22	22	0.8661	35	1.3780	20	0.7874	24 600	5 530	30 000	6 740	16 000	19 000	0.06	0.14
NKS 24	24	0.9449	37	1.4567	20	0.7874	26 000	5 840	33 500	7 530	15 000	17 000	0.07	0.14
NKS 25	25	0.9843	38	1.4961	20	0.7874	27 500	6 180	36 000	8 090	15 000	17 000	0.07	0.15
NKS 28	28	1.1024	42	1.6535	20	0.7874	28 600	6 430	39 000	8 760	13 000	15 000	0.08	0.18
NKS 30	30	1.1811	45	1.7717	22	0.8661	31 900	7 170	43 000	9 660	12 000	14 000	0.10	0.23
NKS 32	32	1.2598	47	1.8504	22	0.8661	34 100	7 660	46 500	10 450	12 000	13 000	0.11	0.24
NKS 35	35	1.3780	50	1.9685	22	0.8661	35 200	7 910	50 000	11 240	11 000	12 000	0.12	0.26
NKS 37	37	1.4567	52	2.0472	22	0.8661	36 900	8 290	54 000	12 130	10 000	12 000	0.12	0.27
NKS 40	40	1.5748	55	2.1654	22	0.8661	38 000	8 540	57 000	12 810	9 500	11 000	0.13	0.28
NKS 43	43	1.6929	58	2.2835	22	0.8661	39 100	8 790	61 000	13 710	9 000	10 000	0.14	0.31
NKS 45	45	1.7717	60	2.3622	22	0.8661	40 200	9 030	64 000	14 380	8 500	10 000	0.15	0.32
NKS 50	50	1.9685	65	2.5591	22	0.8661	42 900	9 640	72 000	16 180	8 000	9 000	0.16	0.35
NKS 55	55	2.1654	72	2.8346	22	0.8661	44 600	10 020	78 000	17 530	7 000	8 000	0.22	0.49
NKS 60	60	2.3622	80	3.1496	28	1.1024	62 700	14 090	104 000	23 370	6 300	7 500	0.34	0.74
NKS 65	65	2.5591	85	3.3465	28	1.1024	66 000	14 830	114 000	25 620	6 000	6 700	0.36	0.78
NKS 70	70	2.7559	90	3.5433	28	1.1024	68 200	15 330	120 000	26 970	5 600	6 300	0.38	0.84
NKS 75	75	2.9528	95	3.7402	28	1.1024	70 400	15 820	132 000	29 660	5 300	6 000	0.40	0.89

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

Single row
without inner ring
Series: RNA 4822 – RNA 4876
Size: 120 mm – 415 mm
4.7244 in – 16.3386 in



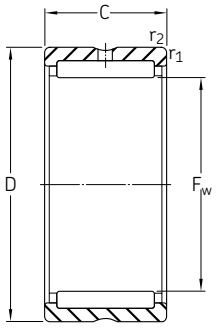
Series RNA 48

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
RNA 4822	120	4.7244	140	5.5118	30	1.1811	93 500	21 010	232 000	52 100	3 400	3 800	0.66	1.46
RNA 4824	130	5.1181	150	5.9055	30	1.1811	99 000	22 250	255 000	57 300	3 200	3 600	0.73	1.61
RNA 4826	145	5.7087	165	6.4961	35	1.3780	119 000	26 740	325 000	73 000	2 800	3 200	0.99	2.18
RNA 4828	155	6.1024	175	6.8898	35	1.3780	121 000	27 190	345 000	77 500	2 600	3 000	0.97	2.14
RNA 4830	165	6.4961	190	7.4803	40	1.5748	147 000	33 030	415 000	93 300	2 400	2 800	1.60	3.53
RNA 4832	175	6.8898	200	7.8740	40	1.5748	157 000	35 280	450 000	101 100	2 200	2 600	1.70	3.75
RNA 4834	185	7.2835	215	8.4646	45	1.7717	179 000	40 220	520 000	116 900	2 200	2 400	2.54	5.60
RNA 4836	195	7.6772	225	8.8583	45	1.7717	190 000	42 700	570 000	128 100	2 000	2 400	2.68	5.91
RNA 4838	210	8.2677	240	9.4488	50	1.9685	220 000	49 440	710 000	159 600	1 900	2 200	3.21	7.08
RNA 4840	220	8.6614	250	9.8425	50	1.9685	224 000	50 300	735 000	165 200	1 800	2 000	3.35	7.39
RNA 4844	240	9.4488	270	10.6299	50	1.9685	238 000	53 500	815 000	183 100	1 700	1 900	3.62	7.98
RNA 4848	265	10.4331	300	11.8110	60	2.3622	347 000	78 000	1 119 999	251 700	1 500	1 700	5.40	11.91
RNA 4852	285	11.2205	320	12.5984	60	2.3622	358 000	80 400	1 199 999	269 700	1 400	1 500	5.80	12.79
RNA 4856	305	12.0079	350	13.7795	69	2.7165	429 000	96 400	1 319 999	296 600	1 300	1 400	9.30	20.51
RNA 4860	330	12.9921	380	14.9606	80	3.1496	594 000	133 500	1 799 999	404 500	1 100	1 300	12.70	28.00
RNA 4864	350	13.7795	400	15.7480	80	3.1496	605 000	136 000	1 899 999	427 000	1 100	1 200	13.40	29.55
RNA 4868	370	14.5669	420	16.5354	80	3.1496	616 000	138 400	1 959 999	440 400	1 000	1 200	14.00	30.87
RNA 4872	390	15.3543	440	17.3228	80	3.1496	627 000	140 900	2 039 999	458 400	950	1 100	14.80	32.63
RNA 4876	415	16.3386	480	18.8976	100	3.9370	968 000	217 500	3 000 000	674 200	900	1 000	26.00	57.33

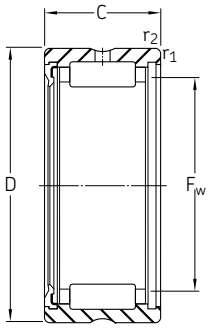
Consult SKF USA Inc. prior to design change or order placement.

Single row
without inner ring
Open and sealed
Series: RNA 49/22 – RNA 49/32
Size: 14 mm – 85 mm
1.1024 in – 1.5748 in

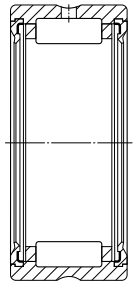
Series: RNA 4900 – RNA 4907 2RS
Size: 14 mm – 42 mm
0.5512 in – 1.6535 in



Series RNA 49



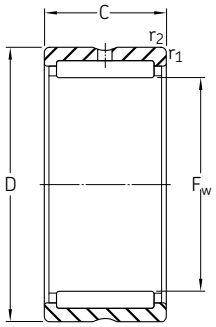
Series RNA 49 RS


Series RNA 2RS

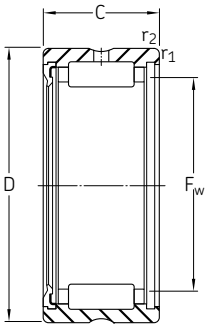
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb
RNA 49/22	28	1.1024	39	1.5354	17	0.6693	23 300	5 240	32 000	7 190	14 000	15 000	0.05	0.11
RNA 49/28	32	1.2598	45	1.7717	17	0.6693	25 100	5 640	36 500	8 200	12 000	14 000	0.07	0.16
RNA 49/32	40	1.5748	52	2.0472	20	0.7874	30 800	6 920	51 000	11 460	10 000	11 000	0.09	0.20
RNA 4900	14	0.5512	22	0.8661	13	0.5118	8 800	1 980	10 400	2 340	24 000	28 000	0.02	0.04
RNA 4900 2RS	14	0.5512	22	0.8661	13	0.5118	7 370	1 660	8 150	1 830	–	12 000	0.02	0.04
RNA 4901	16	0.6299	24	0.9449	13	0.5118	9 900	2 220	12 200	2 740	22 000	26 000	0.02	0.04
RNA 4901 2RS	16	0.6299	24	0.9449	13	0.5118	8 090	1 820	9 650	2 170	–	11 000	0.02	0.04
RNA 4902	20	0.7874	28	1.1024	13	0.5118	11 200	2 520	15 300	3 440	19 000	22 000	0.02	0.05
RNA 4902 2RS	20	0.7874	28	1.1024	13	0.5118	9 130	2 050	12 000	2 700	–	9 500	0.02	0.05
RNA 4903	22	0.8661	30	1.1811	13	0.5118	11 400	2 560	16 300	3 660	18 000	20 000	0.02	0.05
RNA 4903 RS	22	0.8661	30	1.1811	13	0.5118	9 520	2 140	12 900	2 900	–	9 000	0.02	0.05
RNA 4903 2RS	22	0.8661	30	1.1811	13	0.5118	9 520	2 140	12 900	2 900	–	9 000	0.02	0.05
RNA 4904	25	0.9843	37	1.4567	17	0.6693	21 600	4 850	28 000	6 290	15 000	17 000	0.05	0.12
RNA 4904 RS	25	0.9843	37	1.4567	17	0.6693	19 400	4 360	22 400	5 030	–	7 500	0.06	0.12
RNA 4904 2RS	25	0.9843	37	1.4567	17	0.6693	19 400	4 360	22 400	5 030	–	7 500	0.06	0.12
RNA 4905	30	1.1811	42	1.6535	17	0.6693	24 200	5 440	34 500	7 750	13 000	15 000	0.06	0.13
RNA 4905 RS	30	1.1811	42	1.6535	17	0.6693	21 600	4 850	27 500	6 180	–	6 300	0.06	0.13
RNA 4905 2RS	30	1.1811	42	1.6535	17	0.6693	21 600	4 850	27 500	6 180	–	6 300	0.06	0.13
RNA 4906	35	1.3780	47	1.8504	17	0.6693	25 500	5 730	39 000	8 760	11 000	13 000	0.07	0.15
RNA 4906 RS	35	1.3780	47	1.8504	17	0.6693	23 300	5 240	32 000	7 190	–	5 600	0.07	0.15
RNA 4906 2RS	35	1.3780	47	1.8504	17	0.6693	23 300	5 240	32 000	7 190	–	5 600	0.07	0.15
RNA 4907	42	1.6535	55	2.1654	20	0.7874	31 900	7 170	54 000	12 130	9 500	11 000	0.11	0.24
RNA 4907 RS	42	1.6535	55	2.1654	20	0.7874	27 000	6 070	43 000	9 660	–	4 800	0.11	0.24
RNA 4907 2RS	42	1.6535	55	2.1654	20	0.7874	27 000	6 070	43 000	9 660	–	4 800	0.11	0.24

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

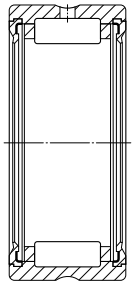
Single row
without inner ring
Open and sealed
Series: RNA 4908 – RNA 4928
Size: 48 mm – 160 mm
1.8898 in – 6.2992 in



Series RNA 49



Series RNA 49 RS

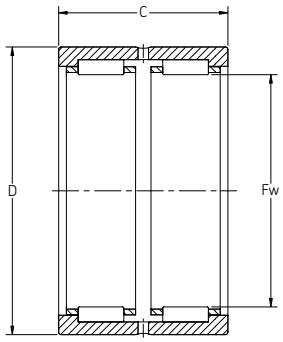

Series RNA 2RS

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
RNA 4908	48	1.8898	62	2.4409	22	0.8661	42 900	9 640	71 000	15 960	8 000	9 500	0.14	0.31
RNA 4908 RS	48	1.8898	62	2.4409	22	0.8661	36 900	8 290	58 500	13 150	–	4 000	0.15	0.34
RNA 4908 2RS	48	1.8898	62	2.4409	22	0.8661	36 900	8 290	58 500	13 150	–	4 000	0.15	0.34
RNA 4909	52	2.0472	68	2.6772	22	0.8661	45 700	10 270	78 000	17 530	7 500	8 500	0.18	0.40
RNA 4909 RS	52	2.0472	68	2.6772	22	0.8661	39 100	8 790	64 000	14 380	–	3 800	0.16	0.35
RNA 4909 2RS	52	2.0472	68	2.6772	22	0.8661	39 100	8 790	64 000	14 380	–	3 800	0.16	0.35
RNA 4910	58	2.2835	72	2.8346	22	0.8661	47 300	10 630	85 000	19 100	7 000	8 000	0.16	0.36
RNA 4910 RS	58	2.2835	72	2.8346	22	0.8661	40 200	9 030	69 500	15 620	–	3 400	0.16	0.35
RNA 4910 2RS	58	2.2835	72	2.8346	22	0.8661	40 200	9 030	69 500	15 620	–	3 400	0.16	0.35
RNA 4911	63	2.4803	80	3.1496	25	0.9843	57 200	12 850	106 000	23 820	6 300	7 000	0.26	0.56
RNA 4912	68	2.6772	85	3.3465	25	0.9843	60 500	13 600	114 000	25 620	6 000	6 700	0.28	0.61
RNA 4913	72	2.8346	90	3.5433	25	0.9843	61 600	13 840	120 000	26 970	5 600	6 300	0.31	0.69
RNA 4914	80	3.1496	100	3.9370	30	1.1811	84 200	18 920	163 000	36 630	5 000	5 600	0.46	1.01
RNA 4915	85	3.3465	105	4.1339	30	1.1811	84 200	18 920	170 000	38 200	4 800	5 300	0.49	1.08
RNA 4916	90	3.5433	110	4.3307	30	1.1811	88 000	19 780	183 000	41 120	4 500	5 000	0.52	1.14
RNA 4917	100	3.9370	120	4.7244	35	1.3780	108 000	24 270	250 000	56 200	4 000	4 500	0.66	1.45
RNA 4918	105	4.1339	125	4.9213	35	1.3780	112 000	25 170	265 000	59 600	3 800	4 300	0.75	1.64
RNA 4919	110	4.3307	130	5.1181	35	1.3780	114 000	25 620	270 000	60 700	3 600	4 000	0.72	1.59
RNA 4920	115	4.5276	140	5.5118	40	1.5748	125 000	28 090	280 000	62 900	3 400	4 000	1.15	2.54
RNA 4922	125	4.9213	150	5.9055	40	1.5748	130 000	29 210	300 000	67 400	3 200	3 600	1.24	2.73
RNA 4924	135	5.3150	165	6.4961	45	1.7717	176 000	39 550	405 000	91 000	3 000	3 400	1.86	4.10
RNA 4926	150	5.9055	180	7.0866	50	1.9685	198 000	44 490	480 000	107 900	2 600	3 000	2.21	4.87
RNA 4928	160	6.2992	190	7.4803	50	1.9685	205 000	46 070	510 000	114 600	2 400	2 800	2.35	5.18

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

Double row
without inner ring
Series: RNA 69/22 – RNA 69/32
Size: 28 mm – 40 mm
1.1024 in – 1.5748 in

Series: RNA 6901 – RNA 6919
Size: 16 mm – 110 mm
0.6299 in – 4.3307 in



Series RNA 69

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore F_w		Outside diameter 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
RNA 69/22	28	1.1024	39	1.5354	30	1.1811	36 900	8 290	57 000	12 810	14 000	15 000	0.10	0.22
RNA 69/28	32	1.2598	45	1.7717	30	1.1811	39 600	8 900	65 500	14 720	12 000	14 000	0.14	0.30
RNA 69/32	40	1.5748	52	2.0472	36	1.4173	47 300	10 630	90 000	20 220	10 000	11 000	0.16	0.36
RNA 6901	16	0.6299	24	0.9449	22	0.8661	16 100	3 620	23 200	5 210	22 000	26 000	0.03	0.07
RNA 6902	20	0.7874	28	1.1024	23	0.9055	17 200	3 870	27 000	6 070	19 000	22 000	0.04	0.09
RNA 6903	22	0.8661	30	1.1811	23	0.9055	18 700	4 200	30 500	6 850	18 000	20 000	0.04	0.09
RNA 6904	25	0.9843	37	1.4567	30	1.1811	35 200	7 910	53 000	11 910	15 000	17 000	0.10	0.22
RNA 6905	30	1.1811	42	1.6535	30	1.1811	38 000	8 540	62 000	13 930	13 000	15 000	0.11	0.25
RNA 6906	35	1.3780	47	1.8504	30	1.1811	42 900	9 640	75 000	16 850	11 000	13 000	0.13	0.28
RNA 6907	42	1.6535	55	2.1654	36	1.4173	48 400	10 880	93 000	20 900	9 500	11 000	0.19	0.43
RNA 6908	48	1.8898	62	2.4409	40	1.5748	67 100	15 080	125 000	28 090	8 000	9 500	0.26	0.56
RNA 6909	52	2.0472	68	2.6772	40	1.5748	70 400	15 820	137 000	30 790	7 500	8 500	0.34	0.75
RNA 6910	58	2.2835	72	2.8346	40	1.5748	73 700	16 560	150 000	33 710	7 000	8 000	0.31	0.68
RNA 6911	63	2.4803	80	3.1496	45	1.7717	89 700	20 160	190 000	42 700	6 300	7 000	0.47	1.04
RNA 6912	68	2.6772	85	3.3465	45	1.7717	93 500	21 010	204 000	45 840	6 000	6 700	0.49	1.08
RNA 6913	72	2.8346	90	3.5433	45	1.7717	95 200	21 390	212 000	47 640	5 600	6 300	0.58	1.28
RNA 6914	80	3.1496	100	3.9370	54	2.1260	128 000	28 760	285 000	64 000	5 000	5 600	0.86	1.89
RNA 6915	85	3.3465	105	4.1339	54	2.1260	130 000	29 210	290 000	65 200	4 800	5 300	0.94	2.06
RNA 6916	90	3.5433	110	4.3307	54	2.1260	134 000	30 110	315 000	70 800	4 500	5 000	0.99	2.18
RNA 6917	100	3.9370	120	4.7244	63	2.4803	165 000	37 080	425 000	95 500	4 000	4 500	1.20	2.65
RNA 6918	105	4.1339	125	4.9213	63	2.4803	172 000	38 650	450 000	101 100	3 800	4 300	1.33	2.93
RNA 6919	110	4.3307	130	5.1181	63	2.4803	172 000	38 650	465 000	104 500	3 600	4 000	1.46	3.22

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

Taper roller bearings (metric series)

32302 B J2 / Q CL7C

1 2 3 4

1. Contact angle:

B	Larger contact angle than standard

2. Internal design:

J2	Pressed steel cage rolling element guided
X	Boundary dimensions changed to conform to ISO standards
DF	Duplex (2) bearings, face-to-face arrangement including 1 outer ring
DB	Duplex (2) bearings, back-to-back arrangement including 1 outer and 1 inner ring spacer
DT	Duplex (2) bearings arranged in tandem with 1 outer ring and 1 inner ring spacer
T...	A number immediately following the T identifies the total width of the matched bearings, arranged back-to-back or tandem
C	Special axial clearance in microns (mean value)

3. Features:

Q	Improved friction torque characteristics and raceway geometry

4. Quality:

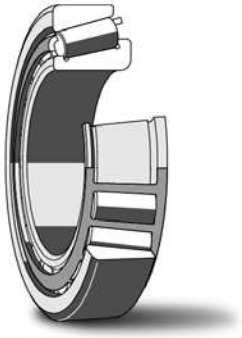
CL7C	Special SKF quality for pinion bearings
W64	Solid Oil lubricants

* QCL7A is now QCL7C.

Introduction

Technical features

Boundary dimensions	In accordance with ISO 355-2007
Tolerances	ISO-Normal
Heat stabilization	302° F (150° C)
Misalignment (under heavy load conditions)	2-4 minutes of arc (logarithmic profile rollers)
Cage Material	
Standard	Steel
Optional	None
Axial load – max	Contact SKF Applications Engineering
Seals	Not available



Single row
Taper roller bearing
(data tables on page 232)

Paired single row
Taper roller bearing
(data tables on page 242)

Introduction

Taper roller bearings have tapered inner and outer ring raceways between which tapered rollers are arranged. If extended, the tapered surfaces converge towards a single point on the bearing axis. This means that rolling conditions are at an optimum.

Their design makes taper roller bearings particularly suitable for the accommodation of combined (radial and axial) loads. The axial load carrying capacity of the bearings is largely determined by the contact angle a, which corresponds to the angle of the outer ring raceway. The larger this angle, the larger the axial load carrying capacity. Taper roller bearings are generally of separable design; for example, the inner ring with roller and cage assembly forms a unit which can be mounted separately from the outer ring.

Single row taper roller bearings are able to accommodate axial loads acting in one direction only. Under radial loads, an axial force is produced in the bearing which must be counteracted. Therefore, it is customary for the single row taper roller bearings to be adjusted against a second taper roller bearing.

SKF manufactures single and double row taper roller bearings with metric dimensions. The single row bearings listed in the following product tables are the most prevalent. Double row taper roller bearings are also included in this catalog.

Basic design

Single row taper roller bearings

Continuous improvements made to SKF taper roller bearings resulted in the latest state of the art design known as the TQ-line (suffix Q). The sliding surfaces of the inner ring guide flange and the roller ends have been redesigned to enable lubricant feed to the roller end / flange contacts to be enhanced and lubricant film formation in the contacts to be considerably improved. The contact geometry between rollers and raceways has also been markedly improved by the "logarithmic" profile, which provides for optimum stress distribution in the bearing. Optimized raceway surfaces promote lubricant film formation and correct motion of the rollers. These improvements have considerably enhanced the performance of SKF taper roller bearings.

Metric bearings

When the current international standard (ISO 355-1977) was prepared, new designations were devised for the Dimension series, and consequently, for the bearings.

However, since changes in bearing designations cause difficulties, and if introduced would necessitate the alteration of drawings, part lists, etc., both by producer and user, it was decided that the SKF designations for those bearings, which were in accordance with the earlier ISO/R 355 as well as the new standard, would be retained. New designations comprising the three symbols of the series designation to ISO, prefixed by the letter T and followed by a three-figure identification of the bore diameter in mm were adopted only for the bearing sizes, which were new to the ISO 355-1977 standard; for example, T2ED 045.

SKF Explorer class bearings

High performance taper roller bearings in the SKF Explorer performance class are printed in blue in the product tables. The higher performance of SKF Explorer bearings retain the designation of the earlier standard bearings, e.g. 32010 X/Q. However, each bearing and its box are marked with the name "SKF Explorer".

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

Product highlights

Suitable for heavy loads

Taper roller bearings are designed for heavy combined axial and radial loads.

Offer longer life and higher reliability

SKF's latest state-of-the-art taper roller bearing design is less sensitive to misalignment (up to two minutes of arc) and offers long life, high reliability and low operating temperatures.

CL7C design offers high running accuracy and low friction torque

These taper roller bearings operate under full load without any running-in risk or temperature peaks.

Large product assortment

Available in a wide range of sizes including 15 to 320 mm inside diameter.

Quiet running

The outstanding running and dimensional accuracy allows for extremely silent running conditions.

Application flexibility

Depending on application needs, SKF has the possibility to provide either case-carburized or thru-hardened in some sizes. Typical applications are gearboxes, construction equipment, wheel hubs, and mining bulk conveyors.

Introduction

Paired single row taper roller bearings

For bearing arrangements where the load carrying capacity of a single bearing is inadequate or where the shaft has to be located in both directions with a given axial play, SKF can supply single row taper roller bearings as ready-to-mount matched pairs.

Matched pairs of single row taper roller bearings enable economic designs of bearing arrangement to be made and can be supplied by SKF in the arrangements shown in **(Figure 1)**. However, the use of the paired bearings in face-to-face arrangements shown in the product tables on pages 242-246, which represent the range currently produced, is recommended. Other sets of bearings arranged face-to-face as well as bearing sets arranged back-to-back or in tandem can be supplied to order if the quantities required are economic.

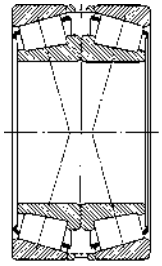
Where only a few sets are required it is recommended that they be matched by the user, following the instructions given in the SKF Rolling bearings catalog 17000 EN.

Matched pairs of bearings arranged face-to-face are simple in design and easily produced as they consist of two bearings with an intermediate ring between the two outer rings. The load lines of bearings arranged face-to-face converge towards the bearing axis. Axial loads can be accommodated in both directions, although only by one bearing at a time.

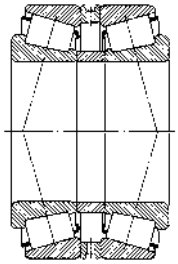
Where the bearing set has a back-to-back arrangement, two intermediate rings are needed: one between the outer rings and one between the inner rings. Such sets are therefore more expensive to produce. In a back-to-back arrangement, the load lines of the bearings diverge towards the bearing axis, so that such bearing arrangements are relatively stiff and can accommodate tilting moments. Axial loads can again be accommodated in both directions as for the face-to-face arrangement.

Sets of bearings arranged in tandem also call for the use of two intermediate rings (one between the inner and one between the outer rings) but such sets are seldom required. The load lines of bearings arranged in tandem are parallel to each other so that radial and axial loads are equally distributed over the bearing pair. Axial loads can only be taken up in one direction and the pair is usually adjusted against a third bearing, which can take axial loads acting in the opposite direction.

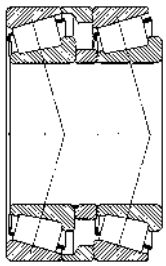
Figure 1



Face-to-face arrangement
(Suffix DF)



Back-to-back arrangement
(Suffix DB)



Tandem arrangement
(Suffix DT)

Variations

CL7C design

Bearings to the CL7C specifications require no running-in and a hydrodynamic lubricant film is able to form in the roller end / flange so that their friction torque almost from the start of operation is as low as that of normal bearings after running-in. The bearings can be adjusted using the preload force / preload path procedures as well as the friction torque, as described in the SKF Rolling bearings catalog 17000 EN.

Further information on CL7C design bearings can be supplied on request.

Four-row tapered roller bearings

Four-row tapered roller bearings are used in extremely heavy applications. Consult SKF Applications Engineering for further details.

Metric bearing tolerances

SKF single row metric taper roller bearings are manufactured to Normal tolerances as standard. Some bearings are also available with higher accuracy – in particular those of series 320 X, T4CB and T4DB. Consult SKF Applications Engineering for further details.

Inch series

SKF manufactures a limited assortment of these bearings. Consult SKF USA Inc. prior to design or ordering.

Internal clearance

Axial internal clearance – single row

The internal clearance of single row taper roller bearings can only be obtained after mounting and is determined by adjustment of the bearing against a second bearing which provides location in the opposite direction. Further details will be found in the SKF Rolling bearings catalog 17000 EN.

Axial internal clearance – paired tapered roller bearings

The axial internal clearance of paired single row taper roller bearings is determined by the intermediate rings between the two bearings of the matched pair. The bearing pairs shown in the bearing tables are produced with the standard bearing clearance shown in Table 1. The values apply to bearings before they are mounted and under measuring loads of

- 100 N for bearings with an outside diameter $D \leq 90$ mm
- 300 N for bearings with an outside diameter $90 < D \leq 240$ mm
- 500 N for bearings with an outside diameter $D > 240$ mm

Matched bearing sets having a clearance other than the standard value are identified by the designation suffix C followed by a two-or three-figure number, which gives the mean axial clearance in µm. The range of the special clearance is, however, the same as for the standard clearance; for example, for the bearing set designated 32048 X / DFC205, having a mean axial clearance of 205 µm, the clearance limits are 175 and 235 µm since the range from the table below for a 320X series bearing with 240 mm bore is 500 - 440 = 60 µm.

Loads

Equivalent dynamic bearing load for single row taper roller bearings

$P = F_r$ where $F_a / F_r \leq e$

$P = 0.4\ F_r + YF_a$ where $F_a / F_r > e$

The values of factors e and Y will be found in the bearing tables for each individual bearing.

Because the raceways are at an angle to the bearing axis, when taper roller bearings are subjected to a radial load, an axial force is induced within the bearing. This must be considered when calculating the equivalent dynamic bearing load. All the requisite equations for the various bearing arrangements and load cases are given on the following page. These are only valid if the bearings are adjusted against each other to give zero clearance in operation, but are without preload. Values for the axial load factor Y for bearings can be found in the bearing tables.

Equivalent dynamic bearing load for bearings arranged in either face-to-face or back-to-back assemblies.

$P = F_r + Y_1 F_a$ where $F_a / F_r \leq e$

$P = 0.67\ F_r + Y_2 F_a$ where $F_a / F_r > e$

F_r and F_a are the forces acting on the bearing pair. Values of the factors e, Y_1 and Y_2 are given for each bearing pair on the SKF website.

Information regarding the calculation of the equivalent load for sets of bearings arranged back-to-back or in tandem will be found in the SKF Rolling bearings catalog 17000 EN.

Table 1

Total width tolerances of matched single row metric taper roller bearings

Bore diameter d		Total width tolerance Δ_{TsD} of matched bearings of series											
		329		320		330		331, 302, 322, 332		303, 323		313	
over	incl.	high	low	high	low	high	low	high	low	high	low	high	low
mm		µm											
–	30	–	–	+550	+100	–	–	+550	+100	+600	+150	+500	+50
30	40	–	–	+550	+100	–	–	+600	+150	+600	+150	+550	+50
40	50	–	–	+600	+150	–	–	+600	+200	+600	+200	+550	+50
50	65	–	–	+600	+150	–	–	+600	+200	+650	+200	+550	+100
65	80	–	–	+600	+200	–	–	+650	+200	+700	+200	+600	+100
80	100	+750	-150	+650	-250	+800	-50	+700	-200	+700	-100	+600	-300
100	120	+750	-150	+700	-200	+800	-100	+700	-200	+750	-150	+600	-300
120	140	+1 100	-200	+1 000	-300	+1 100	-200	+1 000	-300	+1 100	-200	+950	-350
140	160	+1 150	-150	+1 050	-250	+1 100	-200	+1 050	-250	+1 150	-150	+950	-350
160	180	+1 150	-150	+1 100	-200	–	–	+1 100	-200	+1 150	-150	–	–
180	190	+1 150	-150	+1 100	-200	–	–	+1 100	-200	+1 200	-100	–	–
190	200	+1 150	-150	+1 100	-200	–	–	+1 100	-200	+1 200	-100	–	–
200	225	+1 200	-100	+1 150	-150	–	–	+1 150	-150	+1 250	-50	–	
225	250	+1 200	-100	+1 200	-100	–	–	+1 200	-100	+1 300	0	–	–
250	280	+1 300	0	+1 250	-50	–	–	+1 250	-50	–	–	–	–
280	300	+1 400	+100	+1 300	0	–	–	+1 300	0	–	–	–	–
300	315	+1 400	+100	+1 350	+50	–	–	+1 350	+50	–	–	–	–
315	340	+1 500	-200	+1 450	-250	–	–	+1 450	+200				

Axial internal clearance of matched single row metric taper roller bearings

Bore diameter d		Axial internal clearance of matched bearings of series											
		329		320		330		331, 302, 322, 332		303, 323		313	
over	incl.	min	max	min	max	min	max	min	max	min	max	min	max
mm		µm											
–	30	–	–	80	120	–	–	100	140	130	170	60	100
30	40	–	–	100	140	–	–	120	160	140	180	70	110
40	50	–	–	120	160	180	220	140	180	160	200	80	120
50	65	–	–	140	180	200	240	160	200	180	220	100	140
65	80	–	–	160	200	250	290	180	220	200	260	110	170
80	100	270	310	190	230	350	390	210	270	240	300	110	170
100	120	270	330	220	280	340	400	220	280	280	340	130	190
120	140	310	370	240	300	340	400	240	300	330	390	160	220
140	160	370	430	270	330	340	400	270	330	370	430	180	240
160	180	370	430	310	370	–	–	310	370	390	450	–	–
180	190	370	430	340	400	–	–	340	400	440	500	–	–
190	200	390	450	340	400	–	–	340	400	440	500	–	–
200	225	440	500	390	450	–	–	390	450	490	550	–	–
225	250	440	500	440	500	–	–	440	500	540	600	–	–
250	280	540	600	490	550	–	–	490	550	–	–	–	–
280	300	640	700	540	600	–	–	540	600	–	–	–	–
300	340	640	700	590	650	–	–	590	650				

Note: To convert values to inches, multiply "µm" x 0.00004.

Minimum load

In order to guarantee the satisfactory operation of all ball and roller bearings, they must always be subjected to a given minimum load. This is also true of taper 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 found on the SKF website Frequency vibration data is available on the SKF website **skfusa.com.** Select Engineering Tools under the Support menu. Or contact 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 by increasing belt tension or similar means.

Frequency vibration data

Frequency vibration data is available on the SKF website **skfusa.com.** Select Engineering Tools under the Support menu. Or contact SKF Applications Engineering.

Design of bearing arrangements

When designing bearing arrangements incorporating single row taper roller bearings, it is necessary to consider the special characteristics of these bearings. Because of their internal design, they cannot be used singly and a second bearing is required, or alternatively a paired set (**Figure 1**, page 228) may be used.

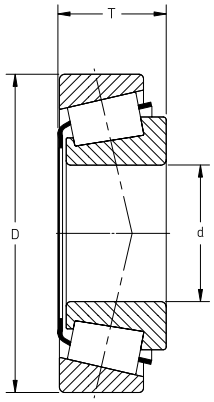
Where the arrangement comprises two single row taper roller bearings, they must be adjusted against each other until the desired operational clearance or requisite preload is achieved.

A correctly dimensioned operational clearance or preload is vital to the correct performance of single row taper roller bearings and also to the operational reliability of the bearing arrangement. If the operational clearance is too great, then the full load carrying capacity of the bearing will not be exploited and if the preload is too large then frictional losses will be greater, the operating temperature higher and the life shorter.

Single row

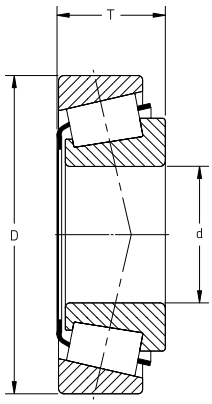
Standard and SKF Explorer

Series: 30202 – 30248
Size: 15 mm – 240 mm
0.5906 in – 9.4488 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
30202	15	0.5906	35	1.3780	11.75	0.4626	18500	4160	14600	3280	17000	20000	0.1	0.1	0.10	1.70
30203	17	0.6693	40	1.5748	13.25	0.5217	23400	5260	18600	4180	15000	18000	0.1	0.2	0.35	1.70
30204	20	0.7874	47	1.8504	15.25	0.6004	34100	7660	28000	6290	12000	15000	0.1	0.3	0.35	1.70
30205	25	0.9843	52	2.0472	16.25	0.6398	38100	8560	33500	7530	11000	13000	0.2	0.3	0.37	1.60
30 2/28	28	1.1024	58	2.2835	17.25	0.6791	46600	10470	41500	9330	10000	12000	0.2	0.4	0.37	1.60
30206	30	1.1811	62	2.4409	17.25	0.6791	50000	11240	44000	9890	9000	11000	0.2	0.5	0.37	1.60
30207	35	1.3780	72	2.8346	18.25	0.7185	63200	14200	56000	12580	8000	9500	0.3	0.7	0.37	1.60
30208	40	1.5748	80	3.1496	19.75	0.7776	75800	17030	68000	15280	7000	8500	0.4	0.9	0.37	1.60
30209	45	1.7717	85	3.3465	20.75	0.8169	81600	18340	76500	17190	6300	8000	0.5	1.0	0.40	1.50
30210	50	1.9685	90	3.5433	21.75	0.8563	93100	20920	91500	20560	6000	7500	0.5	1.2	0.43	1.40
30211	55	2.1654	100	3.9370	22.75	0.8957	111000	24940	106000	23820	5300	6700	0.7	1.5	0.40	1.50
30212	60	2.3622	110	4.3307	23.75	0.9350	120000	26970	114000	25620	5000	6000	0.9	1.9	0.40	1.50
30213	65	2.5591	120	4.7244	24.75	0.9744	141000	31690	134000	30110	4500	5600	1.1	2.5	0.40	1.50
30214	70	2.7559	125	4.9213	26.25	1.0335	155000	34830	156000	35060	4300	5300	1.2	2.7	0.43	1.40
30215	75	2.9528	130	5.1181	27.25	1.0728	171000	38430	176000	39550	4000	5000	1.4	3.0	0.43	1.40
30216	80	3.1496	140	5.5118	28.25	1.1122	184000	41350	183000	41120	3800	4800	1.6	3.6	0.43	1.40
30217	85	3.3465	150	5.9055	30.50	1.2008	216000	48540	220000	49440	3600	4300	2.0	4.5	0.43	1.40
30218	90	3.5433	160	6.2992	32.50	1.2795	240000	53900	245000	55100	3400	4000	2.5	5.6	0.43	1.40
30219	95	3.7402	170	6.6929	34.50	1.3583	266000	59800	275000	61800	3200	3800	3.0	6.6	0.43	1.40
30220	100	3.9370	180	7.0866	37.00	1.4567	304000	68300	320000	71900	3000	3600	3.6	8.0	0.43	1.40
30221	105	4.1339	190	7.4803	39.00	1.5354	333000	74800	355000	79800	2800	3400	4.3	9.5	0.43	1.40
30222	110	4.3307	200	7.8740	41.00	1.6142	376000	84500	405000	91000	2600	3200	5.1	11.2	0.43	1.40
30224	120	4.7244	215	8.4646	43.50	1.7126	417000	93700	465000	104500	2400	3000	6.1	13.5	0.43	1.40
30226	130	5.1181	230	9.0551	43.75	1.7224	451000	101300	490000	110100	2200	2800	6.8	15.1	0.43	1.40
30228	140	5.5118	250	9.8425	45.75	1.8012	451000	101300	570000	128100	1900	2600	8.7	19.2	0.43	1.40
30230	150	5.9055	270	10.6299	49.00	1.9291	455000	102200	560000	125800	1800	2400	10.6	23.4	0.43	1.40
30232	160	6.2992	290	11.4173	52.00	2.0472	566000	127200	735000	165200	1600	2200	13.2	29.1	0.43	1.40
30234	170	6.6929	310	12.2047	57.00	2.2441	657000	147600	865000	194400	1500	2000	16.6	36.6	0.43	1.40
30236	180	7.0866	320	12.5984	57.00	2.2441	629000	141300	815000	183100	1500	2000	17.0	37.5	0.46	1.30
30238	190	7.4803	340	13.3858	60.00	2.3622	763000	171500	1000000	224700	1400	1800	20.5	45.3	0.43	1.40
30240	200	7.8740	360	14.1732	64.00	2.5197	845000	189900	1120000	251700	1300	1700	24.6	54.3	0.43	1.40
30244	220	8.6614	400	15.7480	72.00	2.8346	1059000	238000	1400000	314600	1200	1600	34.4	75.9	0.43	1.40
30248	240	9.4488	440	17.3228	79.00	3.1102	1300000	292100	1760000	395500	1000	1400	47.0	103.6	0.43	1.40

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



Single row

Standard and SKF Explorer

Series: 30302 – 30334
Size: 15 mm – 170 mm
0.5906 in – 6.6929 in

Series: 31305 – 31310
Size: 25 mm – 50 mm
0.9843 in – 1.9685 in

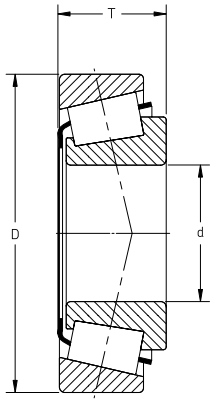
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Calculation factors	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
30302	15	0.5906	42	1.6535	14.25	0.5610	27700	6220	20000	4490	15000	18000	0.1	0.2	0.28	2.10
30303	17	0.6693	47	1.8504	15.25	0.6004	34200	7690	25000	5620	13000	16000	0.1	0.3	0.28	2.10
30304	20	0.7874	52	2.0472	16.25	0.6398	41900	9420	32500	7300	12000	14000	0.2	0.4	0.30	2.00
30305	25	0.9843	62	2.4409	18.25	0.7185	55300	12430	43000	9660	9500	12000	0.3	0.6	0.30	2.00
30306	30	1.1811	72	2.8346	20.75	0.8169	69200	15550	56000	12580	8000	10000	0.4	0.8	0.31	1.90
30307	35	1.3780	80	3.1496	22.75	0.8957	88900	19980	73500	16520	7500	9000	0.5	1.1	0.31	1.90
30308	40	1.5748	90	3.5433	25.25	0.9941	106000	23820	95000	21350	6300	8000	0.7	1.6	0.35	1.70
30309	45	1.7717	100	3.9370	27.25	1.0728	132000	29660	120000	26970	5600	7000	1.0	2.1	0.35	1.70
30310	50	1.9685	110	4.3307	29.25	1.1516	154000	34610	140000	31460	5300	6300	1.2	2.7	0.35	1.70
30311	55	2.1654	120	4.7244	31.50	1.2402	176000	39550	163000	36630	4800	5600	1.6	3.4	0.35	1.70
30312	60	2.3622	130	5.1181	33.50	1.3189	208000	46740	196000	44040	4300	5300	2.0	4.3	0.35	1.70
30313	65	2.5591	140	5.5118	36.00	1.4173	240000	53900	228000	51200	4000	4800	2.4	5.3	0.35	1.70
30314	70	2.7559	150	5.9055	38.00	1.4961	271000	60900	260000	58400	3800	4500	2.9	6.5	0.35	1.70
30315	75	2.9528	160	6.2992	40.00	1.5748	301000	67600	290000	65200	3400	4300	3.5	7.7	0.35	1.70
30316	80	3.1496	170	6.6929	42.50	1.6732	333000	74800	320000	71900	3200	4000	4.1	9.1	0.35	1.70
30317	85	3.3465	180	7.0866	44.50	1.7520	372000	83600	365000	82000	3000	3800	4.8	10.7	0.35	1.70
30318	90	3.5433	190	7.4803	46.50	1.8307	353000	79300	400000	89900	2600	3600	5.6	12.4	0.35	1.70
30319	95	3.7402	200	7.8740	49.50	1.9488	353000	79300	390000	87600	2600	3400	6.5	14.2	0.35	1.70
30320	100	3.9370	215	8.4646	51.50	2.0276	431000	96900	490000	110100	2400	3200	8.0	17.5	0.35	1.70
30321	105	4.1339	225	8.8583	53.50	2.1063	462000	103800	530000	119100	2200	3000	9.1	20.0	0.35	1.70
30322	110	4.3307	240	9.4488	54.50	2.1457	507000	113900	585000	131500	2200	2800	10.8	23.8	0.35	1.70
30324	120	4.7244	260	10.2362	59.50	2.3425	601000	135100	710000	159600	2000	2600	13.7	30.2	0.35	1.70
30326	130	5.1181	280	11.0236	63.75	2.5098	679000	152600	800000	179800	1800	2400	16.8	37.1	0.35	1.70
30328	140	5.5118	300	11.8110	67.75	2.6673	787000	176900	950000	213500	1700	2200	20.7	45.6	0.35	1.70
30330	150	5.9055	320	12.5984	72.00	2.8346	879000	197500	1060000	238200	1600	2000	24.8	54.6	0.35	1.70
30332	160	6.2992	340	13.3858	75.00	2.9528	970000	218000	1180000	265200	1500	2000	28.9	63.7	0.35	1.70
30334	170	6.6929	360	14.1732	80.00	3.1496	1103000	247900	1340000	301100	1400	1800	34.7	76.6	0.35	1.70
31305	25	0.9843	62	2.4409	18.25	0.7185	46600	10470	40000	8990	8500	11000	0.3	0.6	0.83	0.72
31306	30	1.1811	72	2.8346	20.75	0.8169	58300	13100	50000	11240	7500	9500	0.4	0.9	0.83	0.72
31307	35	1.3780	80	3.1496	22.75	0.8957	75400	16940	67000	15060	6300	8500	0.5	1.1	0.83	0.72
31308	40	1.5748	90	3.5433	25.25	0.9941	91100	20470	81500	18310	5600	7500	0.7	1.6	0.83	0.72
31309	45	1.7717	100	3.9370	27.25	1.0728	113000	25390	102000	22920	5000	6700	1.0	2.1	0.83	0.72
31310	50	1.9685	110	4.3307	29.25	1.1516	131000	29440	120000	26970	4500	6000	1.2	2.7	0.83	0.72

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

Single row

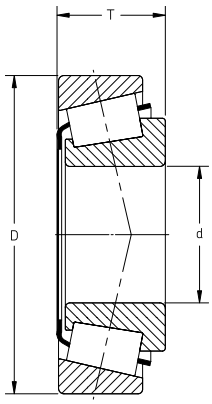
Standard and SKF Explorer
Series: 31311 – 31330 X
Size: 55 mm – 150 mm
2.1654 in – 5.9055 in

Series: 320/22 X – 32018 X
Size: 22 mm – 90 mm
0.8661 in – 3.5433 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
31311	55	2.1654	120	4.7244	31.50	1.2402	149000	33480	137000	30790	4300	5600	1.5	3.4	0.83	0.72
31312	60	2.3622	130	5.1181	33.50	1.3189	177000	39780	166000	37300	3800	5300	1.9	4.2	0.83	0.72
31313	65	2.5591	140	5.5118	36.00	1.4173	203000	45620	193000	43370	3600	4800	2.4	5.2	0.83	0.72
31314	70	2.7559	150	5.9055	38.00	1.4961	229000	51500	220000	49440	3400	4500	2.9	6.3	0.83	0.72
31315	75	2.9528	160	6.2992	40.00	1.5748	255000	57300	245000	55100	3200	4300	3.4	7.5	0.83	0.72
31316	80	3.1496	170	6.6929	42.50	1.6732	276000	62000	265000	59600	3000	4000	4.1	8.9	0.83	0.72
31317	85	3.3465	180	7.0866	44.50	1.7520	297000	66700	285000	64000	2800	3800	4.6	10.2	0.83	0.72
31318	90	3.5433	190	7.4803	46.50	1.8307	283000	63600	315000	70800	2400	3400	5.4	11.9	0.83	0.72
31319	95	3.7402	200	7.8740	49.50	1.9488	314000	70600	355000	79800	2400	3400	6.3	13.9	0.83	0.72
31320 X	100	3.9370	215	8.4646	56.50	2.2244	399000	89700	465000	104500	2200	3000	8.6	19.0	0.83	0.72
31321 X	105	4.1339	225	8.8583	58.00	2.2835	429000	96400	500000	112400	2000	3000	9.6	21.3	0.83	0.72
31322 X	110	4.3307	240	9.4488	63.00	2.4803	491000	110300	585000	131500	1900	2800	12.0	26.4	0.83	0.72
31324 X	120	4.7244	260	10.2362	68.00	2.6772	578000	129900	695000	156200	1700	2400	15.3	33.7	0.83	0.72
31326 X	130	5.1181	280	11.0236	72.00	2.8346	647000	145400	780000	175300	1600	2400	18.5	40.7	0.83	0.72
31328 X	140	5.5118	300	11.8110	77.00	3.0315	737000	165600	900000	202200	1500	2200	22.6	49.9	0.83	0.72
31330 X	150	5.9055	320	12.5984	82.00	3.2283	832000	187000	1020000	229200	1400	2000	27.2	59.9	0.83	0.72
320/22 X	22	0.8661	44	1.7323	15.00	0.5906	30900	6940	29000	6520	13000	15000	0.1	0.2	0.40	1.50
320/28 X	28	1.1024	52	2.0472	16.00	0.6299	39000	8760	38000	8540	10000	13000	0.1	0.3	0.43	1.40
320/32 X	32	1.2598	58	2.2835	17.00	0.6693	45100	10130	46500	10450	9000	11000	0.2	0.4	0.46	1.30
32004 X	20	0.7874	42	1.6535	15.00	0.5906	29700	6670	27000	6070	13000	16000	0.1	0.2	0.37	1.60
32005 X	25	0.9843	47	1.8504	15.00	0.5906	33200	7460	32500	7300	12000	14000	0.1	0.3	0.43	1.40
32006 X	30	1.1811	55	2.1654	17.00	0.6693	43900	9870	44000	9890	10000	12000	0.2	0.4	0.43	1.40
32007 X	35	1.3780	62	2.4409	18.00	0.7087	52300	11750	54000	12130	8500	10000	0.2	0.5	0.46	1.30
32008 X	40	1.5748	68	2.6772	19.00	0.7480	64700	14540	71000	15960	7500	9500	0.3	0.6	0.37	1.60
32009 X	45	1.7717	75	2.9528	20.00	0.7874	71700	16110	80000	17980	7000	8500	0.3	0.8	0.40	1.50
32010 X	50	1.9685	80	3.1496	20.00	0.7874	75100	16880	88000	19780	6300	8000	0.4	0.8	0.43	1.40
32011 X	55	2.1654	90	3.5433	23.00	0.9055	99400	22340	116000	26070	5600	7000	0.6	1.2	0.40	1.50
32012 X	60	2.3622	95	3.7402	23.00	0.9055	101000	22700	122000	27420	5300	6700	0.6	1.3	0.43	1.40
32013 X	65	2.5591	100	3.9370	23.00	0.9055	103000	23150	127000	28540	5000	6000	0.6	1.4	0.46	1.30
32014 X	70	2.7559	110	4.3307	25.00	0.9843	125000	28090	153000	34380	4500	5600	0.9	1.9	0.43	1.40
32015 X	75	2.9528	115	4.5276	25.00	0.9843	130000	29210	163000	36630	4300	5300	0.9	2.0	0.46	1.30
32016 X	80	3.1496	125	4.9213	29.00	1.1417	168000	37750	216000	48540	4000	5000	1.3	2.9	0.43	1.40
32017 X	85	3.3465	130	5.1181	29.00	1.1417	171000	38430	224000	50300	3800	4800	1.4	3.0	0.44	1.35
32018 X	90	3.5433	140	5.5118	32.00	1.2598	208000	46740	270000	60700	3600	4300	1.8	3.9	0.43	1.40

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



Single row

Standard and SKF Explorer

Series: 32004 X – 32064 X
Size: 95 mm – 320 mm
3.7402 in – 12.5984in

Series: 32205 – 32219
Size: 25 mm – 95 mm
0.9843 in – 3.7402 in

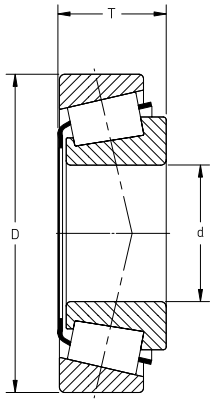
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Calculation factors	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
32019 X	95	3.7402	145	5.7087	32.00	1.2598	206000	46290	270000	60700	3400	4300	1.8	4.1	0.44	1.35
32020 X	100	3.9370	150	5.9055	32.00	1.2598	209000	46970	280000	62900	3200	4000	1.9	4.2	0.46	1.30
32021 X	105	4.1339	160	6.2992	35.00	1.3780	248000	55700	335000	75300	3200	3800	2.4	5.4	0.44	1.35
32022 X	110	4.3307	170	6.6929	38.00	1.4961	288000	64700	390000	87600	3000	3600	3.1	6.8	0.43	1.40
32024 X	120	4.7244	180	7.0866	38.00	1.4961	299000	67200	415000	93300	2800	3400	3.3	7.3	0.46	1.30
32026 X	130	5.1181	200	7.8740	45.00	1.7717	388000	87200	540000	121300	2400	3000	4.9	10.9	0.43	1.40
32028 X	140	5.5118	210	8.2677	45.00	1.7717	404000	90800	585000	131500	2400	2800	5.3	11.6	0.46	1.30
32030 X	150	5.9055	225	8.8583	48.00	1.8898	456000	102500	655000	147200	2200	2600	6.4	14.1	0.46	1.30
32032 X	160	6.2992	240	9.4488	51.00	2.0079	532000	119600	780000	175300	2000	2400	7.8	17.2	0.46	1.30
32034 X	170	6.6929	260	10.2362	57.00	2.2441	625000	140400	915000	205600	1900	2200	10.5	23.2	0.44	1.35
32036 X	180	7.0866	280	11.0236	64.00	2.5197	793000	178200	1160000	260700	1700	2200	14.2	31.3	0.43	1.40
32038 X	190	7.4803	290	11.4173	64.00	2.5197	806000	181100	1200000	269700	1600	2000	14.8	32.5	0.44	1.35
32040 X	200	7.8740	310	12.2047	70.00	2.7559	800000	179800	1370000	307900	1400	1900	18.8	41.5	0.43	1.40
32044 X	220	8.6614	340	13.3858	76.00	2.9921	955000	214600	1660000	373000	1300	1700	24.6	54.2	0.43	1.40
32048 X	240	9.4488	360	14.1732	76.00	2.9921	989000	222200	1800000	404500	1200	1600	26.3	58.0	0.46	1.30
32052 X	260	10.2362	400	15.7480	87.00	3.4252	1241000	278900	2200000	494400	1100	1400	38.2	84.2	0.43	1.40
32056 X	280	11.0236	420	16.5354	87.00	3.4252	1288000	289400	2360000	530300	1000	1300	40.6	89.5	0.46	1.30
32060 X	300	11.8110	460	18.1102	100.00	3.9370	1644000	369400	3000000	674200	900	1200	58.0	127.9	0.43	1.40
32064 X	320	12.5984	480	18.8976	100.00	3.9370	1663000	373700	3100000	696600	850	1100	64.0	141.1	0.46	1.30
32205	25	0.9843	52	2.0472	19.25	0.7579	50400	11330	45500	10220	11000	13000	0.2	0.4	0.35	1.70
32206	30	1.1811	62	2.4409	21.25	0.8366	61800	13890	57000	12810	9000	11000	0.3	0.6	0.37	1.60
32207	35	1.3780	72	2.8346	24.25	0.9547	81200	18250	78000	17530	8000	9500	0.4	1.0	0.37	1.60
32208	40	1.5748	80	3.1496	24.75	0.9744	91600	20580	86500	19440	7000	8500	0.5	1.2	0.37	1.60
32209	45	1.7717	85	3.3465	24.75	0.9744	98700	22180	98000	22020	6300	8000	0.6	1.3	0.40	1.50
32210	50	1.9685	90	3.5433	24.75	0.9744	101000	22700	100000	22470	6000	7500	0.6	1.4	0.43	1.40
32211	55	2.1654	100	3.9370	26.75	1.0531	130000	29210	129000	28990	5300	6700	0.8	1.8	0.40	1.50
32212	60	2.3622	110	4.3307	29.75	1.1713	155000	34830	160000	35960	5000	6000	1.2	2.5	0.40	1.50
32213	65	2.5591	120	4.7244	32.75	1.2894	186000	41800	193000	43370	4500	5600	1.5	3.3	0.40	1.50
32214	70	2.7559	125	4.9213	33.25	1.3091	195000	43820	208000	46740	4300	5300	1.6	3.5	0.43	1.40
32215	75	2.9528	130	5.1181	33.25	1.3091	197000	44270	212000	47640	4000	5000	1.7	3.7	0.43	1.40
32216	80	3.1496	140	5.5118	35.25	1.3878	228000	51200	245000	55100	3800	4500	2.1	4.5	0.43	1.40
32217	85	3.3465	150	5.9055	38.50	1.5157	263000	59100	285000	64000	3600	4300	2.6	5.8	0.43	1.40
32218	90	3.5433	160	6.2992	42.50	1.6732	309000	69400	340000	76400	3400	4000	3.3	7.3	0.43	1.40
32219	95	3.7402	170	6.6929	45.50	1.7913	348000	78200	390000	87600	3200	3800	4.1	9.0	0.43	1.40

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

Single row

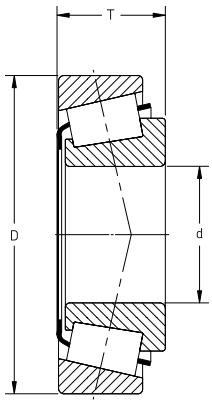
Standard and SKF Explorer
Series: 32220 – 32264
Size: 15 mm – 90 mm
0.5906 in – 3.5433 in

Series: 32303 – 32320
Size: 17 mm – 100 mm
0.6693 in – 3.9370 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
32220	15	0.5906	35	1.3780	11.75	0.4626	18500	4160	14600	3280	17000	20000	0.1	0.1	0.10	1.70
32221	17	0.6693	40	1.5748	13.25	0.5217	23400	5260	18600	4180	15000	18000	0.1	0.2	0.35	1.70
32222	20	0.7874	47	1.8504	15.25	0.6004	34100	7660	28000	6290	12000	15000	0.1	0.3	0.35	1.70
32224	25	0.9843	52	2.0472	16.25	0.6398	38100	8560	33500	7530	11000	13000	0.2	0.3	0.37	1.60
32226	28	1.1024	58	2.2835	17.25	0.6791	46600	10470	41500	9330	10000	12000	0.2	0.4	0.37	1.60
32228	30	1.1811	62	2.4409	17.25	0.6791	50000	11240	44000	9890	9000	11000	0.2	0.5	0.37	1.60
32230	35	1.3780	72	2.8346	18.25	0.7185	63200	14200	56000	12580	8000	9500	0.3	0.7	0.37	1.60
32232	40	1.5748	80	3.1496	19.75	0.7776	75800	17030	68000	15280	7000	8500	0.4	0.9	0.37	1.60
32234	45	1.7717	85	3.3465	20.75	0.8169	81600	18340	76500	17190	6300	8000	0.5	1.0	0.40	1.50
32236	50	1.9685	90	3.5433	21.75	0.8563	93100	20920	91500	20560	6000	7500	0.5	1.2	0.43	1.40
32238	55	2.1654	100	3.9370	22.75	0.8957	111000	24940	106000	23820	5300	6700	0.7	1.5	0.40	1.50
32240	60	2.3622	110	4.3307	23.75	0.9350	120000	26970	114000	25620	5000	6000	0.9	1.9	0.40	1.50
32244	65	2.5591	120	4.7244	24.75	0.9744	141000	31690	134000	30110	4500	5600	1.1	2.5	0.40	1.50
32248	70	2.7559	125	4.9213	26.25	1.0335	155000	34830	156000	35060	4300	5300	1.2	2.7	0.43	1.40
32252	75	2.9528	130	5.1181	27.25	1.0728	171000	38430	176000	39550	4000	5000	1.4	3.0	0.43	1.40
32256	80	3.1496	140	5.5118	28.25	1.1122	184000	41350	183000	41120	3800	4800	1.6	3.6	0.43	1.40
32260	85	3.3465	150	5.9055	30.50	1.2008	216000	48540	220000	49440	3600	4300	2.0	4.5	0.43	1.40
32264	90	3.5433	160	6.2992	32.50	1.2795	240000	53900	245000	55100	3400	4000	2.5	5.6	0.43	1.40
32303	17	0.6693	47	1.8504	20.25	0.7972	42800	9620	33500	7530	12000	16000	0.2	0.4	0.28	2.10
32304	20	0.7874	52	2.0472	22.25	0.8760	54300	12200	45500	10220	11000	14000	0.2	0.5	0.30	2.00
32305	25	0.9843	62	2.4409	25.25	0.9941	74100	16650	63000	14160	9000	12000	0.4	0.8	0.30	2.00
32306	30	1.1811	72	2.8346	28.75	1.1319	95000	21350	85000	19100	7500	10000	0.6	1.2	0.31	1.90
32307	35	1.3780	80	3.1496	32.75	1.2894	117000	26290	106000	23820	6700	9000	0.7	1.6	0.31	1.90
32308	40	1.5748	90	3.5433	35.25	1.3878	143000	32130	140000	31460	6000	8000	1.0	2.3	0.35	1.70
32309	45	1.7717	100	3.9370	38.25	1.5059	173000	38880	170000	38200	5300	7000	1.4	3.1	0.35	1.70
32310	50	1.9685	110	4.3307	42.25	1.6634	211000	47420	212000	47640	4800	6300	1.8	4.0	0.35	1.70
32311	55	2.1654	120	4.7244	45.50	1.7913	245000	55100	250000	56200	4300	5600	2.3	5.1	0.35	1.70
32312	60	2.3622	130	5.1181	48.50	1.9094	282000	63400	290000	65200	4000	5300	2.9	6.4	0.35	1.70
32313	65	2.5591	140	5.5118	51.00	2.0079	323000	72600	335000	75300	3600	4800	3.5	7.7	0.35	1.70
32314	70	2.7559	150	5.9055	54.00	2.1260	363000	81600	380000	85400	3400	4500	4.3	9.4	0.35	1.70
32315	75	2.9528	160	6.2992	58.00	2.2835	416000	93500	440000	98900	3200	4300	5.2	11.5	0.35	1.70
32316	80	3.1496	170	6.6929	61.50	2.4213	465000	104500	500000	112400	3200	4000	6.2	13.7	0.35	1.70
32317	85	3.3465	180	7.0866	63.50	2.5000	501000	112600	530000	119100	3000	3800	7.1	15.6	0.35	1.70
32318	90	3.5433	190	7.4803	67.50	2.6575	487000	109400	610000	137100	2600	3600	8.4	18.5	0.35	1.70
32319	95	3.7402	200	7.8740	71.50	2.8150	535000	120200	670000	150600	2400	3400	9.8	21.6	0.35	1.70
32320	100	3.9370	215	8.4646	77.50	3.0512	617000	138700	780000	175300	2200	3200	12.5	27.5	0.35	1.70

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



Single row

SKF Explorer

Series: 32321 – 32328
Size: 105 mm – 140 mm
4.1339 in – 5.5118 in

Series: 32910 – 32964
Size: 50 mm – 320 mm
1.9685 in – 12.5984 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
32321	105	4.1339	225	8.8583	81.50	3.2087	645000	144900	815000	183100	2000	3000	14.1	31.2	0.35	1.70
32322	110	4.3307	240	9.4488	84.50	3.3268	675000	151700	830000	186500	1900	2800	16.6	36.7	0.35	1.70
32324	120	4.7244	260	10.2362	90.50	3.5630	855000	192100	1120000	251700	1800	2600	21.4	47.1	0.35	1.70
32326	130	5.1181	280	11.0236	98.75	3.8878	1019000	229000	1340000	301100	1600	2400	27.3	60.1	0.35	1.70
32328	140	5.5118	300	11.8110	107.75	4.2421	1220000	274200	1660000	373000	1600	2200	34.6	76.4	0.35	1.70
32910	50	1.9685	72	2.8346	15.00	0.5906	41300	9280	53000	11910	7000	8500	0.2	0.4	0.35	1.70
32911	55	2.1654	80	3.1496	17.00	0.6693	51700	11620	69500	15620	6300	7500	0.3	0.6	0.31	1.90
32912	60	2.3622	85	3.3465	17.00	0.6693	53200	11960	75000	16850	6000	7000	0.3	0.7	0.33	1.80
32913	65	2.5591	90	3.5433	17.00	0.6693	54700	12290	80000	17980	5600	6700	0.3	0.7	0.35	1.70
32914	70	2.7559	100	3.9370	20.00	0.7874	85800	19280	112000	25170	5000	6000	0.5	1.1	0.31	1.90
32915	75	2.9528	105	4.1339	20.00	0.7874	86800	19510	116000	26070	4800	5600	0.5	1.1	0.33	1.80
32916	80	3.1496	110	4.3307	20.00	0.7874	89700	20160	125000	28090	4500	5600	0.5	1.2	0.35	1.70
32917	85	3.3465	120	4.7244	23.00	0.9055	115000	25840	156000	35060	4000	5000	0.8	1.7	0.33	1.80
32918	90	3.5433	125	4.9213	23.00	0.9055	119000	26740	166000	37300	4000	4800	0.8	1.8	0.35	1.70
32919	95	3.7402	130	5.1181	23.00	0.9055	121000	27190	173000	38880	3800	4500	0.9	1.9	0.35	1.70
32920	100	3.9370	140	5.5118	25.00	0.9843	147000	33030	204000	45840	3400	4300	1.1	2.5	0.33	1.80
32921	105	4.1339	145	5.7087	25.00	0.9843	149000	33480	212000	47640	3400	4000	1.2	2.6	0.35	1.70
32922	110	4.3307	150	5.9055	25.00	0.9843	154000	34610	224000	50300	3200	4000	1.2	2.7	0.35	1.70
32924	120	4.7244	165	6.4961	29.00	1.1417	204000	45840	305000	68500	3000	3600	1.8	4.0	0.35	1.70
32926	130	5.1181	180	7.0866	32.00	1.2598	245000	55100	365000	82000	2600	3200	2.4	5.3	0.33	1.80
32928	140	5.5118	190	7.4803	32.00	1.2598	252000	56600	390000	87600	2600	3000	2.5	5.6	0.35	1.70
32930	150	5.9055	210	8.2677	38.00	1.4961	346000	77800	530000	119100	2200	2800	3.9	8.7	0.33	1.80
32932	160	6.2992	220	8.6614	38.00	1.4961	349000	78400	540000	121300	2200	2600	4.2	9.2	0.35	1.70
32934	170	6.6929	230	9.0551	38.00	1.4961	351000	78900	585000	131500	2000	2400	4.5	9.9	0.37	1.60
32936	180	7.0866	250	9.8425	45.00	1.7717	435000	97800	735000	165200	1900	2200	6.7	14.7	0.48	1.25
32938	190	7.4803	260	10.2362	45.00	1.7717	443000	99600	765000	171900	1800	2200	7.0	15.4	0.48	1.25
32940	200	7.8740	280	11.0236	51.00	2.0079	588000	132100	950000	213500	1700	2000	9.5	20.9	0.40	1.50
32944	220	8.6614	300	11.8110	51.00	2.0079	601000	135100	1000000	224700	1500	1900	10.2	22.4	0.43	1.40
32948	240	9.4488	320	12.5984	51.00	2.0079	624000	140200	1080000	242700	1400	1700	11.0	24.3	0.46	1.30
32952	260	10.2362	360	14.1732	63.50	2.5000	910000	204500	1530000	343800	1300	1600	18.9	41.6	0.40	1.50
32956	280	11.0236	380	14.9606	63.50	2.5000	950000	213500	1660000	373000	1200	1400	20.2	44.6	0.43	1.40
32960	300	11.8110	420	16.5354	76.00	2.9921	1126000	253000	2240000	503400	950	1300	31.7	69.8	0.40	1.50
32964	320	12.5984	440	17.3228	76.00	2.9921	1156000	259800	2360000	530300	900	1200	33.5	73.9	0.43	1.40

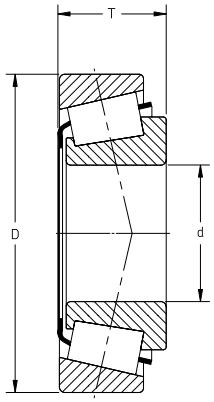
Consult SKF USA Inc. prior to design change or order placement.

Single row

Standard and SKF Explorer
Series: 32968 – 32972
Size: 340 mm – 360 mm
13.3858 in – 14.1732 in

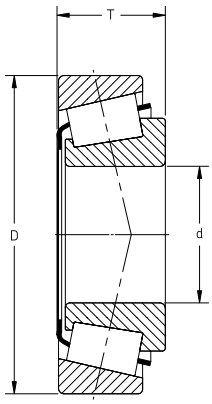
Series: 33010 – 33030
Size: 50 mm – 150 mm
1.9685 in – 5.9055 in

Series: 33108 – 33122
Size: 40 mm – 110 mm
1.5748 in – 4.3307 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
32968	340	13.3858	460	18.1102	76.00	2.9921	1163000	261300	2400000	539300	850	1200	35.0	77.2	0.44	1.35
32972	360	14.1732	480	18.8976	76.00	2.9921	1191000	267600	2550000	573000	800	1100	37.0	81.6	0.46	1.30
33010	50	1.9685	80	3.1496	24.00	0.9449	84800	19060	102000	22920	6300	8000	0.4	1.0	0.31	1.90
33011	55	2.1654	90	3.5433	27.00	1.0630	111000	24940	137000	30790	5600	7000	0.7	1.5	0.31	1.90
33012	60	2.3622	95	3.7402	27.00	1.0630	113000	25390	143000	32130	5300	6700	0.7	1.6	0.33	1.80
33013	65	2.5591	100	3.9370	27.00	1.0630	119000	26740	153000	34380	5000	6300	0.8	1.7	0.35	1.70
33014	70	2.7559	110	4.3307	31.00	1.2205	159000	35730	196000	44040	4800	5600	1.1	2.4	0.28	2.10
33015	75	2.9528	115	4.5276	31.00	1.2205	167000	37530	228000	51200	4300	5300	1.2	2.6	0.30	2.00
33016	80	3.1496	125	4.9213	36.00	1.4173	207000	46520	285000	64000	4000	5000	1.6	3.6	0.28	2.10
33017	85	3.3465	130	5.1181	36.00	1.4173	223000	50100	310000	69700	3800	4800	1.7	3.8	0.30	2.00
33018	90	3.5433	140	5.5118	39.00	1.5354	266000	59800	355000	79800	3600	4500	2.2	4.8	0.27	2.20
33019	95	3.7402	145	5.7087	39.00	1.5354	272000	61100	375000	84300	3400	4300	2.3	5.1	0.28	2.10
33020	100	3.9370	150	5.9055	39.00	1.5354	278000	62500	390000	87600	3400	4000	2.4	5.3	0.28	2.10
33021	105	4.1339	160	6.2992	43.00	1.6929	303000	68100	430000	96600	3200	3800	3.0	6.7	0.28	2.10
33022	110	4.3307	170	6.6929	47.00	1.8504	343000	77100	500000	112400	3000	3600	3.8	8.4	0.28	2.10
33024	120	4.7244	180	7.0866	48.00	1.8898	356000	80000	540000	121300	2800	3400	4.2	9.2	0.30	2.00
33026	130	5.1181	200	7.8740	55.00	2.1654	470000	105600	680000	152800	2400	3000	6.1	13.5	0.35	1.70
33030	150	5.9055	225	8.8583	59.00	2.3228	561000	126100	865000	194400	2200	2600	8.0	17.7	0.37	1.60
33108	40	1.5748	75	2.9528	26.00	1.0236	97500	21910	104000	23370	7000	9000	0.5	1.1	0.35	1.70
33109	45	1.7717	80	3.1496	26.00	1.0236	104000	23370	114000	25620	6700	8000	0.5	1.2	0.37	1.60
33110	50	1.9685	85	3.3465	26.00	1.0236	106000	23820	122000	27420	6000	7500	0.6	1.3	0.40	1.50
33111	55	2.1654	95	3.7402	30.00	1.1811	136000	30560	156000	35060	5600	6700	0.9	1.9	0.37	1.60
33112	60	2.3622	100	3.9370	30.00	1.1811	144000	32360	170000	38200	5300	6300	0.9	2.0	0.40	1.50
33113	65	2.5591	110	4.3307	34.00	1.3386	175000	39330	208000	46740	4800	5600	1.3	2.8	0.40	1.50
33114	70	2.7559	120	4.7244	37.00	1.4567	211000	47420	250000	56200	4300	5300	1.7	3.7	0.37	1.60
33115	75	2.9528	125	4.9213	37.00	1.4567	216000	48540	265000	59600	4000	5000	1.8	3.9	0.40	1.50
33116	80	3.1496	130	5.1181	37.00	1.4567	221000	49660	280000	62900	4000	4800	1.9	4.1	0.43	1.40
33117	85	3.3465	140	5.5118	41.00	1.6142	268000	60200	340000	76400	3600	4500	2.4	5.4	0.40	1.50
33118	90	3.5433	150	5.9055	45.00	1.7717	310000	69700	390000	87600	3400	4300	3.1	6.9	0.40	1.50
33122	110	4.3307	180	7.0866	56.00	2.2047	455000	102200	630000	141600	2800	3400	5.5	12.2	0.43	1.40

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



Single row

SKF Explorer

Series: 33205 – 33220
Size: 25 mm – 100 mm
0.9843 in – 3.9370 in

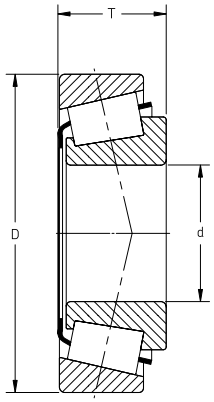
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass		Calculation factors	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
33205	25	0.9843	52	2.0472	22.00	0.8661	57900	13010	56000	12580	10000	13000	0.2	0.5	0.35	1.70
33206	30	1.1811	62	2.4409	25.00	0.9843	79700	17910	76500	17190	8500	11000	0.4	0.8	0.35	1.70
33207	35	1.3780	72	2.8346	28.00	1.1024	104000	23370	106000	23820	7000	9500	0.5	1.2	0.35	1.70
33208	40	1.5748	80	3.1496	32.00	1.2598	128000	28760	132000	29660	6300	8500	0.7	1.6	0.35	1.70
33209	45	1.7717	85	3.3465	32.00	1.2598	132000	29660	143000	32130	6000	7500	0.8	1.8	0.40	1.50
33210	50	1.9685	90	3.5433	32.00	1.2598	142000	31910	160000	35960	5300	7000	0.9	1.9	0.40	1.50
33211	55	2.1654	100	3.9370	35.00	1.3780	170000	38200	190000	42700	4800	6300	1.2	2.6	0.40	1.50
33212	60	2.3622	110	4.3307	38.00	1.4961	207000	46520	236000	53000	4500	6000	1.5	3.4	0.40	1.50
33213	65	2.5591	120	4.7244	41.00	1.6142	239000	53700	270000	60700	4000	5300	2.0	4.4	0.40	1.50
33214	70	2.7559	125	4.9213	41.00	1.6142	247000	55500	285000	64000	3800	5000	2.1	4.6	0.40	1.50
33215	75	2.9528	130	5.1181	41.00	1.6142	255000	57300	300000	67400	3600	4800	2.2	4.8	0.43	1.40
33216	80	3.1496	140	5.5118	46.00	1.8110	308000	69200	375000	84300	3400	4500	2.9	6.4	0.43	1.40
33217	85	3.3465	150	5.9055	49.00	1.9291	353000	79300	430000	96600	3200	4300	3.6	7.9	0.43	1.40
33218	90	3.5433	160	6.2992	55.00	2.1654	415000	93300	520000	116900	3000	4000	4.6	10.2	0.43	1.40
33219	95	3.7402	170	6.6929	58.00	2.2835	460000	103400	560000	125800	2800	3800	5.5	12.0	0.40	1.50
33220	100	3.9370	180	7.0866	63.00	2.4803	532000	119600	655000	147200	2600	3600	6.7	14.8	0.40	1.50

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

Single row

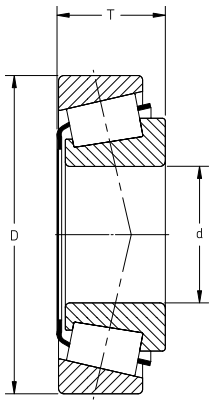
Standard and SKF Explorer
Series: T2EE 040 – T7FC 075
Size: 120 mm – 320 mm
4.7244 in – 12.5984 in

Series: T7FC 080 – T4EB 240
Size: 50 mm – 130 mm
1.9685 in – 5.1811 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
T2EE 040	120	4.7244	165	6.4961	29.00	1.1417	204000	45840	305000	68500	3000	3600	1.8	4.0	0.35	1.70
T2ED 045	130	5.1181	180	7.0866	32.00	1.2598	245000	55100	365000	82000	2600	3200	2.4	5.3	0.33	1.80
T7FC 045	140	5.5118	190	7.4803	32.00	1.2598	252000	56600	390000	87600	2600	3000	2.5	5.6	0.35	1.70
T2ED 050	150	5.9055	210	8.2677	38.00	1.4961	346000	77800	530000	119100	2200	2800	3.9	8.7	0.33	1.80
T7FC 050	160	6.2992	220	8.6614	38.00	1.4961	349000	78400	540000	121300	2200	2600	4.2	9.2	0.35	1.70
T2ED 055	170	6.6929	230	9.0551	38.00	1.4961	351000	78900	585000	131500	2000	2400	4.5	9.9	0.37	1.60
T7FC 055	180	7.0866	250	9.8425	45.00	1.7717	435000	97800	735000	165200	1900	2200	6.7	14.7	0.48	1.25
T2EE 060	190	7.4803	260	10.2362	45.00	1.7717	443000	99600	765000	171900	1800	2200	7.0	15.4	0.48	1.25
T7FC 060	200	7.8740	280	11.0236	51.00	2.0079	588000	132100	950000	213500	1700	2000	9.5	20.9	0.40	1.50
T2DD 065	220	8.6614	300	11.8110	51.00	2.0079	601000	135100	1000000	224700	1500	1900	10.2	22.4	0.43	1.40
T7FC 065	240	9.4488	320	12.5984	51.00	2.0079	624000	140200	1080000	242700	1400	1700	11.0	24.3	0.46	1.30
T2ED 070	260	10.2362	360	14.1732	63.50	2.5000	910000	204500	1530000	343800	1300	1600	18.9	41.6	0.40	1.50
T7FC 070	280	11.0236	380	14.9606	63.50	2.5000	95000	213500	1660000	373000	1200	1400	20.2	44.6	0.43	1.40
T3FE 075	300	11.8110	420	16.5354	76.00	2.9921	1126000	253000	2240000	503400	950	1300	31.7	69.8	0.40	1.50
T7FC 075	320	12.5984	440	17.3228	76.00	2.9921	1156000	259800	2360000	530300	900	1200	33.5	73.9	0.43	1.40
T7FC 080	50	1.9685	80	3.1496	24.00	0.9449	8480	19060	102000	22920	6300	8000	0.4	1.0	0.31	1.90
T7FC 085	55	2.1654	90	3.5433	27.00	1.0630	11100	24940	137000	30790	5600	7000	0.7	1.5	0.31	1.90
T2EE 100	60	2.3622	95	3.7402	27.00	1.0630	113000	25390	143000	32130	5300	6700	0.7	1.6	0.33	1.80
T4CB 100	65	2.5591	100	3.9370	27.00	1.0630	119000	26740	153000	34380	5000	6300	0.8	1.7	0.35	1.70
T4CB 120	70	2.7559	110	4.3307	31.00	1.2205	159000	35730	196000	44040	4800	5600	1.1	2.4	0.28	2.10
T4CB 140	75	2.9528	115	4.5276	31.00	1.2205	167000	37530	228000	51200	4300	5300	1.2	2.6	0.30	2.00
T4DB 150	80	3.1496	125	4.9213	36.00	1.4173	207000	46520	285000	64000	4000	5000	1.6	3.6	0.28	2.10
T4DB 160	85	3.3465	130	5.1181	36.00	1.4173	223000	50100	310000	69700	3800	4800	1.7	3.8	0.30	2.00
T4EE 160	90	3.5433	140	5.5118	39.00	1.5354	266000	59800	355000	79800	3600	4500	2.2	4.8	0.27	2.20
T4DB 170	95	3.7402	145	5.7087	39.00	1.5354	272000	61100	375000	84300	3400	4300	2.3	5.1	0.28	2.10
T4DB 180	100	3.9370	150	5.9055	39.00	1.5354	278000	62500	390000	87600	3400	4000	2.4	5.3	0.28	2.10
T4DB 200	105	4.1339	160	6.2992	43.00	1.6929	303000	68100	430000	96600	3200	3800	3.0	6.7	0.28	2.10
T2DC 220	110	4.3307	170	6.6929	47.00	1.8504	343000	77100	500000	112400	3000	3600	3.8	8.4	0.28	2.10
T2EE 240	120	4.7244	180	7.0866	48.00	1.8898	356000	80000	540000	121300	2800	3400	4.2	9.2	0.30	2.00
T4EB 240	130	5.1181	200	7.8740	55.00	2.1654	470000	105600	680000	152800	2400	3000	6.1	13.5	0.35	1.70

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



Single row

SKF Explorer

Series: JL 26749/710 – JM 73829/210

Size: 80 mm – 180 mm

3.1496 in – 7.0866 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				
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb	e	Y
JL 26749/710	80	3.1496	125	4.9213	29.00	1.1417	168000	37750	216000	48540	4000	5000	1.3	2.9	0.43	1.40
JL 69345/310	85	3.3465	130	5.1181	29.00	1.1417	171000	38430	224000	50300	3800	4800	1.4	3.0	0.44	1.35
JL 69349/310	90	3.5433	140	5.5118	32.00	1.2598	208000	46740	270000	60700	3600	4300	1.8	3.9	0.43	1.40
JLM 10 4945/910	95	3.7402	145	5.7087	32.00	1.2598	206000	46290	270000	60700	3400	4300	1.8	4.1	0.44	1.35
JM 20 5149/110	100	3.9370	150	5.9055	32.00	1.2598	209000	46970	280000	62900	3200	4000	1.9	4.2	0.46	1.30
JLM 50 8748/710	105	4.1339	160	6.2992	35.00	1.3780	248000	55700	335000	75300	3200	3800	2.4	5.4	0.44	1.35
JLM 710 949/910	110	4.3307	170	6.6929	38.00	1.4961	288000	64700	390000	87600	3000	3600	3.1	6.8	0.43	1.40
JM 511946/910	120	4.7244	180	7.0866	38.00	1.4961	299000	67200	415000	93300	2800	3400	3.3	7.3	0.46	1.30
JM 714249/210	130	5.1181	200	7.8740	45.00	1.7717	388000	87200	540000	121300	2400	3000	4.9	10.9	0.43	1.40
JM 515649/610	140	5.5118	210	8.2677	45.00	1.7717	404000	90800	585000	131500	2400	2800	5.3	11.6	0.46	1.30
JM 716649/610	150	5.9055	225	8.8583	48.00	1.8898	456000	102500	655000	147200	2200	2600	6.4	14.1	0.46	1.30
JM 718149/110	160	6.2992	240	9.4488	51.00	2.0079	532000	119600	780000	175300	2000	2400	7.8	17.2	0.46	1.30
JM 8220 49/010	170	6.6929	260	10.2362	57.00	2.2441	625000	140400	915000	205600	1900	2200	10.5	23.2	0.44	1.35
JM 738249/210	180	7.0866	280	11.0236	64.00	2.5197	793000	178200	1160000	260700	1700	2200	14.2	31.3	0.43	1.40

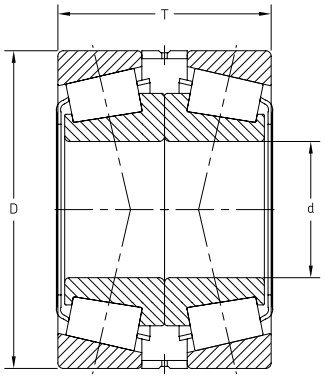
Consult SKF USA Inc. prior to design change or order placement.

Paired single row

Standard and SKF Explorer

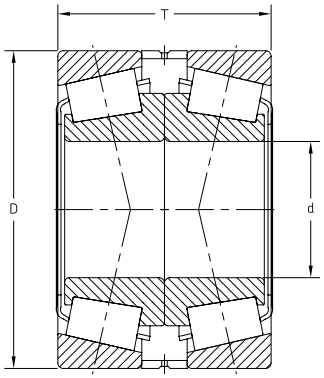
Series: 30206 /DF – 30244 /DF
Size: 30 mm – 220 mm
1.1811 in – 8.6614 in

Series: 30306 /DF – 30330/DF
Size: 30 mm – 150 mm
1.1811 in – 5.9055 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
30206/DF	30	1.1811	62	2.4409	34.5	1.3583	85700	19260	88000	19780	7500	11000	0.5	1.1
30208/DF	40	1.5748	80	3.1496	39.5	1.5551	130000	29210	137000	30790	5600	8500	0.9	1.9
30210/DF	50	1.9685	90	3.5433	43.5	1.7126	160000	35960	183000	41120	4800	7500	1.1	2.5
30211/DF	55	2.1654	100	3.9370	45.5	1.7913	190000	42700	212000	47640	4500	6700	1.5	3.2
30212/DF	60	2.3622	110	4.3307	47.5	1.8701	207000	46520	228000	51200	4000	6000	1.8	4.0
30213/DF	65	2.5591	120	4.7244	49.5	1.9488	242000	54400	270000	60700	3600	5600	2.3	5.1
30215/DF	75	2.9528	130	5.1181	54.5	2.1457	293000	65800	355000	79800	3400	5000	2.8	6.2
30217/DF	85	3.3465	150	5.9055	61.0	2.4016	370000	83100	440000	98900	3000	4300	4.2	9.4
30218/DF	90	3.5433	160	6.2992	65.0	2.5591	411000	92400	490000	110100	2800	4000	5.2	11.4
30220/DF	100	3.9370	180	7.0866	74.0	2.9134	521000	117100	640000	143800	2400	3600	7.5	16.6
30221/DF	105	4.1339	190	7.4803	78.0	3.0709	571000	128300	710000	159600	2200	3400	9.0	19.9
30222/DF	110	4.3307	200	7.8740	82.0	3.2283	645000	144900	800000	179800	2200	3200	10.5	23.0
30224/DF	120	4.7244	215	8.4646	87.0	3.4252	716000	160900	915000	205600	2000	3000	12.7	27.9
30226/DF	130	5.1181	230	9.0551	87.5	3.4449	774000	173900	980000	220200	1800	2800	14.1	31.2
30228/DF	140	5.5118	250	9.8425	91.5	3.6024	773000	173700	1140000	256200	1500	2600	17.9	39.5
30230/DF	150	5.9055	270	10.6299	98.0	3.8583	781000	175500	1120000	251700	1400	2400	22.1	48.8
30232/DF	160	6.2992	290	11.4173	104.0	4.0945	971000	218200	1460000	328100	1300	2200	27.4	60.5
30234/DF	170	6.6929	310	12.2047	114.0	4.4882	1126000	253000	1730000	388800	1200	2000	34.6	76.3
30236/DF	180	7.0866	320	12.5984	114.0	4.4882	1079000	242500	1630000	366300	1200	2000	35.5	78.3
30238/DF	190	7.4803	340	13.3858	120.0	4.7244	1308000	293900	2000000	449400	1100	1800	42.6	94.0
30240/DF	200	7.8740	360	14.1732	128.0	5.0394	1448000	325400	2240000	503400	1000	1700	51.8	114.3
30244/DF	220	8.6614	400	15.7480	144.0	5.6693	1816000	408100	2800000	629200	950	1600	71.8	158.2
30306/DF	30	1.1811	72	2.8346	41.5	1.6339	119000	26740	112000	25170	6700	10000	0.8	1.8
30307/DF	35	1.3780	80	3.1496	45.5	1.7913	152000	34160	150000	33710	6000	9000	1.1	2.3
30309/DF	45	1.7717	100	3.9370	54.5	2.1457	227000	51000	240000	53900	4500	7000	2.0	4.4
30311/DF	55	2.1654	120	4.7244	63.0	2.4803	302000	67900	325000	73000	3800	5600	3.3	7.2
30312/DF	60	2.3622	130	5.1181	67.0	2.6378	357000	80200	390000	87600	3600	5300	4.1	9.0
30320/DF	100	3.9370	215	8.4646	103.0	4.0551	739000	166100	980000	220200	1900	3200	16.9	37.2
30324/DF	120	4.7244	260	10.2362	119.0	4.6850	1031000	231700	1400000	314600	1600	2600	29.0	64.0
30326/DF	130	5.1181	280	11.0236	127.5	5.0197	1165000	261800	1600000	359600	1400	2400	35.2	77.7
30330/DF	150	5.9055	320	12.5984	144.0	5.6693	1507000	338700	2120000	476400	1300	2000	51.9	114.4

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



Paired single row

Standard and SKF Explorer
Series: 31305/DF – 31330 X/DF
Size: 25 mm – 150 mm
0.9843 in – 5.9055 in

Series: 32007 X/DF – 32017 X/DF
Size: 35 mm – 85 mm
1.3780 in – 3.3465 in

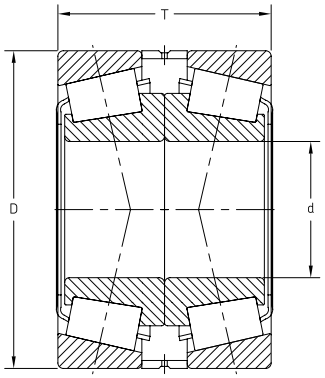
Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter D		Width B		Dynamic C		Static C_0		Reference speed	Limiting speed		
	mm	in	mm	in	mm	in	N	lbf	N	lbf	r/min	r/min	kg	lb
31305/DF	25	0.9843	62	2.4409	36.5	1.4370	79900	17960	80000	17980	6700	11000	0.6	1.2
31306/DF	30	1.1811	72	2.8346	41.5	1.6339	100000	22470	100000	22470	5600	9500	0.8	1.8
31307/DF	35	1.3780	80	3.1496	45.5	1.7913	129000	28990	134000	30110	5000	8500	1.1	2.4
31308/DF	40	1.5748	90	3.5433	50.5	1.9882	156000	35060	163000	36630	4500	7500	1.5	3.3
31309/DF	45	1.7717	100	3.9370	54.5	2.1457	194000	43600	204000	45840	4000	6700	2.0	4.4
31310/DF	50	1.9685	110	4.3307	58.5	2.3031	224000	50300	240000	53900	3600	6000	2.6	5.6
31311/DF	55	2.1654	120	4.7244	63.0	2.4803	256000	57500	275000	61800	3400	5600	3.2	7.2
31312/DF	60	2.3622	130	5.1181	67.0	2.6378	303000	68100	335000	75300	3000	5300	4.0	8.9
31313/DF	65	2.5591	140	5.5118	72.0	2.8346	348000	78200	380000	85400	2800	4800	5.0	11.0
31314/DF	70	2.7559	150	5.9055	76.0	2.9921	393000	88300	440000	98900	2600	4500	6.1	13.4
31315/DF	75	2.9528	160	6.2992	80.0	3.1496	438000	98400	490000	110100	2400	4300	7.2	15.8
31316/DF	80	3.1496	170	6.6929	85.0	3.3465	473000	106300	530000	119100	2400	4000	8.7	19.1
31317/DF	85	3.3465	180	7.0866	89.0	3.5039	510000	114600	570000	128100	2200	3800	9.9	21.8
31318/DF	90	3.5433	190	7.4803	93.0	3.6614	486000	109200	630000	141600	1900	3400	11.4	25.2
31319/DF	95	3.7402	200	7.8740	99.0	3.8976	539000	121100	710000	159600	1800	3400	13.5	29.8
31320 X/DF	100	3.9370	215	8.4646	113.0	4.4488	685000	153900	930000	209000	1700	3000	18.4	40.6
31322 X/DF	110	4.3307	240	9.4488	126.0	4.9606	841000	189000	1160000	260700	1500	2800	25.9	57.2
31324 X/DF	120	4.7244	260	10.2362	136.0	5.3543	992000	222900	1400000	314600	1400	2400	32.5	71.7
31326 X/DF	130	5.1181	280	11.0236	144.0	5.6693	1110000	249400	1560000	350600	1300	2400	39.6	87.3
31328 X/DF	140	5.5118	300	11.8110	154.0	6.0630	1264000	284000	1800000	404500	1200	2200	49.1	108.3
31330 X/DF	150	5.9055	320	12.5984	164.0	6.4567	1427000	320700	2040000	458400	1100	2000	58.6	129.1
32007 X/DF	35	1.3780	62	2.4409	36.0	1.4173	89700	20160	108000	24270	7000	10000	0.5	1.0
32009 X/DF	45	1.7717	75	2.9528	40.0	1.5748	123000	27640	160000	35960	5600	8500	0.7	1.6
32010 X/DF	50	1.9685	80	3.1496	40.0	1.5748	129000	28990	176000	39550	5300	8000	0.8	1.7
32011 X/DF	55	2.1654	90	3.5433	46.0	1.8110	170000	38200	232000	52100	4500	7000	1.2	2.5
32012 X/DF	60	2.3622	95	3.7402	46.0	1.8110	173000	38880	245000	55100	4300	6700	1.2	2.7
32013 X/DF	65	2.5591	100	3.9370	46.0	1.8110	176000	39550	255000	57300	4000	6000	1.3	2.9
32014 X/DF	70	2.7559	110	4.3307	50.0	1.9685	214000	48090	305000	68500	3800	5600	1.8	3.9
32016 X/DF	80	3.1496	125	4.9213	58.0	2.2835	288000	64700	430000	96600	3200	5000	2.7	5.9
32017 X/DF	85	3.3465	130	5.1181	58.0	2.2835	293000	65800	450000	101100	3200	4800	2.8	6.2

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

Paired single row

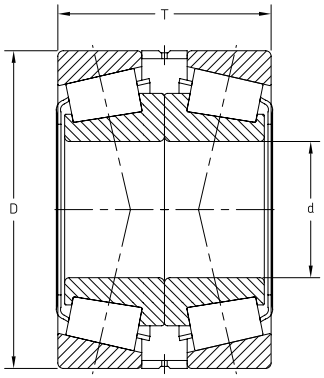
Standard and SKF Explorer
Series: 32018 X/DF – 32064 X/DF
Size: 90 mm – 320 mm
3.5433 in – 12.5984 in

Series: 32206/DF – 32221/DF
Size: 30 mm – 105 mm
1.1811 in – 4.1339 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
32018 X/DF	90	3.5433	140	5.5118	64.0	2.5197	356000	80000	540000	121300	3000	4300	3.6	8.0
32019 X/DF	95	3.7402	145	5.7087	64.0	2.5197	353000	79300	540000	121300	2800	4300	3.8	8.4
32020 X/DF	100	3.9370	150	5.9055	64.0	2.5197	359000	80700	560000	125800	2600	4000	3.9	8.6
32021 X/DF	105	4.1339	160	6.2992	70.0	2.7559	426000	95700	670000	150600	2600	3800	5.0	11.1
32022 X/DF	110	4.3307	170	6.6929	76.0	2.9921	494000	111000	780000	175300	2400	3600	6.3	13.9
32024 X/DF	120	4.7244	180	7.0866	76.0	2.9921	513000	115300	830000	186500	2200	3400	6.8	14.9
32026 X/DF	130	5.1181	200	7.8740	90.0	3.5433	666000	149700	1080000	242700	2000	3000	10.2	22.5
32028 X/DF	140	5.5118	210	8.2677	90.0	3.5433	692000	155500	1160000	260700	1900	2800	10.9	24.0
32030 X/DF	150	5.9055	225	8.8583	96.0	3.7795	782000	175700	1320000	296600	1800	2600	13.3	29.2
32032 X/DF	160	6.2992	240	9.4488	102.0	4.0157	912000	204900	1560000	350600	1600	2400	16.2	35.7
32034 X/DF	170	6.6929	260	10.2362	114.0	4.4882	1071000	240700	1830000	411200	1500	2200	21.7	47.9
32036 X/DF	180	7.0866	280	11.0236	128.0	5.0394	1360000	305600	2320000	521300	1400	2200	29.2	64.5
32038 X/DF	190	7.4803	290	11.4173	128.0	5.0394	1381000	310300	2400000	539300	1300	2000	30.6	67.5
32040 X/DF	200	7.8740	310	12.2047	140.0	5.5118	1372000	308300	2750000	618000	1100	1900	39.0	86.0
32044 X/DF	220	8.6614	340	13.3858	152.0	5.9843	1637000	367900	3350000	752800	1000	1700	51.0	112.4
32048 X/DF	240	9.4488	360	14.1732	152.0	5.9843	1695000	380900	3550000	797800	950	1600	54.3	119.7
32052 X/DF	260	10.2362	400	15.7480	174.0	6.8504	2127000	478000	4400000	988800	850	1400	78.8	173.7
32056 X/DF	280	11.0236	420	16.5354	174.0	6.8504	2208000	496200	4750000	1067400	800	1300	84.0	185.2
32060 X/DF	300	11.8110	460	18.1102	200.0	7.8740	2818000	633300	6000000	1348300	750	1200	119.0	262.4
32064 X/DF	320	12.5984	480	18.8976	200.0	7.8740	2852000	640900	6200000	1393300	700	1100	104.0	229.3
32206/DF	30	1.1811	62	2.4409	42.5	1.6732	106000	23820	116000	26070	7500	11000	0.6	1.3
32207/DF	35	1.3780	72	2.8346	48.5	1.9094	139000	31240	156000	35060	6300	9500	0.9	2.0
32209/DF	45	1.7717	85	3.3465	49.5	1.9488	169000	37980	196000	44040	5300	8000	1.2	2.6
32210/DF	50	1.9685	90	3.5433	49.5	1.9488	173000	38880	200000	44940	4800	7500	1.3	2.8
32211/DF	55	2.1654	100	3.9370	53.5	2.1063	222000	49890	260000	58400	4300	6700	1.7	3.8
32212/DF	60	2.3622	110	4.3307	59.5	2.3425	266000	59800	320000	71900	4000	6000	2.4	5.3
32213/DF	65	2.5591	120	4.7244	65.5	2.5787	320000	71900	390000	87600	3600	5600	3.1	6.8
32214/DF	70	2.7559	125	4.9213	66.5	2.6181	334000	75100	415000	93300	3400	5300	3.3	7.2
32215/DF	75	2.9528	130	5.1181	66.5	2.6181	337000	75700	425000	95500	3200	5000	3.4	7.5
32216/DF	80	3.1496	140	5.5118	70.5	2.7756	391000	87900	490000	110100	3000	4500	4.2	9.3
32217/DF	85	3.3465	150	5.9055	77.0	3.0315	451000	101300	570000	128100	2800	4300	5.4	11.9
32218/DF	90	3.5433	160	6.2992	85.0	3.3465	529000	118900	680000	152800	2600	4000	6.9	15.1
32219/DF	95	3.7402	170	6.6929	91.0	3.5827	597000	134200	780000	175300	2600	3800	8.4	18.5
32220/DF	100	3.9370	180	7.0866	98.0	3.8583	668000	150100	880000	197800	2400	3600	10.2	22.5
32221/DF	105	4.1339	190	7.4803	106.0	4.1732	760000	170800	1020000	229200	2200	3400	12.4	27.4

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



Paired single row

Standard and SKF Explorer
Series: 32222/DF – 32260/DF
Size: 110 mm – 300 mm
4.3307 in – 11.8110 in

Series: 32312/DF – 32324/DF
Size: 60 mm – 120 mm
2.3622 in – 4.7244 in

Series: 32920/DF – 32972/DF
Size: 100 mm – 360 mm
3.9370 in – 14.1732 in

Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
32222/DF	110	4.3307	200	7.8740	112.0	4.4094	842000	189200	1140000	256200	2200	3200	14.5	32.1
32224/DF	120	4.7244	215	8.4646	123.0	4.8425	983000	220900	1400000	314600	2000	3000	18.6	41.0
32226/DF	130	5.1181	230	9.0551	135.5	5.3346	1012000	227400	1660000	373000	1600	2800	23.1	50.9
32228/DF	140	5.5118	250	9.8425	143.5	5.6496	1185000	266300	2000000	449400	1500	2600	29.3	64.6
32230/DF	150	5.9055	270	10.6299	154.0	6.0630	1341000	301300	2280000	512400	1400	2400	37.3	82.2
32232/DF	160	6.2992	290	11.4173	168.0	6.6142	1602000	360000	2800000	629200	1300	2200	48.0	105.7
32234/DF	170	6.6929	310	12.2047	182.0	7.1654	1843000	414200	3250000	730300	1200	2000	59.3	130.9
32236/DF	180	7.0866	320	12.5984	182.0	7.1654	1833000	411900	3250000	730300	1100	1900	61.1	134.6
32240/DF	200	7.8740	360	14.1732	208.0	8.1890	2229000	500900	4000000	898900	1000	1700	88.1	194.3
32244/DF	220	8.6614	400	15.7480	228.0	8.9764	2949000	662700	5400000	1213500	900	1500	123.2	271.8
32248/DF	240	9.4488	440	17.3228	254.0	10.0000	3300000	741600	6550000	1471900	1000	1500	172.0	379.3
32252/DF	260	10.2362	480	18.8976	274.0	10.7874	4013000	901800	7350000	1651700	750	1200	213.0	469.7
32256/DF	280	11.0236	500	19.6850	274.0	10.7874	2410000	541600	7800000	1752800	700	1200	226.0	498.3
32260/DF	300	11.8110	540	21.2598	280.0	11.0236	2935000	659600	9500000	2134800	630	1100	290.0	639.5
32312/DF	60	2.3622	130	5.1181	97.0	3.8189	483000	108500	585000	131500	3200	5300	6.1	13.4
32315/DF	75	2.9528	160	6.2992	116.0	4.5669	713000	160200	880000	197800	2600	4300	10.8	23.8
32316/DF	80	3.1496	170	6.6929	123.0	4.8425	797000	179100	1000000	224700	2600	4000	12.8	28.3
32318/DF	90	3.5433	190	7.4803	135.0	5.3150	835000	187600	1220000	274200	2200	3600	17.5	38.7
32320/DF	100	3.9370	215	8.4646	155.0	6.1024	1057000	237500	1560000	350600	1900	3200	26.1	57.6
32322/DF	110	4.3307	240	9.4488	169.0	6.6535	1158000	260200	1660000	373000	1700	2800	35.0	77.1
32324/DF	120	4.7244	260	10.2362	181.0	7.1260	1466000	329400	2240000	503400	1600	2600	45.0	99.3
32920/DF	100	3.9370	140	5.5118	50.0	1.9685	252000	56600	405000	91000	2800	4300	2.4	5.2
32926/DF	130	5.1181	180	7.0866	64.0	2.5197	420000	94400	735000	165200	2200	3200	4.9	10.9
32928/DF	140	5.5118	190	7.4803	64.0	2.5197	432000	97100	780000	175300	2000	3000	5.2	11.5
32936/DF	180	7.0866	250	9.8425	90.0	3.5433	746000	167600	1460000	328100	1500	2200	13.8	30.5
32938/DF	190	7.4803	260	10.2362	90.0	3.5433	760000	170800	1530000	343800	1400	2200	14.5	32.0
32944/DF	220	8.6614	300	11.8110	102.0	4.0157	1030000	231500	2000000	449400	1200	1900	21.1	46.5
32948/DF	240	9.4488	320	12.5984	102.0	4.0157	1069000	240200	2160000	485400	1200	1700	22.6	49.9
32960/DF	300	11.8110	420	16.5354	152.0	5.9843	1790000	402200	4500000	1011200	800	1400	65.5	144.4
32964/DF	320	12.5984	440	17.3228	152.0	5.9843	1982000	445400	4650000	1044900	750	1200	69.0	152.1
32968/DF	340	13.3858	460	18.1102	152.0	5.9843	1995000	448300	4800000	1078700	700	1200	73.0	161.0
32972/DF	360	14.1732	480	18.8976	152.0	5.9843	2043000	459100	5100000	1146100	670	1100	302.0	665.9

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

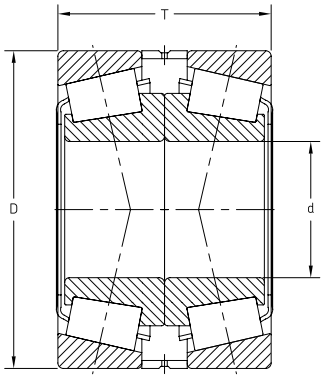
Paired single row

SKF Explorer

Series: 33010 / DF – 33024 / DF
Size: 50 mm – 120 mm
1.9685 in – 4.7244 in

Series: 33108 / DF – 33122/ DF
Size: 40 mm – 110 mm
1.5748 in – 4.3307 in

Series: 33207/ DF – 33217/ DF
Size: 35 mm – 85 mm
1.3780 in – 3.3465 in



Designation	Principal dimensions						Basic load ratings				Speed rating		Mass	
	Bore d		Outside diameter 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
33010/DF	50	1.9685	80	3.1496	48.0	1.8898	145000	32580	204000	45840	5300	8000	0.9	2.0
33011/DF	55	2.1654	90	3.5433	54.0	2.1260	191000	42920	270000	60700	4500	7000	1.4	3.0
33013/DF	65	2.5591	100	3.9370	54.0	2.1260	204000	45840	310000	69700	4000	6300	1.5	3.4
33014/DF	70	2.7559	110	4.3307	62.0	2.4409	273000	61300	400000	89900	3800	5600	2.2	4.8
33015/DF	75	2.9528	115	4.5276	62.0	2.4409	286000	64300	455000	102200	3600	5300	2.4	5.3
33017/DF	85	3.3465	130	5.1181	72.0	2.8346	382000	85800	620000	139300	3200	4800	3.5	7.8
33018/DF	90	3.5433	140	5.5118	78.0	3.0709	457000	102700	710000	159600	3000	4500	4.5	9.9
33019/DF	95	3.7402	145	5.7087	78.0	3.0709	467000	104900	735000	165200	2800	4300	4.7	10.3
33024/DF	120	4.7244	180	7.0866	96.0	3.7795	611000	137300	1080000	242700	2200	3400	8.6	18.9
33108/DF	40	1.5748	75	2.9528	52.0	2.0472	167000	37530	208000	46740	6000	9000	1.0	2.3
33114/DF	70	2.7559	120	4.7244	74.0	2.9134	361000	81100	500000	112400	3600	5300	3.4	7.6
33115/DF	75	2.9528	125	4.9213	74.0	2.9134	370000	83100	530000	119100	3400	5000	3.6	8.0
33116/DF	80	3.1496	130	5.1181	74.0	2.9134	379000	85200	560000	125800	3200	4800	3.8	8.4
33122/DF	110	4.3307	180	7.0866	112.0	4.4094	781000	175500	1250000	280900	2200	3400	11.3	25.0
33207/DF	35	1.3780	72	2.8346	56.0	2.2047	178000	40000	212000	47640	6300	9500	1.1	2.4
33210/DF	50	1.9685	90	3.5433	64.0	2.5197	243000	54600	320000	71900	4800	7000	1.8	3.9
33212/DF	60	2.3622	110	4.3307	76.0	2.9921	354000	79600	475000	106700	3800	6000	3.2	7.0
33215/DF	75	2.9528	130	5.1181	82.0	3.2283	436000	98000	600000	134800	3200	4800	4.5	9.9
33216/DF	80	3.1496	140	5.5118	92.0	3.6220	527000	118400	750000	168500	3000	4500	6.0	13.1
33217/DF	85	3.3465	150	5.9055	98.0	3.8583	606000	136200	850000	191000	2800	4300	7.3	16.1

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

Notes

Notes

Ball bearing units

P2BL 207 WF W64

Housing style		ISO reference
F2B	Flange, two-bolt, cast iron	**FYT**
F4B	Flange, four-bolt, cast iron	**FY**
F4BM	Flange, four-bolt, cast iron, medium duty	**FYM**
P2B	Pillow block, cast iron	**SY**
P2BL	Pillow block, cast iron, low center height	**SYH**
P2BM	Pillow block, cast iron, medium duty	**SYM**
P2BX	Pillow block, pressed steel	**S**
P2BT	Tapped-base pillow block, threaded base, cast iron	**SYF**
WSTU	Wide slot take-up, cast iron	**TU**
ECY	End cover – order separately	**ECY**

Shaft size

Inch

First digit: number of inches

Second and third digits: number of sixteenths of an inch

Example: 207 indicates $2^{7}/_{16}$ (unit)

Metric

First two digits: number of millimeters

Example: 25M indicates 25mm (or millimeters)

S $1^{1}/_{4}$" bore, fitted into a housing that usually accommodates a $1^{3}/_{16}$" insert bearing

Insert bearing selections (WF):

TF Set screw lock, seals and flingers, wide inner ring, YAR series insert

RM Set screw lock, seals, narrow inner ring, YAT series insert

FM Eccentric lock, seals, narrow inner ring, YET series insert

WF Eccentric lock, seals and flingers, wide inner ring, YEL series insert

LF ConCentra™ lock, seals and flingers, wide inner ring, YSP series insert

Additional options (W64):

VA228 High temperature bearings with graphite cage

VA201 High temperature bearings with graphite paste

W64 Solid Oil

-AH Air handling unit – anti rotation pin

Ball bearing units

Ball bearing units consist of a precision wide inner ring bearing assembled into a housing made of cast iron or pressed steel. Units are prelubricated and are designed to slip fit on to the shaft. Locking method is either set screw locking, eccentric self-locking or concentric.

On cast iron and pressed steel units, the outside diameter of the bearing and the inside diameter of the housing are sphered, allowing the bearing to swivel within the housing to accommodate initial alignment.

There are numerous bearing and housing combinations to accommodate a diversity of mounting surfaces, load requirements, shaft sizes and dimensional requirements. Housing types include: pillow blocks, flange units, take-up units, flangette units, and tapped base units.

P2B – Pillow blocks

Pillow block housings, the most popular housing design for mounted bearings, are available in several series. All are designed to support loads primarily directed through the base. The P2B series housing has a standard base-to-center height. The P2BL series features a low center height with a base-to-center height typically 1/16" lower than the P2B series. The PTBM series – medium duty housings accommodate a larger bearing for a given shaft size, resulting in a greater load carrying capacity.

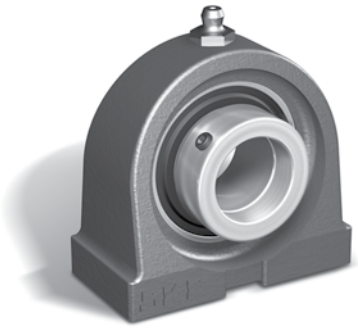
All three housing series are supplied with a grease fitting for relubrication, have slotted bolt holes for adjustments during installation and provide for initial bearing alignment. For more detailed information see data tables.

F4B – Four-bolt flange units

Four-bolt cast iron flange units are designed to support shafts through walls, bulkheads and other flat surfaces. The housing mounts flush to the surface and the load is carried by the four mounting bolts. F4BM – medium duty housings accommodate a larger bearing for a given shaft size, resulting in a greater load carrying capacity. Both series are supplied with a grease fitting for relubrication and provide for initial bearing alignment. For more detailed information see data tables.

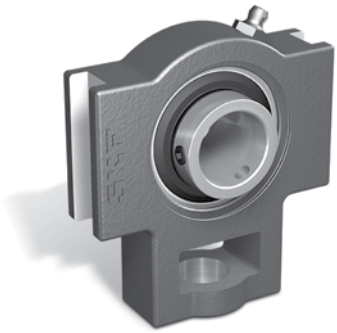
F2B – Two-bolt cast iron flange units

Two-bolt cast iron flange units flange units support shafts through walls, bulkheads and other flat surfaces but have a more compact two-bolt design. F2BM – medium duty housings accommodate a larger bearing for a given shaft size, resulting in a greater load carrying capacity. Both series are supplied with a grease fitting for relubrication and provide for initial bearing alignment. For more detailed information see data tables.



P2BT – Tapped base units

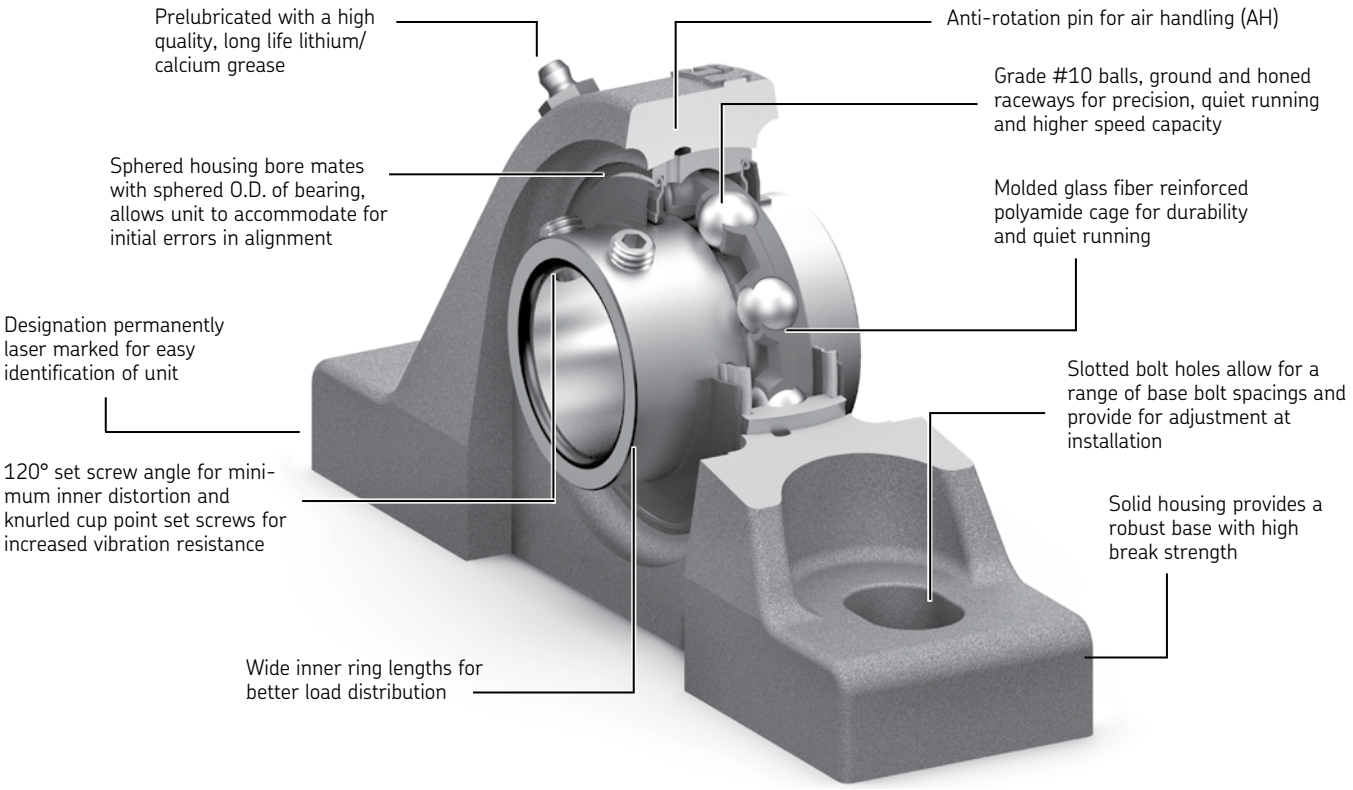
Tapped base housings are a variation of pillow block housings. Their design is optimized for radial loads acting in the direction of the base or the support surface. Tapped base units have a narrow width for tight areas and the non-tensioning end of conveyors. For more detailed information see data tables.



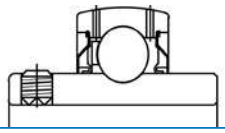
WSTU – Center pull cast iron take-up units

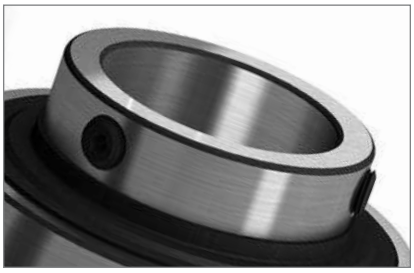
These take-up units are typically used in conjunction with a customer supplied frame for belt or shaft tensioning in conveyor, elevator and power transmission applications. A wide slot for the frame guide is standard. Bearings are supplied with a grease fitting for relubrication and provide for initial bearing alignment. For more detailed information see data tables.

Ball bearing units – features



Shaft locking methods

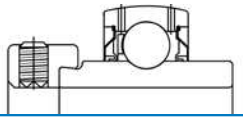




Set screw locking (RM, TF, TF-AH)

Set screw locking features two set screws 120° apart. This placement of the set screws maximizes holding power while minimizing inner ring distortion. Other factors such as zone hardening of the bearing inner ring, drilling and tapping after heat treat, proper screw length, a knurled cup point set screw and a forged set screw socket have been incorporated to further enhance holding power and vibration resistance (backout).

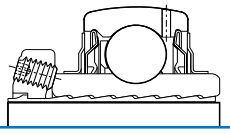
Insert bearing designations – YAT, YAR

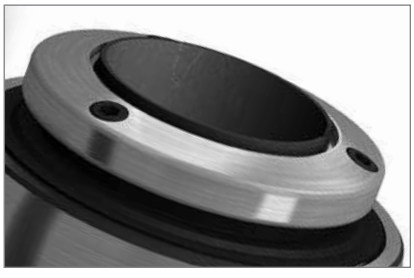


Eccentric self-locking (FM, WF, WF-AH)

Eccentric self-locking features a machined collar and bearing inner ring which act as mating cams when assembled on the shaft. When the collar is engaged on the bearing inner ring, and turned in the direction of shaft rotation, it grips the shaft firmly with a binding action that further increases with rotation. The single set screw in the collar firmly secures the position of the eccentric collar and does less damage to shaft than normal set screw lock. This locking method is recommended for most applications except where reversing shaft rotation is involved.

Insert bearing designations – YEL, YET





ConCentra™ locking (LF-AH)

ConCentra locking features SKF's patented mechanical connector that applies a near 360° concentric grip around the entire circumference of the shaft. Two paired rings with precision engineered serrations on their contact surfaces respond to axial displacement by expanding radially against the shaft. When the mounting screws are tightened the slotted ring grips the shaft firmly at the same time assuring the bearing maintains proper internal clearance conforming to SKF recommendations. An Allen wrench with a built in torque indicator, included with every unit, quickly shows when the proper locking torque has been achieved.

Insert bearing designation – YSP-2F-AH

Inner ring length

The bearings for ball bearing units are available in wide and narrow width inner ring designs. When space permits, the wide inner ring is the preferred choice. Shaft misalignment relative to the bearing bore is minimized with the wide inner ring since the load is distributed over a greater shaft area. The narrow inner ring is used when space is limited.

Misalignment

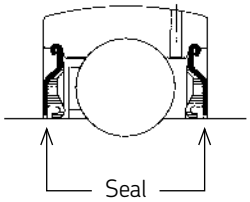
Ball bearing units can compensate for up to ±5° of static misalignment. However, in the cast iron housings when it is desirable to relubricate the bearings, initial errors in alignment should not exceed ±2° for basic bearings size 211 and smaller and ±1.5° for larger sizes. Misalignment greater than this will prevent the lubrication holes in the outer ring of the bearing from lining up with the groove in the housing bore, and the bearings will also not be relubricated.

Grease fill

Generally speaking, wide inner ring bearings are designed to operate without relubrication under normal speed and operating conditions. All wide inner ring bearings are sealed at both sides with rubbing contact seals and are filled with a special, long life grease with a Lithium/Calcium thickener/soap, and an NLGI #2 consistency. The grease has good corrosion inhibiting properties and is suitable for operating temperatures from -20° F to 250° F. However, under extreme conditions or in heavily contaminated environments, it may be necessary to relubricate the bearings. Reference the SKF General Catalog (6000EN) for relubrication intervals.

Cages

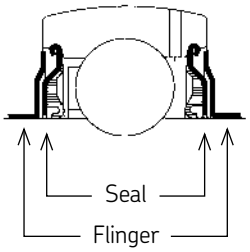
All wide inner ring bearings are fitted with an injection molded, heat stabilized, glass fiber reinforced polyamide 6.6 cage. This material has a favorable combination of strength and elasticity and cages of this material have given excellent performance in a wide variety of applications. The friction of these cages is low and they have excellent running properties under adverse conditions. Additionally, the cages promote quiet operation The operating temperature range for the cage is -40° F to 250° F.



FM, RM designation series seal

Seals are standard on FM and RM series housed units. This grease-purgeable contact seal is comprised of a wear resistant elastomer lip bonded to a steel trash guard.

The lip rides on the precision ground surface of the inner ring providing positive exclusion of dust, moisture and other contaminants.



TF, LF, and WF designation series seal and flinger

The 2F seal is standard on TF, LF and WF series housed units. It consists of the basic seal and a flinger mounted outboard. The flinger provides extra protection of the contact element and serves to "fling" large contaminants away from the seal opening.

This seal has tested extremely effective in a variety of contamination conditions including agricultural applications and very dirty environments.

The NBR contact seals are limited to a continuous operating range of -40° F to 210° F, with brief periods up to 250° F.

Radial loads – standard series

This table may be used to select series P2B and P2BL pillow blocks, F2B and F4B flanged units, P2BT tapped base units and WSTU take-up units.

Determine the operating speed and life required. Then select a unit having a bearing radial load rating equal to or greater than the actual radial load.

The loads listed in this table are calculated to give the indicated L10 basic rating life (hours at speed) and are in accordance with ANSI/ABMA standard 9 – load ratings and fatigue life for ball bearings. A life adjustment factor (a23) of 1.0 has been used throughout.

These loads are for horizontally mounted shafts with the radial load directed downward toward the base of the pillow block.

When the load is heavy, C / P <6.6, a press fit must be used. In the table, this is the area shaded in white.

Table 1

Bearing radial load in pounds for given speed and life – standard duty

Nominal shaft diameter		L10 basic rating life	Speed RPM								
mm	in	hrs	50	100	200	500	1 000	1 800	3 000	3 600	5 000
		5,000	872	692	549	405	321	264	223	210	188
12.70	1/2	10,000	692	549	436	321	255	210	177	166	149
15.88	5/8	20,000	549	436	346	255	202	166	140	132	118
		50,000	405	321	255	188	149	123	103	97	87
		100,000	321	255	202	149	118	97	82	77	69
		5,000	1,160	920	731	538	427	351	296	279	250
		10,000	920	731	580	427	339	279	235	221	198
19.05	3/4	20,000	731	580	460	339	269	221	187	176	157
		50,000	538	427	339	250	198	163	137	129	116
		100,000	427	339	269	198	157	129	109	103	92
20.64	13/16	5,000	1,277	1,014	805	593	471	387	326	307	275
22.22	7/8	10,000	1,014	805	639	471	373	307	259	244	218
23.81	15/16	20,000	805	639	507	373	296	244	206	193	173
25.40	1	50,000	593	471	373	275	218	180	151	143	128
		100,000	471	373	296	218	173	143	120	113	101
26.99	1 1/16	5,000	1,780	1,413	1,121	826	656	539	455	428	384
28.58	1 1/8	10,000	1,413	1,121	890	656	520	428	361	340	304
30.16	1 3/16	20,000	1,121	890	706	520	413	340	286	270	242
31.75	1 1/4	50,000	826	656	520	384	304	250	211	199	178
		100,000	656	520	413	304	242	199	168	158	141
31.75	1 1/4	5,000	2,327	1,847	1,466	1,080	857	705	595	559	501
33.34	1 5/16	10,000	1,847	1,466	1,164	857	681	559	472	444	398
34.92	1 3/8	20,000	1,466	1,164	924	681	540	444	375	352	316
36.51	1 7/16	50,000	1,080	857	681	501	398	327	276	260	233
		100,000	857	681	540	398	316	260	219	206	185
		5,000	2,802	2,224	1,765	1,301	1,032	849	716	673	604
		10,000	2,224	1,765	1,401	1,032	819	673	568	535	479
38.10	1 1/2	20,000	1,765	1,401	1,112	819	650	535	451	424	380
		50,000	1,301	1,032	819	604	479	394	332	313	280
		100,000	1,032	819	650	479	380	313	264	248	222
		5,000	3,029	2,404	1,908	1,406	1,116	917	774	728	653
41.28	1 5/8	10,000	2,404	1,908	1,514	1,116	886	728	614	578	518
42.86	1 11/16	20,000	1,908	1,514	1,202	886	703	578	487	459	411
44.45	1 3/4	50,000	1,406	1,116	886	653	518	426	359	338	303
		100,000	1,116	886	703	518	411	338	285	268	240
		5,000	3,203	2,542	2,018	1,487	1,180	970	818	770	
		10,000	2,542	2,018	1,602	1,180	937	770	649	611	
49.21	1 15/16	20,000	2,018	1,602	1,271	937	743	611	515	485	
		50,000	1,487	1,180	937	690	548	450	380	357	
		100,000	1,180	937	743	548	435	357	301	284	
		5,000	3,978	3,157	2,506	1,846	1,465	1,205	1,016	956	
50.80	2	10,000	3,157	2,506	1,989	1,465	1,163	956	806	759	
55.56	2 3/16	20,000	2,506	1,989	1,579	1,163	923	759	640	602	
		50,000	1,846	1,465	1,163	857	680	559	472	444	
		100,000	1,465	1,163	923	680	540	444	374	352	
		5,000	4,825	3,830	3,040	2,240	1,778	1,461	1,233	1,160	
57.15	2 1/4	10,000	3,830	3,040	2,413	1,778	1,411	1,160	978	921	
61.91	2 7/16	20,000	3,040	2,413	1,915	1,411	1,120	921	776	731	
		50,000	2,240	1,778	1,411	1,040	825	678	572	538	
		100,000	1,778	1,411	1,120	825	655	538	454	427	
		5,000	5,231	4,152	3,295	2,428	1,927	1,584	1,336	1,257	
63.50	2 1/2	10,000	4,152	3,295	2,615	1,927	1,529	1,257	1,060	998	
68.26	2 11/16	20,000	3,295	2,615	2,076	1,529	1,214	998	842	792	
		50,000	2,428	1,927	1,529	1,127	894	735	620	584	
		100,000	1,927	1,529	1,214	894	710	584	492	463	
		5,000	6,042	4,795	3,806	2,804	2,226	1,830	1,543		
69.85	2 3/4	10,000	4,795	3,806	3,021	2,226	1,767	1,452	1,225		
74.61	2 15/16	20,000	3,806	3,021	2,398	1,767	1,402	1,153	972		
		50,000	2,804	2,226	1,767	1,302	1,033	849	716		
		100,000	2,226	1,767	1,402	1,033	820	674	569		
		5,000	8,677	6,887	5,466	4,028	3,197	2,628			
		10,000	6,887	5,466	4,339	3,197	2,537	2,086			
87.31	3 7/16	20,000	5,466	4,339	3,444	2,537	2,014	1,656			
		50,000	4,028	3,197	2,537	1,869	1,484	1,220			
		100,000	3,197	2,537	2,014	1,484	1,178	968			
		5,000	11,272	8,947	7,101	5,232	4,153	3,414			
100.01	3 15/16	10,000	8,947	7,101	5,636	4,153	3,296	2,710			
101.60	4	20,000	7,101	5,636	4,473	3,296	2,616	2,151			
		50,000	5,232	4,153	3,296	2,429	1,928	1,585			
		100,000	4,153	3,296	2,616	1,928	1,530	1,258			

Radial loads – medium series

This table may be used to select series P2BM pillow blocks, F2BM and F4BM flanged units, and WSTU take-up units.

Determine the operating speed and life required. Then select a unit having a bearing radial load rating equal to or greater than the actual radial load.

The loads listed in this table are calculated to give the indicated L10 basic rating life (hours at speed) and are in accordance with ANSI/ABMA standard 9 – load ratings and fatigue life for ball bearings. A life adjustment factor (a23) of 1.0 has been used throughout.

These loads are for horizontally mounted shafts with the radial load directed downward toward the base of the pillow block.

When the load is heavy, C / P <6.6, a press fit must be used. In the table, this is the area shaded in white.

Table 2

Bearing radial load in pounds for given speed and life – standard duty

Nominal shaft diameter		L10 basic rating life	Speed RPM								
mm	in	hrs	50	100	200	500	1 000	1 800	3 000	3 600	5 000
		5,000	2,802	2,224	1,765	1,301	1,032	849	716	673	604
		10,000	2,224	1,765	1,401	1,032	819	673	568	535	479
36.51	1 7/16	20,000	1,765	1,401	1,112	819	650	535	451	424	380
		50,000	1,301	1,032	819	604	479	394	332	313	280
		100,000	1,032	819	650	479	380	313	264	248	222
		5,000	3,029	2,404	1,908	1,406	1,116	917	774	728	653
		10,000	2,404	1,908	1,514	1,116	886	728	614	578	518
38.10	1 1/2	20,000	1,908	1,514	1,202	886	703	578	487	459	411
		50,000	1,406	1,116	886	653	518	426	359	338	303
		100,000	1,116	886	703	518	411	338	285	268	240
		5,000	3,203	2,542	2,018	1,487	1,180	970	818	770	
42.86	1 11/16	10,000	2,542	2,018	1,602	1,180	937	770	649	611	
44.45	1 3/4	20,000	2,018	1,602	1,271	937	743	611	515	485	
		50,000	1,487	1,180	937	690	548	450	380	357	
		100,000	1,180	937	743	548	435	357	301	284	
		5,000	3,978	3,157	2,506	1,846	1,465	1,205	1,016	956	
		10,000	3,157	2,506	1,989	1,465	1,163	956	806	759	
49.21	1 15/16	20,000	2,506	1,989	1,579	1,163	923	759	640	602	
		50,000	1,846	1,465	1,163	857	680	559	472	444	
		100,000	1,465	1,163	923	680	540	444	374	352	
		5,000	4,825	3,830	3,040	2,240	1,778	1,461	1,233	1,160	
		10,000	3,830	3,040	2,413	1,778	1,411	1,160	978	921	
55.56	2 3/16	20,000	3,040	2,413	1,915	1,411	1,120	921	776	731	
		50,000	2,240	1,778	1,411	1,040	825	678	572	538	
		100,000	1,778	1,411	1,120	825	655	538	454	427	
		5,000	5,677	4,506	3,576	2,635	2,091	1,719	1,450		
61.91	2 7/16	10,000	4,506	3,576	2,838	2,091	1,660	1,365	1,151		
63.50	2 1/2	20,000	3,576	2,838	2,253	1,660	1,317	1,083	913		
		50,000	2,635	2,091	1,660	1,223	971	798	673		
		100,000	2,091	1,660	1,317	971	770	633	534		
		5,000	6,042	4,795	3,806	2,804	2,226	1,830	1,543		
		10,000	4,795	3,806	3,021	2,226	1,767	1,452	1,225		
68.26	2 11/16	20,000	3,806	3,021	2,398	1,767	1,402	1,153	972		
		50,000	2,804	2,226	1,767	1,302	1,033	849	716		
		100,000	2,226	1,767	1,402	1,033	820	674	569		
		5,000	6,650	5,278	4,189	3,087	2,450	2,014	1,699		
74.61	2 15/16	10,000	5,278	4,189	3,325	2,450	1,944	1,598	1,348		
76.20	3	20,000	4,189	3,325	2,639	1,944	1,543	1,269	1,070		
		50,000	3,087	2,450	1,944	1,433	1,137	935	788		
		100,000	2,450	1,944	1,543	1,137	903	742	626		
		5,000	11,272	8,947	7,101	5,232	4,153	3,414			
87.31	3 7/16	10,000	8,947	7,101	5,636	4,153	3,296	2,710			
88.90	3 1/2	20,000	7,101	5,636	4,473	3,296	2,616	2,151			
		50,000	5,232	4,153	3,296	2,429	1,928	1,585			
		100,000	4,153	3,296	2,616	1,928	1,530	1,258			

Air handling units

If you're responsible for designing high efficiency, quiet-running air handling equipment, then you know the importance of specifying the right bearing for the job.

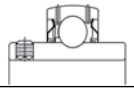
The right bearing not only meets the specific performance requirements of your air handling application, but also provides exceptional value with:

- On-time deliverySuperior product quality
- Unsurpassed customer service
- Expert technical support

As the world leader in rolling bearing technology, SKF is aware of the need for superior bearing performance in air handling applications. That's why we've committed the resources and have developed special ball bearing units to meet the performance requirements of air handling applications.

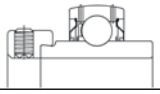
SKF air handling ball bearing units feature an anti-rotation pin that ensures the outer ring does not rotate. Ground and honed raceways and high precision balls are prelubricated with a special, long life grease with a Lithium/Calcium thickener/soap, and an NLGI #2 consistency to help ensure long service life.

Unit ball shaft locking methods



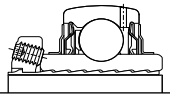
Set screw locking (RM-AH, TF-AH)

- Accommodates reverse rotation
- Optimized set screw location
- Optimized holding power
- Minimum inner ring distortion



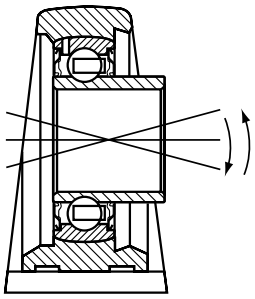
Eccentric locking (FM-AH, WF-AH)

- For rotation in one direction
- Easy to dismount
- Does less damage to shaft than normal set screw lock



ConCentra™ locking (LF-AH)

- SKF's patented mechanical connector applies a near 360° concentric grip around the shaft
- Slotted ring grips the shaft with the proper locking torque

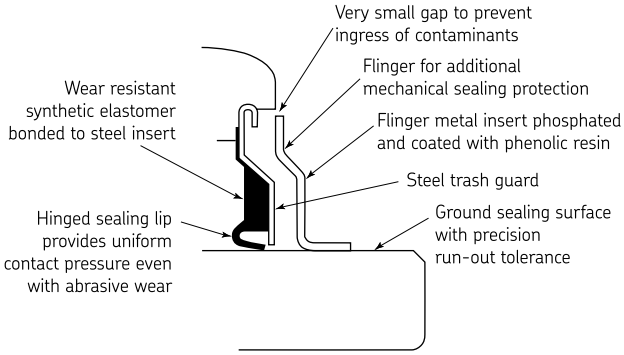


Closely controlled air-handling alignment torque increases system reliability to allow operating misalignment. An anti-rotation pin ensures that the outer ring does not rotate.

Air handling grease and sealing arrangement

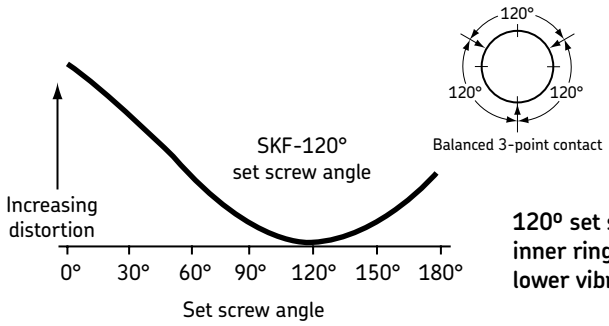
Contact seals and flingers allow for high speed operation and provide superior protection from contaminants in aggressive operating environments. The seal features a land riding design and is molded of synthetic rubber.

- Start-up capability of -20° F (-29° C)
- Operating range of -20° to +210° F (-29° to +99° C)
- Good water resistance and rust protection



NOTE: The SKF air handling units have longer service lives than other bearing units owing to the use of high performance grease and an improved sealing arrangement. The selection of SKF air handing units can be optimized using the SKF rating life calculation. Please contact SKF Applications Engineering for assistance.

Inner ring distortion vs. angle between set screws



120° set screw spacing minimizes inner ring distortion. This results in lower vibration and better sealing.

Notes

Set screw locking – pillow block

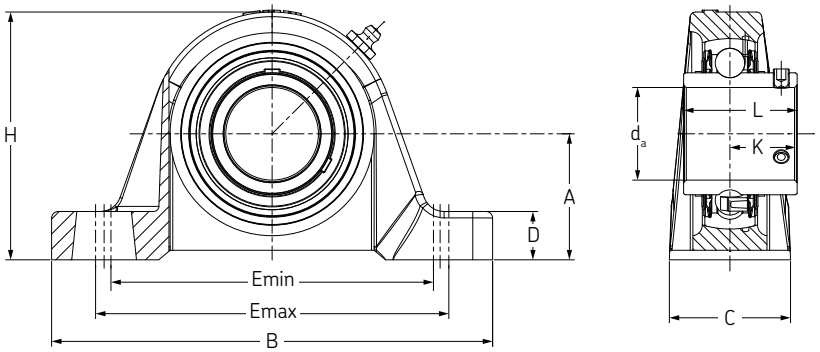
P2B-TF / standard duty & P2BM-TF / medium duty

Cast-iron housing
Standard center height
Wide inner ring
Seals & flingers

Replaces (standard duty): P2B-SC, YAS, NP, P3U, VPS-2, UCP
Replaces (medium duty): P2B-SCM, YASM, MP, VPS-3, UCPX

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit



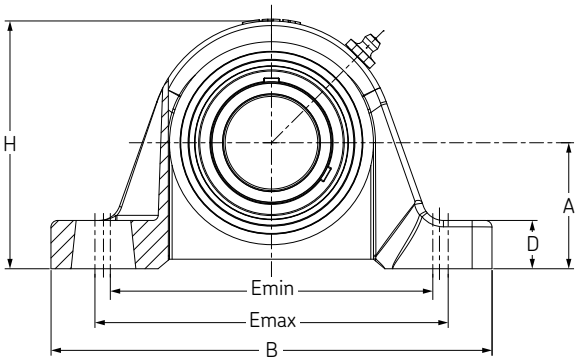
For bearing information see page **290**.

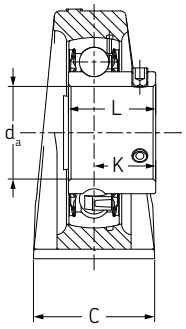
Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2B 008-TF**	**3 1/8**	**4 1/8**	**1 3/16**	5 15/32	1.268	0.469	2.219	0.626	1.079	3/8	**YAR 203-008-2F**	2 150	1.1
5/8		**P2B 010-TF**											**YAR 203-010-2F**	2 150	1.0
3/4		**P2B 012-TF**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	0.720	1.220	3/8	**YAR 204-012-2F**	2 850	1.3
7/8		**P2B 014-TF**											**YAR 205-014-2F**	3 150	1.8
15/16		**P2B 015-TF**	**3 3/4**	**4 1/2**	**1 7/16**	5 1/2	1.500	0.625	2.781	0.780	1.343	3/8	**YAR 205-015-2F**	3 150	1.7
1		**P2B 100-TF**											**YAR 205-100-2F**	3 150	1.7
1 1/8		**P2B 102-TF**											**YAR 206-102-2F**	4 380	2.8
1 3/16		**P2B 103-TF**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	0.874	1.500	1/2	**YAR 206-103-2F**	4 380	2.6
1 1/4		**P2B 104S-TF**											**YAR 206-104-2F**	4 380	2.6
	30	**P2B 30M-TF**											**YAR 206-2F**	4 380	2.6
1 1/4		**P2B 104-TF**											**YAR 207-104-2F**	5 730	3.4
1 3/8		**P2B 106-TF**	**4 11/16**	**5 5/16**	**1 7/8**	6 9/16	1.803	0.719	3.687	1.000	1.689	1/2	**YAR 207-106-2F**	5 730	3.3
1 7/16		**P2B 107-TF**											**YAR 207-107-2F**	5 730	3.3
	35	**P2B 35M-TF**											**YAR 207-2F**	5 730	3.3
1 7/16		**P2BM 107-TF**											**YAR 208-107-2F**	6 900	4.7
1 1/2		**P2B 108-TF**	**5 3/32**	**5 23/32**	**2 1/8**	7 1/4	1.921	0.813	4.094	1.189	1.937	1/2	**YAR 208-108-2F**	6 900	4.6
	40	**P2B 40M-TF**											**YAR 208-2F**	6 900	4.5
1 5/8		**P2B 110-TF**											**YAR 209-110-2F**	7 460	5.2
1 11/16		**P2B 111-TF**	**5 7/16**	**6 1/8**	**2 1/8**	7 15/32	2.016	0.750	4.250	1.189	1.937	1/2	**YAR 209-111-2F**	7 460	5.1
1 3/4		**P2B 112-TF**											**YAR 209-112-2F**	7 460	5.0
	45	**P2B 45M-TF**											**YAR 209-2F**	7 460	5.0
1 11/16		**P2BM 111-TF**											**YAR 210-111-2F**	7 890	6.4
1 3/4		**P2BM 112-TF**	**6**	**6 1/2**	**2 1/4**	8 1/8	2.189	0.750	4.563	1.283	2.031	5/8	**YAR 210-112-2F**	7 890	6.0
1 15/16		**P2B 115-TF**											**YAR 210-115-2F**	7 890	6.0
	50	**P2B 50M-TF**											**YAR 210-2F**	7 890	5.8
1 15/16		**P2BM 115-TF**											**YAR 211-115-2F**	9 800	7.9
2		**P2B 200-TF**	**6 15/32**	**6 31/32**	**2 1/2**	8 5/8	2.319	0.875	4.969	1.315	2.189	5/8	**YAR 211-200-2F**	9 800	8.2
2 3/16		**P2B 203-TF**											**YAR 211-203-2F**	9 800	7.7
2 3/16		**P2BM 203-TF**											**YAR 212-203-2F**	11 840	10.5
2 1/4		**P2B 204-TF**	**6 7/8**	**7 5/8**	**2 3/4**	9 7/16	2.425	0.875	5.563	1.563	2.563	5/8	**YAR 212-204-2F**	11 840	10.4
2 7/16		**P2B 207-TF**											**YAR 212-207-2F**	11 840	9.8
	60	**P2B 60M-TF**											**YAR 212-2F**	11 840	10.0
2 1/2		**P2B 208-TF**											**YAR 213-208-2F**	12 850	14.0
2 11/16		**P2B 211-TF**	**7 9/16**	**8 7/16**	**3**	10 7/16	2.831	1.000	6.047	1.689	2.689	3/4	**YAR 213-211-2F**	12 850	13.5
	65	**P2B 65M-TF**											**YAR 213-2F**	12 850	13.9
2 7/16		**P2BM 207-TF**	**7 27/32**	**8 23/32**	**3**	10 15/32	2.839	1.109	6.142	1.563	2.752	3/4	**YAR 214-207-2F**	14 020	15.5
2 3/4		**P2B 212-TF**	**8 3/32**	**8 31/32**	3 1/4	10 13/16	2.874	1.000	6.625	1.823	2.886	3/4	**YAR 215-212-2F**	**14900**	**17.5**
2 15/16		**P2B 215-TF**											**YAR 215-215-2F**	**14900**	**16.9**
2 15/16		**P2BM 215-TF**	**8 1/2**	**9 3/4**	3.5	11 1/2	3.063	1.344	6.937	1.874	3.063	3/4	**YAR 216-215-2F**	**16360**	**21.2**
3		**P2BM 300-TF**											**YAR 216-300-2F**	**16360**	**20.9**

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

Set screw locking – pillow block

P2B-RM / standard duty





Cast-iron housing
Standard center height
Narrow inner ring
Seals

Replaces: P2B-VSC, SAS, NP-C, P3S, VPS-1, BP

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2B 008-RM**	**3 1/8**	**4 1/8**	**1 3/16**	5 15/32	1.268	0.469	2.219	0.626	0.870	3/8	**YAT 203-008**	2 150	1.0
5/8		**P2B 010-RM**											**YAT 203-010**	2 150	1.0
3/4		**P2B 012-RM**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	0.720	1.004	3/8	**YAT 204-012**	2 850	1.3
7/8		**P2B 014-RM**	**3 3/4**	**4 1/2**	**1 7/16**	5 1/2	1.500	0.625	2.781	0.768	1.071	3/8	**YAT 205-014**	3 150	1.7
1		**P2B 100-RM**											**YAT 205-100**	3 150	1.6
1 1/8		**P2B 102-RM**											**YAT 206-102**	4 380	2.6
1 3/16		**P2B 103-RM**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	0.827	1.189	1/2	**YAT 206-103**	4 380	2.5
1 1/4		**P2B 104S-RM**											**YAT 206-104**	4 380	2.5
1 1/4		**P2B 104-RM**											**YAT 207-104**	5 730	3.3
1 3/8		**P2B 106-RM**	**4 11/16**	**5 5/16**	**1 7/8**	6 9/16	1.803	0.719	3.687	0.917	1.299	1/2	**YAT 207-106**	5 730	3.2
1 7/16		**P2B 107-RM**											**YAT 207-107**	5 730	3.1
1 1/2		**P2B 108-RM**	**5 3/32**	**5 23/32**	**2 1/8**	7 1/4	1.921	0.813	4.094	0.996	1.417	1/2	**YAT 208-108**	6 900	4.4
1 11/16		**P2B 111-RM**	**5 7/16**	**6 1/8**	**2 1/8**	7 15/32	2.016	0.750	4.250	1.016	1.457	1/2	**YAT 209-111**	7 460	4.7
1 3/4		**P2B 112-RM**											**YAT 209-112**	7 460	4.7
1 15/16		**P2B 115-RM**	**6**	**6 1/2**	**2 1/4**	8 1/8	2.189	0.750	4.563	1.087	1.528	5/8	**YAT 210-115**	7 890	5.6
2		**P2B 200-RM**	**6 15/32**	**6 31/32**	**2 1/2**	8 5/8	2.319	0.875	4.969	1.280	1.772	5/8	**YAT 211-200**	9 800	7.7
2 3/16		**P2B 203-RM**											**YAT 211-203**	9 800	7.5

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

Set screw locking – pillow block

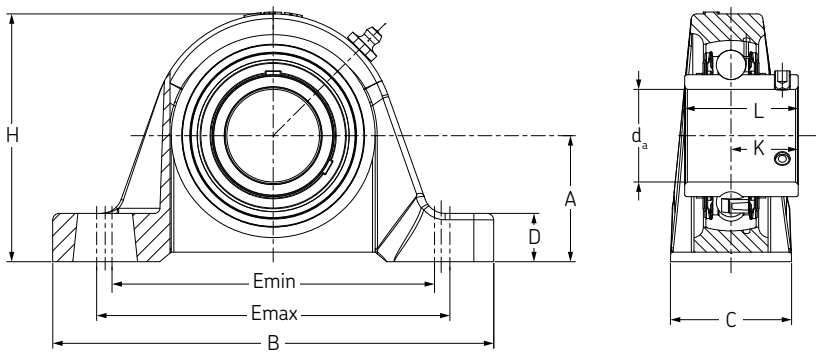
P2BL-TF / standard duty

Cast-iron housing
Low center height
Wide inner ring
Seals & flingers

Replaces: P2B-SCB, YAK, NPL, PL3U, VPLS-2, UCLP

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit



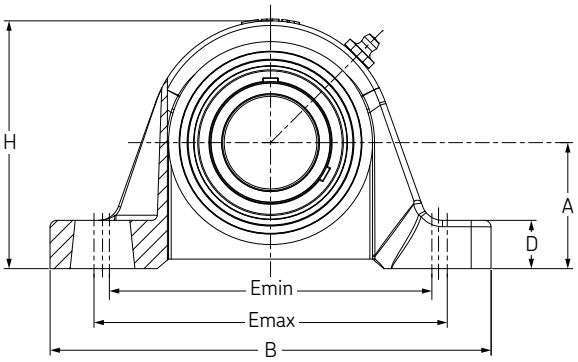
For bearing information see page **290**.

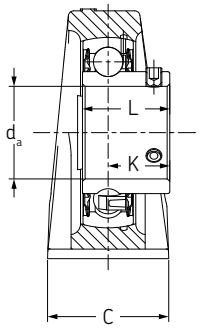
Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2BL 008-TF**	**3 1/8**	**4 1/8**	**1 1/16**	5 15/32	1.268	0.344	2.094	0.626	1.079	3/8	**YAR 203-008-2F**	2 150	0.9
5/8		**P2BL 010-TF**											**YAR 203-010-2F**	2 150	0.9
3/4		**P2BL 012-TF**	**3 3/8**	**4 1/8**	**1 1/4**	5	1.339	0.469	2.469	0.720	1.220	3/8	**YAR 204-012-2F**	2 850	1.3
7/8		**P2BL 014-TF**											**YAR 205-014-2F**	3 150	1.7
15/16		**P2BL 015-TF**	**3 3/4**	**4 1/2**	**1 5/16**	5 1/2	1.500	0.500	2.656	0.780	1.343	3/8	**YAR 205-015-2F**	3 150	1.6
1		**P2BL 100-TF**											**YAR 205-100-2F**	3 150	1.6
1 1/8		**P2BL 102-TF**											**YAR 206-102-2F**	4 380	2.5
1 3/16		**P2BL 103-TF**	**4 3/8**	**5 1/16**	**1 9/16**	6 1/2	1.756	0.531	3.156	0.874	1.500	1/2	**YAR 206-103-2F**	4 380	2.5
1 1/4		**P2BL 104S-TF**											**YAR 206-104-2F**	4 380	2.4
1 1/4		**P2BL 104-TF**											**YAR 207-104-2F**	5 730	3.3
1 3/8		**P2BL 106-TF**	**4 11/16**	**5 5/16**	**1 13/16**	6 9/16	1.803	0.656	3.625	1.000	1.689	1/2	**YAR 207-106-2F**	5 730	3.2
1 7/16		**P2BL 107-TF**											**YAR 207-107-2F**	5 730	3.2
1 5/8		**P2BL 110-TF**											**YAR 209-110-2F**	7 460	5.1
1 11/16		**P2BL 111-TF**	**5 7/16**	**6 1/8**	**2 1/16**	7 15/32	2.016	0.687	4.187	1.189	1.937	1/2	**YAR 209-111-2F**	7 460	5.0
1 3/4		**P2BL 112-TF**											**YAR 209-112-2F**	7 460	4.9
1 15/16		**P2BL 115-TF**	**6**	**6 1/2**	**2 3/16**	8 1/8	2.189	0.687	4.500	1.283	2.031	5/8	**YAR 210-115-2F**	7 890	5.8
2		**P2BL 200-TF**	**6 15/32**	**7 21/64**	**2 7/16**	8 5/8	2.319	0.813	4.906	1.315	2.189	5/8	**YAR 211-200-2F**	9 800	7.9
2 3/16		**P2BL 203-TF**											**YAR 211-203-2F**	9 800	7.5
2 1/4		**P2BL 204-TF**	**6 7/8**	**7 15/16**	**2 11/16**	9 1/2	2.425	0.813	5.500	1.563	2.563	5/8	**YAR 212-204-2F**	11 840	10.3
2 7/16		**P2BL 207-TF**											**YAR 212-207-2F**	11 840	9.7
2 3/4		**P2BL 212-TF**	**8 3/32**	**8 31/32**	**3 5/16**	10 13/16	2.874	1.061	6.686	1.823	2.886	3/4	**YAR 215-212-2F**	14 900	9.6
2 15/16		**P2BL 215-TF**											**YAR 215-215-2F**	14 900	17.1

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

Set screw locking – pillow block

P2BL-RM / standard duty





Cast-iron housing
Low center height
Narrow inner ring
Seals

Replaces: P2B-VSCB, SAK, NPL-C, PL3S, VPLS-1, BLP

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2 5/8		**P2BL 008-RM** **P2BL 010-RM**	**3 1/8**	**4 1/8**	**1 1/16**	5 15/32	1.268	0.344	2.094	0.626	0.870	3/8	**YAT 203-008** **YAT 203-010**	2 150 2 150	0.9 0.9
3/4		**P2BL 012-RM**	**3 3/8**	**4 1/8**	**1 1/4**	5	1.339	0.469	2.469	0.720	1.004	3/8	**YAT 204-012**	2 850	1.2
7/8 1		**P2BL 014-RM** **P2BL 100-RM**	**3 3/4**	**4 1/2**	**1 5/16**	5 1/2	1.500	0.500	2.656	0.768	1.071	3/8	**YAT 205-014** **YAT 205-100**	3 150 3 150	1.6 1.5
1 1/8 1 3/16 1 1/4		**P2BL 102-RM** **P2BL 103-RM** **P2BL 104S-RM**	**4 3/8**	**5 1/16**	**1 9/16**	6 1/2	1.756	0.531	3.156	0.827	1.189	1/2	**YAT 206-102** **YAT 206-103** **YAT 206-104**	4 380 4 380 4 380	2.4 2.4 2.3
1 1/4 1 3/8 1 7/16		**P2BL 104-RM** **P2BL 106-RM** **P2BL 107-RM**	**4 22/32**	**5 5/16**	**1 13/16**	6 9/16	1.803	0.656	3.625	0.917	1.299	1/2	**YAT 207-104** **YAT 207-106** **YAT 207-107**	5 730 5 730 5 730	3.2 3.1 3.0
1 1/2		**P2BL 108-RM**	**5 3/32**	**5 23/32**	**1 15/16**	7 1/4	1.921	0.813	4.000	0.996	1.417	1/2	**YAT 208-108**	6 900	4.3
1 11/16 1 3/4		**P2BL 111-RM** **P2BL 112-RM**	**5 7/16**	**6 1/8**	**2 1/16**	7 15/32	2.016	0.687	4.187	1.016	1.457	1/2	**YAT 209-111** **YAT 209-112**	7 460 7 460	4.6 4.6
1 15/16		**P2BL 115-RM**	**6**	**6 1/2**	**2 3/16**	8 1/8	2.189	0.687	4.500	1.087	1.528	5/8	**YAT 210-115**	7 890	5.5
2 2 3/16		**P2BL 200-RM** **P2BL 203-RM**	**6 15/32**	**7 21/64**	**2 7/16**	8 5/8	2.319	0.813	4.906	1.280	1.772	5/8	**YAT 211-200** **YAT 211-203**	9 800 9 800	7.5 7.3

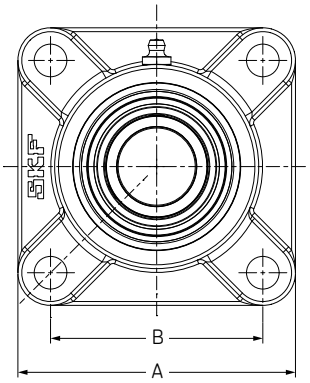
Consult SKF USA Inc. prior to design change or order placement.

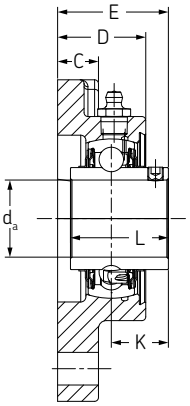
Set screw locking – 4-bolt flange

F4B-TF / standard duty & F4BM-TF / medium duty

Cast-iron flange
Four-bolt mounting
Wide inner ring
Seals & flingers

Replaces (standard duty): F4B-SC, YCJ, SF, F3U, VF4S-2, UCF
Replaces (medium duty): F4B-SCM, YCJM, MSF, VF4S-3, UCFX





How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

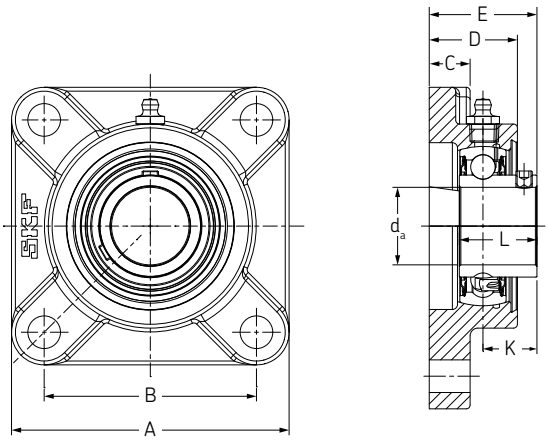
For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
1/2		**F4B 008-TF**	**3**	**2 1/8**	0.437	1.094	1.283	0.626	1.079	3/8	**YAR 203-008-2F**	2 150	–	1.1
5/8		**F4B 010-TF**									**YAR 203-010-2F**	2 150	–	1.0
3/4		**F4B 012-TF**	**3 3/8**	**2 1/2**	0.374	1.134	1.472	0.720	1.220	3/8	**YAR 204-012-2F**	2 850	ECY 204	1.3
7/8		**F4B 014-TF**									**YAR 205-014-2F**	3 150	ECY 205	1.9
15/16		**F4B 015-TF**	**3 3/4**	**2 3/4**	0.433	1.228	1.602	0.780	1.343	7/16	**YAR 205-015-2F**	3 150	ECY 205	1.9
1		**F4B 100-TF**									**YAR 205-100-2F**	3 150	ECY 205	1.9
	25	**F4B 25M-TF**									**YAR 205-2F**	3 150	ECY 205	1.9
1 1/8		**F4B 102-TF**									**YAR 206-102-2F**	4 380	ECY 206	2.9
1 3/16		**F4B 103-TF**	**4 1/4**	**3 1/4**	0.626	1.350	1.697	0.874	1.500	7/16	**YAR 206-103-2F**	4 380	ECY 206	2.8
1 1/4		**F4B 104S-TF**									**YAR 206-104-2F**	4 380	ECY 206	2.8
	30	**F4B 30M-TF**									**YAR 206-2F**	4 380	ECY 206	2.8
1 1/4		**F4B 104-TF**									**YAR 207-104-2F**	5 730	ECY 207	3.7
1 3/8		**F4B 106-TF**	**4 5/8**	**3 5/8**	0.500	1.500	1.906	1.000	1.689	1/2	**YAR 207-106-2F**	5 730	ECY 207	3.6
1 7/16		**F4B 107-TF**									**YAR 207-107-2F**	5 730	ECY 207	3.5
1 7/16		**F4BM 107-TF**									**YAR 208-107-2F**	6 900	ECY 208	5.1
1 1/2		**F4B 108-TF**	**5 1/8**	**4**	0.657	1.531	2.189	1.189	1.937	1/2	**YAR 208-108-2F**	6 900	ECY 208	5.1
	40	**F4B 40M-TF**									**YAR 208-2F**	6 900	ECY 208	5.0
1 5/8		**F4B 110-TF**									**YAR 209-110-2F**	7 460	ECY 209	5.8
1 11/16		**F4B 111-TF**	**5 3/8**	**4 1/8**	0.720	1.563	2.189	1.189	1.937	1/2	**YAR 209-111-2F**	7 460	ECY 209	5.7
1 3/4		**F4B 112-TF**									**YAR 209-112-2F**	7 460	ECY 209	5.6
1 11/16		**F4BM 111-TF**									**YAR 210-111-2F**	7 890	ECY 210	6.8
1 3/4		**F4BM 112-TF**	**5 5/8**	**4 3/8**	0.626	1.811	2.425	1.283	2.031	1/2	**YAR 210-112-2F**	7 890	ECY 210	6.7
1 15/16		**F4B 115-TF**									**YAR 210-115-2F**	7 890	ECY 210	6.4
1 15/16		**F4BM 115-TF**									**YAR 211-115-2F**	9 800	ECY 211	9.7
2		**F4B 200-TF**	**6 3/8**	**5 1/8**	0.689	1.969	2.575	1.315	2.189	5/8	**YAR 211-200-2F**	9 800	ECY 211	9.6
2 3/16		**F4B 203-TF**									**YAR 211-203-2F**	9 800	ECY 211	9.2
2 3/16		**F4BM 203-TF**									**YAR 212-203-2F**	11 840	ECY 212	11.2
2 1/4		**F4B 204-TF**	**6 7/8**	**5 5/8**	0.689	2.157	2.906	1.563	2.563	5/8	**YAR 212-204-2F**	11 840	ECY 212	11.1
2 7/16		**F4B 207-TF**									**YAR 212-207-2F**	11 840	ECY 212	10.6
2 1/2		**F4B 208-TF**	**7 3/8**	**5 7/8**	0.874	2.311	3.189	1.689	2.689	5/8	**YAR 213-208-2F**	12 850	ECY 213	14.2
2 11/16		**F4B 211-TF**									**YAR 213-211-2F**	12 850	ECY 213	13.6
2 7/16		**F4BM 207-TF**	**7 19/32**	**5 7/8**	0.874	2.437	3.063	1.563	2.752	5/8	**YAR 214-207-2F**	14 020	ECY 214	16.5
2 3/4		**F4B 212-TF**	**7 7/8**	**6**	0.874	2.563	3.429	1.823	2.886	3/4	**YAR 215-212-2F**	14 900	ECY 215	17.4
2 15/16		**F4B 215-TF**									**YAR 215-215-2F**	14 900	ECY 215	16.8
2 15/16		**F4BM 215-TF**	**7 25/32**	**6**	0.945	2.402	3.449	1.874	3.063	7/8	**YAR 216-215-2F**	16 360	–	17.5
3		**F4BM 300-TF**									YAR 216-300-2F	16 360	–	17.2

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

Set screw locking – 4-bolt flange

F4B-RM / standard duty



Cast-iron flange
Four-bolt mounting
Narrow inner ring
Seals

Replaces: F4B-VSC, SCJ, SF-C, F3S, VF4S-1, BF

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
1/2		**F4B 008-RM**	**3**	**2 1/8**	0.437	1.094	1.283	0.626	0.870	3/8	**YAT 203-008**	2 150	–	1.0
5/8		**F4B 010-RM**									**YAT 203-010**	2 150	–	1.0
3/4		**F4B 012-RM**	**3 3/8**	**2 1/2**	0.374	1.134	1.472	0.720	1.004	3/8	**YAT 204-012**	2 850	ECY 204	1.3
7/8		**F4B 014-RM**	**3 3/4**	**2 3/4**	0.433	1.228	1.591	0.768	1.071	7/16	**YAT 205-014**	3 150	ECY 205	1.9
1		**F4B 100-RM**									**YAT 205-100**	3 150	ECY 205	1.8
1 1/8		**F4B 102-RM**					1.650	0.827	1.189	7/16	**YAT 206-102**	4 380	ECY 206	2.8
1 3/16		**F4B 103-RM**	**4 1/4**	**3 1/4**	0.626	1.350	1.650	0.827	1.189	7/16	**YAT 206-103**	4 380	ECY 206	2.8
1 1/4		**F4B 104S-RM**					1.650	0.827	1.189	7/16	**YAT 206-104**	4 380	ECY 206	2.6
1 1/4		**F4B 104-RM**									**YAT 207-104**	5 730	ECY 207	3.6
1 3/8		**F4B 106-RM**	**4 5/8**	**3 5/8**	0.500	1.500	1.823	0.917	1.299	1/2	**YAT 207-106**	5 730	ECY 207	3.5
1 7/16		**F4B 107-RM**									**YAT 207-107**	5 730	ECY 207	3.4
1 1/2		**F4B 108-RM**	**5 1/8**	**4**	0.657	1.531	1.996	0.996	1.417	1/2	**YAT 208-108**	6 900	ECY 208	4.7
1 11/16		**F4B 111-RM**	**5 3/8**	**4 1/8**	0.720	1.563	2.016	1.016	1.457	1/2	**YAT 209-111**	7 460	ECY 209	5.5
1 3/4		**F4B 112-RM**									**YAT 209-112**	7 460	ECY 209	5.4
1 15/16		**F4B 115-RM**	**5 5/8**	**4 3/8**	0.626	1.811	2.228	1.087	1.528	1/2	**YAT 210-115**	7 890	ECY 210	6.1
2		**F4B 200-RM**	**6 3/8**	**5 1/8**	0.689	1.969	2.539	1.280	1.772	5/8	**YAT 211-200**	9 800	ECY 211	9.3
2 3/16		**F4B 203-RM**									**YAT 211-203**	9 800	ECY 211	8.9

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

Set screw locking – 2-bolt flange

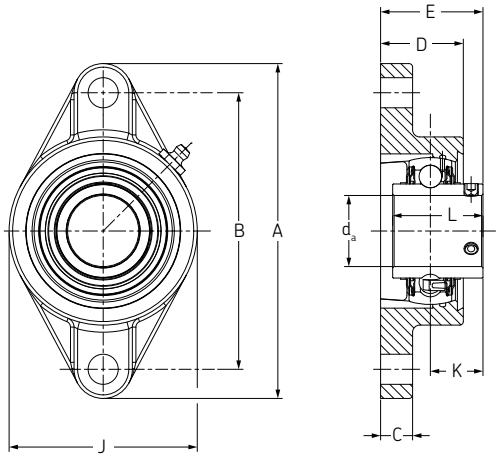
F2B-TF / standard duty

Cast-iron flange
Two-bolt mounting
Wide inner ring
Seals & flingers

Replaces: F2B-SC, YCJT, SFT, FX3U, VF2S-2, UCFT

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in								in		lbf		lb
1/2		**F2B 008-TF**	3 7/8	3	0.437	0.945	1.295	2.374	0.626	1.079	3/8	**YAR 203-008-2F**	2 150	-	0.9
5/8		**F2B 010-TF**										**YAR 203-010-2F**	2 150	-	0.9
3/4		**F2B 012-TF**	4 7/16	3 17/32	0.437	1.142	1.469	2.374	0.720	1.220	3/8	**YAR 204-012-2F**	2 850	ECY 204	1.0
7/8		**F2B 014-TF**										**YAR 205-014-2F**	3 150	ECY 205	1.5
15/16		**F2B 015-TF**	4 7/8	3 7/8	0.531	1.165	1.528	2.752	0.780	1.342	7/16	**YAR 205-015-2F**	3 150	ECY 205	1.4
1		**F2B 100-TF**										**YAR 205-100-2F**	3 150	ECY 205	1.4
	25	**F2B 25M-TF**										**YAR 205-2F**	3 150	ECY 205	1.4
1 1/8		**F2B 102-TF**										**YAR 206-102-2F**	4 380	ECY 206	2.1
1 3/16		**F2B 103-TF**	5 9/16	4 19/32	0.531	1.374	1.701	3.126	0.874	1.500	7/16	**YAR 206-103-2F**	4 380	ECY 206	2.0
1 1/4		**F2B 104S-TF**										**YAR 206-104-2F**	4 380	ECY 206	2.0
	30	**F2B 30M-TF**										**YAR 206-2F**	4 380	ECY 206	2.1
1 1/4		**F2B 104-TF**										**YAR 207-104-2F**	5 730	ECY 207	3.0
1 3/8		**F2B 106-TF**	6 1/8	5 1/8	0.563	1.469	1.906	3.626	1.000	1.689	1/2	**YAR 207-106-2F**	5 730	ECY 207	2.9
1 7/16		**F2B 107-TF**										**YAR 207-107-2F**	5 730	ECY 207	2.8
1 1/2		**F2B 108-TF**	6 3/4	5 21/32	0.563	1.531	2.173	4.126	1.189	1.937	1/2	**YAR 208-108-2F**	6 900	ECY 208	4.0
	40	**F2B 40M-TF**										**YAR 208-2F**	6 900	ECY 208	3.9
1 5/8		**F2B 110-TF**										**YAR 209-110-2F**	7 460	ECY 209	5.0
1 11/16		**F2B 111-TF**	7 1/16	5 27/32	0.563	1.752	2.173	4.374	1.189	1.937	1/2	**YAR 209-111-2F**	7 460	ECY 209	4.9
1 3/4		**F2B 112-TF**										**YAR 209-112-2F**	7 460	ECY 209	4.7
1 15/16		**F2B 115-TF**	7 7/16	6 3/16	0.563	1.843	2.465	4.563	1.283	2.031	1/2	**YAR 210-115-2F**	7 890	ECY 210	5.2
2		**F2B 200-TF**	8 1/2	7 1/4	0.811	1.969	2.614	5.252	1.315	2.189	5/8	**YAR 211-200-2F**	9 800	ECY 211	7.9
2 3/16		**F2B 203-TF**										**YAR 211-203-2F**	9 800	ECY 211	7.5

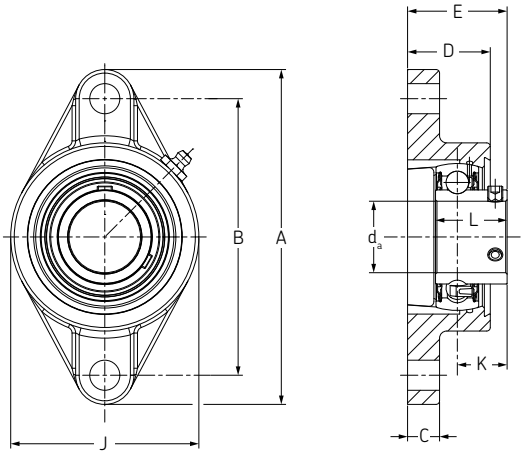
Consult SKF USA Inc. prior to design change or order placement.

Set screw locking – 2-bolt flange

F2B-RM / standard duty

Cast-iron flange
Two-bolt mounting
Set screw locking
Seals

Replaces: F2B-VSC, SCJT, SFT-C, FX3S, VF2S-1, BFT



How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in								in		lbf		lb
1/2		**F2B 008-RM**	3 7/8	3	0.437	0.945	1.295	2.374	0.626	0.870	3/8	**YAT 203-008**	2 150	-	0.9
5/8		**F2B 010-RM**										**YAT 203-010**	2 150	-	0.9
3/4		**F2B 012-RM**	4 7/16	3 17/32	0.437	1.142	1.469	2.374	0.720	1.004	3/8	**YAT 204-012**	2 850	ECY 204	1.0
7/8		**F2B 014-RM**	4 7/8	3 7/8	0.531	1.165	1.516	2.752	0.768	1.071	7/16	**YAT 205-014**	3 150	ECY 205	1.4
1		**F2B 100-RM**										**YAT 205-100**	3 150	ECY 205	1.3
1 1/8		**F2B 102-RM**										**YAT 206-102**	4 380	ECY 206	2.0
1 3/16		**F2B 103-RM**	5 9/16	4 19/32	0.531	1.374	1.654	3.126	0.827	1.189	7/16	**YAT 206-103**	4 380	ECY 206	1.9
1 1/4		**F2B 104S-RM**										**YAT 206-104**	4 380	ECY 206	1.9
1 1/4		**F2B 104-RM**										**YAT 207-104**	5 730	ECY 207	2.8
1 3/8		**F2B 106-RM**	6 1/8	5 1/8	0.563	1.469	1.823	3.626	0.917	1.299	1/2	**YAT 207-106**	5 730	ECY 207	2.8
1 7/16		**F2B 107-RM**										**YAT 207-107**	5 730	ECY 207	2.6
1 1/2		**F2B 108-RM**	6 3/4	5 21/32	0.563	1.531	1.980	4.126	0.996	1.417	1/2	**YAT 208-108**	6 900	ECY 208	3.7
1 11/16		**F2B 111-RM**	7 1/16	5 27/32	0.563	1.752	2.000	4.374	1.016	1.457	1/2	**YAT 209-111**	7 460	ECY 209	4.5
1 3/4		**F2B 112-RM**										**YAT 209-112**	7 460	ECY 209	4.5
1 15/16		**F2B 115-RM**	7 7/16	6 3/16	0.563	1.843	2.268	4.563	1.087	1.527	1/2	**YAT 210-115**	7 890	ECY 210	4.9
2		**F2B 200-RM**	8 1/2	7 1/4	0.811	1.969	2.579	5.252	1.280	1.772	5/8	**YAT 211-200**	9 800	ECY 211	7.5
2 3/16		**F2B 203-RM**										**YAT 211-203**	9 800	ECY 211	7.3

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

Set screw locking – tapped base unit

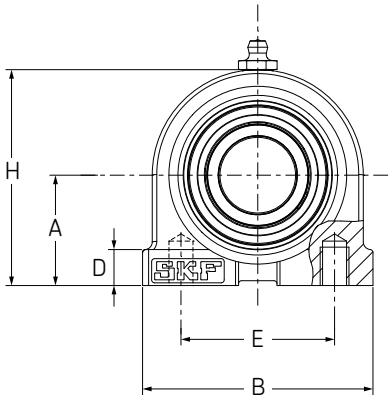
P2BT-TF / standard duty

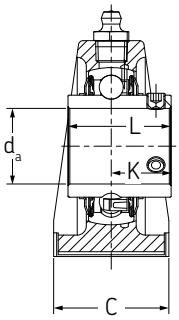
Cast-iron housing
Threaded base
Wide inner ring
Seal & flingers

Replaces: TB-SC, YTB, TB, PT3U, VTBS-2, UCTB

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit





For bearing information see page **290**.

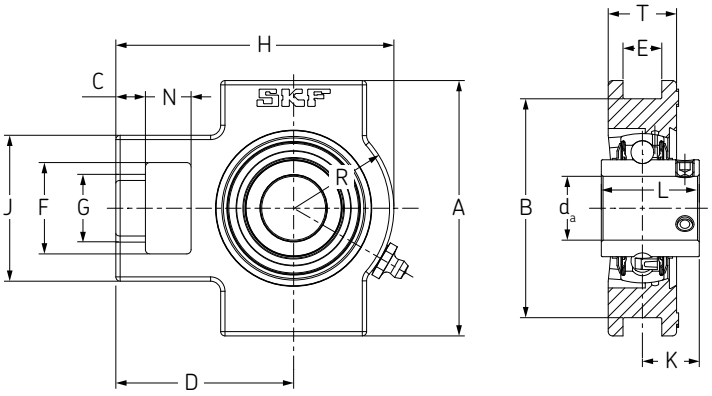
Shaft size d_a		Unit designation	E	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in								in		lbf	lb
3/4		**P2BT 012-TF**	**2**	**1 5/16**	2 7/8	1.500	0.437	2.563	0.720	1.220	3/8-16 UNC	**YAR 204-012-2F**	2 850	1.3
7/8		**P2BT 014-TF**										**YAR 205-014-2F**	3 150	1.5
15/16		**P2BT 015-TF**	**2**	**1 7/16**	3	1.500	0.469	2.811	0.780	1.343	3/8-16 UNC	**YAR 205-015-2F**	3 150	1.5
1		**P2BT 100-TF**										**YAR 205-100-2F**	3 150	1.5
	25	**P2BT 25M-TF**										**YAR 205-2F**	3 150	1.5
1 1/16		**P2BT 101-TF**										**YAR 206-101-2F**	4 380	2.6
1 1/8		**P2BT 102-TF**	**3**	**1 11/16**	4	1.500	0.469	3.374	0.874	1.500	7/16-14 UNC	**YAR 206-102-2F**	4 380	2.6
1 3/16		**P2BT 103-TF**										**YAR 206-103-2F**	4 380	2.5
1 1/4		**P2BT 104S-TF**										**YAR 206-104-2F**	4 380	2.5
1 1/4		**P2BT 104-TF**										**YAR 207-104-2F**	5 730	3.6
1 5/16		**P2BT 105-TF**	**3 1/4**	**1 7/8**	4 1/4	1.874	0.500	3.752	1.000	1.689	1/2-13 UNC	**YAR 207-105-2F**	5 730	3.6
1 3/8		**P2BT 106-TF**										**YAR 207-106-2F**	5 730	3.5
1 7/16		**P2BT 107-TF**										**YAR 207-107-2F**	5 730	3.5
1 1/2		**P2BT 108-TF**	**3 1/2**	**1 15/16**	4 5/8	1.874	0.500	3.937	1.189	1.937	1/2-13 UNC	**YAR 208-108-2F**	6 900	4.2
1 5/8		**P2BT 110-TF**										**YAR 209-110-2F**	7 460	5.1
1 11/16		**P2BT 111-TF**	**3 3/4**	**2 1/8**	5	2.000	0.500	4.248	1.189	1.937	1/2-13 UNC	**YAR 209-111-2F**	7 460	5.0
1 3/4		**P2BT 112-TF**										**YAR 209-112-2F**	7 460	4.9
1 15/16		**P2BT 115-TF**	**4**	**2 1/4**	5 1/2	2.000	0.563	4.626	1.283	2.031	5/8-11 UNC	**YAR 210-115-2F**	7 890	6.0

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

WSTU-TF / standard duty

Cast-iron housing
Wide slot
Wide inner ring
Seal & flingers

Replaces: WSTU-SC, YTU, ST, TH3U, VTWS-2, UCST



How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	F	G	H	J	K	L	N	T	Insert bearing designation	Dynamic capacity C		End cover	Mass
in	mm		in														lbf			lb
3/4		**WSTU 012-TF**	**3.50**	3.00	0.41	2.41	0.53	1.25	0.69	3.72	2.00	0.72	1.22	0.63	0.81	**YAR 204-012-2F**	2 850	ECY 204		1.6
7/8		**WSTU 014-TF**														**YAR 205-014-2F**	3 150	ECY 205		1.8
15/16		**WSTU 015-TF**	**3.50**	3.00	0.41	2.44	0.53	1.25	0.69	3.81	2.00	0.78	1.34	0.63	0.94	**YAR 205-015-2F**	3 150	ECY 205		1.8
1		**WSTU 100-TF**														**YAR 205-100-2F**	3 150	ECY 205		1.7
1 1/8		**WSTU 102-TF**														**YAR 206-102-2F**	4 380	ECY 206		2.8
1 3/16		**WSTU 103-TF**	**4.03**	3.50	0.41	2.75	0.53	1.47	0.81	4.44	2.22	0.87	1.50	0.63	1.09	**YAR 206-103-2F**	4 380	ECY 206		2.6
1 1/4		**WSTU 104S-TF**														**YAR 206-104-2F**	4 380	ECY 206		2.6
1 1/4		**WSTU 104-TF**														**YAR 207-104-2F**	5 730	ECY 207		3.5
1 3/8		**WSTU 106-TF**	**4.03**	3.50	0.50	3.06	0.53	1.47	0.81	5.07	2.53	1.00	1.69	0.63	1.19	**YAR 207-106-2F**	5 730	ECY 207		3.4
1 7/16		**WSTU 107-TF**														**YAR 207-107-2F**	5 730	ECY 207		3.4
1 1/2		**WSTU 108-TF**	**4.50**	4.02	0.63	3.47	0.69	1.94	1.10	5.69	3.28	1.19	1.94	0.75	1.31	**YAR 208-108-2F**	6 900	ECY 208		5.3
	40	**WSTU 40M-TF**														**YAR 208-2F**	6 900	ECY 208		5.2
1 5/8		**WSTU 110-TF**														**YAR 209-110-2F**	7 460	ECY 209		5.4
1 11/16		**WSTU 111-TF**	**4.59**	4.02	0.63	3.44	0.69	1.94	1.10	5.69	3.28	1.19	1.94	0.83	1.37	**YAR 209-111-2F**	7 460	ECY 209		5.3
1 3/4		**WSTU 112-TF**														**YAR 209-112-2F**	7 460	ECY 209		5.2
1 15/16		**WSTU 115-TF**	**4.59**	4.02	0.63	3.53	0.69	1.94	1.10	5.84	3.28	1.28	2.03	0.75	1.47	**YAR 210-115-2F**	7 890	ECY 210		5.6
	50	**WSTU 50M-TF**														**YAR 210-2F**	7 890	ECY 210		5.5
2		**WSTU 200-TF**	**5.75**	5.13	0.75	4.19	1.06	2.53	1.37	6.75	4.03	1.31	2.19	1.00	1.50	**YAR 211-200-2F**	9 800	ECY 211		8.7
2 3/16		**WSTU 203-TF**														**YAR 211-203-2F**	9 800	ECY 211		8.3

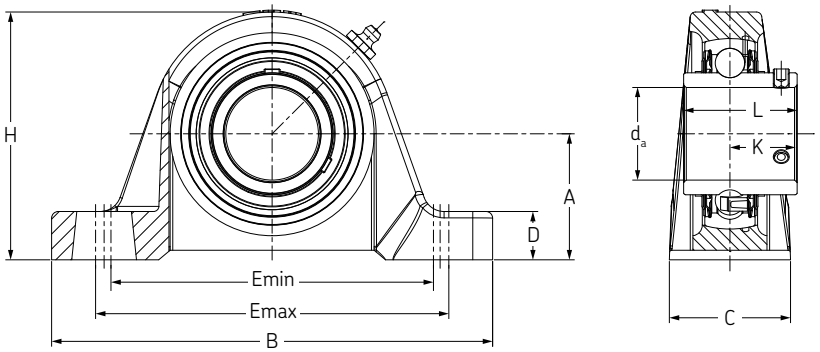
Set screw locking – pillow block

P2B-TF-AH / standard duty and medium duty

Cast-iron housing
Standard center height
Seals & flingers

Air handling (AH)
Wide inner ring

Replaces (standard duty): P2B-SCAH, NP-CXU, VPS-2 AH, UCP-AM
Replaces (medium duty): P2B-SCMAH, MP-CXU, VPS-3 AH, UCPX-AM



How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2B 008-TF-AH**	**3 1/8**	**4 1/8**	**1 3/16**	5 15/32	1.268	0.469	2.219	0.626	1.079	3/8	**YAR 203-008-2F-AH**	2 150	1.1
5/8		**P2B 010-TF-AH**											**YAR 203-010-2F-AH**	2 150	1.0
3/4		**P2B 012-TF-AH**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	0.720	1.220	3/8	**YAR 204-012-2F-AH**	2 850	1.3
7/8		**P2B 014-TF-AH**											**YAR 205-014-2F-AH**	3 150	1.8
15/16		**P2B 015-TF-AH**	**3 3/4**	**4 1/2**	**1 7/16**	5 1/2	1.500	0.625	2.781	0.780	1.343	3/8	**YAR 205-015-2F-AH**	3 150	1.7
1		**P2B 100-TF-AH**											**YAR 205-100-2F-AH**	3 150	1.7
1 1/8		**P2B 102-TF-AH**											**YAR 206-102-2F-AH**	4 380	2.8
1 3/16		**P2B 103-TF-AH**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	0.874	1.500	1/2	**YAR 206-103-2F-AH**	4 380	2.6
1 1/4		**P2B 104S-TF-AH**											**YAR 206-104-2F-AH**	4 380	2.6
1 1/4		**P2B 104-TF-AH**											**YAR 207-104-2F-AH**	5 730	3.4
1 3/8		**P2B 106-TF-AH**	**4 22/32**	**5 5/16**	**1 7/8**	6 9/16	1.803	0.719	3.687	1.000	1.689	1/2	**YAR 207-106-2F-AH**	5 730	3.3
1 7/16		**P2B 107-TF-AH**											**YAR 207-107-2F-AH**	5 730	3.3
1 7/16		**P2BM 107-TF-AH**											**YAR 208-107-2F-AH**	6 900	4.7
1 1/2		**P2B 108-TF-AH**	**5 3/32**	**5 23/32**	**2 1/8**	7 1/4	1.921	0.813	4.094	1.189	1.937	1/2	**YAR 208-108-2F-AH**	6 900	4.6
1 5/8		**P2B 110-TF-AH**											**YAR 209-110-2F-AH**	7 460	5.2
1 11/16		**P2B 111-TF-AH**	**5 7/16**	**6 1/8**	**2 1/8**	7 15/32	2.016	0.750	4.250	1.189	1.937	1/2	**YAR 209-111-2F-AH**	7 460	5.1
1 3/4		**P2B 112-TF-AH**											**YAR 209-112-2F-AH**	7 460	5.0
1 11/16		**P2BM 111-TF-AH**											**YAR 210-111-2F-AH**	7 890	6.4
1 3/4		**P2BM 112-TF-AH**	**6**	**6 1/2**	**2 1/4**	8 1/8	2.189	0.750	4.563	1.283	2.031	5/8	**YAR 210-112-2F-AH**	7 890	6.0
1 15/16		**P2B 115-TF-AH**											**YAR 210-115-2F-AH**	7 890	6.0
1 15/16		**P2BM 115-TF-AH**											**YAR 211-115-2F-AH**	9 800	7.9
2		**P2B 200-TF-AH**	**6 15/32**	**6 31/32**	**2 1/2**	8 5/8	2.319	0.875	4.969	1.315	2.189	5/8	**YAR 211-200-2F-AH**	9 800	8.2
2 3/16		**P2B 203-TF-AH**											**YAR 211-203-2F-AH**	9 800	7.7
2 3/16		**P2BM 203-TF-AH**											**YAR 212-203-2F-AH**	11 840	10.5
2 1/4		**P2B 204-TF-AH**	**6 7/8**	**7 5/8**	**2 3/4**	9 7/16	2.425	0.875	5.563	1.563	2.563	5/8	**YAR 212-204-2F-AH**	11 840	10.4
2 7/16		**P2B 207-TF-AH**											**YAR 212-207-2F-AH**	11 840	9.8
2 1/2		**P2B 208-TF-AH**	**7 9/16**	**8 7/16**	**3**	10 7/16	2.831	1.000	6.047	1.689	2.689	3/4	**YAR 213-208-2F-AH**	12 850	14.0
2 11/16		**P2B 211-TF-AH**											**YAR 213-211-2F-AH**	12 850	13.5
2 7/16		**P2BM 207-TF-AH**	**7 27/32**	**8 23/32**	**3**	10 15/32	2.839	1.109	6.142	1.563	2.752	3/4	**YAR 214-207-2F-AH**	14 020	15.5
2 3/4		**P2B 212-TF-AH**	**8 3/32**	**8 31/32**	**3 1/4**	10 13/16	2.874	1.000	6.625	1.823	2.886	3/4	**YAR 215-212-2F-AH**	14 900	17.5
2 15/16		**P2B 215-TF-AH**											**YAR 215-215-2F-AH**	14 900	16.9
2 15/16		**P2BM 215-TF-AH**	**8 1/2**	**9 3/4**	**3.5**	11 1/2	3.063	1.344	6.937	1.874	3.063	3/4	**YAR 216-215-2F-AH**	16 360	21.2
3		**P2BM 300-TF-AH**											**YAR 216-300-2F-AH**	16 360	20.9

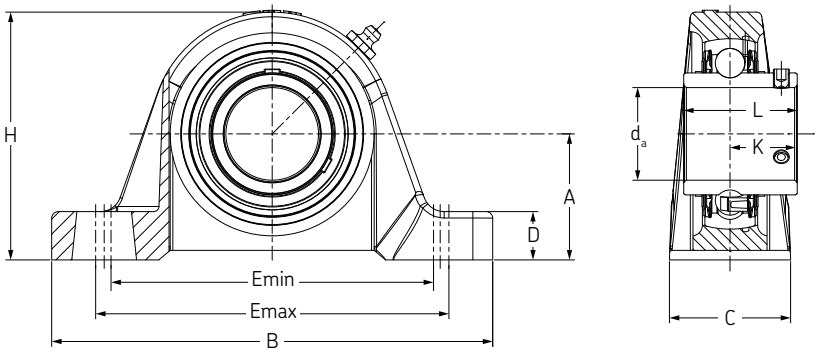
* AH bearings with anti-rotation pin not sold separately

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

P2BL-TF-AH / standard duty

Air handling (AH)
Low center height
Cast-iron housing
Wide inner ring
Seals & flingers

Replaces: P2B-SCBAH, NPL-CXU, VPLS-2 AH, UCLP AM



How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2BL 008-TF-AH**	**3 1/8**	**4 1/8**	**1 1/16**	5 15/32	1.268	0.344	2.094	0.626	1.079	3/8	**YAR 203-008-2F-AH**	2 150	0.9
5/8		**P2BL 010-TF-AH**											**YAR 203-010-2F-AH**	2 150	0.9
3/4		**P2BL 012-TF-AH**	**3 3/8**	**4 1/8**	**1 1/4**	5	1.339	0.469	2.469	0.720	1.220	3/8	**YAR 204-012-2F-AH**	2 850	1.3
7/8		**P2BL 014-TF-AH**											**YAR 205-014-2F-AH**	3 150	1.7
15/16		**P2BL 015-TF-AH**	**3 3/4**	**4 1/2**	**1 5/16**	5 1/2	1.500	0.500	2.656	0.780	1.343	3/8	**YAR 205-015-2F-AH**	3 150	1.6
1		**P2BL 100-TF-AH**											**YAR 205-100-2F-AH**	3 150	1.6
1 1/8		**P2BL 102-TF-AH**											**YAR 206-102-2F-AH**	4 380	2.5
1 3/16		**P2BL 103-TF-AH**	**4 3/8**	**5 1/16**	**1 9/16**	6 1/2	1.756	0.531	3.156	0.874	1.500	1/2	**YAR 206-103-2F-AH**	4 380	2.5
1 1/4		**P2BL 104S-TF-AH**											**YAR 206-104-2F-AH**	4 380	2.4
1 1/4		**P2BL 104-TF-AH**											**YAR 207-104-2F-AH**	5 730	3.3
1 3/8		**P2BL 106-TF-AH**	**4 22/32**	**5 5/16**	**1 13/16**	6 9/16	1.803	0.656	3.625	1.000	1.689	1/2	**YAR 207-106-2F-AH**	5 730	3.2
1 7/16		**P2BL 107-TF-AH**											**YAR 207-107-2F-AH**	5 730	3.2
1 5/8		**P2BL 110-TF-AH**											**YAR 209-110-2F-AH**	7 460	5.1
1 11/16		**P2BL 111-TF-AH**	**5 7/16**	**6 1/8**	**2 1/16**	7 15/32	2.016	0.687	4.187	1.189	1.937	1/2	**YAR 209-111-2F-AH**	7 460	5.0
1 3/4		**P2BL 112-TF-AH**											**YAR 209-112-2F-AH**	7 460	4.9
1 15/16		**P2BL 115-TF-AH**	**6**	**6 1/2**	**2 3/16**	8 1/8	2.189	0.687	4.500	1.283	2.031	5/8	**YAR 210-115-2F-AH**	7 890	5.8
2		**P2BL 200-TF-AH**	**6 15/32**	**7 21/64**	**2 7/16**	8 5/8	2.319	0.813	4.906	1.315	2.189	5/8	**YAR 211-200-2F-AH**	9 800	7.9
2 3/16		**P2BL 203-TF-AH**											**YAR 211-203-2F-AH**	9 800	7.5
2 1/4		**P2BL 204-TF-AH**	**6 7/8**	**7 15/16**	**2 11/16**	9 1/2	2.425	0.813	5.500	1.563	2.563	5/8	**YAR 212-204-2F-AH**	11 840	10.3
2 7/16		**P2BL 207-TF-AH**											**YAR 212-207-2F-AH**	11 840	9.7
2 3/4		**P2BL 212-TF-AH**	**8 3/32**	**8 31/32**	**3 5/16**	10 13/16	2.874	1.061	6.686	1.823	2.886	3/4	**YAR 215-212-2F-AH**	14 900	9.6
2 15/16		**P2BL 215-TF-AH**											**YAR 215-215-2F-AH**	14 900	17.1

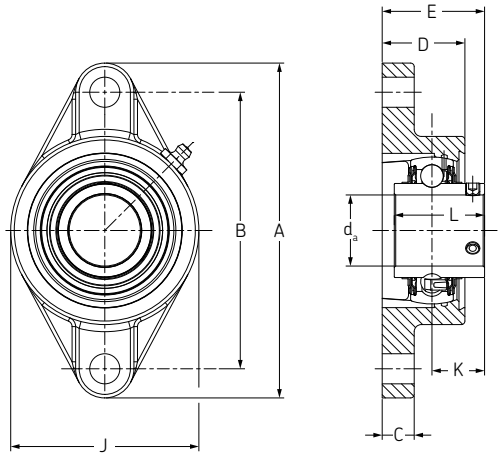
* AH bearings with anti-rotation pin not sold separately

Set screw locking – 2-bolt flange

F2B-TF-AH / standard duty

Air handling (AH)
Two-bolt mounting
Seals & flingers
Cast-iron flange
Wide inner ring

Replaces: F2B-SCAH, SFT-CXU, VF2S-2 AH, UCFT-AM



How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

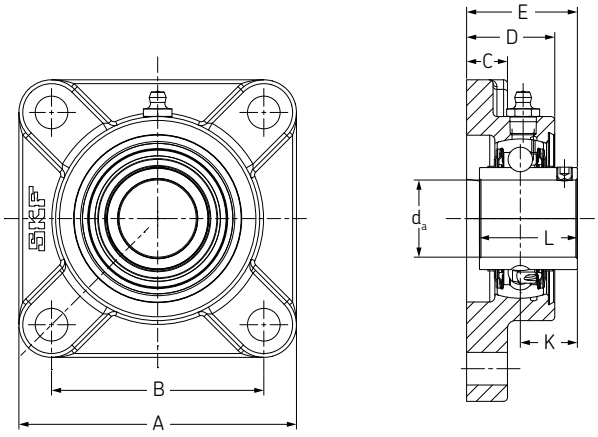
Shaft size d_a		Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	End cover	Mass
in	mm		in								in		lbf		lb
1/2		**F2B 008-TF-AH**	3 7/8	3	0.437	0.945	1.295	2.374	0.626	1.079	3/8	**YAR 203-008-2F-AH**	2 150	-	0.9
5/8		**F2B 010-TF-AH**										**YAR 203-010-2F-AH**	2 150	-	0.9
3/4		**F2B 012-TF-AH**	4 7/16	3 17/32	0.437	1.142	1.469	2.374	0.720	1.220	3/8	**YAR 204-012-2F-AH**	2 850	ECY 204	1.0
7/8		**F2B 014-TF-AH**										**YAR 205-014-2F-AH**	3 150	ECY 205	1.5
15/16		**F2B 015-TF-AH**	4 7/8	3 7/8	0.531	1.165	1.528	2.752	0.780	1.342	7/16	**YAR 205-015-2F-AH**	3 150	ECY 205	1.4
1		**F2B 100-TF-AH**										**YAR 205-100-2F-AH**	3 150	ECY 205	1.4
1 1/8		**F2B 102-TF-AH**										**YAR 206-102-2F-AH**	4 380	ECY 206	2.1
1 3/16		**F2B 103-TF-AH**	5 9/16	4 19/32	0.531	1.374	1.701	3.126	0.874	1.500	7/16	**YAR 206-103-2F-AH**	4 380	ECY 206	2.0
1 1/4		**F2B 104S-TF-AH**										**YAR 206-104-2F-AH**	4 380	ECY 206	2.0
1 1/4		**F2B 104-TF-AH**										**YAR 207-104-2F-AH**	5 730	ECY 207	3.0
1 3/8		**F2B 106-TF-AH**	6 1/8	5 1/8	0.563	1.469	1.906	3.626	1.000	1.689	1/2	**YAR 207-106-2F-AH**	5 730	ECY 207	2.9
1 7/16		**F2B 107-TF-AH**										**YAR 207-107-2F-AH**	5 730	ECY 207	2.8
1 1/2		**F2B 108-TF-AH**	6 3/4	5 21/32	0.563	1.531	2.173	4.126	1.189	1.937	1/2	**YAR 208-108-2F-AH**	6 900	ECY 208	4.0
1 5/8		**F2B 110-TF-AH**										**YAR 209-110-2F-AH**	7 460	ECY 209	5.0
1 11/16		**F2B 111-TF-AH**	7 1/16	5 27/32	0.563	1.752	2.173	4.374	1.189	1.937	1/2	**YAR 209-111-2F-AH**	7 460	ECY 209	4.9
1 3/4		**F2B 112-TF-AH**										**YAR 209-112-2F-AH**	7 460	ECY 209	4.7
1 15/16		**F2B 115-TF-AH**	7 7/16	6 3/16	0.563	1.843	2.465	4.563	1.283	2.031	1/2	**YAR 210-115-2F-AH**	7 890	ECY 210	5.2
2		**F2B 200-TF-AH**	8 1/2	7 1/4	0.811	1.969	2.614	5.252	1.315	2.189	5/8	**YAR 211-200-2F-AH**	9 800	ECY 211	7.9
2 3/16		**F2B 203-TF-AH**										**YAR 211-203-2F-AH**	9 800	ECY 211	7.5

* AH bearings with anti-rotation pin not sold separately

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

Set screw locking – 4-bolt flange

F4B-TF-AH / standard duty and medium duty



Air handling (AH)
Four-bolt mounting
Seals & flingers

Cast-iron flange
Wide inner ring

Replaces (standard duty): F4B-SCAH, SF-CXU, VF4S-2 AH, UCF-AM
Replaces (medium duty): F4B-SCMAH, MSF-CXU, VF4S-3 AH, UCFX-AM

How to order

Suffix	Insert	Locking type
RM	YAT	Set screw – Seals
TF	YAR	Set screw – Seals and flingers
TF-AH	YAR	Set screw – Seals, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
1/2		**F4B 008-TF-AH**	**3**	**2 1/8**	0.437	1.094	1.295	0.626	1.079	3/8	**YAR 203-008-2F-AH**	2 150	–	1.1
5/8		**F4B 010-TF-AH**									**YAR 203-010-2F-AH**	2 150	–	1.0
3/4		**F4B 012-TF-AH**	**3 3/8**	**2 1/2**	0.374	1.134	1.469	0.720	1.220	3/8	**YAR 204-012-2F-AH**	2 850	ECY 204	1.3
7/8		**F4B 014-TF-AH**									**YAR 205-014-2F-AH**	3 150	ECY 205	1.9
15/16		**F4B 015-TF-AH**	**3 3/4**	**2 3/4**	0.433	1.228	1.606	0.780	1.343	7/16	**YAR 205-015-2F-AH**	3 150	ECY 205	1.9
1		**F4B 100-TF-AH**									**YAR 205-100-2F-AH**	3 150	ECY 205	1.9
1 1/8		**F4B 102-TF-AH**									**YAR 206-102-2F-AH**	4 380	ECY 206	2.9
1 3/16		**F4B 103-TF-AH**	**4 1/4**	**3 1/4**	0.626	1.350	1.701	0.874	1.500	7/16	**YAR 206-103-2F-AH**	4 380	ECY 206	2.8
1 1/4		**F4B 104S-TF-AH**									**YAR 206-104-2F-AH**	4 380	ECY 206	2.8
1 1/4		**F4B 104-TF-AH**									**YAR 207-104-2F-AH**	5 730	ECY 207	3.7
1 3/8		**F4B 106-TF-AH**	**4 5/8**	**3 5/8**	0.500	1.500	1.906	1.000	1.689	1/2	**YAR 207-106-2F-AH**	5 730	ECY 207	3.6
1 7/16		**F4B 107-TF-AH**									**YAR 207-107-2F-AH**	5 730	ECY 207	3.6
1 7/16		**F4BM 107-TF-AH**	**5 1/8**	**4**	0.657	1.531	2.173	1.189	1.937	1/2	**YAR 208-107-2F-AH**	6 900	ECY 208	5.2
1 1/2		**F4B 108-TF-AH**									**YAR 208-108-2F-AH**	6 900	ECY 208	5.1
1 5/8		**F4B 110-TF-AH**									**YAR 209-110-2F-AH**	7 460	ECY 209	5.8
1 11/16		**F4B 111-TF-AH**	**5 3/8**	**4 1/8**	0.720	1.563	2.173	1.189	1.937	1/2	**YAR 209-111-2F-AH**	7 460	ECY 209	5.7
1 3/4		**F4B 112-TF-AH**									**YAR 209-112-2F-AH**	7 460	ECY 209	5.6
1 11/16		**F4BM 111-TF-AH**									**YAR 210-111-2F-AH**	7 890	ECY 210	6.8
1 3/4		**F4BM 112-TF-AH**	**5 5/8**	**4 3/8**	0.626	1.811	2.425	1.283	2.031	1/2	**YAR 210-112-2F-AH**	7 890	ECY 210	6.4
1 15/16		**F4B 115-TF-AH**									**YAR 210-115-2F-AH**	7 890	ECY 210	6.4
1 15/16		**F4BM 115-TF-AH**									**YAR 211-115-2F-AH**	9 800	ECY 211	9.4
2		**F4B 200-TF-AH**	**6 3/8**	**5 1/8**	0.689	1.969	2.575	1.315	2.189	5/8	**YAR 211-200-2F-AH**	9 800	ECY 211	9.6
2 3/16		**F4B 203-TF-AH**									**YAR 211-203-2F-AH**	9 800	ECY 211	9.2
2 3/16		**F4BM 203-TF-AH**									**YAR 212-203-2F-AH**	11 840	ECY 212	11.2
2 1/4		**F4B 204-TF-AH**	**6 7/8**	**5 5/8**	0.689	2.157	2.902	1.563	2.563	5/8	**YAR 212-204-2F-AH**	11 840	ECY 212	11.1
2 7/16		**F4B 207-TF-AH**									**YAR 212-207-2F-AH**	11 840	ECY 212	10.6
2 1/2		**F4B 208-TF-AH**	**7 3/8**	**5 7/8**	0.874	2.311	3.185	1.689	2.689	5/8	**YAR 213-208-2F-AH**	12 850	ECY 213	14.1
2 11/16		**F4B 211-TF-AH**									**YAR 213-211-2F-AH**	12 850	ECY 213	13.6
2 7/16		**F4BM 207-TF-AH**	**7 19/32**	**5 7/8**	0.874	2.437	3.059	1.563	2.752	5/8	**YAR 214-207-2F-AH**	14 020	ECY 214	16.5
2 3/4		**F4B 212-TF-AH**	**7 7/8**	**6**	0.874	2.563	3.437	1.823	2.886	3/4	**YAR 215-212-2F-AH**	14 900	ECY 215	17.4
2 15/16		**F4B 215-TF-AH**									**YAR 215-215-2F-AH**	14 900	ECY 215	16.8
2 15/16		**F4BM 215-TF-AH**	**7 25/32**	**6**	0.945	2.402	3.449	1.874	3.063	7/8	**YAR 216-215-2F-AH**	16 360	–	17.5
3		**F4BM 300-TF-AH**									**YAR 216-300-2F-AH**	16 360	–	17.3

* AH bearings with anti-rotation pin not sold separately

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

Eccentric locking – pillow block

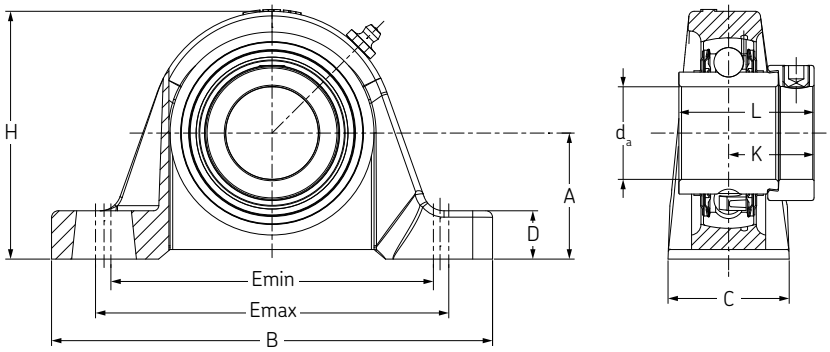
P2B-WF / standard duty

Cast-iron housing
Standard center height
Wide inner ring
Seals & flingers

Replaces: P2B-SXR, RAS, P3Y, VPE-2, UGP

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
3/4		**P2B 012-WF**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	1.047	1.720	3/8	**YEL 204-012-2F**	2 850	1.4
1		**P2B 100-WF**	**3 3/4**	**4 1/2**	**1 7/16**	5 1/2	1.500	0.625	2.781	1.059	1.748	3/8	**YEL 205-100-2F**	3 150	1.8
1 1/8		**P2B 102-WF**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	1.185	1.906	1/2	**YEL 206-102-2F**	4 380	2.9
1 3/16		**P2B 103-WF**											**YEL 206-103-2F**	4 380	2.9
1 1/4		**P2B 104-WF**											**YEL 207-104-2F**	5 730	3.6
1 3/8		**P2B 106-WF**	**4 22/32**	**5 5/16**	**1 7/8**	6 9/16	1.803	0.719	3.687	1.272	2.012	1/2	**YEL 207-106-2F**	5 730	3.5
1 7/16		**P2B 107-WF**											**YEL 207-107-2F**	5 730	3.4
1 1/2		**P2B 108-WF**	**5 3/32**	**5 23/32**	**2 1/8**	7 1/4	1.921	0.813	4.094	1.374	2.217	1/2	**YEL 208-108-2F**	6 900	4.9
1 3/4		**P2B 112-WF**	**5 7/16**	**6 1/8**	**2 1/8**	7 15/32	2.016	0.750	4.250	1.374	2.217	1/2	**YEL 209-112-2F**	7 460	5.2
1 15/16		**P2B 115-WF**	**6**	**6 1/2**	**2 1/4**	8 1/8	2.189	0.750	4.563	1.500	2.469	5/8	**YEL 210-115-2F**	7 890	6.3
2		**P2B 200-WF**	**6 15/32**	**6 31/32**	**2 1/2**	8 5/8	2.319	0.875	4.969	1.717	2.811	5/8	**YEL 211-200-2F**	9 800	8.8
2 3/16		**P2B 203-WF**											**YEL 211-203-2F**	9 800	8.3
2 7/16		**P2B 207-WF**	**6 7/8**	**7 5/8**	**2 3/4**	9 7/16	2.425	0.875	5.563	1.843	3.063	5/8	**YEL 212-207-2F**	11 840	10.5
2 15/16		**P2B 215-WF**	**8 3/32**	**8 31/32**	**3 1/4**	10 13/16	2.874	1.000	6.625	1.469	2.937	3/4	**YEL 215-215-2F**	14 900	18.0

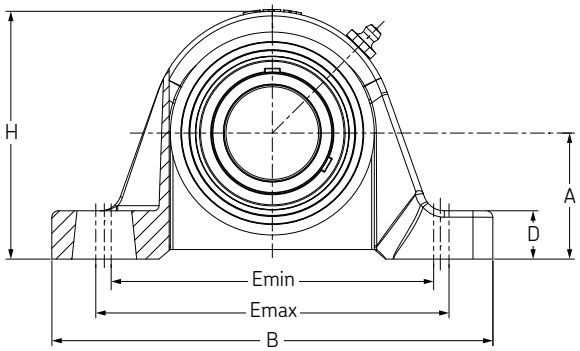
Consult SKF USA Inc. prior to design change or order placement.

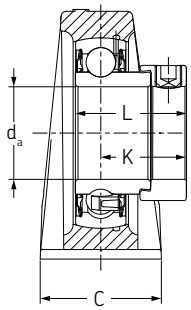
Eccentric locking – pillow block

P2B-FM / standard duty

Cast-iron housing
Standard center height
Narrow inner ring
Seals

Replaces: P2B-SXV, VAS, P3W, VPE-1, KHP





How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		**P2B 008-FM**	**3 1/8**	**4 1/8**	**1 3/16**	5 15/32	1.268	0.469	2.219	0.870	1.126	3/8	**YET 203-008**	2 150	1.1
5/8		**P2B 010-FM**											**YET 203-010**	2 150	1.0
3/4		**P2B 012-FM**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	0.925	1.201	3/8	**YET 204-012**	2 850	1.3
	25	**P2B 25M-FM**											**YET 205**	3 150	1.7
7/8		**P2B 014-FM**	**3 3/4**	**4 1/2**	**1 7/16**	5 1/2	1.500	0.625	2.781	0.925	1.220	3/8	**YET 205-014**	3 150	1.8
1		**P2B 100-FM**											**YET 205-100**	3 150	1.7
1 1/8		**P2B 102-FM**											**YET 206-102**	4 380	2.8
1 3/16		**P2B 103-FM**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	1.051	1.406	1/2	**YET 206-103**	4 380	2.8
1 1/4		**P2B 104S-FM**											**YET 206-104**	4 380	2.6
1 1/4		**P2B 104-FM**											**YET 207-104**	5 730	3.4
1 3/8		**P2B 106-FM**	**4 22/32**	**5 5/16**	**1 7/8**	6 9/16	1.803	0.719	3.687	1.157	1.531	1/2	**YET 207-106**	5 730	3.3
1 7/16		**P2B 107-FM**											**YET 207-107**	5 730	3.3
1 1/2		**P2B 108-FM**	**5 3/32**	**5 23/32**	**2 1/8**	7 1/4	1.921	0.813	4.094	1.287	1.701	1/2	**YET 208-108**	6 900	4.6
1 11/16		**P2B 111-FM**	**5 7/16**	**6 1/8**	**2 1/8**	7 15/32	2.016	0.750	4.250	1.287	1.720	1/2	**YET 209-111**	7 460	5.1
1 3/4		**P2B 112-FM**											**YET 209-112**	7 460	5.0
1 15/16		**P2B 115-FM**	**6**	**6 1/2**	**2 1/4**	8 1/8	2.189	0.750	4.563	1.287	1.720	5/8	**YET 210-115**	7 890	5.8
2		**P2B 200-FM**	**6 15/32**	**6 31/32**	**2 1/2**	8 5/8	2.319	0.875	4.969	1.413	1.906	5/8	**YET 211-200**	9 800	8.0
2 3/16		**P2B 203-FM**											**YET 211-203**	9 800	7.7

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

Eccentric locking – pillow block

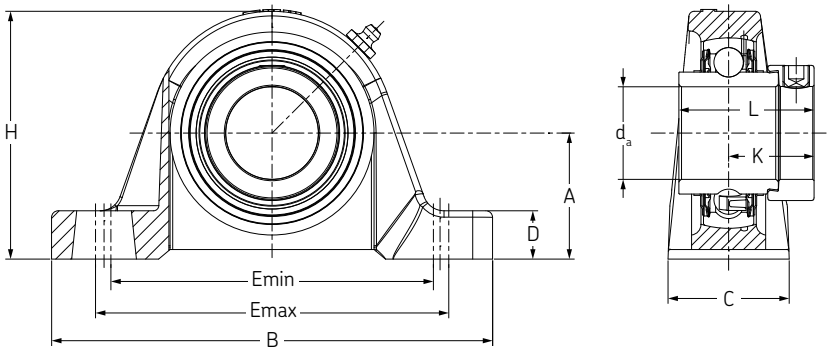
P2BL-WF / standard duty

Cast-iron housing
Low center height
Wide inner ring
Seals & flingers

Replaces: P2B-SXRB, RAK, PL3Y, VPLE-2, UGAK

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
3/4		**P2BL 012-WF**	**3 3/8**	**4 1/8**	**1 1/4**	5	1.339	0.469	2.469	1.047	1.720	3/8	**YEL 204-012-2F**	2 850	1.4
1		**P2BL 100-WF**	**3 3/4**	**4 1/2**	**1 5/16**	5 1/2	1.500	0.500	2.656	1.059	1.748	3/8	**YEL 205-100-2F**	3 150	1.7
1 1/8		**P2BL 102-WF**											**YEL 206-102-2F**	4 380	2.8
1 3/16		**P2BL 103-WF**	**4 3/8**	**5 1/16**	**1 9/16**	6 1/2	1.756	0.531	3.156	1.185	1.906	1/2	**YEL 206-103-2F**	4 380	2.6
1 1/4		**P2BL 104S-WF**											**YEL 206-104-2F**	4 380	2.6
1 1/4		**P2BL 104-WF**											**YEL 207-104-2F**	5 730	3.5
1 3/8		**P2BL 106-WF**	**4 22/32**	**5 5/16**	**1 13/16**	6 9/16	1.803	0.656	3.625	1.272	2.012	1/2	**YEL 207-106-2F**	5 730	3.4
1 7/16		**P2BL 107-WF**											**YEL 207-107-2F**	5 730	3.3
1 1/2		**P2BL 108-WF**	**5 3/32**	**5 23/32**	**1 15/16**	7 1/4	1.921	0.813	4.000	1.374	2.217	1/2	**YEL 208-108-2F**	6 900	4.7
1 3/4		**P2BL 112-WF**	**5 7/16**	**6 1/8**	**2 1/16**	7 15/32	2.016	0.687	4.187	1.374	2.217	1/2	**YEL 209-112-2F**	7 460	5.1
1 15/16		**P2BL 115-WF**	**6**	**6 1/2**	**2 3/16**	8 1/8	2.189	0.687	4.500	1.500	2.469	5/8	**YEL 210-115-2F**	7 890	6.2
2		**P2BL 200-WF**	**6 15/32**	**7 21/64**	**2 7/16**	8 5/8	2.319	0.813	4.906	1.717	2.811	5/8	**YEL 211-200-2F**	9 800	8.6
2 3/16		**P2BL 203-WF**											**YEL 211-203-2F**	9 800	8.0
2 7/16		**P2BL 207-WF**	**6 7/8**	**7 15/16**	**2 11/16**	9 1/2	2.425	0.813	5.500	1.843	3.063	5/8	**YEL 212-207-2F**	11 840	10.4
2 15/16		**P2BL 215-WF**	**8 3/32**	**8 31/32**	**3 5/16**	10 13/16	2.874	1.016	6.686	1.469	2.937	3/4	**YEL 215-215-2F**	14 900	17.1

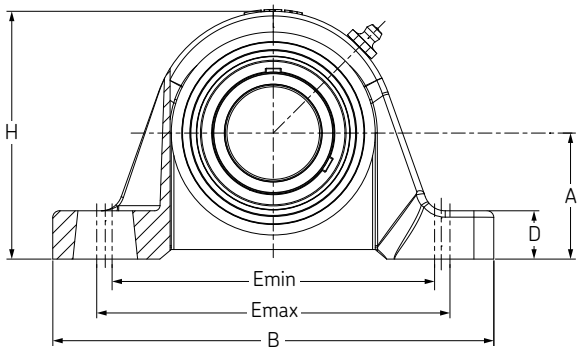
Consult SKF USA Inc. prior to design change or order placement.

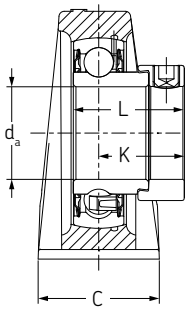
Eccentric locking – pillow block

P2BL-FM / standard duty

Cast-iron housing
Low center height
Narrow inner ring
Seals

Replaces: P2B-SXVB, VAK, PL3W, VPLE-1, KHLP





How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1/2		P2BL 008-FM	3 1/8	4 1/8	1 1/16	5 15/32	1.268	0.344	2.094	0.870	1.126	3/8	YET 203-008	2 150	1.0
5/8		P2BL 010-FM											YET 203-010	2 150	0.9
3/4		P2BL 012-FM	3 3/8	4 1/8	1 1/4	5	1.339	0.469	2.469	0.925	1.201	3/8	YET 204-012	2 850	1.3
7/8		P2BL 014-FM	3 3/4	4 1/2	1 5/16	5 1/2	1.500	0.500	2.656	0.925	1.220	3/8	YET 205-014	3 150	1.7
1		P2BL 100-FM											YET 205-100	3 150	1.6
1 1/8		P2BL 102-FM	4 3/8	5 1/16	1 9/16	6 1/2	1.756	0.531	3.156	1.051	1.406	1/2	YET 206-102	4 380	2.5
1 3/16		P2BL 103-FM											YET 206-103	4 380	2.5
1 1/4		P2BL 104S-FM											YET 206-104	4 380	2.5
1 1/4		P2BL 104-FM	4 22/32	5 5/16	1 13/16	6 9/16	1.803	0.656	3.625	1.157	1.531	1/2	YET 207-104	5 730	3.3
1 3/8		P2BL 106-FM											YET 207-106	5 730	3.2
1 7/16		P2BL 107-FM											YET 207-107	5 730	3.2
1 1/2		P2BL 108-FM	5 3/32	5 23/32	1 15/16	7 1/4	1.921	0.813	4.000	1.287	1.701	1/2	YET 208-108	6 900	4.5
1 11/16		P2BL 111-FM	5 7/16	6 1/8	2 1/16	7 15/32	2.016	0.687	4.187	1.287	1.720	1/2	YET 209-111	7 460	5.0
1 3/4		P2BL 112-FM											YET 209-112	7 460	4.9
1 15/16		P2BL 115-FM	6	6 1/2	2 3/16	8 1/8	2.189	0.687	4.500	1.287	1.720	5/8	YET 210-115	7 890	5.7
2		P2BL 200-FM	6 15/32	7 21/64	2 7/16	8 5/8	2.319	0.813	4.906	1.413	1.906	5/8	YET 211-200	9 800	7.8
2 3/16		P2BL 203-FM											YET 211-203	9 800	7.5

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

Eccentric locking – 4-bolt flange

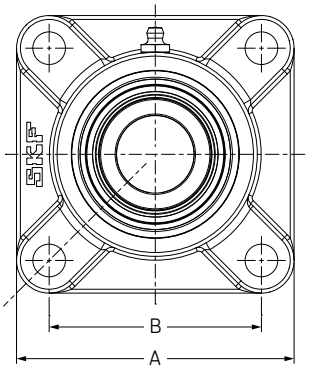
F4B-WF / standard duty

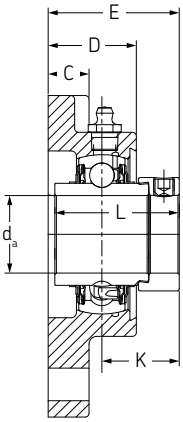
Cast-iron flange
Four-bolt mounting
Wide inner ring
Seals & flingers

Replaces: F4B-SXR, RCJ, F3Y, VF4E-2, UGSLF

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit





For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
3/4		**F4B 012-WF**	**3 3/8**	**2 1/2**	0.374	1.134	1.677	0.925	1.201	3/8	**YET 204-012**	2 850	ECY 204	1.4
1		**F4B 100-WF**	**3 3/4**	**2 3/4**	0.433	1.228	1.882	1.059	1.748	7/16	**YEL 205-100-2F**	3 150	ECY 205	2.0
1 1/8		**F4B 102-WF**									**YEL 206-102-2F**	4 380	ECY 206	3.1
1 3/16		**F4B 103-WF**	**4 1/4**	**3 1/4**	0.626	1.350	2.008	1.185	1.906	7/16	**YEL 206-103-2F**	4 380	ECY 206	3.0
1 1/4		**F4B 104S-WF**									**YEL 206-104-2F**	4 380	ECY 206	2.9
1 1/4		**F4B 104-WF**									**YEL 207-104-2F**	5 730	ECY 207	4.0
1 3/8		**F4B 106-WF**	**4 5/8**	**3 5/8**	0.500	1.500	2.177	1.272	2.012	1/2	**YEL 207-106-2F**	5 730	ECY 207	3.9
1 7/16		**F4B 107-WF**									**YEL 207-107-2F**	5 730	ECY 207	3.7
1 1/2		**F4B 108-WF**	**5 1/8**	**4**	0.657	1.531	2.374	1.374	2.217	1/2	**YEL 208-108-2F**	6 900	ECY 208	5.3
1 3/4		**F4B 112-WF**	**5 3/8**	**4 1/8**	0.720	1.563	2.374	1.374	2.217	1/2	**YEL 209-112-2F**	7 460	ECY 209	6.0
1 15/16		**F4B 115-WF**	**5 5/8**	**4 3/8**	0.626	1.811	2.642	1.500	2.469	1/2	**YEL 210-115-2F**	7 890	ECY 210	6.7
2		**F4B 200-WF**	**6 3/8**	**5 1/8**	0.689	1.969	2.976	1.717	2.811	5/8	**YEL 211-200-2F**	9 800	ECY 211	10.3
2 3/16		**F4B 203-WF**									**YEL 211-203-2F**	9 800	ECY 211	9.8
2 7/16		**F4B 207-WF**	**6 7/8**	**5 5/8**	0.689	2.157	3.185	1.843	3.063	5/8	**YEL 212-207-2F**	11 840	ECY 212	11.2
2 15/16		**F4B 215-WF**	**7 7/8**	**6**	0.874	2.563	3.764	1.469	2.937	3/4	**YEL 215-215-2F**	14 900	ECY 215	17.9

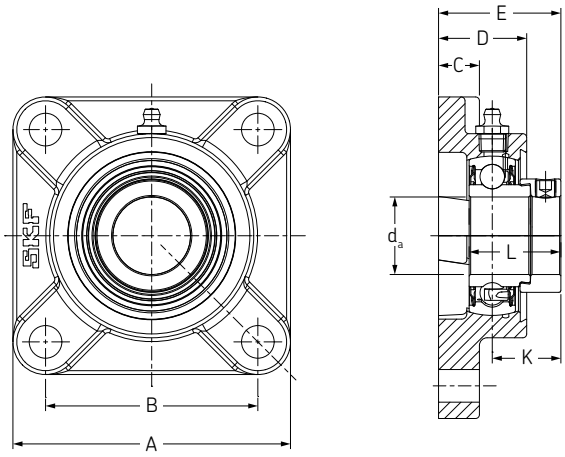
Consult SKF USA Inc. prior to design change or order placement.

Eccentric locking – 4-bolt flange

F4B-FM / standard duty

Cast-iron flange
Four-bolt mounting
Narrow inner ring
Seals

Replaces: F4B-SXV, VCJ, F3W, VF4E-1, KHF



How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
1/2		**F4B 008-FM**	**3**	**2 1/8**	0.437	1.094	1.528	0.870	1.126	3/8	**YET 203-008**	2 150	–	1.1
5/8		**F4B 010-FM**									**YET 203-010**	2 150	–	1.1
3/4		**F4B 012-FM**	**3 3/8**	**2 1/2**	0.374	1.134	1.677	0.925	1.201	3/8	**YET 204-012**	2 850	ECY 204	1.4
7/8		**F4B 014-FM**	**3 3/4**	**2 3/4**	0.433	1.228	1.748	0.925	1.220	7/16	**YET 205-014**	3 150	ECY 205	1.9
1		**F4B 100-FM**									**YET 205-100**	3 150	ECY 205	1.9
1 1/8		**F4B 102-FM**	**4 1/4**	**3 1/4**	0.626	1.350	1.874	1.051	1.406	7/16	**YET 206-102**	4 380	ECY 206	2.9
1 3/16		**F4B 103-FM**									**YET 206-103**	4 380	ECY 206	2.9
1 1/4		**F4B 104S-FM**									**YET 206-104**	4 380	ECY 206	2.8
1 1/4		**F4B 104-FM**	**4 5/8**	**3 5/8**	0.500	1.500	2.063	1.157	1.531	1/2	**YET 207-104**	5 730	ECY 207	3.7
1 3/8		**F4B 106-FM**									**YET 207-106**	5 730	ECY 207	3.6
1 7/16		**F4B 107-FM**									**YET 207-107**	5 730	ECY 207	3.6
1 1/2		**F4B 108-FM**	**5 1/8**	**4**	0.657	1.531	2.287	1.287	1.701	1/2	**YET 208-108**	6 900	ECY 208	5.1
1 11/16		**F4B 111-FM**	**5 3/8**	**4 1/8**	0.720	1.563	2.287	1.287	1.720	1/2	**YET 209-111**	7 460	ECY 209	5.7
1 3/4		**F4B 112-FM**									**YET 209-112**	7 460	ECY 209	5.6
1 15/16		**F4B 115-FM**	**5 5/8**	**4 3/8**	0.626	1.811	2.429	1.287	1.720	1/2	**YET 210-115**	7 890	ECY 210	6.3
2		**F4B 200-FM**	**6 3/8**	**5 1/8**	0.689	1.969	2.673	1.413	1.906	5/8	**YET 211-200**	9 800	ECY 211	9.5
2 3/16		**F4B 203-FM**									**YET 211-203**	9 800	ECY 211	9.2

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

Eccentric locking – 2-bolt flange

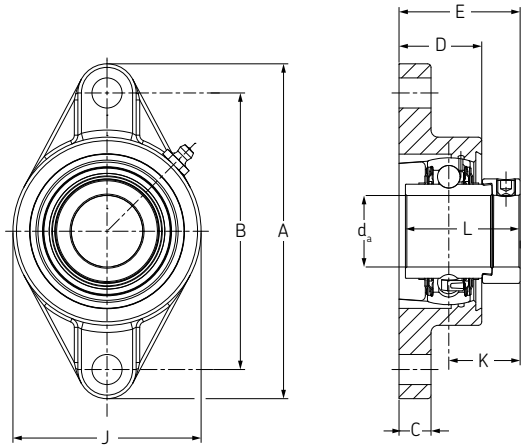
F2B-WF / standard duty

Cast-iron flange
Two-bolt mounting
Wide inner ring
Seals & flingers

Replaces: F2B-SXR, RCJT, FX3Y, VF2E-2, UGFJT

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in								in		lbf		lb
3/4	20	**F2B 012-WF** **F2B 20M-WF**	**4 7/16**	**3 17/32**	0.437	1.142	1.795	2.374	1.047	1.720	3/8	YEL 204-012-2F YEL 204-2F	2 850 2 850	ECY 204 ECY 204	1.1 1.1
1	25	**F2B 100-WF** **F2B 25M-WF**	**4 7/8**	**3 7/8**	0.531	1.165	1.807	2.752	1.059	1.748	7/16	YEL 205-100-2F YEL 205-2F	3 150 3 150	ECY 205 ECY 205	1.5 1.5
1 1/8 1 3/16		**F2B 102-WF** **F2B 103-WF**	**5 9/16**	**4 19/32**	0.531	1.374	2.012	3.126	1.185	1.905	7/16	YEL 206-102-2F YEL 206-103-2F	4 380 4 380	ECY 206 ECY 206	2.3 2.2
1 1/4 1 3/8 1 7/16		**F2B 104-WF** **F2B 106-WF** **F2B 107-WF**	**6 1/8**	**5 1/8**	0.563	1.469	2.177	3.626	1.272	2.012	1/2	YEL 207-104-2F YEL 207-106-2F YEL 207-107-2F	5 730 5 730 5 730	ECY 207 ECY 207 ECY 207	3.2 3.1 3.0
1 1/2	40	**F2B 108-WF** **F2B 40M-WF**	**6 3/4**	**5 21/32**	0.563	1.531	2.358	4.126	1.374	2.216	1/2	YEL 208-108-2F YEL 208-2F	6 900 6 900	ECY 208 ECY 208	4.2 4.1
1 3/4		**F2B 112-WF**	**7 1/16**	**5 27/32**	0.563	1.752	2.358	4.374	1.374	2.216	1/2	YEL 209-112-2F	7 460	ECY 209	5.0
1 15/16		**F2B 115-WF**	**7 7/16**	**6 3/16**	0.563	1.843	2.681	4.563	1.500	2.468	1/2	YEL 210-115-2F	7 890	ECY 210	5.5
2 2 3/16		**F2B 200-WF** **F2B 203-WF**	**8 1/2**	**7 1/4**	0.811	1.969	3.016	5.252	1.717	2.811	5/8	YEL 211-200-2F YEL 211-203-2F	9 800 9 800	ECY 211 ECY 211	8.6 8.0

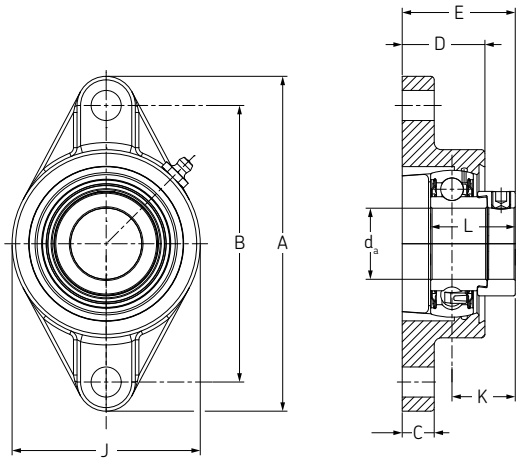
Consult SKF USA Inc. prior to design change or order placement.

Eccentric locking – 2-bolt flange

F2B-FM / standard duty

Cast-iron flange
Two-bolt mounting
Narrow inner ring
Seals

Replaces: F2B-SXV, VCJT, FX3W, VF2E-1, KHFT



How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in								in		lbf		lb
1/2		**F2B 008-FM**	**3 7/8**	**3**	0.437	0.945	1.539	2.374	0.870	1.126	3/8	**YET 203-008**	2 150	-	0.9
5/8		**F2B 010-FM**										**YET 203-010**	2 150	-	0.9
3/4		**F2B 012-FM**	**4 7/16**	**3 17/32**	0.437	1.142	1.673	2.374	0.925	1.201	3/8	**YET 204-012**	2 850	ECY 204	1.1
7/8		**F2B 014-FM**	**4 7/8**	**3 7/8**	0.531	1.165	1.673	2.752	0.925	1.220	7/16	**YET 205-014**	3 150	ECY 205	1.5
1		**F2B 100-FM**										**YET 205-100**	3 150	ECY 205	1.4
1 1/8		**F2B 102-FM**	**5 9/16**	**4 19/32**	0.531	1.374	1.878	3.126	1.051	1.405	7/16	**YET 206-102**	4 380	ECY 206	2.1
1 3/16		**F2B 103-FM**										**YET 206-103**	4 380	ECY 206	2.1
1 1/4		**F2B 104S-FM**										**YET 206-104**	4 380	ECY 206	2.0
	30	**F2B 30M-FM**										**YET 206**	4 380	ECY 206	2.1
1 1/4		**F2B 104-FM**	**6 1/8**	**5 1/8**	0.563	1.469	2.063	3.626	1.157	1.531	1/2	**YET 207-104**	5 730	ECY 207	3.0
1 3/8		**F2B 106-FM**										**YET 207-106**	5 730	ECY 207	2.9
1 7/16		**F2B 107-FM**										**YET 207-107**	5 730	ECY 207	2.9
1 1/2		**F2B 108-FM**	**6 3/4**	**5 21/32**	0.563	1.531	2.272	4.126	1.287	1.701	1/2	**YET 208-108**	6 900	ECY 208	4.0
1 11/16		**F2B 111-FM**	**7 1/16**	**5 27/32**	0.563	1.752	2.272	4.374	1.287	1.72	1/2	**YET 209-111**	7 460	ECY 209	4.9
1 3/4		**F2B 112-FM**										**YET 209-112**	7 460	ECY 209	4.7
1 15/16		**F2B 115-FM**	**7 7/16**	**6 3/16**	0.563	1.843	2.469	4.563	1.287	1.72	1/2	**YET 210-115**	7 890	ECY 210	5.1
2		**F2B 200-FM**	**8 1/2**	**7 1/4**	0.811	1.969	2.713	5.252	1.413	1.905	5/8	**YET 211-200**	9 800	ECY 211	7.8
2 3/16		**F2B 203-FM**										**YET 211-203**	9 800	ECY 211	7.5

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

Eccentric locking – tapped base unit

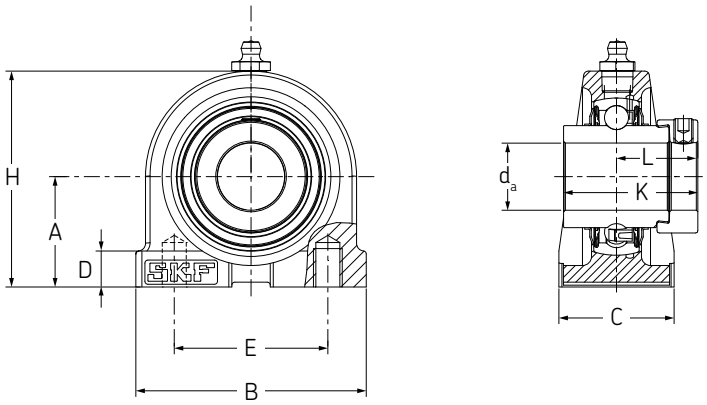
P2BT-WF / standard duty

Cast-iron housing
Threaded base
Wide inner ring
Seals & flingers

Replaces: TB-SXR, RTB, PT3Y, VTBE-2, UGTB

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



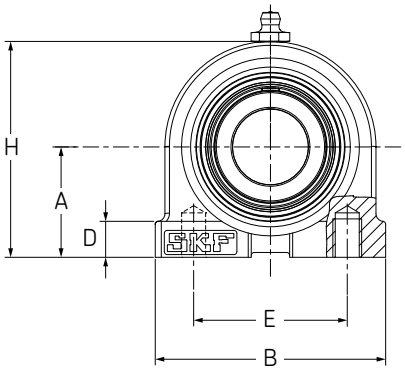
For bearing information see page **290**.

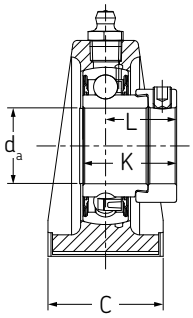
Shaft size d_a		Unit designation	E	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in								in		lbf	lb
3/4		**P2BT 012-WF**	2	1 5/16	2 7/8	1.500	0.437	2.563	1.047	1.720	3/8-16 UNC	**YEL 204-012-2F**	2 850	1.4
7/8		**P2BT 014-WF**										**YEL 205-014-2F**	3 150	1.7
15/16		**P2BT 015-WF**	2	1 7/16	3	1.500	0.469	2.811	1.059	1.748	3/8-16 UNC	**YEL 205-015-2F**	3 150	1.6
1		**P2BT 100-WF**										**YEL 205-100-2F**	3 150	1.6
1 1/16		**P2BT 101-WF**										**YEL 206-101-2F**	4 380	2.9
1 1/8		**P2BT 102-WF**	3	1 11/16	4	1.500	0.469	3.374	1.185	1.906	7/16-14 UNC	**YEL 206-102-2F**	4 380	2.9
1 3/16		**P2BT 103-WF**										**YEL 206-103-2F**	4 380	2.8
1 1/4		**P2BT 104S-WF**										**YEL 206-104-2F**	4 380	2.6
1 1/4		**P2BT 104-WF**										**YEL 207-104-2F**	5 730	3.9
1 5/16		**P2BT 105-WF**	3 1/4	1 7/8	4 1/4	1.874	0.500	3.752	1.272	2.012	1/2-13 UNC	**YEL 207-105-2F**	5 730	3.9
1 3/8		**P2BT 106-WF**										**YEL 207-106-2F**	5 730	3.7
1 7/16		**P2BT 107-WF**										**YEL 207-107-2F**	5 730	3.6
1 1/2		**P2BT 108-WF**	3 1/2	1 15/16	4 5/8	1.874	0.500	3.937	1.374	2.217	1/2-13 UNC	**YEL 208-108-2F**	6 900	4.4
1 5/8		**P2BT 110-WF**										**YEL 209-110-2F**	7 460	5.3
1 11/16		**P2BT 111-WF**	3 3/4	2 1/8	5	2.000	0.500	4.248	1.374	2.217	1/2-13 UNC	**YEL 209-111-2F**	7 460	5.2
1 3/4		**P2BT 112-WF**										**YEL 209-112-2F**	7 460	5.1
1 15/16		**P2BT 115-WF**	4	2 1/4	5 1/2	2.000	0.563	4.626	1.500	2.469	5/8-11 UNC	**YEL 210-115-2F**	7 890	6.3

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

Eccentric locking – tapped base unit

P2BT-FM / standard duty





Cast-iron housing
Threaded base
Narrow inner ring
Seals

Replaces: TB-SXV, VTB, PT3W, VTBE-1, KHTB

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	E	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation	Dynamic capacity C	Mass
in	mm		in								in		lbf	lb
3/4		**P2BT 012-FM**	2	1 5/16	2 7/8	1.500	0.437	2.563	0.925	1.201	3/8-16 UNC	**YET 204-012**	2 850	1.3
7/8		**P2BT 014-FM**	2	1 7/16	3	1.500	0.469	2.811	0.925	1.220	3/8-16 UNC	**YET 205-014**	3 150	1.5
15/16		**P2BT 015-FM**										**YET 205-015**	3 150	1.5
1		**P2BT 100-FM**										**YET 205-100**	3 150	1.5
	25	**P2BT 25M-FM**										**YET 205**	3 150	1.5
1 1/16		**P2BT 101-FM**	3	1 11/16	4	1.500	0.469	3.374	1.051	1.406	7/16-14 UNC	**YET 206-101**	4 380	2.8
1 1/8		**P2BT 102-FM**										**YET 206-102**	4 380	2.6
1 3/16		**P2BT 103-FM**										**YET 206-103**	4 380	2.6
1 1/4		**P2BT 104S-FM**										**YET 206-104**	4 380	2.5
1 1/4		**P2BT 104-FM**	3 1/4	1 7/8	4 1/4	1.874	0.500	3.752	1.157	1.531	1/2-13 UNC	**YET 207-104**	5 730	3.6
1 5/16		**P2BT 105-FM**										**YET 207-105**	5 730	3.6
1 3/8		**P2BT 106-FM**										**YET 207-106**	5 730	3.5
1 7/16		**P2BT 107-FM**										**YET 207-107**	5 730	3.5
1 1/2		**P2BT 108-FM**	3 1/2	1 15/16	4 5/8	1.874	0.500	3.937	1.287	1.701	1/2-13 UNC	**YET 208-108**	6 900	4.2
1 5/8		**P2BT 110-FM**	3 3/4	2 1/8	5	2.000	0.500	4.248	1.287	1.720	1/2-13 UNC	**YET 209-110**	7 460	5.1
1 11/16		**P2BT 111-FM**										**YET 209-111**	7 460	5.0
1 3/4		**P2BT 112-FM**										**YET 209-112**	7 460	4.9
1 15/16		**P2BT 115-FM**	4	2 1/4	5 1/2	2.000	0.563	4.626	1.287	1.720	5/8-11 UNC	**YET 210-115**	7 890	5.8

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

Eccentric locking – take-up unit

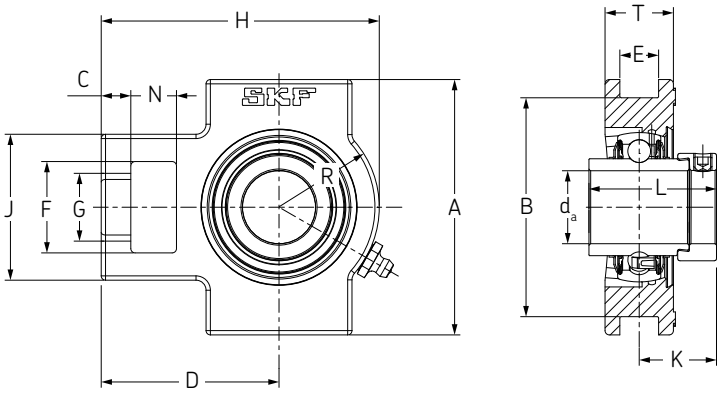
WSTU-WF / standard duty

Cast-iron housing
Wide slot
Wide inner ring
Seals & flingers

Replaces: WSTU-SXR, RTU, TH3Y, VTWE-2

How to order

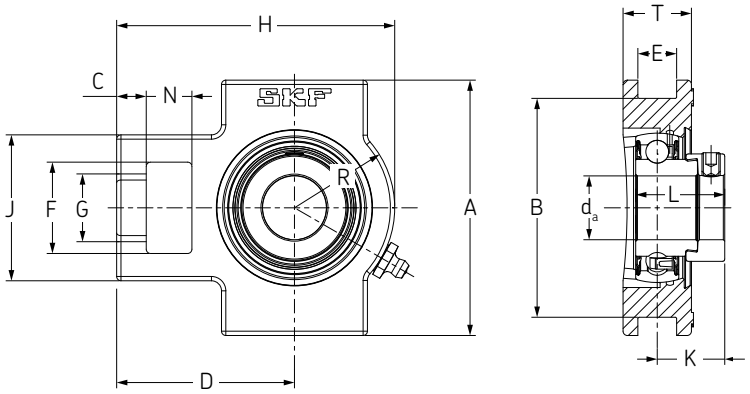
Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	F	G	H	J	K	L	N	T	Insert bearing designation	Dynamic End cover capacity C		Mass
in	mm		in														lbf		lb
3/4		**WSTU 012-WF**	3.50	3.00	0.41	2.41	0.53	1.25	0.69	3.72	2.00	1.05	1.20	0.63	0.81	**YEL 204-012-2F**	2 850	ECY 204	1.7
1		**WSTU 100-WF**	3.50	3.00	0.41	2.44	0.53	1.25	0.69	3.81	2.00	1.06	1.22	0.63	0.94	**YEL 205-100-2F**	3 150	ECY 205	1.9
1 1/8		**WSTU 102-WF**														**YEL 206-102-2F**	4 380	ECY 206	3.0
1 3/16		**WSTU 103-WF**	4.03	3.50	0.41	2.75	0.53	1.47	0.81	4.44	2.22	1.19	1.41	0.63	1.09	**YEL 206-103-2F**	4 380	ECY 206	2.9
1 1/4		**WSTU 104S-WF**														**YEL 206-104-2F**	4 380	ECY 206	2.8
1 1/4		**WSTU 104-WF**														**YEL 207-104-2F**	5 730	ECY 207	3.7
1 3/8		**WSTU 106-WF**	4.03	3.50	0.50	3.06	0.53	1.47	0.81	5.07	2.53	1.27	1.53	0.63	1.19	**YEL 207-106-2F**	5 730	ECY 207	3.6
1 7/16		**WSTU 107-WF**														**YEL 207-107-2F**	5 730	ECY 207	3.5
1 1/2		**WSTU 108-WF**	4.50	4.02	0.63	3.47	0.69	1.94	1.10	5.69	3.28	1.37	1.70	0.75	1.31	**YEL 208-108-2F**	6 900	ECY 208	5.5
1 3/4		**WSTU 112-WF**	4.59	4.02	0.63	3.44	0.69	1.94	1.10	5.69	3.28	1.37	1.72	0.83	1.37	**YEL 209-112-2F**	7 460	ECY 209	5.4
1 15/16		**WSTU 115-WF**	4.59	4.02	0.63	3.53	0.69	1.94	1.10	5.84	3.28	1.50	1.72	0.75	1.47	**YEL 210-115-2F**	7 890	ECY 210	6.0
2		**WSTU 200-WF**	5.75	5.13	0.75	4.19	1.06	2.53	1.37	6.75	4.03	1.72	1.91	1.00	1.50	**YEL 211-200-2F**	9 800	ECY 211	9.4
2 3/16		**WSTU 203-WF**														**YEL 211-203-2F**	9 800	ECY 211	8.8

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



WSTU-FM / standard duty

Cast-iron housing
Wide slot
Narrow inner ring
Seals

Replaces: WSTU-SXV, VTU, TH3W, VTWE-1

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	F	G	H	J	K	L	N	T	Insert bearing designation	Dynamic capacity C	End cover	Mass
in	mm		in														lbf		lb
3/4		**WSTU 012-FM**	3.50	3.00	0.41	2.41	0.53	1.25	0.69	3.72	2.00	0.93	2.00	0.63	0.81	**YET 204-012**	2 850	ECY 204	1.6
7/8		**WSTU 014-FM**	3.50	3.00	0.41	2.44	0.53	1.25	0.69	3.81	2.00	0.93	2.00	0.63	0.94	**YET 205-014**	3 150	ECY 205	1.8
1		**WSTU 100-FM**														**YET 205-100**	3 150	ECY 205	1.7
1 1/8		**WSTU 102-FM**														**YET 206-102**	4 380	ECY 206	2.8
1 3/16		**WSTU 103-FM**	4.03	3.50	0.41	2.75	0.53	1.47	0.81	4.44	2.22	1.05	2.25	0.63	1.09	**YET 206-103**	4 380	ECY 206	2.8
1 1/4		**WSTU 104S-FM**														**YET 206-104**	4 380	ECY 206	2.6
1 1/4		**WSTU 104-FM**														**YET 207-104**	5 730	ECY 207	3.5
1 3/8		**WSTU 106-FM**	4.03	3.50	0.50	3.06	0.53	1.47	0.81	5.07	2.53	1.16	2.53	0.63	1.19	**YET 207-106**	5 730	ECY 207	3.4
1 7/16		**WSTU 107-FM**														**YET 207-107**	5 730	ECY 207	3.4
1 1/2		**WSTU 108-FM**	4.50	4.02	0.63	3.47	0.69	1.94	1.10	5.69	3.28	1.29	3.28	0.75	1.31	**YET 208-108**	6 900	ECY 208	5.3
1 11/16		**WSTU 111-FM**	4.59	4.02	0.63	3.44	0.69	1.94	1.10	5.69	3.28	1.29	3.28	0.83	1.37	**YET 209-111**	7 460	ECY 209	5.3
1 3/4		**WSTU 112-FM**														**YET 209-112**	7 460	ECY 209	5.2
1 15/16		**WSTU 115-FM**	4.59	4.02	0.63	3.53	0.69	1.94	1.10	5.84	3.28	1.29	3.37	0.75	1.47	**YET 210-115**	7 890	ECY 210	5.5
2		**WSTU 200-FM**	5.75	5.13	0.75	4.19	1.06	2.53	1.37	6.75	4.03	1.41	3.75	1.00	1.50	**YET 211-200**	9 800	ECY 211	8.6
2 3/16		**WSTU 203-FM**														**YET 211-203**	9 800	ECY 211	8.3

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

Eccentric locking – pillow block

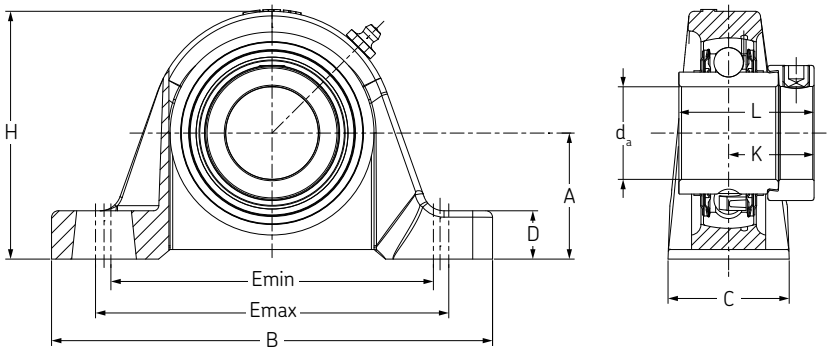
P2B-WF-AH, P2BL-WF-AH / standard duty

Air handling (AH) Cast-iron housing
Wide inner ring Seals & flingers
Standard center height and low center height

Replaces (standard height): P2B-SXRAH, VPE-2 AH, UGP-AM
Replaces (low height): P2B-SXRBAH, VPLE-2 AH, UGAK-AM

How to order

Suffix	Insert	Locking type
FM	YET	Eccentric collar – Seals
WF	YEL	Eccentric collar – Seals & flingers
WF-AH	YEL	Eccentric coll., Seals & flingers, AH unit



For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
3/4		**P2B 012-WF-AH**	**3 3/8**	**4 1/8**	**1 5/16**	5	1.339	0.531	2.531	1.047	1.720	3/8	**YEL 204-012-2F-AH**	2 850	1.4
1 3/16		**P2B 103-WF-AH**	**4 3/8**	**5 1/16**	**1 11/16**	6 1/2	1.756	0.656	3.281	1.185	1.906	1/2	**YEL 206-103-2F-AH**	4 380	2.9
1		**P2BL 100-WF-AH**	**3 3/4**	**4 1/2**	**1 5/16**	5 1/2	1.500	0.500	2.656	1.059	1.748	3/8	**YEL 205-100-2F-AH**	3 150	1.7
1 1/8		**P2BL 102-WF-AH**	**4 3/8**	**5 1/16**	**1 9/16**	6 1/2	1.756	0.531	3.156	1.185	1.906	1/2	**YEL 206-102-2F-AH**	4 380	2.8
1 3/16		**P2BL 103-WF-AH**											**YEL 206-103-2F-AH**	4 380	2.6
1 1/4		**P2BL 104-WF-AH**	**4 22/32**	**5 5/16**	**1 13/16**	6 9/16	1.803	0.656	3.625	1.272	2.012	1/2	**YEL 207-104-2F-AH**	5 730	3.5
1 7/16		**P2BL 107-WF-AH**											**YEL 207-107-2F-AH**	5 730	3.3
1 1/2		**P2BL 108-WF-AH**	**5 3/32**	**5 23/32**	**1 15/16**	7 1/4	1.921	0.813	4.000	1.374	2.217	1/2	**YEL 208-108-2F-AH**	6 900	4.7
1 3/4		**P2BL 112-WF-AH**	**5 7/16**	**6 1/8**	**2 1/16**	7 15/32	2.016	0.687	4.187	1.374	2.217	1/2	**YEL 209-112-2F-AH**	7 460	5.1
1 15/16		**P2BL 115-WF-AH**	**6**	**6 1/2**	**2 3/16**	8 1/8	2.189	0.687	4.500	1.500	2.469	5/8	**YEL 210-115-2F-AH**	7 890	6.2
2 3/16		**P2BL 203-WF-AH**	**6 15/32**	**7 21/64**	**2 7/16**	8 5/8	2.319	0.813	4.906	1.717	2.811	5/8	**YEL 211-203-2F-AH**	9 800	8.0

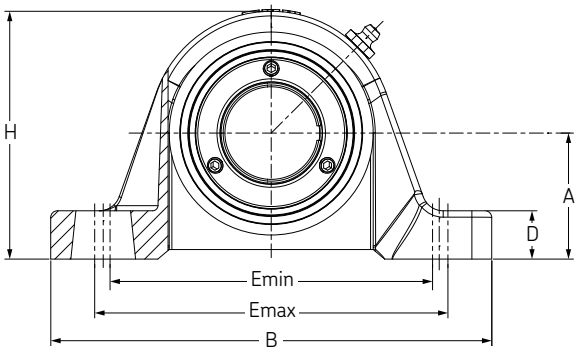
* AH bearings with anti-rotation pin not sold separately

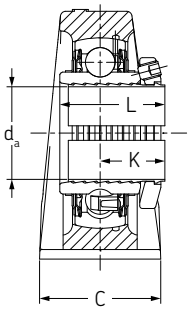
Consult SKF USA Inc. prior to design change or order placement.

P2B-LF-AH / standard duty

Air handling (AH)
Standard center height
Cast-iron housing
ConCentra locking
Seals & flingers

Replaces: P2B-DLAH, RASC, NP-T, P3CL, VPB-AH, UEP-AM





How to order

Suffix	Insert	Locking type
LF	YSP	Concentric collar – Air handling unit, Seals & flingers

For bearing information see page **290**.

Shaft size d_a		Unit designation	E min.	E max.	A	B	C	D	H	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	Mass
in	mm		in									in		lbf	lb
1		**P2B 100-LF-AH**	**3 3/4**	**4 1/2**	1 7/16	5 1/2	1.500	0.625	2.781	0.835	1.307	3/8	**YSP 205-100 SB-2F-AH**	3 150	1.7
1 3/16		**P2B 103-LF-AH**	**4 3/8**	**5 1/16**	1 11/16	6 1/2	1.756	0.656	3.281	0.913	1.465	1/2	**YSP 206-103 SB-2F-AH**	4 380	2.6
1 1/4		**P2B 104-LF-AH**											**YSP 207-104 SB-2F-AH**	5 730	3.4
1 3/8		**P2B 106-LF-AH**	**4 22/32**	**5 5/16**	1 7/8	6 9/16	1.803	0.719	3.687	0.965	1.563	1/2	**YSP 207-106 SB-2F-AH**	5 730	3.3
1 7/16		**P2B 107-LF-AH**											**YSP 207-107 SB-2F-AH**	5 730	3.3
1 1/2		**P2B 108-LF-AH**	**5 3/32**	**5 23/32**	2 1/8	7 1/4	1.921	0.813	4.094	1.031	1.697	1/2	**YSP 208-108 SB-2F-AH**	6 900	4.6
1 15/16		**P2B 115-LF-AH**	**6**	**6 1/2**	2 1/4	8 1/8	2.189	0.750	4.563	1.091	1.819	5/8	**YSP 210-115 SB-2F-AH**	7 890	5.8
2 3/16		**P2B 203-LF-AH**	**6 15/32**	**6 31/32**	2 1/2	8 5/8	2.319	0.875	4.969	1.150	1.937	5/8	**YSP 211-203 SB-2F-AH**	9 800	7.7
2 7/16		**P2B 207-LF-AH**	**6 7/8**	**7 5/8**	2 3/4	9 7/16	2.425	0.875	5.563	1.201	2.035	5/8	**YSP 212-207 SB-2F-AH**	11 840	9.6

* AH bearings with anti-rotation pin not sold separately

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

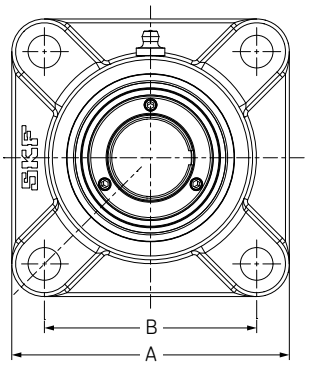
ConCentra™ locking – 4-bolt flange

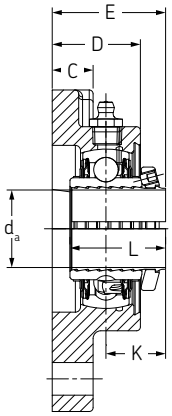
F4B-LF-AH / standard duty

Air handling (AH)
Four-bolt mounting
Seals & flingers

Cast-iron flange
ConCentra locking

Replaces: F4B-DLAH, RCJC, SF-T, F3CL, VF4B-2 AH, UEF-AM





How to order

Suffix	Insert	Locking type
LF	YSP	Concentric collar – Air handling unit, Seals & flingers

For bearing information see page **290**.

Shaft size d_a		Unit designation	A	B	C	D	E	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	End cover	Mass
in	mm		in							in		lbf		lb
1		**F4B 100-LF-AH**	**3 3/4**	**2 3/4**	0.433	1.228	1.661	0.835	1.307	7/16	**YSP 205-100 SB-2F-AH**	3 150	ECY 205	1.8
1 3/16		**F4B 103-LF-AH**	**4 1/4**	**3 1/4**	0.626	1.350	1.740	0.913	1.465	7/16	**YSP 206-103 SB-2F-AH**	4 380	ECY 206	2.8
1 1/4		**F4B 104-LF-AH**									**YSP 207-104 SB-2F-AH**	5 730	ECY 207	3.7
1 3/8		**F4B 106-LF-AH**	**4 5/8**	**3 5/8**	0.500	1.500	1.870	0.965	1.563	1/2	**YSP 207-106 SB-2F-AH**	5 730	ECY 207	3.6
1 7/16		**F4B 107-LF-AH**									**YSP 207-107 SB-2F-AH**	5 730	ECY 207	3.6
1 1/2		**F4B 108-LF-AH**	**5 1/8**	**4**	0.657	1.531	2.016	1.031	1.697	1/2	**YSP 208-108 SB-2F-AH**	6 900	ECY 208	5.1
1 15/16		**F4B 115-LF-AH**	**5 5/8**	**4 3/8**	0.626	1.811	2.232	1.091	1.819	1/2	**YSP 210-115 SB-2F-AH**	7 890	ECY 210	6.3

* AH bearings with anti-rotation pin not sold separately

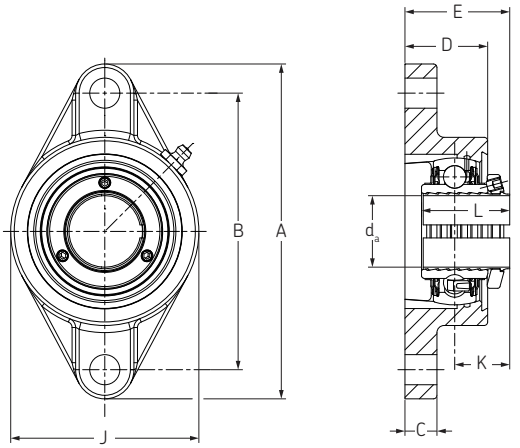
ConCentra™ locking – 2-bolt flange

F2B-LF-AH / standard duty

Air handling (AH)
Two-bolt mounting

Cast-iron housing
ConCentra locking
Seals & flingers

Replaces: F2B-DLAH, RCJTC, SFT-T, FX3CL, VF2B-2 AH, UEFT-AM



How to order

Suffix	Insert	Locking type
LF	YSP	Concentric collar – Air handling unit, Seals & flingers

For bearing information see page **290**.

Shaft size d_a	Unit designation	A	B	C	D	E	J	K	L	Bolt dia	Insert bearing designation*	Dynamic capacity C	End cover	Mass
in		in								in		lbf		lb
1	**F2B 100-LF-AH**	**4 7/8**	**3 7/8**	0.531	1.165	1.583	2.752	0.835	1.307	7/16	**YSP 205-100 SB-2F-AH**	3 150	ECY 205	1.4
1 3/16	**F2B 103-LF-AH**	**5 9/16**	**4 19/32**	0.531	1.374	1.740	3.126	0.913	1.465	7/16	**YSP 206-103 SB-2F-AH**	4 380	ECY 206	2.0
1 1/4	**F2B 104-LF-AH**										**YSP 207-104 SB-2F-AH**	5 730	ECY 207	3.0
1 3/8	**F2B 106-LF-AH**	**6 1/8**	**5 1/8**	0.563	1.469	1.870	3.626	0.965	1.563	1/2	**YSP 207-106 SB-2F-AH**	5 730	ECY 207	2.9
1 7/16	**F2B 107-LF-AH**										**YSP 207-107 SB-2F-AH**	5 730	ECY 207	2.8
1 1/2	**F2B 108-LF-AH**	**6 3/4**	**5 21/32**	0.563	1.531	2.016	4.126	1.031	1.697	1/2	**YSP 208-108 SB-2F-AH**	6 900	ECY 208	4.0

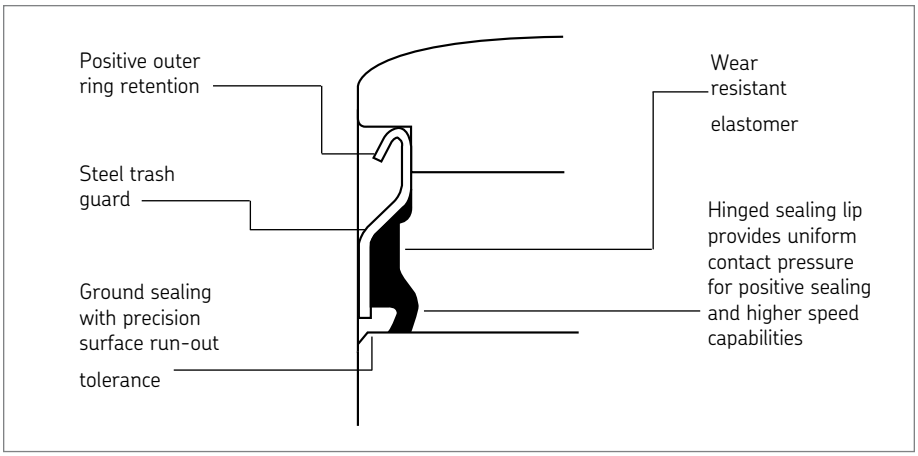
* AH bearings with anti-rotation pin not sold separately

Notes

Seals and grease – the basic protection

Seals

- The pressed steel washer or guard forms a narrow gap with the cylindrical surface of the inner ring shoulder providing protection against larger contaminants.
- A synthetic rubber lip is bonded to a pressed steel washer. This provides protection against small contaminants. It also retains the grease and allows for grease purging.



Long life grease

The standard SKF grease is a special, long life grease with a lithium/calcium thickener/ soap, and an NLGI #2 consistency.

Properties

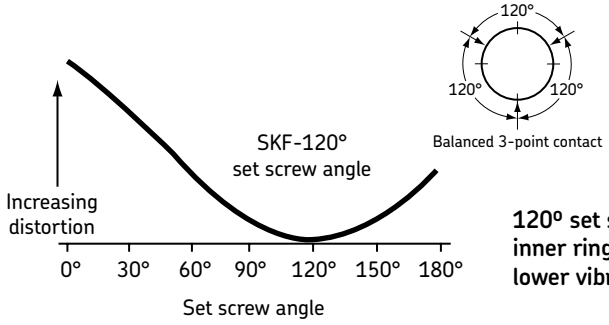
- High level of mechanical stability even in the most severe conditions
- Very good extreme pressure and anti-wear properties
- Very good water resistance
- Very good anti-rust and anti-corrosion protection
- Exceptional characteristics at both high and low temperatures

Grease characteristics	
Base	Lithium-Calcium
Application temperature	-20° to 250 F (-29° to 121° C)
NLGI	2
Viscosity at 100° F (40° C)	900 SUS (190 cSt)
Dropping point	389° F

Set screw locking method

Set screw locking features two set screws 120° apart. This placement of the set screws maximizes holding power while minimizing inner ring distortion. Other factors such as: zone hardening of the bearing inner ring, drilling and tapping after heat treat, proper screw length, a knurled cup point set screw and forged set screw socket have been incorporated to further enhance holding power and vibration resistance (backout).

Inner ring distortion vs. angle between set screws



120° set screw spacing minimizes inner ring distortion. This results in lower vibration and better sealing.

Insert bearing types

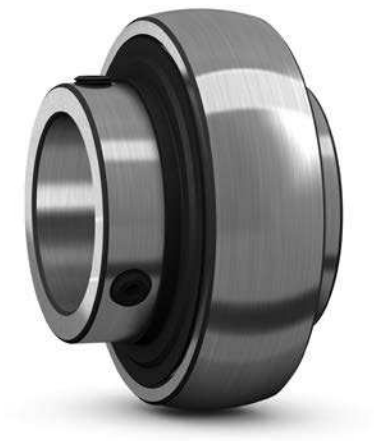
SKF wide inner ring insert bearings are based on the design of the 62(00) series deep groove ball bearing. They share the same materials, high precision and high quality manufacturing processes. Rings and steel balls are made of SAE 52100 bearing steel. Raceways are hardened, ground, and honed. Steel balls are a high precision grade #10. Cages are a molded, glass fiber reinforced polyamide. The standard seal is a positive contact, land riding seal with an integral trash guard.

Bearings are prelubricated with an optimum fill of a special, long life grease with a lithium/calcium thickener/soap, and an NLGI #2 consistency, and are relubricatable. The result is a bearing with high speed capabilities, low noise, superior protection against contamination, strength, durability, and one that is easy to install and maintain.

Bearings only differ in the type of locking method, inner ring length and seal options.

Wide inner ring insert bearings are offered with spherical or cylindrical profiled outer rings. Bearings with a spherical profiled outer ring are typically used with SKF housings. The sphered O.D. of the bearing is matched to the sphered I.D. of the housing allowing the bearing to swivel and accommodate initial alignment. Bearings with cylindrical profiled outer rings are assembled into customer machined housings and are not designed to accommodate initial alignment.

Set screw locking device



YAR-2F

YAT

YAR-2F – standard duty and medium duty wide inner ring, set screw locking, spherical O.D.

YAR wide inner ring insert bearings are offered in standard duty and medium duty series. The medium duty series uses a larger bearing for a given shaft size, resulting in a greater load carrying capacity. Both series feature an outboard flinger in addition to the standard seal. As the inner of the bearing rotates, the flinger "flings" away moisture and large contaminates for additional sealing performance. The wide inner ring offers additional bearing load support and minimizes shaft misalignment associated with narrow inner bearings. Housing units with this bearing have a TF suffix.

Options include a non-relubricatable version, a version with a grease groove in the outer ring and SKF's multi-function seal. YAR standard duty wide inner ring bearings are available in shaft sizes from $1/2$" to $2\,15/16$". YAR medium duty wide inner ring bearings are available in shaft sizes from $17/16$" to 3". For more detailed information see data tables on page **295**.

YAT – standard duty and medium duty narrow inner ring, set screw locking, spherical O.D.

YAT narrow inner ring insert bearings feature a positive contact, and a land riding seal with an integral trash guard. This seal is grease purgeable and provides high speed, low friction operation along with positive contaminant exclusion. The narrow inner ring makes the bearing suitable for use in tight operating spaces. Housing units equipped with this bearing have an RM suffix.

Options include a nonrelubricatable version, a version with a grease groove in the outer ring as well as an air handling (-AH suffix) unit. YAT bearings are available in shaft sizes from $1/2$" to $2\,15/16$" and are offered with several housing styles. For more detailed information see data tables on page **294**.

Eccentric locking device

YEL-2F

YEL-2F – standard duty wide inner ring, eccentric locking collar, spherical O.D.

YEL wide inner ring insert bearings feature an outboard flinger in addition to the standard seal. As the inner of the bearing rotates, the flinger "flings" away moisture and large contaminates for additional sealing performance. The wide inner ring offers additional bearing load support and minimizes shaft misalignment associated with narrow inner bearings. Housing units with this bearing have a WF suffix.

Options include a non-relubricatable version, a version with a grease groove in the outer ring and SKF's multi-function seal. YEL wide inner ring bearings are available in shaft sizes from $^{3}/_{4}$" to $2^{7}/_{16}$". For more detailed information see data tables on page **298**.

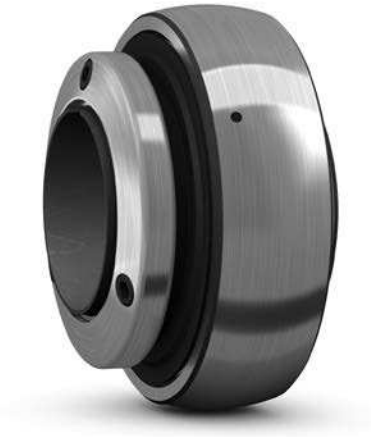
YET

YET – standard duty narrow inner ring, eccentric locking collar, spherical O.D.

YET narrow inner ring insert bearings feature a positive contact, land riding seal with an integral trash guard. This seal is grease purgeable and provides high speed, low friction operation along with positive contaminant exclusion. The narrow inner ring makes the bearing suitable for use in tight operating spaces. Housing units with this bearing have an FM suffix.

Options include a non-relubricatable version and a version with a grease groove in the outer ring. YET bearings are available in shaft sizes from $^{1}/_{2}$" to $2^{3}/_{16}$". For more detailed information see data tables on page **297**.

ConCentra™ locking device



YSP-2F

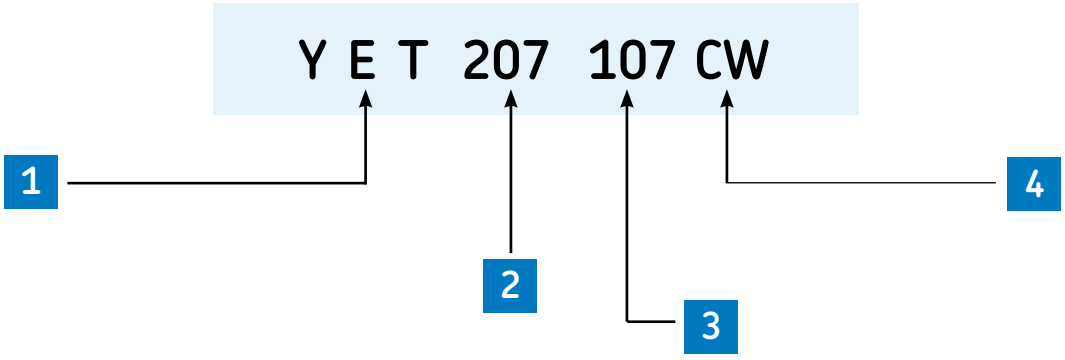
YSP-2F – wide inner ring, ConCentra™ locking, spherical O.D.

YSP-2F wide inner ring insert bearings feature an outboard flinger in addition to the land riding seal and SKF's revolutionary ConCentra locking system. Utilizing a built-in mechanical connector that applies a nearly 360° concentric grip around the shaft, SKF ConCentra inserts provide superb bearing performance while still allowing for easy mounting and dismounting.

Providing true concentric locking, ConCentra locking technology reduces vibration and fretting corrosion increasing service life and reducing the shaft damage common to conventional set screw locking devices when replacement is necessary. YSP-2F series bearings are the standard insert in SKF LF air handling housed units and are available in shaft sizes from 1" to $2^{11}/_{16}$".

For more detailed information see data tables on page **299**.

Nomenclature – insert bearings



1. Bearing type:

YET	Narrow inner ring, eccentric lock
YEL	Wide inner ring, eccentric lock
YAR	Wide inner ring, set screw lock
YAT	Narrow inner ring, set screw lock
YSP	Wide inner ring, ConCentra™ lock

2. Bearing series

3. Bore size:

Example: 107 is $1\frac{7}{16}$

4. Suffix:

C	Cylindrical O.D.
W	Nonrelubricatable bearing, no lube holes in outer ring
G	Lubrication groove in outer ring (opposite locking side)
GR	Lubrication groove in outer ring (on locking side)
-2F	Bearing with two flingers
-2RF	Bearing with two multi-function seals
U	No locking collar
SB	ConCentra™
-AH	Air handling – anti rotation pin

Speed ratings

The speed at which ball bearing units can operate depends on the means by which they are located on the shaft and also the type of seal. For bearings of series YAR, YEL, YET, YAT and YSP the speeds are limited by the fit on the shaft; the looser the fit the lower the speed. Recommended maximum values are given in **Table 3**.

Bearings with multi-function seals should not be operated at speeds in excess of 60% of those quoted in the table, particularly when shafts having an h6 tolerance are used.

Table 3

Speed ratings for insert bearings

Basic bearing size	Speed ratings for bearings of series: YAR, YEL, YET, YAT, YSP with shaft tolerance				
	h6	h7	h8	h9	h11
	rpm				
203	9500	6000	4300	1500	950
204	8500	5300	3800	1300	850
205	7000	4500	3200	1000	700
206	6300	4000	2800	900	630
207	5300	3400	2200	750	530
208	4800	3000	1900	670	480
209	4300	2600	1700	600	430
210	4000	2400	1600	560	400
211	3600	2000	1400	500	360
212	3400	1900	1300	480	340
213	3000	1700	1100	430	300
214	2800	1600	1000	400	280
215	2600	1500	930	380	260
216	2400	1400	900	360	240

Internal clearance

SKF inch series YAR, YEL, YET, YAT and YSP wide inner ring bearings are produced as standard with internal clearance according to **Table 4**.

Table 4

Radial internal clearance of wide inner ring bearings

Basic bearing size	Radial internal clearance of bearings of series: YAR, YEL, YET, YAT, YSP	
	min	max
	0.0001 in	
203	4	10
204-206	5	11
207-208	5	13
209-210	6	14
211-213	7	17
214-216	8	20

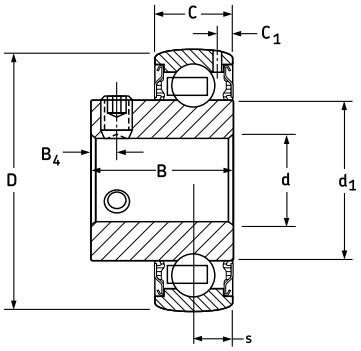
Set screw locking – Insert bearing

YAT / standard duty

Spherical O.D.
Narrow inner ring
Relubricatable
Seal

Replaces: GYA-RRB, V-, INS-SL

How to order	**YAT 208-108**
Option	Specify
Nonrelubricatable	YAT 208-108-W
Lube groove	YAT 208-108-G
Lube groove (locking side)	YAT 208-108-GR



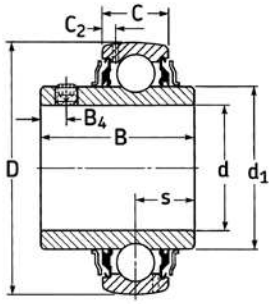
Bore dia d		**Insert bearing designation**	D	d_1	B	M	C	**Dynamic capacity C**	**Static load C_0**	**Min fillet radius**	**Set screw size**	**Mass**
in	mm		mm	in	in	in	mm	lbf	lbf	in		lb
1/2		**YAT 203-008**	40	0.953	0.870	0.472	12	2 150	1 070	0.038	#10-32 UNF	0.2
5/8		**YAT 203-010**									–	0.2
	17	**YAT 203**									M6x0.75	0.2
3/4		**YAT 204-012**	47	1.110	1.004	0.551	14	2 850	1 470	0.044	1/4-28 UNF	0.3
	20	**YAT 204**									M6x0.75	0.3
7/8		**YAT 205-014**	52	1.328	1.071	0.591	15	3 150	1 750	0.052	1/4-28 UNF	0.4
15/16		**YAT 205-015**									–	0.4
1		**YAT 205-100**									–	0.4
	25	**YAT 205**									M6x0.75	0.4
1 1/8		**YAT 206-102**	62	1.563	1.189	0.709	18	4 380	2 520	0.062	1/4-28 UNF	0.5
1 3/16		**YAT 206-103**									–	0.6
1 1/4		**YAT 206-104**									–	0.6
	30	**YAT 206**									M6x0.75	0.6
1 1/4		**YAT 207-104**	72	1.815	1.299	0.748	19	5 730	3 440	0.071	5/16-24 UNF	0.8
1 3/8		**YAT 207-106**									–	0.8
1 7/16		**YAT 207-107**									–	0.9
	35	**YAT 207**									M6x0.75	0.8
1 1/2		**YAT 208-108**	80	2.039	1.417	0.827	21	6 900	4 270	0.080	5/16-24 UNF	1.2
	40	**YAT 208**									M6x0.75	1.1
1 11/16		**YAT 209-111**	85	2.236	1.457	0.866	22	7 460	4 850	0.088	5/16-24 UNF	1.3
1 3/4		**YAT 209-112**									–	1.3
	45	**YAT 209**									M6x0.75	1.2
1 15/16		**YAT 210-115**	90	2.461	1.528	0.866	22	7 890	5 210	0.097	3/8-24 UNF	1.4
	50	**YAT 210**									M8x1	1.4
2		**YAT 211-200**	100	2.719	1.772	0.984	25	9 800	6 520	0.107	3/8-24 UNF	2.2
2 3/16		**YAT 211-203**									–	1.9
2 1/4		**YAT 212-204**	110	2.978	1.909	1.024	26	11 840	8 090	0.117	3/8-24 UNF	2.8
2 7/16		**YAT 212-207**									–	2.4
2 15/16		**YAT 215-215**	130	3.624	2.106	1.142	29	14 900	11 010	0.143	3/8-24 UNF	3.9
3		**YAT 216-300**	140	3.835	2.185	1.181	30	16 360	11 910	0.151	3/8-24 UNF	4.9

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

Set screw locking – Insert bearing

YAR-2F / standard duty

Spherical O.D.
Wide inner ring
Relubricatable
Seal & flingers



How to order	YAR 208-107-2F
Option	Specify
Nonrelubricatable	YAR 208-107-2FW
Lube groove	YAR 208-107-2FG
Lube groove (locking side)	YAR 208-107-2FGR

Bore dia d		Insert bearing designation	D	d_1	B	M	C	Dynamic capacity C	Static load C_0	Min fillet radius	Set screw size	Mass
in	mm		mm	in	in	in	mm	lbf	lbf	in		lb
1/2		YAR 203-010-2F									#10-32 UNF	0.2
5/8		YAR 203-008-2F	40	0.953	1.079	0.472	12	2 150	1 070	0.038	–	0.3
	17	YAR 203-2F									M6x0.75	0.2
3/4		YAR 204-012-2F	47	1.110	1.220	0.551	14	2 850	1 470	0.044	1/4-28 UNF	0.4
	20	YAR 204-2F									M6x0.75	0.3
7/8		YAR 205-014-2F									1/4-28 UNF	0.0
1		YAR 205-100-2F	52	1.328	1.343	0.591	15	3 150	1 750	0.052	–	0.4
15/16		YAR 205-015-2F									–	0.4
	25	YAR 205-2F									M6x0.75	0.4
1 1/4		YAR 206-104-2F									1/4-28 UNF	0.6
1 3/16		YAR 206-103-2F									–	0.7
1 1/8		YAR 206-102-2F	62	1.563	1.500	0.709	18	4 380	2 520	0.062	–	0.7
1 1/16		YAR 206-101-2F									–	0.8
	30	YAR 206-2F									M6x0.75	0.7
1 7/16		YAR 207-107-2F									5/16-24 UNF	0.9
1 3/8		YAR 207-106-2F									–	1.0
1 5/16		YAR 207-105-2F	72	1.815	1.689	0.748	19	5 730	3 440	0.071	–	1.1
1 1/4		YAR 207-104-2F									–	1.1
	35	YAR 207-2F									M6x0.75	1.0
1 7/16		YAR 208-107-2F									5/16-24 UNF	1.5
1 1/2		YAR 208-108-2F	80	2.039	1.937	0.827	21	6 900	4 270	0.080	–	1.4
1 9/16		YAR 208-109-2F									–	1.3
	40	YAR 208-2F									M8x1	1.3
1 1/2		YAR 209-108-2F									5/16-24 UNF	1.9
1 5/8		YAR 209-110-2F									–	1.7
1 11/16		YAR 209-111-2F		2.236	1.937	0.866	22	7 460	4 850	0.088	–	1.6
1 3/4		YAR 209-112-2F									–	1.5
	45	YAR 209-2F									M8x1	1.5
	90	YAR 218-2F	160	4.429	3.504	1.417	36	21 480	16 180	0.174	M12x1.5	8.8
	100	YAR 220-2F	180	4.913	3.874	1.575	40	27 870	20 900	0.193	M12x1.5	12.3

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

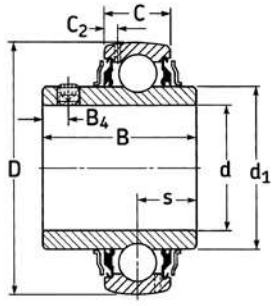
Set screw locking – Insert bearing

YAR / standard duty

Spherical OD
Wide inner ring
Relubricatable
Multi-function seal and rubberized flingers

Replaces: GYA-RBB, UG200NL

How to order	**YAR 208-107-2RF**
Option	Specify
Nonrelubricatable	YAR 208-107-2RFW
Lube groove	YAR 208-107-2RFG
Lube groove (locking side)	YAR 208-107-2RFGR



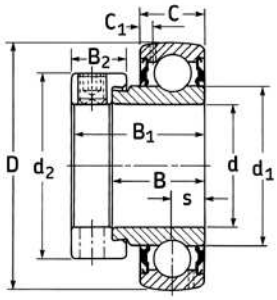
Bore dia d		**Insert bearing designation**	D	d_1	B	M	C	**Dynamic capacity C**	**Static load C_0**	**Min fillet radius**	**Set screw size**	**Mass**
in	mm		mm	in	in	in	mm	lbf	lbf	in		lb
3/4	20	**YAR 204-012-2RF** **YAR 204-2RF**	47	1.110	1.220	0.551	14	2 850	1 470	0.044	1/4-28 UNF M6x0.75	0.4 0.3
1	25	**YAR 205-100-2RF** **YAR 205-2RF**	52	1.328	1.343	0.591	15	3 150	1 750	0.052	1/4-28 UNF M6x0.75	0.4 0.4
	30	**YAR 206-2RF**	62	1.563	1.500	0.709	18	4 380	2 520	0.062	M6x0.75	0.7
1 1/4	35	**YAR 207-104-2RF** **YAR 207-2RF**	72	1.815	1.689	0.748	19	5 730	3 440	0.071	5/16-24 UNF M6x0.75	1.1 1.0
1 1/2	40	**YAR 208-108-2RF** **YAR 208-2RF**	80	2.039	1.937	0.827	21	6 900	4 270	0.080	5/16-24 UNF M8x1	1.4 1.3
1 3/4	45	**YAR 209-112-2RF** **YAR 209-2RF**	85	2.236	1.937	0.866	22	7 460	4 850	0.088	5/16-24 UNF M8x1	1.5 1.5
1 15/16	50	**YAR 210-115-2RF** **YAR 210-2RF**	90	2.461	2.031	0.866	22	7 890	5 210	0.097	3/8-24 UNF M10x1	1.7 1.7
2	55	**YAR 211-200-2RF** **YAR 211-2RF**	100	2.719	2.189	0.984	25	9 800	6 520	0.107	3/8-24 UNF M10x1	2.6 2.3
	60	**YAR 212-2RF**	110	2.978	2.563	1.024	26	11 840	8 090	0.117	M10x1	3.1
2 1/2	65	**YAR 213-208-2RF** **YAR 213-2RF**	120	3.248	2.689	1.063	27	12 850	8 990	0.128	3/8-24 UNF M10x1	4.2 4.0

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

YET / standard duty

Spherical O.D.
Narrow inner ring
Relubricatable
Seal

Replaces: GRA-RRB, WG200UL



How to order	**YET 205-100**
Option	Specify
No collar	YET 205-100U
Nonrelubricatable	YET 205-100W
Lube groove	YET 205-100G
Lube groove (collar side)	YET 205-100GR

Bore dia d		**Insert bearing designation**	D	B	B_1	C [1]	d_1	d_2	M	**Dynamic capacity C**	**Static load C_0**	**Min fillet radius**	**Set screw size**	**Mass**
in	mm		mm	in		mm	in		in	lbf	lbf	in		lb
1/2		**YET 203-008**	40	0.752	1.126	12	0.953	1.071	0.030	2 150	1 070	0.012	1/4-28 UNF	0.3
	17	**YET 203**											M6x0.75	0.2
3/4		**YET 204-012**	47	0.827	1.201	14	1.110	1.276	0.033	2 850	1 470	0.024	1/4-28 UNF	0.4
	20	**YET 204**											M6x0.75	0.4
1		**YET 205-100**	52	0.846	1.220	15	1.328	1.472	0.033	3 150	1 750	0.024	1/4-28 UNF	0.4
15/16		**YET 205-015**											–	0.5
7/8		**YET 205-014**											–	0.5
	25	**YET 205**											M6x0.75	0.4
1 1/4		**YET 206-104**	62	0.937	1.406	18	1.563	1.736	0.037	4 380	2 520	0.024	5/16-24 UNF	0.7
1 3/16		**YET 206-103**											–	0.7
1 1/8		**YET 206-102**											–	0.7
1 1/16		**YET 206-101**											–	0.8
	30	**YET 206**											M8x1	0.7
1 7/16		**YET 207-107**	72	1.000	1.531	19	1.815	2.016	0.039	5 730	3 440	0.039	3/8-24 UNF	1.0
1 3/8		**YET 207-106**											–	1.0
1 5/16		**YET 207-105**											–	1.1
1 1/4		**YET 207-104**											–	1.1
	35	**YET 207**											M10x1	1.0
1 1/2		**YET 208-108**	80	1.169	1.701	21	2.039	2.224	0.046	6 900	4 270	0.039	3/8-24 UNF	1.4
	40	**YET 208**											M10x1	1.3
1 3/4		**YET 209-112**	85	1.189	1.720	22	2.236	2.441	0.047	7 460	4 850	0.039	3/8-24 UNF	1.5
1 11/16		**YET 209-111**											–	1.6
1 5/8		**YET 209-110**											–	1.7
	45	**YET 209**											M10x1	1.5
1 15/16		**YET 210-115**	90	1.189	1.720	22	2.461	2.646	0.047	7 890	5 210	0.039	3/8-24 UNF	1.7
	50	**YET 210**											M10x1	1.6
2 3/16		**YET 211-203**	100	1.283	1.906	25	2.719	2.933	0.051	9 800	6 520	0.039	7/16-20 UNF	2.2
2		**YET 211-200**											–	2.5
	55	**YET 211**											M10x1	2.3
2 7/16		**YET 212-207**	110	1.445	2.071	26	2.978	3.228	0.057	11 840	8 090	0.059	7/16-20 UNF	2.8
	60	**YET 212**											M10x1	3.0

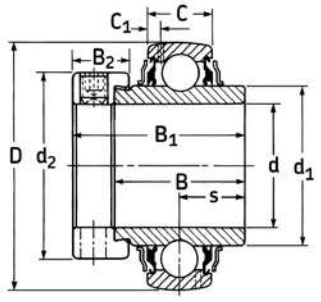
[1] If bearings are mounted on shafts with interference fits, then C values may be multiplied by 1.3.

Eccentric locking – Insert bearing

YEL-2F / standard duty

Spherical O.D.
Wide inner ring
Relubricatable
Seal & flingers

Replaces: G-KRRB, YG200NL



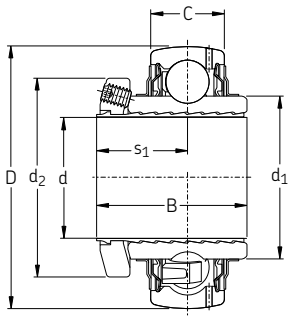
How to order	**YEL 205-100-2F**
Option	Specify
No collar	YEL 205-100-2FU
Nonrelubricatable	YEL 205-100-2FW
Lube groove	YEL 205-100-2FG
Lube groove (collar side)	YEL 205-100-2FGR
Multi-function seal	YEL 205-100-2RF

Bore dia d		**Insert bearing designation**	D	B	B_1	C	d_1	d_2	M	**Dynamic capacity C**	**Static load C_0**	**Min fillet radius**	**Set screw size**	**Mass**
in	mm		mm	in		mm	in		in	lbf	lbf	in		lb
3/4		**YEL 204-012-2F**	47	1.346	1.720	14	1.110	1.276	0.053	2 850	1 470	0.024	1/4-28 UNF	0.5
	20	**YEL 204-2F**											M6x0.75	0.4
1		**YEL 205-100-2F**	52	1.374	1.748	15	1.328	1.472	0.054	3 150	1 750	0.024	1/4-28 UNF	0.5
15/16		**YEL 205-015-2F**											–	0.6
7/8		**YEL 205-014-2F**											–	0.6
	25	**YEL 205-2F**											M6x0.75	0.5
1 1/4		**YEL 206-104-2F**	62	1.437	1.906	18	1.563	1.736	0.057	4 380	2 520	0.024	5/16-24 UNF	0.8
1 3/16		**YEL 206-103-2F**											5/16-24 UNF	0.8
1 1/8		**YEL 206-102-2F**											–	0.9
	30	**YEL 206-2F**											M8x1	0.8
1 7/16		**YEL 207-107-2F**	72	1.480	2.012	19	1.815	2.012	0.058	5 730	3 440	0.039	3/8-24 UNF	1.1
1 3/8		**YEL 207-106-2F**											–	1.2
1 1/4		**YEL 207-104-2F**											–	1.3
	35	**YEL 207-2F**											M10x1	1.2
1 1/2		**YEL 208-108-2F**	80	1.685	2.217	21	2.039	2.224	0.066	6 900	4 270	0.039	3/8-24 UNF	1.7
	40	**YEL 208-2F**											M10x1	1.5
1 3/4		**YEL 209-112-2F**	85	1.685	2.217	22	2.236	2.441	0.066	7 460	4 850	0.039	3/8-24 UNF	1.8
1 11/16		**YEL 209-111-2F**											–	1.9
1 5/8		**YEL 209-110-2F**											–	2.0
	45	**YEL 209-2F**											M10x1	1.7
1 15/16		**YEL 210-115-2F**	90	1.937	2.469	22	2.461	2.646	0.076	7 890	5 210	0.039	3/8-24 UNF	2.1
	50	**YEL 210-2F**											M10x1	2.0
2 3/16		**YEL 211-203-2F**	100	2.189	2.811	25	2.719	2.933	0.086	9 800	6 520	0.039	7/16-20 UNF	2.8
2		**YEL 211-200-2F**											–	3.3
	55	**YEL 211-2F**											M10x1	2.9
2 7/16		**YEL 212-207-2F**	110	2.437	3.063	26	2.978	3.228	0.096	11 840	8 090	0.059	7/16-20 UNF	3.5
	60	**YEL 212-2F**											M10x1	3.7

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

YSP SB-2F / standard duty

Spherical O.D.
ConCentra locking
Relubricatable
Seals & flingers



How to order	YSP 205-100 SB-2F
Option	Specify
Air handling	YSP 205-100 SB-2F-AH

Bore dia d		Insert bearing designation	B	C	D	d_1	d_2	S_1	Dynamic capacity C	Static load C_0	Set screw size	Mass
in	mm		in	mm	mm	in		in	lbf	lbf		lb
1	25	**YSP 205-100 SB-2F** **YSP 205 SB-2F**	1.307	15	52	1.328	1.642	0.835	3 150	1 750	M5	0.4 0.4
1 3/16	30	**YSP 206-103 SB-2F** **YSP 206 SB-2F**	1.465	18	62	1.563	1.890	0.913	4 380	2 520	M5	0.7 0.7
1 7/16 1 3/8 1 1/4	35	**YSP 207-107 SB-2F** **YSP 207-106 SB-2F** **YSP 207-104 SB-2F** **YSP 207 SB-2F**	1.563	19	72	1.815	2.244	0.965	5 730	3 440	M6	0.9 – 1.1 1.0
1 1/2	40	**YSP 208 SB-2F** **YSP 208-108 SB-2F**	1.697	21	80	2.039	2.441	1.031	6 900	4 270	M6	1.3 1.4
1 11/16	45	**YSP 209-111 SB-2F** **YSP 209 SB-2F**	1.740	22	85	2.236	2.638	1.051	7 460	4 850	M6	1.5 1.5
1 15/16	50	**YSP 210-115 SB-2F** **YSP 210 SB-2F**	1.819	22	90	2.461	2.835	1.091	7 890	5 210	M6	1.7 1.6
2 3/16 2	55	**YSP 211-203 SB-2F** **YSP 211-200 SB-2F** **YSP 211 SB-2F**	1.937	25	100	2.719	3.055	1.150	9 800	6 520	M6	2.1 2.4 2.2
2 1/4 2 7/16	60	**YSP 212-204 SB-2F** **YSP 212-207 SB-2F** **YSP 212 SB-2F**	2.035	26	110	2.978	3.268 3.449 3.268	1.201	11 840	8 090	M6	3.0 2.6 2.8
2 11/16		**YSP 213-211 SB-2F**	2.075	27	120	3.248	3.520	1.220	12 850	8 990	M6	3.1

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

Notes

Notes

Notes

Roller bearing units nomenclature guide*

(Inch series)

P2B 207 – SRB – SRE – W64

1 2 3 4 5 6 7

1. Housing style

		Predecessor
P2B	Pillow block, two-bolt	SYR
P2BA	Pillow block, two-bolt, SAF dimensions	SYAF
P2BE	Pillow block, two-bolt, type E dimensions	SYE
P4B	Pillow block, four-bolt	–
P4BA	Pillow block, four-bolt, SAF dimensions	(F)SYAF
P4BE	Pillow block, four-bolt, type E dimensions	FSYE
F3BBD	Flange, three-bolt, bracket	–
F3BR	Flange, three-bolt, round	FYR
F4B	Flange, four-bolt, square	–
F4BBD	Flange, four-bolt, bracket	–
F4BE	Flange, four-bolt, type E dimensions	FYE
F4BED	Flange, four-bolt, type E dimensions, ductile	FYED
F4BR	Flange, four-bolt	FYR
F4BRP	Flange, four-bolt, round, piloted	FYRP
F6BRP	Flange, six-bolt, round, piloted	FYRP
WSTU	Take-up, wideslot	–

2. Shaft size

Inch

First digit: number of inches

Second and third digits: number of sixteenths of an inch

Example: 207 indicates 2 7/16 (unit)

3. Bearing type

SRB Spherical roller bearing

4. Locking mechanism (SRE)

S	Set screw
C	SKF ConCentra™

5. Seal options (SRE)

R	Radial lip
L	Labyrinth
G	Garter spring

6. Bearing location (SRE)

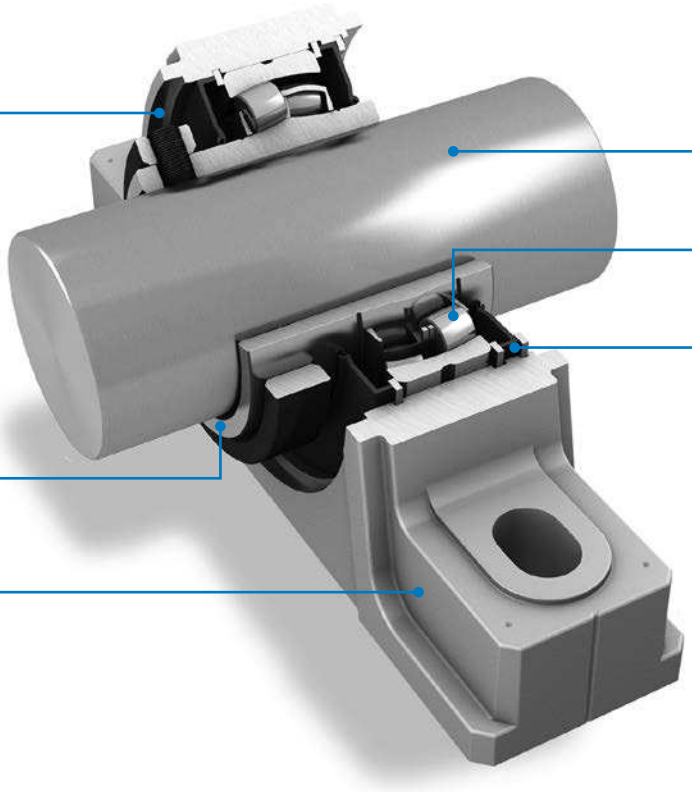
H	Held (locating)
E	Expansion (non-locating)

7. Additional options

Y	End cover included
W64	Solid Oil
H7**	H7 housing bore tolerance
V____	V-number special execution

* SKF changed the nomenclature and following designations. The new and previous designations are shown.
** G7 is the standard housing bore tolerance.

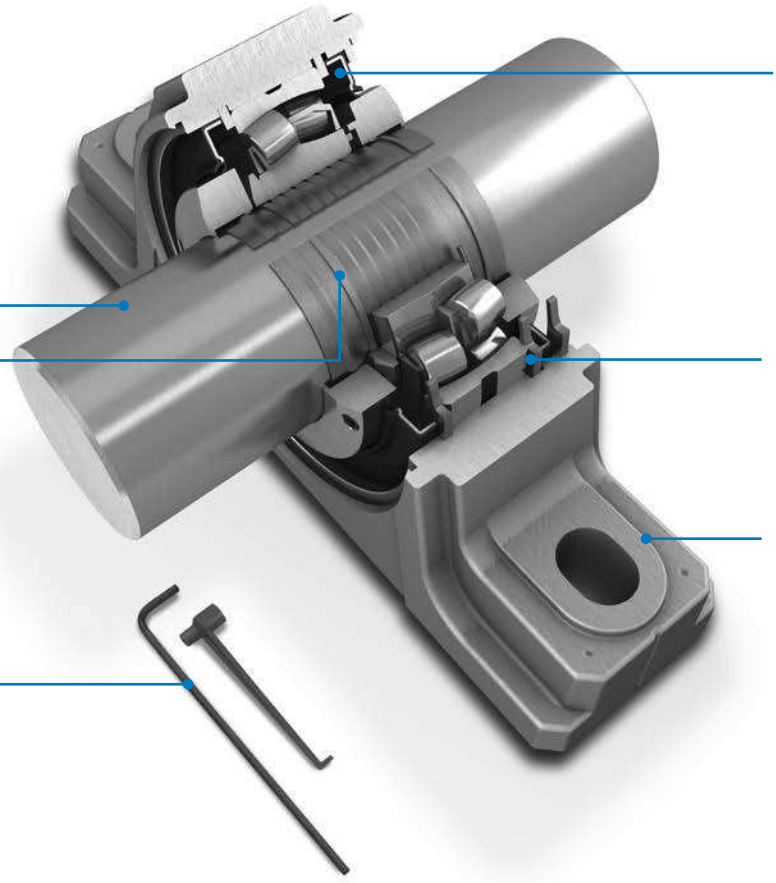
Introduction



Set screw mounted roller bearing unit

The units are based on the SKF 22200 series spherical roller bearing. Fully assembled and pre-greased, the units need no internal bearing adjustments at assembly. This saves time and eliminates the risk of bearing contamination during assembly.

Roller bearing units offer many of the advantages of the split housing series but with the convenience of just slipping it on the shaft. Misalignment, non-locating or locating assemblies, two-or four-bolt bases, cast iron and a variety of seal options make the roller bearing unit a preferred alternative to the split housing.



ConCentra™ spherical roller bearing unit

Patented multi-taper sleeve uniformly clamps the inner ring around the shaft circumference and sets the bearing internal clearance. The ConCentra locking method achieves true concentric mounting with the shaft, and also minimizes risk of damage or fretting corrosion on the shaft surface. The ConCentra design increases the axial holding strength of the bearing inner ring to the shaft, and also facilitates easy dismounting.

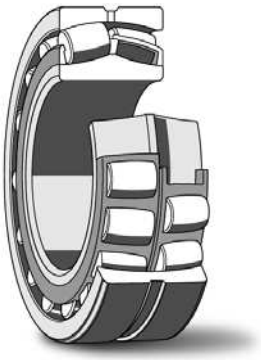
Some typical applications are:
- Apron conveyors
- Bucket elevators
- Belt conveyors
- Chain conveyors
- Fans & blowers
- Wastewater treatment equipment
- Commercial laundry equipment

Set screw mounted roller bearing unit

Roller bearing units are supplied completely assembled with bearings, seals, and grease. They are ready for installation right out of the box and require no internal adjustment.

Bearings

The bearings used in SKF roller bearing units are based on the high capacity SKF 22200 series spherical roller bearing. They can handle heavy radial and axial loads, misalignment and high operating temperatures. Clearances in the bearing are preset; no adjustment is required during mounting.

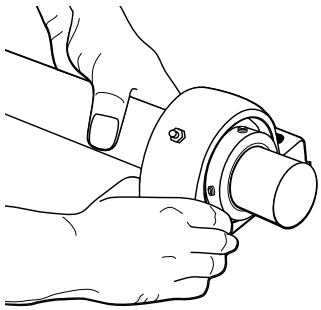


Grease

All roller bearing units are factory lubricated with SKF LGEP2 grease.

Mounting

Set screw mounted roller bearing units slide easily onto the shaft and are locked in place with a double set screw locking collar. The locking collar keeps pressure on the set screws helping to maintain the tight fit with the shaft. For added holding power, the largest sizes are designed with two locking collars, indicated in the dimension tables. Mounting is quick and easy.



Housings

There are a variety of housing styles in the SKF roller bearing unit product line, including pillow blocks and flange units. Pillow blocks are made in two configurations: the P2BE is dimensionally interchangeable with competitor "E" designs and the P2B is dimensionally interchangeable with units such as the Dodge S–2000, Linkbelt P–B22400, and Rexnord ZA 2000 series.

Table 1

Set screw torque and permissible axial load

Shaft sizes	Set screw	Torque	Permissible axial load
in	(No.) size	in-lbs	lbs
1 7/16 to 2 3/16	(2) 3/8" - 24	250	515
2 7/16 to 3 1/2	(2) 1/2" - 20	620	900
3 11/16 to 4	(2) 5/8" - 18	1325	1200
4 7/16 to 4 15/16	(4) 5/8" - 18	1325	2400

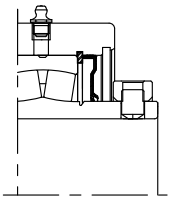
Table 2

Recommended shaft tolerances

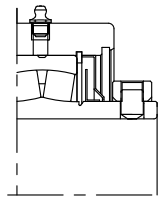
Shaft diameter	Tolerance
Up to 1 15/16"	Nominal to -0.0005"
2" to 4 15/16"	Nominal to -0.0010"

Note: When the load is heavy, C/P < 8.3, a press fit must be used. Consult SKF Applications Engineering.

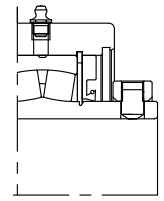
Seals



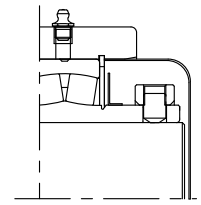
TriGard seal (R) *Standard offer*



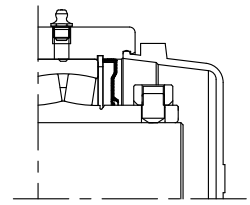
Labyrinth seal (L)



Garter spring seal (G)



End cover (Y) *3 7/16" shaft and up*



End cover (Y) *1 3/16" to 3" shaft*

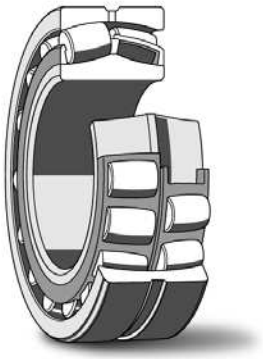
SKF ConCentra™ roller bearing unit

SKF ConCentra™ roller bearing units are supplied completely assembled with bearings, seals, and grease. They are ready for installation right out of the box and require no internal adjustment.

ConCentra units can be used in the same applications as set screw mounted roller bearing units. The difference between the two types is that the ConCentra unit mounts with a near 360° interference fit (see "Mounting", to the right, and Product descriptions on following page).

Bearings

The bearings used in ConCentra roller bearing units are based on the high capacity SKF 22200 series spherical roller bearing. They can handle heavy radial and axial loads, misalignment and high operating temperatures. Clearances in the bearing are preset; no adjustment is required during mounting.



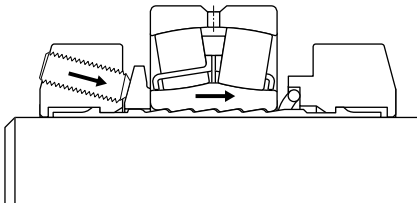
Grease

All roller bearing units are factory lubricated with SKF LGEP2 grease.

LGEP2 Grease characteristics	
Base oil	Mineral
Thickener	Lithium
Application temperature	-4° to 230° F (-20° to 110° C)
NLGI	2
Viscosity at 100° F (40° C)	900 SUS (190 cSt)
212° F (100° C)	82 SUS (16 cSt)

Mounting

The ConCentra roller bearing unit uses a patented multi–tapered sleeve arrangement, making it easy to mount the bearing to the shaft. This method provides nearly 360° of interference fit, which does not offset the center line of the shaft and helps reduce fretting.



Housings

There are a variety of housing styles in the ConCentra roller bearing unit product line including pillow blocks and flange units. Pillow blocks are made in three configurations: the P2BE is dimensionally interchangeable with competitor "E" designs, the P2B is dimensionally interchangeable with units such as the Dodge S–2000, Linkbelt P–B22400 and SKF collar-mounted unit roller bearings.

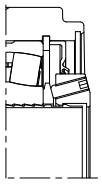
Tolerances

In normal cases shafts machined to tolerance h9 can be used. The cylindricity as defined in ISO 1101:1996 should be according to IT5/2. For less demanding applications h10 and IT7/2 may be satisfactory.

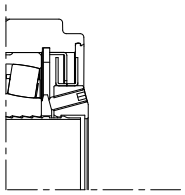
Table 3

Recommended shaft tolerances	
Shaft diameter	Tolerance
Up to $1^{1}/_{2}$"	+0.000" to -0.003"
$1^{11}/_{16}$" to $2^{1}/_{2}$"	+0.000" to -0.004"
$2^{11}/_{16}$" to 4"	+0.000" to -0.005"

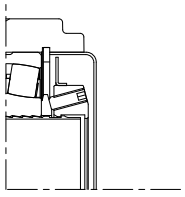
Seals



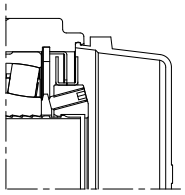
TriGard seal (R) *Standard offer*



Labyrinth seal (L)



*End cover (Y) *3 7/16" shaft and up*



End cover (Y) *1 3/16" to 3" shaft*

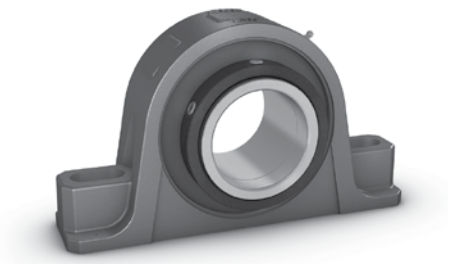
*Consult SKF for Availability

Product descriptions

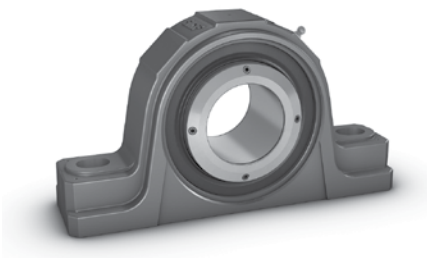
These units are simple and economic bearing arrangements combining the high load capacity and self-aligning features of the SKF spherical roller bearing with the convenience of set screw or ConCentra mounting and a rugged cast-iron housing. Installation time is reduced and there is no risk of bearing contamination during assembly. All units incorporate triple protection TriGard seals as standard, but can also be supplied with optional performance seals.

Set screw units use a locking collar design to firmly secure the bearing inner ring to the shaft. The two set screws extend through the inner ring of the bearing and lock into the shaft. The elasticity of the locking collars maintains pressure on the set screws helping to maintain a secure fit to the shaft even in severe power transmission applications. Mounting is quick and easy. Slide the unit on the shaft, bolt the housing securely to the mounting surface and tighten the two set screws.

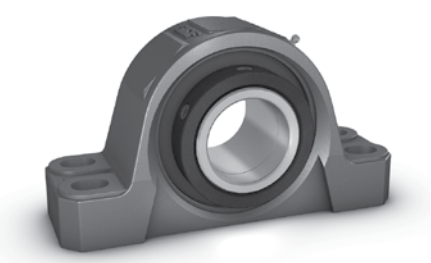
ConCentra units combine the advantages of adapter mounting found in split pillow blocks with the convenience of set screw mounting. The result is a positive, near 360° interference fit with the shaft. This is achieved with a unique patented multi-tapered sleeve arrangement developed by SKF. The shaft is held concentric to the bore of the bearing resulting in reduced fretting corrosion, good balance and low vibration. Dismounting is just as easy. Loosen the mounting set screws and tighten the dismounting set screws until the multi-tapered sleeve releases its grip, usually with a "POP". No need for cutting torches or other mechanical devices. Downtime and shafting cost are saved.



P2B
Cast-iron, two-bolt base pillow blocks. They are available in shaft sizes ranging from 1 7/16" to 4." See pages 316 and 317.



P2BE
Cast-iron, two-bolt base pillow blocks with Type E dimensions are available in shaft sizes ranging from 1 7/16" to 3 1/2." See pages 312 and 313.



P4BE
Cast iron, four-bolt base pillow block with Type E dimensions are available for shafts ranging from 2 7/16" to 4 15/16" with set screw mounting. ConCentra is available up to a 4."
See pages 314 and 315.

F3BR
Cast-iron flange unit supports rotating shafts through walls, bulkheads or other flat surfaces. The three bolts are available in both set screw and ConCentra mounting in two sizes, 1 7/16" and 1 1/2." See pages 306 and 327. These units rely on the mounting bolts for location and load carrying. See page 322 and 323.

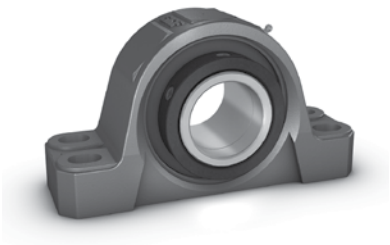
F4BR
Cast-iron flange unit supports rotating shafts through walls, bulkheads, or other flat surfaces. They are available for shaft sizes ranging from 1 7/16" to 4." These units rely on the mounting bolts for location and load carrying.
See page 322 and 323.

F4BBD
Cast ductile-iron, four-bolt flange unit supports rotating shafts. Available for shaft sizes ranging from 2 7/16" to 2 1/2." Available in set screw mounting as well as Concentra mounting.
See pages 328 and 329.

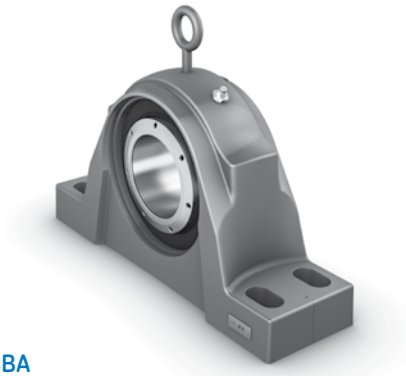
New Designations	
Previous Designation	**New Designation**
SYR	P2B
SYAF	P2BA
SYE	P2BE
–	P4B
(F)SYAF	P4BA
FSYE	P4BE
FYR	F3BR
–	F3BBD
–	F4B
FYE	F4BE
FYR	F4BR
–	F4BBD
FYED	F4BED
FYRP	F4BRP
FYRP	F6BRP
–	WSTU

Product descriptions

P2BA
Cast-iron, two-bolt base pillow blocks with SAF dimensions. This makes for easy replacement when the features of a spherical roller unit are needed. See pages 318 and 319.



P4B
Cast-iron, four-bolt base pillow block unit. Available for saft sizes ranging from 1 15/16" to 4 15/16"as well as a couple metric shaft diameters within that range. Available in set screw mounting as well as ConCentra mounting. See pages 332 and 333.



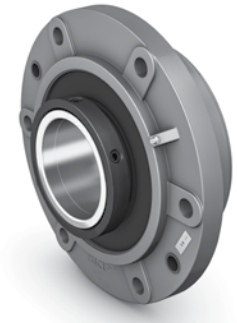
P4BA
Cast-iron, four-bolt base pillow block unit with SAF dimensions. See pages 318 and 319.

F3BBD
Cast ductile-iron, three-bolt flange unit supports rotating shafts. Available for shaft sizes ranging from 1 7/16" to 2". Available in set screw mounting as well as ConCentra mounting. See pages 328 and 329.

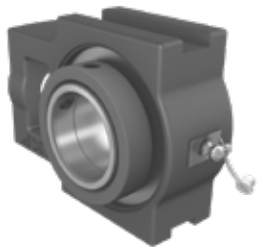
F4B
Cast-iron, four-bolt square flange unit supports rotating shafts. Available for shaft sizes 1 7/16" to 4" as well as several metric shaft diameters within that range. Available in set screw mounting as well as ConCentra mounting. See pages 330 and 331.

F4BE
Cast-iron, four-bolt flange with Type E dimensions roller bearing units are available in shaft sizes ranging from 1 7/16" to 4 7/16." ConCentra available ranging from 1 7/16" to 4 1/2." See page 320 and 321.

F4BRP
Cast-iron piloted flange units, available for shaft sizes ranging from 1 1/4" to 4," have a machined extension on one side to fit into a precisely machined bulkhead opening. This provides additional location and support to the unit. See page 324 and 325.



F6BRP
Cast-iron piloted flange units are available in shaft sizes ranging from 4 7/16" to 4 15/16" with set screw mounting and 4 7/16" to 5" with ConCentra mounting. They have a machined extension on one side to fit into a precisely machined bulkhead opening. This provides additional location and support to the unit.
See pages 324 and 325.



WSTU
Cast iron take-up unit. Available for shaft sizes ranging from 1 7/16" to 3 7/16" as well as the 100mm metric shaft diameter. Available in set screw mounting as well as ConCentra mounting. See pages 334 and 335.

Seal design criteria/Set screw-mounted roller bearing units

TriGard seal (R) *Standard offer*

- Standard on all unit roller bearings
- Features a double lip molded contact seal, which rides on a ground surface of the inner ring
- Steel outboard trash guard protects the seal and excludes larger contaminants
- Provides positive contact even under misaligned conditions
- Permits ±1½° misalignment
- Low frictional torque
- Limited to 200° F maximum operating temperature

Labyrinth seal (L)

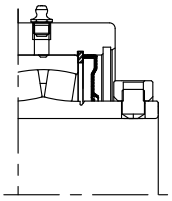
- Two-piece all metal labyrinth seal provides for high operating speeds
- Inboard flinger pressed on the inner ring of the bearing helps retain grease and exclude contaminants
- Outboard stationary plate is pressed into the housing and has close running tolerance with the inner ring of the bearing to exclude contaminants
- Permits ±1½° misalignment
- No frictional torque from seal
- No temperature limitation of seal

Garter spring seal (G)

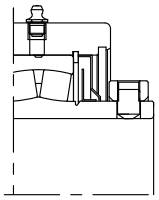
- Features one-piece molded nitrile rubber seal pressed into the housing bore
- Provides greater grease retention and sealing protection because stainless steel garter spring holds seal lip firmly to the ground inner ring
- Provides positive contact even under misaligned conditions
- Permits ±1½° misalignment
- Provides good protection in moist environment
- Limited to 200° F maximum operating temperature

End covers (Y)

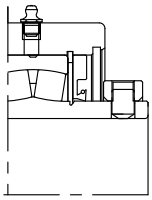
- Steel end covers are simply pushed into position in the housing bore
- Provides additional sealing and protection against exposed shaft ends



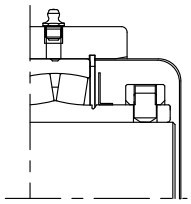
TriGard seal (R) *Standard offer*



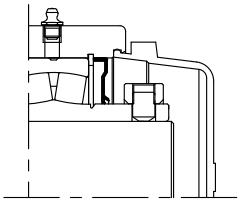
Labyrinth seal (L)



Garter spring seal (G)



End cover (Y) *3 7/16" shaft and up*



End cover (Y) *1 3/16" to 3" shaft*

Table 4

Seal speed limits

Shaft size	TriGard	Labyrinth	Garter Spring
in	rpm		
1 7/16	2300	5300	1700
1 1/2	2300	5300	1700
1 11/16	4500	4700	1600
1 3/4	4500	4700	1600
1 15/16	4100	4250	1450
2	4100	4250	1450
2 3/16	3700	3800	1300
2 7/16	3100	3250	1100
2 1/2	3100	3250	1100
2 11/16	2800	2800	950
2 3/4	2800	2800	950
2 15/16	2800	2800	950
3	2800	2800	950
3 7/16	2300	2200	800
3 1/2	2300	2200	800
3 11/16	2100	2000	700
3 15/16	2100	2000	700
4	2100	2000	700
4 7/16	1900	N/A	N/A
4 1/2	1900	N/A	N/A
4 15/16	1650	N/A	N/A

TriGard seal (R) *Standard offer*

- Standard on all unit roller bearings
- Features a double lip molded contact seal, which rides on a ground surface
- Steel outboard trash guard protects the seal and excludes larger contaminants
- Provides positive contact even under misaligned conditions
- Permits ±1½° misalignment
- Low frictional torque
- Limited to 200° F maximum operating temperature

Labyrinth seal (L)

- Three-piece all metal labyrinth seal inboard flinger pressed on the inner ring of the bearing helps retain grease
- Outboard plate pressed on the inner ring flings contaminants away from the seal opening
- A stationary trash guard, positioned between the two flingers, is pressed into the housing and helps create a difficult path labyrinth to prevent the ingress of contaminants
- Permits ±1½° misalignment
- No frictional torque from seal
- No temperature limitation of seal

End covers (Y)

- Steel end covers are simply pushed into position in the housing bore. A variety of end cover designs are available depending upon the specific housing. Contact SKF Application Engineering for specific details concerning ECM, ECY and B-9794 end cover designs
- Provides additional sealing and protection against exposed shaft ends

Table 5

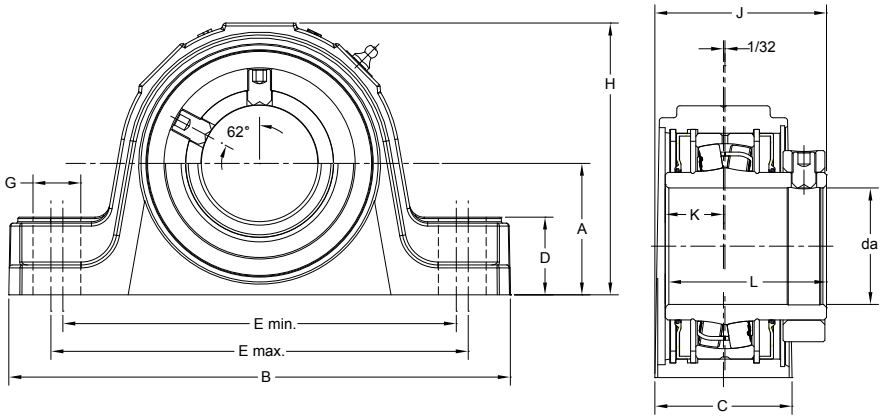
Seal speed limits

Shaft size	TriGard	Labyrinth
in	rpm	
1 7/16	4000	5600
1 1/2	4000	5600
1 11/16	3700	5300
1 3/4	3700	5300
1 15/16	3500	5000
2	3500	5000
2 3/16	3250	4500
2 7/16	2900	3800
2 1/2	2900	3800
2 11/16	2600	3400
2 3/4	2600	3400
2 15/16	2600	3400
3	2600	3400
3 7/16	2200	2600
3 1/2	2200	2600
3 15/16	2000	2200
4	2000	2200

Pillow block / set screw

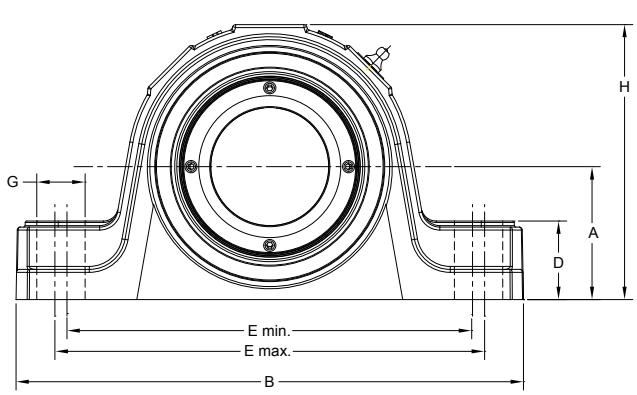
P2BE
Cast-iron housing
2-bolt base
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

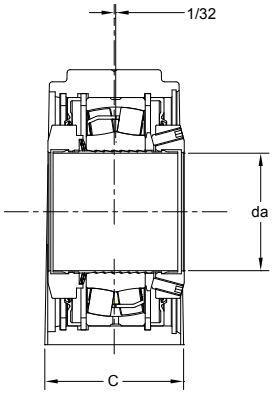
How to order	P2BE 207-SRB-SRH
Option	Specify
TriGard seal	P2BE 207-SRB-S**R**E
Garter spring seal	P2BE 207-SRB-S**G**H
Labyrinth seal	P2BE 207-SRB-S**L**E
Locating unit	P2BE 207-SRB-SR**H**
Non-locating unit	P2BE 207-SRB-SR**E**



Shaft dia. d_a	Previous Designation	New Designation	Bearing basic load rating dynamic C	TriGard speed limit	Mass	A	B	C	D	E Max	E Min	G	H	J	K	L	Bolts (No. req'd)
in	—	—	lbs	rpm	lbs	in											in
1 7/16	SYE 1 7/16	P2BE 107-SRB-SRE	16 600	5100	8.0	1 7/8	7 3/8	2 1/8	1 1/8	5 7/8	5 5/8	3/4	3 7/8	2 27/32	1	2 3/4	(2)-1/2
1 1/2	SYE 1 1/2	P2BE 108-SRB-SRE	16 600	5100	8.0												
1 11/16	SYE 1 11/16	P2BE 111-SRB-SRE	17 300	4 500	9.3	2 1/8	7 7/8	2 3/8	1 1/4	6 3/8	6 1/8	3/4	4 1/4	2 31/32	1	2 3/4	(2)-1/2
1 3/4	SYE 1 3/4	P2BE 112-SRB-SRE	17 300	4500	9.3												
1 15/16	SYE 1 15/16	P2BE 115-SRB-SRE	19 000	4100	10.5	2 1/4	8 7/8	2 1/2	1 5/16	7 1/8	6 7/8	7/8	4 1/2	3 5/32	1	2 7/8	(2)-5/8
2	SYE 2	P2BE 200-SRB-SRE	19 000	4100	10.5												
2 3/16	SYE 2 3/16	P2BE 203-SRB-SRE	22 400	3700	13.5	2 1/2	9 5/8	2 5/8	1 1/2	8	7 5/8	7/8	5	3 11/32	1 1/8	3 1/8	(2)-5/8
2 7/16	SYE 2 7/16	P2BE 207-SRB-SRE	33 300	3100	18.5	2 3/4	10 1/2	2 7/8	1 5/8	8 3/4	8 1/4	1	5 11/16	3 19/32	1 1/4	3 3/8	(2)-5/8
2 1/2	SYE 2 1/2	P2BE 208-SRB-SRE			18.0												
2 11/16	SYE 2 11/16	P2BE 211-SRB-SRE	35 500	2800	25.5	3 1/8	12	3	1 7/8	9 3/4	9 1/4	1 1/8	6 5/16	3 29/32	1 1/4	3 5/8	(2)-3/4
2 3/4	SYE 2 3/4	P2BE 212-SRB-SRE			25.0												
2 15/16	SYE 2 15/16	P2BE 215-SRB-SRE			24.0												
3	SYE 3	P2BE 300-SRB-SRE			23.5												
3 7/16	SYE 3 7/16	P2BE 307-SRB-SRE	56 900	2300	35.5	3 3/4	14	3 5/8	2 1/4	11 7/16	10 9/16	1 5/16	7 1/2	4 7/16	1 7/16	4 1/32	(2)-7/8
3 1/2	SYE 3 1/2	P2BE 308-SRB-SRE			35.5												

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.





Pillow block / ConCentra™

P2BE
Cast-iron housing
2-bolt base
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

How to order	**P2BE 207-SRB-CRH**
Option	Specify
TriGard seal	P2BE 207-SRB-C**R**E
Garter spring seal	P2BE 207-SRB-C**G**H
Labyrinth seal	P2BE 207-SRB-C**L**E
Locating unit	P2BE 207-SRB-CR**H**
Non-locating unit	P2BE 207-SRB-CR**E**

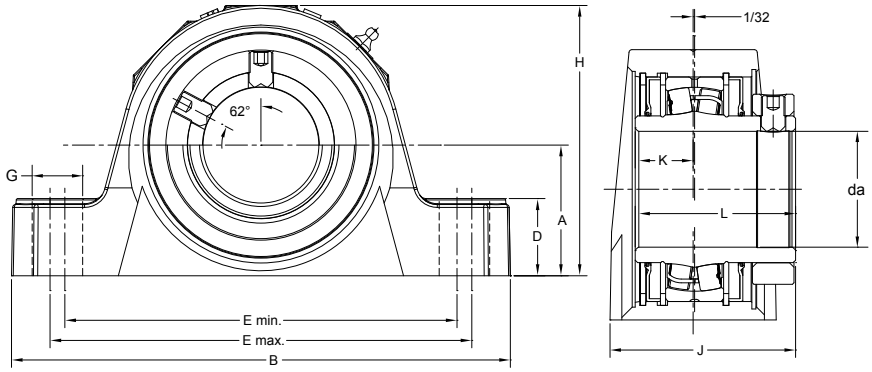
Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** dynamic C	**TriGard speed limit**	**Mass**	A	B	C	D	E Max	E Min	G	H	**Bolts** (No. req'd)
in	—	—	lbs	rpm	lbs	in								in
1 7/16	SYE 1 7/16 N	P2BE 107-SRB-CRE	22 900	4000	8.0	1 7/8	7 3/8	2 1/8	1 1/8	5 7/8	5 5/8	3/4	3 7/8	(2)-1/2
1 1/2	SYE 1 1/2 N	P2BE 108-SRB-CRE	22 900	4000	8.0	2 1/8	7 7/8	2 3/8	1 1/4	6 3/8	6 1/8	3/4	4 1/4	(2)-1/2
1 11/16	SYE 1 11/16 N	P2BE 111-SRB-CRE	20 200	3700	9.3									
1 3/4	SYE 1 3/4 N	P2BE 112-SRB-CRE	20 200	3700	9.3									
1 15/16	SYE 1 15/16 N	P2BE 115-SRB-CRE	21 700	3500	10.5	2 1/4	8 7/8	2 1/2	1 5/16	7 1/8	6 7/8	7/8	4 1/2	(2)-5/8
2	SYE 2 N	P2BE 200-SRB-CRE	21 700	3500	10.5									
2 3/16	SYE 2 3/16 N	P2BE 203-SRB-CRE	30 100	3250	13.5	2 1/2	9 5/8	2 5/8	1 1/2	8	7 5/8	7/8	5	(2)-5/8
2 7/16	SYE 2 7/16 N	P2BE 207-SRB-CRE	43 400	2900	18.5	2 3/4	10 1/2	2 7/8	1 5/8	8 3/4	8 1/4	1	5 11/16	(2)-5/8
2 1/2	SYE 2 1/2 N	P2BE 208-SRB-CRE			18.5									
2 11/16	SYE 2 11/16 N	P2BE 211-SRB-CRE			25.5									
2 3/4	SYE 2 3/4 N	P2BE 212-SRB-CRE	47 700	2600	25.0	3 1/8	12	3	1 7/8	9 3/4	9 1/4	11/8	6 5/16	(2)-3/4
2 15/16	SYE 2 15/16 N	P2BE 215-SRB-CRE			24.0									
3	SYE 3 N	P2BE 300-SRB-CRE			23.5									
3 7/16	SYE 3 7/16 N	P2BE 307-SRB-CRE	65 200	2200	35.5	3 3/4	14	3 5/8	2 1/4	11 7/16	10 9/16	15/16	7 1/2	(2)-7/8
3 1/2	SYE 3 1/2 N	P2BE 308-SRB-CRE			35.5									

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Pillow block / set screw

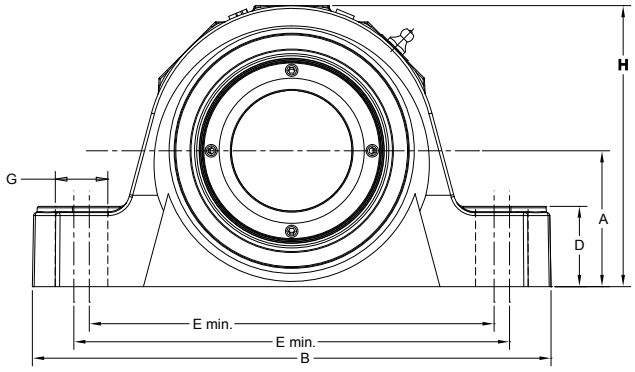
P4BE
Cast-iron housing
4-bolt base
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

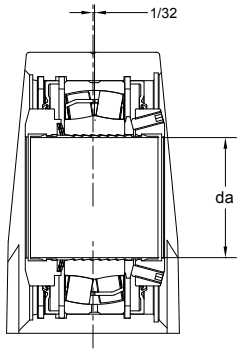
How to order	P4BE 207-SRB-SRH
Option	Specify
TriGard seal	P4BE 207-SRB-S**R**E
Garter spring seal	P4BE 207-SRB-S**G**H
Labyrinth seal	P4BE 207-SRB-S**L**E
Locating unit	P4BE 207-SRB-SR**H**
Non-locating unit	P4BE 207-SRB-SR**E**



Shaft dia. d_a	Previous Designation	New Designation	Bearing basic load rating dynamic C	TriGard speed limit	Mass	A	B	C	D	E Max	E Min	F	G	H	J	K	L	Bolts (No. req'd)
in	—	—	lbs	rpm	lbs	in												in
2 7/16	FSYE 2 7/16	P4BE 207-SRB-SRE	33 300	3100	19.0	2 3/4	10 1/2	3 1/2	1 5/8	8 3/4	8 1/4	1 7/8	1	5 11/16	3 19/32	1 1/4	3 3/8	(4)-5/8
2 1/2	FSYE 2 1/2	P4BE 208-SRB-SRE			18.5													
2 11/16	FSYE 2 11/16	P4BE 211-SRB-SRE	35 500	2800	25.5	3 1/8	12	4	1 7/8	10 1/8	9 1/8	2 1/8	1 1/8	6 5/16	3 29/32	1 1/4	3 5/8	(4)-5/8
2 3/4	FSYE 2 3/4	P4BE 212-SRB-SRE			25.5													
2 15/16	FSYE 2 15/16	P4BE 215-SRB-SRE			24.0													
3	FSYE 3	P4BE 300-SRB-SRE			24.0													
3 7/16	FSYE 3 7/16	P4BE 307-SRB-SRE	56 900	2300	36.5	3 3/4	14	4 1/2	2 1/4	11 3/4	10 1/2	2 3/8	15/16	7 1/2	4 7/16	17/16	4 1/32	(4)-3/4
3 1/2	FSYE 3 1/2	P4BE 308-SRB-SRE			36.5													
					50.5													
3 11/16	FSYE 3 11/16	P4BE 311-SRB-SRE	69 900	2100	49.5	4 1/4	15 1/4	4 1/2	2 7/16	13 1/8	12	2 1/4	13/8	8 9/16	4 7/8	15/8	4 19/32	(4)-3/4
3 15/16	FSYE 3 15/16	P4BE 315-SRB-SRE			49.5													
4	FSYE 4	P4BE 400-SRB-SRE			49.5													
4 7/16	FSYE 4 7/16	P4BE 407-SRB-SRE	91 700	1900	71.0	4 3/4	16 5/8	4 5/8	2 3/4	14 1/2	13 1/8	2 1/2	1 1/4	9 3/8	4 31/32	–	–	(4)-3/4
4 1/2	FSYE 4 1/2	P4BE 408-SRB-SRE			71.0													
4 15/16	FSYE 4 15/16	P4BE 415-SRB-SRE	123 000	1650	100.0	5 1/2	18 1/2	5 1/8	3	16 1/4	15 1/8	2 3/4	13/8	10 7/8	5 17/32	–	–	(4)-7/8

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.
P4BE 207-SRB-SRE thru P4BE 400-SRB-SRE supplied with single locking collar only.
P4BE 407-SRB-SRE thru P4BE 415-SRB-SRE supplied with double locking collar only.





Pillow block / ConCentra™

P4BE
Cast-iron housing
4-bolt base
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

How to order	P4BE 207-SRB-CRH
Option	Specify
TriGard seal	P4BE 207-SRB-C**R**E
Garter spring seal	P4BE 207-SRB-C**G**H
Labyrinth seal	P4BE 207-SRB-C**L**E
Locating unit	P4BE 207-SRB-CR**H**
Non-locating unit	P4BE 207-SRB-CR**E**

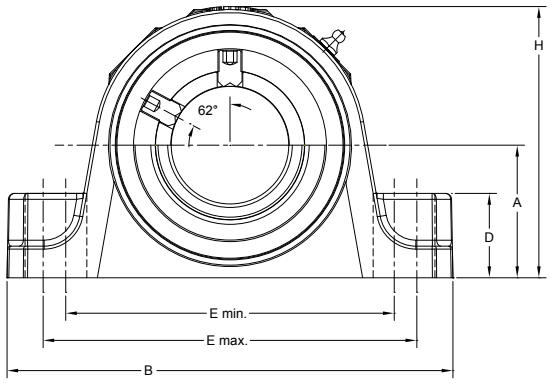
Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** dynamic C	**TriGard speed limit**	**Mass**	A	B	C	D	E Max	E Min	F	G	H	**Bolts** (No. req'd)
in	—		lbs	rpm	lbs	in									in
2 7/16	FSYE 2 7/16 N	P4BE 207-SRB-CRE	43 400	2900	19.0	2 3/4	10 1/2	3 1/2	1 5/8	8 3/4	8 1/4	1 7/8	1	5 11/16	(4)-5/8
2 1/2	FSYE 2 1/2 N	P4BE 208-SRB-CRE			19.0										
2 11/16	FSYE 2 11/16 N	P4BE 211-SRB-CRE	47 700	2600	25.5	3 1/8	12	4	1 7/8	10 1/8	9 1/8	2 1/8	1 1/8	6 5/16	(4)-5/8
2 3/4	FSYE 2 3/4 N	P4BE 212-SRB-CRE			25.5										
2 15/16	FSYE 2 15/16 N	P4BE 215-SRB-CRE			24.0										
3	FSYE 3 N	P4BE 300-SRB-CRE			24.0										
3 7/16	FSYE 3 7/16 N	P4BE 307-SRB-CRE	65 200	2200	36.5	3 3/4	14	4 1/2	2 1/4	11 3/4	10 1/2	2 3/8	1 5/16	7 1/2	(4)-3/4
3 1/2	FSYE 3 1/2 N	P4BE 308-SRB-CRE			36.5										
3 11/16	FSYE 3 11/16 N	P4BE 311-SRB-CRE	81 000	2000	50.5	4 1/4	15 1/4	4 1/2	2 7/16	13 1/8	12	2 1/4	1 3/8	8 9/16	(4)-3/4
3 15/16	FSYE 3 15/16 N	P4BE 315-SRB-CRE			49.5										
4	FSYE 4 N	P4BE 400-SRB-CRE			49.5										

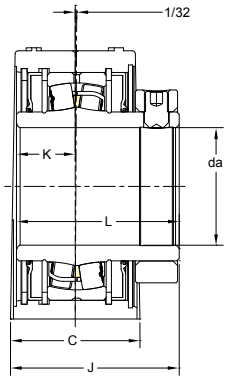
For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Pillow block / set screw

P2B
Cast-iron housing
2-bolt base
Self-aligning
Locating or non-locating
TriGard seal

How to order	P2B 207-SRB-SRH
Option	Specify
TriGard seal	P2B 207-SRB-S**R**E
Garter spring seal	P2B 207-SRB-S**G**H
Labyrinth seal	P2B 207-SRB-S**L**E
Locating unit	P2B 207-SRB-SR**H**
Non-locating unit	P2B 207-SRB-SR**E**

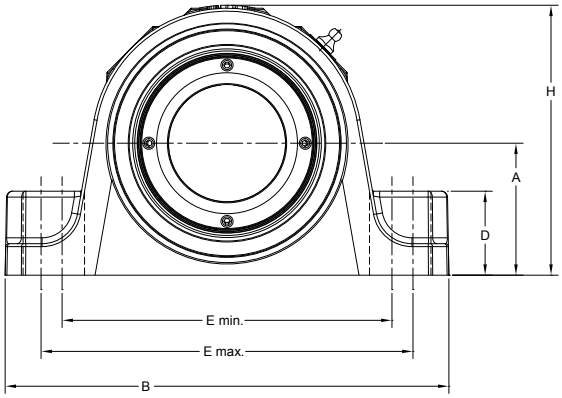


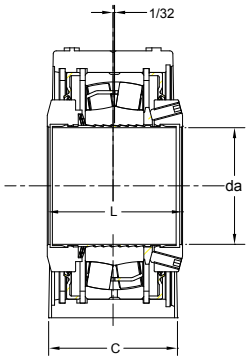


Shaft dia. d_a	Previous Designation	New Designation	Bearing basic load rating Dynamic C	TriGard speed limit	Mass	A	B	C	D	E Max	E Min	H	J	K	L	Bolts (No. req'd)
in			lbs	rpm	lbs	in										in
1 7/16	SYR 1 7/16	P2B 107-SRB-SRE	16 600	5100	7.0	1 7/8	6 7/8	2 1/8	1 3/16	5 5/16	4 11/16	3 7/8	2 13/16	1	2 3/4	(2)-1/2
1 1/2	SYR 1 1/2	P2B 108-SRB-SRE			7.0											
1 11/16	SYR 1 11/16	P2B 111-SRB-SRE	17 300	4500	8.1	2 1/8	7 3/8	2 3/8	1 5/16	5 13/16	5 3/16	4 1/4	2 15/16	1	2 7/8	(2)-1/2
1 3/4	SYR 1 3/4	P2B 112-SRB-SRE			8.1											
1 15/16	SYR 1 15/16	P2B 115-SRB-SRE	19 000	4100	9.2	2 1/4	8 3/8	2 3/8	1 3/8	6 9/16	5 15/16	4 9/16	2 15/16	1	2 7/8	(2)-5/8
2	SYR 2	P2B 200-SRB-SRE			9.1											
2 3/16	SYR 2 3/16	P2B 203-SRB-SRE	22 400	3700	12.0	2 1/2	8 7/8	2 3/8	1 5/8	7 1/16	6 7/16	5	3 3/16	1 1/8	3 1/8	(2)-5/8
2 7/16	SYR 2 7/16	P2B 207-SRB-SRE	33 300	3100	16.0	2 3/4	9 1/4	2 11/16	1 3/4	7 7/16	6 13/16	5 11/16	3 7/16	1 1/4	3 3/8	(2)-5/8
2 1/2	SYR 2 1/2	P2B 208-SRB-SRE			16.0											
2 11/16	SYR 2 11/16	P2B 211-SRB-SRE	35 500	2800	22.0	3 1/4	10 7/16	2 11/16	2 1/4	8 7/16	7 13/16	6 7/16	3 11/16	1 1/4	3 5/8	(2)-3/4
2 3/4	SYR 2 3/4	P2B 212-SRB-SRE			22.0											
2 15/16	SYR 2 15/16	P2B 215-SRB-SRE			21.0											
3	SYR 3	P2B 300-SRB-SRE			21.0											
3 7/16	SYR 3 7/16	P2B 307-SRB-SRE	56 900	2300	31.5	3 3/4	13	3 3/16	2 1/4	10 3/4	9 1/4	7 1/2	4 3/32	1 7/16	4 1/32	(2)-7/8
3 1/2	SYR 3 1/2	P2B 308-SRB-SRE			31.5											
3 11/16	SYR 3 11/16	P2B 311-SRB-SRE	69 900	2100	44.5	4 1/8	14 1/4	3 17/32	2 1/2	11 3/4	10	8 7/16	4 21/32	1 5/8	4 19/32	(2)-1
3 15/16	SYR 3 15/16	P2B 315-SRB-SRE			43.5											
4	SYR 4	P2B 400-SRB-SRE			43.5											

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.

P2B
Cast-iron housing
2-bolt base
Self-aligning
Locating or non-locating
TriGard seal





How to order	P4BE 207-SRB-CRH
Option	Specify
TriGard seal	P2B 207-SRB-C**R**E
Garter spring seal	P2B 207-SRB-C**G**H
Labyrinth seal	P2B 207-SRB-C**L**E
Locating unit	P2B 207-SRB-CR**H**
Non-locating unit	P2B 207-SRB-CR**E**

Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** Dynamic C	**TriGard speed limit**	**Mass**	A	B	C	D	E Max	E Min	H	L	**Bolts** (No. req'd)
in			lbs	rpm	lbs	in								in
1 7/16	SYR 1 7/16 N	P2B 107-SRB-CRE	22 900	4000	7.0	1 7/8	6 7/8	2 1/16	1 3/16	5 5/16	4 11/16	3 7/8	2 11/32	(2)-1/2
1 1/2	SYR 1 1/2 N	P2B 108-SRB-CRE			7.0									
1 11/16	SYR 1 11/16 N	P2B 111-SRB-CRE	20 200	3700	7.0	2 1/8	7 3/8	2 1/8	1 5/16	5 13/16	5 3/16	4 1/4	2 11/32	(2)-1/2
1 3/4	SYR 1 3/4 N	P2B 112-SRB-CRE			8.1									
1 15/16	SYR 1 15/16 N	P2B 115-SRB-CRE	21 700	3500	8.1	2 1/4	8 3/8	2 5/16	1 3/8	6 9/16	5 15/16	4 9/16	2 11/32	(2)-5/8
2	SYR 2 N	P2B 200-SRB-CRE			9.2									
2 3/16	SYR 2 3/16 N	P2B 203-SRB-CRE	30 100	3250	12.0	2 1/2	8 7/8	2 3/8	1 5/8	7 1/16	6 7/16	5	2 11/32	(2)-5/8
2 7/16	SYR 2 7/16 N	P2B 207-SRB-CRE	43 400	2900	12.0	2 3/4	9 1/4	2 11/16	1 3/4	7 7/16	6 13/16	5 11/16	2 37/64	(2)-5/8
2 1/2	SYR 2 1/2 N	P2B 208-SRB-CRE			16.0									
2 11/16	SYR 2 11/16 N	P2B 211-SRB-CRE	47 700	2600	22.0	3 1/4	10 7/16	2 11/16	2 1/4	8 7/16	7 13/16	6 7/16	2 37/64	(2)-3/4
2 3/4	SYR 2 3/4 N	P2B 212-SRB-CRE			22.0									
2 15/16	SYR 2 15/16 N	P2B 215-SRB-CRE			21.0									
3	SYR 3 N	P2B 300-SRB-CRE			21.0									
3 7/16	SYR 3 7/16 N	P2B 307-SRB-CRE	65 200	2200	31.5	3 3/4	13	3 3/16	2 1/4	10 3/4	9 1/4	7 1/2	3 5/32	(2)-7/8
3 1/2	SYR 3 1/2 N	P2B 308-SRB-CRE			31.5									
3 11/16	SYR 3 11/16 N	P2B 311-SRB-CRE	81 000	2000	44.5	4 1/8	14 1/4	3 17/32	2 1/2	1 13/4	10	8 7/16	3 3/8	(2)-1
3 15/16	SYR 3 15/16 N	P2B 315-SRB-CRE			43.5									
4	SYR 4 N	P2B 400-SRB-CRE			43.5									

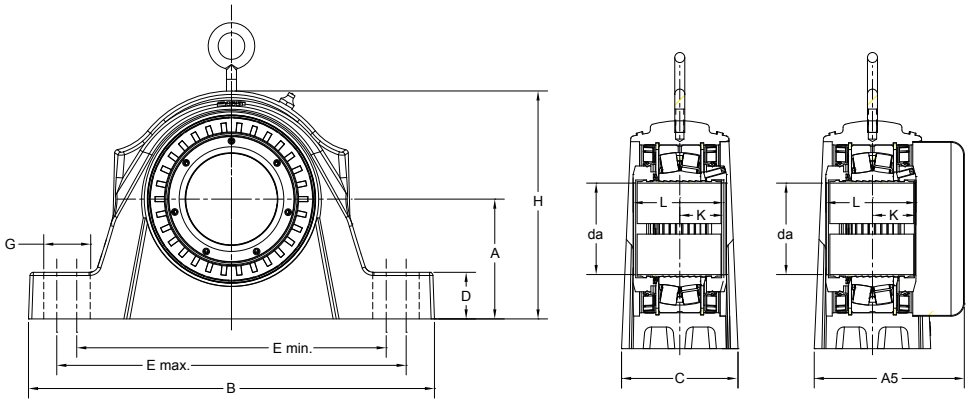
For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Pillow block

P2BA/P4BA - ConCentra only

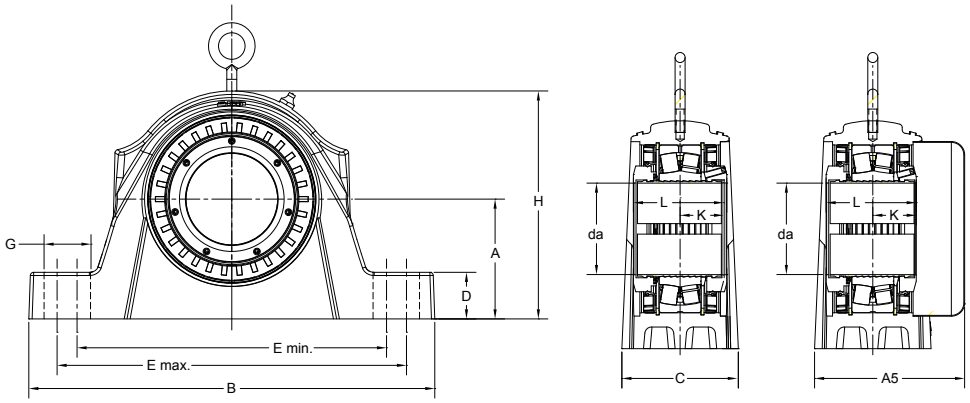
Cast-iron housing
2- and 4- bolt base
SAF dimensions
Self-aligning
Locating or non-locating
TriGard seal

How to order	P2BA 303 SRB-CRH
Option	Specify
TriGard seal	P2BA 303 SRB-CRE
Garter spring seal	P2BA 303 SRB-CGH
Labyrinth seal:	P2BA 303 SRB-CLE
Heavy duty seal	P2BA 303 SRB-CTE
Locating unit	P2BA 303 SRB-CRH
Non locating unit	P2BA 303 SRB-CRE



Shaft dia d_a	Designation Pillow block unit non-locating	New Designation	Insert Bearing designation	Bearing basic load rating dynamic C	Seals speed limits TriGard
in	–			lbf	rpm
3 3/16	SYAF 3 3/16 N	P2BA 303-SRB-CRE			
3 7/16	SYAF 3 7/16 N	P2BA 307-SRB-CRE	22218	74.4	2100
3 1/2	SYAF 3 1/2 N	P2BA 308-SRB-CRE			
3 3/16	FSYAF 3 3/16 N	P4BA 303-SRB-CRE			
3 7/16	FSYAF 3 7/16 N	P4BA 307-SRB-CRE	22218	74.4	2100
3 1/2	FSYAF 3 1/2 N	P4BA 308-SRB-CRE			
3 11/16	SYAF 3 11/16 N	P4BA 311-SRB-CRE			
3 15/16	SYAF 3 15/16 N	P4BA 315-SRB-CRE	22220	97.3	2000
4	SYAF 4 N	P4BA 400-SRB-CRE			
4 7/16	SYAF 4 7/16 N	P4BA 407-SRB-CRE	22222	128.6	2000
4 15/16	SYAF 4 15/16 N	P4BA 415-SRB-CRE	22226	170.4	1800

For shaft diameter tolerances see page 306; for bearing information see page 328; for other seal speed limits see page 309.



A	B	C	D	E Max	E Min	F	G	H	A5	L	**Bolts** (No. req'd)	**End cover designation optional***
in												
4.500	15 1/4	4 3/8	1 3/4	11 5/8	13 1/8	–	1 3/4	8 9/16	5 5/8	3.4	(2) 7/8	ECM 218*
4.500	15 1/4	4 3/8	1 3/4	11 5/8	13 1/8	2 3/8	1 9/16	8 9/16	5 5/8	3.4	(4) 3/4	ECM 218*
4.938	16 1/2	4 3/4	2	12 5/8	14 1/2	2 3/4	1 13/16	9 7/16	6 5/32	3.48	(4) 3/4	ECM 220*
6.000	18 3/8	5 1/4	2 3/8	14 5/8	16	3 1/4	1 5/8	11	6 3/4	3.9	(4) 7/8	ECM 222*
6.000	20 1/8	5 7/8	2 3/8	15 5/8	17 3/8	3 3/8	2	12 1/32	7 13/32	4.606	(4) 1	ECM 226*

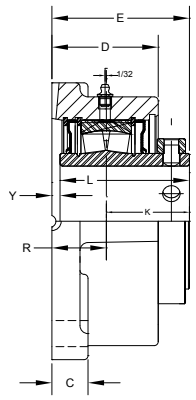
For shaft diameter tolerances see page 306; for bearing information see page 328; for other seal speed limits see page 309.

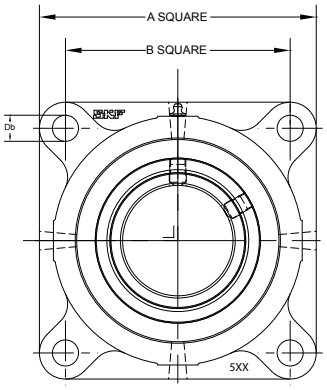
* Must be ordered separately.

Flange / set screw

F4BE
Cast-iron housing
4-bolt
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

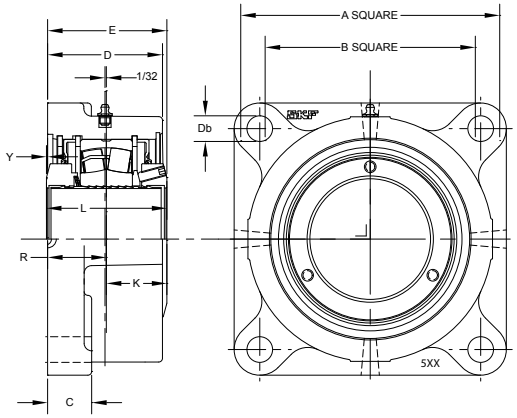
How to order	**F4BE 207-SRB-SRH**
Option	Specify
TriGard seal	F4BE 207-SRB-S**R**E
Garter spring seal	F4BE 207-SRB-S**G**H
Labyrinth seal	F4BE 207-SRB-S**L**E
Locating unit	F4BE 207-SRB-SR**H**
Non-locating unit	F4BE 207-SRB-SR**E**





Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** Dynamic C	**TriGard speed limit**	**Mass**	**Bolt square** A	B	C	D	E	K	L	R	Y	**Bolts** (No. req'd)	**Bolt Hole** D_b
in			lbs	rpm	lbs	in									in	in
1 3/16	FYE 1 3/16	F4BE 103-SRB-SRE			7.6											
1 1/4	FYE 1 1/4	F4BE 104-SRB-SRE	16 600	5100	7.5	4 5/8	3 1/2	3/4	2 1/4	2 27/32	1	2 3/4	1 3/32	3/32	(4)-1/2	9/16
1 7/16	FYE 1 7/16	F4BE 107-SRB-SRE			7.2											
1 1/2	FYE 1 1/2	F4BE 108-SRB-SRE	16 600	5100	10.0	5 3/8	4 1/8	3/4	2 5/16	2 29/32	1	2 3/4	1 5/32	5/32	(4)-1/2	9/16
1 11/16	FYE 1 11/16	F4BE 111-SRB-SRE	17 300	4500	10.0	5 3/8	4 1/8	3/4	2 5/16	3 1/32	1	2 7/8	1 5/32	5/32	(4)-1/2	9/16
1 3/4	FYE 1 3/4	F4BE 112-SRB-SRE	17 300	4500	11.0											
1 15/16	FYE 1 15/16	F4BE 115-SRB-SRE	19 000	4100	11.0	5 1/2	4 3/8	3/4	2 1/4	2 31/32	1	2 7/8	1 3/32	3/32	(4)-1/2	9/16
2	FYE 2	F4BE 200-SRB-SRE	19 000	4100	11.0											
2 3/16	FYE 2 3/16	F4BE 203-SRB-SRE	22 400	3700	13.5	6 1/4	4 7/8	3/4	2 3/8	3 7/32	1 1/8	3 1/8	1 7/32	3/32	(4)-1/2	11/16
2 7/16	FYE 2 7/16	F4BE 207-SRB-SRE	33 300	3100	17.3	6 7/8	5 3/8	1	2 3/4	3 15/32	1 1/4	3 3/8	1 11/32	3/32	(4)-5/8	11/16
2 1/2	FYE 2 1/2	F4BE 208-SRB-SRE			17.1											
2 11/16	FYE 2 11/16	F4BE 211-SRB-SRE			28.5											
2 3/4	FYE 2 3/4	F4BE 212-SRB-SRE	35 500	2800	28.3	7 5/8	6	1 1/16	2 3/4	3 7/8	1 1/4	3 5/8	1 1/2	1/4	(4)-3/4	13/16
2 15/16	FYE 2 15/16	F4BE 215-SRB-SRE			27.2											
3	FYE 3	F4BE 300-SRB-SRE			27.0											
3 7/16	FYE 3 7/16	F4BE 307-SRB-SRE	56 900	2300	40.6	8 3/4	7	1 1/8	3 5/16	4 1/4	1 7/16	4 1/32	1 21/32	7/32	(4)-3/4	13/16
3 1/2	FYE 3 1/2	F4BE 308-SRB-SRE			40.1											
3 11/16	FYE 3 11/16	F4BE 311-SRB-SRE			64.1											
3 15/16	FYE 3 15/16	F4BE 315-SRB-SRE	69 900	2100	69.1	9 3/4	7 3/4	1 1/4	3 1/2	4 13/16	1 5/8	4 19/32	1 27/32	7/32	(4)-7/8	15/16
4	FYE 4	F4BE 400-SRB-SRE			68.1											
4 7/16	FYE 4 7/16	F4BE 407-SRB-SRE	91 700	1900	63.0	10 7/8	8 3/4	2 3/8	5 13/16	6.41	3.06	6.13	3.33	0.28	(4)-7/8	15/16
4 1/2	F4E 4 1/2	F4BE 408-SRB-SRE			62.5											

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.



Flange / ConCentra™

F4BE
Cast-iron housing
4-bolt
Type E dimensions
Self-aligning
Locating or non-locating
TriGard seal

How to order	**F4BE 207-SRB-CRH**
Option	Specify
TriGard seal	F4BE 207-SRB-C**R**E
Garter spring seal	F4BE 207-SRB-C**G**H
Labyrinth seal	F4BE 207-SRB-C**L**E
Locating unit	F4BE 207-SRB-CR**H**
Non-locating unit	F4BE 207-SRB-CR**E**

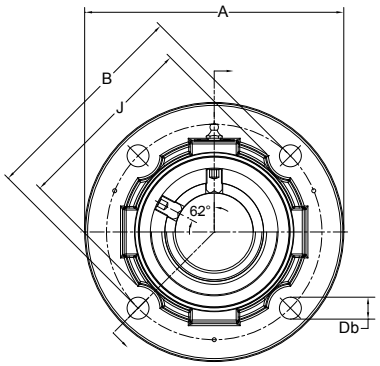
Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** Dynamic C	**TriGard speed limit**	**Mass**	**Bolt square** A	B	C	D	E	K	L	R	Y	**Bolts** (No. req'd)	**Bolt Hole** D_b
in			lbs	rpm	lbs	in									in	in
1 7/16	FYE 1 7/16 N	F4BE 107-SRB-CRE	22 100	4000	7.2	4 5/8	3 1/2	3/4	2 1/4	2.318	1.272	2.543	1 3/32	0.226	(4) 1/2	9/16
1 1/2	FYE 1 1/2 N	F4BE 108-SRB-CRE	22 100	4000	10.0	5 3/8	4 1/8	3/4	2 5/16	2.380	1.272	2.543	1 5/32	0.163	(4) 1/2	9/16
1 11/16	FYE 1 11/16 N	F4BE 111-SRB-CRE	23 400	3700	10.0											
1 3/4	FYE 1 3/4 N	F4BE 112-SRB-CRE	23 400	3700	11.0											
1 15/16	FYE 1 15/16 N	F4BE 115-SRB-CRE	24 000	3500	11.0	5 1/2	4 3/8	3/4	2 1/4	2.318	1.272	2.543	1 3/32	0.226	(4) 1/2	9/16
2	FYE 2 N	F4BE 200-SRB-CRE	24 000	3500	11.0											
2 3/16	FYE 2 3/16 N	F4BE 203-SRB-CRE	24 000	3250	13.5	6 1/4	4 7/8	3/4	2 3/8	2.484	1.292	2.583	1 7/32	0.099	(4) 5/8	11/16
2 7/16	FYE 2 7/16 N	F4BE 207-SRB-CRE	44 500	2900	17.3	6 7/8	5 3/8	1	2 3/4	2.726	1.410	2.819	1 11/32	0.093	(4) 5/8	11/16
2 1/2	FYE 2 1/2 N	F4BE 208-SRB-CRE			17.1											
2 11/16	FYE 2 11/16 N	F4BE 211-SRB-CRE	48 800	2600	28.5	7 5/8	6	1 1/16	2 3/4	2.887	1.410	2.819	1 1/2	-0.068	(4) 3/4	13/16
2 3/4	FYE 2 3/4 N	F4BE 212-SRB-CRE			28.3											
2 15/16	FYE 2 15/16 N	F4BE 215-SRB-CRE			27.2											
3	FYE 3 N	F4BE 300-SRB-CRE			27											
3 3/16	FYE 3 3/16 N	F4BE 303-SRB-CRE			42.0	8 3/4	7	1 1/8	3 5/16	3.254	1.693	3.386	1 21/32	0.132	(4) 3/4	13/16
3 7/16	FYE 3 7/16 N	F4BE 307-SRB-CRE	74 400	2200	40.6											
3 1/2	FYE 3 1/2 N	F4BE 308-SRB-CRE			40.1											
3 11/16	FYE 3 11/16 N	F4BE 311-SRB-CRE			64.1											
3 15/16	FYE 3 15/16 N	F4BE 315-SRB-CRE	97 300	2000	69.1	9 3/4	7 3/4	1 1/4	3 1/2	3.560	1.742	3.484	1 27/32	-0.076	(4) 7/8	15/16
4	FYE 4 N	F4BE 400-SRB-CRE			68.1											
4 7/16	FYE 4 7/16 N	F4BE 407-SRB-CRE	128 500	1660	52.6	10 7/8	8 3/4	2 3/8	5 3/16	4.817	1.940	3.898	3.330	-0.919	(4) 7/8	15/16
4 1/2	FYE 4 1/2 N	F4BE 408-SRB-CRE			56.0											

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

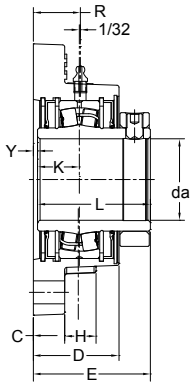
Flange (round) / set screw

F3BR/F4BR
Cast-iron housing
3-bolt or 4-bolt
Self-aligning
Locating or non-locating
TriGard seal

How to order	F4BR 207-SRB-SRH
Option	Specify
TriGard seal	F4BR 207-SRB-S**R**E
Garter spring seal	F4BR 207-SRB-S**G**H
Labyrinth seal	F4BR 207-SRB-S**L**E
Locating unit	F4BR 207-SRB-SR**H**
Non-locating unit	F4BR 207-SRB-SR**E**

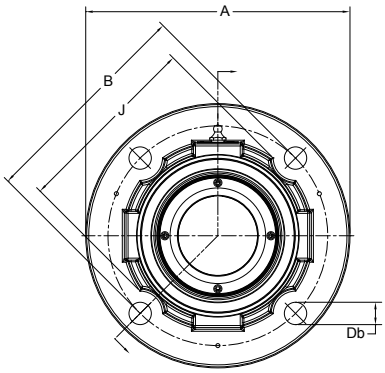


F3BR 107 and 108 have three mounting holes at 120°

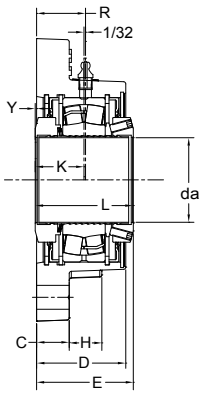


Shaft dia. d_a	Previous Designation	New Designation	Bearing basic load rating Dynamic C	TriGard speed limit	Mass	Bolt circle A	B	C	D	E	H	J	K	L	R	Y	Bolts (No. req'd)	Bolt Hole Db
in			lbs	rpm	lbs	in											in	in
1 7/16	FYR 1 7/16	F3BR 107-SRB-SRE	16 600	5100	8.5	6 1/4	5	3/4	2 1/16	2 7/8	3/4	3 7/8	1	2 3/4	1 3/32	1/8	(3)-1/2	9/16
1 1/2	FYR 1 1/2	F3BR 108-SRB-SRE			8.4													
1 11/16	FYR 1 11/16	F4BR 111-SRB-SRE	17 300	4500	10.5	6 3/4	5 1/2	3/4	2 1/4	3	13/16	4 1/2	1	2 7/8	1 3/32	1/8	(4)-1/2	9/16
1 3/4	FYR 1 3/4	F4BR 112-SRB-SRE			11.0													
1 15/16	FYR 1 15/16	F4BR 115-SRB-SRE	19 000	4100	11.0	7	5 3/4	3/4	2 1/4	3	13/16	4 3/4	1	2 7/8	1 3/32	1/8	(4)-1/2	9/16
2	FYR 2	F4BR 200-SRB-SRE			10.5													
2 3/16	FYR 2 3/16	F4BR 203-SRB-SRE	22 400	3700	13.5	7 3/4	6 3/8	3/4	2 3/8	3 1/4	15/16	5 1/8	1 1/8	3 1/8	1 7/32	1/8	(4)-5/8	11/16
2 7/16	FYR 2 7/16	F4BR 207-SRB-SRE	33 300	3100	17.5	8 1/8	6 3/4	1 5/16	2 9/16	3 1/2	15/16	5 3/4	1 1/4	3 3/8	1 11/32	1/8	(4)-5/8	11/16
2 1/2	FYR 2 1/2	F4BR 208-SRB-SRE			17.5													
2 11/16	FYR 2 11/16	F4BR 211-SRB-SRE	35 500	2800	27.0	9 1/2	7 7/8	1 5/16	2 7/8	3 7/8	13/16	6 5/8	1 1/4	3 5/8	1 15/32	1/4	(4)-3/4	13/16
2 3/4	FYR 2 3/4	F4BR 212-SRB-SRE			27.0													
2 15/16	FYR 2 15/16	F4BR 215-SRB-SRE			26.0													
3	FYR 3	F4BR 300-SRB-SRE			26.0													
3 7/16	FYR 3 7/16	F4BR 307-SRB-SRE	56 900	2300	38.0	11 1/8	9 1/2	1 1/8	3 1/16	4 9/32	13/16	7 5/8	1 7/16	4 1/32	1 21/32	1/4	(4)-3/4	13/16
3 1/2	FYR 3 1/2	F4BR 308-SRB-SRE			38.0													
3 11/16	FYR 3 11/16	F4BR 311-SRB-SRE	69 900	2100	53.0	12 5/8	10 3/4	1 1/8	3 1/2	4 27/32	17/16	8 3/8	1 5/8	4 19/32	1 27/32	1/4	(4)-7/8	15/16
3 15/16	FYR 3 15/16	F4BR 315-SRB-SRE			52.0													
4	FYR 4	F4BR 400-SRB-SRE			52.0													

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.



F3BR 107 thru 108 N have three mounting holes at 120°



Flange (round) / ConCentra™

F3BR/F4BR
Cast-iron housing
3-bolt or 4-bolt
Self-aligning
Locating or non-locating
TriGard seal

How to order	F4BR 207-SRB-CRH
Option	Specify
TriGard seal	F4BR 207-SRB-C**R**E
Garter spring seal	F4BR 207-SRB-C**G**H
Labyrinth seal	F4BR 207-SRB-C**L**E
Locating unit	F4BR 207-SRB-CR**H**
Non-locating unit	F4BR 207-SRB-CR**E**

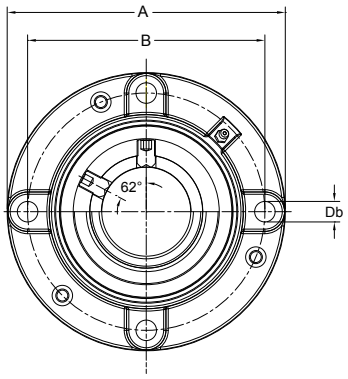
Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** Dynamic C	**TriGard speed limit**	**Mass**	**Bolt circle** A	B	C	D	E	H	J	K	L	R	Y	**Bolts** (No. req'd)	**Bolt Hole** Db
in			lbs	rpm	lbs	in											in	in
1 7/16	FYR 1 7/16 N	F3BR 107-SRB-CRE	22100	4000	8.5	6 1/4	5	3/4	2 1/16	2.328	3/4	3 7/8	1.272	2.543	1 3/32	0.188	(3) 1/2	9/16
1 1/2	FYR 1 1/2 N	F3BR 108-SRB-CRE			8.4													
1 11/16	FYR 1 11/16 N	F4BR 111-SRB-CRE	23400	3700	10.5	6 3/4	5 1/2	3/4	2 1/4	2.359	13/16	4 1/2	1.272	2.543	1 3/32	0.156	(4) 1/2	9/16
1 3/4	FYR 1 3/4 N	F4BR 112-SRB-CRE			10.0													
1 15/16	FYR 1 15/16 N	F4BR 115-SRB-CRE	24000	3500	11.0	7	5 3/4	3/4	2 1/4	2.359	13/16	4 3/4	1.272	2.543	1 3/32	0.156	(4) 1/2	9/16
2	FYR 2 N	F4BR 200-SRB-CRE			10.5													
2 3/16	FYR 2 3/16 N	F4BR 203-SRB-CRE	29000	3250	13.5	7 3/4	6 3/8	3/4	2 3/8	2.516	15/16	5 1/8	1.292	2.583	1 7/32	0.310	(4) 5/8	11/16
2 7/16	FYR 2 7/16 N	F4BR 207-SRB-CRE	44500	2900	17.5	8 1/8	6 3/4	15/16	2 9/16	2.750	15/16	5 3/4	1.410	2.819	1 11/32	0.047	(4) 5/8	11/16
2 1/2	FYR 2 1/2 N	F4BR 208-SRB-CRE			17.2													
2 11/16	FYR 2 11/16 N	F4BR 211-SRB-CRE	48800	2600	27.0	9 1/2	7 7/8	15/16	2 7/8	2.891	1 3/16	6 5/8	1.410	2.819	1 15/32	-0.094	(4) 3/4	13/16
3	FYR 3 N	F4BR 300-SRB-CRE			26.0													
3 3/16	FYR 3 3/16 N	F4BR 303-SRB-CRE	74400	2200	38.0	11 1/8	9 1/2	1 1/8	3 1/16	3.281	1 3/16	7 5/8	1.693	3.386	1 21/32	0.250	(4) 3/4	13/16
3 1/2	FYR 3 1/2 N	F4BR 308-SRB-CRE			37.2													
3 11/16	FYR 3 11/16 N	F4BR 311-SRB-CRE	97300	2000	53.0	12 5/8	10 3/4	1 1/8	3 1/2	3.594	1 7/16	8 3/8	1.742	3.484	1 27/32	-0.141	(4) 7/8	15/16
4	FYR 4 N	F4BR 400-SRB-CRE			52.0													

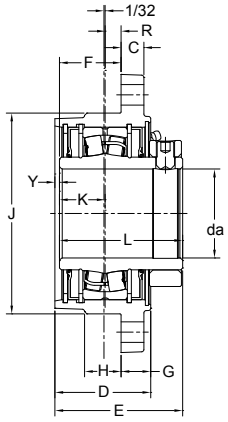
For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Piloted flange / set screw

F4BRP/F6BRP
Cast-iron housing
4- or 6- bolt base
Self-aligning
Locating or non-locating
TriGard seal

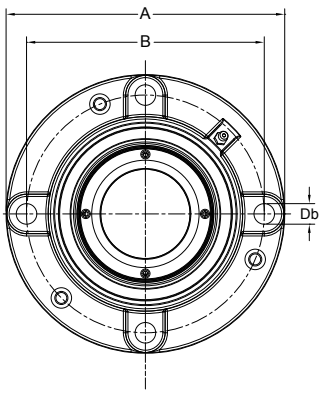
How to order	F4BRP 207-SRB-SRH
Option	Specify
TriGard seal	F4BRP 207-SRB-S**R**E
Garter spring seal	F4BRP 207-SRB-S**G**H
Labyrinth seal	F4BRP 207-SRB-S**L**E
Locating unit	F4BRP 207-SRB-SR**H**
Non-locating unit	F4BRP 207-SRB-SR**E**

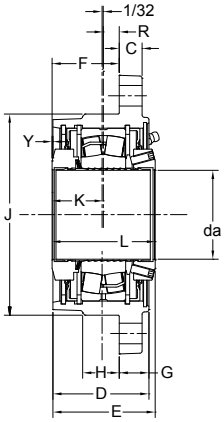




Shaft dia. d_a	Previous Designation	New Designation	Bearing basic load rating Dynamic C	TriGard speed limit	Mass	A	B	C	D	E	F	G	H	J*	K	L	R	Y	Bolts (No. req'd)	Bolt Hole D_b
in			lbs	rpm	lbs	in											in	in		
1 7/16	FYRP 1 7/16	F4BRP 107-SRB-SRE	16 600	5100	6.3	5 1/4	4 3/8	1/2	2 1/4	2 57/64	1 25/64	23/32	3/4	3.625	1	2 3/4	27/64	9/64	(4)-3/8	13/32
1 1/2	FYRP 1 1/2	F4BRP 108-SRB-SRE			6.3															
1 11/16	FYRP 1 11/16	F4BRP 111-SRB-SRE	17 300	4500	7.8	6 1/8	5 1/8	1/2	2 1/2	3 5/32	1 19/32	5/8	7/8	4.250	1	2 7/8	5/8	9/32	(4)-7/16	15/32
1 3/4	FYRP 13/4	F4BRP 112-SRB-SRE			7.7															
1 15/16	FYRP 115/16	F4BRP 115-SRB-SRE	19 000	4100	11.0	6 3/8	5 3/8	9/16	2 1/2	3 5/32	1 19/32	5/8	7/8	4.500	1	2 7/8	5/8	9/32	(4)-7/16	1/2
2	FYRP 2	F4BRP 200-SRB-SRE			11.0															
2 3/16	FYRP 2 3/16	F4BRP 203-SRB-SRE	22 400	3700	9.9	7 1/8	6	9/16	2 9/16	3 5/16	1 21/32	23/32	1	5.000	1 1/8	3 1/8	9/16	3/16	(4)-1/2	9/16
2 7/16	FYRP 2 7/16	F4BRP 207-SRB-SRE	33 300	3100	14.0	7 5/8	6 1/2	5/8	2 5/8	3 1/2	1 11/16	13/16	1	5.500	1 1/4	3 3/8	15/32	1/8	(4)-1/2	17/32
2 1/2	FYRP 2 1/2	F4BRP 208-SRB-SRE			13.5															
2 11/16	FYRP 2 11/16	F4BRP 211-SRB-SRE	35 500	2800	20.5	8 3/4	7 1/2	11/16	3 1/8	3 29/32	2 1/32	13/16	1 1/4	6.375	1 1/4	3 5/8	13/16	9/32	(4)-5/8	21/32
2 3/4	FYRP 2 3/4	F4BRP 212-SRB-SRE			20.5															
2 15/16	FYRP 2 15/16	F4BRP 215-SRB-SRE			19.5															
3	FYRP 3	F4BRP 300-SRB-SRE			19.5															
3 7/16	FYRP 3 7/16	F4BRP 307-SRB-SRE	56 900	2300	29.5	10 1/4	8 5/8	7/8	3 3/16	4 7/32	1 15/16	11/16	1 1/4	7.375	1 7/16	4 1/32	17/32	3/16	(4)-3/4	25/32
3 1/2	FYRP 3 1/2	F4BRP 308-SRB-SRE			29.0															
3 11/16	FYRP 3 11/16	F4BRP 311-SRB-SRE	69 900	2100	41.0	10 7/8	9 3/8	7/8	3 5/8	4 13/16	2 13/32	1	2	8.125	1 5/8	4 19/32	13/16	7/32	(4)-3/4	25/32
3 15/16	FYRP 3 15/16	F4BRP 315-SRB-SRE			40.0															
4	FYRP 4	F4BRP 400-SRB-SRE			40.0															
4 7/16	FYRP 4 7/16	F6BRP 407-SRB-SRE	91 700	1900	68.0	13 1/2	11 3/4	1	3 11/16	4 15/16	3 3/16	1 11/16	1 15/32	10.250	3 1/16	6 1/8	9/64	13/16	(6)-3/4	13/16
4 15/16	FYRP 4 15/16	F6BRP 415-SRB-SRE	123 000	1650	94.0	14 3/4	12 3/4	1 1/4	4 5/16	5 19/32	3 21/32	1 11/16	2 1/4	11.000	3 5/16	6 5/8	11/32	11/32	(6)-7/8	29/32

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.
*O.D. tolerance of the F4BRP and F6BRP unit pilot diameter (J) dimension is 0.000 in. to –0.002 in.





Piloted flange / ConCentra™

F4BRP/F6BRP
Cast-iron housing
4- or 6- bolt base
Self-aligning
Locating or non-locating
TriGard seal

How to order	**F4BRP 207-SRB-CRH**
Option	Specify
TriGard seal	F4BRP 207-SRB-C**R**E
Garter spring seal	F4BRP 207-SRB-C**G**H
Labyrinth seal	F4BRP 207-SRB-C**L**E
Locating unit	F4BRP 207-SRB-CR**H**
Non-locating unit	F4BRP 207-SRB-CR**E**

Shaft dia. d_a	**Previous Designation**	**New Designation**	**Bearing basic load rating** Dynamic C	**TriGard speed limit**	**Mass**	**Bolt circle** A	B	C	D	E	F	G	H	J*	K	L	R	Y	**Bolts** (No. req'd)	**Bolt Hole** D_b
in			lbs	rpm	lbs	in											in	in		
1 7/16	FYRP 1 7/16 N	F4BRP 107-SRB-CRE	22100	4000	6.3	5 1/4	4 3/8	1/2	2 1/4	2.391	1.650	3/32	3/4	3 5/8	1.272	2.543	27/64	0.156	(4) 3/8	13/32
1 1/2	FYRP 1 1/2 N	F4BRP 108-SRB-CRE			6.3															
1 11/16	FYRP 1 11/16 N	F4BRP 111-SRB-CRE	23400	3700	7.8	6 1/8	5 1/8	1/2	2 1/2	2.516	1.875	5/8	7/8	4 1/4	1.272	2.543	5/8	0.031	(4) 7/16	15/32
1 3/4	FYRP 1 3/4 N	F4BRP 112-SRB-CRE			7.7															
1 15/16	FYRP 1 15/16 N	F4BRP 115-SRB-CRE	24000	3500	8.2	6 3/8	5 3/8	9/16	2 1/2	2.578	1.906	5/8	7/8	4 1/2	1.272	2.543	5/8	0.031	(4) 7/16	1/2
2	FYRP 2 N	F4BRP 200-SRB-CRE			8.1															
2 3/16	FYRP 2 3/16 N	F4BRP 203-SRB-CRE	29000	3250	9.9	7 1/8	6	9/16	2 9/16	2.578	1.813	23/32	1	5	1.292	2.583	9/16	-0.031	(4) 1/2	9/16
2 7/16	FYRP 2 7/16 N	F4BRP 207-SRB-CRE	44500	2900	14.0	7 5/8	6 1/2	5/8	2 5/8	2.798	1.828	13/16	1	5 1/2	1.410	2.819	15/32	0.016	(4) 1/2	17/32
2 1/2	FYRP 2 1/2 N	F4BRP 208-SRB-CRE			13.5															
2 11/16	FYRP 2 11/16 N	F4BRP 211-SRB-CRE	48800	2600	20.5	8 3/4	7 1/2	11/16	3 29/32	2.938	2.188	13/16	1 1/4	6 3/8	1.410	2.819	13/16	-0.125	(4) 5/8	21/32
3	FYRP 3 N	F4BRP 300-SRB-CRE			19.5															
3 3/16	FYRP 3 3/16 N	F4BRP 303-SRB-CRE	74400	2200	29.5	10 1/4	8 5/8	7/8	3 3/16	3.219	2.250	1 1/16	1 1/4	7 3/8	1.693	3.386	17/32	0.156	(4) 3/4	25/32
3 1/2	FYRP 3 1/2 N	F4BRP 308-SRB-CRE			28.0															
3 11/16	FYRP 3 11/16 N	F4BRP 311-SRB-CRE	97300	2000	41.0	10 7/8	9 3/8	7/8	3 5/8	3.671	2.516	1	2	8 1/8	1.742	3.484	13/16	-0.109	(4) 3/4	25/32
4	FYRP 4 N	F4BRP 400-SRB-CRE			39.0															
4 7/16	FYRP 4 7/16 N	F6BRP 407-SRB-CRE	128600	2000	67.0	13 1/2	11 3/4	1	3 11/16	3.74	2.158	1 11/16	1 15/32	10 1/4	1.949	3.898	9/64	0.158	(6) 3/4	13/16
4 1/2	FYRP 4 1/2 N	F6BRP 408-SRB-CRE			66.0															
4 15/16	FYRP 4 15/16 N	F6BRP 415-SRB-CRE	170400	1800	93.0	14 3/4	12 3/4	1 1/4	4 5/16	4.542	2.689	1 11/16	2 1/4	11	2.303	4.606	9/64	0.064	(6) 7/8	13/16
5	FYRP 5 N	F6BRP 500-SRB-CRE			92.0															

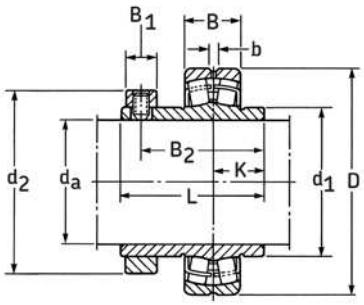
For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

*O.D. tolerance of the F4BRP and F6BRP unit pilot diameter (J) dimension is 0.000 in. to –0.002 in.

Insert bearings / Set screw-mounted
4762(00) and 4762(00) B/VSB series

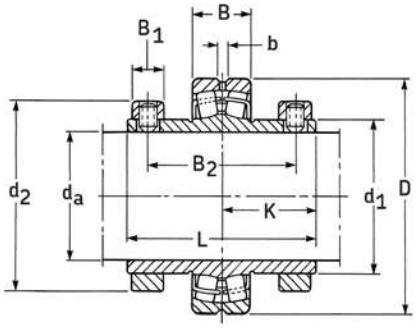
Radial internal clearance
SKF Unit roller insert bearings

Shaft sizes	Internal clearance	
in	in	mm
	min – max	min – max
1 7/16 – 1 1/2	.0010 – .0020	.025 – .050
1 11/16 – 2	.0012 – .0022	.030 – .055
2 3/16 – 2 1/2	.0014 – .0026	.035 – .065
2 11/16 – 3	.0018 – .0031	.045 – .080
3 7/16 – 4	.0024 – .0039	.060 – .100
4 7/16 – 4 1/2	.0028 – .0047	.070 – .120
4 15/16	.0035 – .0057	.090 – .145



Series 4762C

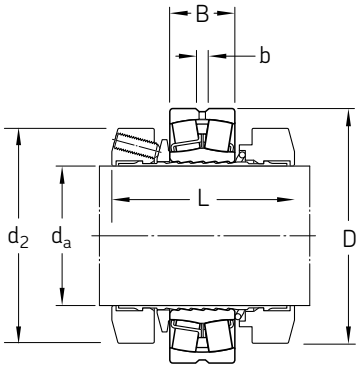
Shaft sizes
1 7/16 thru 4

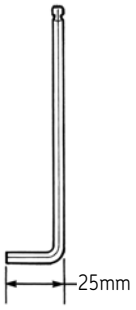


Series 4762B-VSB

Shaft sizes
4 7/16 thru 4 15/16

Shaft dia. d_a	Designation	D	B	L	Bearing basic load rating dynamic C	Static C_0	b	B_1	B_2	d_1	K	d_2	Set screw size	Mass	Calculation factors e	Y_1	Y_2	Y_0
in		mm	mm	in	lb		in						in	lb				
1 7/16	**476208-107 C**	80	23	2 3/4	16 600	18 300	.219	5/8	2 3/8	1.908	1	2 3/8	3/8-24 x 1/2	2.50	0.28	2.4	3.6	2.5
1 1/2	**476208-108 C**													2.45				
1 11/16	**476209-111 C**	85	23	2 7/8	17 300	19 800	.219	5/8	2 3/8	2.157	1	2 5/8	3/8-24 x 1/2	2.75	0.26	2.6	3.9	2.5
1 3/4	**476209-112 C**													2.70				
1 15/16	**476210-115 C**	90	23	2 7/8	19 000	22 500	.219	5/8	2 15/32	2.357	1	2 7/8	3/8-24 x 1/2	2.90	0.24	2.8	4.2	2.8
2	**476210-200 C**													2.80				
2 3/16	**476211-203 C**	100	25	3 1/8	22 400	26 500	.219	3/4	2 23/32	2.600	11/8	3 1/4	3/8-24 x 1/2	3.90	0.24	2.8	4.2	2.8
2 7/16	**476213-207 C**	120	31	3 3/8	33 300	41 100	.219	7/8	2 15/16	3.088	11/4	4	1/2-20 x 3/4	6.75	0.24	2.8	4.2	2.8
2 1/2	**476213-208 C**													6.75				
2 11/16	**476215-211 C**	130	31	3 5/8	35 500	46 800	.219	7/8	3 1/16	3.491	11/4	4 1/2	1/2-20 x 7/8	9.35	0.22	3	4.6	2.8
3 3/4	**476215-212 C**													9.35				
2 15/16	**476215-215 C**													9.35				
3	**476215-300 C**													9.35				
3 7/16	**476218-307 C**	160	40	4 1/32	56 900	76 400	.219	7/8	3 15/32	4.224	1 7/16	5 1/8	1/2-20 x 7/8	13.5	0.23	2.9	4.4	2.8
3 1/2	**476218-308 C**													13.5				
3 11/16	**476220-311 C**	180	46	4 19/32	69 900	93 300	.328	1	3 15/16	4.650	1 5/8	6	5/8-18 x 1	19.5	0.24	2.8	4.2	2.8
3 15/16	**476220-315 C**													19.5				
4	**476220-400 C**													19.5				
4 7/16	**476222B-407 B/VSB**	200	53	6 1/8	91 700	126 000	.328	1	5 1/8	5.029	3 1/16	6 1/8	5/8-18 x 7/8	29.5	0.25	2.7	4	2.5
4 1/2	**476222B-408 B/VSB**													29.5				
4 15/16	**476226B-415 B/VSB**	230	64	6 5/8	123 000	180 000	.438	1	5 5/8	5.819	3 5/16	6 7/8	5/8-18 x 7/8	46.5	0.26	2.6	3.9	2.5





3mm allen wrench
supplied with each unit

Radial internal clearance
SKF Unit roller insert bearings

Shaft sizes	Internal clearance	
in	in	mm
	min – max	min – max
$1\frac{7}{16}$ – $1\frac{1}{2}$	.0020 – .0026	.050 – .065
$1\frac{11}{16}$ – 2	.0024 – .0031	.060 – .080
$2\frac{3}{16}$ – $2\frac{1}{2}$	.0030 – .0037	.075 – .095
$2\frac{11}{16}$ – 3	.0037 – .0047	.095 – .120
$3\frac{7}{16}$ – 4	.0043 – .0055	.110 – .140

Shaft dia. d_a	**Designation**				**Bearing basic load rating** dynamic	Static				**Mass**	**No. mounting screws** (M6X1)	**Calculation factors**			
		D	B	L	C	C_0	b	d_2	B_1						
in (mm)		mm	mm	in	lb		in	mm	in	lb	qty	e	Y_1	Y_2	Y_0
$1\frac{7}{16}$	**ABSY 475208-107**									1.85	3				
$1\frac{1}{2}$	**ABSY 475208-108**	80	23	$2\frac{11}{32}$	22 900	22 000	.219	66	$2\frac{1}{8}$	1.85	3	0.28	2.4	3.6	2.5
$1\frac{11}{16}$	**ABSY 475209-111**									2.42	3				
$1\frac{3}{4}$	**ABSY 475209-112**	85	23	$2\frac{11}{32}$	20 200	19 800	.219	71	$2\frac{1}{8}$	2.42	3	0.26	2.6	3.9	2.5
$1\frac{15}{16}$	**ABSY 475210-115**									2.42	3				
2	**ABSY 475210-200**	90	23	$2\frac{11}{32}$	21 700	22 500	.219	76	$2\frac{1}{8}$	2.42	3	0.24	2.8	4.2	2.8
$2\frac{3}{16}$	**ABSY 475211-203**	100	25	$2\frac{11}{32}$	30 100	30 800	.219	81	$2\frac{7}{32}$	2.98	3	0.24	2.8	4.2	2.8
$2\frac{7}{16}$	**ABSY 475213-207**									4.85	4				
$2\frac{1}{2}$	**ABSY 475213-208**	120	31	$2\frac{37}{64}$	43 400	41 100	.219	91	$2\frac{29}{64}$	4.85	4	0.24	2.8	4.2	2.8
$2\frac{11}{16}$	**ABSY 475215-211**									5.29	4				
$2\frac{3}{4}$	**ABSY 475215-212**									5.29	4				
$2\frac{15}{16}$	**ABSY 475215-215**	130	31	$2\frac{37}{64}$	47 700	54 000	.219	101	$2\frac{29}{64}$	5.29	5	0.22	3	4.6	2.8
3	**ABSY 475215-300**									5.29	4				
$3\frac{7}{16}$	**ABSY 475218-307**	160	40	$3\frac{9}{64}$	65 200	76 400	.219	120	$2\frac{53}{64}$	10.88	7	0.23	2.9	4.4	2.8
$3\frac{1}{2}$	**ABSY 475218-308**									10.88	7				
$3\frac{11}{16}$	**ABSY 475220-311**									15.95	7				
$3\frac{15}{16}$	**ABSY 475220-315**	180	46	$3\frac{25}{64}$	81 000	93 300	.328	130	$3\frac{1}{16}$	15.95	7	0.24	2.8	4.2	2.8
4	**ABSY 475220-400**									15.95	7				

Flange / Set screw

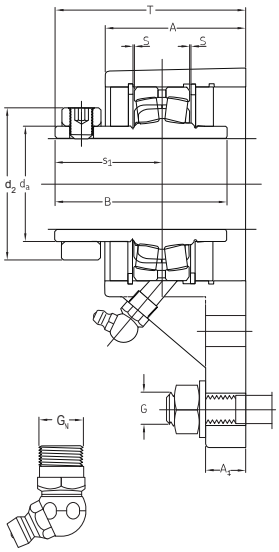
F3BBD/F4BBD

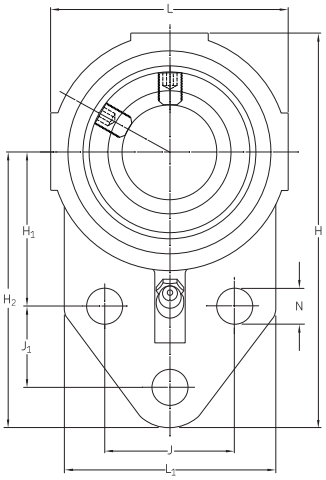
Cast ductile-iron housing
3-bolt/4-bolt
Self-aligning
Locating or non-locating
Radial lip seal

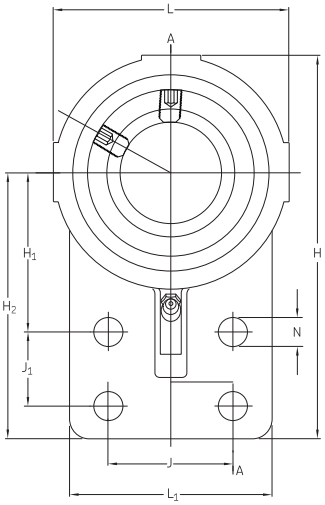
How to order	F3BBD 107-SRB-SRE	F4BBD 207-SRB-SRE
Option	Specify	Specify
Radial lip seal	F3BBD 107-SRB-**S**RE	F4BBD 207-SRB-**S**RE
Labyrinth seal	F3BBD 107-SRB-S**L**E	F4BBD 207-SRB-S**L**E
Locating unit	F3BBD 107-SRB-SR**H**	F4BBD 207-SRB-SR**H**
Non-locating unit	F3BBD 107-SRB-SR**E**	F4BBD 207-SRB-SR**E**

Shaft dia. d_a	**Designation**	**Bearing basic load rating** Dynamic C	**Radial lip seal speed limit**	**Mass**	d_2	A	A_1	B	H	H_1	H_2	J	J_1	L	L_1	s_1	S	T	**Bolt Dia. G** (No. req'd)	**Bolt Hole** D_b	G_N
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	NPT
1 7/16	F3BBD 107-SRB-SRE	16 600	5 100	5.2	2.470	2.250	0.625	2.750	6.125	2.375	4.250	2.00	1.250	3.75	3.250	1.750	0.031	3.031	(3) 1/2	0.5625	1/8-27
1 1/2	F3BBD 108-SRB-SRE	16 600	5 100	5.2	2.470	2.250	0.625	2.750	6.125	2.375	4.250	2.00	1.250	3.75	3.250	1.750	0.031	3.031	(3) 1/2	0.5625	1/8-27
1 15/16	F3BBD 115-SRB-SRE	19 000	4 100	7.7	2.905	2.250	0.563	2.875	7.313	2.938	5.188	2.75	1.625	4.25	4.000	1.875	0.031	3.156	(3) 1/2	0.5625	1/8-27
2	F3BBD 200-SRB-SRE	19 000	4 100	7.7	2.905	2.250	0.563	2.875	7.313	2.938	5.188	2.75	1.625	4.25	4.000	1.875	0.031	3.156	(3) 1/2	0.5625	1/8-27
2 7/16	F4BBD 207-SRB-SRE	33 300	3 100	15.6	4.000	2.656	0.750	3.375	9.094	3.750	6.250	3.00	1.750	5.688	4.875	2.125	0.031	3.531	(4) 5/8	0.6875	1/8-27
2 1/2	F4BBD 208-SRB-SRE	33 300	3 100	15.6	4.000	2.656	0.750	3.375	9.094	3.750	6.250	3.00	1.750	5.688	4.875	2.125	0.031	3.531	(4) 5/8	0.6875	1/8-27

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.





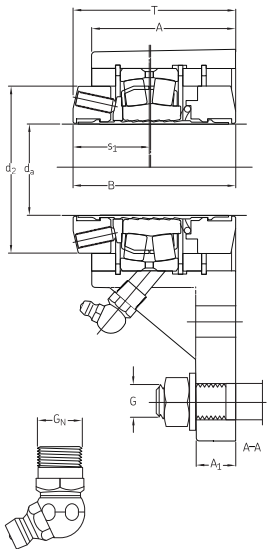


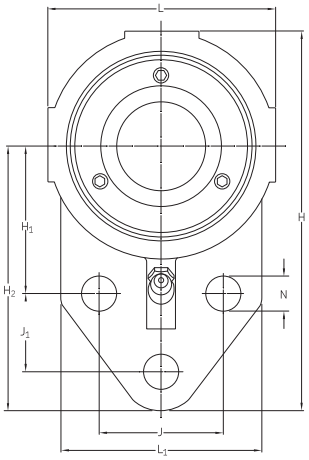
F3BBD/F4BBD
Cast ductile-iron housing
3-bolt/4-bolt
Self-aligning
Locating or non-locating
Radial lip seal

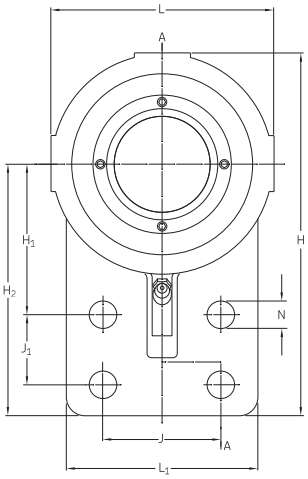
How to order	**F3BBD 207-SRB-CRH**	**F4BBD 207-SRB-CRH**
Option	Specify	Specify
Radial lip seal	F3BBD 107-SRB-**C**RH	F4BBD 207-SRB-**C**RH
Labyrinth seal	F3BBD 107-SRB-C**L**H	F4BBD 207-SRB-C**L**H
Locating unit	F3BBD 107-SRB-CR**H**	F4BBD 207-SRB-CR**H**
Non-locating unit	F3BBD 107-SRB-CR**E**	F4BBD 207-SRB-CR**E**

Shaft dia. d_a	**Designation**	**Bearing basic load rating** Dynamic C	**Radial lip seal speed limit**	**Mass**	d_2	A	A_1	B	H	H_1	H_2	J	J_1	L	L_1	s_1	S	T	**Bolt Dia. G** (No. req'd)	**Bolt Hole** D_b	G_N
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	in	NPT
1 7/16	F3BBD 107-SRB-CRE	21 700	3 800	5.4	2.598	2.250	0.625	2.543	6.125	2.375	4.250	2.00	1.250	3.75	3.250	1.260	0.031	2.531	(3) 1/2	0.5625	1/8-27
1 1/2	F3BBD 108-SRB-CRE	21 700	3 800	5.4	2.598	2.250	0.625	2.543	6.125	2.375	4.250	2.00	1.250	3.75	3.250	1.260	0.031	2.531	(3) 1/2	0.5625	1/8-27
1 15/16	F3BBD 115-SRB-CRE	23 400	3 300	6.9	2.992	2.250	0.563	2.543	7.313	2.938	5.188	2.75	1.625	4.25	4.000	1.260	0.031	2.531	(3) 1/2	0.5625	1/8-27
50 mm	F3BBD 50M-SRB-CRE	23 400	3 300	6.7	2.992	2.250	0.563	2.543	7.313	2.938	5.188	2.75	1.625	4.25	4.000	1.260	0.031	2.594	(3) 1/2	0.5625	1/8-27
2	F3BBD 200-SRB-CRE	23 400	3 300	6.9	2.992	2.250	0.563	2.543	7.313	2.938	5.188	2.75	1.625	4.25	4.000	1.260	0.031	2.531	(3) 1/2	0.5625	1/8-27
2 7/16	F4BBD 207-SRB-CRE	43 400	2 700	14.5	3.583	2.656	0.750	2.819	9.094	3.750	6.250	3.00	1.750	5.688	4.875	1.417	0.031	2.844	(4) 5/8	0.6875	1/8-27
2 1/2	F4BBD 208-SRB-CRE	43 400	2 700	14.5	3.583	2.656	0.750	2.819	9.094	3.750	6.250	3.00	1.750	5.688	4.875	1.417	0.031	2.844	(4) 5/8	0.6875	1/8-27

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.



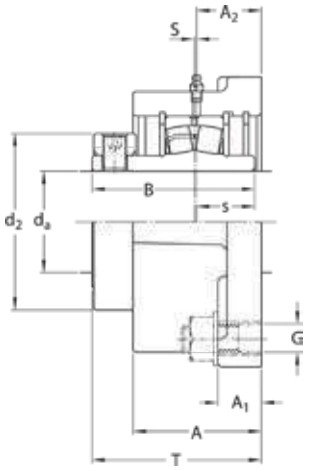


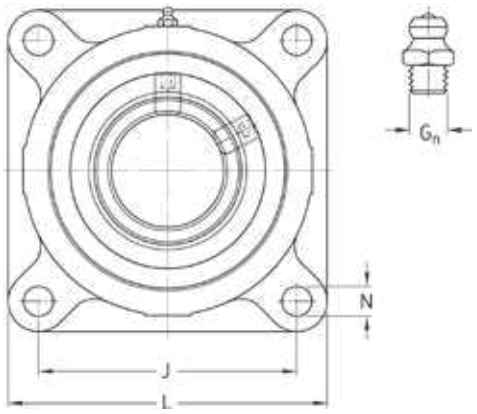


Flange 4-bolt / Set screw

F4B
Cast-iron housing
4-bolt
Self-aligning
Locating or non-locating
Radial lip seal

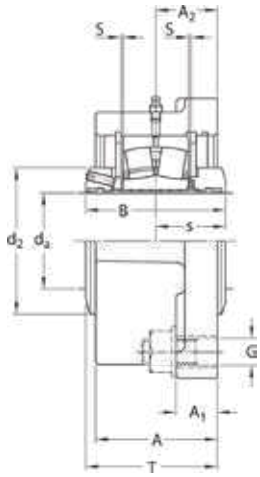
How to order	F4B 107-SRB-SRH
Option	Specify
Radial lip seal	F4B 107-SRB-**S**RH
Labyrinth seal	F4B 107-SRB-S**L**H
Locating unit	F4B 107-SRB-SR**H**
Non-locating unit	F4B 107-SRB-SR**E**

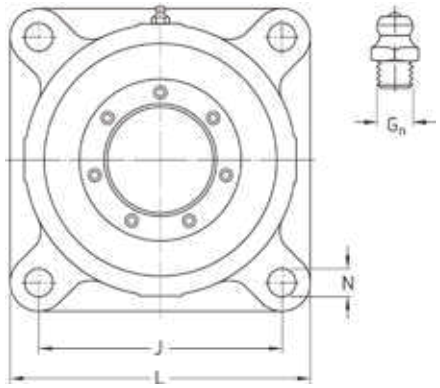




Shaft dia. d_a	Designation	Bearing basic load rating Dynamic C	Radial lip seal speed limit	Mass	d_2	A	A_1	A_2	B	Bolt square J	L	N	s_1	S	T	Bolt Dia. G (No. req'd)	Bolt Hole D_b	G_N
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in	in	NPT
1 7/16	F4B 107-SRB-SRE	16 600	5 100	5.4	2.470	2.250	0.500	1.313	2.750	3.5	4.625	0.563	1.000	0.031	3.031	(4) 1/2	0.5625	1/8-27
1 1/2	F4B 108-SRB-SRE	16 600	5 100	5.2	2.470	2.250	0.500	1.313	2.750	3.5	4.625	0.563	1.000	0.031	3.031	(4) 1/2	0.5625	1/8-27
1 11/16	F4B 111-SRB-SRE	17 300	4 500	7.4	2.705	2.250	0.500	1.313	2.875	3.8	5.125	0.563	1.000	0.031	3.156	(4) 1/2	0.5625	1/8-27
1 3/4	F4B 112-SRB-SRE	17 300	4 500	7.6	2.705	2.250	0.500	1.313	2.875	3.8	5.125	0.563	1.000	0.031	3.156	(4) 1/2	0.5625	1/8-27
1 15/16	F4B 115-SRB-SRE	19 000	4 100	7.8	2.905	2.250	0.563	1.281	2.875	4.0	5.313	0.563	1.000	0.031	3.156	(4) 1/2	0.5625	1/8-27
2	F4B 200-SRB-SRE	19 000	4 100	7.6	2.905	2.250	0.563	1.281	2.875	4.0	5.313	0.563	1.000	0.031	3.156	(4) 1/2	0.5625	1/8-27
2 3/16	F4B 203-SRB-SRE	22 400	3 700	10.0	3.250	2.438	0.563	1.375	3.125	4.5	5.875	0.688	1.125	0.031	3.375	(4) 5/8	0.688	1/8-27
2 7/16	F4B 207-SRB-SRE	33 300	3 100	13.2	4.000	2.656	0.625	1.406	3.375	4.7	6.125	0.688	1.250	0.031	3.531	(4) 5/8	0.688	1/8-27
2 1/2	F4B 208-SRB-SRE	33 300	2 700	13.2	4.000	2.656	0.625	1.406	3.375	4.7	6.125	0.688	1.250	0.031	3.531	(4) 5/8	0.688	1/8-27
2 11/16	F4B 211-SRB-SRE	35 500	2 800	18.8	4.375	2.875	0.750	1.438	3.625	5.5	7.188	0.813	1.250	0.031	3.781	(4) 3/4	0.813	1/8-27
2 3/4	F4B 212-SRB-SRE	35 500	2 800	18.8	4.375	2.875	0.750	1.438	3.625	5.5	7.188	0.813	1.250	0.031	3.781	(4) 3/4	0.813	1/8-27
2 15/16	F4B 215-SRB-SRE	35 500	2 800	18.8	4.375	2.875	0.750	1.438	3.625	5.5	7.188	0.813	1.250	0.031	3.781	(4) 3/4	0.813	1/8-27
3 7/16	F4B 307-SRB-SRE	56 900	2 300	28.9	5.125	3.219	0.938	1.813	4.031	6.7	8.250	0.813	1.438	0.031	4.375	(4) 3/4	0.813	1/8-27
3 1/2	F4B 308-SRB-SRE	56 900	2 300	28.9	5.125	3.219	0.938	1.813	4.031	6.7	8.250	0.813	1.438	0.031	4.375	(4) 3/4	0.813	1/8-27
3 11/16	F4B 311-SRB-SRE	69 900	2 100	37.5	6.000	3.500	1.063	1.938	4.594	7.6	9.250	0.938	1.625	0.031	4.875	(4) 7/8	0.938	1/8-27
3 15/16	F4B 315-SRB-SRE	69 900	2 100	37.5	6.000	3.500	1.063	1.938	4.594	7.6	9.250	0.938	1.625	0.031	4.875	(4) 7/8	0.938	1/8-27
4	F4B 400-SRB-SRE	69 900	2 100	37.5	6.000	3.500	1.063	1.938	4.594	7.6	9.250	0.938	1.625	0.031	4.875	(4) 7/8	0.938	1/8-27
1 7/16	F4B 107-SRB-CRE	21 700	8 000	5.7	2.598	2.250	0.500	1.313	2.543	3.5	4.625	0.563	1.283	0.031	2.531	(4) 1/2	0.5625	1/8-27

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.





Flange 4-bolt / ConCentra™

F4B
Cast-iron housing
4-bolt
Self-aligning
Locating or non-locating
Radial lip seal

How to order	F4B 107-SRB-CRE
Option	Specify
Radial lip seal	F4B 107-SRB-**C**RH
Labyrinth seal	F4B 107-SRB-C**L**H
Locating unit	F4B 107-SRB-CR**H**
Non-locating unit	F4B 107-SRB-CR**E**

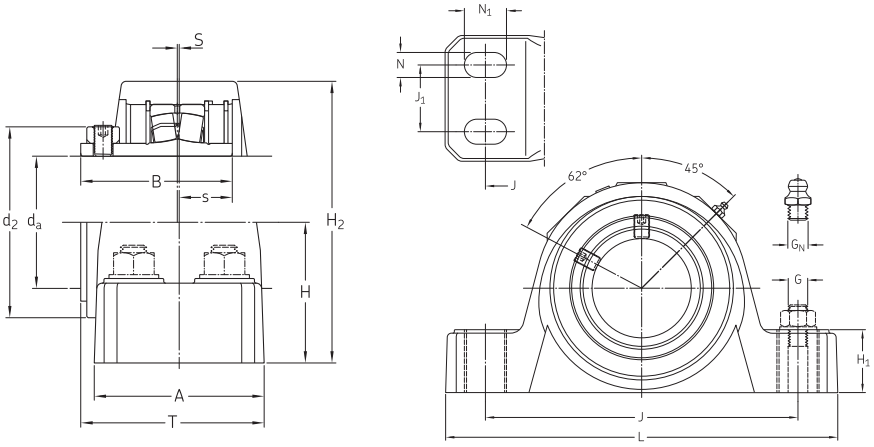
Shaft dia. d_a	Designation	Bearing basic load rating Dynamic C	Radial lip seal speed limit	Mass	d_2	A	A_1	A_2	B	Bolt square J	L	N	s_1	S	T	Bolt Dia. G (No. req'd)	Bolt Hole D_b	G_N
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in	in	NPT
1 7/16	F4B 107-SRB-CRE	21 700	8 000	5.7	2.598	2.250	0.500	1.313	2.543	3.5	4.625	0.563	1.283	0.031	2.531	(4) 1/2	0.5625	1/8-27
1 1/2	F4B 108-SRB-CRE	21 700	8 000	5.6	2.598	2.250	0.500	1.313	2.543	3.5	4.625	0.563	1.283	0.031	2.531	(4) 1/2	0.5625	1/8-27
1 11/16	F4B 111-SRB-CRE	23 000	3 500	7.8	2.795	2.250	0.500	1.313	2.543	3.8	5.125	0.563	1.283	0.031	2.563	(4) 1/2	0.5625	1/8-27
1 3/4	F4B 112-SRB-CRE	23 000	3 500	7.7	2.795	2.250	0.500	1.313	2.543	3.8	5.125	0.563	1.283	0.031	2.563	(4) 1/2	0.5625	1/8-27
1 15/16	F4B 115-SRB-CRE	23 400	3 300	7.8	2.992	2.250	0.563	1.281	2.543	4.0	5.313	0.563	1.283	0.031	2.563	(4) 1/2	0.5625	1/8-27
50 mm	F4B 50M-SRB-CRE	23 400	3 300	7.8	2.992	2.250	0.563	1.281	2.543	4.0	5.313	0.563	1.283	0.031	2.563	(4) 1/2	0.5625	1/8-27
2	F4B 200-SRB-CRE	23 400	3 300	7.8	2.992	2.250	0.563	1.281	2.543	4.0	5.313	0.563	1.283	0.031	2.563	(4) 1/2	0.5625	1/8-27
2 3/16	F4B 203-SRB-CRE	28 100	3 100	10.0	3.189	2.438	0.563	1.375	2.583	4.5	5.875	0.688	1.283	0.031	2.656	(4) 5/8	0.688	1/8-27
2 7/16	F4B 207-SRB-CRE	43 400	2 700	12.1	3.583	2.656	0.625	1.406	2.819	4.7	6.125	0.688	1.402	0.031	2.656	(4) 5/8	0.688	1/8-27
2 1/2	F4B 208-SRB-CRE	43 400	2 700	12.1	3.583	2.656	0.625	1.406	2.819	4.7	6.125	0.688	1.402	0.031	2.656	(4) 5/8	0.688	1/8-27
2 11/16	F4B 211-SRB-CRE	47 700	2 500	18.4	3.976	2.875	0.750	1.438	2.819	5.5	7.188	0.813	1.402	0.031	2.813	(4) 3/4	0.813	1/8-27
2 3/4	F4B 212-SRB-CRE	47 700	2 500	18.2	3.976	2.875	0.750	1.438	2.819	5.5	7.188	0.813	1.402	0.031	2.813	(4) 3/4	0.813	1/8-27
2 15/16	F4B 215-SRB-CRE	47 700	2 500	17.7	3.976	2.875	0.750	1.438	2.819	5.5	7.188	0.813	1.402	0.031	2.813	(4) 3/4	0.813	1/8-27
3 3/16	F4B 303-SRB-CRE	73 100	2 100	27.8	4.724	3.219	0.938	1.813	3.386	6.7	8.250	0.813	1.754	0.031	3.406	(4) 3/4	0.813	1/8-27
3 7/16	F4B 307-SRB-CRE	73 100	2 100	26.6	4.724	3.219	0.938	1.813	3.386	6.7	8.250	0.813	1.754	0.031	3.406	(4) 3/4	0.813	1/8-27
3 1/2	F4B 308-SRB-CRE	73 100	2 100	27.8	4.724	3.219	0.938	1.813	3.386	6.7	8.250	0.813	1.754	0.031	3.406	(4) 3/4	0.813	1/8-27
3 11/16	F4B 311-SRB-CRE	95 700	2 000	35.6	5.118	3.500	1.063	1.938	3.483	7.6	9.250	0.938	1.746	0.031	3.656	(4) 7/8	0.938	1/8-27
3 15/16	F4B 315-SRB-CRE	95 700	2 000	34.0	5.118	3.500	1.063	1.938	3.483	7.6	9.250	0.938	1.746	0.031	3.656	(4) 7/8	0.938	1/8-27
4	F4B 400-SRB-CRE	95 700	2 000	35.6	5.118	3.500	1.063	1.938	3.483	7.6	9.250	0.938	1.746	0.031	3.656	(4) 7/8	0.938	1/8-27

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Pillow Block 4-bolt / Set screw

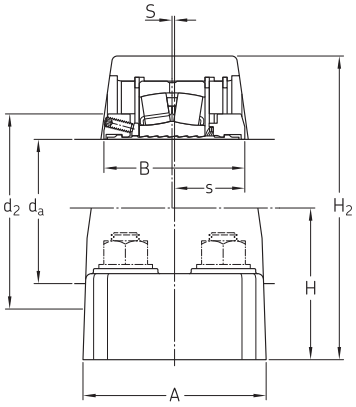
P4B
Cast-iron housing
4-bolt base
Self-aligning
Locating or non-locating
Radial lip seal

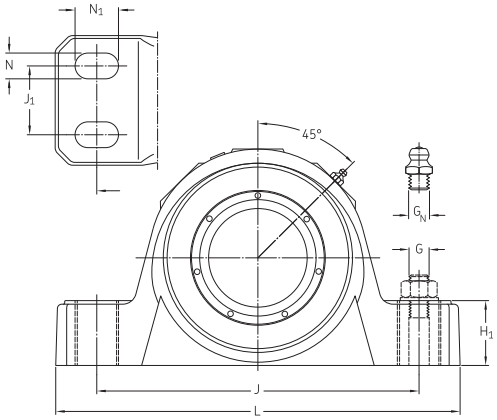
How to order	P4B 115-SRB-SRH
Option	Specify
Radial lip seal	P4B 115-SRB-**S**RH
Labyrinth seal	P4B 115-SRB-S**L**H
Locating unit	P4B 115-SRB-SR**H**
Non-locating unit	P4B 115-SRB-SR**E**



Shaft dia. d_a	Designation	Bearing basic load rating Dynamic C	Radial lip seal speed limit	Mass	H	L	A	H_1	Jmin	Jmax	J_1	H_2	T	s	B	Bolts (No. req'd)
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	
1 15/16	P4B 115-SRB-SRE	19 000	4 100	11.2	2.250	8.000	3.188	1.313	6.063	6.438	1.594	4.563	3.500	1.000	2.875	(4) 1/2
2	P4B 200-SRB-SRE	19 000	4 100	11.1	2.250	8.000	3.188	1.313	6.063	6.438	1.594	4.563	3.500	1.000	2.875	(4) 1/2
2 3/16	P4B 203-SRB-SRE	22 400	3 700	14.1	2.500	8.875	3.250	1.500	6.563	6.938	1.688	5.000	3.656	1.125	3.125	(4) 1/2
2 7/16	P4B 207-SRB-SRE	33 000	3 100	18.2	2.750	9.250	3.375	1.625	6.938	7.313	1.750	5.594	3.844	1.250	3.375	(4) 1/2
2 1/2	P4B 208-SRB-SRE	33 000	3 100	17.9	2.750	9.250	3.375	1.625	6.938	7.313	1.750	5.594	3.844	1.250	3.375	(4) 1/2
2 11/16	P4B 211-SRB-SRE	35 500	2 800	24.7	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	4.281	1.250	3.625	(4) 5/8
2 3/4	P4B 212-SRB-SRE	35 500	2 800	24.4	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	4.281	1.250	3.625	(4) 5/8
2 15/16	P4B 215-SRB-SRE	35 500	2 800	23.5	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	4.281	1.250	3.625	(4) 5/8
3	P4B 300-SRB-SRE	35 500	2 800	23.2	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	4.281	1.250	3.625	(4) 5/8
3 3/16	P4B 303-SRB-SRE	56 900	2 300	40.3	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	4.688	1.438	4.031	(4) 3/4
3 7/16	P4B 307-SRB-SRE	56 900	2 300	38.8	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	4.688	1.438	4.031	(4) 3/4
3 1/2	P4B 308-SRB-SRE	56 900	2 300	40.3	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	4.688	1.438	4.031	(4) 3/4
3 11/16	P4B 311-SRB-SRE	69 900	2 100	54.2	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	5.250	1.625	4.594	(4) 3/4
3 15/16	P4B 315-SRB-SRE	69 900	2 100	52.2	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	5.250	1.625	4.594	(4) 3/4
100 mm	P4B 100M-SRB-SRE	69 900	2 100	52.2	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	5.250	1.625	4.594	(4) 3/4
4	P4B 400-SRB-SRE	69 900	2 100	51.7	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	5.250	1.625	4.594	(4) 3/4
4 7/16	P4B 407-SRB-SRE	91 700	1 900	77.1	4.750	16.500	4.750	2.750	13.000	14.000	2.500	9.625	5.469	3.063	6.125	(4) 3/4
4 15/16	P4B 415-SRB-SRE	123 000	1 650	115.6	5.500	18.625	5.375	3.000	15.000	16.000	2.750	11.125	6.031	3.313	6.625	(4) 7/8

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.





Pillow Block 4-bolt / ConCentra™

P4B
Cast-iron housing
4-bolt base
Self-aligning
Locating or non-locating
Radial lip seal

How to order	**P4B 115-SRB-CRH**
Option	Specify
Radial lip seal	P4B 115-SRB-**C**RH
Labyrinth seal	P4B 115-SRB-C**L**H
Locating unit	P4B 115-SRB-CR**H**
Non-locating unit	P4B 115-SRB-CR**E**

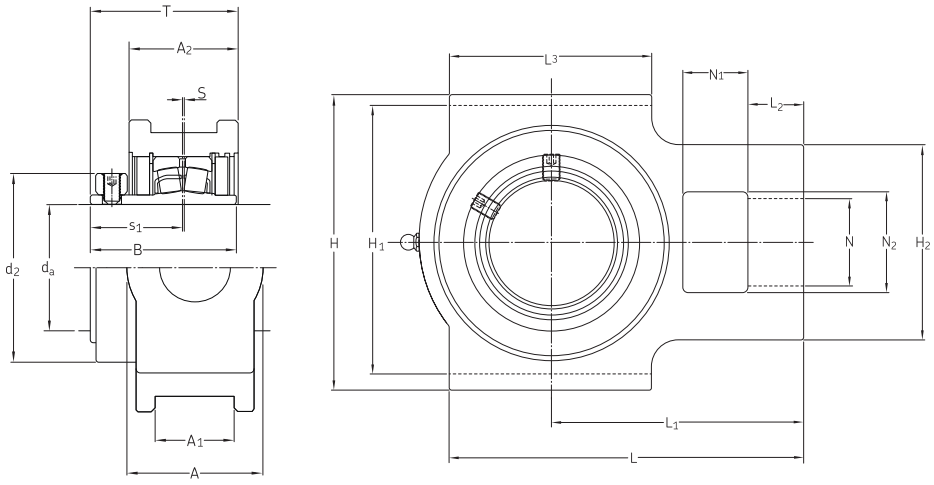
Shaft dia. d_a	**Designation**	**Bearing basic load rating** Dynamic C	**Radial lip seal speed limit**	**Mass**	H	L	A	H_1	Jmin	Jmax	J_1	H_2	T	s	B	**Bolts** (No. req'd)
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in
1 15/16	P4B 115-SRB-CRE	23 400	3 300	11.3	2.250	8.000	3.188	1.313	6.063	6.438	1.594	4.563	2.859	1.281	2.547	(4) 1/2
50mm	P4B 50M-SRB-CRE	23 400	3 300	11.3	2.250	8.000	3.188	1.313	6.063	6.438	1.594	4.563	2.859	1.281	2.547	(4) 1/2
2	P4B 200-SRB-CRE	23 400	3 300	11.1	2.250	8.000	3.188	1.313	6.063	6.438	1.594	4.563	2.859	1.281	2.547	(4) 1/2
2 3/16	P4B 203-SRB-CRE	28 100	3 100	13.8	2.500	8.875	3.250	1.500	6.563	6.938	1.688	5.000	2.922	1.281	2.578	(4) 1/2
2 7/16	P4B 207-SRB-CRE	43 400	2 700	16.9	2.750	9.250	3.375	1.625	6.938	7.313	1.750	5.594	3.094	1.406	2.813	(4) 1/2
2 1/2	P4B 208-SRB-CRE	43 400	2 700	16.8	2.750	9.250	3.375	1.625	6.938	7.313	1.750	5.594	3.094	1.406	2.813	(4) 1/2
2 11/16	P4B 211-SRB-CRE	47 700	2 500	23.2	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	3.281	1.406	2.813	(4) 1/2
2 3/4	P4B 212-SRB-CRE	47 700	2 500	23.0	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	3.281	1.406	2.813	(4) 5/8
2 15/16	P4B 215-SRB-CRE	47 700	2 500	22.4	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	3.281	1.406	2.813	(4) 5/8
3	P4B 300-SRB-CRE	47 700	2 500	22.1	3.250	10.438	3.750	1.625	7.938	8.313	1.875	6.438	3.281	1.406	2.813	(4) 5/8
3 3/16	P4B 303-SRB-CRE	73 100	2 100	37.7	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	3.688	1.750	3.375	(4) 3/4
3 7/16	P4B 307-SRB-CRE	73 100	2 100	36.6	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	3.688	1.750	3.375	(4) 3/4
3 1/2	P4B 308-SRB-CRE	73 100	2 100	36.3	3.750	13.000	4.125	2.250	9.375	10.625	2.000	7.563	3.688	1.750	3.375	(4) 3/4
3 11/16	P4B 311-SRB-CRE	75 700	2 000	50.2	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	4.000	1.734	3.484	(4) 3/4
3 15/16	P4B 315-SRB-CRE	75 700	2 000	48.8	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	4.000	1.734	3.484	(4) 3/4
100mm	P4B 100M-SRB-CRE	75 700	2 000	48.8	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	4.000	1.734	3.484	(4) 3/4
4	P4B 400-SRB-CRE	75 700	2 000	48.4	4.250	15.250	4.500	2.438	12.125	12.875	2.250	8.438	4.000	1.734	3.484	(4) 3/4
4 7/16	P4B 407-SRB-CRE	128 500	1 700	70.4	4.750	16.500	4.750	2.750	13.000	14.000	2.500	9.625	4.313	1.938	3.375	(4) 3/4
4 15/16	P4B 415-SRB-CRE	170 300	1 550	108.5	5.500	18.625	5.375	3.00	15.000	16.000	2.750	11.125	4.969	2.313	4.594	(4) 7/8

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Take-Up / Set screw

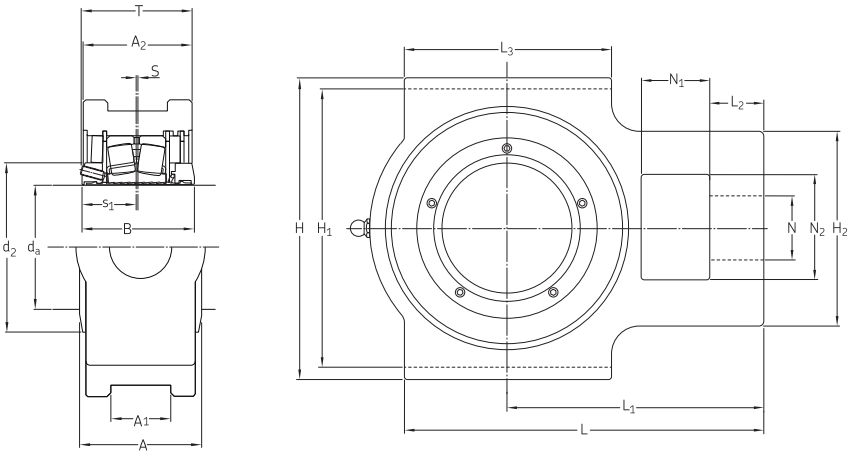
WSTU
Cast-iron housing
Self-aligning
Locating or non-locating
Radial lip seal

How to order	WSTU 115-SRB-SRH
Option	Specify
Radial lip seal	WSTU 115-SRB-**S**RH
Labyrinth seal	WSTU 115-SRB-S**L**H
Locating unit	WSTU 115-SRB-SR**H**
Non-locating unit	WSTU 115-SRB-SR**E**



Shaft dia. d_a	Designation	Bearing basic load rating Dynamic C	Radial lip seal speed limit	Mass	d_2	H	H_1	L_2	L_1	A_1	N_2	N	L	H_2	s_1	B	N_1	A_2
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in		
1 7/16	WSTU 107-SRB-SRE	16 600	5 100	6.2	2.470	4.125	3.500	0.688	3.188	0.53	1.438	0.875	5.063	2.438	1.775	2.75	0.625	2.063
1 1/2	WSTU 108-SRB-SRE	16 600	5 100	6.1	2.470	4.125	3.500	0.688	3.188	0.53	1.438	0.875	5.063	2.438	1.775	2.75	0.625	2.063
1 11/16	WSTU 111-SRB-SRE	17 300	4 500	8.8	2.705	4.750	4.000	0.938	3.812	0.69	1.938	1.125	5.938	3.313	1.875	2.875	0.750	2.031
1 3/4	WSTU 112-SRB-SRE	17 300	4 500	8.8	2.705	4.750	4.000	0.938	3.813	0.69	1.938	1.125	5.938	3.313	1.875	2.875	0.750	2.031
1 15/16	WSTU 115-SRB-SRE	19 000	4 100	9.3	2.905	4.750	4.000	0.938	3.938	0.69	1.938	1.125	6.188	3.313	1.972	2.875	0.750	2.000
2	WSTU 200-SRB-SRE	19 000	4 100	9.1	2.905	4.750	4.000	0.938	3.938	0.69	1.938	1.125	6.188	3.313	1.972	2.875	0.750	2.000
2 3/16	WSTU 203-SRB-SRE	22 400	3 700	11.9	3.250	5.250	4.500	0.938	4.625	0.81	2.250	1.375	7.063	3.875	2.019	3.125	1.250	2.219
2 7/16	WSTU 207-SRB-SRE	33 300	3 100	17.3	4.000	5.875	5.125	1.063	5.000	1.06	2.500	1.375	7.688	4.250	2.160	3.375	1.250	2.563
2 1/2	WSTU 208-SRB-SRE	33 300	3 100	17.1	4.000	5.875	5.125	1.063	5.000	1.06	2.500	1.375	7.688	4.250	2.160	3.375	1.250	2.563
2 11/16	WSTU 211-SRB-SRE	35 500	2 800	23.5	4.375	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	2.392	3.625	1.500	2.688
2 3/4	WSTU 212-SRB-SRE	35 500	2 800	23.1	4.375	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	2.392	3.625	1.500	2.688
2 15/16	WSTU 215-SRB-SRE	35 500	2 800	22.4	4.375	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	2.392	3.625	1.500	2.688
3	WSTU 300-SRB-SRE	35 500	2 800	22.4	4.375	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	2.392	3.625	1.500	2.688
3 7/16	WSTU 307-SRB-SRE	56 900	2 300	33.0	5.125	7.813	6.813	1.063	6.375	1.81	2.875	1.875	10.063	5.125	2.613	4.031	1.625	3.063
100 mm	WSTU 100M-SRB-SRE	69 900	2 000	55.2	6.000	9.438	8.625	1.125	7.375	2.06	3.375	2.125	11.813	6.000	2.988	4.594	2.125	3.438

For shaft diameter tolerances see page 306; for bearing information see page 326; for other seal speed limits see page 310.



WSTU
Cast-iron housing
Self-aligning
Locating or non-locating
Radial lip seal

How to order	WSTU 115-SRB-CRH
Option	Specify
Radial lip seal	WSTU 115-SRB-**C**RH
Labyrinth seal	WSTU 115-SRB-C**L**H
Locating unit	WSTU 115-SRB-CR**H**
Non-locating unit	WSTU 115-SRB-CR**E**

Shaft dia. d_a	Designation	Bearing basic load rating Dynamic C	Radial lip seal speed limit	Mass	d_2	H	H_1	L_2	L_1	A_1	N_2	N	L	H_2	s_1	B	N_1	A_2
in		lbs	rpm	lbs	in	in	in	in	in	in	in	in	in	in	in	in		
1 7/16	WSTU 107-SRB-CRE	21 700	3 800	6.5	2.598	4.125	3.500	0.688	3.188	0.53	1.438	0.875	5.063	2.438	1.260	2.543	0.625	2.063
1 1/2	WSTU 108-SRB-CRE	21 700	3 800	6.3	2.470	4.125	3.500	0.688	3.188	0.53	1.438	0.875	5.063	2.438	1.260	2.543	0.625	2.063
1 11/16	WSTU 111-SRB-CRE	23 000	3 500	8.9	2.795	4.750	4.000	0.938	3.813	0.69	1.938	1.125	5.938	3.313	1.296	2.543	0.750	2.031
1 3/4	WSTU 112-SRB-CRE	23 000	3 500	8.9	2.795	4.750	4.000	0.938	3.813	0.69	1.938	1.125	5.938	3.313	1.296	2.543	0.750	2.031
1 15/16	WSTU 115-SRB-CRE	23 400	3 300	6.5	2.992	4.750	4.000	0.938	3.938	0.69	1.938	1.125	6.188	3.313	1.357	2.543	0.750	2.000
2	WSTU 200-SRB-CRE	23 400	3 300	9.1	2.992	4.750	4.000	0.938	3.938	0.69	1.938	1.125	6.188	3.313	1.357	2.543	0.750	2.000
2 3/16	WSTU 203-SRB-CRE	28 100	3 100	11.8	3.189	5.250	4.500	0.938	4.625	0.81	2.250	1.375	7.063	3.875	1.335	2.583	1.250	2.219
2 7/16	WSTU 207-SRB-CRE	43 400	2 700	16.2	3.583	5.875	5.125	1.063	5.000	1.06	2.500	1.375	7.688	4.250	1.452	2.819	1.250	2.563
2.1/2	WSTU 208-SRB-CRE	43 400	2 700	16.1	3.583	5.875	5.125	1.063	5.000	1.06	2.500	1.375	7.688	4.250	1.452	2.819	1.250	2.563
2 11/16	WSTU 211-SRB-CRE	47 700	2 500	22.1	3.976	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	1.435	2.819	1.500	2.688
2 3/4	WSTU 212-SRB-CRE	47 700	2 500	21.9	3.976	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	1.435	2.819	1.500	2.688
2 15/16	WSTU 215-SRB-CRE	47 700	2 500	21.2	3.976	6.656	5.940	1.125	5.750	1.81	2.750	1.625	8.875	4.875	1.435	2.819	1.500	2.688
3 3/16	WSTU 303-SRB-CRE	73 100	2 100	29.8	4.724	7.813	6.813	1.063	6.375	1.81	2.875	1.875	8.875	5.125	1.668	3.386	1.625	3.063
3 7/16	WSTU 307-SRB-CRE	73 100	2 100	30.9	4.724	7.813	6.813	1.063	6.375	1.81	2.875	1.875	10.063	5.125	1.668	3.386	1.625	3.063
100 mm	WSTU 100-SRB-CRE	95 700	2 000	51.7	5.118	9.438	8.625	1.125	7.375	2.06	3.375	2.125	11.813	6.000	1.785	3.483	2.125	3.438

For shaft diameter tolerances see page 307; for bearing information see page 327; for other seal speed limits see page 311.

Notes

Split pillow blocks
(inch series)

F SAF D 22634 TA

Prefix

F	Four bolt base (when optional)

Housing style

S	Standard pillow block
D	Heavy duty series
A	Inch dimensions
F	Triple ring seal

Material

_	Cast iron (standard)
D	Ductile iron
S	Cast steel

Housing designation

Cast-iron	Cast-steel	Basic bearing series	Mounting method
13(00)		13(00)	Cylindrical
15(00)		12(00)K	Adapter
16(00)		13(00)K	Adapter
222(00)	222(00)	222(00) CC/W33	Cylindrical
223(00)	223(00)	223(00) CC/W33	Cylindrical
225(00)	225(00)	222(00) CCK33	Adapter
226(00)	226(00)	223(00) CCK33	Adapter
230(00)KA		230(00) CCK33	Adapter
C22(00)		C22(00)	Cylindrical
C23(00)		C23(00)	Cylindrical
C25(00)		C22(00)K	Adapter
C26(000		C23(00)K	Adapter
C30(00)KA		C30(00)K	Adapter

Suffix

T	Taconite contact seal
TV	Taconite V-ring seal
TA or TVA	Taconite seal with button head grease fitting
TB or TVB	Taconite seal with giant button head grease fitting
Y	One end closed (i.e., supplied with end plug)
-11	Four-bolt base (when optional / cast steel SAFS only)
/VZ###	Special feature / modification
-##	Special feature / modification
TLC	PosiTrac Plus™ seal

Introduction

SKF split pillow blocks are the most versatile mounted assemblies and are designed for extremely demanding applications. They can accommodate a large range of shaft sizes and handle higher loads. They come standard with heavy gray cast-iron housings, and provide more flexibility in sealing options and lubrication (grease or oil can be used).

These assemblies are predominately designed for radial loads that are carried directly through the base. Some of their applications include:

- Strip processing equipment steel mills
- Conveyors that must accommodate larger shaft sizes or special seals
- Fans and blowers
- Felt rolls and drying cylinders within the paper industry
- Crushers, hammer mills, and kilns in the processing industry

The standard split pillow block is made from cast-iron, while cast-steel or ductile iron are available as options. The housing is horizontally split and the cap and base are a mated set; they cannot be interchanged with other caps or bases. For accurate realignment, each cap is mated to the base with dowel pins. Split pillow blocks are available in two-and four-bolt base mounting configurations, which allows for moderate adjustments during installation. Sealing options for split pillow blocks include the LER/LOR triple ring seal, the contact seal, taconite seal, and the end plug.

SKF split pillow blocks come in three styles, SAF, SAW and SDAF. A fourth type, known as the extended range, is custom designed for demanding applications, where requirements include shaft sizes of 10 to 20 inches.

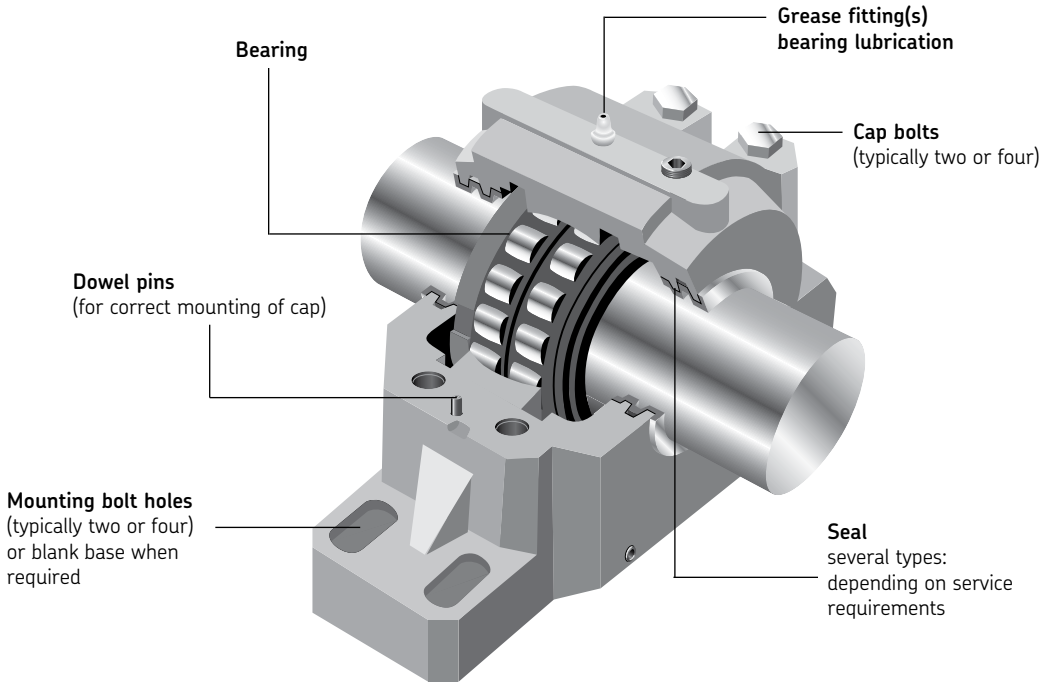
SAF, the most popular split pillow block, is manufactured in cast-iron, cast-steel, or ductile iron. It features a combination of five bearing types, four sealing options and two mounting methods, enabling the SAF to be optimized for a wide variety of applications.

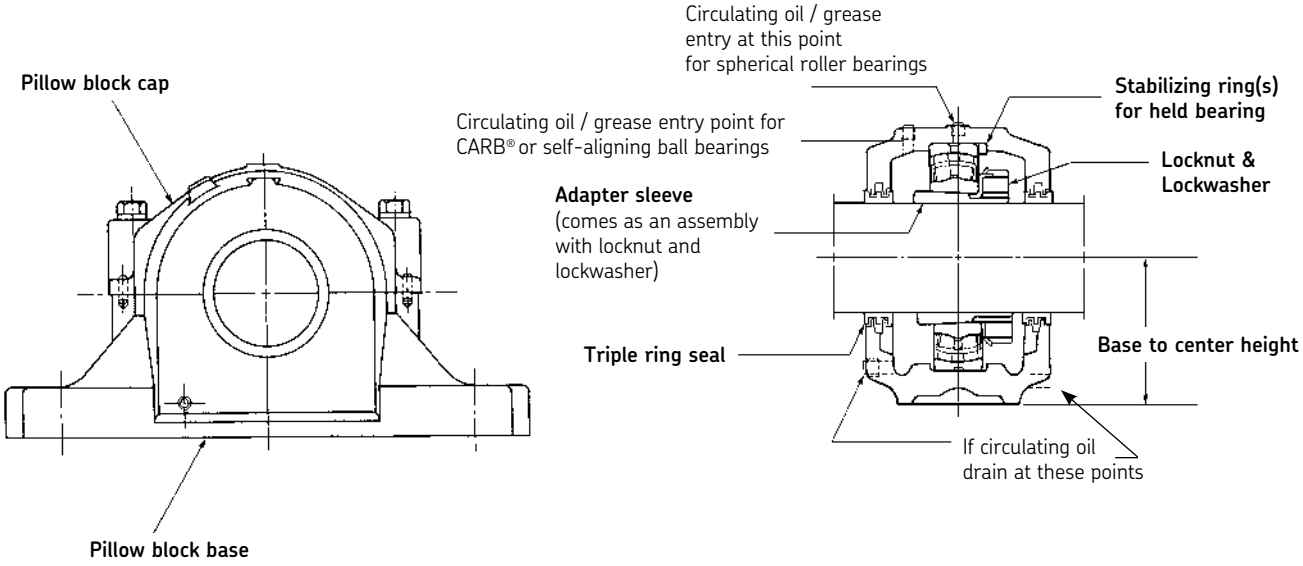
The SAW accommodates the higher capacity series 23200 bearings, or provides greater thermal expansion of the shaft when the 22200 bearing is used. It is dimensionally interchangeable with SAF. Although the bolt hole spacings and center heights are the same, the pillow block is about one-inch wider.

The SDAF style is used for applications that involve heavy or shock loads. SDAF is used extensively in steel mills, mineral processing, and other environments using heavy duty equipment.

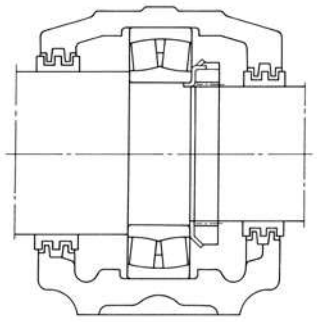
SKF split pillow blocks offer optional customized features, such as special bearings to meet unusual clearance and/or tolerance requirements; machined base ends that provide flat surface for jacking screws; holes for attachment of various condition monitoring devices (thermocouples and vibration detection equipment); and special seals for use with circulating oil lubrication and high-speed operation.

Correct names for pillow block parts

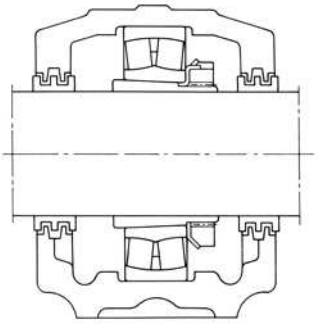




Introduction



Cylindrical mounting



Adapter mounting

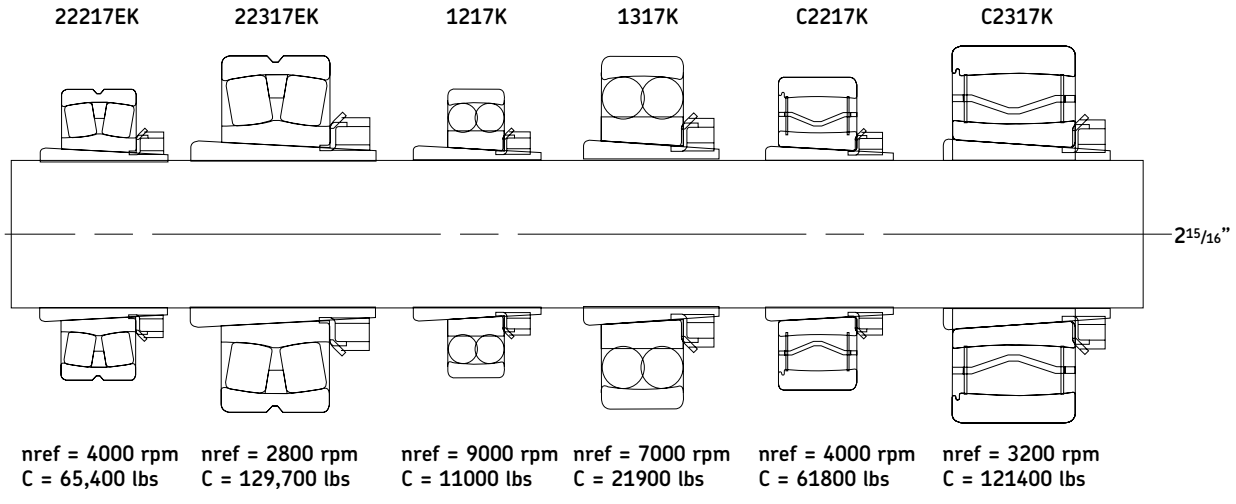
Cylindrical mounting

Cylindrical mounting involves mounting a straight bore bearing to a cylindrical shaft using an interference fit. This mounting method is preferred if precise location on the shaft is required. It is also better suited for high speed applications. In cylindrical mounting, the shaft must have precision tolerances at the bearing seat and machined threads for the locknut. Heating of the inner ring is usually necessary for mounting.

Adapter mounting

In adapter mounting a tapered bore bearing is mounted to a cylindrical shaft through the use of a tapered adapter sleeve. Adapter mounting is considered the general purpose mounting method and most applications of split pillow blocks use this method of attaching the bearing to the shaft. The shaft seatings do not need to be machined to the precision tolerances necessary for cylindrical mounting and the mounting method does not require heating the bearing. Additionally, dismounting is considerably easier with a tapered adapter sleeve. For these reasons the total costs associated with adapter mounting are less than for cylindrical mounting.

Multiple bearing types and series accommodate a variety of applications



Standard split pillow block assortment

SAF

The cast-iron SAF split pillow blocks accommodate self-aligning ball bearings or spherical and toroidal (CARB®) roller bearings and are suitable for adapter or cylindrical mounting to a shaft. SAF housings are available for shaft sizes ranging from $1\,3/16$" to $10\,1/2$" and offer a choice of two-or four-bolt base mounting. Their design accommodates grease or oil lubrication. LER/LOR triple ring seals are supplied as standard but SAF housings also accommodate a variety of optional seals such as contact seals, taconite seals, and end plugs. The standard housing material is cast-iron. Dimensional tables begin on page 366.

SAFS

The SAFS split pillow blocks are cast-steel versions of the SAF block described above. The cast steel material offers greater strength and shock resistance for extra heavy-duty applications. SAFS blocks are used with cylindrical or adapter mounted spherical roller bearings. Shaft sizes range from $2\,7/16$" to $10\,1/2$". They can be supplied in two-or four-bolt base mounting arrangements. The SAFS pillow blocks can be grease or oil lubricated and come standard with LER/LOR triple ring seals. Contact seals, taconite seals, and end plugs are also available. SAFS housings have the same basic mounting dimensions as SAF housings but differ in some basic dimensions. SAF dimensional tables begin on page 366.

SDAF

The SDAF block is designed for applications where heavy thrust loads and shock require a housing of exceptionally sturdy construction. The four-bolt cap and four-bolt base of the heavy-duty SDAF are of unusually rugged proportions adequate to resist shock and heavy loading in any direction. The caps of these large housings are supplied with tapped holes for lifting eyes. SDAF housings accommodate several series of spherical roller bearings, cylindrical or adapter mounted. Shaft sizes range from $3\,15/16$" to $9\,9/16$". Triple ring seals are standard; but optional taconite seals and end plugs are available. SDAF housings can be grease or oil lubricated. Dimensional tables begin on page 416.

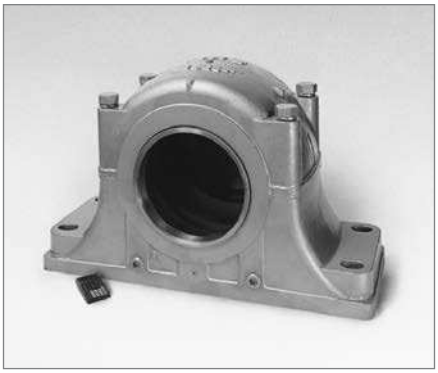
Product descriptions

Special application solutions

SAW

SAW split pillow blocks are designed to accommodate the higher capacity 23200 series spherical roller bearings. They can also be used with 22200 series bearings to allow for greater axial travel or thermal shaft expansion. SAW blocks have the same basic mounting dimensions as their SAF counterparts but are about one-inch wider to accommodate the wider bearing.

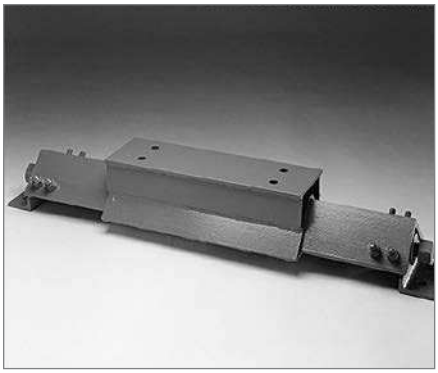
Shaft sizes range from $3^{7}/_{16}$" to $7^{15}/_{16}$" in adapter mounting. SAW blocks are available in four-bolt base only and are suitable for grease or oil lubrication. LER/LOR triple ring seals are standard but, as with the SAF, other sealing options are available. Product nomenclature is on page 403 and dimensional tables begin on page 404.



Extended range

The extended range split pillow blocks provide an extremely rugged housing style of exceptionally sturdy construction for shaft sizes ranging from 9" to 20" and higher. These blocks are made-to-order and can be supplied with a variety of customized features to suit the largest and most demanding applications. Customized features can include special seals and grease shrouds, special bearings and tolerances, specific bolt hole patterns and machinings for attachment of auxiliary equipment such as temperature and vibration detectors.

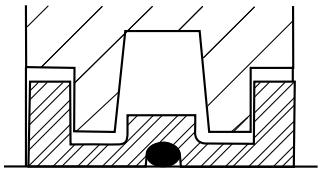
The blocks can accommodate several series of high capacity spherical roller bearings in either cylindrical or adapter mounted arrangements. As with other SKF split pillow block housings, the extended range is suitable for grease or oil lubrication and has a variety of sealing options. Product nomenclature is on page 424 and dimensional tables begin on page 428.



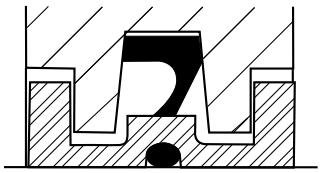
TFT

TFT top mount take-up frames are designed for use with SAF split pillow blocks. As with the TY-RPA assemblies, TFT assemblies are used primarily for belt tensioning in conveyor applications. A SAF block mounts directly to the top of the TFT frame to complete the assembly. TFT frames are available in travel lengths from 12" to 48" and accommodate SAF blocks in shaft sizes from $1^{7}/_{16}$" to $4^{15}/_{16}$".

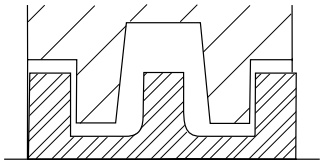
Standard seals for split pillow blocks



PosiTrac seal



PosiTrac Plus seal



LER seal

PosiTrac™ LOR seal

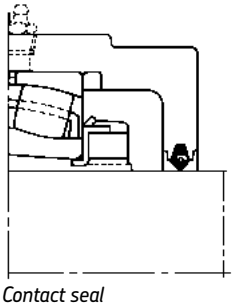
- Standard seal above 2 1/4" (see seal table for specific sizes)
- O-ring in bore to promote spinning with the shaft and prevents contaminate migration between seal and shaft
- Close running tolerance to housing surface
- Provides grease or oil retention
- Aluminum material for spark resistance
- Easily upgradable to PosiTrac™ Plus

PosiTrac Plus™ seal

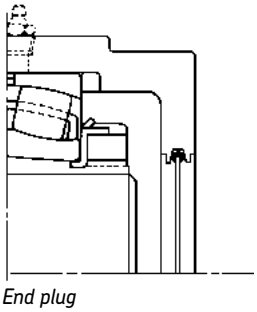
- Combination of PosiTrac with nitrile rubber contact element
- Contact element protected by ring and housing providing the maximum protection to the critical sealing element
- Mounts flush in the housing to maintain the overall housing width
- Positive contact even under misalignment
- Easy to install
- Can be used for purge and non-purge systems
- For use in dirty, dusty and wet environments

Triple ring LER seal

- Standard seal on split pillow blocks below 2 1/4"
- One-piece rotating labyrinth seal
- Close running tolerance between shaft and housing surfaces
- Provides protection from contaminants
- Provides grease or oil retention
- Aluminum material for spark resistance



Contact seal



End plug

Contact seal

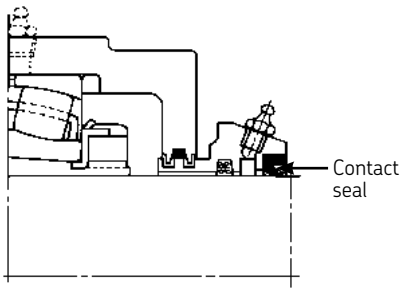
- One-piece nitrile rubber seal
- Positive contact even under misaligned conditions
- Specially molded to fit into the center of the housing labyrinth
- For use in dirty, dusty and wet environments
- Available for shaft below 2 1/4"

End plug

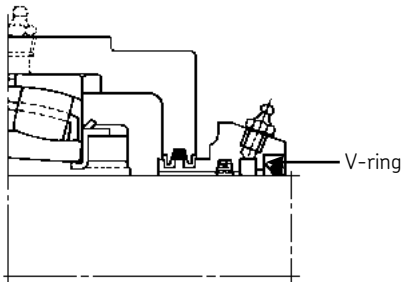
- Extruded nitrile rubber strip fabricated over metal plate
- Designed to give positive fit in center housing labyrinth
- Provides a perfect closure

Seals & speed limits

Standard seals for split pillow blocks



Taconite TER seal



Taconite TER V-ring seal

Taconite TER seal

- Auxiliary seal features three seals in one
  1) Outboard shaft-riding split-contact seal
  2) Grease cavity with fitting to flush contaminants
  3) Felt inboard seal
- Designed to operate in dusty, dirty, abrasive and wet environments
- Ideal for use in mines, quarries, foundries and other tough applications
- Provides for effective lubricant retention for more efficient bearing operation
- Grease purges through the outboard seal during regreasing of the Taconite seal, to expel contaminants

Taconite TER V-ring seal

- Same features as Taconite TER seal except that the outboard seal is a "V" ring face riding seal for minimum shaft wear and accommodates rougher shaft surfaces

PosiTrac™ seals for split pillow blocks

PosiTrac™ from SKF is the next generation of the popular SKF LER seal. The lightweight seal is supplied with new SKF SAF-design split pillow blocks. It can also be used as a replacement seal for existing SKF LER and A9508 ring seals.

Two-way sealing protection

PosiTrac's inboard O-ring sets it apart from conventional pillow block seals. The O-ring, made of nitrile rubber, provides two-way sealing protection: it blocks contaminants from migrating along the shaft into the housing, while preventing lubricant leakage in the opposite direction.

During operation, PosiTrac's O-ring makes complete contact with the spinning shaft. This allows the entire seal to rotate at shaft speed – and enhances overall sealing effectiveness. The result is a "Posi"-tive "Trac"tive effect.

Quick and easy seal retrofits

Replacing existing SKF LER or A9508 seals with the new PosiTrac seal is a simple maintenance task. Because PosiTrac is identical in width to the LER seals it replaces, it retrofits into existing SKF pillow blocks without special housing, sealing or machining requirements.

Once the bearing and housing have been disassembled, actual seal installation can be completed quickly. Simply remove the old seal by hand and slide PosiTrac into position. No special tools are required.

Although you'll experience slight resistance when installing PosiTrac seals, this requires only slight hand pressure to overcome. You can also lubricate the O-ring to ease assembly.

Excellent misalignment and temperature capabilities

- A misalignment capability equivalent to that of existing SKF LER seal
- A broad temperature operating range from -30° to 230° F
- Seal speed ratings equal to bearing speed ratings

PosiTrac Plus seal from SKF for harsh-environment service

Mining, construction, conveyors and related harsh-environment applications challenge bearing reliability with constant exposure to dirt, sand and other contaminants. Especially demanding environments call for a special seal – PosiTrac Plus.

PosiTrac Plus combines the advanced features of the PosiTrac seal from SKF with an additional sealing component – a nitrile rubber contact element that rides on the outer diameter of the seal's aluminum ring. The ring seal provides a wearing surface, and virtually eliminates any possibilty of shaft wear. This contact seal is completely encased within the housing and ring seal labyrinth, protecting it from large particles of contamination. Together, this system provides superior sealing in harsh environments.

PosiTrac Plus replaces the SKF B9784 contact seal. The two major PosiTrac Plus components are packaged separately for easier inventory control.

Flush-mounted, easy-to-install design

Some heavy-duty seals for split pillow blocks have a contact element that extends from the housing side face, requiring additional axial space – but not PosiTrac Plus.

PosiTrac Plus mounts flush with the housing and has no protruding parts that might snag on belts or other machinery.

PosiTrac Plus is easy to install. There's no need to carefully align the seal with the housing to ensure proper sealing. PosiTrac Plus drops straight into an ideal sealing position every time.

Adaptable for purge and non-purge operations

Grease purging is essential in some applications (high-contamination mining operations, for example), but unacceptable in others (papermaking, meat and fruit processing). PosiTrac adapts easily to either requirement. Simply reverse the seal orientation in the housing to convert PosiTrac Plus from purgeable to non-purgeable operation.

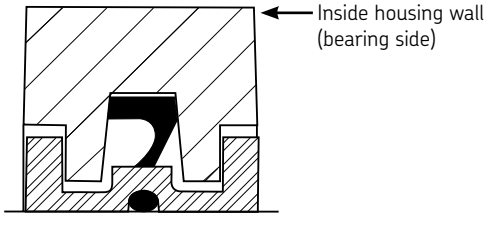
Packaged for convenient upgrades

Users of PosiTrac seals can upgrade to PosiTrac Plus at any time. To upgrade, order the PosiTrac Plus contact element that corresponds with the PosiTrac seal currently in use. The contact element slips easily over the aluminum ring's outer diameter, converting a PosiTrac seal into a PosiTrac Plus for maximum sealing protection.

How to order PosiTrac Plus from SKF

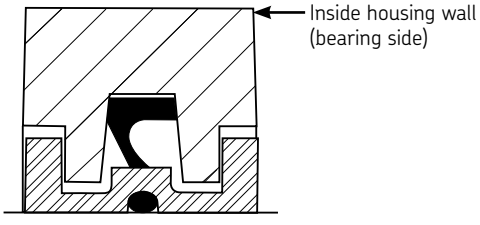
The two PosiTrac Plus components – rubber contact element and aluminum ring with inboard O-ring – are packaged separately and have different designations. The contact element designation is B-10724-###; the designation for the aluminum ring is LOR-XXX. See the accompanying tables for size ranges.

Easy installation for both purgeable and non-purgeable systems



Grease purgeable set-up

Use purgeable for maximum contamination exclusion



Non-grease purgeable set-up

Use non-grease purgeable for maximum grease retention

Seals & speed limits

Seal selection for SAF and SAFS housings

	Labyrinth	PosiTrac™	PosiTrac™ Plus	Contact	SKF Taconite		End plug
Basic part number	**LER**	**LOR PosiTrac™**	**LOR & B-10724**	**B-9784**	**TER**	**TER V**	**EPR**
Housing range	SAF 308-311 SAF 507-513 SAF 609-611	SAF 024-056 KA SAF 213-244 SAF 312-340 SAF 515-544 SAF 613-640	SAF 024-056 KA SAF 213-244 SAF 312-340 SAF 515-544 SAF 613-640	SAF 308-311 SAF 509-513 SAF 609-611	SAF 024-056 KA SAF 213-244 SAF 308-340 SAF 507-544 SAF 609-640	SAF 024-056 KA SAF 213-244 SAF 308-340 SAF 507-544 SAF 609-640	SAF 024-056 KA SAF 213-244 SAF 308-340 SAF 507-544 SAF 609-640
Shaft diameters	$1^1/_8$" - $2^5/_8$"	$2^1/_8$" - $10^1/_2$"	$2^1/_8$" - $10^1/_2$"	$1^1/_8$" - $2^5/_8$"	$1^1/_8$" - $10^1/_2$"	$1^1/_8$" - $10^1/_2$"	$1^1/_8$" - $10^1/_2$"
Material composition	aluminum	aluminum and nitrile rubber	aluminum and nitrile rubber	nitrile rubber	steel, felt and nitrile rubber	steel, felt and nitrile rubber	steel and nitrile rubber
Temperature[1]	300° F max	220° F max	220° F max	220° F max	220° F max	220° F max	220° F max
Speed [2]	same as bearing	same as bearing	limited	limited	limited	limited	–
Misalignment [3]	some	some	limited	limited	extremely limited	extremely limited	–
Grease purgeable	yes	yes	yes	yes	yes	yes	–
Oil leak prevention	minimal	some	yes	yes	yes (most of any listed)	yes	yes
Friction	none present	none present	some	some	large amount	large amount	–
Dusty / dirty	some	some	yes	yes	yes, extreme conditions	yes, extreme conditions	yes
Wet / moisture	no	no	yes	yes	yes	yes	yes
High pressure wash	no	no	non direct	non direct	yes	yes	yes
Chemical	some	some	limited	limited	limited	limited	limited
Availability	common sizes stocked	common sizes stocked	common sizes stocked	common sizes stocked	common sizes stocked	made to order	common sizes stocked
Lead time for made to order [3]	6 – 8 weeks	6 – 8 weeks	6 – 8 weeks	6 – 8 weeks	6 – 8 weeks	6 – 8 weeks	6 – 8 weeks

1 A special lubrication may be required to accommodate 400° F. Consult SKF or your lubrication supplier.
2 Consult SKF Applications Engineering for specific speed ratings.
3 A self aligning bearing in a split housing assembly will not realize the full bearing misalignment capability; misalignment is limited by seal type.

Seal chart for SKF SAF, SAFS and SAW split pillow block housings

	S-1	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	000 Series	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
1-1/8"		507						LER-13	–	–	–	TER-13	TER-13 V	2250	EPR-2
1-3/16"		507*						LER-14	–	–	–	TER-14	TER-14 V	2250	EPR-2
1-1/4"		507						LER-15	–	–	–	TER-15	TER-15 V	2250	EPR-2
1-3/8"		509	609					LER-16	–	–	–	TER-16	TER-16 V	2175	EPR-3
1-7/16"		509*	609*				308*	LER-17	–	B-9784-12	3800	TER-17	TER-17 V	2175	EPR-3
1-1/2"		509	609					LER-18	–	–	–	TER-18	TER-18 V	2175	EPR-3
1-5/8"		510	610					LER-19	–	–	–	TER-19	TER-19 V	1800	EPR-4
1-11/16"		510*	610*				309*	LER-20	–	B-9784-15	3400	TER-20	TER-20 V	1800	EPR-4
1-3/4"		510	610					LER-21	–	–	–	TER-21	TER-21 V	1800	EPR-4
1-13/16"		511	611					LER-22	–	–	–	TER-22	TER-22 V	1575	EPR-5
1-7/8"		511	611				310*	LER-23	–	–	–	TER-23	TER-23 V	1575	EPR-5
1-15/16"		511*	611*		308*			LER-24	–	B-9784-19	2950	TER-24	TER-24 V	1575	EPR-5
2"		511	611					LER-25	–	–	–	TER-25	TER-25 V	1575	EPR-5
2"		513						LER-26	–	B-9784-21	2950	TER-26	TER-26 V	1450	EPR-6
2-1/16"		513					311*	LER-27	–	–	–	TER-27	TER-27 V	1450	EPR-6
2-1/8"		513			309*			LER-28	–	–	–	TER-28	TER-28 V	1450	EPR-6
2-1/8"			613				312	LOR-31	AS-568-034	B-10724-32	2600	TER-31	TER-31 V	1400	EPR-7
2-3/16"		513*						LER-29	–	B-9784-24	2600	TER-29	TER-29 V	1400	EPR-6
2-3/16"			613*				312	LOR-32	AS-568-035	B-10724-32	2600	TER-32	TER-32 V	1400	EPR-7
2-1/4"		513						LER-30	–	–	–	TER-30	TER-30 V	1400	EPR-6
2-1/4"			613				312*	LOR-33	AS-568-035	B-10724-32	2600	TER-33	TER-33 V	1075	EPR-7
2-5/16"				210	310			LER-34	–	–	–	TER-34	TER-34 V	1300	–
2-3/8"				210	310*			LER-35	–	–	–	TER-35	TER-35 V	1300	–
2-3/8"		515	615			213	313	LOR-36	AS-568-036	B-10724-37	2350	TER-36	TER-36 V	1250	EPR-7
2-7/16"		515*	615*			213*	313*	LOR-37	AS-568-037	B-10724-37	2350	TER-37	TER-37 V	1250	EPR-7
2-1/2"								LER-39	–	B-9784-37	–	TER-39	TER-39 V	1250	–
2-1/2"		515	615			213	313	LOR-38	AS-568-037	B-10724-37	2350	TER-38	TER-38 V	1250	EPR-7
2-9/16"					311*			LER-40	–	B-9784-35	–	TER-40	TER-40 V	1200	–
2-9/16"		516	616				314	LOR-42	AS-568-038	B-10724-44	2150	TER-42	TER-42 V	1150	EPR-8
2-5/8"					311			LER-41	–	–	–	TER-41	TER-41 V	1150	–
2-5/8"		516	616				314*	LOR-43	AS-568-038	B-10724-44	2150	TER-43	TER-43 V	1150	EPR-8
2-11/16"		516*	616*				314	LOR-44	AS-568-039	B-10724-44	2150	TER-44	TER-44 V	1150	EPR-8
2-3/4"		516	616				314	LOR-45	AS-568-039	B-10724-44	2150	TER-45	TER-45 V	1150	EPR-8
2-13/16"			617					LOR-182	AS-568-149	B-10724-184	1950	TER-182	TER-182 V	1050	EPR-10
2-13/16"					312	215*	315*	LOR-46	AS-568-040	B-10724-44	2150	TER-46	TER-46 V	900	EPR-8
2-13/16"		517		213	313	216		LOR-51	AS-568-040	B-10724-53	1950	TER-51	TER-51 V	1050	EPR-9
2-3/16"							316	LOR-57	AS-568-150	B-10724-184	1900	TER-57	TER-57 V	850	EPR-10
2-7/8"			617					LOR-183	AS-568-150	B-10724-184	1950	TER-183	TER-183 V	1050	EPR-10
2-7/8"					312*	215	315	LOR-47	AS-568-040	B-10724-44	2150	TER-47	TER-47 V	1075	EPR-8
2-7/8"		517		213	313	216		LOR-52	AS-568-040	B-10724-53	1950	TER-52	TER-52 V	1050	EPR-9

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order

Seals & speed limits

Seal chart for SKF SAF, SAFS and SAW split pillow block housings

	S-1	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	000 Series	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
2-7/8"							316	LOR-58	AS-568-150	B-10724-184	1900	TER-58	TER-58 V	850	EPR-10
2-15/16"		617*						LOR-184	AS-568-151	B-10724-184	1950	TER-184	TER-184 V	1050	EPR-10
2-15/16"		517*	213	313	216			LOR-53	AS-568-041	B-10724-53	1950	TER-53	TER-53 V	1050	EPR-9
2-15/16"							316	LOR-59	AS-568-151	B-10724-184	1900	TER-59	TER-59 V	850	EPR-10
3"		617						LOR-185	AS-568-151	B-10724-184	1950	TER-185	TER-185 V	1050	EPR-10
3"		517		213	313	216*		LOR-54	AS-568-041	B-10724-53	1950	TER-54	TER-54 V	850	EPR-9
3"						316*		LOR-60	AS-568-151	B-10724-184	1900	TER-60	TER-60 V	850	EPR-10
3-1/16"		518	618				317	LOR-186	38309-186	B-10724-188	1800	TER-186	TER-186 V	950	EPR-11
3-1/16"				213*	313*	216		LOR-55	38309-55	B-10724-53	1950	TER-55	TER-55 V	1000	EPR-9
3-1/16"						217		LOR-61	38309-61	B-10724-64	1450	TER-61	TER-61 V	775	EPR-28
3-1/8"		518	618				317	LOR-187	AS-568-152	B-10724-188	1800	TER-187	TER-187 V	950	EPR-11
3-1/8"				213	313	216		LOR-56	AS-568-042	B-10724-53	1950	TER-56	TER-56 V	1000	EPR-28
3-1/8"					314	217		LOR-62	AS-568-042	B-10724-64	1450	TER-62	TER-62 V	775	EPR-28
3-3/16"		518*	618*				317*	LOR-188	AS-568-152	B-10724-188	1800	TER-188	TER-188 V	950	EPR-11
3-3/16"					314	217*		LOR-63	AS-568-042	B-10724-64	1450	TER-63	TER-63 V	775	EPR-28
3-1/4"		518	618				317	LOR-189	AS-568-152	B-10724-188	1800	TER-189	TER-189 V	950	EPR-11
3-1/4"					314*	217		LOR-64	AS-568-042	B-10724-64	1450	TER-64	TER-64 V	925	EPR-28
3-5/16"		520	620			220		LOR-100	38309-100	B-10724-102	1650	TER-100	TER-100 V	900	EPR-12
3-5/16"						217		LOR-65	38309-65	B-10724-64	1450	TER-65	TER-65 V	775	EPR-28
3-5/16"						218	318	LOR-190	38309-190	B-10724-188	1800	TER-190	TER-190 V	750	EPR-11
3-3/8"				215/216	315			LOR-78	AS-568-043	B-10724-79	1650	TER-78	TER-78 V	900	–
3-3/8"						217		LOR-66	AS-568-043	B-10724-64	1450	TER-66	TER-66 V	775	EPR-28
3-3/8"		520	620			220		LOR-101	AS-568-153	B-10724-102	1650	TER-101	TER-101 V	900	EPR-12
3-3/8"						218*	318*	LOR-191	AS-568-153	B-10724-188	1800	TER-191	TER-191 V	750	EPR-11
3-7/16"				215*/216		315*		LOR-79	AS-568-043	B-10724-79	1450	TER-79	TER-79 V	900	–
3-7/16"		520*	620*			220		LOR-102	AS-568-153	B-10724-102	1650	TER-102	TER-102 V	900	EPR-12
3-1/2"				215/216	315			LOR-80	AS-568-043	B-10724-79	1450	TER-80	TER-80 V	900	–
3-1/2"		520	620			220		LOR-103	AS-568-153	B-10724-102	1650	TER-103	TER-103 V	900	EPR-12
3-9/16"				215/216	315			LOR-81	38309-81	B-10724-79	1450	TER-81	TER-81 V	900	–
3-9/16"					316			LOR-83	38309-83	B-10724-106	1275	TER-83	TER-83 V	850	EPR-12
3-5/8"				215/216*		315		LOR-82	AS-568-044	B-10724-79	1450	TER-82	TER-82 V	850	–
3-5/8"					316*			LOR-84	AS-568-154	B-10724-106	1275	TER-84	TER-84 V	850	EPR-12
3-11/16"					316			LOR-85	AS-568-154	B-10724-106	1275	TER-85	TER-85 V	850	EPR-12
3-11/16"						320		LOR-104	AS-568-154	B-10724-106	1275	TER-104	TER-104 V	675	EPR-12
3-3/4"					316			LOR-86	AS-568-154	B-10724-106	1275	TER-86	TER-86 V	850	EPR-12
3-3/4"							320	LOR-105	AS-568-154	B-10724-106	1275	TER-105	TER-105 V	675	EPR-12
3-13/16"					316			LOR-87	38309-87	B-10724-106	1275	TER-87	TER-87 V	850	EPR-12
3-13/16"					220*	320*		LOR-106	38309-106	B-10724-106	1275	TER-106	TER-106 V	675	EPR-12
3-13/16"	522	622		317				LOR-107	38309-107	B-10724-109	1450	TER-107	TER-107 V	775	EPR-13
3-7/8"		522	622		317			LOR-108	AS-568-155	B-10724-109	1450	TER-108	TER-108 V	775	EPR-13

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs, the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order

Seal chart for SKF SAF, SAFS and SAW split pillow block housings

	S-1	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	000 Series	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
3-7/8"				217				LOR-88	AS-568-045	B-10724-89	1450	TER-88	TER-88 V	775	–
3-15/16"		522*	622*		317*			LOR-109	AS-568-155	B-10724-109	1450	TER-109	TER-109 V	775	EPR-13
3-15/16"				217*				LOR-89	AS-568-045	B-10724-89	1450	TER-89	TER-89 V	775	–
4"		522	622		317			LOR-110	AS-568-155	B-10724-109	1450	TER-110	TER-110 V	775	EPR-13
4"				217				LOR-90	AS-568-045	B-10724-89	1450	TER-90	TER-90 V	775	–
4-1/16"	024	524	624	218	318	222	322	LOR-111	38309-111	B-10724-113	1350	TER-111	TER-111 V	750	EPR-14
4-1/8"	024	524	624	218*	318*	222	322	LOR-112	AS-568-156	B-10724-113	1350	TER-112	TER-112 V	750	EPR-14
4-3/16"	024*	524*	624*	218	318	222*	322*	LOR-113	AS-568-156	B-10724-113	1350	TER-113	TER-113 V	725	EPR-14
4-1/4"	024	524	624	218	318	222	322	LOR-114	AS-568-156	B-10724-113	1350	TER-114	TER-114 V	725	EPR-14
4-5/16"	026	526	626	220	320	224	324	LOR-115	38309-115	B-10724-117	1300	TER-115	TER-115 V	700	EPR-15
4-3/8"	026	526	626	220	320	224	324	LOR-116	AS-568-157	B-10724-117	1300	TER-116	TER-116 V	700	EPR-15
4-7/16"	026*	526*	626*	220	320	224	324	LOR-117	AS-568-157	B-10724-117	1300	TER-117	TER-117 V	700	EPR-15
4-1/2"	026	526	626	220*	320*	224	324	LOR-118	AS-568-157	B-10724-117	1300	TER-118	TER-118 V	675	EPR-15
4-9/16"				220	320	224*	324*	LOR-119	38309-119	B-10724-117	1300	TER-119	TER-119 V	675	EPR-15
4-13/16"	028	528	628	222	322	226	326	LOR-120	38309-120	B-10724-122	1150	TER-120	TER-120 V	625	EPR-27
4-7/8"	028	528	628	222*	322*	226	326	LOR-121	AS-568-159	B-10724-122	1150	TER-121	TER-121 V	625	EPR-27
4-15/16"	028*	528*	628*	222	322	226*	326*	LOR-122	AS-568-159	B-10724-122	1150	TER-122	TER-122 V	625	EPR-27
5-1/8"	030	530	630	224	324	228	328	LOR-124	AS-568-160	B-10724-125	1075	TER-124	TER-124 V	590	EPR-16
5-3/16"	030*	530*	630*	224	324	228	328	LOR-125	AS-568-160	B-10724-125	1075	TER-125	TER-125 V	590	EPR-16
5-1/4"	030	530	630	224	324	228	328	LOR-126	AS-568-160	B-10724-125	1075	TER-126	TER-126 V	575	EPR-16
5-5/16"	030			224*	324*	228*	328*	LOR-127	38309-127	B-10724-125	1075	TER-127	TER-127 V	575	EPR-16
5-3/8"	30			224	324	228	328	LOR-128	AS-568-161	B-10724-125	1075	TER-128	TER-128 V	575	EPR-16
5-3/8"	032	532	632					LOR-129	AS-568-253	B-10724-130	1050	TER-129	TER-129 V	560	EPR-16
5-7/16"	032*	532*	632*					LOR-130	AS-568-254	B-10724-130	1050	TER-130	TER-130 V	560	EPR-16
5-1/2"	032	532	632					LOR-131	AS-568-254	B-10724-130	1050	TER-131	TER-131 V	560	EPR-16
5-5/8"				226	326	230	330	LOR-132	AS-568-162	B-10724-134	850	TER-132	TER-132 V	460	EPR-17
5-11/16"				226	326	230	330	LOR-133	AS-568-162	B-10724-134	850	TER-133	TER-133 V	460	EPR-17
5-3/4"				226	326	230*	330*	LOR-134	AS-568-162	B-10724-134	850	TER-134	TER-134 V	460	EPR-17
5-13/16"	034	534	634			232	332	LOR-138	AS-568-257	B-10724-140	950	TER-138	TER-138 V	520	EPR-18
5-13/16"				226	326	230	330	LOR-135	38309-135	B-10724-134	850	TER-135	TER-135 V	520	EPR-17
5-7/8"	034	534	634			232	332	LOR-139	AS-568-257	B-10724-140	950	TER-139	TER-139 V	520	EPR-18
5-7/8"				226*	326*	230	330	LOR-136	AS-568-163	B-10724-134	850	TER-136	TER-136 V	520	EPR-17
5-15/16"	034*	534*	634*			232	332	LOR-140	AS-568-258	B-10724-140	950	TER-140	TER-140 V	520	EPR-18
5-15/16"				226	326	230	330	LOR-137	AS-568-163	B-10724-134	850	TER-137	TER-137 V	520	EPR-17
6"	034	534	634			232	332	LOR-141	AS-568-258	B-10724-140	950	TER-141	TER-141 V	500	EPR-18
6-1/16"						232*	332*	LOR-142	38309-142	B-10724-140	950	TER-142	TER-142 V	500	EPR-18
6-3/16"				228	328			LOR-143	AS-568-164	B-10724-144	925	TER-143	TER-143 V	490	–
6-1/4"				228*	328*			LOR-144	AS-568-164	B-10724-144	925	TER-144	TER-144 V	490	–
6-5/16"				228	328			LOR-145	38309-145	B-10724-144	925	TER-145	TER-145 V	490	–
6-5/16"	036	536				234	334	LOR-146	38309-146	B-10724-148	875	TER-146	TER-146 V	460	EPR-19

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs, the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order

Seals & speed limits

Seal chart for SKF SAF, SAFS and SAW split pillow block housings

	S-1	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	000 Series	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
6-3/8"	036	536				234	334	LOR-147	AS-568-260	B-10724-148	875	TER-147	TER-147 V	460	EPR-19
6-7/16"	036*	536*				234	334*	LOR-148	AS-568-260	B-10724-148	875	TER-148	TER-148 V	460	EPR-19
6-1/2"	036	536				234	334	LOR-149	AS-568-260	B-10724-148	875	TER-149	TER-149 V	460	EPR-19
6-9/16"				230	330			LOR-150	38309-150	B-10724-151	850	TER-150	TER-150 V	460	–
6-5/8"				230*	330*			LOR-151	AS-568-166	B-10724-151	850	TER-151	TER-151 V	460	–
6-11/16"				230	330			LOR-152	AS-568-166	B-10724-151	850	TER-152	TER-152 V	460	–
6-13/16"	038	538	638	232	332	236		LOR-153	38309-153	B-10724-155	825	TER-153	TER-153 V	440	EPR-20
6-7/8"	038	538	638	232	332	236*		LOR-154	AS-568-262	B-10724-155	825	TER-154	TER-154 V	440	EPR-20
6-15/16"	038*	538*	638*	232	332	236		LOR-155	AS-568-262	B-10724-155	825	TER-155	TER-155 V	440	EPR-20
7"	038	538	638	232*	332*	236		LOR-156	AS-568-262	B-10724-155	825	TER-156	TER-156 V	440	EPR-20
7-1/16"				232	332	236		LOR-157	38309-157	B-10724-155	825	TER-157	TER-157 V	440	EPR-20
7-1/8"	040	540	640			238	338	LOR-158	AS-568-263	B-10724-159	800	TER-158	TER-158 V	425	EPR-21
7-3/16"	040*	540*	640*			238	338	LOR-159	AS-568-263	B-10724-159	800	TER-159	TER-159 V	425	EPR-21
7-1/4"	040	540	640			238*	338*	LOR-160	AS-568-263	B-10724-159	800	TER-160	TER-160 V	425	EPR-21
7-7/16"				234*	334*	240	340	LOR-161	AS-568-264	B-10724-161	650	TER-161	TER-161 V	410	EPR-22
7-1/2"				234	334	240	340	LOR-162	AS-568-264	B-10724-161	650	TER-162	TER-162 V	410	EPR-22
7-9/16"				234	334	240	340	LOR-163	AS-568-265	B-10724-161	650	TER-163	TER-163 V	410	EPR-22
7-5/8"				234	334	240*	340*	LOR-164	AS-568-265	B-10724-161	650	TER-164	TER-164 V	390	EPR-22
7-13/16"	044	544		236*				LOR-165	AS-568-266	B-10724-167	725	TER-165	TER-165 V	390	EPR-23
7-7/8"	044	544		236				LOR-166	AS-568-266	B-10724-167	725	TER-166	TER-166 V	390	EPR-23
7-15/16"	044*	544*		236				LOR-167	AS-568-266	B-10724-167	725	TER-167	TER-167 V	385	EPR-23
8"	044	544		236				LOR-168	AS-568-266	B-10724-167	725	TER-168	TER-168 V	385	EPR-23
8-1/4"				238	338	244		LOR-169	AS-568-267	B-10724-170	600	TER-169	TER-169 V	365	EPR-24
8-5/16"				238	338	244*		LOR-170	AS-568-268	B-10724-170	600	TER-170	TER-170 V	365	EPR-24
8-3/8"				238*	338*	244		LOR-171	AS-568-268	B-10724-170	600	TER-171	TER-171 V	365	EPR-24
8-7/16"				238	338	244		LOR-172	AS-568-268	B-10724-170	600	TER-172	TER-172 V	365	EPR-24
8-7/16"	048							LOR-550	AS-568-268	B-10724-552	680	TER-550	TER-550 V	360	X-5217-4
8-1/2"				238	338	244		LOR-173	AS-568-268	B-10724-170	600	TER-173	TER-173 V	360	EPR-24
8-1/2"	048							LOR-551	AS-568-268	B-10724-552	680	TER-551	TER-551 V	360	X-5217-4
8-11/16"				240	340			LOR-174	AS-568-269	B-10724-175	650	TER-174	TER-174 V	350	EPR-25
8-3/4"				240*	340*			LOR-175	AS-568-269	B-10724-175	650	TER-175	TER-175 V	350	EPR-25
8-13/16"				240	340			LOR-176	AS-568-270	B-10724-175	650	TER-176	TER-176 V	350	EPR-25
8-7/8"				240	340			LOR-177	AS-568-270	B-10724-175	650	TER-177	TER-177 V	350	EPR-25
8-15/16"	048*							LOR-552	AS-568-270	B-10724-552	640	TER-552	TER-552 V	340	X-5217-4
9"	048							LOR-513	AS-568-270	B-10724-552	640	TER-513	TER-513 V	340	X-5217-4
9-7/16"	052*							LOR-553	AS-568-272	B-10724-178	600	TER-553	TER-553 V	325	X-5217-2
9-1/2"	052			244				LOR-178	AS-568-272	B-10724-178	600	TER-178	TER-178 V	320	X-5217-2
9-9/16"				244*				LOR-179	AS-568-273	B-10724-178	600	TER-179	TER-179 V	315	X-5217-2
9-5/8"				244				LOR-180	AS-568-273	B-10724-178	600	TER-180	TER-180 V	315	X-5217-2
9-11/16"				244				LOR-181	AS-568-273	B-10724-178	600	TER-181	TER-181 V	315	X-5217-2
9-15/16"	056*							LOR-607	AS-568-274	B-10724-607	575	TER-607	TER-607 V	310	X-5217-2
10"	056							LOR-568	AS-568-274	B-10724-607	575	TER-568	TER-568 V	305	X-5217-2
10-7/16"	056*							LOR-606	AS-568-275	B-10724-606	550	TER-606	TER-606 V	295	X-5217-1
10-1/2"	056							LOR-519	AS-568-275	B-10724-606	550	TER-519	TER-519 V	290	X-5217-1

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs, the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order

Seals & speed limits

Seal chart for SKF SDAF and SDAFS split pillow block housings

	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
2-13/16"			617				LOR-57	AS-568-150	B-10724-184	1950	TER-57	TER-57 V	1050	EPR-10
2-7/8"		617					LOR-58	AS-568-150	B-10724-184	1950	TER-58	TER-58 V	1050	EPR-10
2-15/16"		617*					LOR-59	AS-568-151	B-10724-184	1950	TER-59	TER-59 V	1050	EPR-10
3"		617					LOR-60	AS-568-151	B-10724-184	1950	TER-60	TER-60 V	1050	EPR-10
3-1/16"		618					LER-67	–	– [6]		TER-67	TER-67 V	950	EPR-11
3-1/8"		618					LER-68	–	– [6]		TER-68	TER-68 V	950	EPR-11
3-3/16"		618*				317*	LER-69	–	– [6]	–	TER-69	TER-69 V	950	EPR-11
3-1/4"		618					LER-70	–	– [6]		TER-70	TER-70 V	950	EPR-11
3-3/8"						318*	LER-72	–	– [6]	–	TER-72	TER-72 V	750	EPR-11
3-5/16"	520	620					LER-73	–	– [6]		TER-73	TER-73 V	750	EPR-11
3-3/8"	520	620					LER-74	–	– [6]		TER-74	TER-74 V	750	EPR-11
3-7/16"	520*	620*					LER-75	–	– [6]	–	TER-75	TER-75 V	900	EPR-11
3-1/2"	520	620					LER-76	–	– [6]		TER-76	TER-76 V	900	EPR-11
3-13/16"					220*	320*	LER-87	–	– [6]	–	TER-87	TER-87 V	675	EPR-12
3-13/16"	522	622					LER-91	–	– [6]		TER-91	TER-91 V	775	EPR-13
3-7/8"	522	622					LER-92	–	– [6]		TER-92	TER-92 V	775	EPR-13
3-15/16"	522*	622*		317*			LER-93	–	– [6]	–	TER-93	TER-93 V	775	EPR-13
4"	522	622					LER-94	–	– [6]		TER-94	TER-94 V	775	EPR-13
4-1/8"				318*			LER-96	–	– [6]	–	TER-96	TER-96 V	750	–
4-1/16"	524	624					LOR-111	38309-111	B-10724-113	1350	TER-111	TER-111 V	725	EPR-14
4-1/8"	524	624					LOR-112	AS-568-156	B-10724-113	1350	TER-112	TER-112 V	725	EPR-14
4-3/16"	524*	624*			222*	322*	LOR-113	AS-568-156	B-10724-113	1350	TER-113	TER-113 V	725	EPR-14
4-1/4"	524	624					LOR-114	AS-568-156	B-10724-113	1350	TER-114	TER-114 V	725	EPR-14
4-5/16"	526	626					LOR-115	38309-115	B-10724-117	1300	TER-115	TER-115 V	700	EPR-15
4-3/8"	526	626					LOR-116	AS-568-157	B-10724-117	1300	TER-116	TER-116 V	700	EPR-15
4-7/16"	526*	626*					LOR-117	AS-568-157	B-10724-117	1300	TER-117	TER-117 V	700	EPR-15
4-1/2"	526	626					LOR-118	AS-568-157	B-10724-117	1300	TER-118	TER-118 V	700	EPR-15
4-9/16"	526	626					LOR-119	38309-119	B-10724-117	1300	TER-119	TER-119 V	700	EPR-15
4-1/2"			220*	320*			LER-205	–	– [6]	–	TER-205	TER-205 V	675	–
4-9/16"	528				224*	324*	LOR-119	38309-119	B-10724-117	1300	TER-119	TER-119 V	575	EPR-15
4-7/8"	528		222*	322*			LOR-121	AS-568-159	B-10724-122	1150	TER-121	TER-121 V	625	–
4-15/16"	528*				226*	326*	LOR-122	AS-568-159	B-10724-122	1150	TER-122	TER-122 V	520	EPR-27
5-1/8"	530	630					LOR-124	AS-568-160	B-10724-125	1075	TER-124	TER-124 V	590	EPR-16
5-3/16"	530*	630*					LOR-125	AS-568-160	B-10724-125	1075	TER-125	TER-125 V	590	EPR-16
5-1/4"	530	630					LOR-126	AS-568-160	B-10724-125	1075	TER-126	TER-126 V	590	EPR-16
5-5/16"	530	630	224*	324*	228*		LOR-127	38309-127	B-10724-125	1075	TER-127	TER-127 V	575	–
5-3/8"	530	630					LOR-128	AS-568-161	B-10724-125	1075	TER-128	TER-128 V	575	EPR-16
5-3/8"	532						LOR-129	AS-568-253	B-10724-130	1050	TER-129	TER-129 V	575	EPR-16
5-7/16"	532*						LOR-130	AS-568-254	B-10724-130	1050	TER-130	TER-130 V	560	EPR-16
5-1/2"	532						LOR-131	AS-568-254	B-10724-130	1050	TER-131	TER-131 V	560	EPR-16

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs, the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order
6 = Consult SKF Applications Engineering for options

Seals & speed limits

Seal chart for SKF SDAF and SDAFS split pillow block housings

	S-1	S-1	S-2	S-2	S-3	S-3	Triple ring seal[1]		Contact seals		Taconite seals[5]			End plugs
Shaft diameter	500 Series	600 Series	200 Series	300 Series	200 Series	300 Series	Ring seal part number	O-Ring designation for LOR[2]	Contact seal P/N[3]	Speed limit rpm[4]	Contact seal type	"V"-Ring seal type	Speed limit rpm[4]	
5-7/16"		632*					LER-211	–	– [6]	–	TER-211	TER-211 V	560	EPR-17
5-3/4"					230*	330*	LOR-134	AS-568-162	B-10724-130	1050	TER-134	TER-134 V	460	EPR-17
5-7/8"			226*	326*			LOR-136	AS-568-163	B-10724-130	1050	TER-136	TER-136 V	520	–
5-15/16"		634*					LER-215	–	– [6]	–	TER-215	TER-215 V	515	EPR-19
6-1/16"					232*		LOR-142	38309-142	B-10724-140	950	TER-142	TER-142 V	435	EPR-18
6-1/16"						332*	LER-217	–	– [6]	–	TER-217	TER-217 V	435	EPR-19
6-1/4"				228*			LOR 144	AS-568-164	B-10724-144	925	TER-144	TER-144 V	–	–
6-5/16"	536						LOR-146	38309-146	B-10724-148	875	TER-146	TER-146 V	475	EPR-19
6-3/8"	536						LOR-147	AS-568-260	B-10724-148	875	TER-147	TER-147 V	475	EPR-19
6-7/16"	536*						LOR-148	AS-568-260	B-10724-148	875	TER-148	TER-148 V	475	EPR-19
6-1/2"	536						LOR-149	AS-568-260	B-10724-148	875	TER-149	TER-149 V	475	EPR-19
6-7/16"		636*				334*	LER-220	–	– [6]	–	TER-220	TER-220 V	475	EPR-26
6-5/8"			230*	330*			LOR-151	AS-568-166	B-10724-151	850	TER-151	TER-151 V	460	–
6-7/8"					236*		LOR-154	AS-568-262	B-10724-155	825	TER-154	TER-154 V	390	EPR-20
6-7/8"						336*	LER-223	–	B-9784-130	750	TER-223	TER-223 V	390	EPR-21
6-15/16"	538*	638*					LER-224	–	– [6]	–	TER-224	TER-224 V	440	EPR-21
7"			232*				LOR-156	AS-568-262	B-10724-155	825	TER-156	TER-156 V	435	–
7"				332*			LER-225	–	– [6]	–	TER-225	TER-225 V	435	–
7-3/16"	540*	640*					LER-228	–	B-9784-140	800	TER-228	TER-228 V	425	EPR-22
7-1/4"					238*	338*	LER-229	–	B-9784-141	700	TER-229	TER-229 V	365	EPR-22
7-7/16"				334*			LER-230	–	– [6]	–	TER-230	TER-230 V	410	–
7-5/8"					240*		LER-233	–	B-9784-146	650	TER-233	TER-233 V	350	EPR-23
7-13/16"			236*				LOR-165	AS-568-266	B-17024-167	725	TER-165	TER-165 V	390	–
7-13/16"				336*			LER-234	–	B-9784-148	750	TER-234	TER-234 V	390	–
7-15/16"	544*						LER-236	–	– [6]	–	TER-236	TER-236 V	385	EPR-24
8-5/16"					244*		LER-239	–	– [6]	–	TER-239	TER-239 V	315	EPR-25
8-3/8"			238*	338*			LER-240	–	– [6]	–	TER-240	TER-240 V	365	–
8-3/4"			240*				LER-244	–	B-9784-159	650	TER-244	TER-244 V	350	–
9-9/16"			244*				LER-248	–	– [6]	–	TER-248	TER-248 V	315	–

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables
2 = O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors
3 = B-10724-###'s are the SKF PosiTrac Plus seal and require the LOR
4 = For stepped shaft housing designs, the largest shaft diameter is the limiting speed limit
5 = Most taconite seals are made to order; contact SKF for availability, all "V"-ring versions are made to order
6 = Consult SKF Applications Engineering for options

Seals & speed limits

Seal chart for SKF SDAF extended range adapter mount split pillow block housings[5]

Shaft diameter	S-1 SDAF 23000	S-1 SDAF 23100	S-1 SDAF 23200	Triple ring seal[1,4] Ring seal part number	Taconite seals[2,3] Contact seal	"V"-Ring seal	Speed limit rpm	End plugs
8-15/16"			3248 KA*	ERF-914	TER-914	TER-914 V	280	X-5217-25
9"			3248 KA	ERF-828	TER-828	TER-828 V	280	X-5217-25
9-7/16"		3152 KA*	3252 KA*	ERF-891	TER-891	TER-891 V	275	X-5217-53
9-1/2"		3152 KA	3252 KA	ERF-842	TER-842	TER-842 V	275	X-5217-53
9-15/16"		3156 KA		ERF-845	TER-845	TER-845 V	270	X-5217-35
10"		3156 KA		ERF-820	TER-820	TER-820 V	270	X-5217-54
10-7/16"		3156 KA*	3256 KA*	ERF-973	TER-973	TER-973 V	260	X-5217-52
10-1/2"		3156 KA	3256 KA	ERF-840	TER-840	TER-840 V	260	X-5217-52
10-15/16"	3060 KA*	3160 KA*		ERF-858	TER-858	TER-858 V	280	X-5217-9
10-15/16"			3260 KA*	ERF-1002	TER-1002	TER-1002 V	270	X-5217-55
11"	3060 KA	3160 KA		ERF-825	TER-825	TER-825 V	275	X-5217-9
11"			3260 KA	ERF-1003	TER-1003	TER-1003 V	270	X-5217-55
11-7/16"	3064 KA*			ERF-861	TER-861	TER-861 V	270	X-5217-16
11-1/2"	3064 KA			ERF-832	TER-832	TER-832 V	265	X-5217-16
11-15/16"	3064 KA*			ERF-859	TER-859	TER-859 V	260	X-5217-3
11-15/16"		3164 KA*	3264 KA*	ERF-900	TER-900	TER-900 V	260	X-5217-43
12"	3064 KA			ERF-818	TER-818	TER-818 V	255	X-5217-3
12-7/16"	3068 KA*			ERF-865	TER-865	TER-865 V	250	X-5217-29
12-7/16"		3168 KA*	3268 KA*	ERF-975	TER-975	TER-975 V	250	---
12-1/2"	3068 KA			ERF-866	TER-866	TER-866 V	245	X-5217-29
12-15/16"	3072 KA*			ERF-869	TER-869	TER-869 V	240	X-5217-28
13"	3072 KA			ERF-846	TER-846	TER-846 V	235	X-5217-28
13-7/16"	3072 KA*	3172 KA*		ERF-872	TER-872	TER-872 V	230	X-5217-27
13-7/16"			3272 KA*	ERF-979	TER-979	TER-979 V	230	---
13-1/2"	3072 KA	3172 KA		ERF-823	TER-823	TER-823 V	225	X-5217-27
13-15/16"	3076 KA*	3176 KA*		ERF-875	TER-875	TER-875 V	215	X-5217-12
13-15/16"			3276 KA*	ERF-977	TER-977	TER-977 V	215	---
14	3076 KA	3176 KA		ERF-876	TER-876	TER-876 V	215	X-5217-12
14-15/16"	3080 KA*			ERF-882	TER-882	TER-882 V	200	---
14-15/16"		3180 KA*	3280KA*	ERF-976	TER-976	TER-976 V	200	---
15"	3080 KA*			ERF-847	TER-847	TER-847 V	200	X-5217-21
15-3/4"	3084 KA*			ERF-969	TER-969	TER-969 V	185	X-5217-23
15-3/4"		3184 KA*	3284 KA*	ERF-907	TER-907	TER-907 V	185	X-5217-5
16-1/2"	3088 KA*	3188 KA*	3288 KA*	ERF-958	TER-958	TER-958 V	180	---
17"	3092 KA*	3192 KA*		ERF-838	TER-838	TER-838 V	175	X-5217-48
18"	3096 KA*	3196 KA*		ERF-888	TER-888	TER-888 V	170	---
18-1/2"	230/500 KA*			ERF-978	TER-978	TER-978 V	170	---
19-1/2"	230/530 KA*			ERF-926	TER-926	TER-926 V	165	---

* = Standard shaft diameter, all others are optional shaft diameters
1 = Speed rating same as bearing speed rating; see bearing tables; not all optional shaft diameter ring seals are stocked items
2 = Taconite seals are made to order; contact SKF for availability
3 = The SKF preferred taconite seal design is a split bolt-on-taconite auxiliary cover
4 = Optional shaft diameters may require special machining so alternate ring seals or end plugs require review prior to ordering
5 = These housings are available in cast-Iron (SDAF), cast-steel (SDAFS) and ductile-iron (SDAFD)

Lubrication

Introduction

The information presented in this section is intended to provide the user with basic and practical information on the lubrication of split pillow blocks. It does not include a theoretical background. As the world leader in rolling bearing technology, SKF has extensive information available on the subject of bearing lubrication theory. Some of this information can be found in other SKF publications including the General Catalog (6000 EN) and the Bearing Installation and Maintenance Guide (140-710). If you have questions regarding bearing lubrication not addressed here or in these other SKF publications, please contact SKF Applications Engineering.

General

The primary function of lubrication is to prevent damaging metal to metal contact at the various sliding and rolling contact surfaces of the bearing. Metal to metal contact causes excessive rates of wear and can lead to premature bearing failure. The secondary function of lubrication is to protect the highly finished bearing surfaces from rust and corrosion. Lubrication can also be used to transfer heat from a bearing (circulating oil) and provide additional sealing (grease).

SKF split pillow block housings are designed to permit either grease, static oil bath, or circulating oil lubrication of the bearings inside. Most caps are drilled and tapped with two holes located at 30° off vertical centerline. The hole over the center of the housing is for the lubrication of spherical roller bearings which have the W33 feature (a groove and three holes around the outer ring). The second of the two holes is used for self-aligning ball bearings, which do not have the W33 feature. The housing bases are equipped with a drain hole on each side to aid in removing old lubricants or serve as an outlet for circulating oil. The reservoirs inside the housings are designed so that they maintain adequate quantities of either grease or oil for reliable long-term operation.

At speeds within the bearing grease speed rating and operating temperatures, which do not exceed approximately 180° F, grease is the simplest and most reliable form of lubrication. Grease has the additional advantage of affording excellent protection against rust and the intrusion of dirt. Application systems for grease are relatively simple and inexpensive when compared to those for oil.

At higher speeds and temperatures, grease relubrication intervals become unacceptably short and oil lubrication is highly recommended. Static oil baths and circulating oil systems can be used with SKF split pillow blocks with little or no modification to the blocks. Inlet and drain holes appropriate for most oil lubricated applications are standard on SKF split pillow blocks, and oil sight glasses and other special fittings can be provided. The level of the oil should be at the center of the lowermost ball or roller when the bearing is stationary. Refer to the "K" dimension in the housing dimension tables.

Circulating oil should be drained from both side drains of the pillow block. The drain piping must be adequately sized and arranged to allow the free drainage of oil. Too high of an oil level, or too large of a quantity of grease can result in high operating temperatures due to churning of the lubricant.

Lubricant

Grease

Most greases consist of a lubricating oil (approx. 90%) suspended in a soap base (approx. 10%).

The latter merely acts to keep the oil in suspension. When moving parts of a bearing come in contact with the grease, a small quantity of oil will adhere to the bearing surfaces. Oil is therefore removed from the grease near the rotating parts. The oil that is picked up by the bearing is gradually broken down by oxidation or lost by evaporation, centrifugal force, etc. Bleeding of the grease should therefore take place to continue to supply a small quantity of oil, which is usually sufficient for satisfactory operation. But, needless to say, the bearing cannot function properly unless the supply of oil keeps up with the demand. This process cannot go on indefinitely. In time, the grease will oxidize or the oil in the grease near the rotating parts may be depleted.

When can grease be used?

For normally loaded applications, which operate without the effects of outside heat sources and where the bearings do not exceed the grease speed rating, grease lubrication is most often used. When loads are heavy, or bearings are subject to external heat sources or other extremes in ambient temperature, or speeds exceed the bearing grease speed rating, a bearing temperature analysis should be conducted to verify that expected operating temperatures are within acceptable limits, typically less than 180° F. SKF Applications Engineering can assist with this analysis.

What kind of grease should be used?

For most split pillow block applications, SKF recommends the use of a high quality, NLGI grade 1 or 2 consistency, lithium soap based grease with a mineral base oil. Consistency refers to the stiffness of a grease and is classified according to the National Lubricating Grease Institute (NLGI) of the United States. Higher NLGI numbers correspond to stiffer greases. In slow speed or low temperature applications, an NLGI 2 may channel excessively leaving the bearing without oil. In these applications, it may be necessary to use a softer grease, i.e. an NLGI 1 or 0. Please consult SKF Applications Engineering.

With respect to bearing lubrication, viscosity is another characteristic of the grease that should be evaluated. SKF Applications Engineering can help you determine the necessary viscosity at the bearing operating temperature to prevent metal to metal contact at the rolling contact surfaces. However, to prevent metal to metal contact at the sliding contact surfaces, the viscosity at the operating temperature should be at least 21 cSt (100 SUS) for spherical and toroidal (carb) roller bearings and at least 13 cSt (70 SUS) for ball bearings. Note that the operating temperature of the bearing is typically 10° to 20° F warmer than the surface of the housing.

Although greases with soap bases other than lithium are often successfully used in the lubrication of bearings, it has been the experience of SKF that lithium soaps offer the best combination of high temperature stability, resistance to water, and durability in split pillow block applications. Greases with mineral base oils have long been the recommended type although synthetics, such as SHCs (synthetic hydrocarbons), are starting to gain favor due to their high temperature performance, i.e. they have higher oxidation resistance. As a general rule, greases with different soap bases, consistencies, or base oil types should not be mixed.

How much grease should be used?

For the majority of split pillow applications, at installation, the base of the housing should be packed 1/3 to 1/2 full and the bearing should be filled with grease by working it in between the rolling elements. As mentioned earlier, too much grease can result in high operating temperatures due to lubricant churning. For low speed applications, which operate in a heavily contaminated environment, the housing and bearing can be filled 100% with grease to provide additional sealing protection. The low speed should preclude the danger of high operating temperatures. For relubrication quantities and intervals, refer to the appropriate following sections.

Oil

SKF split pillow blocks are suitable for static oil bath and circulating oil methods of lubrication. Oil is generally used when high speeds or operating temperatures preclude the use of grease, when heat must be removed from the bearing, or when surrounding components are oil-lubricated.

What kind of oil should be used?

SKF recommends the use of a good quality, straight mineral oil without additives. The oil should be resistant to oxidation and gumming and obviously should not cause corrosion to any bearing or housing components. Oils containing additives for the improvement of certain lubricant properties such as extreme pressure behavior, aging resistance, anti-corrosion, etc., are generally only used in special cases. Synthetic oils are generally only considered for bearing lubrication in extreme cases, e.g. at very low or very high operating temperatures. It should be remembered that the lubricant film formation when using a synthetic oil may differ from that of a mineral oil having the same viscosity. For information concerning EP additives (in grease and oil), refer to the General Catalog (6000EN).

Viscosity is another characteristic that should be evaluated. SKF Applications Engineering can again be used to determine the minimum viscosity at the bearing operating temperature to prevent metal to metal contact at the rolling contact surfaces. However, to prevent metal to metal contact at the sliding contact surfaces, the viscosity at the operating temperature should be at least 21 cSt (100 SUS) for spherical and toroidal (CARB) roller bearings and at least 13 cSt (70 SUS) for ball bearings. Note that the operating temperature of the bearing is typically 10° to 20° F warmer than the surface of the housing.

How often should the oil be changed?

The frequency at which the oil must be changed is mainly dependent on the operating conditions and on the quantity of oil used.

Where oil bath lubrication is employed it is normally sufficient to change the oil once a year, provided the bearing temperature does not exceed 120° F (50° C) and there is no contamination. Higher temperatures or more arduous running conditions necessitate more frequent changes, e.g. at a temperature of 220° F (110° C) the oil should be changed every 3 months. For circulating oil systems the period between complete oil changes is dependent on how often the oil is circulated over a given period of time and whether it is cooled, etc. The most suitable period can generally only be determined by trial runs and frequent examination of the oil. The same practice also applies to oil jet lubrication.

Oil bath

A simple oil bath is suitable for low and moderate speed applications. The level of the oil should be at about the center of the lowermost ball or roller when the bearing is stationary. The dimension for this is given in the dimension tables as "K". For higher speeds, the level should be slightly lower to reduce the effects of lubricant churning or about $^1/_8$" above the corner of the outer ring sphere of the bearing. An oil sight glass must be used to monitor the oil level during operation. It mounts into one of the drain holes in the housing base. Additionally, for higher speeds, SKF can supply special seals which reduce oil leakage. SKF Applications Engineering can assist with determining the best sealing requirements.

The static oil level should be marked on the sight glass at installation and a running level should be marked immediately after start up. Depending on the type of bearing and the speed and direction of rotation, the running level will either rise or fall from the static level.

Circulating oil systems

Pressurized circulating oil, for auxiliary heat removal allows higher operation, and prolongs the life of the oil where operating conditions are usually severe such as in high temperature applications. Most commercial circulating oil systems have components which filter and cool the oil, creating the best possible operating condition for the bearing.

Oil is introduced through one of the inlet holes in the housing cap and drained from one or both sides of the base. For spherical roller bearings, oil should be put in through the center hole in the cap and drained from both sides of the base. For ball bearings and toroidal roller (CARB) bearings, oil should be put in through the offset hole in the cap and drained from the opposite side of the base so that oil is forced to go through the bearing before being outlet. Drains should lead downward immediately outside of the housing to prevent accumulation of oil in the housing. Horizontal drains must be avoided.

Additional considerations may be necessary when using circulating oil. These can include special seals, cross drillings in the housing, wet sump requirements, flow rates, and enlarging drain hole diameters. Please consult SKF Applications Engineering concerning these issues.

Lubrication

Comparative advantages of oil and grease

Advantages of grease

1. Maintenance work is ordinarily reduced since there are no oil levels to maintain and the addition of a new lubricant is required less frequently.
2. Grease in proper quantity is more easily confined to the housing. Design of enclosures can therefore be simplified.
3. Freedom from leakage is readily accomplished in food, textile, chemical industries and where contamination of products must be avoided.
4. Grease improves the efficiency of labyrinth enclosures and offers better protection for the bearing.
5. The friction torque and temperature rise are usually more favorable.

Advantages of oil

1. Oil is easier to drain and refill. This may be more desirable for applications requiring short lubricating intervals.
2. The correct amount of lubricant is more easily controlled.
3. Oil lends itself more readily to the lubrication of all parts of a machine.
4. Oil lends itself to applications with higher temperatures.

Protection against moisture

No rolling bearing lubricant has been developed, which will completely protect a bearing against moisture. However, rolling bearings are frequently used with success where moisture is present. The design of enclosures and lubrication systems requires careful consideration. Selection of the lubricant is important to minimize effects of some moisture entry.

Compounded oils are more water repellent than straight mineral oils and are, therefore, better able to keep moisture from the bearing surfaces. If, however, the oil is permitted to oxidize, it will be more destructive to the bearing surfaces when moisture is present.

A sodium-base grease will usually form a non-corrosive emulsion when mixed with a limited quantity of water. Agitation is necessary to form the emulsion. If water enters the bearing while there is no agitation from rotation, the bearing can become corroded. Because of the limited tolerance to water and the potential damage while static, sodium-base greases are losing favor to the water-repellent quite-stable lithium-base greases. Of course, the water-repellent grease must completely cover the bearing to protect it and so, attention must be paid to the static condition. Water-repellent grease is useful also in improving efficiency of labyrinth seals.

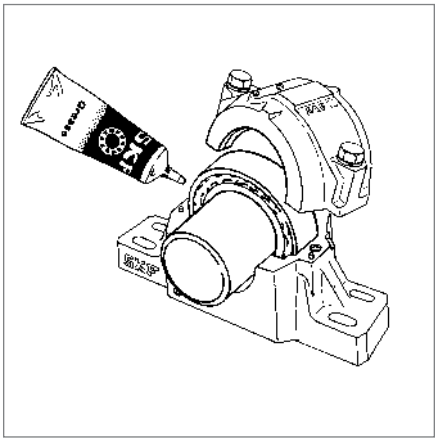
Initial grease charge for split pillow block housings

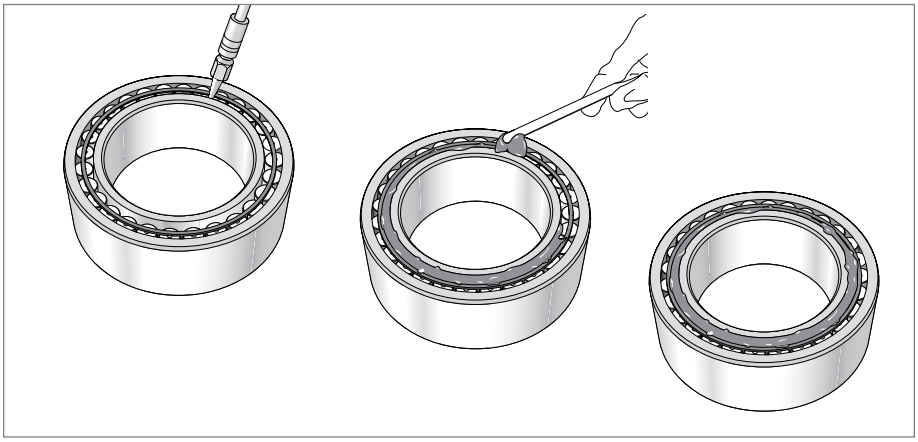
The recommended initial grease charge (weight) for split pillow block and bearing assemblies are listed in the accompanying tables. Values apply for spherical roller bearings, toroidal roller (CARB) bearings and self-aligning ball bearing units. The initial charge is intended to fill approximately 1/2 of the free space in the housing cavities and should be used for applications operating at slow to moderate speeds under 2/3 of the grease speed rating shown in the bearing tables. For higher operating speeds or applications running in clean environments, the recommended initial grease charge may be reduced by approximately 1/3 in order to minimize churning. For operation over the bearing grease speed ratings or less than 10 rpm, consult SKF Applications Engineering.

At initial assembly of the unit, spherical roller bearings and self-aligning ball bearings should be internally packed 100% around the cage and rolling elements. Toroidal roller (CARB) bearings should be filled approximately 50% full of grease at installation with that grease being placed under the cage totally filling the space between the cage and inner ring. The remainder of the grease should be applied to the side cavities in the housing base and the labyrinth grooves of the ring seals.

Initial grease charge for SAF pillow block assemblies

Initial charge SAF	SAF	SAF	SAF	SAF	oz	lbs
		507			2.5	
		509			3.0	
		510			4.0	
	308				4.5	
	309		609		5.0	
		511			5.0	
	310		610		6.5	
		513			7.5	
	311		611		8.0	
		515			9.0	
	312				10.0	
216	313	516	613		13.0	
217		517			13.0	
	314				14.0	
218	315	518	615		14.0	
	316		616		16.0	
	317		617		20.0	
220		520		024	21.0	
	318		618		22.0	
222		522		026	28.0	
224	320	524	620	028	40.0	
226	322	526	622	030		3 1/4
				032		3 1/4
228		528		034		3 1/4
230	324	530	624			3 3/4
232	326	532	626	036		4 1/4
				038		4 1/4
234	328	534	628	040		5 1/4
236	330	536	630			6
238	332	538	632	044		7 1/4
240	334	540	634	048		8 1/2
244	338	544	638	052		11 1/2
	340		640	056		15 1/2





Lubrication

Initial grease charge for SDAF pillow block assemblies (estimate)

SDAF	SDAF	SDAF	SDAF	Initial charge oz	lbs
219	316		616	16	
220	317	520	617	20	
	318		618	21	
222	319	522		27	
224	320	524	620	32	
226	322	526	622	44	
228		528		44	
230	324	530	624		3
232	326	532	626		$3\frac{3}{4}$
234	328	534	628		$4\frac{3}{4}$
236	330	536	630		$5\frac{1}{2}$
238	332	538	632		$6\frac{1}{2}$
240	334	540	634		8
	336		636		9
244	338	544	638		$10\frac{1}{2}$
	340		640		12

Initial grease charge for SAW pillow block assemblies (estimate)

SAW	SAW	Initial charge oz	lbs
220	520	26	
222	522	34	
224	524	40	
226	526		3
228	528		$3\frac{3}{4}$
230	530		$4\frac{1}{2}$
323	532		$5\frac{1}{2}$
234	534		$6\frac{1}{2}$
236	536		7
238	538		$8\frac{1}{2}$
240	540		10
244	544		$13\frac{1}{4}$

Initial grease charge for SDAF extended range pillow block assemblies (estimate)

SDAF extended range			lbs
	3152	3248	10
3060	3156	3252	15
3064	3160	3256	15
3072	3164		18
3076		3260	20
	3168	3264	22
3080	3172	3264	25
3084	3176		21
3088	3180	3268	27
		3272	32
3092		3276	32
3096	3184		40
	3188		38
30/500		3280	44
30/530	3192	3284	46
	3196	3288	47
		3292	60
		3296	60

Due to the special engineering nature of these housings, please consult with SKF Applications Engineering for custom lubrication recommendations.

Shaft fits for split pillow block housings

The following chart shows the recommended shaft diameter tolerance for split pillow block housings. S-1 refers to the shaft diameter for an adapter mount bearing and S-2 & S-3 refer to the shaft diameter under the seal for cylindrical mounted bearings.

The values S-1, S-2, and S-3 can be found in the product tables starting on page 358. The bearing seat diameter should be selected from the bearing fit tables in the Bearing Installation and Maintenance Guide (SKF publication # 140-710).

Shaft tolerance for split pillow block mountings

Nominal dia. In		For adapter mounting Dia. tolerance limits In	For cylindrical mounting Dia. tolerance limits In
Over	Including	S-1	S-2 and S-3
1/2	1	0.000 –0.002	–
1	2	0.000 –0.003	0.000 –0.003
2	4	0.000 –0.004	0.000 –0.003
4	6	0.000 –0.005	0.000 –0.003
6	10	0.000 –0.006	0.000 –0.004
10	15	0.000 –0.006	0.000 –0.005
15		0.000 –0.006	0.000 –0.006

Housing loads for split pillow blocks

The selection of a rolling bearing pillow block depends not only on determining adequate service life of the bearing for the operating conditions of the application, but also on the adequacy of the housing to safely accommodate the magnitude and characteristics of all applied loading.

Split pillow blocks are designed for predominantly vertical loads directed through the base. If the load direction is otherwise, care must be taken to see that the housing selected has sufficient strength. It must have an adequate factor of safety against fracture and be properly assembled to carry the loading involved.

Proper assembly techniques dictate that the housing cap and base bolts be torqued to achieve preload during installation, to avoid elastic separation of the mating parts under load and to resist gradual loosening over ime. To obtain full fatigue resistance of the bolts, care in following recommended torque requirements is of particular importance; especially when the assembly is subjected to the action of cyclic loading and dynamic imbalance.

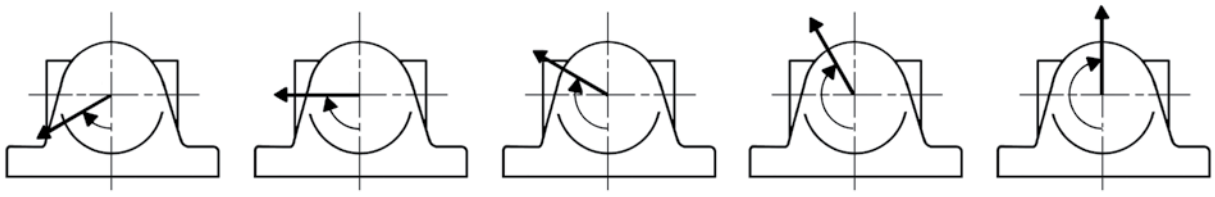
The tabulations on pages 352-356 show the approximate safe loading for different directions of load. These guideline limits have been established using accepted engineering practices with consideration given to safety, ultimate tensile strength of the materials used and working stresses to reflect a safety factor of 5 against base fracture, and a minimum factor of 2 against cap bolt yield.

When the loading acts at an angle between 60° and 120°, or if the axial direction exceeds 25% of the P180° value shown in the tables, it is recommended that the housing be doweled to its mounting surface. Starting dimples are provided on the feet of most housings, which can be drilled for dowel pins. Alternatively, the mounting surface may be provided with positive stops or “shear blocks” to locate the housing in the direction of load.

The maximum permissible axial loading that can be safely carried by the pillow block assembly depends on various considerations in addition to the operational performance abilities of the bearing. For a purely axial force under static or dynamic conditions, the permissible load on the pillow block casting should not exceed 65% of P180°. Additionally for adapter mounted assemblies the axial load rating to safely prevent slippage on the shaft can be found in the tables on page 365.

Housing loads – SAF style cast-iron

(values in pounds force)



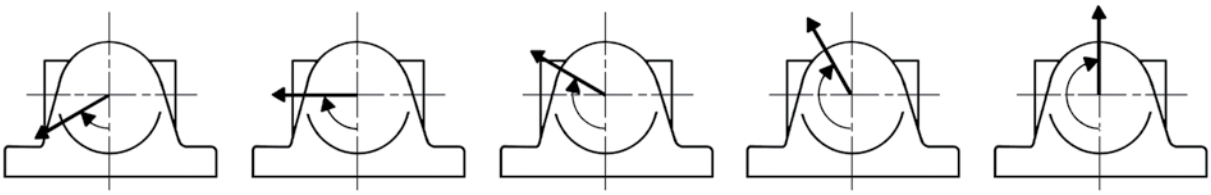
P 60° P 90° P 120° P 150° P 180°

Pillow block housing designation						Recommended safe loads					Cap bolt information		
SAF	SAF	SAF	SAF	SAF	Style	P 60°	P 90°	P 120°	P 150°	P 180°	Cap bolt (no.) size	Torque	SAE grade
						lbf					in	ft-lbs	
			509		M5	4700	2800	1700	1500	1800	(2) 7/16-14	45	5
		308			A	7300	4400	2800	2500	3100	(2) 1/2-13	110	8
			510		M5	6500	3900	2500	2200	2800	(2) 7/16-14	45	5
		309		609	A	7900	4700	3000	2700	3300	(2) 1/2-13	110	8
			511		M5	10100	6100	3900	3500	4300	(2) 1/2-13	60	5
		310		610	A	8800	5300	3200	2900	3500	(2) 1/2-13	110	8
			513		M5	11300	6800	4000	3600	4300	(2) 1/2-13	60	5
		311		611	A	9700	5800	3600	3300	4000	(2) 1/2-13	110	8
		*311		*611	A	8000	4800	3000	2700	3200	(2) 1/2-13	110	8
		312			A	11100	6700	4100	3700	4500	(2) 1/2-13	110	8
		*312			A	9500	5700	3500	3100	3800	(2) 1/2-13	110	8
			515		M5	17000	10200	6300	5700	6800	(2) 1/2-13	60	5
			*515		M5	12200	7300	4500	4100	5000	(2) 1/2-13	60	5
		313		613	A	18700	11200	6800	6000	7100	(2) 5/8-11	220	8
		*313		*613	A	13600	8100	4900	4400	5200	(2) 5/8-11	220	8
216			516		M5	18700	11200	6800	6000	7100	(2) 5/8-11	110	5
*216			*516		M5	13600	8100	4900	4400	5200	(2) 5/8-11	110	5
		314			A	20800	12500	7800	6900	8500	(2) 5/8-11	220	8
		*314			A	20800	12500	7800	6900	8500	(2) 5/8-11	220	8
217			517		M5	19000	11400	7100	6400	7800	(2) 5/8-11	110	5
*217			*517		M5	13800	8300	5200	4700	5700	(2) 5/8-11	110	5
218			518		M5	27200	16300	10200	9100	11200	(2) 5/8-11	110	5
*218			*518		M5	22800	13700	8600	7800	9500	(2) 5/8-11	110	5
		315		615	A	27200	16300	10200	9100	11200	(2) 5/8-11	220	8
		*315		*615	A	22800	13700	8600	7800	9500	(2) 5/8-11	220	8
		316		616	A	19300	11600	7200	6500	7800	(2) 3/4-10	380	8
		*316		*616	A	20800	12500	7600	6900	8300	(2) 3/4-10	380	8
		317		617	A	21200	12700	8000	7200	8600	(2) 3/4-10	380	8
		*317		*617	A	23300	14000	8800	8000	9600	(2) 3/4-10	380	8
220	024		520		M5	30500	18300	11400	10400	12500	(2) 3/4-10	150	5
*220	*024		*520		M5	26700	16000	10000	9000	11000	(2) 3/4-10	150	5
		318		618	A	28800	17300	11000	10000	12200	(2) 3/4-10	380	8
222	026		522		M5	33400	20000	12500	11400	13700	(2) 3/4-10	150	5
224			524		M5	41700	25000	16300	15000	18300	(2) 1-8	295	5
	028	320		620	A	41700	25000	16300	15000	18300	(2) 1-8	900	8
226			526		M5	42500	25500	16600	15300	19000	(2) 1-8	295	5
	030/032	322		622	A	42500	25500	16600	15300	19000	(2) 1-8	900	8
228	034		528		M5	55900	33500	21200	19300	23200	(2) 1-8	295	5
230		324	530	624	A	51700	31000	19600	18000	21600	(4) 3/4-1	380	8
232	036/038	326	532	626	A	50900	30500	19300	17600	21200	(4) 3/4-10	380	8
234	040	328	534	628	A	52600	31500	19300	17300	20800	(4) 3/4-10	380	8
236		330	536	630	A	52600	31500	19000	17000	20000	(4) 3/4-10	380	8
238	044	332	538	632	A	65100	39000	24000	21200	25500	(4) 7/8-9	600	8
240	048	334	540	634	A	81800	49000	30500	27000	32500	(4) 7/8-9	600	8
244	052	338	544	638	A	95100	57000	36000	32500	39000	(4) 1-8	900	8
	056	340		640	A	101000	61000	38000	34000	41500	(4) 1 1/2-6	870	2

*When the bearing housing can be supplied with either a two- or four-bolt base, the asterisk indicates allowable loads for the four-bolt base option. Grade 5 cap bolt torques are based on manufacturing processes. Increased tightening torques may be required for critical applications. Consult SKF Applications Engineering for further details.

Housing loads – SAFS style cast-steel

(values in pounds force)



Pillow block housing designation						Recommended safe loads					Cap bolt information		
SAFS	SAFS	SAFS	SAFS	SAFS	Style	P 60°	P 90°	P 120°	P 150°	P 180°	Cap bolt (no.) size	Torque	SAE grade
						lbf					in	ft-lbs	
			515		L	23300	13400	8300	7500	9000	(2) 1/2-13	110	8
			*515		L	17000	10200	6400	5700	6900	(2) 1/2-13	110	8
216			516		L	31000	18600	11200	10000	11800	(2) 5/8-11	220	8
*216			*516		L	31000	18600	11200	10000	11800	(2) 5/8-11	220	8
217			517		L	17700	10600	6500	6000	7200	(2) 5/8-11	220	8
*217			*517		L	18700	11200	7100	6400	7600	(2) 5/8-11	220	8
218			518		N	31700	19000	12000	10800	13200	(4) 1/2-13	110	8
*218			*518		N	35400	21200	13400	12200	14600	(4) 1/2-13	110	8
220	024		520		N	31700	19000	11800	10800	12900	(4) 5/8-11	220	8
*220	*024		*520		N	39400	23600	14600	13200	16000	(4) 5/8-11	220	8
222	026		522		N	40000	24000	15000	13400	16300	(4) 5/8-11	220	8
224			524		M7	55900	33500	21200	19600	24000	(4) 5/8-11	220	8
	028	320		620	N	55900	33500	21200	19600	24000	(4) 5/8-11	220	8
226	030	322	526	622	N	69300	41500	28000	26500	34000	(4) 3/4-10	380	8
	032				N	69300	41500	28000	26500	34000	(4) 3/4-10	380	8
228			528		N	67600	40500	26000	23600	28500	(4) 7/8-9	600	8
	034				N	67600	40500	26000	23600	28500	(4) 7/8-9	600	8
230		324	530	624	N	88500	53000	33500	30500	36500	(4) 7/8-9	600	8
232	036	326	532	626	N	77600	46500	30000	27000	32500	(4) 7/8-9	600	8
	038				N	77600	46500	30000	27000	32500	(4) 7/8-9	600	8
234	040	328	534	628	N	77600	46500	28500	25500	30000	(4) 1-8	900	8
238		330	536	630	L	120200	72000	44000	39000	45500	(2) 1 3/8-6	2380	8
238	044	332	538	632	N	93500	56000	34000	30500	36000	(4) 1 1/8-7	1280	8
240	048	334	540	634	N	125200	75000	46500	41500	50000	(4) 1 1/4-7	1820	8
244	052	338	544	638	N	155300	93000	58500	53000	64000	(4) 1 1/2-6	3160	8
	056	340		640	N	150300	90000	56000	50000	60000	(4) 1 1/2-6	3160	8

*When the bearing housing can be supplied with either a two- or four-bolt base, the asterisk indicates allowable loads for the four-bolt base option

SAF A-style

Taking advantage of technological advances in design and manufacturing the SAF A-style housing offers a high mechanically efficient design having significantly improved upward load capacity for greater safety and reliability with a minimum of material weight. Of modern functional appearance, and a choice of 2- or 4-bolt mounting variations, the SAF A housing interchanges with previous designs and complies with all industry mounting dimensions.

In addition to its superior upward strength, the following features have been added:

- Pry slots for easier cap removal
- All cap bolts supplied of heat treated, high tensile material for improved strength and maximum safety
- Large sump design for use with either grease or oil
- Flat square foot for proper base bolt seating and proper assembly alignment during installation
- Cast-in dimples in the base for dowel pin drilling during field installations

SAF L-style

The SAF L-style is the classic 2-bolt cap design, which established the SAF interchange dimensions within the industry.

SAF N-style

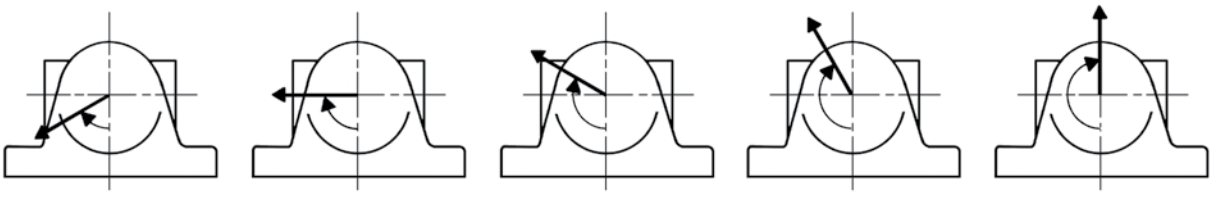
The SAF N-style is a rugged, 4-bolt cap design available only in the largest SAFS sizes where the cast-in lifting grips on each side of the cap provide ease of handling whether manually or with a sling.

SAF M5-style

The SAF M5 style incorporates modern technology to optimize its design, thus offering high mechanical efficiency while reducing the housing weight. The optimized foot design removes the old gussets and still maintains housing strength. The sump has been maximized and is suitable for grease or oil lubrication, while the cast-in oil drain back feature reduces leakages. The newly designed under-coring allows for uniform material cooling when cast, while the foot hole and center cross supports improve housing bore roundedness. Additionally, SKF has patented a grease guiding system for side lubrication.

Housing loads – SAW style cast-iron

(values in pounds force)

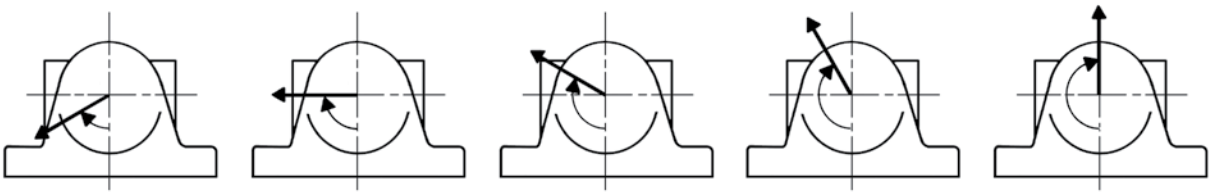


P 60° P 90° P 120° P 150° P 180°

Pillow block housing designation SAW	Style	Recommended safe loads P 60°	P 90°	P 120°	P 150°	P 180°	Cap bolt information Cap bolt (no.) size	Torque	SAE grade
		lbf					in	ft-lbs	
520	A	26720	16000	10000	9000	1100	(2) 3/4-10	380	8
526	A	42585	25500	16600	15300	19000	(2) 1-8	900	8
528	N	43420	26000	16600	15000	18300	(4) 7/8-9	165	2
538	A	65130	39000	24000	21200	25500	(4) 7/8-9	600	8
540	A	81830	49000	30500	27000	32500	(4) 7/8-9	600	8
544	A	95190	57000	36000	32500	39000	(4) 1-8	900	8

Housing loads – SDAF style cast-iron, SDAFS cast-steel

(values in pounds force)



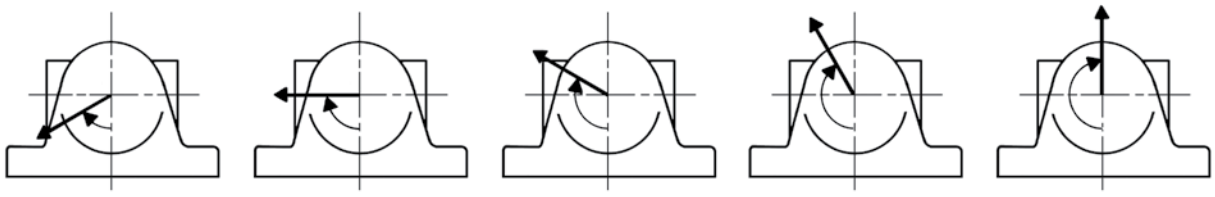
Pillow block housing designation					Recommended safe loads					Cap bolt information		
SDAF	SDAF	SDAF	SDAF	SDAF	P 60°	P 90°	P 120°	P 150°	P 180°	Cap bolt (no.) size	Torque	SAE grade
					lbf					in	ft-lbs	
220	317	520	617	–	40080	24000	15000	13700	16600	(4) 3/4-10	175	2
	318		618	–	45925	27500	17300	16000	19300	(4) 3/4-10	175	2
222		522		–	51770	31000	19600	17600	21200	(4) 7/8-9	165	2
224	320	524	620	–	54000	36500	23600	21600	26500	(4) 7/8-9	165	2
226	322	526	622	–	60120	36000	23600	21600	27000	(4) 7/8-9	165	2
230	324	530	624	–	85170	51000	32000	29000	35500	(4) 1 1/8-7	350	2
232	326	532	626	–	83500	50000	31500	28500	34500	(4) 1 1/8-7	350	2
236	330	536	630	–	90180	54000	32500	29000	34500	(4) 1 1/4-7	500	2
238	332	538	632	–	127755	76500	47500	43000	52000	(4) 1 1/4-7	500	2
240	334	540	634	–	150300	90000	56000	50000	60000	(4) 1 1/4-7	500	2
	336		636	–	141950	85000	53000	48000	57000	(4) 1 3/8-6	660	2
244	338	544	638	–	152805	91500	57000	52000	63000	(4) 1 3/8-6	660	2
	340		640	–	144455	86500	54000	49000	58500	(4) 1 3/8-6	660	2

NOTE: A higher safe load may be achieved by using high-tensile cap bolts of SAE grade 5 or higher; consult SKF Applications Engineering for this variation

Pillow block housing designation					Recommended safe loads					Cap bolt information		
SDAFS	SDAFS	SDAFS	SDAFS	SDAFS	P 60°	P 90°	P 120°	P 150°	P 180°	Cap bolt (no.) size	Torque	SAE grade
					lbf					in	ft-lbs	
222		522		–	81830	49000	30500	27500	33500	(4) 7/8-9	600	8
224	320	524	620	–	95190	57000	36500	33500	41500	(4) 7/8-9	600	8
226	322	526	622	–	88510	53000	34500	32000	40000	(4) 7/8-9	600	8
232	326	532	626	–	130260	78000	49000	44000	54000	(4) 1 1/8-7	1280	8
236	330	536	630	–	141950	85000	51000	45500	54000	(4) 1 1/4-7	1820	8
238	332	538	632	–	203740	122000	75000	68000	81500	(4) 1 1/4-7	1820	8
240	334	540	634	–	238810	143000	88000	80000	95000	(4) 1 1/4-7	1820	8
	336		636	–	228790	137000	85000	76500	91500	(4) 1 3/8-6	2380	8
244	338	544	638	–	250500	150000	95000	85000	102000	(4) 1 3/8-6	2380	8
	340		640	–	228790	137000	85000	76500	93000	(4) 1 3/8-6	2380	8

Housing loads – SDAF style cast-iron

(values in pounds force)



P 60° P 90° P 120° P 150° P 180°

Pillow block designation			Recommended safe loads (class 40 cast-iron)						Cap bolt information		
SDAF	SDAF	SDAF	P 60°	P 90°	P 120°	P 150°	P 180°	P axial	Cap bolt (no.) size	Torque	SAE grade
			lbf						in	ft-lbs	
	3152	3248	294000	176000	110000	98000	118000	76500	(4) $1^1/_2$-6	1950	5
3060	3156	3252	408000	245000	156000	143000	176000	114000	(4) $1^1/_2$-6	1950	5
3064	3160	3256									
3068	3160	3256									
3072	3164	3260	442000	265000	170000	153000	186000	120000	(4) $1^3/_4$-5	2280	5
3076											
	3168	3264	517000	310000	200000	186000	228000	148000	(4) $1^7/_8$-5	2860	5
3080	3172	3268	650000	390000	245000	224000	275000	180000	(4) $1^3/_4$-5	2280	5
3084	3176										
3088	3180	3272	717000	430000	275000	250000	305000	198000	(4) $1^7/_8$-5	2860	5
3092		3276									
3096	3184	3280	1050000	630000	405000	375000	465000	302000	(4) 2-$4^1/_2$	3440	5
30/500	3188										
30/530	3192	3284	900000	540000	345000	320000	400000	260000	(4) $2^1/_4$-$4^1/_2$	5030	5
	3196	3288									

SDAF extended range pillow blocks are designed to predominantly support vertical loads directly through the housing base. In this general direction, the permissible load carrying ability of the pillow block assembly is dependent solely on the bearing. The standard engineering material for all extended range housings is class 40 cast-iron to ASTM A48B, which provides high load capability at an economical cost for most heavy industrial applications. However, if the load direction is not perpendicular to the base, engineering care should be taken to assure that the housing selection, which includes the choice of material, will provide adequate strength to assure factor of safety against fracture or yield. For these custom assemblies, SKF offers alternate cast-steel and ductile-iron materials for improved impact resistance and strength.

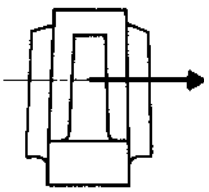
The tabulation above shows the recommended safe loads for extended range housing for nominal directions of loading. These guidelines refer to class 40 cast-iron material and have been established using accepted engineering practices with full consideration given to safety, the ultimate tensile strength of the material, and working stresses to reflect a safety factor of 5 for the pillow block casting, and a minimum factor of 2 on the cap bolts.

To determine the improved loading capabilities with alternate materials, the values in the tabulation may be multiplied by the factor 1.2 for cast-steel, or the factor 1.5 for ductile-iron. All cast-steel and ductile-iron assemblies are additionally equipped with SAE grade 8 cap bolts to fully accommodate these higher load carrying potentials.

When the application loading acts at an angle between 60° and 120°, or if the axial direction exceeds 25% of the P180° value shown in the table, it is recommended that the housing be doweled to its mounting surface. Alternatively, the mounting surface may be provided with positive stops or "shear blocks" to locate the housing in the direction of load. It is recommended that SKF Applications Engineering be contacted for complete review of load carrying abilities and mounting requirements.

Permissible axial load rating for adapter mounted pillow blocks

(values in pounds force)



The full axial load carrying ability of an adapter mounted pillow block assembly is dependent upon the friction fit between the adapter sleeve and the shaft. Provided that the bearing is properly mounted in accordance with the SKF approved mounting method, the permissible axial holding power for adapter mountings are shown in the table below.

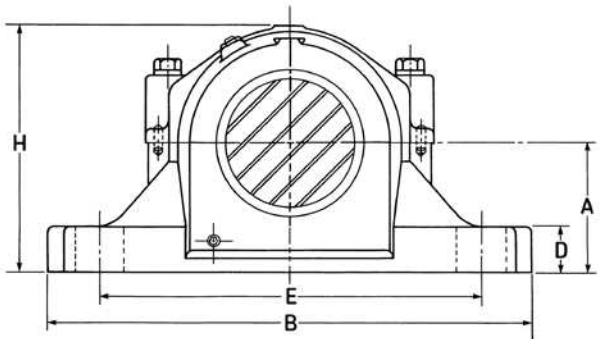
Shaft dia.	Bearing size[2]	Safe axial load[1]								
S-1		SAF 15	SAF 225 SDAF 225	SAW 235	SAF 16	SAF 226 SDAF 226	SAF 230	SDAF extended range 230	231	232
in		lbf								
$1^{7}/_{16}$	09	570	695		765	1100				
$1^{11}/_{16}$	10	670	780		915	1340				
$1^{15}/_{16}$	11	780	930		1080	1560				
$2^{3}/_{16}$	13	1000	1370		1460	2120				
$2^{7}/_{16}$	15	1270	1560		1860	2800				
$2^{11}/_{16}$	16	1400	1760		2120	3150				
$2^{15}/_{16}$	17	1600	2080		2360	3450				
$3^{3}/_{16}$	18		2450		2600	3900				
$3^{7}/_{16}$	20		3100	4070	3150	4900				
$3^{15}/_{16}$	22		3900	5180	3750	6000				
$4^{3}/_{16}$	24		4650	6150		6950	3750			
$4^{7}/_{16}$	26		5600	7010		8150	4550			
$4^{15}/_{16}$	28		6400	8310		9650	5000			
$5^{3}/_{16}$	30		7350	9710		11000	5700			
$5^{7}/_{16}$	32		8650	11200		12200	6400			
$5^{15}/_{16}$	34		9800	12600		13700	7650			
$6^{7}/_{16}$	36		10400	13600		15300	9000			
$6^{15}/_{16}$	38		11800	15400		17000	9650			
$7^{3}/_{16}$	40		13200	17300		18600	11000			
$7^{15}/_{16}$	44		16000	21400			13400			
$8^{15}/_{16}$	48						15000			26000
$9^{7}/_{16}$	52						18300		25000	30500
$10^{7}/_{16}$	56						20000		27500	33000
$10^{15}/_{16}$	60							24000	32000	39000
$11^{15}/_{16}$	64							26000	38000	45000
$12^{7}/_{16}$	68							30500	43500	51000
$13^{7}/_{16}$	72							32500	46500	56000
$13^{15}/_{16}$	76							34500	49500	61500
15	80							40000	54000	69000
$15^{3}/_{4}$	84							42500	63000	77000
$16^{1}/_{2}$	88							46500	67000	83000
17	92							50500	74500	
18	96							53000	80000	
$18^{1}/_{2}$	/500							56000		
$19^{1}/_{2}$	/530							66000		

[1]Applies for both cast-iron and cast-steel housings
[2]Last two figures in bearing designation

Ball bearing / cylindrical mount

SAF 1300
Two-piece cast-iron housing
Self-aligning / 1300 series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF 1320
Option	Specify
Four-bolt base	FSAF 1320
One end closed	SAF 1320Y
PosiTrac Plus seals	SAF 1320TLC
Taconite seal	SAF 1320T
Cast-steel	SAFS 1320

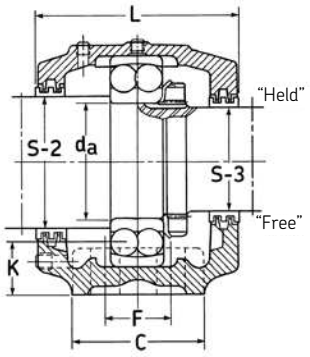


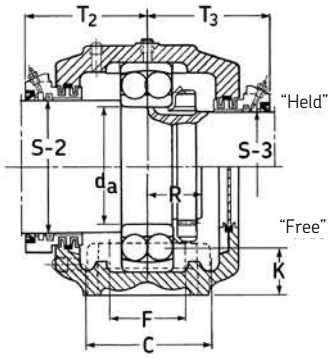
Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 97; for other seal speed limits see pages 347-350.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Comlete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal S-2 shaft (1 req'd)	Triple ring seal S-3 shaft (1 req'd)	End plug	Taconite seal S-2	Taconite seal S-3	
mm	in													lbs
40	1 15/16	1 7/16	**SAF 1308**	1308E	N 08	W 08	SAF 308	SR 1608	LER 24	LER 17	EPR 3	TER 24	TER 17	14
45	2 1/8	11 1/16	**SAF 1309**	1309E	N 09	W 09	SAF 309	SR 1609	LER 28	LER 20	EPR 4	TER 28	TER 20	18
50	2 3/8	1 7/8	**SAF 1310**	1310E	N 10	W 10	SAF 310	SR 1610	LER 35	LER 23	EPR 5	TER 35	TER 23	21
55	2 9/16	2 1/16	**SAF 1311**	1311E	N 11	W 11	SAF 311	SR 1611	LER 40	LER 27	EPR 6	TER 40	TER 27	25
60	2 7/8	2 1/4	**SAF 1312**	1312E	N 12	W 12	SAF 312	SR 1612	LOR 47	LOR 33	EPR 7	TER 47	TER 33	29
65	3 1/16	2 7/16	**SAF 1313**	1313E	N 13	W 13	SAF 313	SR 1613	LOR 55	LOR 37	EPR 7	TER 55	TER 37	35
70	3 1/4	2 5/8	**SAF 1314**	1314	N 14	W 14	SAF 314	SR 1614	LOR 64	LOR 43	EPR 8	TER 64	TER 43	40
75	3 7/16	2 13/16	**SAF 1315**	1315	AN 15	W 15	SAF 315	SR 1615	LOR 79	LOR 46	EPR 8	TER 79	TER 46	44
80	3 5/8	3	**SAF 1316**	1316	AN 16	W 16	SAF 316	SR 1616	LOR 84	LOR 60	EPR 10	TER 84	TER 60	63
85	3 15/16	3 3/16	**SAF 1317**	1317	AN 17	W 17	SAF 317	SR 1617	LOR 109	LOR 188	EPR 11	TER 109	TER 188	66
90	4 1/8	3 3/8	**SAF 1318**	1318	AN 18	W 18	SAF 318	SR 1618	LOR 112	LOR 191	EPR 11	TER 112	TER 191	86
100	4 1/2	3 13/16	**SAF 1320**	1320	AN 20	W 20	SAF 320	SR 1620	LOR 118	LOR 106	EPR 12	TER 118	TER 106	97
110	4 7/8	4 3/16	**SAF 1322**	1322	AN 22	W 22	SAF 322	SR 1622	LOR 121	LOR 113	EPR 14	TER 121	TER 113	132

Sizes SAF 1308 - SAF 1310, two-bolt base only;
Sizes SAF 1311 - SAF 1317, two-or four-bolt base options;
Sizes SAF 1318 - SAF 1322, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.





Taconite seal option

Two-piece cast-iron housing
Self-aligning / 1300 series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF 1320**
Option	Specify
Four-bolt base	FSAF 1320
One end closed	SAF 1320Y
PosiTrac Plus seals	SAF 1320TLC
Taconite seal	SAF 1320T
Cast-steel	SAFS 1320

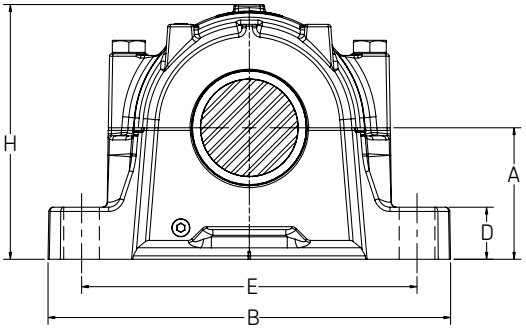
Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 97; for other seal speed limits see pages 347-350.

Designations Complete pillow block									**Static oil level**		**Bolts**			
	A	B	C	D	E Max	E Min	F	H	K	L	(no req'd)	R	T2	T3
	in													
SAF 1308	2 1/2	8 1/4	2 3/8	1	7	6 1/2	–	4 13/16	1 7/32	4	(2)-1/2	1 1/64	3 1/2	3 9/32
SAF 1309	2 3/4	9 5/8	2 3/4	1	7 7/8	7 3/8	–	5 15/16	1 5/16	4 1/4	(2)-5/8	1 1/16	3 9/16	3 9/16
SAF 1310	3	10 5/8	2 3/4	1 1/8	9	7 3/4	–	513/16	1 7/16	4 5/8	(2)-5/8	1 5/32	3 3/4	3 3/4
SAF 1311	3 1/4	11	3 1/8	1 3/16	9 1/2	8 1/8	2	6 3/16	1 1/2	5	(2)-5/8, (4)-1/2	1 3/16	3 7/8	3 7/8
SAF 1312	3 1/4	11 1/4	3 1/8	1 3/16	9 5/8	8 5/8	1 7/8	6 3/8	1 3/8	5 1/4	(2)-5/8, (4)-1/2	1 1/4	4 3/32	4 1/16
SAF 1313	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 7/16	5 5/16	(2)-3/4, (4)-5/8	1 11/32	4 1/8	4 1/8
SAF 1314	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 3/8	1 9/16	5 3/8	(2)-3/4, (4)-5/8	1 3/8	4 5/32	4 1/8
SAF 1315	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 11/16	5 7/8	(2)-3/4, (4)-5/8	1 15/32	4 1/2	4 1/2
SAF 1316	4 1/4	14 1/4	3 7/8	1 3/4	12 5/8	10 5/8	2 1/8	8 1/4	1 13/16	6 1/2	(2)-3/4, (4)-5/8	1 1/2	4 19/32	4 19/32
SAF 1317	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 7/8	6 3/4	(2)-7/8, (4)-3/4	1 9/16	4 11/16	4 19/32
SAF 1318	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 1/4	2	6 7/8	(4)-3/4	1 11/16	4 3/4	4 19/32
SAF 1320	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 3/16	7 3/8	(4)-3/4	1 27/32	5	5
SAF 1322	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 1/2	8 1/8	(4)-7/8	1 15/16	5 1/4	5 3/8

Ball bearing / adapter mount

SAF 1500
Two-piece cast-iron housing
Self-aligning / 1200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF 1515
Option	Specify
Four-bolt base	FSAF 1515
One end closed	SAF 1515Y
PosiTrac Plus seals	SAF 1515TLC
Taconite seals	SAF 1515T
Optional shaft size	SAF 1515 x $2^{1}/_{2}$
Cast-steel	SAFS 1515



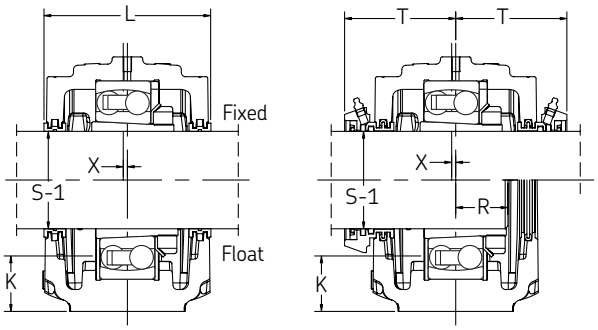
Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 96; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1		Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
Standard	Optional*									
in										lbs
$1^{3}/_{16}$	–	**SAF 1507**	1207 EK	SNW 7	SAF 507	(1) SR 7-6	LER 14	EPR 2	TER 14	8
$1^{7}/_{16}$	$1^{3}/_{8}$, $1^{1}/_{2}$	**SAF 1509**	1209 EK	SNW 9	SAF 509	(1) SR 9-0	LER 17	EPR 3	TER 17	11
$1^{11}/_{16}$	$1^{5}/_{8}$, $1^{3}/_{4}$	**SAF 1510**	1210 EK	SNW 10	SAF 510	(1) SR 10-8	LER 20	EPR 4	TER 20	12
$1^{15}/_{16}$	$1^{7}/_{8}$, 2	**SAF 1511**	1211 EK	SNW 11	SAF 511	(1) SR 11-9	LER 24	EPR 5	TER 24	16
$2^{3}/_{16}$	$2^{1}/_{8}$, $2^{1}/_{4}$	**SAF 1513**	1213 EK	SNW 13	SAF 513	(2) SR 13-0	LER 29	EPR 6	TER 29	22
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAF 1515**	1215 K	SNW 15	SAF 515	(2) SR 15-0	LOR 37	EPR 7	TER 37	27
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAF 1516**	1216 K	SNW 16	SAF 516	(2) SR 1516	LOR 44	EPR 8	TER 44	36
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAF 1517**	1217 K	SNW 17	SAF 517	(2) SR 1517	LOR 53	EPR 9	TER 53	37
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAF 1518**	1218 K	SNW 18	SAF 518	(2) SR 1518	LOR 188	EPR 11	TER 188	45
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAF 1520**	1220 K	SNW 20	SAF 520	(2) SR 1520	LOR 102	EPR 12	TER 102	59
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAF 1522**	1222 K	SNW 22	SAF 522	(2) SR 1522	LOR 109	EPR 13	TER 109	69

*Requires different adapter sleeve and seals.

Sizes SAF 1507 - SAF 1513, two-bolt base only;
Sizes SAF 1515 - SAF 1520, two-or four-bolt base options;
Size SAF 1522, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Ball bearing / adapter mount

SAF 1500
Two-piece cast-iron housing
Self-aligning / 1200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF 1515**
Option	Specify
Four-bolt base	FSAF 1515
One end closed	SAF 1515Y
PosiTrac Plus seals	SAF 1515TLC
Taconite seals	SAF 1515
Optional shaft size	SAF 1515 x $2^{3}/_{8}$
Cast-steel	SAFS 1515

Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 96; for other seal speed limits see pages 347-350.

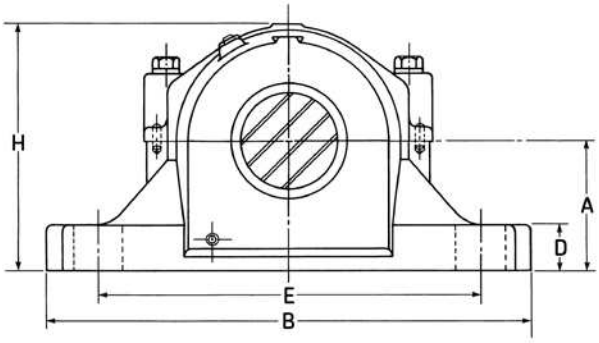
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAF 1507	2	$7^{1}/_{2}$	2	$^{13}/_{16}$	$6^{1}/_{8}$	$5^{5}/_{8}$	–	$3^{3}/_{4}$	$^{7}/_{8}$	$3^{3}/_{16}$	$^{3}/_{16}$	(2)-$^{1}/_{2}$	$^{13}/_{16}$	$3^{1}/_{32}$
SAF 1509	$2^{1}/_{4}$	$8^{1}/_{4}$	$2^{3}/_{8}$	$^{13}/_{16}$	7	$6^{1}/_{4}$	–	$4^{3}/_{8}$	1	$3^{5}/_{8}$	$^{3}/_{16}$	(2)-$^{1}/_{2}$	$^{15}/_{16}$	$3^{1}/_{32}$
SAF 1510	$2^{1}/_{2}$	$8^{1}/_{4}$	$2^{3}/_{8}$	$^{15}/_{16}$	7	$6^{1}/_{2}$	–	$4^{3}/_{4}$	$1^{1}/_{8}$	$3^{5}/_{8}$	$^{3}/_{16}$	(2)-$^{1}/_{2}$	$1^{1}/_{64}$	$3^{1}/_{4}$
SAF 1511	$2^{3}/_{4}$	$9^{5}/_{8}$	$2^{3}/_{4}$	$^{15}/_{16}$	$7^{7}/_{8}$	$7^{3}/_{8}$	–	$5^{1}/_{32}$	$1^{1}/_{4}$	$3^{7}/_{8}$	$^{3}/_{16}$	(2)-$^{5}/_{8}$	$1^{1}/_{32}$	$3^{3}/_{8}$
SAF 1513	3	11	$3^{1}/_{8}$	1	$9^{1}/_{2}$	$8^{1}/_{8}$	–	$5^{21}/_{32}$	$1^{3}/_{16}$	$4^{1}/_{2}$	–	(2)-$^{5}/_{8}$	$1^{9}/_{64}$	$3^{5}/_{8}$
SAF 1515	$3^{1}/_{4}$	$11^{1}/_{4}$	$3^{1}/_{8}$	$1^{1}/_{8}$	$9^{5}/_{8}$	$8^{5}/_{8}$	$1^{7}/_{8}$	$6^{1}/_{8}$	$1^{1}/_{4}$	$4^{11}/_{16}$	–	(2)-$^{5}/_{8}$, (4)-$^{1}/_{2}$	$1^{7}/_{32}$	$3^{13}/_{16}$
SAF 1516	$3^{1}/_{2}$	13	$3^{1}/_{2}$	$1^{1}/_{4}$	11	$9^{5}/_{8}$	$2^{1}/_{8}$	$6^{19}/_{32}$	$1^{5}/_{16}$	$5^{5}/_{16}$	–	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{1}/_{4}$	$4^{1}/_{8}$
SAF 1517	$3^{3}/_{4}$	13	$3^{1}/_{2}$	$1^{1}/_{4}$	11	$9^{7}/_{8}$	$2^{1}/_{8}$	$7^{1}/_{8}$	$1^{7}/_{16}$	5	–	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{5}/_{16}$	$3^{29}/_{32}$
SAF 1518	4	$13^{3}/_{4}$	$3^{7}/_{8}$	$1^{5}/_{8}$	$11^{5}/_{8}$	$10^{3}/_{8}$	$2^{1}/_{8}$	$7^{9}/_{16}$	$1^{1}/_{2}$	$5^{7}/_{8}$	–	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{3}/_{4}$	$4^{1}/_{16}$
SAF 1520	$4^{1}/_{2}$	$15^{1}/_{4}$	$4^{3}/_{8}$	$1^{3}/_{4}$	$13^{1}/_{8}$	$11^{5}/_{8}$	$2^{3}/_{8}$	$8^{15}/_{32}$	$1^{21}/_{32}$	$6^{1}/_{8}$	–	(2)-$^{7}/_{8}$, (4)-$^{3}/_{4}$	$1^{59}/_{64}$	$4^{3}/_{8}$
SAF 1522	$4^{15}/_{16}$	$16^{1}/_{2}$	$4^{3}/_{4}$	2	$14^{1}/_{2}$	$12^{5}/_{8}$	$2^{3}/_{4}$	$9^{11}/_{32}$	$1^{25}/_{32}$	$6^{1}/_{2}$	–	(4)-$^{3}/_{4}$	$2^{1}/_{8}$	$4^{9}/_{16}$

Ball bearing / adapter mount

SAF 1600

Two-piece cast-iron housing
Self-aligning / 1300 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF 1615
Option	Specify
Four-bolt base	FSAF 1615
One end closed	SAF 1615Y
PosiTrac Plus seal	SAF 1615TLC
Taconite seals	SAF 1615T
Optional shaft size	SAF 1615 x 2
Cast-steel	SAFS 1615



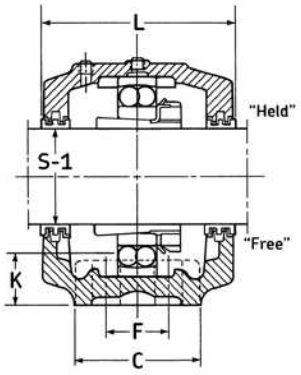
Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 97; for other seal speed limits see pages 347-350.

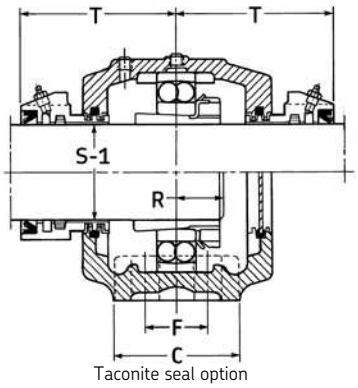
Shaft dia.		Designations								Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$1^{7}/_{16}$	$1^{3}/_{8}$, $1^{1}/_{2}$	**SAF 1609**	1309 EK	SNW 9	SAF 609	SR 1609	LER 17	EPR 3	TER 17	19
$1^{11}/_{16}$	$1^{5}/_{8}$, $1^{3}/_{4}$	**SAF 1610**	1310 EK	SNW 10	SAF 610	SR 1610	LER 20	EPR 4	TER 20	22
$1^{15}/_{16}$	$1^{7}/_{8}$, 2	**SAF 1611**	1311 EK	SNW 11	SAF 611	SR 1611	LER 24	EPR 5	TER 24	27
$2^{3}/_{16}$	$2^{1}/_{8}$, $2^{1}/_{4}$	**SAF 1613**	1313 EK	SNW 13	SAF 613	SR 1613	LOR 32	EPR 7	TER 32	38
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAF 1615**	1315 K	SNW 15	SAF 615	SR 1615	LOR 37	EPR 7	TER 37	47
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAF 1616**	1316 K	SNW 16	SAF 616	SR 1616	LOR 44	EPR 8	TER 44	66
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAF 1617**	1317 K	SNW 17	SAF 617	SR 1617	LOR 184	EPR 10	TER 184	69
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAF 1618**	1318 K	SNW 18	SAF 618	SR 1618	LOR 188	EPR 11	TER 188	91
$3^{7}/_{16}$	$3^{15}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAF 1620**	1320 K	SNW 20	SAF 620	SR 1620	LOR 102	EPR 12	TER 102	101
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAF 1622**	1322 K	SNW 22	SAF 622	SR 1622	LOR 109	EPR 13	TER 109	138

*Requires different adapter sleeve and seals.

Sizes SAF 1609 - SAF 1610, two-bolt base only;
Sizes SAF 1611 - SAF 1617, two-or four-bolt base options;
Sizes SAF 1618 - SAF 1620, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.





Taconite seal option

SAF 1600
Two-piece cast-iron housing
Self-aligning / 1300 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF 1615
Option	Specify
Four-bolt base	FSAF 1615
One end closed	SAF 1615Y
PosiTrac Plus seal	SAF 1615TLC
Taconite seals	SAF 1615T
Optional shaft size	SAF 1615 x 2
Cast-steel	SAFS 1615

Held and free: Specify the appropriate stabilizing rings for a held unit; two required. Discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 97; for other seal speed limits see pages 347-350.

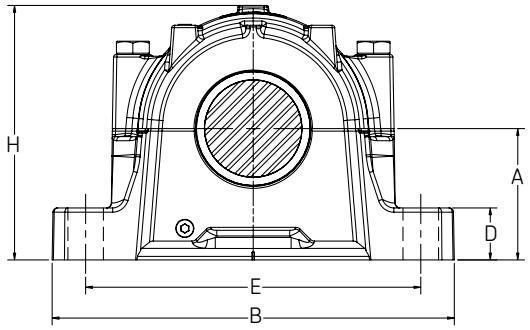
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in												
SAF 1609	2 3/4	9 5/8	2 3/4	1	7 7/8	7 3/8	–	5 5/16	1 5/16	4 1/4	(2)-5/8	1 1/16	3 3/8
SAF 1610	3	10 5/8	2 3/4	1 1/8	9	7 3/4	–	5 13/16	1 7/16	4 5/8	(2)-5/8	1 5/32	3 3/4
SAF 1611	3 1/4	11	3 1/8	1 3/16	9 1/2	8 1/8	2	6 3/16	1 1/2	4 7/8	(2)-5/8, (4)-1/2	1 3/16	3 7/8
SAF 1613	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 7/16	5 5/16	(2)3/4, (4)-5/8	1 11/32	4 1/8
SAF 1615	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 11/16	5 7/8	(2)-)3/4, (4)-5/8	1 15/32	4 13/32
SAF 1616	4 1/4	14 1/4	3 7/8	1 3/4	12 5/8	10 5/8	2 1/8	8 1/4	1 13/16	6 1/2	(2)-)3/4, (4)-5/8	1 1/2	4 19/32
SAF 1617	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 7/8	6 3/4	(2)-7/8, (4)-3/4	1 9/16	4 9/16
SAF 1618	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 3/16	2	6 7/8	(4)-3/4	1 11/16	4 9/16
SAF 1620	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 3/16	7 5/16	(4)-)3/4	1 27/32	5
SAF 1622	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 1/2	8 1/8	(4)-7/8	1 15/16	5 3/8

Spherical roller / cylindrical mount

SAF 22200

Two-piece cast-iron housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	SAF 22215
Option	Specify
Four-bolt base	FSAF 22215
One end closed	SAF 22215Y
PosiTrac Plus seal	SAF 22215TLC
Taconite seals	SAF 22215T
Cast-steel	SAFS 22215

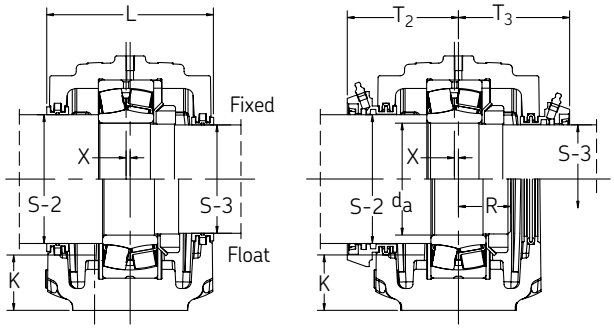


Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 347-350.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
65	3 1/16	2 7/16	**SAF 22213**	22213 E	N 13	W 13	SAF 213	SR 13-0	LOR 55	LOR 37	EPR 7	TER 55	TER 37	22
75	3 7/16	2 13/16	**SAF 22215**	22215 E	AN 15	W 15	SAF 215	SR 15-0	LOR 79	LOR 46	EPR 8	TER 79	TER 46	27
80	3 5/8	3	**SAF 22216**	22216 E	AN 16	W 16	SAF 216	SR 16-13	LOR 82	LOR 54	EPR 9	TER 82	TER 54	34
85	3 15/16	3 3/16	**SAF 22217**	22217 E	AN 17	W 17	SAF 217	SR 17-14	LOR 89	LOR 63	EPR 9	TER 89	TER 63	35
90	4 1/8	3 3/8	**SAF 22218**	22218 E	AN 18	W 18	SAF 218	SR 18-15	LOR 112	LOR 191	EPR 11	TER 112	TER 191	44
100	4 1/2	3 13/16	**SAF 22220**	22220 E	AN 20	W 20	SAF 220	SR 20-17	LOR 118	LOR 106	EPR 12	TER 118	TER 106	75
110	4 7/8	4 3/16	**SAF 22222**	22222 E	AN 22	W 22	SAF 222	SR 22-19	LOR 121	LOR 113	EPR 14	TER 121	TER 113	68
120	5 5/16	4 9/16	**SAF 22224**	22224 E	AN 24	W 24	SAF 224	SR 24-20	LOR 127	LOR 119	EPR 15	TER 127	TER 119	97
130	5 7/8	4 15/16	**SAF 22226**	22226 E	AN 26	W 26	SAF 226	SR 26-0	LOR 136	LOR 122	EPR 27	TER 136	TER 122	134
140	6 1/4	5 5/16	**SAF 22228**	22228 CC/W33	AN 28	W 28	SAF 228	SR 28-0	LOR 144	LOR 127	EPR 16	TER 144	TER 127	141
150	6 5/8	5 3/4	**SAF 22230**	22230 CC/W33	AN 30	W 30	SAF 230	SR 30-0	LOR 151	LOR 134	EPR 17	TER 151	TER 134	181
160	7	6 1/16	**SAF 22232**	22232 CC/W33	AN 32	W 32	SAF 232	SR 32-0	LOR 156	LOR 142	EPR 18	TER 156	TER 142	199
170	7 7/16	6 7/16	**SAF 22234**	22234 CC/W33	AN 34	W 34	SAF 234	SR 34-0	LOR 161	LOR 148	EPR 20	TER 161	TER 148	263
180	7 13/16	6 7/8	**SAF 22236**	22236 CC/W33	AN 36	W 36	SAF 236	SR 36-30	LOR 165	LOR 154	EPR 21	TER 165	TER 154	286
190	8 3/8	7 1/4	**SAF 22238**	22238 CC/W33	AN 38	W 38	SAF 238	SR 38-32	LOR 171	LOR 160	EPR 21	TER 171	TER 160	356
200	8 3/4	7 5/8	**SAF 22240**	22240 CC/W33	AN 40	W 40	SAF 240	SR 40-34	LOR 175	LOR 164	EPR 22	TER 175	TER 164	408
220	9 9/16	8 5/16	**SAF 22244**	22244 CC/W33	N 44	W 44	SAF 244	SR 44-38	LOR 179	LOR 170	EPR 24	TER 179	TER 170	535

Size SAF 22213, two-bolt base only;
Sizes SAF 22215 - SAF 22220, two-or four-bolt base options;
Sizes SAF 22222 - SAF 22244, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Spherical roller / cylindrical mount

SAF 22200
Two-piece cast-iron housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF 22215**
Option	Specify
Four-Bolt Base	FSAF 22215
One end closed	SAF 22215Y
PosiTrac Plus seal	SAF 22215TLC
Taconite seals	SAF 22215T
Cast-steel	SAFS 22215

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 347-350.

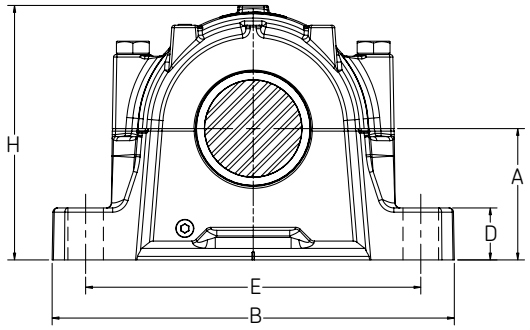
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SAF 22213	3	11	3 1/8	1	9 1/2	8 1/8	–	5 21/32	–	4 1/2	3/16	(2)-5/8	1 1/4	3 3/4	3 3/4
SAF 22215	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 1/8	–	4 11/16	3/16	(2)-5/8, (4)-1/2	1 9/32	3 7/8	3 7/8
SAF 22216	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 1/4	5 5/16	3/16	(2)-3/4, (4)-5/8	1 15/32	4 1/8	4 3/32
SAF 22217	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	3/16	(2)-3/4, (4)-5/8	1 9/16	3 29/32	3 29/32
SAF 22218	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 1/2	5 7/8	3/16	(2)-3/4, (4)-5/8	1 3/4	4 3/16	4 3/32
SAF 22220	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 15/32	1 21/32	6 1/8	3/16	(2)-7/8, (4)-3/4	1 59/64	4 5/16	4 5/16
SAF 22222	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 11/32	1 25/32	6 1/2	3/16	(4)-3/4	2 1/8	4 1/2	4 9/16
SAF 22224	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	1 27/32	7 3/8	3/16	(4)-3/4	2 9/32	5	5
SAF 22226	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 11/32	8 1/8	3/16	(4)-7/8	2 15/32	5 1/4	5 5/16
SAF 22228	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/32	7 5/8	3/16	(4)-1	2 39/64	5 1/8	5 1/8
SAF 22230	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2	8 3/8	3/16	(4)-1	2 49/64	5 1/2	5 1/2
SAF 22232	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	2 1/16	8 3/4	3/16	(4)-1	2 31/32	5 11/16	5 11/16
SAF 22234	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 5/8	3/16	(4)-1	3 1/8	6 3/16	6
SAF 22236	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 3/8	10	3/16	(4)-1	3 9/64	6 1/4	6 1/4
SAF 22238	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 7/16	10 3/4	3/16	(4)-1 1/4	3 19/64	7 7/16	6 13/16
SAF 22240	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 15/32	11 1/4	3/16	(4)-1 1/4	3 1/2	7 11/16	7 1/16
SAF 22244	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 1/8	12	3/16	(4)-1 1/2	3 5/8	8	8 1/16

Spherical roller / cylindrical mount

SAF 22300

Two-piece cast-iron housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

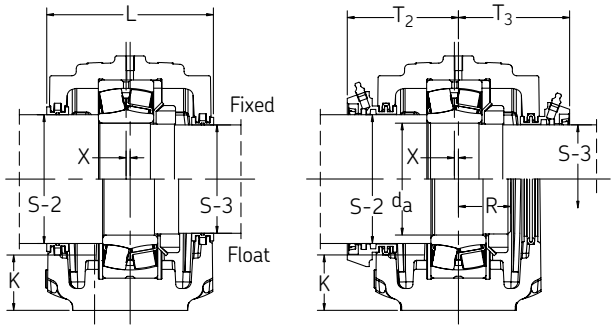
How to order	SAF 22315
Option	Specify
Four-bolt base	FSAF 22315
One end closed	SAF 22315Y
PosiTrac Plus seal	SAF 22315TLC
Taconite seals	SAF 22315T
Cast-steel	SAFS 22315



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 351; for bearing information see page 164; for other seal speed limits see pages 339-342.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
40	1 15/16	1 7/16	**SAF 22308**	22308 E	N 08	W 08	SAF 308	SR 10-8	LER 24	LER 17	EPR 3	TER 24	TER 17	15
45	2 1/8	1 11/16	**SAF 22309**	22309 E	N 09	W 09	SAF 309	SR 11-9	LER 28	LER 20	EPR 4	TER 28	TER 20	19
50	2 3/8	1 7/8	**SAF 22310**	22310 E	N 10	W 10	SAF 310	SR 0-10	LER 35	LER 23	EPR 5	TER 35	TER 23	22
55	2 9/16	2 1/16	**SAF 22311**	22311 E	N 11	W 11	SAF 311	SR 13-11	LER 40	LER 27	EPR 6	TER 40	TER 27	27
60	2 7/8	2 1/4	**SAF 22312**	22312 E	N 12	W 12	SAF 312	SR 15-12	LOR 47	LOR 33	EPR 7	TER 47	TER 33	31
65	3 1/16	2 7/16	**SAF 22313**	22313 E	N 13	W 13	SAF 313	SR 16-13	LOR 55	LOR 37	EPR 7	TER 55	TER 37	38
70	3 1/4	2 5/8	**SAF 22314**	22314 E	N 14	W 14	SAF 314	SR 17-14	LOR 64	LOR 43	EPR 8	TER 64	TER 43	42
75	3 7/16	2 13/16	**SAF 22315**	22315 E	AN 15	W 15	SAF 315	SR 18-15	LOR 79	LOR 46	EPR 8	TER 79	TER 46	48
80	3 5/8	3	**SAF 22316**	22316 E	AN 16	W 16	SAF 316	SR 19-16	LOR 84	LOR 60	EPR 10	TER 84	TER 60	67
85	3 15/16	3 3/16	**SAF 22317**	22317 E	AN 17	W 17	SAF 317	SR 20-17	LOR 109	LOR 188	EPR 11	TER 109	TER 188	71
90	4 1/8	3 3/8	**SAF 22318**	22318 E	AN 18	W 18	SAF 318	SR 21-18	LOR 112	LOR 191	EPR 11	TER 112	TER 191	92
100	4 1/2	3 13/16	**SAF 22320**	22320 E	AN 20	W 20	SAF 320	SR 24-20	LOR 118	LOR 106	EPR 12	TER 118	TER 106	107
110	4 7/8	4 3/16	**SAF 22322**	22322 E	AN 22	W 22	SAF 322	SR 0-22	LOR 121	LOR 113	EPR 14	TER 121	TER 113	145
120	5 5/16	4 9/16	**SAF 22324**	22324 CC/W33	AN 24	W 24	SAF 324	SR 0-24	LOR 127	LOR 119	EPR 15	TER 127	TER 119	201
130	5 7/8	4 15/16	**SAF 22326**	22326 CC/W33	AN 26	W 26	SAF 326	SR 0-26	LOR 136	LOR 122	EPR 27	TER 136	TER 122	221
140	6 1/4	5 5/16	**SAF 22328**	22328 CC/W33	AN 28	W 28	SAF 328	SR 0-28	LOR 144	LOR 127	EPR 16	TER 144	TER 127	283
150	6 5/8	5 3/4	**SAF 22330**	22330 CC/W33	AN 30	W 30	SAF 330	SR 36-30	LOR 151	LOR 134	EPR 17	TER 151	TER 134	313
160	7	6 1/16	**SAF 22332**	22332 CC/W33	AN 32	W 32	SAF 332	SR 38-32	LOR 156	LOR 142	EPR 18	TER 156	TER 142	385
170	7 7/16	6 7/16	**SAF 22334**	22334 CC/W33	AN 34	W 34	SAF 334	SR 40-34	LOR 161	LOR 148	EPR 19	TER 161	TER 148	449
180	8 3/8	7 1/4	**SAF 22338**	22338 CC/W33	AN 38	W 38	SAF 338	SR 44-38	LOR 171	LOR 160	EPR 21	TER 171	TER 160	589
200	8 3/4	7 5/8	**SAF 22340**	22340 CC/W33	AN 40	W 40	SAF 340	SR 0-40	LOR 175	LOR 164	EPR 22	TER 175	TER 164	809

Sizes SAF 22308 - SAF 22310, two-bolt base only; sizes SAF 22311 - SAF 22317, two-or four-bolt base options; sizes SAF 22318 - SAF 22340, four-bolt base only.
Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Spherical roller / cylindrical mount

SAF 22300
Two-piece cast-iron housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF 22315**
Option	Specify
Four-bolt base	FSAF 22315
One end closed	SAF 22315Y
PosiTrac Plus seal	SAF 22315TLC
Taconite seals	SAF 22315T
Cast-steel	SAFS 22315

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 351; for bearing information see page 164; for other seal speed limits see pages 339-342.

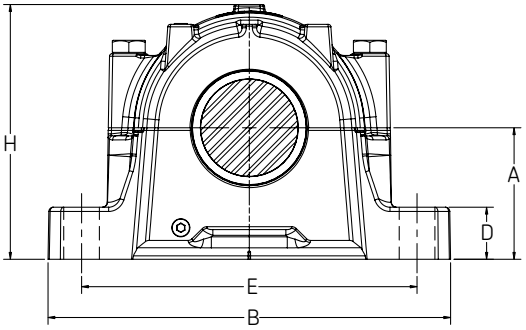
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SAF 22308	2 1/2	8 1/4	2 3/8	1	7	6 1/2	–	4 13/16	1 3/16	4	3/16	(2)-1/2	1 5/32	3 1/2	3 9/32
SAF 22309	2 3/4	9 5/8	2 3/4	1	7 7/8	7 3/8	–	5 5/16	1 9/32	4 1/4	3/16	(2)-5/8	1 5/16	3 9/16	3 9/16
SAF 22310	3	10 5/8	2 3/4	1 1/8	9	7 3/4	–	5 13/16	1 3/8	4 5/8	3/16	(2)-5/8	1 7/16	3 3/4	3 3/4
SAF 22311	3 1/4	11	3 1/8	1 3/16	9 1/2	8 1/8	2	6 3/16	1 7/16	5	3/16	(2)-5/8, (4)-1/2	1 1/2	3 7/8	3 7/8
SAF 22312	3 1/4	11 1/4	3 1/8	1 3/16	9 5/8	8 5/8	1 7/8	6 3/8	1 5/16	5 1/4	3/16	(2)-5/8, (4)-1/2	1 9/16	4 3/32	4 1/16
SAF 22313	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 13/32	5 5/16	3/16	(2)-3/4, (4)-5/8	1 11/16	4 1/8	4 1/8
SAF 22314	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 3/8	1 15/32	5 3/8	3/16	(2)-3/4, (4)-5/8	1 11/16	4 5/32	4 1/8
SAF 22315	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 19/32	5 7/8	3/16	(2)-3/4, (4)-5/8	1 7/8	4 1/2	4 9/16
SAF 22316	4 1/4	14 1/4	3 7/8	1 5/16	12 5/8	10 5/8	2 1/8	8 1/4	1 11/16	6 1/2	3/16	(2)-3/4, (4)-5/8	1 15/16	4 19/32	4 19/32
SAF 22317	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 3/4	6 3/4	3/16	(2)-7/8, (4)-3/4	2 1/16	4 11/16	4 19/32
SAF 22318	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 3/16	1 7/8	6 7/8	3/16	(4)-3/4	2 3/16	4 3/4	4 19/32
SAF 22320	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 1/32	7 3/8	3/16	(4)-3/4	2 7/16	5	5
SAF 22322	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 13/32	8 1/8	3/16	(4)-7/8,	2 5/8	5 1/4	5 3/8
SAF 22324	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2 3/8	8 3/8	3/16	(4)-1	2 13/16	5 1/2	5 1/2
SAF 22326	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	2 7/16	8 3/4	3/16	(4)-1	3	5 11/16	5 11/16
SAF 22328	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 9/16	9 3/8	3/16	(4)-1	3 1/4	6 1/16	6 1/16
SAF 22330	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 5/8	9 3/4	3/16	(4)-1	3 7/16	6 1/4	6 1/4
SAF 22332	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 11/16	10 3/4	3/16	(4)-1 1/4	3 5/8	6 11/16	6 11/16
SAF 22334	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 3/4	11 1/4	3/16	(4)-1/4	3 3/4	7 1/16	6 7/8
SAF 22338	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 3/8	12	3/16	(4)-1 1/2	4 1/16	8 1/16	7 7/16
SAF 22340	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	19 1/2	3 7/16	12 3/8	3/16	(4)-1 1/2	4 1/8	8 7/32	7 19/32

Spherical roller / adapter mount

SAF 22500

Two-piece cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

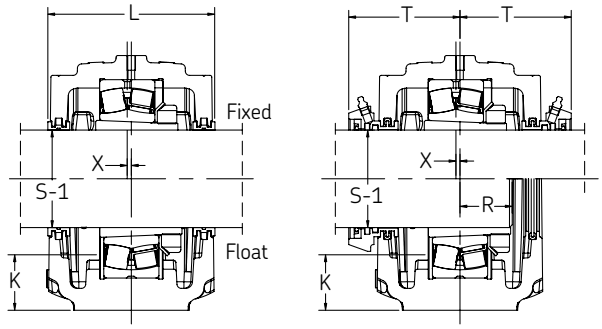
How to order	SAF 22515
Option	Specify
Four-bolt base	FSAF 22515
One end closed	SAF 22515Y
PosiTrac Plus seal	SAF 22515TLC
Taconite seals	SAF 22515T
Optional shaft size	SAF 22515 x $2^{1}/_{2}$
Cast-steel	SAFS 22515



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$1^{3}/_{16}$	–	**SAF 22507**	22207 EK	SNW 7	SAF 507	36053-6	LER 14	EPR 2	TER 14	8
$1^{7}/_{16}$	$1^{3}/_{8}$, $1^{1}/_{2}$	**SAF 22509**	22209 EK	SNW 9	SAF 509	SR 9-9	LER 17	EPR 3	TER 17	12
$1^{11}/_{16}$	$1^{5}/_{8}$, $1^{3}/_{4}$	**SAF 22510**	22210 EK	SNW 10	SAF 510	SR 10-0	LER 20	EPR 4	TER 20	13
$1^{15}/_{16}$	$1^{7}/_{8}$, 2	**SAF 22511**	22211 EK	SNW 11	SAF 511	SR 11-0	LER 24	EPR 5	TER 24	16
$2^{3}/_{16}$	$2^{1}/_{8}$, $2^{1}/_{4}$	**SAF 22513**	22213 EK	SNW 13	SAF 513	SR 13-0	LER 29	EPR 6	TER 29	23
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAF 22515**	22215 EK	SNW 15	SAF 515	SR 15-0	LOR 37	EPR 7	TER 37	28
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAF 22516**	22216 EK	SNW 16	SAF 516	SR 16-13	LOR 44	EPR 8	TER 44	37
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAF 22517**	22217 EK	SNW 17	SAF 517	SR 17-14	LOR 53	EPR 9	TER 53	38
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAF 22518**	22218 EK	SNW 18	SAF 518	SR 18-15	LOR 188	EPR 11	TER 188	47
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAF 22520**	22220 EK	SNW 20	SAF 520	SR 20-17	LOR 102	EPR 12	TER 102	62
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAF 22522**	22222 EK	SNW 22	SAF 522	SR 22-19	LOR 109	EPR 13	TER 109	73
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SAF 22524**	22224 EK	SNW 24	SAF 524	SR 24-20	LOR 113	EPR 14	TER 113	104
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SAF 22526**	22226 EK	SNW 26	SAF 526	SR 26-0	LOR 117	EPR 15	TER 117	144
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SAF 22528**	22228 CCK/W33	SNW 28	SAF 528	SR 28-0	LOR 122	EPR 27	TER 122	153
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SAF 22530**	22230 CCK/W33	SNW 30	SAF 530	SR 30-0	LOR 125	EPR 16	TER 125	199
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SAF 22532**	22232 CCK/W33	SNW 32	SAF 532	SR 32-0	LOR 130	EPR 16	TER 130	212
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SAF 22534**	22234 CCK/W33	SNW 34	SAF 534	SR 34-0	LOR 140	EPR 18	TER 140	276
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SAF 22536**	22236 CCK/W33	SNW 36	SAF 536	SR 36-30	LOR 148	EPR 19	TER 148	301
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAF 22538**	22238 CCK/W33	SNW 38	SAF 538	SR 38-32	LOR 155	EPR 21	TER 155	374
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SAF 22540**	22240 CCK/W33	SNW 40	SAF 540	SR 40-34	LOR 159	EPR 21	TER 159	443
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SAF 22544**	22244 CCK/W33	SNW 44	SAF 544	SR 44-38	LOR 167	EPR 23	TER 167	577

*Optional shaft sizes require different adapter sleeve and seals. ***Optional internal radial clearances (e.g. C3) are available upon request.***
Sizes SAF 22507 - SAF 22513, two-bolt base only; sizes SAF 22515 - SAF 22520, two-or four-bolt base options; sizes SAF 22522 - SAF 22544, four-bolt base only.



Taconite seal option

Spherical roller / adapter mount

SAF 22500
Two-piece cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF 22515**
Option	Specify
Four-bolt base	FSAF 22515
One end closed	SAF 22515Y
PosiTrac Plus seal	SAF 22515TLC
Taconite seals	SAF 22515T
Optional shaft size	SAF 22515 x 2 1/2
Cast-steel	SAFS 22515

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 347-350.

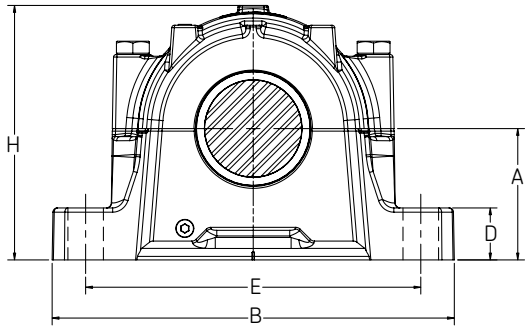
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAF 22507	2	7 1/2	2	13/16	6 1/8	5 5/8	–	3 3/4	7/8	3 3/16	3/32	(2)-1/2	13/16	3 1/32
SAF 22509	2 1/4	8 1/4	2 3/8	13/16	7	6 1/4	–	4 3/8	31/32	3 5/8	7/64	(2)-1/2	1 3/32	3 1/32
SAF 22510	2 1/2	8 1/4	2 3/8	15/16	7	6 1/2	–	4 3/4	1 3/32	3 5/8	9/64	(2)-1/2	1 5/32	3 1/4
SAF 22511	2 3/4	9 5/8	2 3/4	15/16	7 7/8	7 3/8	–	5 1/32	1 3/16	3 7/8	7/64	(2)-5/8	1 13/64	3 3/8
SAF 22513	3	11	3 1/8	1	9 1/2	8 1/8	–	5 21/32	1 3/32	4 1/2	5/32	(2)-5/8	1 25/64	3 5/8
SAF 22515	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 1/8	1 1/8	4 11/16	7/64	(2)-5/8, (4)-1/2	1 7/16	3 13/16
SAF 22516	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 1/4	5 5/16	3/16	(2)-3/4, (4)-5/8	1 15/32	4 1/8
SAF 22517	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	3/16	(2)-3/4, (4)-5/8	1 9/16	3 29/32
SAF 22518	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 1/2	5 7/8	3/16	(2)-3/4, (4)-5/8	1 3/4	4 1/16
SAF 22520	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 15/32	1 21/32	6 1/8	3/16	(2)-7/8, (4)-3/4	1 59/64	4 3/8
SAF 22522	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 11/32	1 25/32	6 1/2	3/16	(4)-3/4	2 1/8	4 9/16
SAF 22524	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	1 27/32	7 3/8	3/16	(4)-3/4	2 9/32	5
SAF 22526	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 11/32	8 1/8	3/16	(4)-7/8	2 15/32	5 5/16
SAF 22528	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/32	7 5/8	3/16	(4)-1	2 29/64	5 1/8
SAF 22530	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2	8 3/8	3/16	(4)-1	2 39/64	5 1/2
SAF 22532	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	2 1/16	8 3/4	3/16	(4)-1	2 31/32	5 11/16
SAF 22534	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 5/8	3/16	(4)-1	3 1/8	6 1/16
SAF 22536	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 3/8	10	3/16	(4)-1	3 9/64	6 1/4
SAF 22538	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 7/16	10 3/4	3/16	(4)-1 1/4	3 19/64	6 11/16
SAF 22540	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 15/32	11 1/4	3/16	(4)-1 1/4	3 1/2	7 1/16
SAF 22544	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 1/8	12	3/16	(4)-1 1/2	3 5/8	7 1/4

Spherical roller / adapter mount

SAF 22600

Two-piece cast-iron housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF 22615
Option	Specify
Four-bolt base	FSAF 22615
One end closed	SAF 22615Y
PosiTrac Plus seal	SAF 22615TLC
Taconite seals	SAF 22615T
Optional shaft size	SAF 22615 x 2
Cast-steel	SAFS 22615



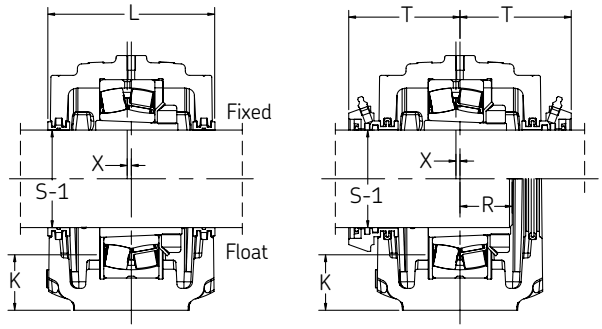
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
1 7/16	1 3/8, 1 1/2	**SAF 22609**	22309 EK	SNW 109	SAF 609	SR 11-9	LER 17	EPR 3	TER 17	20
1 11/16	1 5/8, 1 3/4	**SAF 22610**	22310 EK	SNW 110	SAF 610	SR 0-10	LER 20	EPR 4	TER 20	24
1 15/16	1 7/8, 2	**SAF 22611**	22311 EK	SNW 111	SAF 611	SR 13-11	LER 24	EPR 5	TER 24	29
2 3/16	2 1/8, 2 1/4	**SAF 22613**	22313 EK	SNW 113	SAF 613	SR 16-13	LOR 32	EPR 7	TER 32	40
2 7/16	2 3/8, 2 1/2	**SAF 22615**	22315 EK	SNW 115	SAF 615	SR 18-15	LOR 37	EPR 7	TER 37	52
2 11/16	2 5/8, 2 3/4	**SAF 22616**	22316 EK	SNW 116	SAF 616	SR 19-16	LOR 44	EPR 8	TER 44	71
2 15/16	2 13/16, 2 7/8, 3	**SAF 22617**	22317 EK	SNW 117	SAF 617	SR 20-17	LOR 184	EPR 10	TER 184	75
3 3/16	3 1/16, 3 1/8, 3 1/4	**SAF 22618**	22318 EK	SNW 118	SAF 618	SR 21-18	LOR 188	EPR 11	TER 188	97
3 7/16	3 5/16, 3 3/8, 3 1/2	**SAF 22620**	22320 EK	SNW 120	SAF 620	SR 24-20	LOR 102	EPR 12	TER 102	113
3 15/16	3 13/16, 3 7/8, 4	**SAF 22622**	22322 EK	SNW 122	SAF 622	SR 0-22	LOR 109	EPR 13	TER 109	153
4 3/16	4 1/16, 4 1/8, 4 1/4	**SAF 22624**	22324 CCK/W33	SNW 124	SAF 624	SR 0-24	LOR 113	EPR 14	TER 113	206
4 7/16	4 5/16, 4 3/8, 4 1/2	**SAF 22626**	22326 CCK/W33	SNW 126	SAF 626	SR 0-26	LOR 117	EPR 15	TER 117	233
4 15/16	4 13/16, 4 7/8, 5	**SAF 22628**	22328 CCK/W33	SNW 128	SAF 628	SR 0-28	LOR 122	EPR 27	TER 122	296
5 3/16	5 1/8, 5 1/4	**SAF 22630**	22330 CCK/W33	SNW 130	SAF 630	SR 36-30	LOR 125	EPR 16	TER 125	322
5 7/16	5 3/8, 5 1/2	**SAF 22632**	22332 CCK/W33	SNW 132	SAF 632	SR 38-32	LOR 130	EPR 16	TER 130	401
5 15/16	5 13/16, 5 7/8, 6	**SAF 22634**	22334 CCK/W33	SNW 134	SAF 634	SR 40-34	LOR 140	EPR 18	TER 140	510
6 15/16	6 13/16, 6 7/8, 7	**SAF 22638**	22338 CCK/W33	SNW 138	SAF 638	SR 44-38	LOR 155	EPR 21	TER 155	609
7 3/16	7 1/8, 7 1/4	**SAF 22640**	22340 CCK/W33	SNW 140	SAF 640	SR 0-40	LOR 159	EPR 21	TER 159	902

*Optional shaft sizes require different adapter sleeve and seals.

Sizes SAF 22609 - SAF 22610, two-bolt base only;
Sizes SAF 22611 - SAF 22617, two-or four-bolt base options;
Sizes SAF 22618 - SAF 22640, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Spherical roller / adapter mount

SAF 22600
Two-piece cast-iron housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF 22615**
Option	Specify
Four-bolt base	FSAF 22615
One end closed	SAF 22615Y
PosiTrac Plus seal	SAF 22615TLC
Taconite seals	SAF 22615T
Optional shaft size	SAF 22615 x 2
Cast-steel	SAFS 22615

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 347-350.

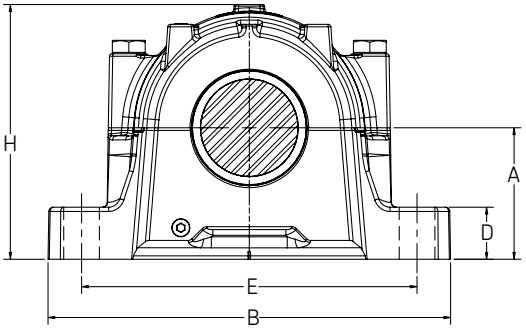
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAF 22609	2 3/4	9 5/8	2 3/4	1	7 7/8	7 3/8	–	5 5/16	1 9/32	4 1/4	3/16	(2)-5/8	1 5/16	3 3/8
SAF 22610	3	10 5/8	2 3/4	1 1/8	9	7 3/4	–	5 13/16	1 3/8	4 5/8	3/16	(2)-5/8	1 7/16	3 3/4
SAF 22611	3 1/4	11	3 1/8	1 3/16	9 1/2	8 1/8	2	6 3/16	1 7/16	4 7/8	3/16	(2)-5/8, (4)-1/2	1 1/2	3 7/8
SAF 22613	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 13/32	5 5/16	3/16	(2)-3/4, (4)-5/8	1 11/16	4 1/8
SAF 22615	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 19/32	5 7/8	3/16	(2)-3/4, (4)-5/8	1 7/8	4 13/32
SAF 22616	4 1/4	14 1/4	3 7/8	1 3/4	12 5/8	10 5/8	2 1/8	8 1/4	1 11/16	6 1/2	3/16	(2)-3/4, (4)-5/8	1 15/16	4 19/32
SAF 22617	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 3/4	6 3/4	3/16	(2)-7/8, (4)-3/4	2 1/16	4 9/16
SAF 22618	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 1/4	1 7/8	6 7/8	3/16	(4)-3/4	2 3/16	4 9/16
SAF 22620	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 1/32	7 5/16	3/16	(4)-3/4	2 7/16	5
SAF 22622	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 13/32	8 1/8	3/16	(4)-7/8	2 5/8	5 3/8
SAF 22624	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2 3/8	8 3/8	3/16	(4)-1	2 13/16	5 1/2
SAF 22626	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	2 7/16	8 3/4	3/16	(4)-1	3	5 11/16
SAF 22628	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 9/16	9 5/8	3/16	(4)-1	3 1/4	6 1/16
SAF 22630	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 5/8	9 3/4	3/16	(4)-1	3 7/16	6 1/4
SAF 22632	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 11/16	10 3/4	3/16	(4)-1 1/4	3 5/8	6 11/16
SAF 22634	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 3/4	11 1/4	3/16	(4)-1 1/4	3 3/4	6 15/16
SAF 22638	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 3/8	12	3/16	(4)-1 1/2	4 1/16	7 5/16
SAF 22640	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	19 1/2	3 7/16	12 3/8	3/16	(4)-1 1/2	4 1/8	7 19/32

Spherical roller / adapter mount

SAF 23000 KA

Two-piece cast-iron housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	SAF 23024 KA x $4^{3}/_{16}$
Option	Specify
Four-bolt base	FSAF 23024 KA x $4^{3}/_{16}$
One end closed	SAF 23024 KAY x $4^{3}/_{16}$
PosiTrac Plus seal	SAF 23024 KA/TLC x $4^{3}/_{16}$
Taconite seals	SAF 23024 KAT x $4^{3}/_{16}$
Optional shaft size	SAF 23024 KA x $4^{1}/_{4}$
Cast-steel	SAFS 23024



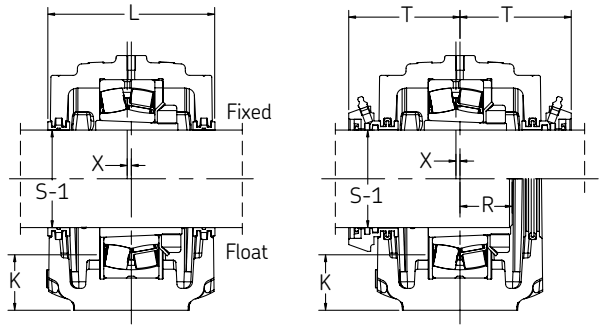
Held and free: Specify the appropriate stabilizing rings for a held unit.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 347-350.

Shaft dia.					Designations					Mass
S-1 Standard	S-1 Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SAF 23024 KA x $4^{3}/_{16}$**	23024 CCK/W33	SNW 3024 x $4^{3}/_{16}$	SAF 024 KA x $4^{3}/_{16}$	38151-24	LOR 113	EPR 14	TER 113	87
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SAF 23026 KA x $4^{7}/_{16}$**	23026 CCK/W33	SNW 3026 x $4^{7}/_{16}$	SAF 026 KA x $4^{7}/_{16}$	38151-26	LOR 117	EPR 15	TER 117	71
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SAF 23028 KA x $4^{15}/_{16}$**	23028 CCK/W33	SNW 3028 x $4^{15}/_{16}$	SAF 028 KA x $4^{15}/_{16}$	36053-50	LOR 122	EPR 27	TER 122	138
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SAF 23030 KA x $5^{3}/_{16}$**	23030 CCK/W33	SNW 3030 x $5^{3}/_{16}$	SAF 030 KA x $5^{3}/_{16}$	SR-0-21	LOR 125	EPR 16	TER 125	149
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SAF 23032 KA x $5^{7}/_{16}$**	23032 CCK/W33	SNW 3032 x $5^{7}/_{16}$	SAF 032 KA x $5^{7}/_{16}$	38151-32	LOR 130	EPR 16	TER 130	175
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SAF 23034 KA x $5^{15}/_{16}$**	23034 CCK/W33	SNW 3034 x $5^{15}/_{16}$	SAF 034 KA x $5^{15}/_{16}$	SR-0-24	LOR 140	EPR 18	TER 140	220
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SAF 23036 KA x $6^{7}/_{16}$**	23036 CCK/W33	SNW 3036 x $6^{7}/_{16}$	SAF 036 KA x $6^{7}/_{16}$	38151-36	LOR 148	EPR 19	TER 148	272
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAF 23038 KA x $6^{15}/_{16}$**	23038 CCK/W33	SNW 3038 x $6^{15}/_{16}$	SAF 038 KA x $6^{15}/_{16}$	38151-38	LOR 155	EPR 21	TER 155	284
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SAF 23040 KA x $7^{3}/_{16}$**	23040 CCK/W33	SNW 3040 x $7^{3}/_{16}$	SAF 040 KA x $7^{3}/_{16}$	38151-40	LOR 159	EPR 21	TER 159	367
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SAF 23044 KA x $7^{15}/_{16}$**	23044 CCK/W33	SNW 3044 x $7^{15}/_{16}$	SAF 044 KA x $7^{15}/_{16}$	36053-140	LOR 167	EPR 23	TER 167	386
$8^{15}/_{16}$	$8^{7}/_{16}$, $8^{1}/_{2}$, 9	**SAF 23048 KA x $8^{15}/_{16}$**	23048 CCK/W33	SNP 3048 x $8^{15}/_{16}$	SAF 048 KA x $8^{15}/_{16}$	A-8897	LOR 552	X-5217-4	TER 552	474
$9^{7}/_{16}$	$9^{1}/_{2}$	**SAF 23052 KA x $9^{7}/_{16}$**	23052 CCK/W33	SNP 3052 x $9^{7}/_{16}$	SAF 052 KA x $9^{7}/_{16}$	A-8898	LOR 553	X-5217-2	TER 553	530
$9^{15}/_{16}$	10	**SAF 23056 KA x $9^{15}/_{16}$**	23056 CACK/W33	SNP 3056 x $9^{15}/_{16}$	SAF 056 KA x $9^{15}/_{16}$	A-8819	LOR 607	X-5217-2	TER 607	800
$10^{7}/_{16}$	$10^{1}/_{2}$	**SAF 23056 KA x $10^{7}/_{16}$**	23056 CACK/W33	SNP 3056 x $10^{7}/_{16}$	SAF 056 KA x $10^{7}/_{16}$	A-8819	LOR 606	X-5217-1	TER 606	800

*Optional shaft sizes require different adapter sleeve and seals.

Size SAF 23024 KA, two-or four-bolt base options;
Sizes SAF 23026 KA - SAF 23056 KA, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Spherical roller / adapter mount

SAF 23000 KA
Two-piece cast-iron housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF 23000 KA x $4^{3}/_{16}$**
Option	Specify
Four-bolt base	FSAF 23024 KA x $4^{3}/_{16}$
One end closed	SAF 23024 KAY x $4^{3}/_{16}$
PosiTrac Plus seal	SAF 23024 KA/TLC x $4^{3}/_{16}$
Taconite seals	SAF 23024 KAT x $4^{3}/_{16}$
Optional shaft size	SAF 23024 KA x $4^{1}/_{4}$
Cast-steel	SAFS 23024 KA x $4^{3}/_{16}$

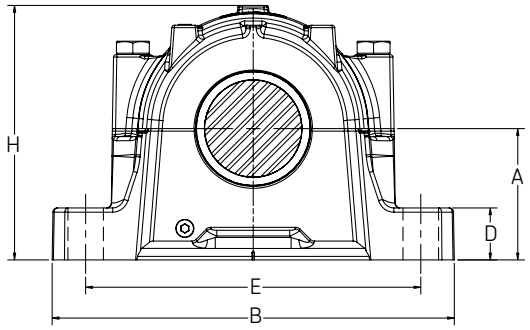
Held and free: Specify the appropriate stabilizing rings for a held unit.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in												
SAF 23024 KA x $4^{3}/_{16}$	$4^{1}/_{2}$	$15^{1}/_{4}$	$4^{3}/_{8}$	$1^{3}/_{4}$	$13^{1}/_{8}$	$11^{5}/_{8}$	$2^{3}/_{8}$	$8^{15}/_{32}$	$1^{9}/_{16}$	$6^{1}/_{8}$	(2)-$^{7}/_{8}$, (4)-$^{3}/_{4}$	$1^{29}/_{32}$	$4^{1}/_{2}$
SAF 23026 KA x $4^{7}/_{16}$	$4^{15}/_{16}$	$16^{1}/_{2}$	$4^{3}/_{4}$	2	$14^{1}/_{2}$	$12^{5}/_{8}$	$2^{3}/_{4}$	$9^{11}/_{32}$	$1^{11}/_{16}$	$6^{1}/_{2}$	(4)-$^{3}/_{4}$	$2^{3}/_{32}$	$4^{5}/_{8}$
SAF 23028 KA x $4^{15}/_{16}$	$5^{1}/_{4}$	$16^{1}/_{2}$	$4^{3}/_{4}$	$2^{1}/_{8}$	$14^{1}/_{2}$	$13^{1}/_{4}$	$2^{3}/_{4}$	$10^{3}/_{16}$	$1^{13}/_{16}$	$7^{3}/_{8}$	(4)-$^{3}/_{4}$	$2^{5}/_{32}$	$5^{1}/_{32}$
SAF 23030 KA x $5^{3}/_{16}$	6	$18^{3}/_{8}$	$5^{1}/_{4}$	$2^{3}/_{8}$	16	$14^{5}/_{8}$	$3^{1}/_{4}$	$11^{5}/_{16}$	$2^{7}/_{32}$	$8^{1}/_{8}$	(4)-$^{7}/_{8}$	$2^{9}/_{32}$	$5^{13}/_{32}$
SAF 23032 KA x $5^{7}/_{16}$	6	$18^{3}/_{8}$	$5^{1}/_{4}$	$2^{3}/_{8}$	16	$14^{5}/_{8}$	$3^{1}/_{4}$	$11^{5}/_{16}$	$2^{1}/_{32}$	$8^{1}/_{8}$	(4)-$^{7}/_{8}$	$2^{7}/_{16}$	$5^{15}/_{32}$
SAF 23034 KA x $5^{15}/_{16}$	6	$20^{1}/_{8}$	$5^{7}/_{8}$	$2^{3}/_{8}$	$17^{1}/_{8}$	16	$3^{3}/_{8}$	$11^{3}/_{4}$	$1^{23}/_{32}$	$7^{5}/_{8}$	(4)-1	$2^{19}/_{32}$	$5^{5}/_{32}$
SAF 23036 KA x $6^{7}/_{16}$	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{5}/_{16}$	$2^{1}/_{16}$	$8^{3}/_{4}$	(4)-1	$2^{25}/_{32}$	$5^{23}/_{32}$
SAF 23038 KA x $6^{15}/_{16}$	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{5}/_{16}$	$1^{7}/_{8}$	$8^{3}/_{4}$	(4)-1	$2^{13}/_{16}$	$5^{23}/_{32}$
SAF 23040 KA x $7^{3}/_{16}$	$7^{1}/_{16}$	$24^{3}/_{4}$	$6^{3}/_{4}$	$2^{3}/_{4}$	$21^{5}/_{8}$	$19^{3}/_{8}$	$4^{1}/_{4}$	$14^{3}/_{16}$	$1^{15}/_{16}$	$9^{5}/_{8}$	(4)-1	$3^{1}/_{32}$	$6^{9}/_{32}$
SAF 23044 KA x $7^{15}/_{16}$	$7^{7}/_{8}$	28	$7^{1}/_{2}$	$3^{1}/_{8}$	$24^{3}/_{8}$	$21^{5}/_{8}$	$4^{1}/_{2}$	$15^{11}/_{16}$	$2^{1}/_{4}$	$10^{3}/_{4}$	(4)-$1^{1}/_{4}$	$3^{7}/_{32}$	$6^{23}/_{32}$
SAF 23048 KA x $8^{15}/_{16}$	$8^{1}/_{4}$	$29^{1}/_{2}$	8	$3^{3}/_{8}$	25	$22^{1}/_{2}$	5	$16^{1}/_{2}$	$2^{7}/_{32}$	$11^{1}/_{4}$	(4)-$1^{1}/_{4}$	$3^{9}/_{16}$	$7^{11}/_{16}$
SAF 23052 KA x $9^{7}/_{16}$	$9^{1}/_{2}$	$32^{3}/_{4}$	$8^{3}/_{4}$	$3^{3}/_{4}$	$27^{7}/_{8}$	$24^{3}/_{4}$	$5^{1}/_{4}$	$18^{5}/_{8}$	$2^{3}/_{4}$	12	(4)-$1^{1}/_{2}$	$3^{7}/_{8}$	$8^{1}/_{16}$
SAF 23056 KA x $9^{15}/_{16}$	$9^{7}/_{8}$	$34^{1}/_{4}$	9	4	$29^{1}/_{2}$	$26^{1}/_{4}$	$5^{1}/_{2}$	$19^{1}/_{2}$	$2^{7}/_{8}$	$12^{3}/_{8}$	(4)-$1^{1}/_{2}$	4	$8^{1}/_{4}$
SAF 23056 KA x $10^{7}/_{16}$	$9^{7}/_{8}$	$34^{1}/_{4}$	9	4	$29^{1}/_{2}$	$26^{1}/_{4}$	$5^{1}/_{2}$	$19^{1}/_{2}$	$2^{7}/_{8}$	$12^{3}/_{8}$	(4)-$1^{1}/_{2}$	4	$8^{1}/_{4}$

Toroidal roller (CARB) / cylindrical mount

SAF C2200
Two-piece cast-iron housing
Toroidal/ C2200 series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	SAF C2215
Option	Specify
Four-bolt base	FSAF C2215
One end closed	SAF C2215Y
PosiTrac Plus seal	SAF C2215TLC
Taconite seals	SAF C2215T
Cast-steel	SAFS C2215

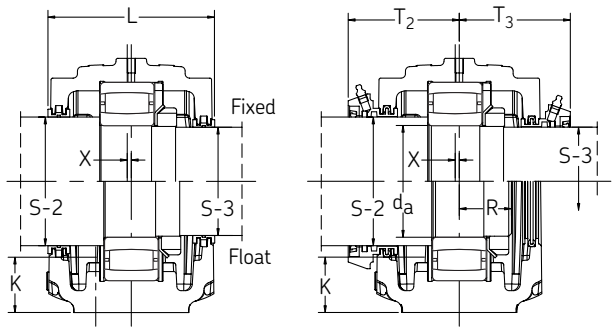


Held: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used.
For shaft diameter tolerances see page 359; for bearing information see page 192; for other seal speed limits see pages 347-350.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut*	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
65	$3\frac{1}{16}$	$2\frac{7}{16}$	**SAF C2213**	C2213TN9	KMFE 13	–	SAF 213	SR 13-0	LOR 55	LOR 37	EPR 7	TER 55	TER 37	22
75	$3\frac{7}{16}$	$2\frac{13}{16}$	**SAF C2215**	C2215	KMFE 15	–	SAF 215	SR 15-0	LOR 79	LOR 46	EPR 8	TER 79	TER 46	27
80	$3\frac{5}{8}$	3	**SAF C2216**	C2216	KMFE 16	–	SAF 216	SR 16-13	LOR 82	LOR 54	EPR 9	TER 82	TER 54	34
85	$3\frac{15}{16}$	$3\frac{3}{16}$	**SAF C2217**	C2217	KMFE 17	–	SAF 217	SR 17-14	LOR 89	LOR 63	EPR 9	TER 89	TER 63	35
90	$4\frac{1}{18}$	$3\frac{3}{8}$	**SAF C2218**	C2218	KMFE 18	–	SAF 218	SR 18-15	LOR 112	LOR 191	EPR 11	TER 112	TER 191	44
100	$4\frac{1}{2}$	$3\frac{13}{16}$	**SAF C2220**	C2220	KMFE 20	–	SAF 220	SR 20-17	LOR 118	LOR 106	EPR 12	TER 118	TER 106	65
110	$4\frac{7}{8}$	$4\frac{3}{16}$	**SAF C2222**	C2222	KMFE 22	–	SAF 222	SR 22-19	LOR 121	LOR 113	EPR 14	TER 121	TER 113	88
130	$5\frac{7}{8}$	$4\frac{15}{16}$	**SAF C2226**	C2226	KML 26	MBL 26	SAF 226	SR 26-0	LOR 136	LOR 122	EPR 27	TER 136	TER 122	134
140	$6\frac{1}{4}$	$5\frac{5}{16}$	**SAF C2228**	C2228	KML 28	MBL 28	SAF 228	SR 28-0	LOR 144	LOR 127	EPR 16	TER 144	TER 127	141
150	$6\frac{5}{8}$	$5\frac{3}{4}$	**SAF C2230**	C2230	KML 30	MBL 30	SAF 230	SR 30-0	LOR 151	LOR 134	EPR 17	TER 151	TER 134	181
170	$7\frac{7}{16}$	$6\frac{7}{16}$	**SAF C2234**	C2234	KML 34	MBL 34	SAF 234	SR 34-0	LOR 161	LOR 148	EPR 19	TER 161	TER 148	263
190	$8\frac{3}{8}$	$7\frac{1}{4}$	**SAF C2238**	C2238	KML 38	MBL 38	SAF 238	SR 38-32	LOR 171	LOR 160	EPR 21	TER 171	TER 160	356
220	$9\frac{9}{16}$	$8\frac{5}{16}$	**SAF C2244**	C2244	KML 44	MBL 44	SAF 244	SR 44-38	LOR 179	LOR 170	EPR 24	TER 179	TER 170	535

Size SAF C2213, two-bolt base only;
Sizes SAF C2215 - SAF C2220, two-or four-bolt base options;
Sizes SAF C2222 - SAF C2224, four-bolt base only.
* Refer to page 452 for information on KMFE and KML lock nuts.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Toroidal roller (CARB) / cylindrical mount

SAF C2200
Two-piece cast-iron housing
Toroidal / C2200 series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF C2215**
Option	Specify
Four-bolt base	FSAF C2215
One end closed	SAF C2215Y
PosiTrac Plus seal	SAF C2215TLC
Taconite seals	SAF C2215T
Cast-steel	SAFS C2215

Held: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used. For shaft diameter tolerances see page 359; for bearing information see page 192; for other seal speed limits see pages 347-350.

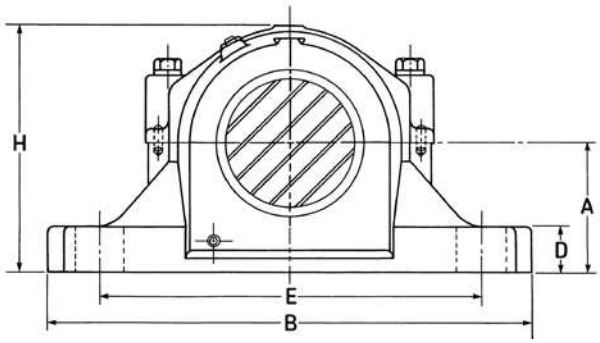
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SAF C2213	3	11	3 1/8	1	9 1/2	8 1/8	–	5 21/32	–	4 1/2	3/16	(2)-5/8	1 1/4	3 3/4	3 3/4
SAF C2215	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 1/8	–	4 11/16	3/16	(2)-5/8, (4)-1/2	1 9/32	3 7/8	3 7/8
SAF C2216	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 1/4	5 5/16	3/16	(2)-3/4, (4)-5/8	1 15/32	4 1/8	4 3/32
SAF C2217	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	3/16	(2)-3/4, (4)-5/8	1 9/16	3 29/32	3 29/32
SAF C2218	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 1/2	5 7/8	3/16	(2)-3/4, (4)-5/8	1 3/4	4 3/16	4 3/32
SAF C2220	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 15/32	1 21/32	6 1/8	3/16	(2)-7/8, (4)-3/4	1 59/64	4 5/16	4 5/16
SAF C2222	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 11/32	1 25/32	6 1/2	3/16	(4)-3/4	2 1/8	4 1/2	4 9/16
SAF C2226	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 11/32	8 1/8	3/16	(4)-7/8	2 15/32	5 1/4	5 5/16
SAF C2228	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/32	7 5/8	3/16	(4)-1	2 39/64	5 1/8	5 1/8
SAF C2230	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2	8 3/8	3/16	(4)-1	2 49/64	5 1/2	5 1/2
SAF C2234	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 5/8	3/16	(4)-1	3 1/8	6 3/16	6
SAF C2238	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 7/16	10 3/4	3/16	(4)-1 1/4	3 19/64	7 7/16	6 13/16
SAF C2244	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 1/8	12	3/16	(4)-1 1/2	3 5/8	8	8 1/16

Toroidal roller (CARB) / cylindrical mount

SAF C2300

Two-piece cast-iron housing
Toroidal / C2300 series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	SAF C2315
Option	Specify
Four-bolt base	FSAF C2315
One end closed	SAF C2315Y
PosiTrac Plus seal	SAF C2315TLC
Taconite seals	SAF C2315T
Cast-steel	SAFS C2315

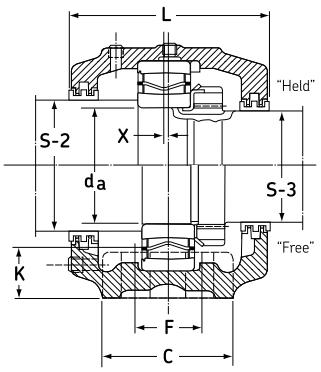


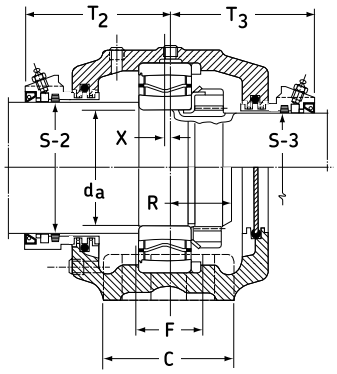
Free: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used.
For shaft diameter tolerances see page 359; for bearing information see page 193; for other seal speed limits see pages 347-350.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
70	$3\frac{1}{4}$	$2\frac{5}{8}$	**SAF C2314**	C2314	N 14	W 14	SAF 314	SR 17-14	LOR 64	LOR 43	EPR 8	TER 64	TER 43	42
75	$3\frac{7}{16}$	$2\frac{13}{16}$	**SAF C2315**	C2315	AN 15	W 15	SAF 315	SR 18-15	LOR 79	LOR 46	EPR 8	TER 79	TER 46	48
80	$3\frac{5}{8}$	3	**SAF C2316**	C2316	AN 16	W 16	SAF 316	SR 19-16	LOR 84	LOR 60	EPR 10	TER 84	TER 60	67
85	$3\frac{15}{16}$	$3\frac{3}{16}$	**SAF C2317**	C2317	AN 17	W 17	SAF 317	SR 20-17	LOR 109	LOR 188	EPR 11	TER 109	TER 188	71
90	$4\frac{1}{8}$	$3\frac{3}{8}$	**SAF C2318**	C2318	AN 18	W 18	SAF 318	SR 21-18	LOR 112	LOR 191	EPR 11	TER 112	TER 191	92
100	$4\frac{1}{2}$	$3\frac{13}{16}$	**SAF C2320**	C2320	AN 20	W 20	SAF 320	SR 24-20	LOR 118	LOR 106	EPR 12	TER 118	TER 106	107

Sizes SAF C2314 - SAF C2317, two-or four-bolt base options;
Sizes SAF C2318 - SAF C2320, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.





Taconite seal option

Toroidal roller (CARB) / cylindrical mount

SAF C2300
Two-piece cast-iron housing
Toroidal / C2300 series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF C2315**
Option	Specify
Four-bolt base	FSAF C2315
One end closed	SAF C2315Y
PosiTrac Plus seal	SAF C2315TLC
Taconite seals	SAF C2315T
Cast-steel	SAFS C2315

Held: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used. For shaft diameter tolerances see page 359; for bearing information see page 193; for other seal speed limits see pages 347-350.

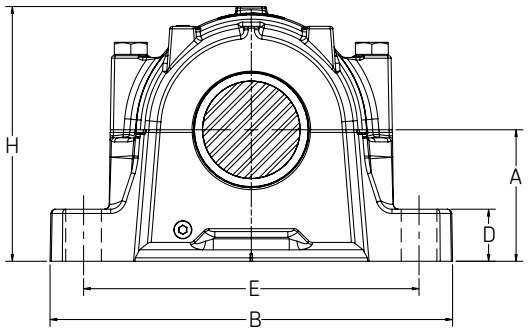
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SAF C2314	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 3/8	1 15/32	5 3/8	3/16	(2)-3/4, (4)-5/8	1 11/16	4 5/32	4 1/8
SAF C2315	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 19/32	5 7/8	3/16	(2)-3/4, (4)-5/8	1 7/8	4 1/2	4 9/16
SAF C2316	4 1/4	14 1/4	3 7/8	1 5/16	12 5/8	10 5/8	2 1/8	8 1/4	1 11/16	6 1/2	3/16	(2)-3/4, (4)-5/8	1 15/16	4 19/32	4 19/32
SAF C2317	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 3/4	6 3/4	3/16	(2)-7/8, (4)-3/4	2 1/16	4 11/16	4 19/32
SAF C2318	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 3/16	1 7/8	6 7/8	3/16	(4)-3/4	2 3/16	4 3/4	4 19/32
SAF C2320	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 1/32	7 3/8	3/16	(4)-3/4	2 7/16	5	5

Toroidal roller (CARB) / adapter mount

SAF C2500

Two-piece cast-iron housing
Toroidal / C2200 K series bearing
Free bearing only
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAF C2515
Option	Specify
Four-bolt base	FSAF C2515
One end closed	SAF C2515Y
PosiTrac Plus seal	SAF C2515TLC
Taconite seals	SAF C2515T
Optional shaft size	SAF C2515 x $2^{1}/_{2}$
Cast-steel	SAFS C2515



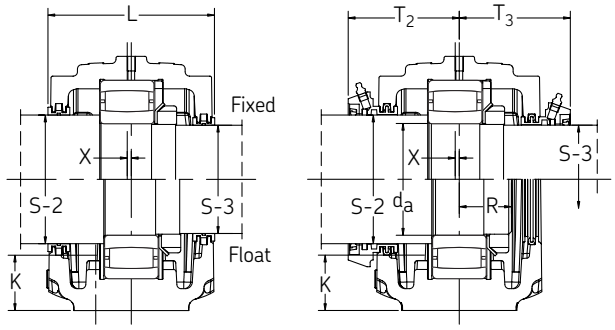
Free: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used.
For shaft diameter tolerances see page 359; for bearing information see page 192; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$1^{3}/_{16}$	–	**SAF C2507**	C2207 KTN9	HA 307E	SAF 507	36053-6	LER 14	EPR 2	TER 14	8
$1^{7}/_{16}$	$1^{3}/_{8}$, $1^{1}/_{2}$	**SAF C2509**	C2209 KTN9	HA 309E	SAF 509	SR 9-9	LER 17	EPR 3	TER 17	12
$1^{11}/_{16}$	$1^{5}/_{8}$, $1^{3}/_{4}$	**SAF C2510**	C2210 KTN9	HA 310E	SAF 510	SR 10-0	LER 20	EPR 4	TER 20	13
$1^{15}/_{16}$	$1^{7}/_{8}$, 2	**SAF C2511**	C2211 KTN9	HA 311E	SAF 511	SR 11-0	LER 24	EPR 5	TER 24	16
$2^{3}/_{16}$	$2^{1}/_{8}$, $2^{1}/_{4}$	**SAF C2513**	C2213 KTN9	HA 313E	SAF 513	SR 13-0	LER 29	EPR 6	TER 29	22
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAF C2515**	C2215 K	HA 315E	SAF 515	SR 15-0	LOR 37	EPR 7	TER 37	28
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAF C2516**	C2216 K	HA 316E	SAF 516	SR 16-13	LOR 44	EPR 8	TER 44	37
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAF C2517**	C2217 K	HA 317E	SAF 517	SR 17-14	LOR 53	EPR 9	TER 53	38
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAF C2518**	C2218 K	HA 318E	SAF 518	SR 18-15	LOR 188	EPR 11	TER 188	47
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAF C2520**	C2220 K	HA 320E	SAF 520	SR 20-17	LOR 102	EPR 12	TER 102	62
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAF C2522**	C2222 K	HA 322E	SAF 522	SR 22-19	LOR 109	EPR 13	TER 109	73
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SAF C2526**	C2226 K	HA 3126L	SAF 526	SR 26-0	LOR 117	EPR 15	TER 117	144
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SAF C2528**	C2228 K	HA 3128L	SAF 528	SR 28-0	LOR 122	EPR 27	TER 122	153
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SAF C2530**	C2230 K	HA 3130L	SAF 530	SR 30-0	LOR 125	EPR 16	TER 125	199
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SAF C2534**	C2234 K	HA 3134L	SAF 534	SR 34-0	LOR 140	EPR 18	TER 140	276
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAF C2538**	C2238 K	HA 3138L	SAF 538	SR 38-32	LOR 155	EPR 20	TER 155	374
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SAF C2544**	C2244 K	HA 3144L	SAF 544	SR 44-38	LOR 167	EPR 23	TER 167	576

*Requires different adapter sleeve and seals.

Sizes SAF C2507 - SAF C2513, two-bolt base only;
Sizes SAF C2515 - SAF C2520, two-or four-bolt base options;
Sizes SAF C2522 - SAF C2544, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Toroidal roller (CARB) / adapter mount

SAF C2500
Two-piece cast-iron housing
Toroidal / C2200 K series bearing
Free bearing only
Oil or grease lubrication
LER / LOR triple ring seals

How to order	**SAF C2515**
Option	Specify
Four-bolt base	FSAF C2515
One end closed	SAF C2515Y
PosiTrac Plus seal	SAF C2515TLC
Taconite seals	SAF C2515T
Optional shaft size	SAF C2515 x 2 1/2
Cast-steel	SAFS C2515

Free: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used. For shaft diameter tolerances see page 359; for bearing information see page 192; for other seal speed limits see pages 347-350.

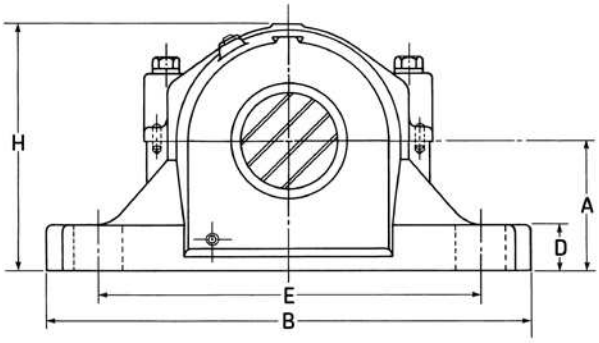
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAF C2507	2	7 1/2	2	13/16	6 1/8	5 5/8	–	3 3/4	7/8	3 3/16	3/32	(2)-1/2	13/16	3 1/32
SAF C2509	2 1/4	8 1/4	2 3/8	13/16	7	6 1/4	–	4 3/8	31/32	3 5/8	7/64	(2)-1/2	1 3/32	3 1/32
SAF C2510	2 1/2	8 1/4	2 3/8	15/16	7	6 1/2	–	4 3/4	1 3/32	3 5/8	9/64	(2)-1/2	1 5/32	3 1/4
SAF C2511	2 3/4	9 5/8	2 3/4	15/16	7 7/8	7 3/8	–	5 1/32	1 3/16	3 7/8	7/64	(2)-5/8	1 13/64	3 3/8
SAF C2513	3	11	3 1/8	1	9 1/2	8 1/8	–	5 21/32	1 3/32	4 1/2	5/32	(2)-5/8	1 25/64	3 5/8
SAF C2515	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 1/8	1 1/8	4 11/16	7/64	(2)-5/8, (4)-1/2	1 7/16	3 13/16
SAF C2516	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	1 1/4	5 5/16	3/16	(2)-3/4, (4)-5/8	1 15/32	4 1/8
SAF C2517	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	3/16	(2)-3/4, (4)-5/8	1 9/16	3 29/32
SAF C2518	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 1/2	5 7/8	3/16	(2)-3/4, (4)-5/8	1 3/4	4 1/16
SAF C2520	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 15/32	1 21/32	6 1/8	3/16	(2)-7/8, (4)-3/4	1 59/64	4 3/8
SAF C2522	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 11/32	1 25/32	6 1/2	3/16	(4)-3/4	2 1/8	4 9/16
SAF C2526	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	2 11/32	8 1/8	3/16	(4)-7/8	2 15/32	5 5/16
SAF C2528	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/32	7 5/8	3/16	(4)-1	2 29/64	5 1/8
SAF C2530	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	2	8 3/8	3/16	(4)-1	2 39/64	5 1/2
SAF C2534	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 5/8	3/16	(4)-1	3 1/8	6 1/16
SAF C2538	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 7/16	10 3/4	3/16	(4)-1 1/4	3 19/64	6 11/16
SAF C2544	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 1/8	12	3/16	(4)-1 1/2	3 5/8	7 1/4

Toroidal roller (CARB) / adapter mount

SAF C2600

Two-piece cast-iron housing
Toroidal / C2300 K series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	SAF C2615
Option	Specify
Four-bolt base	FSAF C2615
One end closed	SAF C2615Y
PosiTrac Plus seal	SAF C2615TLC
Taconite seals	SAF C2615T
Optional shaft size	SAF C2615 x 2
Cast-steel	SAFS C2615

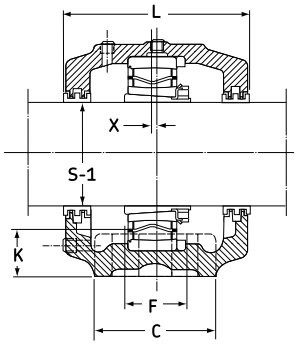


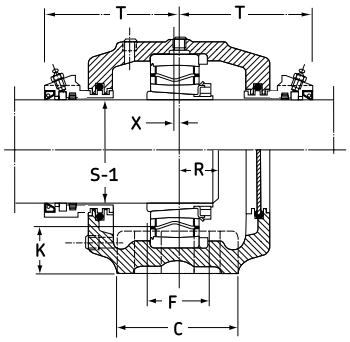
Free: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used.
For shaft diameter tolerances see page 359; for bearing information see page 193; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block	Stab. ring housing	Triple ring seal (1 req'd)	End plug (2 req'd)	Taconite seal	
in										lbs
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAF C2615**	C2315 K	HA 2315	SAF 615	SR 18-15	LOR 37	EPR 7	TER 37	52
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAF C2616**	C2316 K	HA 2316	SAF 616	SR 19-16	LOR 44	EPR 8	TER 44	71
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAF C2617**	C2317 K	HA 2317	SAF 617	SR 20-17	LOR 184	EPR 10	TER 184	75
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAF C2618**	C2318 K	HA 2318	SAF 618	SR 21-18	LOR 188	EPR 11	TER 188	97
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAF C2620**	C2320 K	HA 2320	SAF 620	SR 24-20	LOR 102	EPR 12	TER 102	113

*Optional shaft sizes require different adapter sleeve and seals.
Sizes SAF C2615 - SAF C2617, two-or four-bolt base options;
Sizes SAF C2618 - SAF C2620, four-bolt base only.

Optional internal radial clearances (e.g. C3) are available upon request.





Taconite seal option

SAF C2600
Two-piece cast-iron housing
Toroidal / C2300 K series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF C2615**
Option	Specify
Four-bolt base	FSAF C2615
One end closed	SAF C2615Y
PosiTrac Plus seal	SAF C2615TLC
Taconite seals	SAF C2615T
Optional shaft size	SAF C2615 x 2
Cast-steel	SAFS C2615

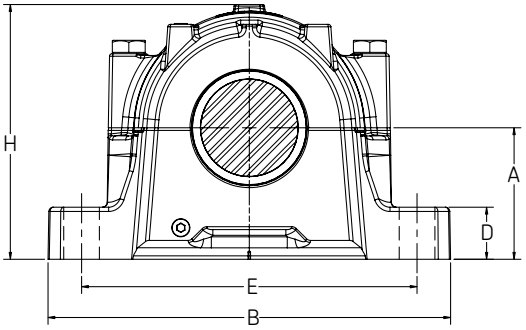
Free: Standard and standard option blocks come with a stabilizing ring. For toroidal bearings, the enclosed stabilizing ring must be used. For shaft diameter tolerances see page 359; for bearing information see page 193; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAF C2615	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	1 19/32	5 7/8	3/16	(2)-3/4, (4)-5/8	1 7/8	4 11/32
SAF C2616	4 1/4	14 1/4	3 7/8	1 3/4	12 5/8	10 5/8	2 1/8	8 1/4	1 11/16	6 1/2	3/16	(2)-3/4, (4)-5/8	1 15/16	4 19/32
SAF C2617	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	1 3/4	6 3/4	3/16	(2)-7/8, (4)-3/4	2 1/16	4 9/16
SAF C2618	4 3/4	15 1/2	4 3/8	2	13 1/2	12	2 1/4	9 1/4	1 7/8	6 7/8	3/16	(4)-3/4	2 3/16	4 9/16
SAF C2620	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	2 1/32	7 5/16	3/16	(4)-3/4	2 7/16	5

Toroidal roller (CARB) / adapter mount

SAF C3000 KA
Two-piece cast-iron housing
Toroidal / C3000 K series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

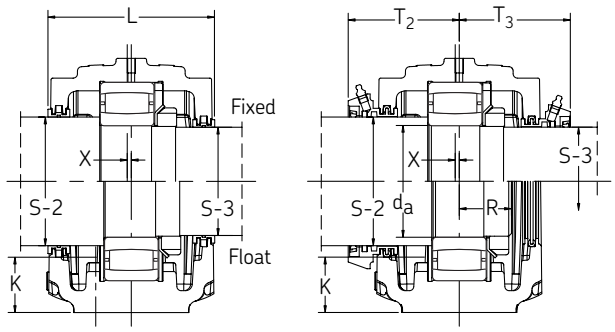
How to order	C3036 KA x $6^{7}/_{16}$
Option	Specify
One end closed	SAF C3036 KAY x $6^{7}/_{16}$
PosiTrac Plus seal	SAF C3036TLC x $6^{7}/_{16}$
Taconite seals	SAF C3036 KAT x $6^{7}/_{16}$
Optional shaft size	SAF C3036 KA x $6^{1}/_{2}$
Cast-steel	SAFS C3036 KA x $6^{7}/_{16}$



For toroidal bearings in this series, you must order the appropriate stabilizing rings.
For shaft diameter tolerances see page 359; for bearing information see page 194; for other seal speed limits see pages 347-350.

Shaft dia.			Designations							Mass
S-1 Standard	Optional*	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SAF C3036 KA x $6^{7}/_{16}$**	C3036 K	HA 3036	SAF 036 KA x $6^{7}/_{16}$	38151-36	LOR 148	EPR 19	TER 148	272
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAF C3038 KA x $6^{15}/_{16}$**	C3038 K	HA 3038	SAF 038 KA x $6^{15}/_{16}$	38151-38	LOR 155	EPR 20	TER 155	284
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SAF C3040 KA x $7^{3}/_{16}$**	C3040 K	HA 3040	SAF 040 KA x $7^{3}/_{16}$	38151-40	LOR 159	EPR 21	TER 159	367
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SAF C3044 KA x $7^{15}/_{16}$**	C3044 K	HA 3044	SAF 044 KA x $7^{15}/_{16}$	36053-140	LOR 167	EPR 23	TER 167	386
$8^{15}/_{16}$	$8^{7}/_{16}$, $8^{1}/_{2}$, 9	**SAF C3048 KA x $8^{15}/_{16}$**	C3048 K	HA 3048	SAF 048 KA x $8^{15}/_{16}$	A-8897	LOR 552	X-5217-4	TER 552	474
$9^{7}/_{16}$	$9^{1}/_{2}$	**SAF C3052 KA x $9^{7}/_{16}$**	C3052 K	HA 3052	SAF 052 KA x $9^{7}/_{16}$	A-8898	LOR 553	X-5217-2	TER 553	530
$9^{15}/_{16}$	10	**SAF C3056 KA x $9^{15}/_{16}$**	C3056 K	HA 3056/252.4	SAF 056 KA x $9^{15}/_{16}$	A-8819	LOR 607	X-5217-2	TER 607	800
$10^{7}/_{16}$	$10^{1}/_{2}$	**SAF C3056 KA x $10^{7}/_{16}$**	C3056 K	HA 3056/265.1	SAF 056 KA x $10^{7}/_{16}$	A-8819	LOR 606	X-5217-1	TER 606	800

*Optional shaft sizes require different adapter sleeve and seals.
Sizes SAF C3036 KA - SAF C3056 KA, four-bolt base only.
Optional internal radial clearances (e.g. C3) are available upon request.



Taconite seal option

Toroidal roller / adapter mount

SAF C3000 KA
Two-piece cast-iron housing
Self-aligning / 23000 K series bearing
Free bearing only
Oil or grease lubrication
LOR triple ring seals

How to order	**SAF C3036 KA x $6^{7}/_{16}$**
Option	Specify
One end closed	SAF C3036 KAY $6^{7}/_{16}$
PosiTrac Plus seal	SAF C3036 KA/TLC x $6^{7}/_{16}$
Taconite seals	SAF C3036 KAT $6^{7}/_{16}$
Optional shaft size	SAF C3036 KA x $6^{1}/_{2}$
Cast-steel	SAFS C3036 KA x $6^{7}/_{16}$

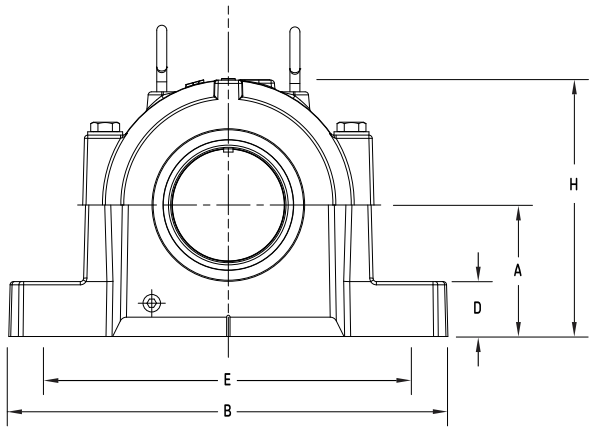
For toroidal bearings in this series, you must order the appropriate stabilizing rings.
For shaft diameter tolerances see page 359; for bearing information see page 194; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in												
SAF C3036 KA x $6^{7}/_{16}$	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{5}/_{16}$	$2^{1}/_{16}$	$8^{3}/_{4}$	(4)-1	$2^{25}/_{32}$	$5^{23}/_{32}$
SAF C3038 KA x $6^{15}/_{16}$	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{5}/_{16}$	$1^{7}/_{8}$	$8^{3}/_{4}$	(4)-1	$2^{13}/_{16}$	$5^{23}/_{32}$
SAF C3040 KA x $7^{3}/_{16}$	$7^{1}/_{16}$	$24^{3}/_{4}$	$6^{3}/_{4}$	$2^{3}/_{4}$	$21^{5}/_{8}$	$19^{3}/_{8}$	$4^{1}/_{4}$	$14^{3}/_{16}$	$1^{15}/_{16}$	$9^{5}/_{8}$	(4)-1	$3^{1}/_{32}$	$6^{9}/_{32}$
SAF C3044 KA x $7^{15}/_{16}$	$7^{7}/_{8}$	28	$7^{1}/_{2}$	$3^{1}/_{8}$	$24^{3}/_{8}$	$21^{5}/_{8}$	$4^{1}/_{2}$	$15^{11}/_{16}$	$2^{1}/_{4}$	$10^{3}/_{4}$	(4)-$1^{1}/_{4}$	$3^{7}/_{32}$	$6^{23}/_{32}$
SAF C3048 KA x $8^{15}/_{16}$	$8^{1}/_{4}$	$29^{1}/_{2}$	8	$3^{3}/_{8}$	25	$22^{1}/_{2}$	5	$16^{1}/_{2}$	$2^{7}/_{32}$	$11^{1}/_{4}$	(4)-$1^{1}/_{4}$	$3^{9}/_{16}$	$7^{11}/_{16}$
SAF C3052 KA x $9^{7}/_{16}$	$9^{1}/_{2}$	$32^{3}/_{4}$	$8^{3}/_{4}$	$3^{3}/_{4}$	$27^{7}/_{8}$	$24^{3}/_{4}$	$5^{1}/_{4}$	$18^{5}/_{8}$	$2^{3}/_{4}$	12	(4)-$1^{1}/_{2}$	$3^{7}/_{8}$	$8^{1}/_{16}$
SAF C3056 KA x $9^{15}/_{16}$	$9^{7}/_{8}$	$34^{1}/_{4}$	9	$2^{3}/_{4}$	$29^{1}/_{2}$	$26^{1}/_{4}$	$5^{1}/_{2}$	$20^{3}/_{16}$	$2^{7}/_{8}$	$12^{1}/_{4}$	(4)-$1^{1}/_{2}$	4	$8^{1}/_{4}$
SAF C3056 KA x $10^{7}/_{16}$	$9^{7}/_{8}$	$34^{1}/_{4}$	9	$2^{3}/_{4}$	$29^{1}/_{2}$	$26^{1}/_{4}$	$5^{1}/_{2}$	$20^{3}/_{16}$	$2^{7}/_{8}$	$12^{1}/_{4}$	(4)-$1^{1}/_{2}$	4	$8^{1}/_{4}$

Spherical roller bearing / cylindrical mount

SAFS 22200
Two-piece cast-steel housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

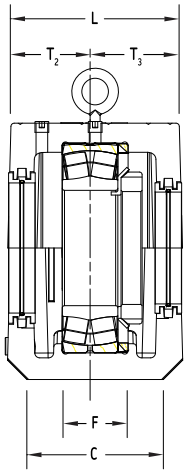
How to order	**SAFS 22216**
Option	Specify
Four-bolt base	SAFS 22216-11
One end closed	SAFS 22216Y
Taconite seals	SAFS 22216T
Contact seals	SAFS 22216-210



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 98; for other seal speed limits see pages 347-350.

Shaft dia.			**Designations**											**Mass**
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
80	3 5/8	3	**SAFS 22216**	22216 E	AN 16	W 16	SAFS 216	SR 16-13	LOR 82	LOR 54	EPR 9	TER 82	TER 54	41
85	3 15/16	3 3/16	**SAFS 22217**	22217 E	AN 17	W 17	SAFS 217	SR 17-14	LOR 89	LOR 63	EPR 9	TER 89	TER 63	44
90	4 1/8	3 3/8	**SAFS 22218**	22218 E	AN 18	W 18	SAFS 218	SR 18-15	LOR 112	LOR 191	EPR 11	TER 112	TER 191	53
100	4 1/2	3 3/16	**SAFS 22220**	22220 E	AN 20	W 20	SAFS 220	SR 20-17	LOR 118	LOR 106	EPR 12	TER 118	TER 106	75
110	4 7/8	4 3/16	**SAFS 22222**	22222 E	AN 22	W 22	SAFS 222	SR 22-19	LOR 121	LOR 113	EPR 14	TER 121	TER 113	98
120	5 5/16	4 9/16	**SAFS 22224**	22224 E	AN 24	W 24	SAFS 224	SR 24-20	LOR 127	LOR 119	EPR 15	TER 127	TER 119	118
130	5 7/8	4 15/16	**SAFS 22226**	22226 E	AN 26	W 26	SAFS 226	SR 26-0	LOR 136	LOR 122	EPR 27	TER 136	TER 122	158
140	6 1/4	5 5/16	**SAFS 22228**	22228 CC/W33	AN 28	W 28	SAFS 228	SR 28-0	LOR 144	LOR 127	EPR 16	TER 144	TER 127	178
150	6 5/8	5 3/4	**SAFS 22230**	22230 CC/W33	AN 30	W 30	SAFS 230	SR 30-0	LOR 151	LOR 134	EPR 17	TER 151	TER 134	221
160	7	6 7/16	**SAFS 22232**	22232 CC/W33	AN 32	W 32	SAFS 232	SR 32-0	LOR 156	LOR 142	EPR 18	TER 156	TER 142	247
170	4 1/8	3 3/8	**SAFS 22234**	22234 CC/W33	AN 34	W 34	SAFS 234	SR 34-0	LOR 161	LOR 148	EPR 19	TER 161	TER 148	313
180	7 13/16	6 7/8	**SAFS 22236**	22236 CC/W33	AN 36	W 36	SAFS 236	SR 36-30	LOR 165	LOR 154	EPR 20	TER 165	TER 154	393
190	8 3/8	7 1/4	**SAFS 22238**	22238 CC/W33	AN 38	W 38	SAFS 238	SR 38-32	LOR 171	LOR 160	EPR 21	TER 171	TER 160	409
200	8 3/4	7 5/8	**SAFS 22240**	22240 CC/W33	AN 40	W 40	SAFS 240	SR 40-34	LOR 175	LOR 164	EPR 22	TER 175	TER 164	464
220	9 9/16	8 5/16	**SAFS 22244**	22244 CC/W33	N 44	W 44	SAFS 244	SR 44-38	LOR 179	LOR 170	EPR 24	TER 179	TER 170	491

Sizes SAFS 22216 - SAFS 22220, two-or four-bolt base options;
Sizes SAFS 22222 - SAFS 22244, four-bolt base only.



Spherical roller bearing / cylindrical mount

SAFS 22200
Two-piece cast-steel housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22216**
Option	Specify
Four-bolt base	SAFS 22216-11
One end closed	SAFS 22216Y
Taconite seals	SAFS 22216T
Contact seals	SAFS 22216-210

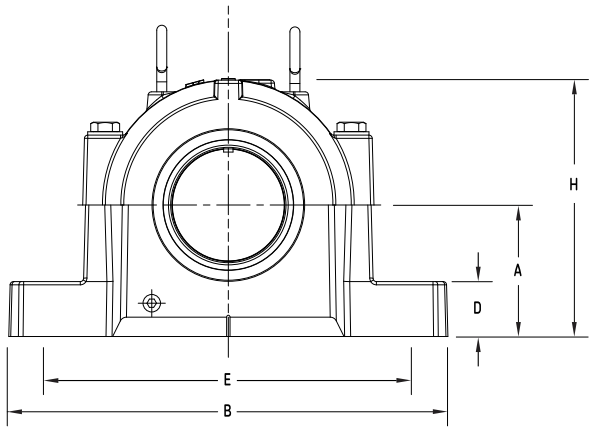
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 98; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	**Bolts** (no. req'd)	R	T_2	T_3
	in													
SAFS 22216	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 15/16	1 1/4	5 3/8	(2)-3/4, (4)-5/8	1 15/32	4 1/8	4 3/32
SAFS 22217	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 3/8	1 3/8	5 3/8	(2)-3/4, (4)-5/8	1 9/16	4 5/32	4 5/32
SAFS 22218	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 7/8	1 1/2	6 1/4	(2)-3/4, (4)-5/8	1 3/4	4 7/16	4 9/32
SAFS 22220	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 7/8	1 21/32	6	(2)-7/8, (4)-3/4	1 59/64	4 1/4	4 1/4
SAFS 22222	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 3/4	1 25/32	6 5/8	(4)-3/4	2 1/8	4 9/16	4 5/8
SAFS 22224	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/2	1 27/32	7 3/8	(4)-3/4	2 9/32	5	5
SAFS 22226	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 3/4	2 11/32	8	(4)-7/8	2 15/32	5 1/4	5 1/4
SAFS 22228	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	12	2 1/32	7 5/8	(4)-1	2 39/64	5 1/8	5 1/8
SAFS 22230	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 5/8	2	8 3/8	(4)-1	2 49/64	5 1/2	5 1/2
SAFS 22232	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 7/16	2 1/16	8 3/4	(4)-1	2 31/32	5 11/16	5 11/16
SAFS 22234	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 7/16	2 5/32	9 5/8	(4)-1	3 1/8	6 3/16	6
SAFS 22236	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	15 5/16	2 3/8	10	(4)-1	3 9/64	6 1/4	6 1/4
SAFS 22238	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 5/16	2 7/16	10 3/4	(4)-1 1/4	3 19/64	7 7/16	6 13/16
SAFS 22240	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 15/32	11 1/4	(4)-1 1/4	3 1/2	7 3/4	7 1/8
SAFS 22244	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 7/8	3 1/8	12	(4)-1 1/2	3 5/8	8	8 1/16

Spherical roller bearing / cylindrical mount

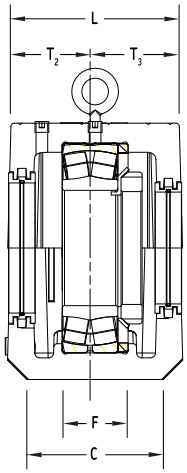
SAFS 22300
Two-piece cast-steel housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22320**
Option	Specify
One end closed	SAFS 22320Y
Taconite seals	SAFS 22320T
Contact seals	SAFS 22320-210



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 99; for other seal speed limits see pages 347-350.

Shaft dia.			**Designations**											**Mass**
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
100	$4\frac{1}{2}$	$3\frac{13}{16}$	**SAFS 22320**	22320 E	AN 20	W 20	SAFS 320	SR 24-20	LOR 118	LOR 106	EPR 12	TER 118	TER 106	152
110	$4\frac{7}{8}$	$4\frac{3}{16}$	**SAFS 22322**	22322 E	AN 22	W 22	SAFS 322	SR 0-22	LOR 121	LOR 113	EPR 14	TER 121	TER 113	158
120	$5\frac{5}{16}$	$4\frac{9}{16}$	**SAFS 22324**	22324 CC/W33	AN 24	W 24	SAFS 324	SR 0-24	LOR 127	LOR 119	EPR 15	TER 127	TER 119	221
130	$5\frac{7}{8}$	$4\frac{15}{16}$	**SAFS 22326**	22326 CC/W33	AN 26	W 26	SAFS 326	SR 0-26	LOR 136	LOR 122	EPR 27	TER 136	TER 122	266
140	$6\frac{1}{4}$	$5\frac{5}{16}$	**SAFS 22328**	22328 CC/W33	AN 28	W 28	SAFS 328	SR 0-28	LOR 144	LOR 127	EPR 16	TER 144	TER 127	312
150	$6\frac{5}{8}$	$5\frac{3}{4}$	**SAFS 22330**	22330 CC/W33	AN 30	W 30	SAFS 330	SR 36-30	LOR 151	LOR 134	EPR 17	TER 151	TER 134	392
160	7	$6\frac{7}{16}$	**SAFS 22332**	22332 CC/W33	AN 32	W 32	SAFS 332	SR 38-32	LOR 156	LOR 142	EPR 18	TER 156	TER 142	408
170	$7\frac{7}{16}$	$6\frac{7}{16}$	**SAFS 22334**	22334 CC/W33	AN 34	W 34	SAFS 334	SR 40-34	LOR 161	LOR 148	EPR 19	TER 161	TER 148	461
180	$8\frac{3}{8}$	$7\frac{1}{4}$	**SAFS 22338**	22338 CC/W33	AN 38	W 38	SAFS 338	SR 44-38	LOR 171	LOR 160	EPR 21	TER 171	TER 160	491
200	$8\frac{3}{4}$	$7\frac{5}{8}$	**SAFS 22340**	22340 CC/W33	AN 40	W 40	SAFS 340	SR 0-40	LOR 175	LOR 164	EPR 22	TER 175	TER 164	800



Spherical roller bearing / cylindrical mount

SAFS 22300
Two-piece cast-steel housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22320**
Option	Specify
One end closed	SAFS 22320Y
Taconite seals	SAFS 22320T
Contact seals	SAFS 22320-210

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 99; for other seal speed limits see pages 347-350.

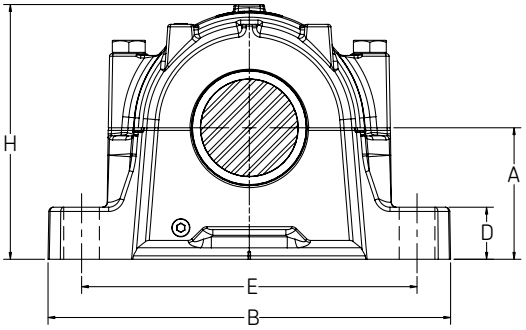
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	**Bolts** (no. req'd)	R	T_2	T_3
	in													
SAFS 22320	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/2	2 1/32	7 3/8	(4)-3/4	2 7/16	5	5
SAFS 22322	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 3/4	2 13/32	8	(4)-7/8	2 5/8	5 1/4	5 1/4
SAFS 22324	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 5/8	2 3/8	8 3/8	(4)-1	2 13/16	5 1/2	5 1/2
SAFS 22326	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 7/16	2 7/16	8 3/4	(4)-1	3	5 11/16	5 11/16
SAFS 22328	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 7/16	2 9/16	9 3/4	(4)-1	3 1/4	6 1/8	6 1/8
SAFS 22330	7 1/2	26 3/4	7 1/8	2 1/8	23 5/8	20 7/8	4 5/8	15 5/16	2 5/8	9 3/4	(4)-1	3 7/16	6 1/4	6 1/4
SAFS 22332	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 15/16	2 11/16	10 3/4	(4)-1 1/4	3 5/8	6 11/16	6 11/16
SAFS 22334	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 3/4	11 3/8	(4)-1 1/4	3 3/4	7 1/8	6 15/16
SAFS 23338	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 7/8	3 3/8	12	(4)-1 1/2	4 1/16	8 11/16	7 7/16
SAFS 22340	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	19 1/2	3 7/16	12 3/8	(4)-1 1/2	4 1/8	8 1/4	8 1/4

Spherical roller / adapter mount

SAFS 22500

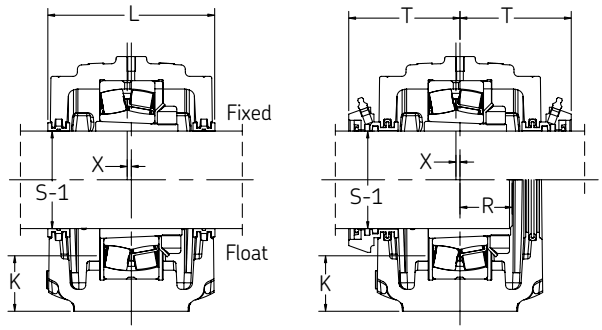
Two-piece cast-steel housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	SAFS 22515
Option	Specify
Four-bolt base	SAFS 22515-11
One end closed	SAFS 22515Y
Taconite seals	SAFS 22515T
Contact seals	SAFS 22515-210
Optional shaft size	SAFS 22515 x $2^{1}/_{2}$



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 100; for other seal speed limits see pages 347-350.

Shaft dia.						Designations				Mass
S-1		Complete pillow block	Bearing	Adapter assembly	Pillow block	Stab. ring housing	Triple ring seal (1 req'd)	End plug (2 req'd)	Taconite seal	
Standard	Optional									
in										lbs
$2^{7}/_{16}$	$2^{3}/_{8}$, $2^{1}/_{2}$	**SAFS 22515**	22215 EK	SNW 15	SAFS 515	SR 15-0	LOR 37	EPR 7	TER 37	32
$2^{11}/_{16}$	$2^{5}/_{8}$, $2^{3}/_{4}$	**SAFS 22516**	22216 EK	SNW 16	SAFS 516	SR 16-13	LOR 44	EPR 8	TER 44	42
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SAFS 22517**	22217 EK	SNW 17	SAFS 517	SR 17-14	LOR 53	EPR 9	TER 53	45
$3^{3}/_{16}$	$3^{1}/_{16}$, $3^{1}/_{8}$, $3^{1}/_{4}$	**SAFS 22518**	22218 EK	SNW 18	SAFS 518	SR 18-15	LOR 188	EPR 11	TER 188	62
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAFS 22520**	22220 EK	SNW 20	SAFS 520	SR 20-17	LOR 102	EPR 12	TER 102	79
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAFS 22522**	22222 EK	SNW 22	SAFS 522	SR 22-19	LOR 109	EPR 13	TER 109	88
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SAFS 22524**	22224 EK	SNW 24	SAFS 524	SR 24-20	LOR 113	EPR 14	TER 113	125
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SAFS 22526**	22226 EK	SNW 26	SAFS 526	SR 26-0	LOR 117	EPR 15	TER 117	169
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SAFS 22528**	22228 CCK/W33	SNW 28	SAFS 528	SR 28-0	LOR 122	EPR 27	TER 122	185
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SAFS 22530**	22230 CCK/W33	SNW 30	SAFS 530	SR 30-0	LOR 125	EPR 16	TER 125	236
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SAFS 22532**	22232 CCK/W33	SNW 32	SAFS 532	SR 32-0	LOR 130	EPR 16	TER 130	241
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SAFS 22534**	22234 CCK/W33	SNW 34	SAFS 534	SR 34-0	LOR 140	EPR 18	TER 140	326
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SAFS 22536**	22236 CCK/W33	SNW 36	SAFS 536	SR 36-30	LOR 148	EPR 19	TER 148	366
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAFS 22538**	22238 CCK/W33	SNW 38	SAFS 538	SR 38-32	LOR 155	EPR 20	TER 155	435
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SAFS 22540**	22240 CCK/W33	SNW 40	SAFS 540	SR 40-34	LOR 159	EPR 21	TER 159	486
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SAFS 22544**	22244 CCK/W33	SNW 44	SAFS 544	SR 44-38	LOR 167	EPR 23	TER 167	680



Taconite seal option

Spherical roller / adapter mount

SAFS 22500
Two-piece cast-steel housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22515**
Option	Specify
Four-bolt base	SAFS 22515-11
One end closed	SAFS 22515Y
Taconite seals	SAFS 22515T
Contact seals	SAFS 22515-210
Optional shaft size	SAFS 22515 x $2^{1}/_{2}$

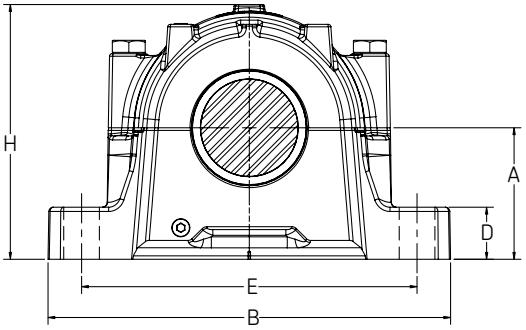
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 100; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAFS 22515	$3^{1}/_{4}$	$11^{1}/_{4}$	$3^{1}/_{8}$	$1^{3}/_{16}$	$9^{5}/_{8}$	$8^{5}/_{8}$	$1^{7}/_{8}$	$6^{3}/_{8}$	$1^{1}/_{8}$	$4^{3}/_{4}$	$^{7}/_{64}$	(2)-$^{5}/_{8}$, (4)-$^{1}/_{2}$	$1^{7}/_{16}$	$3^{13}/_{16}$
SAFS 22516	$3^{1}/_{2}$	13	$3^{1}/_{2}$	$1^{1}/_{4}$	11	$9^{5}/_{8}$	$2^{1}/_{8}$	$6^{15}/_{16}$	$1^{1}/_{4}$	$5^{3}/_{8}$	$^{3}/_{16}$	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{15}/_{32}$	$4^{5}/_{32}$
SAFS 22517	$3^{3}/_{4}$	13	$3^{1}/_{2}$	$1^{1}/_{4}$	11	$9^{7}/_{8}$	$2^{1}/_{8}$	$7^{7}/_{16}$	$1^{3}/_{8}$	$5^{3}/_{8}$	$^{3}/_{16}$	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{9}/_{16}$	$4^{5}/_{32}$
SAFS 22518	4	$13^{3}/_{4}$	$3^{7}/_{8}$	$1^{5}/_{8}$	$11^{5}/_{8}$	$10^{3}/_{8}$	$2^{1}/_{8}$	$7^{7}/_{8}$	$1^{1}/_{2}$	$6^{1}/_{4}$	$^{3}/_{16}$	(2)-$^{3}/_{4}$, (4)-$^{5}/_{8}$	$1^{3}/_{4}$	$4^{1}/_{4}$
SAFS 22520	$4^{1}/_{2}$	$15^{1}/_{4}$	$4^{3}/_{8}$	$1^{3}/_{4}$	$13^{1}/_{8}$	$11^{5}/_{8}$	$2^{3}/_{8}$	$8^{7}/_{8}$	$1^{21}/_{32}$	6	$^{3}/_{16}$	(2)-$^{7}/_{8}$, (4)-$^{3}/_{4}$	$1^{59}/_{64}$	$4^{15}/_{16}$
SAFS 22522	$4^{15}/_{16}$	$16^{1}/_{2}$	$4^{3}/_{4}$	2	$14^{1}/_{2}$	$12^{5}/_{8}$	$2^{3}/_{4}$	$9^{3}/_{4}$	$1^{25}/_{32}$	$6^{5}/_{8}$	$^{3}/_{16}$	(4)-$^{3}/_{4}$	$2^{1}/_{8}$	$4^{5}/_{8}$
SAFS 22524	$5^{1}/_{4}$	$16^{1}/_{2}$	$4^{3}/_{4}$	$2^{1}/_{8}$	$14^{1}/_{2}$	$13^{1}/_{4}$	$2^{3}/_{4}$	$10^{1}/_{2}$	$1^{27}/_{32}$	$7^{3}/_{8}$	$^{3}/_{16}$	(4)-$^{3}/_{4}$	$2^{9}/_{32}$	5
SAFS 22526	6	$18^{3}/_{8}$	$5^{1}/_{8}$	$2^{3}/_{8}$	16	$14^{5}/_{8}$	$3^{1}/_{4}$	$11^{3}/_{4}$	$2^{11}/_{32}$	8	$^{3}/_{16}$	(4)-$^{7}/_{8}$	$2^{15}/_{32}$	$5^{1}/_{4}$
SAFS 22528	6	$20^{1}/_{8}$	$5^{7}/_{8}$	$2^{3}/_{8}$	$17^{1}/_{8}$	16	$3^{3}/_{8}$	12	$2^{1}/_{32}$	$7^{5}/_{8}$	$^{3}/_{16}$	(4)-1	$2^{29}/_{64}$	$5^{1}/_{8}$
SAFS 22530	$6^{5}/_{16}$	$21^{1}/_{4}$	$6^{1}/_{4}$	$2^{1}/_{2}$	$18^{1}/_{4}$	17	$3^{3}/_{4}$	$12^{5}/_{8}$	2	$8^{3}/_{8}$	$^{3}/_{16}$	(4)-1	$2^{39}/_{64}$	$5^{1}/_{2}$
SAFS 22532	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{7}/_{16}$	$2^{1}/_{16}$	$8^{3}/_{4}$	$^{3}/_{16}$	(4)-1	$2^{31}/_{32}$	$5^{11}/_{16}$
SAFS 22534	$7^{1}/_{16}$	$23^{3}/_{4}$	$6^{3}/_{4}$	$2^{3}/_{4}$	$21^{5}/_{8}$	$19^{3}/_{8}$	$4^{1}/_{4}$	$14^{7}/_{16}$	$2^{5}/_{32}$	$9^{5}/_{8}$	$^{3}/_{16}$	(4)-1	$3^{1}/_{8}$	$6^{1}/_{16}$
SAFS 22536	$7^{1}/_{2}$	$26^{3}/_{4}$	$7^{1}/_{8}$	$2^{1}/_{8}$	$23^{5}/_{8}$	$20^{7}/_{8}$	$4^{5}/_{8}$	$15^{5}/_{16}$	$2^{3}/_{8}$	10	$^{3}/_{16}$	(4)-1	$3^{9}/_{64}$	$6^{1}/_{4}$
SAFS 22538	$7^{7}/_{8}$	28	$7^{1}/_{2}$	$3^{1}/_{8}$	$24^{3}/_{8}$	$21^{5}/_{8}$	$4^{1}/_{2}$	$15^{15}/_{16}$	$2^{7}/_{16}$	$10^{3}/_{4}$	$^{3}/_{16}$	(4)-$1^{1}/_{4}$	$3^{19}/_{64}$	$6^{11}/_{16}$
SAFS 22540	$8^{1}/_{4}$	$29^{1}/_{2}$	8	$3^{3}/_{8}$	25	$22^{1}/_{2}$	5	$16^{1}/_{2}$	$2^{15}/_{32}$	$11^{3}/_{8}$	$^{3}/_{16}$	(4)-$1^{1}/_{4}$	$3^{1}/_{2}$	$7^{1}/_{8}$
SAFS 22544	$9^{1}/_{2}$	$32^{3}/_{4}$	$8^{3}/_{4}$	$3^{3}/_{4}$	$27^{7}/_{8}$	$24^{3}/_{4}$	$5^{1}/_{4}$	$18^{7}/_{8}$	$3^{1}/_{8}$	12	$^{3}/_{16}$	(4)-$1^{1}/_{2}$	$3^{5}/_{8}$	$7^{1}/_{4}$

Spherical roller / adapter mount

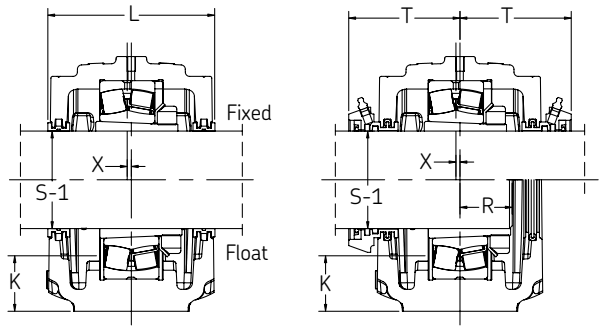
SAFS 22600
Two-piece cast-steel housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22515**
Option	Specify
One end closed	SAFS 22620 x $3^{7}/_{16}$Y
Taconite seals	SAFS 22620 x $3^{7}/_{16}$T
Contact seals	SAFS 22620 x $3^{7}/_{16}$-210
Optional shaft size	SAFS 22620 x $3^{1}/_{2}$



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.

Shaft dia.					**Designations**					**Mass**
S-1 Standard	Optional	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SAFS 22620**	22320 EK	SNW 120	SAFS 620	SR 24-20	LOR 102	EPR 12	TER 102	169
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SAFS 22622**	22322 EK	SNW 122	SAFS 622	SR 0-22	LOR 109	EPR 13	TER 109	185
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SAFS 22624**	22324 CCK/W33	SNW 124	SAFS 624	SR 0-24	LOR 113	EPR 14	TER 113	236
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SAFS 22626**	22326 CCK/W33	SNW 126	SAFS 626	SR 0-26	LOR 117	EPR 15	TER 117	241
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SAFS 22628**	22328 CCK/W33	SNW 128	SAFS 628	SR 0-28	LOR 122	EPR 27	TER 122	326
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SAFS 22630**	22330 CCK/W33	SNW 130	SAFS 630	SR 36-30	LOR 125	EPR 16	TER 125	366
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SAFS 22632**	22332 CCK/W33	SNW 132	SAFS 632	SR 38-32	LOR 130	EPR 16	TER 130	435
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SAFS 22634**	22334 CCK/W33	SNW 134	SAFS 634	SR 40-34	LOR 140	EPR 18	TER 140	486
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SAFS 22638**	22338 CCK/W33	SNW 138	SAFS 638	SR 44-38	LOR 155	EPR 20	TER 155	680
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SAFS 22640**	22340 CCK/W33	SNW 140	SAFS 640	SR 0-40	LOR 159	EPR 21	TER 159	800



Taconite seal option

Spherical roller / adapter mount

SAFS 22600
Two-piece cast-steel housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	**SAFS 22515**
Option	Specify
One end closed	SAFS 22620 x $3^{7}/_{16}$Y
Taconite seals	SAFS 22620 x $3^{7}/_{16}$T
Contact seals	SAFS 22620 x $3^{7}/_{16}$-210
Optional shaft size	SAFS 22620 x $3^{1}/_{2}$

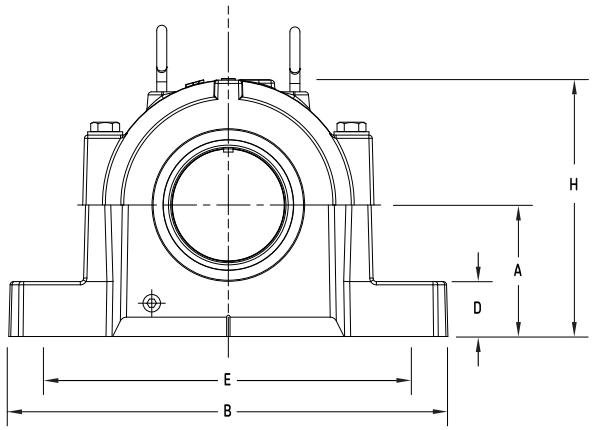
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAFS 22620	$5^{1}/_{4}$	$16^{1}/_{2}$	$4^{3}/_{4}$	$2^{1}/_{8}$	$14^{1}/_{2}$	$13^{1}/_{4}$	$2^{3}/_{4}$	$10^{1}/_{2}$	$2^{1}/_{32}$	$7^{3}/_{8}$	$^{3}/_{16}$	(4)-$^{3}/_{4}$	$2^{7}/_{16}$	5
SAFS 22622	6	$18^{3}/_{8}$	$5^{1}/_{8}$	$2^{3}/_{8}$	16	$14^{5}/_{8}$	$3^{1}/_{4}$	$11^{3}/_{4}$	$2^{13}/_{32}$	8	$^{3}/_{16}$	(4)-$^{7}/_{8}$	$2^{5}/_{8}$	$5^{5}/_{16}$
SAFS 22624	$6^{5}/_{16}$	$21^{1}/_{4}$	$6^{1}/_{4}$	$2^{1}/_{2}$	$18^{1}/_{4}$	17	$3^{3}/_{4}$	$12^{5}/_{8}$	$2^{3}/_{8}$	$8^{3}/_{8}$	$^{3}/_{16}$	(4)-1	$2^{13}/_{16}$	$5^{1}/_{2}$
SAFS 22626	$6^{11}/_{16}$	22	$6^{1}/_{4}$	$2^{5}/_{8}$	$19^{1}/_{4}$	$17^{3}/_{8}$	$3^{3}/_{4}$	$13^{7}/_{16}$	$2^{7}/_{16}$	$8^{3}/_{4}$	$^{3}/_{16}$	(4)-1	3	$5^{11}/_{16}$
SAFS 22628	$7^{1}/_{16}$	$24^{3}/_{4}$	$6^{3}/_{4}$	$2^{3}/_{4}$	$21^{5}/_{8}$	$19^{3}/_{8}$	$4^{1}/_{4}$	$14^{7}/_{16}$	$2^{9}/_{16}$	$9^{3}/_{4}$	$^{3}/_{16}$	(4)-1	$3^{1}/_{4}$	$6^{1}/_{8}$
SAFS 22630	$7^{1}/_{2}$	$26^{3}/_{4}$	$7^{1}/_{8}$	$2^{1}/_{8}$	$23^{5}/_{8}$	$20^{7}/_{8}$	$4^{5}/_{8}$	$15^{5}/_{16}$	$2^{5}/_{8}$	$9^{3}/_{4}$	$^{3}/_{16}$	(4)-1	$3^{7}/_{16}$	$6^{1}/_{4}$
SAFS 22632	$7^{7}/_{8}$	28	$7^{1}/_{2}$	$3^{1}/_{8}$	$24^{3}/_{8}$	$21^{5}/_{8}$	$4^{1}/_{2}$	$15^{15}/_{16}$	$2^{11}/_{16}$	$10^{3}/_{4}$	$^{3}/_{16}$	(4)-$1^{1}/_{4}$	$3^{5}/_{8}$	$6^{11}/_{16}$
SAFS 22634	$8^{1}/_{4}$	$29^{1}/_{2}$	8	$3^{3}/_{8}$	25	$22^{1}/_{2}$	5	$16^{1}/_{2}$	$2^{3}/_{4}$	$11^{3}/_{8}$	$^{3}/_{16}$	(4)-$1^{1}/_{4}$	$3^{3}/_{4}$	7
SAFS 22638	$9^{1}/_{2}$	$32^{3}/_{4}$	$8^{3}/_{4}$	$3^{3}/_{4}$	$27^{7}/_{8}$	$24^{3}/_{4}$	$5^{1}/_{4}$	$18^{7}/_{8}$	$3^{3}/_{8}$	12	$^{3}/_{16}$	(4)-$1^{1}/_{2}$	$4^{1}/_{16}$	$7^{5}/_{16}$
SAFS 22640	$9^{7}/_{8}$	$34^{1}/_{4}$	9	4	$29^{1}/_{2}$	$26^{1}/_{4}$	$5^{1}/_{2}$	$19^{1}/_{2}$	$3^{7}/_{16}$	$12^{3}/_{8}$	$^{3}/_{16}$	(4)-$1^{1}/_{2}$	$4^{1}/_{8}$	$8^{1}/_{4}$

Spherical roller / adapter mount

SAFS 23000 KA
Two-piece cast-steel housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

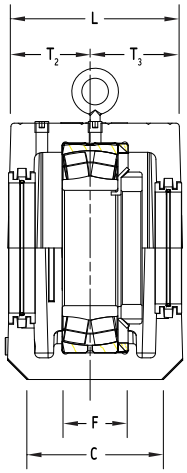
How to order	SAFS 23024 KA
Option	Specify
Four-bolt base	SAFS 23024 KA-11
One end closed	SAFS 23024 KAY
Taconite seals	SAFS 23024 KAT
Contact seals	SAFS 23024 KA-210



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.

Shaft dia.					Designations					Mass
S-1 Standard		Complete pillow block Optional	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$4\frac{3}{16}$	$4\frac{1}{16}$, $4\frac{1}{8}$, $4\frac{1}{4}$	**SAFS 23024 KA/$4\frac{3}{16}$**	23024 CCK/W33	SNW 3024/$4\frac{3}{16}$	SAFS 024 KA/$4\frac{3}{16}$	38151-24	LOR 113	EPR 14	TER 113	88
$4\frac{7}{16}$	$4\frac{5}{16}$, $4\frac{3}{8}$, $4\frac{1}{2}$	**SAFS 23026 KA/$4\frac{7}{16}$**	23026 CCK/W33	SNW 3026/$4\frac{7}{16}$	SAFS 026 KA/$4\frac{7}{16}$	38151-26	LOR 117	EPR 15	TER 117	105
$4\frac{15}{16}$	$4\frac{13}{16}$, $4\frac{7}{8}$, 5	**SAFS 23028 KA/$4\frac{15}{16}$**	23028 CCK/W33	SNW 3028/$4\frac{15}{16}$	SAFS 028 KA/$4\frac{15}{16}$	38053-50	LOR 122	EPR 27	TER 122	125
$5\frac{3}{16}$	$5\frac{1}{8}$, $5\frac{1}{4}$	**SAFS 23030 KA/$5\frac{3}{16}$**	23030 CCK/W33	SNW 3030/$5\frac{3}{16}$	SAFS 030 KA/$5\frac{3}{16}$	SR 0-21	LOR 125	EPR 16	TER 125	169
$5\frac{7}{16}$	$5\frac{3}{8}$, $5\frac{1}{2}$	**SAFS 23032 KA/$5\frac{7}{16}$**	23032 CCK/W33	SNW 3032/$5\frac{7}{16}$	SAFS 032 KA/$5\frac{7}{16}$	38151-32	LOR 130	EPR 16	TER 130	185
$5\frac{15}{16}$	$5\frac{13}{16}$, $5\frac{7}{8}$, 6	**SAFS 23034 KA/$5\frac{15}{16}$**	23034 CCK/W33	SNW 3034/$5\frac{15}{16}$	SAFS 034 KA/$5\frac{15}{16}$	SR 0-24	LOR 140	EPR 18	TER 140	236
$6\frac{7}{16}$	$6\frac{5}{16}$, $6\frac{3}{8}$, $6\frac{1}{2}$	**SAFS 23036 KA/$6\frac{7}{16}$**	23036 CCK/W33	SNW 3036/$6\frac{7}{16}$	SAFS 036 KA/$6\frac{7}{16}$	38151-36	LOR 148	EPR 19	TER 148	241
$6\frac{15}{16}$	$6\frac{13}{16}$, $6\frac{7}{8}$, 7	**SAFS 23038 KA/$6\frac{15}{16}$**	23038 CCK/W33	SNW 3038/$6\frac{15}{16}$	SAFS 038 KA/$6\frac{15}{16}$	38151-38	LOR 155	EPR 20	TER 155	326
$7\frac{3}{16}$	$7\frac{1}{8}$, $7\frac{1}{4}$	**SAFS 23040 KA/$7\frac{3}{16}$**	23040 CCK/W33	SNW 3040/$7\frac{3}{16}$	SAFS 040 KA/$7\frac{3}{16}$	38151-40	LOR 159	EPR 21	TER 159	366
$7\frac{15}{16}$	$7\frac{3}{16}$, $7\frac{7}{8}$, 8	**SAFS 23044 KA/$7\frac{15}{16}$**	23044 CCK/W33	SNW 3044/$7\frac{15}{16}$	SAFS 044 KA/$7\frac{15}{16}$	38053-140	LOR 167	EPR 23	TER 167	435
$8\frac{15}{16}$	$8\frac{7}{16}$, $8\frac{1}{2}$, 9	**SAFS 23048 KA/$8\frac{15}{16}$**	23048 CCK/W33	SNP 3048/$8\frac{15}{16}$	SAFS 048 KA/$8\frac{15}{16}$	A-8897	LOR 552	X-5217-4	TER 552	486
$9\frac{7}{16}$	$9\frac{1}{2}$	**SAFS 23052 KA/$9\frac{7}{16}$**	23052 CCK/W33	SNP 3052/$9\frac{7}{16}$	SAFS 052 KA/$9\frac{7}{16}$	A-8898	LOR 553	X-5217-2	TER 553	680
$9\frac{15}{16}$	10	**SAFS 23056 KA/$9\frac{15}{16}$**	23056 CCK/W33	SNP 3056/$9\frac{15}{16}$	SAFS 056 KA/$9\frac{15}{16}$	A-8819	LOR 607	X-5217-2	TER 607	820
$10\frac{7}{16}$	$10\frac{1}{2}$	**SAFS 23056 KA/$10\frac{7}{16}$**	23056 CCK/W33	SNP 3056/$10\frac{7}{16}$	SAFS 056 KA/$10\frac{7}{16}$	A-8819	LOR 606	X-5217-1	TER 606	800

Size SAFS 23024 KA, two-or four-bolt base options;
Sizes SAFS 23026 KA - SAFS 23056 KA, four-bolt base only.



Spherical roller / adapter mount

SAFS 23000 KA
Two-piece cast-steel housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

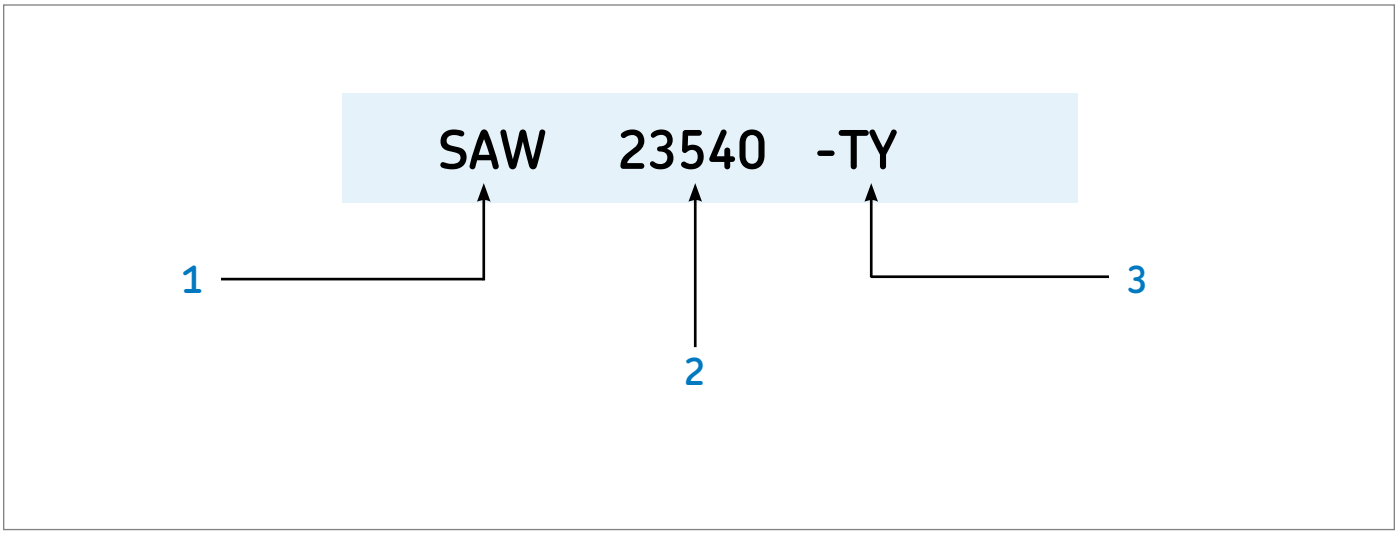
How to order	**SAFS 23024 KA**
Option	Specify
Four-bolt base	SAFS 23024 KA-11
One end closed	SAFS 23024 KAY
Taconite seals	SAFS 23024 KAT
Contact seals	SAFS 23024 KA-210

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a Free unit, discard the enclosed stabilizing ring.

Designations Complete pillow block									**Static oil level**			**Bolts**		
	A	B	C	D	E Max	E Min	F	H	K	L	X	(No. req'd)	R	T
	in													
SAFS 23024 KA/4 3/16	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 7/8	1 9/16	6 1/8	3/16	(2)-7/8, (4)-3/4	1 29/32	4 1/2
SAFS 23026 KA/4 7/16	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 3/4	1 11/16	6 5/8	3/16	(4)-3/4	2 3/32	4 5/8
SAFS 23028 KA/4 15/16	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/2	1 13/16	7 3/8	3/16	(4)-3/4	2 5/32	5 1/32
SAFS 23030 KA/5 3/16	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 3/4	2 7/32	8 1/8	3/16	(4)-7/8	2 9/32	5 13/32
SAFS 23032 KA/5 7/16	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 3/4	2 1/32	8 1/8	3/16	(4)-7/8	2 7/16	5 15/32
SAFS 23034 KA/5 15/16	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	12	1 23/32	7 5/8	3/16	(4)-1	2 19/32	5 5/32
SAFS 23036 KA/6 7/16	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 7/16	2 1/16	8 3/4	3/16	(4)-1	2 25/32	5 23/32
SAFS 23038 KA/6 15/16	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 7/16	1 7/8	8 3/4	3/16	(4)-1	2 13/16	5 23/32
SAFS 23040 KA/7 3/16	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 7/16	1 15/16	9 5/8	3/16	(4)-1	3 1/32	6 9/32
SAFS 23044 KA/7 15/16	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 15/16	2 1/4	10 3/4	3/16	(4)-1 1/4	3 7/32	6 23/32
SAFS 23048 KA/8 15/16	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 7/32	11 3/8	3/16	(4)-1 1/4	3 9/16	7 11/16
SAFS 23052 KA/9 7/16	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 7/8	2 3/4	12	3/16	(4)-1 1/2	3 7/8	8 1/16
SAFS 23056 KA/9 15/16	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	19 1/2	3 7/16	12 3/8	3/16	(4)-1 1/2	4 1/8	8 1/4
SAFS 23056 KA/10 7/16	9 7/8	34 1/4	9	4	29 1/2	26 1/4	5 1/2	19 1/2	3 7/16	12 3/8	3/16	(4)-1 1/2	4 1/8	8 1/4

Notes

Nomenclature / SAW split pillow blocks



1. Housing style:	
S	Standard pillow block
A	Inch dimensions
W	Wide bearing seat

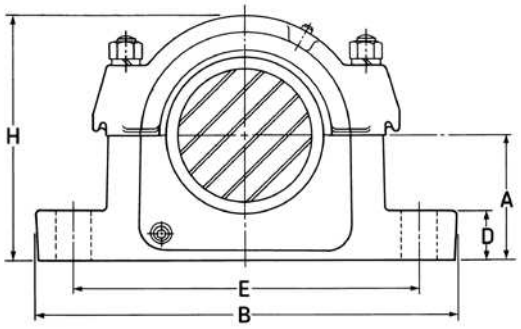
2. Designation:	Basic bearing series	Mounting method
232(00)	232(00) CC/W33	Cylindrical
235(00)	235(00) CCK/W33	Adapter

3. Suffix:	
T	Taconite contact seal
TV	Taconite V-ring seal
TA or TVA	Taconite seal with button head grease fitting
TB or TVB	Taconite seal with giant button head grease fitting
Y	One end closed (i.e.,supplied with end plug)
TLC	PosiTrac Plus seals

Spherical roller / cylindrical mount

SAW 23200
Two-piece cast-iron housing
Self-aligning / 23200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals
Custom manufactured
Four-bolt base

How to order	SAW 23220
Option	Specify
One end closed	SAW 23220 Y
Taconite seals	SAW 23220 T
PosiTrac Plus seals	SAW 23220-TLC

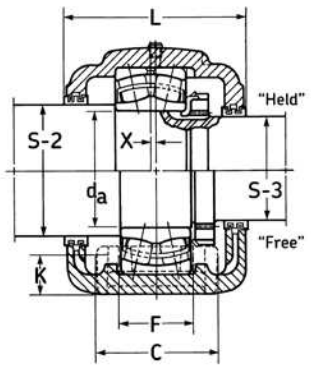


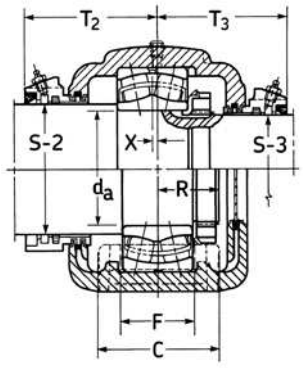
Housing style "N"

For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
100	4 1/2	3 13/16	**SAW 23220**	23220 CC/W33	AN 20	W 20	SAW 220	SR 20-17	LOR 118	LOR 106	EPR 12	TER 118	TER 106	80
130	5 7/8	4 15/16	**SAW 23226**	23226 CC/W33	AN 26	W 26	SAW 226	SR 26-0	LOR 136	LOR 122	EPR 27	TER 136	TER 122	155
140	6 1/4	5 5/16	**SAW 23228**	23228 CC/W33	AN 28	W 28	SAW 228	SR 28-0	LOR 144	LOR 127	EPR 16	TER 144	TER 127	180
190	8 3/8	7 1/4	**SAW 23238**	23238 CC/W33	AN 38	W 38	SAW 238	SR 38-32	LOR 171	LOR 160	EPR 21	TER 171	TER 160	430
200	8 3/4	7 5/8	**SAW 23240**	23240 CC/W33	AN 40	W 40	SAW 240	SR 40-34	LOR 175	LOR 164	EPR 22	TER 175	TER 164	515
220	9 9/16	8 5/16	**SAW 23244**	23244 CC/W33	N 44	W 44	SAW 244	SR 44-38	LOR 179	LOR 170	EPR 24	TER 179	TER 170	710

NOTE: All housings are made to order, as an alternative, consider SAFD housings.
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.





Taconite seal option

Spherical roller / cylindrical mount

SAW 23200
Two-piece cast-iron housing
Self-aligning / 23200 series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals
Custom manufactured
Four-bolt base

How to order	**SAW 23220**
Option	Specify
One end closed	SAW 23220 Y
Taconite seals	SAW 23220 T
PosiTrac Plus seals	SAW 23220-TLC

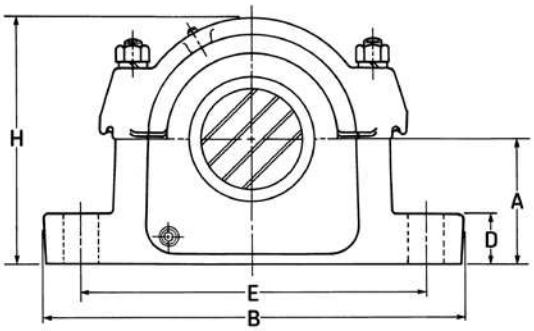
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SAW 23220	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	–	6 3/16	3/16	(4)-3/4	2 1/16	–	–
SAW 23226	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 5/16	2 3/8	8 1/2	3/16	(4)-7/8	2 3/4	5 1/2	5 1/2
SAW 23228	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/16	9 1/8	3/16	(4)-1	2 31/32	5 3/4	5 3/4
SAW 23236	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 7/16	10 3/8	3/16	(4)-1	3 21/32	6 1/2	6 1/2
SAW 23238	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 1/2	10 7/8	3/16	(4)-1 1/4	3 27/32	7 1/2	7
SAW 23240	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 9/16	11 3/8	3/16	(4)-1 1/4	4 1/16	7 11/16	7 1/16
SAW 23244	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 3/16	12 1/8	3/16	(4)-1 1/2	4 15/32	8	8 1/16

Spherical roller / adapter mount

SAW 23500
Two-piece cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals
Custom manufactured
Four-bolt base

How to order	**SAW 23520**
Option	Specify
One end closed	SAW 23520 Y
Taconite seals	SAW 23520 T
PosiTrac Plus seals	SAW 23520TLC

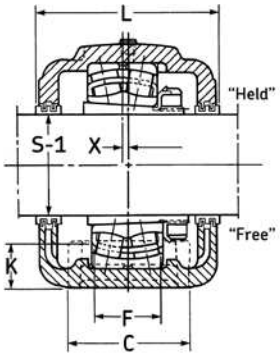


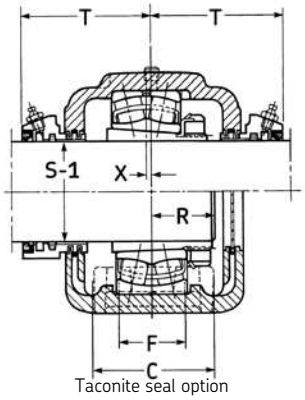
Housing style "N"

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Shaft dia.		**Designations**							**Mass**
S-1	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in									lbs
$3\frac{7}{16}$	**SAW 23520**	23220 CCK/W33	SNW 120	SAW 520	SR 20-17	LOR 102	EPR 12	TER 102	–
$4\frac{7}{16}$	**SAW 23526**	23226 CCK/W33	SNW 126	SAW 526	SR 26-0	LOR 117	EPR 15	TER 117	155
$4\frac{15}{16}$	**SAW 23528**	23228 CCK/W33	SNW 128	SAW 528	SR 28-0	LOR 122	EPR 27	TER 122	180
$6\frac{15}{16}$	**SAW 23538**	23238 CCK/W33	SNW 138	SAW 538	SR 38-32	LOR 155	EPR 21	TER 155	430
$7\frac{3}{16}$	**SAW 23540**	23240 CCK/W33	SNW 140	SAW 540	SR 40-34	LOR 159	EPR 21	TER 159	515
$7\frac{15}{16}$	**SAW 23544**	23244 CCK/W33	SNW 144	SAW 544	SR 44-38	LOR 167	EPR 23	TER 167	710

Note: All housings are made to order; as an alternative consider SAFD housings.





Taconite seal option

Spherical roller / adapter mount

SAW 23500
Two-piece cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals
Custom manufactured
Four-bolt base

How to order	**SAW 23520**
Option	Specify
One end closed	SAW 23520 Y
Taconite seals	SAW 23520 T
PosiTrac Plus seals	SAW 23520TLC

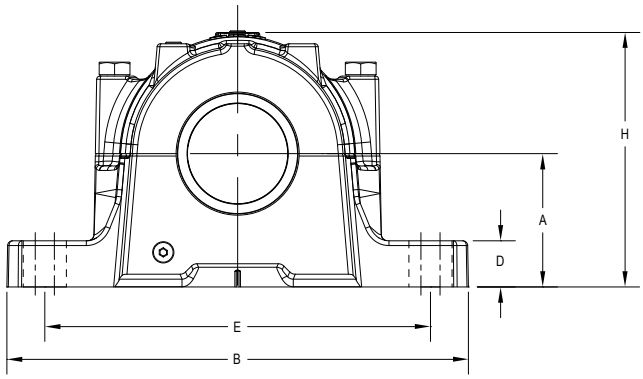
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SAW 23520	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 3/4	–	6 13/16	3/16	(4)-1/2	2 1/16	–
SAW 23526	6	18 3/8	5 1/8	2 3/8	16	14 5/8	3 1/4	11 5/16	2 3/8	8 1/2	3/16	(4)-7/8	2 3/4	5 1/2
SAW 23528	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	2 1/16	9 1/8	3/16	(4)-1	2 31/32	5 23/32
SAW 23538	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	2 1/2	10 7/8	3/16	(4)-1 1/4	3 27/32	6 23/32
SAW 23540	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	2 9/16	11 3/8	3/16	(4)-1 1/4	4 1/16	7 1/8
SAW 23544	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	3 3/16	12 1/8	3/16	(4)-1 1/2	4 15/32	7 11/32

Spherical roller / adapter mount

SAFD 22000
Two-piece ductile cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

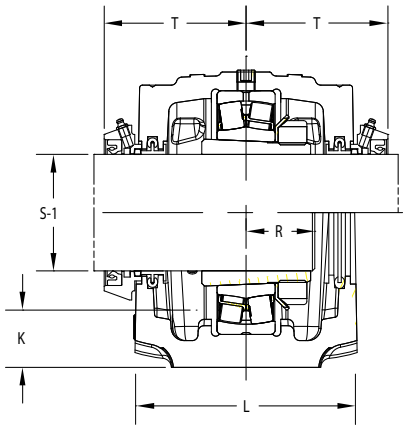
How to order	SAFD 520
Order all components individually.	

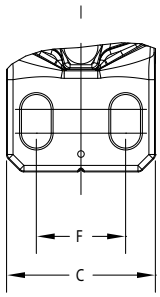


Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Shaft dia.						**Designations**				**Mass**
S-1 Standard	Optional	Complete pillow block**	Bearing	Adapter assembly	PIllow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
1 7/16	1 1/2	**SAFD 22509**	22209 EK	HA 309	SAFD 509	FRB 3.5/85	LER 17	EPR 3	TER 17	12
1 11/16	1 3/4	**SAFD 22510**	22210 EK	HA310	SAFD 510	FRB 5/90	LER 20	EPR 4	TER 20	13
1 15/16	50mm, 2	**SAFD 22511**	22211 EK	HA311	SAFD 511	FRB 4/100	LER 24	EPR 5	TER 24	16
2 3/16	2 1/4	**SAFD 22513**	22213 EK	HA313	SAFD 513	FRB 4/120	LER 29	EPR 6	TER 29	23
2 7/16	2 1/2	**SAFD 22515**	22215 EK	HA315	SAFD 515	FRB 5/130	LOR37	EPR 7	TER 37	28
2 7/16	2 1/2	**FSAFD 22515**	22215 EK	HA315	FSAFD 515	FRB 5/130	LOR 37	EPR 7	TER 37	28
2 11/16	2 3/4, 70mm	**SAFD 22516**	22216 EK	HA316	SAFD 516	FRB 5/140	LOR 44	EPR 8	TER 44	37
2 11/16	2 3/4, 70mm	**FSAFD 22516**	22216 EK	HA316	FSAFD 516	FRB 5/140	LOR 44	EPR 8	TER 44	37
2 15/16	75mm, 3	**SAFD 22517**	22217 EK	HA317	SAFD 517	FRB 5/150	LOR 53	EPR 9	TER 53	38
2 15/16	75mm, 3	**FSAFD 22517**	22217 EK	HA317	FSAFD 517	FRB 5/150	LOR 53	EPR 9	TER 53	38
3 3/16	80mm, 3 1/4	**SAFD 22518**	22218 EK	HA318	SAFD 518	FRB 11.2/160	LOR 188	EPR 11	TER 188	47
3 3/16	80mm, 3 1/4	**FSAFD 22518**	22218 EK	HA318	FSAFD 518	FRB 11.2/160	LOR 188	EPR 11	TER 188	47
3 7/16	3 1/2, 90mm	**SAFD 22520**	22220 EK	HA320	SAFD 520	FRB 12/180	LOR 102	EPR 12	TER 102	62
3 7/16	3 1/2, 90mm	**FSAFD 22520**	22220 EK	HA320	FSAFD 520	FRB 12/180	LOR 102	EPR 12	TER 102	62
3 15/16	100mm, 4	**SAFD 22522**	22222 EK	HA322	SAFD 522	FRB 13.5/200	LOR 109	EPR 13	TER 109	73

*Optional size shaft require different adapter sleeve and seals.
**Only offered in component format.





Spherical roller / adapter mount

SAFD 22000
Two-piece ductile cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LER / LOR triple ring seals

How to order	SAFD 520
Order all components individually.	

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

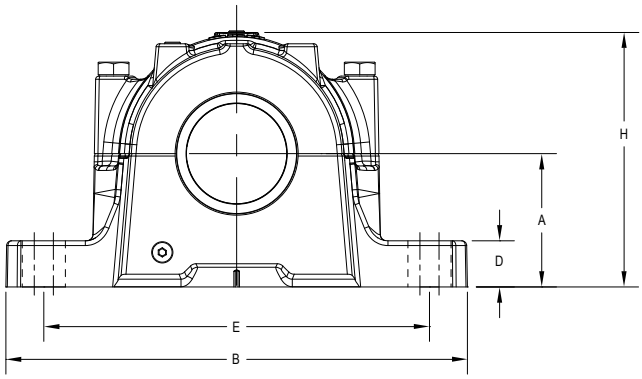
Designations Complete pillow block*									**Static oil level**		**Bolts**		
	A	B	C	D	E Max	E Min	F	H	K	L	(No req'd) R		T
in													
SAFD 22509	2 1/4	8 1/4	2 3/8	13/16	7	6 1/4	–	4 7/16	31/32	3 1/2	(2)-1/2	1 3/32	3 1/32
SAFD 22510	2 1/2	8 1/4	2 3/8	15/16	7	6 1/2	–	4 13/16	1 3/32	3 17/32	(2)-1/2	1 5/32	3 1/4
SAFD 22511	2 3/4	9 5/8	2 3/4	15/16	8 1/4	7 3/8	–	5 1/4	1 3/16	3 7/8	(2)-5/8	1 13/64	3 3/8
SAFD 22513	3	11	3 1/8	1	9 1/2	8 1/8	–	5 13/16	1 3/32	4 1/2	(2)-5/8	1 25/64	3 5/8
SAFD 22515	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 7/32	1 1/8	4 11/16	(2)-5/8	1 7/16	3 13/16
FSAFD 22515	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 7/32	1 1/8	4 11/16	(4)-11/16	1 7/16	3 13/16
SAFD 22516	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 11/16	1 1/4	5	(2)-3/4	1 15/32	4 1/8
FSAFD 22516	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 11/16	1 1/4	5	(4)-5/8	1 15/32	4 1/8
SAFD 22517	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	(2)-3/4	1 9/16	3 29/32
FSAFD 22517	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	1 3/8	5	(4)-5/8	1 9/16	3 29/32
SAFD 22518	4	13 3/4	3 7/8	1 5/8	11 3/4	10 1/4	2 1/8	7 19/32	1 1/2	5 7/8	(2)-3/4	1 3/4	4 1/16
FSAFD 22518	4	13 3/4	3 7/8	1 5/8	11 3/4	10 1/4	2 1/8	7 19/32	1 1/2	5 7/8	(4)-5/8	1 3/4	4 1/16
SAFD 22520	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 9/16	1 21/32	6 1/8	(2)-7/8	1 59/64	4 3/8
FSAFD 22520	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 9/16	1 21/32	6 1/8	(4)-3/4	1 59/64	4 3/8
SAFD 22522	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 7/16	1 25/32	6 1/2	(4)-3/4	2 1/8	4 9/16

*Only offered in component format.

Spherical roller / adapter mount

SAFD 22000
Two-piece ductile cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

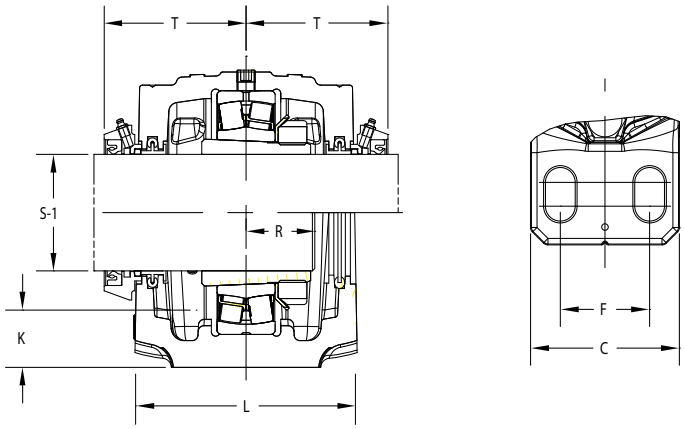
How to order	SAFD 520
Order all components individually.	



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Shaft dia.		Designations								Mass
S-1 Standard	Optional	Complete pillow block**	Bearing	Adapter assembly	PIllow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
4 3/16	4 1/4, 110mm	**SAFD 22524**	22224 EK	HA3124	SAFD 524	FRB 14 / 215	LOR 113	EPR 14	TER 113	104
4 7/16	4 1/2, 115mm	**SAFD 22526**	22226 EK	HA3126	SAFD 526	FRB 13 / 230	LOR 117	EPR 15	TER 117	144
4 15/16	125mm, 5	**SAFD 22528**	22228 CCK/W33	HA3128	SAFD 528	FRB 15 / 250	LOR 122	EPR 27	TER 122	153
5 3/16	5 1/4, 135mm	**SAFD 22530**	22230 CCK/W33	HA3130	SAFD 530	FRB 16 5 / 270	LOR 125	EPR 16	TER 125	199
5 7/16	5 1/2, 140mm	**SAFD 22532**	22232 CCK/W33	HA3132	SAFD 532	FRB 17 / 290	LOR 130	EPR 16	TER 130	212
5 15/16	150mm, 6	**SAFD 22534**	22234 CCK/W33	HA3134	SAFD 534	36059-34	LOR 140	EPR 18	TER 140	276
6 7/16	160mm, 6 1/2	**SAFD 22536**	22236 CCK/W33	HA3136	SAFD 536	36059-36	LOR 148	EPR 19	TER 148	301
6 15/16	170mm, 7	**SAFD 22538**	22238 CCK/W33	HA3138	SAFD 538	36059-38	LOR 155	EPR 21	TER 155	374
7 3/16	180, 7 1/4	**SAFD 22540**	22240 CCK/W33	SNW 40x7 3/16	SAFD 540	36059-40	LOR 159	EPR 21	TER 159	443
7 15/16	200mm, 8	**SAFD 22544**	22244 CCK/W33	SNW 44x7 15/16	SAFD 544	36059-44	LOR 167	EPR 23	TER 167	577

*Optional size shaft require different adapter sleeve and seals.
**Only offered in component format.



Spherical roller / adapter mount

SAFD 22000
Two-piece ductile cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	SAFD 520
Order all components individually.	

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

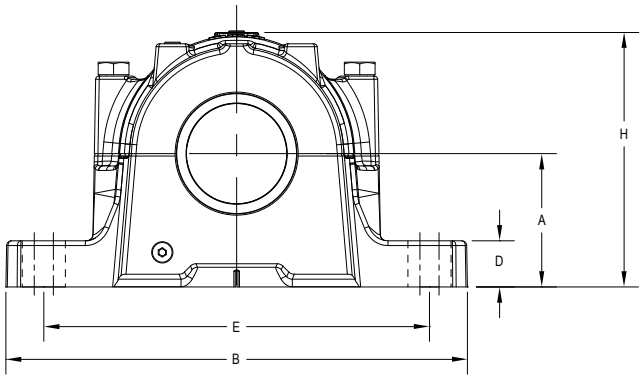
Designations Complete pillow block*									**Static oil level**		**Bolts**		
	A	B	C	D	E Max	E Min	F	H	K	L	(No req'd) R		T
in													
SAFD 22524	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/8	1 27/32	7 3/8	(4)-3/4	2 9/32	5
SAFD 22526	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/8	2 11/32	7 5/8	(4)-7/8	2 15/32	5 5/16
SAFD 22528	6	20 1/8	5 7/8	2 3/8	17 3/8	15 5/8	3 3/8	12 1/32	2 1/32	7 5/8	(4)-1	2 29/64	5 1/8
SAFD 22530	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 5/8	2	8 1/2	(4)-1	2 39/64	5 1/2
SAFD 22532	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 1/4	2 1/16	8 3/4	(4)-1	2 31/32	5 11/16
SAFD 22534	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 9/16	(4)-1	3 1/8	6 1/16
SAFD 22536	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 3/8	9 7/8	(4)-1	3 9/64	6 1/4
SAFD 22538	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 13/16	2 7/16	10 3/4	(4)-1 1/4	3 19/64	6 11/16
SAFD 22540	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 5/8	2 15/32	11 1/4	(4)-1 1/4	3 1/2	7 1/16
SAFD 22544	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 11/16	3 1/8	12	(4)-1 1/2	3 5/8	7 1/4

*Only offered in component format.

Spherical roller / adapter mount

SAFD 23000
Two-piece ductile cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

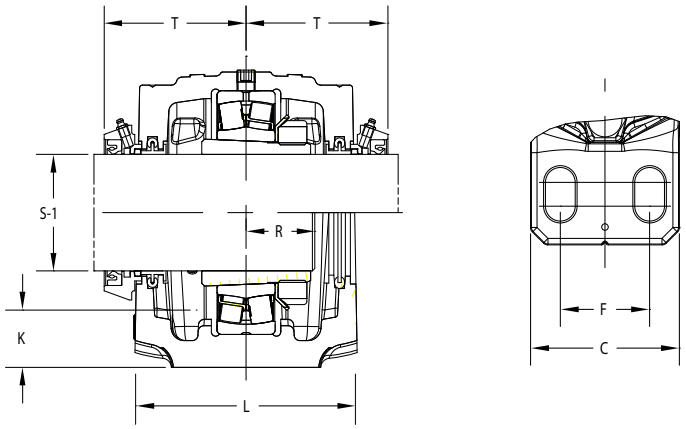
How to order	SAFD 520
Order all components individually.	



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Shaft dia.		**Designations**								**Mass**
S-1 Standard	Optional	Complete pillow block**	Bearing	Adapter assembly	Pllow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
3 3/16	80mm, 3 1/4	**SAFD 23518**	23218 CCK/W33	HA2318	SAFD 518	FRB 5 / 160	LOR 188	EPR 11	TER 188	47
3 3/16	80mm, 3 1/4	**FSAFD 23518**	23218 CCK/W33	HA2318	FSAFD 518	FRB 5 / 160	LOR 188	EPR 11	TER 188	47
3 7/16	3 1/2, 90mm	**SAFD 23520**	23220 CCK/W33	HA2320	SAFD 520	FRB 4.85 / 180	LOR 102	EPR 12	TER 102	62
3 7/16	3 1/2, 90mm	**FSAFD 23520**	23220 CCK/W33	HA2320	FSAFD 520	FRB 4.85 / 180	LOR 102	EPR 12	TER 102	62
3 15/16	100mm, 4	**SAFD 23522**	23222 CCK/W33	H2322	SAFD 522	FRB 5.1 / 200	LOR 109	EPR 13	TER 109	73
4 3/16	4 1/4, 110mm	**SAFD 23524**	23224 CCK/W33	HA2324	SAFD 524	FRB 5 / 215	LOR 113	EPR 14	TER 113	104
4 7/16	4 1/2, 115mm	**SAFD 23526**	23226 CCK/W33	HA2326	SAFD 526	FRB 5 / 230	LOR 117	EPR 15	TER 117	144
4 15/16	125mm, 5	**SAFD 23528**	23228 CCK/W33	HA2328	SAFD 528	FRB 5/250	LOR 122	EPR 27	TER 122	153
5 3/16	5 1/4, 135mm	**SAFD 23530**	23230 CCK/W33	HA2330	SAFD 530	FRB 5 / 270	LOR 125	EPR 16	TER 125	199
5 7/16	5 1/2, 140mm	**SAFD 23532**	23232 CCK/W33	HA2332	SAFD 532	FRB 5 / 290	LOR 130	EPR 16	TER 130	212
5 15/16	150mm, 6	**SAFD 23534**	23234 CCK/W33	HA2334	SAFD 534	35072-34	LOR 140	EPR 18	TER 140	276
6 7/16	160mm, 6 1/2	**SAFD 23536**	23236 CCK/W33	HA2336	SAFD 536	35072-36	LOR 148	EPR 19	TER 148	301
6 15/16	170mm, 7	**SAFD 23538**	23238 CCK/W33	HA2338	SAFD 538	35072-38	LOR 155	EPR 21	TER 155	374
7 3/16	180, 7 1/4	**SAFD 23540**	23240 CCK/W33	HA2340 or SNW 140x7 3/16	SAFD 540	35072-40	LOR 159	EPR 21	TER 159	443
7 15/16	200mm, 8	**SAFD 23544**	23244 CCK/W33	SNW 144x7 15/16	SAFD 544	35072-44	LOR 167	EPR 23	TER 167	577

*Optional size shaft require different adapter sleeve and seals.
**Only offered in component format.



Spherical roller / adapter mount

SAFD 23000
Two-piece ductile cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR triple ring seals

How to order	SAFD 520
Order all components individually.	

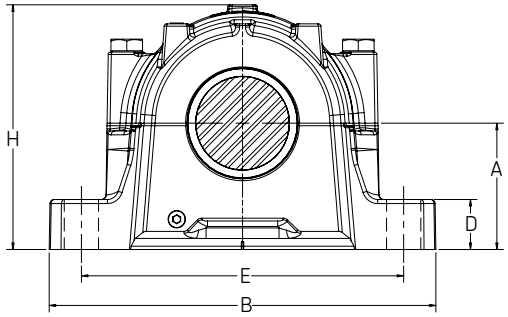
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see pages 347-350.

Designations Complete pillow block*									**Static oil level**		**Bolts**		
	A	B	C	D	E Max	E Min	F	H	K	L	(No req'd)	R	T
in													
SAFD 23518	4	13 3/4	3 7/8	1 5/8	11 3/4	10 1/4	2 1/8	7 19/32	1 1/2	5 7/8	(2)-3/4	1 3/4	4 1/16
FSAFD 23518	4	13 3/4	3 7/8	1 5/8	11 3/4	10 1/4	2 1/8	7 19/32	1 1/2	5 7/8	(4)-5/8	1 3/4	4 1/16
SAFD 23520	4.5	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 9/16	1 21/32	6 1/8	(2)-7/8	1 59/64	4 3/8
FSAFD 23520	4.5	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 9/16	1 21/32	6 1/8	(4)-3/4	1 59/64	4 3/8
SAFD 23522	4.938	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 7/16	1 25/32	6 1/2	(4)-3/4	2 1/8	4 9/16
SAFD 23524	5.25	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 1/8	1 27/32	7 3/8	(4)-3/4	2 9/32	5
SAFD 23526	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/8	2 11/32	7 5/8	(4)-7/8	2 15/32	5 5/16
SAFD 23528	6	20 1/8	5 7/8	2 3/8	17 3/8	15 5/8	3 3/8	12 1/32	2 1/32	7 5/8	(4)-1	2 29/64	5 1/8
SAFD 23530	6.312	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 5/8	2	8 1/2	(4)-1	2 39/64	5 1/2
SAFD 23532	6.688	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 1/4	2 1/16	8 3/4	(4)-1	2 31/32	5 11/16
SAFD 23534	7.062	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	2 5/32	9 9/16	(4)-1	3 1/8	6 1/16
SAFD 23536	7.5	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	2 3/8	9 7/8	(4)-1	3 9/64	6 1/4
SAFD 23538	7.875	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 13/16	2 7/16	10 3/4	(4)-1 1/4	3 19/64	6 11/16
SAFD 23540	8.25	29 1/2	8	3 3/8	25	22 1/2	5	16 5/8	2 15/32	11 1/4	(4)-1 1/4	3 1/2	7 1/16
SAFD 23544	9.5	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 11/16	3 1/8	12	(4)-1 1/2	3 5/8	7 1/4

*Only offered in component format.

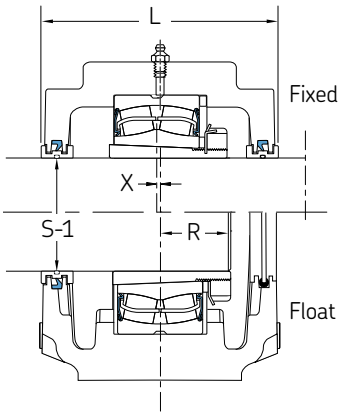
Sealed Spherical roller / adapter mount

SAFB 22500
Two-piece cast-iron housing
Self-aligning bearing
Held or free bearing
Grease lubrication
LORP triple ring seals with contact element



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

Shaft dia.	**Designations**								**Mass**
S-1 Std.	Complete pillow block	Bearing	Adapter assembly	Spacer ring	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	
in									lbs
$2^{7}/_{16}$	**(F)SAF B22515 HTLC**	BS2-22215 2RSK/VT143	SNW 15 x $2^{7}/_{16}$	SR-BS2-2215	FSAF 515	FRB 5/130	LOR 37	EPR 7	28
$2^{11}/_{16}$	**SAF B22516 HTLC**	BS2-22216 2RSK/VT143	SNW 16 x $2^{11}/_{16}$	SR-BS2-2216	FSAF 516	FRB 5/140	LOR 44	EPR 8	37
$2^{15}/_{16}$	**(F)SAF B22517 HTLC**	BS2-22217 2RSK/VT143	SNW 17 x $2^{15}/_{16}$	SR-BS2-2217	FSAF 517	FRB 5/150	LOR 53	EPR 9	38
$3^{3}/_{16}$	**(F)SAF B22518 HTLC**	BS2-22218 2RSK/VT143	SNW 118 x $3^{3}/_{16}$	SR-BS2-2218	FSAF 518	FRB 5/160	LOR 188	EPR 11	47
$3^{7}/_{16}$	**(F)SAF B22520 HTLC**	BS2-22220 2RSK/VT143	SNW 120 x $3^{7}/_{16}$	SR-BS2-2220	FSAF 520	FRB 5/180	LOR 102	EPR 12	62
$3^{15}/_{16}$	**SAF B22522 HTLC**	BS2-22222 2RSK/VT143	SNW 122 x $3^{15}/_{16}$	–	SAF 522	FRB 5/200	LOR 109	EPR 13	73
$4^{3}/_{16}$	**SAF B22524 HTLC**	BS2-22224 2RSK/VT143	SNW 124 x $4^{3}/_{16}$	SR-BS2-2224	SAF 524	FRB 5/230	LOR 113	EPR 14	104
$4^{7}/_{16}$	**SAF B22526 HTLC**	BS2-22226 2CSSK/VT143	OSNW 126 x $4^{7}/_{16}$	SR-BS2-2226	SAF 526	SR 28-0	LOR 117	EPR 15	144
$4^{15}/_{16}$	**SAF B22528 HTLC**	22228 2CSSK/VT143	OSNW 28 x $4^{15}/_{16}$	SR-22228-2CS5	SAF 528	SR 30-0	LOR 122	EPR 27	153
$5^{3}/_{16}$	**SAF B22530 HTLC**	22230 2CSSK/VT143	OSNW 30 x $5^{3}/_{16}$	SR-22230-2CS5	SAF 530	SR 32-0	LOR 125	EPR 16	199
$5^{7}/_{16}$	**SAF B22532 HTLC**	22232 2CSSK/VT143	OSNW 32 x $5^{7}/_{16}$	SR-22232-2CS5	SAF 532	SR 34-0	LOR 130	EPR 16	212
$5^{15}/_{16}$	**SAF B22534 HTLC**	22232 2CSSK/VT143	OSNW 34 x $5^{15}/_{16}$	SR-22234-2CS5	SAF 532	SR 34-0	LOR 140	EPR 18	276
$6^{7}/_{16}$	**SAF B22536 HTLC**	22236 2CSSK/VT143	OSNW 36 x $6^{7}/_{16}$	SR-22236-2CS5	SAF 536	SR 36-30	LOR 148	EPR 19	301
$6^{15}/_{16}$	**SAF B22538 HTLC**	22238 2CSSK/VT143	OSNW 38 x $6^{15}/_{16}$	SR-22238-2CS5	SAF 538	SR 38-32	LOR 155	EPR 21	374
$7^{3}/_{16}$	**SAF B22540 HTLC**	22240 2CSSK/VT143	OSNW 40 x $7^{3}/_{16}$	SR-22240-2CS5	SAF 540	SR 40-34	LOR 159	EPR 21	443
$7^{15}/_{16}$	**SAF B22544 HTLC**	22244 2CSSK/VT143	OSNW 44 x $7^{15}/_{16}$	–	SAF 544	SR 44-38	LOR 167	EPR 23	577



Sealed Spherical roller / adapter mount

SAFB 22500
Two-piece cast-iron housing
Self-aligning bearing
Held or free bearing
Grease lubrication
LORP triple ring seals with contact element

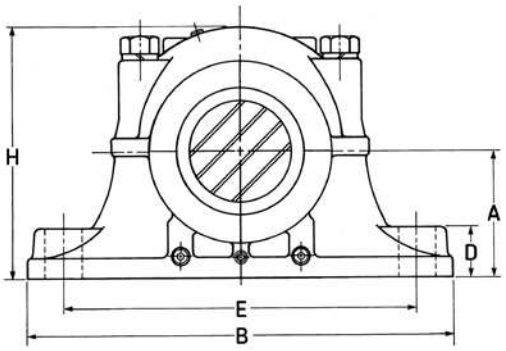
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	L	X	**Bolts** (No. req'd)	R
	in											
(F)SAF B22515 HTLC	3 1/4	11 1/4	3 1/8	1 1/8	9 5/8	8 5/8	1 7/8	6 1/8	4 11/16	7/64	(2)-5/8, (4)-1/2	1 7/16
SAF B22516 HTLC	3 1/2	13	3 1/2	1 1/4	11	9 5/8	2 1/8	6 19/32	5 5/16	7/64	(2)-3/4, (4)-5/8	1 15/32
(F)SAF B22517 HTLC	3 3/4	13	3 1/2	1 1/4	11	9 7/8	2 1/8	7 1/8	5	7/64	(2)-3/4, (4)-5/8	1 9/16
(F)SAF B22518 HTLC	4	13 3/4	3 7/8	1 5/8	11 5/8	10 3/8	2 1/8	7 9/16	5 7/8	7/64	(2)-3/4, (4)-5/8	1 3/4
(F)SAF B22520 HTLC	4 1/2	15 1/4	4 3/8	1 3/4	13 1/8	11 5/8	2 3/8	8 15/32	6 1/8	7/64	(2)-7/8, (4)-3/4	1 59/64
SAF B22522 HTLC	4 15/16	16 1/2	4 3/4	2	14 1/2	12 5/8	2 3/4	9 11/32	6 1/2	7/64	(4)-3/4	2 1/8
SAF B22524 HTLC	5 1/4	16 1/2	4 3/4	2 1/8	14 1/2	13 1/4	2 3/4	10 3/16	7 3/8	7/64	(4)-3/4	2 9/32
SAF B22526 HTLC	6	18 3/8	5 1/4	2 3/8	16	14 5/8	3 1/4	11 5/16	8 1/8	7/64	(4)-7/8	2 15/32
SAF B22528 HTLC	6	20 1/8	5 7/8	2 3/8	17 1/8	16	3 3/8	11 3/4	7 5/8	3/16	(4)-1	2 29/64
SAF B22530 HTLC	6 5/16	21 1/4	6 1/4	2 1/2	18 1/4	17	3 3/4	12 1/2	8 3/8	3/16	(4)-1	2 39/64
SAF B22532 HTLC	6 11/16	22	6 1/4	2 5/8	19 1/4	17 3/8	3 3/4	13 5/16	8 3/4	3/16	(4)-1	2 31/32
SAF B22534 HTLC	7 1/16	24 3/4	6 3/4	2 3/4	21 5/8	19 3/8	4 1/4	14 3/16	9 5/8	3/16	(4)-1	3 1/8
SAF B22536 HTLC	7 1/2	26 3/4	7 1/8	3	23 5/8	20 7/8	4 5/8	14 7/8	10	3/16	(4)-1	3 9/64
SAF B22538 HTLC	7 7/8	28	7 1/2	3 1/8	24 3/8	21 5/8	4 1/2	15 11/16	10 3/4	3/16	(4)-1 1/4	3 19/646
SAF B22540 HTLC	8 1/4	29 1/2	8	3 3/8	25	22 1/2	5	16 1/2	11 1/4	3/16	(4)-1 1/4	3 1/2
SAF B22544 HTLC	9 1/2	32 3/4	8 3/4	3 3/4	27 7/8	24 3/4	5 1/4	18 5/8	12	3/16	(4)-1 1/2	3 5/8w

Spherical roller / cylindrical mount

SDAF 22200
Two-piece heavy duty cast-iron housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

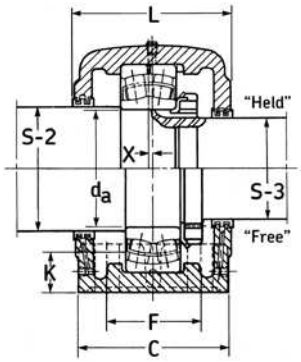
How to order	SDAF 22220
Option	Specify
One end closed	SDAF 22220Y
Taconite seals	SDAF 22220T
Cast-steel	SDAFS 22220

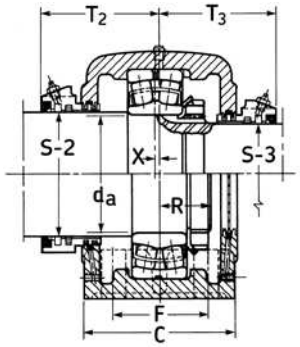


Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

Shaft dia.			Designations											Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in													lbs
100	4 1/2	3 13/16	**SDAF 22220**	22220 E	AN 20	W 20	SDAF 220	SR 20-17	LER 205	LER 87	EPR 12	TER 205	TER 87	80
110	4 7/8	4 3/16	**SDAFS 22222***	22222 E	AN 22	W 22	SDAFS 222	SR 22-19	LOR 121	LOR 113	EPR 14	TER 121	TER 113	102
120	5 5/16	4 9/16	**SDAF 22224**	22224 E	AN 24	W 24	SDAF 224	SR 24-20	LOR 127	LOR 119	EPR 15	TER 127	TER 119	118
130	5 7/8	4 15/16	**SDAF 22226**	22226 E	AN 26	W 26	SDAF 226	SR 26-0	LOR 136	LOR 122	EPR 27	TER 136	TER 122	169
140	6 1/4	5 5/16	**SDAFS 22228***	22228 CC/W33	AN 28	W 28	SDAFS 228	SR 28-0	LOR 144	LOR 127	–	TER 144	TER 127	175
150	6 5/8	5 3/4	**SDAF 22230**	22230 CC/W33	AN 30	W 30	SDAF 230	SR 30-0	LOR 151	LOR 134	EPR 17	TER 151	TER 134	200
160	7	6 1/16	**SDAF 22232**	22232 CC/W33	AN 32	W 32	SDAF 232	SR 32-0	LOR 156	LOR 142	EPR 18	TER 156	TER 142	264
180	7 13/16	6 7/8	**SDAF 22236**	22236 CC/W33	AN 36	W 36	SDAF 236	SR 36-30	LOR 165	LOR 154	EPR 20	TER 165	TER 154	436
190	8 3/8	7 1/4	**SDAF 22238**	22238 CC/W33	AN 38	W 38	SDAF 238	SR 38-32	LER 240	LER 229	EPR 22	TER 240	TER 229	510
200	8 3/4	7 5/8	**SDAF 22240**	22240 CC/W33	AN 40	W 40	SDAF 240	SR 40-34	LER 244	LER 233	EPR 23	TER 244	TER 233	389
220	9 9/16	8 5/16	**SDAF 22244**	22244 CC/W33	N 44	W 44	SDAF 244	SR 44-38	LER 248	LER 239	EPR 25	TER 248	TER 239	787

*Available in steel only





Taconite seal option

Spherical roller / cylindrical mount

SDAF 22200
Two-piece heavy duty cast-iron housing
Self-aligning / 22200 series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

How to order	**SDAF 22220**
Option	Specify
One end closed	SDAF 22220Y
Taconite seals	SDAF 22220T
Cast-steel	SDAFS 22220

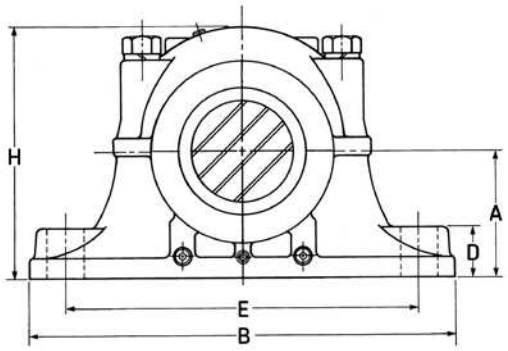
Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SDAF 22220	4 1/2	15 1/4	6	1 7/8	13 1/8	11 5/8	3 3/8	8 15/16	1 21/32	6 3/4	3/16	(4)-3/4	1 59/64	4 11/16	4 11/16
SDAFS 22222	4 15/16	16 1/2	6 3/4	2 1/8	14 1/2	12 5/8	4	9 7/8	1 13/16	7 1/4	3/16	(4)-7/8	2 1/8	4 7/8	4 7/8
SDAF 22224	5 1/4	16 1/2	6 7/8	2 1/4	14 1/2	13 1/4	4 1/8	10 1/2	1 27/32	7 3/8	3/16	(4)-7/8	2 9/32	4 15/16	4 15/16
SDAF 22226	6	18 3/8	7 1/2	2 3/8	16	14 5/8	4 1/2	11 7/8	2 11/32	8	3/16	(4)-1	2 15/32	5 1/4	5 1/4
SDAFS 22228	6	20 1/8	7 1/2	2 3/8	17 1/8	16	4 1/2	12 1/16	2 1/8	7 3/16	3/16	(4)-1	–	–	–
SDAF 22230	6 5/16	21 1/4	7 7/8	2 1/2	18 1/4	17	4 3/4	12 9/16	2 1/32	8 3/8	3/16	(4)-1 1/8	2 49/64	5 7/16	5 7/16
SDAF 22232	6 11/16	22	8 1/4	2 1/2	19 1/4	17 3/8	5	13 7/16	2 3/32	8 3/4	3/16	(4)-1 1/8	2 31/32	5 5/8	5 5/8
SDAF 22236	7 1/2	26 3/4	9 3/8	2 3/4	23 5/8	20 7/8	5 7/8	15 3/16	2 3/8	10	3/16	(4)-1 1/4	3 9/64	6 1/8	6 1/8
SDAF 22238	7 7/8	27 5/8	10	3	23 1/2	21 1/2	6 1/4	16	2 7/16	10 5/8	3/16	(4)-1 3/8	3 19/64	7 1/4	7 1/4
SDAF 22240	8 1/4	28 3/4	10 1/2	3 1/4	25	23	6 3/4	16 7/8	2 1/2	11 1/8	3/16	(4)-1 3/8	3 1/2	7 1/2	7 1/2
SDAF 22244	9 1/2	32	11 1/4	3 1/2	27 7/8	25 5/8	7 1/4	19	3 1/8	11 7/8	3/16	(4)-1 1/2	3 5/8	7 7/8	7 7/8

Spherical roller / cylindrical mount

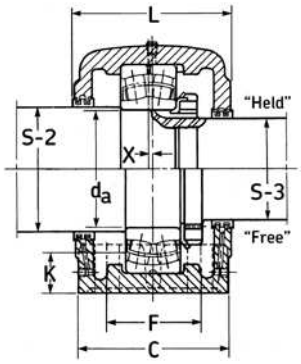
SDAF 22300
Two-piece heavy duty cast-iron housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

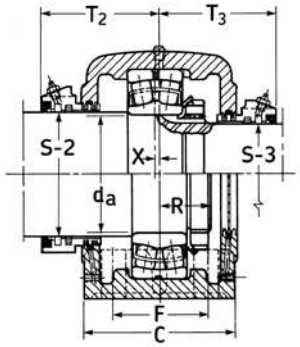
How to order	SDAF 22320
Option	Specify
One end closed	SDAF 22320Y
Taconite seals	SDAF 22320T
Cast-steel	SDAFS 22320



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 351-352.

Shaft dia.		Designations											Mass
d_a		Complete pillow block	Bearing	Lock-nut	Lock-washer	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	End plug	Taconite seal S-2	S-3	
mm	in												lbs
85	$3^{15}/_{16}$ $3^{3}/_{16}$	**SDAF 22317**	22317 E	AN 17	W 17	SDAF 317	SR 20-17	LER 93	LER 69	EPR 11	TER 93	TER 69	83
100	$4^{1}/_{2}$ $3^{13}/_{16}$	**SDAF 22320**	22320 E	AN 20	W 20	SDAF 320	SR 24-20	LER 205	LER 87	EPR 12	TER 205	TER 87	141
110	$4^{7}/_{8}$ $4^{3}/_{16}$	**SDAF 22322**	22322 E	AN 22	W 22	SDAF 322	SR 0-22	LOR 121	LOR 113	EPR 14	TER 121	TER 113	172
120	$5^{5}/_{16}$ $4^{9}/_{16}$	**SDAF 22324**	22324 CC/W33	AN 24	W 24	SDAF 324	SR 0-24	LOR 127	LOR 119	EPR 15	TER 127	TER 119	304
130	$5^{7}/_{8}$ $4^{15}/_{16}$	**SDAF 22326**	22326 CC/W33	AN 26	W 26	SDAF 326	SR 0-26	LOR 136	LOR 122	EPR 27	TER 136	TER 122	330
140	$6^{1}/_{4}$ $5^{5}/_{16}$	**SDAF 22328**	22328 CC/W33	AN 28	W 28	SDAF 328	SR 0-28	LOR 144	LOR 127	EPR 16	TER 144	TER 127	331
150	$6^{5}/_{8}$ $5^{3}/_{4}$	**SDAF 22330**	22330 CC/W33	AN 30	W 30	SDAF 330	SR 36-30	LOR 151	LOR 134	EPR 17	TER 151	TER 134	466
160	7 $6^{1}/_{16}$	**SDAF 22332**	22332 CC/W33	AN 32	W 32	SDAF 332	SR 38-32	LER 225	LER 217	EPR 19	TER 225	TER 217	537
170	$7^{7}/_{16}$ $6^{7}/_{16}$	**SDAF 22334**	22334 CC/W33	AN 34	W 34	SDAF 334	SR 40-34	LER 230	LER 220	EPR 26	TER 230	TER 220	554
180	$7^{13}/_{16}$ $6^{7}/_{8}$	**SDAF 22336**	22336 CC/W33	AN 36	W 36	SDAF 336	SR 0-36	LER 234	LER 223	EPR 21	TER 234	TER 223	623
190	$8^{3}/_{8}$ $7^{1}/_{4}$	**SDAF 22338**	22338 CC/W33	AN 38	W 38	SDAF 338	SR 44-38	LER 240	LER 229	EPR 22	TER 240	TER 229	734





Taconite seal option

Spherical roller / cylindrical mount

SDAF 22300
Two-piece heavy duty cast-iron housing
Self-aligning / 22300 series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

How to order	**SDAF 22320**
Option	Specify
One end closed	SDAF 22320Y
Taconite seals	SDAF 22320T
Cast-steel	SDAFS 22320

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 351-352.

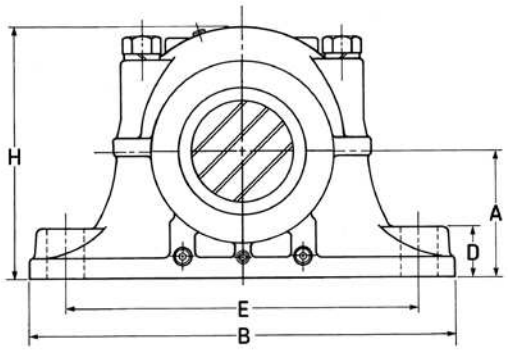
Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T_2	T_3
	in														
SDAF 22317	4 1/2	15 1/4	6	1 7/8	13 1/8	11 5/8	3 3/8	8 15/16	1 25/32	6 3/4	3/16	(4)-3/4	2 1/16	4 3/4	4 3/4
SDAF 22320	5 1/4	16 1/2	6 7/8	2 1/4	14 1/2	13 1/4	4 1/8	10 1/2	2 1/32	7 3/8	3/16	(4)-7/8	2 7/16	5	5
SDAF 22322	6	18 3/8	7 1/2	2 3/8	16	14 5/8	4 1/2	11 7/8	2 13/32	8	3/16	(4)-1	2 5/8	5 1/4	5 1/4
SDAF 22324	6 5/16	21 1/4	7 7/8	2 1/2	18 1/4	17	4 3/4	12 9/16	2 13/32	8 3/8	3/16	(4)-1 1/8	2 13/16	5 7/16	5 7/16
SDAF 22326	6 11/16	22	8 1/4	2 1/2	19 1/4	17 3/8	5	13 7/16	2 15/32	8 3/4	3/16	(4)-1 1/8	3	5 5/8	5 5/8
SDAF 22328	7 1/16	24 3/4	9	2 1/2	21 5/8	19 3/8	5 1/2	14 1/4	2 9/16	9 3/8	3/16	(4)-1 1/4	3 1/4	6 1/16	6 1/16
SDAF 22330	7 1/2	26 3/4	9 3/8	2 3/4	23 5/8	20 7/8	5 7/8	15 3/16	2 5/8	9 3/4	3/16	(4)-1 1/4	3 7/16	6 1/8	6 1/8
SDAF 22332	7 7/8	27 5/8	10	3	23 1/2	21 1/2	6 1/4	16	2 23/32	10 5/8	3/16	(4)-1 3/8	3 5/8	6 1/2	6 1/2
SDAF 22334	8 1/4	28 3/4	10 1/2	3 1/4	25	23	6 3/4	16 7/8	2 3/4	11 1/8	3/16	(4)-1 3/8	3 3/4	6 7/8	6 7/8
SDAF 22336	8 7/8	30 1/2	10 3/4	3 1/4	26 3/8	24 1/8	6 7/8	17 15/16	3 1/16	11 3/8	3/16	(4)-1 1/2	3 7/8	6 7/8	6 7/8
SDAF 22338	9 1/2	32	11 1/4	3 1/2	27 7/8	25 5/8	7 1/4	19	3 13/32	11 7/8	3/16	(4)-1 1/2	4 1/16	7 7/8	7 7/8

Spherical roller / adapter mount

SDAF 22500

Two-piece heavy duty cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

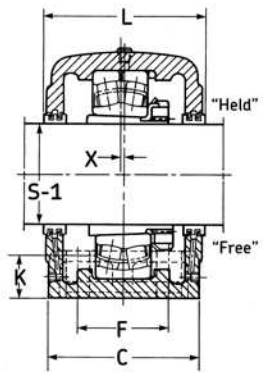
How to order	SDAF 22520
Option	Specify
One end closed	SDAF 22520Y
Taconite seals	SDAF 22520T
Cast-Steel	SDAFS 22520
Optional shaft size	SDAF 22520 x $3^{1}/_{2}$

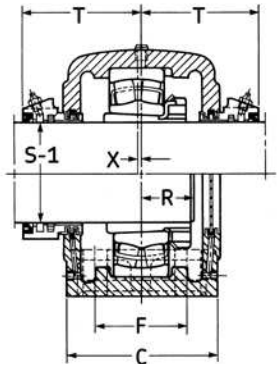


Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

Shaft dia.		Designations								Mass
S-1 Standard	Optional	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal	End plug (2 req'd)	Taconite seal	
in										lbs
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SDAF 22520**	22220 EK	SNW 20	SDAF 520	SR 20-17	LER 75	EPR 11	TER 75	96
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SDAFS 22522***	22222 EK	SNW 22	SDAFS 522	SR 22-19	LER 93	EPR 13	TER 93	105
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SDAF 22524**	22224 EK	SNW 24	SDAF 524	SR 24-20	LOR 113	EPR 14	TER 113	125
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SDAF 22526**	22226 EK	SNW 26	SDAF 526	SR 26-0	LOR 117	EPR 15	TER 117	199
$4^{15}/_{16}$	$4^{13}/_{16}$, $4^{7}/_{8}$, 5	**SDAFS 22528***	22228 CCK/W33	SNW 28	SDAFS 528	SR 28-0	LOR 122	EPR 27	TER 122	220
$5^{3}/_{16}$	$5^{1}/_{8}$, $5^{1}/_{4}$	**SDAF 22530**	22230 CCK/W33	SNW 30	SDAF 530	SR 30-0	LOR 125	EPR 16	TER 125	259
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SDAF 22532**	22232 CCK/W33	SNW 32	SDAF 532	SR 32-0	LOR 130	EPR 16	TER 130	330
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SDAF 22536**	22236 CCK/W33	SNW 36	SDAF 536	SR 36-30	LOR 148	EPR 19	TER 148	403
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SDAF 22538**	22238 CCK/W33	SNW 38	SDAF 538	SR 38-32	LER 224	EPR 21	TER 224	454
$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SDAF 22540**	22240 CCK/W33	SNW 40	SDAF 540	SR 40-34	LER 228	EPR 22	TER 228	544
$7^{15}/_{16}$	$7^{13}/_{16}$, $7^{7}/_{8}$, 8	**SDAF 22544**	22244 CCK/W33	SNW 44	SDAF 544	SR 44-38	LER 236	EPR 24	TER 236	795

*Available in steel only





Taconite seal option

Spherical roller / adapter mount

SDAF 22500
Two-piece heavy duty cast-iron housing
Self-aligning / 22200 K series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

How to order	**SDAF 22520**
Option	Specify
One end closed	SDAF 22520Y
Taconite seals	SDAF 22520T
Cast-steel	SDAFS 22520
Optional shaft size	SDAF 22520 x $3\frac{1}{2}$

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 162; for other seal speed limits see pages 351-352.

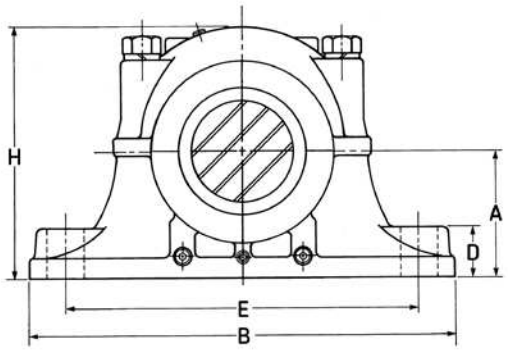
Designations Complete pillow block									**Static oil level**			**Bolts**		
	A	B	C	D	E Max	E Min	F	H	K	L	X	(No. req'd)	R	T
	in													
SDAF 22520	$4\frac{1}{2}$	$15\frac{1}{4}$	6	$1\frac{7}{8}$	$13\frac{1}{8}$	$11\frac{5}{8}$	$3\frac{3}{8}$	$8\frac{15}{16}$	$1\frac{21}{32}$	$6\frac{3}{4}$	$\frac{3}{16}$	(4)-$\frac{3}{4}$	$1\frac{59}{64}$	$4\frac{3}{4}$
SDAFS 22522	$4\frac{15}{16}$	$16\frac{1}{2}$	$6\frac{3}{4}$	$2\frac{1}{8}$	$14\frac{1}{2}$	$12\frac{5}{8}$	4	$9\frac{7}{8}$	$1\frac{13}{16}$	$7\frac{1}{4}$	$\frac{3}{16}$	(4)-$\frac{7}{8}$	$2\frac{1}{8}$	$4\frac{7}{8}$
SDAF 22524	$5\frac{1}{4}$	$16\frac{1}{2}$	$6\frac{7}{8}$	$2\frac{1}{4}$	$14\frac{1}{2}$	$13\frac{1}{4}$	$4\frac{1}{8}$	$10\frac{1}{2}$	$1\frac{27}{32}$	$7\frac{3}{8}$	$\frac{3}{16}$	(4)-$\frac{7}{8}$	$2\frac{9}{32}$	$4\frac{15}{16}$
SDAF 22526	6	$18\frac{3}{8}$	$7\frac{1}{2}$	$2\frac{3}{8}$	16	$14\frac{5}{8}$	$4\frac{1}{2}$	$11\frac{7}{8}$	$2\frac{11}{32}$	8	$\frac{3}{16}$	(4)-1	$2\frac{15}{32}$	$5\frac{1}{4}$
SDAFS 22528	6	$20\frac{1}{8}$	$7\frac{1}{2}$	$2\frac{3}{8}$	$17\frac{1}{8}$	16	$4\frac{1}{2}$	$12\frac{1}{16}$	$2\frac{1}{8}$	$7\frac{13}{16}$	$\frac{3}{16}$	(4)-$1\frac{1}{8}$	–	–
SDAF 22530	$6\frac{5}{16}$	$21\frac{1}{4}$	$7\frac{7}{8}$	$2\frac{1}{2}$	$18\frac{1}{4}$	17	$4\frac{3}{4}$	$12\frac{9}{16}$	$2\frac{1}{32}$	$8\frac{3}{8}$	$\frac{3}{16}$	(4)-$1\frac{1}{8}$	$2\frac{49}{64}$	$5\frac{7}{16}$
SDAF 22532	$6\frac{11}{16}$	22	$8\frac{1}{4}$	$2\frac{1}{2}$	$19\frac{1}{4}$	$17\frac{3}{8}$	5	$13\frac{7}{16}$	$2\frac{3}{32}$	$8\frac{3}{4}$	$\frac{3}{16}$	(4)-$1\frac{1}{8}$	$2\frac{31}{32}$	$5\frac{5}{8}$
SDAF 22536	$7\frac{1}{2}$	$26\frac{3}{4}$	$9\frac{3}{8}$	$2\frac{3}{4}$	$23\frac{5}{8}$	$20\frac{7}{8}$	$5\frac{7}{8}$	$15\frac{3}{16}$	$2\frac{3}{8}$	10	$\frac{3}{16}$	(4)-$1\frac{1}{4}$	$3\frac{9}{64}$	$6\frac{1}{8}$
SDAF 22538	$7\frac{7}{8}$	$27\frac{5}{8}$	10	3	$23\frac{1}{2}$	$21\frac{1}{2}$	$6\frac{1}{4}$	16	$2\frac{7}{16}$	$10\frac{5}{8}$	$\frac{3}{16}$	(4)-$1\frac{3}{8}$	$3\frac{19}{64}$	$6\frac{1}{2}$
SDAF 22540	$8\frac{1}{4}$	$28\frac{3}{4}$	$10\frac{1}{2}$	$3\frac{1}{4}$	25	23	$6\frac{3}{4}$	$16\frac{7}{8}$	$2\frac{1}{2}$	$11\frac{1}{8}$	$\frac{3}{16}$	(4)-$1\frac{3}{8}$	$3\frac{1}{2}$	$6\frac{7}{8}$
SDAF 22544	$9\frac{1}{2}$	32	$11\frac{1}{4}$	$3\frac{1}{2}$	$27\frac{7}{8}$	$25\frac{5}{8}$	$7\frac{1}{4}$	19	$3\frac{1}{8}$	$11\frac{7}{8}$	$\frac{3}{16}$	(4)-$1\frac{1}{2}$	$3\frac{5}{8}$	$7\frac{1}{8}$

Spherical roller / adapter mount

SDAF 22600

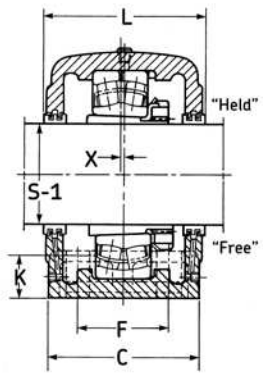
Two-piece heavy duty cast-iron housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

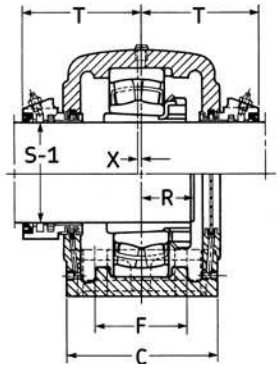
How to order	SDAF 22617
Option	Specify
One end closed	SDAF 22617Y
Taconite seals	SDAF 22617T
Cast-steel	SDAFS 22617
Optional shaft size	SDAF 22617 x 3



Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 351-352.

Shaft dia.		Designations								Mass
S-1 Standard	Optional	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (1 req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$2^{15}/_{16}$	$2^{13}/_{16}$, $2^{7}/_{8}$, 3	**SDAF 22617**	22317 EK	SNW 117	SDAF 617	SR 20-17	LER 59	EPR 10	TER 59	84
$3^{7}/_{16}$	$3^{5}/_{16}$, $3^{3}/_{8}$, $3^{1}/_{2}$	**SDAF 22620**	22320 EK	SNW 120	SDAF 620	SR 24-20	LER 75	EPR 11	TER 75	164
$3^{15}/_{16}$	$3^{13}/_{16}$, $3^{7}/_{8}$, 4	**SDAF 22622**	22322 EK	SNW 122	SDAF 622	SR 0-22	LER 93	EPR 13	TER 93	178
$4^{3}/_{16}$	$4^{1}/_{16}$, $4^{1}/_{8}$, $4^{1}/_{4}$	**SDAF 22624**	22324 CCK/W33	SNW 124	SDAF 624	SR 0-24	LOR 113	EPR 14	TER 113	272
$4^{7}/_{16}$	$4^{5}/_{16}$, $4^{3}/_{8}$, $4^{1}/_{2}$	**SDAF 22626**	22326 CCK/W33	SNW 126	SDAF 626	SR 0-26	LOR 117	EPR 15	TER 117	340
$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SDAF 22632**	22332 CCK/W33	SNW 132	SDAF 632	SR 38-32	LER 211	EPR 17	TER 211	455
$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SDAF 22634**	22334 CCK/W33	SNW 134	SDAF 634	SR 40-34	LER 215	EPR 19	TER 215	530
$6^{7}/_{16}$	$6^{5}/_{16}$, $6^{3}/_{8}$, $6^{1}/_{2}$	**SDAF 22636**	22336 CCK/W33	SNW 136	SDAF 636	SR 0-36	LER 220	EPR 26	TER 220	630
$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SDAF 22638**	22338 CCK/W33	SNW 138	SDAF 638	SR 44-38	LER 224	EPR 21	TER 224	792





Taconite seal option

Spherical roller / adapter mount

SDAF 22600
Two-piece heavy duty cast-iron housing
Self-aligning / 22300 K series bearing
Held or free bearing
Oil or grease lubrication
LOR / LER triple ring seals
Four-bolt base

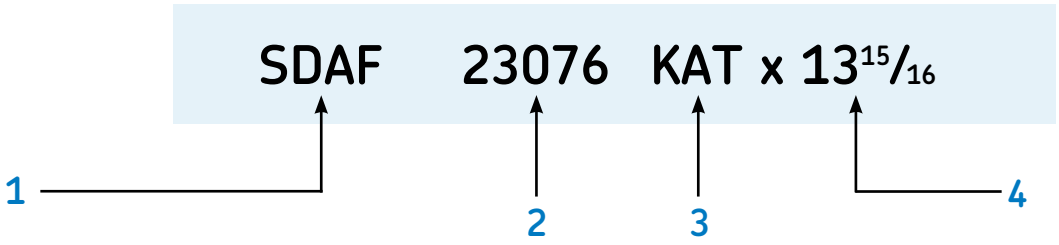
How to order	**SDAF 22617**
Option	Specify
One end closed	SDAF 22617Y
Taconite seals	SDAF 22617T
Cast-steel	SDAFS 22617
Optional shaft size	SDAF 22617 x 3

Held and free: Standard and standard option blocks come with an enclosed stabilizing ring. For a free unit, discard the enclosed stabilizing ring.
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see pages 351-352.

Designations Complete pillow block	A	B	C	D	E Max	E Min	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in													
SDAF 22617	4 1/2	15 1/4	6	1 7/8	13 1/8	11 5/8	3 3/8	8 15/16	1 25/32	6 3/4	3/16	(4)-3/4	2 1/16	4 11/16
SDAF 22620	5 1/4	16 1/2	6 7/8	2 1/4	14 1/2	13 1/4	4 1/8	10 1/2	2 1/32	7 3/8	3/16	(4)-7/8	2 7/16	5 1/16
SDAF 22622	6	18 3/8	7 1/2	2 3/8	16	14 5/8	4 1/2	11 7/8	2 13/32	8	3/16	(4)-1	2 5/8	5 1/4
SDAF 22624	6 5/16	21 1/4	7 7/8	2 1/2	18 1/4	17	4 3/4	12 9/16	2 13/32	8 3/8	3/16	(4)-1 1/8	2 13/16	5 7/16
SDAF 22626	6 11/16	22	8 1/4	2 1/2	19 1/4	17 3/8	5	13 7/16	2 15/32	8 3/4	3/16	(4)-1 1/8	3	5 5/8
SDAF 22632	7 7/8	27 5/8	10	3	23 1/2	21 1/2	6 1/4	16	2 23/32	10 5/8	3/16	(4)-1 3/8	3 5/8	6 1/2
SDAF 22634	8 1/4	28 3/4	10 1/2	3 1/4	25	23	6 3/4	16 7/8	2 3/4	11 1/8	3/16	(4)-1 3/8	3 3/4	6 3/4
SDAF 22636	8 7/8	30 1/2	10 3/4	3 1/4	26 3/8	24 1/8	6 7/8	17 15/16	3 1/16	11 3/8	3/16	(4)-1 1/2	3 15/16	6 7/8
SDAF 22638	9 1/2	32	11 1/4	3 1/2	27 7/8	25 5/8	7 1/4	19	3 13/32	11 7/8	3/16	(4)-1 1/2	4 1/16	7 1/8

Nomenclature / SDAF extended range

Standards



1. Housing style:

S	Standard pillow block
D	Heavy duty series
A	Inch dimensions
F	Triple ring seal

2. Designation:

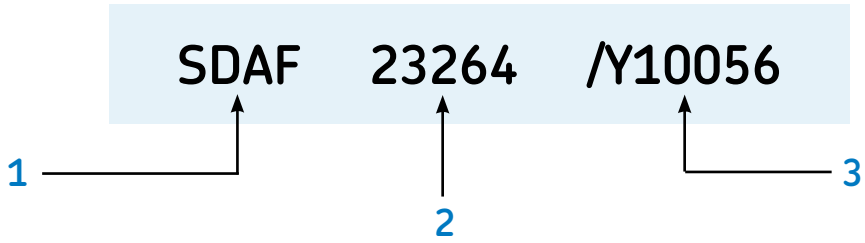
Complete assembly (cast-iron)	Housing only	Basic bearing series	Mounting method
230(00)	30(00)	230(00) CC/W33	Cylindrical
231(00)	31(00)	231(00) CC/W33	Cylindrical
232(00)	32(00)	232(00) CC/W33	Cylindrical
230(00)KA	30(00)KA	230(00) CCK/W33	Adapter
231(00)KA	31(00)KA	231(00) CCK/W33	Adapter
232(00)KA	32(00)KA	232(00) CCK/W33	Adapter

3. Suffix:

T	Taconite contact seal
–	Standard triple ring seal

4. Shaft size:

Adapter mounted



1. Prefix:

SDAF	Gray iron
SDAFD	Ductile iron
SDAFS	Cast steel
SSDAF	Solid foot, no cast slots, iron
SSDAFD	Solid foot, no cast slots, ductile
SSDAFS	Solid foot, no cast slots, steel

2. Designation:

23264	Complete kit including bearing and locking device
3264	Housing only, no bearing or locking device

3. Suffix:

/Y10056	Float, both ends open
H /Y10056	Fixed, both ends open, includes ring seals and (1) stabilizing ring
HH /Y10056	Fixed, both ends open, includes ring seals and (2) stabilizing rings
Y /Y10056	Float, one end closed, includes ring seals and end plug
HY /Y10056	Fixed, one end closed, includes (1) stabilizing ring and end plug
HHY /Y10056	Fixed, one end closed, includes (2) stabilizing rings and end plug

Introduction / SDAF extended range

Introduction

SKF is the leading supplier of split pillow blocks in the US and has established many of the designs that are regarded as the industry standards today. This position is due, in part, to the fact that SKF is a full range supplier of split pillow block housings and the associated bearings and mounting accessories for shafts ranging from 1-7/16" to over 20" in diameter. The largest size split pillow blocks, for 9" to 20" shafts, are referred to as the extended range series and are supplied as made-to-order, customized solutions for the largest and most demanding split pillow block applications.

The extended range series of pillow blocks are a rugged housing style of exceptionally sturdy 4-bolt construction. The standard material is class 40 gray iron but when extra high strength or impact resistance is necessary, housings can be supplied in high strength ductile irons or cast steel as specified below. Extended range housings are machined according to the requirements of the individual application and are, therefore, highly customized bearing solutions. These customized housings are each given their own specific part number and drawing so that there is a permanent record for each housing.

When no special features are required, housings are designated according to the part numbers in the following tables. However, since extended range housings are not stocked in a final machined state, it is recommended that each application for extended range housings be reviewed with SKF Applications Engineering to determine what features may be needed since many special features can often be accommodated with little or no additional cost.

Mounting

Because of their size, extended range housings often require special considerations when mounting and dismounting. For bearings mounted directly on the shaft, it is recommended that hydraulic assist features be included in the shaft design. These will aid in mounting and dismounting the bearing. For bearings mounted on adapter sleeves, sleeves can be supplied modified with hydraulic assist features which, once again, aid in both mounting and dismounting. SKF Applications Engineering can provide the appropriate recommendations and drawings for hydraulic assist as well as instructions for extended range housing assembly.

Housing material

- Standard material is ASTM A48B class 40 gray iron
- Alternate high strength or impact resistant material available
  - Ductile-Iron: ASTM A536 Grade 65-45-12
  - Ductile-Iron: ASTM A536 Grade 80-55-06
  - Cast-Steel: ASTM A27 Grade U-60-30

Lubrication

- Housing design will provide effective bearing lubrication with choice of conventional greasing methods, static oil or pressurized circulating oil system
- Readily adaptable for use with custom lubrication systems and auxiliary monitoring devices

Sealing options

- Triple ring seals of steel material for high wear resistance and strength in severe environments
- Special labyrinth ring seals with O-ring bore inserts for enhanced lubricant retention in oil applications
- Two-piece, bolt-on Taconite seal or TER cartridge type Taconite seals
- One end closed enclosures to provide superior sealing ability with ease of assembly and maintenance

Custom considerations

Because of the highly specialized nature of the extended range applications, SKF Mounted Products Design and Applications Engineering work together to specify and design each pillow block. This flexible approach to supplying extended range pillow blocks provides the user with a host of optional features that tailor to the specific application. These features can include, but are not limited to: drilled base bolt holes, milled foot pads, special machinings for lubrication and condition monitoring systems, special bore tolerances, machined foot ends, special seals, machinings for user supplied auxiliary seals, hydraulic assisted adapter sleeves, etc. The extended range series pillow blocks are individually engineered to provide a safe, reliable, cost effective bearing solution for the application. Consult SKF Applications Engineering for your particular needs.

Availability

SKF extended range housings are made-to-order to accommodate any special features that may be required. So that orders can be filled quickly, SKF stocks unmachined castings for the most popular sizes, and can turn around most finished products with reduced lead times.

Application information / SDAF extended range

Send this form plus any design details or drawings information you wish to include to your local SKF sales representative.

Application: (Please note type of equipment where pillow blocks are to be used.)

_____

_____

Purpose: (Is this installation part of a new design or a replacement? If the latter, please indicate what unit is presently used.)

_____

_____

Why is the present unit being replaced? (Please explain.)

Present unit is defective:_____

Equipment is being modified or upgraded: _____

What type of load is the pillow block intended to carry?

☐ Radial ☐ Steady ☐ Mild shock ☐ Axial ☐ Alternating ☐ Heavy shock

Direction_____Speed_____rpm Temperature_____° F Required Life_____hours (L_{10})

Type of lubrication available: ☐ Grease ☐ Oil ☐ Oil Mist ☐ Static ☐ Circulating

Conditions under which pillow block will be used: ☐ Wet ☐ Dry ☐ Exposed ☐ Covered

Type of drive mechanism to be used:_____

Shaft diameter range (specify): _____

Will unit use a cylindrical or adapter mounted (tapered) bore? _____

What special requirements will be needed?

Center height:_____

Bolt configuration and spacing: _____

Sealing material:_____

Other:_____

Name:_____ Title:_____

Company:_____

Address:_____

City:_____ State:_____ Zip:_____ Phone: (___) _____

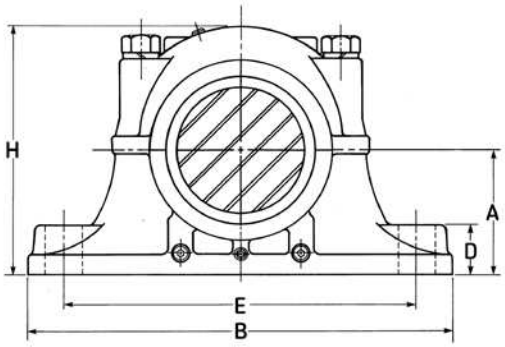
Email:_____ Cell Phone: (___) _____

Extended range / cylindrical mount

SDAF 23000
Two-piece heavy duty cast-iron housing
Self-aligning / 23000 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

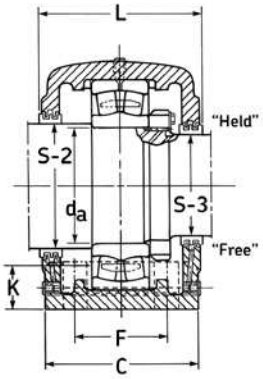
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

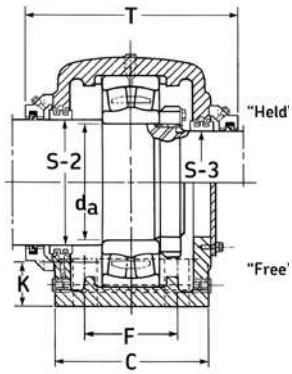


For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see page 353.

Shaft dia.			Designations								Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-plate	Pillow block housing	Stab. ring (No. req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	
mm	in										lbs
300	13	11 1/2	**SDAF 23060**	23060 CAC/W33	N 060	PL 60	SDAF 3060	(1)-A 8967	ERF 824	ERF 832	1 200
320	13 3/4	12 1/4	**SDAF 23064**	23064 CC/W33	N 064	PL 64	SDAF 3064	(1)-A 8968	ERF 943	ERF 804	1 300
340	15	13	**SDAF 23068**	23068 CAC/W33	N 068	PL 68	SDAF 3068	(1)-A 8969	ERF 806	ERF 824	1 550
360	15 3/4	13 3/4	**SDAF 23072**	23072 CAC/W33	N 072	PL 72	SDAF 3072	(1)-A 8970	ERF 969	ERF 874	1 650
380	16 3/4	14 1/2	**SDAF 23076**	23076 CAC/W33	N 076	PL 76	SDAF 3076	(1)-A 8971	ERF 822	ERF 950	1 700
400	17 1/2	15 3/8	**SDAF 23080**	23080 CAC/W33	N 080	PL 80	SDAF 3080	(1)-36053-153	ERF 999	ERF 942	2 300
420	18	16	**SDAF 23084**	23084 CA/W33	N 084	PL 84	SDAF 3084	(1)-36053-143	ERF 812	ERF 809	2 300
440	19 1/2	17	**SDAF 23088**	23088 CA/W33	N 088	PL 88	SDAF 3088	(2)-36053-150	ERF 926	ERF 838	2 550
460	20	17 3/4	**SDAF 23092**	23092 CA/W33	N 092	PL 92	SDAF 3092	(2)-36053-152	ERF 808	ERF 906	2 850
480	21	18 1/2	**SDAF 23096**	23096 CA/W33	N 096	PL 96	SDAF 3096	(2)-36053-200	ERF 933	ERF 978	4 250
500	21	19	**SDAF 230/500**	230/500 CA/W33	N 500	PL 500	SDAF 30/500	(2)-36053-165	ERF 933	ERF 922	4 350
530	22 1/2	20 3/8	**SDAF 230/530**	230/530 CA/W33	N 530	PL 530	SDAF 30/530	(2)-36053-166	ERF 997	ERF 998	5 200

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / cylindrical mount

SDAF 23000
Two-piece heavy duty cast-iron housing
Self-aligning / 23000 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see page 353.

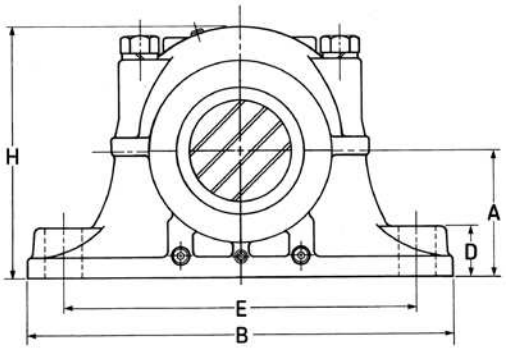
Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in														
SDAF 23060	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4 3/8	15 1/2	3/16	(4)-1 5/8	4 11/32	18 3/8
SDAF 23064	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4	15 1/2	3/16	(4)-1 5/8	4 1/2	19 3/8
SDAF 23068	12	39	15 1/4	4 3/16	33 1/2	32	32 3/4	10	24	3 3/8	15 3/4	3/16	(4)-1 7/8	4 7/8	19 5/8
SDAF 23072	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	3 23/32	16 3/4	3/16	(4)-1 7/8	4 7/8	20
SDAF 23076	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	3 3/8	16 3/4	3/16	(4)-1 7/8	5 1/8	20
SDAF 23080	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 7/16	17 5/8	3/16	(4)-2	5 17/32	22 3/4
SDAF 23084	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	29	4 1/16	17 5/8	3/16	(4)-2	5 9/16	22 3/4
SDAF 23088	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 1/2	19 1/4	0	(4)-2 1/4	5 3/4	24
SDAF 23092	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4	19 1/4	0	(4)-2 1/4	5 7/8	24
SDAF 23096	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 1/8	21 3/4	0	(4)-2 1/4	5 29/32	26 1/2
SDAF 230/500	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	4 3/4	21 3/4	0	(4)-2 1/4	6 1/2	26 1/2
SDAF 230/530	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	4 13/16	22 1/4	0	(4)-2 1/2	6 27/32	27

Extended range / adapter mount

SDAF 23000 KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.



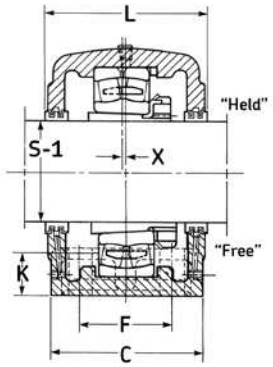
For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see page 353.

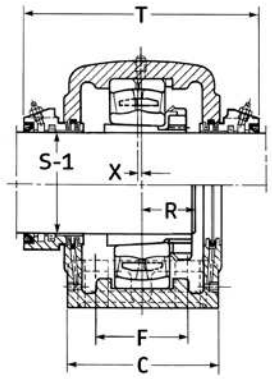
Shaft dia.		Designations								Mass
S-1 Standard	Optional [1]	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (No. req'd)	Triple ring seal (2 req'd)	End plug	Taconite seal	
in										lbs
$10^{15}/_{16}$	11	**SDAF 23060 KA x $10^{15}/_{16}$**	23060 CACK/W33	SNP 3060 x $10^{15}/_{16}$	SDAF 3060 KA x $10^{15}/_{16}$	(1)-A 8967	ERF 858	X-5217-9	TER 858	1 200
$11^{7}/_{16}$	$11^{1}/_{2}$	**SDAF 23064 KA x $11^{7}/_{16}$**	23064 CCK/W33	SNP 3064 x $11^{7}/_{16}$	SDAF 3064 KA x $11^{7}/_{16}$	(1)-A 8968	ERF 861	X-5217-16	TER 861	1 300
$11^{15}/_{16}$	12	**SDAF 23064 KA x $11^{15}/_{16}$**	23064 CCK/W33	SNP 3064 x $11^{15}/_{16}$	SDAF 3064 KA x $11^{15}/_{16}$	(1)-A 8968	ERF 859	X-5217-3	TER 859	1 250
$12^{7}/_{16}$	$12^{1}/_{2}$	**SDAF 23068 KA x $12^{7}/_{16}$**	23068 CACK/W33	SNP 3068 x $12^{7}/_{16}$	SDAF 3068 KA x $12^{7}/_{16}$	(1)-A 8969	ERF 865	X-5217-29	TER 865	1 550
$12^{15}/_{16}$	13	**SDAF 23072 KA x $12^{15}/_{16}$**	23072 CACK/W33	SNP 3072 x $12^{15}/_{16}$	SDAF 3072 KA x $12^{15}/_{16}$	(1)-A 8970	ERF 869	X-5217-28	TER 869	1 650
$13^{7}/_{16}$	$13^{1}/_{2}$	**SDAF 23072 KA x $13^{7}/_{16}$**	23072 CACK/W33	SNP 3072 x $13^{7}/_{16}$	SDAF 3072 KA x $13^{7}/_{16}$	(1)-A 8970	ERF 872	X-5217-27	TER 872	1 600
$13^{15}/_{16}$	14	**SDAF 23076 KA x $13^{15}/_{16}$**	23076 CAK/W33	SNP 3076 x $13^{15}/_{16}$	SDAF 3076 KA x $13^{15}/_{16}$	(1)-A 8971	ERF 875	X-5217-12	TER 875	1 700
15	$14^{15}/_{16}$	**SDAF 23080 KA x 15**	23080 CACK/W33	SNP 3080 x 15	SDAF 3080 KA x 15	(1)-36053-153	ERF 847	X-5217-21	TER 847	2 300
$15^{3}/_{4}$	*	**SDAF 23084 KA x $15^{3}/_{4}$**	23084 CAK/W33	SNP 3084 x $15^{3}/_{4}$	SDAF 3084 KA x $15^{3}/_{4}$	(1)-36053-143	ERF 969	X-5217-23	TER 969	2 300
$16^{1}/_{2}$	*	**SDAF 23088 KA x $16^{1}/_{2}$**	23088 CAK/W33	SNP 3088 x $16^{1}/_{2}$	SDAF 3088 KA x $16^{1}/_{2}$	(2)-36053-150	ERF 958	**	**	2 550
17	*	**SDAF 23092 KA x 17**	23092 CAK/W33	SNP 3092 x 17	SDAF 3092 KA x 17	(2)-36053-152	ERF 838	**	**	2 850
18	*	**SDAF 23096 KA x 18**	23096 CAK/W33	SNP 3096 x 18	SDAF 3096 KA x 18	(2)-36053-200	ERF 888	**	**	4 250
$18^{1}/_{2}$	*	**SDAF 230/500 KA x $18^{1}/_{2}$**	230/500 CAK/W33	SNP 30/500 x $18^{1}/_{2}$	SDAF 30/500 KA x $18^{1}/_{2}$	(2)-36053-165	ERF 978	**	**	4 350
$19^{1}/_{2}$	*	**SDAF 230/530 KA x $19^{1}/_{2}$**	230/530 CAK/W33	SNP 30/530 x $19^{1}/_{2}$	SDAF 30/530 KA x $19^{1}/_{2}$	(2)-36053-166	ERF 926	**	**	5 200

*SKF will evaluate optional shaft diameters upon request.
**In these sizes, housing and seals are a matched pair and cannot be ordered separately.
1) Requires different adapter sleeve and seals.

Optional internal radial clearances (e.g. C3) are available upon request.

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / adapter mount

SDAF 23000KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23000 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

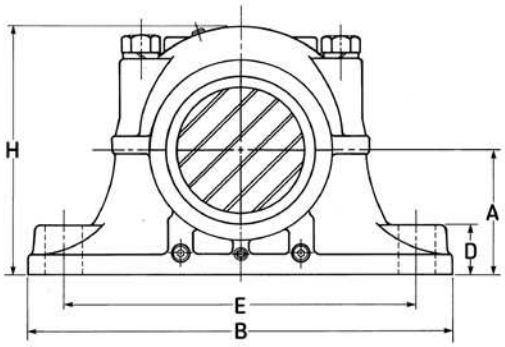
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 164; for other seal speed limits see page 353.

Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	X	**Bolts** (No. req'd)	R	T
	in														
SDAF 23060 KA x 10 15/16	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	33 1/8	9	23 7/16	4 3/8	15 1/2	3/16	(4)-1 5/8	4 11/32	18 3/8
SDAF 23064 KA x 11 7/16	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	33 1/8	9	23 7/16	4	15 1/2	3/16	(4)-1 5/8	4 1/2	19 3/8
SDAF 23064 KA x 11 15/16	12	38 1/4	14 3/4	3 3/8	33 1/2	32 3/4	33 1/8	9	23 7/16	4	15 1/2	3/16	(4)-1 5/8	4 1/2	19 3/8
SDAF 23068 KA x 12 7/16	11 13/16	39	15 1/4	4 3/16	33 1/2	32	32 3/4	10	24	3 3/8	15 3/4	3/16	(4)-1 7/8	4 7/8	19 5/8
SDAF 23072 KA x 12 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	3 23/32	16 3/4	3/16	(4)-1 7/8	4 7/8	20
SDAF 23072 KA x 13 7/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	3 23/32	16 3/4	3/16	(4)-1 7/8	4 7/8	20
SDAF 23076 KA x 13 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	3 3/8	16 3/4	3/16	(4)-1 7/8	5 1/8	20
SDAF 23080 KA x 15	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	29	4 7/16	17 5/8	3/16	(4)-2	5 17/32	22 3/4
SDAF 23084 KA x 15 3/4	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	29	4 1/16	17 5/8	3/16	(4)-2	5 9/16	22 3/4
SDAF 23088 KA x 16 1/2	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 1/2	19 1/4	3/16	(4)-2 1/4	5 3/4	24
SDAF 23092 KA x 17	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4	19 1/4	3/16	(4)-2 1/4	5 7/8	24
SDAF 23096 KA x 18	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 1/8	21 3/4	3/16	(4)-2 1/4	5 29/32	26 1/2
SDAF 230/500 KA x 18 1/2	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	4 3/4	21 3/4	3/16	(4)-2 1/4	6 1/2	26 1/2
SDAF 230/530 KA x 19 1/2	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	4 13/16	22 1/4	3/16	(4)-2 1/2	6 27/32	27

Extended range / cylindrical mount

SDAF 23100
Two-piece heavy duty cast-iron housing
Self-aligning / 23100 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured



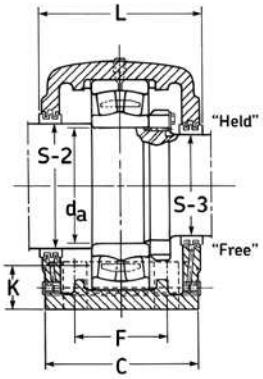
How to order

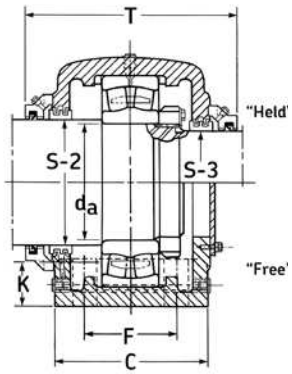
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 166; for other seal speed limits see page 353.

Shaft dia.			Designations								Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-plate	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal S-2 shaft (1 req'd)	S-3 shaft (1 req'd)	
mm	in										lbs
260	11 1/2	9 15/16	**SDAF 23152**	23152 CAC/W33	N 052	PL 52	SDAF 3152	36053-114	ERF 832	ERF 845	1 050
280	12 1/2	10 3/4	**SDAF 23156**	23156 CAC/W33	N 056	PL 56	SDAF 3156	A 8967	ERF 866	ERF 826	1 250
300	13	11 1/2	**SDAF 23160**	23160 CAC/W33	N 060	PL 60	SDAF 3160	36053-157	ERF 846	ERF 856	1 350
320	14	12 1/4	**SDAF 23164**	23164 CAC/W33	N 064	PL 64	SDAF 3164	A 8970	ERF 876	ERF 983	1 850
340	15	13	**SDAF 23168**	23168 CAC/W33	N 068	PL 68	SDAF 3168	36053-137	ERF 847	ERF 846	2 450
360	16	13 3/4	**SDAF 23172**	23172 CAC/W33	N 072	PL 72	SDAF 3172	36053-167	ERF 809	ERF 874	2 500
380	17	14 1/2	**SDAF 23176**	23176 CA/W33	N 076	PL 76	SDAF 3176	36053-143	ERF 811	ERF 950	2 500
400	17 1/2	15 1/4	**SDAF 23180**	23180 CA/W33	N 080	PL 80	SDAF 3180	36053-150	ERF 967	ERF 895	2 800
420	18 1/2	15 3/4	**SDAF 23184**	23184 CA/W33	N 084	PL 84	SDAF 3184	36053-160	ERF 978	ERF 907	4 300
440	19 1/2	17	**SDAF 23188**	23188 CA/W33	N 088	PL 88	SDAF 3188	36053-165	ERF 926	ERF 838	4 300
460	20	17 3/4	**SDAF 23192**	23192 CA/W33	N 092	PL 92	SDAF 3192	36053-154	ERF 808	ERF 906	5 000
480	21	18 1/2	**SDAF 23196**	23196 CA/W33	N 096	PL 96	SDAF 3196	36053-159	ERF 933	ERF 978	5 300

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / cylindrical mount

SDAF 23100
Two-piece heavy duty cast-iron housing
Self-aligning / 23100 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

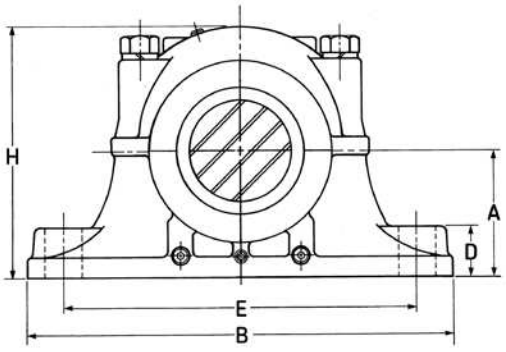
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 166; for other seal speed limits see page 353.

Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in													
SDAF 23152	10 1/4	35	13 1/8	3 3/4	30 1/2	29	29 3/4	8 3/4	20 7/8	3 1/8	13 3/4	(4)-1 5/8	4 5/8	17 1/2
SDAF 23156	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4 1/2	15 1/2	(4)-1 5/8	4 25/32	19
SDAF 23160	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	3 7/8	15 1/2	(4)-1 5/8	5 1/8	19
SDAF 23164	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	4 1/16	16 3/4	(4)-1 7/8	5 17/32	20 3/4
SDAF 23168	14	43 3/4	17 3/4	5	38 1/4	36 3/4	37 1/2	10 3/4	27 7/8	4 5/8	18 3/4	(4)-2	5 29/32	22 1/2
SDAF 23172	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 5/8	17 5/8	(4)-2	5 31/32	21 3/4
SDAF 23176	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 9/32	17 5/8	(4)-2	6 1/8	21 3/4
SDAF 23180	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 13/16	19 1/4	(4)-2 1/4	6 13/32	24
SDAF 23184	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 19/32	21 3/4	(4)-2 1/4	6 7/8	26 1/2
SDAF 23188	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 5/16	21 3/4	(4)-2 1/4	7 7/32	26 1/2
SDAF 23192	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 7/16	22 1/4	(4)-2 1/2	7 1/2	27
SDAF 23196	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 3/16	22 1/4	(4)-2 1/2	7 21/32	27

Extended range / adapter mount

SDAF 23100 KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23100 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured



How to order

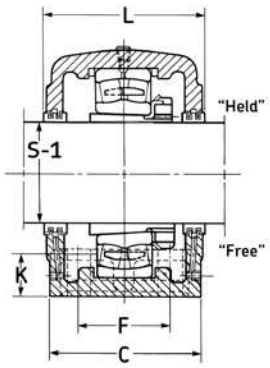
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

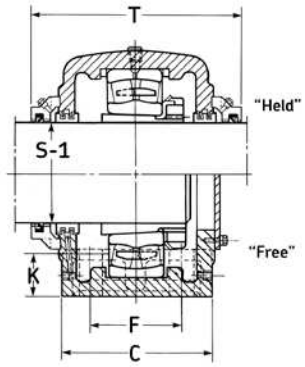
For shaft diameter tolerances see page 359; for bearing information see page 166; for other seal speed limits see page 353.

Shaft dia.		Designations						Mass
S-1 Standard	Optional	Complete pillow block	Bearing	Adapter assembly	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal (2 req'd)	
in								lbs
9 7/16	9 1/2	**SDAF 23152 KA x 9 7/16**	23152 CACK/W33	SNP 3152 x 9 7/16	SDAF 3152 KA x 9 7/16	36053-114	ERF 891	1 050
10 7/16	10 1/2	**SDAF 23156 KA x 10 7/16**	23156 CACK/W33	SNP 3156 x 10 7/16	SDAF 3156 KA x 10 7/16	A 8967	ERF 973	1 250
10 15/16	11	**SDAF 23160 KA x 10 15/16**	23160 CACK/W33	SNP 3160 x 10 15/16	SDAF 3160 KA x 10 15/16	36053-157	ERF 858	1 350
11 15/16	12	**SDAF 23164 KA x 11 15/16**	23164 CACK/W33	SNP 3164 x 11 15/16	SDAF 3164 KA x 11 15/16	A 8970	ERF 900	1 850
12 7/16	12 1/2	**SDAF 23168 KA x 12 7/16**	23168 CACK/W33	SNP 3168 x 12 7/16	SDAF 3168 KA x 12 7/16	36053-137	ERF 975	2 450
13 7/16	13 1/2	**SDAF 23172 KA x 13 7/16**	23172 CACK/W33	SNP 3172 x 13 7/16	SDAF 3172 KA x 13 7/16	36053-167	ERF 872	2 500
13 15/16	14	**SDAF 23176 KA x 13 15/16**	23176 CAK/W33	SNP 3176 x 13 15/16	SDAF 3176 KA x 13 15/16	36053-143	ERF 875	2 500
14 15/16	15	**SDAF 23180 KA x 14 15/16**	23180 CAK/W33	SNP 3180 x 14 15/16	SDAF 3180 KA x 14 15/16	36053-150	ERF 882	2 800
15 3/4	*	**SDAF 23184 KA x 15 3/4**	23184 CAK/W33	SNP 3184 x 15 3/4	SDAF 3184 KA x 15 3/4	36053-160	ERF 907	4 300
16 1/2	*	**SDAF 23188 KA x 16 1/2**	23188 CAK/W33	SNP 3188 x 16 1/2	SDAF 3188 KA x 16 1/2	36053-165	ERF 958	4 300
17	*	**SDAF 23192 KA x 17**	23192 CAK/W33	SNP 3192 x 17	SDAF 3192 KA x 17	36053-154	ERF 838	5 000
18	*	**SDAF 23196 KA x 18**	23196 CAK/W33	SNP 3196 x 18	SDAF 3196 KA x 18	36053-159	ERF 888	5 300

*SKF will evaluate optional shaft diameters upon request

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / adapter mount

SDAF 23100 KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23100 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

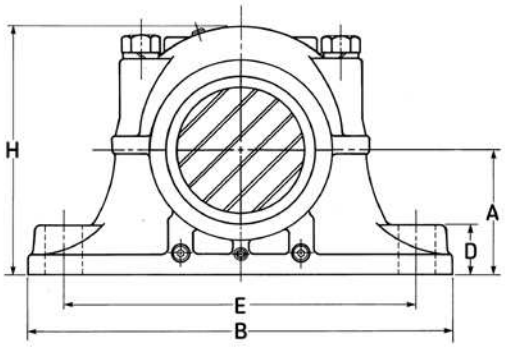
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 166; for other seal speed limits see page 353.

Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in													
SDAF 23152 KA x 9 7/16	10 1/4	35	13 1/8	3 3/4	30 1/2	29	29 3/4	8 3/4	20 7/8	3 1/8	13 3/4	(4)-1 5/8	4 5/8	17 1/2
SDAF 23156 KA x 10 7/16	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4 1/2	15 1/2	(4)-1 5/8	4 25/32	19
SDAF 23160 KA x 10 15/16	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	3 7/8	15 1/2	(4)-1 5/8	5 1/8	19
SDAF 23164 KA x 11 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	4 1/16	16 3/4	(4)-1 7/8	5 17/32	20 3/4
SDAF 23168 KA x 12 7/16	14	43 3/4	17 3/4	5	38 1/4	36 3/4	37 1/2	10 3/4	27 7/8	4 5/8	18 3/4	(4)-2	5 29/32	22 1/2
SDAF 23172 KA x 13 7/16	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 5/8	17 5/8	(4)-2	5 31/32	21 3/4
SDAF 23176 KA x 13 15/16	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 9/32	17 5/8	(4)-2	6 1/8	21 3/4
SDAF 23180 KA x 15	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 13/16	19 1/4	(4)-2 1/4	6 13/32	24
SDAF 23184 KA x 15 3/4	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 19/32	21 3/4	(4)-2 1/4	6 7/8	26 1/2
SDAF 23188 KA x 16 1/2	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 5/16	21 3/4	(4)-2 1/4	7 7/32	26 1/2
SDAF 23192 KA x 17	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 7/16	22 1/4	(4)-2 1/2	7 1/2	27
SDAF 23196 KA x 18	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 3/16	22 1/4	(4)-2 1/2	7 21/32	27

Extended range / cylindrical mount

SDAF 23200
Two-piece heavy duty cast-iron housing
Self-aligning / 23200 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured



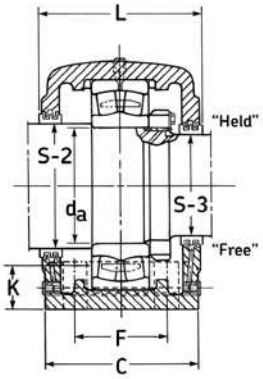
How to order

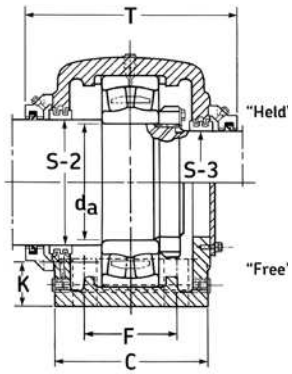
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see page 353.

Shaft dia.			Designations								Mass
d_a	S-2	S-3	Complete pillow block	Bearing	Lock-nut	Lock-plate	Pillow block housing	Stab. ring (2 req'd)	Triple ring seal S-2 shaft	S-3 shaft (1 req'd)	(1 req'd)
mm	in										lbs
240	10 1/2	9 3/16	**SDAF 23248**	23248 CAC/W33	N 048	PL 48	SDAF 3248	36053-114	ERF 840	ERF 923	1 100
260	11 1/2	9 15/16	**SDAF 23252**	23252 CAC/W33	N 052	PL 52	SDAF 3252	A 8968	ERF 832	ERF 845	1 350
280	12 1/2	10 3/4	**SDAF 23256**	23256 CAC/W33	N 056	PL 56	SDAF 3256	36053-157	ERF 866	ERF 826	1 400
300	13	11 1/2	**SDAF 23260**	23260 CAC/W33	N 060	PL 60	SDAF 3260	36053-130	ERF 846	ERF 856	1 900
320	14	12 1/4	**SDAF 23264**	23264 CAC/W33	N 064	PL 64	SDAF 3264	36053-137	ERF 876	ERF 983	2 500
340	15	13	**SDAF 23268**	23268 CA/W33	N 068	PL 68	SDAF 3268	36053-143	ERF 847	ERF 846	2 650
360	16	13 3/4	**SDAF 23272**	23272 CA/W33	N 072	PL 72	SDAF 3272	36053-150	ERF 965	ERF 981	2 950
380	17	14 1/2	**SDAF 23276**	23276 CA/W33	N 076	PL 76	SDAF 3276	36053-152	ERF 838	ERF 984	3 050
400	17 1/2	15 1/4	**SDAF 23280**	23280 CA/W33	N 080	PL 80	SDAF 3280	36053-165	ERF 967	ERF 895	4 500
420	18 1/2	15 3/4	**SDAF 23284**	23284 CA/W33	N 084	PL 84	SDAF 3284	36053-154	ERF 978	ERF 907	5 000
440	19 1/2	17	**SDAF 23288**	23288 CA/W33	N 088	PL 88	SDAF 3288	36053-159	ERF 926	ERF 838	5 050

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / cylindrical mount

SDAF 23200
Two-piece heavy duty cast-iron housing
Self-aligning / 23200 series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

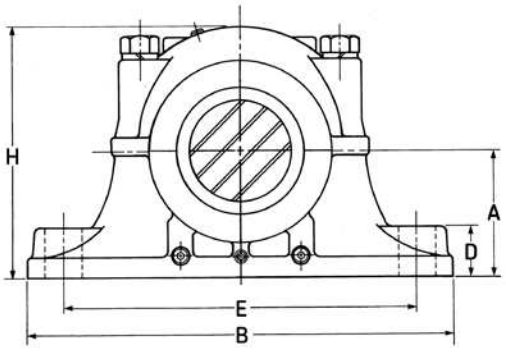
These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see page 353.

Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in													
SDAF 23248	10 1/4	35	13 1/8	3 3/4	30 1/2	29	29 3/4	8 3/4	20 7/8	3 9/32	13 3/4	(4)-1 5/8	4 7/8	17 1/2
SDAF 23252	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4 3/8	15 1/2	(4)-1 5/8	5 7/32	19
SDAF 23256	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4	15 1/2	(4)-1 5/8	5 11/32	19
SDAF 23260	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	4 3/32	16 3/4	(4)-1 7/8	5 3/4	20 3/4
SDAF 23264	14	43 3/4	17 3/4	5	38 1/4	36 3/4	37 1/2	10 3/4	27 7/8	4 3/4	18 3/4	(4)-2	6 5/32	22 1/2
SDAF 23268	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 17/32	17 5/8	(4)-2	6 19/32	21 3/4
SDAF 23272	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	5 1/8	19 1/4	(4)-2 1/4	6 3/4	24
SDAF 23276	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 9/16	19 1/4	(4)-2 1/4	7 1/32	24
SDAF 23280	17	53	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 5/8	21 3/4	(4)-2 1/4	7 1/2	26 1/2
SDAF 23284	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 25/32	22 1/4	(4)-2 1/2	7 13/16	27
SDAF 23288	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 1/4	22 1/4	(4)-2 1/2	8 9/32	27

Extended range / adapter mount

SDAF 23200 KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured



How to order

These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

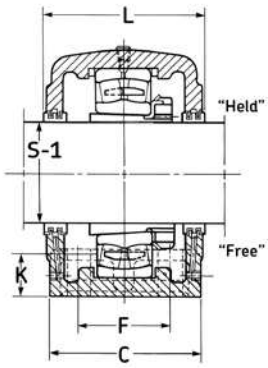
For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see page 353.

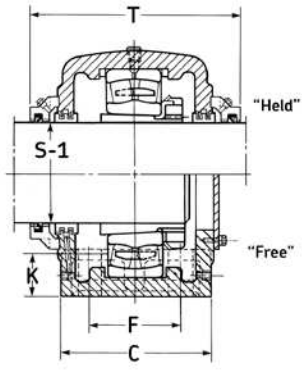
Shaft dia.		Designations						Mass
S-1 Standard	Optional[1]	Complete pillow block	Bearing	Adapter assembly housing	Pillow block (2 req'd)	Stab. ring (2 req'd)	Triple ring seal	
in								lbs
8 15/16	9	**SDAF 23248 KA x 8 15/16**	23248 CACK/W33	SNP 148 x 8 15/16	SDAF 3248 KA x 8 15/16	36053-114	ERF 914	1 100
9 7/16	9 1/2	**SDAF 23252 KA x 9 7/16**	23252 CACK/W33	SNP 152 x 9 7/16	SDAF 3252 KA x 9 7/16	A 8968	ERF 891	1 350
10 7/16	10 1/2	**SDAF 23256 KA x 10 7/16**	23256 CACK/W33	SNP 3256 x 10 7/16	SDAF 3256 KA x 10 7/16	36053-157	ERF 973	1 400
10 15/16	11	**SDAF 23260 KA x 10 15/16**	23260 CACK/W33	SNP 3260 x 10 15/16	SDAF 3260 KA x 10 15/16	36053-130	ERF 1002	1 900
11 15/16	12	**SDAF 23264 KA x 11 15/16**	23264 CACK/W33	SNP 3264 x 11 15/16	SDAF 3264 KA x 11 15/16	36053-137	ERF 900	2 500
12 7/16	12 1/2	**SDAF 23268 KA x 12 7/16**	23268 CAK/W33	SNP 3268 x 12 7/16	SDAF 3268 KA x 12 7/16	36053-143	ERF 975	2 650
13 7/16	13 1/2	**SDAF 23272 KA x 13 7/16**	23272 CAK/W33	SNP 3272 x 13 7/16	SDAF 3272 KA x 13 7/16	36053-150	ERF 979	2 950
13 15/16	14	**SDAF 23276 KA x 13 15/16**	23276 CAK/W33	SNP 3276 x 13 15/16	SDAF 3276 KA x 13 15/16	36053-152	ERF 977	3 050
14 15/16	15	**SDAF 23280 KA x 15**	23280 CAK/W33	SNP 3280 x 15	SDAF 3280 KA x 15	36053-165	ERF 976	4 500
15 3/4	*	**SDAF 23284 KA x 15 3/4**	23284 CAK/W33	SNP 3284 x 15 3/4	SDAF 3284 KA x 15 3/4	36053-154	ERF 907	5 000
16 1/2	*	**SDAF 23288 KA x 16 1/2**	23288 CAK/W33	SNP 3288 x 16 1/2	SDAF 3288 KA x 16 1/2	36053-159	ERF 958	5 050

1) Requires different adapter sleeve and seals.

* SKF will evaluate optional shaft diameters upon request.

Note: All SDAF extended range series are custom manufactured





Taconite seal option

Extended range / adapter mount

SDAF 23200 KA
Two-piece heavy duty cast-iron housing
Self-aligning / 23200 K series bearing
Held or free bearing
Oil or grease lubrication
ERF triple ring seals
Custom manufactured

How to order

These housings are made-to-order, customized bearing solutions and should be reviewed by our application engineers. Please refer to page 427 for required application information.

For shaft diameter tolerances see page 359; for bearing information see page 167; for other seal speed limits see page 353.

Designations Complete pillow block	A	B	C	D	E Max	E Min	E Drilled holes	F	H	**Static oil level** K	L	**Bolts** (No. req'd)	R	T
	in													
SDAF 23248 KA x 8 15/16	10 1/4	35	13 1/8	3/4	30 1/2	29	29 3/4	8 3/4	20 7/8	3 9/32	13 3/4	(4)-1 5/8	4 7/8	17 1/2
SDAF 23252 KA x 9 7/16	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4 3/8	15 1/2	(4)-1 5/8	5 7/32	19
SDAF 23256 KA x 10 7/16	12	38 1/4	14 3/4	4	33 1/2	32 3/4	33 1/8	9	23 7/16	4	15 1/2	(4)-1 5/8	5 11/32	19
SDAF 23260 KA x 10 15/16	12 13/16	41 3/4	15 3/4	4 1/2	36 1/2	35	35 3/4	10 1/2	25 3/4	4 3/32	16 3/4	(4)-1 7/8	5 3/4	20 3/4
SDAF 23264 KA x 11 15/16	14	43 3/4	17 3/4	5	38 1/4	36 3/4	37 1/2	10 3/4	27 7/8	4 3/4	18 3/4	(4)-2	6 5/32	22 1/2
SDAF 23268 KA x 12 7/16	14 1/2	46	17 1/8	5 1/4	40 3/4	39 1/4	40	11	28 7/8	4 17/32	17 5/8	(4)-2	6 19/32	21 3/4
SDAF 23272 KA x 13 7/16	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	5 1/8	19 1/4	(4)-2 1/4	6 3/4	24
SDAF 23276 KA x 13 15/16	15 1/2	48 3/4	18 3/4	5 1/2	43 1/2	41 3/4	42 5/8	12 1/4	30 1/2	4 9/16	19 1/4	(4)-2 1/4	7 1/32	24
SDAF 23280 KA x 15	17	52	21	5 1/2	46 1/8	44 3/8	45 1/4	14 1/2	33 3/4	5 5/8	21 3/4	(4)-2 1/4	7 1/2	26 1/2
SDAF 23284 KA x 15 3/4	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 25/32	22 1/4	(4)-2 1/2	7 13/16	27
SDAF 23288 KA x 16 1/2	18	54 1/4	21 5/8	5 3/4	48 7/8	47 1/8	48	15	35 3/4	5 1/4	22 1/4	(4)-2 1/2	8 9/32	27

Mounting accessories / introduction

Adapters

The adapter is used to hold and locate a tapered bore bearing on a cylindrical shaft seat. It permits relatively wide tolerances for the shaft diameter and makes it unnecessary to heat the bearing or use a press when mounting in order to obtain an interference fit of the inner ring on the shaft.

SKF adapters are manufactured with the same precise techniques and care used in the manufacture of bearings.

SKF adapters are generally supplied complete with locknut and locking device.

Dimensions and tolerances

The adapters, locknuts, lockwashers, lockplates and withdrawal sleeves generally conform to ABMA standard 8.2.

In addition to the inch bore accessories shown in these catalog tables the SKF manufacturing program includes metric bore adapter sleeves and withdrawal sleeves along with their associated locking devices. Consult SKF for information.

Hydraulic assist adapters (OSNW and OSNP)

SKF inch adapter sleeves for bearing sizes 26 (22226, 23226) and larger, can be supplied with oil supply ducts and distribution grooves for pressurized oil to assist in mounting and dismounting. M6 x 1 threads are used for all inch dimension adapter sleeves. For corresponding information on inch dimension adapter sleeves, please consult SKF Applications Engineering.

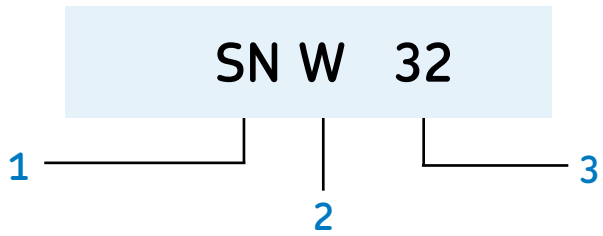
Complete adapters

Hydraulic assist adapters (nomenclature):

OS....	Inlet on non-threaded side to distribution groove on tapered surface
OS....H	Inlet on threaded side to distribution groove on tapered surface
OS....HB	Inlet on threaded side to distribution groove on tapered surface; 2nd inlet on threaded side to distribution groove on bore surface
OS....B	Inlet on non-threaded side to distribution groove on tapered surface; 2nd inlet on non-threaded side to distribution groove on bore surface

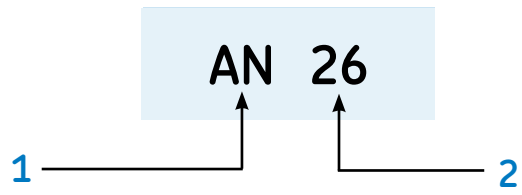
Mounting accessories / nomenclature

Complete adapters



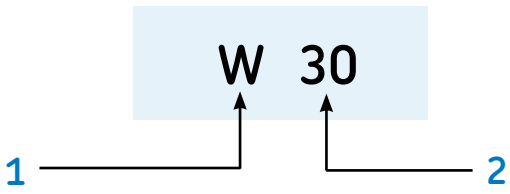
1. Adapters:	
S	Adapter sleeve
N	Locknut
2. Locking device:	
S	Lockwasher
N	Lockplate
3. Size:	

Locknuts



1. Locknut:	
N	Heavy section
AN	Heavy section
NO	Light section
2. Size:	

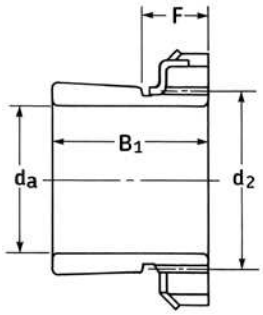
Lockwashers / lockplates



1. Locking device:	
W	Lockwasher, heavy section
WO	Lockwasher, light section
PL	Lockplate
2. Size:	

Adapters

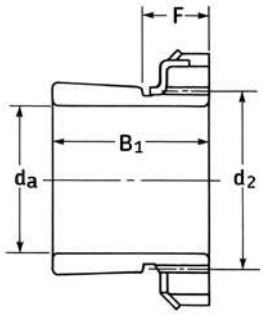
Bearings series 12, 13, 222



How to order	Specify
Complete adapter	Shaft size
SNW 5	x 3/4

All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard. Consult SKF for optional shaft sizes.

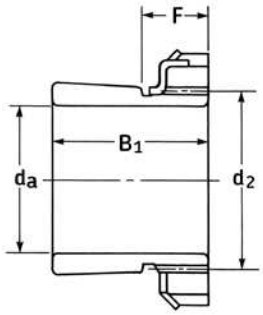
Bearing size	Shaft dia.		Designations				Mass	Dimensions			
	d_a Standard	Optional	Complete adapter	Locknut	Lockwasher	Adapter sleeve		B_1	F	Mean thread pitch diameter d_2	Threads per inch
	in						lbs				
05	3/4	–	**SNW 5**	N 05	W 05	S 5	0.22	1.269	0.562	0.9470	32
06	15/16	–	**SNW 6**	N 06	W 06	S 6	0.28	1.353	0.622	1.1339	18
07	1 3/16	–	**SNW 7**	N 07	W 07	S 7	0.35	1.459	0.654	1.3369	18
08	1 5/16	–	**SNW 8**	N 08	W 08	S 8	0.41	1.504	0.662	1.5237	18
09	1 7/16	1 3/8, 1 1/2	**SNW 9**	N 09	W 09	S 9	0.62	1.584	0.662	1.7277	18
10	1 11/16	1 5/8, 1 3/4	**SNW 10**	N 10	W 10	S 10	0.73	1.765	0.724	1.9277	18
11	1 15/16	1 7/8, 2	**SNW 11**	N 11	W 11	S 11	0.80	1.845	0.729	2.1174	18
12	2 1/16		**SNW 12**	N 12	W 12	S 12	1.10	1.989	0.760	2.3204	18
13	2 3/16	2 1/8, 2 1/4	**SNW 13**	N 13	W 13	S 13	1.40	2.100	0.792	2.5084	18
14	2 5/16	–	**SNW 14**	N 14	W 14	S 14	1.80	2.274	0.792	2.7114	18
15	2 7/16	2 3/8, 2 1/2	**SNW 15**	AN 15	W 15	S 15	2.25	2.296	0.895	2.8752	12
16	2 11/16	2 5/8, 2 3/4	**SNW 16**	AN 16	W 16	S 16	2.40	2.376	0.895	3.0790	12
17	2 15/16	2 13/16, 2 7/8, 3	**SNW 17**	AN 17	W 17	S 17	2.90	2.486	0.926	3.2812	12
18	3 3/16	3 1/16, 3 1/8, 3 1/4	**SNW 18**	AN 18	W 18	S 18	3.05	2.646	1.010	3.4682	12
19	3 5/16	–	**SNW 19**	AN 19	W 19	S 19	4.05	2.760	1.041	3.6712	12
20	3 7/16	3 5/16, 3 3/8, 3 1/2	**SNW 20**	AN 20	W 20	S 20	4.40	2.869	1.073	3.8592	12
21	3 11/16	–	**SNW 21**	AN 21	W 21	S 21	4.55	2.987	1.073	4.0618	12
22	3 15/16	3 13/16, 3 7/8, 4	**SNW 22**	AN 22	W 22	S 22	5.00	3.206	1.135	4.2648	12
24	4 3/16	4 1/16, 4 1/8, 4 1/4	**SNW 24**	AN 24	W 24	S 24	6.65	3.466	1.166	4.6558	12
26	4 7/16	4 5/16, 4 3/8, 4 1/2	**SNW 26**	AN 26	W 26	S 26	9.70	3.762	1.229	5.0458	12
28	4 15/16	4 13/16, 4 7/8, 5	**SNW 28**	AN 28	W 28	S 28	10.5	3.981	1.291	5.4368	12
30	5 3/16	5 1/8, 5 1/4	**SNW 30**	AN 30	W 30	S 30	16.0	4.241	1.354	5.8278	12
32	5 7/16	5 3/8, 5 1/2	**SNW 32**	AN 32	W 32	S 32	15.5	4.578	1.510	6.1953	8
34	5 15/16	5 13/16, 5 7/8, 6	**SNW 34**	AN 34	W 34	S 34	19.5	4.847	1.541	6.5703	8
36	6 7/16	6 5/16, 6 3/8, 6 1/2	**SNW 36**	AN 36	W 36	S 36	20.5	5.038	1.573	6.9773	8
38	6 15/16	6 13/16, 6 7/8, 7	**SNW 38**	AN 38	W 38	S 38	23.5	5.261	1.604	7.3833	8
40	7 3/16	7 1/8, 7 1/4	**SNW 40**	AN 40	W 40	S 40	30.5	5.484	1.666	7.7571	8
44	7 15/16	7 13/16, 7 7/8, 8	**SNW 44**	N 44	W 44	S 44	32.5	5.901	1.698	8.5378	8



How to order	Specify
Complete adapter	Shaft size
SNW 3024	x 4 3/16

All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
Consult SKF for optional shaft sizes.

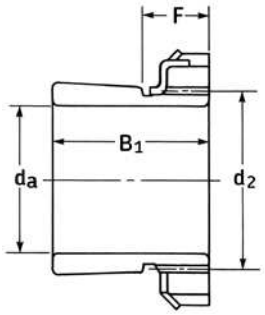
Bearing size	Shaft dia. d_a		Designations				Mass	Dimensions			
	Standard	Optional	Complete adapter	Locknut	Lockwasher	Adapter sleeve		B_1	F	Mean thread pitch diameter d_2	Threads per inch
	in						lbs				
24	4 3/16	4 1/16, 4 1/8, 4 1/4	**SNW 3024**	N 024	W 024	S 3024	6.15	2.947	1.250	4.6558	12
26	4 7/16	4 5/16, 4 3/8, 4 1/2	**SNW 3026**	N 026	W 026	S 3026	7.50	3.237	1.313	5.0458	12
28	4 15/16	4 13/16, 4 7/8, 5	**SNW 3028**	N 028	W 028	S 3028	8.45	3.340	1.375	5.4368	12
30	5 3/16	5 1/8, 5 1/4	**SNW 3030**	N 030	W 030	S 3030	9.80	3.492	1.406	5.8278	12
32	5 7/16	5 3/8, 5 1/2	**SNW 3032**	N 032	W 032	S 3032	12.0	3.711	1.468	6.1953	8
34	5 15/16	5 13/16, 5 7/8, 6	**SNW 3034**	N 034	W 034	S 3034	13.5	4.019	1.500	6.5703	8
36	6 7/16	6 5/16, 6 3/8, 6 1/2	**SNW 3036**	N 036	W 036	S 3036	15.0	4.337	1.531	6.9773	8
38	6 15/16	6 13/16, 6 7/8, 7	**SNW 3038**	N 038	W 038	S 3038	16.5	4.412	1.594	7.3833	8
40	7 3/16	7 1/8, 7 1/4	**SNW 3040**	N 040	W 040	S 3040	19.5	4.750	4.656	7.7571	8
44	7 15/16	7 13/16, 7 7/8, 8	**SNW 3044**	N 044	W 044	S 3044	24.5	5.130	1.750	8.5378	8
48	8 15/16	8 7/16, 8 1/2, 9	**SNP 3048**	N 048	PL 48	S 3048	32.0	5.432	1.968	9.3245	6
52	9 7/16	9 1/2	**SNP 3052**	N 052	PL 52	S 3052	41.0	6.019	2.125	10.0742	6
56	10 7/16	10, 10 1/2	**SNP 3056**	N 056	PL 56	S 3056	45.5	6.191	2.219	10.8852	6
60	10 15/16	11	**SNP 3060**	N 060	PL 60	S 3060	59.0	6.727	2.281	11.6662	6
64	11 15/16	11 1/2, 12	**SNP 3064**	N 064	PL 64	S 3064	65.0	6.946	2.375	12.4440	6
68	12 7/16	12 1/2	**SNP 3068**	N 068	PL 68	S 3068	78.0	7.543	2.531	13.1910	5
72	13 7/16	13, 13 1/2	**SNP 3072**	N 072	PL 72	S 3072	86.0	7.579	2.531	14.0220	5
76	13 15/16	14	**SNP 3076**	N 076	PL 76	S 3076	94.5	7.743	2.656	14.8090	5
80	15	15	**SNP 3080**	N 080	PL 80	S 3080	100.0	8.411	2.813	15.5970	5
84	15 3/4	–	**SNP 3084**	N 084	PL 84	S 3084	105.0	8.498	2.813	16.3840	5
88	16 1/2	–	**SNP 3088**	N 088	PL 88	S 3088	130.0	9.100	3.228	17.2830	5
92	17	–	**SNP 3092**	N 092	PL 92	S 3092	157.0	9.336	3.228	18.0710	5
96	18	–	**SNP 3096**	N 096	PL 96	S 3096	165.0	9.446	3.260	18.8580	5
500	18 1/2	–	**SNP 30/500**	N 500	PL 500	S 32/500	200.0	9.838	3.573	19.6460	5
530	19 1/2	–	**SNP 30/530**	N 530	PL 530	S 32/530	263.0	10.679	3.573	20.8270	4



How to order	Specify
Complete adapter	Shaft size
SNW 3122	x 3 15/16

All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard. Consult SKF for optional shaft sizes.

Bearing size	Shaft dia. d_a Standard	Shaft dia. d_a Optional	Designations Complete adapter	Locknut	Lockwasher	Adapter sleeve	Mass	Dimensions B_1	F	Mean thread pitch diameter d_2	Threads per inch
	in						lbs				
22	3 15/16	–	**SNW 3122**	N 022	W 022	S 22	4.25	3.206	1.135	4.2648	12
24	4 1/4	–	**SNW 3124**	N 024	W 024	S 24	5.85	3.466	1.166	4.6558	12
26	4 7/16	–	**SNW 3126**	N 026	W 026	S 26	8.35	3.762	1.229	5.0458	12
28	4 15/16	–	**SNW 3128**	N 028	W 028	S 28	8.85	3.981	1.291	5.4368	12
30	5 3/16	–	**SNW 3130**	N 030	W 030	S 30	13.5	4.241	1.354	5.8278	12
32	5 7/16	–	**SNW 3132**	N 032	W 032	S 32	13.5	4.578	1.510	6.1953	8
34	5 15/16	–	**SNW 3134**	N 034	W 034	S 34	16.0	4.847	1.541	6.5703	8
36	6 7/16	–	**SNW 3136**	N 036	W 036	S 36	17.0	5.038	1.573	6.9773	8
38	6 15/16	–	**SNW 3138**	N 038	W 038	S 38	19.5	5.261	1.604	7.3833	8
40	7 3/16	–	**SNW 3140**	N 040	W 040	S 40	28.5	5.484	1.666	7.7571	8
44	7 15/16	–	**SNW 3144**	N 044	W 044	S 44	28.0	5.901	1.698	8.5378	8
48	8 15/16		**SNP 3148**	N 048	PL 48	S 48	37.5	6.638	1.979	9.3245	6
52	9 7/16	9 1/2	**SNP 3152**	N 052	PL 52	S 52	44.0	7.593	2.125	10.0742	6
56	10	10 1/2	**SNP 3156**	N 056	PL 56	S 3156	46.5	7.766	2.219	10.8852	6
60	10 15/16	11	**SNP 3160**	N 060	PL 60	S 3160	59.5	8.830	2.281	11.6662	6
64	12	12	**SNP 3164**	N 064	PL 64	S 3164	74.0	9.111	2.375	12.4440	6
68	12 7/16	12 1/2	**SNP 3168**	N 068	PL 68	S 3168	93.5	9.787	2.531	13.1910	5
72	13 7/16	13 1/2	**SNP 3172**	N 072	PL 72	S 3172	120.0	9.862	2.531	14.0220	5
76	13 15/16	14	**SNP 3176**	N 076	PL 76	S 3176	125.0	10.066	2.656	14.8090	5
80	15	15	**SNP 3180**	N 080	PL 80	S 3180	140.0	10.459	2.875	15.5970	5
84	15 3/4	–	**SNP 3184**	N 084	PL 84	S 3184	145.0	11.412	2.938	16.3840	5
88	16 1/2	–	**SNP 3188**	N 088	PL 88	S 3188	151.0	11.817	3.228	17.2830	5
92	17	–	**SNP 3192**	N 092	PL 92	S 3192	209.0	12.368	3.323	18.0710	5
96	18	–	**SNP 3196**	N 096	PL 96	S 3196	201.0	12.714	3.354	18.8580	5

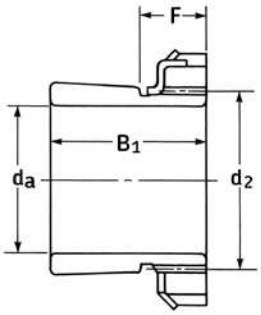


All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
Consult SKF for optional shaft sizes.

Bearing size	Shaft dia.	Designations				Mass	Dimensions			
	d_a Standard	Complete adapter	Locknut	Lockwasher	Adapter sleeve		B_1	F	Mean thread pitch diameter d_2	Threads per inch
	in					lbs				
09	$1^{7}/_{16}$	**SNW 109**	N 09	W 09	S 109	0.71	2.133	0.622	1.7277	18
10	$1^{11}/_{16}$	**SNW 110**	N 10	W 10	S 110	0.87	2.394	0.724	1.9277	18
11	$1^{15}/_{16}$	**SNW 111**	N 11	W 11	S 111	0.94	2.516	0.729	2.1174	18
12	$2^{1}/_{16}$	**SNW 112**	N 12	W 12	S 112	1.60	2.659	0.760	2.3204	18
13	$2^{3}/_{16}$	**SNW 113**	N 13	W 13	S 113	1.75	2.771	0.792	2.5084	18
14	$2^{7}/_{16}$	**SNW 114**	N 14	W 14	S 114	2.05	2.945	0.792	2.7114	18
15	$2^{7}/_{8}$	**SNW 115**	AN 15	W 15	S 115	2.95	3.084	0.895	2.8752	12
16	$2^{11}/_{16}$	**SNW 116**	AN 16	W 16	S 116	3.20	3.204	0.895	3.0790	12
17	$2^{15}/_{16}$	**SNW 117**	AN 17	W 17	S 117	3.40	3.312	0.926	3.2812	12
18	$3^{3}/_{16}$	**SNW 118**	AN 18	W 18	S 118	4.00	3.553	1.010	3.4682	12
19	$3^{5}/_{16}$	**SNW 119**	AN 19	W 19	S 119	4.80	3.702	1.041	3.6712	12
20	$3^{7}/_{16}$	**SNW 120**	AN 20	W 20	S 120	6.25	3.971	1.073	3.8592	12
22	$3^{15}/_{16}$	**SNW 122**	AN 22	W 22	S 122	6.45	4.348	1.135	4.2648	12
24	$4^{3}/_{16}$	**SNW 124**	AN 24	W 24	S 124	7.80	4.648	1.166	4.6558	12
26	$4^{7}/_{16}$	**SNW 126**	AN 26	W 26	S 126	12.5	4.982	1.229	5.0458	12
28	$4^{15}/_{16}$	**SNW 128**	AN 28	W 28	S 128	13.0	5.323	1.291	5.4368	12
30	$5^{3}/_{16}$	**SNW 130**	AN 30	W 30	S 130	8.15	5.621	1.354	5.8278	12

Bearings series 223 and 232

d_a $5^{7}/_{16}$ - $16^{1}/_{2}$ in



How to order	Specify
Complete adapter	Shaft size
SNW 132	x $5^{7}/_{16}$

All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard. Consult SKF for optional shaft sizes.

Bearing size	Shaft dia.		Designations				Mass	Dimensions			
	d_a Standard	Optional	Complete adapter	Locknut	Lockwasher/ lockplate	Adapter sleeve		B_1	F	Mean thread pitch diameter d_2	Threads per inch
	in						lbs				
32	$5^{7}/_{16}$	$5^{3}/_{8}$, $5^{1}/_{2}$	**SNW 132**	AN 32	W 32	S 132	18.0	5.920	1.510	6.1953	8
34	$5^{15}/_{16}$	$5^{13}/_{16}$, $5^{7}/_{8}$, 6	**SNW 134**	AN 34	W 34	S 134	21.0	6.188	1.541	6.5703	8
36	$6^{7}/_{16}$	–	**SNW 136**	AN 36	W 36	S 136	22.5	6.456	1.573	6.9773	8
38	$6^{15}/_{16}$	$6^{13}/_{16}$, $6^{7}/_{8}$, 7	**SNW 138**	AN 38	W 38	S 138	28.0	6.758	1.604	7.3833	8
40	$7^{3}/_{16}$	$7^{1}/_{8}$, $7^{1}/_{4}$	**SNW 140**	AN 40	W 40	S 140	35.5	7.095	1.666	7.7571	8
44	$7^{15}/_{16}$	–	**SNW 144**	N 44	W 44	S 144	46.5	7.287	1.698	8.5378	8
48	$8^{15}/_{16}$	–	**SNP 148**	N 048	PL 48	S 148	48.5	8.109	1.979	9.3245	6
52	$9^{7}/_{16}$	$9^{1}/_{2}$	**SNP 152**	N 052	PL 52	S 152	54.5	8.774	2.125	10.0742	6
56	$10^{7}/_{16}$	$10^{1}/_{2}$	**SNP 3256**	N 056	PL 56	S 3256	59.0	8.947	2.219	10.8852	6
60	$10^{15}/_{16}$	11	**SNP 3260**	N 060	PL 60	S 3260	68.5	9.640	2.281	11.6662	6
64	$11^{15}/_{16}$	12	**SNP 3264**	N 064	PL 64	S 3264	98.0	10.371	2.375	12.4440	6
68	$12^{7}/_{16}$	$12^{1}/_{2}$	**SNP 3268**	N 068	PL 68	S 3268	105.0	11.126	2.531	13.1910	5
72	$13^{7}/_{16}$	$13^{1}/_{2}$	**SNP 3272**	N 072	PL 72	S 3272	135.0	11.437	2.531	14.0220	5
76	$13^{15}/_{16}$	14	**SNP 3276**	N 076	PL 76	S 3276	145.0	11.877	2.656	14.8090	5
80	15	15	**SNP 3280**	N 080	PL 80	S 3280	165.0	12.664	2.875	15.5970	5
84	$15^{3}/_{4}$	–	**SNP 3284**	N 084	PL 84	S 3284	165.0	13.302	2.938	16.3840	5
88	$16^{1}/_{2}$	–	**SNP 3288**	N 088	PL 88	S 3288	190.0	13.943	3.228	17.2830	5

Mounting accessories / locknuts lockwashers and lockplates

Locknuts, lockwashers and lockplates

Locknuts and lockwashers are commonly used as effective means for holding bearing inner rings axially on the shaft. They are also frequently used to secure gears, belt pulleys and other machine components. The locknuts are accurately made to insure that the abutment face will be square with the shaft axis, thus avoiding distortion of the shaft during tightening.

The lockwashers are made from selected high quality steel, heat treated, and they must pass a final inspection that requires their surfaces to be smooth and free from burrs.

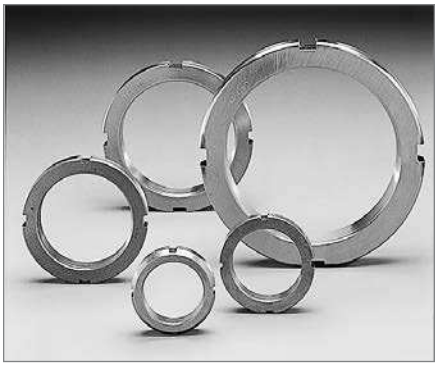
The lockplate is a steel stamping that engages the slot of the sleeve and is secured to the end face of larger nuts by two screws. This unit is used in lieu of lockwashers.

Wherever bearings must be held in permanent or correct position, SKF locknuts, lockwashers and lockplates are recommended.

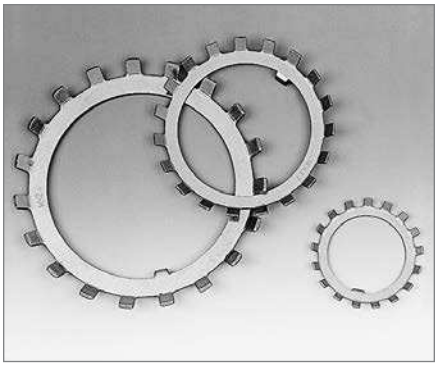
Dimensions and tolerances

The adapters, locknuts, lockwashers, lockplates and withdrawal sleeves generally conform to ABMA standard 8.2.

In addition to the inch bore accessories shown in these catalog tables, the SKF manufacturing program includes metric bore adapter sleeves and withdrawal sleeves along with their associated locking devices. Consult SKF for information.

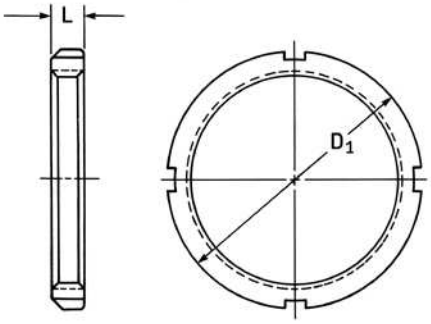


Locknuts



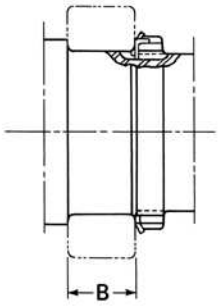
Lockwashers / Lockplates

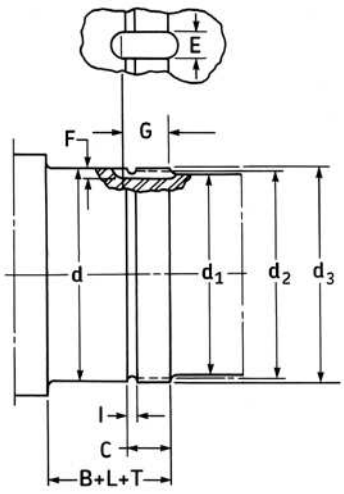
Heavy section
Locknuts and lockwashers
Bearing Series 12, 13, 222, 223, 232



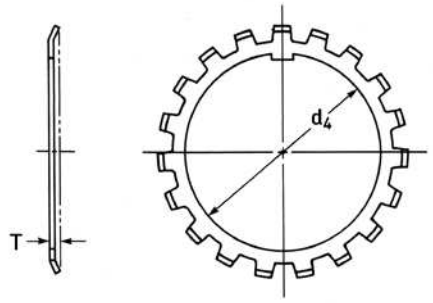
How to order	Specify
N 00	Locknut
W 00	Lockwasher

All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.





Bearing size	Designations		Combined mass	Shaft dimensions		
	Locknut	Lockwasher		d	Threads major dia. d_3 max	min.
			lbs	in		
00	**N 00**	**W 00**	0.02	0.3937	0.3910	0.3856
01	**N 01**	**W 01**	0.04	0.4724	0.4690	0.4636
02	**N 02**	**W 02**	0.05	0.5906	0.5860	0.5806
03	**N 03**	**W 03**	0.07	0.6693	0.6640	0.6586
04	**N 04**	**W 04**	0.11	0.7874	0.7810	0.7756
05	**N 05**	**W 05**	0.14	0.9843	0.9690	0.9636
06	**N 06**	**W 06**	0.16	1.1811	1.1730	1.1648
07	**N 07**	**W 07**	0.24	1.3780	1.3760	1.3678
08	**N 08**	**W 08**	0.27	1.5748	1.5630	1.5548
09	**N 09**	**W 09**	0.34	1.7717	1.7670	1.7588
10	**N 10**	**W 10**	0.39	1.9685	1.9670	1.9588
11	**N 11**	**W 11**	0.48	2.1654	2.1570	2.1488
12	**N 12**	**W 12**	0.54	2.3622	2.3600	2.3518
13	**N 13**	**W 13**	0.64	2.5591	2.5480	2.5398
14	**N 14**	**W 14**	0.73	2.7559	2.7510	2.7428
15	**AN 15**	**W 15**	0.90	2.9528	2.9330	2.9218
16	**AN 16**	**W 16**	1.05	3.1496	3.1370	3.1258
17	**AN 17**	**W 17**	1.20	3.3465	3.3400	3.3288
18	**AN 18**	**W 18**	1.50	3.5433	3.5270	3.5158
19	**AN 19**	**W 19**	1.75	3.7402	3.7300	3.7188
20	**AN 20**	**W 20**	2.05	3.9370	3.9180	3.9068



How to order	Specify
N 00	Locknut
W 00	Lockwasher

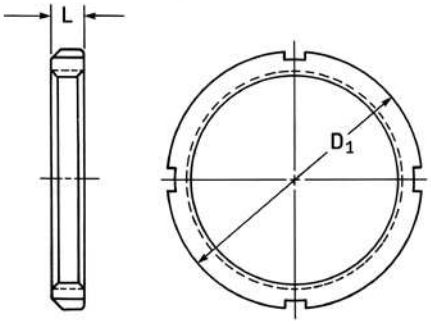
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

Dimensions

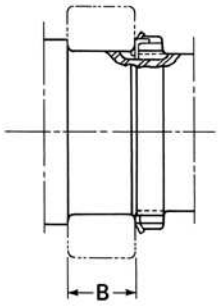
Thread pitch dia. d_2 max	Thread pitch dia. d_2 min	Threads per inch	d_1 max	C $+^1/_{64}$ –0	G $+^1/_{32}$ –0	I $+^1/_{64}$ –0	E $+^1/_{64}$ –0	F $+^1/_{64}$ –0	Locknut D_1	Locknut L	Lockwasher T	Lockwasher d_4
			in									
0.3707	0.3681	32	5/16	9/32	3/8	1/16	1/8	1/16	3/4	7/32	0.042	0.414
0.4487	0.4461	32	13/32	3/8	15/32	1/16	1/8	1/16	7/8	5/16	0.042	0.492
0.5657	0.5627	32	1/2	3/8	15/32	1/16	1/8	5/64	1	5/16	0.042	0.609
0.6437	0.6407	32	9/16	13/32	1/2	1/16	1/8	5/64	1 1/8	11/32	0.042	0.687
0.7607	0.7573	32	23/32	7/16	17/32	1/16	3/16	5/64	1 3/8	3/8	0.042	0.809
0.9487	0.9453	32	7/8	15/32	19/32	1/16	3/16	3/32	1 9/16	13/32	0.050	0.999
1.1369	1.1329	18	1 1/16	15/32	19/32	3/32	3/16	3/32	1 3/4	13/32	0.050	1.203
1.3399	1.3359	18	1 1/4	1/2	5/8	3/32	3/16	3/32	2 1/16	7/16	0.050	1.406
1.5269	1.5224	18	1 15/32	17/32	21/32	3/32	5/16	3/32	2 1/4	7/16	0.058	1.593
1.7309	1.7204	18	1 11/16	17/32	11/16	1/8	5/16	3/32	2 17/32	7/16	0.058	1.805
1.9309	1.9264	18	1 7/8	19/32	3/4	1/8	5/16	3/32	2 11/16	1/2	0.058	2.005
2.1209	2.1158	18	2 1/16	19/32	3/4	1/8	5/16	1/8	2 31/32	1/2	0.063	2.195
2.3239	2.3188	18	2 1/4	5/8	25/32	1/8	5/16	1/8	3 5/32	17/32	0.063	2.413
2.5119	2.5068	18	2 7/16	21/32	13/16	1/8	5/16	1/8	3 3/8	9/16	0.063	2.601
2.7149	2.7098	18	2 5/8	21/32	29/32	1/8	5/16	1/8	3 5/8	9/16	0.063	2.804
2.8789	2.8735	12	2 25/32	11/16	15/16	5/32	5/16	1/8	3 7/8	19/32	0.072	2.988
3.0829	3.0770	12	3	11/16	15/16	5/32	3/8	1/8	4 5/32	19/32	0.072	3.192
3.2859	3.2800	12	3 3/16	23/32	31/32	5/32	3/8	1/8	4 13/32	5/8	0.072	3.410
3.4729	3.4655	12	3 3/8	13/16	1 1/16	5/32	3/8	5/32	4 21/32	11/16	0.094	3.597
3.6759	3.6685	12	3 9/16	27/32	1 3/32	5/32	3/8	5/32	4 15/16	23/32	0.094	3.815
3.8639	3.8565	12	3 25/32	7/8	1 3/16	5/32	3/8	5/32	5 3/16	3/4	0.094	4.003

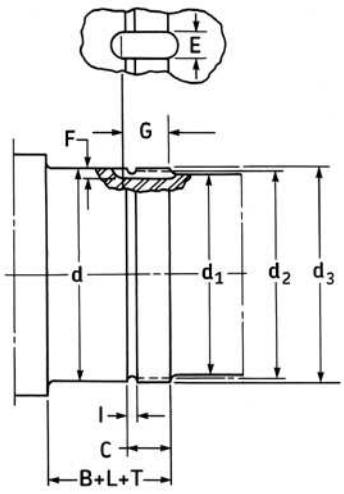
Heavy section
Locknuts and lockwashers
Bearing series 12, 13, 222, 223, 232*

How to order	Specify
AN 21	Locknut
W 21	Lockwasher



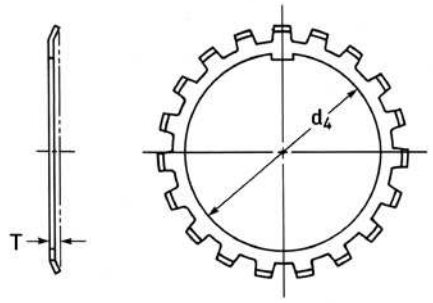
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.





Bearing size	Designations		Combined mass	Shaft dimensions		
	Locknut	Lockwasher		d	Threads major dia. d_3 max	min
			lbs	in		
21	**AN 21**	**W 21**	2.25	4.1339	4.122	4.1108
22	**AN 22**	**W 22**	2.45	4.3307	4.325	4.3138
24	**AN 24**	**W 24**	2.80	4.7244	4.716	4.7048
26	**AN 26**	**W 26**	3.90	5.1181	5.106	5.0948
28	**AN 28**	**W 28**	4.30	5.5118	5.497	5.4858
30	**AN 30**	**W 30**	5.40	5.9055	5.888	5.8768
32	**AN 32**	**W 32**	6.15	6.2992	6.284	6.2688
34	**AN 34**	**W 34**	7.55	6.6929	6.659	6.6438
36	**AN 36**	**W 36**	8.25	7.0866	7.066	7.0508
38	**AN 38**	**W 38**	8.80	7.4803	7.472	7.4568
40	**AN 40**	**W 40**	9.70	7.8740	7.847	7.8318
44	**N 44**	**W 44**	13.50	8.6614	8.628	8.6128

*For bearings in series 232, larger than a 23244, use locknuts and lockplates on pages 452 and 453.



How to order	Specify
AN 21	Locknut
W 21	Lockwasher

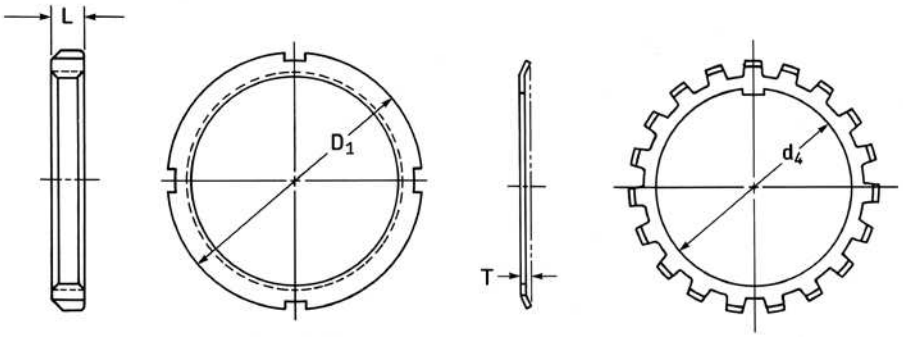
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

Dimensions

Thread pitch dia. d_2		Threads per	d_1	C	G	I	E	F	Locknut		Lockwasher	
max	min	inch	max	$+1/16$ -0	$+1/32$ -0	$+1/16$ -0	$+1/16$ -0	$+1/64$ -0	D_1	L	T	d_4
			in									
4.0679	4.0596	12	$3\,15/16$	$7/8$	$1\,3/16$	$5/32$	$3/8$	$5/32$	$5\,7/16$	$3/4$	0.094	4.207
4.2709	4.2626	12	$4\,3/16$	$29/32$	$1\,7/32$	$5/32$	$3/8$	$3/16$	$5\,23/32$	$25/32$	0.125	4.410
4.6619	4.6536	12	$4\,9/16$	$15/16$	$1\,1/4$	$5/32$	$3/8$	$3/16$	$6\,1/8$	$13/16$	0.125	4.816
5.0519	5.0436	12	$4\,15/16$	1	$1\,5/16$	$5/32$	$1/2$	$3/16$	$6\,3/4$	$7/8$	0.125	5.209
5.4429	5.4346	12	$5\,5/16$	$1\,1/16$	$1\,3/8$	$5/32$	$5/8$	$3/16$	$7\,3/32$	$15/16$	0.125	5.600
5.8339	5.8256	12	$5\,3/4$	$1\,1/8$	$1\,1/2$	$5/32$	$5/8$	$7/32$	$7\,11/16$	$31/32$	0.156	6.001
6.2028	6.1937	8	$6\,1/8$	$1\,3/16$	$1\,9/16$	$1/4$	$5/8$	$15/64$	$8\,1/16$	$1\,1/32$	0.156	6.407
6.5778	6.5687	8	$6\,1/2$	$1\,7/32$	$1\,19/32$	$1/4$	$3/4$	$15/64$	$8\,21/32$	$1\,1/16$	0.156	6.782
6.9848	6.9757	8	$6\,29/32$	$1\,1/4$	$1\,5/8$	$1/4$	$3/4$	$15/64$	$9\,1/16$	$1\,3/32$	0.156	7.189
7.3908	7.3817	8	$7\,5/16$	$1\,9/32$	$1\,21/32$	$1/4$	$3/4$	$15/64$	$9\,15/32$	$1\,1/8$	0.156	7.595
7.7658	7.7544	8	$7\,11/16$	$1\,11/32$	$1\,23/32$	$1/4$	$7/8$	$15/64$	$9\,27/32$	$1\,3/16$	0.156	8.000
8.5468	8.5347	8	$8\,5/16$	$1\,3/8$	$1\,9/16$	$1/4$	$1\,1/16$	$3/8$	11	$1\,1/4$	0.156	8.719

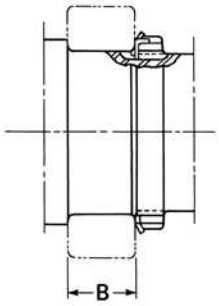
*For bearings in series 232, larger than a 23244, use locknuts and lockplates on pages 452 and 453.

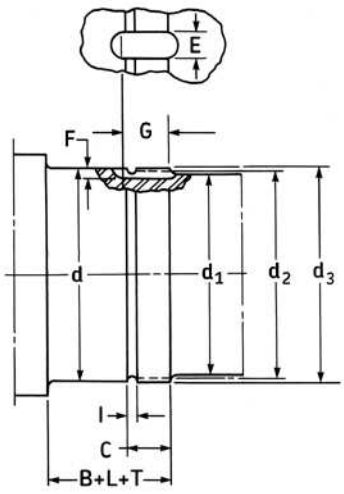
Light section
Locknuts, lockwashers and lockplates
Bearing series 230, 231, 23248 and larger



How to order	Specify
N 022	Locknut
W 022	Lockwasher

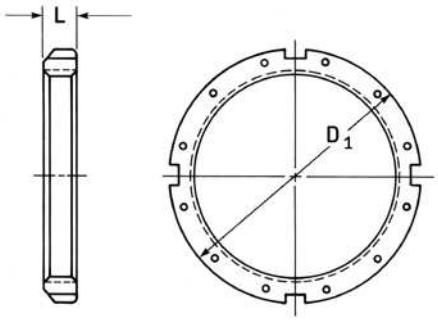
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

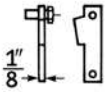




(B+L+1/4" for N 048-N 076)

Bearing size	Designations		Combined mass	Shaft dimensions		
	Locknut	Lockwasher		d	Threads major dia. d_3 max	min
			lbs	in		
22	**N 022**	**W 022**	1.75	4.3307	4.325	4.3138
24	**N 024**	**W 024**	1.90	4.7244	4.716	4.7048
26	**N 026**	**W 026**	2.65	5.1181	5.106	5.0948
28	**N 028**	**W 028**	2.60	5.5118	5.497	5.4858
30	**N 030**	**W 030**	3.65	5.9055	5.888	5.8768
32	**N 032**	**W 032**	4.15	6.2992	6.284	6.2688
34	**N 034**	**W 034**	4.50	6.6929	6.659	6.6438
36	**N 036**	**W 036**	4.80	7.0866	7.066	7.0508
38	**N 038**	**W 038**	6.65	7.4803	7.472	7.4568
40	**N 040**	**W 040**	7.65	7.8740	7.847	7.8318
44	**N 044**	**W 044**	9.25	8.6614	8.628	8.6128
48	**N 048**	**PL 48**	13.0	9.4488	9.442	9.4218
52	**N 052**	**PL 52**	15.0	10.2362	10.192	10.1718
56	**N 056**	**PL 56**	17.0	11.0236	11.004	10.9838
60	**N 060**	**PL 60**	23.0	11.8110	11.785	11.7648
64	**N 064**	**PL 64**	26.0	12.5984	12.562	12.5418
68	**N 068**	**PL 68**	29.5	13.3858	13.303	13.2870
72	**N 072**	**PL 72**	30.0	14.1732	14.134	14.1180
76	**N 076**	**PL 76**	41.0	14.9606	14.921	14.9050
80	**N 080**	**PL 80**	46.0	15.7480	15.709	15.6930
84	**N 084**	**PL 84**	49.0	16.5354	16.496	16.4800
88	**N 088**	**PL 88**	66.5	17.3228	17.283	17.2670
92	**N 092**	**PL 92**	68.5	18.1102	18.071	18.0550
96	**N 096**	**PL 96**	71.5	18.8976	18.858	18.8420
1500	**N 500**	**PL 500**	79.0	19.6460	19.646	19.6440
1530	**N 530**	**PL 530**	107.0	20.8270	20.827	20.8070





Lockplate and capscrew

How to order	Specify
N 022	Locknut
W 022	Lockwasher

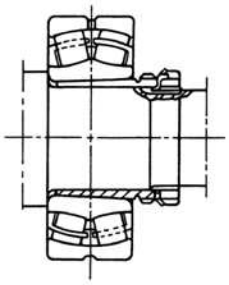
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

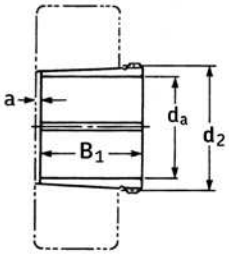
Dimensions

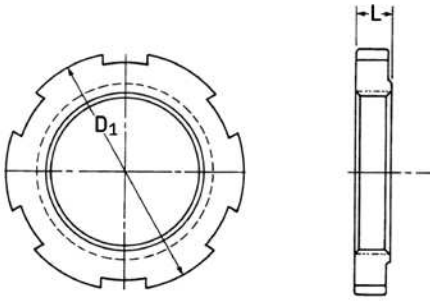
Thread pitch dia. d_2 max	Thread pitch dia. d_2 min	Threads per inch	d_1 max	C +1/64 –0	G +1/32 –0	I +1/64 –0	E +1/64 –0	F +1/64 –0	Locknut D_1	Locknut L	Lockwasher T	Lockwasher d_4
			in									
4.2709	4.2626	12	4 3/16	29/32	1 7/32	5/32	3/8	3/16	5 5/16	25/32	0.125	4.410
4.6619	4.6536	12	4 9/16	15/16	1 1/4	5/32	3/8	3/16	5 11/16	13/16	0.125	4.816
5.0519	5.0436	12	4 15/16	1	1 5/16	5/32	1/2	3/16	6 1/8	7/8	0.125	5.209
5.4429	5.4346	12	5 5/16	1 1/16	1 3/8	5/32	5/8	3/16	6 1/2	15/16	0.125	5.600
5.8339	5.8256	12	5 23/32	1 1/8	1 1/2	5/32	5/8	7/32	7 1/8	31/32	0.125	6.000
6.2028	6.1937	8	6 1/8	1 3/16	1 9/16	1/4	5/8	15/64	7 1/2	1 1/32	0.125	6.407
6.5778	6.5687	8	6 1/2	1 7/32	1 19/32	1/4	3/4	15/64	7 7/8	1 1/16	0.125	6.782
6.9848	6.9757	8	6 9/32	1 1/4	1 5/8	1/4	3/4	15/64	8 1/4	1 3/32	0.125	7.189
7.3908	7.3817	8	7 5/16	1 9/32	1 21/32	1/4	3/4	15/64	8 11/16	1 1/8	0.125	7.595
7.7658	7.7544	8	7 11/16	1 11/32	1 23/32	1/4	7/8	15/64	9 7/16	1 3/16	0.125	8.000
8.5468	8.5347	8	8 5/16	1 3/8	1 9/16	1/4	1 1/16	3/8	10 1/4	1 1/4	0.125	8.719
											Capscrew size	
9.3337	9.3123	6	9 3/16	1 23/32	1/2	1/4	1 1/8	7/16	11 7/16	1 11/32	5/16-18 x 5/8	
10.0837	10.0707	6	9 15/16	1 25/32	1/2	1/4	1 3/16	7/16	12 3/16	1 13/32	5/16-18 x 5/8	
10.8957	10.8827	6	10 3/4	1 7/8	1/2	1/4	1 1/4	7/16	13	1 1/2	5/16-18 x 5/8	
11.6767	11.6637	6	11 1/2	1 15/16	1/2	1/4	1 3/8	7/16	14 3/16	1 9/16	3/8-16 x 3/4	
12.4537	12.4402	6	12 5/16	2 1/32	1/2	1/4	1 7/16	7/16	15	1 21/32	3/8-16 x 3/4	
13.203	13.187	5	13 1/16	2 5/32	1/2	1/4	1 1/2	7/16	15 3/4	1 25/32	3/8-16 x 3/4	
14.034	14.018	5	13 13/16	2 5/32	1/2	1/4	1 1/2	1/2	16 1/2	1 25/32	3/8-16 x 3/4	
14.821	14.805	5	14 5/8	2 9/32	1/2	1/4	1 1/2	1/2	17 3/4	1 29/32	1/2-13 x 7/8	
15.609	15.593	5	15 3/8	2 7/16	1/2	1/4	1 5/8	1/2	18 1/2	2 1/16	1/2-13 x 7/8	
16.396	16.380	5	16 3/16	2 7/16	1/2	1/4	1 5/8	1/2	19 5/16	2 1/16	1/2-13 x 7/8	
17.183	17.167	5	17	2 3/4	1/2	1/4	1 13/16	1/2	20 1/2	2 3/8	5/8-11 x 1	
17.971	17.955	5	17 3/4	2 3/4	1/2	1/4	1 13/16	1/2	21 1/4	2 3/8	5/8-11 x 1	
18.758	18.742	5	18 1/2	2 3/4	1/2	1/4	1 13/16	1/2	22 1/16	2 3/8	5/8-11 x 1 1/4	
19.546	19.530	5	19 1/4	3 9/64	1/2	1/4	1.812	1/2	22 13/16	2 11/16	5/8-11 x 1 1/4	
20.702	20.682	4	20 1/4	3 9/64	1/2	1/4	1.812	1/2	24 13/16	2 11/16	5/8-11 x 1 1/4	

Withdrawal sleeves, removal nuts

Bearing series 13 and 222



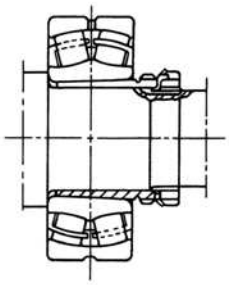


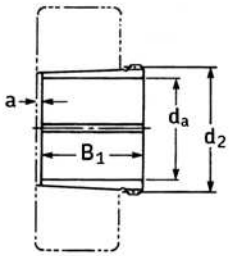


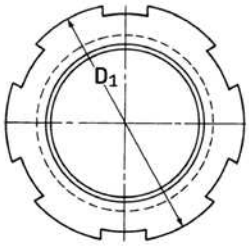
All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

Bearing[4] size	Designations				Mass	Dimensions						
	Sleeve	Locknut	Lock-washer	Removal nut		d_a	B_1	a[5]	D_1	L	Mean thread pitch diameter d_2	Threads[3] per inch
–	–	–	–	–	lb	in	in	in	in	–	–	–
08	SK 8	N 07	W 07	N 09	0.16	1.377	1.181	0.098	2 17/32	7/16	1.7277	18
09	SK 9	N 08	W 08	N 10	0.22	1.574	1.260	0.098	2 11/16	1/2	1.9277	18
10	SK 10	N 09	W 09	RN 10	0.25	1.771	1.378	0.118	3 9/32	9/16	2.1644	18
11	SK 11	N 10	W 10	RN 11	0.31	1.968	1.457	0.118	3 1/2	9/16	2.3674	18
12	SK 12	N 11	W 11	RN 12	0.41	2.164	1.575	0.138	3 23/32	5/8	2.5864	18
13	ASK 13	N 12	W 12	AN 15	0.50	2.361	1.654	0.138	3 7/8	19/32	2.8752	12
14	ASK 14	N 12	W 12	AN 16	0.94	2.361	1.732	0.138	4 5/32	19/32	3.0790	12
15[1]	SK 2215	N 13	W 13	AN 17	1.25	2.558	1.732	0.138	4 13/32	5/8	3.2812	12
16[2]	SK 2216	N 14	W 14	AN 18	1.25	2.755	1.732	0.138	4 21/32	11/16	3.4682	12
17	ASK 17	AN 15	W 15	AN 19	1.45	2.952	2.047	0.138	4 15/16	23/32	3.6712	12
18	ASK 18	AN 16	W 16	AN 20	1.55	3.149	2.087	0.138	5 3/16	3/4	3.8592	12
19	ASK 19	AN 17	W 17	AN 21	1.80	3.346	2.244	0.157	5 7/16	3/4	4.0618	12
20	ASK 20	AN 18	W 18	AN 22	2.00	3.543	2.323	0.157	5 23/32	3/4	4.2648	12
21	ASK 21	AN 19	W 19	ARN 21	2.30	3.740	2.441	0.157	6	3/4	4.4988	12
22	ASK 22	AN 20	W 20	ARN 22	2.45	3.937	2.559	0.157	6 25/32	3/4	4.7178	12
24	ASK 24	AN 22	W 22	ARN 24	3.15	4.330	2.835	0.157	7 13/32	13/16	5.1248	12
26	ASK 26	AN 22	W 22	ARN 26	5.00	4.527	3.071	0.157	7 25/32	7/8	5.5618	12
28	SK 28	AN 24	W 24	RN 28	5.90	4.921	3.228	0.197	8 17/32	15/16	6.0083	8
30	SK 30	AN 26	W 26	RN 30	6.80	5.315	3.465	0.197	9 5/32	1	6.4143	8
32	SK 32	AN 28	W 28	RN 32	9.95	5.512	3.780	0.197	9 25/32	1	6.8363	8
34	SK 34	AN 30	W 30	RN 34	11.50	5.906	4.095	0.197	10 13/32	1 1/16	7.2423	8
36	SK 36	AN 32	W 32	RN 36	12.50	6.299	4.095	0.197	10 29/32	1 1/16	7.6643	8
38	SK 38	AN 34	W 34	RN 38	14.50	6.693	4.409	0.197	11 7/8	1 3/16	8.1019	8
40	SK 40	AN 36	W 36	N 44	16.50	7.087	4.646	0.197	11	1 1/4	8.5378	8
44	SK 44	AN 40	W 40	N 048	19.50	7.874	5.118	0.236	11 7/16	1 11/32	9.3245	6
48	SK 48	N 44	W 44	N 052	24.50	8.661	5.669	0.236	12 3/16	1 13/32	10.0742	6

1) For bearing 1315, use sleeve No. ASK 15 with length of 1.850.
2) For bearing 1316, use sleeve No. ASK 16 with length of 1.969.
3) Threads derived from the *Screw Threads Standards for Federal Services Handbook H-28* (1944) page 111, and H-28 (1957) Part 1, page 181, Class 3.
4) Last two figures of bearing designation.
5) Stickout before the sleeve is pressed into the bearing bore.







All mounting accessories are manufactured in accordance with ABMA standard 8.2 latest revision. For more information on threads please consult this standard.
For recommended bearing seat tolerances see page 359.

Bearing[2] **size**	**Designations**				**Mass**	**Dimensions**						
	Sleeve	Locknut	Lock-washer	Removal nut		d_a	B_1	a^3	D_1	L	Mean thread pitch diameter d_2	Threads[1] per inch
–	–	–	–	–	lb	in	in	in	in	–	–	–
08	SK 108	N 07	W 07	N 09	0.25	1.377	1.575	0.118	$2^{17}/_{32}$	$^{7}/_{16}$	1.7277	18
*09	SK 109	N 08	W 08	N 10	0.31	1.574	1.732	0.118	$2^{11}/_{16}$	$^{1}/_{2}$	1.9277	18
10	SK 110	N 09	W 09	RN 10	0.47	1.771	1.969	0.118	$3^{9}/_{32}$	$^{9}/_{16}$	2.1644	18
11	SK 111	N 10	W 10	RN 11	0.56	1.968	2.126	0.118	$3^{1}/_{2}$	$^{9}/_{16}$	2.3674	18
12	SK 112	N 11	W 11	RN 12	0.69	2.164	2.244	0.138	4	$^{5}/_{8}$	2.5864	18
13	ASK 113	N 12	W 12	AN 15	0.84	2.361	2.402	0.138	$3^{7}/_{8}$	$^{9}/_{32}$	2.8752	12
14	ASK 114	N 12	W 12	AN 16	1.55	2.361	2.559	0.138	$4^{1}/_{7}$	$^{19}/_{32}$	3.0790	12
15	ASK 115	N 13	W 13	AN 17	1.80	2.558	2.717	0.138	$4^{13}/_{32}$	$^{5}/_{8}$	3.2812	12
16	ASK 116	N 14	W 14	AN 18	2.00	2.755	2.835	0.138	$4^{21}/_{32}$	$^{11}/_{16}$	3.4682	12
17	ASK 117	AN 15	W 15	AN 19	2.25	2.952	2.953	0.138	$4^{15}/_{32}$	$^{23}/_{32}$	3.6712	12
18	ASK 118	AN 16	W 16	AN 20	2.55	3.149	3.150	0.138	$5^{3}/_{16}$	$^{3}/_{4}$	3.8592	12
19	ASK 119	AN 17	W 17	AN 21	2.95	3.346	3.346	0.157	$5^{7}/_{16}$	$^{3}/_{4}$	4.0618	12
20	ASK 120	AN 18	W 18	AN 22	3.40	3.543	3.543	0.157	$5^{23}/_{32}$	$^{25}/_{32}$	4.2648	12
21	ASK 121	AN 19	W 19	ARN 21	3.90	3.740	3.701	0.157	6	$^{3}/_{4}$	4.4988	12
22	ASK 122	AN 20	W 20	ARN 22	4.25	3.937	3.858	0.157	$6^{5}/_{7}$	$^{3}/_{4}$	4.7178	12
24	ASK 124	AN 22	W 22	ARN 24	5.00	4.330	4.134	0.157	$7^{13}/_{32}$	$^{13}/_{16}$	5.1248	8
26	ASK 126	AN 22	W 22	ARN 26	8.00	4.527	4.523	0.157	$7^{25}/_{32}$	$^{7}/_{8}$	5.5618	8
28	SK 128	AN 24	W 24	RN 28	9.50	4.921	4.921	0.197	$8^{17}/_{32}$	$^{5}/_{16}$	6.0083	8
30	SK 130	AN 26	W 26	RN 30	11.50	5.315	5.512	0.197	$9^{5}/_{32}$	1	6.8363	8
32	SK 132	AN 28	W 28	RN 32	15.50	5.512	5.512	0.236	$9^{25}/_{32}$	1	6.8363	8
34	SK 134	AN 30	W 30	RN 34	17.50	5.906	5.748	0.236	$10^{13}/_{32}$	$1^{1}/_{16}$	7.2423	8
36	SK 136	AN 32	W 32	RN 36	20.50	6.299	6.063	0.236	$10^{29}/_{32}$	$1^{1}/_{16}$	7.6643	8
38	SK 138	AN 34	W 34	RN 38	22.00	6.693	6.299	0.276	$11^{7}/_{16}$	$1^{3}/_{16}$	8.1019	8
40	SK 140	AN 36	W 36	N 44	25.50	7.087	6.693	0.276	11	$1^{1}/_{4}$	8.5378	8
44	SK 144	AN 40	W 40	N 48	29.50	7.874	7.126	0.315	$11^{7}/_{16}$	$1^{11}/_{32}$	9.3245	6
48	SK 148	N 44	W 44	N 052	34.00	8.661	7.441	0.315	$12^{3}/_{16}$	$1^{13}/_{32}$	10.0742	6

1) Threads derived from the *Screw Threads Standards for Federal Services Handbook H-28* (1944) page 111, and H-28 (1957) Part 1, page 181, Class 3.
2) Last two figures of bearing designation.
3) Stickout before the sleeve is pressed into the bearing bore.

Notes

Split pillow blocks
(metric series)

F SNL 522-619 NMSN

1 2 3 4

1. Prefix:

–	Two holes for attachment bolts
F	Four drilled holes for attachment bolts
S	No holes

2. Housing styles:

SNL	Housing of gray cast-iron
SNLD	Housing of ductile-iron
SE	Standard flummer block housing

3. Housing size:

205 to 218

505 to 532

4. Suffix:

NM	Drilled and tapped hole 1/8-27 NPSF at center of cap, one grease nipple supplied
V	Grease escape hole in base
VU	Cap drilled, tapped and plugged with two holes 1/8-27 NPSF; Base drilled diagonally opposite, tapped and plugged with two holes 1/8-27 NPSF; One grease fitting AH 1/8-27 PTF supplied with housing
T	Drilled and tapped hole 1/4-28 UNF at one side of cap, one grease nipple supplied
TD	Drilled and tapped hole 1/4-28 UNF at both sides of cap, two grease nipples supplied
SN	Drilled and tapped hole for sensor
K7	Bearing seating diameter tolerance K7
F	Fixed (large size blocks)
L	Loose (no stab ring – large size blocks)

Where two or more suffixes are used they are given in the same order as above

Introduction

Fewer bearing replacements and less maintenance

Plummer (pillow) block housings have much to offer

The main benefit of split plummer block housings is their easy installation; pre-assembled shafts can be mounted in them. When the housing bases are attached to the base plate it is then only necessary to place the housing caps in position and to tighten the attachment bolts to complete the installation.

Split plummer block housings available on the market are mainly intended for self-aligning ball bearings, spherical roller bearings and CARB® bearings of ISO dimension series 02, 03, 22, 23 and 32. They can often be fitted with various seals. Many designs and variants of split plummer block housings are available making the use of tailored housings unnecessary and thus enabling cost effective bearing arrangements to be made.

For many years SKF has been one of the leading producers of split plummer block housings – synonymous with operational reliability, quality and versatility.

SNL plummer (pillow) block housings have more to offer

SKF has developed the SNL plummer block housings to be the first choice for design, quality and economy. This enables customers to keep a step ahead.

SNL plummer block housings enable the full service life potential of the incorporated bearings to be exploited with less need of maintenance. This supports user efforts to further reduce maintenance costs. Among other characteristics the housings are very stiff, making them insensitive to uncontrolled and excessive tightening of the attachment bolts.

Another benefit is the choice of oil or grease lubrication for the bearings housed in SNL plummer blocks. A range of efficient seals for oil lubrication and rough environments make for trouble-free operation.

One basic design – many variants

SNL plummer block housings are primarily intended for self-aligning ball bearings, spherical roller bearings and CARB bearings. The housings are designed on a "building block" principle. This enables a more generous choice of bearing, shaft mounting, seals and type of lubrication. Stocking is also simplified.

A building block system

The basis of the SNL plummer block housing system consists of a number of housings of the same design but in different sizes. By combining these housings with the different standard seals a wide variety of housing variants, all belonging to the standard range, can be supplied to cover the majority of demands for plummer blocks for shafts having diameters of 20 to 160 mm, inclusive. The standard range also covers other variants, for example, housings with drilled and tapped holes for lubrication nipples or condition monitoring sensors. Housings are also available for bearings for larger shaft diameters (see page 504).

SNL plummer block housings are made of gray cast-iron and demonstrate high strength. Should, however, this strength be inadequate, dimensionally equivalent plummer block housings of ductile iron (spheroidal graphite cast-iron) can be supplied.

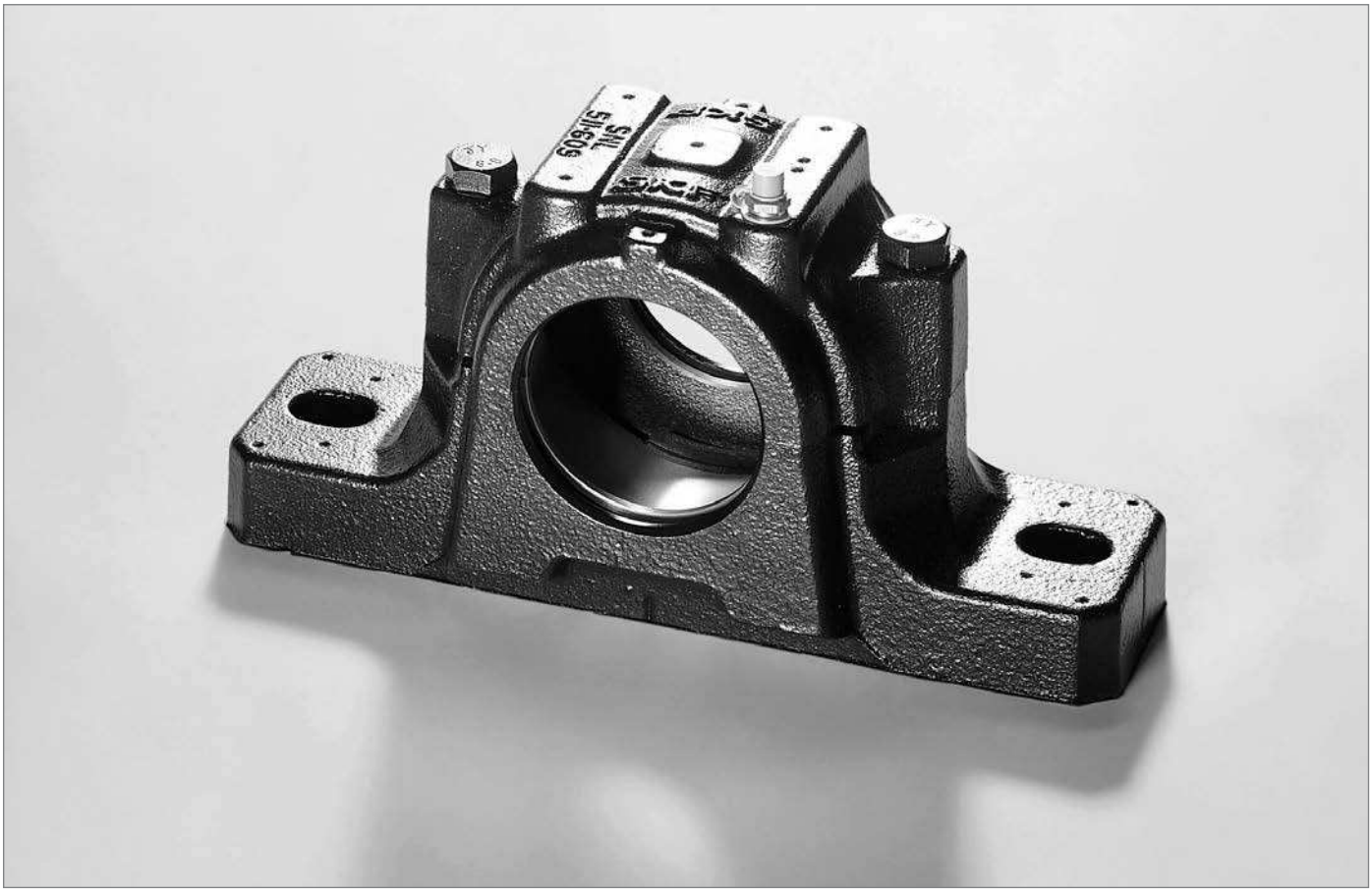
Several sealing options

An important advantage of the SNL plummer block housings is that they can be fitted with a variety of seals. The standard seals supplied by SKF comprise double-lip seals, V-ring seals, felt seals, labyrinth seals and heavy-duty "taconite" seals as well as end covers. Other standard seals are also available for SNL housings. The housings need modification to accommodate the seals. These are oil seals and heavy-duty axial taconite seals.

SNL plummer block housings are fully interchangeable with the earlier SNH housings. Their dimensions conform to ISO 113:1994.

Painting system

Resulting from customer surveys, SNL plummer block housings are painted as standard in accordance with ISO 12944-2, environmental Class C2. Black color: RAL 9005.

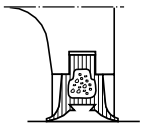


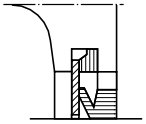
Seals

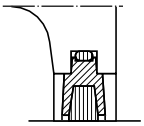
Standard seals

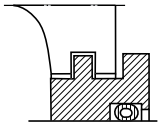
An important advantage of SNL plummer block housings is that they can be fitted with different types of seal. The standard seals available from SKF are split double-lip seals and felt seals, one-piece V-rings, labyrinth seals and the heavy-duty "taconite" seals. The seals are easy to install and are supplied separately.

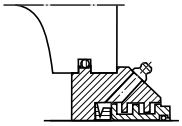
All the standard seals as well as the seals for use with oil lubrication are presented in Table 1 which gives a comprehensive overview of the seal types, their design features and their suitability for various operating conditions. Detailed information on the various standard and special seals, including properties and availability, will be found on pages 462 to 466.


TSN .. G


TSN .. A


TSN .. C


TSN .. S


TSN .. ND

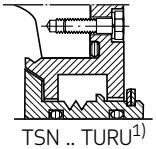
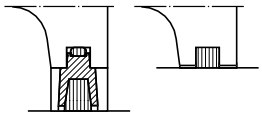

TSN .. TURU[1)]

Table 1

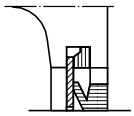
Seal selection	TSN..G	TSN..A	TSN..C	TSN..S	TSN..ND	TSN..TURU[1)]
Internal conditions						
Temperature	-40° to +212° F (-40° to +100° C)	-40° to +212° F (-40° to +100° C)	-40° to +212° F (-40° to +100° C)	-58° to +392° F (-50° to +200° C)	-40° to +212° F (-40° to +100° C)	-40° to +392° F (-40° to +200° C)
Peripheral speed	Up to 26 ft/sec (Up to 8 m/sec)	Up to 23 ft/sec (Up to 7 m/sec) Above 23 ft/sec [2)] (Above 7 m/sec [2)])	Up to 13 ft/sec (Up to 4 m/sec)	++ ++	Up to 39 ft/sec (Up to 12 m/sec)	++ ++
Misalignment, degrees	0.5 to 1	1 to 1.5	Up to 0.5	Up to 0.3	Up to 0.5	Up to 1
Relubrication grease	13 ft/sec [3)] (4 m/sec [3)])	++[4)]	-	+	+	
Oil lubrication	-	-	--	-	-	++
Low friction	+	++	-	++	+	++
Axial shaft displacement	++	-	++	+	+	-
Vertical mounting	+	++ [5)]	--	--	-	--
Replacement	++	-	+	-	-	-
External conditions						
Dust	++	+	+	+	++	-
Sand	++	+	-	+	++	+
Grit	+	-	-	+	++	+
Sharp objects, chipping splinters, etc.	+	--	+	++	++	++
Liquids when sprayed	+	+	-	--	++	-
Direct sunshine	+	--	++	++	++	++

Symbols: ++ very suitable + suitable - limited suitability -- unsuitable

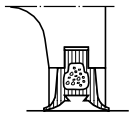
[1)] Delivered as a complete unit only, i.e. housing with seals.
[2)] When V-ring axially supported.
[3)] When using housing with grease escape hole (suffix V).
[4)] If appropriate components are used: ASNA .. V.
[5)] When the V-ring of the lower seal is mounted inboard.



C design
felt seals



A design
V-ring seals



G design
double-lip seals

Table 2

Permissible shaft speeds for rubbing seals

Shaft diameter	**Guideline values for the permissible shaft speed**[1] **for standard seals of design**		
d_a, d_b	C[2]	A	G
mm	r/min		
20	3 820	6 680	7 640
25	3 060	5 350	6 110
30	2 550	4 460	5 090
35	2 180	3 820	4 360
40	1 910	3 340	3 820
45	1 700	2 970	3 390
50	1 530	2 670	3 060
55	1 390	2 430	2 780
60	1 270	2 230	2 550
65	1 180	2 060	2 350
70	1 090	1 910	2 180
75	1 020	1 780	2 040
80	960	1 670	1 910
85	900	1 570	1 800
90	850	1 490	1 700
95	800	1 410	1 610
100	760	1 340	1 530
110	690	1 220	1 390
115	660	1 160	1 330
120	640	1 110	1 270
125	610	1 070	1 220
130	590	1 030	1 180
135	570	990	1 130
140	550	960	1 090
145	530	920	1 050
150	510	890	1 020
155	490	860	990
160	480	840	960
165	460	810	930
170	450	790	900

The speeds are valid when the seals are operated at temperatures between -40° to +212° F (-40° to +100° C) (permissible temperature range). At temperatures outside this range and/or at speeds higher than those given, labyrinth seals should be used.

[1] The guideline values are based on the permissible sliding speed at the seal/counterface contact. However, the permissible shaft seal is determined by the speed rating for the bearing to be used in the housing.
[2] The guideline values are based on a peripheral speed of 13 ft/sec (4 m/sec). Higher speeds are possible, see under "Felt ring seals".

Seals

Double-lip seals

Double-lip seals (**Figure 1**) are made of polyurethane, a wear-resistant material which has good elastic properties. The seals are split so that they are easy to fit. They are intended for grease lubrication and can be used at peripheral speeds of up to 26 ft/sec (8 m/sec). The permissible angular misalignment is approximately 1° for shaft diameters up to approximately 100 mm and 0.5° for larger sizes. The seal counterface on the shaft should be ground and the surface roughness Ra should not exceed 126 µin (3.2 µm). The recommended shaft tolerance is h9. When using housings with grease escape hole (suffix V) the speed limit is 13 ft/sec (4 m/sec) due to increased pressure on the inner seal lip.

The axial movement of the shaft relative to the housing is not limited when double-lip seals are used.

The double-lip seals are always supplied in packs of two seals. When housings are used at shaft ends, i.e. with one end cover, one of the seals will be left over and can be kept as a spare. The double lip seals are identified by the designation prefix TSN followed by the size identification and the suffix G, e.g. TSN 511 G.

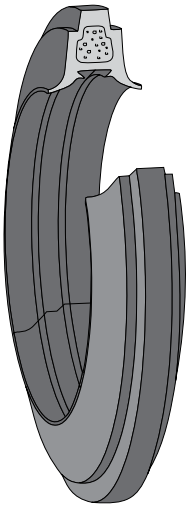
V-ring seals

The V-ring seals **(Figure 2)** consist of a V-ring and a sheet steel sealing washer with vulcanized rubber lip which fits into the sealing groove in the housing. The washer is protected against corrosion. The V-rings are made of synthetic rubber and have a slim sealing lip, which seals axially against the sealing washer. The V-ring "body", which sits tightly on the shaft and rotates with it, also serves as a flinger. V-ring seals provide efficient sealing even under difficult operating conditions such as high speeds, rough finished shafts etc. They can be operated at peripheral speeds in excess of 7 m/s if the V-ring is prevented from moving or lifting from the shaft by a support ring. Recommended dimensions for appropriate support rings (for axial and radial location) are given in **Table 3**.

The permissible angular misalignment for V-ring seals is approximately 1.5° for a 50 mm shaft decreasing to approximately 1° for a shaft diameter of 150 mm and above. The axial movement of the shaft relative to the housing is limited to ±1 mm for shaft diameters up to 65 mm and to approximately ±1.2 mm for larger shaft diameters.

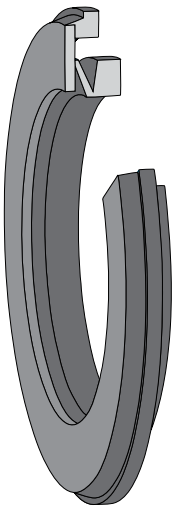
The V-ring seals are always supplied in packs of two seals. When housings are used at shaft ends, i.e. with one end cover, one of the seals will be left over and can be kept as a spare. The V-ring seals are identified by the designation prefix TSN followed by the size identification and the suffix A, e.g. TSN 511 A.

Figure 1



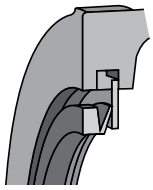
Double-lip seal

Figure 2

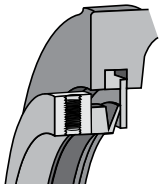


V-ring seal

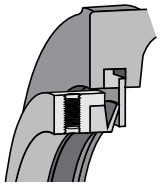
Location of V-ring



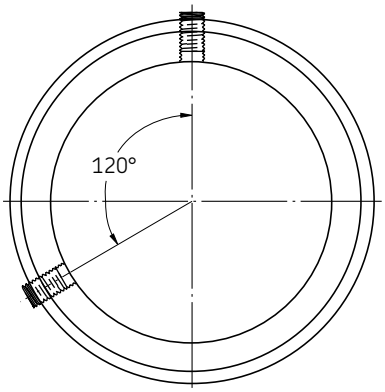
Peripheral speed 7 m/s

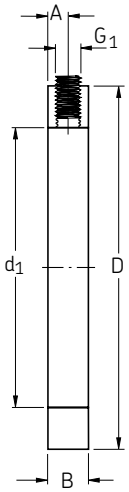


Peripheral speed 7 to 12 m/s

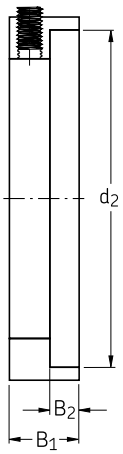


Peripheral speed above 7 m/s





7-12 m/s



>12 m/s

Table 3

Recommended dimensions for support rings for V-ring seals

Shaft diameter	Dimensions							Grub screw to	V-ring Designation	
d_a, d_b	d_1	d_2	B	B_1	B_2	D	A	G_1	DIN 913	
mm	mm								–	–
20	20	27.2	5	8.5	3.5	30	2.5	M3	3 x 5	CR 400200
25	25	32.1	5	8.5	3.5	35	2.5	M3	3 x 5	CR 400250
30	30	37.2	5	8.5	3.5	40	2.5	M3	3 x 5	CR 400300
35	35	42.2	5	8.5	3.5	45	2.5	M3	3 x 5	CR 400350
40	40	49.1	7	11.5	4.5	53	3.5	M4	4 x 5	CR 400400
45	45	54	7	11.5	4.5	58	3.5	M4	4 x 5	CR 400450
50	50	59.1	7	11.5	4.5	63	3.5	M4	4 x 5	CR 400500
55	55	64.1	7	11.5	4.5	68	3.5	M4	4 x 5	CR 400550
60	60	69.1	7	11.5	4.5	73	3.5	M4	4 x 5	CR 400600
65	65	74.1	7	11.5	4.5	78	3.5	M4	4 x 5	CR 400650
70	70	81	9	15	6	84	4.5	M5	5 x 6	CR 400700
75	75	86	9	15	6	89.5	4.5	M5	5 x 6	CR 400750
80	80	91	9	15	6	94.5	4.5	M5	5 x 6	CR 400800
85	85	96	9	15	6	100	4.5	M5	5 x 6	CR 400850
90	90	101	9	15	6	105	4.5	M5	5 x 6	CR 400900
95	95	106	9	15	6	109	4.5	M5	5 x 6	CR 400950
100	100	111	9	15	6	115	4.5	M5	5 x 6	CR 401000
110	110	122.9	10	7.5	7.5	128	5	M6	6 x 8	CR 401100
115	115	127.4	10	17.5	7.5	133	5	M6	6 x 8	CR 401100
125	125	138.1	10	17.5	7.5	143	5	M6	6 x 8	CR 401300
135	135	147.5	10	17.5	7.5	153	5	M6	6 x 8	CR 401300
140	140	152.9	10	17.5	7.5	158	5	M6	6 x 8	CR 401400
145	145	158.1	10	17.5	7.5	163	5	M6	6 x 8	CR 401500
155	155	167.5	10	18.5	8.5	173	5	M6	6 x 8	CR 401500
165	165	179.9	10	18.5	8.5	185.5	5	M6	6 x 8	CR 401700
175	175	189.3	10	18.5	8.5	195	5	M6	6 x 8	CR 401700

Seals

Felt ring seals

Felt ring seals **(Figure 3)** are simple but efficient seals for use with grease lubrication. They can be operated at peripheral speeds up to 13 ft/sec (4 m/sec). The seals can be used at much higher speeds but at high speeds a small gap will be formed between the felt and the shaft and the seal becomes a non-rubbing gap-type seal. For plummer block housings with bearings on adapter sleeves on cylindrical shafts the felt ring seals are split. The impregnated felt is inserted in light alloy half-rings. It is only necessary to insert the seals in the grooves in the housing. The rubber O-section cords should be put into the grooves first as they prevent the seal rings from turning.

SNL plummer block housings for bearings mounted on cylindrical seatings on stepped shafts, sizes 205 to 218 inclusive, can also be supplied with felt seals. In this case the seals consist of loose felt strips, which can be inserted in the sealing grooves. Before mounting, the FS felt strips should be left to soak for a few minutes in hot oil.

For applications with spherical roller bearings or CARB bearings, which are to operate at continuously high temperatures up to approximately 482° F (+250° C), SKF graphited FSB sealing strips, made of aluminum boron silicate, can be used. They are suitable for peripheral speeds up to 6.5 ft/sec (2 m/sec). The strips have been well proven as seals on autoclave trucks.

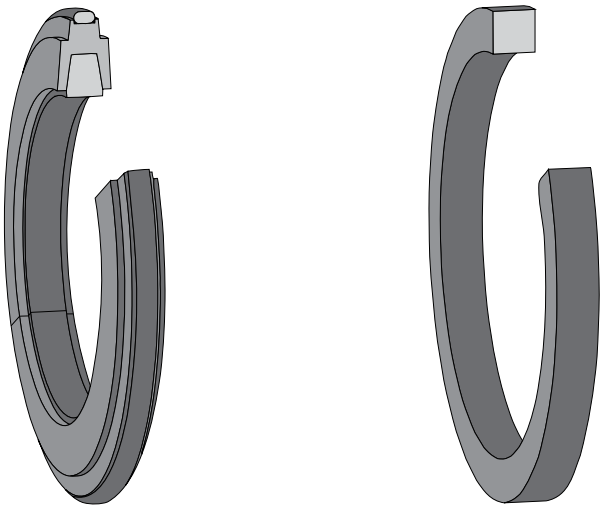
The permissible angular misalignment is approximately 0.5°. The seal counterface on the shaft should be ground and the surface roughness Ra should not exceed 126 µin (3.2 µm).

The axial movement of the shaft relative to the housing is not limited when felt seals are used.

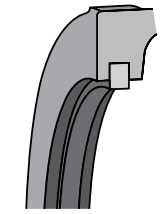
The ready-to-mount felt ring seals (in light alloy half-rings) are always supplied in packs of two seals. When housings are used at shaft ends, i.e. with one end cover, one of the seals will be left over and can be kept as a spare. The felt ring seals are identified by the designation prefix TSN followed by the size identification and the suffix C, e.g. TSN 511 C.

The felt ring seals can also be supplied with an FSB insert. The rubber O-section cords are replaced by fluoro rubber O-section cords. These seals are identified by the suffix CB, e.g. TSN 511 CB.

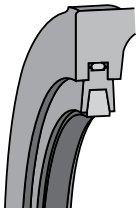
Figure 3



Felt ring seal



Ready-to-mount felt ring seal



Felt strips

Labyrinth seals

Under difficult operating conditions and/or at high speeds the use of labyrinth seals **(Figure 4)** is recommended. The labyrinth rings are made of steel and have two radially arranged labyrinth steps, which form a narrow sealing gap with the housing grooves.

Hollow O-ring cords of silicone rubber (supplied with the seals) allows the labyrinth rings, which are mounted with a loose fit, to rotate with the shaft. Angular misalignments of the shaft up to approximately 0.3° are permissible. The operating temperature range for the labyrinth seals is -58° to +392° F (-50° to +200° C).

When labyrinth seals are used, axial movement of the shaft relative to the housing is not limited. The recommended shaft tolerance is h9.

The labyrinth seals are supplied singly. For bearing arrangements for through shafts it is therefore necessary to order two rings. The labyrinth seal is identified by the prefix TSN followed by the size identification and the suffix S, e.g. TSN 511 S.

Taconite heavy-duty seals

Taconite is a very fine-grained mineral which is extremely difficult to seal out. For bearing arrangements, which must operate under very arduous conditions (such as those encountered in mining), labyrinth seals, which can be relubricated, are recommended; grease enhances the sealing effect and extends the serviceability of the seals. SKF has developed two different designs of these heavy-duty seals (which can seal out taconite, hence the name) which can be supplied for use with SNL housings.

The one taconite seal design **(Figure 5)** is based on a radial labyrinth seal and fits the standard housings. A V-ring seal mounted on the shaft seals against the non-rotating part of the seal, which is inserted in the seal groove and prevents contaminants from penetrating the bearing when the seal is relubricated. This grease is supplied via a grease nipple in the non-rotating part of the seal. Angular misalignments of the shaft of up to approximately 0.5° are possible. The permissible operating temperature range for the seal is between -40° to +212° F (-40° and +100° C).

The axial movement of the shaft relative to the housing is limited for this type of taconite seal to ±1 mm for shaft diameters up to 65 mm and to approximately ±1.2 mm for sizes up to 100 mm and ±1.5 mm for larger shaft diameters. The recommended shaft tolerance is h9.

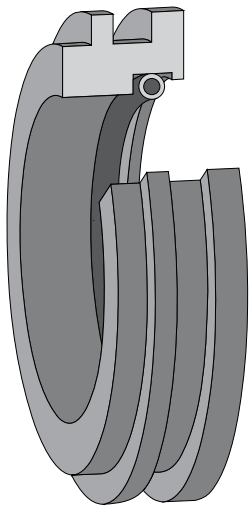
These seals are supplied singly so that for housings used on through shafts, it is necessary to order two seals. The seal is identified by the prefix TSN followed by the size identification and the suffix ND, e.g. TSN 511 ND.

The other design of taconite seal **(Figure 6)** is based on a labyrinth seal with the labyrinth stages arranged axially and does not fit the standard housings. The seal is relubricated via lubrication holes and nipples in the housing cap. The positions for the holes are marked by dimples in the casting. The permissible misalignment of the shaft relative to the housing for this seal is approximately 0.5°. The operating temperature range is from -40° to +482° F (-40° to +250° C). Axial movement of the shaft relative to the housing is also limited. The recommended shaft tolerance is h9.

The modified SNL housings are always supplied together with the seals and are available from size 515-612. The housings with seals are identified by the designation suffix TNC, e.g. SNL 515 TNC or SNL 612 TNC. A housing intended for a shaft end with one seal and one end cover is identified by an additional suffix A, e.g. SNL 515 ATNC. The seal itself is designated TSN .. NC.

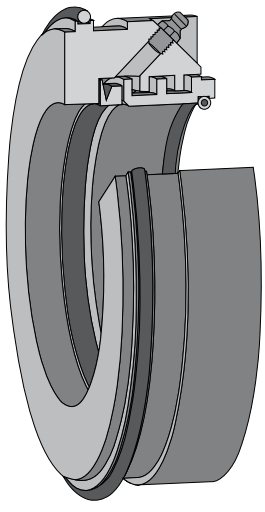
A variant of the TNC seal with an additional V-ring can also be supplied. The seal is identified by the letters TNB and can be supplied to order.

Figure 4



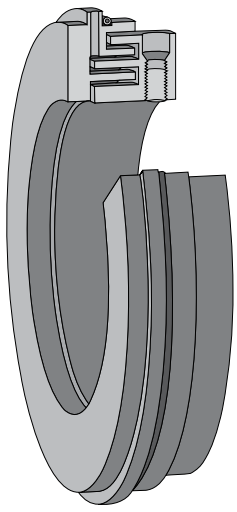
Labyrinth seal

Figure 5



Taconite heavy-duty seal

Figure 6



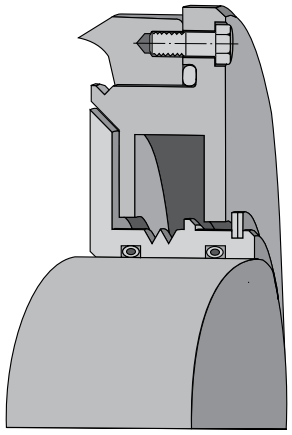
Taconite heavy-duty seal

Seals for oil lubrication

Special seals (oil seals) are required to prevent oil from escaping from the housing when oil lubrication is applied. For SNL housings, SKF has developed the non-rubbing seal of the U design **(Figure 7)**. These U seals also require modified housings and comprise two parts: one that is stationary and is screwed to the housing and the other that is mounted on the shaft and rotates. A hollow O-ring cord of silicone rubber inserted between the labyrinth ring and the shaft allows the ring, which is mounted with a loose fit, to rotate with the shaft, and oil cannot escape along the shaft. These oil seals do not limit axial movement of the shaft relative to the housing. The recommended shaft tolerance is h9.

The modified SNL housing is supplied together with the seals as a unit. The housings with seals are identified by the suffix TURU, e.g. SNL 524 TURU. Special end covers can be supplied separately on request, designation ASNH .. R.

Figure 7



Oil seal

Special seals

Applications where, for some reason, the standard seals cannot be used, **must** be fitted with special seals. The SNL housings can be supplied without seals for such applications and are relatively easy to equip with special seals. It is recommended that housings of series SNL 2 are used rather than those of series SNL 5-6 as they have a comparatively larger bore at the shaft entrance. There is therefore more room to accommodate a seal, so that there are more choices for seal design.

Special seals are not normally supplied by SKF. Therefore, the relevant housing dimensions are given in **Table 4**.

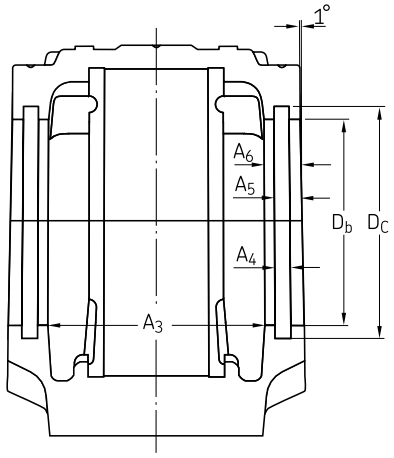


Table 4

Sealing groove dimensions

Housing Size	Dimensions A_3	A_4	A_5	A_6	D_b	D_c
–	mm					
SNL 205	44	5	7.5	10	36.5	44.5
SNL 206-305	54	5	7.5	10	46.5	54.5
SNL 207	58	5	8	11	56.5	64.5
SNL 208-307	61	5	8	11	62	70.5
SNL 209	59	5	9	12	67	75.5
SNL 210	64	5	9	12	72	80.5
SNL 211	69	5	9	12	77	85.5
SNL 212	79	5	9	12	87	95.5
SNL 213	82	5	9	13	92.5	101
SNL 215	87	5	9	13	102.5	111
SNL 216	92	5	9	13	108	116.5
SNL 217	97	5	9	13	112	120.5
SNL 218	112	5	9	13	120	128.5
SNL 505	45	5	7.5	10	31.5	39.5
SNL 506-605	55	5	7.5	10	36.5	44.5
SNL 507-606	59	5	8	11	46.5	54.5
SNL 508-607	62	5	8	11	51.5	59.5
SNL 509	60	5	9	12	56.5	64.5
SNL 510-608	65	5	9	12	62	70.5
SNL 511-609	70	5	9	12	67	75.5
SNL 512-610	80	5	9	12	72	80.5
SNL 513-611	83	5	9	13	77	85.5
SNL 515-612	88	5	9	13	87	95.5
SNL 516-613	93	5	9	13	92.5	101
SNL 517	98	5	9	13	97.5	106
SNL 518-615	113	5	9	13	102.5	111
SNL 519-616	116	6	10	14	131	141
SNL 520-617	131	6	10	14	137.5	147.5
SNL 522-619	143	6	10	14	147.5	157.5
SNL 524-620	151	6	11	15	157.5	167.5
SNL 526	156	6	11	15	167.5	177.5
SNL 528	171	6	11	15	177.5	187.5
SNL 530	189	6	11	15	192.5	202.5
SNL 532	201	6	11	15	202.5	212.5

End covers

For housings mounted at the ends of shafts, the one opening should be fitted with an end cover, which fits into the seal groove **(Figure 8)**. Details of the permissible length of the shaft end can be found in **Table 5**. The end covers are of plastic and are suitable for operating temperatures in the range -40° to +230° F (-40° to +110° C).

At higher temperatures sheet steel end covers should be used instead. These can be cut out from steel sheets and should be inserted with a hollow O-ring cord of silicone rubber in the seal groove in the housing. The relevant seal groove dimensions are given in **Table 4**.

The standard end cover of plastic is designated by the prefix ASNH followed by the housing size identification, e.g. ASNH 511-609.

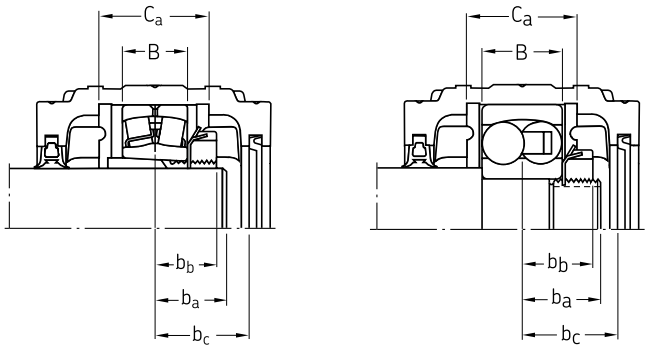


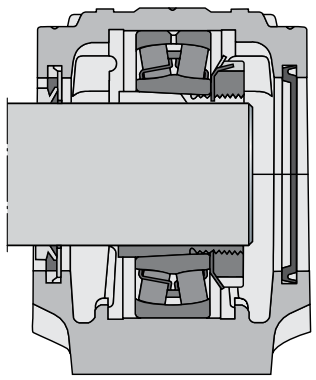
Table 5

Permissible length of shaft end

Housing Size	Dimensions			Widest bearing to fit housing Designation	Dimensions	
	b_a [1]	b_c	C_a		B	b_b
–	mm			–	mm	
SNL 205	18	24	25	**22205 CC/W33**	18	17
SNL 206-305	20	29	32	**22206 CC/W33**	20	18
SNL 207	23	32	34	**22207 CC/W33**	23	20.5
SNL 208-307	26 (22)	33	39	**22208 E**	23	21.5
SNL 209	25	32	30	**22209 CC/W33**	23	22.5
SNL 210	28 (24)	35	41	**22210 CC/W33**	23	23.5
SNL 211	30 (25)	37	44	**22211 E**	25	25
SNL 212	33 (26)	42	48	**22212 E**	28	27
SNL 213	35 (30)	45	51	**22213 CC/W33**	31	29.5
SNL 215	37 (30)	47	56	**22215 E**	31	30.5
SNL 216	39 (33)	50	58	**22216 E**	33	33.5
SNL 217	40 (35)	52	61	**22217 E**	36	36
SNL 218	45 (35)	60	65	**23218 CC/W33**	52.4	44.2
SNL 505	18	24	25	**22205 CCK/W33**	18	17
SNL 506-605	20	29	32	**2305 EK**	24	19
SNL 507-606	23	32	34	**2306 K**	27	21.5
SNL 508-607	26 (22)	33	39	**2307 EK**	31	24.5
SNL 509	25	32	30	**22209 CCK/W33**	23	22.5
SNL 510-608	28 (24)	35	41	**22308 CCK/W33**	33	26.5
SNL 511-609	30 (25)	37	44	**22309 CCK/W33**	36	29
SNL 512-610	33 (26)	42	48	**22310 EK**	40	32
SNL 513-611	35 (30)	45	51	**22311 EK**	43	33.5
SNL 515-612	37 (30)	47	56	**22312 EK**	46	36
SNL 516-613	39 (33)	50	58	**22313 EK**	48	38
SNL 517	40 (35)	52	61	**22217 EK**	36	36
SNL 518-615	45 (35)	60	65	**22315 EK**	55	42.5
SNL 519-616	47 (40)	61	68	**22316 EK**	58	46
SNL 520-617	51 (45)	69	70	**23220 CCK/W33**	60.3	50.2
SNL 522-619	61	75	80	**23222 CCK/W33**	69.8	55.9
SNL 524-620	65	79	86	**23224 CCK/W33**	76	60
SNL 526	65	81	90	**23226 CCK/W33**	80	63
SNL 528	70	89	98	**23228 CCK/W33**	88	68
SNL 530	80	98	106	**23230 CCK/W33**	96	74
SNL 532	85	104	114	**23232 CCK/W33**	104	80

[1] The dimension b_a is determined to suit all appropriate bearings with two exceptions:
1. With self-aligning ball bearings of series 12 where the total bearing seating width must be available, the values given in brackets apply.
2. For non-locating arrangements with the widest bearings, as listed above, which are not mounted centrally in the housing, the value of b_a must be either correspondingly reduced or correspondingly increased.

Figure 8



Housing with end cover

Locating rings

Locating rings

The bearing seating in the housing is sufficiently wide to enable the bearing to be displaced axially. The locating or held bearing must always be fixed axially in position in the housing bore by locating rings at both sides (**Figure 9**).

CARB bearings are non-locating bearings and cannot take axial loads. Since axial displacement is accommodated within a CARB bearing (together with any misalignment), it is necessary to locate the outer ring axially in its seating by inserting a locating ring at each side of the bearing.

The locating rings are identified by the prefix FRB followed by figures giving the width/outside diameter in millimeters, e.g. FRB 11.5/100.

Axial displacement of CARB bearings in SNL housings

The permissible axial displacement in a CARB bearing is dependent on the clearance remaining in the bearing after mounting: the larger the residual radial internal clearance, the larger the permissible axial displacement of one ring with respect to the other. This axial displacement reduces the clearance in the bearing until at a given displacement, the clearance disappears altogether or the rollers may start to be exposed at one side of the bearing.

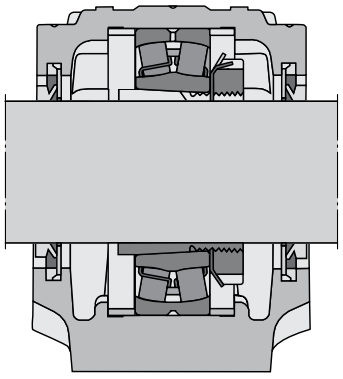
Table 6 shows the maximum permissible axial displacement for each CARB bearing having Normal initial radial internal clearance when mounted normally. It is assumed that there is little difference in temperature between inner and outer ring.

When the rings are displaced a certain distance, the roller and cage assembly will move through half this distance. If the inner ring moves into the bearing, or alternatively, if the outer ring moves out from the bearing, the roller and cage assembly can contact the lock nut and locking washer. For bearings of series C 22 K up to and including size 22, therefore, a special adapter sleeve with a narrow slot and a self-locking KMFE nut must be used to prevent this from happening (**Figure 10**). Such sleeves are supplied by SKF and identified by suffix E, e.g. H 311 E.

For bearings of series C 22 K and C 32 K, from size 24 and above, the adapter sleeves are supplied together with a KML nut, indicated by suffix L in the sleeve designation, e.g. H 2324 L.

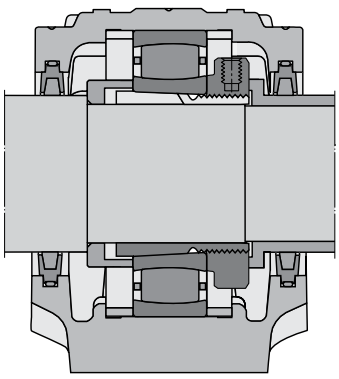
It should be observed that the possible axial displacement of the shaft relative to the housing may be limited by the type of seal used.

Figure 9



Housing with locating rings at both sides of bearing

Figure 10



CARB bearing on adapter sleeve with spacer ring between bearing inner ring and lock nut

Axial displacement

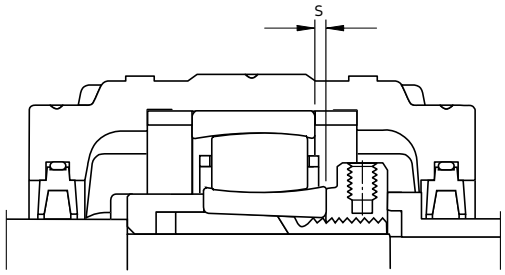


Table 6

Axial displacement for mounted CARB bearings

Bearing	Housing Size	Axial displacement s[1] for mounted CARB bearings with initial radial internal clearance Normal
–	–	mm
C 2205 K	**SNL 505**	2.3
C 2206 K	**SNL 506-605**	2.3
C 2207 K	**SNL 507-606**	2.8
C 2208 K	**SNL 508-607**	2.7
C 2209 K	**SNL 509**	3.1
C 2210 K	**SNL 510-508**	2.9
C 2211 K	**SNL 511-609**	3.5
C 2212 K	**SNL 512-610**	3.6
C 2213 K	**SNL 513-611**	3.7
C 2215 K	**SNL 515-612**	4.4
C 2315 K	**SNL 518-615**	5.9
C 2216 K	**SNL 516-613**	4.4
C 2316 K	**SNL 519-616**	5.7
C 2217 K	**SNL 517**	5.1
C 2317 K	**SNL 520-617**	6.5
C 2218 K	**SNL 518-615**	5.2
C 2220 K	**SNL 520-617**	5.4
C 2320 K	**SNL 524-620**	6.8
C 2222 K	**SNL 522-619**	6.7
C 3224 K	**SNL 524**	7.8
C 2226 K	**SNL 526**	8.0
C 2228 K	**SNL 528**	8.0
C 2230 K	**SNL 530**	9.3
C 3232 K	**SNL 532**	10.5

[1] s is the maximum permissible displacement of one ring with respect to the other in one direction; the total axial displacement is twice as large.

Lubrication

SNL plummer block housings are designed so that the bearings can be lubricated with grease or oil, although grease lubrication is generally preferable. The lubricant should be selected with reference to the operating conditions.

Grease lubrication

In the majority of applications, the amount of grease applied to the SNL housings when mounting (initial fill) or after an inspection is adequate until the next planned inspection.

Certain operating conditions, e.g. high speeds, high temperatures or heavy loads, may mean that more frequent relubrication is necessary. **Table 7** gives guideline values for the grease quantities to be applied for the initial fill and for relubrication. Seven markings will be found on the housing cap of which six show where holes can be drilled and tapped to take grease nipples.

There is also a drilled and tapped hole for the grease nipple AH 1/8-27 PTF, which is supplied with the housing. This hole is closed by a plastic plug. The two markings at the outer sides of the central ridge indicate the position for lubrication holes for the seals.

It is recommended that spherical roller bearings having a lubrication groove and three holes in the outer ring (designation suffix E or W33) be lubricated via this feature **(Figure 11)**. A hole should be drilled at one of the middle markings on the three bars for this purpose. SNL housings having a drilled and tapped hole in the middle of the cap together with a lubrication nipple and can be supplied on request. They are identified by the designation suffix NM, e.g. SNL 511-609 NM.

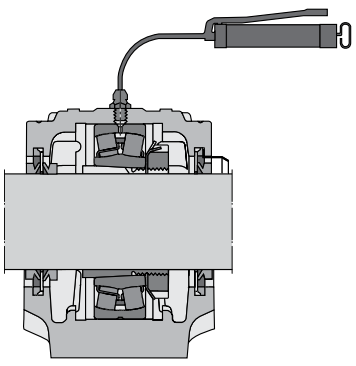
Table 7

Grease quantities

Housing Size	Grease quantities First fill[1]	 Relubrication
–	g	
SNL 205	25	5
SNL 206-305	40	5
SNL 207	50	10
SNL 208-307	60	10
SNL 209	65	10
SNL 210	75	10
SNL 211	100	15
SNL 212	150	15
SNL 213	180	20
SNL 215	230	20
SNL 216	280	25
SNL 217	330	25
SNL 218	430	40
SNL 505	25	5
SNL 506-605	40	5
SNL 507-606	50	10
SNL 508-607	60	10
SNL 509	65	10
SNL 510-608	75	10
SNL 511-609	100	15
SNL 512-610	150	15
SNL 513-611	180	20
SNL 515-612	230	20
SNL 516-613	280	25
SNL 517	330	25
SNL 518-615	430	40
SNL 519-616	480	50
SNL 520-617	630	55
SNL 522-619	850	70
SNL 524-620	1 000	80
SNL 526	1 100	95
SNL 528	1 400	110
SNL 530	1 700	130
SNL 532	2 000	150

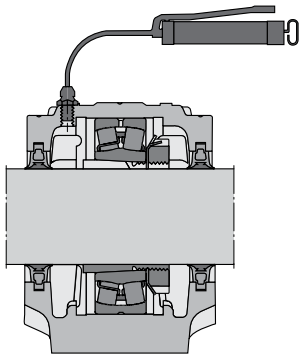
1 Fills approximately 40% of the free space in the housing.

Figure 11



Lubricating the bearing via the outer ring

Figure 12



Bearing lubrication via the standard nipple

It should be noted that when spherical roller bearings are to be relubricated via the outer ring, they should be rotated. If outer ring relubrication is not possible or if self-aligning ball bearings or CARB bearings are used, the standard grease nipple supplied with the housing should be inserted in the hole provided and used for this purpose **(Figure 12)**. If it is desired to use a grease nipple other than that supplied with the housing, adapters are available which make a reworking of the available drilled and tapped hole unnecessary.

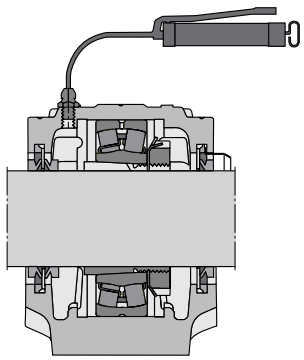
Where V-ring seals are used, the effectiveness of relubrication can be much improved if an additional V-ring is mounted inside the housing at the side where the grease is applied, so that grease can only exit at the opposite side of the housing. For this purpose a set comprising a V-ring and a splash plate, which covers a sector of more than 180° **(Figure 13)**, can be supplied. This V-ring and splash plate set is designated by the prefix ASNA followed by the housing size identification and the suffix V, e.g. ASNA 511 V.

Where the bearings are mounted on adapter sleeves, the grease should be introduced at the side opposite to the lock nut of the sleeve. Where housings are mounted at shaft ends, grease should be applied at the end cover side.

Where G- or C-design seals are used, it should be noted that grease cannot escape via the seals. If frequent relubrication is required when such seals are used, it is advisable to provide the housing with a grease escape hole **(Figure 14)** through which excess grease can escape. Recommended dimensions will be found in **Table 8**. SNL housings with a grease escape hole in the base can be supplied. This housing design is identified by the suffix V, e.g. SNL 511-609 V.

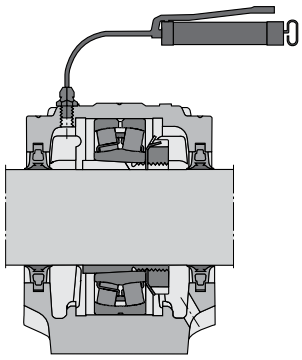
If housings fitted with the G-design double-lip seals are periodically relubricated, the seals can only be operated at peripheral speeds up to 13 ft/sec (4 m/sec) as otherwise the sealing lips may overheat and wear.

Figure 13



Housing with additional V-ring and splash plate

Figure 14



Housing with grease escape hole

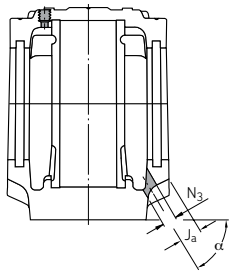


Table 8

Recommended dimensions for grease escape hole

Housing Size	Dimensions J_a	N_3	a
–	mm		degrees
SNL 205	8.5	10	45
SNL 206-305	10	10	45
SNL 207	10	10	45
SNL 208-307	9	10	45
SNL 209	10	10	45
SNL 210	11	10	45
SNL 211	10	12	45
SNL 212	9	12	45
SNL 213	13	12	45
SNL 215	12.5	12	45
SNL 216	14	16	45
SNL 217	17	16	45
SNL 218	20	16	40
SNL 505	8.5	10	45
SNL 506-605	10	10	45
SNL 507-606	10	10	45
SNL 508-607	9	10	45
SNL 509	10	10	45
SNL 510-608	11	10	45
SNL 511-609	10	12	45
SNL 512-610	9	12	45
SNL 513-611	13	12	45
SNL 515-612	12.5	12	45
SNL 516-613	14	16	45
SNL 517	17	16	45
SNL 518-615	20	16	40
SNL 519-616	20	16	50
SNL 520-617	21	16	50
SNL 522-619	21	20	50
SNL 524-620	24	20	55
SNL 526	22	20	55
SNL 528	23	20	50
SNL 530	25	20	55
SNL 532	25	20	60

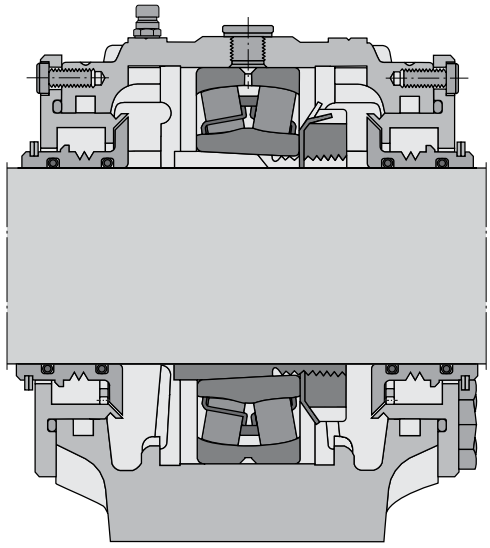
The dimensions are those recommended when the standard grease nipple AH 1/8-27 PTF is used (supplied with the housing) but can also be applied if nipples having threads R 1/8, KR 1/8 or M 10x1 are used. An adapter is available, which fits the SNL standard lubrication hole, designation LAPN 1/8. Using this adapter nipple with thread G 1/4 and grease dispensers, e.g. SKF SYSTEM 24, can be applied.

Lubrication

Oil lubrication

The new SNL housings can be used for oil lubrication at relatively high speeds. When using oil, however, the specially developed U-design seals should be incorporated to avoid oil loss from the housing. These seals are described on page 466. In order for these seals to be used, the housing must be modified so that SNL housings for oil lubrication are only supplied complete with seals.

Figure 15



Housing for oil lubrication

Table 1

Recommended oil levels for SNL..TURU plummer blocks of series 5(00)
For series 3(00) and 6(00) please contact SKF Applications Engineering

Housing Designation	Oil level for bearings of series 12		22		232		222		C 22	
	min	max	min	max	min	max	min	max	min	max
–	mm									
SNL 511 TURU	27	31	27	32			27	31	28	32
SNL 512 TURU	23	27	22	28			23	27	23	26
SNL 513 TURU	29	33	28	34			28	33	29	34
SNL 515 TURU	24	29	23	29			23	28	24	29
SNL 516 TURU	34	39	33	40			33	39	34	39
SNL 517 TURU	30	36	30	36			29	35	30	36
SNL 518 TURU	31	38	31	38	33	37	30	37	30	36
SNL 519 TURU	38	45	38	46			38	45		
SNL 520 TURU	34	42	34	42	37	42	33	41	35	43
SNL 522 TURU	39	47	38	48	42	47	37	46	39	48
SNL 524 TURU	47	57			50	55	46	55		
SNL 526 TURU					54	59	50	59	52	62
SNL 528 TURU					46	52	44	52	40	51
SNL 530 TURU					48	54	45	54	44	57
SNL 532 TURU					50	57	47	57		

The oil level is measured from the base of the housing. Mark the min and max level on the sight glass.

Mounting

SNL housings together with SKF bearings are robust and operationally reliable bearing arrangements which have long lives. However, if they are to achieve their full potential and not fail prematurely, they must be properly mounted. **Incorrect procedures or unsuitable tools can influence life negatively.**

Mounting the bearing

The bearings can be mounted either on a tapered seating – normally for SNL housings in the form of an adapter sleeve – or on a cylindrical seating. When a bearing is correctly mounted on a sleeve, there will be interference fits between the inner ring, sleeve and shaft. The degree of interference is determined by how far the bearing is driven up on the sleeve and either the internal clearance reduction or the axial drive-up distance can be used as a measure. The clearance reduction in spherical roller bearings can be measured using a feeler gauge, or the new SKF drive-up method can be used.

When mounting self-aligning ball bearings having Normal radial internal clearance (which is relatively small) the clearance reduction can be checked by turning and swivelling out the outer ring. When the swivelling out meets a slight resistance, the bearing has a sufficient degree of interference and the drive-up should be stopped. A particularly simple method of mounting self-aligning ball bearings on adapter sleeves is the use of the spanner set TMHN 7, which has been specially developed for this purpose. Each spanner is marked with the angle to which the lock nut should be turned when self-aligning ball bearings having C3 radial internal clearance are used.

CARB bearings can also be mounted on cylindrical as well as tapered seatings. For tapered seatings, adapter sleeves are normally employed; the spanner set TMHN 7 can be used for smaller CARB bearings as well as for self-aligning ball bearings. For larger CARB bearings either the clearance reduction or the axial drive-up length should be measured. When using a feeler gauge to measure clearance reduction, it is important that the inner and outer rings of the bearing are not displaced with respect to each other. The new SKF drive-up method can also be applied.

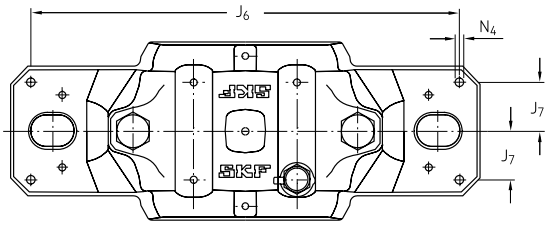


Table 10

Position and size of dowel holes

Housing Size	Dimensions J_6	J_7	N_4 max	Housing Size	Dimensions J_6	J_7	N_4 max
–	mm			–	mm		
SNL 205	152	16	5	**SNL 511-609**	234	27	8
SNL 206-305	172	19	5	**SNL 512-610**	234	27	8
SNL 207	172	19	5	**SNL 513-611**	252	29	8
SNL 208-307	188	22	6	**SNL 515-612**	257	29	8
SNL 209	188	22	6	**SNL 516-613**	288	33	8
SNL 210	188	22	6	**SNL 517**	292	33	8
SNL 211	234	27	8	**SNL 518-615**	317	35	8
SNL 212	234	27	8	**SNL 519-616**	317	35	8
SNL 213	252	29	8	**SNL 520-617**	348	39	8
SNL 215	257	29	8	**SNL 522-619**	378	44	8
SNL 216	288	33	8	**SNL 524-620**	378	44	8
SNL 217	292	33	8	**SNL 526**	414	46	12
SNL 218	317	35	8				
SNL 505	152	16	5	**SNL 528**	458	54	12
SNL 506-605	172	19	5	**SNL 530**	486	58	12
SNL 507-606	172	19	5	**SNL 532**	506	58	12
SNL 508-607	188	22	6				
SNL 509	188	22	6				
SNL 510-608	188	22	6				

Bearings with cylindrical bore are normally mounted with an interference fit on the shaft. Appropriate shaft tolerances should be selected. The recommendations applying to self-aligning ball and spherical roller bearings also apply to CARB bearings.

Support surface for housing base

To guarantee long bearing service life it is recommended that the support surface for the housing is finished to Ra ≤ 492 µin (12.5 µm). The flatness tolerance should be to IT7. For moderate demands IT8 may be satisfactory.

Dowel pins

SNL housings are designed for loads acting vertically to the housing base support. If they are to be subjected to moderate or heavy loads acting parallel to the base support, a stop should be provided, or the housing should be pinned to its support. Recommendations for the position and size of holes to take dowel pins are given in **Table 10**.

Mounting

Housings with four bolt holes in base

For the attachment of SNL housings to T-shaped beams, it is possible to drill four bolt holes in the base. The appropriate positions are indicated by dimples. Recommended dimensions are given in **Table 11**.

Some housings which are already prepared for four-bolt mounting can be supplied. These housings are also prepared for relubrication of the bearing via the outer ring (suffix NM) as standard. Available sizes are shown in **Table 12**. The housings are designated FSNL .. NM, e.g. FSNL 511-609 NM.

Attachment bolts

It is recommended that hexagon-headed bolts to strength class 8.8 according to ISO 4014:1999 be used. If the load does not act vertically to the base, it may be necessary to use stronger, class 10.9 bolts. Details of the appropriate tightening torques for the bolts to class 8.8 are given in **Table 14** on page 477.

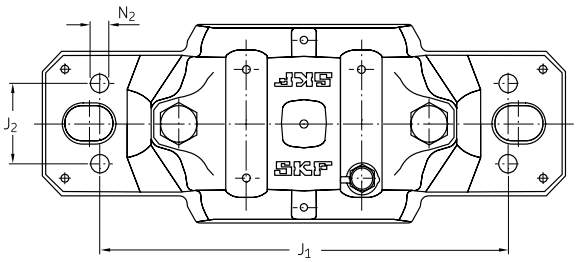


Table 11

Bolt hole dimensions

Housing Size	Dimensions J_1	J_2	N_2	Appropriate bolt size
–	mm			mm
SNL 208-307	160	34	11	M 10
SNL 209	160	34	11	M 10
SNL 210	160	34	11	M 10
SNL 211	200	40	14	M 12
SNL 212	200	40	14	M 12
SNL 213	220	48	14	M 12
SNL 215	220	48	14	M 12
SNL 216	252	52	18	M 16
SNL 217	252	52	18	M 16
SNL 218	280	58	18	M 16
SNL 508-607	160	34	11	M 10
SNL 509	160	34	11	M 10
SNL 510-608	160	34	11	M 10
SNL 511-609	200	40	14	M 12
SNL 512-610	200	40	14	M 12
SNL 513-611	220	48	14	M 12
SNL 515-612	220	48	14	M 12
SNL 516-613	252	52	18	M 16
SNL 517	252	52	18	M 16
SNL 518-615	280	58	18	M 16
SNL 519-616	280	58	18	M 16
SNL 520-617	300	66	18	M 16
SNL 522-619	320	74	18	M 16
SNL 524-620	330	74	18	M 16
SNL 526	370	80	22	M 20
SNL 528	400	92	26	M 24
SNL 530	430	100	26	M 24
SNL 532	450	100	26	M 24

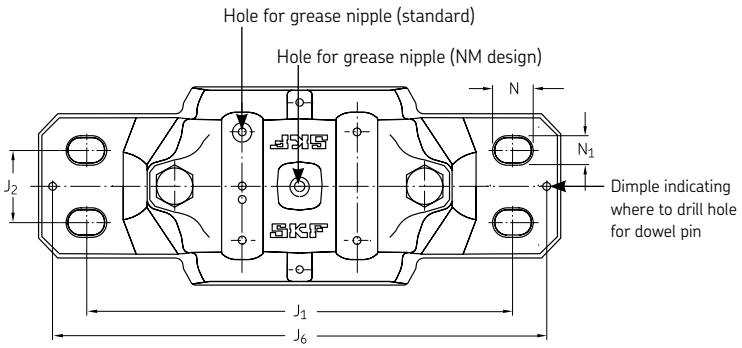


Table 12

Bolt hole dimensions

Housing Size	Dimensions N	N_1	J_1	J_2	J_6
–	mm				
FSNL 511-609 NM	20	15	210	35	234
FSNL 513-611 NM	20	15	230	40	252
FSNL 515-612 NM	20	15	230	40	257
FSNL 516-613 NM	24	18	260	50	288
FSNL 517 NM	24	18	260	50	292
FSNL 518-615 NM	24	18	290	50	317
FSNL 520-617 NM	24	18	320	60	348
FSNL 522-619 NM	24	18	350	70	378
FSNL 524-620 NM	24	18	350	70	378
FSNL 526 NM	28	22	380	70	414
FSNL 528 NM	32	26	420	80	458
FSNL 530 NM	32	26	450	90	486
FSNL 532 NM	32	26	470	90	506

Load carrying ability

SNL plummer block housings are intended for loads acting vertically towards the base plate (support). If loads acting in other directions occur, checks should be made to ensure that the magnitude of the load is permissible for the housing, the bolts joining the housing cap and base, and for the attachment bolts.

Load carrying ability of the housing

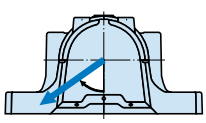
Guideline values for the breaking load P of the housing for various load directions are given in **Table 13**. Using these values and a safety factor selected with respect to the operating conditions, the permissible load for the housing can be calculated. In general engineering a safety factor of 6 is often used. For special purposes where extra strength and resistance to shock loads are required, SKF supplies as standard a range of dimensionally equivalent spheroidal graphite cast-iron housings. For housings made of spheroidal graphite cast-iron, the values for P obtained from **Table 13** should be multiplied by 1.8.

It is important for the load carrying ability of the housing that the bolts joining cap and base are properly tightened in accordance with the values given in **Table 14**. The axial load carrying capacity of the housing is approximately 65% of P180°. For load angles between 55° and 120° as well as for axial loads, if the load acting parallel to the base plate (support surface) exceeds 5% of P180°, the housing should be pinned to the support or a stop should be provided in the direction of the load.

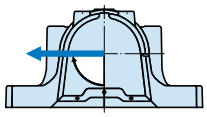
Load carrying ability of the bolts

SNL plummer block housings are supplied with cap bolts (to join cap and base) to strength class 8.8 as standard. The guideline values for the yield point Q for the cap bolts are given in **Table 14** for various load directions as well as the corresponding maximum radial loads F.

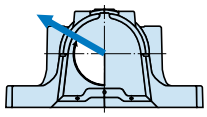
IMPORTANT: Refer to text for determination of permissible load



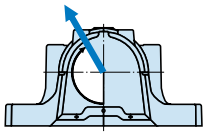
$P_{55°}$



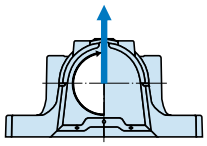
$P_{90°}$



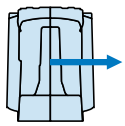
$P_{120°}$



$P_{150°}$



$P_{180°}$



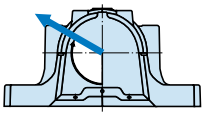
P_a

Table 13

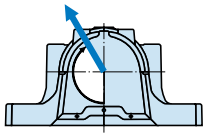
Breaking loads for SNL plummer block housings

Housing Size	Breaking loads for SNL housing $P_{55°}$	$P_{90°}$	$P_{120°}$	$P_{150°}$	$P_{180°}$	P_a
–	kN*					
SNL 205	155	95	70	60	80	52
SNL 206-305	170	100	80	65	85	55
SNL 207	190	115	85	80	95	60
SNL 208-307	215	130	95	85	110	70
SNL 209	230	140	100	90	115	75
SNL 210	265	155	120	110	130	85
SNL 211	275	170	125	115	140	90
SNL 212	300	180	130	120	150	100
SNL 213	340	205	150	130	170	110
SNL 215	410	250	185	160	205	135
SNL 216	430	260	190	175	215	140
SNL 217	480	290	205	190	240	155
SNL 218	550	340	250	215	275	180
SNL 505	155	95	70	60	80	52
SNL 506-605	170	100	80	65	85	55
SNL 507-606	190	115	85	80	95	60
SNL 508-607	215	130	95	85	110	70
SNL 509	230	140	100	90	115	75
SNL 510-608	265	155	120	110	130	85
SNL 511-609	275	170	125	115	140	90
SNL 512-610	300	180	130	120	150	100
SNL 513-611	340	205	150	130	170	110
SNL 515-612	410	250	185	160	205	135
SNL 516-613	430	260	190	175	215	140
SNL 517	480	290	205	190	240	155
SNL 518-615	550	340	250	215	275	180
SNL 519-616	580	350	260	230	290	190
SNL 520-617	620	370	280	250	310	200
SNL 522-619	680	410	310	275	340	220
SNL 524-620	790	470	350	320	400	260
SNL 526	900	540	410	360	450	295
SNL 528	1 050	630	470	430	530	345
SNL 530	1 200	730	540	480	600	390
SNL 532	1 450	860	640	570	720	470

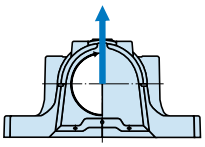
* lbs = Kn x 225



$Q_{120°}$
$F_{120°}$



$Q_{150°}$
$F_{150°}$



$Q_{180°}$
$F_{180°}$

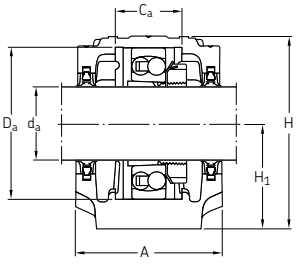
Table 14

Load carrying ability and tightening torque for cap bolts and attachment bolts

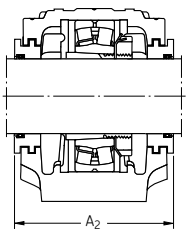
Housing	Cap bolts								Attachment bolts	
Size	Yield point for both bolts			Maximum load for both bolts			Tightening torque	Designation	Size	Tightening torque
	$Q_{120°}$	$Q_{150°}$	$Q_{180°}$	$F_{120°}$	$F_{150°}$	$F_{180°}$				
–	kN[1]			kN[1]			Nm[2]	–	–	Nm[2]
SNL 205	150	85	75	50	30	25	50	M 10x40	M 12	90
SNL 206-305	150	85	75	50	30	25	50	M 10x40	M 12	90
SNL 207	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 208-307	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 209	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 210	150	85	75	50	30	25	50	M 10x55	M 12	90
SNL 211	220	125	110	80	45	40	80	M 12x60	M 16	220
SNL 212	220	125	110	80	45	40	80	M 12x60	M 16	220
SNL 213	220	125	110	80	45	40	80	M 12x65	M 16	220
SNL 215	220	125	110	80	45	40	80	M 12x65	M 16	220
SNL 216	220	125	110	80	45	40	80	M 12x70	M 20	430
SNL 217	220	125	110	80	45	40	80	M 12x80	M 20	430
SNL 218	400	230	200	170	100	85	150	M 16x90	M 20	430
SNL 505	150	85	75	50	30	25	50	M 10x40	M 12	90
SNL 506-605	150	85	75	50	30	25	50	M 10x40	M 12	90
SNL 507-606	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 508-607	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 509	150	85	75	50	30	25	50	M 10x50	M 12	90
SNL 510-608	150	85	75	50	30	25	50	M 10x55	M 12	90
SNL 511-609	220	125	110	80	45	40	80	M 12x60	M 16	220
SNL 512-610	220	125	110	80	45	40	80	M 12x60	M 16	220
SNL 513-611	220	125	110	80	45	40	80	M 12x65	M 16	220
SNL 515-612	220	125	110	80	45	40	80	M 12x65	M 16	220
SNL 516-613	220	125	110	80	45	40	80	M 12x70	M 20	430
SNL 517	220	125	110	80	45	40	80	M 12x80	M 20	430
SNL 518-615	400	230	200	170	100	85	150	M 16x90	M 20	430
SNL 519-616	400	230	200	170	100	85	150	M 16x90	M 20	430
SNL 520-617	620	360	310	260	150	130	200	M 20x100	M 24	750
SNL 522-619	620	360	310	260	150	130	200	M 20x100	M 24	750
SNL 524-620	620	360	310	260	150	130	200	M 20x110	M 24	750
SNL 526	900	500	450	380	220	190	350	M 24x130	M 24	750
SNL 528	900	500	450	380	220	190	350	M 24x130	M 30	1 400
SNL 530	900	500	450	380	220	190	350	M 24x130	M 30	1 400
SNL 532	900	500	450	380	220	190	350	M 24x130	M 30	1 400

[1] lbs = kN x 225
[2] 1 Nm = 8.85 in-lbf

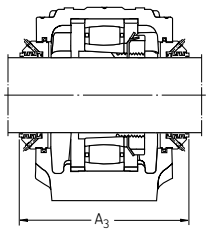
SNL plummer block housings
for bearings on adapter sleeve
d_a 20 – 35 mm



Double-lip seals
G-design



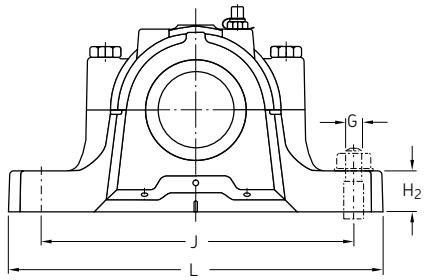
Labyrinth seals
S-design

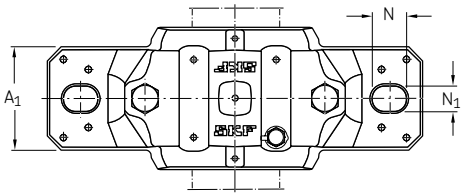


Taconite seals
ND-design

Note: These products are not sold as complete units. Each component must be ordered separately.

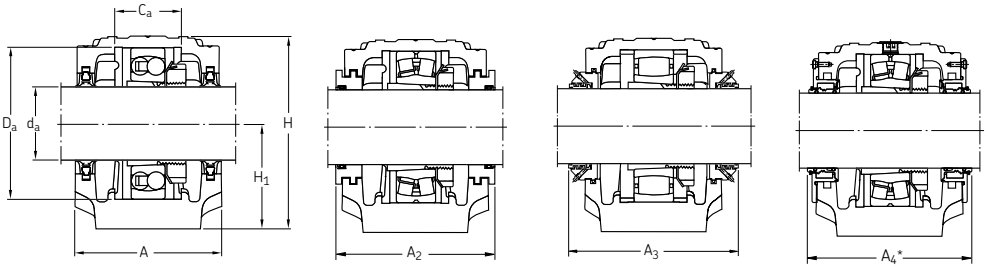
Shaft	Housing dimensions										Mass	Designations		
												Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
20	67	46	74	40	19	130	165	20	15	12	1.45	SNL 505	TSN 505 G	ASNH 505
												SNL 505	TSN 505 A	ASNH 505
												SNL 505	TSN 505 C	ASNH 505
												SNL 505	TSN 505 S	ASNH 505
												SNL 505	TSN 505 ND	ASNH 505
	77	52	89	50	22	150	185	20	15	12	2.00	SNL 506-605	TSN 605 G	ASNH 506-605
												SNL 506-605	TSN 605 A	ASNH 506-605
												SNL 506-605	TSN 605 C	ASNH 506-605
												SNL 506-605	TSN 605 S	ASNH 506-605
												SNL 506-605	TSN 605 ND	ASNH 506-605
25	77	52	89	50	22	150	185	20	15	12	2.00	SNL 506-605	TSN 506 G	ASNH 506-605
												SNL 506-605	TSN 506 A	ASNH 506-605
												SNL 506-605	TSN 506 C	ASNH 506-605
												SNL 506-605	TSN 506 S	ASNH 506-605
												SNL 506-605	TSN 506 ND	ASNH 506-605
	82	52	93	50	22	150	185	20	15	12	2.20	SNL 507-606	TSN 606 G	ASNH 507-606
												SNL 507-606	TSN 606 A	ASNH 507-606
												SNL 507-606	TSN 606 C	ASNH 507-606
												SNL 507-606	TSN 606 S	ASNH 507-606
												SNL 507-606	TSN 606 ND	ASNH 507-606
30	82	52	93	50	22	150	185	20	15	12	2.20	SNL 507-606	TSN 507 G	ASNH 507-606
												SNL 507-606	TSN 507 A	ASNH 507-606
												SNL 507-606	TSN 507 C	ASNH 507-606
												SNL 507-606	TSN 507 S	ASNH 507-606
												SNL 507-606	TSN 507 ND	ASNH 507-606
	85	60	107	60	25	170	205	20	15	12	2.90	SNL 508-607	TSN 607 G	ASNH 508-607
												SNL 508-607	TSN 607 A	ASNH 508-607
												SNL 508-607	TSN 607 C	ASNH 508-607
												SNL 508-607	TSN 607 S	ASNH 508-607
												SNL 508-607	TSN 607 ND	ASNH 508-607
35	85	60	108	60	25	170	205	20	15	12	2.90	SNL 508-607	TSN 508 G	ASNH 508-607
												SNL 508-607	TSN 508 A	ASNH 508-607
												SNL 508-607	TSN 508 C	ASNH 508-607
												SNL 508-607	TSN 508 S	ASNH 508-607
												SNL 508-607	TSN 508 ND	ASNH 508-607
	90	60	113	60	25	170	205	20	15	12	3.20	SNL 510-608	TSN 608 G	ASNH 510-608
												SNL 510-608	TSN 608 A	ASNH 510-608
												SNL 510-608	TSN 608 C	ASNH 510-608
												SNL 510-608	TSN 608 S	ASNH 510-608
												SNL 510-608	TSN 608 ND	ASNH 510-608





Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Self-aligning ball bearing Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
20	25	52	80	130	**1205 EK** **–**	H 205 –	FRB 5/52 –	**2205 EK** **22205 CCK/W33** **C 2205 K**	H 305 H 305 H 305 E	FRB 3.5/52 FRB 3.5/52 FRB 3.5/52
	32	62	89	135	**1305 EK** **–**	H 305 –	FRB 7.5/62 –	**2305 EK** **–** **–**	H 2305 – –	FRB 4/62 – –
25	32	62	89	140	**1206 EK** **–**	H 206 –	FRB 8/62 –	**2206 EK** **22206 CCK/W33** **C 2206 K**	H 306 H 306 H 306 E	FRB 6/62 FRB 6/62 FRB 6/62
	34	72	94	140	**1306 EK** **–**	H 306 –	FRB 7.5/72 –	**2306 K** **–** **–**	H 2306 – –	FRB 3.5/72 – –
30	34	72	94	145	**1207 EK** **–**	H 207 –	FRB 8.5/72 –	**2207 EK** **22207 CCK/W33** **C 2207 K**	H 307 H 307 H 307 E	FRB 5.5/72 FRB 5.5/72 FRB 5.5/72
	39	80	97	145	**1307 EK** **–**	H 307 –	FRB 9/80 –	**2307 EK** **–** **–**	H 2307 – –	FRB 4/80 – –
35	39	80	97	150	**1208 EK** **–**	H 208 –	FRB 10.5/80 –	**2208 EK** **22208 EK** **C 2208 K**	H 308 H 308 H 308 E	FRB 8/80 FRB 8/80 FRB 8/80
	41	90	102	150	**1308 EK** **21308 CCK**	H 308 H 308	FRB 9/90 FRB 9/90	**2308 EK** **22308 CCK/W33** **–**	H 2308 H 2308 –	FRB 4/90 FRB 4/90 –

SNL plummer block housings
for bearings on adapter sleeve
d_a 40 – 50 mm

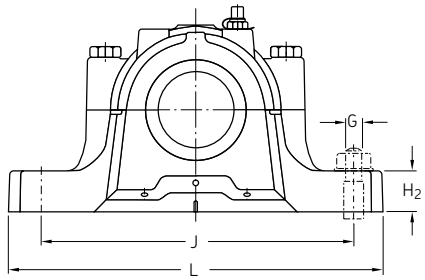


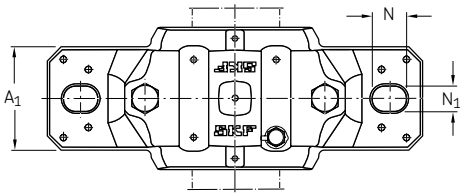
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations		
												Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
40	85	60	109	60	25	170	205	20	15	12	2.90	SNL 509	TSN 509 G	ASNH 509
												SNL 509	TSN 509 A	ASNH 509
												SNL 509	TSN 509 C	ASNH 509
												SNL 509	TSN 509 S	ASNH 509
												SNL 509	TSN 509 ND	ASNH 509
	95	70	127	70	28	210	255	24	18	16	4.40	SNL 511-609	TSN 609 G	ASNH 511-609
												SNL 511-609	TSN 609 A	ASNH 511-609
												SNL 511-609	TSN 609 C	ASNH 511-609
												SNL 511-609	TSN 609 S	ASNH 511-609
												SNL 511-609	TSN 609 ND	ASNH 511-609
												SNL 511-609 RU	TSN 609 U	ASNH 511-609 R
45	90	60	113	60	25	170	205	20	15	12	3.20	SNL 510-608	TSN 510 G	ASNH 510-608
												SNL 510-608	TSN 510 A	ASNH 510-608
												SNL 510-608	TSN 510 C	ASNH 510-608
												SNL 510-608	TSN 510 S	ASNH 510-608
												SNL 510-608	TSN 510 ND	ASNH 510-608
	105	70	133	70	30	210	255	24	18	16	5.10	SNL 512-610	TSN 610 G	ASNH 512-610
												SNL 512-610	TSN 610 A	ASNH 512-610
												SNL 512-610	TSN 610 C	ASNH 512-610
												SNL 512-610	TSN 610 S	ASNH 512-610
												SNL 512-610	TSN 610 ND	ASNH 512-610
												SNL 512-610 RU	TSN 610 U	ASNH 512-610 R
50	95	70	128	70	28	210	255	24	18	16	4.40	SNL 511-609	TSN 511 G	ASNH 511-609
												SNL 511-609	TSN 511 A	ASNH 511-609
												SNL 511-609	TSN 511 C	ASNH 511-609
												SNL 511-609	TSN 511 S	ASNH 511-609
												SNL 511-609	TSN 511 ND	ASNH 511-609
												SNL 211 RU	TSN 511 U	ASNH 513-611 R
	110	80	148	80	30	230	275	24	18	16	6.50	SNL 513-611	TSN 611 G	ASNH 513-611
												SNL 513-611	TSN 611 A	ASNH 513-611
												SNL 513-611	TSN 611 C	ASNH 513-611
												SNL 513-611	TSN 611 S	ASNH 513-611
												SNL 513-611	TSN 611 ND	ASNH 513-611
												SNL 513-611 RU	TSN 611 U	ASNH 513-611 R

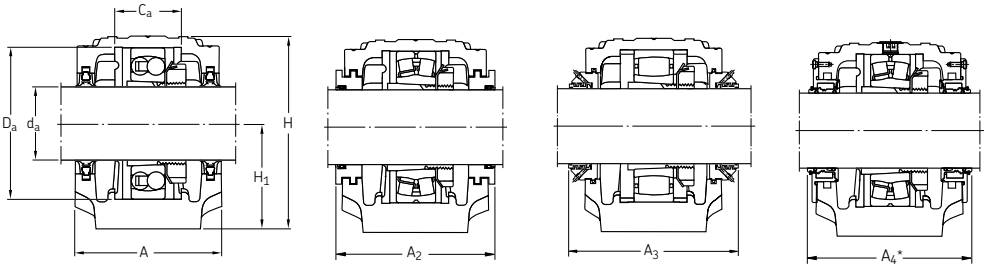
* For A_4 dimension see Table 4, page 466.





Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Self-aligning ball bearing Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
40	30	85	97	150	**1209 EK**	H 209	FRB 5.5/85	**2209 EK**	H 309	FRB 3.5/85
					–	–	–	**22209 CCK/W33**	H 309	FRB 3.5/85
								C 2209 K	H 309 E	FRB 3.5/85
	44	100	107	155	**1309 EK**	H 309	FRB 9.5/100	**2309 EK**	H 2309	FRB 4/100
					21309 EK	H 309	FRB 9.5/100	**22309 CCK/W33**	H 2309	FRB 4/100
								–	–	–
45	41	90	102	155	**1210 EK**	H 210	FRB 10.5/90	**2210 EK**	H 310	FRB 9/90
					–	–	–	**22210 CCK/W33**	H 310	FRB 9/90
								C 2210 K	H 310 E	FRB 9/90
	48	110	117	165	**1310 EK**	H 310	FRB 10.5/110	**2310 K**	H 2310	FRB 4/110
					21310 EK	H 310	FRB 10.5/110	**22310 CCK/W33**	H 2310	FRB 4/110
								–	–	–
50	44	100	107	165	**1211 EK**	H 211	FRB 11.5/100	**2211 EK**	H 311	FRB 9.5/100
					–	–	–	**22211 EK**	H 311	FRB 9.5/100
								C 2211 K	H 311 E	FRB 9.5/100
	51	120	122	170	**1311 EK**	H 311	FRB 11/120	**2311 K**	H 2311	FRB 4/120
					21311 EK	H 311	FRB 11/120	**22311 EK**	H 2311	FRB 4/120

SNL plummer block housings
for bearings on adapter sleeve
d_a 55 – 65 mm

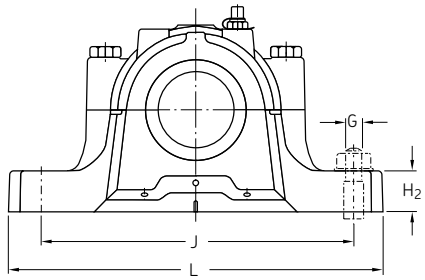


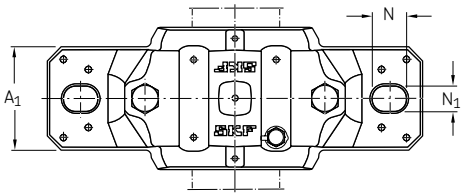
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
												Housing only	Seals	End cover
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G				
mm	mm										kg			
55	105	70	134	70	30	210	255	24	18	16	5.10	SNL 512-610	TSN 512 G	ASNH 512-610
												SNL 512-610	TSN 512 A	ASNH 512-610
												SNL 512-610	TSN 512 C	ASNH 512-610
												SNL 512-610	TSN 512 S	ASNH 512-610
												SNL 512-610	TSN 512 ND	ASNH 512-610
												SNL 212 RU	TSN 512 U	ASNH 515-612 R
	115	80	154	80	30	230	280	24	18	16	7.00	SNL 515-612	TSN 612 G	ASNH 515-612
												SNL 515-612	TSN 612 A	ASNH 515-612
												SNL 515-612	TSN 612 C	ASNH 515-612
												SNL 515-612	TSN 612 S	ASNH 515-612
												SNL 515-612	TSN 612 ND	ASNH 515-612
												SNL 515-612 RU	TSN 612 U	ASNH 515-612 R
60	110	80	149	80	30	230	275	24	18	16	6.50	SNL 513-611	TSN 513 G	ASNH 513-611
												SNL 513-611	TSN 513 A	ASNH 513-611
												SNL 513-611	TSN 513 C	ASNH 513-611
												SNL 513-611	TSN 513 S	ASNH 513-611
												SNL 513-611	TSN 513 ND	ASNH 513-611
												SNL 213 RU	TSN 513 U	ASNH 513-611 R
	120	90	175	95	32	260	315	28	22	20	9.50	SNL 516-613	TSN 613 G	ASNH 516-613
												SNL 516-613	TSN 613 A	ASNH 516-613
												SNL 516-613	TSN 613 C	ASNH 516-613
												SNL 516-613	TSN 613 S	ASNH 516-613
												SNL 516-613	TSN 613 ND	ASNH 516-613
												SNL 516-613 RU	TSN 613 U	ASNH 516-613 R
65	115	80	155	80	30	230	280	24	18	16	7.00	SNL 515-612	TSN 515 G	ASNH 515-612
												SNL 515-612	TSN 515 A	ASNH 515-612
												SNL 515-612	TSN 515 C	ASNH 515-612
												SNL 515-612	TSN 515 S	ASNH 515-612
												SNL 515-612	TSN 515 ND	ASNH 515-612
												SNL 215 RU	TSN 515 U	ASNH 518-615 R
	140	100	193	100	35	290	345	28	22	20	12.5	SNL 518-615	TSN 615 G	ASNH 518-615
												SNL 518-615	TSN 615 A	ASNH 518-615
												SNL 518-615	TSN 615 C	ASNH 518-615
												SNL 518-615	TSN 615 S	ASNH 518-615
												SNL 518-615	TSN 615 ND	ASNH 518-615
												SNL 518-615 RU	TSN 615 U	ASNH 518-615 R

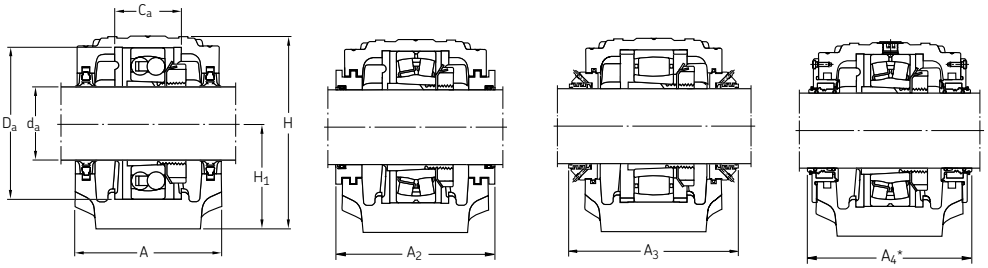
* For A_4 dimension see Table 4, page 466.





Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Self-aligning ball bearing Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
55	48	110	117	175	**1212 EK** **–**	H 212 –	FRB 13/110 –	**2212 EK** **22212 EK** **C 2212 K**	H 312 H 312 H 312 E	FRB 10/110 FRB 10/110 FRB 10/110
	56	130	127	175	**1312 EK** **21312 EK**	H 312 H 312	FRB 12.5/130 FRB 12.5/130	**2312 K** **22312 EK** **–**	H 2312 H 2312 –	FRB 5/130 FRB 5/130 –
60	51	120	122	180	**1213 EK** **–**	H 213 –	FRB 14/120 –	**2213 EK** **22213 CCK/W33** **C 2213 K**	H 313 H 313 H 313 E	FRB 10/120 FRB 10/120 FRB 10/120
	58	140	138	180	**1313 EK** **21313 EK**	H 313 H 313	FRB 12.5/140 FRB 12.5/140	**2313 K** **22313 EK** **–**	H 2313 H 2313 –	FRB 5/140 FRB 5/140 –
65	56	130	127	175	**1215 K** **–**	H 215 –	FRB 15.5/130 –	**2215 EK** **22215 EK** **C 2215 K**	H 315 H 315 H 315 E	FRB 12.5/130 FRB 12.5/130 FRB 12.5/130
	65	160	158	200	**1315 K** **21315 EK**	H 315 H 315	FRB 14/160 FRB 14/160	**2315 K** **22315 EK** **C 2315 K**	H 2315 H 2315 H 2315	FRB 5/160 FRB 5/160 FRB 5/160

SNL plummer block housings
for bearings on adapter sleeve
d_a 70 – 85mm

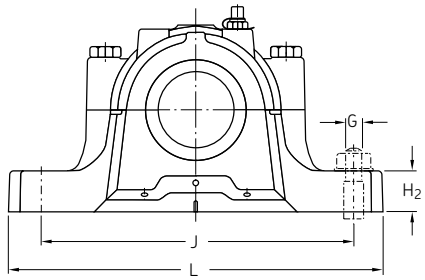


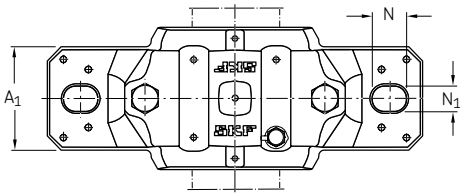
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations		
												Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
70	120	90	177	95	32	260	315	28	22	20	9.50	SNL 516-613	TSN 516 G	ASNH 516-613
												SNL 516-613	TSN 516 A	ASNH 516-613
												SNL 516-613	TSN 516 C	ASNH 516-613
												SNL 516-613	TSN 516 S	ASNH 516-613
												SNL 516-613	TSN 516 ND	ASNH 516-613
												SNL 216 RU	TSN 516 U	ASNH 216 R
	145	100	210	112	35	290	345	28	22	20	13.7	SNL 519-616	TSN 616 G	ASNH 519-616
												SNL 519-616	TSN 616 A	ASNH 519-616
												SNL 519-616	TSN 616 C	ASNH 519-616
												SNL 519-616	TSN 616 S	ASNH 519-616
												SNL 519-616	TSN 616 ND	ASNH 519-616
												SNL 519-616 RU	TSN 616 U	ASNH 519-616 R
75	125	90	183	95	32	260	320	28	22	20	10.0	SNL 517	TSN 517 G	ASNH 517
												SNL 517	TSN 517 A	ASNH 517
												SNL 517	TSN 517 C	ASNH 517
												SNL 517	TSN 517 S	ASNH 517
												SNL 517	TSN 517 ND	ASNH 517
												SNL 217 RU	TSN 517 U	ASNH 217 R
	160	110	215	112	40	320	380	32	26	24	17.6	SNL 520-617	TSN 617 G	ASNH 520-617
												SNL 520-617	TSN 617 A	ASNH 520-617
												SNL 520-617	TSN 617 C	ASNH 520-617
												SNL 520-617	TSN 617 S	ASNH 520-617
												SNL 520-617	TSN 617 ND	ASNH 520-617
												SNL 520-617 RU	TSN 617 U	ASNH 520-617 R
80	140	100	194	100	35	290	345	28	22	20	12.5	SNL 518-615	TSN 518 G	ASNH 518-615
												SNL 518-615	TSN 518 A	ASNH 518-615
												SNL 518-615	TSN 518 C	ASNH 518-615
												SNL 518-615	TSN 518 S	ASNH 518-615
												SNL 518-615	TSN 518 ND	ASNH 518-615
												SNL 218 RU	TSN 518 U	ASNH 218 R
85	145	100	212	112	35	290	345	28	22	20	13.7	SNL 519-616	TSN 519 G	ASNH 519-616
												SNL 519-616	TSN 519 A	ASNH 519-616
												SNL 519-616	TSN 519 C	ASNH 519-616
												SNL 519-616	TSN 519 S	ASNH 519-616
												SNL 519-616	TSN 519 ND	ASNH 519-616
												SNL 519-616 RU	TSN 519 U	ASNH 519-616 R
	175	120	239	125	45	350	410	32	26	24	22.0	SNL 522-619	TSN 619 G	ASNH 522-619
												SNL 522-619	TSN 619 A	ASNH 522-619
												SNL 522-619	TSN 619 C	ASNH 522-619
												SNL 522-619	TSN 619 S	ASNH 522-619
												SNL 522-619	TSN 619 ND	ASNH 522-619
												SNL 522-619 RU	TSN 619 U	ASNH 522-619 R

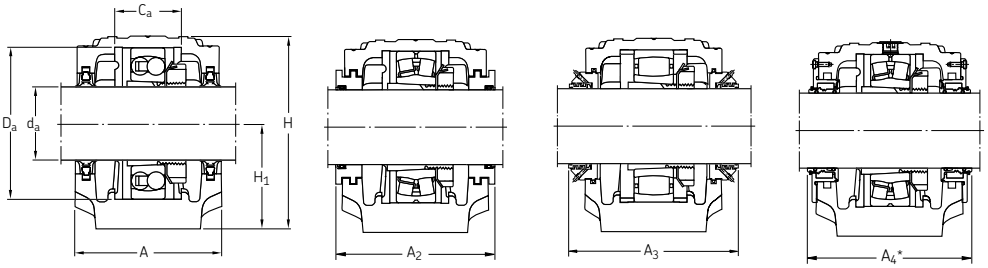
* For A_4 dimension see Table 4, page 466.





Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Self-aligning ball bearing Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
70	58	140	138	205	**1216 K** **–**	H 216 –	FRB 16/140 –	**2216 EK** **22216 EK** **C 2216 K**	H 316 H 316 H 316 E	FRB 12.5/140 FRB 12.5/140 FRB 12.5/140
	68	170	163	205	**1316 K** **21316 EK**	H 316 H 316	FRB 14.5/170 FRB 14.5/170	**2316 K** **22316 EK** **C 2316 K**	H 2316 H 2316 H 2316	FRB 5/170 FRB 5/170 FRB 5/170
75	61	150	143	210	**1217 K** **–**	H 217 –	FRB 16.5/150 –	**2217 K** **22217 EK** **C 2217 K**	H 317 H 317 H 317 E	FRB 12.5/150 FRB 12.5/150 FRB 12.5/150
	70	180	178	220	**1317 K** **21317 EK**	H 317 H 317	FRB 14.5/180 FRB 14.5/180	**2317 K** **22317 EK** **C 2317 K**	H 2317 H 2317 H 2317	FRB 5/180 FRB 5/180 FRB 5/180
80	65	160	158	225	**1218 K** **22218 EK**	H 218 H 318	FRB 17.5/160 FRB 12.5/160	**2218 K** **23218 CCK/W33** **C 2218 K**	H 318 H 2318 H 318 E	FRB 12.5/160 FRB 6.25/160 FRB 12.5/160
85	68	170	163	220	**1219 K** **–**	H 219 –	FRB 18/170 –	**2219 K** **22219 EK** **–**	H 319 H 319 –	FRB 12.5/170 FRB 12.5/170 –
	80	200	191	235	**1319 K** **21319 EK**	H 319 H 319	FRB 17.5/200 FRB 17.5/200	**2319 K** **22319 EK**	H 2319 H 2319	FRB 6.5/200 FRB 6.5/200

SNL plummer block housings
for bearings on adapter sleeve
d_a 90 – 135 mm

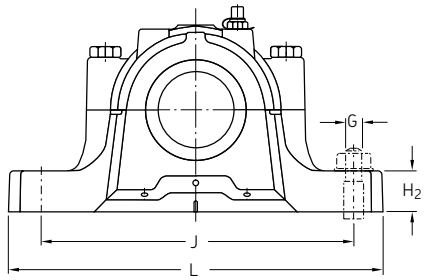


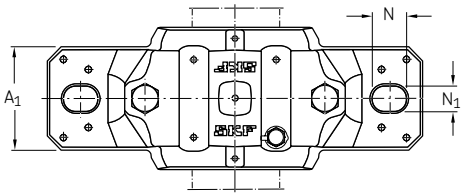
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations		
												Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
90	160	110	218	112	40	320	380	32	26	24	17.6	SNL 520-617	TSN 520 G	ASNH 520-617
												SNL 520-617	TSN 520 A	ASNH 520-617
												SNL 520-617	TSN 520 C	ASNH 520-617
												SNL 520-617	TSN 520 S	ASNH 520-617
												SNL 520-617	TSN 520 ND	ASNH 520-617
												SNL 520-617 RU	TSN 520 U	ASNH 520-617 R
	185	120	271	140	45	350	410	32	26	24	26.2	SNL 524-620	TSN 620 G	ASNH 524-620
												SNL 524-620	TSN 620 A	ASNH 524-620
												SNL 524-620	TSN 620 C	ASNH 524-620
												SNL 524-620	TSN 620 S	ASNH 524-620
												SNL 524-620	TSN 620 ND	ASNH 524-620
												SNL 524-620 RU	TSN 620 U	ASNH 524-620 R
100	175	120	242	125	45	350	410	32	26	24	22.0	SNL 522-619	TSN 522 G	ASNH 522-619
												SNL 522-619	TSN 522 A	ASNH 522-619
												SNL 522-619	TSN 522 C	ASNH 522-619
												SNL 522-619	TSN 522 S	ASNH 522-619
												SNL 522-619	TSN 522 ND	ASNH 522-619
												SNL 522-619 RU	TSN 522 U	ASNH 522-619 R
110	185	120	271	140	45	350	410	32	26	24	26.2	SNL 524-620	TSN 524 G	ASNH 524-620
												SNL 524-620	TSN 524 A	ASNH 524-620
												SNL 524-620	TSN 524 C	ASNH 524-620
												SNL 524-620	TSN 524 S	ASNH 524-620
												SNL 524-620	TSN 524 ND	ASNH 524-620
												SNL 524-620 RU	TSN 524 U	ASNH 524-620 R
115	190	130	290	150	50	380	445	35	28	24	33.0	SNL 526	TSN 526 G	ASNH 526
												SNL 526	TSN 526 A	ASNH 526
												SNL 526	TSN 526 C	ASNH 526
												SNL 526	TSN 526 S	ASNH 526
												SNL 526	TSN 526 ND	ASNH 526
												SNL 526 RU	TSN 526 U	ASNH 526 R
125	205	150	302	150	50	420	500	42	35	30	40.0	SNL 528	TSN 528 G	ASNH 528
												SNL 528	TSN 528 A	ASNH 528
												SNL 528	TSN 528 C	ASNH 528
												SNL 528	TSN 528 S	ASNH 528
												SNL 528	TSN 528 ND	ASNH 528
												SNL 528 RU	TSN 528 U	ASNH 528 R
135	220	160	323	160	60	450	530	42	35	30	49.0	SNL 530	TSN 530 G	ASNH 530
												SNL 530	TSN 530 A	ASNH 530
												SNL 530	TSN 530 C	ASNH 530
												SNL 530	TSN 530 S	ASNH 530
												SNL 530	TSN 530 ND	ASNH 530
												SNL 530 RU	TSN 530 U	ASNH 530 R

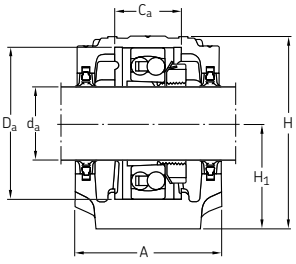
* For A_4 dimension see Table 4, page 466.



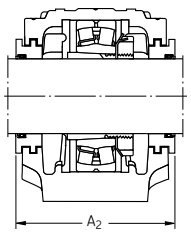


Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
90	70	180	178	235	**1220 K** **22220 EK**	H 220 H 320	FRB 18/180 FRB 12/180	**2220 K** **23220 CCK/W33** **C 2220 K**	H 320 H 2320 H 320 E	FRB 12/180 FRB 4.85/180 FRB 12/180
	86	215	199	240	**1320 K** **21320 EK**	H 320 H 320	FRB 19.5/215 FRB 19.5/215	**2320 K** **22320 EK** **C 2320 K**	H 2320 H 2320 H 2320	FRB 6.5/215 FRB 6.5/215 FRB 6.5/215
100	80	200	191	250	**1222 K** **22222 EK**	H 222 H 322	FRB 21/200 FRB 13.5/200	**2222 K** **23222 CCK/W33** **C 2222 K**	H 322 H 2322 H 322 E	FRB 13.5/200 FRB 5.1/200 FRB 13.5/200
110	86	215	199	260	**1224 K** **22224 EK**	H 3124 H 3124	FRB 22/215 FRB 14/215	**–** **23224 CCK/W33** **C 3224 K**	– H 2324 H 2324 L	– FRB 5/215 FRB 5/215
115	90	230	208	265	**–** **22226 EK**	– H 3126	– FRB 13/230	**–** **23226 CCK/W33** **C 2226 K**	– H 2326 H 3126 L	– FRB 5/230 FRB 13/230
125	98	250	223	285	**22228 CCK/W33**	H 3128	FRB 15/250	**23228 CCK/W33** **C 2228 K**	H 2328 H 3128 L	FRB 5/250 FRB 15/250
135	106	270	241	295	**22230 CCK/W33**	H 3130	FRB 16.5/270	**23230 CCK/W33** **C 2230 K**	H 2330 H 3130 L	FRB 5/270 FRB 16.5/270

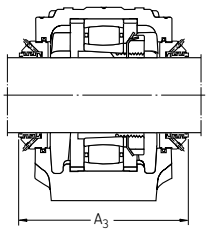
SNL plummer block housings
for bearings on adapter sleeve
d_a 140 mm



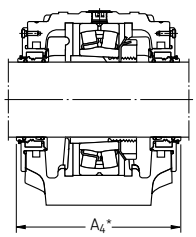
Double-lip seals
G-design



Labyrinth seals
S-design



Taconite seals
ND-design

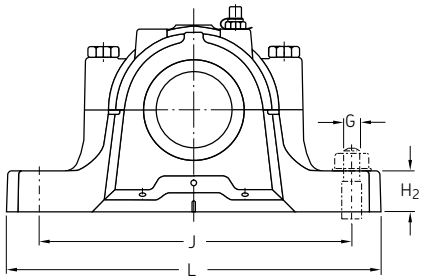


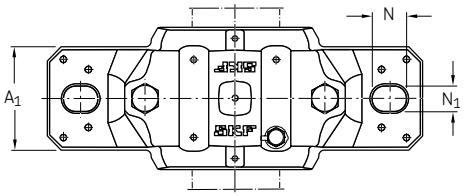
Oil seals
U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
140	235	160	344	170	60	470	550	42	35	30	55.0	SNL 532	TSN 532 G	ASNH 532
												SNL 532	TSN 532 A	ASNH 532
												SNL 532	TSN 532 C	ASNH 532
												SNL 532	TSN 532 S	ASNH 532
												SNL 532	TSN 532 ND	ASNH 532
												SNL 532 RU	TSN 532 U	ASNH 532 R

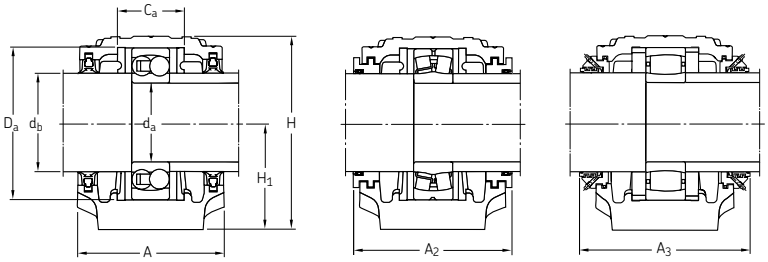
* For A_4 dimension see Table 4, page 466.





Shaft	Bearing seating		Width across seal		Appropriate bearings and associated components					
					Spherical roller bearing	Adapter sleeve	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings 2 per housing
d_a	C_a	D_a	A_2	A_3						
mm	mm		mm		–					
140	114	290	254	315	**22232 CCK/W33**	H 3132	FRB 17/290	**23232 CCK/W33** **C 3232 K**	H 2332 H 2332 L	FRB 5/290 FRB 5/290

SNL plummer block housings
for bearings with cylindrical bore
d_a 25 – 40 mm

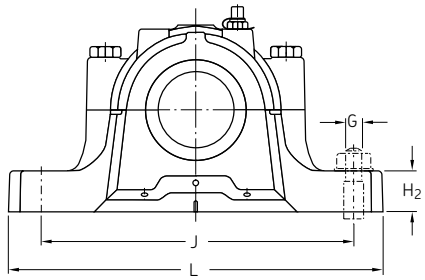


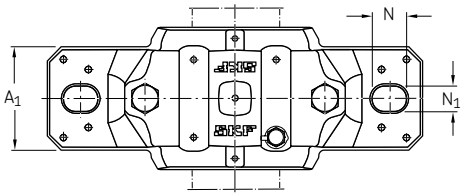
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
25	67	46	74	40	19	130	165	20	15	12	1.40	SNL 205 SNL 505 SNL 205 SNL 205	TSN 205 G 2 FS 170 TSN 205 S TSN 205 ND	ASNH 506-605 ASNH 505 ASNH 506-605 ASNH 506-605
	77	52	89	50	22	150	185	20	15	12	1.90	SNL 206-305 SNL 206-305 SNL 206-305 SNL 206-305	TSN 305 G TSN 305 A TSN 305 S TSN 305 ND	ASNH 507-605 ASNH 507-605 ASNH 507-605 ASNH 507-605
30	77	52	89	50	22	150	185	20	15	12	1.90	SNL 206-305 SNL 206-305 SNL 506-605 SNL 206-305 SNL 206-305	TSN 206 G TSN 206 A 2 FS 170 TSN 206 S TSN 206 ND	ASNH 507-606 ASNH 507-606 ASNH 506-605 ASNH 507-606 ASNH 507-606
	82	52	93	50	22	150	185	20	15	12	2.20	SNL 507-606 SNL 507-606 SNL 507-606 SNL 507-606	TSN 306 G TSN 306 A TSN 306 S TSN 306 ND	ASNH 507-606 ASNH 507-606 ASNH 507-606 ASNH 507-606
35	82	52	93	50	22	150	185	20	15	12	2.10	SNL 207 SNL 207 SNL 507-606 SNL 207 SNL 207	TSN 207 G TSN 207 A 4 FS 170 TSN 207 S TSN 207 ND	ASNH 509 ASNH 509 ASNH 507-606 ASNH 509 ASNH 509
	85	60	108	60	25	170	205	20	15	12	2.90	SNL 208-307 SNL 208-307 SNL 208-307 SNL 208-307	TSN 307 G TSN 307 A TSN 307 S TSN 307 ND	ASNH 510-608 ASNH 510-608 ASNH 510-608 ASNH 510-608
40	85	60	108	60	25	170	205	20	15	12	2.75	SNL 208-307 SNL 208-307 SNL 508-607 SNL 208-307 SNL 208-307	TSN 208 G TSN 208 A 4 FS 170 TSN 208 S TSN 208 ND	ASNH 510-608 ASNH 510-608 ASNH 508-607 ASNH 510-608 ASNH 510-608
	90	60	113	60	25	170	205	20	15	12	3.20	SNL 510-608 SNL 510-608 SNL 510-608 SNL 510-608	TSN 308 G TSN 308 A TSN 308 S TSN 308 ND	ASNH 510-608 ASNH 510-608 ASNH 510-608 ASNH 510-608

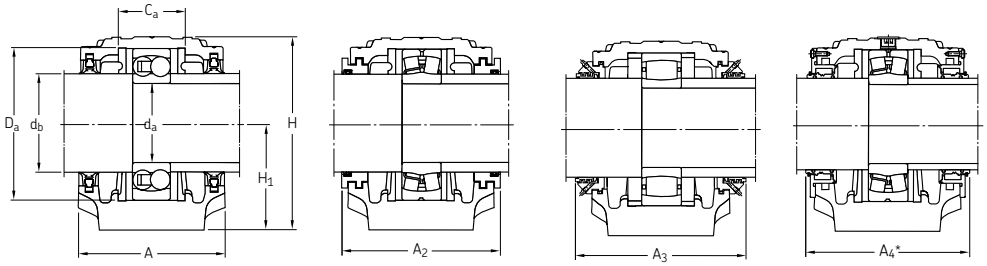
For seal details see pages 500 - 502.





Shaft		Bearing seating		Width across seal		Appropriate bearings and locating rings			
						Self-aligning ball bearing Spherical roller bearing	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Locating rings 2 per housing
d_a	d_b	C_a	D_a	A_2	A_3				
mm		mm		mm		–			
25	30	25	52	90	140	**1205 E** **–**	FRB 5/52 –	**2205 E** **22205 CC/W33** **C 2205**	FRB 3.5/52 FRB 3.5/52 FRB 3.5/52
	30	32	62	89	150	**1305 E** **21305 CC**	FRB 7.5/62 FRB 7.5/62	**2305** **–** **–**	FRB 4/62 – –
30	35	32	62	89	150	**1206 E** **–**	FRB 8/62 –	**2206 E** **22206 CC/W33** **C 2206**	FRB 6/62 FRB 6/6 FRB 6/62
	35	34	72	94	155	**1306 E** **21306 CC**	FRB 7.5/72 FRB 7.5/72	**2306** **–** **–**	FRB 3.5/72 – –
35	45	34	72	96	155	**1207 E** **–**	FRB 8.5/72 –	**2207 E** **22207 CC/W33** **C 2207**	FRB 5.5/72 FRB 5.5/72 FRB 5.5/72
	45	39	80	99	164	**1307 E** **21307 CC**	FRB 9/80 FRB 9/80	**2307 E** **–** **–**	FRB 4/80 – –
40	50	39	80	99	160	**1208 E** **–**	FRB 10.5/80 –	**2208 E** **22208 E** **C 2208**	FRB 8/80 FRB 8/80 FRB 8/80
	50	41	90	102	167	**1308 E** **21308 E**	FRB 9/90 FRB 9/90	**2308 E** **22308 CC/W33** **–**	FRB 4/90 FRB 4/90 –

SNL plummer block housings
for bearings with cylindrical bore
d_a 45 – 60 mm

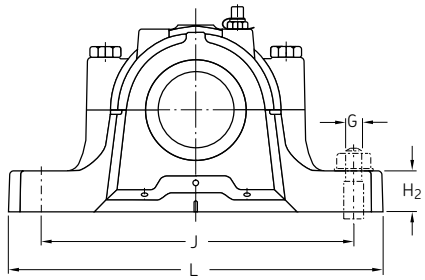


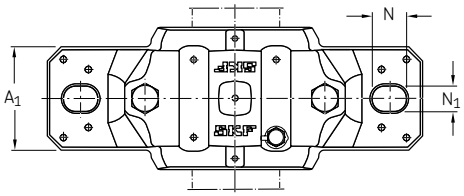
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
45	85	60	109	60	25	170	205	20	15	12	2.75	SNL 209	TSN 209 G	ASNH 511-609
												SNL 209	TSN 209 A	ASNH 511-609
												SNL 509	4 FS 170	ASNH 509
												SNL 209	TSN 209 S	ASNH 511-609
												SNL 209	TSN 209 ND	ASNH 511-609
	95	70	128	70	28	210	255	24	18	16	4.40	SNL 511-609	TSN 309 G	ASNH 511-609
												SNL 511-609	TSN 309 A	ASNH 511-609
												SNL 511-609	TSN 309 S	ASNH 511-609
												SNL 511-609	TSN 309 ND	ASNH 511-609
50	90	60	113	60	25	170	205	20	15	12	3.00	SNL 210	TSN 210 G	ASNH 512-610
												SNL 210	TSN 210 A	ASNH 512-610
												SNL 510-608	4 FS 170	ASNH 510-608
												SNL 210	TSN 210 S	ASNH 512-610
												SNL 210	TSN 210 ND	ASNH 512-610
	105	70	134	70	30	210	255	24	18	16	5.10	SNL 512-610	TSN 310 G	ASNH 512-610
												SNL 512-610	TSN 310 A	ASNH 512-610
												SNL 512-610	TSN 310 S	ASNH 512-610
												SNL 512-610	TSN 310 ND	ASNH 512-610
55	95	70	128	70	28	210	255	24	18	16	4.20	SNL 211	TSN 211 G	ASNH 513-611
												SNL 211	TSN 211 A	ASNH 513-611
												SNL 511-609	4 FS 170	ASNH 511-609
												SNL 211	TSN 211 S	ASNH 513-611
												SNL 211	TSN 211 ND	ASNH 513-611
	110	80	149	80	30	230	275	24	18	16	6.50	SNL 513-611	TSN 311 G	ASNH 513-611
												SNL 513-611	TSN 311 A	ASNH 513-611
												SNL 513-611	TSN 311 S	ASNH 513-611
												SNL 513-611	TSN 311 ND	ASNH 513-611
60	105	70	134	70	30	210	255	24	18	16	4.75	SNL 212	TSN 212 G	ASNH 515-612
												SNL 212	TSN 212 A	ASNH 515-612
												SNL 512-610	4 FS 170	ASNH 512-610
												SNL 212	TSN 212 S	ASNH 515-612
												SNL 212	TSN 212 ND	ASNH 515-612
	115	80	155	80	30	230	280	24	18	16	7.00	SNL 515-612	TSN 312 G	ASNH 515-612
												SNL 515-612	TSN 312 A	ASNH 515-612
												SNL 515-612	TSN 312 S	ASNH 515-612
												SNL 515-612	TSN 312 ND	ASNH 515-612
												SNL 215 RU	TSN 312 U	ASNH 518-615 R

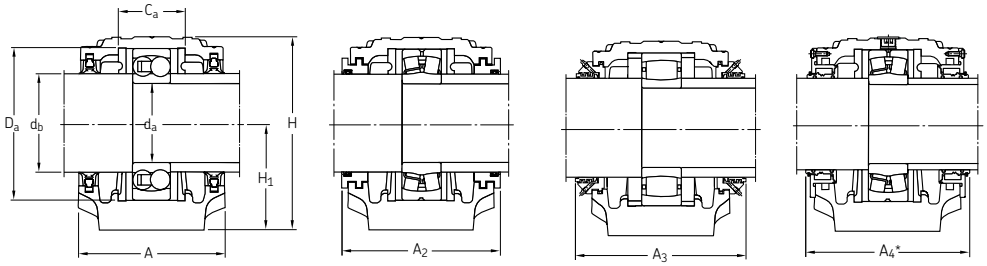
* For A_4 dimension see Table 4, page 466.
For seal details see pages 500 - 502.





Shaft		Bearing seating		Width across seal		Appropriate bearings and locating rings			
						Self-aligning ball bearing Spherical roller bearing	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Locating rings 2 per housing
d_a	d_b	C_a	D_a	A_2	A_3				
mm		mm		mm		–			
45	55	30	85	97	160	**1209 E** **–**	FRB 5.5/85 –	**2209 E** **22209 CC/W33** **C 2209**	FRB 3.5/85 FRB 3.5/85 FRB 3.5/85
	55	44	100	107	172	**1309 E** **21309 E**	FRB 9.5/100 FRB 9.5/100	**2309 E** **22309 CC/W33** **–**	FRB 4/100 FRB 4/100 –
50	60	41	90	102	165	**1210 E** **–**	FRB 10.5/90 –	**2210 E** **22210 CC/W33** **C 2210**	FRB 9/90 FRB 9/90 FRB 9/90
	60	48	110	117	187	**1310 E** **21310 E**	FRB 10.5/110 FRB 10.5/110	**2310** **22310 CC/W33** **–**	FRB 4/110 FRB 4/110 –
55	65	44	100	107	170	**1211 E** **–**	FRB 11.5/100 –	**2211 E** **22211 E** **C 2211**	FRB 9.5/100 FRB 9.5/100 FRB 9.5/100
	65	51	120	122	192	**1311 E** **21311 E**	FRB 11/120 FRB 11/120	**2311** **22311 E** **–**	FRB 4/120 FRB 4/120 –
60	70	48	110	117	180	**1212 E** **–**	FRB 13/110 –	**2212 E** **22212 E** **C 2212**	FRB 10/110 FRB 10/110 FRB 10/110
	70	56	130	127	197	**1312** **21312 E**	FRB 12.5/130 FRB 12.5/130	**2312** **22312 E** **–**	FRB 5/130 FRB 5/130 –

SNL plummer block housings
for bearings with cylindrical bore
d_a 65 – 80 mm

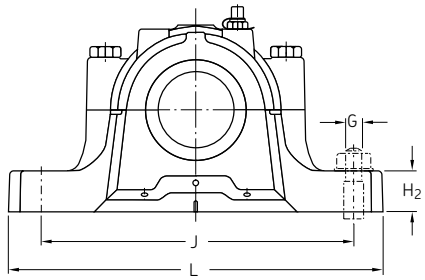


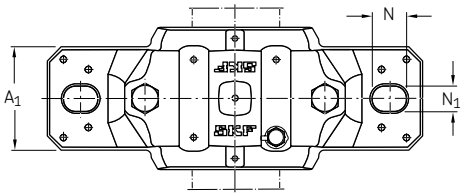
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
65	110	80	149	80	30	230	275	24	18	16	6.10	SNL 213	TSN 213 G	ASNH 516-613
												SNL 213	TSN 213 A	ASNH 516-613
												SNL 513-611	4 FS 170	ASNH 513-611
												SNL 213	TSN 213 S	ASNH 516-613
												SNL 213	TSN 213 ND	ASNH 516-613
	120	90	177	95	32	260	315	28	22	20	9.50	SNL 516-613	TSN 313 G	ASNH 516-613
												SNL 516-613	TSN 313 A	ASNH 516-613
												SNL 516-613	TSN 313 S	ASNH 516-613
												SNL 516-613	TSN 313 ND	ASNH 516-613
												SNL 216 RU	TSN 313 U	ASNH 216 R
70	125	90	183	95	32	260	320	28	22	20	10.0	SNL 517	TSN 314 G	ASNH 517
												SNL 517	TSN 314 A	ASNH 517
												SNL 517	TSN 314 S	ASNH 517
												SNL 517	TSN 314 ND	ASNH 517
												SNL 217 RU	TSN 314 U	ASNH 217 R
75	115	80	155	80	30	230	280	24	18	16	6.60	SNL 215	TSN 215 G	ASNH 518-615
												SNL 215	TSN 215 A	ASNH 518-615
												SNL 515-612	4 FS 170	ASNH 515-612
												SNL 215	TSN 215 S	ASNH 518-615
												SNL 215	TSN 215 ND	ASNH 518-615
	140	100	194	100	35	290	345	28	22	20	12.5	SNL 518-615	TSN 315 G	ASNH 518-615
												SNL 518-615	TSN 315 A	ASNH 518-615
												SNL 518-615	TSN 315 S	ASNH 518-615
												SNL 518-615	TSN 315 ND	ASNH 518-615
												SNL 218 RU	TSN 315 U	ASNH 218 R
80	120	90	177	95	32	260	315	28	22	20	9.00	SNL 216	TSN 216 G	ASNH 216
												SNL 216	TSN 216 A	ASNH 216
												SNL 516-613	4 FS 170	ASNH 516-613
												SNL 216	TSN 216 S	ASNH 216
												SNL 216	TSN 216 ND	ASNH 216
	145	100	212	112	35	290	345	28	22	20	13.7	SNL 519-616	TSN 316 G	ASNH 519-616
												SNL 519-616	TSN 316 A	ASNH 519-616
												SNL 519-616	TSN 316 S	ASNH 519-616
												SNL 519-616	TSN 316 ND	ASNH 519-616
												SNL 519-616 RU	TSN 316 U	ASNH 519-616 R

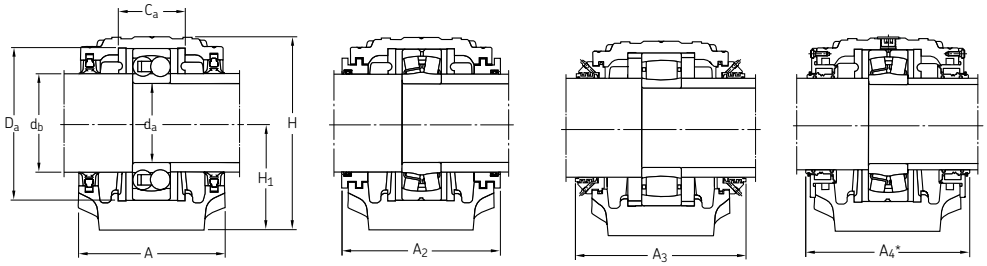
* For A_4 dimension see Table 4, page 466.
For seal details see pages 500 - 502.





Shaft		Bearing seating		Width across seal		Appropriate bearings and locating rings			
						Self-aligning ball bearing Spherical roller bearing	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Locating rings 2 per housing
d_a	d_b	C_a	D_a	A_2	A_3				
mm		mm		mm		–			
65	75	51	120	128	190	**1213 E** **–**	FRB 14/120 –	**2213 E** **22213 CC/W33** **C 2213**	FRB 10/120 FRB 10/120 FRB 10/120
	75	58	140	138	200	**1313 E** **21313 E**	FRB 12.5/140 FRB 12.5/140	**2313** **22313 E** **–**	FRB 5/140 FRB 5/140 –
70	80	61	150	143	205	**1314** **21314 E**	FRB 13/150 FRB 13/150	**2314** **22314 E** **C 2314**	FRB 5/150 FRB 5/150 FRB 5/150
75	85	56	130	133	195	**1215** **–**	FRB 15.5/130 –	**2215 E** **22215 E** **C 2215**	FRB 12.5/130 FRB 12.5/130 FRB 12.5/130
	85	65	160	158	220	**1315** **21315 E**	FRB 14/160 FRB 14/160	**2315** **22315 E** **C 2315**	FRB 5/160 FRB 5/160 FRB 5/160
80	90	58	140	138	200	**1216** **–**	FRB 16/140 –	**2216 E** **22216 E** **C 2216**	FRB 12.5/140 FRB 12.5/140 FRB 12.5/140
	90	68	170	163	205	**1316** **21316 E**	FRB 14.5/170 FRB 14.5/170	**2316** **22316 E** **C 2316**	FRB 5/170 FRB 5/170 FRB 5/170

SNL plummer block housings for bearings with cylindrical bore d_a 85 – 130 mm



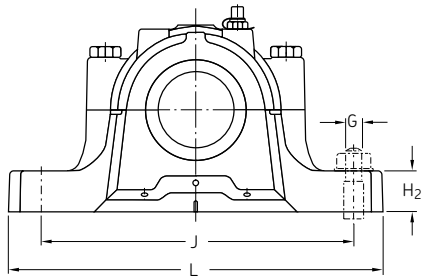
Double-lip seals G-design | Labyrinth seals S-design | Taconite seals ND-design | Oil seals U-design

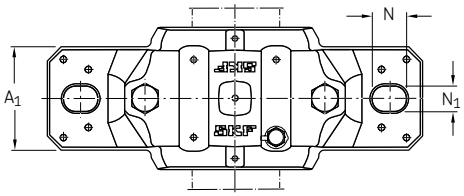
Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
85	125	90	183	95	32	260	320	28	22	20	9.50	SNL 217	TSN 217 G	ASNH 217
												SNL 217	TSN 217 A	ASNH 217
												SNL 517	4 FS 170	ASNH 517
												SNL 217	TSN 217 S	ASNH 217
												SNL 217	TSN 217 ND	ASNH 217
	160	110	218	112	40	320	380	32	26	24	17.6	SNL 520-617	TSN 317 G	ASNH 520-617
												SNL 520-617	TSN 317 A	ASNH 520-617
												SNL 520-617	TSN 317 S	ASNH 520-617
												SNL 520-617	TSN 317 ND	ASNH 520-617
												SNL 520-617 RU	TSN 317 U	ASNH 520-617 R
90	140	100	194	100	35	290	345	28	22	20	11.8	SNL 218	TSN 218 G	ASNH 218
												SNL 218	TSN 218 A	ASNH 218
												SNL 518-615	4 FS 170	ASNH 518-615
												SNL 218	TSN 218 S	ASNH 218
												SNL 218	TSN 218 ND	ASNH 218
95	175	120	242	125	45	350	410	32	26	24	22.0	SNL 522-619	TSN 319 A	ASNH 522-619
												SNL 522-619	TSN 319 S	ASNH 522-619
												SNL 522-619	TSN 319 ND	ASNH 522-619
												SNL 522-619 RU	TSN 319 U	ASNH 522-619 R
100	160	110	218	112	40	320	380	32	26	24	17.6	SNL 520-617	TSN 220 G	ASNH 520-617
												SNL 520-617	TSN 220 A	ASNH 520-617
												SNL 520-617	TSN 220 S	ASNH 520-617
												SNL 520-617	TSN 220 ND	ASNH 520-617
	185	120	271	140	45	350	410	32	26	24	26.2	SNL 524-620	TSN 320 A	ASNH 524-620
												SNL 524-620	TSN 320 S	ASNH 524-620
												SNL 524-620	TSN 320 ND	ASNH 524-620
												SNL 524-620 RU	TSN 320 U	ASNH 524-620 R
110	175	120	242	125	45	350	410	32	26	24	22.0	SNL 522-619	TSN 222 G	ASNH 522-619
												SNL 522-619	TSN 222 A	ASNH 522-619
												SNL 522-619	TSN 222 S	ASNH 522-619
												SNL 522-619	TSN 222 ND	ASNH 522-619
120	185	120	271	140	45	350	410	32	26	24	26.2	SNL 524-620	TSN 224 G	ASNH 524-620
												SNL 524-620	TSN 224 A	ASNH 524-620
												SNL 524-620	TSN 224 S	ASNH 524-620
												SNL 524-620	TSN 224 ND	ASNH 524-620
130	190	130	290	150	50	380	445	35	28	24	33.0	SNL 526	TSN 226 G	ASNH 526
												SNL 526	TSN 226 A	ASNH 526
												SNL 526	TSN 226 S	ASNH 526
												SNL 526	TSN 226 ND	ASNH 526

* For A_4 dimension see Table 4, page 466.

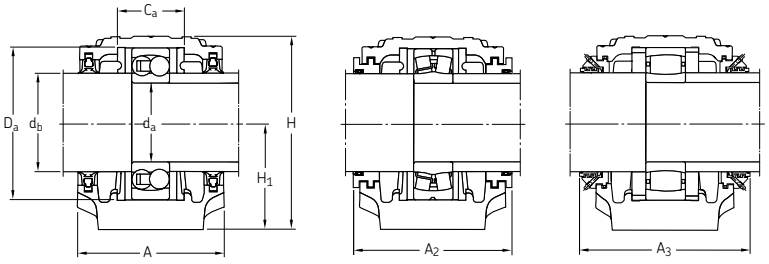
For seal details see pages 500 - 502.





Shaft		Bearing seating		Width across seal		Appropriate bearings and locating rings			
						Self-aligning ball bearing Spherical roller bearing	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Locating rings 2 per housing
d_a	d_b	C_a	D_a	A_2	A_3				
mm		mm		mm		–			
85	95	61	150	143	205	**1217** **–**	FRB 16.5/150 –	**2217** **22217 E** **C 2217**	FRB 12.5/150 FRB 12.5/150 FRB 12.5/150
	95	70	180	178	220	**1317** **21317 E**	FRB 14.5/180 FRB 14.5/180	**2317** **22317 E** **C 2317**	FRB 5/180 FRB 5/180 FRB 5/180
90	100	65	160	158	220	**1218** **22218 E**	FRB 17.5/160 FRB 12.5/160	**2218** **23218 CC/W33** **C 2218**	FRB 12.5/160 FRB 6.25/160 FRB 12.5/160
95	110	80	200	191	235	**1319** **21319 E**	FRB 17.5/200 FRB 17.5/200	**2319** **22319 E** **–**	FRB 6.5/200 FRB 6.5/200 –
100	115	70	180	178	240	**1220** **22220 E**	FRB 18/180 FRB 12/180	**2220** **23220 CC/W33** **C 2220**	FRB 12/180 FRB 4.85/180 FRB 12/180
	115	86	215	199	240	**1320** **21320 E**	FRB 19.5/215 FRB 19.5/215	**2320** **22320 E** **C 2320**	FRB 6.5/215 FRB 6.5/215 FRB 6.5/215
110	125	80	200	191	255	**1222** **22222 E**	FRB 21/200 FRB 13.5/200	**2222** **23222 CC/W33** **C 2222**	FRB 13.5/200 FRB 5.1/200 FRB 13.5/200
120	135	86	215	199	260	**1224** **22224 E**	FRB 22/215 FRB 14/215	**–** **23224 CC/W33** **C 3224**	– FRB 5/215 FRB 5/215
130	145	90	230	208	270	**1226** **22226 E**	FRB 22/230 FRB 13/230	**–** **23226 CC/W33** **C 2226**	– FRB 5/230 FRB 13/230

SNL plummer block housings
for bearings with cylindrical bore
d_a 140 – 160 mm



Double-lip seals
G-design

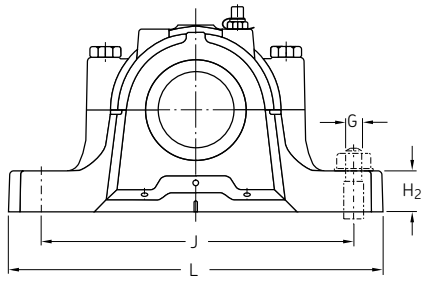
Labyrinth seals
S-design

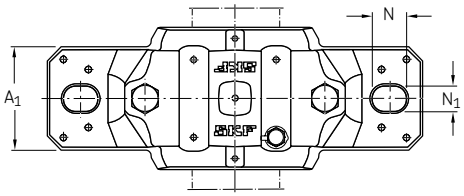
Taconite seals
ND-design

Note: These products are not sold as complete units. Each component must be ordered separately.

Shaft	Housing dimensions										Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	L	N	N_1	G		Housing only	Seals	End cover
mm	mm										kg			
140	205	150	302	150	50	420	500	42	35	30	40.0	SNL 528	TSN 228 G	ASNH 528
												SNL 528	TSN 228 A	ASNH 528
												SNL 528	TSN 228 S	ASNH 528
												SNL 528	TSN 228 ND	ASNH 528
150	220	160	323	160	60	450	530	42	35	30	49.0	SNL 530	TSN 230 G	ASNH 530
												SNL 530	TSN 230 A	ASNH 530
												SNL 530	TSN 230 S	ASNH 530
												SNL 530	TSN 230 ND	ASNH 530
160	235	160	344	170	60	470	550	42	35	30	55.0	SNL 532	TSN 232 G	ASNH 532
												SNL 532	TSN 232 A	ASNH 532
												SNL 532	TSN 232 S	ASNH 532
												SNL 532	TSN 232 ND	ASNH 532

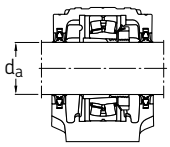
For seal details see pages 500 - 502.



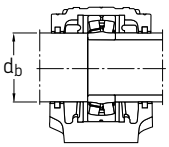


Shaft		Bearing seating		Width across seal		Appropriate bearings and locating rings			
						Self-aligning ball bearing Spherical roller bearing	Locating rings 2 per housing	Self-aligning ball bearing Spherical roller bearing CARB bearing	Locating rings 2 per housing
d_a	d_b	C_a	D_a	A_2	A_3				
mm		mm		mm		–			
140	155	98	250	223	290	**–** **22228 CC/W33**	– FRB 15/250	**–** **23228 CC/W33** **C 2228**	– FRB 5/250 FRB 15/250
150	165	106	270	241	305	**–** **22230 CC/W33**	– FRB 16.5/270 **C 2230**	**–** **23230 CC/W33** FRB 16.5/270	– FRB 5/270
160	175	114	290	254	320	**–** **22232 CC/W33**	– FRB 17/290	**–** **23232 CC/W33** **C 3232**	– FRB 5/290 FRB 5/290

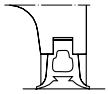
Sealing arrangements for
SNL plummer block housings
Size 505 – 510-608



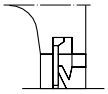
Housing series 5



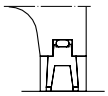
Housing series 2



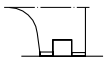
Design G
Split



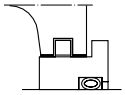
Design A
Unsplit



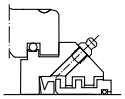
Design C
Split



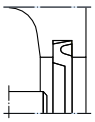
Design C
Felt Strips
Split



Design S
Unsplit

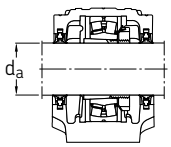


Design ND

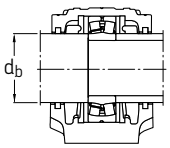


End Cover

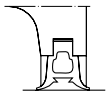
Housing Size	**Shaft dia.** d_a, d_b	**Seal sets** Design G 2 double-lip seals	Design A 2 V-ring seals	Loose V-ring	Design C 2 felt strips	Loose felt strips	Design S 2 labyrinth seals	Design ND	**End cover**
–	mm	–							–
505	20	TSN 505 G	TSN 505 A	CR 400200	TSN 505 C	–	2 x TSN 505 S	2 x TSN 505 ND	ASNH 505
	30	–	–	–	–	2 x FS 170	–	–	
205	20	TSN 605 G	TSN 605 A	CR 400200	TSN 605 C	–	2 x TSN 605 S	2 x TSN 605 ND	ASNH 506-605
	25	TSN 506 G	TSN 506 A	CR 400250	TSN 506 C	–	2 x TSN 506 S	2 x TSN 506 ND	
	30	TSN 205 G	–	–	–	–	2 x TSN 205 S	2 x TSN 205 ND	
	35	–	–	–	–	2 x FS 170	–	–	
506-605	20	TSN 605 G	TSN 605 A	CR 400200	TSN 605 C	–	2 x TSN 605 S	2 x TSN 605 ND	ASNH 506-605
	25	TSN 506 G	TSN 506 A	CR 400250	TSN 506 C	–	2 x TSN 506 S	2 x TSN 506 ND	
	30	TSN 305 G	TSN 305 A	–	–	–	2 x TSN 305 S	2 x TSN 305 ND	
	35	–	–	–	–	2 x FS 170	–	–	
206-305	25	TSN 606 G	TSN 606 A	CR 400250	TSN 606 C	–	2 x TSN 606 S	2 x TSN 606 ND	ASNH 507-606
	30	TSN 507 G	TSN 507 A	CR 400300	TSN 507 C	–	2 x TSN 507 S	2 x TSN 507 ND	
	35	TSN 206 G	TSN 206 A	CR 400350	–	–	2 x TSN 206 S	2 x TSN 206 ND	
	45	–	–	–	–	2 x FS 170	–	–	
507-606	25	TSN 606 G	TSN 606 A	CR 400250	TSN 606 C	–	2 x TSN 606 S	2 x TSN 606 ND	ASNH 507-606
	30	TSN 507 G	TSN 507 A	CR 400300	TSN 507 C	–	2 x TSN 507 S	2 x TSN 507 ND	
	35	TSN 306 G	TSN 306 A	CR 400350	–	–	2 x TSN 306 S	2 x TSN 306 ND	
	45	–	–	–	–	2 x FS 170	–	–	
207	40	TSN 509 G	TSN 509 A	CR 400400	TSN 509 C	–	2 x TSN 509 S	2 x TSN 509 ND	ASNH 509
	45	TSN 207 G	TSN 207 A	CR 400450	–	–	2 x TSN 207 S	2 x TSN 207 ND	
	55	–	–	–	–	4 x FS 170	–	–	
508-607	30	TSN 607 G	TSN 607 A	CR 400300	TSN 607 C	–	2 x TSN 607 S	2 x TSN 607 ND	ASNH 508-607
	35	TSN 508 G	TSN 508 A	CR 400350	TSN 508 C	–	2 x TSN 508 S	2 x TSN 508 ND	
	50	–	–	–	–	4 x FS 170	–	–	
208-307	35	TSN 608 G	TSN 608 A	CR 400350	TSN 608 C	–	2 x TSN 608 S	2 x TSN 608 ND	ASNH 510-608
	45	TSN 307 G	TSN 307 A	CR 400450	–	–	2 x TSN 307 S	2 x TSN 307 ND	
	50	TSN 208 G	TSN 208 A	CR 400500	–	–	2 x TSN 208 S	2 x TSN 208 ND	
	60	–	–	–	–	4 x FS 170	–	–	
509	40	TSN 509 G	TSN 509 A	CR 400400	TSN 509 C	–	2 x TSN 509 S	2 x TSN 509 ND	ASNH 509
	45	TSN 307 G	TSN 307 A	CR 400450	–	–	2 x TSN 307 S	2 x TSN 307 ND	
	55	–	–	–	–	4 x FS 170	–	–	
209	40	TSN 609 G	TSN 609 A	CR 400400	TSN 609 C	–	2 x TSN 609 S	2 x TSN 609 ND	ASNH 511-609
	50	TSN 511 G	TSN 511 A	CR 400500	TSN 511 C	–	2 x TSN 511 S	2 x TSN 511 ND	
	55	TSN 209 G	TSN 209 A	CR 400550	–	–	2 x TSN 209 S	2 x TSN 209 ND	
	65	–	–	–	–	4 x FS 170	–	–	
510-608	35	TSN 608 G	TSN 608 A	CR 400350	TSN 608 C	–	2 x TSN 608 S	2 x TSN 608 ND	ASNH 510-608
	45	TSN 510 G	TSN 510 A	CR 400450	TSN 510 C	–	2 x TSN 510 S	2 x TSN 510 ND	
	50	TSN 308 G	TSN 308 A	CR 400500	–	–	2 x TSN 308 S	2 x TSN 308 ND	
	60	–	–	–	–	4 x FS 170	–	–	



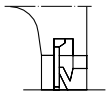
Housing series 5



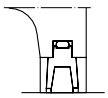
Housing series 2



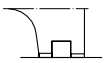
Design G
Split



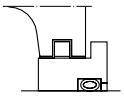
Design A
Unsplit



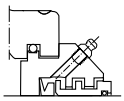
Design C
Split



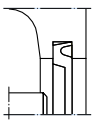
Design C
Felt strips
Split



Design S
Unsplit



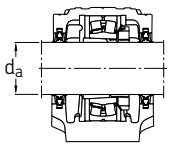
Design ND



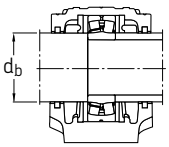
End cover

Housing Size	**Shaft dia.** d_a, d_b	**Seal sets** Design G 2 double-lip seals	Design A 2 V-ring seals	Loose V-ring	Design C 2 felt strips	Loose felt strips	Design S 2 labyrinth seals	Design ND	**End cover**
–	mm	–							–
210	45	TSN 610 G	TSN 610 A	CR 400450	TSN 610 C	–	2 x TSN 610 S	2 x TSN 610 ND	ASNH 512-610
	55	TSN 512 G	TSN 512 A	CR 400550	TSN 512 C	–	2 x TSN 512 S	2 x TSN 512 ND	
	60	TSN 210 G	TSN 210 A	CR 400600	–	–	2 x TSN 210 S	2 x TSN 210 ND	
	70	–	–	–	–	4 x FS 170	–	–	
511-609	40	TSN 609 G	TSN 609 A	CR 400400	TSN 609 C	–	2 x TSN 609 S	2 x TSN 609 ND	ASNH 511-609
	50	TSN 511 G	TSN 511 A	CR 400500	TSN 511 C	–	2 x TSN 511 S	2 x TSN 511 ND	
	55	TSN 309 G	TSN 309 A	CR 400550	–	–	2 x TSN 309 S	2 x TSN 309 ND	
	65	–	–	–	–	4 x FS 170	–	–	
211	50	TSN 611 G	TSN 611 A	CR 400500	TSN 611 C	–	2 x TSN 611 S	2 x TSN 611 ND	ASNH 513-611
	60	TSN 513 G	TSN 513 A	CR 400600	TSN 513 C	–	2 x TSN 513 S	2 x TSN 513 ND	
	65	TSN 211 G	TSN 211 A	CR 400650	–	–	2 x TSN 211 S	2 x TSN 211 ND	
	75	–	–	–	–	4 x FS 170	–	–	
512-610	45	TSN 610 G	TSN 610 A	CR 400450	TSN 610 C	–	2 x TSN 610 S	2 x TSN 610 ND	ASNH 512-610
	55	TSN 512 G	TSN 512 A	CR 400550	TSN 512 C	–	2 x TSN 512 S	2 x TSN 512 ND	
	60	TSN 310 G	TSN 310 A	CR 400600	–	–	2 x TSN 310 S	2 x TSN 310 ND	
	70	–	–	–	–	4 x FS 170	–	–	
212	55	TSN 612 G	TSN 612 A	CR 400550	TSN 612 C	–	2 x TSN 612 S	2 x TSN 612 ND	ASNH 515-612
	65	TSN 515 G	TSN 515 A	CR 400650	TSN 515 C	–	2 x TSN 515 S	2 x TSN 515 ND	
	70	TSN 212 G	TSN 212 A	CR 400700	–	–	2 x TSN 212 S	2 x TSN 212 ND	
	85	–	–	–	–	4 x FS 170	–	–	
513-611	50	TSN 611 G	TSN 611 A	CR 400500	TSN 611 C	–	2 x TSN 611 S	2 x TSN 611 ND	ASNH 513-611
	60	TSN 513 G	TSN 513 A	CR 400600	TSN 513 C	–	2 x TSN 513 S	2 x TSN 513 ND	
	65	TSN 311 G	TSN 311 A	CR 400650	–	–	2 x TSN 311 S	2 x TSN 311 ND	
	75	–	–	–	–	4 x FS 170	–	–	
213	60	TSN 613 G	TSN 613 A	CR 400600	TSN 613 C	–	2 x TSN 613 S	2 x TSN 613 ND	ASNH 516-613
	70	TSN 516 G	TSN 516 A	CR 400700	TSN 516 C	–	2 x TSN 516 S	2 x TSN 516 ND	
	75	TSN 213 G	TSN 213 A	CR 400750	–	–	2 x TSN 213 S	2 x TSN 213 ND	
	90	–	–	–	–	4 x FS 170	–	–	
515-612	55	TSN 612 G	TSN 612 A	CR 400550	TSN 612 C	–	2 x TSN 612 S	2 x TSN 612 ND	ASNH 515-612
	65	TSN 515 G	TSN 515 A	CR 400650	TSN 515 C	–	2 x TSN 515 S	2 x TSN 515 ND	
	70	TSN 312 G	TSN 312 A	CR 400700	–	–	2 x TSN 312 S	2 x TSN 312 ND	
	85	–	–	–	–	4 x FS 170	–	–	
215	65	TSN 615 G	TSN 615 A	CR 400650	TSN 615 C	–	2 x TSN 615 S	2 x TSN 615 ND	ASNH 518-615
	80	TSN 518 G	TSN 518 A	CR 400800	TSN 518 C	–	2 x TSN 518 S	2 x TSN 518 ND	
	85	TSN 215 G	TSN 215 A	CR 400850	–	–	2 x TSN 215 S	2 x TSN 215 ND	
	100	–	–	–	–	4 x FS 170	–	–	
516-613	60	TSN 613 G	TSN 613 A	CR 400600	TSN 613 C	–	2 x TSN 613 S	2 x TSN 613 ND	ASNH 516-613
	70	TSN 516 G	TSN 516 A	CR 400700	TSN 516 C	–	2 x TSN 516 S	2 x TSN 516 ND	
	75	TSN 313 G	TSN 313 A	CR 400750	–	–	2 x TSN 313 S	2 x TSN 313 ND	
	90	–	–	–	–	4 x FS 170	–	–	

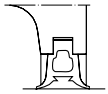
Sealing arrangements for
SNL plummer block housings
Size 216 – 532



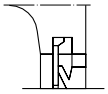
Housing series 5



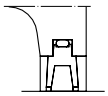
Housing series 2



Design G
Split

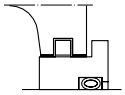


Design A
Unsplit

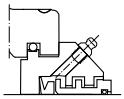


Design C
Split

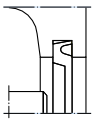
Design C
Felt strips
Split



Design S
Unsplit



Design ND



End cover

Housing Size	**Shaft dia.** d_a, d_b	**Seal sets** Design G 2 double-lip seals	Design A 2 V-ring seals	Loose V-ring	Design C 2 felt strips	Loose felt strips	Design S 2 labyrinth seals	Design ND	**End cover**
–	mm	–							–
216	90	TSN 216 G	TSN 216 A	CR 400900	–	–	2 x TSN 216 S	2 x TSN 216 ND	ASNH 216
	105	–	–	–	–	2 x FS 170	–	–	
517	75	TSN 517 G	TSN 517 A	CR 400750	TSN 517 C	–	2 x TSN 517 S	2 x TSN 517 ND	ASNH 517
	80	TSN 314 G	TSN 314 A	CR 400800	TSN 314 C	–	2 x TSN 314 S	2 x TSN 314 ND	
	95	–	–	–	–	2 x FS 170	–	–	
217	95	TSN 217 G	TSN 217 A	CR 400950	–	–	2 x TSN 217 S	2 x TSN 217 ND	ASNH 217
518-615	65	TSN 615 G	TSN 615 A	CR 400650	TSN 615 C	–	2 x TSN 615 S	2 x TSN 615 ND	ASNH 518-615
	80	TSN 518 G	TSN 518 A	CR 400800	TSN 518 C	–	2 x TSN 518 S	2 x TSN 518 ND	
	85	TSN 315 G	TSN 315 A	CR 400850	–	–	2 x TSN 315 S	2 x TSN 315 ND	
	100	–	–	–	–	2 x FS 170	–	–	
218	100	TSN 218 G	TSN 218 A	CR 401000	–	–	2 x TSN 218 S	2 x TSN 218 ND	ASNH 218
519-616	70	TSN 616 G	TSN 616 A	CR 400700	TSN 616 C	–	2 x TSN 616 S	2 x TSN 616 ND	ASNH 519-616
	85	TSN 519 G	TSN 519 A	CR 400850	TSN 519 C	–	2 x TSN 519 S	2 x TSN 519 ND	
	90	TSN 316 G	TSN 316 A	CR 400900	–	–	2 x TSN 316 S	2 x TSN 316 ND	
520-617	75	TSN 617 G	TSN 617 A	CR 400750	TSN 617 C	–	2 x TSN 617 S	2 x TSN 617 ND	ASNH 520-617
	90	TSN 520 G	TSN 520 A	CR 400900	TSN 520 C	–	2 x TSN 520 S	2 x TSN 520 ND	
	95	TSN 317 G	TSN 317 A	CR 400950	–	–	2 x TSN 317 S	2 x TSN 317 ND	
	115	TSN 220 G	TSN 220 A	CR 401100	–	–	2 x TSN 220 S	2 x TSN 220 ND	
522-619	85	TSN 619 G	TSN 619 A	CR 400850	TSN 619 C	–	2 x TSN 619 S	2 x TSN 619 ND	ASNH 522-619
	100	TSN 522 G	TSN 522 A	CR 401000	TSN 522 C	–	2 x TSN 522 S	2 x TSN 522 ND	
	110	–	TSN 319 A	CR 401100	–	–	2 x TSN 319 S	2 x TSN 319 ND	
	125	TSN 222 G	TSN 222 A	CR 401300	–	–	2 x TSN 222 S	2 x TSN 222 ND	
524-620	90	TSN 620 G	TSN 620 A	CR 400900	TSN 620 C	–	2 x TSN 620 S	2 x TSN 620 ND	ASNH 524-620
	110	TSN 524 G	TSN 524 A	CR 401100	TSN 524 C	–	2 x TSN 524 S	2 x TSN 524 ND	
	115	–	TSN 320 A	CR 401100	–	–	2 x TSN 320 S	2 x TSN 320 ND	
	135	TSN 224 G	TSN 224 A	CR 401300	–	–	2 x TSN 224 S	2 x TSN 224 ND	
526	115	TSN 526 G	TSN 526 A	CR 401100	TSN 526 C	–	2 x TSN 526 S	2 x TSN 526 ND	ASNH 526
	145	TSN 226 G	TSN 226 A	CR 401500	–	–	2 x TSN 226 S	2 x TSN 226 ND	
528	125	TSN 528 G	TSN 528 A	CR 401300	TSN 528 C	–	2 x TSN 528 S	2 x TSN 528 ND	ASNH 528
	155	TSN 228 G	TSN 228 A	CR 401500	TSN 228 C	–	2 x TSN 228 S	2 x TSN 228 ND	
530	135	TSN 530 G	TSN 530 A	CR 401300	TSN 530 C	–	2 x TSN 530 S	2 x TSN 530 ND	ASNH 530
	165	TSN 230 G	TSN 230 A	CR 401700	–	–	2 x TSN 230 S	2 x TSN 230 ND	
532	140	TSN 532 G	TSN 532 A	CR 401400	TSN 532 C	–	2 x TSN 532 S	2 x TSN 532 ND	ASNH 532
	175	TSN 232 G	TSN 232 A	CR 401700	–	–	2 x TSN 232 S	2 x TSN 232 ND	

Split pillow blocks

SNL 30 and SNL 31 (metric series)

SNL D 3134 TSSN

1 2 3 4

1. Basic design:

SNL

2. Material:

–	Housing of gray cast-iron
D	Housing of spheroidal graphite cast-iron (ductile-iron)

3. Housing size:

3036 to 30/500

3134 to 3196

4. Suffix:

–	Housing for bearing with adapter sleeve and through shaft
G	Housing for bearing with cylindrical bore and for stepped shaft
A	Housing for shaft end, with end cover at one side
TS	Housing with labyrinth seal(s)
TNF	Housing with taconite seal(s)
V	Housing with grease escape holes in base
T	Drilled and tapped hole at one side of cap to take grease nipple for relubrication of seals; nipple supplied with housing
TD	Drilled and tapped hole at both sides of cap to take grease nipple for relubrication of seals; two nipples supplied with housing
SN	Housing with drilled and tapped hole for sensor
TURT	Housing prepared for oil lubrication (spherical roller bearing) with seals
TURA	Housing prepared for oil lubrication (CARB bearing) with seals

Introduction

Fewer bearing replacements and less maintenance

Plummer (pillow) block housings have much to offer

The main benefit of split plummer block housings is their easy installation; pre-assembled shafts can be mounted in them. When the housing bases are attached to the base plate it is then only necessary to place the housing caps in position and to tighten the attachment bolts to complete the installation.

Split plummer block housings available on the market are mainly intended for self-aligning ball bearings, spherical roller bearings and CARB toroidal roller bearings. The housings can accomodate bearings in the 02, 03, 22, 23, 30, 31, 32, 39, 40 and 41 ISO Dimension Series. They can often be fitted with a variety of seals. Several designs and variants of split plummer block housings are available, making the use of tailored housings unnecessary and thus enabling cost-effective bearing arrangements to be made.

For many years SKF has been one of the leading suppliers of split plummer block housings – synonymous with operational reliability and quality.

SNL 30 and SNL 31 plummer (pillow) block housings have more to offer

SNL plummer block housings in the 30 and 31 series are also referred to as “Large SNL plummer block housings”.

These plummer block housings enable the bearings to achieve maximum bearing service life with less need for maintenance. This supports user efforts to further reduce maintenance costs. Among other enhancements, SNL housings are designed for easy alignment and handling during installation.

Another benefit is the choice of oil or grease lubrication for the bearings housed in SNL plummer blocks. A range of seals for oil lubrication and difficult environments provide trouble-free operation.

One basic design – many variants

Large SNL plummer block housings are intended for spherical roller bearings and CARB toroidal bearings. The housings are designed on a "building block" principle.This enables more possibilities when it comes to selecting the bearing designs, shaft, seals and the type of lubricant and/or lubrication delivery system.

A building block system

The basis of the original SNL plummer block housing system consists of a number of housings with the same basic design but in different sizes. By combining the housings with the different standard seals, a wide variety of variants, all belonging to the standard range, can besupplied to cover most applications.

SNL 30 and 31 series housings are available for shaft diameters ranging from 150 to 530 mm, inclusive.

The standard range also covers housings with drilled and tapped holes for lubrication fittings. Upon request, housings can be drilled for condition monitoring.

SNL 30 and 31 series plummer block housings are made of grey cast iron and demonstrate the same high strength as the earlier SD housings. Should, however, this strength be inadequate, dimensionally equivalent SNLD plummer block housings made of spheroidal graphite cast iron are available.

The large SNL and SNLD plummer block housings in the 31 series are dimensionally interchangeable with the earlier SD and SDD housings. However, for SNL and SNLD plummer block housings in the 30 series, one needs to check the bearing axial position, as the bearing center is off-set compared to the housing base center (dimension s in the tables). The housing boundary dimensions conform to ISO 113:1999.

Several sealing options

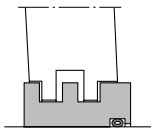
An important advantage of the SNL plummer block housings is that they can be fitted with a choice of seals. The standard seals supplied by SKF for the large SNL 30 and 31 series housings include labyrinth seals and heavy-duty "taconite" seals as well as end covers. Oil seals are also available and are supplied together with the housing, as the housing has to be modified to accomodate the seal.

Seals

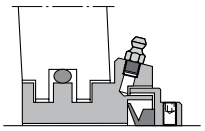
Standard seals

The standard seals available from SKF for large SNL housings (series SNL 30 and SNL 31) are one-piece labyrinth seals and the heavy-duty "taconite" seals. The seals are easy to install and are supplied separately.

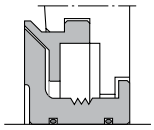
The standard seals as well as the seals for use with oil lubrication are presented in **Table 1**, which gives a comprehensive overview of the seal types, their design features and their suitability for various operating conditions. Detailed information on the various standard and special seals including properties and availability will be found on pages 507 to 508.



TS ..



TNF ..



TSD .. U[1)]

Table 1

Seal selection

	TSN..	TNF..	TSD..U[1)]
Properties			
Temperature, °F °C	-58° to +392° F (-50° to +200° C)	-40° to +212° F (-40° to +100° C)	-58° to +392° F (-50° to +200° C)
Peripheral speed	++	≤ 39 ft/sec (12 m/sec)	++
Misalignment, minutes	≤ 18	≤ 18	≤ 18
Grease relubrication	+	+	–
Oil lubrication	–	–	++
Low friction	++	+	++
Axial shaft displacement	+	+	–
Vertical arrangement	––	–	––
Sealing ability against			
Dust	+	++	+
Fine particulate contaminants	+	++	+
Coarse particulate contaminants	+	++	+
Abrasive contaminants	++	++	++
Liquids when sprayed	––	++	–
Direct sunlight	++	++	++

Symbols: ++ very suitable + suitable – limited suitability –– unsuitable

[1)] The oil seals are supplied together with housings prepared for oil lubrication. Oil seals can be ordered separately as spares only.

Labyrinth seals

The labyrinth rings **(Figure 1)** are made of cast-iron and have three radially arranged labyrinth steps which form a narrow sealing gap with the housing grooves.

Hollow O-ring cords of silicone rubber (supplied with the seals) ensure that the labyrinth rings, which are mounted with a loose fit, rotate with the shaft. Angular misalignments of the shaft up to approximately 18 minutes are permissible. The operating temperature range for the labyrinth seals is -58° to +392° F (-50° to +200° C).

When labyrinth seals are used, axial movement of the shaft relative to the housing is not limited.

The labyrinth seals are supplied individually. For bearing arrangements for through shafts, it is therefore necessary to order two rings. The labyrinth seal is identified by the prefix TS followed by the size identification, e.g. TS 34.

Taconite heavy-duty seals

Taconite is a very fine-grained mineral, which is extremely difficult to seal out. For bearing arrangements, which must operate under very arduous conditions (such as those encountered in mining), labyrinth seals, which can be relubricated, are recommended as grease enhances the sealing effect and extends the serviceability of the seals. SKF has developed a heavy-duty seal (which can seal out taconite, hence the name), which can be supplied for use with SNL housings.

The taconite seal design **(Figure 2)** is based on a labyrinth seal with the labyrinth stages arranged axially and fits the standard housings. A V-ring seal mounted on the shaft seals against the non-rotating part of the seal, which is inserted in the seal groove, prevents contaminants from penetrating to the bearing when the seal is relubricated. This grease is supplied via a grease nipple on the non-rotating part of the seal. Angular misalignments of the shaft of up to approximately 18 minutes are possible.

The permissible operating temperature range for the seal is between -40° to +212° F (-40° and +100° C). Please contact SKF for applications above 212° F (100° C). The rubber O-ring and V-ring limit the operating temperature to 212° F (100° C). However, SKF can supply high temperature O-rings and V-rings made of fluoro rubber for operation at higher temperatures.

The axial movement of the shaft relative to the housing is limited for this type of taconite seal to approximately ±2 mm for sizes from 150 up to 200 mm and ±4 mm for larger shaft diameters.

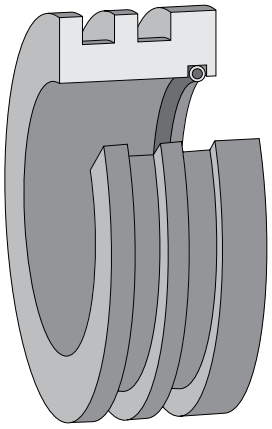
These seals are supplied individually so that for housings used on through shafts, it is necessary to order two seals. The seal is identified by the prefix TNF followed by the size identification, e.g. TNF 34.

Seals for oil lubrication

Special seals (oil seals) are required to prevent oil from escaping from the housing when oil lubrication is applied. For SNL housings, SKF has developed the non-rubbing seal of the U-design **(Figure 3)**. These U-seals require modified housings and comprise two parts: one which is stationary and fitted in the modified seal groove, and the other which is mounted on the shaft and rotates. The hollow O-ring cords of silicone rubber inserted between the labyrinth ring and the shaft allows the ring, which is mounted with a loose fit, to rotate with the shaft, and oil cannot escape along the shaft. These oil seals do not limit axial movement of the shaft relative to the housing.

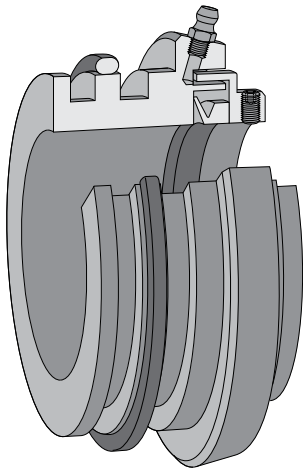
The modified SNL housing is supplied together with the seals as a unit. The housings with seals are identified by the suffix TURT (TURA for CARB bearings) e.g. SNL 3134 TURT. The seal itself is designated TSD .. U.

Figure 1



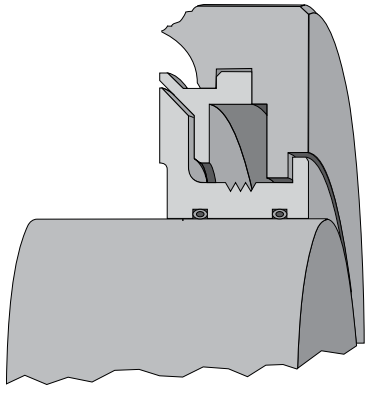
Labyrinth seal

Figure 2



Taconite heavy-duty seal

Figure 3



Oil seal

Seals

Special seals

In applications where, for some reason the standard seals cannot be used, special seals must be fitted. The SNL housings can be supplied without seals for such applications and are relatively easy to equip with special seals. It is recommended that housings of series SNL .. G are used rather than those of series SNL as they have a comparatively larger bore at the shaft entrance. There is therefore more room to accommodate a seal, so that there are more choices for seal design.

Special seals are not normally supplied by SKF. Therefore, the relevant housing dimensions are given in **Tables 2 and 3**.

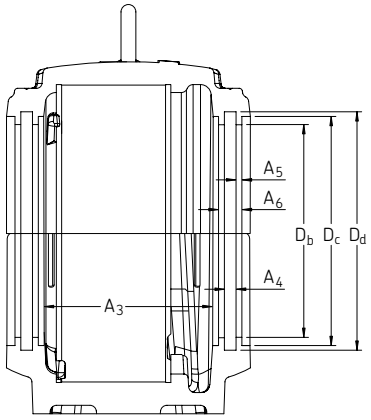


Table 2

Sealing groove dimensions

Housing	Dimensions						
Size	A_3	A_4	A_5	A_6	D_b	D_c	D_d
–	mm						
SNL 3036	158	11	5.5	22	181.2	196.4	205.2
SNL 3038	168	11	5.5	22	191.4	206.4	215.4
SNL 3040	186	11	5.5	22	201.4	216.4	225.4
SNL 3044	206	11	5.5	22	221.4	236.4	245.4
SNL 3048	214	11	5.5	22	241.4	256.4	265.4
SNL 3052	231	11	5.5	22	261.6	276.6	285.6
SNL 3056	249	11	5.5	22	281.6	296.6	305.6
SNL 3060	249	11	5.5	22	301.6	316.6	325.6
SNL 3064	279	11	5.5	22	321.8	336.8	345.8
SNL 3068	299	11	5.5	22	342.4	357.4	366.4
SNL 3072	297	11	5.5	22	362.4	377.4	386.4
SNL 3076	328	11	5.5	22	382.4	397.4	406.4
SNL 3080	328	11	5.5	22	402.8	417.8	426.8
SNL 3084	328	11	5.5	22	422.8	437.8	446.8
SNL 3088	358	11	5.5	22	442.8	457.8	466.8
SNL 3092	388	11	5.5	22	463	478	487
SNL 3096	388	11	5.5	22	483	498	507
SNL 30/500	388	11	5.5	22	503	518	527
SNL 30/530	398	11	5.5	22	533	548	557
SNL 3134	159	11	5.5	22	171.2	186.4	195.2
SNL 3136	169	11	5.5	22	181.2	196.4	205.2
SNL 3138	187	11	5.5	22	191.4	206.4	215.4
SNL 3140	207	11	5.5	22	201.4	216.4	225.4
SNL 3144	215	11	5.5	22	221.4	236.4	245.4
SNL 3148	231	11	5.5	22	241.4	256.4	265.4
SNL 3152	249	11	5.5	22	261.6	276.6	285.6
SNL 3156	249	11	5.5	22	281.6	296.6	305.6
SNL 3160	280	11	5.5	22	301.6	316.8	325.6
SNL 3164	300	11	5.5	22	321.8	336.8	345.8
SNL 3168	328	11	5.5	22	342.4	357.4	366.4
SNL 3172	328	11	5.5	22	362.4	377.4	386.4
SNL 3176	328	11	5.5	22	382.4	397.4	406.4
SNL 3180	358	11	5.5	22	402.8	417.8	426.8
SNL 3184	388	11	5.5	22	422.8	437.8	446.8
SNL 3188	388	11	5.5	22	442.8	457.8	466.8
SNL 3192	398	11	5.5	22	463	478	487
SNL 3196	398	11	5.5	22	483	498	507

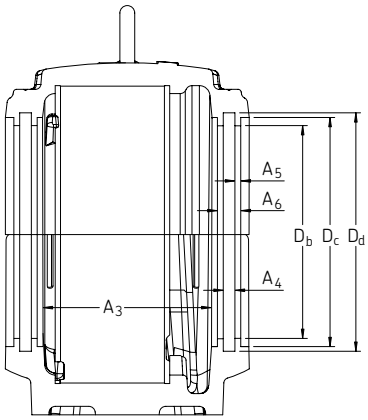
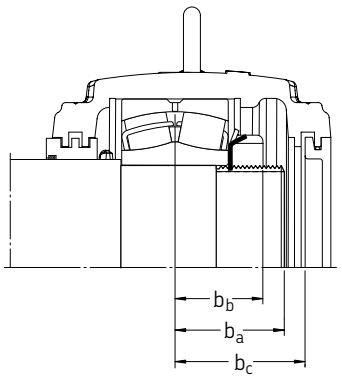


Table 3

Sealing groove dimensions

Housing	Dimensions						
Size	A_3	A_4	A_5	A_6	D_b	D_c	D_d
–	mm						
SNL 3036 G	156	11	5.5	22	221.4	236.4	245.4
SNL 3038 G	166	11	5.5	22	221.4	236.4	245.4
SNL 3040 G	184	11	5.5	22	241.4	256.4	265.4
SNL 3044 G	203	11	5.5	22	261.6	276.6	285.6
SNL 3048 G	211	11	5.5	22	281.6	296.6	305.6
SNL 3052 G	228	11	5.5	22	301.6	316.8	325.6
SNL 3056 G	247	11	5.5	22	321.8	336.8	345.8
SNL 3060 G	247	11	5.5	22	341.8	356.8	365.8
SNL 3064 G	277	11	5.5	22	361.8	376.8	385.8
SNL 3068 G	295	11	5.5	22	381.8	396.8	405.8
SNL 3072 G	293	11	5.5	22	401.8	416.8	425.8
SNL 3076 G	325	11	5.5	22	422.8	437.8	446.8
SNL 3080 G	325	11	5.5	22	463	478	487
SNL 3084 G	325	11	5.5	22	483	498	507
SNL 3088 G	354	11	5.5	22	503	518	527
SNL 3092 G	384	11	5.5	22	533	548	557
SNL 3096 G	384	11	5.5	22	533	548	557
SNL 30/500 G	384	11	5.5	22	563	578	587
SNL 30/530 G	392	11	5.5	22	603	618	627
SNL 3134 G	157	11	5.5	22	201.4	216.4	225.4
SNL 3136 G	166	11	5.5	22	221.4	236.4	245.4
SNL 3138 G	185	11	5.5	22	221.4	236.4	245.4
SNL 3140 G	204	11	5.5	22	241.4	256.4	265.4
SNL 3144 G	213	11	5.5	22	261.6	276.6	285.6
SNL 3148 G	230	11	5.5	22	281.6	296.6	305.6
SNL 3152 G	248	11	5.5	22	301.6	316.8	325.6
SNL 3156 G	248	11	5.5	22	321.8	336.8	345.8
SNL 3160 G	278	11	5.5	22	341.8	356.8	365.8
SNL 3164 G	297	11	5.5	22	361.8	376.8	385.8
SNL 3168 G	325	11	5.5	22	382.4	397.4	406.4
SNL 3172 G	325	11	5.5	22	402.8	417.8	426.8
SNL 3176 G	325	11	5.5	22	422.8	437.8	446.8
SNL 3180 G	354	11	5.5	22	463	478	487
SNL 3184 G	384	11	5.5	22	483	498	507
SNL 3188 G	384	11	5.5	22	503	518	527
SNL 3192 G	395	11	5.5	22	533	548	557
SNL 3196 G	394	11	5.5	22	563	578	587

End covers



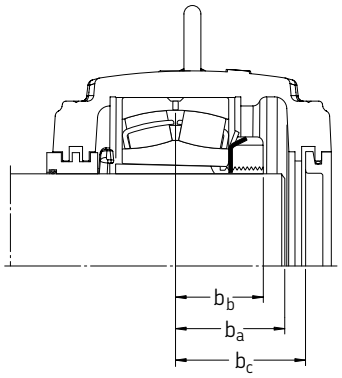


Table 4

Permissible length of shaft end

Housing	Bearing	Dimensions			
Size		b_a	b_a	b_b	b_c
		min	max[1]		
–	–	mm			
SNL 3036	23036	72	102	66.5	107.5
	24036	85	102	79.5	107.5
SNL 3038	23038	73	108	68	113.5
	24038	86	108	80.5	113.5
SNL 3040	23040	78	112	72.5	117.5
	24040	91	112	86	117.5
SNL 3044	23044	91	122	86	127.5
	24044	105	122	100	127.5
SNL 3048	23048	97	128	92	133.5
	24048	110	128	105	133.5
SNL 3052	23052	103	136	98	141.5
	24052	121	136	116	141.5
SNL 3056	23056	108	146	103	151.5
	24056	125	146	120	151.5
SNL 3060	23060	118	149	113	154.5
	24060	139	149	134	154.5
SNL 3064	23064	121	170	115.5	175.5
	24064	140	170	135	175.5
SNL 3068	23068	130	181	124.5	186.5
	24068	153	181	148	186.5
SNL 3072	23072	130	181	125	186.5
	24072	153	181	148	186.5
SNL 3076	23076	134.5	197	129.5	202.5
	24076	157	197	152	202.5
SNL 3080	23080	145	203	140	208.5
	24080	171	203	166	208.5
SNL 3084	23084	146	203	141	208.5
	24084	171	203	166	208.5
SNL 3088	23088	160.5	218	155.5	223.5
	24088	188	218	183	223.5
SNL 3092	23092	163.5	238	158.5	243.5
	24092	191	238	186	243.5
SNL 3096	23096	164.5	238	159.5	243.5
	24096	191	238	186	243.5
SNL 30/500	230/500	173.5	238	168.5	243.5
	240/500	199	238	194	243.5
SNL 30/530	230/530	187.5	243	182.5	248.5
	240/530	220	243	215	248.5
SNL 3134	23134	78	102	73	107.5
SNL 3136	23136	83	108	78	113.5
SNL 3138	23138	88	112	83	117.5
SNL 3140	23140	93	122	88	127.5
SNL 3144	23144	100	128	95	133.5
SNL 3148	23148	106	136	101	141.5
SNL 3152	23152	116	146	111	151.5
SNL 3156	23156	119	149	114	154.5
SNL 3160	23160	138	170	133	175.5
SNL 3164	23164	149	181	144	186.5
SNL 3168	23168	172	197	167	202.5
SNL 3172	23172	176	203	171	208.5
SNL 3176	23176	179	203	174	208.5
SNL 3180	23180	187	218	182	223.5
SNL 3184	23184	207	238	202	243.5
SNL 3188	23188	208	238	203	243.5
SNL 3192	23192	220	243	215	248.5
SNL 3196	23196	224	243	219	248.5

[1] For non-locating arrangements, which are not mounted centrally in the bearing seating, the value of $b_{a\,max}$ must be correspondingly reduced

End covers

For housings mounted at the ends of shafts, the one opening should be fitted with an end cover, which fits into the seal groove **(Figure 4)**. Details of the permissible length of the shaft end can be found in **Table 4**. The end covers are of cast-iron and are inserted with a hollow O-ring cord of silicone rubber in the seal groove in the housing. The end covers are suitable for operating temperatures in the range -58° to + 392° F (–50° to +200° C).

The standard end cover is designated by the prefix ETS followed by the housing size identification, e.g. ETS 34. End covers for oil lubricated SNL housings are identified by suffix R, e.g. ETS 34 R.

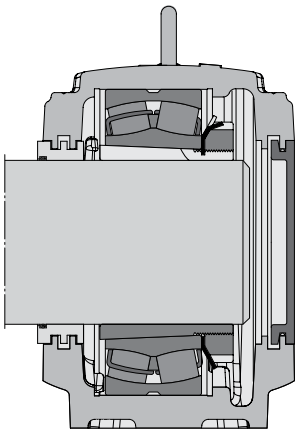
Locating rings

The bearing seating in the housing is sufficiently wide to enable the bearing to be displaced axially. The locating or held bearing **must** always be fixed axially in position in the housing bore by locating rings at both sides **(Figure 5)**.

CARB bearings are non-locating bearings and cannot take axial loads. Since axial displacement is accommodated within a CARB bearing (together with any misalignment), it is necessary to locate the outer ring axially in its seating by inserting locating rings at each side of the bearing.

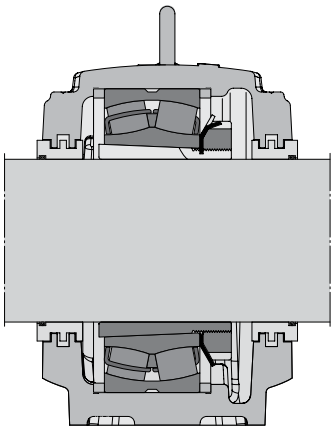
The locating rings are identified by the prefix FRB followed by figures giving the width/outside diameter in millimeters, e.g. FRB 10/280.

Figure 4



Housing with end cover

Figure 5



Housing with locating rings at both sides of bearing

Lubrication

SNL plummer block housings are designed so that the bearings can be lubricated with grease or oil, although grease lubrication is generally preferred. The lubricant should be selected with reference to the operating conditions.

Grease lubrication

In the majority of applications, the amount of grease applied to the SNL housings when mounting (initial fill) or after an inspection is adequate until the next planned inspection.

Certain operating conditions, e.g. high speeds, high temperatures or heavy loads, may mean that more frequent relubrication is necessary. **Table 5** gives guideline values for the grease quantities to be applied for the first fill. Markings in each corner inside the base give an indication of the grease level for the initial fill **(Figure 6)**.

There are three drilled and tapped holes for a grease nipple AH 1/8-27 PTF in the housing: two in the cap and one in the base. These holes are closed by metallic plugs. The two markings at the outer sides of the central ridge indicate the position for lubrication holes for the seals.

A grease nipple AH 1/8-27 PTF is supplied with the housing. The grease nipple kit also contains a plastic grease nipple protector, a grease nipple M1 G 1/8 and an adapter LAPN 1/8. This adapter transforms the standard drilled 1/8-27 NPSF thread to a G 1/4 which enables the use of grease lubricators such as SKF SYSTEM 24.

It is recommended that spherical roller bearings having a lubrication groove and three holes in the outer ring (designation suffix W33) be lubricated via this feature **(Figure 7)**. In this case the relubrication hole in the base or in the center of the cap should be used.

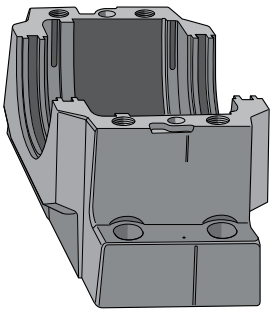
Table 5

Grease quantities

Housing Size	Grease quantity First fill[1)]
–	kg
SNL 3036	1.2
SNL 3038	1.5
SNL 3040	2.0
SNL 3044	2.7
SNL 3048	3.0
SNL 3052	3.9
SNL 3056	4.9
SNL 3060	5.2
SNL 3064	7.0
SNL 3068	8.7
SNL 3072	10.9
SNL 3076	10.9
SNL 3080	11.7
SNL 3084	11.8
SNL 3088	14.4
SNL 3092	18.8
SNL 3096	18.5
SNL 30/500	20.0
SNL 30/530	21.5
SNL 3134	1.1
SNL 3136	1.4
SNL 3138	1.8
SNL 3140	2.3
SNL 3144	2.7
SNL 3148	3.4
SNL 3152	4.3
SNL 3156	4.4
SNL 3160	6.2
SNL 3164	7.7
SNL 3168	9.4
SNL 3172	9.7
SNL 3176	9.6
SNL 3180	12.2
SNL 3184	14.9
SNL 3188	16.2
SNL 3192	17.4
SNL 3196	17.2

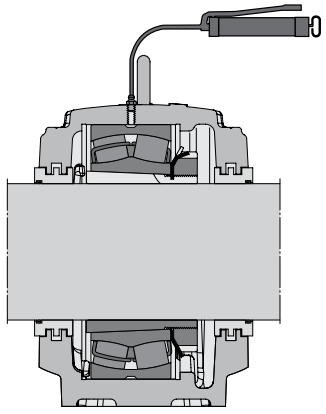
1) Fills approximately 40 % of the free space in the housing

Figure 6



Grease level markings for first fill

Figure 7



Lubricating the bearing via the outer ring

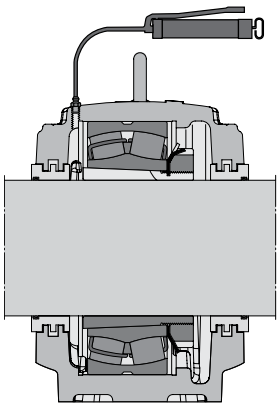
It should be noted that when spherical roller bearings are to be relubricated via the outer ring, they should be rotated. If outer ring relubrication is not possible or if CARB bearings are used, the standard grease nipple supplied with the housing should be inserted in the hole on the side of the cap and used for this purpose **(Figure 8)**. If it is desired to use a grease nipple other than that supplied with the housing, adapters are available which make a reworking of the available drilled and tapped hole unnecessary.

Where the bearings are mounted on adapter sleeves, the grease should be introduced at the side opposite to the lock nut of the sleeve.

If frequent relubrication is required, it is advisable to provide the housing with grease escape holes **(Figure 9)** through which excess grease can escape. Recommended dimensions will be found in **Table 6**. SNL housings with grease escape holes in the base can be supplied. This housing design is identified by the suffix V, e.g. SNL 3134 V.

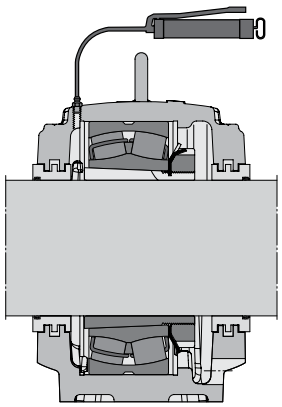
SNL housings can also be equipped with grease lubricators. Recommended are the SKF SYSTEM 24 lubricators (e.g. LAGD 125/WA2), which provide a reliable alternative to manual relubrication.

Figure 8



Lubricating the bearing from the side

Figure 9



Housing with grease escape hole

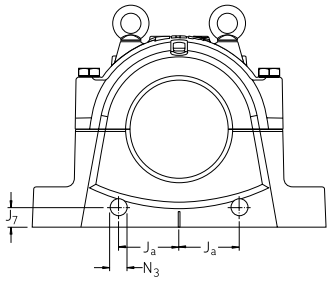


Table 6

Recommended dimensions for grease escape holes

Housing Size	Dimensions J_a	J_7	N_3
–	mm		
SNL 3036	105	34	30
SNL 3038	110	38	30
SNL 3040	120	36	30
SNL 3044	120	36	30
SNL 3048	130	42	40
SNL 3052	145	43	40
SNL 3056	150	44	40
SNL 3060	165	51	40
SNL 3064	180	53	40
SNL 3068	180	53	40
SNL 3072	180	53	40
SNL 3076	185	51	40
SNL 3080	220	51	40
SNL 3084	220	53	40
SNL 3088	230	58	40
SNL 3092	260	58	40
SNL 3096	260	58	40
SNL 30/500	260	58	40
SNL 30/530	280	58	40
SNL 3134	105	34	30
SNL 3136	110	38	30
SNL 3138	120	36	30
SNL 3140	120	36	30
SNL 3144	130	42	40
SNL 3148	145	43	40
SNL 3152	150	44	40
SNL 3156	165	51	40
SNL 3160	180	53	40
SNL 3164	180	53	40
SNL 3168	185	51	40
SNL 3172	220	51	40
SNL 3176	220	53	40
SNL 3180	230	58	40
SNL 3184	260	58	40
SNL 3188	260	58	40
SNL 3192	280	58	40
SNL 3196	280	58	40

The dimensions are those recommended when the standard grease nipple AH 1/8-27 PTF is used (supplied with the housing) but can also be applied if nipples having threads R 1/8, KR 1/8, M 10x1 or G 1/4 (with adapter LAPN 1/8) are used. The recommendations also apply if grease dispensers, e.g. SKF SYSTEM 24, are used.

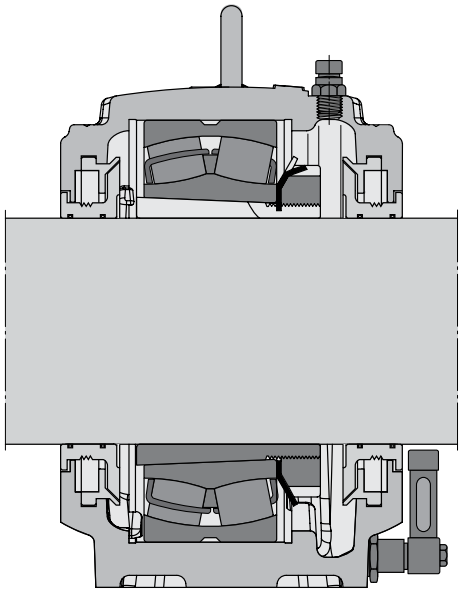
Lubrication

Oil lubrication

The new SNL 30 and SNL 31 housings can be used for oil lubrication at relatively high speeds. When using oil, however, the specially developed U-design seals should be incorporated to avoid oil loss from the housing **(Figure 10)**. These seals are described on page 506. In order for these seals to be used, the housing must be modified so that SNL housings for oil lubrication are only supplied, complete with seals.

Oil lubricated SNL housings can also be equipped with oil levellers, LAHD series, which are designed for automatic adjustment of the optimal oil lubrication level within the bearing housing.

Figure 10



Housing for oil lubrication

Mounting

SNL housings together with SKF bearings are robust and operationally reliable bearing arrangements which have long lives. However, if they are to achieve their full potential and not fail prematurely, they must be properly mounted. **Incorrect procedures or unsuitable tools can influence life negatively**.

When mounting the housings it should be remembered that the housings are asymmetrical internally and therefore the bearings are not always mounted in the center of the housing.

Vertical markings on the housing base end faces indicate the location of the center of the bearing seating.

Mounting the bearing

The bearings can be mounted either on a tapered seating – normally for SNL housings in the form of an adapter sleeve – or on a cylindrical seating. When a bearing is correctly mounted on a sleeve there will be interference fits between the inner ring, sleeve and shaft. The degree of interference is determined by how far the bearing is driven up on the sleeve and either the internal clearance reduction or the axial drive-up distance can be used as a measure. The clearance reduction in spherical roller bearings can be measured using a feeler gauge, or the SKF drive-up method can be used.

For CARB bearings either the clearance reduction or the axial drive-up distance should be measured. When using a feeler gauge to measure clearance reduction, it is important that the inner and outer rings of the bearing are not displaced with respect to each other. The SKF drive-up method can also be applied.

Adapter sleeves with the designation OH .. H in the product tables indicate that the sleeves are provided with the necessary ducts to enable the bearings to be mounted using the oil injection method. Oil is supplied to the nut side of the sleeve.

Bearings with cylindrical bore are normally mounted with an interference fit on the shaft. Appropriate shaft tolerances should be selected. The recommendations applying to spherical roller bearings also apply to CARB bearings.

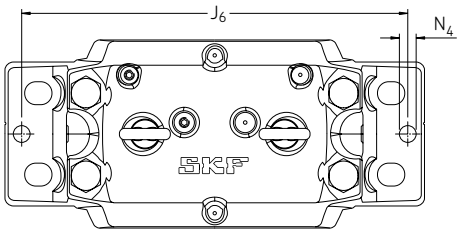


Table 7

Position and size of dowel pin holes

Housing	Dimensions		Housing	Dimensions	
Size	J_6	N_4 max	Size	J_6	N_4 max
–	mm		–	mm	
SNL 3036	470	20	**SNL 3134**	470	20
SNL 3038	490	20	**SNL 3136**	490	20
SNL 3040	520	20	**SNL 3138**	520	20
SNL 3044	560	20	**SNL 3140**	560	20
SNL 3048	590	20	**SNL 3144**	590	20
SNL 3052	650	20	**SNL 3148**	650	20
SNL 3056	720	20	**SNL 3152**	720	20
SNL 3060	740	20	**SNL 3156**	740	20
SNL 3064	770	25	**SNL 3160**	770	25
SNL 3068	820	25	**SNL 3164**	820	25
SNL 3072	820	25	**SNL 3168**	880	25
SNL 3076	880		**SNL 3172**	920	30
SNL 3080	920		**SNL 3176**	960	30
SNL 3084	960		**SNL 3180**	1 020	35
SNL 3088	1 020		**SNL 3184**	1 070	35
SNL 3092	1 070		**SNL 3188**	1 120	35
SNL 3096	1 070		**SNL 3192**	1 160	40
SNL 30/500	1 120		**SNL 3196**	1 210	40
SNL 30/530	1 210				

Support surface for housing base

To guarantee long bearing service life, it is recommended that the support surface for the housing is finished to $R_a \leq 492$ µin (12.5 µm). The flatness tolerance should be to IT7. For moderate demands IT8 may be satisfactory.

Dowel pins

SNL housings are designed for loads acting vertically to the housing base support. If they are to be subjected to moderate or heavy loads acting parallel to the base support, a stop should be provided, or the housing should be pinned to its support. Recommendations for the position and size of holes to take dowel pins are given in **Table 7**.

Attachment bolts

It is recommended that hexagon-headed bolts to strength class 8.8 according to the European Standard EN 24014 be used. If the load does not act vertically to the base, it may be necessary to use stronger, class 10.9 bolts. Details of the appropriate tightening torques for the bolts to class 8.8 are given in **Table 9** on page 517.

Load carrying ability

SNL plummer block housings are intended for loads acting vertically towards the base plate (support). If loads acting in other directions occur, checks should be made to ensure that the magnitude of the load is permissible for the housing, the bolts joining the housing cap and base, and for the attachment bolts.

Load carrying ability of the housing

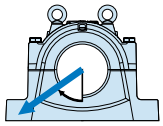
Guideline values for the breaking load P of the housing for various load directions are given in **Table 8**. Using these values and a safety factor selected with respect to the operating conditions, the permissible load for the housing can be calculated. In general engineering a safety factor of 6 is often used.

For special purposes where extra strength and resistance to shock loads are required, SKF supplies as standard a range of spheroidal graphite cast-iron housings. Spheroidal graphite cast-iron housings are designated SNLD followed by the size identification, e.g. SNLD 3134. For housings made of spheroidal graphite cast-iron, the values of P in **Table 8** should be multiplied by 1.8.

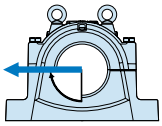
It is important for the load carrying ability of the housing that the bolts joining cap and base are properly tightened in accordance with the values given in **Table 9**. The axial load carrying capacity of the housing is approximately 65% of $P_{180°}$. For load angles between 55 and 120° as well as for axial loads, if the load acting parallel to the base plate (support surface) exceeds 5% of $P_{180°}$, the housing should be pinned to the support or a stop should be provided in the direction of the load.

Load carrying ability of bolts

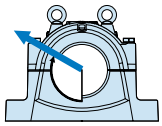
SNL plummer block housings are supplied with cap bolts (to join cap and base) to strength class 8.8 as standard. The guideline values for the yield point Q for the cap bolts are given in **Table 9** for various load directions as well as the corresponding maximum radial loads F.



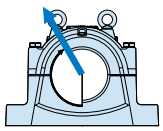
$P_{55°}$



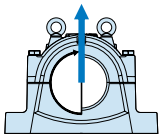
$P_{90°}$



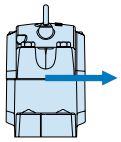
$P_{120°}$



$P_{150°}$



$P_{180°}$

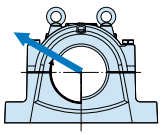


P_a

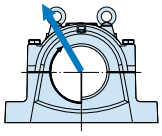
Table 8

Breaking loads for SNL plummer block housing

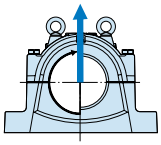
Housing	Breaking loads for SNL housing					
Size	$P_{55°}$	$P_{90°}$	$P_{120°}$	$P_{150°}$	$P_{180°}$	P_a
–	kN					
SNL 3036	2100	1000	760	680	850	550
SNL 3038	2400	1150	850	760	950	620
SNL 3040	2700	1300	1000	880	1100	710
SNL 3044	3200	1600	1100	1000	1300	840
SNL 3048	4000	1900	1400	1300	1600	1000
SNL 3052	4200	2000	1500	1400	1700	1100
SNL 3056	4700	2300	1700	1500	1900	1200
SNL 3060	5000	2400	1800	1600	2000	1300
SNL 3064	6000	2900	2200	1900	2400	1500
SNL 3068	7000	3400	2500	2200	2800	1800
SNL 3072	7000	3400	2500	2200	2800	1800
SNL 3076	7 500	3 600	2 600	2 300	3 000	1 900
SNL 3080	7 700	3 600	2 700	2 400	3 000	2 000
SNL 3084	8 000	3 900	2 900	2 500	3 200	2 100
SNL 3088	8 700	4 200	3 100	2 700	3 500	2 200
SNL 3092	9 600	4 600	3 400	3 000	3 800	2 400
SNL 3096	9 600	4 600	3 400	3 000	3 800	2 400
SNL 30/500	10 000	4 800	3 600	3 100	4 000	2 500
SNL 30/530	11 200	5 400	4 000	3 500	4 400	2 800
SNL 3134	2100	1000	760	680	850	550
SNL 3136	2400	1150	850	760	950	620
SNL 3138	2700	1300	1000	880	1100	710
SNL 3140	3200	1600	1100	1000	1300	840
SNL 3144	4000	1900	1400	1300	1600	1000
SNL 3148	4200	2000	1500	1400	1700	1100
SNL 3152	4700	2300	1700	1500	1900	1200
SNL 3156	5000	2400	1800	1600	2000	1300
SNL 3160	6000	2900	2200	1900	2400	1500
SNL 3164	7000	3400	2500	2200	2800	1800
SNL 3168	7 500	3 600	2 600	2 300	3 000	1 900
SNL 3172	7 700	3 600	2 700	2 400	3 000	2 000
SNL 3176	8 000	3 900	2 900	2 500	3 200	2 100
SNL 3180	8 700	4 200	3 100	2 700	3 500	2 200
SNL 3184	9 600	4 600	3 400	3 000	3 800	2 400
SNL 3188	10 000	4 800	3 600	3 100	4 000	2 500
SNL 3192	10 700	5 200	3 800	3 300	4 200	2 700
SNL 3196	11 200	5 400	4 000	3 500	4 400	2 800



$Q_{120°}$
$F_{120°}$



$Q_{150°}$
$F_{150°}$



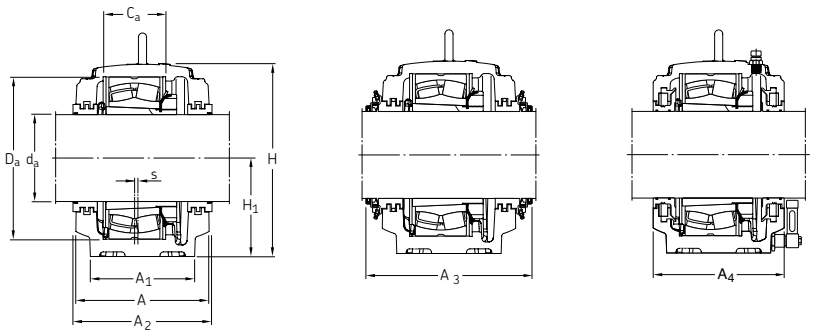
$Q_{180°}$
$F_{180°}$

Table 9

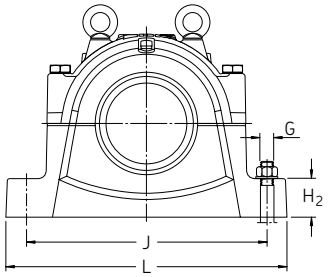
Load carrying ability and tightening torque for cap bolts and attachment bolts

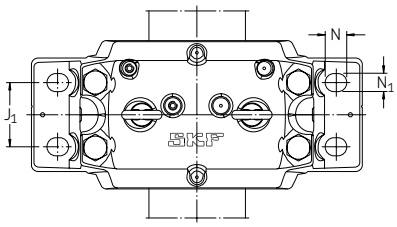
Housing	Cap bolts								Attachment bolts	
Size	Yield point for four bolts			Maximum load for four bolts			Tightening torque	Designation to EN 24014	Size	Tightening torque
	$Q_{120°}$	$Q_{150°}$	$Q_{180°}$	$F_{120°}$	$F_{150°}$	$F_{180°}$				
–	kN			kN			Nm	–	–	Nm
SNL 3036	1800	1040	900	760	440	380	350	M 24x140	M 24	665
SNL 3038	1800	1040	900	760	440	380	350	M 24x140	M 24	665
SNL 3040	1800	1040	900	760	440	380	350	M 24x150	M 24	665
SNL 3044	1800	1040	900	760	440	380	350	M 24x160	M 30	1 310
SNL 3048	1800	1040	900	760	440	380	350	M 24x160	M 30	1 310
SNL 3052	2860	1650	1 430	1 240	720	620	400	M 30x180	M 30	1 310
SNL 3056	2860	1650	1 430	1 240	720	620	400	M 30x200	M 36	2 280
SNL 3060	2860	1650	1 430	1 240	720	620	400	M 30x200	M 36	2 280
SNL 3064	2860	1650	1 430	1 240	720	620	400	M 30x220	M 36	2 280
SNL 3068	2860	1650	1 430	1 240	720	620	400	M 30x220	M 36	2 280
SNL 3072	2860	1650	1 430	1 240	720	620	400	M 30x220	M 36	2 280
SNL 3076	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3080	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3084	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3088	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 42	3 640
SNL 3092	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 42	3 640
SNL 3096	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 42	3 640
SNL 30/500	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 42	3 640
SNL 30/530	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 48	5 450
SNL 3134	1 800	1 040	900	760	440	380	350	M 24x140	M 24	665
SNL 3136	1 800	1 040	900	760	440	380	350	M 24x140	M 24	665
SNL 3138	1 800	1 040	900	760	440	380	350	M 24x150	M 24	665
SNL 3140	1 800	1 040	900	760	440	380	350	M 24x160	M 30	1 310
SNL 3144	1 800	1 040	900	760	440	380	350	M 24x160	M 30	1 310
SNL 3148	2 860	1 650	1430	1240	720	620	400	M 30x180	M 30	1 310
SNL 3152	2 860	1 650	1430	1240	720	620	400	M 30x200	M 36	2 280
SNL 3156	2 860	1 650	1430	1240	720	620	400	M 30x200	M 36	2 280
SNL 3160	2 860	1 650	1430	1240	720	620	400	M 30x220	M 36	2 280
SNL 3164	2 860	1 650	1430	1240	720	620	400	M 30x220	M 36	2 280
SNL 3168	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3172	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3176	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 36	2 280
SNL 3180	4 200	2 400	2 100	1 600	920	800	600	M 36x240	M 42	3 640
SNL 3184	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 42	3 640
SNL 3188	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x280	M 42	3 640
SNL 3192	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x300	M 42	3 640
SNL 3196	5 800	3 350	2 900	2 200	1 260	1 100	850	M 42x300	M 48	5 450

Large SNL plummer block housings
for bearings on adapter sleeves
d_a 150 – 200 mm



Shaft	Housing dimensions												Mass	Designations Components		
														Housing only	Seal	End cover
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G				
mm	mm												kg			
150	230	180	333	170	70	430	100	510	34	28	14	24	69.5	SNL 3134 SNL 3134 SNL 3134 TURT SNL 3134 TURA	TS 34 TNF 34 TSD 3134 U TSD 3134 U	ETS 34 ETS 34 ETS 3134 R ETS 3134 R
160	230	180	333	170	70	430	100	510	34	28	14	24	69.5	SNL 3036 SNL 3036 SNL 3036 TURT SNL 3036 TURA	TS 36 TNF 36 TSD 3036 U TSD 3036 U	ETS 36 ETS 36 ETS 3036 R ETS 3036 R
	240	190	353	180	75	450	110	530	34	28	15	24	77.5	SNL 3136 SNL 3136 SNL 3136 TURT SNL 3136 TURA	TS 36 TNF 36 TSD 3136 U TSD 3136 U	ETS 36 ETS 36 ETS 3136 R ETS 3136 R
170	240	190	353	180	75	450	110	530	34	28	15	24	77.5	SNL 3038 SNL 3038 SNL 3038 TURT SNL 3038 TURA	TS 38 TNF 38 TSD 3038 U TSD 3038 U	ETS 38 ETS 38 ETS 3038 R ETS 3038 R
	260	210	375	190	80	480	120	560	34	28	10	24	97.5	SNL 3138 SNL 3138 SNL 3138 TURT SNL 3138 TURA	TS 38 TNF 38 TSD 3138 U TSD 3138 U	ETS 38 ETS 38 ETS 3138 R ETS 3138 R
180	260	210	375	190	80	480	120	560	34	28	10	24	97.5	SNL 3040 SNL 3040 SNL 3040 TURT SNL 3040 TURA	TS 40 TNF 40 TSD 3040 U TSD 3040 U	ETS 40 ETS 40 ETS 3040 R ETS 3040 R
	280	230	411	210	85	510	130	610	42	35	10	30	123	SNL 3140 SNL 3140 SNL 3140 TURT SNL 3140 TURA	TS 40 TNF 40 TSD 3140 U TSD 3140 U	ETS 40 ETS 40 ETS 3140 R ETS 3140 R
200	280	230	411	210	85	510	130	610	42	35	10	30	123	SNL 3044 SNL 3044 SNL 3044 TURT SNL 3044 TURA	TS 44 TNF 44 TSD 3044 U TSD 3044 U	ETS 44 ETS 44 ETS 3044 R ETS 3044 R
	290	240	434	220	90	540	140	640	42	35	12	30	138	SNL 3144 SNL 3144 SNL 3144 TURT SNL 3144 TURA	TS 44 TNF 44 TSD 3144 U TSD 3144 U	ETS 44 ETS 44 ETS 3144 R ETS 3144 R

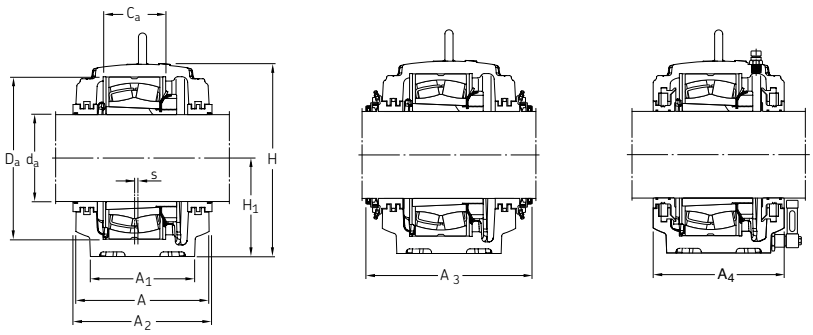




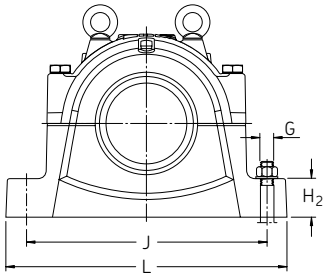
Shaft	Bearing seating		Width across seals			Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings
d_a	C_a	D_a	A_2	A_3	A_4				
mm	mm		mm			–	–		
150	108	280	240	302	225	M 16	23134 CCK/W33 C 3134 K[1]	H 3134 H 3134 L	2 FRB 10/280 2 FRB 10/280
160	108	280	240	304	225	M 16	23036 CCK/W33 C 3036 K	H 3036 H 3036	2 FRB 17/280 2 FRB 17/280
	116	300	250	317	235	M 16	23136 CCK/W33 C 3136 K	H 3136 H 3136 L	2 FRB 10/300 2 FRB 10/300
170	115	290	250	318	235	M 16	23038 CCK/W33 C 3038 K	H 3038 H 3038	4 FRB 10/290 4 FRB 10/290
	124	320	270	334	255	M 20	23138 CCK/W33 C 3138[1]	H 3138 H 3138 L	2 FRB 10/320 2 FRB 10/320
180	122	310	270	331	255	M 20	23040 CCK/W33 C 3040 K	H 3040 H 3040	4 FRB 10/310 4 FRB 10/310
	132	340	290	351	275	M 20	23140 CCK/W33 C 3140 K	H 3140 H 3140	2 FRB 10/340 2 FRB 10/340
200	130	340	290	353	275	M 20	23044 CCK/W33 C 3044 K	OH 3044 H OH 3044 H	4 FRB 10/340 4 FRB 10/340
	140	370	300	361	285	M 20	23144 CCK/W33 C 3144 K	OH 3144 H OH 3144 HTL	2 FRB 10/370 2 FRB 10/370

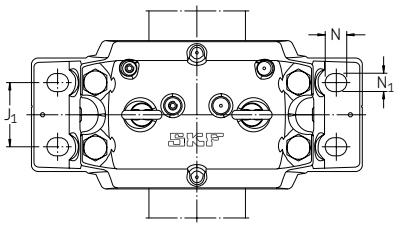
[1] Please check availability of the bearing before incorporating it in a bearing arrangement design.

Large SNL plummer block housings
for bearings on adapter sleeves
d_a 220 – 300 mm



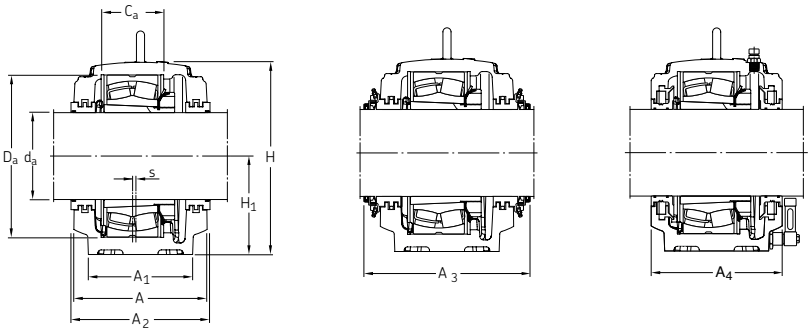
Shaft	Housing dimensions												Mass	Designations Components		
														Housing only	Seal	End cover
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G				
mm	mm												kg			
220	290	240	434	220	90	540	140	640	42	35	12	30	138	SNL 3048 SNL 3048 SNL 3048 TURT SNL 3048 TURA	TS 48 TNF 48 TSD 3048 U TSD 3048 U	ETS 48 ETS 48 ETS 3048 R ETS 3048 R
	310	260	474	240	95	600	150	700	42	35	12	30	187	SNL 3148 SNL 3148 SNL 3148 TURT SNL 3148 TURA	TS 48 TNF 48 TSD 3148 U TSD 3148 U	ETS 48 ETS 48 ETS 3148 R ETS 3148 R
240	310	260	474	240	95	600	150	700	42	35	12	30	187	SNL 3052 SNL 3052 SNL 3052 TURT SNL 3052 TURA	TS 52 TNF 52 TSD 3052 U TSD 3052 U	ETS 52 ETS 52 ETS 3052 R ETS 3052 R
	320	280	516	260	100	650	160	770	50	42	13	36	221	SNL 3152 SNL 3152 SNL 3152 TURT SNL 3152 TURA	TS 52 TNF 52 TSD 3152 U TSD 3152 U	ETS 52 ETS 52 ETS 3152 R ETS 3152 R
260	320	280	516	260	100	650	160	770	50	42	13	36	221	SNL 3056 SNL 3056 SNL 3056 TURT SNL 3056 TURA	TS 56 TNF 56 TSD 3056 U TSD 3056 U	ETS 56 ETS 56 ETS 3056 R ETS 3056 R
	320	280	551	280	105	670	160	790	50	42	16	36	252	SNL 3156 SNL 3156 SNL 3156 TURT SNL 3156 TURA	TS 56 TNF 56 TSD 3156 U TSD 3156 U	ETS 56 ETS 56 ETS 3156 R ETS 3156 R
280	320	280	551	280	105	670	160	790	50	42	16	36	252	SNL 3060 SNL 3060 SNL 3060 TURT SNL 3060 TURA	TS 60 TNF 60 TSD 3060 U TSD 3060 U	ETS 60 ETS 60 ETS 3060 R ETS 3060 R
	350	310	591	300	110	710	190	830	50	42	22	36	301	SNL 3160 SNL 3160 SNL 3160 TURT SNL 3160 TURA	TS 60 TNF 60 TSD 3160 U TSD 3160 U	ETS 60 ETS 60 ETS 3160 R ETS 3160 R
300	350	310	591	300	110	710	190	830	50	42	22	36	301	SNL 3064 SNL 3064 SNL 3064 TURT SNL 3064 TURA	TS 64 TNF 64 TSD 3064 U TSD 3064 U	ETS 64 ETS 64 ETS 3064 R ETS 3064 R
	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3164 SNL 3164 SNL 3164 TURT SNL 3164 TURA	TS 64 TNF 64 TSD 3164 U TSD 3164 U	ETS 64 ETS 64 ETS 3164 R ETS 3164 R



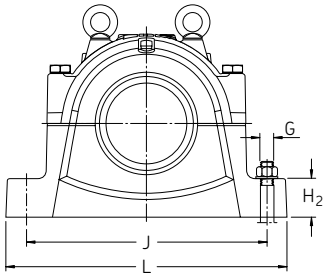


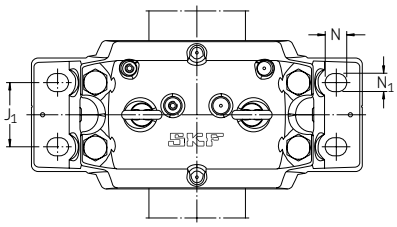
Shaft	Bearing seating		Width across seals			Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings
d_a	C_a	D_a	A_2	A_3	A_4				
mm	mm		mm			–	–		
220	140	360	300	387	285	M 20	23048 CCK/W33 C 3048 K	OH 3048 H OH 3048 H	4 FRB 12/360 4 FRB 12/360
	148	400	315	404	305	M 24	23148 CCK/W33 C 3148 K	OH 3148 H OH 3148 HTL	2 FRB 10/400 2 FRB 10/400
240	148	400	315	397	305	M 24	23052 CCK/W33 C 3052 K	OH 3052 H OH 3052 H	2 FRB 22/400 2 FRB 22/400
	164	440	330	414	315	M 24	23152 CCK/W33 C 3152 K	OH 3152 H OH 3152 HTL	2 FRB 10/440 2 FRB 10/440
260	166	420	330	413	315	M 24	23056 CCK/W33 C 3056 K	OH 3056 H OH 3056 H	6 FRB 10/420 6 FRB 10/420
	166	460	330	412	315	M 24	23156 CCK/W33 C 3156 K	OH 3156 H OH 3156 HTL	2 FRB 10/460 2 FRB 10/460
280	168	460	330	412	315	M 24	23060 CCK/W33 C 3060 KM	OH 3060 H OH 3060 H	2 FRB 25/460 2 FRB 25/460
	180	500	360	442	345	M 30	23160 CCK/W33 C 3160 K	OH 3160 H OH 3160 H	2 FRB 10/500 2 FRB 10/500
300	181	480	360	443	345	M 30	23064 CCK/W33 C 3064 KM	OH 3064 H OH 3064 H	6 FRB 10/480 6 FRB 10/480
	196	540	380	462	365	M 30	23164 CCK/W33 C 3164 KM	OH 3164 H OH 3164 H	2 FRB 10/540 2 FRB 10/540

Large SNL plummer block housings
for bearings on adapter sleeves
d_a 320 – 400 mm



Shaft	Housing dimensions												Mass	Designations Components		
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G		Housing only	Seal	End cover
mm	mm												kg			
320	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3068	TS 68	ETS 68
														SNL 3068	TNF 68	ETS 68
														SNL 3068 TURT	TSD 3068 U	ETS 3068 R
														SNL 3068 TURA	TSD 3068 U	ETS 3068 R
	400	360	675	340	120	810	220	950	50	42	24	36	430	SNL 3168 F	TS 68	ETS 68
														SNL 3168 F	TNF 68	ETS 68
														SNL 3168 FTURT	TSD 3168 U	ETS 3168 R
														SNL 3168 FTURA	TSD 3168 U	ETS 3168 R
340	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3072	TS 72	ETS 72
														SNL 3072	TNF 72	ETS 72
														SNL 3072 TURT	TSD 3072 U	ETS 3072 R
														SNL 3072 TURA	TSD 3072 U	ETS 3072 R
	400	360	695	350	120	840	220	1 000	50	42	30	36	458	SNL 3172 F	TS 72	ETS 72
														SNL 3172 F	TNF 72	ETS 72
														SNL 3172 FTURT	TSD 3172 U	ETS 3172 R
														SNL 3172 FTURA	TSD 3172 U	ETS 3172 R
360	400	360	675	340	120	810	220	950	50	42	24	36	430	SNL 3076 F	TS 76	ETS 76
														SNL 3076 F	TNF 76	ETS 76
														SNL 3076 FTURT	TSD 3076 U	ETS 3076 R
														SNL 3076 FTURA	TSD 3076 U	ETS 3076 R
	400	360	715	360	120	870	220	1 040	50	42	30	36	473	SNL 3176 F	TS 76	ETS 76
														SNL 3176 F	TNF 76	ETS 76
														SNL 3176 FTURT	TSD 3176 U	ETS 3176 R
														SNL 3176 FTURA	TSD 3176 U	ETS 3176 R
380	400	360	695	350	120	840	220	1 000	50	42	30	36	458	SNL 3080 F	TS 80	ETS 80
														SNL 3080 F	TNF 80	ETS 80
														SNL 3080 FTURT	TSD 3080 U	ETS 3080 R
														SNL 3080 FTURA	TSD 3080 U	ETS 3080 R
	430	390	775	380	125	950	240	1 120	60	48	30	42	595	SNL 3180 F	TS 80	ETS 80
														SNL 3180 F	TNF 80	ETS 80
														SNL 3180 FTURT	TSD 3180 U	ETS 3180 R
														SNL 3180 FTURA	TSD 3180 U	ETS 3180 R
400	400	360	715	360	120	870	220	1 040	50	42	30	36	473	SNL 3084 F	TS 84	ETS 84
														SNL 3084 F	TNF 84	ETS 84
														SNL 3084 FTURT	TSD 3084 U	ETS 3084 R
														SNL 3084 FTURA	TSD 3084 U	ETS 3084 R
	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716	SNL 3184 F	TS 84	ETS 84
														SNL 3184 F	TNF 84	ETS 84
														SNL 3184 FTURT	TSD 3184 U	ETS 3184 R
														SNL 3184 FTURA	TSD 3184 U	ETS 3184 R

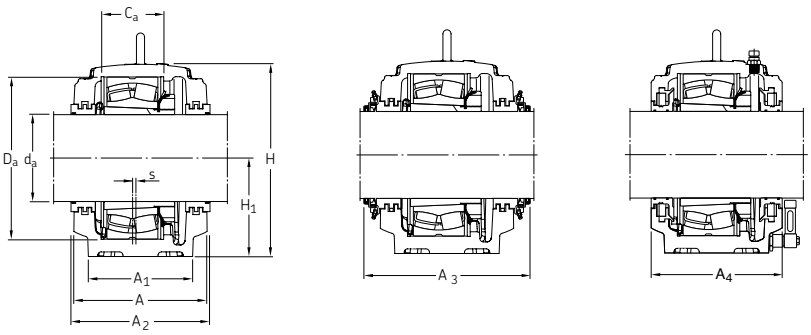




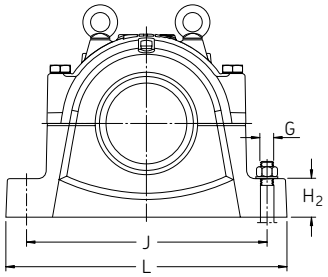
Shaft	Bearing seating		Width across seals			Eye bolts	Appropriate bearings and associated components		
						According to DIN 580	Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings
d_a	C_a	D_a	A_2	A_3	A_4				
mm	mm		mm			–	–		
320	197	520	380	461	365	M 30	23068 CCK/W33 C 3068 KM	OH 3068 H OH 3068 H	4 FRB 16/520 4 FRB 16/520
	190	580	410	491	395	M 30	23168 CCK/W33 C 3168 KM	OH 3168 H OH 3168 H	– –
340	198	540	380	461	365	M 30	23072 CCK/W33 C 23072 KM	OH 3072 H OH 3072 H	4 FRB 16/540 4 FRB 16/540
	192	600	410	491	395	M 36	23172 CCK/W33 C 3172 KM	OH 3172 H OH 3172 H	– –
360	135	560	410	492	395	M 30	23076 CCK/W33 C 3076 KM	OH 3076 H OH 3076 H	– –
	194	620	410	491	395	M 36	23176 CAK/W33 C 3176 KMB[1]	OH 3176 H OH 3176 HE	– –
380	148	600	410	492	395	M 36	23080 CCK/W33 C 3080 KM	OH 3080 H OH 3080 H	– –
	200	650	440	521	425	M 42	23180 CAK/W33 C 3180 KMB	OH 3180 H OH 3180 HE	– –
400	150	620	410	492	395	M 36	23084 CAK/W33 C 3084 KM	OH 3084 H OH 3084 H	– –
	224	700	470	551	455	M 42	23184 CKJ/W33 C 3184 KM	OH 3184 H OH 3184 H	– –

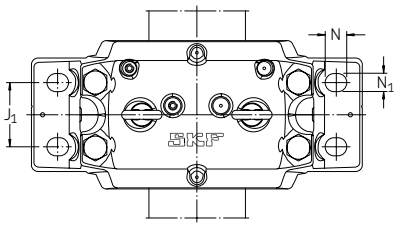
[1] Please check availability of the bearing before incorporating it in a bearing arrangement design.
For missing locating ring data, please contact SKF Applications Engineering.

Large SNL plummer block housings
for bearings on adapter sleeves
d_a 410 – 470 mm



Shaft	Housing dimensions												Mass	Designations Components		
														Housing only	Seal	End cover
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G				
mm	mm												kg			
410	430	390	775	380	125	950	240	1 120	60	48	30	42	595	SNL 3088 F	TS 88	ETS 88
														SNL 3088 F	TNF 88	ETS 88
														SNL 3088 FTURT	TSD 3088 U	ETS 3088 R
														SNL 3088 FTURA	TSD 3088 U	ETS 3088 R
	460	430	835	420	135	1 030	260	1 220	60	48	35	42	755	SNL 3188 F	TS 88	ETS 88
														SNL 3188 F	TNF 88	ETS 88
														SNL 3188 FTURT	TSD 3188 U	ETS 3188 R
														SNL 3188 FTURA	TSD 3188 U	ETS 3188 R
430	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716	SNL 3092 F	TS 92	ETS 92
														SNL 3092 F	TNF 92	ETS 92
														SNL 3092 FTURT	TSD 3092 U	ETS 3092 R
														SNL 3092 FTURA	TSD 3092 U	ETS 3092 R
	470	440	880	440	145	1 070	260	1 280	60	48	35	42	865	SNL 3192 F	TS 92	ETS 92
														SNL 3192 F	TNF 92	ETS 92
														SNL 3192 FTURT	TSD 3192 U	ETS 3192 R
														SNL 3192 FTURA	TSD 3192 U	ETS 3192 R
450	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716	SNL 3096 F	TS 96	ETS 96
														SNL 3096 F	TNF 96	ETS 96
														SNL 3096 FTURT	TSD 3096 U	ETS 3096 R
														SNL 3096 FTURA	TSD 3096 U	ETS 3096 R
	470	440	920	460	155	1 110	260	1 330	70	56	35	48	947	SNL 3196 F	TS 96	ETS 96
														SNL 3196 F	TNF 96	ETS 96
														SNL 3196 FTURT	TSD 3196 U	ETS 3196 R
														SNL 3196 FTURA	TSD 3196 U	ETS 3196 R
470	460	430	835	420	135	1 030	260	1 220	60	48	35	42	755	SNL 30/500 F	TS 500	ETS 500
														SNL 30/500 F	TNF 500	ETS 500
														SNL 30/500 FTURT	TSD 30/500 U	ETS 30/500 R
														SNL 30/500 FTURA	TSD 30/500 U	ETS 30/500 R

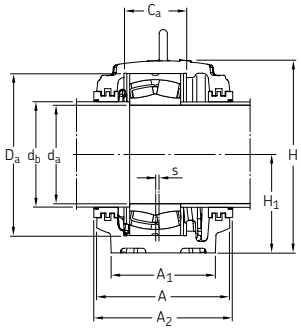




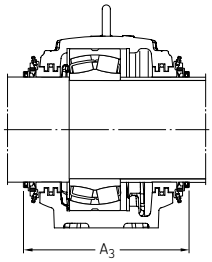
Shaft	Bearing seating		Width across seals			Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Adapter sleeve	Locating rings
d_a	C_a	D_a	A_2	A_3	A_4				
mm	mm		mm			–	–		
410	157	650	440	522	425	M 42	23088 CAK/W33 C 3088 KMB	OH 3088 H OH 3088 HE	– –
	226	720	470	552	455	M 42	23188 CAK/W33 C 3188 KMB[1]	OH 3188 H OH 3188 HE	– –
430	163	680	470	552	455	M 42	23092 CAK/W33 C 3092 KM	OH 3092 H OH 3092 H	– –
	240	760	480	562	465	M 48	23192 CAK/W33 C 3192 KM	OH 3192 H OH 3192 H	– –
450	165	700	470	561	455	M 42	23096 CAK/W33 C 3096 KM	OH 3096 H OH 3096 H	– –
	248	790	480	561	465	M 48	23196 CAK/W33 C 3196 KMB[1]	OH 3196 H OH 3196 HE	– –
470	167	720	470	551	455	M 42	230/500 CAK/W33 C 30/500 KM	OH 30/500 H OH 30/500 H	– –

[1] Please check availability of the bearing before incorporating it in a bearing arrangement design.
For missing locating ring data, please contact SKF Applications Engineering.

Large SNL plummer block housings for bearings with cylindrical bore d_a 170 – 300 mm

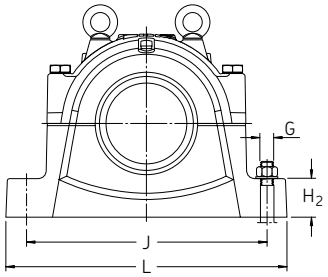


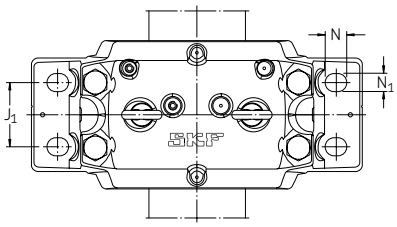
Labyrinth seals
TS design



Taconite seals
TNF design

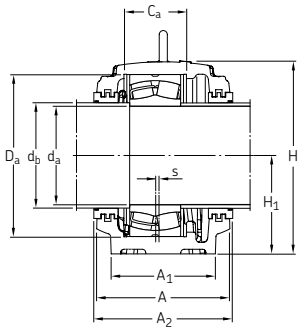
Shaft	Housing dimensions												Mass	Designations Components		
														Housing only	Seal	End cover
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G				
mm	mm												kg			
170	230	180	333	170	70	430	100	510	34	28	14	24	69.5	SNL 3134 G SNL 3134 G	TS 40 TNF 40	ETS 40 ETS 40
180	230	180	333	170	70	430	100	510	34	28	14	24	69.5	SNL 3036 G SNL 3036 G	TS 44 TNF 44	ETS 44 ETS 44
	240	190	353	180	75	450	110	530	34	28	15	24	77.5	SNL 3136 G SNL 3136 G	TS 44 TNF 44	ETS 44 ETS 44
190	240	190	353	180	75	450	110	530	34	28	15	24	77.5	SNL 3038 G SNL 3038 G	TS 44 TNF 44	ETS 44 ETS 44
	260	210	375	190	80	480	120	560	34	28	10	24	97.5	SNL 3138 G SNL 3138 G	TS 44 TNF 44	ETS 44 ETS 44
200	260	210	375	190	80	480	120	560	34	28	10	24	97.5	SNL 3040 G SNL 3040 G	TS 48 TNF 48	ETS 48 ETS 48
	280	230	411	210	85	510	130	610	42	35	10	30	123	SNL 3140 G SNL 3140 G	TS 48 TNF 48	ETS 48 ETS 48
220	280	230	411	210	85	510	130	610	42	35	10	30	123	SNL 3044 G SNL 3044 G	TS 52 TNF 52	ETS 52 ETS 52
	290	240	434	220	90	540	140	640	42	35	12	30	138	SNL 3144 G SNL 3144 G	TS 52 TNF 52	ETS 52 ETS 52
240	290	240	434	220	90	540	140	640	42	35	12	30	138	SNL 3048 G SNL 3048 G	TS 56 TNF 56	ETS 56 ETS 56
	310	260	474	240	95	600	150	700	42	35	12	30	187	SNL 3148 G SNL 3148 G	TS 56 TNF 56	ETS 56 ETS 56
260	310	260	474	240	95	600	150	700	42	35	12	30	187	SNL 3052 G SNL 3052 G	TS 60 TNF 60	ETS 60 ETS 60
	320	280	516	260	100	650	160	770	50	42	13	36	221	SNL 3152 G SNL 3152 G	TS 60 TNF 60	ETS 60 ETS 60
280	320	280	516	260	100	650	160	770	50	42	13	36	221	SNL 3056 G SNL 3056 G	TS 64 TNF 64	ETS 64 ETS 64
	320	280	551	280	105	670	160	790	50	42	16	36	252	SNL 3156 G SNL 3156 G	TS 64 TNF 64	ETS 64 ETS 64
300	320	280	551	280	105	670	160	790	50	42	16	36	252	SNL 3060 G SNL 3060 G	TS 68 TNF 68	ETS 68 ETS 68
	350	310	591	300	110	710	190	830	50	42	22	36	301	SNL 3160 G SNL 3160 G	TS 68 TNF 68	ETS 68 ETS 68



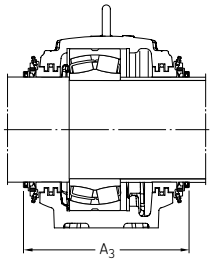


Shaft		Bearing seating		Width across seals		Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Locating rings
d_a	d_b	C_a	D_a	A_2	A_3			
mm		mm		mm		–	–	
170	180	108	280	240	302	M 16	23134 CC/W33	2 FRB 10/280
180	200	108	280	240	304	M 16	23036 CC/W33 24036 CC/W33 C 3036	2 FRB 17/280 2 FRB 4/280 2 FRB 17/280
	200	116	300	250	317	M 16	23136 CC/W33 C 3136	2 FRB 10/300 2 FRB 10/300
190	200	115	290	250	318	M 16	23038 CC/W33 24038 CC/W33 C 3038	4 FRB 10/290 2 FRB 7.5/290 4 FRB 10/290
	200	124	320	270	334	M 20	23138 CC/W33	2 FRB 10/320
200	220	122	310	270	331	M 20	23040 CC/W33 24040 CC/W33 C 3040	4 FRB 10/310 2 FRB 6.5/310 4 FRB 10/310
	220	132	340	290	351	M 20	23140 CC/W33 C 3140	2 FRB 10/340 2 FRB 10/340
220	240	130	340	290	353	M 20	23044 CC/W33 24044 CC/W33 C 3044	4 FRB 10/340 2 FRB 6/340 4 FRB 10/340
	240	140	370	300	361	M 20	23144 CC/W33 C 3144	2 FRB 10/370 2 FRB 10/370
240	260	140	360	300	387	M 20	23048 CC/W33 24048 CC/W33 C 3048	4 FRB 12/360 2 FRB 11/360 4 FRB 12/360
	260	148	400	315	404	M 24	23148 CC/W33 C 3148	2 FRB 10/400 2 FRB 10/400
260	280	148	400	315	397	M 24	23052 CC/W33 24052 CC/W33 C 3052	2 FRB 22/400 2 FRB 4/400 2 FRB 22/400
	280	164	440	330	414	M 24	23152 CC/W33 C 3152	2 FRB 10/440 2 FRB 10/440
280	300	166	420	330	413	M 24	23056 CC/W33 24056 CC/W33 C 3056	6 FRB 10/420 2 FRB 13/420 6 FRB 10/420
	300	166	460	330	412	M 24	23156 CC/W33 C 3156	2 FRB 10/460 2 FRB 10/460
300	320	168	460	330	412	M 24	23060 CC/W33 24060 CC/W33 C 3060	2 FRB 25/460 2 FRB 4/460 2 FRB 25/460
	320	180	500	360	442	M 30	23160 CC/W33 C 3160	2 FRB 10/500 2 FRB 10/500

Large SNL plummer block housings for bearings with cylindrical bore
d_a 320 – 460 mm

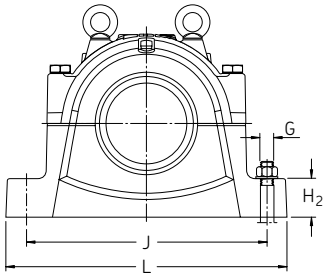


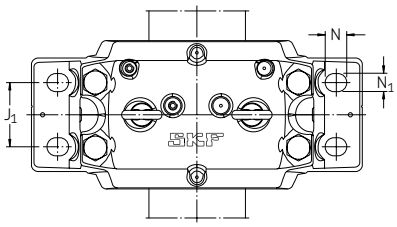
Labyrinth seals
TS design



Taconite seals
TNF design

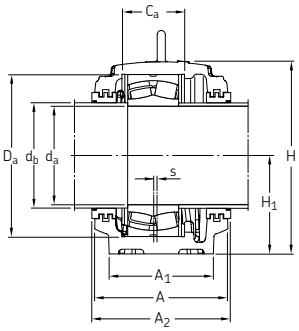
Shaft	Housing dimensions												Mass	Designations Components		
														Housing only	Seal	End cover
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G				
mm	mm												kg			
320	350	310	591	300	110	710	190	830	50	42	22	36	301	SNL 3064 G SNL 3064 G	TS 72 TNF 72	ETS 72 ETS 72
	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3164 G SNL 3164 G	TS 72 TNF 72	ETS 72 ETS 72
340	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3068 G SNL 3068 G	TS 76 TNF 76	ETS 76 ETS 76
	400	360	675	340	120	810	220	950	50	42	24	36	430 427	SNL 3168 GF SNL 3168 GL	TS 76	ETS 76
360	370	330	631	320	115	750	200	880	50	42	23	36	339	SNL 3072 G SNL 3072 G	TS 80 TNF 80	ETS 80 ETS 80
	400	360	695	350	120	840	220	1 000	50	42	30	36	458 454	SNL 3172 GF SNL 3172 GL	TS 80	ETS 80
380	400	360	675	340	120	810	220	950	50	42	24	36	430 427	SNL 3076 GF SNL 3076 GL	TS 84	ETS 84
	400	360	715	360	120	870	220	1 040	50	42	30	36	473 470	SNL 3176 GF SNL 3176 GL	TS 84	ETS 84
400	400	360	695	350	120	840	220	1 000	50	42	30	36	458 454	SNL 3080 GF SNL 3080 GL	TS 92	ETS 92
	430	390	775	380	125	950	240	1 120	60	48	30	42	595 595	SNL 3180 GF SNL 3180 GL	TS 92	ETS 92
420	400	360	715	360	120	870	220	1 040	50	42	30	36	473 470	SNL 3084 GF SNL 3084 GL	TS 96	ETS 96
	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716 709	SNL 3184 GF SNL 3184 GL	TS 96	ETS 96
440	430	390	775	380	125	950	240	1 120	60	48	30	42	595 595	SNL 3088 GF SNL 3088 GL	TS 500	ETS 500
	460	430	835	420	135	1 030	260	1 220	60	48	35	42	755 751	SNL 3188 GF SNL 3188 GL	TS 500	ETS 500
460	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716 709	SNL 3092 GF SNL 3092 GL	TS 530	ETS 530
	470	440	880	440	145	1 070	260	1 280	60	48	35	42	865 859	SNL 3192 GF SNL 3192 GL	TS 530	ETS 530



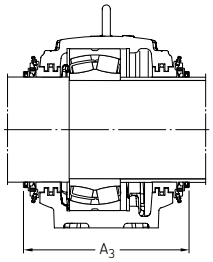


Shaft		Bearing seating		Width across seals		Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Locating rings
d_a	d_b	C_a	D_a	A_2	A_3			
mm		mm		mm		–	–	
320	340	181	480	360	443	M 30	23064 CC/W33 24064 CC/W33 C 3064 M	6 FRB 10/480 2 FRB 10.5/480 6 FRB 10/480
	340	196	540	380	462	M 30	23164 CC/W33 C 3164 M	2 FRB 10/540 2 FRB 10/540
340	360	197	520	380	461	M 30	23068 CC/W33 24068 CC/W33 C 3068 M	4 FRB 16/520 2 FRB 8.5/520 4 FRB 16/520
	360	190 210	580	410	491	M 30	23168 CC/W33	
360	380	198	540	380	461	M 30	23072 CC/W33 24072 CC/W33	4 FRB 16/540 2 FRB 9/540
	380	192 212	600	410	491	M 36	23172 CC/W33	–
380	400	135 180	560	410	492	M 30	23076 CC/W33	–
	400	194 214	620	410	491	M 36	23176 CA/W33	–
400	430	148 192	600	410	492	M 36	23080 CC/W33	–
	430	200 220	650	440	521	M 42	23180 CA/W33	–
420	450	150 194	620	410	492	M 36	23084 CA/W33	–
	450	224 244	700	470	551	M 42	23184 CJ/W33	–
440	470	157 200	650	440	522	M 42	23088 CA/W33	–
	470	226 246	720	470	552	M 42	23188 CA/W33	–
460	500	163 224	680	470	552	M 42	23092 CA/W33	–
	500	240 260	760	480	562	M 48	23192 CA/W33	–

Large SNL plummer block housings for bearings with cylindrical bore
d_a 480 – 530 mm

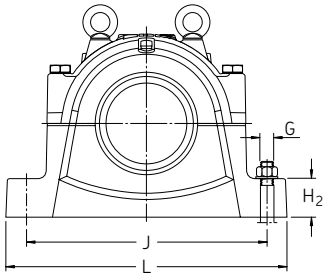


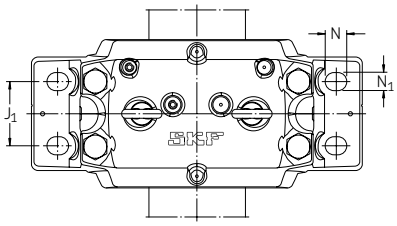
Labyrinth seals
TS design



Taconite seals
TNF design

Shaft	Housing dimensions												Mass	Designations	
													Components		
d_a	A	A_1	H	H_1	H_2	J	J_1	L	N	N_1	s	G	Housing only	Seal	End cover
mm	mm												kg		
480	460	420	810	410	130	1 000	260	1 170	60	48	35	42	716 709	SNL 3096 GF SNL 3096 GL	TS 530/510	ETS 530
	470	440	920	460	155	1 110	260	1 330	70	56	35	48	947 941	SNL 3196 GF SNL 3196 GL	TS 560/520	ETS 560
500	460	430	835	420	135	1 030	260	1 220	60	48	35	42	745 751	SNL 30/500 GF SNL 30/500 GL	TS 560	ETS 560
530	470	440	920	460	155	1 110	260	1 330	70	56	35	48	947 941	SNL 30/530 GF SNL 30/530 GL	TS 600	ETS 600





Shaft		Bearing seating		Width across seals		Eye bolts According to DIN 580	Appropriate bearings and associated components Spherical roller bearing CARB bearing	Locating rings
d_a	d_b	C_a	D_a	A_2	A_3			
mm		mm		mm		–	–	
480	510	165 224	700	470	561	M 42	23096 CA/W33	
	520	248 268	790	480	561	M 48	23196 CA/W33	
500	530	167 226	720	470	551	M 42	230/500 CA/W33	
530	560	185 248	780	480	551	M 48	230/530 CA/W33	

For missing locating ring data please contact SKF Applications Engineering.

Bearing accessories

Adapter and withdrawal sleeves

Adapter and withdrawal sleeves are used to secure bearings having a tapered bore on to cylindrical shaft seatings. They facilitate bearing mounting and dismounting and often simplify bearing arrangement design. Adapter sleeves are the more popular as they enable bearings to be mounted on straight shafts **(Figure 1)** as well as stepped shafts **(Figure 2**). They are easier to mount than the withdrawal sleeves **(Figure 3)** and require no additional location on the shaft.

When using adapter sleeves on straight shafts it is possible to locate the bearing at any position on the shaft. When used on stepped shafts together with a support ring, exact axial positioning of the bearing can be achieved and bearing dismounting is facilitated.

Bearings on withdrawal sleeves must be mounted against a fixed abutment, for example, a shaft shoulder. The withdrawal sleeve must be secured in position after it has been pressed into the bearing bore by a lock nut or plate on the shaft.

As adapter and withdrawal sleeves adapt to the shaft diameter, less stringent shaft tolerances can be permitted. However, the accuracy of form the running accuracy of the bearing arrangement. Generally, seatings machined to tolerance h9 and having a cylindricity tolerance to IT5/2 will be satisfactory.

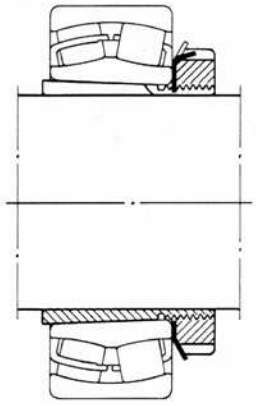
Adapter and withdrawal sleeves for oil injection

The requisite interference fit of the bearing on the shaft is achieved by pressing the bearing up on to the adapter sleeve, or by pressing the withdrawal sleeve into the bearing bore. The force required to do this may be considerable, particularly where large bearings are concerned, because of the friction of the mating surfaces in the bearing/sleeve and sleeve/shaft contacts.

To facilitate the use of the oil injection method for mounting and dismounting, larger SKF adapter and withdrawal sleeves are available with oil supply ducts and distribution grooves. If oil is injected and pressure maintained via these ducts and grooves between the sleeve and bearing bore and between the sleeve and shaft, friction in the contacts will be reduced, and the force required for mounting and dismounting will be considerably smaller than for mounting in the dry state.

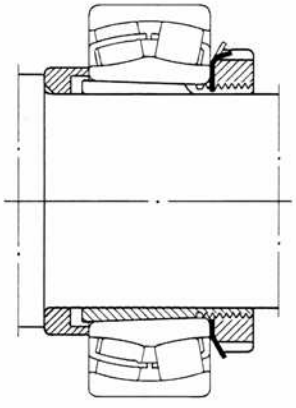
The oil injection equipment required for this method is also available from SKF; please refer to SKF Maintenance and Lubrication Products Catalog (711-639). When using the oil injection method and equipment, the prescribed precautionary measures **should be** observed.

Figure 1



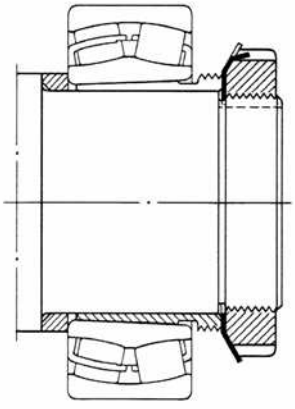
Straight shaft mounting with adapter sleeve

Figure 2



Shouldered shaft mounting with adapter sleeve

Figure 3



Withdrawal sleeve mount on a stepped shaft

Adapter sleeves

SKF adapter sleeves **(Figure 4)** are supplied complete with lock nut and locking device. The sleeves have a slotted design and an external taper of 1:12. Up to size 40, the sleeves are phosphated; the larger sleeves are not surface treated but are oiled.

The dimensions of the metric adapter sleeves conform to ISO 2982-1:1995. Adapter sleeves with inch dimensions are in accordance with ANSI/ABMA std 8.2.

Adapter sleeves for oil injection

SKF metric adapter sleeves with a bore diameter of 140 mm and above are supplied with oil supply ducts and distributor grooves for pressurized oil **(Figure 5)**. Ducts and grooves are optional for inch dimension sleeves of 7⅞" and above. The following four types are available:

OH	Oil injected between bearing and sleeve. One oil supply duct from large end of sleeve.
OH ..B	Oil injected between bearing, sleeve and shaft. Sizes 32 to 40: one oil supply duct from large end of sleeve. Size 44 and larger: two oil supply ducts from large end of sleeve.
OH .. H	Oil injected between bearing and sleeve. One oil supply duct from nut side of sleeve.
OH .. HB	Oil injected between bearing, sleeve and shaft. Sizes 32 to 40: one oil supply duct from nut side of sleeve. Size 44 and larger: two oil supply ducts from nut side of sleeve.

For metric adapter sleeves the dimensions of the oil injection holes are shown in the table. For corresponding information on inch dimension adapter sleeves, please consult SKF Applications Engineering.

Withdrawal sleeves

SKF withdrawal sleeves **(Figure 6)** are coated with a preservative. They are slotted and have an external taper of 1:12, except for those of series AH 240 and AH 241, which have an external taper of 1:30 and are designed for use with the wide spherical roller bearings of series 240 K30 and 241 K30.

The dimensions of the metric withdrawal sleeves are in accordance with ISO 2982-1:1995. Prefix X indicates that the sleeve has been modified and suffix G indicates that the thread pitch diameter G has been changed to adopt to the ISO standard.

The nuts required for dismounting are not supplied with the sleeves and must be ordered separately.

Withdrawal sleeves for oil injection

SKF metric sleeves having a bore diameter of 200 mm and above are supplied as standard in the AOH design, which enables the oil injection method to be used.

AOH withdrawal sleeves **(Figure 7)** have two oil supply ducts at the threaded side and have distribution grooves around the circumference and in the axial direction on the outside surface as well as in the bore.

The tables give the thread data for the supply ducts to take the oil injection equipment, which can be supplied by SKF.

Figure 4

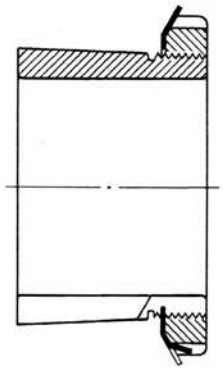


Figure 5

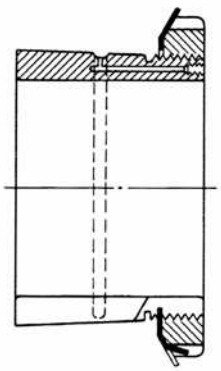


Figure 6

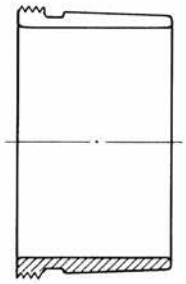
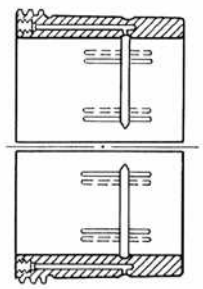


Figure 7



Lock nuts

SKF can supply a wide range of sizes of lock nuts, which are also referred to as shaft or withdrawal nuts, depending on the use to which they are put. They are used to locate bearings and other components on shafts as well as to facilitate mounting and dismounting bearings on withdrawal sleeves, adapter sleeves or tapered journals.

SKF lock nuts have four **(Figure 8)** or eight **(Figure 9)** equally spaced slots around the outside diameter to allow the use of hook, impact or HNM spanners.

Metric lock nuts up to and including size 40 (KM and KML designs) have a metric ISO thread to tolerance 5H, ISO 965/III-1980, while the larger nuts from size 42 have a metric ISO trapezoidal thread to tolerance 7H, ISO 2901-1977. It is recommended that the mating thread on the shaft be made to tolerance 6g according to ISO 965/III-1980 for the smaller nuts and to tolerance 7e according to ISO 2901-1977 for those with trapezoidal thread.

Inch-size lock nuts up to and including a thread diameter of 12.562" have a thread of American National Form NS Class 3. Larger inch sizes have an Acme Class 3G, General Purpose thread. The mating inch thread on the shaft must be of the same form and tolerance as that of the nut.

The dimensions of the metric lock nuts are in accordance with ISO 2982-2:1995. The inch series nuts are in accordance with ANSI/ABMA std 8.2.

Locking washers, locking clips and locking plates

Locking washers **(Figure 10)** of the MB, MBL and W designs are used with the smaller nuts, while locking clips **(Figure 11)** of the MS design and locking plates of the P design are used with larger nuts. They engage a groove in the shaft and lock the nut in position. Locking washers of the MB .. A design are used when a washer with increased strength is needed.

The locking washers are made of deep drawn steel strip. Dimensions of the metric sizes, except those of the MB .. A designs, conform to ISO 2982-2:1995. Inch-size locking washers are in accordance with ANSI/ABMA std 8.2.

The locking clips and plates are also made of deep drawn steel strip. They are attached to the shaft nut using a screw with hexagonal head to DIN EN 24017:1992. The screw and a spring washer (to DIN 128) are supplied with the clips. Locking plates type P are supplied with a steel wire to be passed through the holes in the head of each screw. The ends of the wire should be twisted together, to prevent loosening of the screws.

Figure 8

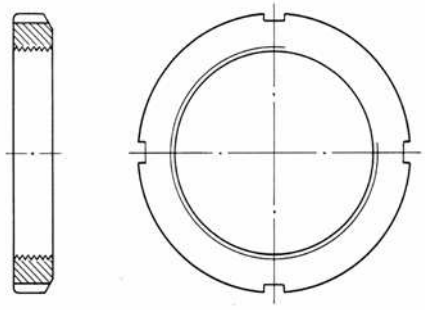


Figure 9

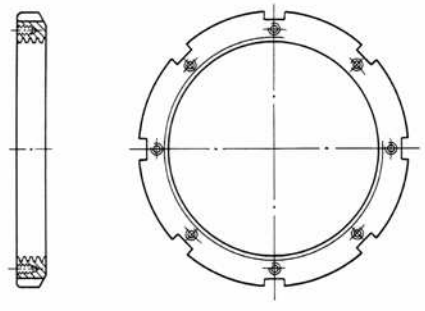


Figure 10

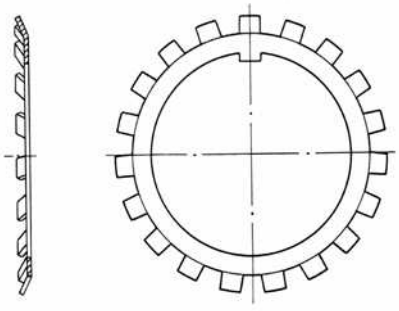
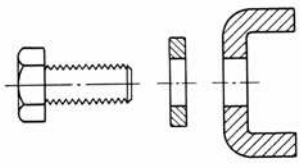


Figure 11

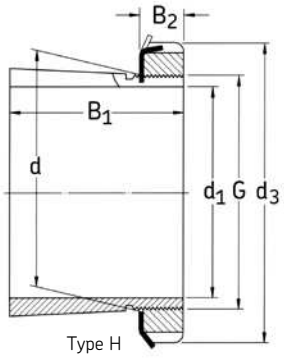


Other accessories

In addition to the selection of accessories shown in this publication, SKF can also supply a wide variety of other aids for mounting and dismounting rolling bearings. These include dollies, drifts, mechanical tools such as drive-up kits and pullers, oil pumps with accessories, complete oil injection tool kits, heating tools, electrical withdrawal tools, gauges and other items. Further details can be found in the SKF Maintenance and Lubrication Products catalog (MP/P1 03000 EN).

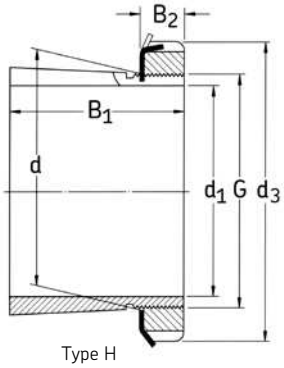
A carefully selected range of lubricating greases is also available to cover the majority of applications where grease lubricated bearings are used.

Adapter sleeves
d_1 17 – 55 mm



Type H
MB locking device

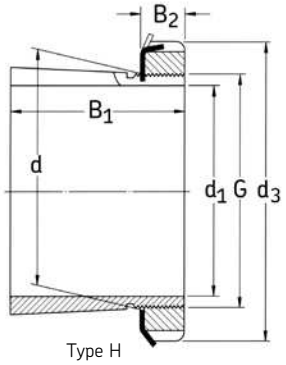
Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm						kg	–				
17	20	32	24	7	M 20x1	0.036	**H 204**	KM 4	MB 4	-	1204 EK
		32	28	7	M 20x1	0.04	**H 304**	KM 4	MB 4	-	2204 EK, 1304 EK
		32	31	7	M 20x1	0.05	**H 2304**	KM 4	MB 4	-	2304 K
20	25	38	26	8	M 25x1.5	0.064	**H 205**	KM 5	MB 5	-	1205 EK
		38	29	8	M 25x1.5	0.071	**H 305**	KM 5	MB 5	-	2205 EK, 1305 EK, 22205 EK
		38	29	8	M 25x1.5	0.071	**H 305 C**	KM 5	MB 5 C	-	2205 E-2RS1K
		38	35	8	M 25x1.5	0.085	**H 2305**	KM 5	MB 5	-	2305 K
25	30	45	27	8	M 30x1.5	0.086	**H 206**	KM 6	MB 6	-	1206 EK
		45	31	8	M 30x1.5	0.095	**H 306**	KM 6	MB 6	-	2206 EK, 1306 EK, 22206 EK
		45	31	8	M 30x1.5	0.095	**H 306 C**	KM 6	MB 6 C	-	2206 E-2RS1K
		45	38	8	M 30x1.5	0.11	**H 2306**	KM 6	MB 6	-	2306 K
30	35	52	29	9	M 35x1.5	0.12	**H 207**	KM 7	MB 7	-	1207 EK
		52	35	9	M 35x1.5	0.14	**H 307**	KM 7	MB 7	-	2207 EK, 1307 EK, 22207 EK
		52	35	9	M 35x1.5	0.14	**H 307 C**	KM 7	MB 7 C	-	2207 E-2RS1K
		52	43	9	M 35x1.5	0.16	**H 2307**	KM 7	MB 7	-	2307 EK
35	40	58	31	10	M 40x1.5	0.16	**H 208**	KM 8	MB 8	-	1208 EK
		58	36	10	M 40x1.5	0.17	**H 308**	KM 8	MB 8	-	2208 EK, 1308 EK, 22208 EK, 21308 CCK
		58	36	10	M 40x1.5	0.17	**H 308 C**	KM 8	MB 8 C	-	2208 E-2RS1K
		58	46	10	M 40x1.5	0.22	**H 2308**	KM 8	MB 8	-	2308 EK, 22308 EK
40	45	65	33	11	M 45x1.5	0.21	**H 209**	KM 9	MB 9	-	1209 EK
		65	39	11	M 45x1.5	0.23	**H 309**	KM 9	MB 9	-	2209 EK, 1309 EK, 22209 EK, 21309 CCK
		65	39	11	M 45x1.5	0.23	**H 309 C**	KM 9	MB 9 C	-	2209 E-2RS1K
		65	50	11	M 45x1.5	0.27	**H 2309**	KM 9	MB 9	-	2309 EK, 22309 EK
45	50	70	35	12	M 50x1.5	0.24	**H 210**	KM 10	MB 10	HMV 10	1210 EK
		70	42	12	M 50x1.5	0.27	**H 310**	KM 10	MB 10	HMV 10	2210 EK, 1310 EK, 22210 EK, 21310 CCK
		70	42	12	M 50x1.5	0.27	**H 310 C**	KM 10	MB 10 C	-	2210-2RS1K
		70	55	12	M 50x1.5	0.34	**H 2310**	KM 10	MB 10	HMV 10	2310 K, 22310 EK
50	55	75	37	12.5	M 55x2	0.28	**H 211**	KM 11	MB 11	HMV 11	1211 EK
		75	45	12.5	M 55x2	0.32	**H 311**	KM 11	MB 11	HMV 11	2211 EK, 1311 EK, 22211 EK, 21311 CCK
		75	45	12.5	M 55x2	0.32	**H 311 C**	KM 11	MB 11 C	-	2211 E-2RS1K
		75	59	12.5	M 55x2	0.39	**H 2311**	KM 11	MB 11	HMV 11	2311 K, 22311 EK
55	60	80	38	13	M 60x2	0.31	**H 212**	KM 12	MB 12	HMV 12	1212 EK
		80	47	13	M 60x2	0.36	**H 312**	KM 12	MB 12	HMV 12	2212 EK, 1312 EK, 22212 EK, 21312 CCK
		80	62	13	M 60x2	0.45	**H 2312**	KM 12	MB 12	HMV 12	2312 K, 22312 EK



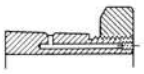
Type H
MB locking device

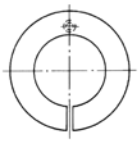
Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm						kg	–				
60	65	85	40	14	M 65x2	0.36	**H 213**	KM 13	MB 13	-	1213 EK
		85	50	14	M 65x2	0.42	**H 313**	KM 13	MB 13	HMV 13	2213 EK,1313 EK, 22213 EK, 21313 CCK
		85	65	14	M 65x2	0.52	**H 2313**	KM 13	MB 13	HMV 13	2313 K, 22313 EK
	70	92	52	14	M 70x2	0.67	**H 314**	KM 14	MB 14	HMV 14	22214 EK, 21314 CCK
		92	68	14	M 70x2	0.88	**H 2314**	KM 14	MB 14	HMV 14	22314 EK
65	75	98	43	15	M 75x2	0.66	**H 215**	KM 15	MB 15	HMV 15	1215 K
		98	55	15	M 75x2	0.78	**H 315**	KM 15	MB 15	HMV 15	2215 K, 1315 K, 22215 EK, 21315 CCK
		98	73	15	M 75x2	1.1	**H 2315**	KM 15	MB 15	HMV 15	2315 K, 22315 EK
70	80	105	46	17	M 80x2	0.81	**H 216**	KM 16	MB 16	HMV 16	1216 K
		105	59	17	M 80x2	0.95	**H 316**	KM 16	MB 16	HMV 16	2216 EK, 1316 K, 22216 EK, 21316 CCK
		105	78	17	M 80x2	1.2	**H 2316**	KM 16	MB 16	HMV 16	2316 K, 22316 EK
75	85	110	50	18	M 85x2	0.94	**H 217**	KM 17	MB 17	HMV 17	1217 K
		110	63	18	M 85x2	1.1	**H 317**	KM 17	MB 17	HMV 17	2217 K, 1317 K, 22217 EK, 21317 CCK
		110	82	18	M 85x2	1.35	**H 2317**	KM 17	MB 17	HMV 17	2317 K, 22317 EK
80	90	120	52	18	M 90x2	1.1	**H 218**	KM 18	MB 18	HMV 18	1218 K
		120	65	18	M 90x2	1.3	**H 318**	KM 18	MB 18	HMV 18	2218 K, 1318 K, 22218 EK, 21318 CCK
		120	86	18	M 90x2	1.6	**H 2318**	KM 18	MB 18	HMV 18	2318 K, 23218 CCK/W33, 22318 EK
85	95	125	55	19	M 95x2	1.25	**H 219**	KM 19	MB 19	HMV 19	1219 K
		125	68	19	M 95x2	1.4	**H 319**	KM 19	MB 19	HMV 19	2219 K, 1319 K, 22219 EK, 21319 CCK
		125	90	19	M 95x2	1.8	**H 2319**	KM 19	MB 19	HMV 19	2319 K, 22319 EK
90	100	130	58	20	M 100x2	1.4	**H 220**	KM 20	MB 20	HMV 20	1220 K
		130	71	20	M 100x2	1.6	**H 320**	KM 20	MB 20	HMV 20	2220 K, 1320 K, 22220 EK, 21320 CCK
		130	97	20	M 100x2	2	**H 2320**	KM 20	MB 20	HMV 20	2320 K, 23220 CCK/W33, 22320 EK
		130	76	20	M 100x2	1.8	**H 3120**	KM 20	MB 20	HMV 20	23120 CCK/W33
95	105	140	60	20	M 105x2	1.6	**H 221**	KM 21	MB 21	HMV 21	1221 K
		140	74	20	M 105x2	1.85	**H 321**	KM 21	MB 21	HMV 21	2221 K, 1321 K
100	110	145	63	21	M 110x2	1.8	**H 222**	KM 22	MB 22	HMV 22	1222 K
		145	77	21	M 110x2	2.05	**H 322**	KM 22	MB 22	HMV 22	2222 K, 1322 K, 23022 CCK, 22222 EK, 21322 CCK
		145	105	21	M 110x2	2.75	**H 2322**	KM 22	MB 22	HMV 22	2322 K, 23222 CCK/W33, 22322 EK
		145	81	21	M 110x2	2.1	**H 3122**	KM 22	MB 22	HMV 22	23122 CCK/W33
110	120	145	60	22	M 120x2	1.7	**H 3924**	KML 24	MBL 24	HMV 24	23924 CCK/W33
		145	72	22	M 120x2	1.8	**H 3024**	KML 24	MBL 24	HMV 24	1224 K, 23024 CCK/W33
		155	88	22	M 120x2	2.5	**H 3124**	KM 24	MB 24	HMV 24	23124 CCK/W33, 22224 EK
		155	112	22	M 120x2	3	**H 2324**	KM 24	MB 24	HMV 24	23224 CCK/W33, 22324 CCK/W33

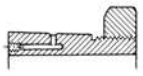
Adapter sleeves
d_1 115 – 140 mm

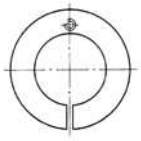


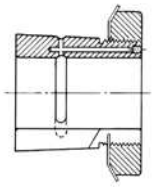
Type H
MB locking device

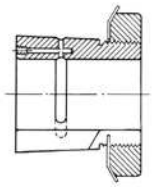

Type OH . . H

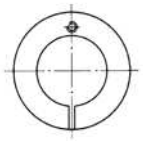


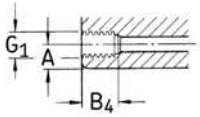

Type OH



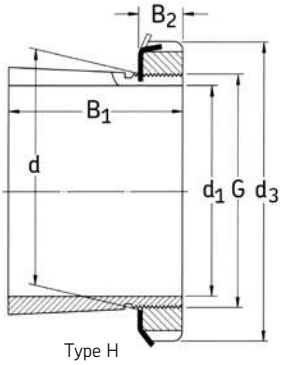

Type OH . . HB
Size 40 and under


Type OH . . B
Size 40 and under

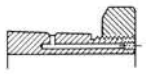


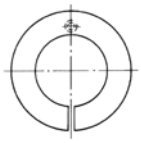


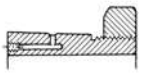
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_4	A	G	G_1			Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
115	130	155	65	23	-	-	M 130x2	-	-	2.4	**H 3926**	KML 26	MBL 26	HMV 26	23926 CCK/W33
		155	80	23	-	-	M 130x2	-	-	2.8	**H 3026**	KML 26	MBL 26	HMV 26	23026 CCK/W33
		165	92	23	-	-	M 130x2	-	-	3.45	**H 3126**	KM 26	MB 26	HMV 26	23126 CCK/W33, 22226 EK
		165	121	23	-	-	M 130x2	-	-	4.45	**H 2326**	KM 26	MB 26	HMV 26	23226 CCK/W33, 22326 CCK/W33
125	140	165	66	24	-	-	M 140x2	-	-	2.7	**H 3928**	KML 28	MBL 28	HMV 28	23928 CCK/W33
		165	82	24	-	-	M 140x2	-	-	3.05	**H 3028**	KML 28	MBL 28	HMV 28	23028 CCK/W33
		180	97	24	-	-	M 140x2	-	-	4.1	**H 3128**	KM 28	MB 28	HMV 28	23128 CCK/W33, 22228 CCK/W33
		180	131	24	-	-	M 140x2	-	-	5.4	**H 2328**	KM 28	MB 28	HMV 28	23228 CCK/W33, 22328 CCK/W33
135	150	180	76	26	-	-	M 150x2	-	-	3.6	**H 3930**	KML 30	MBL 30	HMV 30	23930 CCK/W33
		180	87	26	-	-	M 150x2	-	-	3.75	**H 3030**	KML 30	MBL 30	HMV 30	23030 CCK/W33
		195	111	26	-	-	M 150x2	-	-	5.25	**H 3130**	KM 30	MB 30	HMV 30	23130 CCK/W33, 22230 CCK/W33
		195	139	26	-	-	M 150x2	-	-	6.4	**H 2330**	KM 30	MB 30	HMV 30	23230 CCK/W33, 22330 CCK/W33
140	160	190	78	27.5	-	-	M 160x3	-	-	4.6	**H 3932**	KML 32	MBL 32	HMV 32	23932 CCK/W33
		190	78	27.5	9	4.2	M 160x3	M 6	-	4.6	**OH 3932 H**	KML 32	MBL 32	HMV 32	23932 CCK/W33
		190	78	27.5	9	4.2	M 160x3	M 6	-	4.6	**OH 3932 HB**	KML 32	MBL 32	HMV 32	23932 CCK/W33
		190	78	27.5	9	5	M 160x3	M 6	-	4.6	**OH 3932**	KML 32	MBL 32	HMV 32	23932 CCK/W33
		190	78	27.5	9	5	M 160x3	M 6	-	4.6	**OH 3932 B**	KML 32	MBL 32	HMV 32	23932 CCK/W33
		190	93	27.5	-	-	M 160x3	-	-	5.1	**H 3032**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		190	93	27.5	9	4.2	M 160x3	M 6	-	5.1	**OH 3032 H**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		190	93	27.5	9	4.2	M 160x3	M 6	-	5.1	**OH 3032 HB**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		190	93	27.5	9	5	M 160x3	M 6	-	5.1	**OH 3032**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		190	93	27.5	9	5	M 160x3	M 6	-	5.1	**OH 3032 B**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		210	119	28	-	-	M 160x3	-	-	7.25	**H 3132**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	119	28	9	4.2	M 160x3	M 6	-	7.25	**OH 3132 H**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	119	28	9	4.2	M 160x3	M 6	-	7.25	**OH 3132 HB**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	119	28	13	6.8	M 160x3	-	G 1/8	7.25	**OH 3132**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	119	28	13	6.8	M 160x3	-	G 1/8	7.25	**OH 3132 B**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33

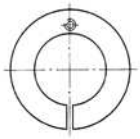


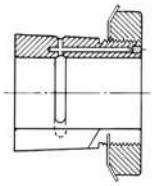
Type H
MB locking device

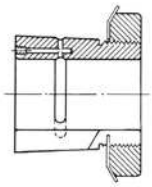

Type OH . . H

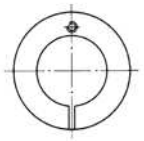


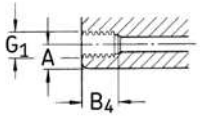

Type OH




Type OH . . HB
Size 40 and under

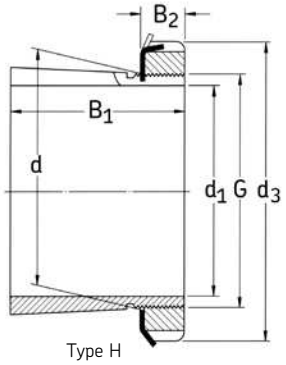

Type OH . . B
Size 40 and under



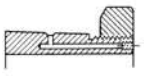


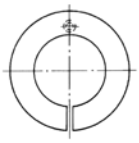
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_4	A	G	G_1			Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
140 (cont.)	160	210	147	28	-	-	M 160x3	-	-	8.8	**H 2332**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
		210	147	28	9	4.2	M 160x3	M 6	-	8.8	**OH 2332 H**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
		210	147	28	9	4.2	M 160x3	M 6	-	8.8	**OH 2332 HB**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
		210	147	28	13	7	M 160x3	-	G 1/8	8.8	**OH 2332**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
		210	147	28	13	7	M 160x3	-	G 1/8	8.8	**OH 2332 B**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
150	170	200	79	28.5	-	-	M 170x3	-	-	5	**H 3934**	KML 34	MBL 34	HMV 34	23934 CCK/W33
		200	79	28.5	9	4.2	M 170x3	M 6	-	5	**OH 3934 H**	KML 34	MBL 34	HMV 34	23934 CCK/W33
		200	79	28.5	9	4.2	M 170x3	M 6	-	5	**OH 3934 HB**	KML 34	MBL 34	HMV 34	23934 CCK/W33
		200	79	28.5	9	5	M 170x3	M 6	-	5	**OH 3934**	KML 34	MBL 34	HMV 34	23934 CCK/W33
		200	79	28.5	9	5	M 170x3	M 6	-	5	**OH 3934 B**	KML 34	MBL 34	HMV 34	23934 CCK/W33
		200	101	28.5	-	-	M 170x3	-	-	5.8	**H 3034**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		200	101	28.5	9	4.2	M 170x3	M 6	-	5.8	**OH 3034 H**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		200	101	28.5	9	4.2	M 170x3	M 6	-	5.8	**OH 3034 HB**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		200	101	28.5	9	5	M 170x3	M 6	-	5.8	**OH 3034**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		200	101	28.5	9	5	M 170x3	M 6	-	5.8	**OH 3034 B**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		220	122	29	-	-	M 170x3	-	-	8.1	**H 3134**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	122	29	9	4.2	M 170x3	M 6	-	8.1	**OH 3134 H**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	122	29	9	4.2	M 170x3	M 6	-	8.1	**OH 3134 HB**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	122	29	13	7	M 170x3	-	G 1/8	8.1	**OH 3134**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	122	29	13	7	M 170x3	-	G 1/8	8.1	**OH 3134 B**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	154	29	-	-	M 170x3	-	-	9.9	**H 2334**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33
		220	154	29	9	4.2	M 170x3	M 6	-	9.9	**OH 2334 H**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33
		220	154	29	9	4.2	M 170x3	M 6	-	9.9	**OH 2334 HB**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33
		220	154	29	13	7	M 170x3	-	G 1/8	9.9	**OH 2334**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33
		220	154	29	13	7	M 170x3	-	G 1/8	9.9	**OH 2334 B**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33

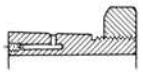
Adapter sleeves
d_1 160 – 170 mm

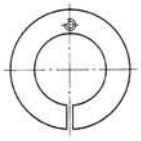


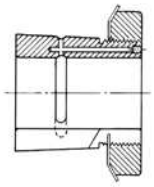
Type H
MB locking device

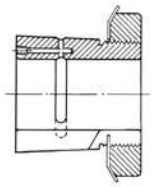

Type OH . . H

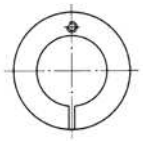


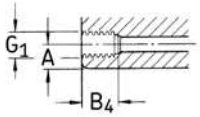

Type OH



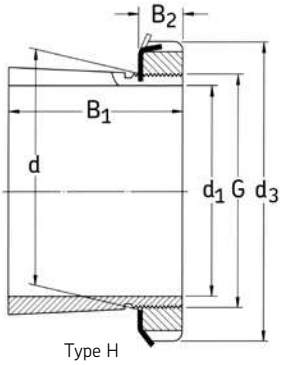

Type OH . . HB
Size 40 and under


Type OH . . B
Size 40 and under

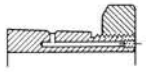


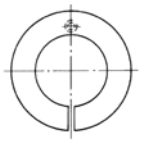


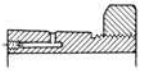
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_4	A	G	G_1			Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
160	180	210	87	29.5	-	-	M 180x3	-	-	5.7	**H 3936**	KML 36	MBL 36	HMV 36	23936 CCK/W33
		210	87	29.5	9	4.2	M 180x3	M 6	-	5.7	**OH 3936 H**	KML 36	MBL 36	HMV 36	23936 CCK/W33
		210	87	29.5	9	4.2	M 180x3	M 6	-	5.7	**OH 3936 HB**	KML 36	MBL 36	HMV 36	23936 CCK/W33
		210	87	29.5	9	5	M 180x3	M 6	-	5.7	**OH 3936**	KML 36	MBL 36	HMV 36	23936 CCK/W33
		210	87	29.5	9	5	M 180x3	M 6	-	5.7	**OH 3936 B**	KML 36	MBL 36	HMV 36	23936 CCK/W33
		210	109	29.5	-	-	M 180x3	-	-	6.7	**H 3036**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		210	109	29.5	9	4.2	M 180x3	M 6	-	6.7	**OH 3036 H**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		210	109	29.5	9	4.2	M 180x3	M 6	-	6.7	**OH 3036 HB**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		210	109	29.5	9	5	M 180x3	M 6	-	6.7	**OH 3036**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		210	109	29.5	9	5	M 180x3	M 6	-	6.7	**OH 3036 B**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		230	131	30	-	-	M 180x3	-	-	9.15	**H 3136**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	131	30	9	4.2	M 180x3	M 6	-	9.15	**OH 3136 H**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	131	30	9	4.2	M 180x3	M 6	-	9.15	**OH 3136 HB**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	131	30	13	7	M 180x3	-	G 1/8	9.15	**OH 3136**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	131	30	13	7	M 180x3	-	G 1/8	9.15	**OH 3136 B**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	161	30	-	-	M 180x3	-	-	11	**H 2336**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
		230	161	30	9	4.2	M 180x3	M 6	-	11	**OH 2336 H**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
		230	161	30	9	4.2	M 180x3	M 6	-	11	**OH 2336 HB**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
		230	161	30	13	7	M 180x3	-	G 1/8	11	**OH 2336**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
		230	161	30	13	7	M 180x3	-	G 1/8	11	**OH 2336 B**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
170	190	220	89	30.5	-	-	M 190x3	-	-	6.2	**H 3938**	KML 38	MBL 38	HMV 38	23938 CCK/W33
		220	89	30.5	9	4.2	M 190x3	M 6	-	6.2	**OH 3938 H**	KML 38	MBL 38	HMV 38	23938 CCK/W33
		220	89	30.5	9	4.2	M 190x3	M 6	-	6.2	**OH 3938 HB**	KML 38	MBL 38	HMV 38	23938 CCK/W33
		220	89	30.5	9	5	M 190x3	M 6	-	6.2	**OH 3938**	KML 38	MBL 38	HMV 38	23938 CCK/W33
		220	89	30.5	9	5	M 190x3	M 6	-	6.2	**OH 3938 B**	KML 38	MBL 38	HMV 38	23938 CCK/W33
		220	112	30.5	-	-	M 190x3	-	-	7.25	**H 3038**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		220	112	30.5	9	4.2	M 190x3	M 6	-	7.25	**OH 3038 H**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		220	112	30.5	9	4.2	M 190x3	M 6	-	7.25	**OH 3038 HB**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		220	112	30.5	9	5	M 190x3	M 6	-	7.25	**OH 3038**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		220	112	30.5	9	5	M 190x3	M 6	-	7.25	**OH 3038 B**	KML 38	MBL 38	HMV 38	23038 CCK/W33

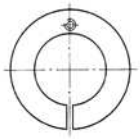


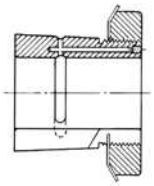
Type H
MB locking device

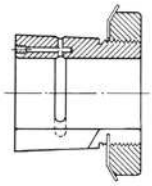

Type OH . . H

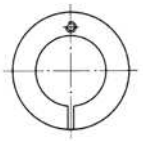


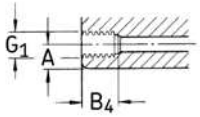

Type OH




Type OH . . HB
Size 40 and under


Type OH . . B
Size 40 and under

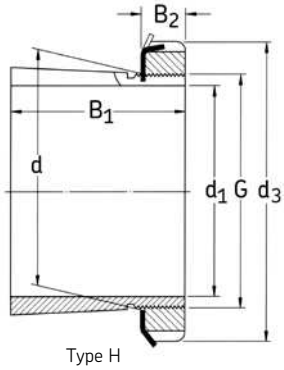




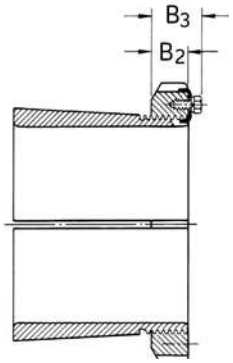
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_4	A	G	G_1			Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
170 (cont.)	190	240	141	31	-	-	M 190x3	-	-	10.5	**H 3138**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	141	31	9	4.2	M 190x3	M 6	-	10.5	**OH 3138 H**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	141	31	9	4.2	M 190x3	M 6	-	10.5	**OH 3138 HB**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	141	31	13	7	M 190x3	-	G 1/8	10.5	**OH 3138**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	141	31	13	7	M 190x3	-	G 1/8	10.5	**OH 3138 B**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	169	31	-	-	M 190x3	-	-	12	**H 2338**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
		240	169	31	9	4.2	M 190x3	M 6	-	12	**OH 2338 H**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
		240	169	31	9	4.2	M 190x3	M 6	-	12	**OH 2338 HB**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
		240	169	31	13	7	M 190x3	-	G 1/8	12	**OH 2338**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
		240	169	31	13	7	M 190x3	-	G 1/8	12	**OH 2338 B**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
180	200	240	98	31.5	-	-	M 200x3	-	-	7.9	**H 3940**	KML 40	MBL 40	HMV 40	23940 CCK/W33
		240	98	31.5	9	4.2	M 200x3	M 6	-	7.9	**OH 3940 H**	KML 40	MBL 40	HMV 40	23940 CCK/W33
		240	98	31.5	9	4.2	M 200x3	M 6	-	7.9	**OH 3940 HB**	KML 40	MBL 40	HMV 40	23940 CCK/W33
		240	98	31.5	9	5	M 200x3	M 6	-	7.9	**OH 3940**	KML 40	MBL 40	HMV 40	23940 CCK/W33
		240	98	31.5	9	5	M 200x3	M 6	-	7.9	**OH 3940 B**	KML 40	MBL 40	HMV 40	23940 CCK/W33
		240	120	31.5	-	-	M 200x3	-	-	8.9	**H 3040**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		240	120	31.5	9	4.2	M 200x3	M 6	-	8.9	**OH 3040 H**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		240	120	31.5	9	4.2	M 200x3	M 6	-	8.9	**OH 3040 HB**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		240	120	31.5	13	7	M 200x3	-	G 1/8	8.9	**OH 3040**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		240	120	31.5	13	7	M 200x3	-	G 1/8	8.9	**OH 3040 B**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		250	150	32	-	-	M 200x3	-	-	12	**H 3140**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	150	32	9	4.2	M 200x3	M 6	-	12	**OH 3140 H**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	150	32	9	4.2	M 200x3	M 6	-	12	**OH 3140 HB**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	150	32	13	7.5	M 200x3	-	G 1/8	12	**OH 3140**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	150	32	13	7.5	M 200x3	-	G 1/8	12	**OH 3140 B**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33

Adapter sleeves

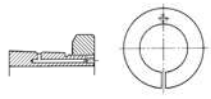
d_1 180 – 200 mm



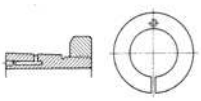
Type H
MB locking device



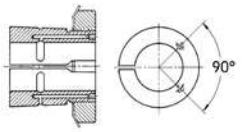
Type H
MS locking device



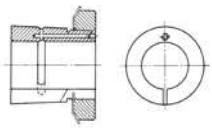
Type OH . . H



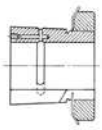
Type OH



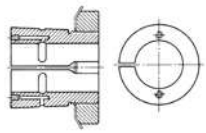
Type OH . . HB
Size 44 to 56



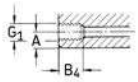
Type OH . . HB
Size 40 and under



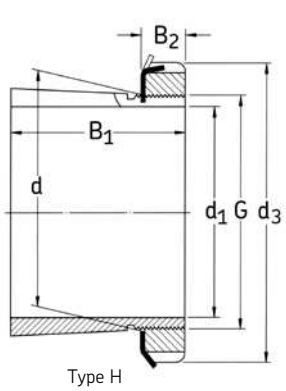
Type OH . . B
Size 40 and under



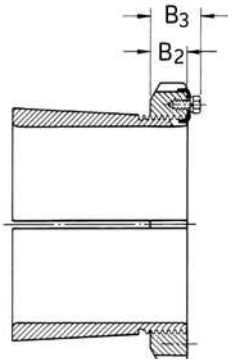
Type OH . . B
Size 44 to 56



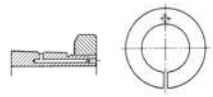
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
180 (Cont.)	200	250	176	32	-	-	-	M 200x3	-	-	13.5	**H 2340**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
		250	176	32	-	9	4.2	M 200x3	M 6	-	13.5	**OH 2340 H**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
		250	176	32	-	9	4.2	M 200x3	M 6	-	13.5	**OH 2340 HB**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
		250	176	32	-	13	8	M 200x3	-	G 1/8	13.5	**OH 2340**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
		250	176	32	-	13	8	M 200x3	-	G 1/8	13.5	**OH 2340 B**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
200	220	260	96	30	41	9	4.2	Tr 220x4	M 6	-	7.95	**OH 3944 H**	HM 3044	MS 3044	HMV 44	23944 CCK/W33
		260	96	30	41	9	4.2	Tr 220x4	M 6	-	7.95	**OH 3944 HB**	HM 3044	MS 3044	HMV 44	23944 CCK/W33
		260	96	30	41	9	5	Tr 220x4	M 6	-	7.95	**OH 3944**	HM 3044	MS 3044	HMV 44	23944 CCK/W33
		260	96	30	41	9	5	Tr 220x4	M 6	-	7.95	**OH 3944 B**	HM 3044	MS 3044	HMV 44	23944 CCK/W33
		260	96	30	41	-	-	Tr 220x4	-	-	7.95	**H 3944**	HM 3044	MS 3044	HMV 44	23944 CCK/W33
		260	126	30	41	9	4.2	Tr 220x4	M 6	-	9.90	**OH 3044 H**	HM 3044	MS 3044	HMV 44	23044 CCK/W33
		260	126	30	41	9	4.2	Tr 220x4	M 6	-	9.90	**OH 3044 HB**	HM 3044	MS 3044	HMV 44	23044 CCK/W33
		260	126	30	41	13	7	Tr 220x4	-	G 1/8	9.90	**OH 3044**	HM 3044	MS 3044	HMV 44	23044 CCK/W33
		260	126	30	41	13	7	Tr 220x4	-	G 1/8	9.90	**OH 3044 B**	HM 3044	MS 3044	HMV 44	23044 CCK/W33
		260	126	30	41	-	-	Tr 220x4	-	-	9.90	**H 3044**	HM 3044	MS 3044	HMV 44	23044 CCK/W33
		280	161	35	-	9	4.2	Tr 220x4	M 6	-	15.0	**OH 3144 H**	HM 44 T	MB 44	HMV 44	23144 CCK/W33, 22244 CCK/W33
		280	161	35	-	9	4.2	Tr 220x4	M 6	-	15.0	**OH 3144 HB**	HM 44 T	MB 44	HMV 44	23144 CCK/W33, 22244 CCK/W33
		280	161	35	-	13	8	Tr 220x4	-	G 1/8	15.0	**OH 3144**	HM 44 T	MB 44	HMV 44	23144 CCK/W33, 22244 CCK/W33
		280	161	35	-	13	8	Tr 220x4	-	G 1/8	15.0	**OH 3144 B**	HM 44 T	MB 44	HMV 44	23144 CCK/W33, 22244 CCK/W33
		280	161	35	-	-	-	Tr 220x4	-	-	15.0	**H 3144**	HM 44 T	MB 44	HMV 44	23144 CCK/W33, 22244 CCK/W33
		280	186	35	-	9	4.2	Tr 220x4	M 6	-	17.0	**OH 2344 H**	HM 44 T	MB 44	HMV 44	23244 CCK/W33, 22344 CCK/W33
		280	186	35	-	9	4.2	Tr 220x4	M 6	-	17.0	**OH 2344 HB**	HM 44 T	MB 44	HMV 44	23244 CCK/W33, 22344 CCK/W33
		280	186	35	-	13	8.5	Tr 220x4	-	G 1/8	17.0	**OH 2344**	HM 44 T	MB 44	HMV 44	23244 CCK/W33, 22344 CCK/W33
		280	186	35	-	13	8.5	Tr 220x4	-	G 1/8	17.0	**OH 2344 B**	HM 44 T	MB 44	HMV 44	23244 CCK/W33, 22344 CCK/W33
		280	186	35	-	-	-	Tr 220x4	-	-	17.0	**H 2344**	HM 44 T	MB 44	HMV 44	23244 CCK/W33, 22344 CCK/W33

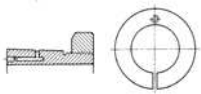


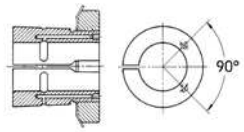
Type H
MB locking device



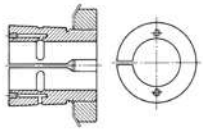
Type H
MS locking device

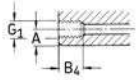

Type OH . . H


Type OH



Type OH . . HB
Size 44 to 56

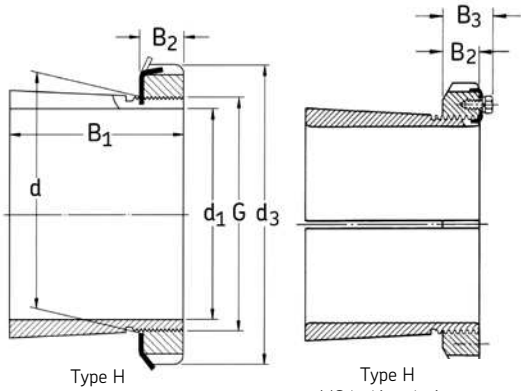

Type OH . . B
Size 44 to 56



Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
220	240	290	101	34	46	9	4.2	Tr 240x4	M 6	-	11	**OH 3948 H**	HM 3048	MS 3052-48	HMV 48	23948 CCK/W33
		290	101	34	46	9	4.2	Tr 240x4	M 6	-	11	**OH 3948 HB**	HM 3048	MS 3052-48	HMV 48	23948 CCK/W33
		290	101	34	46	13	6.5	Tr 240x4	-	G 1/8	11	**OH 3948**	HM 3048	MS 3052-48	HMV 48	23948 CCK/W33
		290	101	34	46	13	6.5	Tr 240x4	-	G 1/8	11	**OH 3948 B**	HM 3048	MS 3052-48	HMV 48	23948 CCK/W33
		290	101	34	46	-	-	Tr 240x4	-	-	11	**H 3948**	HM 3048	MS 3052-48	HMV 48	23948 CCK/W33
		290	133	34	46	9	4.2	Tr 240x4	M 6	-	12	**OH 3048 H**	HM 3048	MS 3052-48	HMV 48	23048 CCK/W33
		290	133	34	46	9	4.2	Tr 240x4	M 6	-	12	**OH 3048 HB**	HM 3048	MS 3052-48	HMV 48	23048 CCK/W33
		290	133	34	46	13	7	Tr 240x4	-	G 1/8	12	**OH 3048**	HM 3048	MS 3052-48	HMV 48	23048 CCK/W33
		290	133	34	46	13	7	Tr 240x4	-	G 1/8	12	**OH 3048 B**	HM 3048	MS 3052-48	HMV 48	23048 CCK/W33
		290	133	34	46	-	-	Tr 240x4	-	-	12	**H 3048**	HM 3048	MS 3052-48	HMV 48	23048 CCK/W33
		300	172	37	-	9	4.2	Tr 240x4	M 6	-	16	**OH 3148 H**	HM 48 T	MB 48	HMV 48	23148 CCK/W33, 22248 CCK/W33
		300	172	37	-	9	4.2	Tr 240x4	M 6	-	16	**OH 3148 HB**	HM 48 T	MB 48	HMV 48	23148 CCK/W33, 22248 CCK/W33
		300	172	37	-	13	8	Tr 240x4	-	G 1/8	16	**OH 3148**	HM 48 T	MB 48	HMV 48	23148 CCK/W33, 22248 CCK/W33
		300	172	37	-	13	8	Tr 240x4	-	G 1/8	16	**OH 3148 B**	HM 48 T	MB 48	HMV 48	23148 CCK/W33, 22248 CCK/W33
		300	172	37	-	-	-	Tr 240x4	-	-	16	**H 3148**	HM 48 T	MB 48	HMV 48	23148 CCK/W33, 22248 CCK/W33
		300	199	37	-	9	4.2	Tr 240x4	M 6	-	19	**OH 2348 H**	HM 48 T	MB 48	HMV 48	23248 CCK/W33, 22348 CCK/W33
		300	199	37	-	9	4.2	Tr 240x4	M 6	-	19	**OH 2348 HB**	HM 48 T	MB 48	HMV 48	23248 CCK/W33, 22348 CCK/W33
		300	199	37	-	13	9.5	Tr 240x4	-	G 1/8	19	**OH 2348**	HM 48 T	MB 48	HMV 48	23248 CCK/W33, 22348 CCK/W33
		300	199	37	-	13	9.5	Tr 240x4	-	G 1/8	19	**OH 2348 B**	HM 48 T	MB 48	HMV 48	23248 CCK/W33, 22348 CCK/W33
		300	199	37	-	-	-	Tr 240x4	-	-	19	**H 2348**	HM 48 T	MB 48	HMV 48	23248 CCK/W33, 22348 CCK/W33
240	260	310	116	34	46	9	4.2	Tr 260x4	M 6	-	11.7	**OH 3952 H**	HM 3052	MS 3052-48	HMV 52	23952 CCK/W33
		310	116	34	46	9	4.2	Tr 260x4	M 6	-	11.7	**OH 3952 HB**	HM 3052	MS 3052-48	HMV 52	23952 CCK/W33
		310	116	34	46	13	7	Tr 260x4	-	G 1/8	11.7	**OH 3952**	HM 3052	MS 3052-48	HMV 52	23952 CCK/W33
		310	116	34	46	13	7	Tr 260x4	-	G 1/8	11.7	**OH 3952 B**	HM 3052	MS 3052-48	HMV 52	23952 CCK/W33
		310	116	34	46	-	-	Tr 260x4	-	-	11.7	**H 3952**	HM 3052	MS 3052-48	HMV 52	23952 CCK/W33
		310	145	34	46	9	4.2	Tr 260x4	M 6	-	13.5	**OH 3052 H**	HM 3052	MS 3052-48	HMV 52	23052 CCK/W33
		310	145	34	46	9	4.2	Tr 260x4	M 6	-	13.5	**OH 3052 HB**	HM 3052	MS 3052-48	HMV 52	23052 CCK/W33
		310	145	34	46	13	7.5	Tr 260x4	-	G 1/8	13.5	**OH 3052**	HM 3052	MS 3052-48	HMV 52	23052 CCK/W33
		310	145	34	46	13	7.5	Tr 260x4	-	G 1/8	13.5	**OH 3052 B**	HM 3052	MS 3052-48	HMV 52	23052 CCK/W33
		310	145	34	46	-	-	Tr 260x4	-	-	13.5	**H 3052**	HM 3052	MS 3052-48	HMV 52	23052 CCK/W33

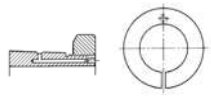
Adapter sleeves

d_1 240 – 260 mm

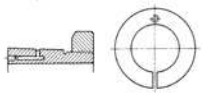


Type H
MB locking device

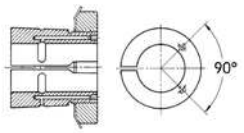
Type H
MS locking device



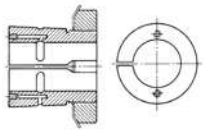
Type OH . . H



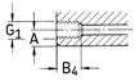
Type OH



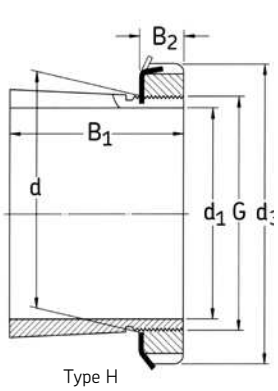
Type OH . . HB
Size 44 to 56



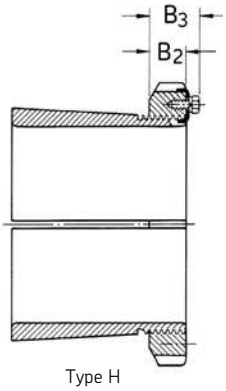
Type OH . . B
Size 44 to 56



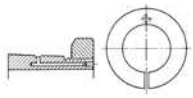
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
240 (Cont.)	260	330	190	39	-	9	4.2	Tr 260x4	M 6	-	21	**OH 3152 H**	HM 52 T	MB 52	HMV 52	23152 CCK/W33, 22252 CACK/W33
		330	190	39	-	9	4.2	Tr 260x4	M 6	-	21	**OH 3152 HB**	HM 52 T	MB 52	HMV 52	23152 CCK/W33, 22252 CACK/W33
		330	190	39	-	13	8	Tr 260x4	-	G 1/8	21	**OH 3152**	HM 52 T	MB 52	HMV 52	23152 CCK/W33, 22252 CACK/W33
		330	190	39	-	13	8	Tr 260x4	-	G 1/8	21	**OH 3152 B**	HM 52 T	MB 52	HMV 52	23152 CCK/W33, 22252 CACK/W33
		330	190	39	-	-	-	Tr 260x4	-	-	21	**H 3152**	HM 52 T	MB 52	HMV 52	23152 CCK/W33, 22252 CACK/W33
		330	211	39	-	9	4.2	Tr 260x4	M 6	-	23	**OH 2352 H**	HM 52 T	MB 52	HMV 52	23252 CACK/W33, 22352 CCK/W33
		330	211	39	-	9	4.2	Tr 260x4	M 6	-	23	**OH 2352 HB**	HM 52 T	MB 52	HMV 52	23252 CACK/W33, 22352 CCK/W33
		330	211	39	-	13	9	Tr 260x4	-	G 1/8	23	**OH 2352**	HM 52 T	MB 52	HMV 52	23252 CACK/W33, 22352 CCK/W33
		330	211	39	-	13	9	Tr 260x4	-	G 1/8	23	**OH 2352 B**	HM 52 T	MB 52	HMV 52	23252 CACK/W33, 22352 CCK/W33
		330	211	39	-	-	-	Tr 260x4	-	-	23	**H 2352**	HM 52 T	MB 52	HMV 52	23252 CACK/W33, 22352 CCK/W33
260	280	330	121	38	50	9	4.2	Tr 280x4	M 6	-	15.3	**OH 3956 H**	HM 3056	MS 3056	HMV 56	23956 CCK/W33
		330	121	38	50	9	4.2	Tr 280x4	M 6	-	15.3	**OH 3956 HB**	HM 3056	MS 3056	HMV 56	23956 CCK/W33
		330	121	38	50	13	7	Tr 280x4	-	G 1/8	15.3	**OH 3956**	HM 3056	MS 3056	HMV 56	23956 CCK/W33
		330	121	38	50	13	7	Tr 280x4	-	G 1/8	15.3	**OH 3956 B**	HM 3056	MS 3056	HMV 56	23956 CCK/W33
		330	121	38	50	-	-	Tr 280x4	-	-	15.3	**H 3956**	HM 3056	MS 3056	HMV 56	23956 CCK/W33
		330	152	38	50	9	4.2	Tr 280x4	M 6	-	16	**OH 3056 H**	HM 3056	MS 3056	HMV 56	23056 CCK/W33
		330	152	38	50	9	4.2	Tr 280x4	M 6	-	16	**OH 3056 HB**	HM 3056	MS 3056	HMV 56	23056 CCK/W33
		330	152	38	50	13	7.5	Tr 280x4	-	G 1/8	16	**OH 3056**	HM 3056	MS 3056	HMV 56	23056 CCK/W33
		330	152	38	50	13	7.5	Tr 280x4	-	G 1/8	16	**OH 3056 B**	HM 3056	MS 3056	HMV 56	23056 CCK/W33
		330	152	38	50	-	-	Tr 280x4	-	-	16	**H 3056**	HM 3056	MS 3056	HMV 56	23056 CCK/W33
		350	195	41	-	9	4.2	Tr 280x4	M 6	-	23	**OH 3156 H**	HM 56 T	MB 56	HMV 56	23156 CCK/W33, 22256 CACK/W33
		350	195	41	-	9	4.2	Tr 280x4	M 6	-	23	**OH 3156 HB**	HM 56 T	MB 56	HMV 56	23156 CCK/W33, 22256 CACK/W33
		350	195	41	-	13	8	Tr 280x4	-	G 1/8	23	**OH 3156**	HM 56 T	MB 56	HMV 56	23156 CCK/W33, 22256 CACK/W33
		350	195	41	-	13	8	Tr 280x4	-	G 1/8	23	**OH 3156 B**	HM 56 T	MB 56	HMV 56	23156 CCK/W33, 22256 CACK/W33
		350	195	41	-	-	-	Tr 280x4	-	-	23	**H 3156**	HM 56 T	MB 56	HMV 56	23156 CCK/W33, 22256 CACK/W33

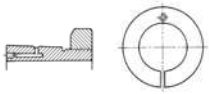


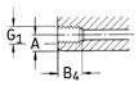
Type H
MB locking device

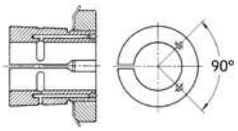


Type H
MS locking device

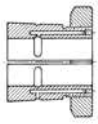

Type OH . . H

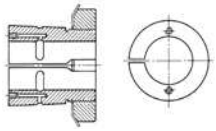

Type OH

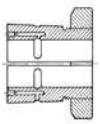




Type OH . . HB
Size 44 to 56


Type OH . . HB
Size 60 and over

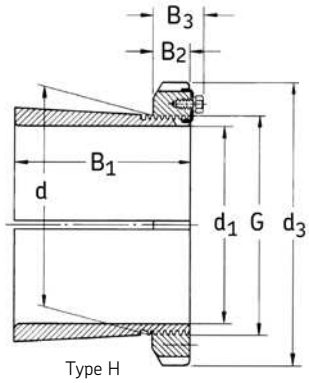

Type OH . . B
Size 44 to 56


Type OH . . B
Size 60 and over

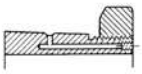
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
260 (cont.)	280	350	224	41	-	9	4.2	Tr 280x4	M 6	-	27	**OH 2356 H**	HM 56 T	MB 56	HMV 56	23256 CACK/W33, 22356 CCK/W33
		350	224	41	-	9	4.2	Tr 280x4	M 6	-	27	**OH 2356 HB**	HM 56 T	MB 56	HMV 56	23256 CACK/W33, 22356 CCK/W33
		350	224	41	-	13	9.5	Tr 280x4	-	G 1/8	27	**OH 2356**	HM 56 T	MB 56	HMV 56	23256 CACK/W33, 22356 CCK/W33
		350	224	41	-	13	9.5	Tr 280x4	-	G 1/8	27	**OH 2356 B**	HM 56 T	MB 56	HMV 56	23256 CACK/W33, 22356 CCK/W33
		350	224	41	-	-	-	Tr 280x4	-	-	27	**H 2356**	HM 56 T	MB 56	HMV 56	23256 CACK/W33, 22356 CCK/W33
280	300	360	140	42	54	9	4.2	Tr 300x4	M 6	-	20	**OH 3960 H**	HM 3060	MS 3060	HMV 60	23960 CCK/W33
		360	140	42	54	9	4.2	Tr 300x4	M 6	-	20	**OH 3960 HB**	HM 3060	MS 3060	HMV 60	23960 CCK/W33
		360	140	42	54	13	7	Tr 300x4	-	G 1/8	20	**OH 3960**	HM 3060	MS 3060	HMV 60	23960 CCK/W33
		360	140	42	54	13	7	Tr 300x4	-	G 1/8	20	**OH 3960 B**	HM 3060	MS 3060	HMV 60	23960 CCK/W33
		360	140	42	54	-	-	Tr 300x4	-	-	20	**H 3960**	HM 3060	MS 3060	HMV 60	23960 CCK/W33
		360	168	42	54	9	4.2	Tr 300x4	M 6	-	20.5	**OH 3060 H**	HM 3060	MS 3060	HMV 60	23060 CCK/W33
		360	168	42	54	9	4.2	Tr 300x4	M 6	-	20.5	**OH 3060 HB**	HM 3060	MS 3060	HMV 60	23060 CCK/W33
		360	168	42	54	13	7.5	Tr 300x4	-	G 1/8	20.5	**OH 3060**	HM 3060	MS 3060	HMV 60	23060 CCK/W33
		360	168	42	54	13	7.5	Tr 300x4	-	G 1/8	20.5	**OH 3060 B**	HM 3060	MS 3060	HMV 60	23060 CCK/W33
		360	168	42	54	-	-	Tr 300x4	-	-	20.5	**H 3060**	HM 3060	MS 3060	HMV 60	23060 CCK/W33
		380	208	40	53	9	4.2	Tr 300x4	M 6	-	29	**OH 3160 H**	HM 3160	MS 3160	HMV 60	23160 CCK/W33, 22260 CACK/W33
		380	208	40	53	9	4.2	Tr 300x4	M 6	-	29	**OH 3160 HB**	HM 3160	MS 3160	HMV 60	23160 CCK/W33, 22260 CACK/W33
		380	208	40	53	13	9	Tr 300x4	-	G 1/8	29	**OH 3160**	HM 3160	MS 3160	HMV 60	23160 CCK/W33, 22260 CACK/W33
		380	208	40	53	13	9	Tr 300x4	-	G 1/8	29	**OH 3160 B**	HM 3160	MS 3160	HMV 60	23160 CCK/W33, 22260 CACK/W33
		380	208	40	53	-	-	Tr 300x4	-	-	29	**H 3160**	HM 3160	MS 3160	HMV 60	23160 CCK/W33, 22260 CACK/W33
		380	240	40	53	9	4.2	Tr 300x4	M 6	-	32	**OH 3260 H**	HM 3160	MS 3160	HMV 60	23260 CACK/W33
		380	240	40	53	9	4.2	Tr 300x4	M 6	-	32	**OH 3260 HB**	HM 3160	MS 3160	HMV 60	23260 CACK/W33
		380	240	40	53	15	9	Tr 300x4	-	G 1/4	32	**OH 3260**	HM 3160	MS 3160	HMV 60	23260 CACK/W33
		380	240	40	53	15	9	Tr 300x4	-	G 1/4	32	**OH 3260 B**	HM 3160	MS 3160	HMV 60	23260 CACK/W33
		380	240	40	53	-	-	Tr 300x4	-	-	32	**H 3260**	HM 3160	MS 3160	HMV 60	23260 CACK/W33
300	320	380	140	42	55	9	4	Tr 320x5	M 6	-	21.5	**OH 3964 H**	HM 3064	MS 3068-64	HMV 64	23964 CACK/W33
		380	140	42	55	9	4	Tr 320x5	M 6	-	21.5	**OH 3964 HB**	HM 3064	MS 3068-64	HMV 64	23964 CACK/W33
		380	140	42	55	13	7	Tr 320x5	-	G 1/8	21.5	**OH 3964**	HM 3064	MS 3068-64	HMV 64	23964 CACK/W33
		380	140	42	55	13	7	Tr 320x5	-	G 1/8	21.5	**OH 3964 B**	HM 3064	MS 3068-64	HMV 64	23964 CACK/W33
		380	140	42	55	-	-	Tr 320x5	-	-	21.5	**H 3964**	HM 3064	MS 3068-64	HMV 64	23964 CACK/W33

Adapter sleeves

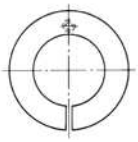
d_1 300 – 320 mm

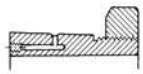


Type H
MS locking device

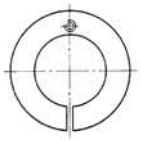


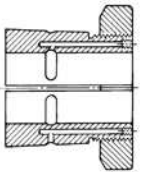
Type OH . . H



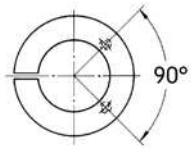


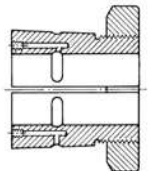
Type OH



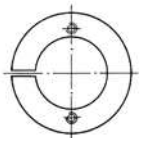


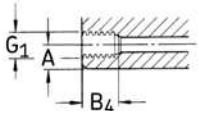
Type OH . . HB
Size 60 and over



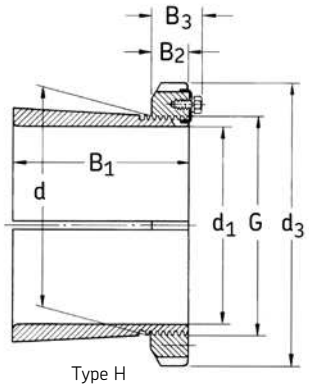


Type OH . . B
Size 60 and over

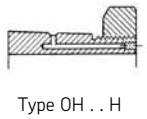




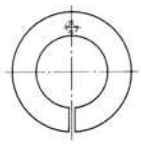
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
300	320	380	171	42	55	9	4	Tr 320x5	M 6	-	22	**OH 3064 H**	HM 3064	MS 3068-64	HMV 64	23064 CCK/W33
(cont.)		380	171	42	55	9	4	Tr 320x5	M 6	-	22	**OH 3064 HB**	HM 3064	MS 3068-64	HMV 64	23064 CCK/W33
		380	171	42	55	13	7.5	Tr 320x5	-	G 1/8	22	**OH 3064**	HM 3064	MS 3068-64	HMV 64	23064 CCK/W33
		380	171	42	55	13	7.5	Tr 320x5	-	G 1/8	22	**OH 3064 B**	HM 3064	MS 3068-64	HMV 64	23064 CCK/W33
		380	171	42	55	-	-	Tr 320x5	-	-	22	**H 3064**	HM 3064	MS 3068-64	HMV 64	23064 CCK/W33
		400	226	42	56	9	4	Tr 320x5	M 6	-	32	**OH 3164 H**	HM 3164	MS 3164	HMV 64	23164 CCK/W33, 22264 CACK/W33
		400	226	42	56	9	4	Tr 320x5	M 6	-	32	**OH 3164 HB**	HM 3164	MS 3164	HMV 64	23164 CCK/W33, 22264 CACK/W33
		400	226	42	56	13	9.5	Tr 320x5	-	G 1/8	32	**OH 3164**	HM 3164	MS 3164	HMV 64	23164 CCK/W33, 22264 CACK/W33
		400	226	42	56	13	9.5	Tr 320x5	-	G 1/8	32	**OH 3164 B**	HM 3164	MS 3164	HMV 64	23164 CCK/W33, 22264 CACK/W33
		400	226	42	56	-	-	Tr 320x5	-	-	32	**H 3164**	HM 3164	MS 3164	HMV 64	23164 CCK/W33, 22264 CACK/W33
		400	258	42	56	9	4	Tr 320x5	M 6	-	35	**OH 3264 H**	HM 3164	MS 3164	HMV 64	23264 CACK/W33
		400	258	42	56	9	4	Tr 320x5	M 6	-	35	**OH 3264 HB**	HM 3164	MS 3164	HMV 64	23264 CACK/W33
		400	258	42	56	15	9	Tr 320x5	-	G 1/4	35	**OH 3264**	HM 3164	MS 3164	HMV 64	23264 CACK/W33
		400	258	42	56	15	9	Tr 320x5	-	G 1/4	35	**OH 3264 B**	HM 3164	MS 3164	HMV 64	23264 CACK/W33
		400	258	42	56	-	-	Tr 320x5	-	-	35	**H 3264**	HM 3164	MS 3164	HMV 64	23264 CACK/W33
320	340	400	144	45	58	9	4	Tr 340x5	M 6	-	24.5	**OH 3968 H**	HM 3068	MS 3068-64	HMV 68	23968 CCK/W33
		400	144	45	58	9	4	Tr 340x5	M 6	-	24.5	**OH 3968 HB**	HM 3068	MS 3068-64	HMV 68	23968 CCK/W33
		400	144	45	58	13	7	Tr 340x5	-	G 1/8	24.5	**OH 3968**	HM 3068	MS 3068-64	HMV 68	23968 CCK/W33
		400	144	45	58	13	7	Tr 340x5	-	G 1/8	24.5	**OH 3968 B**	HM 3068	MS 3068-64	HMV 68	23968 CCK/W33
		400	144	45	58	-	-	Tr 340x5	-	-	24.5	**H 3968**	HM 3068	MS 3068-64	HMV 68	23968 CCK/W33
		400	187	45	58	9	4	Tr 340x5	M 6	-	27	**OH 3068 H**	HM 3068	MS 3068-64	HMV 68	23068 CCK/W33
		400	187	45	58	9	4	Tr 340x5	M 6	-	27	**OH 3068 HB**	HM 3068	MS 3068-64	HMV 68	23068 CCK/W33
		400	187	45	58	13	8	Tr 340x5	-	G 1/8	27	**OH 3068**	HM 3068	MS 3068-64	HMV 68	23068 CCK/W33
		400	187	45	58	13	8	Tr 340x5	-	G 1/8	27	**OH 3068 B**	HM 3068	MS 3068-64	HMV 68	23068 CCK/W33
		400	187	45	58	-	-	Tr 340x5	-	-	27	**H 3068**	HM 3068	MS 3068-64	HMV 68	23068 CCK/W33
		440	254	55	72	9	4	Tr 340x5	M 6	-	50	**OH 3168 H**	HM 3168	MS 3172-68	HMV 68	23168 CCK/W33
		440	254	55	72	9	4	Tr 340x5	M 6	-	50	**OH 3168 HB**	HM 3168	MS 3172-68	HMV 68	23168 CCK/W33
		440	254	55	72	15	9.5	Tr 340x5	-	G 1/4	50	**H 3168**	HM 3168	MS 3172-68	HMV 68	23168 CCK/W33
		440	254	55	72	15	9.5	Tr 340x5	-	G 1/4	50	**OH 3168 B**	HM 3168	MS 3172-68	HMV 68	23168 CCK/W33
		440	254	55	72	-	-	Tr 340x5	-	-	50	**H 3168**	HM 3168	MS 3172-68	HMV 68	23168 CCK/W33
		440	288	55	72	9	4	Tr 340x5	M 6	-	51.5	**OH 3268 H**	HM 3168	MS 3172-68	HMV 68	23268 CAK/W33
		440	288	55	72	9	4	Tr 340x5	M 6	-	51.5	**OH 3268 HB**	HM 3168	MS 3172-68	HMV 68	23268 CAK/W33
		440	288	55	72	15	10	Tr 340x5	-	G 1/4	51.5	**OH 3268**	HM 3168	MS 3172-68	HMV 68	23268 CAK/W33
		440	288	55	72	15	10	Tr 340x5	-	G 1/4	51.5	**OH 3268 B**	HM 3168	MS 3172-68	HMV 68	23268 CAK/W33
		440	288	55	72	-	-	Tr 340x5	-	-	51.5	**H 3268**	HM 3168	MS 3172-68	HMV 68	23268 CAK/W33

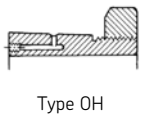


Type H
MS locking device

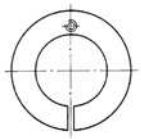


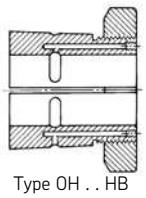
Type OH . . H



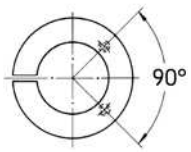


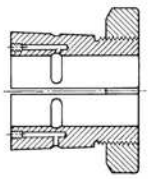
Type OH



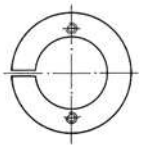


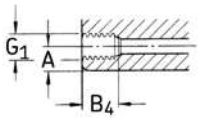
Type OH . . HB
Size 60 and over





Type OH . . B
Size 60 and over

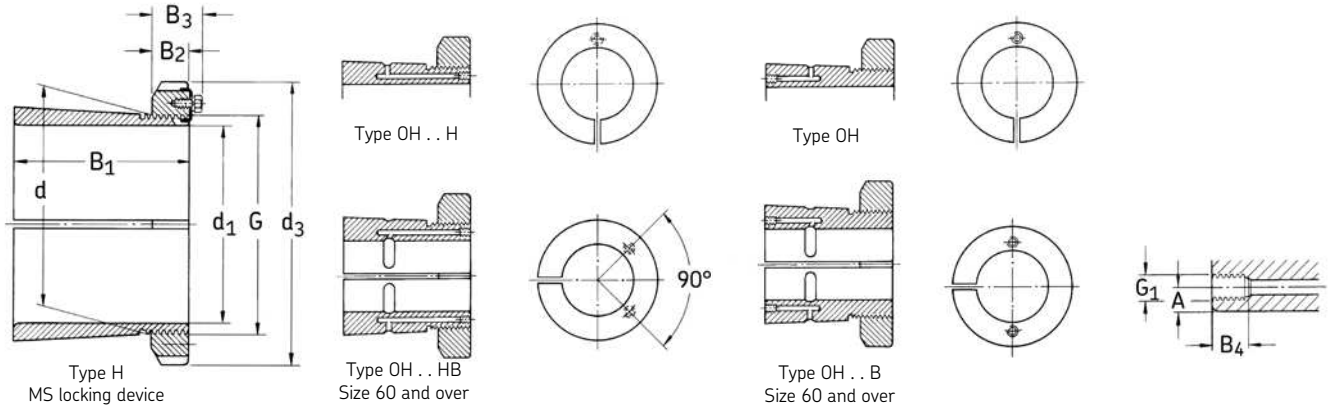




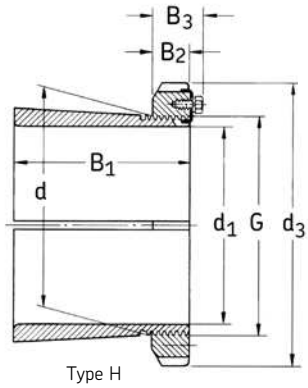
Dimensions											Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1			Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm										in	kg	–				
340	360	420	144	45	58	9	4	Tr 360x5	M 6	-	25.2	**OH 3972 H**	HM 3072	MS 3072	HMV 72	23972 CACK/W33
		420	144	45	58	9	4	Tr 360x5	M 6	-	25.2	**OH 3972 HB**	HM 3072	MS 3072	HMV 72	23972 CACK/W33
		420	144	45	58	13	7	Tr 360x5	-	G 1/8	25.2	**OH 3972**	HM 3072	MS 3072	HMV 72	23972 CACK/W33
		420	144	45	58	13	7	Tr 360x5	-	G 1/8	25.2	**OH 3972 B**	HM 3072	MS 3072	HMV 72	23972 CACK/W33
		420	144	45	58	-	-	Tr 360x5	-	-	25.2	**H 3972**	HM 3072	MS 3072	HMV 72	23972 CACK/W33
		420	188	45	58	9	4	Tr 360x5	M 6	-	29	**OH 3072 H**	HM 3072	MS 3072	HMV 72	23072 CCK/W33
		420	188	45	58	9	4	Tr 360x5	M 6	-	29	**OH 3072 HB**	HM 3072	MS 3072	HMV 72	23072 CCK/W33
		420	188	45	58	13	8	Tr 360x5	-	G 1/8	29	**OH 3072**	HM 3072	MS 3072	HMV 72	23072 CCK/W33
		420	188	45	58	13	8	Tr 360x5	-	G 1/8	29	**OH 3072B**	HM 3072	MS 3072	HMV 72	23072 CCK/W33
		420	188	45	58	-	-	Tr 360x5	-	-	29	**H 3072**	HM 3072	MS 3072	HMV 72	23072 CCK/W33
		460	259	58	75	9	4	Tr 360x5	M 6	-	56	**OH 3172 H**	HM 3172	MS 3172-68	HMV 72	23172 CACK/W33
		460	259	58	75	9	4	Tr 360x5	M 6	-	56	**OH 3172 HB**	HM 3172	MS 3172-68	HMV 72	23172 CACK/W33
		460	259	58	75	15	9.5	Tr 360x5	-	G 1/4	56	**OH 3172**	HM 3172	MS 3172-68	HMV 72	23172 CACK/W33
		460	259	58	75	15	9.5	Tr 360x5	-	G 1/4	56	**OH 3172 B**	HM 3172	MS 3172-68	HMV 72	23172 CACK/W33
		460	259	58	75	-	-	Tr 360x5	-	-	56	**H 3172**	HM 3172	MS 3172-68	HMV 72	23172 CACK/W33
		460	299	58	75	9	4	Tr 360x5	M 6	-	60.5	**OH 3272 H**	HM 3172	MS 3172-68	HMV 72	23272 CAK/W33
		460	299	58	75	9	4	Tr 360x5	M 6	-	60.5	**OH 3272 HB**	HM 3172	MS 3172-68	HMV 72	23272 CAK/W33
		460	299	58	75	15	10	Tr 360x5	-	G 1/4	60.5	**OH 3272**	HM 3172	MS 3172-68	HMV 72	23272 CAK/W33
		460	299	58	75	15	10	Tr 360x5	-	G 1/4	60.5	**OH 3272 B**	HM 3172	MS 3172-68	HMV 72	23272 CAK/W33
		460	299	58	75	-	-	Tr 360x5	-	-	60.5	**H 3272**	HM 3172	MS 3172-68	HMV 72	23272 CAK/W33
360	380	450	164	48	62	9	4	Tr 380x5	M 6	-	31.5	**OH 3976 H**	HM 3076	MS 3080-76	HMV 76	23976 CCK/W33
		450	164	48	62	9	4	Tr 380x5	M 6	-	31.5	**OH 3976 HB**	HM 3076	MS 3080-76	HMV 76	23976 CCK/W33
		450	164	48	62	13	7.5	Tr 380x5	-	G 1/8	31.5	**OH 3976**	HM 3076	MS 3080-76	HMV 76	23976 CCK/W33
		450	164	48	62	13	7.5	Tr 380x5	-	G 1/8	31.5	**OH 3976 B**	HM 3076	MS 3080-76	HMV 76	23976 CCK/W33
		450	164	48	62	-	-	Tr 380x5	-	-	31.5	**H 3976**	HM 3076	MS 3080-76	HMV 76	23976 CCK/W33
		450	193	48	62	9	4	Tr 380x5	M 6	-	35.5	**OH 3076 H**	HM 3076	MS 3080-76	HMV 76	23076 CCK/W33
		450	193	48	62	9	4	Tr 380x5	M 6	-	35.5	**OH 3076 HB**	HM 3076	MS 3080-76	HMV 76	23076 CCK/W33
		450	193	48	62	13	8	Tr 380x5	-	G 1/8	35.5	**OH 3076**	HM 3076	MS 3080-76	HMV 76	23076 CCK/W33
		450	193	48	62	13	8	Tr 380x5	-	G 1/8	35.5	**OH 3076 B**	HM 3076	MS 3080-76	HMV 76	23076 CCK/W33
		450	193	48	62	-	-	Tr 380x5	-	-	35.5	**H 3076**	HM 3076	MS 3080-76	HMV 76	23076 CCK/W33
		490	264	60	77	9	4	Tr 380x5	M 6	-	61.5	**OH 3176 H**	HM 3176	MS 3176	HMV 76	23176 CAK/W33
		490	264	60	77	9	4	Tr 380x5	M 6	-	61.5	**OH 3176 HB**	HM 3176	MS 3176	HMV 76	23176 CAK/W33
		490	264	60	77	15	9.5	Tr 380x5	-	G 1/4	61.5	**OH 3176**	HM 3176	MS 3176	HMV 76	23176 CAK/W33
		490	264	60	77	15	9.5	Tr 380x5	-	G 1/4	61.5	**OH 3176 B**	HM 3176	MS 3176	HMV 76	23176 CAK/W33
		490	264	60	77	-	-	Tr 380x5	-	-	61.5	**H 3176**	HM 3176	MS 3176	HMV 76	23176 CAK/W33
		490	310	60	77	9	4	Tr 380x5	M 6	-	69.5	**OH 3276 H**	HM 3176	MS 3176	HMV 76	23276 CAK/W33
		490	310	60	77	9	4	Tr 380x5	M 6	-	69.5	**OH 3276 HB**	HM 3176	MS 3176	HMV 76	23276 CAK/W33
		490	310	60	77	15	10.5	Tr 380x5	-	G 1/4	69.5	**OH 3276**	HM 3176	MS 3176	HMV 76	23276 CAK/W33
		490	310	60	77	15	10.5	Tr 380x5	-	G 1/4	69.5	**OH 3276 B**	HM 3176	MS 3176	HMV 76	23276 CAK/W33
		490	310	60	77	-	-	Tr 380x5	-	-	69.5	**H 3276**	HM 3176	MS 3176	HMV 76	23276 CAK/W33

Adapter sleeves

d_1 380 – 400 mm

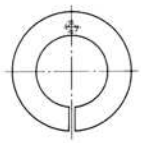


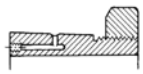
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
380	400	470	168	52	66	9	4	Tr 400x5	M 6	-	35	**OH 3980 H**	HM 3080	MS 3080-76	HMV 80	23980 CACK/W33
		470	168	52	66	9	4	Tr 400x5	M 6	-	35	**OH 3980 HB**	HM 3080	MS 3080-76	HMV 80	23980 CACK/W33
		470	168	52	66	13	7.5	Tr 400x5	-	G 1/8	35	**OH 3980**	HM 3080	MS 3080-76	HMV 80	23980 CACK/W33
		470	168	52	66	13	7.5	Tr 400x5	-	G 1/8	35	**OH 3980 B**	HM 3080	MS 3080-76	HMV 80	23980 CACK/W33
		470	168	52	66	-	-	Tr 400x5	-	-	35	**H 3980**	HM 3080	MS 3080-76	HMV 80	23980 CACK/W33
		470	210	52	66	9	4	Tr 400x5	M 6	-	40	**OH 3080 H**	HM 3080	MS 3080-76	HMV 80	23080 CACK/W33
		470	210	52	66	9	4	Tr 400x5	M 6	-	40	**OH 3080 HB**	HM 3080	MS 3080-76	HMV 80	23080 CACK/W33
		470	210	52	66	13	8.5	Tr 400x5	-	G 1/8	40	**OH 3080**	HM 3080	MS 3080-76	HMV 80	23080 CACK/W33
		470	210	52	66	13	8.5	Tr 400x5	-	G 1/8	40	**OH 3080 B**	HM 3080	MS 3080-76	HMV 80	23080 CACK/W33
		470	210	52	66	-	-	Tr 400x5	-	-	40	**H 3080**	HM 3080	MS 3080-76	HMV 80	23080 CACK/W33
		520	272	62	82	9	4	Tr 400x5	M 6	-	73	**OH 3180 H**	HM 3180	MS 3184-80	HMV 80	23180 CAK/W33
		520	272	62	82	9	4	Tr 400x5	M 6	-	73	**OH 3180 HB**	HM 3180	MS 3184-80	HMV 80	23180 CAK/W33
		520	272	62	82	15	9.5	Tr 400x5	-	G 1/4	73	**OH 3180**	HM 3180	MS 3184-80	HMV 80	23180 CAK/W33
		520	272	62	82	15	9.5	Tr 400x5	-	G 1/4	73	**OH 3180 B**	HM 3180	MS 3184-80	HMV 80	23180 CAK/W33
		520	272	62	82	-	-	Tr 400x5	-	-	73	**H 3180**	HM 3180	MS 3184-80	HMV 80	23180 CAK/W33
		520	328	62	82	9	4	Tr 400x5	M 6	-	87	**OH 3280 H**	HM 3180	MS 3184-80	HMV 80	23280 CAK/W33
		520	328	62	82	9	4	Tr 400x5	M 6	-	87	**OH 3280 HB**	HM 3180	MS 3184-80	HMV 80	23280 CAK/W33
		520	328	62	82	15	11	Tr 400x5	-	G 1/4	87	**OH 3280**	HM 3180	MS 3184-80	HMV 80	23280 CAK/W33
		520	328	62	82	15	11	Tr 400x5	-	G 1/4	87	**OH 3280 B**	HM 3180	MS 3184-80	HMV 80	23280 CAK/W33
		520	328	62	82	-	-	Tr 400x5	-	-	87	**H 3280**	HM 3180	MS 3184-80	HMV 80	23280 CAK/W33
400	420	490	168	52	66	9	4	Tr 420x5	M 6	-	36	**OH 3984 H**	HM 3084	MS 3084	HMV 84	23984 CACK/W33
		490	168	52	66	9	4	Tr 420x5	M 6	-	36	**OH 3984 HB**	HM 3084	MS 3084	HMV 84	23984 CACK/W33
		490	168	52	66	13	7.5	Tr 420x5	-	G 1/8	36	**OH 3984**	HM 3084	MS 3084	HMV 84	23984 CACK/W33
		490	168	52	66	13	7.5	Tr 420x5	-	G 1/8	36	**OH 3984B**	HM 3084	MS 3084	HMV 84	23984 CACK/W33
		490	168	52	66	-	-	Tr 420x5	-	-	36	**H 3984**	HM 3084	MS 3084	HMV 84	23984 CACK/W33
		490	212	52	66	9	4	Tr 420x5	M 6	-	47	**OH 3084 H**	HM 3084	MS 3084	HMV 84	23084 CAK/W33
		490	212	52	66	9	4	Tr 420x5	M 6	-	47	**OH 3084 HB**	HM 3084	MS 3084	HMV 84	23084 CAK/W33
		490	212	52	66	13	8.5	Tr 420x5	-	G 1/8	47	**OH 3084**	HM 3084	MS 3084	HMV 84	23084 CAK/W33
		490	212	52	66	13	8.5	Tr 420x5	-	G 1/8	47	**OH 3084 B**	HM 3084	MS 3084	HMV 84	23084 CAK/W33
		490	212	52	66	-	-	Tr 420x5	-	-	47	**H 3084**	HM 3084	MS 3084	HMV 84	23084 CAK/W33
		540	304	70	90	9	4	Tr 420x5	M 6	-	80	**OH 3184 H**	HM 3184	MS 3184-80	HMV 84	23184 CK/W33
		540	304	70	90	9	4	Tr 420x5	M 6	-	80	**OH 3184 HB**	HM 3184	MS 3184-80	HMV 84	23184 CK/W33
		540	304	70	90	15	10.5	Tr 420x5	-	G 1/4	80	**OH 3184**	HM 3184	MS 3184-80	HMV 84	23184 CK/W33
		540	304	70	90	15	10.5	Tr 420x5	-	G 1/4	80	**OH 3184 B**	HM 3184	MS 3184-80	HMV 84	23184 CK/W33
		540	304	70	90	-	-	Tr 420x5	-	-	80	**H 3184**	HM 3184	MS 3184-80	HMV 84	23184 CK/W33
		540	352	70	90	9	4	Tr 420x5	M 6	-	96	**OH 3284 H**	HM 3184	MS 3184-80	HMV 84	23284 CAK/W33
		540	352	70	90	9	4	Tr 420x5	M 6	-	96	**OH 3284 HB**	HM 3184	MS 3184-80	HMV 84	23284 CAK/W33
		540	352	70	90	15	11	Tr 420x5	-	G 1/4	96	**OH 3284**	HM 3184	MS 3184-80	HMV 84	23284 CAK/W33
		540	352	70	90	15	11	Tr 420x5	-	G 1/4	96	**OH 3284 B**	HM 3184	MS 3184-80	HMV 84	23284 CAK/W33
		540	352	70	90	-	-	Tr 420x5	-		96	**H 3284**	HM 3184	MS 3184-80	HMV 84	23284 CAK/W33

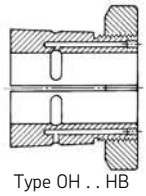


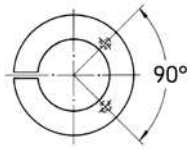
Type H
MS locking device

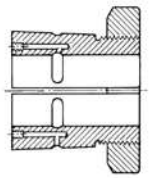
Type OH . . H

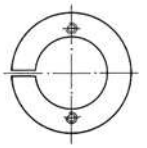


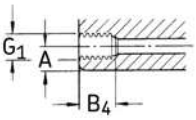

Type OH


Type OH . . HB
Size 60 and over




Type OH . . B
Size 60 and over

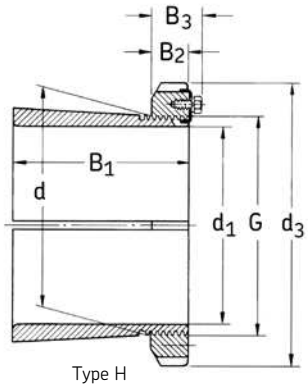




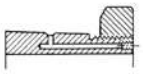
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
410	440	520	189	60	77	12	6.5	Tr 440x5	M 8	-	58	**OH 3988 H**	HM 3088	MS 3092-88	HMV 88	23988 CACK/W33
		520	189	60	77	12	6.5	Tr 440x5	M 8	-	58	**OH 3988 HB**	HM 3088	MS 3092-88	HMV 88	23988 CACK/W33
		520	189	60	77	15	10	Tr 440x5	-	G 1/4	58	**OH 3988**	HM 3088	MS 3092-88	HMV 88	23988 CACK/W33
		520	189	60	77	15	10	Tr 440x5	-	G 1/4	58	**OH 3988 B**	HM 3088	MS 3092-88	HMV 88	23988 CACK/W33
		520	189	60	77	-	-	Tr 440x5	-	-	58	**H 3988**	HM 3088	MS 3092-88	HMV 88	23988 CACK/W33
		520	228	60	77	12	6.5	Tr 440x5	M 8	-	65	**OH 3088 H**	HM 3088	MS 3092-88	HMV 88	23088 CAK/W33
		520	228	60	77	12	6.5	Tr 440x5	M 8	-	65	**OH 3088 HB**	HM 3088	MS 3092-88	HMV 88	23088 CAK/W33
		520	228	60	77	15	11	Tr 440x5	-	G 1/4	65	**OH 3088**	HM 3088	MS 3092-88	HMV 88	23088 CAK/W33
		520	228	60	77	15	11	Tr 440x5	-	G 1/4	65	**OH 3088 B**	HM 3088	MS 3092-88	HMV 88	23088 CAK/W33
		520	228	60	77	-	-	Tr 440x5	-	-	65	**H 3088**	HM 3088	MS 3092-88	HMV 88	23088 CAK/W33
		560	307	70	90	12	6.5	Tr 440x5	M 8	-	95	**OH 3188 H**	HM 3188	MS 3192-88	HMV 88	23188 CAK/W33
		560	307	70	90	12	6.5	Tr 440x5	M 8	-	95	**OH 3188 HB**	HM 3188	MS 3192-88	HMV 88	23188 CAK/W33
		560	307	70	90	15	14	Tr 440x5	-	G 1/4	95	**OH 3188**	HM 3188	MS 3192-88	HMV 88	23188 CAK/W33
		560	307	70	90	15	14	Tr 440x5	-	G 1/4	95	**OH 3188 B**	HM 3188	MS 3192-88	HMV 88	23188 CAK/W33
		560	307	70	90	-	-	Tr 440x5	-	-	95	**H 3188**	HM 3188	MS 3192-88	HMV 88	23188 CAK/W33
		560	361	70	90	12	6.5	Tr 440x5	M 8	-	117	**OH 3288 H**	HM 3188	MS 3192-88	HMV 88	23288 CAK/W33
		560	361	70	90	12	6.5	Tr 440x5	M 8	-	117	**OH 3288 HB**	HM 3188	MS 3192-88	HMV 88	23288 CAK/W33
		560	361	70	90	15	16	Tr 440x5	-	G 1/4	117	**OH 3288**	HM 3188	MS 3192-88	HMV 88	23288 CAK/W33
		560	361	70	90	15	16	Tr 440x5	-	G 1/4	117	**OH 3288 B**	HM 3188	MS 3192-88	HMV 88	23288 CAK/W33
		560	361	70	90	-	-	Tr 440x5	-	-	117	**H 3288**	HM 3188	MS 3192-88	HMV 88	23288 CAK/W33
430	460	540	189	60	77	12	6.5	Tr 460x5	M 8	-	60	**OH 3992 H**	HM 3092	MS 3092-88	HMV 92	23992 CAK/W33
		540	189	60	77	12	6.5	Tr 460x5	M 8	-	60	**OH 3992 HB**	HM 3092	MS 3092-88	HMV 92	23992 CAK/W33
		540	189	60	77	15	10	Tr 460x5	-	G 1/4	60	**OH 3992**	HM 3092	MS 3092-88	HMV 92	23992 CAK/W33
		540	189	60	77	15	10	Tr 460x5	-	G 1/4	60	**OH 3992 B**	HM 3092	MS 3092-88	HMV 92	23992 CAK/W33
		540	189	60	77	-	-	Tr 460x5	-	-	60	**H 3992**	HM 3092	MS 3092-88	HMV 92	23992 CAK/W33
		540	234	60	77	12	6.5	Tr 460x5	M 8	-	71	**OH 3092 H**	HM 3092	MS 3092-88	HMV 92	23092 CAK/W33
		540	234	60	77	12	6.5	Tr 460x5	M 8	-	71	**OH 3092 HB**	HM 3092	MS 3092-88	HMV 92	23092 CAK/W33
		540	234	60	77	15	11	Tr 460x5	-	G 1/4	71	**OH 3092**	HM 3092	MS 3092-88	HMV 92	23092 CAK/W33
		540	234	60	77	15	11	Tr 460x5	-	G 1/4	71	**OH 3092 B**	HM 3092	MS 3092-88	HMV 92	23092 CAK/W33
		540	234	60	77	-	-	Tr 460x5	-	-	71	**H 3092**	HM 3092	MS 3092-88	HMV 92	23092 CAK/W33
		580	326	75	95	12	6.5	Tr 460x5	M 8	-	119	**OH 3192 H**	HM 3192	MS 3192-88	HMV 92	23192 CAK/W33
		580	326	75	95	12	6.5	Tr 460x5	M 8	-	119	**OH 3192 HB**	HM 3192	MS 3192-88	HMV 92	23192 CAK/W33
		580	326	75	95	15	14	Tr 460x5	-	G 1/4	119	**OH 3192**	HM 3192	MS 3192-88	HMV 92	23192 CAK/W33
		580	326	75	95	15	14	Tr 460x5	-	G 1/4	119	**OH 3192 B**	HM 3192	MS 3192-88	HMV 92	23192 CAK/W33
		580	326	75	95	-	-	Tr 460x5	-	-	119	**H 3192**	HM 3192	MS 3192-88	HMV 92	23192 CAK/W33
		580	382	75	95	12	6.5	Tr 460x5	M 8	-	134	**OH 3292 H**	HM 3192	MS 3192-88	HMV 92	23292 CAK/W33
		580	382	75	95	12	6.5	Tr 460x5	M 8	-	134	**OH 3292 HB**	HM 3192	MS 3192-88	HMV 92	23292 CAK/W33
		580	382	75	95	15	17	Tr 460x5	-	G 1/4	134	**OH 3292**	HM 3192	MS 3192-88	HMV 92	23292 CAK/W33
		580	382	75	95	15	17	Tr 460x5	-	G 1/4	134	**OH 3292 B**	HM 3192	MS 3192-88	HMV 92	23292 CAK/W33
		580	382	75	95	-	-	Tr 460x5	-	-	134	**H 3292**	HM 3192	MS 3192-88	HMV 92	23292 CAK/W33

Adapter sleeves

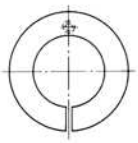
d_1 450 – 470 mm

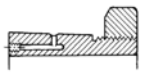


Type H
MS locking device

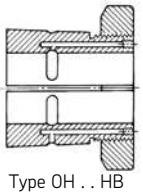


Type OH . . H

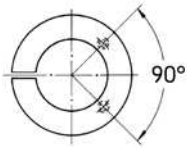


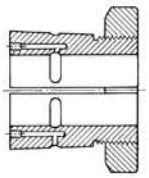


Type OH

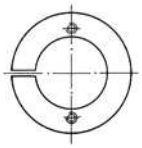


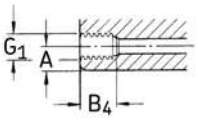
Type OH . . HB
Size 60 and over



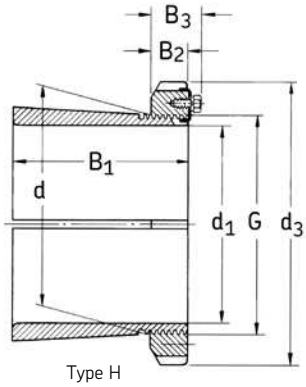


Type OH . . B
Size 60 and over

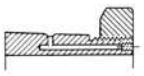




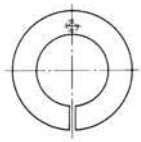
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
450	480	560	200	60	77	12	6.5	Tr 480x5	M 8	-	66	**OH 3996 H**	HM 3096	MS 30/500-96	HMV 96	23996 CAK/W33
		560	200	60	77	12	6.5	Tr 480x5	M 8	-	66	**OH 3996 HB**	HM 3096	MS 30/500-96	HMV 96	23996 CAK/W33
		560	200	60	77	15	10	Tr 480x5	-	G 1/4	66	**OH 3996**	HM 3096	MS 30/500-96	HMV 96	23996 CAK/W33
		560	200	60	77	15	10	Tr 480x5	-	G 1/4	66	**OH 3996 B**	HM 3096	MS 30/500-96	HMV 96	23996 CAK/W33
		560	200	60	77	-	-	Tr 480x5	-	-	66	**H 3996**	HM 3096	MS 30/500-96	HMV 96	23996 CAK/W33
		560	237	60	77	12	6.5	Tr 480x5	M 8	-	75	**OH 3096 H**	HM 3096	MS 30/500-96	HMV 96	23096 CAK/W33
		560	237	60	77	12	6.5	Tr 480x5	M 8	-	75	**OH 3096 HB**	HM 3096	MS 30/500-96	HMV 96	23096 CAK/W33
		560	237	60	77	15	11	Tr 480x5	-	G 1/4	75	**OH 3096**	HM 3096	MS 30/500-96	HMV 96	23096 CAK/W33
		560	237	60	77	15	11	Tr 480x5	-	G 1/4	75	**OH 3096 B**	HM 3096	MS 30/500-96	HMV 96	23096 CAK/W33
		560	237	60	77	-	-	Tr 480x5	-	-	75	**H 3096**	HM 3096	MS 30/500-96	HMV 96	23096 CAK/W33
		620	335	75	95	12	6.5	Tr 480x5	M 8	-	135	**OH 3196 H**	HM 3196	MS 3196	HMV 96	23196 CAK/W33
		620	335	75	95	12	6.5	Tr 480x5	M 8	-	135	**OH 3196 HB**	HM 3196	MS 3196	HMV 96	23196 CAK/W33
		620	335	75	95	15	14	Tr 480x5	-	G 1/4	135	**OH 3196**	HM 3196	MS 3196	HMV 96	23196 CAK/W33
		620	335	75	95	15	14	Tr 480x5	-	G 1/4	135	**OH 3196 B**	HM 3196	MS 3196	HMV 96	23196 CAK/W33
		620	335	75	95	-	-	Tr 480x5	-	-	135	**H 3196**	HM 3196	MS 3196	HMV 96	23196 CAK/W33
		620	397	75	95	12	6.5	Tr 480x5	M 8	-	153	**OH 3296 H**	HM 3196	MS 3196	HMV 96	23296 CAK/W33
		620	397	75	95	12	6.5	Tr 480x5	M 8	-	153	**OH 3296 HB**	HM 3196	MS 3196	HMV 96	23296 CAK/W33
		620	397	75	95	15	17	Tr 480x5	-	G 1/4	153	**OH 3296**	HM 3196	MS 3196	HMV 96	23296 CAK/W33
		620	397	75	95	15	17	Tr 480x5	-	G 1/4	153	**OH 3296 B**	HM 3196	MS 3196	HMV 96	23296 CAK/W33
		620	397	75	95	-	-	Tr 480x5	-	-	153	**H 3296**	HM 3196	MS 3196	HMV 96	23296 CAK/W33
470	500	580	208	68	85	12	6.5	Tr 500x5	M 8	-	74.3	**OH 39/500 H**	HM 30/500	MS 30/500-96	HMV 100	239/500 CAK/W33
		580	208	68	85	12	6.5	Tr 500x5	M 8	-	74.3	**OH 39/500 HB**	HM 30/500	MS 30/500-96	HMV 100	239/500 CAK/W33
		580	208	68	85	15	10	Tr 500x5	-	G 1/4	74.3	**OH 39/500**	HM 30/500	MS 30/500-96	HMV 100	239/500 CAK/W33
		580	208	68	85	15	10	Tr 500x5	-	G 1/4	74.3	**OH 39/500B**	HM 30/500	MS 30/500-96	HMV 100	239/500 CAK/W33
		580	208	68	85	-	-	Tr 500x5	-	-	74.3	**H 39/500**	HM 30/500	MS 30/500-96	HMV 100	239/500 CAK/W33
		580	247	68	85	12	6.5	Tr 500x5	M 8	-	82	**OH 30/500 H**	HM 30/500	MS 30/500-96	HMV 100	230/500 CAK/W33
		580	247	68	85	12	6.5	Tr 500x5	M 8	-	82	**OH 30/500 HB**	HM 30/500	MS 30/500-96	HMV 100	230/500 CAK/W33
		580	247	68	85	15	11	Tr 500x5	-	G 1/4	82	**OH 30/500**	HM 30/500	MS 30/500-96	HMV 100	230/500 CAK/W33
		580	247	68	85	15	11	Tr 500x5	-	G 1/4	82	**OH 30/500 B**	HM 30/500	MS 30/500-96	HMV 100	230/500 CAK/W33
		580	247	68	85	-	-	Tr 500x5	-	-	82	**H 30/500**	HM 30/500	MS 30/500-96	HMV 100	230/500 CAK/W33
		630	356	80	100	12	6.5	Tr 500x5	M 8	-	145	**OH 31/500 H**	HM 31/500	MS 31/500	HMV 100	231/500 CAK/W33
		630	356	80	100	12	6.5	Tr 500x5	M 8	-	145	**OH 31/500 HB**	HM 31/500	MS 31/500	HMV 100	231/500 CAK/W33
		630	356	80	100	15	15	Tr 500x5	-	G 1/4	145	**OH 31/500**	HM 31/500	MS 31/500	HMV 100	231/500 CAK/W33
		630	356	80	100	15	15	Tr 500x5	-	G 1/4	145	**OH 31/500 B**	HM 31/500	MS 31/500	HMV 100	231/500 CAK/W33
		630	356	80	100	-	-	Tr 500x5	-	-	145	**H 31/500**	HM 31/500	MS 31/500	HMV 100	231/500 CAK/W33
		630	428	80	100	12	6	Tr 500x5	M 8	-	170	**OH 32/500 H**	HM 31/500	MS 31/500	HMV 100	232/500 CAK/W33
		630	428	80	100	12	6	Tr 500x5	M 8	-	170	**OH 32/500 HB**	HM 31/500	MS 31/500	HMV 100	232/500 CAK/W33
		630	428	80	100	15	18	Tr 500x5	-	G 1/4	170	**OH 32/500**	HM 31/500	MS 31/500	HMV 100	232/500 CAK/W33
		630	428	80	100	15	18	Tr 500x5	-	G 1/4	170	**OH 32/500 B**	HM 31/500	MS 31/500	HMV 100	232/500 CAK/W33
		630	428	80	100	-	-	Tr 500x5	-	-	170	**H 32/500**	HM 31/500	MS 31/500	HMV 100	232/500 CAK/W33

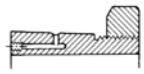


Type H
MS locking device

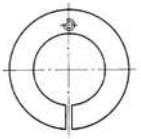


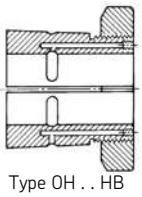
Type OH . . H



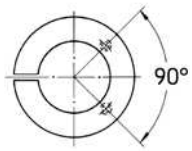


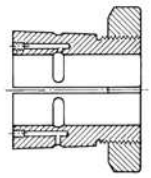
Type OH



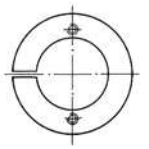


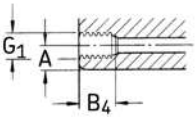
Type OH . . HB
Size 60 and over





Type OH . . B
Size 60 and over

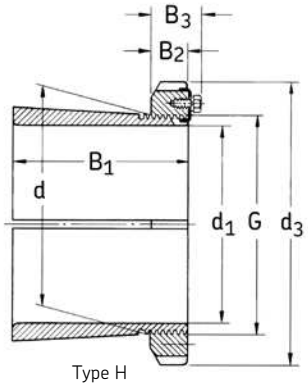




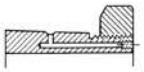
Dimensions											Mass	Designations				
												Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1							
mm										in	kg	–				
500	530	630	216	68	90	12	6	Tr 530x6	M 8	-	87.9	**OH 39/530 H**	HM 30/530	MS 30/600-530	HMV 106	239/530 CAK/W33
		630	216	68	90	12	6	Tr 530x6	M 8	-	87.9	**OH 39/530 HB**	HM 30/530	MS 30/600-530	HMV 106	239/530 CAK/W33
		630	216	68	90	15	11	Tr 530x6	-	G 1/4	87.9	**OH 39/530**	HM 30/530	MS 30/600-530	HMV 106	239/530 CAK/W33
		630	216	68	90	15	11	Tr 530x6	-	G 1/4	87.9	**OH 39/530 B**	HM 30/530	MS 30/600-530	HMV 106	239/530 CAK/W33
		630	216	68	90	-	-	Tr 530x6	-	-	87.9	**H 39/530**	HM 30/530	MS 30/600-530	HMV 106	239/530 CAK/W33
		630	265	68	90	12	6	Tr 530x6	M 8	-	105	**OH 30/530 H**	HM 30/530	MS 30/600-530	HMV 106	230/530 CAK/W33
		630	265	68	90	12	6	Tr 530x6	M 8	-	105	**OH 30/530 HB**	HM 30/530	MS 30/600-530	HMV 106	230/530 CAK/W33
		630	265	68	90	15	13	Tr 530x6	-	G 1/4	105	**OH 30/530**	HM 30/530	MS 30/600-530	HMV 106	230/530 CAK/W33
		630	265	68	90	15	13	Tr 530x6	-	G 1/4	105	**OH 30/530 B**	HM 30/530	MS 30/600-530	HMV 106	230/530 CAK/W33
		630	265	68	90	-	-	Tr 530x6	-	-	105	**H 30/530**	HM 30/530	MS 30/600-530	HMV 106	230/530 CAK/W33
		670	364	80	105	12	6	Tr 530x6	M 8	-	161	**OH 31/530 H**	HM 31/530	MS 31/530	HMV 106	231/530 CAK/W33
		670	364	80	105	12	6	Tr 530x6	M 8	-	161	**OH 31/530 HB**	HM 31/530	MS 31/530	HMV 106	231/530 CAK/W33
		670	364	80	105	15	15	Tr 530x6	-	G 1/4	161	**OH 31/530**	HM 31/530	MS 31/530	HMV 106	231/530 CAK/W33
		670	364	80	105	15	15	Tr 530x6	-	G 1/4	161	**OH 31/530 B**	HM 31/530	MS 31/530	HMV 106	231/530 CAK/W33
		670	364	80	105	-	-	Tr 530x6	-	-	161	**H 31/530**	HM 31/530	MS 31/530	HMV 106	231/530 CAK/W33
		670	447	80	105	12	6	Tr 530x6	M 8	-	192	**OH 32/530 H**	HM 31/530	MS 31/530	HMV 106	232/530 CAK/W33
		670	447	80	105	12	6	Tr 530x6	M 8	-	192	**OH 32/530 HB**	HM 31/530	MS 31/530	HMV 106	232/530 CAK/W33
		670	447	80	105	15	19	Tr 530x6	-	G 1/4	192	**OH 32/530**	HM 31/530	MS 31/530	HMV 106	232/530 CAK/W33
		670	447	80	105	15	19	Tr 530x6	-	G 1/4	192	**OH 32/530 B**	HM 31/530	MS 31/530	HMV 106	232/530 CAK/W33
		670	447	80	105	-	-	Tr 530x6	-	-	192	**H 32/530**	HM 31/530	MS 31/530	HMV 106	232/530 CAK/W33
530	560	650	227	75	97	12	6	Tr 560x6	M 8	-	95	**OH 39/560 H**	HM 30/560	MS 30/560	HMV 112	239/560 CAK/W33
		650	227	75	97	12	6	Tr 560x6	M 8	-	95	**OH 39/560 HB**	HM 30/560	MS 30/560	HMV 112	239/560 CAK/W33
		650	227	75	97	15	11	Tr 560x6	-	G 1/4	95	**OH 39/560**	HM 30/560	MS 30/560	HMV 112	239/560 CAK/W33
		650	227	75	97	15	11	Tr 560x6	-	G 1/4	95	**OH 39/560 B**	HM 30/560	MS 30/560	HMV 112	239/560 CAK/W33
		650	227	75	97	-	-	Tr 560x6	-	-	95	**H 39/560**	HM 30/560	MS 30/560	HMV 112	239/560 CAK/W33
		650	282	75	97	12	6	Tr 560x6	M 8	-	112	**OH 30/560 H**	HM 30/560	MS 30/560	HMV 112	230/560 CAK/W33
		650	282	75	97	12	6	Tr 560x6	M 8	-	112	**OH 30/560 HB**	HM 30/560	MS 30/560	HMV 112	230/560 CAK/W33
		650	282	75	97	15	13	Tr 560x6	-	G 1/4	112	**OH 30/560**	HM 30/560	MS 30/560	HMV 112	230/560 CAK/W33
		650	282	75	97	15	13	Tr 560x6	-	G 1/4	112	**OH 30/560 B**	HM 30/560	MS 30/560	HMV 112	230/560 CAK/W33
		650	282	75	97	-	-	Tr 560x6	-	-	112	**H3 0/560**	HM 30/560	MS 30/560	HMV 112	230/560 CAK/W33
		710	377	85	110	12	6	Tr 560x6	M 8	-	185	**OH 31/560 H**	HM 31/560	MS 31/600-560	HMV 112	231/560 CAK/W33
		710	377	85	110	12	6	Tr 560x6	M 8	-	185	**OH 31/560 HB**	HM 31/560	MS 31/600-560	HMV 112	231/560 CAK/W33
		710	377	85	110	15	16	Tr 560x6	-	G 1/4	185	**OH 31/560**	HM 31/560	MS 31/600-560	HMV 112	231/560 CAK/W33
		710	377	85	110	15	16	Tr 560x6	-	G 1/4	185	**OH 31/560 B**	HM 31/560	MS 31/600-560	HMV 112	231/560 CAK/W33
		710	377	85	110	-	-	Tr 560x6	-	-	185	**H 31/560**	HM 31/560	MS 31/600-560	HMV 112	231/560 CAK/W33
		710	462	85	110	12	6	Tr 560x6	M 8	-	219	**OH 32/560 H**	HM 31/560	MS 31/600-560	HMV 112	232/560 CAK/W33
		710	462	85	110	12	6	Tr 560x6	M 8	-	219	**OH 32/560 HB**	HM 31/560	MS 31/600-560	HMV 112	232/560 CAK/W33
		710	462	85	110	15	19	Tr 560x6	-	G 1/4	219	**OH 32/560**	HM 31/560	MS 31/600-560	HMV 112	232/560 CAK/W33
		710	462	85	110	15	19	Tr 560x6	-	G 1/4	219	**OH 32/560 B**	HM 31/560	MS 31/600-560	HMV 112	232/560 CAK/W33
		710	462	85	110	-	-	Tr 560x6	-	-	219	**H 32/560**	HM 31/560	MS 31/600-560	HMV 112	232/560 CAK/W33

Adapter sleeves

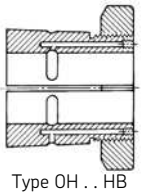
d_1 560 – 600 mm



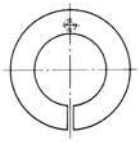
Type H
MS locking device

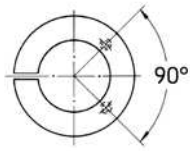


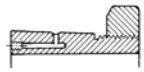
Type OH . . H



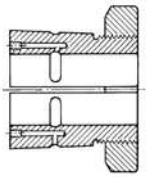
Type OH . . HB
Size 60 and over



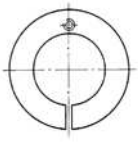


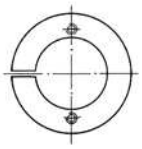


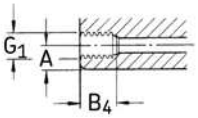
Type OH



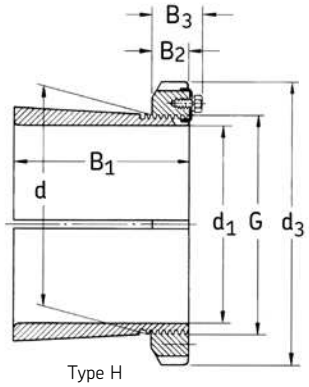
Type OH . . B
Size 60 and over



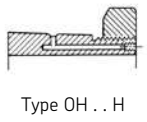




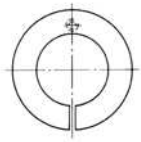
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm										kg	–				
560	600	700	239	75	97	13	8	Tr 600x6	-	127	**OH 39/600 H**	HM 30/600	MS 30/600-530	HMV 120	239/600 CAK/W33
		700	239	75	97	13	8	Tr 600x6	-	127	**OH 39/600 HB**	HM 30/600	MS 30/600-530	HMV 120	239/600 CAK/W33
		700	239	75	97	15	16	Tr 600x6	-	127	**OH 39/600**	HM 30/600	MS 30/600-530	HMV 120	239/600 CAK/W33
		700	239	75	97	15	16	Tr 600x6	-	127	**OH 39/600 B**	HM 30/600	MS 30/600-530	HMV 120	239/600 CAK/W33
		700	239	75	97	-	-	Tr 600x6	-	127	**H 39/600**	HM 30/600	MS 30/600-530	HMV 120	239/600 CAK/W33
		700	289	75	97	13	8	Tr 600x6	-	147	**OH 30/600 H**	HM 30/600	MS 30/600-530	HMV 120	230/600 CAK/W33
		700	289	75	97	13	8	Tr 600x6	-	147	**OH 30/600 HB**	HM 30/600	MS 30/600-530	HMV 120	230/600 CAK/W33
		700	289	75	97	15	18	Tr 600x6	-	147	**OH 30/600**	HM 30/600	MS 30/600-530	HMV 120	230/600 CAK/W33
		700	289	75	97	15	18	Tr 600x6	-	147	**OH 30/600 B**	HM 30/600	MS 30/600-530	HMV 120	230/600 CAK/W33
		700	289	75	97	-	-	Tr 600x6	-	147	**H 30/600**	HM 30/600	MS 30/600-530	HMV 120	230/600 CAK/W33
		750	399	85	110	13	8	Tr 600x6	-	234	**OH 31/600 H**	HM 31/600	MS 31/600-560	HMV 120	231/600 CAK/W33
		750	399	85	110	13	8	Tr 600x6	-	234	**OH 31/600 HB**	HM 31/600	MS 31/600-560	HMV 120	231/600 CAK/W33
		750	399	85	110	15	22	Tr 600x6	-	234	**OH 31/600**	HM 31/600	MS 31/600-560	HMV 120	231/600 CAK/W33
		750	399	85	110	15	22	Tr 600x6	-	234	**OH 31/600 B**	HM 31/600	MS 31/600-560	HMV 120	231/600 CAK/W33
		750	399	85	110	-	-	Tr 600x6	-	234	**H 31/600**	HM 31/600	MS 31/600-560	HMV 120	231/600 CAK/W33
		750	487	85	110	13	8	Tr 600x6	-	278	**OH 32/600 H**	HM 31/600	MS 31/600-560	HMV 120	232/600 CAK/W33
		750	487	85	110	13	8	Tr 600x6	-	278	**OH 32/600 HB**	HM 31/600	MS 31/600-560	HMV 120	232/600 CAK/W33
		750	487	85	110	15	25	Tr 600x6	-	278	**OH 32/600**	HM 31/600	MS 31/600-560	HMV 120	232/600 CAK/W33
		750	487	85	110	15	25	Tr 600x6	-	278	**OH 32/600 B**	HM 31/600	MS 31/600-560	HMV 120	232/600 CAK/W33
		750	487	85	110	-	-	Tr 600x6	-	278	**H 32/600**	HM 31/600	MS 31/600-560	HMV 120	232/600 CAK/W33
600	630	730	254	75	97	12	6	Tr 630x6	M 8	124	**OH 39/630 H**	HM 30/630	MS 30/630	HMV 126	239/630 CAK/W33
		730	254	75	97	12	6	Tr 630x6	M 8	124	**OH 39/630 HB**	HM 30/630	MS 30/630	HMV 126	239/630 CAK/W33
		730	254	75	97	15	12	Tr 630x6	-	124	**OH 39/630**	HM 30/630	MS 30/630	HMV 126	239/630 CAK/W33
		730	254	75	97	15	12	Tr 630x6	-	124	**OH 39/630 B**	HM 30/630	MS 30/630	HMV 126	239/630 CAK/W33
		730	254	75	97	-	-	Tr 630x6	-	124	**H 39/630**	HM 30/630	MS 30/630	HMV 126	239/630 CAK/W33
		730	301	75	97	12	6	Tr 630x6	M 8	138	**OH 30/630 H**	HM 30/630	MS 30/630	HMV 126	230/630 CAK/W33
		730	301	75	97	12	6	Tr 630x6	M 8	138	**OH 30/630 HB**	HM 30/630	MS 30/630	HMV 126	230/630 CAK/W33
		730	301	75	97	15	13	Tr 630x6	-	138	**OH 30/630**	HM 30/630	MS 30/630	HMV 126	230/630 CAK/W33
		730	301	75	97	15	13	Tr 630x6	-	138	**OH 30/630 B**	HM 30/630	MS 30/630	HMV 126	230/630 CAK/W33
		730	301	75	97	-	-	Tr 630x6	-	138	**H 30/630**	HM 30/630	MS 30/630	HMV 126	230/630 CAK/W33
		800	424	95	120	12	6	Tr 630x6	M 8	254	**OH 31/630 H**	HM 31/630	MS 31/630	HMV 126	231/630 CAK/W33
		800	424	95	120	12	6	Tr 630x6	M 8	254	**OH 31/630 HB**	HM 31/630	MS 31/630	HMV 126	231/630 CAK/W33
		800	424	95	120	15	17	Tr 630x6	-	254	**OH 31/630**	HM 31/630	MS 31/630	HMV 126	231/630 CAK/W33
		800	424	95	120	15	17	Tr 630x6	-	254	**OH 31/630 B**	HM 31/630	MS 31/630	HMV 126	231/630 CAK/W33
		800	424	95	120	-	-	Tr 630x6	-	254	**H 31/630**	HM 31/630	MS 31/630	HMV 126	231/630 CAK/W33
		800	521	95	120	12	6	Tr 630x6	M 8	300	**OH 32/630 H**	HM 31/630	MS 31/630	HMV 126	232/630 CAK/W33
		800	521	95	120	12	6	Tr 630x6	M 8	300	**OH 32/630 HB**	HM 31/630	MS 31/630	HMV 126	232/630 CAK/W33
		800	521	95	120	15	21	Tr 630x6	-	300	**OH 32/630**	HM 31/630	MS 31/630	HMV 126	232/630 CAK/W33
		800	521	95	120	15	21	Tr 630x6	-	300	**OH 32/630 B**	HM 31/630	MS 31/630	HMV 126	232/630 CAK/W33
		800	521	95	120	-	-	Tr 630x6	-	300	**H 32/630**	HM 31/630	MS 31/630	HMV 126	232/630 CAK/W33

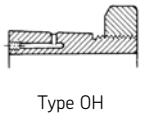


Type H
MS locking device

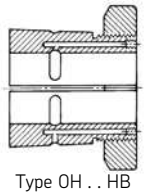


Type OH . . H

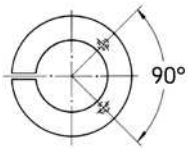


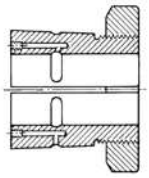


Type OH

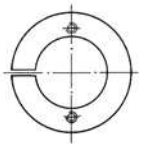


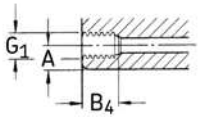
Type OH . . HB
Size 60 and over





Type OH . . B
Size 60 and over

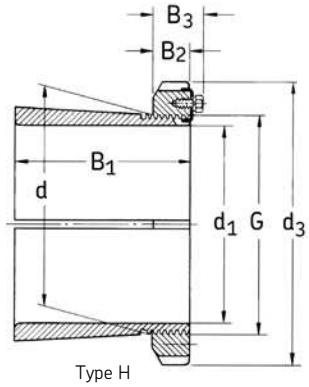




Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
630	670	780	264	80	102	13	8	Tr 670x6	G 1/8	162	**OH 39/670 H**	HM 30/670	MS 30/670	HMV 134	239/670 CAK/W33
		780	264	80	102	13	8	Tr 670x6	G 1/8	162	**OH 39/670 HB**	HM 30/670	MS 30/670	HMV 134	239/670 CAK/W33
		780	264	80	102	15	17	Tr 670x6	G 1/4	162	**OH 39/670**	HM 30/670	MS 30/670	HMV 134	239/670 CAK/W33
		780	264	80	102	15	17	Tr 670x6	G 1/4	162	**OH 39/670 B**	HM 30/670	MS 30/670	HMV 134	239/670 CAK/W33
		780	264	80	102	-	-	Tr 670x6	-	162	**H 39/670**	HM 30/670	MS 30/670	HMV 134	239/670 CAK/W33
		780	324	80	102	13	8	Tr 670x6	G 1/8	190	**OH 30/670 H**	HM 30/670	MS 30/670	HMV 134	230/670 CAK/W33
		780	324	80	102	13	8	Tr 670x6	G 1/8	190	**OH 30/670 HB**	HM 30/670	MS 30/670	HMV 134	230/670 CAK/W33
		780	324	80	102	15	19	Tr 670x6	G 1/4	190	**OH 30/670**	HM 30/670	MS 30/670	HMV 134	230/670 CAK/W33
		780	324	80	102	15	19	Tr 670x6	G 1/4	190	**OH 30/670 B**	HM 30/670	MS 30/670	HMV 134	230/670 CAK/W33
		780	324	80	102	-	-	Tr 670x6	-	190	**H 30/670**	HM 30/670	MS 30/670	HMV 134	230/670 CAK/W33
		850	456	106	131	13	8	Tr 670x6	G 1/8	340	**OH 31/670 H**	HM 31/670	MS 31/670	HMV 134	231/670 CAK/W33
		850	456	106	131	13	8	Tr 670x6	G 1/8	340	**OH 31/670 HB**	HM 31/670	MS 31/670	HMV 134	231/670 CAK/W33
		850	456	106	131	15	23	Tr 670x6	G 1/4	340	**OH 31/670**	HM 31/670	MS 31/670	HMV 134	231/670 CAK/W33
		850	456	106	131	15	23	Tr 670x6	G 1/4	340	**OH 31/670 B**	HM 31/670	MS 31/670	HMV 134	231/670 CAK/W33
		850	456	106	131	-	-	Tr 670x6	-	340	**H 31/670**	HM 31/670	MS 31/670	HMV 134	231/670 CAK/W33
		850	558	106	131	13	8	Tr 670x6	G 1/8	401	**OH 32/670 H**	HM 31/670	MS 31/670	HMV 134	232/670 CAK/W33
		850	558	106	131	13	8	Tr 670x6	G 1/8	401	**OH 32/670 HB**	HM 31/670	MS 31/670	HMV 134	232/670 CAK/W33
		850	558	106	131	15	27	Tr 670x6	G 1/4	401	**OH 32/670**	HM 31/670	MS 31/670	HMV 134	232/670 CAK/W33
		850	558	106	131	15	27	Tr 670x6	G 1/4	401	**OH 32/670 B**	HM 31/670	MS 31/670	HMV 134	232/670 CAK/W33
		850	558	106	131	-	-	Tr 670x6	-	401	**H 32/670**	HM 31/670	MS 31/670	HMV 134	232/670 CAK/W33
670	710	830	286	90	112	13	8	Tr 710x7	G 1/8	183	**OH 39/710 H**	HM 30/710	MS 30/710	HMV 142	239/710 CAK/W33
		830	286	90	112	13	8	Tr 710x7	G 1/8	183	**OH 39/710 HB**	HM 30/710	MS 30/710	HMV 142	239/710 CAK/W33
		830	286	90	112	15	18	Tr 710x7	G 1/4	183	**OH 39/710**	HM 30/710	MS 30/710	HMV 142	239/710 CAK/W33
		830	286	90	112	15	18	Tr 710x7	G 1/4	183	**OH 39/710 B**	HM 30/710	MS 30/710	HMV 142	239/710 CAK/W33
		830	286	90	112	-	-	Tr 710x7	-	183	**H 39/710**	HM 30/710	MS 30/710	HMV 142	239/710 CAK/W33
		830	342	90	112	13	8	Tr 710x7	G 1/8	228	**OH 30/710 H**	HM 30/710	MS 30/710	HMV 142	230/710 CAK/W33
		830	342	90	112	13	8	Tr 710x7	G 1/8	228	**OH 30/710 HB**	HM 30/710	MS 30/710	HMV 142	230/710 CAK/W33
		830	342	90	112	15	19	Tr 710x7	G 1/4	228	**OH 30/710**	HM 30/710	MS 30/710	HMV 142	230/710 CAK/W33
		830	342	90	112	15	19	Tr 710x7	G 1/4	228	**OH 30/710 B**	HM 30/710	MS 30/710	HMV 142	230/710 CAK/W33
		830	342	90	112	-	-	Tr 710x7	-	228	**H 30/710**	HM 30/710	MS 30/710	HMV 142	230/710 CAK/W33
		900	467	106	135	13	8	Tr 710x7	G 1/8	392	**OH 31/710 H**	HM 31/710	MS 31/710	HMV 142	231/710 CAK/W33
		900	467	106	135	13	8	Tr 710x7	G 1/8	392	**OH 31/710 HB**	HM 31/710	MS 31/710	HMV 142	231/710 CAK/W33
		900	467	106	135	15	24	Tr 710x7	G 1/4	392	**OH 31/710**	HM 31/710	MS 31/710	HMV 142	231/710 CAK/W33
		900	467	106	135	15	24	Tr 710x7	G 1/4	392	**OH 31/710 B**	HM 31/710	MS 31/710	HMV 142	231/710 CAK/W33
		900	467	106	135	-	-	Tr 710x7	-	392	**H 31/710**	HM 31/710	MS 31/710	HMV 142	231/710 CAK/W33
		900	572	106	135	13	8	Tr 710x7	G 1/8	459	**OH 32/710 H**	HM 31/710	MS 31/710	HMV 142	232/710 CAK/W33
		900	572	106	135	13	8	Tr 710x7	G 1/8	459	**OH 32/710 HB**	HM 31/710	MS 31/710	HMV 142	232/710 CAK/W33
		900	572	106	135	15	28	Tr 710x7	G 1/4	459	**OH 32/710**	HM 31/710	MS 31/710	HMV 142	232/710 CAK/W33
		900	572	106	135	15	28	Tr 710x7	G 1/4	459	**OH 32/710 B**	HM 31/710	MS 31/710	HMV 142	232/710 CAK/W33
		900	572	106	135	-	-	Tr 710x7	-	459	**H 32/710**	HM 31/710	MS 31/710	HMV 142	232/710 CAK/W33

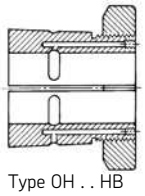
Adapter sleeves

d_1 710 – 750 mm

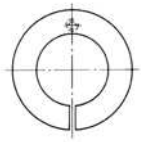


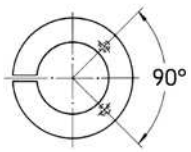
Type H
MS locking device

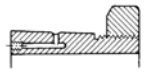
Type OH . . H



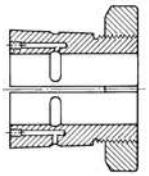
Type OH . . HB
Size 60 and over



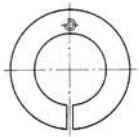


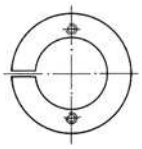


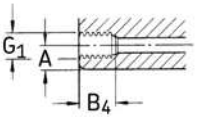
Type OH



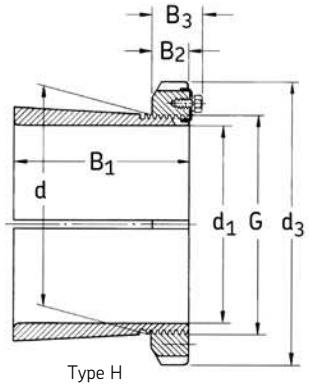
Type OH . . B
Size 60 and over



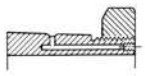




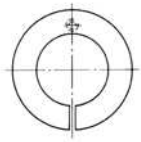
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
710	750	870	291	90	112	13	8	Tr 750x7	G 1/8	211	**OH 39/750 H**	HM 30/750	MS 30/800-750	HMV 150	239/750 CAK/W33
		870	291	90	112	13	8	Tr 750x7	G 1/8	211	**OH 39/750 HB**	HM 30/750	MS 30/800-750	HMV 150	239/750 CAK/W33
		870	291	90	112	15	18	Tr 750x7	G 1/4	211	**OH 39/750**	HM 30/750	MS 30/800-750	HMV 150	239/750 CAK/W33
		870	291	90	112	15	18	Tr 750x7	G 1/4	211	**OH 39/750 B**	HM 30/750	MS 30/800-750	HMV 150	239/750 CAK/W33
		870	291	90	112	-	-	Tr 750x7	-	211	**H 39/750**	HM 30/750	MS 30/800-750	HMV 150	239/750 CAK/W33
		870	356	90	112	13	8	Tr 750x7	G 1/8	246	**OH 30/750 H**	HM 30/750	MS 30/800-750	HMV 150	230/750 CAK/W33
		870	356	90	112	13	8	Tr 750x7	G 1/8	246	**OH 30/750 HB**	HM 30/750	MS 30/800-750	HMV 150	230/750 CAK/W33
		870	356	90	112	15	20	Tr 750x7	G 1/4	246	**OH 30/750**	HM 30/750	MS 30/800-750	HMV 150	230/750 CAK/W33
		870	356	90	112	15	20	Tr 750x7	G 1/4	246	**OH 30/750 B**	HM 30/750	MS 30/800-750	HMV 150	230/750 CAK/W33
		870	356	90	112	-	-	Tr 750x7	-	246	**H 30/750**	HM 30/750	MS 30/800-750	HMV 150	230/750 CAK/W33
		950	493	112	141	13	8	Tr 750x7	G 1/8	451	**OH 31/750 H**	HM 31/750	MS 31/800-750	HMV 150	231/750 CAK/W33
		950	493	112	141	13	8	Tr 750x7	G 1/8	451	**OH 31/750 HB**	HM 31/750	MS 31/800-750	HMV 150	231/750 CAK/W33
		950	493	112	141	15	24	Tr 750x7	G 1/4	451	**OH 31/750**	HM 31/750	MS 31/800-750	HMV 150	231/750 CAK/W33
		950	493	112	141	15	24	Tr 750x7	G 1/4	451	**OH 31/750 B**	HM 31/750	MS 31/800-750	HMV 150	231/750 CAK/W33
		950	493	112	141	-	-	Tr 750x7	-	451	**H 31/750**	HM 31/750	MS 31/800-750	HMV 150	231/750 CAK/W33
		950	603	112	141	13	8	Tr 750x7	G 1/8	526	**OH 32/750 H**	HM 31/750	MS 31/800-750	HMV 150	232/750 CAK/W33
		950	603	112	141	13	8	Tr 750x7	G 1/8	526	**OH 32/750 HB**	HM 31/750	MS 31/800-750	HMV 150	232/750 CAK/W33
		950	603	112	141	15	29	Tr 750x7	G 1/4	526	**OH 32/750**	HM 31/750	MS 31/800-750	HMV 150	232/750 CAK/W33
		950	603	112	141	15	29	Tr 750x7	G 1/4	526	**OH 32/750 B**	HM 31/750	MS 31/800-750	HMV 150	232/750 CAK/W33
		950	603	112	141	-	-	Tr 750x7	-	526	**H 32/750**	HM 31/750	MS 31/800-750	HMV 150	232/750 CAK/W33
750	800	920	303	90	112	13	10	Tr 800x7	G 1/8	259	**OH 39/800 H**	HM 30/800	MS 30/800-750	HMV 160	239/800 CAK/W33
		920	303	90	112	13	10	Tr 800x7	G 1/8	259	**OH 39/800 HB**	HM 30/800	MS 30/800-750	HMV 160	239/800 CAK/W33
		920	303	90	112	15	23	Tr 800x7	G 1/4	259	**OH 39/800**	HM 30/800	MS 30/800-750	HMV 160	239/800 CAK/W33
		920	303	90	112	15	23	Tr 800x7	G 1/4	259	**OH 39/800 B**	HM 30/800	MS 30/800-750	HMV 160	239/800 CAK/W33
		920	303	90	112	-	-	Tr 800x7	-	259	**H 39/800**	HM 30/800	MS 30/800-750	HMV 160	239/800 CAK/W33
		920	366	90	112	13	10	Tr 800x7	G 1/8	302	**OH 30/800 H**	HM 30/800	MS 30/800-750	HMV 160	230/800 CAK/W33
		920	366	90	112	13	10	Tr 800x7	G 1/8	302	**OH 30/800 HB**	HM 30/800	MS 30/800-750	HMV 160	230/800 CAK/W33
		920	366	90	112	15	25	Tr 800x7	G 1/4	302	**OH 30/800**	HM 30/800	MS 30/800-750	HMV 160	230/800 CAK/W33
		920	366	90	112	15	25	Tr 800x7	G 1/4	302	**OH 30/800 B**	HM 30/800	MS 30/800-750	HMV 160	230/800 CAK/W33
		920	366	90	112	-	-	Tr 800x7	-	302	**H30/800**	HM 30/800	MS 30/800-750	HMV 160	230/800 CAK/W33
		1 000	505	112	141	13	10	Tr 800x7	G 1/8	535	**OH 31/800 H**	HM 31/800	MS 31/800-750	HMV 160	231/800 CAK/W33
		1 000	505	112	141	13	10	Tr 800x7	G 1/8	535	**OH 31/800 HB**	HM 31/800	MS 31/800-750	HMV 160	231/800 CAK/W33
		1 000	505	112	141	15	30	Tr 800x7	G 1/4	535	**OH 31/800**	HM 31/800	MS 31/800-750	HMV 160	231/800 CAK/W33
		1 000	505	112	141	15	30	Tr 800x7	G 1/4	535	**OH 31/800 B**	HM 31/800	MS 31/800-750	HMV 160	231/800 CAK/W33
		1 000	505	112	141	-	-	Tr 800x7	-	535	**H 31/800**	HM 31/800	MS 31/800-750	HMV 160	231/800 CAK/W33
		1 000	618	112	141	13	10	Tr 800x7	G 1/8	629	**OH 32/800 H**	HM 31/800	MS 31/800-750	HMV 160	232/800 CAK/W33
		1 000	618	112	141	13	10	Tr 800x7	G 1/8	629	**OH 32/800 HB**	HM 31/800	MS 31/800-750	HMV 160	232/800 CAK/W33
		1 000	618	112	141	15	34	Tr 800x7	G 1/4	629	**OH 32/800**	HM 31/800	MS 31/800-750	HMV 160	232/800 CAK/W33
		1 000	618	112	141	15	34	Tr 800x7	G 1/4	629	**OH 32/800 B**	HM 31/800	MS 31/800-750	HMV 160	232/800 CAK/W33
		1 000	618	112	141	-	-	Tr 800x7	-	629	**H 32/800**	HM 31/800	MS 31/800-750	HMV 160	232/800 CAK/W33

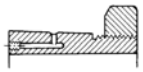


Type H
MS locking device

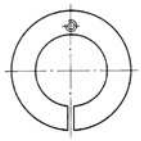


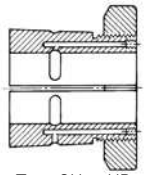
Type OH . . H



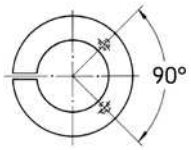


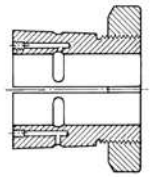
Type OH



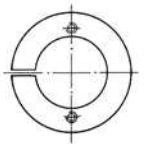


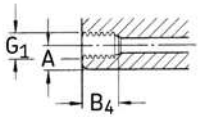
Type OH . . HB
Size 60 and over





Type OH . . B
Size 60 and over

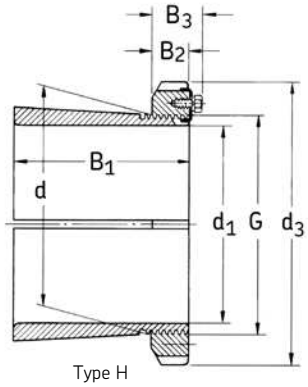




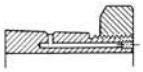
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
800	850	980	308	90	115	13	10	Tr 850x7	G 1/8	288	**OH 39/850 H**	HM 30/850	MS 30/900-850	HMV 170	239/850 CAK/W33
		980	308	90	115	13	10	Tr 850x7	G 1/8	288	**OH 39/850 HB**	HM 30/850	MS 30/900-850	HMV 170	239/850 CAK/W33
		980	308	90	115	15	23	Tr 850x7	G 1/4	288	**OH 39/850**	HM 30/850	MS 30/900-850	HMV 170	239/850 CAK/W33
		980	308	90	115	15	23	Tr 850x7	G 1/4	288	**OH 39/850 B**	HM 30/850	MS 30/900-850	HMV 170	239/850 CAK/W33
		980	308	90	115	-	-	Tr 850x7	-	288	**H 39/850**	HM 30/850	MS 30/900-850	HMV 170	239/850 CAK/W33
		980	380	90	115	13	10	Tr 850x7	G 1/8	341	**OH 30/850 H**	HM 30/850	MS 30/900-850	HMV 170	230/850 CAK/W33
		980	380	90	115	13	10	Tr 850x7	G 1/8	341	**OH 30/850 HB**	HM 30/850	MS 30/900-850	HMV 170	230/850 CAK/W33
		980	380	90	115	15	25	Tr 850x7	G 1/4	341	**OH 30/850**	HM 30/850	MS 30/900-850	HMV 170	230/850 CAK/W33
		980	380	90	115	15	25	Tr 850x7	G 1/4	341	**OH 30/850 B**	HM 30/850	MS 30/900-850	HMV 170	230/850 CAK/W33
		980	380	90	115	-	-	Tr 850x7	-	341	**H 30/850**	HM 30/850	MS 30/900-850	HMV 170	230/850 CAK/W33
		1 060	536	118	147	13	10	Tr 850x7	G 1/8	616	**OH 31/850 H**	HM 31/850	MS 31/850	HMV 170	231/850 CAK/W33
		1 060	536	118	147	13	10	Tr 850x7	G 1/8	616	**OH 31/850 HB**	HM 31/850	MS 31/850	HMV 170	231/850 CAK/W33
		1 060	536	118	147	15	31	Tr 850x7	G 1/4	616	**OH 31/850**	HM 31/850	MS 31/850	HMV 170	231/850 CAK/W33
		1 060	536	118	147	15	31	Tr 850x7	G 1/4	616	**OH 31/850 B**	HM 31/850	MS 31/850	HMV 170	231/850 CAK/W33
		1 060	536	118	147	-	-	Tr 850x7	-	616	**H 31/850**	HM 31/850	MS 31/850	HMV 170	231/850 CAK/W33
		1 060	651	118	147	13	10	Tr 850x7	G 1/8	722	**OH 32/850 H**	HM 31/850	MS 31/850	HMV 170	232/850 CAK/W33
		1 060	651	118	147	13	10	Tr 850x7	G 1/8	722	**OH 32/850 HB**	HM 31/850	MS 31/850	HMV 170	232/850 CAK/W33
		1 060	651	118	147	15	35	Tr 850x7	G 1/4	722	**OH 32/850**	HM 31/850	MS 31/850	HMV 170	232/850 CAK/W33
		1 060	651	118	147	15	35	Tr 850x7	G 1/4	722	**OH 32/850 B**	HM 31/850	MS 31/850	HMV 170	232/850 CAK/W33
		1 060	651	118	147	-	-	Tr 850x7	-	722	**H 32/850**	HM 31/850	MS 31/850	HMV 170	232/850 CAK/W33
850	900	1 030	326	100	125	13	10	Tr 900x7	G 1/8	330	**OH 39/900 H**	HM 30/900	MS 30/900-850	HMV 180	239/900 CAK/W33
		1 030	326	100	125	13	10	Tr 900x7	G 1/8	330	**OH 39/900 HB**	HM 30/900	MS 30/900-850	HMV 180	239/900 CAK/W33
		1 030	326	100	125	15	23	Tr 900x7	G 1/4	330	**OH 39/900**	HM 30/900	MS 30/900-850	HMV 180	239/900 CAK/W33
		1 030	326	100	125	15	23	Tr 900x7	G 1/4	330	**OH 39/900 B**	HM 30/900	MS 30/900-850	HMV 180	239/900 CAK/W33
		1 030	326	100	125	-	-	Tr 900x7	-	330	**H 39/900**	HM 30/900	MS 30/900-850	HMV 180	239/900 CAK/W33
		1 030	400	100	125	13	10	Tr 900x7	G 1/8	387	**OH 30/900 H**	HM 30/900	MS 30/900-850	HMV 180	230/900 CAK/W33
		1 030	400	100	125	13	10	Tr 900x7	G 1/8	387	**OH 30/900 HB**	HM 30/900	MS 30/900-850	HMV 180	230/900 CAK/W33
		1 030	400	100	125	15	25	Tr 900x7	G 1/4	387	**OH 30/900**	HM 30/900	MS 30/900-850	HMV 180	230/900 CAK/W33
		1 030	400	100	125	15	25	Tr 900x7	G 1/4	387	**OH 30/900 B**	HM 30/900	MS 30/900-850	HMV 180	230/900 CAK/W33
		1 030	400	100	125	-	-	Tr 900x7	-	387	**H 30/900**	HM 30/900	MS 30/900-850	HMV 180	230/900 CAK/W33
		1 120	557	125	154	13	10	Tr 900x7	G 1/8	677	**OH 31/900 H**	HM 31/900	MS 31/900	HMV 180	231/900 CAK/W33
		1 120	557	125	154	13	10	Tr 900x7	G 1/8	677	**OH 31/900 HB**	HM 31/900	MS 31/900	HMV 180	231/900 CAK/W33
		1 120	557	125	154	15	31	Tr 900x7	G 1/4	677	**OH 31/900**	HM 31/900	MS 31/900	HMV 180	231/900 CAK/W33
		1 120	557	125	154	15	31	Tr 900x7	G 1/4	677	**OH 31/900 B**	HM 31/900	MS 31/900	HMV 180	231/900 CAK/W33
		1 120	557	125	154	-	-	Tr 900x7	-	677	**H 31/900**	HM 31/900	MS 31/900	HMV 180	231/900 CAK/W33
		1 120	660	125	154	13	10	Tr 900x7	G 1/8	776	**OH 32/900 H**	HM 31/900	MS 31/900	HMV 180	232/900 CAK/W33
		1 120	660	125	154	13	10	Tr 900x7	G 1/8	776	**OH 32/900 HB**	HM 31/900	MS 31/900	HMV 180	232/900 CAK/W33
		1 120	660	125	154	15	35	Tr 900x7	G 1/4	776	**OH 32/900**	HM 31/900	MS 31/900	HMV 180	232/900 CAK/W33
		1 120	660	125	154	15	35	Tr 900x7	G 1/4	776	**OH 32/900 B**	HM 31/900	MS 31/900	HMV 180	232/900 CAK/W33
		1 120	660	125	154	-	-	Tr 900x7	-	776	**H 32/900**	HM 31/900	MS 31/900	HMV 180	232/900 CAK/W33

Adapter sleeves

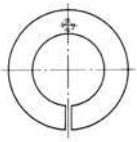
d_1 900 – 950 mm

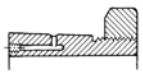


Type H
MS locking device

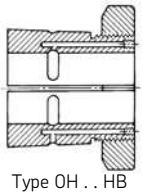


Type OH . . H

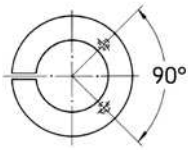


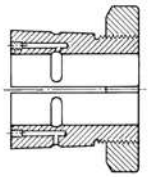


Type OH

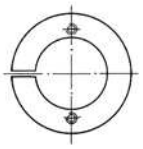


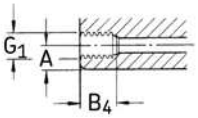
Type OH . . HB
Size 60 and over



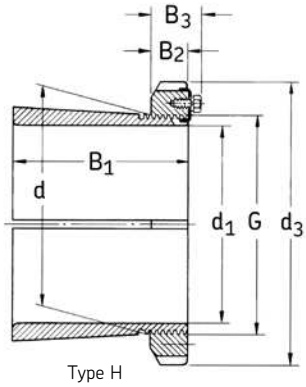


Type OH . . B
Size 60 and over

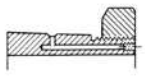




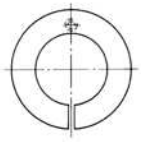
Dimensions										Mass	Designations				
											Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1						
mm									in	kg	–				
900	950	1 080	344	100	125	13	10	Tr 950x8	G 1/8	362	**OH 39/950 H**	HM 30/950	MS 30/950	HMV 190	239/950 CAK/W33
		1 080	344	100	125	13	10	Tr 950x8	G 1/8	362	**OH 39/950 HB**	HM 30/950	MS 30/950	HMV 190	239/950 CAK/W33
		1 080	344	100	125	15	23	Tr 950x8	G 1/4	362	**OH 39/950**	HM 30/950	MS 30/950	HMV 190	239/950 CAK/W33
		1 080	344	100	125	15	23	Tr 950x8	G 1/4	362	**OH 39/950 B**	HM 30/950	MS 30/950	HMV 190	239/950 CAK/W33
		1 080	344	100	125	-	-	Tr 950x8	-	362	**H 39/950**	HM 30/950	MS 30/950	HMV 190	239/950 CAK/W33
		1 080	420	100	125	13	10	Tr 950x8	G 1/8	424	**OH 30/950 H**	HM 30/950	MS 30/950	HMV 190	230/950 CAK/W33
		1 080	420	100	125	13	10	Tr 950x8	G 1/8	424	**OH 30/950 HB**	HM 30/950	MS 30/950	HMV 190	230/950 CAK/W33
		1 080	420	100	125	15	25	Tr 950x8	G 1/4	424	**OH 30/950**	HM 30/950	MS 30/950	HMV 190	230/950 CAK/W33
		1 080	420	100	125	15	25	Tr 950x8	G 1/4	424	**OH 30/950 B**	HM 30/950	MS 30/950	HMV 190	230/950 CAK/W33
		1 080	420	100	125	-	-	Tr 950x8	-	424	**H 30/950**	HM 30/950	MS 30/950	HMV 190	230/950 CAK/W33
		1 170	583	125	154	13	10	Tr 950x8	G 1/8	738	**OH 31/950 H**	HM 31/950	MS 31/950	HMV 190	231/950 CAK/W33
		1 170	583	125	154	13	10	Tr 950x8	G 1/8	738	**OH 31/950 HB**	HM 31/950	MS 31/950	HMV 190	231/950 CAK/W33
		1 170	583	125	154	15	31	Tr 950x8	G 1/4	738	**OH 31/950**	HM 31/950	MS 31/950	HMV 190	231/950 CAK/W33
		1 170	583	125	154	15	31	Tr 950x8	G 1/4	738	**OH 31/950 B**	HM 31/950	MS 31/950	HMV 190	231/950 CAK/W33
		1 170	583	125	154	-	-	Tr 950x8	-	738	**H 31/950**	HM 31/950	MS 31/950	HMV 190	231/950 CAK/W33
		1 170	675	125	154	13	10	Tr 950x8	G 1/8	834	**OH 32/950 H**	HM 31/950	MS 31/950	HMV 190	232/950 CAK/W33
		1 170	675	125	154	13	10	Tr 950x8	G 1/8	834	**OH 32/950 HB**	HM 31/950	MS 31/950	HMV 190	232/950 CAK/W33
		1 170	675	125	154	15	35	Tr 950x8	G 1/4	834	**OH 32/950**	HM 31/950	MS 31/950	HMV 190	232/950 CAK/W33
		1 170	675	125	154	15	35	Tr 950x8	G 1/4	834	**OH 32/950 B**	HM 31/990	MS 31/950	HMV 190	232/950 CAK/W33
		1 170	675	125	154	-	-	Tr 950x8	-	834	**H 32/950**	HM 31/950	MS 31/950	HMV 190	232/950 CAK/W33
950	1 000	1 140	358	100	125	13	10	Tr 1000x8	G 1/8	407	**OH 39/1000 H**	HM 30/1000	MS 30/1000	HMV 200	239/1000 CAK/W33
		1 140	358	100	125	13	10	Tr 1000x8	G 1/8	407	**OH 39/1000 HB**	HM 30/1000	MS 30/1000	HMV 200	239/1000 CAK/W33
		1 140	358	100	125	15	23	Tr 1000x8	G 1/4	407	**OH 39/1000**	HM 30/1000	MS 30/1000	HMV 200	239/1000 CAK/W33
		1 140	358	100	125	15	23	Tr 1000x8	G 1/4	407	**OH 39/1000 B**	HM 30/1000	MS 30/1000	HMV 200	239/1000 CAK/W33
		1 140	358	100	125	-	-	Tr 1000x8	-	407	**H 39/1000**	HM 30/1000	MS 30/1000	HMV 200	239/1000 CAK/W33
		1 140	430	100	125	13	10	Tr 1000x8	G 1/8	470	**OH 30/1000 H**	HM 30/1000	MS 30/1000	HMV 200	230/1000 CAK/W33
		1 140	430	100	125	13	10	Tr 1000x8	G 1/8	470	**OH 30/1000 HB**	HM 30/1000	MS 30/1000	HMV 200	230/1000 CAK/W33
		1 140	430	100	125	15	25	Tr 1000x8	G 1/4	470	**OH 30/1000**	HM 30/1000	MS 30/1000	HMV 200	230/1000 CAK/W33
		1 140	430	100	125	15	25	Tr 1000x8	G 1/4	470	**OH 30/1000 B**	HM 30/1000	MS 30/1000	HMV 200	230/1000 CAK/W33
		1 140	430	100	125	-	-	Tr 1000x8	-	470	**H 30/1000**	HM 30/1000	MS 30/1000	HMV 200	230/1000 CAK/W33
		1 240	609	125	154	13	10	Tr 1000x8	G 1/8	842	**OH 31/1000 H**	HM 31/1000	MS 31/1000	HMV 200	231/1000 CAK/W33
		1 240	609	125	154	13	10	Tr 1000x8	G 1/8	842	**OH 31/1000 HB**	HM 31/1000	MS 31/1000	HMV 200	231/1000 CAK/W33
		1 240	609	125	154	15	31	Tr 1000x8	G 1/4	842	**OH 31/1000**	HM 31/1000	MS 31/1000	HMV 200	231/1000 CAK/W33
		1 240	609	125	154	15	31	Tr 1000x8	G 1/4	842	**OH 31/1000 B**	HM 31/1000	MS 31/1000	HMV 200	231/1000 CAK/W33
		1 240	609	125	154	-	-	Tr 1000x8	-	842	**H 31/1000**	HM 31/1000	MS 31/1000	HMV 200	231/1000 CAK/W33
		1 240	707	125	154	13	10	Tr 1000x8	G 1/8	952	**OH 32/1000 H**	HM 31/1000	MS 31/1000	HMV 200	232/1000 CAK/W33
		1 240	707	125	154	13	10	Tr 1000x8	G 1/8	952	**OH 32/1000 HB**	HM 31/1000	MS 31/1000	HMV 200	232/1000 CAK/W33
		1 240	707	125	154	15	35	Tr 1000x8	G 1/4	952	**OH 32/1000**	HM 31/1000	MS 31/1000	HMV 200	232/1000 CAK/W33
		1 240	707	125	154	15	35	Tr 1000x8	G 1/4	952	**OH 32/1000 B**	HM 31/1000	MS 31/1000	HMV 200	232/1000 CAK/W33
		1 240	707	125	154	-	-	Tr 1000x8	-	952	**H 32/1000**	HM 31/1000	MS 31/1000	HMV 200	232/1000 CAK/W33

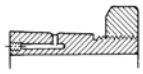


Type H
MS locking device

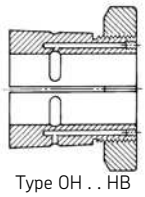


Type OH . . H

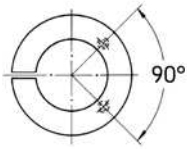


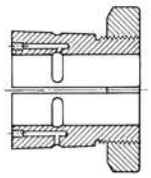


Type OH

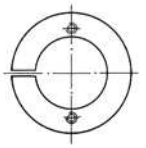


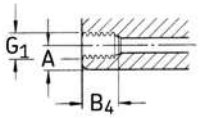
Type OH . . HB
Size 60 and over





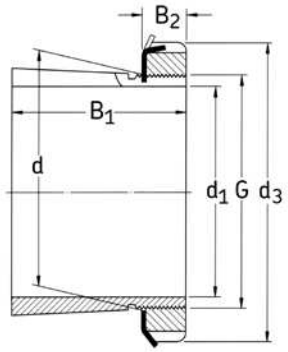
Type OH . . B
Size 60 and over





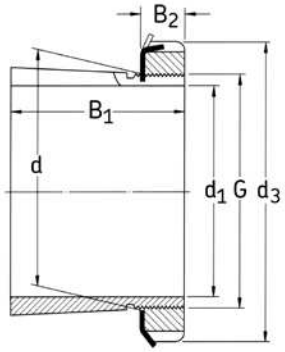
Dimensions										Mass	Designations				
d_1	d	d_3	B_1	B_2	B_3	B_4	A	G	G_1		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
mm									in	kg	–				
1 000	1 060	1 200	372	100	125	15	12	Tr l060x8	G 1/4	490	**OH 39/1060 H**	HM 30/1060	MS 30/1000	HMV 212	239/1060 CAK/W33
		1 200	372	100	125	15	12	Tr l060x8	G 1/4	490	**OH 39/1060 HB**	HM 30/1060	MS 30/1000	HMV 212	239/1060 CAK/W33
		1 200	372	100	125	15	23	Tr l060x8	G 1/4	490	**OH 39/1060**	HM 30/1060	MS 30/1000	HMV 212	239/1060 CAK/W33
		1 200	372	100	125	15	23	Tr l060x8	G 1/4	490	**OH 39/1060 B**	HM 30/1060	MS 30/1000	HMV 212	239/1060 CAK/W33
		1 200	372	100	125	-	-	Tr l060x8	-	490	**H 39/1060**	HM 30/1060	MS 30/1000	HMV 212	239/1060 CAK/W33
		1 200	447	100	125	15	12	Tr l060x8	G 1/4	571	**OH 30/1060 H**	HM 30/1060	MS 30/1000	HMV 212	230/1060 CAK/W33
		1 200	447	100	125	15	12	Tr l060x8	G 1/4	571	**OH 30/1060 HB**	HM 30/1060	MS 30/1000	HMV 212	230/1060 CAK/W33
		1 200	447	100	125	15	25	Tr l060x8	G 1/4	571	**OH 30/1060**	HM 30/1060	MS 30/1000	HMV 212	230/1060 CAK/W33
		1 200	447	100	125	15	25	Tr l060x8	G 1/4	571	**OH 30/1060 B**	HM 30/1060	MS 30/1000	HMV 212	230/1060 CAK/W33
		1 200	447	100	125	-	-	Tr l060x8	-	571	**H 30/1060**	HM 30/1060	MS 30/1000	HMV 212	230/1060 CAK/W33
		1 300	622	125	154	15	12	Tr l060x8	G 1/4	984	**OH 31/1060 H**	HM 31/1060	MS 31/1000	HMV 212	231/1060 CAK/W33
		1 300	622	125	154	15	12	Tr l060x8	G 1/4	984	**OH 31/1060 HB**	HM 31/1060	MS 31/1000	HMV 212	231/1060 CAK/W33
		1 300	622	125	154	15	31	Tr l060x8	G 1/4	984	**OH 31/1060**	HM 31/1060	MS 31/1000	HMV 212	231/1060 CAK/W33
		1 300	622	125	154	15	31	Tr l060x8	G 1/4	984	**OH 31/1060 B**	HM 31/1060	MS 31/1000	HMV 212	231/1060 CAK/W33
		1 300	622	125	154	-	-	Tr l060x8	-	984	**H 31/1060**	HM 31/1060	MS 31/1000	HMV 212	231/1060 CAK/W33

Adapter sleeves
for shafts with inch dimensions
d_1 3/4 – 1 11/16 in



Type HA, HE, HS

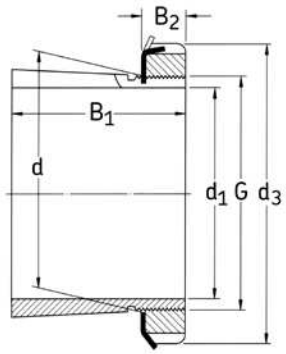
Dimensions						Mass	Designations				
							Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
d_1	d	d_3	B_1	B_2	G						
in						kg	–				
3/4	25	38	26	8	M 25x1.5	0.07	**HE 205**	KM 5	MB 5	-	1205 EK
		38	29	8	M 25x1.5	0.08	**HE 305**	KM 5	MB 5	-	2205 EK, 1305 EK
		38	35	8	M 25x1.5	0.09	**HE 2305**	KM 5	MB 5	-	2305 K
7/8	30	45	27	8	M 30x1.5	0.11	**HS 206**	KM 6	MB 6	-	1206 EK
		45	31	8	M 30x1.5	0.12	**HS 306**	KM 6	MB 6	-	2206 EK, 1306 EK
15/16	30	45	27	8	M 30x1.5	0.1	**HA 206**	KM 6	MB 6	-	1206 EK
		45	31	8	M 30x1.5	0.12	**HA 306**	KM 6	MB 6	-	2206 EK, 1306 EK
		45	38	8	M 30x1.5	0.13	**HA 2306**	KM 6	MB 6	-	2306 K
1	30	45	27	8	M 30x1.5	0.08	**HE 206**	KM 6	MB 6	-	1206 EK
		45	31	8	M 30x1.5	0.1	**HE 306**	KM 6	MB 6	-	2206 EK, 1306 EK
		45	38	8	M 30x1.5	0.11	**HE 2306**	KM 6	MB 6	-	2306 K
1 1/8	35	52	29	9	M 35x1.5	0.14	**HS 207**	KM 7	MB 7	-	1207 EK
		52	35	9	M 35x1.5	0.16	**HS 307**	KM 7	MB 7	-	2207 EK, 1307 EK, 22207 EK
1 3/16	35	52	29	9	M 35x1.5	0.12	**HA 207**	KM 7	MB 7	-	1207 EK
		52	35	9	M 35x1.5	0.14	**HA 307**	KM 7	MB 7	-	2207 EK, 1307 EK, 22207 EK
		52	43	9	M 35x1.5	0.16	**HA 2307**	KM 7	MB 7	-	2307 EK
1 1/4	40	58	31	10	M 40x1.5	0.19	**HE 208**	KM 8	MB 8	-	1208 EK
		58	36	10	M 40x1.5	0.22	**HE 308**	KM 8	MB 8	-	2208 EK, 1308 EK, 22208 EK, 21308 CCK
		58	46	10	M 40x1.5	0.28	**HE 2308**	KM 8	MB 8	-	2308 EK, 22308 EK
1 3/8	40	58	31	10	M 40x1.5	0.16	**HS 208**	KM 8	MB 8	-	1208 EK
		58	36	10	M 40x1.5	0.17	**HS 308**	KM 8	MB 8	-	2208 EK, 1308 EK, 22208 EK, 21308 CCK
1 7/16	45	65	33	11	M 45x1.5	0.26	**HA 209**	KM 9	MB 9	-	1209 EK
		65	39	11	M 45x1.5	0.29	**HA 309**	KM 9	MB 9	-	2209 EK, 1309 EK, 22209 EK, 21309 CCK
		65	50	11	M 45x1.5	0.35	**HA 2309**	KM 9	MB 9	-	2309 EK, 22309 EK
1 1/2	45	65	33	11	M 45x1.5	0.2	**HE 209**	KM 9	MB 9	-	1209 EK
		65	39	11	M 45x1.5	0.24	**HE 309**	KM 9	MB 9	-	2209 EK, 1309 EK, 22209 EK, 21309 CCK
		65	50	11	M 45x1.5	0.31	**HE 2309**	KM 9	MB 9	-	2309 EK, 22309 EK
1 5/8	50	70	35	12	M 50x1.5	0.31	**HS 210**	KM 10	MB 10	HMV 10	1210 EK
		70	42	12	M 50x1.5	0.36	**HS 310**	KM 10	MB 10	HMV 10	2210 EK, 1310 EK, 22210 EK, 21310 CCK
		70	55	12	M 50x1.5	0.4	**HS 2310**	KM 10	MB 10	HMV 10	2310 EK, 22310 EK
1 11/16	50	70	35	12	M 50x1.5	0.28	**HA 210**	KM 10	MB 10	HMV 10	1210 EK
		70	42	12	M 50x1.5	0.32	**HA 310**	KM 10	MB 10	HMV 10	2210 EK, 1310 EK, 22210 EK, 21310 CCK
		70	55	12	M 50x1.5	0.4	**HA 2310**	KM 10	MB 10	HMV 10	2310 EK, 22310 EK



Type HA, HE, HS

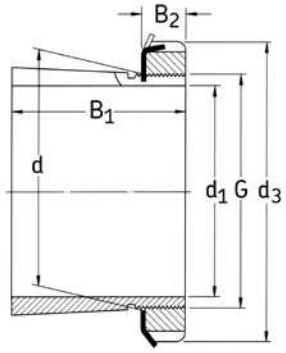
Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
in						kg	–				
1¾	50	70	35	12	M 50x1.5	0.26	**HE 210**	KM 10	MB 10	HMV 10	1210 EK
		70	42	12	M 50x1.5	0.29	**HE 310**	KM 10	MB 10	HMV 10	2210 EK, 1310 EK, 22210 EK, 21310 CCK
		70	55	12	M 50x1.5	0.36	**HE 2310**	KM 10	MB 10	HMV 10	2310 EK, 22310 EK
1⅞	55	75	37	12.5	M 55x2	0.33	**HS 211**	KM 11	MB 11	HMV 11	1211 EK
		75	45	12.5	M 55x2	0.38	**HS 311**	KM 11	MB 11	HMV 11	2211 EK, 1311 EK, 22211 EK, 21311 CCK
1¹⁵⁄₁₆	55	75	37	12.5	M 55x2	0.3	**HA 211**	KM 11	MB 11	HMV 11	1211 EK
		75	45	12.5	M 55x2	0.34	**HA 311**	KM 11	MB 11	HMV 11	2211 EK, 1311 EK, 22211 EK, 21311 CCK
		75	59	12.5	M 55x2	0.42	**HA 2311**	KM 11	MB 11	HMV 11	2311 K, 22311 EK
2	55	75	37	12.5	W 55x1/19	0.26	**HE 211 B**	HM 11	MB 11	-	1211 EK
		75	45	12.5	W 55x1/19	0.29	**HE 311 B**	HM 11	MB 11	-	2211 EK, 1311 EK, 22211 EK, 21311 CCK
		75	59	12.5	W 55x1/19	0.36	**HE 2311 B**	HM 11	MB 11	-	2311 K, 22311 EK
2⅛	60	80	38	13	M 60x2	0.35	**HS 212**	KM 12	MB 12	HMV 12	1212 EK
		80	47	13	M 60x2	0.4	**HS 312**	KM 12	MB 12	HMV 12	2212 EK, 1312 EK, 22212 EK, 21312 CCK
		80	62	13	M 60x2	0.49	**HS 2312**	KM 12	MB 12	HMV 12	2312 K, 22312 EK
2³⁄₁₆	65	85	40	14	M 65x2	0.49	**HA 213**	KM 13	MB 13	HMV 13	1213 EK
		85	50	14	M 65x2	0.58	**HA 313**	KM 13	MB 13	HMV 13	2213 EK, 1313 EK, 22213 EK, 21313 CCK
		85	65	14	M 65x2	0.75	**HA 2313**	KM 13	MB 13	HMV 13	2313 K, 22313 EK
2¼	65	85	40	14	M 65x2	0.44	**HE 213**	KM 13	MB 13	HMV 13	1213 EK
		85	50	14	M 65x2	0.52	**HE 313**	KM 13	MB 13	HMV 13	2213 EK, 1313 EK, 22213 EK, 21313 CCK
		85	65	14	M 65x2	0.65	**HE 2313**	KM 13	MB 13	HMV 13	2313 K, 22313 EK
2⅜	65	85	40	14	M 65x2	0.44	**HS 213**	KM 13	MB 13	HMV 13	1213 EK
		85	50	14	M 65x2	0.71	**HS 313**	KM 13	MB 13	HMV 13	2213 EK, 1313 EK, 22213 EK, 21313 CCK
		85	65	14	M 65x2	0.80	**HS 2313**	KM 13	MB 13	HMV 13	2313 K, 22313 EK
2⁷⁄₁₆	75	98	43	15	M 75x2	0.75	**HA 215**	KM 15	MB 15	HMV 15	1215 K
		98	55	15	M 75x2	0.91	**HA 315**	KM 15	MB 15	HMV 15	2215 K, 1315 K, 22215 EK, 21315 CCK
		98	73	15	M 75x2	1.15	**HA 2315**	KM 15	MB 15	HMV 15	2315 K, 22315 EK
2½	75	98	43	15	M 75x2	0.7	**HE 215**	KM 15	MB 15	HMV 15	1215 K
		98	55	15	M 75x2	0.85	**HE 315**	KM 15	MB 15	HMV 15	2215 K, 1315 K, 22215 EK, 21315 CCK
		98	73	15	M 75x2	1.09	**HE 2315**	KM 15	MB 15	HMV 15	2315 K, 22315 EK
2⅝	75	98	43	15	M 75x2	0.7	**HS 215**	KM 15	MB 15	HMV 15	1215 K
		98	55	15	M 75x2	0.71	**HS 315**	KM 15	MB 15	HMV 15	2215 K, 1315 K, 22215 EK, 21315 CCK
		98	73	15	M 75x2	0.9	**HS 2315**	KM 15	MB 15	HMV 15	2315 K, 22315 EK
2¹¹⁄₁₆	80	105	46	17	M 80x2	0.87	**HA 216**	KM 16	MB 16	HMV 16	1216 K
		105	59	17	M 80x2	1.05	**HA 316**	KM 16	MB 16	HMV 16	2216 EK, 1316 K, 22216 EK, 21316 CCK
		105	78	17	M 80x2	1.3	**HA 2316**	KM 16	MB 16	HMV 16	2316 K, 22316 EK

Adapter sleeves
for shafts with inch dimensions
d_1 2¾ – 4 in



Type HA, HE

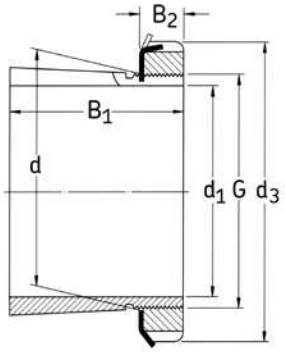
Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
in						kg	–				
2¾	80	105	46	17	M 80x2	0.81	**HE 216**	KM 16	MB 16	HMV 16	1216 K
		105	59	17	M 80x2	0.97	**HE 316**	KM 16	MB 16	HMV 16	2216 EK, 1316 K, 22216 EK, 21316 CCK
		105	78	17	M 80x2	1.2	**HE 2316**	KM 16	MB 16	HMV 16	2316 K, 22316 EK
2 15/16	85	110	50	18	M 85x2	0.94	**HA 217**	KM 17	MB 17	HMV 17	1217 K
		110	63	18	M 85x2	1.1	**HA 317**	KM 17	MB 17	HMV 17	2217 K, 1317 K, 22217 EK, 21317 CCK
		110	82	18	M 85x2	1.4	**HA 2317**	KM 17	MB 17	HMV 17	2317 K, 22317 EK
3	85	110	50	18	M 85x2	0.87	**HE 217**	KM 17	MB 17	HMV 17	1217 K
		110	63	18	M 85x2	1	**HE 317**	KM 17	MB 17	HMV 17	2217 K, 1317 K, 22217 EK, 21317 CCK
		110	82	18	M 85x2	1.3	**HE 2317**	KM 17	MB 17	HMV 17	2317 K, 22317 EK
3 3/16	90	120	52	18	M 90x2	1.05	**HA 218**	KM 18	MB 18	HMV 18	1218 K
		120	65	18	M 90x2	1.25	**HA 318**	KM 18	MB 18	HMV 18	2218 K, 1318 K, 22218 EK, 21318 CCK
		120	86	18	M 90x2	1.5	**HA 2318**	KM 18	MB 18	HMV 18	2318 K, 23218 CCK/W33, 22318 EK
3¼	90	120	52	18	M 90x2	0.97	**HE 218**	KM 18	MB 18	HMV 18	1218 K
		120	65	18	M 90x2	1.1	**HE 318**	KM 18	MB 18	HMV 18	2218 K, 1318 K, 22218 EK, 21318 CCK
		120	86	18	M 90x2	1.4	**HE 2318**	KM 18	MB 18	HMV 18	2318 K, 23218 CCK/W33, 22318 EK
	95	125	55	19	M 95x2	1.35	**HE 219**	KM 19	MB 19	HMV 19	1219 K
		125	68	19	M 95x2	1.6	**HE 319**	KM 19	MB 19	HMV 19	2219 K, 1319 K, 22219 EK, 21319 CCK
		125	90	19	M 95x2	2	**HE 2319**	KM 19	MB 19	HMV 19	2319 K, 22319 EK
3 7/16	100	130	58	20	M 100x2	1.55	**HA 220**	KM 20	MB 20	HMV 20	1220 K
		130	71	20	M 100x2	1.8	**HA 320**	KM 20	MB 20	HMV 20	2220 K, 1320 K, 22220 EK, 21320 CCK
		130	97	20	M 100x2	2.35	**HA 2320**	KM 20	MB 20	HMV 20	2320 K, 23220 CCK/W33, 22320 EK
3½	100	130	58	20	M 100x2	1.45	**HE 220**	KM 20	MB 20	HMV 20	1220 K
		130	71	20	M 100x2	1.75	**HE 320**	KM 20	MB 20	HMV 20	2220 K, 1320 K, 22220 EK, 21320 CCK
		130	97	20	M 100x2	2.2	**HE 2320**	KM 20	MB 20	HMV 20	2320 K, 23220 CCK/W33, 22320 EK
		130	76	20	M 100x2	1.8	**HE 3120**	KM 20	MB 20	HMV 20	23120 CCK/W33
3 11/16	105	140	60	20	M 105x2	1.7	**HA 221**	KM 21	MB 21	HMV 21	1221 K
		140	74	20	M 105x2	1.95	**HA 321**	KM 21	MB 21	HMV 21	2221 K, 1321 K
3¾	105	140	60	20	M 105x2	1.58	**HE 221**	KM 21	MB 21	HMV 21	1221 K
		140	74	20	M 105x2	1.83	**HE 321**	KM 21	MB 21	HMV 21	2221 K, 1321 K
4	110	145	63	21	M 110x2	1.65	**HE 222**	KM 22	MB 22	HMV 22	1222 K
		145	77	21	M 110x2	1.9	**HE 322**	KM 22	MB 22	HMV 22	2222 K, 1322 K, 23022 CCK, 22222 EK 21322 CCK
		145	105	21	M 110x2	2.4	**HE 2322**	KM 22	MB 22	HMV 22	2322 K, 23222 CCK/W33, 22322 EK
		145	81	21	M 110x2	2.25	**HE 3122**	KM 22	MB 22	HMV 22	23122 CCK/W33



Type HA, HE

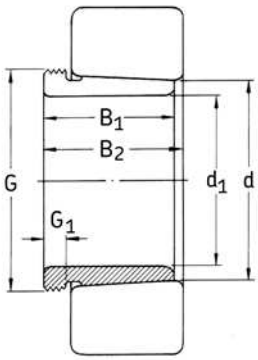
Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
in						kg	–				
4 3/16	120	145	72	22	M 120x2	2.25	**HA 3024**	KML 24	MBL 24	HMV 24	1224 K, 23024 CCK/W33
		155	88	22	M 120x2	2.9	**HA 3124**	KM 24	MB 24	HMV 24	2224 K, 23124 CCK/W33
		155	112	22	M 120x2	3.6	**HA 2324**	KM 24	MB 24	HMV 24	23224 CCK/W33, 22324 CCK/W33
4 1/4	120	145	72	22	M 120x2	2	**HE 3024**	KML 24	MBL 24	HMV 24	1224 K, 23024 CCK/W33
		155	88	22	M 120x2	2.8	**HE 3124**	KM 24	MB 24	HMV 24	23124 CCK/W33, 22224 EK
		155	112	22	M 120x2	3.35	**HE 2324**	KM 24	MB 24	HMV 24	23224 CCK/W33, 22324 CCK/W33
4 7/16	130	155	80	23	M 130x2	2.85	**HA 3026**	KML 26	MBL 26	HMV 26	23026 CCK/W33
		165	92	23	M 130x2	3.75	**HA 3126**	KM 26	MB 26	HMV 26	23126 CCK/W33, 22226 EK
		165	121	23	M 130x2	4.75	**HA 2326**	KM 26	MB 26	HMV 26	23226 CCK/W33, 22326 CCK/W33
4 1/2	130	155	80	23	M 130x2	2.9	**HE 3026**	KML 26	MBL 26	HMV 26	23026 CCK/W33
		165	92	23	M 130x2	3.6	**HE 3126**	KM 26	MB 26	HMV 26	23126 CCK/W33, 22226 EK
		165	121	23	M 130x2	4.55	**HE 2326**	KM 26	MB 26	HMV 26	23226 CCK/W33, 22326 CCK/W33
4 15/16	140	165	82	24	M 140x2	3	**HA 3028**	KML 28	MBL 28	HMV 28	23028 CCK/W33
		180	97	24	M 140x2	4.1	**HA 3128**	KM 28	MB 28	HMV 28	23128 CCK/W33, 22228 CCK/W33
		180	131	24	M 140x2	5.3	**HA 2328**	KM 28	MB 28	HMV 28	23228 CCK/W33, 22328 CCK/W33
5	140	165	82	24	M 140x2	2.8	**HE 3028**	KML 28	MBL 28	HMV 28	23028 CCK/W33
		180	97	24	M 140x2	3.15	**HE 3128**	KM 28	MB 28	HMV 28	23128 CCK/W33, 22228 CCK/W33
		180	131	24	M 140x2	5	**HE 2328**	KM 28	MB 28	HMV 28	23228 CCK/W33, 22328 CCK/W33
5 3/16	150	180	87	26	M 150x2	4.7	**HA 3030**	KML 30	MBL 30	HMV 30	23030 CCK/W33
		195	111	26	M 150x2	5.8	**HA 3130**	KM 30	MB 30	HMV 30	23130 CCK/W33, 22230 CCK/W33
		195	139	26	M 150x2	7.1	**HA 2330**	KM 30	MB 30	HMV 30	23230 CCK/W33, 22330 CCK/W33
5 1/4	150	180	87	26	M 150x2	4.65	**HE 3030**	KML 30	MBL 30	HMV 30	23030 CCK/W33
		195	111	26	M 150x2	5.5	**HE 3130**	KM 30	MB 30	HMV 30	23130 CCK/W33, 22230 CCK/W33
		195	139	26	M 150x2	6.8	**HE 2330**	KM 30	MB 30	HMV 30	23230 CCK/W33, 22330 CCK/W33
5 7/16	160	190	93	27.5	M 160x3	5.2	**HA 3032**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		210	119	28	M 160x3	7.55	**HA 3132**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	147	28	M 160x3	9.4	**HA 2332**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
5 1/2	160	190	93	27.5	M 160x3	5.1	**HE 3032**	KML 32	MBL 32	HMV 32	23032 CCK/W33
		210	119	28	M 160x3	7.3	**HE 3132**	KM 32	MB 32	HMV 32	23132 CCK/W33, 22232 CCK/W33
		210	147	28	M 160x3	8.8	**HE 2332**	KM 32	MB 32	HMV 32	23232 CCK/W33, 22332 CCK/W33
5 15/16	170	200	101	28.5	M 170x3	5.7	**HA 3034**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		220	122	29	M 170x3	7.8	**HA 3134**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	154	29	M 170x3	9.6	**HA 2334**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33
6	170	200	101	28.5	M 170x3	5.4	**HE 3034**	KML 34	MBL 34	HMV 34	23034 CCK/W33
		220	122	29	M 170x3	7.55	**HE 3134**	KM 34	MB 34	HMV 34	23134 CCK/W33, 22234 CCK/W33
		220	154	29	M 170x3	9.2	**HE 2334**	KM 34	MB 34	HMV 34	23234 CCK/W33, 22334 CCK/W33

Adapter sleeves
for shafts with inch dimensions
d_1 6 7/16 – 7 3/16 in



Type HA, HE

Dimensions						Mass	Designations				
d_1	d	d_3	B_1	B_2	G		Adapter sleeve with lock nut and locking device	Lock nut	Locking device	Appropriate hydraulic nut	Bearing(s)
in						kg	–				
6 7/16	180	210	109	29.5	M 180x3	6.85	**HA 3036**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		230	131	30	M 180x3	8.15	**HA 3136**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	161	30	M 180x3	9.9	**HA 2336**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
6 1/2	180	210	109	29.5	M 180x3	5.55	**HE 3036**	KML 36	MBL 36	HMV 36	23036 CCK/W33
		230	131	30	M 180x3	7.8	**HE 3136**	KM 36	MB 36	HMV 36	23136 CCK/W33, 22236 CCK/W33
		230	161	30	M 180x3	9.35	**HE 2336**	KM 36	MB 36	HMV 36	23236 CCK/W33, 22336 CCK/W33
6 3/4	190	220	112	30.5	M 190x3	7.2	**HE 3038**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		240	141	31	M 190x3	10.2	**HE 3138**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	169	31	M 190x3	11.7	**HE 2338**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
6 15/16	190	220	112	30.5	M 190x3	7.2	**HA 3038**	KML 38	MBL 38	HMV 38	23038 CCK/W33
		240	141	31	M 190x3	8.5	**HA 3138**	KM 38	MB 38	HMV 38	23138 CCK/W33, 22238 CCK/W33
		240	169	31	M 190x3	10	**HA 2338**	KM 38	MB 38	HMV 38	23238 CCK/W33, 22338 CCK/W33
7	200	240	120	31.5	M 200x3	9.35	**HE 3040**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		250	150	32	M 200x3	12.3	**HE 3140**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	176	32	M 200x3	14.2	**HE 2340**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33
7 3/16	200	240	120	31.5	M 200x3	8.5	**HA 3040**	KML 40	MBL 40	HMV 40	23040 CCK/W33
		250	150	32	M 200x3	10.8	**HA 3140**	KM 40	MB 40	HMV 40	23140 CCK/W33, 22240 CCK/W33
		250	176	32	M 200x3	12.6	**HA 2340**	KM 40	MB 40	HMV 40	23240 CCK/W33, 22340 CCK/W33

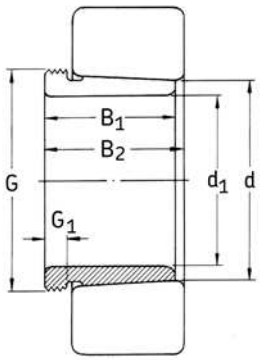


Type AH, AHX

Dimensions						Mass	Designations					
							Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
d_1	d	B_1	B_2[1]	G	G_1							
mm						kg	–					
35	40	29	32	M 45x1.5	6	0.09	**AH 308**	KM 9	-	KM 7	MB 7	2208 EK,1308 EK, 22208 EK, 21308 CCK
		40	43	M 45x1.5	7	0.13	**AH 2308**	KM 9	-	KM 7	MB 7	2308 EK, 22308 EK
40	45	31	34	M 50x1.5	6	0.12	**AH 309**	KM 10	HMV 10	KM 8	MB 8	2209 EK, 1309 EK, 22209 EK, 21309 CCK
		44	47	M 50x1.5	7	0.16	**AH 2309**	KM 10	HMV 10	KM 8	MB 8	2309 EK, 22309 EK
45	50	35	38	M 55x2	7	0.13	**AHX 310**	KM 11	HMV 11	KM 9	MB 9	2210 EK, 1310 EK, 22210 EK, 21310 CCK
		50	53	M 55x2	9	0.19	**AHX 2310**	KM 11	HMV 11	KM 9	MB 9	2310 K, 22310 EK
50	55	37	40	M 60x2	7	0.16	**AHX 311**	KM 12	HMV 12	KM 10	MB 10	2211 EK, 1311 EK, 22211 EK, 21311 CCK
		54	57	M 60x2	10	0.26	**AHX 2311**	KM 12	HMV 12	KM 10	MB 10	2311 K, 22311 EK
55	60	40	43	M 65x2	8	0.19	**AHX 312**	KM 13	HMV 13	KM 11	MB 11	2212 EK, 1312 EK, 22212 EK, 21312 CCK
		58	61	M 65x2	11	0.3	**AHX 2312**	KM 13	HMV 13	KM 11	MB 11	2312 K, 22312 EK
60	65	42	45	M 70x2	8	0.23	**AH 313 G**	KM 14	HMV 14	KM 12	MB 12	2213 EK, 1313 EK, 22213 EK, 21313 CCK
		61	64	M 70x2	12	0.36	**AH 2313 G**	KM 14	HMV 14	KM 12	MB 12	2313 K, 22313 EK
65	70	43	47	M 75x2	8	0.25	**AH 314 G**	KM 15	HMV 15	KM 13	MB 13	22214 EK, 21314 CCK
		64	68	M 75x2	12	0.42	**AHX 2314 G**	KM 15	HMV 15	KM 13	MB 13	22314 EK
70	75	45	49	M 80x2	8	0.3	**AH 315 G**	KM 16	HMV 16	KM 14	MB 14	2215 K, 1315 K, 22215 EK, 21315 CCK
		68	72	M 80x2	12	0.48	**AHX 2315 G**	KM 16	HMV 16	KM 14	MB 14	2315 K, 22315 EK
75	80	48	52	M 90x2	8	0.37	**AH 316**	KM 18	HMV 18	KM 15	MB 15	2216 EK, 1316 K, 22216 EK, 21316 CCK
		71	75	M 90x2	12	0.57	**AHX 2316**	KM 18	HMV 18	KM 15	MB 15	2316 K, 22316 EK
80	85	52	56	M 95x2	9	0.43	**AHX 317**	KM 19	HMV 19	KM 16	MB 16	2217 K, 1317 K, 22217 EK, 21317 CCK
		74	78	M 95x2	13	0.65	**AHX 2317**	KM 19	HMV 19	KM 16	MB 16	2317 K, 22317 EK
85	90	53	57	M 100x2	9	0.46	**AHX 318**	KM 20	HMV 20	KM 17	MB 17	2218 K, 1318 K, 22218 EK, 21318 CCK
		79	83	M 100x2	14	0.76	**AHX 2318**	KM 20	HMV 20	KM 17	MB 17	2318 K, 22318 EK
		63	67	M 100x2	10	0.57	**AHX 3218**	KM 20	HMV 20	KM 17	MB 17	23218 CCK/W33
90	95	57	61	M 105x2	10	0.54	**AHX 319**	KM 21	HMV 21	KM 18	MB 18	2219 K, 1319 K, 22219 EK, 21319 CCK
		85	89	M 105x2	16	0.9	**AHX 2319**	KM 21	HMV 21	KM 18	MB 18	2319 K, 22319 EK
95	100	59	63	M 110x2	10	0.58	**AHX 320**	KM 22	HMV 22	KM 19	MB 19	2220 K, 1320 K, 22220 EK, 21320 CCK
		64	68	M 110x2	11	0.66	**AHX 3120**	KM 22	HMV 22	KM 19	MB 19	23120 CCK/W33
		73	77	M 110x2	11	0.76	**AHX 3220**	KM 22	HMV 22	KM 19	MB 19	23220 CCK/W33
		90	94	M 110x2	16	1	**AHX 2320**	KM 22	HMV 22	KM 19	MB 19	2320 K, 22320 EK

[1] Width before the sleeve is pressed into the bearing bore

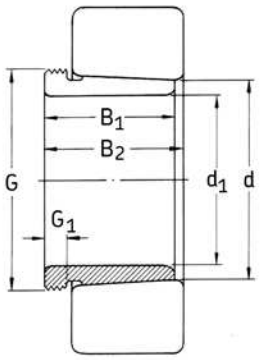
Withdrawal sleeves
d_1 105 – 150 mm



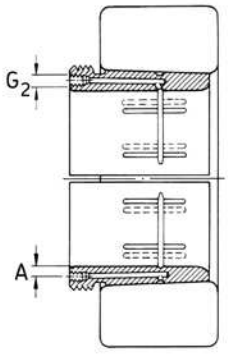
Type AH, AHX

Dimensions						Mass	Designations					
							Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
d_1	d	B_1	B_2[1]	G	G_1							
mm						kg	–					
105	110	63	67	M 120x2	12	0.77	**AHX 322**	KM 24	HMV 24	KM 21	MB 21	1322 K, 21322 CCK
		98	102	M 120x2	16	1.28	**AHX 2322 G**	KM 24	HMV 24	KM 21	MB 21	2322 K, 22322 EK
		68	72	M 120x2	11	0.76	**AHX 3122**	KM 24	HMV 24	KM 21	MB 21	2222 K, 23122 CCK/W33, 22222 EK, 21322 CCK
		82	86	M 120x2	11	1	**AHX 3222 G**	KM 24	HMV 24	KM 21	MB 21	23222 CCK/W33
		82	91	M 115x2	13	0.71	**AH 24122**	KM 23	HMV 23	KM 21	MB 21	24122 CCK30/W33
115	120	105	109	M 130x2	17	1.53	**AHX 2324 G**	KM 26	HMV 26	KM 22	MB 22	22324 CCK/W33
		60	64	M 130x2	13	0.73	**AHX 3024**	KM 26	HMV 26	KM 22	MB 22	23024 CCK/W33
		75	79	M 130x2	12	0.94	**AHX 3124**	KM 26	HMV 26	KM 22	MB 22	23124 CCK/W33, 22224 EK
		90	94	M 130x2	13	1 70	**AHX 3224 G**	KM 26	HMV 26	KM 22	MB 22	23224 CCK/W33
		73	82	M 125x2	13	0 70	**AH 24024**	KM 25	HMV 25	KM 22	MB 22	24024 CCK30/W33
		93	102	M 130x2	13	1	**AH 24124**	KM 26	HMV 26	KM 22	MB 22	24124 CCK30/W33
125	130	115	119	M 140x2	19	1.9	**AHX 2326 G**	KM 28	HMV 28	KM 24	MB 24	22326 CCK/W33
		67	71	M 140x2	14	0.91	**AHX 3026**	KM 28	HMV 28	KM 24	MB 24	23026 CCK/W33
		78	82	M 140x2	12	1.1	**AHX 3126**	KM 28	HMV 28	KM 24	MB 24	23126 CCK/W33, 22226 EK
		98	102	M 140x2	15	1.5	**AHX 3226 G**	KM 28	HMV 28	KM 24	MB 24	23226 CCK/W33
		83	93	M 135x2	14	0.88	**AH 24026**	KM 27	HMV 27	KM 24	MB 24	24026 CCK30/W33
		94	104	M 140x2	14	1.15	**AH 24126**	KM 28	HMV 28	KM 24	MB 24	24126 CCK30/W33
135	140	125	130	M 150x2	20	2.25	**AHX 2328 G**	KM 30	HMV 30	KM 26	MB 26	22328 CCK/W33
		68	73	M 150x2	14	1	**AHX 3028**	KM 30	HMV 30	KM 26	MB 26	23028 CCK/W33
		83	88	M 150x2	14	1.3	**AHX 3128**	KM 30	HMV 30	KM 26	MB 26	23128 CCK/W33, 22228 EK
		104	109	M 150x2	15	1.8	**AHX 3228 G**	KM 30	HMV 30	KM 26	MB 26	23228 CCK/W33
		83	93	M 145x2	14	0.95	**AH 24028**	KM 29	HMV 29	KM 26	MB 26	24028 CCK30/W33
		99	109	M 150x2	14	1.3	**AH 24128**	KM 30	HMV 30	KM 26	MB 26	24128 CCK30/W33
145	150	135	140	M 160x3	24	3.7	**AHX 2330 G**	KM 32	HMV 32	KM 28	MB 28	22330 CCK/W33
		72	77	M 160x3	15	1.15	**AHX 3030**	KM 32	HMV 32	KM 28	MB 28	23030 CCK/W33
		96	101	M 160x3	15	1.7	**AHX 3130 G**	KM 32	HMV 32	KM 28	MB 28	23130 CCK/W33, 22230 CCK/W33
		114	119	M 160x3	17	210	**AHX 3230 G**	KM 32	HMV 32	KM 28	MB 28	23230 CCK/W33
		90	101	M 155x3	15	1 05	**AH 24030**	KM 31	HMV 31	KM 28	MB 28	24030 CCK30/W33
		115	126	M 160x3	15	1.55	**AH 24130**	KM 32	HMV 32	KM 28	MB 28	24130 CCK30/W33
150	160	140	146	M 170x3	24	4.3	**AH 2332 G**	KM 34	HMV 34	KM 30	MB 30	22332 CCK/W33
		77	82	M 170x3	16	2.05	**AH 3032**	KM 34	HMV 34	KM 30	MB 30	23032 CCK/W33
		103	108	M 170x3	16	3	**AH 3132 G**	KM 34	HMV 34	KM 30	MB 30	23132 CCK/W33, 22232 CCK/W33
		124	130	M 170x3	20	3.7	**AH 3232 G**	KM 34	HMV 34	KM 30	MB 30	23232 CCK/W33
		95	106	M 170x3	15	2.3	**AH 24032**	KM 34	HMV 34	KM 30	MB 30	24032 CCK30/W33
		124	135	M 170x3	15	3	**AH 24132**	KM 34	HMV 34	KM 30	MB 30	24132 CCK30/W33

[1] Width before the sleeve is pressed into the bearing bore



Type AH

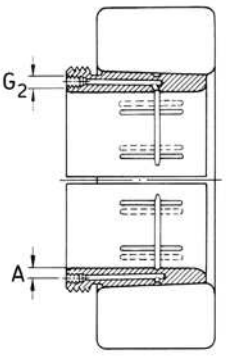


Type AOH

Dimensions								Mass	Designations					
									Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
d_1	d	B_1	B_2[1]	G	G_1	G_2	A							
mm						in	mm	kg	–					
160	170	146	152	M 180x3	24	-	-	4.85	**AH 2334 G**	KM 36	HMV 36	KM 32	MB 32	22334 CCK/W33
		85	90	M 180x3	17	-	-	2.45	**AH 3034**	KM 36	HMV 36	KM 32	MB 32	23034 CCK/W33
		104	109	M 180x3	16	-	-	3.2	**AH 3134 G**	KM 36	HMV 36	KM 32	MB 32	23134 CCK/W33, 22234 CCK/W33
		134	140	M 180x3	24	-	-	4.35	**AH 3234 G**	KM 36	HMV 36	KM 32	MB 32	23234 CCK/W33
		106	117	M 180x3	16	-	-	2.7	**AH 24034**	KM 36	HMV 36	KM 32	MB 32	24034 CCK30/W33
		125	136	M 180x3	16	-	-	3.25	**AH 24134**	KM 36	HMV 36	KM 32	MB 32	24134 CCK30/W33
170	180	105	110	M 190x3	17	-	-	3.4	**AH 2236 G**	KM 38	HMV 38	KM 34	MB 34	22236 CCK/W33
		154	160	M 190x3	26	-	-	5.5	**AH 2336 G**	KM 38	HMV 38	KM 34	MB 34	22336 CCK/W33
		92	98	M 190x3	17	-	-	2.8	**AH 3036**	KM 38	HMV 38	KM 34	MB 34	23036 CCK/W33
		116	122	M 190x3	19	-	-	3.9	**AH 3136 G**	KM 38	HMV 38	KM 34	MB 34	23136 CCK/W33
		140	146	M 190x3	24	-	-	485	**AH 3236 G**	KM 38	HMV 38	KM 34	MB 34	23236 CCK/W33
		116	127	M 190x3	16	-	-	320	**AH 24036**	KM 38	HMV 38	KM 34	MB 34	24036 CCK30/W33
		134	145	M 190x3	16	-	-	3.75	**AH 24136**	KM 38	HMV 38	KM 34	MB 34	24136 CCK30/W33
180	190	112	117	M 200x3	18	-	-	3.9	**AH 2238 G**	KM 40	HMV 40	KM 36	MB 36	22238 CCK/W33
		160	167	M 200x3	26	-	-	6.1	**AH 2338 G**	KM 40	HMV 40	KM 36	MB 36	22338 CCK/W33
		96	102	M 200x3	18	-	-	3.3	**AH 3038 G**	KM 40	HMV 40	KM 36	MB 36	23038 CCK/W33
		125	131	M 200x3	20	-	-	4.5	**AH 3138 G**	KM 40	HMV 40	KM 36	MB 36	23138 CCK/W33
		145	152	M 200x3	25	-	-	5.4	**AH 3238 G**	KM 40	HMV 40	KM 36	MB 36	23238 CCK/W33
		118	131	M 200x3	18	-	-	3.55	**AH 24038**	KM 40	HMV 40	KM 36	MB 36	24038 CCK30/W33
		146	159	M 200x3	18	-	-	4.45	**AH 24138**	KM 40	HMV 40	KM 36	MB 36	24138 CCK30/W33
190	200	118	123	Tr 220x4	19	-	-	4.7	**AH 2240**	HM 44 T	HMV 44	KM 38	MB 38	22240 CCK/W33
		170	177	Tr 220x4	30	-	-	7.6	**AH 2340**	HM 44 T	HMV 44	KM 38	MB 38	22340 CCK/W33
		102	108	Tr 210x4	19	-	-	3.7	**AH 3040 G**	HM 42 T	HMV 42	KM 38	MB 38	23040 CCK/W33
		134	140	Tr 220x4	21	-	-	5.65	**AH 3140**	HM 44 T	HMV 44	KM 38	MB 38	23140 CCK/W33
		153	160	Tr 220x4	25	-	-	6.6	**AH 3240**	HM 44 T	HMV 44	KM 38	MB 38	23240 CCK/W33
		127	140	Tr 210x4	18	-	-	4	**AH 24040**	HM 42 T	HMV 42	KM 38	MB 38	24040 CCK/W33
		158	171	Tr 210x4	18	-	-	5.05	**AH 24140**	HM 42 T	HMV 42	KM 38	MB 38	24140 CCK30/W33
200	220	181	189	Tr 240x4	30	G 1/4	9	13.5	**AOH 2344**	HM 48 T	HMV 48	KM 40	MB 40	23244 CCK/W33, 22344 CCK/W33
		111	117	Tr 230x4	20	G 1/8	6.5	7.3	**AOH 3044 G**	HM 46 T	HMV 46	KM 40	MB 40	23044 CCK/W33
		145	151	Tr 240x4	23	G 1/4	9	9.3	**AOH 3144**	HM 48 T	HMV 48	KM 40	MB 40	23144 CCK/W33
		130	136	Tr 240x4	20	G 1/4	9	9.4	**AOH 2244**	HM 48 T	HMV 48	KM 40	MB 40	22244 CCK/W33
		138	152	Tr 230x4	20	G 1/8	6.5	8.2	**AOH 24044**	HM 46 T	HMV 46	KM 40	MB 40	24044 CCK30/W33
		170	184	Tr 230x4	20	G 1/8	6.5	10	**AOH 24144**	HM 46 T	HMV 46	KM 40	MB 40	24144 CCK30/W33

[1] Width before the sleeve is pressed into the bearing bore

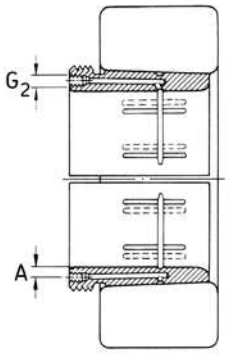
Withdrawal sleeves
d_1 220 – 320 mm



Type AOH

Dimensions								Mass	Designations					
									Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
d_1	d	B_1	B_2[1]	G	G_1	G_2	A							
mm						in	mm	kg	–					
220	240	189	197	Tr 260x4	30	G 1/4	9	14	**AOH 2348**	HM 52 T	HMV 52	HM 44 T	MB 44	23248 CCK/W33, 22348 CCK/W33
		116	123	Tr 260x4	21	G 1/4	9	7.95	**AOH 3048**	HM 52 T	HMV 52	HM 44 T	MB 44	23048 CCK/W33
		154	161	Tr 260x4	25	G 1/4	9	12	**AOH 3148**	HM 52 T	HMV 52	HM 44 T	MB 44	23148 CCK/W33
		144	150	Tr 260x4	21	G 1/4	9	11.5	**AOH 2248**	HM 52 T	HMV 52	HM 44 T	MB 44	22248 CCK/W33
		138	153	Tr 250x4	20	G 1/8	6.5	8.05	**AOH 24048**	HM 50 T	HMV 50	HM 44 T	MB 44	24048 CCK30/W33
		180	195	Tr 260x4	20	G 1/4	9	11.5	**AOH 24148**	HM 52 T	HMV 52	HM 44 T	MB 44	24148 CCK30/W33
240	260	155	161	Tr 280x4	23	G 1/4	9	13.5	**AOH 2252 G**	HM 56 T	HMV 56	HM 48 T	MB 48	22252 CACK/W33
		205	213	Tr 280x4	30	G 1/4	9	19	**AOH 2352 G**	HM 56 T	HMV 56	HM 48 T	MB 48	23252 CACK/W33, 22352 CCK/W33
		128	135	Tr 280x4	23	G 1/4	9	9.6	**AOH 3052**	HM 56 T	HMV 56	HM 48 T	MB 48	23052 CCK/W33
		172	179	Tr 280x4	26	G 1/4	9	15.5	**AOH 3152 G**	HM 56 T	HMV 56	HM 48 T	MB 48	23152 CCK/W33
		162	178	Tr 280x4	22	G 1/8	6.5	12.5	**AOH 24052 G**	HM 56 T	HMV 56	HM 48 T	MB 48	24052 CCK30/W33
		202	218	Tr 280x4	22	G 1/4	9	14	**AOH 24152**	HM 56 T	HMV 56	HM 48 T	MB 48	24152 CCK30/W33
260	280	155	163	Tr 300x4	24	G 1/4	9	14.8	**AOH 2256 G**	HM 3160	HMV 60	HM 52 T	MB 52	22256 CACK/W33
		212	220	Tr 300x4	30	G 1/4	9	21.5	**AOH 2356 G**	HM 3160	HMV 60	HM 52 T	MB 52	23256 CACK/W33, 22356 CCK/W33
		131	139	Tr 300x4	24	G 1/4	9	11	**AOH 3056**	HM 3060	HMV 60	HM 52 T	MB 52	23056 CCK/W33
		175	183	Tr 300x4	28	G 1/4	9	17	**AOH 3156 G**	HM 3160	HMV 60	HM 52 T	MB 52	23156 CCK/W33
		162	179	Tr 300x4	22	G 1/8	6.5	13.5	**AOH 24056 G**	HM 3160	HMV 60	HM 52 T	MB 52	24056 CCK30/W33
		202	219	Tr 300x4	22	G 1/4	9	15	**AOH 24156**	HM 3160	HMV 60	HM 52 T	MB 52	24156 CCK30/W33
280	300	170	178	Tr 320x5	26	G 1/4	9	17.5	**AOH 2260 G**	HM 3164	HMV 64	HM 56 T	MB 56	22260 CACK/W33
		145	153	Tr 320x5	26	G 1/4	9	13	**AOH 3060**	HM 3064	HMV 64	HM 56 T	MB 56	23060 CCK/W33
		192	200	Tr 320x5	30	G 1/4	9	20.5	**AOH 3160 G**	HM 3164	HMV 64	HM 56 T	MB 56	23160 CCK/W33
		228	236	Tr 320x5	34	G 1/4	9	23.5	**AOH 3260 G**	HM 3164	HMV 64	HM 56 T	MB 56	23260 CACK/W33
		184	202	Tr 320x5	24	G 1/8	6.5	17	**AOH 24060 G**	HM 3164	HMV 64	HM 56 T	MB 56	24060 CCK30/W33
		224	242	Tr 320x5	24	G 1/4	9	18.5	**AOH 24160**	HM 3164	HMV 64	HM 56 T	MB 56	24160 CCK30/W33
300	320	180	190	Tr 340x5	27	G 1/4	9	20	**AOH 2264 G**	HM 3168	HMV 68	HM 3060	MS 3060	22264 CACK/W33
		149	157	Tr 340x5	27	G 1/4	9	16.5	**AOH 3064 G**	HM 3068	HMV 68	HM 3060	MS 3060	23064 CCK/W33
		209	217	Tr 340x5	31	G 1/4	9	24.5	**AOH 3164 G**	HM 3168	HMV 68	HM 3060	MS 3060	23164 CCK/W33
		246	254	Tr 340x5	36	G 1/4	9	27.5	**AOH 3264 G**	HM 3168	HMV 68	HM 3060	MS 3060	23264 CACK/W33
		184	202	Tr 340x5	24	G 1/8	6.5	18	**AOH 24064 G**	HM 3168	HMV 68	HM 3060	MS 3060	24064 CCK30/W33
		242	260	Tr 340x5	24	G 1/4	9	20.5	**AOH 24164**	HM 3168	HMV 68	HM 3060	MS 3060	24164 CCK30/W33
320	340	162	171	Tr 360x5	28	G 1/4	9	19	**AOH 3068 G**	HM 3072	HMV 72	HM 3064	MS 3068-64	23068 CCK/W33
		225	234	Tr 360x5	33	G 1/4	9	28	**AOH 3168 G**	HM 3172	HMV 72	HM 3064	MS 3068-64	23168 CCK/W33
		264	273	Tr 360x5	38	G 1/4	9	32	**AOH 3268 G**	HM 3172	HMV 72	HM 3064	MS 3068-64	23268 CAK/W33
		206	225	Tr 360x5	26	G 1/4	9	18	**AOH 24068**	HM 3172	HMV 72	HM 3064	MS 3068-64	24068 CCK30/W33
		269	288	Tr 360x5	26	G 1/4	9	25.5	**AOH 24168**	HM 3172	HMV 72	HM 3064	MS 3068-64	24168 ECAK30/W33

[1] Width before the sleeve is pressed into the bearing bore

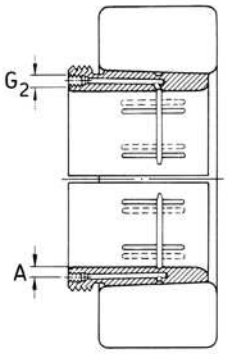


Type AOH, AOHX

Dimensions								Mass	Designations						
d_1	d	B_1	B_2[1]	G	G_1	G_2	A		Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
mm						in	mm	kg	–					
340	360	167	176	Tr 380x5	30	G 1/4	9	21	**AOH 3072 G**	HM 3076	HMV 76	HM 3068	MS 3068-64	23072 CCK/W33
		229	238	Tr 380x5	35	G 1/4	9	30.5	**AOH 3172 G**	HM 3176	HMV 76	HM 3068	MS 3068-64	23172 CACK/W33
		274	283	Tr 380x5	40	G 1/4	9	35.5	**AOH 3272 G**	HM 3176	HMV 76	HM 3068	MS 3068-64	23272 CAK/W33
		206	226	Tr 380x5	26	G 1/4	9	20	**AOH 24072**	HM 3176	HMV 76	HM 3068	MS 3068-64	24072 CCK30/W33
		269	289	Tr 380x5	26	G 1/4	9	26	**AOH 24172**	HM 3176	HMV 76	HM 3068	MS 3068-64	24172 CCK30/W33
360	380	170	180	Tr 400x5	31	G 1/4	9	23	**AOH 3076 G**	HM 3080	HMV 80	HM 3072	MS 3072	23076 CCK/W33
		232	242	Tr 400x5	36	G 1/4	9	33	**AOH 3176 G**	HM 3180	HMV 80	HM 3072	MS 3072	23176 CAK/W33
		284	294	Tr 400x5	42	G 1/4	9	42	**AOH 3276 G**	HM 3180	HMV 80	HM 3072	MS 3072	23276 CAK/W33
		208	228	Tr 400x5	28	G 1/4	9	23.5	**AOH 24076**	HM 3180	HMV 80	HM 3072	MS 3072	24076 CCK30/W33
		271	291	Tr 400x5	28	G 1/4	9	31	**AOH 24176**	HM 3180	HMV 80	HM 3072	MS 3072	24176 CAK30/W33
380	400	183	193	Tr 420x5	33	G 1/4	9	26	**AOH 3080 G**	HM 3084	HMV 84	HM 3076	MS 3080-76	23080 CACK/W33
		240	250	Tr 420x5	38	G 1/4	9	36	**AOH 3180 G**	HM 3184	HMV 84	HM 3076	MS 3080-76	23180 CAK/W33
		302	312	Tr 420x5	44	G 1/4	9	48	**AOH 3280 G**	HM 3184	HMV 84	HM 3076	MS 3080-76	23280 CAK/W33
		228	248	Tr 420x5	28	G 1/4	9	27	**AOH 24080**	HM 3184	HMV 84	HM 3076	MS 3080-76	24080 CACK30/W33
		278	298	Tr 420x5	28	G 1/4	9	35	**AOH 24180**	HM 3184	HMV 84	HM 3076	MS 3080-76	24180 CCK30/W33
400	420	186	196	Tr 440x5	34	G 1/4	9	28	**AOH 3084 G**	HM 3088	HMV 88	HM 3080	MS 3080-76	23084 CAK/W33
		266	276	Tr 440x5	40	G 1/4	9	43	**AOH 3184 G**	HM 3188	HMV 88	HM 3080	MS 3080-76	23184 CK/W33
		321	331	Tr 440x5	46	G 1/4	9	54.5	**AOH 3284 G**	HM 3188	HMV 88	HM 3080	MS 3080-76	23284 CAK/W33
		230	252	Tr 440x5	30	G 1/4	9	29	**AOH 24084**	HM 3188	HMV 88	HM 3080	MS 3080-76	24084 CAK30/W33
		310	332	Tr 440x5	30	G 1/4	9	39	**AOH 24184**	HM 3188	HMV 88	HM 3080	MS 3080-76	24184 CAK30/W33
420	440	194	205	Tr 460x5	35	G 1/4	9	30.8	**AOHX 3088 G**	HM 3092	HMV 92	HM 3084	MS 3084	23088 CAK/W33
		270	281	Tr 460x5	42	G 1/4	9	46	**AOHX 3188 G**	HM 3192	HMV 92	HM 3084	MS 3084	23188 CAK/W33
		330	341	Tr 460x5	48	G 1/4	9	59	**AOHX 3288 G**	HM 3192	HMV 92	HM 3084	MS 3084	23288 CAK/W33
		242	264	Tr 460x5	30	G 1/4	9	32	**AOH 24088**	HM 3192	HMV 92	HM 3084	MS 3084	24088 CAK30/W33
		310	332	Tr 460x5	30	G 1/4	9	45.5	**AOH 24188**	HM 3192	HMV 92	HM 3084	MS 3084	24188 CAK30/W33
440	460	202	213	Tr 480x5	37	G 1/4	9	33.8	**AOHX 3092 G**	HM 3096	HMV 96	HM 3088	MS 3092-88	23092 CAK/W33
		285	296	Tr 480x5	43	G 1/4	9	51.5	**AOHX 3192 G**	HM 3196	HMV 96	HM 3088	MS 3092-88	23192 CAK/W33
		349	360	Tr 480x5	50	G 1/4	9	66.5	**AOHX 3292 G**	HM 3196	HMV 96	HM 3088	MS 3092-88	23292 CAK/W33
		250	273	Tr 480x5	32	G 1/4	9	34.7	**AOH 24092**	HM 3196	HMV 96	HM 3088	MS 3092-88	24092 CAK30/W33
		332	355	Tr 480x5	32	G 1/4	9	50	**AOH 24192**	HM 3196	HMV 96	HM 3088	MS 3092-88	24192 ECAK30/W33
460	480	205	217	Tr 500x5	38	G 1/4	9	36	**AOHX 3096 G**	HM 30/500	HMV 100	HM 3092	MS 3092-88	23096 CAK/W33
		295	307	Tr 500x5	45	G 1/4	9	56	**AOHX 3196 G**	HM 31/500	HMV 100	HM 3092	MS 3092-88	23196 CAK/W33
		364	376	Tr 500x5	52	G 1/4	9	73.5	**AOHX 3296 G**	HM 31/500	HMV 100	HM 3092	MS 3092-88	23296 CAK/W33
		250	273	Tr 500x5	32	G 1/4	9	36.6	**AOH 24096**	HM 31/500	HMV 100	HM 3092	MS 3092-88	24096 CACK30/W33
		340	363	Tr 500x5	32	G 1/4	9	51.5	**AOH 24196**	HM 31/500	HMV 100	HM 3092	MS 3092-88	24196 CAK30/W33

[1] Width before the sleeve is pressed into the bearing bore

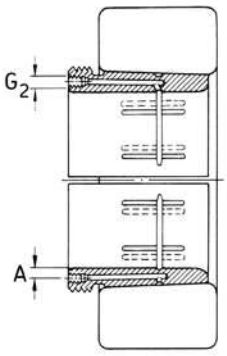
Withdrawal sleeves
d_1 480 – 670 mm



Type AOH, AOHX

Dimensions								Mass	Designations					
d_1	d	B_1	B_2[1]	G	G_1	G_2	A		Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
mm						in	mm	kg	–					
480	500	209	221	Tr 530x6	40	G 1/4	9	41	**AOHX 30/500 G**	HM 30/530	HMV 106	HM 3096	MS 30/500-96	230/500 CAK/W33
		313	325	Tr 530x6	47	G 1/4	9	66.5	**AOHX 31/500 G**	HM 31/530	HMV 106	HM 3096	MS 30/500-96	231/500 CAK/W33
		393	405	Tr 530x6	54	G 1/4	9	89.5	**AOHX 32/500 G**	HM 31/530	HMV 106	HM 3096	MS 30/500-96	232/500 CAK/W33
		253	276	Tr 530x6	35	G 1/4	9	41.7	**AOH 240/500**	HM 31/530	HMV 106	HM 3096	MS 30/500-96	240/500 CAK30/W33
		360	383	Tr 530x6	35	G 1/4	9	57	**AOH 241/500**	HM 31/530	HMV 106	HM 3096	MS 30/500-96	241/500 ECAK30/W33
500	530	230	242	Tr 560x6	45	G 1/4	10	63.5	**AOH 30/530**	HM 30/560	HMV 112	HM 30/500	MS 30/500-96	230/530 CAK/W33
		325	337	Tr 560x6	53	G 1/4	10	94.5	**AOH 31/530**	HM 31/560	HMV 112	HM 30/500	MS 30/500-96	231/530 CAK/W33
		412	424	Tr 560x6	57	G 1/4	10	127	**AOH 32/530 G**	HM 31/560	HMV 112	HM 30/500	MS 30/500-96	232/530 CAK/W33
		285	309	Tr 560x6	35	G 1/4	9	69.5	**AOH 240/530 G**	HM 31/560	HMV 112	HM 30/500	MS 30/500-96	240/530 CAK30/W33
		370	394	Tr 560x6	35	G 1/4	9	91.5	**AOH 241/530 G**	HM 31/560	HMV 112	HM 30/500	MS 30/500-96	241/530 CAK30/W33
530	560	240	252	Tr 600x6	45	G 1/4	11	73.5	**AOHX 30/560**	HM 30/600	HMV 120	HM 30/530	MS 30/600-530	230/560 CAK/W33
		335	347	Tr 600x6	55	G 1/4	11	108	**AOH 31/560**	HM 31/600	HMV 120	HM 30/530	MS 30/600-530	231/560 CAK/W33
		422	434	Tr 600x6	57	G 1/4	11	143	**AOHX 32/560**	HM 31/600	HMV 120	HM 30/530	MS 30/600-530	232/560 CAK/W33
		296	320	Tr 600x6	38	G 1/4	9	79.5	**AOH 240/560 G**	HM 31/600	HMV 120	HM 30/530	MS 30/600-530	240/560 CAK30/W33
		393	417	Tr 600x6	38	G 1/4	9	107	**AOH 241/560 G**	HM 31/600	HMV 120	HM 30/530	MS 30/600-530	241/560 CAK30/W33
570	600	245	259	Tr 630x6	45	G 1/4	11	77	**AOHX 30/600**	HM 30/630	HMV 126	HM 30/560	MS 30/560	230/600 CAK/W33
		355	369	Tr 630x6	55	G 1/4	11	120	**AOHX 31/600**	HM 31/630	HMV 126	HM 30/560	MS 30/560	231/600 CAK/W33
		445	459	Tr 630x6	57	G 1/4	11	159	**AOHX 32/600 G**	HM 31/630	HMV 126	HM 30/560	MS 30/560	232/600 CAK/W33
		310	336	Tr 630x6	38	G 1/4	9	86.5	**AOHX 240/600**	HM 31/630	HMV 126	HM 30/560	MS 30/560	240/600 CAK30/W33
		413	439	Tr 630x6	38	G 1/4	9	118	**AOHX 241/600**	HM 31/630	HMV 126	HM 30/560	MS 30/560	241/600 CAK30/W33
600	630	258	272	Tr 670x6	46	G 1/4	11	89.5	**AOH 30/630**	HM 30/670	HMV 134	HM 30/600	MS 30/600-530	230/630 CAK/W33
		375	389	Tr 670x6	60	G 1/4	11	140	**AOH 31/630**	HM 31/670	HMV 134	HM 30/600	MS 30/600-530	231/630 CAK/W33
		475	489	Tr 670x6	63	G 1/4	11	188	**AOH 32/630 G**	HM 31/670	HMV 134	HM 30/600	MS 30/600-530	232/630 CAK/W33
		330	356	Tr 670x6	40	G 1/4	9	101	**AOH 240/630 G**	HM 31/670	HMV 134	HM 30/600	MS 30/600-530	240/630 CAK30/W33
		440	466	Tr 670x6	40	G 1/4	9	136	**AOH 241/630 G**	HM 31/670	HMV 134	HM 30/600	MS 30/600-530	241/630 CAK30/W33
630	670	280	294	Tr 710x7	50	G 1/4	12	127	**AOH 30/670**	HM 30/710	HMV 142	HM 30/630	MS 30/630	230/670 CAK/W33
		395	409	Tr 710x7	59	G 1/4	12	189	**AOHX 31/670**	HM 31/710	HMV 142	HM 30/630	MS 30/630	231/670 CAK/W33
		500	514	Tr 710x7	62	G 1/4	12	252	**AOH 32/670 G**	HM 31/710	HMV 142	HM 30/630	MS 30/630	232/670 CAK/W33
		348	374	Tr 710x7	40	G 1/4	12	140	**AOH 240/670 G**	HM 31/710	HMV 142	HM 30/630	MS 30/630	240/670 CAK30/W33
		452	478	Tr 710x7	40	G 1/4	12	185	**AOH 241/670**	HM 31/710	HMV 142	HM 30/630	MS 30/630	241/670 CAK30/W33
670	710	286	302	Tr 750x7	50	G 1/4	15	138	**AOHX 30/710**	HM 30/750	HMV 150	HM 30/670	MS 30/670	230/710 CAK/W33
		405	421	Tr 750x7	60	G 1/4	15	207	**AOHX 31/710**	HM 31/750	HMV 150	HM 30/670	MS 30/670	231/710 CAK/W33
		515	531	Tr 750x7	65	G 1/4	15	278	**AOH 32/710 G**	HM 31/750	HMV 150	HM 30/670	MS 30/670	232/710 CAK/W33
		360	386	Tr 750x7	45	G 1/4	12	155	**AOH 240/710 G**	HM 31/750	HMV 150	HM 30/670	MS 30/670	240/710 CAK30/W33
		483	509	Tr 750x7	45	G 1/4	12	212	**AOH 241/710**	HM 31/750	HMV 150	HM 30/670	MS 30/670	241/710 CAK30/W33

[1] Width before the sleeve is pressed into the bearing bore

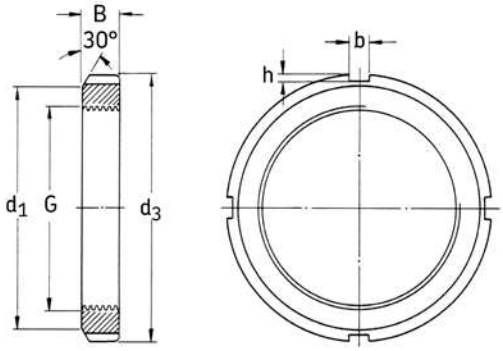


Type AOH

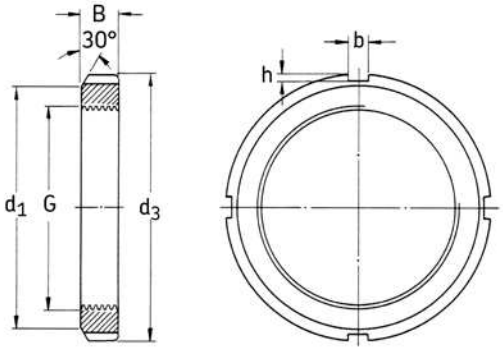
Dimensions								Mass	Designations					
d_1	d	B_1	B_2[1]	G	G_1	G_2	A		Withdrawal sleeve	Appropriate nut for dismounting	Hydraulic nut	Lock nut	Locking washer	Bearing(s)
mm						in	mm	kg	–					
710	750	300	316	Tr 800x7	50	G 1/4	15	159	**AOH 30/750**	HM 30/800	HMV 160	HM 30/710	MS 30/710	230/750 CAK/W33
		425	441	Tr 800x7	60	G 1/4	15	238	**AOH 31/750**	HM 31/800	HMV 160	HM 30/710	MS 30/710	231/750 CAK/W33
		540	556	Tr 800x7	65	G 1/4	15	320	**AOH 32/750**	HM 31/800	HMV 160	HM 30/710	MS 30/710	232/750 CAK/W33
		380	408	Tr 800x7	45	G 1/4	12	178	**AOH 240/750 G**	HM 31/800	HMV 160	HM 30/710	MS 30/710	240/750 CAK30/W33
		520	548	Tr 800x7	45	G 1/4	12	248	**AOH 241/750 G**	HM 31/800	HMV 160	HM 30/710	MS 30/710	241/750 CAK30/W33
750	800	308	326	Tr 850x7	50	G 1/4	15	204	**AOH 30/800**	HM 30/850	HMV 170	HM 30/750	MS 30/800-750	230/800 CAK/W33
		438	456	Tr 850x7	63	G 1/4	15	305	**AOH 31/800**	HM 31/850	HMV 170	HM 30/750	MS 30/800-750	231/800 CAK/W33
		550	568	Tr 850x7	67	G 1/4	15	401	**AOH 32/800**	HM 31/850	HMV 170	HM 30/750	MS 30/800-750	232/800 CAK/W33
		395	423	Tr 850x7	50	G 1/4	15	237	**AOH 240/800 G**	HM 31/850	HMV 170	HM 30/750	MS 30/800-750	240/800 CAK30/W33
		525	553	Tr 850x7	50	G 1/4	15	318	**AOH 241/800 G**	HM 31/850	HMV 170	HM 30/750	MS 30/800-750	241/800 CAK30/W33
800	850	325	343	Tr 900x7	53	G 1/4	15	230	**AOH 30/850**	HM 30/900	HMV 180	HM 30/800	MS 30/800-750	230/850 CAK/W33
		462	480	Tr 900x7	62	G 1/4	15	345	**AOH 31/850**	HM 31/900	HMV 180	HM 30/800	MS 30/800-750	231/850 CAK/W33
		585	603	Tr 900x7	70	G 1/4	15	461	**AOH 32/850**	HM 31/900	HMV 180	HM 30/800	MS 30/800-750	232/850 CAK/W33
		415	445	Tr 900x7	50	G 1/4	15	265	**AOH 240/850 G**	HM 31/900	HMV 180	HM 30/800	MS 30/800-750	240/850 CAK30/W33
		560	600	Tr 900x7	60	G 1/4	15	368	**AOH 241/850**	HM 31/900	HMV 180	HM 30/800	MS 30/800-750	241/850 CAK30/W33
850	900	335	355	Tr 950x8	55	G 1/4	15	253	**AOH 30/900**	HM 30/950	HMV 190	HM 30/850	MS 30/900-850	230/900 CAK/W33
		475	495	Tr 950x8	63	G 1/4	15	379	**AOH 31/900**	HM 31/950	HMV 190	HM 30/850	MS 30/900-850	231/900 CAK/W33
		585	605	Tr 950x8	70	G 1/4	15	489	**AOH 32/900**	HM 31/950	HMV 190	HM 30/850	MS 30/900-850	232/900 CAK/W33
		430	475	Tr 950x8	55	G 1/4	15	296	**AOH 240/900**	HM 31/950	HMV 190	HM 30/850	MS 30/900-850	240/900 CAK30/W33
		575	620	Tr 950x8	60	G 1/4	15	402	**AOH 241/900**	HM 31/950	HMV 190	HM 30/850	MS 30/900-850	241/900 CAK30/W33
900	950	355	375	Tr 1000x8	55	G 1/4	15	285	**AOH 30/950**	HM 30/1000	HMV 200	HM 30/900	MS 30/900-850	230/950 CAK/W33
		500	520	Tr 1000x8	62	G 1/4	15	426	**AOH 31/950**	HM 31/1000	HMV 200	HM 30/900	MS 30/900-850	231/950 CAK/W33
		600	620	Tr 1000x8	70	G 1/4	15	533	**AOH 32/950**	HM 31/1000	HMV 200	HM 30/900	MS 30/900-850	232/950 CAK/W33
		467	512	Tr 1000x8	55	G 1/4	15	340	**AOH 240/950**	HM 31/1000	HMV 200	HM 30/900	MS 30/900-850	240/950 CAK30/W33
		605	650	Tr 1000x8	60	G 1/4	15	449	**AOH 241/950**	HM 31/1000	HMV 200	HM 30/900	MS 30/900-850	241/950 CAK30/W33
950	1 000	365	387	Tr 1060x8	57	G 1/4	15	318	**AOH 30/1000**	HM 30/1060	HMV 212	HM 30/950	MS 30/950	230/1000 CAK/W33
		525	547	Tr 1060x8	63	G 1/4	15	485	**AOH 31/1000**	HM 31/1060	HMV 212	HM 30/950	MS 30/950	231/1000 CAK/W33
		630	652	Tr 1060x8	70	G 1/4	15	608	**AOH 32/1000**	HM 31/1060	HMV 212	HM 30/950	MS 30/950	232/1000 CAK/W33
		469	519	Tr 1060x8	57	G 1/4	15	369	**AOH 240/1000**	HM 31/1060	HMV 212	HM 30/950	MS 30/950	240/1000 CAK30/W33
		645	695	Tr 1060x8	65	G 1/4	15	519	**AOH 241/1000**	HM 31/1060	HMV 212	HM 30/950	MS 30/950	241/1000 CAK30/W33
1 000	1 060	385	407	Tr 1120x8	60	G 1/4	15	406	**AOH 30/1060**	HM 30/1120	HMV 224	HM 30/1000	MS 30/1000	230/1060 CAK/W33
		540	562	Tr 1120x8	65	G 1/4	15	599	**AOH 31/1060**	HM 30/1120	HMV 224	HM 30/1000	MS 30/1000	231/1060 CAK/W33
		498	548	Tr 1120x8	60	G 1/4	15	479	**AOH 240/1060**	HM 30/1120	HMV 224	HM 30/1000	MS 30/1000	240/1060 CAK30/W33
		665	715	Tr 1120x8	65	G 1/4	15	652	**AOH 241/1060**	HM 30/1120	HMV 224	HM 30/1000	MS 30/1000	240/1060 CAK30 W33

[1] Width before the sleeve is pressed into the bearing bore

Lock nuts
M 10x0.75 – M 115x2

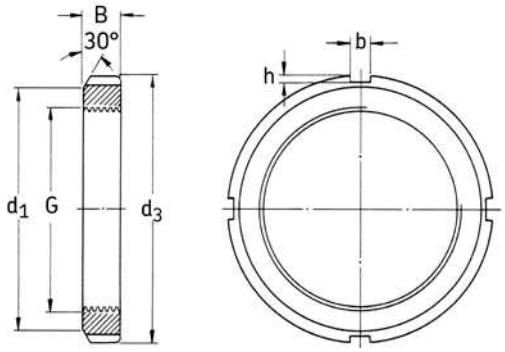


Dimensions						**Axial load carrying capacity**	**Mass**	**Designations**		
G	d_1	d_3	B	b	h	static		Lock nut	Appropriate locking washer	Hook/impact spanner
mm						kN	kg	–		
M 10x0.75	13.5	18	4	3	2	9.8	0.006	**KM 0**	MB 0	-
M 12x1	17	22	4	3	2	11.8	0.008	**KM 1**	MB 1	HN 1
M 15x1	21	25	5	4	2	14.6	0.012	**KM 2**	MB 2	HN 2
M 17x1	24	28	5	4	2	19.6	0.012	**KM 3**	MB 3	HN 3
M 20x1	26	32	6	4	2	24	0.02	**KM 4**	MB 4	HN 4
M 25x1.5	32	38	7	5	2	31.5	0.028	**KM 5**	MB 5	HN 5
M 30x1.5	38	45	7	5	2	36.5	0.038	**KM 6**	MB 6	HN 6
M 35x1.5	44	52	8	5	2	50	0.058	**KM 7**	MB 7	HN 7
M 40x1.5	50	58	9	6	2.5	62	0.078	**KM 8**	MB 8	HN 8
M 45x1.5	56	65	10	6	2.5	78	0.11	**KM 9**	MB 9	HN 9
M 50x1.5	61	70	11	6	2.5	91.5	0.14	**KM 10**	MB 10	HN 10
M 55x2	67	75	11	7	3	91.5	0.15	**KM 11**	MB 11	HN 11
M 60x2	73	80	11	7	3	95	0.16	**KM 12**	MB 12	HN 12
M 65x2	79	85	12	7	3	108	0.19	**KM 13**	MB 13	HN 13
M 70x2	85	92	12	8	3.5	118	0.22	**KM 14**	MB 14	HN 14
M 75x2	90	98	13	8	3.5	134	0.27	**KM 15**	MB 15	HN 15
M 80x2	95	105	15	8	3.5	173	0.36	**KM 16**	MB 16	HN 16
M 85x2	102	110	16	8	3.5	190	0.42	**KM 17**	MB 17	HN 17
M 90x2	108	120	16	10	4	216	0.51	**KM 18**	MB 18	HN 18
M 95x2	113	125	17	10	4	236	0.58	**KM 19**	MB 19	HN 19
M 100x2	120	130	18	10	4	255	0.68	**KM 20**	MB 20	HN 20
M 105x2	126	140	18	12	5	290	0.81	**KM 21**	MB 21	HN 21
M 110x2	133	145	19	12	5	310	0.89	**KM 22**	MB 22	HN 22
M 115x2	137	150	19	12	5	315	0.91	**KM 23**	MB 23	718909

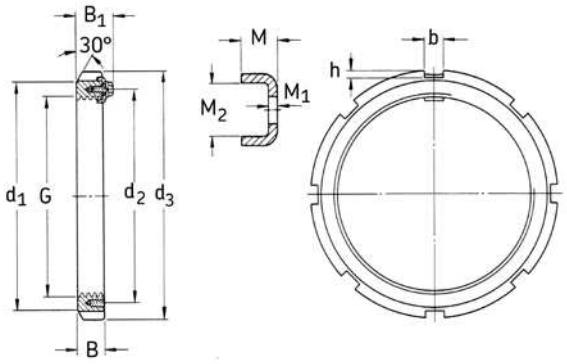


Dimensions						**Axial load carrying capacity**	**Mass**	**Designations**		
G	d_1	d_3	B	b	h	static		Lock nut	Appropriate locking washer	Hook/impact spanner
mm						kN	kg	–		
M 120x2	135	145	20	12	5	265	0.69	**KML 24**	MBL 24	718909
	138	155	20	12	5	340	0.98	**KM 24**	MB 24	718909
M 125x2	148	160	21	12	5	360	1.1	**KM 25**	MB 25	718909
M 130x2	145	155	21	12	5	285	0.84	**KML 26**	MBL 26	718909
	149	165	21	12	5	365	1.2	**KM 26**	MB 26	718909
M 135x2	160	175	22	14	6	430	1.4	**KM 27**	MB 27	718909
M 140x2	155	165	22	12	5	305	0.92	**KML 28**	MBL 28	718909
	160	180	22	14	6	430	1.4	**KM 28**	MB 28	718909
M 145x2	171	190	24	14	6	520	1.85	**KM 29**	MB 29	718909
M 150x2	170	180	24	14	5	390	1.3	**KML 30**	MBL 30	718909
	171	195	24	14	6	530	1.85	**KM 30**	MB 30	718909, 718910
M 155x3	182	200	25	16	7	540	2.05	**KM 31**	MB 31	718910
M 160x3	180	190	25	14	5	405	1.4	**KML 32**	MBL 32	718909
	182	210	25	16	7	585	2.25	**KM 32**	MB 32	718910
M 165x3	193	210	26	16	7	570	2.3	**KM 33**	MB 33	718910
M 170x3	190	200	26	16	5	430	1.6	**KML 34**	MBL 34	718910
	193	220	26	16	7	620	2.55	**KM 34**	MB 34	718910
M 180x3	200	210	27	16	5	450	1.8	**KML 36**	MBL 36	718910
	203	230	27	18	8	670	2.7	**KM 36**	MB 36	718910
M 190x3	210	220	28	16	5	475	1.9	**KML 38**	MBL 38	718910
	214	240	28	18	8	695	3	**KM 38**	MB 38	718910
M 200x3	222	240	29	18	8	625	2.6	**KML 40**	MBL 40	718910
	226	250	29	18	8	735	3.3	**KM 40**	MB 40	718910, 718911

Lock nuts/removal nuts
Tr 210x4 – Tr 280x4



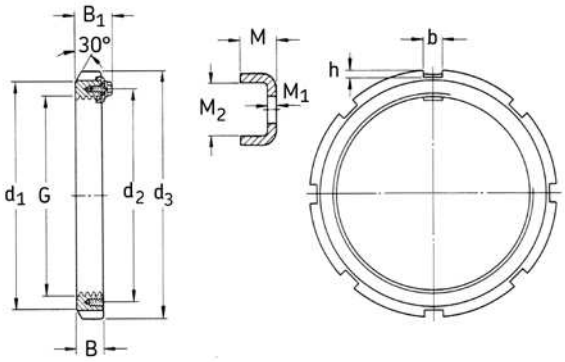
Dimensions						Mass	Designations		
							Lock nut	Appropriate locking	Impact span-
ner G	d_1	d_3	B	b	h			washer	
mm						kg	–		
Tr 210x4	238	270	30	20	10	5.1	**HM 42 T**	-	718911
Tr 220x4	250	280	32	20	10	4.75	**HM 44 T**	MB 44	718911
Tr 230x4	260	290	34	20	10	5.45	**HM 46 T**	-	718911
Tr 240x4	270	300	34	20	10	5.6	**HM 48 T**	MB 48	718911
Tr 250x4	290	320	36	20	10	7.45	**HM 50 T**	-	718911
Tr 260x4	300	330	36	24	12	7.55	**HM 52 T**	MB 52	718912
Tr 280x4	320	350	38	24	12	8.65	**HM 56 T**	MB 56	718912



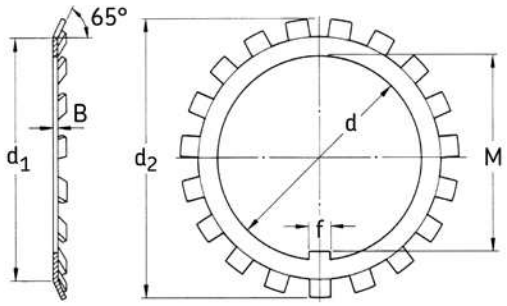
Dimensions											Mass	Designations		
Appropriate												Lock nut +	Hexagon-	
G	d_1	d_2	d_3	B	B_1	b	h	M	M_1	M_2		locking clip and screw (DIN 933)	headed screw	impact spanner
mm											kg	–		
Tr 220x4	242	229	260	30	41	20	9	12	4	13.5	2.75	**HM 3044 + MS 3044**	M 6x12	718911
Tr 240x4	270	253	290	34	46	20	10	12	4	17.5	4.5	**HM 3048 + MS 3052-48**	M 8x16	718911
Tr 260x4	290	273	310	34	46	20	10	12	4	17.5	4.8	**HM 3052 + MS 3052-48**	M 8x16	718911
Tr 280x4	310	293	330	38	50	24	10	12	4	17.5	5.75	**HM 3056 + MS 3056**	M 8x16	718912
Tr 300x4	336	316	360	42	54	24	12	12	4	20.5	8.35	**HM 3060 + MS 3060**	M 8x16	718912
	340	326	380	40	53	24	12	12	4	30.5	11.5	**HM 3160 + MS 3160**	M 10x20	718912
Tr 320x5	356	336	380	42	55	24	12	15	5	21	9	**HM 3064 + MS 3068-64**	M 8x16	718912
	360	346	400	42	56	24	12	15	5	31	13	**HM 3164 + MS 3164**	M 10x20	718912[1]
Tr 340x5	376	356	400	45	58	24	12	15	5	21	11	**HM 3068 + MS 3068-64**	M 8x16	718912[1]
	400	373	440	55	72	28	15	15	5	38	24	**HM 3168 + MS 3172-68**	M 12x25	718913
Tr 360x5	394	375	420	45	58	28	13	15	5	20	11.5	**HM 3072 + MS 3072**	M 8x16	718913
	420	393	460	58	75	28	15	15	5	38	26.5	**HM 3172 + MS 3172-68**	M 12x25	718913
Tr 380x5	422	399	450	48	62	28	14	15	5	24	15	**HM 3076 + MS 3080-76**	M 10x20	718913
	440	415	490	60	77	32	18	15	5	40	32	**HM 3176 + MS 3176**	M 12x25	718913
Tr 400x5	442	419	470	52	66	28	14	15	5	24	17	**HM 3080 + MS 3080-76**	M 10x20	718913
	460	440	520	62	82	32	18	15	5	45	38	**HM 3180 + MS 3184-80**	M 16x30	718913
Tr 420x5	462	439	490	52	66	32	14	15	5	24	18.5	**HM 3084 + MS 3084**	M 10x20	718913
	490	460	540	70	90	32	18	15	5	45	45	**HM 3184 + MS 3184-80**	M 16x30	718914
Tr 440x5	490	463	520	60	77	32	15	15	5	28	26	**HM 3088 + MS 3092-88**	M 12x25	718913
	510	478	560	70	90	36	20	15	5	43	46.5	**HM 3188 + MS 3192-88**	M 16x30	718914
Tr 460x5	510	483	540	60	77	32	15	15	5	28	27	**HM 3092 + MS 3092-88**	M 12x25	718914
	540	498	580	75	95	36	20	15	5	43	50.5	**HM 3192 + MS 3192-88**	M 16x30	718914
Tr 480x5	530	503	560	60	77	36	15	15	5	28	28	**HM 3096 + MS 30/500-96**	M 12x25	718914
	560	528	620	75	95	36	20	15	5	53	62	**HM 3196 + MS 3196**	M 16x30	718914
Tr 500x5	550	523	580	68	85	36	15	15	5	28	33.5	**HM 30/500 + MS 30/500-96**	M 12x25	718914
	580	540	630	80	100	40	23	15	5	45	63.5	**HM 31/500 + MS 31/500**	M 16x30	718914
Tr 530x6	590	558	630	68	90	40	20	21	7	34	42.5	**HM 30/530 + MS 30/600-530**	M 16x30	718915
	610	575	670	80	105	40	23	21	7	51	71.5	**HM 31/530 + MS 31/530**	M 20x40	718915

[1] Impact spanner 718913 also suitable

Lock nuts with locking clip
Tr 560x6 – Tr 1120x8



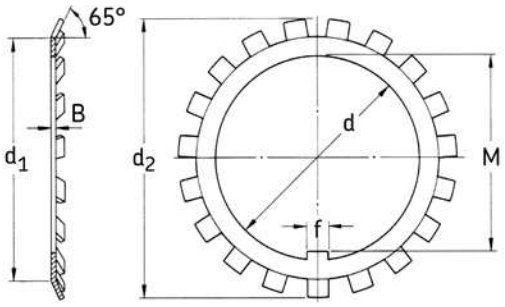
Dimensions											Mass	Designations		
Appropriate												Lock nut +	Hexagon-	
G	d_1	d_2	d_3	B	B_1	b	h	M	M_1	M_2		locking clip and screw (DIN 933)	headed screw	impact spanner
mm											kg	–		
Tr 560x6	610	583	650	75	97	40	20	21	7	29	44.5	**HM 30/560 + MS 30/560**	M 16x30	718915
	650	608	710	85	110	45	25	21	7	54	86.5	**HM 31/560 + MS 31/600-560**	M 20x40	718915
Tr 600x6	660	628	700	75	97	40	20	21	7	34	52.5	**HM 30/600 + MS 30/600-530**	M 16x30	718915
	690	648	750	85	110	45	25	21	7	54	91.5	**HM 31/600 + MS 31/600-560**	M 20x40	718915
Tr 630x6	690	658	730	75	97	45	20	21	7	34	55 0	**HM 30/630 + MS 30/630**	M 16x30	718915
	730	685	800	95	120	50	28	21	7	61	125	**HM 31/630 + MS 31/630**	M 20x40	718916
Tr 670x6	740	703	780	80	102	45	20	21	7	39	68.5	**HM 30/670 + MS 30/670**	M 16x30	718916
	775	730	850	106	131	50	28	21	7	66	155	**HM 31/670 + MS 31/670**	M 20x40	718916
Tr 710x7	780	742	830	90	112	50	25	21	7	39	91.5	**HM 30/710 + MS 30/710**	M 16x30	718916
	825	772	900	106	133	55	30	21	7	69	162	**HM 31/710 + MS 31/710**	M 24x50	718916
Tr 750x7	820	782	870	90	112	55	25	21	7	39	940	**HM 30/750 + MS 30/800-750**	M 16x30	718916
	875	813	950	112	139	60	34	21	7	70	190	**HM 31/750 + MS 31/800-750**	M 24x50	718916
Tr 800x7	870	832	920	90	112	55	25	21	7	39	99.5	**HM 30/800 + MS 30/800-750**	M 16x30	718916
	925	863	1 000	112	139	60	34	21	7	70	202	**HM 31/800 + MS 31/800-750**	M 24x50	-
Tr 850x7	925	887	980	90	115	60	25	21	7	44	115	**HM 30/850 + MS 30/900-850**	M 20x40	-
	975	914	1 060	118	145	70	38	21	7	71	234	**HM 31/850 + MS 31/850**	M 24x50	-
Tr 900x7	975	937	1 030	100	125	60	25	21	7	44	131	**HM 30/900 + MS 30/900-850**	M 20x40	-
	1 030	969	1 120	125	154	70	38	21	7	76	279	**HM 31/900 + MS 31/900**	M 24x50	-
Tr 950x8	1 025	985	1 080	100	125	60	25	21	7	46	139	**HM 30/950 + MS 30/950**	M 20x40	-
	1 080	1 017	1 170	125	154	70	38	21	7	78	293	**HM 31/950 + MS 31/950**	M 24x50	-
Tr 1000x8	1 085	1 040	1 140	100	125	60	25	21	7	51	157	**HM 30/1000 + MS 30/1000**	M 20x40	-
	1 140	1 077	1 240	125	154	70	38	21	7	88	336	**HM 31/1000 + MS 31/1000**	M 24x50	-
Tr 1060x8	1 145	1 100	1 200	100	125	60	25	21	7	51	166	**HM 30/1060 + MS 30/1000**	M 20x40	-
	1 210	1 137	1 300	125	154	70	38	21	7	88	354	**HM 31/1060 + MS 31/1000**	M 24x50	-
Tr 1120x8	1 205	1 160	1 260	100	125	60	25	21	7	51	175	**HM 30/1120 + MS 30/1000**	M 20x40	-



Dimensions						Mass	Designation
d	d_1	d_2	B	f	M		
mm						g	–
10	13.5	21	1	3	8.5	1	**MB 0**
12	17	25	1	3	10.5	2	**MB 1**
15	21	28	1	4	13.5	3	**MB 2**
17	24	32	1	4	15.5	3	**MB 3**
20	26	36	1	4	18.5	4	**MB 4**
25	32	42	1.25	5	23	6	**MB 57**
30	38	49	1.25	5	27.5	8	**MB 6**
35	44	57	1.25	6	32.5	11	**MB 7**
40	50	62	1.25	6	37.5	13	**MB 8**
45	56	69	1.25	6	42.5	15	**MB 9**
50	61	74	1.25	6	47.5	16	**MB 10**
55	67	81	1.5	8	52.5	22	**MB 11**
60	73	86	1.5	8	57.5	24	**MB 12**
65	79	92	1.5	8	62.5	30	**MB 13**
70	85	98	1.5	8	66.5	32	**MB 14**
75	90	104	1.5	8	71.5	35	**MB 15**
80	95	112	1.75	10	76.5	46	**MB 16**
85	102	119	1.75	10	81.5	53	**MB 17**
90	108	126	1.75	10	86.5	61	**MB 18**
95	113	133	1.75	10	91.5	66	**MB 19**
100	120	142	1.75	12	96.5	77	**MB 20**
105	126	145	1.75	12	100.5	83	**MB 21**
110	133	154	1.75	12	105.5	91	**MB 22**

Dimensions						Mass	Designation
d	d_1	d_2	B	f	M		
mm						g	–
115	137	159	2	12	110.5	107	**MB 23**
120	135	152	2	14	115	70	**MBL 24**
	138	164	2	14	115	108	**MB 24**
125	148	170	2	14	120	115	**MB 25**
130	145	161	2	14	125	80	**MBL 26**
	149	175	2	14	125	115	**MB 26**
135	160	185	2	14	130	140	**MB 27**
140	155	172	2	16	135	90	**MBL 28**
	160	192	2	16	135	135	**MB 28**
145	172	202	2	16	140	165	**MB 29**
150	170	189	2	16	145	100	**MBL 30**
	171	205	2	16	145	180	**MB 30**
155	182	212	2.5	16	147.5	200	**MB 31**
160	180	199	2.5	18	154	140	**MBL 32**
	182	217	2.5	18	154	215	**MB 32**
165	193	222	2.5	18	157.5	240	**MB 33**
170	190	211	2.5	18	164	150	**MBL 34**
	193	232	2.5	18	164	240	**MB 34**
180	200	222	2.5	20	174	160	**MBL 36**
	203	242	2.5	20	174	260	**ML 36**
190	210	232	2.5	20	184	170	**MBL 38**
	214	252	2.5	20	184	260	**MB 38**
200	222	245	2.5	20	194	220	**MBL 40**
	226	262	2.5	20	194	280	**MB 40**
220	250	292	3	24	213	350	**MB 44**
240	270	312	3	24	233	450	**MB 48**
260	300	342	3	28	253	650	**MB 52**
280	320	362	3	28	273	1 050	**MB 56**

Locking washers type MB . . A
d 12 – 100 mm



Dimensions						Mass	Designation
d	d_1	d_2	B	f	M		
mm						g	–
12	17	25	1.2	3	10.5	2.5	**MB 1 A**
15	21	28	1.2	4	13.5	3.5	**MB 2 A**
17	24	32	1.2	4	15.5	3.5	**MB 3 A**
20	26	36	1.2	4	18.5	5	**MB 4 A**
25	32	42	1.8	5	23	8.5	**MB 5 A**
30	38	49	1.8	5	27.5	11	**MB 6 A**
35	44	57	1.8	6	32.5	15.5	**MB 7 A**
40	50	62	1.8	6	37.5	18	**MB 8 A**
45	56	69	1.8	6	42.5	21	**MB 9 A**
50	61	74	1.8	6	47.5	22.5	**MB 10 A**
55	67	81	2.5	8	52.5	36.5	**MB 11 A**
60	73	86	2.5	8	57.5	40	**MB 12 A**
65	79	92	2.5	8	62.5	50	**MB 13 A**
70	85	98	2.5	8	66.5	53	**MB 14 A**
75	90	104	2.5	8	71.5	58	**MB 15 A**
80	95	112	2.5	10	76.5	66	**MB 16 A**
85	102	119	2.5	10	81.5	76	**MB 17 A**
90	108	126	2.5	10	86.5	87	**MB 18 A**
95	113	133	2.5	10	91.5	94	**MB 19 A**
100	120	142	2.5	12	96.5	110	**MB 20 A**

Index

1

1200 series, self-aligning ball bearings 96

1300 series, self-aligning ball bearings 97

16000 series, deep groove ball bearings 47

16100 series, deep groove ball bearings 48

2

200 series, deep groove ball bearings (max type) 55

21300 series, spherical roller bearings 162

2200 series, self-aligning ball bearings 100

22200 series,
spherical roller bearings (standard) 162
spherical roller bearings (sealed) 173
spherical roller bearings (printing press) 180
spherical roller bearings (continuous caster) 182

22300 series,
spherical roller bearings (standard) 163
spherical roller bearings (shaker screen) 178
spherical roller bearings (printing press) 180

2300 series, self-aligning ball bearings 101

23000 series,
spherical roller bearings (standard) 164
spherical roller bearings (sealed) 174
spherical roller bearings (printing press) 180
spherical roller bearings (continuous caster) 182

23100 series,
spherical roller bearings (standard) 166
spherical roller bearings (sealed) 175
spherical roller bearings (printing press) 180

23200 series,
spherical roller bearings (standard) 167
spherical roller bearings (sealed) 176
spherical roller bearings (printing press) 180
spherical roller bearings (continuous caster) 180

23800 series, spherical roller bearings 168

23900 series, spherical roller bearings 168

24000 series,
spherical roller bearings (standard) 169
spherical roller bearings (sealed) 176
spherical roller bearings (continuous caster) 180

24100 series,
spherical roller bearings 169
spherical roller bearings (sealed) 177
spherical roller bearings (continuous caster) 180

24800 series, spherical roller bearings 172

24900 series, spherical roller bearings 172

3

300 series, deep groove ball bearings (max type) 55

3200 A series, angular contact ball bearings 82

3200 E series, angular contact ball bearings 84

3300 A series, angular contact ball bearing 83

3300 E series, angular contact ball bearings 84

3300 DNR series, angular contact ball bearing 81

30200 series,
Taper roller bearings 232
Taper roller bearings, DF series (paired single row) 242

30300 series, taper roller bearings 233

31300 series,
Taper roller bearings 234
Taper roller bearings, DF series (paired single row) 243

32000 series,
Taper roller bearings 235
Taper roller bearings, DF series (paired single row) 244

32200 series,
Taper roller bearings 235
Taper roller bearings, DF series (paired single row) 245

32300 series, taper roller bearings 236

32900 series, taper roller bearings 237

33000 series, taper roller bearings 238

33100 series, taper roller bearings 238

33200 series, taper roller bearings 239

4

450000 series, spherical roller (printing press) 181

452300 series, spherical roller (shaker screen) 179

453300 series, spherical roller (shaker screen) 179

460000 series, spherical roller (printing press) 181

4762(00)B-VSB series, roller bearing unit inserts 328

5

51100 series, thrust ball bearings 112

51200 series, thrust ball bearings 114

51300 series, thrust ball bearings 116

51400 series, thrust ball bearings 117

52200 series, thrust ball bearings 118

52300 series, thrust ball bearings 119

52400 series, thrust ball bearings 119

53200 series, thrust ball bearings 120

53300 series, thrust ball bearings 121

53400 series, thrust ball bearings 121

54200 series, thrust ball bearings 122

54300 series, thrust ball bearings 122

54400 series, thrust ball bearings 122

6

6000 series, deep groove ball bearing 40

6200 series, deep groove ball bearings 42

6200/C78 series, deep groove ball bearings 54

6300 series, deep groove ball bearings 44

6300/C78 series, deep groove ball bearings 54

6400 series, deep groove ball bearings 46

61800 series, deep groove ball bearings 49

61900 series, deep groove ball bearings 52

7

7200 series, angular contact ball bearings 69

7300 series, angular contact ball bearings 70

7400 series, angular contact ball bearings 71

A

ABSY 4752(00) series, roller bearing unit inserts 329

Accessories, split pillow blocks (inch series)
- Adapters SNW/SNP series 442-446
- Locknuts, lockwashers and lockplates 447-453
- Withdrawal sleeves, removal nuts 454-455

Accessories, split pillow blocks (metric series)
- Adapters sleeves 536-563
- Withdrawal sleeves 563-569
- Locknuts 570-572
- Locknuts with locking clips 573-574
- Locking washers 575-576

Advanced calculation methods 18

AH series, split pillow block (metric accessories) 563-569

Air handling ball bearing units 268-271, 284-287

AN series, split pillow block (inch accessories) 448-455

Angular contact ball bearings
- Nomenclature 57
- Technical features 58
- Introduction, highlights, and basic design 59-67
- Product specification tables 68-84

AOH series, split pillow block (metric accessories) 565-569

ASK series, split pillow block (inch accessories) 454-455

Axial displacement 10

B

BA2B 459000 series, angular contact ball bearings 80

Ball Bearing Units
- Nomenclature 249
- Introduction / product description 250-256
- Air handling ball bearing units 256
- Product specification tables 258-287
- Insert bearings 289-299

Bearing type 7

Bearing characteristics 13

BC4 series, cylindrical four-row bearing 144

BS2-2200 series, spherical roller bearings (sealed) 173

C

C2200 series,
- CARB (standard) 192

C2300 series,
- CARB (standard) 193

C3000 series,
- CARB (standard) 194

C3100 series,
- CARB (standard) 195

C3200 series, CARB 195

C39/000 series, CARB 196

C4000 series, CARB 197

C4100 series, CARB 197

C4900 series, CARB 197

C5000 series, CARB 197

C5900 series, CARB 197

C6000 series, CARB 197

C6900 series, CARB 197

Calculation tools 19

CARB
- Nomenclature 185
- Technical features 186
- Introduction, highlights, and basic design 187-191
- Product specification tables 192-197

Conversions 3

Continuous castor bearings 180

Cylindrical roller bearings
- Nomenclature 127
- Technical features 128
- Introduction, highlights, and basic design 129-135
- Product specification tables 136-152

D

Deep groove ball bearings
- Nomenclature 33
- Technical features 34
- Introduction, highlights, and basic design 35-39
- Product specification tables 40-55

Designations for rolling bearings 5-6

Dimensions 11

E

ECB 23200 series, spherical roller (printing press) 180

ECBI 11200, spherical roller bearings 182

Engineering consultancy services 22

Equivalent dynamic bearing load 17

Explorer bearings 25

F

F2B two-bolt flange ball bearing units 250

F3BBD three-bolt flange roller bearing unit 328

F3BR (FYR) round three-bolt, flange roller bearing unit 322

F4B four-bolt flange ball bearing units 250

F4B four-bolt square flange roller bearing unit 330

F4BBD four-bolt flange roller bearing unit 328

F4BE (FYE) four-bolt, type E dimensions flange roller bearing unit 320

F4BR (FYR) round, four-bolt, flange roller bearing unit 322

F4BRP (FYRP) round, piloted four-bolt flange roller bearing unit 324

F6BRP (FYRP) round piloted six-bolt, piloted flange roller bearing unit 324

H

H series, split pillow blocks (metric accessories) 536-557

HA series, split pillow blocks (metric accessories) 558-562

HE series, split pillow blocks (metric accessories) 558-562

HK series, needle roller bearings 190

HM series, split pillow block (metric accessories) 542-557

HS series, split pillow blocks (metric accessories) 558-559

I

I 112000 series, spherical roller bearings 182

I 26300 series, spherical roller bearings 182

I 28800 series, spherical roller bearings 182

I 37600 series, spherical roller bearings 182

Internal clearance 22
- Angular contact ball bearings 64
- Ball bearing units 293
- CARB 189
- Cylindrical roller bearings 133
- Deep groove ball bearings 37
- Needle roller bearings 205
- Roller bearing units 328
- Self-aligning ball bearings 93
- Spherical roller bearings 160
- Taper roller bearings 229

K

KM series, split pillow blocks (metric series) 536-571

L

Load carrying capacity and life 14

Loads 8
- Angular contact ball bearings 67
- Ball bearing units 254
- CARB 191
- Cylindrical roller bearings 134
- Deep groove ball bearings 38
- Needle roller bearings 205
- Self-aligning ball bearings 92
- Spherical roller bearings 161
- Split pillow blocks (inch series) 359
- Split pillow blocks (metric series) 476
- Split pillow blocks SNL 30 and 31 (metric series) 516
- Taper roller bearings 229
- Thrust bearings 108

Lubrication
- Deep groove ball bearings 37
- Split pillow blocks (inch series) 354
- Split pillow blocks (metric series) 470, 512

Lubrication 24

Lubrication selection 20

M

Materials for rolling bearings 23

MB series, split pillow block (metric accessories) 536-576

Misalignment 9

Mounted products, please reference...
- Ball bearing units
- Roller bearings units
- Split pillow blocks

Mounting and dismounting 11
- Split pillow blocks (metric series) 449
- Split pillow block SNL 30 and 31 (metric series) 491

N

N series, split pillow block (inch accessories) 424-428

NA series, needle roller bearings
- 4800 series 210
- 4900 series 211
- 6900 series 213

NCF series, cylindrical roller bearings 147

Needle roller bearings
- Nomenclature 201
- Technical features 202
- Introduction, highlights, and basic design 203-205
- Product specification tables 206-224

NJG series, cylindrical roller bearings 148

NK series, needle roller bearings 214

NKI series, needle roller bearings 217

NKIS series, needle roller bearings 219

NKS series, needle roller bearings 220

Nomenclature
- Angular contact ball bearings 57
- Ball bearing units 249
- CARB 185
- Cylindrical roller bearings 129
- Deep groove ball bearings 33
- Insert ball bearings 292
- Needle roller bearings 201
- Roller bearing units 305
- Self-aligning ball bearings 89
- Spherical roller bearings 153
- Split pillow blocks (inch series) 337
- Split pillow blocks (metric series) 457
- Taper roller bearings 225
- Thrust ball bearings 105

NU, NUP series, cylindrical roller bearings
- 1000 series 138
- 200 series 140
- 2200 series 141
- 2300 series 143
- 300 series 144
- 400 series 145

O

OH series, split pillow block (metric accessories) 538-557

OSNP Hydraulic assist adapter series 440

OSNW Hydraulic assist adapter series 440

P

P2B two-bolt, pillow block ball bearing unit 250

P2B (SYR) two-bolt, pillow block roller bearing unit 316

P2BA (SYAF) two-bolt, pillow block roller bearing unit SAF dimensions 318

P2BE (SYE) two-bolt, pillow block roller bearing unit Type E dimensions 312

P2BT two-bolt, tapped base ball bearing unit 250

P4B four-bolt, pillow block roller bearing unit 332

P4BA (FSYAF) four-bolt, pillow block roller bearing unit SAF dimensions 318

P4BE (FSYE) four-bolt, pillow block roller bearing unit SAF dimensions 314

PL series, split pillow block (inch accessories) 452

Precision 9

Preload 10

Printing press bearings 180

Q

QJ200 series, angular contact ball bearings 74

QJ300 series, angular contact ball bearings 76

QJ1000 series, angular contact ball bearings 78

Quiet running 10

R

RNA series, needle roller bearings
- 4800 series 221
- 4900 series 223
- 6900 series 224

Roller bearing units
- Nomenclature 303
- Introduction / product description 304-309
- Seal selection 310-311
- Product specification tables 312-335

S

SAF series, split pillow blocks (inch series)
- 1300 362
- 1500 264
- 1600 366
- 22200 368
- 22300 370
- 22500 372
- 22600 374
- 23000 376

SAF series, split pillow blocks (inch series) - CARB
- C2200 378
- C2300 380
- C2500 382
- C2600 384
- C3000 386

SAW series, split pillow blocks (inch series)
- Nomenclature 399
- 23200 400
- 23500 402

SDAF series, split pillow blocks (inch series)
- 22200 412
- 22300 414
- 22500 416
- 22600 418
- 23000 424
- 23100 428
- 23200 432

Seals
- Roller bearing units 311
- Split pillow blocks (inch series) 343
- Split pillow blocks (metric series) 460, 509

Selecting bearing size using the life equations 14

Self-aligning ball bearings
Nomenclature 89
Technical features 90
Introduction, highlights, and basic design 91-95
Product specification tables 96-101

Shaft fits
Split pillow block housings 359

Shaker screen bearings 178

SK series, split pillow block (inch accessories) 454-455

Snap rings & grooves 36

SNL series, split pillow blocks (metric series)
for bearings on adapter sleeves 518-525
for bearings with cylindrical bore 526-530
Sealing arrangements 500-502

SNL 30 series, split pillow blocks (metric series)
for bearings on adapter sleeves 524
for bearings with cylindrical bore 530

SNP series, split pillow block (inch accessories) 443-446

SNW series, split pillow block (inch accessories) 442-446

Speed 9
Ball bearing units 293

Spherical roller bearings
Nomenclature 153
Technical features 154
Introduction, highlights, and basic design 155-161
Product specification tables 162-184

Spherical roller thrust bearings
Nomenclature 105
Technical features 106
Introduction, highlights, and basic design 107-111
Product specification tables 123-126

Split pillow block (inch series)
Nomenclature 337
Introduction / product description 338-342
Seals & speed limits 343-353
Lubrication 354-358
Shaft fits / housing loads 359-365
Product specification tables 366-439

Split pillow block SNL (metric series), 20-160 mm bore
Nomenclature 503
Introduction / product description 504-505
Seals 506-509
End covers, locating rings, displacement 510-511
Lubrication 512-514
Mounting 515
Load 516-517
Product specification tables 518-531

Split pillow block SNL accessories 532-576

Static load carrying capacity 19

Stiffness 10

T

T2 series, taper roller bearings 240

T4 series, taper roller bearings 240

T7 series, taper roller bearings 240

Taper roller bearing
Nomenclature 225
Technical features 226
Introduction, highlights, and basic design 227-231
Product specification tables 232-246

Thrust ball bearings
Nomenclature 105
Technical features 106
Introduction, highlights, and basic design 107-109
Seating washers 110-111
Product specification tables 112-126

Tolerances 11

U

U200 series, thrust ball seating washers 110

U300 series, thrust ball seating washers 110

U400 series, thrust ball seating washers 111

V

Variations
Angular contact ball bearings 60
CARB 188
Deep groove ball bearings 36
Needle roller bearings 204
Self-aligning ball bearings 91
Spherical roller bearings 156
Taper roller bearings 228

W

W series, split pillow block (inch accessories) 424-428

Wide Inner Ring Bearings 290-299

WSTU center pull cast iron take-up ball bearing units 251

WSTU cast iron take-up roller bearing units 334

Y

YAR series, set screw locking insert bearings 296

YAR-2F series, set screw locking insert bearings 295

YAT series, set screw locking insert bearings 294

YEL-2F series, eccentric locking insert bearings 298

YET series, eccentric locking insert bearings 297

YSP SB-2F series, ConCentra™ locking insert bearings 299

Notes

Notes

Notes

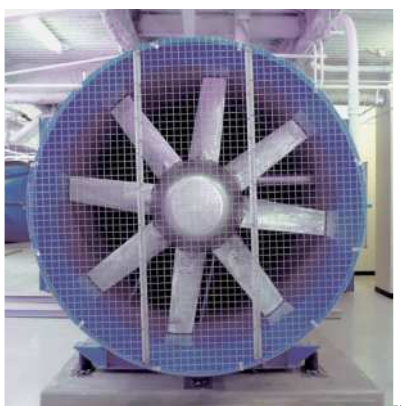
skf.com/us

® SKF, MRC, CARB, INSOCOAT, CR Seals, NoWear, PumPac and SYSTEM 24 are registered trademarks of SKF Group.

™ ConCentra, PosiTrac Plus and TriGard are trademarks of SKF Group.

Molykote® is a registered trademark of The Dow Chemical Company. Aeroshell® is a registered trademark of Shell Oil Company.

© SKF Group 2024
The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

© 2008 SKF USA Inc. **Publication 100-700** (4M/CW 8/2024) Version 8/2024 (24003) Printed in U.S.A.

Certain image(s) used under license from Shutterstock.com.