# Y-bearings and Y-bearing units



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**PUB BU/P1 13728 EN** · June 2013

This publication supersedes catalogue 06001 EN.

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# This is SKF

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader. Over the years we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.



**Research and development**

We have hands-on experience in over 40 industries, based on our employees' knowledge of real life conditions. In addition our world-leading experts and university partners who pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to




*SKF Solution Factory makes SKF knowledge and manufacturing expertise available locally, to provide unique solutions and services to our customers.*

research and development helps us keep our customers at the forefront of their industries.




### Meeting the toughest challenges

Our network of knowledge and experience along with our understanding of how our core technologies can be combined helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

### Working for a sustainable future

Since 2005, SKF has worked to reduce the negative environmental impact from our own operations and those of our suppliers. Our continuing technology development introduced the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our own operations and in our customers'.

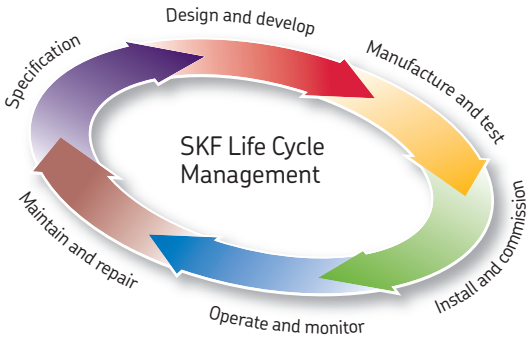


*Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.*

# SKF – the knowledge engineering company

## Our knowledge – your success

***SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.***




**Working closely with you**

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

**Innovative solutions**

Whether the application is linear or rotary or a combination of the two, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with the next.

**Design optimization and verification**

SKF can work with you to optimize current or new designs with proprietary 3-D modelling software that can also be used as a virtual test rig to confirm the integrity of the design.



***Bearings***
*SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.*



***Machinery maintenance***
*Condition monitoring technologies and maintenance services from SKF can help minimize unplanned downtime, improve operational efficiency and reduce maintenance costs.*



***Sealing solutions***
*SKF offers standard seals and custom engineered sealing solutions to increase uptime, improve machine reliability, reduce friction and power losses, and extend lubricant life.*



***Mechatronics***
*SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applications replace heavy, grease or oil consuming mechanical and hydraulic systems.*



***Lubrication solutions***
*From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.*



***Actuation and motion control***
*With a wide assortment of products – from actuators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.*

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# Foreword

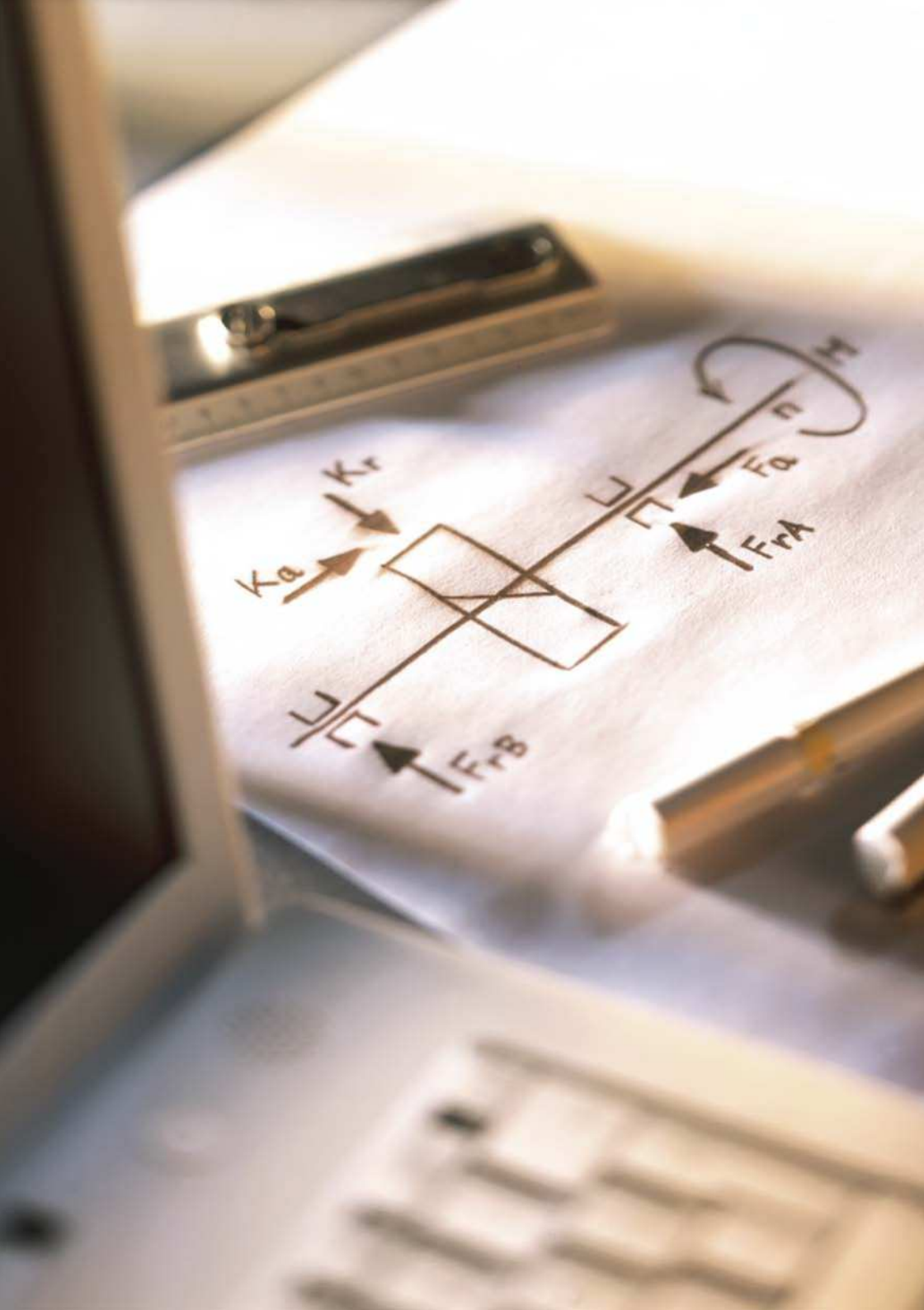
This catalogue provides a representative overview of the range of Y-bearings and Y-bearing units available from SKF. The data in this catalogue is based on the latest standards and product upgrades. However, SKF reserves the right to make any changes necessary as a result of continuous improvement with respect to materials, design and manufacture.

This catalogue contains all the data relevant to Y-bearings and Y-bearing units. All the data required to select a Y-bearing or Y-bearing unit respectively are listed in the product tables. Descriptions of the Y-bearing and Y-bearing unit types including design features and other information precede each product section. General data regarding selecting a Y-bearing or Y-bearing unit type and size, speeds, bearing arrangement design, lubrication, mounting and designations are included in the catalogue too.

The catalogue is designed so that product information is easy to find and use. Each of the 8 chapters listed in the table of contents is clearly identified by a number and colour.

## Unit conversions

| Quantity | Unit | Conversion | | | |
|---|---|---|---|---|---|
| **Length** | inch | 1 mm | 0,03937 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 cub.in | 1 cub.in | 16,387 $cm^3$ |
| | cubic foot | 1 $m^3$ | 35 cub.ft | 1 cub.ft | 0,02832 $m^3$ |
| | imperial gallon | 1 l | 0,22 gallon | 1 gallon | 4,5461 l |
| | U.S. gallon | 1 l | 0,2642 U.S. gallon | 1 U.S. gallon | 3,7854 l |
| **Velocity, speed** | foot per second | 1 m/s | 3,28 ft/s | 1 ft/s | 0,30480 m/s |
| | 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/cub.in | 1 lb/cub.in | 27,680 $g/cm^3$ |
| **Force** | pound-force | 1 N | 0,225 lbf | 1 lbf | 4,4482 N |
| **Pressure, stress** | pounds per square inch | 1 MPa | 145 psi | 1 psi | 6,8948 × $10^3$ Pa |
| **Moment** | inch pound-force | 1 Nm | 8,85 in.lbf | 1 in.lbf | 0,113 Nm |
| **Power** | foot-pound per second | 1 W | 0,7376 ft lbf/s | 1 ft lbf/s | 1,3558 W |
| | horsepower | 1 kW | 1,36 HP | 1 HP | 0,736 kW |
| **Temperature** | degree | Celsius | $t_C = 0,555\ (t_F - 32)$ | Fahrenheit | $t_F = 1,8\ t_C + 32$ |


Kr
Ka
Fa
FrA
FrB

# Principles of selection and application



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# Designs

Conventional SKF ball bearing units are referred to as Y-bearing units. These units consist of:

- an insert bearing (a single row deep groove ball bearing) with a convex sphered outside diameter
- a housing, which has a correspondingly sphered but concave bore

Y-bearing units can accommodate moderate initial misalignment, but normally do not permit axial displacement. They are ready-to-mount, ready-to-use units (→ **fig. 1**) and available as:

- Y-bearing plummer block units
- Flanged Y-bearing units
- Y-bearing take-up units

The housings are available in:

- composite material (→ **fig. 2**)
- grey cast iron (→ **fig. 3**)
- sheet steel (→ **fig. 4**)

SKF Y-bearing units provide designers with considerable freedom of choice so that compromises can be avoided. Numerous standard series Y-bearing units are available (→ tables on pages **20** to **23**). The tables list Y-bearings and Y-bearing housings and their possible combinations to units. For information about more specialized Y-bearing units, refer to the sections, *SKF Con-Centra ball bearings and units* and *SKF Food Line Y-bearing units* starting on **page 247**.

**Fig. 1**



**Fig. 2**



Because of their versatility and cost effectiveness, Y-bearing units are typically found in the following applications: agricultural machinery, construction equipment, conveyor systems, textile machines and fans as well as in machines for food and beverage processing and packaging.

## Bearing terminology

For a better understanding of the information in this catalog, see the next two pages for frequently used bearing terms and their definitions for the following products:

- Y-bearings
- Y-bearing plummer block units
- Flanged Y-bearing units
- Y-bearing take-up units

Essentially, these terms are in accordance with those in the following ISO standards:

- ISO 3228:1993 *Rolling bearings – Cast and pressed housings for insert bearings*
- ISO 9628:2006 *Rolling bearings – Insert bearings and eccentric locking collars*

A detailed collection of bearing specific terms and definitions are also listed in ISO 5593:1997 *Rolling bearings – Vocabulary*.

Fig. 3



Fig. 4

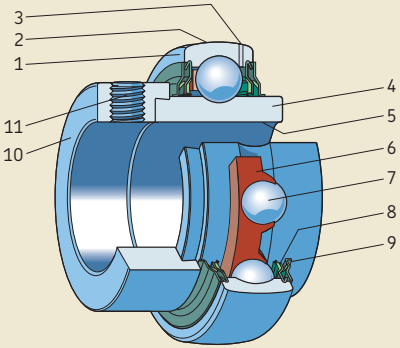


## Y-bearings

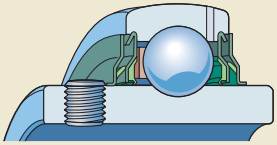
Insert bearings, wide inner ring bearings
(→ **fig. 5**)

1 Outer ring
2 Sphered outer surface
3 Lubrication hole
4 Inner ring
5 Bore
6 Cage
7 Ball
8 Integral seal
9 Flinger
10 Eccentric locking collar
11 Grub (set) screw

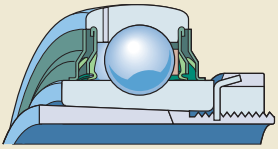
**Fig. 5**



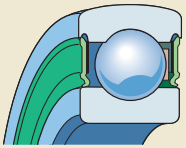

Inner ring with an eccentric locking collar



Inner ring with two grub screws

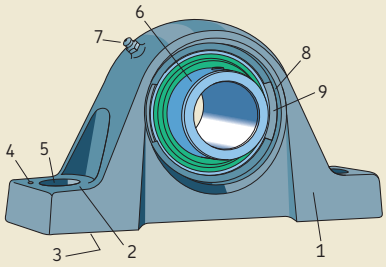


Inner ring with a tapered bore
(on an adapter sleeve)

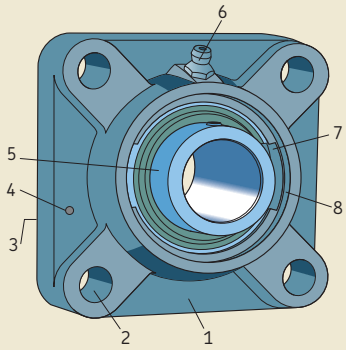


Inner ring of a standard deep
groove ball bearing

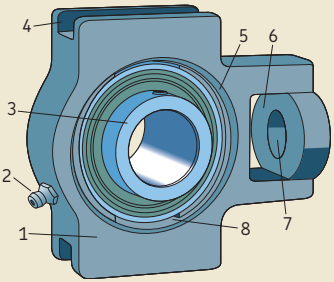
Fig. 6




a




b




c

## Y-bearing units

Mounted ball bearing, unit ball

**Y-bearing plummer (pillow) block unit (→ fig. 6a)**

1 Y-bearing plummer block housing of grey cast iron
2 Housing base
3 Housing support face
4 Cast dimple for dowel pin
5 Attachment bolt hole
6 Y-bearing
7 Grease fitting
8 Recess for end cover
9 Filling slot for Y-bearing

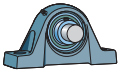
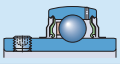
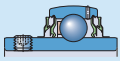
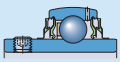
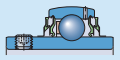
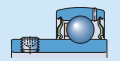
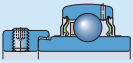
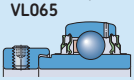
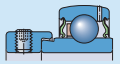
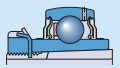
**Flanged Y-bearing unit (→ fig. 6b)**

1 Square flanged housing of grey cast iron
2 Attachment bolt hole
3 Back of flanged housing with or without centring recess
4 Cast dimple for dowel pin
5 Y-bearing
6 Grease fitting
7 Filling slot for Y-bearing
8 Recess for end cover

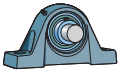
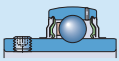
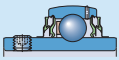
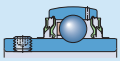
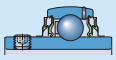
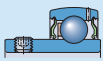
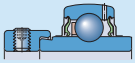
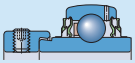
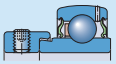
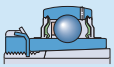
**Y-bearing take-up unit (→ fig. 6c)**

1 Take-up housing of grey cast iron
2 Grease fitting
3 Y-bearing
4 Piloting groove
5 Recess for end cover
6 Receiving opening for adjustment screw location
7 Centre bore for adjustment screw
8 Filling slot for Y-bearing

## Designs

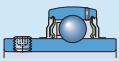
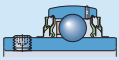
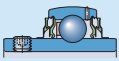
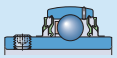
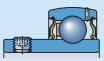
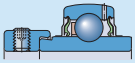
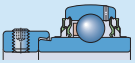
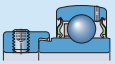
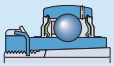
| Y-bearing unit | Composite housings | | | Cast housings | | |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
| **Y-bearings** | **SYK 5(00)** | **FYK 5(00)** | **FYTBK 5(00)** | **SY (500)** | **SYJ 5(00)** | **SYH 5(00)** |
| **YAR 2-2F**  | **SYK .. TF**<br>20–40 mm | **FYK .. TF**<br>20–40 mm<br>3/4–1 1/2 in.[1] | **FYTBK .. TF**<br>20–35 mm<br>3/4–1 1/4 in.[1] | **SY .. TF**<br>12–65 mm<br>1/2–2 15/16 in. | **SYJ .. TF**<br>20–100 mm<br>3/4–2 1/2 in. | **SYH .. TF**<br>1/2–2 7/16 in. |
| **YAR 2-2RF**  | **SYK .. TR**<br>20–40 mm | **FYK .. TR**<br>20–40 mm<br>3/4–1 1/2 in.[1] | **FYTBK .. TR**<br>20–35 mm<br>3/4–1 1/4 in.[1] | **SY .. TR**<br>20–60 mm<br>3/4–2 1/2 in.[1] | 20–65 mm[1]<br>3/4–2 1/2 in.[1] | – |
| **YAR 2-2RF/HV**  | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–35 mm[1]<br>3/4–1 7/16 in.[1] | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | – |
| **YAR 2-2RF/ VE495**  | 20–40 mm[1] | 20–40 mm[1] | 20–35 mm[1] | 20–50 mm | 20–50 mm | – |
| **YAT 2**  | 20–40 mm[1] | 20–40 mm[1] | 20–35 mm[1] | 17–50 mm[1] | 20–50 mm[1] | – |
| **YEL 2-2F**  | 20–40 mm[1] | 20–40 mm[1] | 20–35 mm[1] | **SY .. WF**<br>20–60 mm<br>17/16–1 15/16 in. | 20–60 mm[1] | **SYH .. WF**<br>3/4–2 7/16 in. |
| **YEL 2-2RF/ VL065**  | 20–40 mm[1] | 20–40 mm[1] | 20–35 mm[1] | 20–40 mm[1] | 20–40 mm[1] | – |
| **YET 2**  | 20–40 mm[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–35 mm[1]<br>3/4–1 7/16 in.[1] | **SY .. FM**<br>15–60 mm<br>3/4–1 1/2 in.[1] | 20–60 mm[1]<br>3/4–1 1/2 in.[1] | **SYH .. FM**<br>1–2 in. |
| **YSA 2-2FK on adapter sleeve**  | 20–35 mm[1]<br>3/4–1 1/4 in.[1] | 20–35 mm[1]<br>3/4–1 1/4 in.[1] | 20–30 mm[1]<br>3/4–1 3/16 in.[1] | 20–60 mm[1]<br>3/4–2 3/8 in.[1] | **SYJ .. KF**<br>20–60 mm<br>3/4–2 3/8 in.[1] | – |
| **17262(00)**  | 20–40 mm[1] | 20–40 mm[1] | 20–35 mm[1] | 17–60 mm[1] | 20–60 mm[1] | – |

[1] Parts must be ordered separately.

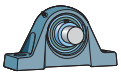
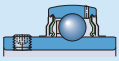
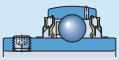
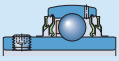
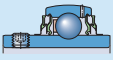
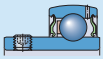
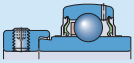
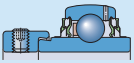
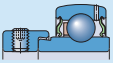
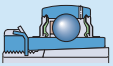
| Y-bearing unit | Cast housings | | | | |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| **Y-bearings** | **SYM 5(00)** | **SYF 5(00)** | **SYFJ 5(00)** | **FY (500)** | **FYJ 5(00)** |
| **YAR 2-2F**  | **SYM .. TF**<br>1 7/16–3 in. | **SYF .. TF**<br>20–50 mm<br>3/4–1 3/4 in.[1] | **SYFJ .. TF**<br>20–50 mm<br>3/4–1 3/4 in.[1] | **FY .. TF**<br>12–65 mm<br>1/2–2 7/16 in. | **FYJ .. TF**<br>20–100 mm<br>3/4–2 1/2 in.[1] |
| **YAR 2-2RF**  | – | 20–50 mm[1]<br>3/4–1 3/4 in.[1] | 20–50 mm[1]<br>3/4–1 3/4 in.[1] | **FY .. TR**<br>20–60 mm<br>3/4–2 1/2 in.[1] | 20–60 mm[1]<br>3/4–2 1/2 in.[1] |
| **YAR 2-2RF/HV**  | – | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. |
| **YAR 2-2RF/ VE495**  | – | 20–50 mm | 20–50 mm | 20–50 mm | 20–50 mm |
| **YAT 2**  | – | 20–50 mm[1] | 20–50 mm[1] | 17–50 mm[1] | 20–50 mm[1] |
| **YEL 2-2F**  | – | 20–50 mm[1] | 20–50 mm[1] | **FY .. WF**<br>20–60 mm<br>1–2 7/16 in. | 20–50 mm[1] |
| **YEL 2-2RF/ VL065**  | – | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] |
| **YET 2**  | – | **SYF .. FM**<br>20–50 mm<br>3/4–1 1/2 in.[1] | **SYFJ .. FM**<br>20–50 mm<br>3/4–1 1/2 in.[1] | **FY .. FM**<br>15–60 mm<br>3/4–2 3/16 in.[1] | 20–60 mm[1]<br>3/4–1 1/2 in.[1] |
| **YSA 2-2FK on adapter sleeve**  | – | 20–45 mm[1]<br>3/4–1 3/4 in.[1] | 12–45 mm[1]<br>3/4–1 3/4 in.[1] | 20–60 mm[1]<br>3/4–2 3/8 in.[1] | **FYJ .. KF**<br>20–60 mm<br>3/4–2 3/8 in.[1] |
| **17262(00)**  | – | 20–50 mm[1] | 20–50 mm[1] | 17–60 mm[1] | 20–60 mm[1] |

[1] Parts must be ordered separately.

## Designs

| Y-bearing flanged unit | Cast housings | | | | |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| **Y-bearings** | **FYM 5(00)** | **FYT 5(00)** | **FYTB 5(00)** | **FYTJ (500)** | **FYC 5(00)** |
| **YAR 2-2F**  | **FYM .. TF**<br>1 7/16–3 in. | **FYT .. TF**<br>1/2–2 3/16 in. | **FYTB .. TF**<br>12–50 mm<br>3/4–1 3/4 in. | **FYTJ .. TF**<br>20–50 mm<br>3/4–1 3/4 in. | **FYC .. TF**<br>20–65 mm<br>3/4–2 1/2 in.[1] |
| **YAR 2-2RF**  | – | – | **FYTB .. TR**<br>20–50 mm<br>3/4–1 3/4 in.[1] | 20–50 mm[1]<br>3/4–1 3/4 in.[1] | 20–65 mm[1]<br>3/4–2 1/2 in.[1] |
| **YAR 2-2RF/HV**  | – | – | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. |
| **YAR 2-2RF/ VE495**  | – | – | 20–50 mm | 20–50 mm | 20–50 mm |
| **YAT 2**  | – | **FYT .. RM**<br>1/2–2 3/16 in. | 17–50 mm[1] | 20–50 mm[1] | 20–50 mm[1] |
| **YEL 2-2F**  | – | – | **FYTB .. WF**<br>20–50 mm | 20–50 mm[1] | 20–60 mm[1] |
| **YEL 2-2RF/ VL065**  | – | – | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] |
| **YET 2**  | – | **FYT .. FM**<br>1/2–2 3/16 in. | **FYTB .. FM**<br>15–50 mm<br>3/4–1 1/2 in.[1] | 20–50 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YSA 2-2FK on adapter sleeve**  | – | – | 20–45 mm[1]<br>3/4–1 3/4 in.[1] | **FYTJ .. KF**<br>20–45 mm<br>3/4–1 3/4 in. | 20–60 mm[1]<br>3/4–2 3/8 in.[1] |
| **17262(00)**  | – | – | 17–50 mm[1] | 20–50 mm[1] | 20–60 mm[1] |

[1] Parts must be ordered separately.

| Y-bearing unit | Cast housings | | Pressed steel housings | | | |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
| **Y-bearings** | **TU 5(00)** | **TUJ 5(00)** | **P 40 – P 85** | **PF 40 – 90** | **PFD 40 – 80** | **PFT 40 – 80** |
| **YAR 2-2F**  | **TU .. TF**<br>20–55 mm<br>3/4–2 3/16 in. | **TUJ .. TF**<br>20–60 mm<br>3/4–2 in.[1] | 12–45 mm[1]<br>1/2–1 3/4 in.[1] | 12–50 mm[1]<br>3/4–1 3/4 in.[1] | 12–40 mm[1]<br>3/4–1 1/2 in.[1] | 12–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF**  | 20–55 mm[1]<br>3/4–2 in.[1] | 20–60 mm[1]<br>3/4–2 in.[1] | 12–45 mm[1]<br>3/4–1 3/4 in.[1] | 20–35 mm[1]<br>3/4–1 3/4 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF/HV**  | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF/ VE495**  | 20–50 mm | 20–50 mm | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] |
| **YAT 2**  | 20–50 mm[1] | 20–50 mm[1] | 17–45 mm[1]<br>5/8–1 3/4 in.[1] | 17–50 mm[1]<br>5/8–1 15/16 in.[1] | 17–40 mm[1]<br>5/8–1 1/2 in.[1] | 17–40 mm[1]<br>5/8–1 1/2 in.[1] |
| **YEL 2-2F**  | 20–55 mm[1] | 20–60 mm[1] | 12–45 mm[1]<br>1/2–1 3/4 in.[1] | 20–50 mm[1]<br>1/2–1 15/16 in.[1] | 20–40 mm[1]<br>1/2–1 1/2 in.[1] | 20–40 mm[1]<br>1/2–1 1/2 in.[1] |
| **YEL 2-2RF/ VL065**  | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] |
| **YET 2**  | **TU .. FM**<br>20–55 mm<br>3/4–1 1/2 in.[1] | 20–60 mm[1]<br>3/4–1 1/2 in.[1] | 15–45 mm[1]<br>1/2–1 3/4 in.[1] | 15–50 mm[1]<br>3/4–1 3/4 in.[1] | 15–40 mm[1]<br>3/4–1 1/2 in.[1] | 15–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YSA 2-2FK on adapter sleeve**  | 20–50 mm[1]<br>3/4–2 in.[1] | 20–55 mm[1]<br>3/4–2 1/8 in.[1] | 20–40 mm[1]<br>3/4–1 3/4 in.[1] | 20–45 mm[1]<br>3/4–1 3/4 in.[1] | 20–35 mm[1]<br>3/4–1 1/4 in.[1] | 20–35 mm[1]<br>3/4–1 3/4 in.[1] |
| **17262(00)**  | 20–55 mm[1] | 20–60 mm[1] | 17–45 mm[1] | 17–50 mm[1] | 17–40 mm[1] | 17–40 mm[1] |

[1] Parts must be ordered separately.

# Selection of Y-bearing unit type

The SKF Y-bearing unit assortment is extensive. It includes three designs with a choice of three different materials for the housing and a variety of Y-bearings that can be locked onto the shaft in very different ways. Because of their design, each Y-bearing unit exhibits characteristic features that make it more or less suitable for a specific application.

For example, Y-bearing units with a pressed steel housing are not capable of supporting heavy loads, can only run at moderate speeds and can not be relubricated. However, they are economical and easy to mount. On the other hand, housings made of grey cast iron can withstand significantly heavier radial, axial and shock loads. In addition, cast housings have a grease fitting for relubrication, making them a good choice for applications with somewhat higher speeds.

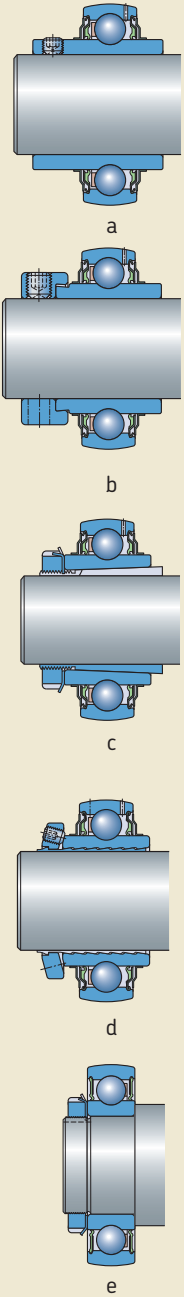
Since, in many cases, several factors have to be considered when selecting a suitable Y-bearing unit, there is no way to provide a list of general rules. However, important factors that should be considered include:

- location on the shaft
- loads
- seals
- permissible operating temperatures
- speeds

Keep in mind that the total cost of a bearing arrangement and inventory considerations could also influence the final choice.

Other important criteria for designing a bearing arrangement, such as load carrying capacity and rating life, lubrication, etc., will be dealt with in detail in the corresponding chapters.

Fig. 1




## Locating on the shaft

There is a choice of five different methods (→ **fig. 1**) by which an SKF Y-bearing unit can be located onto the shaft:

- Grub screws (**a**). This method enables very easy mounting and dismounting, even if space is limited. This locking method is typically used in applications where the shaft alternates direction of rotation.
- Eccentric locking collar (**b**). This locking method is typically used for applications where the shaft rotates in one direction only. It can be used for alternating directions when loads and speeds are low.
- Adapter sleeve locking (**c**). This method enables a concentric locking of the Y-bearing unit on the shaft and is appropriate for alternating as well as constant direction of rotation.
- SKF ConCentra locking (**d**). This method enables true concentric locking on the shaft. It is appropriate for alternating, as well as constant direction of rotation. For additional information about SKF ConCentra ball bearings and units refer to the dedicated chapter on **page 247**.
- Interference fit (**e**). The use of an interference fit is only available for Y-bearings in the 17262(00)-2RS1 and 17263(00)-2RS1 series. These bearings and the required housings have to be ordered separately.

# Loads

The magnitude of the load is the factor that usually determines the size of the Y-bearing unit to be used. Generally, units with housings made from grey cast iron or composite material can withstand heavier loads than units with pressed sheet steel housings. Magnitude of load is defined as:

- $P \leq 0{,}02\ C$ – very light load
- $0{,}02\ C < P \leq 0{,}035\ C$ – light load
- $0{,}035\ C < P \leq 0{,}05\ C$ – moderate load
- $0{,}05\ C < P \leq 0{,}1\ C$ – normal load
- $P > 0{,}1\ C$ – heavy load

## Radial loads

In applications where normal to heavy loads occur, only Y-bearing units with housings made from grey cast iron or composite material should be used. These units are able to withstand the same dynamic and static loads as their insert bearings and are less sensitive to shock loads (→ **fig. 2a**).

Y-bearing units with a pressed steel housing are designed to withstand light to moderate loads and are not able to accommodate shock loads (→ **fig. 2b**).

## Axial loads

The axial load carrying capacity of a Y-bearing depends not as much on its internal design as on the way it is locked onto the shaft (→ **fig. 2c**) as described in the chapter *Axial load carrying ability*, **page 34**. In general, Y-bearing units with housings made from grey cast iron or composite material are more suitable for heavier or alternating axial loads.

Y-bearing units with a pressed sheet steel housing are only intended for light axial loads, in particular the plummer block units incorporating a rubber seating ring (→ **fig. 2d**).

Fig. 2

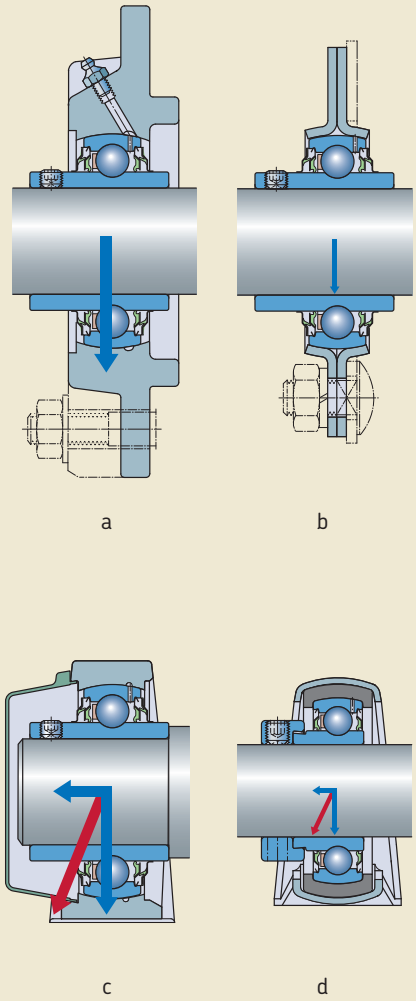
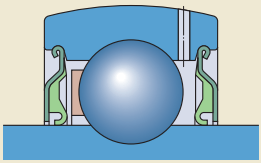
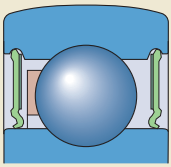


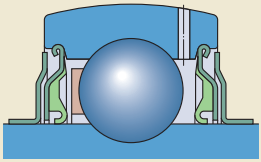
Fig. 3



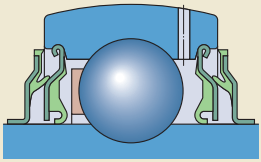
a



b



c



d

# Seals

The factors that influence the choice of the most appropriate sealing method include:

- the peripheral speed at the sealing counterface
- the friction in the seal and the resulting temperature increase
- the operating environment, e.g. moisture, dust or coarse contaminants
- the requirements regarding efficiency

The standard integral seal used in SKF Y-bearing units provides good protection against moisture and contaminants and also provides reliable retention of the lubricant (→ **fig. 3a**). The same applies to RS1 contact seals that are integral to Y-bearings with a normal inner ring in the 17262(00)-2RS1 and 17263(00)-2RS1 series (→ **fig. 3b**).

For more contaminated conditions, Y-bearing units fitted with plain steel flingers outside the integral seal should be used (→ **fig. 3c**). The flingers have an interference fit on the inner ring and considerably enhance the sealing effect without increasing friction.

Where operating conditions are extremely contaminated and long service life is required, Y-bearing units with the highly efficient multiple seal are recommended. Here, the sealing efficiency of the standard integral seal is reinforced by a steel flinger with a vulcanized sealing lip (→ **fig. 3d**).

# Permissible operating temperatures

The permissible operating temperatures for a Y-bearing unit are determined primarily by the bearing, the cage material, the seal material(s) and the grease with which it is lubricated.

The temperature ranges for the greases are:

- –30 to +120 °C for all standard Y-bearings and Y-bearing units that are filled with a grease that has a lithium-calcium thickener[1)]
- –45 to +150 °C for HV and VE495 Y-bearing variants that are filled with a food-grade grease[2)]
- –20 to +140 °C for Y-bearings with a hexagonal bore in the YHB 2 and YHC 2 series that are filled with a grease that has a lithium-complex soap thickener[3)] (designation suffix VT357)
- 40 to 55 °C for maintenance-free operation at moderate loads (P ≤ 0,05 C) and speeds

All standard Y-bearings are fitted with an injection moulded snap-type cage of glass fibre reinforced polyamide 6,6. These cages exhibit excellent performance characteristics in a variety of applications where operating temperatures do not exceed 120 °C.

Contact seals can be used at operating temperatures between –30 and +100 °C. Temperatures up to 120 °C are also possible for brief periods.

1) The temperature range for reliable operation in accordance with the "SKF traffic light concept" is between 10 and 120 °C.
2) The temperature range for reliable operation in accordance with the "SKF traffic light concept" is between 20 and 150 °C.
3) The temperature range for reliable operation in accordance with the "SKF traffic light concept" is between 50 and 140 °C.

## Speeds

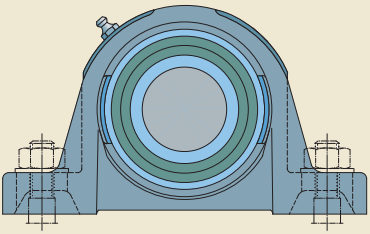
The speed at which a Y-bearing or a Y-bearing unit can operate depends mainly on:

- the method used to attach it to the shaft
- the sealing arrangement

For Y-bearings that are locked onto a shaft with grub screws or an eccentric locking collar, the permissible speed of the bearing is determined by its fit on the shaft. The looser the fit, the lower the speed.

If a Y-bearing is mounted on an adapter sleeve, with an interference fit (bearings in the 17262(00) or 17263(00) series), or with SKF ConCentra locking, the permissible speed is much higher than if another locating method is used. Their concentric fit also provides a low vibration level and quiet running (→ chapter *Speeds*, starting on **page 38**).

Because of the relubrication requirements in applications with relatively high speeds (→ chapter *Lubrication and maintenance*, starting on **page 48**), SKF recommends using Y-bearing units that can be relubricated.



## Application note

Because of their special properties, SKF Y-bearing units are used in applications in virtually every industry. If however, they are to be used in an application where health, safety, or the environment is at risk, the SKF application engineering service should be contacted during the design phase.

This is also true for applications with relatively high speeds and where machine downtime can cause significant problems.



# Selection of Y-bearing unit size

## Load carrying ability and life

The size of a Y-bearing or Y-bearing unit required for a specific arrangement is determined by the loads that will occur in the application and the required life needed for the application. Variables known as load ratings are used in bearing calculations as a measure of the load carrying ability: the basic dynamic load rating C and the basic static load rating $C_0$. The basic dynamic load rating is based on specifications determined in ISO 281:2007 while the basic static load rating is based on specifications determined in ISO 76:2006.

## Selecting the bearing unit size using life equations

To select a Y-bearing or a Y-bearing unit size, the basic rating life is typically calculated in accordance with ISO 281:2007. The equation for ball bearings is

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

If speed is constant, the basic rating life expressed in operating hours can be obtained using

$$L_{10h} = \frac{1\,000\,000}{60\,n} \left(\frac{C}{P}\right)^3$$

or

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

where
$L_{10}$ = basic rating life (at 90% reliability), millions of revolutions
$L_{10h}$ = basic rating life (at 90% reliability), operating hours
C = basic dynamic load rating, kN
P = equivalent dynamic bearing load, kN
n = rotational speed, r/min

This method is usually adequate for selecting the size of Y-bearings or Y-bearing units, as it is based on experience. If reference experience regarding requisite life and operational reliability is not available, the values provided in **table 1** for the basic rating life $L_{10h}$ can be used as guidelines.

To fully exploit the life of a Y-bearing or a Y-bearing unit, the modified life equation in accordance with ISO 281:2007 should be used to calculate the SKF rating life.

## SKF rating life

In the SKF rating life equation, the stresses resulting from external loads are considered, together with the stresses caused by the surface topography, lubrication and kinematics of the rolling contact surfaces. Taking the influence of this combined stress system into account provides a better prediction of the actual performance of the Y-bearing or Y-bearing unit in a particular application.

For additional information about the SKF rating life and its calculation refer to the:

- SKF *General Catalogue*
- *SKF Interactive Engineering Catalogue* available online at www.skf.com

The SKF Interactive Engineering Catalogue allows different bearing lives to be calculated online.

**Table 1**

**Guideline values of requisite basic rating life $L_{10h}$ for Y-bearings and Y-bearing units**

| Type of machine | Requisite basic rating life $L_{10h}$ operating hours |
|---|---|
| **Machines used for short periods or intermittently** | |
| Agricultural and ancillary transport equipment | 1 000 to 2 000 |
| Other agricultural equipment | 4 000 to 8 000 |
| **Machines used 8 hours per day but not always fully utilized** | |
| Belt conveyors | 12 000 to 20 000 |
| **Machines used 8 hours per day and fully utilized** | |
| Light duty fans, textile machinery | 20 000 to 30 000 |

# Equivalent dynamic bearing load

The equivalent dynamic bearing load is defined as that hypothetical radial load, constant in magnitude and direction, which, if applied, would have the same influence on bearing life as the actual load to which the bearing is subjected (→ **fig. 1**).

If the bearing load F is constant in magnitude and direction and acts radially, then P = F and the load can be inserted directly into the life equation. In all other cases, the equivalent dynamic bearing load must be calculated.

## Constant bearing load

Y-bearings and Y-bearing units 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 P can be obtained from the general equations

$P = F_r$ when $F_a/F_r \leq e$
$P = X F_r + Y F_a$ when $F_a/F_r > e$

where
P = equivalent dynamic bearing load, kN
$F_r$ = actual radial bearing load, kN
$F_a$ = actual axial bearing load, kN
X = radial load factor for the bearing
Y = axial load factor for the bearing
e = limiting value for $F_a/F_r$

and with reference to **tables 2** and **3**
$C_0$ = basic static load rating, kN
$f_0$ = bearing-dependent calculation factor

The limiting value e and the load factors X and Y required to calculate the equivalent bearing load for Y-bearings and Y-bearing units can be found in **table 2**. As for deep groove ball bearings, it depends on the value of the relative thrust load $f_0 F_a/C_0$.

**Fig. 1**

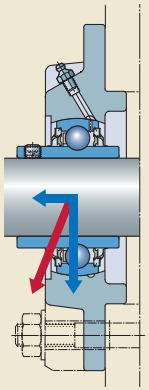


**Table 2**

**Calculation factors**

| Relative thrust load $f_0 F_a/C_0$ | Y-bearing series YAT, YAR, YET, YEL, YSA, YSP e | X | Y | 17262(00), 17263(00) e | X | Y |
|---|---|---|---|---|---|---|
| **0,172** | 0,29 | 0,46 | 1,88 | 0,19 | 0,56 | 2,30 |
| **0,345** | 0,32 | 0,46 | 1,71 | 0,22 | 0,56 | 1,99 |
| **0,689** | 0,36 | 0,46 | 1,52 | 0,26 | 0,56 | 1,71 |
| **1,03** | 0,38 | 0,46 | 1,41 | 0,28 | 0,56 | 1,55 |
| **1,38** | 0,40 | 0,46 | 1,34 | 0,30 | 0,56 | 1,45 |
| **2,07** | 0,44 | 0,46 | 1,23 | 0,34 | 0,56 | 1,31 |
| **3,45** | 0,49 | 0,46 | 1,10 | 0,38 | 0,56 | 1,15 |
| **5,17** | 0,54 | 0,46 | 1,01 | 0,42 | 0,56 | 1,04 |
| **6,89** | 0,54 | 0,46 | 1,00 | 0,44 | 0,56 | 1,00 |

**Table 3**

**Calculation factor $f_0$**

| Y-bearing series (sizes) | Factor $f_0$ |
|---|---|
| **YAT, YAR, YET, YEL, YSA, YSP** | |
| 203 – 204 | 13 |
| 205 – 212 | 14 |
| 213 – 218 | 15 |
| 220 | 14 |
| **17262(00)** | |
| 03 – 04 | 13 |
| 05 – 12 | 14 |
| **17263(00)** | |
| 05 | 12 |
| 06 – 10 | 13 |

**Diagram 1**

**Mean load within a duty interval**

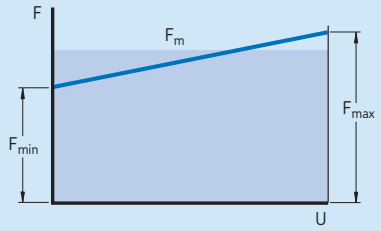



**Diagram 2**

**Rotating load**

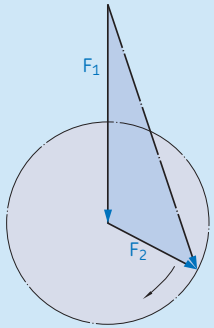
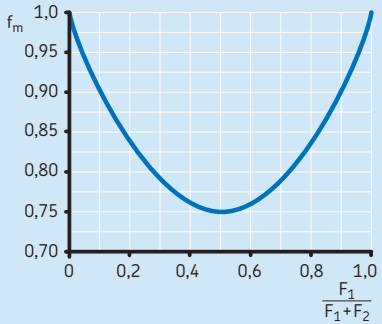



**Diagram 3**




## Fluctuating bearing load

In applications where the load varies over time, both in magnitude and direction, bearing life cannot be calculated without first calculating the equivalent load related to the variable (or fluctuating) load conditions. To do this, refer to the section *Life calculation with variable operating conditions* in the SKF *General Catalogue* or online in the *SKF Interactive Engineering Catalogue* at www.skf.com.

## Mean load within a duty interval

Within each loading interval, the operating conditions can vary slightly from the nominal value. Assuming that the operating conditions, e.g. speed and load direction, are fairly constant and the magnitude of the load constantly varies between a minimum value $F_{min}$ and a maximum value $F_{max}$ (**→ diagram 1**), the mean load can be obtained from

$$F_m = \frac{F_{min} + 2\,F_{max}}{3}$$

## Rotating load

If, as illustrated in **diagram 2**, the load on the bearing consists of a load $F_1$ which is constant in magnitude and direction (e.g. the weight of a rotor) and a rotating constant load $F_2$ (e.g. an unbalanced load), the mean load can be obtained from

$$F_m = f_m\,(F_1 + F_2)$$

Values for the factor $f_m$ can be obtained from **diagram 3**.

## Dynamic bearing loads

When determining additional, external dynamic forces, e.g. an unbalanced condition, it might be necessary to rely on estimates based on experience gained with similar machines or bearing arrangements.

In belt-driven applications, the effective belt pull (circumferential force), which is dependent on the transmitted torque, must be taken into account. To do this, the belt pull must be multiplied by a factor that is dependent on the type of belt, its preload, tension and any additional dynamic forces. Values are usually published by belt manufacturers. However, should information not be available, the following values can be applied:

- Toothed belts 1,1 to 1,3
- V-belts 1,2 to 2,5
- Flat belts 1,5 to 4,5

The larger values apply when the arc of contact is small, for heavy or shock-type duty, or where belt tension is high.

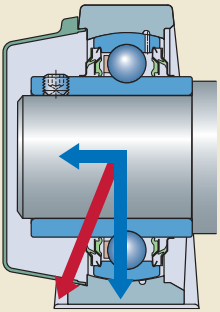
## Requisite minimum load

If Y-bearings or Y-bearing units are to operate satisfactorily, they must always be subjected to a minimum radial load. A rule of thumb indicates that this load should correspond to 0,01 C.

The importance of imposing this load increases where accelerations in the bearing are high, and where speeds are in the region of 75% or more of the limiting speed quoted in the product tables.

The weight of the components supported by the Y-bearing unit, together with external forces, normally exceed the requisite minimum load.

Fig. 2



## Axial load carrying ability

The axial load carrying ability of a Y-bearing or Y-bearing unit depends not so much on its internal design as on the way it is locked onto the shaft.

For Y-bearings and Y-bearing units with grub screws or an eccentric locking collar, the maximum axial load that they can support is approximately 20% of the basic dynamic load rating if an unhardened shaft is used and the grub screws are properly tightened.

When a Y-bearing is mounted on an adapter sleeve, its axial load carrying ability depends on the amount of torque used to tighten the lock nut. If the torque prescribed in **table 2** on **page 55**, is used, the axial load carrying ability will be between 15 and 20% of the basic dynamic load rating.

Where the inner rings are supported by an abutment on the shaft (→ **fig. 2**), the axial load carrying ability depends on the nature of this abutment. Generally, however, the axial load on the bearing should not exceed 0,25 $C_0$.

Additional information about the axial load carrying ability of Y-bearing units is provided in the appropriate chapters of this catalog.

# Selecting the bearing unit size using the static load carrying capacity

A Y-bearing or Y-bearing unit size should be determined on the basis of the static load rating $C_0$, instead of bearing life, when one of the following conditions exists:

- The bearing is stationary and subjected to continuous or intermittent (shock) loads.
- The bearing makes slow oscillating or alignment movements under load.
- The bearing rotates under load at a very slow speed ($n < 10$ r/min) and is not required to have a long service life. In this case, the life equation for a given equivalent load P would give such a low requisite basic dynamic load rating C that the bearing selected on a life basis would be seriously overloaded in service.
- The bearing rotates and, in addition to the normal operating loads, has to sustain heavy shock loads that act during a fraction of a revolution.

In all these cases, the permissible load for a Y-bearing is determined by the load that will cause permanent deformations to the ball/raceway contacts and is not determined by material fatigue. Heavy loads acting on a stationary or slowly oscillating bearing, or shock loads on a rotating bearing, produce flattened areas on the balls and indentations on the raceways. The indentations may be irregularly spaced around the raceway, or may be evenly spaced at positions corresponding to the spacing of the balls. If the load acts for several revolutions, the deformation will be evenly distributed over the whole raceway.

The extent to which this damage is detrimental to bearing performance depends on the application and the demands placed on the bearing. To prevent or minimize this type of damage, Y-bearing units with a sufficiently high static load carrying capacity should be selected.

When determining the Y-bearing or Y-bearing unit 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.

## Equivalent static bearing load

An equivalent static bearing load is defined as the hypothetical load which, if applied, would cause the same maximum rolling element load in the bearing as the actual loads. The equivalent static bearing load for Y-bearings and Y-bearing units is obtained from the general equation

$$P_0 = 0{,}6\ F_r + 0{,}5\ F_a$$

where
$P_0$ = equivalent static bearing load, kN
$F_r$ = actual radial bearing load, kN
$F_a$ = actual axial bearing load, kN

If $P_0 < F_r$, calculate with $P_0 = F_r$.

**NOTE:** When calculating $P_0$, the maximum load that can occur should be used and its radial and axial components inserted in the equation above. If a static load acts in different directions on a bearing, the magnitude of these components will change. In these cases, the components of the load giving the largest value of the equivalent static bearing load $P_0$ should be used.

## Requisite static load rating

The requisite basic static load rating $C_0$ can be determined from

$$C_0 = s_0\ P_0$$

where
$C_0$ = basic static load rating, kN
$P_0$ = equivalent static bearing load, kN
$s_0$ = static safety factor

Experience based guideline values of the static safety factor $s_0$ for Y-bearings and Y-bearing units are provided in **table 4**.

**Table 4**

**Guideline values for static safety factor $s_0$**

| Type of operation | Required static safety factor $s_0$ |
|---|---|
| Normal loads and smooth, vibration-free operation, where noise levels are not specified, and speeds are very low | ≥ 0,5 |
| Normal loads and smooth, vibration-free operation, where noise levels are normal | ≥ 1 |
| Normal loads and high degree of running accuracy, where low noise levels are specified | ≥ 2 |
| Pronounced shock loads, very slow or non-rotating bearings | ≥ 2 |

## Checking the static load carrying capacity

For dynamically loaded bearings that have been selected based on requisite life, it is advisable, where the equivalent static bearing load $P_0$ is known, to check that the static load carrying capacity is adequate using

$$s_0 = C_0/P_0$$

If the $s_0$ value obtained is less than the recommended guideline value (→ **table 4**), then a larger Y-bearing or Y-bearing unit should be selected.

# Speeds

The speed at which a Y-bearing or Y-bearing unit can operate depends mainly on the type of seal that is used and the method used to lock the bearing onto the shaft. The permissible operating speed also depends on the shaft tolerance in applications with:

- Y-bearings with grub screws, YAT 2 and YAR 2-2F series
- Y-bearings with an eccentric locking collar, YET 2 and YEL 2-2F series

The higher the figure following the tolerance symbol h, the lower the permissible speed. Guideline values for the limiting speeds are provided in **table 1**.

For bearings with multiple seals (2RF design), the limiting speed is about 60% of the values quoted in **table 1** for bearings mounted on an h6 tolerance shaft. For the following bearings, the limiting speed depends on the seals:

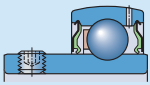
- Y-bearings with a tapered bore on an adapter sleeve, YSA 2-2FK + H 23 series
- Y-bearings with a standard inner ring, 17262(00)-2RS1 and 17263(00)-2RS1 series
- Y-bearings with SKF ConCentra locking, used in SKF ConCentra ball bearing units only

The values for the limiting speed are provided in the product tables and in **table 1** to enable easy comparison.

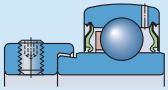
The limiting speeds for Y-bearings and Y-bearing units for inch shafts are the same as those for the corresponding metric bearing.

Table 1

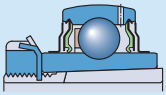
## Limiting speeds for Y-bearings



YAT, YAR



YET, YEL



YSA + H 23



1726...

| Bearing size[1] | Limiting speed for Y-bearings in the series YAT 2, YAR 2, YET 2, YEL 2 for shafts machined to tolerance | | | | | YSA 2 K + H 23 | 17262(00) | 17263(00) | Limiting speed for SKF ConCentra ball bearing units |
|---|---|---|---|---|---|---|---|---|---|
| | h6 | h7 | h8 | h9 | h11 | | | | |
| – | r/min | | | | | | | | |
| **03** | 9 500 | 6 000 | 4 300 | 1 500 | 950 | – | 12 000 | – | – |
| **04** | 8 500 | 5 300 | 3 800 | 1 300 | 850 | – | 10 000 | – | – |
| **05** | 7 000 | 4 500 | 3 200 | 1 000 | 700 | 7 000 | 8 500 | 7 500 | 7 000 |
| **06** | 6 300 | 4 000 | 2 800 | 900 | 630 | 6 300 | 7 500 | 6 300 | 6 300 |
| **07** | 5 300 | 3 400 | 2 200 | 750 | 530 | 5 300 | 6 300 | 6 000 | 5 300 |
| **08** | 4 800 | 3 000 | 1 900 | 670 | 480 | 4 800 | 5 600 | 5 000 | 4 800 |
| **09** | 4 300 | 2 600 | 1 700 | 600 | 430 | 4 300 | 5 000 | 4 500 | 4 300 |
| **10** | 4 000 | 2 400 | 1 600 | 560 | 400 | 4 000 | 4 800 | 4 300 | 4 000 |
| **11** | 3 600 | 2 000 | 1 400 | 500 | 360 | 3 600 | 4 300 | – | 3 600 |
| **12** | 3 400 | 1 900 | 1 300 | 480 | 340 | 3 400 | 4 000 | – | 3 400 |
| **13** | 3 000 | 1 700 | 1 100 | 430 | 300 | 3 000 | – | – | 3 000 |
| **14** | 2 800 | 1 600 | 1 000 | 400 | 280 | – | – | – | – |
| **15** | 2 600 | 1 500 | 950 | 380 | 260 | – | – | – | 2 600 |
| **16** | 2 400 | 1 400 | 900 | 360 | 240 | – | – | – | – |
| **17** | 2 200 | 1 300 | 850 | 340 | 220 | – | – | – | – |
| **18** | 2 000 | 1 200 | 800 | 320 | 200 | – | – | – | – |
| **20** | 1 900 | 1 100 | 750 | 300 | 190 | – | – | – | – |

[1] For example: bearing size 06 includes all bearings based on a Y 206 bearing, such as YAR 206-2F, YAR 206-101-2F, YAR 206-102-2F, YAR 206-103-2F, YAR 206-104-2F

# Design of Y-bearing arrangements

## Axial displacement

Y-bearing units do not accommodate axial displacement of the shaft and are therefore not normally suitable for non-locating bearing (free unit) arrangements. The distance between bearing positions should therefore be short or the units should be supported by resilient sheet metal support surfaces or walls to prevent them from being subjected to excessive stresses as a result of thermal elongation of the shaft (→ **fig. 1**).

In applications where there are low speeds, light loads, and the distance between the bearing positions is too long or the operating temperatures too high and one bearing position has to accommodate thermal elongation of the shaft, the following arrangement is recommended.

The shaft on the non-locating side should be provided with one or two grooves 120° apart, to engage one of the following:

- grub screws with a finger, e.g. in accordance with ISO 4028:2003, but with fine thread according to **table 1**, secured by a nut and spring washer or star lock washer (→ **fig. 2**)
- flat head screws in accordance with ISO 1580:1994, but with fine thread according to **table 1**, locked with a spring or star lock washer (→ **fig. 3**)

The finger(s) and groove(s) accommodate changes in shaft length and prevent relative rotational movements between the shaft and bearing bore. To help provide trouble-free operation, the ends of the grub screws should be ground and the sliding surfaces in the shaft grooves coated with a lubricant paste.

**Fig. 1**

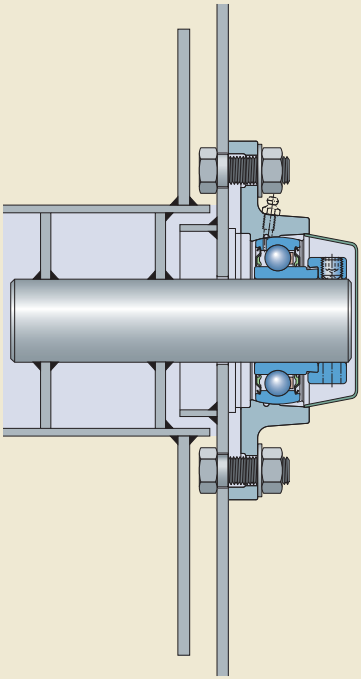


Fig. 2

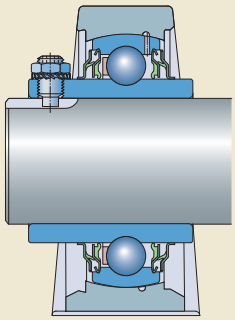


Fig. 3

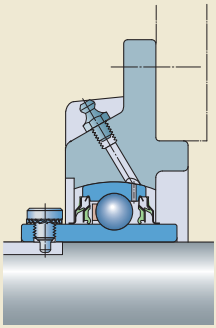
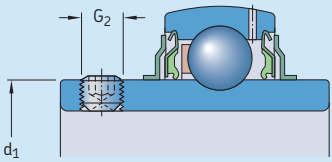


Table 1

**Threaded holes in the inner ring of YAR and YAT bearings**




| **Bearing size**[1] | **Outer diameter of inner ring** $d_1$ | **Threaded holes** YAR bearing with metric bore $G_2$ | YAR bearing with inch bore $G_2$ | YAT bearing with metric bore $G_2$ | YAT bearing with inch bore $G_2$ |
|---|---|---|---|---|---|
| – | mm | – | | | |
| **03** | 24,2 | M 6 × 0,75 | #10-32 UNF | M 6 × 0,75 | #10-32 UNF |
| **04** | 28,2 | M 6 × 0,75 | 1/4"-28 UNF | M 6 × 0,75 | 1/4"-28 UNF |
| **05** | 33,7 | M 6 × 0,75 | 1/4"-28 UNF | M 6 × 0,75 | 1/4"-28 UNF |
| **06** | 39,7 | M 6 × 0,75 | 1/4"-28 UNF | M 6 × 0,75 | 5/16"-24 UNF |
| **07** | 46,1 | M 6 × 0,75 | 5/16"-24 UNF | M 6 × 0,75 | 5/16"-24 UNF |
| **08** | 51,8 | M 8 × 1 | 5/16"-24 UNF | M 6 × 0,75 | 5/16"-24 UNF |
| **09** | 56,8 | M 8 × 1 | 5/16"-24 UNF | M 6 × 0,75 | 5/16"-24 UNF |
| **10** | 62,5 | M 10 × 1 | 3/8"-24 UNF | M 8 × 1 | 3/8"-24 UNF |
| **11** | 69,1 | M 10 × 1 | 3/8"-24 UNF | – | 3/8"-24 UNF |
| **12** | 75,6 | M 10 × 1 | 3/8"-24 UNF | – | 3/8"-24 UNF |
| **13** | 82,5 | M 10 × 1 | 3/8"-24 UNF | – | – |
| **14** | 87 | M 10 × 1 | 7/16"-20 UNF | – | – |
| **15** | 92 | M 10 × 1 | 7/16"-20 UNF | – | 3/8"-24 UNF |
| **16** | 97,4 | M 10 × 1 | 7/16"-20 UNF | – | 3/8"-24 UNF |
| **17** | 105 | M 12 × 1,5 | – | – | – |
| **18** | 112,5 | M 12 × 1,5 | – | – | – |
| **20** | 124,8 | M 12 × 1,5 | – | – | – |

[1] For example: bearing size 06 includes all bearings based on a Y 206 bearing, such as YAR 206-101-2F, YAR 206-102-2F, YAR 206-2F, YAR 206-103-2F, YAR 206-104-2F

## Misalignment

Y-bearing units can accommodate initial misalignment (→ **fig. 4**) of up to:

- 5° when relubrication is not required
- 2° when relubrication is required

Additionally, operational shaft deflections of a few minutes of arc can be permitted.

Y-bearing units with pressed steel housings cannot accommodate misalignment once the attachment bolts have been fully tightened, unless they are equipped with a rubber seating ring (→ **page 45**).

## Support surfaces

To maximize the service life of Y-bearing units, the support surfaces must be manufactured with:

- a roughness of $R_a \leq 12{,}5$ µm
- a flatness (planicity) tolerance to IT7 or IT8

When a heavy load, parallel to the housing base, acts on a Y-bearing unit (→ **fig. 5**) SKF recommends doweling the housing to the support surface. The position and size of the holes for the dowel pins are listed in the relevant product sections.

**Fig. 5**

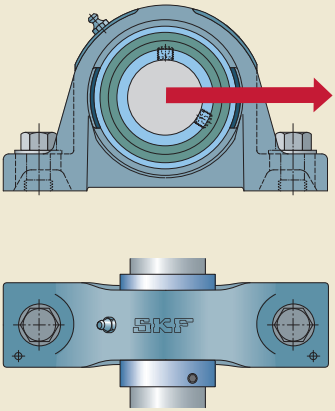
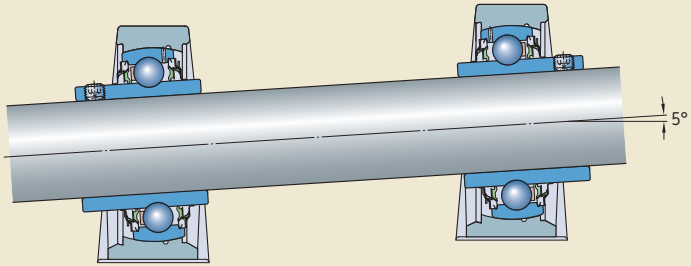



**Fig. 4**



## Attaching to the support surface

To attach Y-bearing units to the support surface, SKF recommends using 8.8 class bolts or studs and a washer to ISO 7089:2000 or 7090:2000 and a spring washer. Hexagonal head bolts in accordance with ISO 4014:1999 are appropriate. Alternatively, hexagonal socket head cap screws in accordance with ISO 4762:1988 can be used.

Appropriate fastener sizes are listed in the product tables.

## Shaft tolerances

Recommended fits for Y-bearings are listed in **table 2**.

For moderate loads (0,035 C < P ≤ 0,05 C) the shaft seats for Y-bearings with grub screws or an eccentric locking collar should be machined to an h7 tolerance. For light loads and low speeds, an h8 shaft tolerance is sufficient and, for very simple applications, h9 to h11 shaft tolerances may be used. **Fig. 6** illustrates the location of the most commonly used ISO shaft tolerance grades for Y-bearings with grub screws or an eccentric locking collar. The values of these ISO tolerances are listed in **table 3a**, **page 44**.

**Fig. 6**

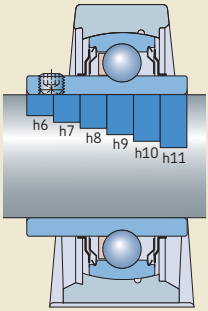



**Table 2**

**Recommended fits**

| Operating conditions | Tolerance |
|---|---|
| **Y-bearings with grub screws or an eccentric locking collar** | |
| P > 0,05 C and/or high speeds | h6 |
| 0,035 C < P ≤ 0,05 C | h7 |
| 0,02 C < P ≤ 0,035 C and/or low speeds | h8 |
| Simple bearing arrangements or P ≤ 0,02 C | h9 – h11 |
| **Y-bearings with a tapered bore on an adapter sleeve or Y-bearings with SKF ConCentra locking** | |
| All loads and speeds | h9/IT5 |
| **Y-bearings with a standard inner ring** | |
| P > 0,035 C | |
| Shaft diameter ≤ 17 mm | j5 |
| Shaft diameter ≥ 20 mm | k5 |
| P ≤ 0,035 C | |
| Shaft diameter ≥ 20 mm | j6 |

**Table 3b**

**ISO shaft tolerances for Y-bearings with a standard inner ring**

| Shaft diameter d | | Deviations of shaft diameter | | | | | |
|---|---|---|---|---|---|---|---|
| | | j5 | | j6 | | k5 | |
| | | Deviation | | | | | |
| over | incl. | high | low | high | low | high | low |
| mm | | µm | | | | | |
| **10** | **18** | +5 | –3 | +8 | –3 | +9 | +1 |
| **18** | **30** | +5 | –4 | +9 | –4 | +11 | +2 |
| **30** | **50** | +6 | –5 | +11 | –5 | +13 | +2 |
| **50** | **80** | +6 | –7 | +12 | –7 | +15 | +2 |

For Y-bearings on an adapter sleeve or Y-bearings with SKF ConCentra locking, a shaft seat machined to h9/IT5 tolerance is adequate. The values for h9 ISO tolerances are listed in **table 3a**.

For Y-bearings with a standard inner ring, the same recommendations apply as for standard deep groove ball bearings (→ **table 2**, **page 43**). The values of these ISO tolerances are listed in **table 3b**.

**Table 3a**

**ISO shaft tolerances for Y-bearings, except for Y-bearings with a standard inner ring**

| Shaft diameter d | | Deviations of shaft diameter | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | h6 | | h7 | | h8 | | h9 | | h10 | | h11 | |
| | | Deviation | | | | | | | | | | | |
| over | incl. | high | low | high | low | high | low | high | low | high | low | high | low |
| mm | | µm | | | | | | | | | | | |
| **10** | **18** | 0 | –11 | 0 | –18 | 0 | –27 | 0 | –43 | 0 | –70 | 0 | –110 |
| **18** | **30** | 0 | –13 | 0 | –21 | 0 | –33 | 0 | –52 | 0 | –84 | 0 | –130 |
| **30** | **50** | 0 | –16 | 0 | –25 | 0 | –39 | 0 | –62 | 0 | –100 | 0 | –160 |
| **50** | **80** | 0 | –19 | 0 | –30 | 0 | –46 | 0 | –74 | 0 | –120 | 0 | –190 |
| **80** | **120** | 0 | –22 | 0 | –35 | 0 | –54 | 0 | –87 | 0 | –140 | 0 | –220 |

# Rubber seating rings

Rubber seating rings in the RIS 2 series (→ **fig. 7**) are primarily intended to "cushion" Y-bearings in pressed steel plummer block housings. Located between the bearing outer ring and housing bore, they dampen vibration and noise (→ **fig. 8**) and enable the bearings to be displaced slightly in their housings to accommodate small shaft elongation or misalignment.

For some applications, rubber seating rings may be fitted to the Y-bearing outer rings to convert Y-bearings to support rollers, and serve as tyres, and to run quietly and protect the counter surfaces (→ **fig. 9**).

The seating rings in the RIS 2 series are made from acrylonitrile-butadiene rubber (NBR) and have a convex sphered outside diameter. The rings can operate at temperatures from –30 to +100 °C.

The product tables for Y-bearing units with a pressed steel plummer block housing are listed with their individual components, e.g. housing, Y-bearing and rubber seating ring.

The designation and the dimensions of rubber seating rings are listed in **table 4**.

Fig. 7



Fig. 8

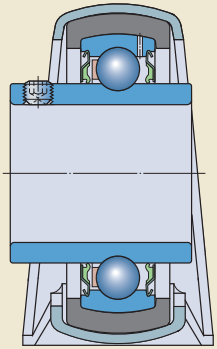


Fig. 9

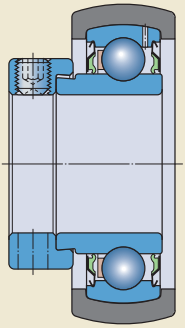
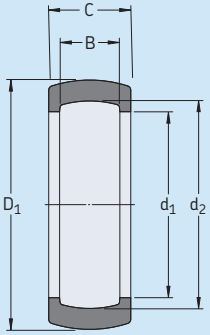


Table 4

**Rubber seating rings**




| **Y-bearing** Outside diameter D | **Rubber seating ring Dimensions** $D_1$ | $d_1$ | $d_2$ | B | C | **Mass** | **Designation** | **Suitable Y-bearing** Size |
|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | g | – | – |
| **40** | 47,3 | 35,5 | 39,8 | 12 | 18 | 12 | **RIS 203** | 03 |
| **47** | 52,3 | 41,2 | 46,8 | 14 | 19 | 11,5 | **RIS 204** | 04 |
| **52** | 62,3 | 46,4 | 51,8 | 15 | 20,5 | 26,5 | **RIS 205** | 05 |
| **62** | 72,3 | 54,6 | 61,8 | 18 | 21,5 | 31 | **RIS 206 A** | 06 |
| **72** | 80,3 | 63,7 | 71,8 | 19 | 23 | 32 | **RIS 207 A** | 07 |
| **80** | 85,3 | 70,7 | 79,7 | 21 | 24 | 26 | **RIS 208 A** | 08 |

# End covers

To protect the bearing arrangement at the end of a shaft, and to avoid the possibility of an accident caused by an exposed shaft end, end covers are available for all composite Y-bearing units and for most cast Y-bearing units. The end covers are made from polypropylene (PP) , have good resistance to most chemicals and can withstand operating temperatures up to 100 °C. They can be snapped into the recesses provided in the housing bore.

Three different end cover designs are available:

- ECY, a black end cover for shaft ends (→ **fig. 10**)
- ECW (→ **fig. 12**) for composite, cast iron, zinc-coated and stainless steel SKF Food Line Y-bearing units
- ECL (**fig. 13**) for some of the composite SKF Food Line Y-bearing units identified by the suffix L in the designation

In the product tables, the end covers are listed together with those units that can accommodate them. The designation of the end cover is listed together with the distance $A_5$ that the end cover protrudes from the housing (→ **fig. 11**).

For additional information about the end covers for Y-bearing units for the food industry refer to *SKF Food Line Y-bearing units* brochure (PUB BU/P1 10844/1 EN – September 2011).

**Fig. 10**




**Fig. 11**

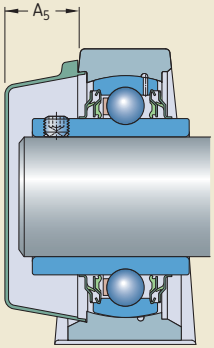



**Fig. 12**

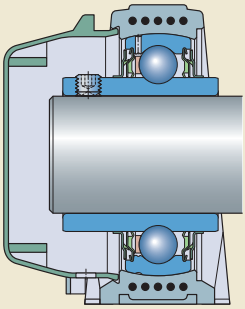
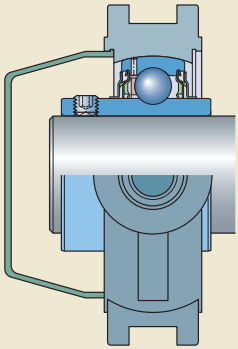


**Fig. 13**



# Lubrication and maintenance

## Grease fills

Standard SKF Y-bearings and Y-bearing units are filled with a high-quality, long-lasting mineral oil based grease that has a lithium-calcium thickener. This grease has a consistency of 2 on the NLGI scale. This grease is extremely water resistant and will provide long service life even under heavy loads. The properties of this grease are listed in **table 1**.

YAR 2-2RF/HV series Y-bearings made of stainless steel and YAR 2-2RF/VE495 series Y-bearings with zinc coated rings and stainless steel flingers are filled with a special food-grade grease. This grease fulfils the requirements listed in the *Guidelines of section 21 CFR 178.3570* of the FDA (US Food and Drug Administration) regulations. It is approved by the USDA (United States Department of Agriculture) for Category H1 use (occasional contact with food stuffs). This food-grade grease shows very good rust inhibiting properties, good water resistance and anti-wear characteristics as well as high ageing and oxidation resistance. The properties of this grease are listed in **table 1**.

Y-bearings with a square or hexagonal bore are filled with a premium quality grease, which has good water and corrosion resistant properties and provides excellent lubrication at high operating temperatures (designation suffix VT357). The properties of this grease are listed in **table 1**.

## Relubrication

Relubrication of Y-bearing units is not required if:

- loads and speeds are moderate
- vibration does not occur
- operating temperatures are between 40 and 55 °C

Y-bearing units with a pressed steel housing are not equipped with a grease fitting and therefore cannot be relubricated.

Relubrication will enable the bearing to realize maximum service life in cases and applications where Y-bearings or Y-bearing units:

- are exposed to high humidity or severe contamination
- have to accommodate heavy loads
- have to operate at high speeds or at temperatures above 55 °C for extended periods

When relubricating, grease should be pumped slowly into the running bearing until fresh grease starts to escape from the seal.

**NOTE:** Excessive pressure from pumping too quickly may damage the seals.

Detailed information about SKF bearing greases can be found in the catalogue MP3000 *SKF Maintenance and Lubrication Products* or online at www.skf.com.

## Relubricating Y-bearing units with cast housings

To relubricate Y-bearing units with cast housings, SKF LGWA 2, LGMT 2 or LGMT 3 greases can be used. Each of these greases is fully compatible with the original grease fill from the factory.

Y-bearing units with a cast housing for inch shafts larger than 1 inch (i.e. units comprising a housings with designation suffix U) are equipped with a grease fitting with a 1/8 NPT thread. All other Y-bearing units with a cast housing are equipped with a grease fitting with a 1/4-28 SAE-LT thread. The hole for the grease fitting has a 1/4-28 UNF thread, which can be changed to G 1/4, using an LAPN 1/4 UNF adapter.

**Table 1**

**Lubricating greases**

| **Technical specification** | **Grease fills in** standard Y-bearings, standard Y-bearing units | YAR 2-2RF/HV and YAR 2-2RF/VE495 series Y-bearings, Y-bearing units for the food industry | YHB 2-2LS8W/VT357 and YHC 2-2LS8W/VT357 series Y-bearings |
|---|---|---|---|
| **Thickener** | Lithium-calcium soap | Aluminium-complex soap | Lithium-complex soap |
| **Base oil** | Mineral oil | Synthetic hydrocarbon oil | Mineral oil |
| **Colour** | Yellowish brown | White | Amber |
| **Temperature range** [°C] (continuous operation) | –30 to +120[1)] | –45 to +150[2)] | –20 to +140[3)] |
| **Kinematic viscosity** [mm²/s] of base oil at 40 °C/100 °C | 190/15 | 100/14,4 | 110/13 |
| **Consistency** (to NLGI scale) | 2 | 2 | 3 |
| **Other** | Long life grease | Fulfils the requirements of the *Guidelines of section* 21 CFR 178.3570 of the FDA (US Food and Drug Administration) regulations | – |

[1)] The temperature range for reliable operation in accordance with the SKF traffic light concept is between 10 and 120 °C.
[2)] The temperature range for reliable operation in accordance with the SKF traffic light concept is between 20 and 150 °C.
[3)] The temperature range for reliable operation in accordance with the SKF traffic light concept is between 50 and 140 °C.

# Relubrication intervals

The relubrication interval $t_f$ can be estimated from **diagram 1** as a function of the rotational speed n (r/min), the bearing mean diameter $d_m$ (→ **table 2**) and the operating temperature (°C).

The recommended intervals correspond to a time when 90% of the bearings are still reliably lubricated, and represent $L_{10}$ grease life. When the $L_{10}$ grease life is equivalent to or higher than the rating life of the Y-bearing, the bearing is considered to be lubricated for life and relubrication is not required.

The intervals obtained from **diagram 1** are valid for Y-bearings and Y-bearing units filled with the standard high quality long lasting mineral oil based grease, as well as for food-grade grease:

- on horizontal shafts
- in stationary machines
- P ≤ 0,05 C

If operating conditions differ, reduce the relubrication intervals obtained from **diagram 1** as follows:

- on vertical shafts by 50%
- at heavier loads, e.g. at P > 0,10 C, by roughly 50%

In severe, very dirty or damp environments, more frequent relubrication might be necessary. When the operating temperatures are constantly below 40 °C, the grease life is shortened because oil separation is reduced.

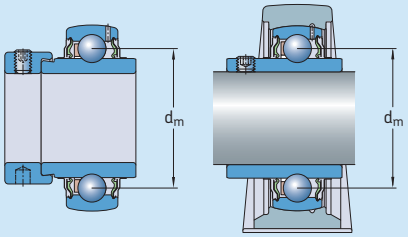
Vibration can have a negative influence on grease life too. The extent cannot be quantified exactly, but it can be noticeable if the normal operating temperature increases.

The values for reducing the relubrication intervals are estimates. If in doubt, contact the SKF application engineering service.

In cases where machines and equipment are used for a limited period of time, SKF recommends relubricating each bearing at the end of the operational period, i.e. immediately before being laid up.

**Table 2**

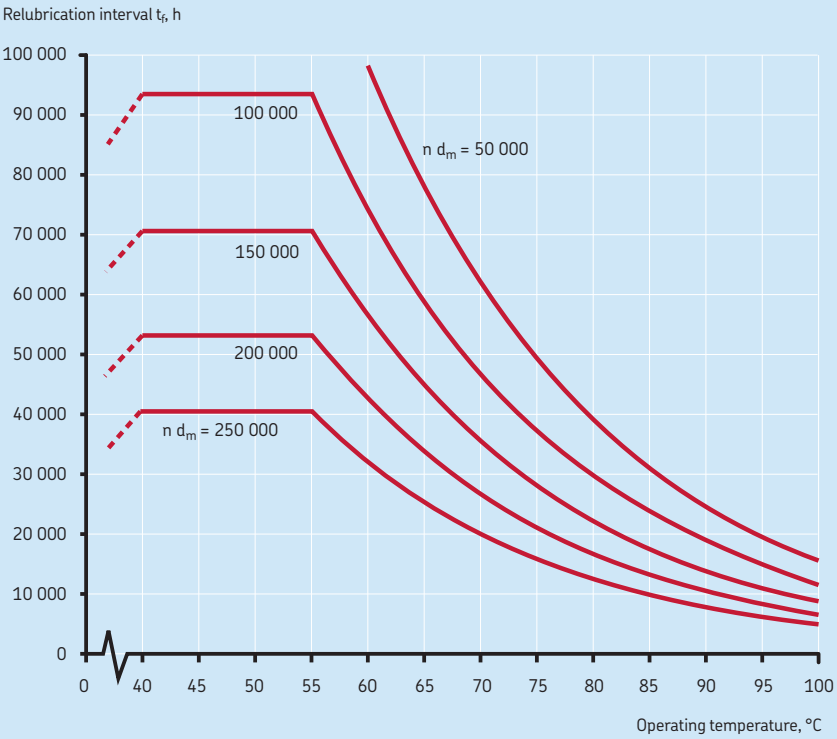
**Bearing mean diameter $d_m$**




| Bearing size[1] | Bearing mean diameter $d_m$ |
|---|---|
| – | mm |
| **03** | 28,5 |
| **04** | 33,5 |
| **05** | 39 |
| **06** | 46 |
| **07** | 53,5 |
| **08** | 60 |
| **09** | 65 |
| **10** | 70 |
| **11** | 77,5 |
| **12** | 85 |
| **13** | 92,5 |
| **14** | 97,5 |
| **15** | 102,5 |
| **16** | 110 |
| **17** | 117,5 |
| **18** | 126 |
| **20** | 141 |

[1] For example: bearing size 06 includes all bearings based on a Y 206 bearing, such as YAR 206-101-2F, YAR 206-102-2F, YAR 206-2F, YAR 206-103-2F, YAR 206 104¬ 2F

**Diagram 1**


Relubrication interval $t_f$, h
100 000
90 000
80 000
70 000
60 000
50 000
40 000
30 000
20 000
10 000
0
100 000
150 000
200 000
n $d_m$ = 250 000
n $d_m$ = 50 000
0
40
45
50
55
60
65
70
75
80
85
90
95
100
Operating temperature, °C

# Mounting instructions

## Mounting instructions – general

To provide proper bearing performance and prevent premature failure, skill and cleanliness when mounting Y-bearings or Y-bearing units are necessary. As precision components, they should be handled carefully when mounting. It is also important to choose the appropriate method of mounting and to use the correct tools.

The method used for mounting a Y-bearing unit depends on:

- the overall machine design
- the Y-bearing housing design
- the method used to attach the unit to the shaft

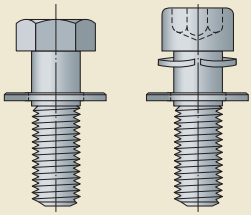
NOTE: Failure to carefully follow applicable mounting instructions can result in premature bearing failure or improper performance. For further information, contact the SKF application engineering service.

Detailed mounting instructions can be found on the following pages.

Y-bearings, Y-housings or Y-bearing units should not be removed from their original packaging until immediately before they are mounted.

Before installing a Y-bearing unit, check that the shaft is clean and free of any burrs and that the shaft seat is within tolerance. Also be sure that the support surfaces are clean and free of burrs and that the flatness is within the IT7 tolerance grade and that the roughness $R_a \leq 12{,}5$ µm.

Fig. 1



### Tools

To mount or dismount Y-bearing units, the following tools are required:

- a hexagonal key (hex wrench) to tighten or loosen grub (set) screws (→ **table 1**, **page 54**)
- a hook spanner to tighten or loosen the lock nut on an adapter sleeve (→ **table 2**, **page 55**)
- a hook spanner with a stud to tighten or loosen the eccentric locking collar
- a spanner or hexagonal key to tighten or loosen the fasteners

The hook spanners are part of the comprehensive SKF range of maintenance products. Detailed information can be found in the printed catalogue *SKF Maintenance and Lubrication Products* or online at www.skf.com.

### Attaching Y-bearing units to the support base

To reduce vibration and enable heat to dissipate from the unit, the housing must be firmly attached to the support base. To attach Y-bearing units to the support surface, SKF recommends using 8.8 class bolts or studs and a washer to ISO 7089:2000 or 7090:2000 and a spring

washer. Hexagonal head bolts in accordance with ISO 4014:1999 are appropriate. Alternatively, hexagonal socket head cap screws in accordance with ISO 4762:1988 can be used (→ **fig. 1**).

## Assembling units

In cases where the Y-bearing and composite or cast Y-housing are not supplied as a unit, the first step is to assemble the bearing into the housing. To do this, start by removing the locking collar if the bearing has one. Then insert the bearing into the filling slot in the housing bore (→ **fig. 2**) and with a round piece of wood or pipe, swivel the bearing into position so that the locking device is facing in the same direction as the filling slots (→ **fig. 3**). When installing standard bearings, make sure that the relubrication hole in the bearing on the side of the locking device does not coincide with the filling slot in the housing, otherwise grease leakage may result (→ **fig. 4**).

Fig. 2



Fig. 3



Fig. 4

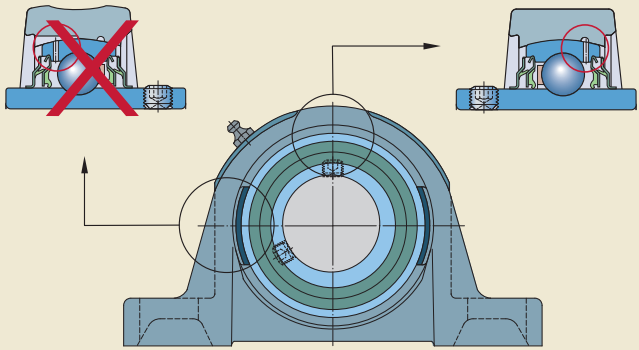
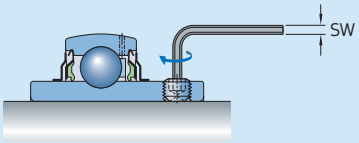
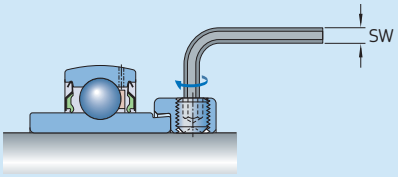


Table 1

**Hexagonal keys to tighten grub screws in inner rings or eccentric locking collars – sizes and tightening torques**



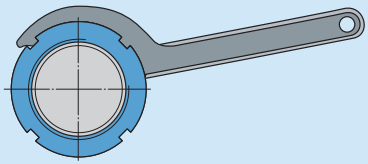

| Bearing size[1] | Bearing or unit with metric bore | | Bearing or unit with inch bore | |
|---|---|---|---|---|
| | Hexagonal key size SW | Tightening torque | Hexagonal key size SW | Tightening torque |
| – | mm | Nm | inch | Nm |
| **Bearings in the YAR series, unit with designation suffix TF, TR** | | | | |
| **03** | 3 | 4 | 3/32 | 4 |
| **04** | 3 | 4 | 1/8 | 4 |
| **05** | 3 | 4 | 1/8 | 4 |
| **06** | 3 | 4 | 1/8 | 4 |
| **07** | 3 | 4 | 5/32 | 6,5 |
| **08** | 4 | 6,5 | 5/32 | 6,5 |
| **09** | 4 | 6,5 | 5/32 | 6,5 |
| **10** | 5 | 16,5 | 3/16 | 16,5 |
| **11** | 5 | 16,5 | 3/16 | 16,5 |
| **12** | 5 | 16,5 | 3/16 | 16,5 |
| **13** | 5 | 16,5 | 3/16 | 16,5 |
| **14** | 5 | 16,5 | 7/32 | 28,5 |
| **15** | 5 | 16,5 | 7/32 | 28,5 |
| **16** | 5 | 16,5 | 7/32 | 28,5 |
| **17** | 6 | 28,5 | – | – |
| **18** | 6 | 28,5 | – | – |
| **20** | 6 | 28,5 | – | – |

| Bearing size[1] | Bearing or unit with metric bore | | Bearing or unit with inch bore | |
|---|---|---|---|---|
| | Hexagonal key size SW | Tightening torque | Hexagonal key size SW | Tightening torque |
| – | mm | Nm | inch | Nm |
| **Bearings in the YAT series, units with designation suffix RM** | | | | |
| **03** | 3 | 4 | 3/32 | 4 |
| **04** | 3 | 4 | 1/8 | 4 |
| **05** | 3 | 4 | 1/8 | 4 |
| **06** | 3 | 4 | 5/32 | 6,5 |
| **07** | 3 | 4 | 5/32 | 6,5 |
| **08** | 3 | 4 | 5/32 | 6,5 |
| **09** | 3 | 4 | 5/32 | 6,5 |
| **10** | 4 | 6,5 | 5/32 | 6,5 |
| **11** | – | – | 3/16 | 16,5 |
| **12** | – | – | 3/16 | 16,5 |
| **15** | – | – | 3/16 | 16,5 |
| **16** | – | – | 3/16 | 16,5 |
| **Bearings in the YET or YEL series, units with designation suffix FM or WF** | | | | |
| **03** | 3 | 4 | 1/8 | 4 |
| **04** | 3 | 4 | 1/8 | 4 |
| **05** | 3 | 4 | 1/8 | 4 |
| **06** | 4 | 6,5 | 5/32 | 6,5 |
| **07** | 5 | 16,5 | 3/16 | 16,5 |
| **08** | 5 | 16,5 | 3/16 | 16,5 |
| **09** | 5 | 16,5 | 3/16 | 16,5 |
| **10** | 5 | 16,5 | 3/16 | 16,5 |
| **11** | 5 | 16,5 | 7/32 | 28,5 |
| **12** | 5 | 16,5 | 7/32 | 28,5 |

[1] For example: bearing size 06 includes all bearings based on a Y 206 bearing, such as YAR 206-101-2F, YAR 206-102-2F, YAR 206-2F, YAR 206-103-2F, YAR 206-104-2F

Table 2

**Hook spanner size and tightening torque for Y-bearings and Y-bearing units on an adapter sleeve**



| Designation<br>Y-bearing + adapter sleeve | Shaft diameter<br>d | | Hook spanner | Tightening torque<br>min | <br>max |
|---|---|---|---|---|---|
| – | mm | in | – | Nm | |
| **Bearings in the YSA series<br>Units with designation suffix KF** | | | | | |
| YSA 205-2FK + HE 2305 | – | 3/4 | HN 5 | 13 | 17 |
| YSA 205-2FK + H 2305 | 20 | – | HN 5 | 13 | 17 |
| YSA 206-2FK + HA 2306 | – | 15/16 | HN 6 | 22 | 28 |
| YSA 206-2FK + H 2306 | 25 | – | HN 6 | 22 | 28 |
| YSA 206-2FK + HE 2306 | – | 1 | HN 6 | 22 | 28 |
| YSA 207-2FK + H 2307 | 30 | – | HN 7 | 27 | 33 |
| YSA 207-2FK + HA 2307 | – | 1 3/16 | HN 7 | 27 | 33 |
| YSA 208-2FK + HE 2308 | – | 1 1/4 | HN 8 | 35 | 45 |
| YSA 208-2FK + H 2308 | 35 | – | HN 8 | 35 | 45 |
| YSA 209-2FK + HA 2309 | – | 1 7/16 | HN 9 | 45 | 55 |
| YSA 209-2FK + HE 2309 | – | 1 1/2 | HN 9 | 45 | 55 |
| YSA 209-2FK + H 2309 | 40 | – | HN 9 | 45 | 55 |
| YSA 210-2FK + HS 2310 | – | 1 5/8 | HN 10 | 55 | 65 |
| YSA 210-2FK + HA 2310 | – | 1 11/16 | HN 10 | 55 | 65 |
| YSA 210-2FK + HE 2310 | – | 1 3/4 | HN 10 | 55 | 65 |
| YSA 210-2FK + H 2310 | 45 | – | HN 10 | 55 | 65 |
| YSA 211-2FK + HA 2311 B | – | 1 15/16 | HN 11 | 65 | 85 |
| YSA 211-2FK + H 2311 | 50 | – | HN 11 | 65 | 85 |
| YSA 211-2FK + HE 2311 | – | 2 | HN 11 | 65 | 85 |
| YSA 212-2FK + HS 2312 | – | 2 1/8 | HN 12 | 85 | 115 |
| YSA 212-2FK + H 2312 | 55 | – | HN 12 | 85 | 115 |
| YSA 213-2FK + HA 2313 | – | 2 3/16 | HN 13 | 110 | 150 |
| YSA 213-2FK + HE 2313 | – | 2 1/4 | HN 13 | 110 | 150 |
| YSA 213-2FK + H 2313 | 60 | – | HN 13 | 110 | 150 |
| YSA 213-2FK + HS 2313 | – | 2 3/8 | HN 13 | 110 | 150 |

# Mounting instructions for Y-bearing plummer block units

**with a composite or cast housing and grub screws**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Slide the Y-bearing plummer (pillow) block unit onto the shaft with its locking device facing outwards.
3. Position the Y-bearing unit on the support surface. Fit the attachment bolts or nuts but do not tighten them.
4. Mount the other Y-bearing plummer block unit on the other end of the shaft, following steps 2 and 3.
5. Carefully align both Y-bearing units, using the shaft. Fully tighten the attachment bolts or nuts in the housing base.
6. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
7. Tighten the grub screws in the inner rings of both units to the tightening torque indicated in **table 1** on **page 54** (**→ fig. 1**).
8. If applicable, snap the end cover(s) into place.



**Fig. 1**

# Mounting instructions for Y-bearing plummer block units

**with a cast housing and an eccentric locking collar**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. With the eccentric locking collar removed, slide the Y-bearing plummer block unit onto the shaft with the locking device facing outwards.
3. Position the Y-bearing unit on the support surface. Fit the attachment bolts or nuts but do not tighten them.
4. Mount the other Y-bearing plummer block unit on the other end of the shaft, following steps 2 and 3.
5. Carefully align both Y-bearing units, using the shaft. Fully tighten the attachment bolts or nuts in the housing base.
6. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
7. Place the eccentric locking collars on the inner ring extension of both Y-bearing units and snug tighten them in the main direction of rotation (→ **fig. 1**).
8. Tighten the locking collars to their final position, using a hook spanner with a stud engaging the hole in the circumference of the collar (→ **fig. 2**).
9. Tighten the grub screw in the eccentric locking collar of both Y-bearing units (→ **fig. 3**) to the tightening torque indicated in **table 1** on **page 54**.
10. If applicable, snap the end cover(s) into place.

Fig. 1



Fig. 2



Fig. 3



# Mounting instructions for Y-bearing plummer block units

**with a cast housing and an adapter sleeve**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Determine the position of the adapter sleeve on the shaft (→ **fig. 1**).
3. Remove the nut and the locking washer from the adapter sleeve (→ **fig. 2**).
4. Wipe the preservative from the bore and outside surface of the sleeve.
5. Expand the adapter sleeve slightly by inserting a screwdriver in the slot of the sleeve and slide the adapter sleeve into position on the shaft (→ **fig. 3**).
6. Slide the Y-bearing plummer block unit up onto the adapter sleeve with the large end of the tapered bore leading, but do not push it.
7. Install the locking washer and screw the lock nut onto the adapter sleeve until the Y-bearing unit is firmly in position on the sleeve.
8. Further tighten the lock nut using one of the following:
   - a hook spanner in the HN series to a tightening angle of about 70° (→ **fig. 4**)
   - a TMHN lock nut spanner to a tightening angle of about 70°
   - a torque wrench to the tightening torque indicated in **table 2** on **page 55**

   Make sure that while tightening the nut, the sleeve does not rotate on the shaft.
9. Lock the nut in position by bending down a tab on the locking washer in one of the slots provided around the circumference of the nut (→ **fig. 5**).
10. Mount the other Y-bearing plummer block unit on the other end of the shaft, following steps 2 through 9.
11. Position the Y-bearing units on their support surfaces. Fit the attachment bolts or nuts but do not tighten them.
12. Carefully align both Y-bearing units, using the shaft and, if possible, turn it a few times. Then tighten the attachment bolts or nuts.
13. If applicable, snap the end cover(s) into place.

Fig. 1

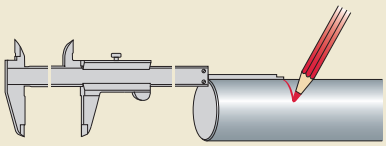


Fig. 2

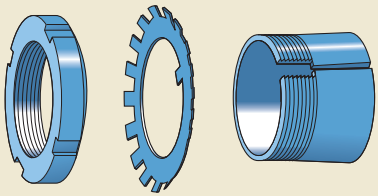


Fig. 3



Fig. 4



Fig. 5



# Mounting instructions for Y-bearing plummer block units

**with a pressed steel housing and grub screws**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Slide the Y-bearings with the locking device facing outward onto the shaft – at both ends. Install the rubber seating ring on the outside diameter of the bearing (optional).
3. Place the base of each housing on its support surface.
4. Place the shaft and Y-bearings into position in each housing base. Then, place the housing caps over the bearings (→ **fig. 1**) and install the attachment bolts or nuts.
5. Carefully align both Y-bearing units, using the shaft. Then, tighten the attachment bolts or nuts.
6. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
7. Tighten the grub screws in the inner ring of both bearings (→ **fig. 2**) to the tightening torque indicated in **table 1** on **page 54**.

Fig. 1



Fig. 2



# Mounting instructions for Y-bearing plummer block units

**with a pressed steel housing and an eccentric locking collar**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. With the eccentric locking collar removed, slide the Y-bearings onto both shaft ends with the locking device facing outwards. Install the rubber seating ring on the outside diameter of the bearing (optional).
3. Place the base of each housing on its support surface.
4. Place the shaft and Y-bearings into position in each housing base. Then, place the housing caps over the bearings (→ **fig. 1**) and install the attachment bolts or nuts.
5. Carefully align both Y-bearing units, using the shaft. Then, tighten the attachment bolts or nuts.
6. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
7. Place the eccentric locking collars on the inner ring extension of both Y-bearings and snug tighten them in the main direction of rotation (→ **fig. 2**).
8. Tighten the locking collars to their final position, using a hook spanner with a stud engaging the hole in the circumference of the collar (→ **fig. 3**).
9. Tighten the grub screw in the eccentric locking collar of both Y-bearings (→ **fig. 4**) to the tightening torque indicated in **table 1** on **page 54**.


Fig. 1


Fig. 2


Fig. 3


Fig. 4

# Mounting instructions for flanged Y-bearing units

**with a composite (Y-TECH) or cast housing and grub screws**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Slide the flanged Y-bearing unit onto the shaft.
3. Fasten the Y-bearing unit securely to the machine wall.
4. Mount the other flanged Y-bearing unit to the opposite end of the shaft, following steps 2 and 3.
5. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
6. Tighten the grub screws on the inner ring of both units (**→ fig. 1**) to the tightening torque indicated in **table 1** on **page 54**.
7. If applicable, snap the end cover(s) into place.

**Fig. 1**



# Mounting instructions for flanged Y-bearing units

**with a composite (Y-TECH) or cast housing and an eccentric locking collar**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. With the eccentric locking collar removed, slide the flanged Y-bearing unit onto the shaft with the locking device facing outwards.
3. Fasten the Y-bearing unit securely to the machine wall.
4. Mount the other flanged Y-bearing unit to the opposite end of the shaft, following steps 2 and 3.
5. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
6. Place the eccentric locking collars on the inner ring of both Y-bearings and snug tighten them in the main direction of rotation (→ **fig. 1**).
7. Tighten the locking collars to their final position using a hook spanner with a stud engaging the hole in the circumference of the collar (→ **fig. 2**).
8. Tighten the grub screw in the eccentric locking collar of both units (→ **fig. 3**) to the tightening torque indicated in **table 1** on **page 54**.
9. If applicable, snap the end cover(s) into place.

Fig. 1



Fig. 2



Fig. 3



# Mounting instructions for flanged Y-bearing units

**with a cast housing and an adapter sleeve**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Determine the position of the adapter sleeve on the shaft (→ **fig. 1**). Take into consideration that later during mounting
   - the Y-bearing unit will move axially on the sleeve or vice versa
   - the shaft will move axially against the Y-bearing unit.

   This is particularly important when mounting the second Y-bearing unit.
3. Remove the nut and locking washer from the adapter sleeve (→ **fig. 2**).
4. Wipe the preservative from the bore and outside surface.
5. Expand the adapter sleeve slightly by inserting a screwdriver in the slot of the sleeve and slide the adapter sleeve into position on the shaft (→ **fig. 3**).
6. Slide the Y-bearing unit up onto the adapter sleeve with the large end of the tapered bore leading, but do not push it.
7. Fasten the Y-bearing unit securely to the machine wall.
8. Install the locking washer and screw the lock nut onto the adapter sleeve until the Y-bearing unit is firmly in position on the sleeve.
9. Further tighten the lock nut using one of the following:
   - a hook spanner in the HN series to a tightening angle of about 70° (→ **fig. 4**)
   - a TMHN lock nut spanner to a tightening angle of about 70°
   - a torque wrench to the tightening torque indicated in **table 2** on **page 55**

   Make sure that while tightening the nut, the sleeve does not rotate on the shaft.
10. Lock the nut in position by bending down a tab on the locking washer into one of the slots provided around the circumference of the nut (→ **fig. 5**).
11. Mount the second Y-bearing unit at the other end of the shaft, following steps 2 through 9.
12. Make sure the shaft turns smoothly and the bearings are not jammed in place. If necessary, remove the last Y-bearing unit to be mounted, determine a new installation position for the adapter sleeve on the shaft and mount the Y-bearing unit again.
13. If the shaft turns smoothly, secure the Y-bearing unit on the adapter sleeve by bending down a tab on the locking washer into one of the slots provided around the circumference of the nut (→ **fig. 5**).
14. If applicable, snap the end cover(s) into place.

Fig. 1

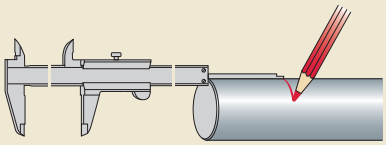


Fig. 2

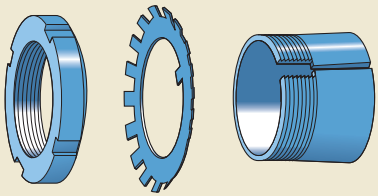


Fig. 3



Fig. 4



Fig. 5



# Mounting instructions for flanged Y-bearing units

**with a pressed steel housing and grub screws**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Place one housing half into position on the machine wall with threaded fasteners (→ **fig. 1**).
3. With the locking device facing outward, slide the Y-bearing onto the shaft and into the housing half.
4. Place the second housing half into position over the Y-bearing (→ **fig. 2**).
5. Fit the threaded fasteners (nuts or bolts), but do not tighten them.
6. Mount the Y-bearing unit at the other end of the shaft, following steps 2 through 5.
7. Tighten the threaded fasteners holding the flanged units in place.
8. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
9. Tighten the grub screws on both units (→ **fig. 3**) to the tightening torque indicated in **table 1** on **page 54**.

Fig. 1



Fig. 2



Fig. 3



# Mounting instructions for flanged Y-bearing units

**with a pressed steel housing and an eccentric locking collar**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Place one housing half into position on the machine wall with threaded fasteners (→ **fig. 1**).
3. With the eccentric locking collar removed, slide the Y-bearing onto the shaft and into the housing half with the locking device facing outwards.
4. Place the second housing half into position over the Y-bearing (→ **fig. 2**).
5. Fit the threaded fasteners (nuts or bolts), but do not tighten them.
6. Mount the other Y-bearing unit at the other end of the shaft, following steps 2 through 5.
7. Tighten the threaded fasteners holding the flanged units in place.
8. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
9. Place the eccentric locking collars on the inner ring extension of both Y-bearings and snug tighten them in the main direction of rotation (→ **fig. 3**).
10. Tighten the locking collars to their final position using a hook spanner with a stud engaging the hole in the circumference of the collar (→ **fig. 4**).
11. Tighten the grub screw in the eccentric locking collar of both units (→ **fig. 5**) to the tightening torque indicated in **table 1** on **page 54**.

Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



# Mounting instructions for Y-bearing take-up units

**with a cast housing and grub screws**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. Slide the Y-bearing take-up units onto both shaft ends with the locking device facing outward.
3. Install the shaft and Y-bearing take-up units into the take-up frames and connect the adjustment screws via the cast hole in the units.
4. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
5. Tighten the grub screws on both Y-bearing take-up units to the tightening torque indicated in **table 1** on **page 54**.
6. If applicable, snap the end cover(s) into place.

# Mounting instructions for Y-bearing take-up units

**with a cast housing and an eccentric locking collar**

1. Mount any components that are on the shaft between the two Y-bearing units.
2. With the eccentric locking collar removed, slide the Y-bearing take-up units onto both shaft ends with the locking device facing outwards.
3. Install the shaft with the Y-bearing take-up units into the take-up frames and connect the adjustment screws via the cast hole in the units.
4. Align the shaft in the bearing arrangement axially and – if possible – turn it a few times.
5. Place the eccentric locking collars on the inner ring extension of both Y-bearing units and snug tighten them in the main direction of rotation.
6. Tighten the locking collars to their final position using a hook spanner with a stud engaging the hole in the circumference of the collar.
7. Tighten the grub screw in the eccentric locking collar of both Y-bearing units to the tightening torque indicated in **table 1** on **page 54**.
8. If applicable, snap the end cover(s) into place.

# Storing Y-bearings and Y-bearing units

Y-bearings and Y-bearing units are normally treated with a rust preventive compound and can be stored in their original unopened package for a number of years. However, they should be kept in a vibration-free, dry environment where the relative humidity does not exceed 60% and the temperature is reasonably constant.

When Y-bearings and Y-bearing units are stored for long periods, they may have a higher initial starting torque than Y-bearings or units recently delivered from the factory. Also, the lubricating properties of the grease may have deteriorated after long periods of storage.

Y-bearings and Y-bearing units, which are no longer in their original packages, must be adequately protected against corrosion and contamination and should also be identified in some way by their complete designation.



# Designation systems



The complete designation for a Y-bearing or a Y-bearing unit consists of:

- prefixes, identifying the Y-bearing or Y-bearing unit series
- figures, identifying the size
- suffixes, identifying designs and variants

More details about the basic designations and the supplementary designations can be obtained from the designation charts:

- Y-bearing designation system (→ **table 1**, **page 76**)
- Y-bearing unit designation system (→ **table 2**, **page 77**)



Table 1

**Y-bearing designation system**

| Examples | | | | | |
|---|---|---|---|---|---|
| | YAR 208-2RF/HV | YAR | 2 | 08 | 2RF/HV |
| | YEL 203/15-2FW | YEL | 2 | 03/15 | 2FW |

**Bearing series**

| | |
|---|---|
| **YAR** | Inner ring extended on both sides, with grub screws |
| **YAT** | Inner ring extended on one side, with grub screws |
| **YEL** | Inner ring extended on both sides, with an eccentric locking collar |
| **YET** | Inner ring extended on one side, with an eccentric locking collar |
| **YHB** | Inner ring extended on both sides, hexagonal bore |
| **YHC** | Inner ring extended on both sides, hexagonal bore |
| **YQC** | Inner ring extended on both sides, square bore |
| **YSA** | Inner ring symmetrically extended on both sides |

**Dimension series**

| | |
|---|---|
| **2** | Bearing to ISO 9628:2006 |
| **17262** | Bearing to ISO 15:1998, Dimension Series 02, sphered outside diameter |
| **17263** | Bearing to ISO 15:1998, Dimension Series 03, sphered outside diameter |

**Bore diameter**

**Bearings for metric shafts**

| | |
|---|---|
| **03/12** | 12 mm bore diameter |
| **03/15** | 15 mm bore diameter |
| **03** | 17 mm bore diameter |
| **04** | 20 mm bore diameter |
| | to |
| **20** | 100 mm bore diameter |

**Bearings for inch shafts**

Three-figure combination that follows the designation of the basic metric bearing and is separated from this by a hyphen; the first figure is the number of whole inches and the second and third figures are the number of sixteenths of an inch, e.g. 204-012

| | |
|---|---|
| **-012** | 3/4 in. = 19,050 mm bore diameter |
| **-100** | 1 in. = 25,400 mm bore diameter |
| | to |
| **-208** | 2 1/2 in. = 63,500 mm bore diameter |

**Suffixes**

**Seals**

| | |
|---|---|
| **–** | Contact standard integral seal on both sides of the bearing |
| **2F** | Contact standard integral seal with an additional plain flinger on both sides of the bearing |
| **2LS8** | Contact seal of synthetic rubber with sheet steel reinforcement on both sides of the bearing |
| **2RF** | Contact standard integral seal with an additional rubberized flinger on both sides of the bearing |
| **2RS1** | Contact seal of synthetic rubber with sheet steel reinforcement on both sides of the bearing |
| **VP076** | Pressed sheet steel shield on both sides of the bearing |

**Material**

| | |
|---|---|
| **HV** | Bearing components of stainless steel and food-grade grease |
| **VE495** | Zinc-coated inner and outer ring and stainless steel flingers, food-grade grease |
| **VL065** | Zinc-coated inner ring bore and side faces |

**Other features**

| | |
|---|---|
| **AH** | Bearing for air-handling applications |
| **C** | Cylindrical outside diameter |
| **G** | Lubrication groove in the outside diameter, located at the side opposite the locking device |
| **GR** | Lubrication groove in the outside diameter, located at the side of the locking device |
| **K** | Tapered bore, taper 1:12 |
| **U** | Bearing without an eccentric locking collar |
| **VT357** | Bearing filled with a special grease |
| **W** | Bearing without lubrication hole(s) |
| **W64** | Solid Oil fill |

Table 2

**Y-bearing unit designation system**

| Examples | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | FYTBK 30 TR | FY | TB | K | 30 | TR | | |
| | SY 1.1/2 TF | SY | | | 1.1/2 | TF | | |
| | TUJ 50 TF | TUJ | | | 50 | TF | | |
| | PFD 40 | PF | D | | 40 | | | |

**Identification of housing type**

J stands for dimensions to standard JIS 1559-1995

| | |
|---|---|
| **FY(J)** | Flanged housing |
| **P** | Plummer block housing, pressed steel |
| **PF** | Flanged housing, pressed steel |
| **SY(J)** | Plummer block housing |
| **TU(J)** | Take-up housing |

**Identification of unit design**

| | |
|---|---|
| **–** | Base version; when flanged: square flange |
| **C** | Flanged unit, round flange |
| **D** | Flanged unit, triangular flange |
| **F** | Plummer block unit, short base |
| **H** | Plummer block unit, lower centre height |
| **M** | Plummer block unit, higher load carrying capacity |
| **T** | Flanged unit, oval flange |
| **TB** | Flanged unit, oval flange |
| **TF** | Flanged unit, oval flange, no relubrication facility |

**Identification of housing material**

| | |
|---|---|
| **–** | Grey cast iron |
| **K** | Composite |
| **Z** | Grey cast iron zinc coated |
| **R** | Stainless steel |

**Identification of size**

| | |
|---|---|
| | **Bearing units for metric shafts: in millimetres uncoded** |
| **12** | 12 mm bore diameter |
| | to |
| **100** | 100 mm bore diameter |
| | **Bearing units for inch shafts: in inches uncoded** |
| **3/4** | 3/4 in. = 19,05 mm bore diameter |
| | to |
| **2 1/2** | 2 1/2 in. = 63,5 mm bore diameter |
| | **Housings from grey cast iron or composite material** |
| **503** | for Y-bearings of sizes 203, 203/12 and 203/15 |
| | to |
| **520** | for Y-bearings of size 220 |
| | **Housings from sheet steel (not supplied as bearing unit)** |
| **40** | 40 mm housing bore diameter |
| | to |
| **90** | 90 mm housing bore diameter |

**Identification of inserted Y-bearing**

| | |
|---|---|
| **FM** | Y-bearing with an eccentric locking collar, YET 2 series |
| **KF** | Y-bearing with a tapered bore, YSA 2-2FK series |
| **LF** | Y-bearing with SKF ConCentra locking |
| **RM** | Y-bearing with grub screws, YAT 2 series |
| **TF** | Y-bearing with grub screws, YAR 2-2F series |
| **TR** | Y-bearing with grub screws, YAR 2-2RF series |
| **WF** | Y-bearing with an eccentric locking collar, YEL 2-2F series |

**Other features**

See **table 1** "Y-bearing designation system"


SKF

# Y-bearings



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# Designs

SKF Y-bearings, which are usually referred to as insert bearings, are basically sealed deep groove ball bearings in the 62 and 63 series, with a convex outer ring. These bearings are manufactured in a number of different series and sizes and are available with a standard inner ring or an inner ring that is extended on one or both sides (→ **fig. 1**).

The various insert bearing series differ in the way the bearing is located onto the shaft. The most common methods use any one of the following:

- grub (set) screws (→ **fig. 2**)
- eccentric locking collar (→ **fig. 3**)
- adapter sleeve (→ **fig. 4**)
- interference fit (→ **fig. 5**)
- SKF ConCentra locking (→ **fig. 6**)

The standard SKF assortment includes Y-bearings made of rolling bearing steel as well as stainless steel and Y-bearings with zinc-coated components.

Fig. 1

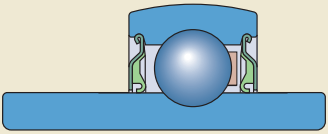


Fig. 2

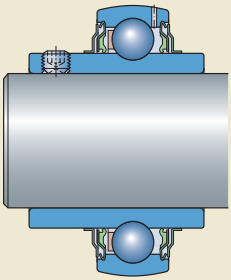


Fig. 3

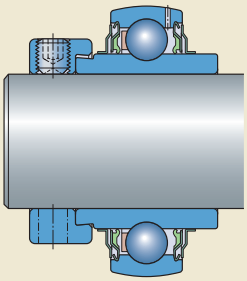


Fig. 4

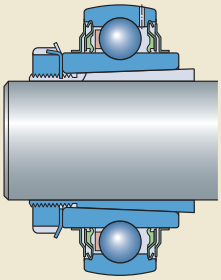


Fig. 5

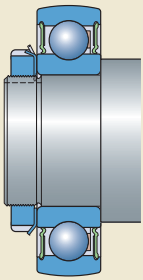
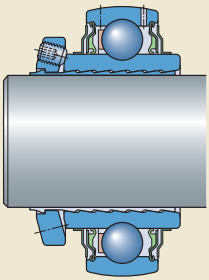


Fig. 6



# Y-bearings with grub screws

Y-bearings with grub screws in the inner ring are locked in position on the shaft by tightening the two cup point hexagonal grub screws, positioned 120° apart. These bearings are suitable for applications where the direction of rotation is constant or alternating. Two different standard designs are available.

Y-bearings in the YAT 2 series have an extended inner ring on one side, and are sealed with the rugged standard integral seal (→ **fig. 7**). The outer ring has two lubrication holes as standard.

Y-bearings in the YAR 2 series have an extended inner ring on both sides (→ **fig. 8**). This reduces the extent to which the inner ring can tilt on the shaft, which enables the bearing to run more smoothly. These bearings are fitted with the rugged standard integral seal and one of the following flinger options:

- plain sheet steel flingers, designation suffix 2F
- rubberized sheet steel flingers (multiple seal), designation suffix 2RF

The outer ring has two lubrication holes as standard.

Bearings without lubrication holes can be supplied on request. They are identified by the suffix W.

Fig. 7

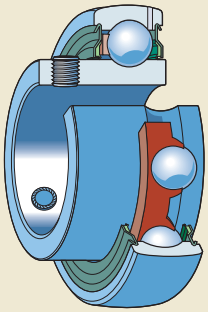
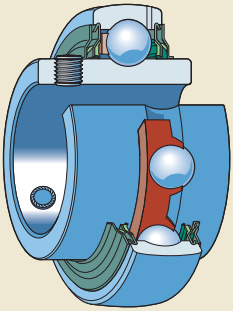


Fig. 8



## Bearings made of rolling bearing steel

Y-bearings in the YAT 2 and YAR 2 standard series are manufactured from high-grade carbon chromium steel. The SKF range comprises bearings for metric shafts from 12 to 100 mm and inch shafts from 1/2 to 3 inch (→ product table on **pages 92** to **97**).

## Bearings with zinc-coated rings

Y-bearings with an extended inner ring on both sides (YAR 2 series) are also available with zinc-coated rings for use in corrosive environments. These bearings, series designation YAR 2-2RF/VE495:

- use highly efficient multiple seals made of food-compatible rubber and stainless steel flingers
- are fitted with grub screws made of stainless steel
- are filled with a food-grade grease
- can be relubricated through the lubrication holes in the outer ring

The SKF range of Y-bearings with zinc-coated rings covers bearings for metric shafts from 20 to 50 mm (→ product table on **page 92**).

## Stainless steel bearings

All steel components of stainless steel Y-bearings are made of stainless steel. This includes the rings, balls, sheet metal parts of the seal and the grub screws. The inner ring is extended on both sides. These bearings, series designation YAR 2-2RF/HV:

- use highly efficient multiple seals made of food-compatible rubber
- are filled with a food-grade grease
- can be relubricated through one lubrication hole in the outer ring

The SKF range covers bearings for metric shafts from 20 to 50 mm as well as inch shafts from $^{3}/_{4}$ to 1 $^{15}/_{16}$ inch (→ product table on **page 92** to **96**).

The dynamic load carrying capacity of a stainless steel bearing is less than that of a similarly sized standard steel bearing.

# Y-bearings with an eccentric locking collar

Y-bearings with an eccentric locking collar are intended primarily for use in applications where the direction of rotation is constant. On one side of the bearing inner ring is an eccentric extension that fits the locking collar. Turning the locking collar on the inner ring extension in the direction of rotation locks the collar and bearing on the shaft. A single grub screw further secures the collar to the shaft. There are two standard series available from SKF.

Y-bearings in the YET 2 series have an extended inner ring on one side and are fitted with the rugged standard integral seal (→ **fig. 9**). The eccentric collar is coated (zinc-coated for bearings with a metric bore, black oxidized for bearings with an inch bore). The outer ring has two lubrication holes as standard.

Y-bearings in the YEL 2 series have an extended inner ring on both sides (→ **fig. 10**). This reduces the extent to which the inner ring can tilt on the shaft, which enables the bearing to run more smoothly. These bearings are fitted with the rugged standard integral seal and one of the following flinger options:

- plain sheet steel flingers, designation suffix 2F
- rubberized sheet steel flingers (multiple seal), designation suffix 2RF/VL065

The outer ring has two lubrication holes as standard.

Bearings without lubrication holes can be supplied on request. They are identified by the suffix W.

The SKF range comprises bearings for metric shafts from 15 to 60 mm and inch shafts from 1/2 to 2 7/16 inch (→ product table on **pages 98** to **101**).

Fig. 9

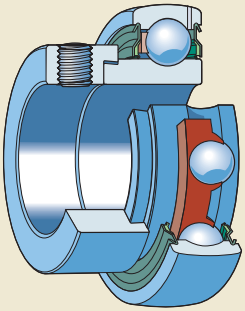


Fig. 10

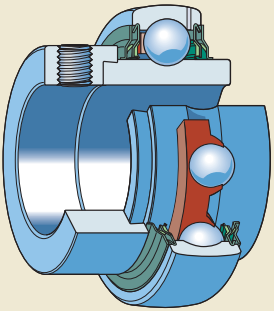


Fig. 11

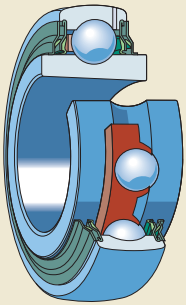
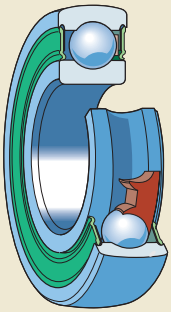


Fig. 12



## Y-bearings with a tapered bore

Y-bearings in the YSA 2-2FK series (→ **fig. 11**) have a symmetrically extended inner ring on both sides and a tapered bore (taper 1:12) enabling them to be mounted on a standard adapter sleeve in the H 23 series. The appropriate adapter sleeve is not part of the bearing and must be ordered separately.

Y-bearings with a tapered bore are equipped with the rugged standard integral seal, fitted with additional plain sheet steel flingers. The outer ring has two lubrication holes as standard.

Mounting onto an adapter sleeve enables the bearings to operate at higher speeds and run more smoothly in applications where the direction of rotation is constant or alternating.

The SKF range, which comprises bearings with bore diameters ranging from 25 to 65 mm, fits adapter sleeves in the H 23 series for metric shafts ranging from 20 to 60 mm (→ product table on **page 102**). These bearings can also be used on adapter sleeves in the HA 23, HE 23 and HS 23 series for inch shafts ranging from 3/4 to 2 3/8 inch (→ product table on **page 104**).

## Y-bearings with a standard inner ring

Y-bearings in the 17262(00)-2RS1 and 17263(00)-2RS1 series (→ **fig. 12**) with a standard inner ring have normal tolerances for the bearing bore diameter and are located on the shaft using an appropriate interference fit. They do not have any lubrication holes in the outer ring. The only difference between these Y-bearings and deep groove ball bearings in the 62 and 63 series is the sphered outside surface of the outer ring.

These Y-bearings are suitable for applications where the direction of the load alternates and where smooth running is a key operational parameter. These bearings can accommodate heavier axial loads than Y-bearings of any other design. They can also operate at the same speeds as the corresponding sealed deep groove ball bearings.

The SKF range comprises bearings for metric shafts from 17 to 60 mm (→ product table on **page 106**).

## Y-bearings with a hexagonal or square bore

Y-bearings with a hexagonal or square bore are intended primarily for high torque applications. The bore is produced to a plus tolerance and enables easy mounting and dismounting. These bearings should be axially located on the shaft using adjacent components.

The bearings have a standard outer ring without lubrication holes (designation suffix W).

Bearings in the YHB 2 and YHC 2 series have a hexagonal bore (→ **fig. 13**). They are equipped with rugged contact seals (designation suffix LS8).

For more information, contact the SKF application engineering service.

**Fig. 13**

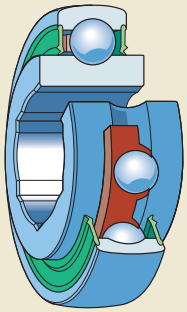


Fig. 14

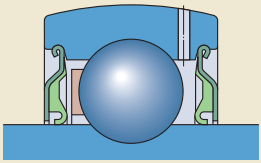


Fig. 15

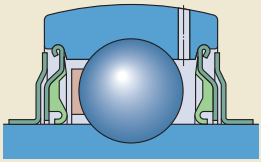
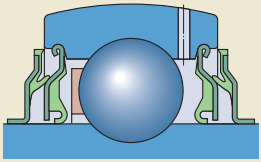


Fig. 16



# Seals

Since Y-bearings were originally developed for use in agricultural applications, sealing has always been very important. Therefore, SKF Y-bearings are available with different sealing configurations to suit the operating conditions.

## Standard seals

The standard seal for SKF Y-bearings is the rugged integral seal. It consists of a pressed sheet steel washer with a sealing lip made of acrylonitrile-butadiene rubber (NBR) vulcanized to its inner surface (→ **fig. 14**). The non-contact sheet steel washer forms a narrow gap with the cylindrical surface of the inner ring shoulder and protects the land-riding seal against coarse contaminants.

## Standard seals with an additional flinger

For more contaminated environments, a Y-bearing with an inner ring extended on both sides should be used. These bearings are equipped with seals that have an additional plain, sheet steel flinger on the outboard side of the integral standard seal (→ **fig. 15**) and are identified by the designation suffix 2F. The flingers are made of sheet steel or stainless sheet steel respectively, have an interference fit on the inner ring and considerably enhance the seals' effectiveness without increasing friction.

## Multiple seals

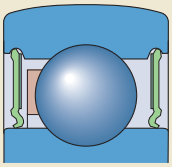
For Y-bearing arrangements requiring a high degree of reliability, even in extremely contaminated environments, a bearing with an inner ring extended on both sides should be used with the highly efficient multiple seal arrangement.

In this sealing arrangement (→ **fig. 16**), a flinger with a vulcanized rubber lip is fitted outside the standard integral seal. This acrylonitrile-butadiene rubber lip seals axially against the integral seal. The space between the integral seal and the rubberized flinger is filled with grease to provide additional protection.

## RS1 seals

Y-bearings with a standard inner ring, 17262(00)-2RS1 and 17263(00)-2RS1 series, are equipped with the RS1 contact seal developed for standard SKF deep groove ball bearings (→ **fig. 17**). These seals, which are made from oil and wear resistant acrylonitrile-butadiene rubber (NBR), are reinforced with a pressed sheet steel insert and seal against the cylindrical surface of the inner ring shoulder.

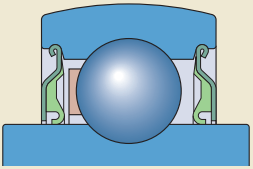
Fig. 17



## LS8 seals

Y-bearings with a hexagonal bore, series YHB 2 and YHC 2, are equipped with LS8 contact seals (→ **fig. 18**). These seals, which are made from acrylonitrile-butadiene rubber (NBR), are reinforced with a pressed sheet steel insert and seal against the cylindrical surface of the inner ring shoulder.

Fig. 18



## Shields

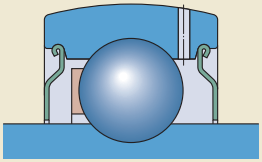
Y-bearings are also available with shields (→ **fig. 19**), which are identified by the designation suffix VP076.

Pressed steel shields are used in temperature or speed sensitive applications where additional friction is not desirable. In applications where shielded bearings are used, contamination should not be severe and water, steam or moisture should not be able to enter the bearing.

## Permissible operating temperatures for seals

Contact seals can be used at operating temperatures between –30 and +100 °C. Temperatures up to 120 °C are also possible for brief periods, but might have a negative effect on the service life of the grease.

Fig. 19



# Data – general

## Dimensions

- The boundary dimensions of Y-bearings in the YAR 2, YET 2 and YEL 2 series are in accordance with ISO 9628:2006.
- The boundary dimensions of Y-bearings in the 17262(00)-2RS1 and 17263(00)-2RS1 series are in accordance with those of deep groove ball bearings in the 62 and 63 series and are in accordance with ISO 15:1998, except that the bearings have a sphered outside diameter
- The boundary dimensions of Y-bearings in the YSA 2-2FK series are in accordance with JIS 1558-1995
- Y-bearings in the YAT 2, YHB 2, YHC 2 and YQC 2 series have not been standardized either nationally or internationally, but are common in the marketplace.

The dimensions of the adapter sleeves in the H 23 series, which are normally used to locate YSA 2-2FK bearings onto the shaft, are in accordance with ISO 2982-1:1995.

## Tolerances

The bore and outside diameter of Y-bearings are produced to tolerances indicated in **table 1**. Symbols used are explained in the following.

The values specified for the tolerance zone of the bore diameter of bearings in the YAT 2, YAR 2, YET 2 and YEL 2 series are slightly tighter than Normal tolerances listed in ISO 9628:2006.

The values specified for bearings in the 17262(00)-2RS1 and 17263(00)-2RS1 series are in accordance with ISO 492:2002.

SKF manufactures bearings in the YSA 2-2FK series with a tapered bore, taper 1:12. They are designed to fit adapter sleeves in the H 23 series, for metric and inch shafts.

The hexagonal or square bore of bearings in the YHB 2, YHC 2 and YQC 2 series is produced to a 0/+0,25 mm tolerance.

## Symbols

| | |
|---|---|
| d | Nominal bore diameter |
| $\Delta_{dmp}$ | Deviation of the mean bore diameter from the nominal |
| D | Nominal outside diameter |
| $\Delta_{Dmp}$ | Deviation of the mean outside diameter from the nominal |

**Table 1**

**Tolerances for SKF Y-bearings**

| **Nominal diameter** | | **Inner ring** Bearings in the series YAT 2, YAR 2, YET 2, YEL 2 | | 17262(00) 17263(00) | | **Outer ring** All bearings | |
|---|---|---|---|---|---|---|---|
| **d, D** | | **$\Delta_{dmp}$** | | **$\Delta_{dmp}$** | | **$\Delta_{Dmp}$** | |
| Over | Incl. | High | Low | High | Low | High | Low |
| mm | | µm | | µm | | µm | |
| **10** | **18** | +15 | +5 | 0 | –8 | – | – |
| **18** | **31,75** | +18 | +5 | 0 | –10 | – | – |
| **31,75** | **50,8** | +19 | +5 | 0 | –12 | 0 | –10 |
| **50,8** | **80,962** | +21 | +5 | 0 | –15 | 0 | –10 |
| **80,962** | **120** | +25 | +5 | – | – | 0 | –15 |
| **120** | **150** | – | – | – | – | 0 | –15 |
| **150** | **180** | – | – | – | – | 0 | –20 |

## Radial internal clearance

Y-bearings are manufactured as standard with the radial internal clearance indicated in **table 2**. The values specified there for bearings in the:

- YAT, YAR, YET, YEL, YHB, YHC and YQC series are in accordance with Group N radial internal clearances as listed ISO 9628:2006
- YSA 2 K series are in accordance with Group 3 radial internal clearances as listed in ISO 9628:2006
- 17262(00)-2RS1 and 17263(00)-2RS1 series are manufactured with Normal radial internal clearances for deep groove ball bearings as standard. The values are in accordance with ISO 5753:1991

**Table 2**

**Radial internal clearance for Y-bearings**

| Bearing size[1] | | Radial internal clearance of Y-bearings in the series | | | | | |
|---|---|---|---|---|---|---|---|
| | | YAT 2, YAR 2, YET 2, YEL 2 YHC 2 | | YSA 2 K | | 17262 (00) 17263(00) | |
| from | to | min | max | min | max | min | max |
| – | | µm | | | | | |
| **03** | **03** | 10 | 25 | – | – | 3 | 18 |
| **04** | **04** | 12 | 28 | – | – | 5 | 20 |
| **05** | **06** | 12 | 28 | 23 | 41 | 5 | 20 |
| **07** | **08** | 13 | 33 | 28 | 46 | 6 | 20 |
| **09** | **10** | 14 | 36 | 30 | 51 | 6 | 23 |
| **11** | **13** | 18 | 43 | 38 | 61 | 8 | 28 |
| **14** | **16** | 20 | 51 | – | – | – | – |
| **17** | **20** | 24 | 58 | – | – | – | – |

[1] For example: bearing size 06 includes all bearings based on a Y 206 bearing, such as YAR 206-101-2F, YAR 206-102-2F, YAR 206-2F, YAR 206-103-2F, YAR 206-104-2F

## Cages

All standard Y-bearings are fitted with an injection moulded snap-type cage of glass fibre reinforced polyamide 66 (→ **fig. 20**). These cages exhibit excellent performance characteristics in a variety of applications where operating temperatures do not exceed 120 °C.

The lubricants generally used for Y-bearings do not have any detrimental effect on cage properties.

Fig. 20



## Grease fills

All standard design SKF Y-bearings and Y-bearings with a square bore are filled with a high quality, long lasting grease containing a lithium-calcium thickener with a consistency of 2 on the NLGI scale.

Y-bearings made of stainless steel, in the YAR 2-2RF/HV series, and Y-bearings with zinc-coated rings, in the YAR 2-2RF/VE495 series, meet the demands of food-processing machinery in a corrosive environment. They are filled with a non-toxic, food-grade grease based on a synthetic hydrocarbon oil using an aluminium-complex soap as a thickener.

Y-bearings with a hexagonal bore are filled with a premium quality, mineral oil based grease using a lithium-complex soap (designation suffix VT357). The grease, which has a consistency of 3 on the NGLI scale, has good water and corrosion resistant properties and provides excellent lubrication at high operating temperatures.

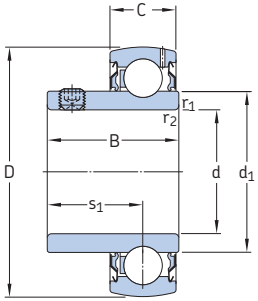
For additional information about lubrication and different lubricants, refer to the section *Lubrication and maintenance*, starting on **page 48**.

## Mounting

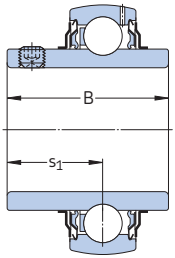
The mounting procedures for Y-bearings depend on the method used to attach the unit to the shaft. The procedures are described in detail in the section *Mounting instructions*, starting on **page 52**.

Y-bearings with a standard inner ring are mounted on the shaft with an interference fit.

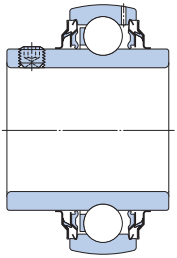
## Y-bearings with grub screws, metric shafts
d **12 – 100** mm




YAT




YAR-2F

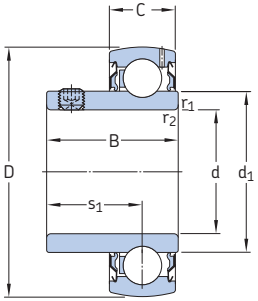


YAR-2RF

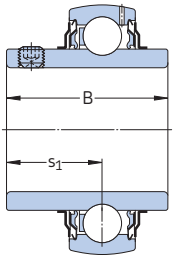
| Dimensions | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | | | |
| mm | | | | | | | kN | | kN | r/min | kg | – |
| **12** | 40 | 27,4 | 12 | 24,2 | 15,9 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,11 | **YAR 203/12-2F** |
| **15** | 40 | 27,4 | 12 | 24,2 | 15,9 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,10 | **YAR 203/15-2F** |
| **17** | 40 | 22,1 | 12 | 24,2 | 15,9 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,07 | **YAT 203** |
| | 40 | 27,4 | 12 | 24,2 | 15,9 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,09 | **YAR 203-2F** |
| **20** | 47 | 25,5 | 14 | 28,2 | 18,3 | 0,6 | 12,7 | 6,55 | 0,28 | 8 500 | 0,11 | **YAT 204** |
| | 47 | 31 | 14 | 28,2 | 18,3 | 0,6 | 12,7 | 6,55 | 0,28 | 8 500 | 0,14 | **YAR 204-2F** |
| | 47 | 31 | 14 | 28,2 | 18,3 | 0,6 | 12,7 | 6,55 | 0,28 | 5 000 | 0,14 | **YAR 204-2RF** |
| | 47 | 31 | 14 | 28,2 | 18,3 | 0,6 | 10,8 | 6,55 | 0,28 | 5 000 | 0,14 | **YAR 204-2RF/HV** |
| | 47 | 31 | 14 | 28,2 | 18,3 | 0,6 | 12,7 | 6,55 | 0,28 | 5 000 | 0,14 | **YAR 204-2RF/VE495** |
| **25** | 52 | 27,2 | 15 | 33,7 | 19,5 | 0,6 | 14 | 7,8 | 0,335 | 7 000 | 0,14 | **YAT 205** |
| | 52 | 34,1 | 15 | 33,7 | 19,8 | 0,6 | 14 | 7,8 | 0,335 | 7 000 | 0,17 | **YAR 205-2F** |
| | 52 | 34,1 | 15 | 33,7 | 19,8 | 0,6 | 14 | 7,8 | 0,335 | 4 300 | 0,17 | **YAR 205-2RF** |
| | 52 | 34,1 | 15 | 33,7 | 19,8 | 0,6 | 11,9 | 7,8 | 0,335 | 4 300 | 0,18 | **YAR 205-2RF/HV** |
| | 52 | 34,1 | 15 | 33,7 | 19,8 | 0,6 | 14 | 7,8 | 0,335 | 4 300 | 0,18 | **YAR 205-2RF/VE495** |
| **30** | 62 | 30,2 | 18 | 39,7 | 21 | 0,6 | 19,5 | 11,2 | 0,475 | 6 300 | 0,23 | **YAT 206** |
| | 62 | 38,1 | 18 | 39,7 | 22,2 | 0,6 | 19,5 | 11,2 | 0,475 | 6 300 | 0,28 | **YAR 206-2F** |
| | 62 | 38,1 | 18 | 39,7 | 22,2 | 0,6 | 19,5 | 11,2 | 0,475 | 3 800 | 0,28 | **YAR 206-2RF** |
| | 62 | 38,1 | 18 | 39,7 | 22,2 | 0,6 | 16,3 | 11,2 | 0,475 | 3 800 | 0,29 | **YAR 206-2RF/HV** |
| | 62 | 38,1 | 18 | 39,7 | 22,2 | 0,6 | 19,5 | 11,2 | 0,475 | 3 800 | 0,29 | **YAR 206-2RF/VE495** |
| **35** | 72 | 33 | 19 | 46,1 | 23,3 | 1 | 25,5 | 15,3 | 0,655 | 5 300 | 0,31 | **YAT 207** |
| | 72 | 42,9 | 19 | 46,1 | 25,4 | 1 | 25,5 | 15,3 | 0,655 | 5 300 | 0,41 | **YAR 207-2F** |
| | 72 | 42,9 | 19 | 46,1 | 25,4 | 1 | 25,5 | 15,3 | 0,655 | 3 200 | 0,41 | **YAR 207-2RF** |
| | 72 | 42,9 | 19 | 46,1 | 25,4 | 1 | 21,6 | 15,3 | 0,655 | 3 800 | 0,42 | **YAR 207-2RF/HV** |
| | 72 | 42,9 | 19 | 46,1 | 25,4 | 1 | 25,5 | 15,3 | 0,655 | 3 800 | 0,42 | **YAR 207-2RF/VE495** |
| **40** | 80 | 36 | 21 | 51,8 | 25,3 | 1 | 30,7 | 19 | 0,8 | 4 800 | 0,43 | **YAT 208** |
| | 80 | 49,2 | 21 | 51,8 | 30,2 | 1 | 30,7 | 19 | 0,8 | 4 800 | 0,55 | **YAR 208-2F** |
| | 80 | 49,2 | 21 | 51,8 | 30,2 | 1 | 30,7 | 19 | 0,8 | 2 800 | 0,55 | **YAR 208-2RF** |
| | 80 | 49,2 | 21 | 51,8 | 30,2 | 1 | 24,7 | 19 | 0,8 | 2 800 | 0,56 | **YAR 208-2RF/HV** |
| | 80 | 49,2 | 21 | 51,8 | 30,2 | 1 | 30,7 | 19 | 0,8 | 2 800 | 0,56 | **YAR 208-2RF/VE495** |
| **45** | 85 | 37 | 22 | 56,8 | 25,8 | 1 | 33,2 | 21,6 | 0,915 | 4 300 | 0,48 | **YAT 209** |
| | 85 | 49,2 | 22 | 56,8 | 30,2 | 1 | 33,2 | 21,6 | 0,915 | 4 300 | 0,60 | **YAR 209-2F** |
| | 85 | 49,2 | 22 | 56,8 | 30,2 | 1 | 33,2 | 21,6 | 0,915 | 2 400 | 0,60 | **YAR 209-2RF** |

| Dimensions | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | | | |
| mm | | | | | | | kN | | kN | r/min | kg | – |
| **50** | 90 | 38,8 | 22 | 62,5 | 27,6 | 1 | 35,1 | 23,2 | 0,98 | 4 000 | 0,54 | **YAT 210** |
| | 90 | 51,6 | 22 | 62,5 | 32,6 | 1 | 35,1 | 23,2 | 0,98 | 4 000 | 0,69 | **YAR 210-2F** |
| | 90 | 51,6 | 22 | 62,5 | 32,6 | 1 | 35,1 | 23,2 | 0,98 | 2 200 | 0,69 | **YAR 210-2RF** |
| | 90 | 51,6 | 22 | 62,5 | 32,6 | 1 | 29,6 | 23,2 | 0,98 | 2 200 | 0,69 | **YAR 210-2RF/HV** |
| | 90 | 51,6 | 22 | 62,5 | 32,6 | 1 | 35,1 | 23,2 | 0,98 | 2 200 | 0,69 | **YAR 210-2RF/VE495** |
| **55** | 100 | 55,6 | 25 | 69,1 | 33,4 | 1 | 43,6 | 29 | 1,25 | 3 600 | 0,94 | **YAR 211-2F** |
| | 100 | 55,6 | 25 | 69,1 | 33,4 | 1 | 43,6 | 29 | 1,25 | 1 900 | 0,94 | **YAR 211-2RF** |
| **60** | 110 | 65,1 | 26 | 75,6 | 39,7 | 1,5 | 52,7 | 36 | 1,53 | 3 400 | 1,30 | **YAR 212-2F** |
| | 110 | 65,1 | 26 | 75,6 | 39,7 | 1,5 | 52,7 | 36 | 1,53 | 1 800 | 1,30 | **YAR 212-2RF** |
| **65** | 120 | 68,3 | 27 | 82,5 | 42,9 | 1,5 | 57,2 | 40 | 1,7 | 3 000 | 1,70 | **YAR 213-2F** |
| | 120 | 68,3 | 27 | 82,5 | 42,9 | 1,5 | 57,2 | 40 | 1,7 | 1 600 | 1,70 | **YAR 213-2RF** |
| **70** | 125 | 69,9 | 28 | 87 | 39,7 | 1,5 | 62,4 | 45 | 1,86 | 2 800 | 1,85 | **YAR 214-2F** |
| **75** | 130 | 73,3 | 29 | 92 | 46,1 | 1,5 | 66,3 | 49 | 2,04 | 2 600 | 2,05 | **YAR 215-2F** |
| **80** | 140 | 77,9 | 30 | 97,4 | 47,7 | 2 | 72,8 | 53 | 2,16 | 2 400 | 2,45 | **YAR 216-2F** |
| **85** | 150 | 81 | 34 | 105 | 50,8 | 2 | 83,2 | 62 | 2,4 | 2 200 | 3,20 | **YAR 217-2F** |
| **90** | 160 | 89 | 36 | 112,5 | 54 | 2 | 95,6 | 72 | 2,7 | 2 000 | 4,00 | **YAR 218-2F** |
| **100** | 180 | 98,4 | 40 | 124,5 | 63,4 | 2 | 124 | 93 | 3,35 | 1 900 | 5,25 | **YAR 220-2F** |

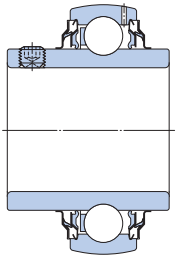
## Y-bearings with grub screws, inch shafts
d **1/2 – 1 7/16** in




YAT




YAR-2F

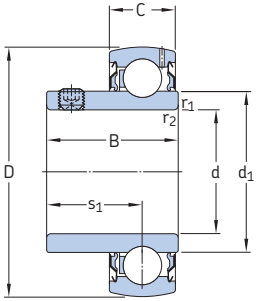


YAR-2RF

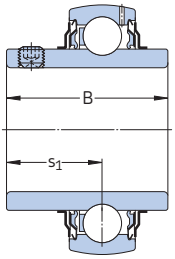
| Dimensions | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | | | |
| in/*mm* | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **1/2** | 1.5748 | 1.08 | 0.47 | 0.95 | 0.63 | 0.01 | 2 150 | 1 070 | 50 | 9 500 | 0.27 | **YAR 203-008-2F** |
| *12,7* | *40* | *27,4* | *12* | *24,2* | *15,9* | *0,3* | *9,56* | *4,75* | *0,2* | | *0,12* | |
| **5/8** | 1.5748 | 1.08 | 0.47 | 0.95 | 0.63 | 0.01 | 2 150 | 1 070 | 50 | 9 500 | 0.23 | **YAR 203-010-2F** |
| *15,875* | *40* | *27,4* | *12* | *24,2* | *15,9* | *0,3* | *9,56* | *4,75* | *0,2* | | *0,11* | |
| | 1.5748 | 0.89 | 0.47 | 0.95 | 0.63 | 0.01 | 2 150 | 1 070 | 50 | 9 500 | 0.21 | **YAT 203-010** |
| | *40* | *22,5* | *12* | *24,2* | *16* | *0,3* | *9,56* | *4,75* | *0,2* | | *0,10* | |
| **3/4** | 1.8504 | 1.22 | 0.55 | 1.11 | 0.72 | 0.02 | 2 860 | 1 470 | 60 | 8 500 | 0.36 | **YAR 204-012-2F** |
| *19,05* | *47* | *31* | *14* | *28,2* | *18,3* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,17* | |
| | 1.8504 | 1.22 | 0.55 | 1.11 | 0.72 | 0.02 | 2 860 | 1 470 | 60 | 5 000 | 0.36 | **YAR 204-012-2RF** |
| | *47* | *31* | *14* | *28,2* | *18,3* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,16* | |
| | 1.8504 | 1.22 | 0.55 | 1.11 | 0.72 | 0.02 | 2 860 | 1 470 | 60 | 8 500 | 0.34 | **YAR 204-012-2F/AH** |
| | *47* | *31* | *14* | *28,2* | *18,3* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,16* | |
| | 1.8504 | 1.22 | 0.55 | 1.11 | 0.72 | 0.02 | 2 430 | 1 470 | 60 | 5 000 | 0.36 | **YAR 204-012-2RF/HV** |
| | *47* | *31* | *14* | *28,2* | *18,3* | *0,6* | *10,8* | *6,55* | *0,28* | | *0,16* | |
| | 1.8504 | 1.00 | 0.55 | 1.11 | 0.72 | 0.02 | 2 860 | 1 470 | 60 | 8 500 | 0.31 | **YAT 204-012** |
| | *47* | *25,5* | *14* | *28,2* | *18,3* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,14* | |
| **7/8** | 2.0472 | 1.07 | 0.59 | 1.33 | 0.77 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.37 | **YAT 205-014** |
| *22,225* | *52* | *27,2* | *15* | *33,7* | *19,5* | *0,6* | *14* | *7,8* | *0,335* | | *0,17* | |
| **15/16** | 2.0472 | 1.34 | 0.59 | 1.33 | 0.78 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.47 | **YAR 205-015-2F** |
| *23,813* | *52* | *34,1* | *15* | *33,7* | *19,8* | *0,6* | *14* | *7,8* | *0,335* | | *0,21* | |
| | 2.0472 | 1.07 | 0.59 | 1.33 | 0.77 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.40 | **YAT 205-015** |
| | *52* | *27,2* | *15* | *33,7* | *19,5* | *0,6* | *14* | *7,8* | *0,335* | | *0,18* | |
| **1** | 2.0472 | 1.34 | 0.59 | 1.33 | 0.78 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.43 | **YAR 205-100-2F** |
| *25,4* | *52* | *34,1* | *15* | *33,7* | *19,8* | *0,6* | *14* | *7,8* | *0,335* | | *0,19* | |
| | 2.0472 | 1.34 | 0.59 | 1.33 | 0.78 | 0.02 | 3 150 | 1 760 | 80 | 4 300 | 0.43 | **YAR 205-100-2RF** |
| | *52* | *34,1* | *15* | *33,7* | *19,8* | *0,6* | *14* | *7,8* | *0,335* | | *0,19* | |
| | 2.0472 | 1.34 | 0.59 | 1.33 | 0.78 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.43 | **YAR 205-100-2F/AH** |
| | *52* | *34,1* | *15* | *33,7* | *19,8* | *0,6* | *14* | *7,8* | *0,335* | | *0,19* | |
| | 2.0472 | 1.34 | 0.59 | 1.33 | 0.78 | 0.02 | 2 680 | 1 760 | 80 | 4 300 | 0.43 | **YAR 205-100-2RF/HV** |
| | *52* | *34,1* | *15* | *33,7* | *19,8* | *0,6* | *11,9* | *7,8* | *0,335* | | *0,19* | |
| | 2.0472 | 1.07 | 0.59 | 1.33 | 0.77 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.36 | **YAT 205-100** |
| | *52* | *27,2* | *15* | *33,7* | *19,5* | *0,6* | *14* | *7,8* | *0,335* | | *0,16* | |
| **1 1/16** | 2.4409 | 1.50 | 0.71 | 1.56 | 0.87 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.76 | **YAR 206-101-2F** |
| *26,988* | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,34* | |

| Dimensions | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | h6 | | |
| in/*mm* | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **1 1/8** | 2.4409 | 1.50 | 0.71 | 1.56 | 0.87 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.76 | **YAR 206-102-2F** |
| *28,575* | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,34* | |
| **1 3/16** | 2.4409 | 1.50 | 0.71 | 1.56 | 0.87 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.68 | **YAR 206-103-2F** |
| *30,163* | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,31* | |
| | 2.4409 | 1.50 | 0.71 | 1.56 | 0.87 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.68 | **YAR 206-103-2F/AH** |
| | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,31* | |
| | 2.4409 | 1.22 | 0.71 | 1.56 | 0.87 | 0.04 | 4 390 | 2 520 | 110 | 6 300 | 0.62 | **YAT 206-103** |
| | *62* | *31* | *18* | *39,7* | *22* | *1* | *19,5* | *11,2* | *0,475* | | *0,28* | |
| | 2.4409 | 1.5 | 0.71 | 1.56 | 0.87 | 0.02 | 3 670 | 2 520 | 110 | 3 800 | 0.64 | **YAR 206-103-2RF/HV** |
| | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *16,3* | *11,2* | *0,475* | | *0,29* | |
| **1 1/4** | 2.4409 | 1.50 | 0.71 | 1.56 | 0.87 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.62 | **YAR 206-104-2F** |
| *31,75* | *62* | *38,1* | *18* | *39,7* | *22,2* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,28* | |
| | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.15 | **YAR 207-104-2F** |
| | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,52* | |
| | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 3 200 | 1.00 | **YAR 207-104-2RF** |
| | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,46* | |
| | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 4 860 | 3 440 | 150 | 3 800 | 1.15 | **YAR 207-104-2RF/HV** |
| | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *21,6* | *15,3* | *0,655* | | *0,52* | |
| | 2.4409 | 1.22 | 0.71 | 1.56 | 0.87 | 0.04 | 4 390 | 2 520 | 110 | 6 300 | 0.61 | **YAT 206-104** |
| | *62* | *31* | *18* | *39,7* | *22* | *1* | *19,5* | *11,2* | *0,475* | | *0,28* | |
| **1 5/16** | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.05 | **YAR 207-105-2F** |
| *33,338* | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,48* | |
| **1 3/8** | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.00 | **YAR 207-106-2F** |
| *34,925* | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,46* | |
| | 2.8346 | 1.69 | 0.75 | 1.81 | 1 | 0.04 | 4 860 | 3 440 | 150 | 3 800 | 0.93 | **YAR 207-106-2RF/HV** |
| | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *21,6* | *15,3* | *0,655* | | *0,42* | |
| **1 7/16** | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 0.93 | **YAR 207-107-2F** |
| *36,513* | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,42* | |
| | 2.8346 | 1.69 | 0.75 | 1.82 | 1.00 | 0.04 | 4 860 | 3 440 | 150 | 3 800 | 0.95 | **YAR 207-107-2RF/HV** |
| | *72* | *42,9* | *19* | *46,1* | *25,4* | *1* | *21,6* | *15,3* | *0,655* | | *0,43* | |
| | 3.1496 | 1.94 | 0.83 | 2.04 | 1.19 | 0.04 | 6 910 | 4 280 | 180 | 4 800 | 1.55 | **YAR 208-107-2F** |
| | *80* | *49,2* | *21* | *51,8* | *30,2* | *1* | *30,7* | *19* | *0,8* | | *0,70* | |
| | 2.8346 | 1.38 | 0.75 | 1.82 | 1.00 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 0.83 | **YAT 207-107** |
| | *72* | *35* | *19* | *46,1* | *25,5* | *1* | *25,5* | *15,3* | *0,655* | | *0,38* | |

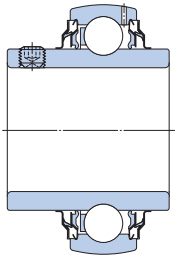
## Y-bearings with grub screws, inch shafts
d **1 1/2 – 2 15/16** in




YAT




YAR-2F

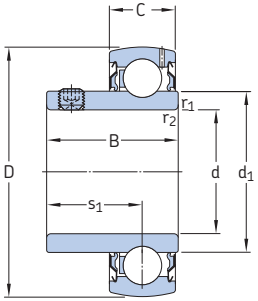


YAR-2RF

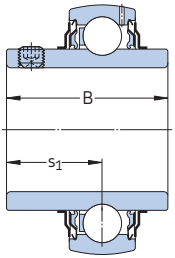
| Dimensions | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | h6 | | |
| in/*mm* | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **1 1/2** | 3.1496 | 1.94 | 0.83 | 2.04 | 1.19 | 0.04 | 6 910 | 4 280 | 180 | 4 800 | 1.30 | **YAR 208-108-2F** |
| *38,1* | *80* | *49,2* | *21* | *51,8* | *30,2* | *1* | *30,7* | *19* | *0,8* | | *0,59* | |
| | 3.1496 | 1.94 | 0.83 | 2.04 | 1.19 | 0.04 | 6 910 | 4 280 | 180 | 2 800 | 1.30 | **YAR 208-108-2RF** |
| | *80* | *49,2* | *21* | *51,8* | *30,2* | *1* | *30,7* | *19* | *0,8* | | *0,59* | |
| | 3.3465 | 1.94 | 0.87 | 2.24 | 1.19 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.89 | **YAR 209-108-2F** |
| | *85* | *49,2* | *22* | *56,8* | *30,2* | *1* | *33,2* | *21,6* | *0,915* | | *0,86* | |
| | 3.1496 | 1.57 | 0.83 | 2.04 | 1.12 | 0.04 | 6 910 | 4 280 | 180 | 4 800 | 1.29 | **YAT 208-108** |
| | *80* | *40* | *21* | *51,8* | *28,5* | *1* | *30,7* | *19* | *0,8* | | *0,58* | |
| | 3.1496 | 1.94 | 0.83 | 2.04 | 1.19 | 0.04 | 5 560 | 4 280 | 180 | 2 800 | 1.25 | **YAR 208-108-2RF/HV** |
| | *80* | *49,2* | *21* | *51,8* | *30,2* | *1* | *24,7* | *19* | *0,8* | | *0,56* | |
| **1 9/16** | 3.1496 | 1.94 | 0.83 | 2.04 | 1.19 | 0.04 | 6 910 | 4 280 | 180 | 4 300 | 1.40 | **YAR 208-109-2F** |
| *39,688* | *80* | *49,2* | *21* | *51,8* | *30,2* | *1* | *30,7* | *19* | *0,8* | | *0,64* | |
| **1 5/8** | 3.3465 | 1.94 | 0.87 | 2.24 | 1.19 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.75 | **YAR 209-110-2F** |
| *41,275* | *85* | *49,2* | *22* | *56,8* | *30,2* | *1* | *33,2* | *21,6* | *0,915* | | *0,79* | |
| **1 11/16** | 3.3465 | 1.94 | 0.87 | 2.24 | 1.19 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.65 | **YAR 209-111-2F** |
| *42,863* | *85* | *49,2* | *22* | *56,8* | *30,2* | *1* | *33,2* | *21,6* | *0,915* | | *0,75* | |
| | 3.3465 | 1.63 | 0.87 | 2.24 | 1.20 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.40 | **YAT 209-111** |
| | *85* | *41,5* | *22* | *56,8* | *30,5* | *1* | *33,2* | *21,6* | *0,915* | | *0,65* | |
| **1 3/4** | 3.3465 | 1.94 | 0.87 | 2.24 | 1.19 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.35 | **YAR 209-112-2F** |
| *44,45* | *85* | *49,2* | *22* | *56,8* | *30,2* | *1* | *33,2* | *21,6* | *0,915* | | *0,62* | |
| | 3.3465 | 1.94 | 0.87 | 2.24 | 1.19 | 0.04 | 7 470 | 4 860 | 210 | 2 400 | 1.35 | **YAR 209-112-2RF** |
| | *85* | *49,2* | *22* | *56,8* | *30,2* | *1* | *33,2* | *21,6* | *0,915* | | *0,62* | |
| | 3.3465 | 1.63 | 0.87 | 2.24 | 1.20 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.35 | **YAT 209-112** |
| | *85* | *41,5* | *22* | *56,8* | *30,5* | *1* | *33,2* | *21,6* | *0,915* | | *0,60* | |
| **1 15/16** | 3.5433 | 2.03 | 0.87 | 2.46 | 1.28 | 0.04 | 7 900 | 5 220 | 220 | 4 000 | 1.70 | **YAR 210-115-2F** |
| *49,213* | *90* | *51,6* | *22* | *62,5* | *32,6* | *1* | *35,1* | *23,2* | *0,98* | | *0,78* | |
| | 3.5433 | 2.03 | 0.87 | 2.46 | 1.28 | 0.04 | 7 900 | 5 220 | 220 | 2 200 | 1.70 | **YAR 210-115-2RF** |
| | *90* | *51,6* | *22* | *62,5* | *32,6* | *1* | *35,1* | *23,2* | *0,98* | | *0,78* | |
| | 3.5433 | 2.03 | 0.87 | 2.46 | 1.28 | 0.04 | 6 660 | 5 220 | 220 | 2 200 | 1.70 | **YAR 210-115-2RF/HV** |
| | *90* | *51,6* | *22* | *62,5* | *32,6* | *1* | *29,6* | *23,2* | *0,98* | | *0,78* | |
| | 3.5433 | 2.03 | 0.87 | 2.46 | 1.28 | 0.04 | 7 900 | 5 220 | 220 | 2 200 | 1.70 | **YAR 210-115-2RF/VE495** |
| | *90* | *51,6* | *22* | *62,5* | *32,6* | *1* | *35,1* | *23,2* | *0,98* | | *0,78* | |
| | 3.5433 | 1.69 | 0.87 | 2.46 | 1.26 | 0.04 | 7 900 | 5 220 | 220 | 4 000 | 1.50 | **YAT 210-115** |
| | *90* | *43* | *22* | *62,5* | *32* | *1* | *35,1* | *23,2* | *0,98* | | *0,67* | |

| Dimensions | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | dynamic | static | | with shaft tolerance | | |
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | h6 | | |
| in/*mm* | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **2** | 3.9370 | 2.19 | 0.98 | 2.72 | 1.32 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 2.45 | **YAR 211-200-2F** |
| *50,8* | *100* | *55,6* | *25* | *69,1* | *33,4* | *1* | *43,6* | *29* | *1,25* | | *1,10* | |
| | 3.9370 | 2.19 | 0.98 | 2.72 | 1.32 | 0.04 | 9 810 | 6 530 | 280 | 1 900 | 2.45 | **YAR 211-200-2RF** |
| | *100* | *55,6* | *25* | *69,1* | *33,4* | *1* | *43,6* | *29* | *1,25* | | *1,10* | |
| | 3.9370 | 1.77 | 0.98 | 2.72 | 1.28 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 2.30 | **YAT 211-200** |
| | *100* | *45* | *25* | *69,1* | *32,5* | *1* | *43,6* | *29* | *1,25* | | *1,05* | |
| **2 3/16** | 3.9370 | 2.19 | 0.98 | 2.72 | 1.32 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 2.30 | **YAR 211-203-2F** |
| *55,563* | *100* | *55,6* | *25* | *69,1* | *33,4* | *1* | *43,6* | *29* | *1,25* | | *1,05* | |
| | 3.9370 | 2.19 | 0.98 | 2.72 | 1.32 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 2.30 | **YAR 211-203-2F/AH** |
| | *100* | *55,6* | *25* | *69,1* | *33,4* | *1* | *43,6* | *29* | *1,25* | | *1,05* | |
| | 4.3307 | 2.56 | 1.02 | 2.98 | 1.56 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 3.75 | **YAR 212-203-2F** |
| | *110* | *65,1* | *26* | *75,6* | *39,7* | *1,5* | *52,7* | *36* | *1,53* | | *1,70* | |
| **2 1/4** | 4.3307 | 2.56 | 1.02 | 2.98 | 1.56 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 3.55 | **YAR 212-204-2F** |
| *57,15* | *110* | *65,1* | *26* | *75,6* | *39,7* | *1,5* | *52,7* | *36* | *1,53* | | *1,60* | |
| | 4.3307 | 1.91 | 1.02 | 2.98 | 1.38 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 2.75 | **YAT 212-204** |
| | *110* | *48,5* | *26* | *75,6* | *35* | *1,5* | *52,7* | *36* | *1,53* | | *1,25* | |
| **2 7/16** | 4.3307 | 2.56 | 1.02 | 2.98 | 1.56 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 3.00 | **YAR 212-207-2F** |
| *61,913* | *110* | *65,1* | *26* | *75,6* | *39,7* | *1,5* | *52,7* | *36* | *1,53* | | *1,35* | |
| | 4.3307 | 1.91 | 1.02 | 2.98 | 1.38 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 2.75 | **YAT 212-207** |
| | *110* | *48,5* | *26* | *75,6* | *35* | *1,5* | *52,7* | *36* | *1,53* | | *1,25* | |
| | 4.9213 | 2.75 | 1.10 | 3.43 | 1.56 | 0.06 | 14 040 | 9 900 | 420 | 2 800 | 5.40 | **YAR 214-207-2F** |
| | *125* | *69,93* | *28* | *87* | *39,7* | *1,5* | *62,4* | *44* | *1,86* | | *2,45* | |
| **2 1/2** | 4.7244 | 2.69 | 1.06 | 3.25 | 1.69 | 0.06 | 12 870 | 9 000 | 380 | 3 000 | 4.20 | **YAR 213-208-2F** |
| *63,5* | *120* | *68,3* | *27* | *82,5* | *42,9* | *1,5* | *57,2* | *40* | *1,7* | | *1,90* | |
| | 4.7244 | 2.69 | 1.06 | 3.25 | 1.69 | 0.06 | 12 870 | 9 000 | 380 | 1 600 | 4.20 | **YAR 213-208-2RF** |
| | *120* | *68,3* | *27* | *82,5* | *42,9* | *1,5* | *57,2* | *40* | *1,7* | | *1,90* | |
| | 4.9213 | 2.75 | 1.10 | 3.43 | 1.56 | 0.06 | 14 040 | 9 900 | 420 | 2 800 | 5.30 | **YAR 214-208-2F** |
| | *125* | *69,93* | *28* | *87* | *39,7* | *1,5* | *62,4* | *44* | *1,86* | | *2,40* | |
| **2 11/16** | 4.7244 | 2.69 | 1.06 | 3.25 | 1.69 | 0.06 | 12 870 | 9 000 | 380 | 3 000 | 3.75 | **YAR 213-211-2F** |
| *68,263* | *120* | *68,3* | *27* | *82,5* | *42,9* | *1,5* | *57,2* | *40* | *1,7* | | *1,70* | |
| **2 15/16** | 5.1181 | 2.88 | 1.14 | 3.62 | 1.82 | 0.06 | 14 920 | 11 030 | 460 | 2 600 | 4.85 | **YAR 215-215-2F** |
| *74,613* | *130* | *73,3* | *29* | *92* | *46,1* | *1,5* | *66,3* | *49* | *2,04* | | *2,20* | |
| | 5.1181 | 2.11 | 1.14 | 3.62 | 1.54 | 0.06 | 14 920 | 11 030 | 460 | 2 600 | 4.65 | **YAT 215-215** |
| | *130* | *53,5* | *29* | *92* | *39* | *1,5* | *66,3* | *49* | *2,04* | | *2,10* | |

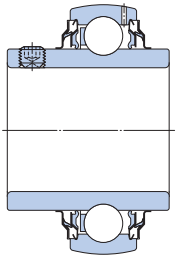
## Y-bearings with grub screws, inch shafts
d **3** in




YAT



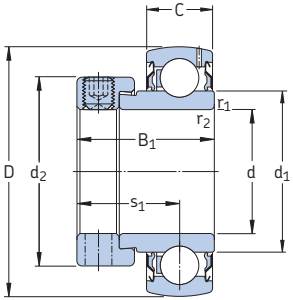

YAR-2F



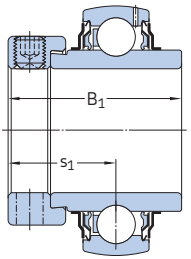
YAR-2RF

| **Dimensions** | | | | | | | **Basic load ratings** dynamic | static | **Fatigue load limit** | **Limiting speed** with shaft tolerance | **Mass** | **Designation** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | C | $d_1$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | h6 | | |
| in/*mm* | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **3** | 5.5118 | 3.07 | 1.18 | 3.83 | 1.88 | 0.08 | 16 400 | 11 900 | 486 | 2 400 | 6.30 | **YAR 216-300-2F** |
| *76,2* | *140* | *77,9* | *30* | *97,4* | *47,7* | *2* | *72,8* | *53* | *2,16* | | *2,85* | |
| | 5.5118 | 2.19 | 1.18 | 3.83 | 1.54 | 0.08 | 16 370 | 11 920 | 490 | 2 400 | 5.20 | **YAT 216-300** |
| | *140* | *55,5* | *30* | *97,4* | *39* | *2* | *72,8* | *53* | *2,16* | | *2,35* | |

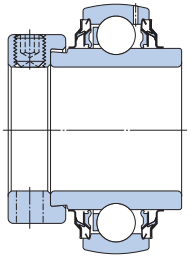
## Y-bearings with an eccentric locking collar, metric shafts
d **15 – 60** mm




YET



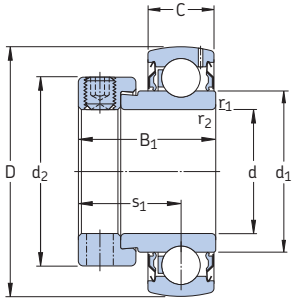

YEL-2F



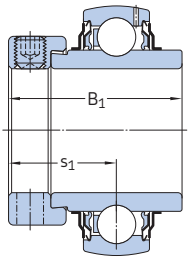
YEL-2RF/VL065

| Dimensions | | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | $B_1$ | C | $d_1$ | $d_2$ | $s_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | | | |
| mm | | | | | | | | kN | | kN | r/min | kg | – |
| **15** | 40 | 28,6 | 12 | 24,2 | 27,2 | 22,1 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,12 | **YET 203/15** |
| **17** | 40 | 28,6 | 12 | 24,2 | 27,2 | 22,1 | 0,3 | 9,56 | 4,75 | 0,2 | 9 500 | 0,10 | **YET 203** |
| **20** | 47 | 31 | 14 | 28,2 | 32,4 | 23,5 | 0,6 | 12,7 | 6,55 | 0,28 | 8 500 | 0,18 | **YET 204** |
| | 47 | 31 | 14 | 28,2 | 32,4 | 23,5 | 0,6 | 12,7 | 6,55 | 0,28 | 8 500 | 0,18 | **YET 204/VL065** |
| | 47 | 43,7 | 14 | 28,2 | 32,4 | 26,6 | 0,6 | 12,7 | 6,55 | 0,28 | 8 500 | 0,19 | **YEL 204-2F** |
| | 47 | 43,7 | 14 | 28,2 | 32,4 | 26,6 | 0,6 | 12,7 | 6,55 | 0,28 | 5 000 | 0,19 | **YEL 204-2RF/VL065** |
| **25** | 52 | 31 | 15 | 33,7 | 37,4 | 23,5 | 0,6 | 14 | 7,8 | 0,335 | 7 000 | 0,18 | **YET 205** |
| | 52 | 31 | 15 | 33,7 | 37,4 | 23,5 | 0,6 | 14 | 7,8 | 0,335 | 7 000 | 0,18 | **YET 205/VL065** |
| | 52 | 44,4 | 15 | 33,7 | 37,4 | 26,9 | 0,6 | 14 | 7,8 | 0,335 | 7 000 | 0,24 | **YEL 205-2F** |
| | 52 | 44,4 | 15 | 33,7 | 37,4 | 26,9 | 0,6 | 14 | 7,8 | 0,335 | 4 300 | 0,24 | **YEL 205-2RF/VL065** |
| **30** | 62 | 35,7 | 18 | 39,7 | 44,1 | 26,7 | 0,6 | 19,5 | 11,2 | 0,475 | 6 300 | 0,30 | **YET 206** |
| | 62 | 35,7 | 18 | 39,7 | 44,1 | 26,7 | 0,6 | 19,5 | 11,2 | 0,475 | 6 300 | 0,30 | **YET 206/VL065** |
| | 62 | 48,4 | 18 | 39,7 | 44,1 | 30,1 | 0,6 | 19,5 | 11,2 | 0,475 | 6 300 | 0,36 | **YEL 206-2F** |
| | 62 | 48,4 | 18 | 39,7 | 44,1 | 30,1 | 0,6 | 19,5 | 11,2 | 0,475 | 3 900 | 0,36 | **YEL 206-2RF/VL065** |
| **35** | 72 | 38,9 | 19 | 46,1 | 51,1 | 29,4 | 1 | 25,5 | 15,3 | 0,655 | 5 300 | 0,44 | **YET 207** |
| | 72 | 38,9 | 19 | 46,1 | 51,1 | 29,4 | 1 | 25,5 | 15,3 | 0,655 | 5 300 | 0,44 | **YET 207/VL065** |
| | 72 | 51,1 | 19 | 46,1 | 51,1 | 32,3 | 1 | 25,5 | 15,3 | 0,655 | 5 300 | 0,55 | **YEL 207-2F** |
| | 72 | 51,1 | 19 | 46,1 | 51,1 | 32,3 | 1 | 25,5 | 15,3 | 0,655 | 3 200 | 0,55 | **YEL 207-2RF/VL065** |
| **40** | 80 | 43,7 | 21 | 51,8 | 56,5 | 32,7 | 1 | 30,7 | 19 | 0,8 | 4 800 | 0,59 | **YET 208** |
| | 80 | 43,7 | 21 | 51,8 | 56,5 | 32,7 | 1 | 30,7 | 19 | 0,8 | 4 800 | 0,59 | **YET 208/VL065** |
| | 80 | 56,3 | 21 | 51,8 | 56,5 | 34,9 | 1 | 30,7 | 19 | 0,8 | 4 800 | 0,67 | **YEL 208-2F** |
| | 80 | 56,3 | 21 | 51,8 | 56,5 | 34,9 | 1 | 30,7 | 19 | 0,8 | 2 800 | 0,67 | **YEL 208-2RF/VL065** |
| **45** | 85 | 43,7 | 22 | 56,8 | 62 | 32,7 | 1 | 33,2 | 21,6 | 0,915 | 4 300 | 0,65 | **YET 209** |
| | 85 | 56,3 | 22 | 56,8 | 62 | 34,9 | 1 | 33,2 | 21,6 | 0,915 | 4 300 | 0,74 | **YEL 209-2F** |
| **50** | 90 | 43,7 | 22 | 62,5 | 67,2 | 32,7 | 1 | 35,1 | 23,2 | 0,98 | 4 000 | 0,70 | **YET 210** |
| | 90 | 62,7 | 22 | 62,5 | 67,2 | 38,1 | 1 | 35,1 | 23,2 | 0,98 | 4 000 | 0,89 | **YEL 210-2F** |
| **55** | 100 | 48,4 | 25 | 69,1 | 74,5 | 36,4 | 1 | 43,6 | 29 | 1,25 | 3 600 | 0,90 | **YET 211** |
| | 100 | 71,4 | 25 | 69,1 | 74,5 | 43,6 | 1 | 43,6 | 29 | 1,25 | 3 600 | 1,20 | **YEL 211-2F** |
| **60** | 110 | 53,1 | 26 | 75,6 | 82 | 39,6 | 1,5 | 52,7 | 36 | 1,53 | 3 400 | 1,30 | **YET 212** |
| | 110 | 77,8 | 26 | 75,6 | 82 | 46,8 | 1,5 | 52,7 | 36 | 1,53 | 3 400 | 1,60 | **YEL 212-2F** |

## Y-bearings with an eccentric locking collar, inch shafts
d **1/2 – 2 7/16** in




YET

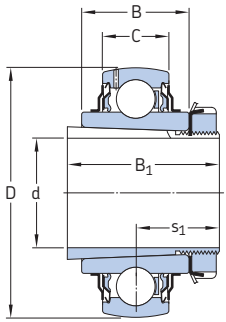



YEL-2F

| Dimensions | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | $B_1$ | C | $d_1$ | $d_2$ | $s_1$ | $r_{1,2}$ min | dynamic C | static $C_0$ | $P_u$ | with shaft tolerance h6 | | |
| in/*mm* | | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **1/2** | 1.5748 | 1.47 | 0.47 | 0.95 | 1.07 | 0.92 | 0.01 | 2 150 | 1 070 | 45 | 9 500 | 0.33 | **YEL 203-008-2F** |
| *12,7* | *40* | *37,3* | *12* | *24,2* | *27,2* | *23,4* | *0,3* | *9,56* | *4,75* | *0,2* | | *0,15* | |
| | 1.5748 | 1.13 | 0.47 | 0.95 | 1.07 | 0.87 | 0.01 | 2 150 | 1 070 | 50 | 9 500 | 0.29 | **YET 203-008** |
| | *40* | *28,6* | *12* | *24,2* | *27,2* | *22,1* | *0,3* | *9,56* | *4,75* | *0,2* | | *0,13* | |
| **3/4** | 1.8504 | 1.72 | 0.55 | 1.11 | 1.28 | 1.05 | 0.02 | 2 860 | 1 470 | 60 | 8 500 | 0.44 | **YEL 204-012-2F** |
| *19,05* | *47* | *43,7* | *14* | *28,2* | *32,4* | *26,6* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,20* | |
| | 1.8504 | 1.22 | 0.55 | 1.11 | 1.28 | 0.93 | 0.02 | 2 860 | 1 470 | 60 | 8 500 | 0.38 | **YET 204-012** |
| | *47* | *31* | *14* | *28,2* | *32,4* | *23,5* | *0,6* | *12,7* | *6,55* | *0,28* | | *0,17* | |
| **1** | 2.0472 | 1.22 | 0.59 | 1.33 | 1.47 | 0.93 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.40 | **YET 205-100** |
| *25,4* | *52* | *31* | *15* | *33,7* | *37,4* | *23,5* | *0,6* | *14* | *7,8* | *0,335* | | *0,18* | |
| | 2.0472 | 1.75 | 0.59 | 1.33 | 1.47 | 1.06 | 0.02 | 3 150 | 1 760 | 80 | 7 000 | 0.53 | **YEL 205-100-2F** |
| | *52* | *44,4* | *15* | *33,7* | *37,4* | *26,9* | *0,6* | *14* | *7,8* | *0,335* | | *0,24* | |
| **1 1/8** | 2.4409 | 1.91 | 0.71 | 1.56 | 1.74 | 1.19 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.86 | **YEL 206-102-2F** |
| *28,575* | *62* | *48,4* | *18* | *39,7* | *44,1* | *30,1* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,39* | |
| | 2.4409 | 1.41 | 0.71 | 1.56 | 1.74 | 1.05 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.73 | **YET 206-102** |
| | *62* | *35,7* | *18* | *39,7* | *44,1* | *26,7* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,33* | |
| **1 3/16** | 2.4409 | 1.91 | 0.71 | 1.56 | 1.74 | 1.19 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.82 | **YEL 206-103-2F** |
| *30,163* | *62* | *48,4* | *18* | *39,7* | *44,1* | *30,1* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,37* | |
| | 2.4409 | 1.41 | 0.71 | 1.56 | 1.74 | 1.05 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.68 | **YET 206-103** |
| | *62* | *35,7* | *18* | *39,7* | *44,1* | *26,7* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,31* | |
| **1 1/4** | 2.8346 | 2.01 | 0.75 | 1.82 | 2.01 | 1.27 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.30 | **YEL 207-104-2F** |
| *31,75* | *72* | *51,1* | *19* | *46,1* | *51,1* | *32,3* | *1* | *25,5* | *15,3* | *0,655* | | *0,60* | |
| | 2.4409 | 1.41 | 0.71 | 1.56 | 1.74 | 1.05 | 0.02 | 4 390 | 2 520 | 110 | 6 300 | 0.64 | **YET 206-104** |
| | *62* | *35,7* | *18* | *39,7* | *44,1* | *26,7* | *0,6* | *19,5* | *11,2* | *0,475* | | *0,29* | |
| | 2.8346 | 1.53 | 0.75 | 1.82 | 2.01 | 1.16 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.10 | **YET 207-104** |
| | *72* | *38,9* | *19* | *46,1* | *51,1* | *29,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,51* | |
| **1 5/16** | 2.8346 | 1.53 | 0.75 | 1.82 | 2.01 | 1.16 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.25 | **YET 207-105** |
| *33,338* | *72* | *38,9* | *19* | *46,1* | *51,1* | *29,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,56* | |
| **1 3/8** | 2.8346 | 2.01 | 0.75 | 1.82 | 2.01 | 1.27 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.20 | **YEL 207-106-2F** |
| *34,925* | *72* | *51,1* | *19* | *46,1* | *51,1* | *32,3* | *1* | *25,5* | *15,3* | *0,655* | | *0,55* | |
| | 2.8346 | 1.53 | 0.75 | 1.82 | 2.01 | 1.16 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.05 | **YET 207-106** |
| | *72* | *38,9* | *19* | *46,1* | *51,1* | *29,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,47* | |

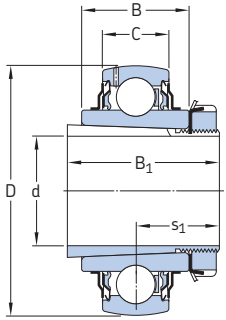
| Dimensions | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | $B_1$ | C | $d_1$ | $d_2$ | $s_1$ | $r_{1,2}$ min | dynamic C | static $C_0$ | $P_u$ | with shaft tolerance h6 | | |
| in/*mm* | | | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – |
| **1 7/16** | 2.8346 | 2.01 | 0.75 | 1.82 | 2.01 | 1.27 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.15 | **YEL 207-107-2F** |
| *36,513* | *72* | *51,1* | *19* | *46,1* | *51,1* | *32,3* | *1* | *25,5* | *15,3* | *0,655* | | *0,53* | |
| | 2.8346 | 1.53 | 0.75 | 1.82 | 2.01 | 1.16 | 0.04 | 5 740 | 3 440 | 150 | 5 300 | 1.97 | **YET 207-107** |
| | *72* | *38,9* | *19* | *46,1* | *51,1* | *29,4* | *1* | *25,5* | *15,3* | *0,655* | | *0,44* | |
| **1 1/2** | 3.1496 | 1.72 | 0.83 | 2.04 | 2.22 | 1.29 | 0.04 | 6 910 | 4 280 | 180 | 4 800 | 1.40 | **YET 208-108** |
| *38,1* | *80* | *43,7* | *21* | *51,8* | *56,5* | *32,7* | *1* | *30,7* | *19* | *0,8* | | *0,63* | |
| | 3.1496 | 2.22 | 0.83 | 2.04 | 2.22 | 1.37 | 0.04 | 6 910 | 4 280 | 180 | 4 800 | 1.70 | **YEL 208-108-2F** |
| | *80* | *56,3* | *21* | *51,8* | *56,5* | *34,9* | *1* | *30,7* | *19* | *0,8* | | *0,77* | |
| **1 11/16** | 3.3465 | 2.22 | 0.87 | 2.24 | 2.44 | 1.37 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.95 | **YEL 209-111-2F** |
| *42,863* | *85* | *56,3* | *22* | *56,8* | *62* | *34,9* | *1* | *33,2* | *21,6* | *0,915* | | *0,88* | |
| | 3.3465 | 1.72 | 0.87 | 2.24 | 2.44 | 1.29 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.65 | **YET 209-111** |
| | *85* | *43,7* | *22* | *56,8* | *62* | *32,7* | *1* | *33,2* | *21,6* | *0,915* | | *0,74* | |
| **1 3/4** | 3.3465 | 2.22 | 0.87 | 2.24 | 2.44 | 1.37 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.75 | **YEL 209-112-2F** |
| *44,45* | *85* | *56,3* | *22* | *56,8* | *62* | *34,9* | *1* | *33,2* | *21,6* | *0,915* | | *0,80* | |
| | 3.3465 | 1.72 | 0.87 | 2.24 | 2.44 | 1.29 | 0.04 | 7 470 | 4 860 | 210 | 4 300 | 1.55 | **YET 209-112** |
| | *85* | *43,7* | *22* | *56,8* | *62* | *32,7* | *1* | *33,2* | *21,6* | *0,915* | | *0,70* | |
| **1 15/16** | 3.5433 | 2.47 | 0.87 | 2.46 | 2.65 | 1.50 | 0.04 | 7 900 | 5 220 | 220 | 4 000 | 2.05 | **YEL 210-115-2F** |
| *49,213* | *90* | *62,7* | *22* | *62,5* | *67,2* | *38,1* | *1* | *35,1* | *23,2* | *0,98* | | *0,94* | |
| **2** | 3.9370 | 2.81 | 0.98 | 2.72 | 2.93 | 1.72 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 3.30 | **YEL 211-200-2F** |
| *50,8* | *100* | *71,4* | *25* | *69,1* | *74,5* | *43,6* | *1* | *43,6* | *29* | *1,25* | | *1,50* | |
| **2 3/16** | 3.9370 | 2.81 | 0.98 | 2.72 | 2.93 | 1.72 | 0.04 | 9 810 | 6 530 | 280 | 3 600 | 2.85 | **YEL 211-203-2F** |
| *55,563* | *100* | *71,4* | *25* | *69,1* | *74,5* | *43,6* | *1* | *43,6* | *29* | *1,25* | | *1,30* | |
| **2 7/16** | 4.3307 | 3.06 | 1.02 | 2.98 | 3.23 | 1.84 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 3.75 | **YEL 212-207-2F** |
| *61,913* | *110* | *77,8* | *26* | *75,6* | *82* | *46,8* | *1,5* | *52,7* | *36* | *1,53* | | *1,70* | |
| | 4.3307 | 2.09 | 1.02 | 2.98 | 3.23 | 1.84 | 0.06 | 11 860 | 8 100 | 340 | 3 400 | 2.65 | **YET 212-207** |
| | *110* | *53,1* | *26* | *75,6* | *82* | *46,8* | *1,5* | *52,7* | *36* | *1,53* | | *1,20* | |

## Y-bearings with a tapered bore on an adapter sleeve, metric shafts
d **20 – 60** mm




| **Dimensions** | | | | | | **Basic load ratings** dynamic | static | **Fatigue load limit** | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing + sleeve | **Designations** Bearing | Adapter sleeve |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | $B_1$ | C | $s_1$ | C | $C_0$ | $P_u$ | | | | |
| mm | | | | | | kN | | kN | r/min | kg | – | |
| **20** | 52 | 24 | 35 | 15 | 20 | 14 | 7,8 | 0,335 | 7 000 | 0,22 | **YSA 205-2FK** | **H 2305** |
| **25** | 62 | 28 | 38 | 18 | 22 | 19,5 | 11,2 | 0,475 | 6 300 | 0,33 | **YSA 206-2FK** | **H 2306** |
| **30** | 72 | 30,5 | 43 | 19 | 24,3 | 25,5 | 15,3 | 0,655 | 5 300 | 0,47 | **YSA 207-2FK** | **H 2307** |
| **35** | 80 | 33,9 | 46 | 21 | 27 | 30,7 | 19 | 0,8 | 4 800 | 0,69 | **YSA 208-2FK** | **H 2308** |
| **40** | 85 | 35 | 50 | 22 | 28,5 | 33,2 | 21,6 | 0,915 | 4 300 | 0,77 | **YSA 209-2FK** | **H 2309** |
| **45** | 90 | 37 | 55 | 22 | 30,5 | 35,1 | 23,2 | 0,98 | 4 000 | 0,88 | **YSA 210-2FK** | **H 2310** |
| **50** | 100 | 40 | 59 | 25 | 32,5 | 43,6 | 29 | 1,25 | 3 600 | 1,10 | **YSA 211-2FK** | **H 2311** |
| **55** | 110 | 42,5 | 62 | 26 | 34,3 | 52,7 | 36 | 1,53 | 3 400 | 1,40 | **YSA 212-2FK** | **H 2312** |
| **60** | 120 | 43,5 | 65 | 27 | 35,8 | 57,2 | 40 | 1,7 | 3 000 | 1,70 | **YSA 213-2FK** | **H 2313** |

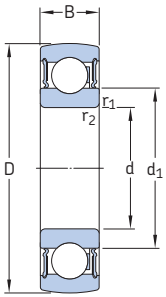
## Y-bearings with a tapered bore on an adapter sleeve, inch shafts
d **3/4 – 2 3/8** in




| **Dimensions** | | | | | | **Basic load ratings** | | **Fatigue load limit** | **Limiting speed** | **Mass** | **Designations** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | $B_1$ | C | $s_1$ | dyn. C | stat $C_0$ | $P_u$ | with shaft tolerance h6 | Bearing + sleeve | Bearing | Adapter sleeve |
| in/*mm* | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – | |
| **3/4**<br>*19,05* | 2.0472<br>*52* | 0.95<br>*24* | 1.38<br>*35* | 0.59<br>*15* | 0.79<br>*20* | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 0.49<br>*0,22* | **YSA 205-2FK** | **HE 2305** |
| **15/16**<br>*23,813* | 2.4409<br>*62* | 1.10<br>*28* | 1.50<br>*38* | 0.71<br>*18* | 0.87<br>*22* | 4 390<br>*20* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 0.77<br>*0,35* | **YSA 206-2FK** | **HA 2306** |
| **1**<br>*25,4* | 2.4409<br>*62* | 1.10<br>*28* | 1.50<br>*38* | 0.71<br>*18* | 0.87<br>*22* | 4 390<br>*20* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 0.73<br>*0,33* | **YSA 206-2FK** | **HE 2306** |
| **1 3/16**<br>*30,163* | 2.8346<br>*72* | 1.20<br>*30,5* | 1.69<br>*43* | 0.75<br>*19* | 0.96<br>*24,3* | 5 740<br>*26* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 1.05<br>*0,47* | **YSA 207-2FK** | **HA 2307** |
| **1 1/4**<br>*31,75* | 3.1496<br>*80* | 1.34<br>*33,9* | 1.81<br>*46* | 0.83<br>*21* | 1.06<br>*27* | 6 910<br>*31* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 1.50<br>*0,69* | **YSA 208-2FK** | **HE 2308** |
| **1 7/16**<br>*36,513* | 3.3465<br>*85* | 1.38<br>*35* | 1.97<br>*50* | 0.87<br>*22* | 1.12<br>*28,5* | 7 470<br>*33* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 1.80<br>*0,81* | **YSA 209-2FK** | **HA 2309** |
| **1 1/2**<br>*38,1* | 3.3465<br>*85* | 1.38<br>*35* | 1.97<br>*50* | 0.87<br>*22* | 1.12<br>*28,5* | 7 470<br>*33* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 1.70<br>*0,77* | **YSA 209-2FK** | **HE 2309** |
| **1 5/8**<br>*41,275* | 3.5433<br>*90* | 1.46<br>*37* | 2.17<br>*55* | 0.87<br>*22* | 1.20<br>*30,5* | 7 900<br>*35* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 2.05<br>*0,94* | **YSA 210-2FK** | **HS 2310** |
| **1 11/16**<br>*42,863* | 3.5433<br>*90* | 1.46<br>*37* | 2.17<br>*55* | 0.87<br>*22* | 1.20<br>*30,5* | 7 900<br>*35* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 2<br>*0,91* | **YSA 210-2FK** | **HA 2310** |
| **1 3/4**<br>*44,45* | 3.5433<br>*90* | 1.46<br>*37* | 2.17<br>*55* | 0.87<br>*22* | 1.20<br>*30,5* | 7 900<br>*35* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 1.95<br>*0,88* | **YSA 210-2FK** | **HE 2310** |
| **1 15/16**<br>*49,213* | 3.937<br>*100* | 1.58<br>*40* | 2.32<br>*59* | 0.98<br>*25* | 1.28<br>*32,5* | 9 810<br>*44* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 2.45<br>*1,10* | **YSA 211-2FK** | **HA 2311** |
| **2**<br>*50,800* | 3.937<br>*100* | 1.58<br>*40* | 2.32<br>*59* | 0.98<br>*25* | 1.28<br>*32,5* | 9 810<br>*44* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 2.45<br>*1,10* | **YSA 211-2FK** | **HE 2311 B** |
| **2 1/8**<br>*53,975* | 4.3307<br>*110* | 1.67<br>*42,5* | 2.44<br>*62* | 1.02<br>*26* | 1.35<br>*34,3* | 11 860<br>*53* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 3.10<br>*1,40* | **YSA 212-2FK** | **HS 2312** |
| **2 3/16**<br>*55,563* | 4.7244<br>*120* | 1.71<br>*43,5* | 2.56<br>*65* | 1.06<br>*27* | 1.41<br>*35,8* | 12 870<br>*57* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 4.20<br>*1,90* | **YSA 213-2FK** | **HA 2313** |

| **Dimensions** | | | | | | **Basic load ratings** | | **Fatigue load limit** | **Limiting speed** | **Mass** | **Designations** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | $B_1$ | C | $s_1$ | dyn. C | stat $C_0$ | $P_u$ | with shaft tolerance h6 | Bearing + sleeve | Bearing | Adapter sleeve |
| in/*mm* | | | | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* | – | |
| **2 1/4**<br>*57,15* | 4.7244<br>*120* | 1.71<br>*43,5* | 2.56<br>*65* | 1.06<br>*27* | 1.41<br>*35,8* | 12 870<br>*57* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 3.95<br>*1,80* | **YSA 213-2FK** | **HE 2313** |
| **2 3/8**<br>*60,325* | 4.7244<br>*120* | 1.71<br>*43,5* | 2.56<br>*65* | 1.06<br>*27* | 1.41<br>*35,8* | 12 870<br>*57* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 3.75<br>*1,70* | **YSA 213-2FK** | **HS 2313** |

## Y-bearings with a standard inner ring, metric shafts
d **17 – 60** mm




| Dimensions | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed | Mass | Designation |
|---|---|---|---|---|---|---|---|---|---|---|
| d | D | B | $d_1$ | $r_{1,2}$ min | C | $C_0$ | $P_u$ | | | |
| mm | | | | | kN | | kN | r/min | kg | – |
| **17** | 40 | 12 | 24,2 | 0,6 | 9,56 | 4,75 | 0,2 | 12 000 | 0,056 | **1726203-2RS1** |
| **20** | 47 | 14 | 28,5 | 1 | 12,7 | 6,55 | 0,28 | 10 000 | 0,095 | **1726204-2RS1** |
| **25** | 52 | 15 | 34 | 1 | 14 | 7,8 | 0,335 | 8 500 | 0,11 | **1726205-2RS1** |
| | 62 | 17 | 36,6 | 1.1 | 22,5 | 11,6 | 0,49 | 7 500 | 0,20 | **1726305-2RS1** |
| **30** | 62 | 16 | 40,3 | 1 | 19,5 | 11,2 | 0,475 | 7 500 | 0,18 | **1726206-2RS1** |
| | 72 | 19 | 44,6 | 1,1 | 28,1 | 16 | 0,67 | 6 300 | 0,30 | **1726306-2RS1** |
| **35** | 72 | 17 | 46,9 | 1,1 | 25,5 | 15,3 | 0,655 | 6 300 | 0,25 | **1726207-2RS1** |
| | 80 | 21 | 49,6 | 1,5 | 33,2 | 19 | 0,815 | 6 000 | 0,40 | **1726307-2RS1** |
| **40** | 80 | 18 | 52,6 | 1,1 | 30,7 | 19 | 0,8 | 5 600 | 0,32 | **1726208-2RS1** |
| | 90 | 23 | 56,1 | 1,5 | 41 | 24 | 1 | 5 000 | 0,55 | **1726308-2RS1** |
| **45** | 85 | 19 | 57,6 | 1,1 | 33,2 | 21,6 | 0,915 | 5 000 | 0,37 | **1726209-2RS1** |
| | 100 | 25 | 62,1 | 1,5 | 52,7 | 31,5 | 1,34 | 4 500 | 0,73 | **1726309-2RS1** |
| **50** | 90 | 20 | 62,5 | 1,1 | 35,1 | 23,2 | 0,98 | 4 800 | 0,41 | **1726210-2RS1** |
| | 110 | 27 | 68,7 | 2 | 61,8 | 38 | 1,6 | 4 300 | 0,95 | **1726310-2RS1** |
| **55** | 100 | 21 | 69 | 1,5 | 43,6 | 29 | 1,25 | 4 300 | 0,54 | **1726211-2RS1** |
| **60** | 110 | 22 | 75,5 | 1,5 | 52,7 | 36 | 1,53 | 4 000 | 0,70 | **1726212-2RS1** |


SKF

# Y-bearing plummer block units



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# Designs

SKF Y-bearing plummer (pillow) block units are available as standard in a wide variety of designs. The standard assortment includes plummer block units with housings made of:

- composite material (→ **fig. 1**) referred to as Y-TECH plummer block units
- grey cast iron (→ **fig. 2**)
- pressed sheet steel (→ **fig. 3**)

They are located on the shaft via the inner ring of the insert bearing with either:

- grub (set) screws
- an eccentric locking collar
- an adapter sleeve

The Y-bearing can be sealed with either:

- the standard integral seal
- the standard integral seal and an additional flinger
- the highly efficient multiple seal

Additional information about Y-bearings can be found in the section *Y-bearings*, starting on **page 79**.

Y-bearing plummer block units available from stock are listed in the product tables. Other units can be composed by ordering the parts separately. The table on **pages 114** and **115** shows the wide variety of combinations of Y-bearings and Y-bearing housings.

**Fig. 1**



**Fig. 2**



**Fig. 3**



## Y-TECH plummer block units

Y-TECH plummer block units have housings made of composite material. They were developed for bearing arrangements that must operate reliably in difficult environments for extended periods without maintenance.

Y-TECH plummer block units in the SYK series are fitted with Y-bearings in the YAR 2-2F or YAR 2-2RF series and are attached to the shaft with grub screws (→ **fig. 4**). These units are part of the standard SKF product range.

For additional information about Y-TECH plummer block units for the food industry, refer to **page 274**.

Fig. 4



## Y-bearing plummer block units with a cast housing

Y-bearing plummer block units with a grey cast iron housing can be relubricated through a grease fitting in the housing. This makes them especially suitable for bearing arrangements that operate under any of the following conditions:

- high levels of contamination
- high speeds
- high temperatures
- relatively heavy loads

Four different housing designs are available:

- SY(J) series with two oblong holes for the attachment bolts in the base of the housing (→ **fig. 5**)
- SYH series, which is similar to the SY series, but with a lower centre height
- SYM series, which is similar to the SY series, but accommodates a larger bearing for a given shaft size, resulting in a greater load carrying capacity
- SYF(J) series with a shortened base that contains two threaded holes in the support base (→ **fig. 6**)

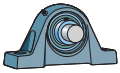
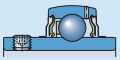
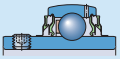
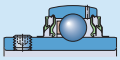
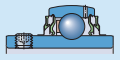
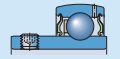
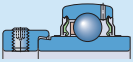
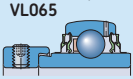
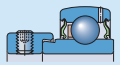
Fig. 5



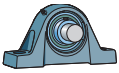
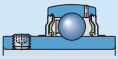
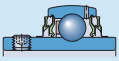
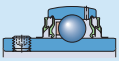
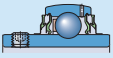
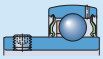
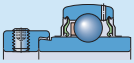
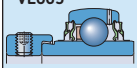
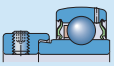
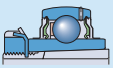
Fig. 6



## Y-bearing plummer block units

| Y-bearing unit | Y-bearing housings | | | | | |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
| **Y-bearings** | **SYK 5(00)** | **SY 5(00)** | **SYJ 5(00)** | **SYH 5(00)** | **SYM 5(00)** | **SYF 5(00)** |
| **YAR 2-2F**  | **SYK .. TF**<br>20–40 mm | **SY .. TF**<br>12–65 mm<br>1/2–2 15/16 in. | **SYJ .. TF**<br>20–100 mm<br>3/4–2 1/2 in. | **SYH .. TF**<br>1/2–2 7/16 in. | **SYM .. TF**<br>1 7/16–3 in. | **SYF .. TF**<br>20–50 mm<br>3/4–1 3/4 in.[1] |
| **YAR 2-2RF**  | **SYK .. TR**<br>20–40 mm | **SY .. TR**<br>20–60 mm<br>3/4–2 1/2 in.[1] | 20–65 mm[1]<br>3/4–2 1/2 in.[1] | – | – | 20–50 mm[1]<br>3/4–1 3/4 in.[1] |
| **YAR 2-2RF/HV**  | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | – | – | 20–50 mm<br>3/4–1 15/16 in. |
| **YAR 2-2RF/ VE495**  | 20–40 mm[1] | 20–50 mm | 20–50 mm | – | – | 20–50 mm |
| **YAT 2**  | 20–40 mm[1] | 17–50 mm[1] | 20–50 mm[1] | – | – | 20–50 mm[1] |
| **YEL 2-2F**  | 20–40 mm[1] | **SY .. WF**<br>20–60 mm<br>1 7/16–1 15/16 in. | 20–60 mm[1] | **SYH .. WF**<br>3/4–2 7/16 in. | – | 20–50 mm[1] |
| **YEL 2-2RF/ VL065**  | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | – | – | 20–40 mm[1] |
| **YET 2**  | 20–40 mm[1] | **SY .. FM**<br>15–60 mm<br>3/4–1 1/2 in.[1] | 20–60 mm[1]<br>3/4–1 1/2 in.[1] | **SYH .. FM**<br>1–2 in. | – | **SYF .. FM**<br>20–50 mm<br>3/4–1 1/2 in.[1] |
| **YSA 2-2FK on adapter sleeve**  | 20– 35 mm[1]<br>3/4–1 1/4 in.[1] | 20–60 mm[1]<br>3/4–2 3/8 in.[1] | **SYJ .. KF**<br>20–60 mm<br>3/4–2 3/8 in. | – | – | 20–45 mm[1]<br>3/4–1 3/4 in.[1] |
| **17262(00)**  | 20–40 mm[1] | 17–60 mm[1] | 20–60 mm[1] | – | – | 20–50 mm[1] |

[1] Parts must be ordered separately.

| Y-bearing unit  | Y-bearing housings | |
|---|---|---|
| |  |  |
| **Y-bearings** | **SYFJ 5(00)** | **P 40 – P 85** |
| **YAR 2-2F**  | **SYFJ .. TF**<br>20–50 mm<br>3/4–1 3/4 in.[1] | 12–45 mm[1]<br>1/2–1 3/4 in.[1] |
| **YAR 2-2RF**  | 20–50 mm[1]<br>3/4–1 3/4 in.[1] | 12–45 mm[1]<br>3/4–1 3/4 in.[1] |
| **YAR 2-2RF/HV**  | 20–50 mm<br>3/4–1 15/16 in. | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF/ VE495**  | 20–50 mm | 20–40 mm[1] |
| **YAT 2**  | 20–50 mm[1] | 17–45 mm[1]<br>5/8–1 3/4 in.[1] |
| **YEL 2-2F**  | 20–50 mm[1] | 12–45 mm[1]<br>1/2–1 3/4 in.[1] |
| **YEL 2-2RF/ VL065**  | 20–40 mm[1] | 20–40 mm[1] |
| **YET 2**  | **SYFJ .. FM**<br>20–50 mm<br>3/4–1 1/2 in.[1] | 15–45 mm[1]<br>1/2–1 3/4 in.[1] |
| **YSA 2-2FK on adapter sleeve**  | 12–45 mm[1]<br>3/4–1 3/4 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **17262(00)**  | 20–50 mm[1] | 17–45 mm[1] |

[1] Parts must be ordered separately.

# Y-bearing plummer block units with a pressed steel housing

Y-bearing plummer block units (→ **fig. 7**) with a pressed steel housing are designed for simple applications with limited loads and speeds. The two-part housing, which has no provision for relubrication, is ordered separately from the insert bearing. The individual items that make up a Y-bearing unit are:

- the two-part housing
- the Y-bearing
- the rubber seating ring, if needed

The advantage of ordering individual components is that a large number of combinations are possible.

Rubber seating rings made of acrylonitrile-butadiene rubber in the RIS 2 series (→ **fig. 8**) are available for these Y-bearing plummer blocks and are meant to reduce running noise and dampen vibration. The rubber seating rings also enable the bearings to be displaced slightly in their housings, for example, to accommodate shaft elongation.

Y-bearing units with a rubber seating ring are also listed in the product tables. Detailed information about rubber seating rings can be found in the section *Design of Y-bearing arrangements* on **pages 45** and **46**.

Fig. 7



Fig. 8



# Data – general

## Dimensions

The boundary dimensions of most Y-bearing plummer block housings are in accordance with the following standards:

- Housings in the SY 5(00) M series are in accordance with ISO 3228:1993.
- Housings in the SY 5(00) U series are in accordance with ISO 3228:1993, except the centre height $H_1$, which deviates for several housing sizes.
- Housings in the SYH series are in accordance with ISO 3228:1993, except the centre height $H_1$, which is lower than the standard.
- Housings in the SYJ series are in accordance with JIS B 1559-1995.
- Housings in the P series are in accordance with ISO 3228:1993, except the centre height $H_1$, which deviates slightly.

Y-bearing plummer block housings in the SYF, SYFJ and SYM series have not been standardized either nationally or internationally, but are common in the marketplace.

## Tolerances

The tolerance for the shaft centre height $H_1$ (→ **fig. 9**) is

- ±0,25 mm for plummer block units with a bearing bore diameter ≤ 40 mm, except for units in the SYK series, where the tolerance is +/– 0,31 mm
- ±0,30 mm for the larger plummer block units.

For Y-bearing plummer block units with composite or cast housings, the outside diameter of the bearing is matched to the diameter of the housing bore so that the outer ring is prevented from turning in its seat, but still able to compensate for misalignment.

Additional information about tolerances for the inner ring bore are listed in the section *Y-bearings* on **page 89**.

## Radial internal clearance

The Y-bearing used in a Y-bearing plummer block unit has the same radial internal clearance as a similarly sized individual Y-bearing.

Additional information about the radial internal clearance can be found in the section *Y-bearings* on **page 90**.

## Materials

### Composite housings

Y-housings in the SYK series are made of injection moulded glass fibre reinforced polyamide 6. A steel coil embedded in the housing adds greater stability to the form of the housing, even if operating temperatures are elevated.

The housing bolt holes are reinforced with zinc-plated sheet steel inserts. The standard housing colour is black.

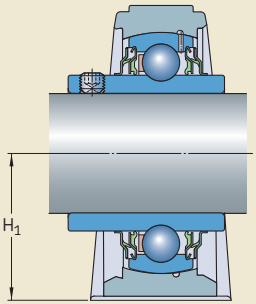
### Cast housings

Housings in the SY(J), SYH, SYM and SYF(J) series are manufactured from grey cast iron EN-GJL HB195 in accordance with EN 1561:1997.

### Pressed steel housings

Pressed steel housings in the P series are made from cold-rolled sheet steel and are zinc-coated for corrosion protection.

**Fig. 9**




## Load carrying ability of the housings

Housings made of composite material or grey cast iron are able to withstand the same dynamic and static loads as the Y-bearings they incorporate. These Y-bearing units can also be used in applications where shock loads or variable axial loads occur.

If SKF Y-bearing units are to be used in an application where health, safety, or the environment is at risk, contact the SKF application engineering service during the design phase.

Pressed steel housings have a lower load carrying capacity than their insert bearings. Permissible radial loads are specified in the product tables. The axial load should not exceed 20% of the permissible radial load.

If the bearing arrangement will be subjected to shock loads or variable axial loads, Y-bearing units with a cast or Y-TECH housing should always be used.

## End covers

To protect the shaft ends and avoid contact to rotating shaft ends, end covers are available for composite and cast Y-bearing plummer block units (→ **fig. 10**).

In the product tables, end covers in the ECY 2 series are shown together with the appropriate bearing unit. The designation of the end cover is listed together with the distance that the end cover protrudes from the housing.

For additional information about end covers, refer to the section *Design of Y-bearing arrangements* on **page 47**.

## Attaching to a support surface

Plummer block units have two bolt holes in the housing base through which they can be attached to their support surface with threaded fasteners. The bolt holes vary for different housings. Housings made of:

- composite material have oblong bolt holes, reinforced with zinc-coated sheet steel or stainless steel inserts
- grey cast iron – SY(J), SYH and SYM series – have cast oblong bolt holes
- grey cast iron – SYF and SYFJ series – have threaded holes in the support base
- pressed steel have round bolt holes

If the loads acting on a housing are between 55° and 120° (→ **fig. 11**), Y-TECH bearing units and SY(J), SYH and SYM plummer block units should be doweled to the support surface or stops should be provided in the direction of the load.

Recommendations for the position and size of the dowel pin holes for SY, SYJ and SYH series housings are provided in **table 1**.

## Grease fills

With the exception of SKF Y-bearing units for the food industry, all standard SKF Y-bearing plummer block units are filled with a high-quality, long-lasting grease containing a lithium-calcium thickener that has a consistency of 2 on the NLGI scale.

For additional information about lubricants and lubrication, refer to the section *Lubrication and maintenance*, starting on **page 48**.

Fig. 10

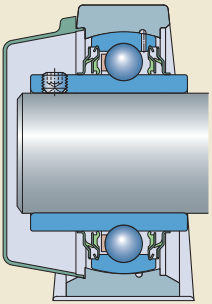
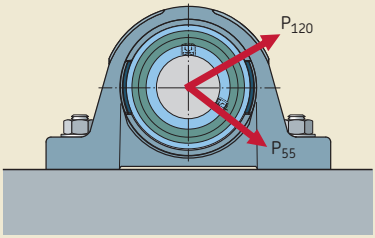


Fig. 11



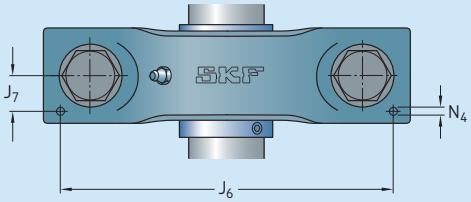

## Mounting

The procedure for mounting a Y-bearing plummer block unit depends on:

- the design of the housing
- the method used to attach the unit to the shaft

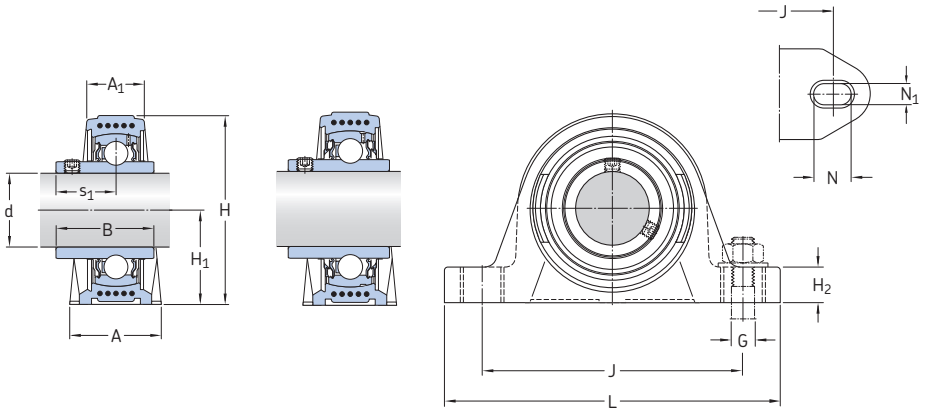
These methods are described in detail in the section *Mounting instructions*, starting on **page 52**.

**Position and size of dowel pin holes for Y-bearing plummer block housings made of grey cast iron**



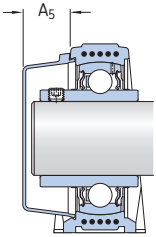

| Housing size | Dimensions for housings in the SYJ series | | | SY, SYH series | | |
|---|---|---|---|---|---|---|
| | $J_6$ | $J_7$ | $N_4$ | $J_6$ | $J_7$ | $N_4$ |
| – | mm | | | | | |
| **503** | – | – | – | 118 | 11,5 | 2 |
| **504** | 118 | 12,5 | 2 | 118 | 11,5 | 2 |
| **505** | 130 | 14 | 2 | 120 | 13 | 2 |
| **506** | 155 | 15 | 2 | 140 | 14 | 2 |
| **507** | 153 | 16 | 4 | 146 | 15,5 | 4 |
| **508** | 170 | 17,5 | 4 | 161 | 17 | 4 |
| **509** | 174 | 18 | 4 | 173 | 17 | 4 |
| **510** | 190 | 21 | 5 | 187 | 19 | 5 |
| **511** | 201 | 21 | 5 | 201 | 21 | 5 |
| **512** | 223 | 23,5 | 5 | 222 | 21 | 5 |
| **513** | 241 | 23 | 5 | 238 | 22,5 | 5 |
| **514** | 246 | 26 | 6 | 240 | 22,5 | 6 |
| **515** | 255 | 27 | 6 | – | – | – |
| **516** | 270 | 28 | 6 | 285 | 29 | 6 |
| **518** | 303 | 32 | 8 | – | – | – |
| **520** | 352 | 33,5 | 8 | – | – | – |

## Y-TECH plummer block units with grub screws, metric shafts
d **20 – 40** mm




TF TR

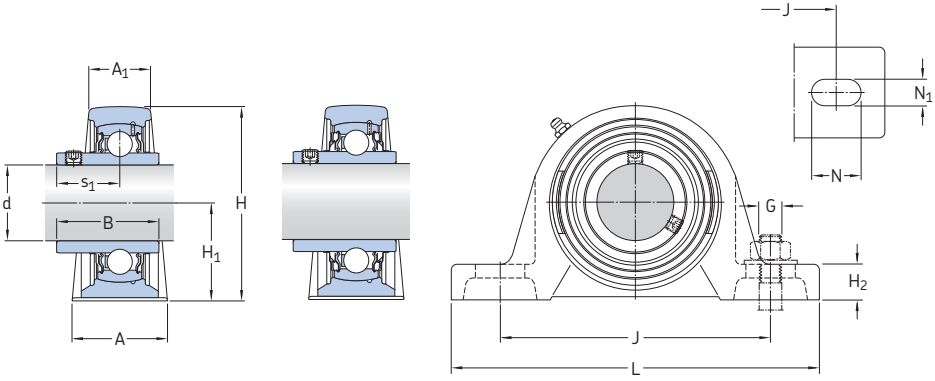
| Dimensions | | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 32 | 21 | 31 | 64 | 33,3 | 16 | 96 | 126 | 17,5 | 12 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 8 500 | **SYK 20 TF** |
| | 32 | 21 | 31 | 64 | 33,3 | 16 | 96 | 126 | 17,5 | 12 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 5 000 | **SYK 20 TR** |
| **25** | 32 | 22 | 34,1 | 70,5 | 36,5 | 16 | 105 | 134 | 17,5 | 12 | 10 | 19,8 | 14 | 7,8 | 0,335 | 7 000 | **SYK 25 TF** |
| | 32 | 22 | 34,1 | 70,5 | 36,5 | 16 | 105 | 134 | 17,5 | 12 | 10 | 19,8 | 14 | 7,8 | 0,335 | 4 300 | **SYK 25 TR** |
| **30** | 40 | 25 | 38,1 | 82 | 42,9 | 19 | 121 | 159 | 21,5 | 14,5 | 12 | 22,2 | 19,5 | 11,2 | 0,475 | 6 300 | **SYK 30 TF** |
| | 40 | 25 | 38,1 | 82 | 42,9 | 19 | 121 | 159 | 21,5 | 14,5 | 12 | 22,2 | 19,5 | 11,2 | 0,475 | 3 800 | **SYK 30 TR** |
| **35** | 45 | 27 | 42,9 | 93 | 47,6 | 19 | 126 | 164 | 21,5 | 14,5 | 12 | 25,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SYK 35 TF** |
| | 45 | 27 | 42,9 | 93 | 47,6 | 19 | 126 | 164 | 21,5 | 14,5 | 12 | 25,4 | 25,5 | 15,3 | 0,655 | 3 200 | **SYK 35 TR** |
| **40** | 48 | 30 | 49,2 | 99 | 49,2 | 19 | 136 | 176 | 21,5 | 14,5 | 12 | 30,2 | 30,7 | 19 | 0,8 | 4 800 | **SYK 40 TF** |
| | 48 | 30 | 49,2 | 99 | 49,2 | 19 | 136 | 176 | 21,5 | 14,5 | 12 | 30,2 | 30,7 | 19 | 0,8 | 2 800 | **SYK 40 TR** |





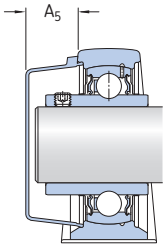

| Designations | | | Mass | Appropriate end cover | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **SYK 20 TF** | SYK 504 | YAR 204-2F | 0,24 | ECY 204 | 18,5 |
| **SYK 20 TR** | SYK 504 | YAR 204-2RF | 0,24 | ECY 204 | 18,5 |
| **SYK 25 TF** | SYK 505 | YAR 205-2F | 0,29 | ECY 205 | 18 |
| **SYK 25 TR** | SYK 505 | YAR 205-2RF | 0,29 | ECY 205 | 18 |
| **SYK 30 TF** | SYK 506 | YAR 206-2F | 0,49 | ECY 206 | 20 |
| **SYK 30 TR** | SYK 506 | YAR 206-2RF | 0,49 | ECY 206 | 20 |
| **SYK 35 TF** | SYK 507 | YAR 207-2F | 0,66 | ECY 207 | 22 |
| **SYK 35 TR** | SYK 507 | YAR 207-2RF | 0,66 | ECY 207 | 22 |
| **SYK 40 TF** | SYK 508 | YAR 208-2F | 0,86 | ECY 208 | 23,5 |
| **SYK 40 TR** | SYK 508 | YAR 208-2RF | 0,86 | ECY 208 | 23,5 |

## Y-bearing plummer block units with a cast housing and grub screws, metric shafts
d **12 – 60** mm




TF TR

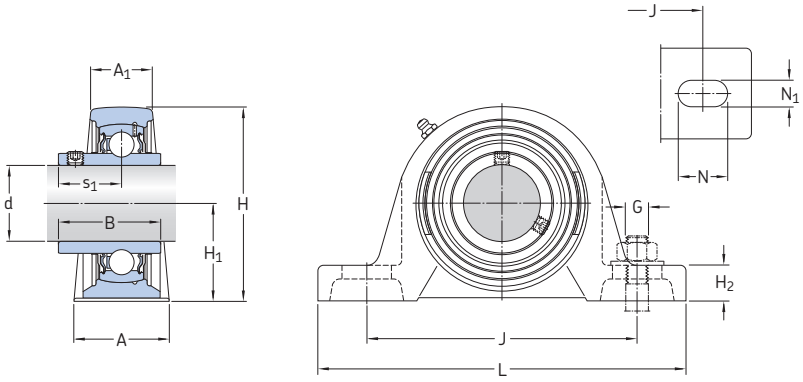
| Dimensions | | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | | | kN | | kN | r/min | – |
| **12** | 32 | 18 | 27,4 | 57 | 30,2 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 15,9 | 9,56 | 4,75 | 0,2 | 9 500 | **SY 12 TF** |
| **15** | 32 | 18 | 27,4 | 57 | 30,2 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 15,9 | 9,56 | 4,75 | 0,2 | 9 500 | **SY 15 TF** |
| **17** | 32 | 18 | 27,4 | 57 | 30,2 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 15,9 | 9,56 | 4,75 | 0,2 | 9 500 | **SY 17 TF** |
| **20** | 32 | 21 | 31 | 65 | 33,3 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 8 500 | **SY 20 TF** |
| | 34 | 23 | 31 | 65 | 33,3 | 14 | 97 | 127 | 20,7 | 13 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 8 500 | **SYJ 20 TF** |
| | 32 | 21 | 31 | 65 | 33,3 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 5 000 | **SY 20 TR** |
| **25** | 36 | 22 | 34,1 | 70,5 | 36,5 | 16 | 102 | 130 | 19,5 | 11,5 | 10 | 19,8 | 14 | 7,8 | 0,335 | 7 000 | **SY 25 TF** |
| | 38 | 24 | 34,1 | 70,5 | 36,5 | 16 | 102,5 | 140 | 21,5 | 13 | 10 | 19,8 | 14 | 7,8 | 0,335 | 7 000 | **SYJ 25 TF** |
| | 36 | 22 | 34,1 | 70,5 | 36,5 | 16 | 102 | 130 | 19,5 | 11,5 | 10 | 19,8 | 14 | 7,8 | 0,335 | 4 300 | **SY 25 TR** |
| **30** | 40 | 25 | 38,1 | 82,5 | 42,9 | 17 | 117,5 | 152 | 23,5 | 14 | 12 | 22,2 | 19,5 | 11,2 | 0,475 | 6 300 | **SY 30 TF** |
| | 42 | 27 | 38,1 | 82,5 | 42,9 | 16 | 118 | 165 | 24 | 17 | 14 | 22,2 | 19,5 | 11,2 | 0,475 | 6 300 | **SYJ 30 TF** |
| | 40 | 25 | 38,1 | 82,5 | 42,9 | 17 | 117,5 | 152 | 23,5 | 14 | 12 | 22,2 | 19,5 | 11,2 | 0,475 | 3 800 | **SY 30 TR** |
| **35** | 45 | 27 | 42,9 | 93 | 47,6 | 19 | 126 | 160 | 21 | 14 | 12 | 25,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SY 35 TF** |
| | 46 | 28 | 42,9 | 93 | 47,6 | 17 | 129 | 167 | 24 | 17 | 14 | 25,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SYJ 35 TF** |
| | 45 | 27 | 42,9 | 93 | 47,6 | 19 | 126 | 160 | 21 | 14 | 12 | 25,4 | 25,5 | 15,3 | 0,655 | 3 200 | **SY 35 TR** |
| **40** | 48 | 30 | 49,2 | 99 | 49,2 | 19 | 135,5 | 175 | 24,5 | 14 | 12 | 30,2 | 30,7 | 19 | 0,8 | 4 800 | **SY 40 TF** |
| | 49 | 31 | 49,2 | 99 | 49,2 | 18 | 136,5 | 184 | 25,5 | 17 | 14 | 30,2 | 30,7 | 19 | 0,8 | 4 800 | **SYJ 40 TF** |
| | 48 | 30 | 49,2 | 99 | 49,2 | 19 | 135,5 | 175 | 24,5 | 14 | 12 | 30,2 | 30,7 | 19 | 0,8 | 2 800 | **SY 40 TR** |
| **45** | 48 | 32 | 49,2 | 107,5 | 54 | 21 | 143,5 | 187 | 22,5 | 14 | 12 | 30,2 | 33,2 | 21,6 | 0,915 | 4 300 | **SY 45 TF** |
| | 52 | 36 | 49,2 | 107,5 | 54 | 20 | 143,5 | 190 | 23,5 | 17 | 14 | 30,2 | 33,2 | 21,6 | 0,915 | 4 300 | **SYJ 45 TF** |
| | 48 | 32 | 49,2 | 107,5 | 54 | 21 | 143,5 | 187 | 22,5 | 14 | 12 | 30,2 | 33,2 | 21,6 | 0,915 | 2 400 | **SY 45 TR** |
| **50** | 54 | 34 | 51,6 | 114,5 | 57,2 | 22 | 157 | 203 | 26 | 18 | 16 | 32,6 | 35,1 | 23,2 | 0,98 | 4 000 | **SY 50 TF** |
| | 58 | 38 | 51,6 | 114,5 | 57,2 | 22 | 157,5 | 206 | 26,5 | 20 | 16 | 32,6 | 35,1 | 23,2 | 0,98 | 4 000 | **SYJ 50 TF** |
| | 54 | 34 | 51,6 | 114,5 | 57,2 | 22 | 157 | 203 | 26 | 18 | 16 | 32,6 | 35,1 | 23,2 | 0,98 | 2 200 | **SY 50 TR** |
| **55** | 60 | 40 | 55,6 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 18 | 16 | 33,4 | 43,6 | 29 | 1,25 | 3 600 | **SY 55 TF** |
| | 60 | 40 | 55,6 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 20 | 16 | 33,4 | 43,6 | 29 | 1,25 | 3 600 | **SYJ 55 TF** |
| | 60 | 40 | 55,6 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 18 | 16 | 33,4 | 43,6 | 29 | 1,25 | 1 900 | **SY 55 TR** |
| **60** | 60 | 42 | 65,1 | 138 | 69,8 | 26,5 | 190,5 | 240 | 29,5 | 18 | 16 | 39,7 | 52,7 | 36 | 1,53 | 3 400 | **SY 60 TF** |
| | 65 | 47 | 65,1 | 138 | 69,8 | 26,5 | 188,5 | 241 | 29,5 | 20 | 16 | 39,7 | 52,7 | 36 | 1,53 | 3 400 | **SYJ 60 TF** |
| | 60 | 42 | 65,1 | 138 | 69,8 | 26,5 | 190,5 | 240 | 29,5 | 18 | 16 | 39,7 | 52,7 | 36 | 1,53 | 1 800 | **SY 60 TR** |





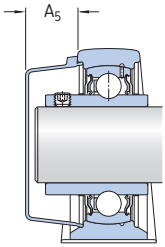

| Designations | | | Mass | Appropriate end cover | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **SY 12 TF** | SY 503 M | YAR 203/12-2F | 0,52 | – | – |
| **SY 15 TF** | SY 503 M | YAR 203/15-2F | 0,51 | – | – |
| **SY 17 TF** | SY 503 M | YAR 203-2F | 0,50 | – | – |
| **SY 20 TF** | SY 504 M | YAR 204-2F | 0,57 | ECY 204 | 18,5 |
| **SYJ 20 TF** | SYJ 504 | YAR 204-2F | 0,55 | – | – |
| **SY 20 TR** | SY 504 M | YAR 204-2RF | 0,57 | ECY 204 | 18,5 |
| **SY 25 TF** | SY 505 M | YAR 205-2F | 0,72 | ECY 205 | 18 |
| **SYJ 25 TF** | SYJ 505 | YAR 205-2F | 0,73 | – | – |
| **SY 25 TR** | SY 505 M | YAR 205-2RF | 0,72 | ECY 205 | 18 |
| **SY 30 TF** | SY 506 M | YAR 206-2F | 1,10 | ECY 206 | 20 |
| **SYJ 30 TF** | SYJ 506 | YAR 206-2F | 1,05 | – | – |
| **SY 30 TR** | SY 506 M | YAR 206-2RF | 1,10 | ECY 206 | 20 |
| **SY 35 TF** | SY 507 M | YAR 207-2F | 1,45 | ECY 207 | 22 |
| **SYJ 35 TF** | SYJ 507 | YAR 207-2F | 1,50 | – | – |
| **SY 35 TR** | SY 507 M | YAR 207-2RF | 1,45 | ECY 207 | 22 |
| **SY 40 TF** | SY 508 M | YAR 208-2F | 1,80 | ECY 208 | 23,5 |
| **SYJ 40 TF** | SYJ 508 | YAR 208-2F | 1,85 | – | – |
| **SY 40 TR** | SY 508 M | YAR 208-2RF | 1,80 | ECY 208 | 23,5 |
| **SY 45 TF** | SY 509 M | YAR 209-2F | 2,20 | ECY 209 | 23 |
| **SYJ 45 TF** | SYJ 509 | YAR 209-2F | 2,40 | – | – |
| **SY 45 TR** | SY 509 M | YAR 209-2RF | 2,20 | ECY 209 | 23 |
| **SY 50 TF** | SY 510 M | YAR 210-2F | 2,70 | ECY 210 | 29,5 |
| **SYJ 50 TF** | SYJ 510 | YAR 210-2F | 2,95 | – | – |
| **SY 50 TR** | SY 510 M | YAR 210-2RF | 2,70 | ECY 210 | 29,5 |
| **SY 55 TF** | SY 511 M | YAR 211-2F | 3,60 | ECY 211 | 34 |
| **SYJ 55 TF** | SYJ 511 | YAR 211-2F | 3,70 | – | – |
| **SY 55 TR** | SY 511 M | YAR 211-2RF | 3,60 | ECY 211 | 34 |
| **SY 60 TF** | SY 512 M | YAR 212-2F | 4,45 | ECY 212 | 35,5 |
| **SYJ 60 TF** | SYJ 512 | YAR 212-2F | 4,85 | – | – |
| **SY 60 TR** | SY 512 M | YAR 212-2RF | 4,45 | ECY 212 | 35,5 |

## Y-bearing plummer block units with a cast housing and grub screws, metric shafts
d **65 – 100** mm




TF

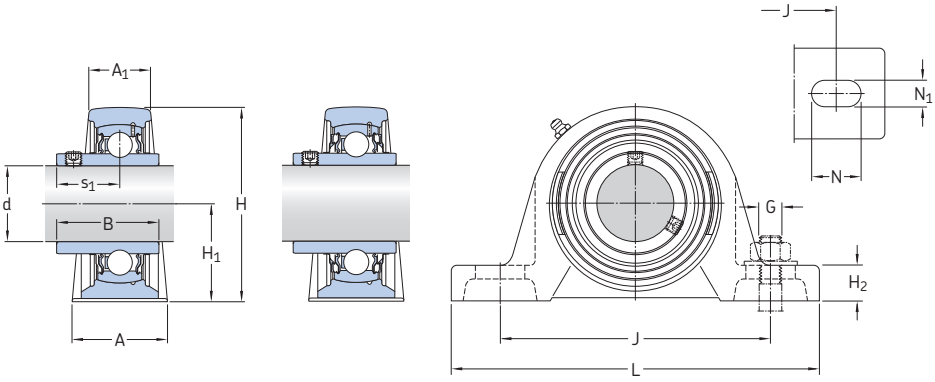
| Dimensions | | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | | | kN | | kN | r/min | – |
| **65** | 65 | 44 | 68,3 | 151 | 76,2 | 29 | 203 | 257 | 35 | 22 | 20 | 42,9 | 57,2 | 40 | 1,7 | 3 000 | **SY 65 TF** |
| | 70 | 49 | 68,3 | 151 | 76,2 | 27 | 203 | 265 | 35 | 25 | 20 | 42,9 | 57,2 | 40 | 1,7 | 3 000 | **SYJ 65 TF** |
| **70** | 72 | 46 | 69,9 | 156 | 79,4 | 27 | 210 | 266 | 30 | 25 | 20 | 39,7 | 62,4 | 45 | 1,86 | 2 800 | **SYJ 70 TF** |
| **75** | 74 | 54 | 73,1 | 166 | 82,5 | 28 | 217 | 275 | 30 | 25 | 20 | 46,1 | 66,3 | 49 | 2,04 | 2 600 | **SYJ 75 TF** |
| **80** | 78 | 50 | 77,9 | 176 | 88,9 | 30 | 232 | 292 | 35 | 25 | 20 | 47,7 | 72,8 | 53 | 2,16 | 2 400 | **SYJ 80 TF** |
| **90** | 88 | 54 | 89 | 201 | 101,6 | 33 | 262 | 327 | 35 | 27 | 22 | 54 | 95,6 | 72 | 2,7 | 2 000 | **SYJ 90 TF** |
| **100** | 95 | 57 | 98,4 | 226 | 115 | 38 | 308 | 380 | 48 | 26 | 24 | 63,4 | 124 | 93 | 3,35 | 1 900 | **SYJ 100 TF** |






| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit | **Appropriate end cover** Designation | Dimension $A_5$ |
|---|---|---|---|---|---|
| – | | | kg | – | mm |
| **SY 65 TF** | SY 513 M | YAR 213-2F | 5,70 | ECY 213 | 35,5 |
| **SYJ 65 TF** | SYJ 513 | YAR 213-2F | 6,15 | – | – |
| **SYJ 70 TF** | SYJ 514 | YAR 214-2F | 6,20 | – | – |
| **SYJ 75 TF** | SYJ 515 | YAR 215-2F | 7,30 | – | – |
| **SYJ 80 TF** | SYJ 516 | YAR 216-2F | 9,70 | – | – |
| **SYJ 90 TF** | SYJ 518 | YAR 218-2F | 14,0 | – | – |
| **SYJ 100 TF** | SYJ 520 | YAR 220-2F | 19,0 | – | – |

## Y-bearing plummer block units with a cast housing and grub screws, inch shafts
d **1/2 – 1 3/16** in

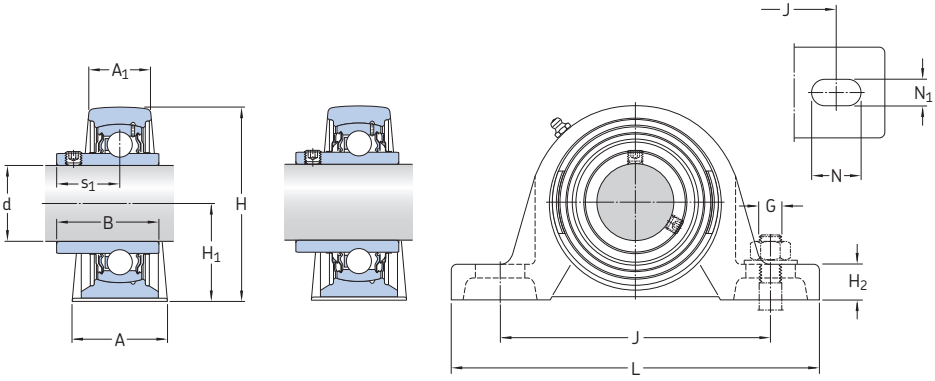



TF TR

| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **1/2** | 1.26 | 0.71 | 1.08 | 2.21 | 1.19 | 0.55 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.63 | **SY 1/2 TF** |
| *12,7* | *32* | *18* | *27,4* | *56* | *30,2* | *14* | *97* | *127* | *20,5* | *11,5* | *10* | *15,9* | |
| | 1.26 | 0.71 | 1.08 | 2.09 | 1.06 | 0.43 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.63 | **SYH 1/2 TF** |
| | *32* | *18* | *27,4* | *53* | *27* | *10,8* | *97* | *127* | *20,5* | *11,5* | *10* | *15,9* | |
| **3/4** | 1.26 | 0.83 | 1.22 | 2.56 | 1.31 | 0.55 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.72 | **SY 3/4 TF** |
| *19,05* | *32* | *21* | *31* | *65* | *33,3* | *14* | *97* | *127* | *20,5* | *11,5* | *10* | *18,3* | |
| | 1.34 | 0.91 | 1.22 | 2.56 | 1.31 | 0.55 | 3.82 | 5.00 | 0.81 | 0.51 | 3/8 | 0.72 | **SYJ 3/4 TF** |
| | *34* | *23* | *31* | *65* | *33,3* | *14* | *97* | *127* | *20,7* | *13* | *10* | *18,3* | |
| **5/8** | 1.26 | 0.71 | 1.08 | 2.21 | 1.19 | 0.55 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.63 | **SY 5/8 TF** |
| *15,875* | *32* | *18* | *27,4* | *56* | *30,2* | *14* | *97* | *127* | *20,5* | *11,5* | *10* | *15,9* | |
| **13/16** | 1.42 | 0.87 | 1.34 | 2.76 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 13/16 TF** |
| *20,637* | *36* | *22* | *34,1* | *70* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| **7/8** | 1.42 | 0.87 | 1.34 | 2.76 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 7/8 TF** |
| *22,225* | *36* | *22* | *34,1* | *70* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| **15/16** | 1.42 | 0.87 | 1.34 | 2.76 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 15/16 TF** |
| *23,813* | *36* | *22* | *34,1* | *70* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| **1** | 1.42 | 0.87 | 1.34 | 2.78 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 1. TF** |
| *25,4* | *36* | *22* | *34,1* | *70,5* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| | 1.42 | 0.87 | 1.34 | 2.76 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 1. TF/AH** |
| | *36* | *22* | *34,1* | *70* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| | 1.50 | 0.94 | 1.34 | 2.78 | 1.44 | 0.63 | 4.02 | 5.51 | 0.85 | 0.51 | 1/2 | 0.78 | **SYJ 1. TF** |
| | *38* | *24* | *34,1* | *70,5* | *36,5* | *16* | *102* | *140* | *21,5* | *13* | *12* | *19,8* | |
| | 1.42 | 0.87 | 1.34 | 2.78 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.78 | **SY 1. TR** |
| | *36* | *22* | *34,1* | *70,5* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *19,8* | |
| **1 1/16** | 1.57 | 0.98 | 1.50 | 3.23 | 1.69 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 0.87 | **SY 1.1/16 TF** |
| *26,988* | *40* | *25* | *38,1* | *82* | *42,9* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *22,2* | |
| **1 1/8** | 1.57 | 0.98 | 1.50 | 3.23 | 1.94 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 0.87 | **SY 1.1/8 TF** |
| *28,575* | *40* | *25* | *38,1* | *82* | *49,2* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *22,2* | |
| **1 3/16** | 1.57 | 0.98 | 1.50 | 3.23 | 1.69 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 0.87 | **SY 1.3/16 TF** |
| *30,163* | *40* | *25* | *38,1* | *82* | *42,9* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *22,2* | |
| | 1.57 | 0.98 | 1.50 | 3.23 | 1.69 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 0.87 | **SY 1.3/16 TF/AH** |
| | *40* | *25* | *38,1* | *82* | *42,9* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *22,2* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 1/2 TF** | SY 503 U | YAR 203-008-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.21<br>*0,55* |
| **SYH 1/2 TF** | SYH 503 U | YAR 203-008-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.21<br>*0,55* |
| **SY 3/4 TF** | SY 504 M | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.23<br>*0,56* |
| **SYJ 3/4 TF** | SYJ 504 | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.19<br>*0,54* |
| **SY 5/8 TF** | SY 503 U | YAR 203-010-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.12<br>*0,51* |
| **SY 13/16 TF** | SY 505 U | YAR 205-013-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.85<br>*0,84* |
| **SY 7/8 TF** | SY 505 U | YAR 205-014-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.78<br>*0,81* |
| **SY 15/16 TF** | SY 505 U | YAR 205-015-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.71<br>*0,78* |
| **SY 1. TF** | SY 505 M | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.57<br>*0,71* |
| **SY 1. TF/AH** | SY 505 U/AH | YAR 205-100-2F/AH | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.59<br>*0,72* |
| **SYJ 1. TF** | SYJ 505 | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.61<br>*0,73* |
| **SY 1. TR** | SY 505 M | YAR 205-100-2RF | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 4 300 | 1.59<br>*0,72* |
| **SY 1.1/16 TF** | SY 506 U | YAR 206-101-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.65<br>*1,20* |
| **SY 1.1/8 TF** | SY 506 U | YAR 206-102-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.60<br>*1,20* |
| **SY 1.3/16 TF** | SY 506 U | YAR 206-103-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.60<br>*1,20* |
| **SY 1.3/16 TF/AH** | SY 506 U/AH | YAR 206-103-2F/AH | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.60<br>*1,20* |

## Y-bearing plummer block units with a cast housing and grub screws, inch shafts
d **1 1/4 – 1 5/8** in

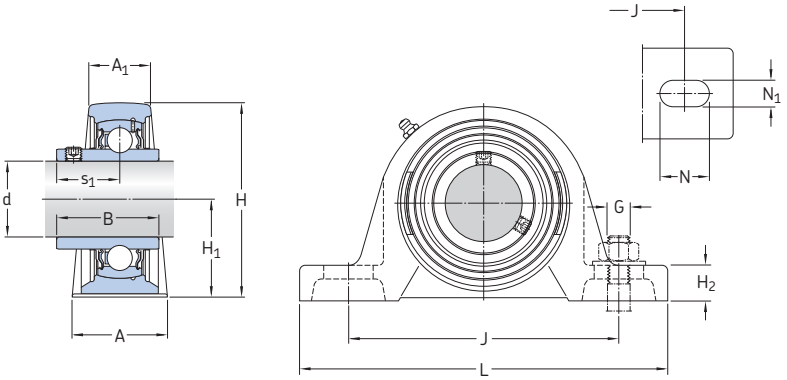



TF TR

| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **1 1/4** | 1.77 | 1.06 | 1.69 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.00 | **SY 1.1/4 TF** |
| *31,75* | *45* | *27* | *42,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *25,4* | |
| | 1.81 | 1.10 | 1.69 | 3.66 | 1.87 | 0.67 | 5.08 | 6.57 | 0.94 | 0.67 | 5/8 | 1.00 | **SYJ 1.1/4 TF** |
| | *46* | *28* | *42,9* | *93* | *47,6* | *17* | *129* | *167* | *24* | *17* | *14* | *25,4* | |
| | 1.77 | 1.06 | 1.69 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.00 | **SY 1.1/4 TR** |
| | *45* | *27* | *42,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *25,4* | |
| **1 5/16** | 1.77 | 1.06 | 1.69 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.00 | **SY 1.5/16 TF** |
| *33,337* | *45* | *27* | *42,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *25,4* | |
| **1 3/8** | 1.77 | 1.06 | 1.69 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.00 | **SY 1.3/8 TF** |
| *34,925* | *45* | *27* | *42,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *25,4* | |
| **1 7/16** | 1.77 | 1.06 | 1.69 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.00 | **SY 1.7/16 TF** |
| *36,513* | *45* | *27* | *42,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *25,4* | |
| | 1.87 | 1.12 | 1.94 | 4.25 | 2.12 | 0.81 | 5.66 | 7.37 | 0.96 | 0.55 | 1/2 | 1.19 | **SYM 1.7/16 TF** |
| | *47,6* | *28,6* | *49,2* | *108* | *54* | *20,6* | *143,7* | *187,5* | *24,5* | *14* | *12* | *30,2* | |
| **1 1/2** | 1.89 | 1.18 | 1.94 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.19 | **SY 1.1/2 TF** |
| *38,1* | *48* | *30* | *49,2* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *30,2* | |
| | 1.89 | 1.18 | 1.94 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.19 | **SY 1.1/2 TF/AH** |
| | *48* | *30* | *49,2* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *30,2* | |
| | 1.93 | 1.22 | 1.94 | 3.90 | 1.94 | 0.71 | 5.37 | 7.24 | 1.00 | 0.67 | 9/16 | 1.19 | **SYJ 1.1/2 TF** |
| | *49* | *31* | *49,2* | *99* | *49,2* | *18* | *136,5* | *184* | *25,5* | *17* | *14* | *30,2* | |
| | 1.87 | 1.26 | 1.94 | 4.25 | 2.12 | 0.81 | 5.66 | 7.37 | 0.89 | 0.55 | 1/2 | 1.19 | **SYM 1.1/2 TF** |
| | *47,6* | *32* | *49,2* | *108* | *54* | *20,6* | *143,7* | *187,5* | *22,7* | *14* | *12* | *30,2* | |
| | 1.89 | 1.18 | 1.94 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.19 | **SY 1.1/2 TR** |
| | *48* | *30* | *49,2* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *30,2* | |
| **1 9/16** | 1.89 | 1.18 | 1.94 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.19 | **SY 1.9/16 TF** |
| *39,688* | *48* | *30* | *49,2* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *30,2* | |
| **1 5/8** | 1.90 | 1.26 | 1.94 | 4.22 | 2.12 | 0.81 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.19 | **SY 1.5/8 TF** |
| *41,275* | *48,3* | *32* | *49,2* | *107* | *54* | *20,6* | *143,7* | *187* | *22,7* | *14* | *12* | *30,2* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 1.1/4 TF** | SY 507 M | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.35<br>*1,50* |
| **SYJ 1.1/4 TF** | SYJ 507 | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.45<br>*1,55* |
| **SY 1.1/4 TR** | SY 507 M | YAR 207-104-2RF | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 3 200 | 3.35<br>*1,50* |
| **SY 1.5/16 TF** | SY 507 U | YAR 207-105-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.65<br>*1,65* |
| **SY 1.3/8 TF** | SY 507 U | YAR 207-106-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.35<br>*1,50* |
| **SY 1.7/16 TF** | SY 507 U | YAR 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.50<br>*1,60* |
| **SYM 1.7/16 TF** | SYM 508 U | YAR 208-107-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 5.35<br>*2,40* |
| **SY 1.1/2 TF** | SY 508 M | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.10<br>*1,85* |
| **SY 1.1/2 TF/AH** | SY 508 U/AH | YAR 208-108-2F/AH | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.95<br>*1,80* |
| **SYJ 1.1/2 TF** | SYJ 508 | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.20<br>*1,90* |
| **SYM 1.1/2 TF** | SYM 509 U | YAR 209-108-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 2.50<br>*2,55* |
| **SY 1.1/2 TR** | SY 508 M | YAR 208-108-2RF | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 2 800 | 4.10<br>*1,85* |
| **SY 1.9/16 TF** | SY 508 U | YAR 208-109-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 300 | 4.25<br>*1,95* |
| **SY 1.5/8 TF** | SY 509 U | YAR 209-110-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.45<br>*2,45* |

## Y-bearing plummer block units with a cast housing and grub screws, inch shafts
d **1 11/16 – 2 1/4** in

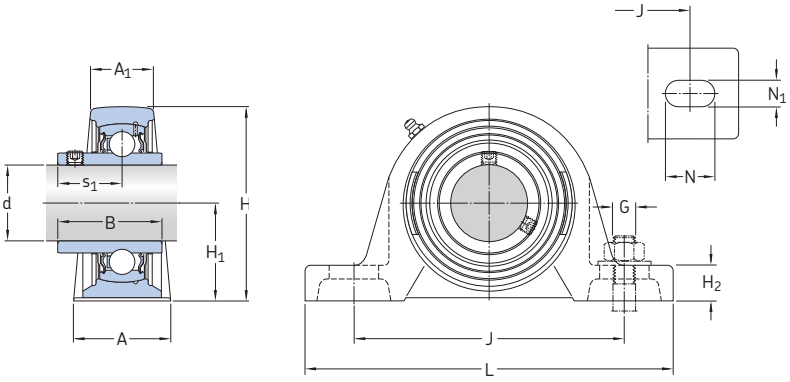



TF

| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **1 11/16** | 1.90 | 1.26 | 1.94 | 4.22 | 2.12 | 0.81 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.19 | **SY 1.11/16 TF** |
| *42,862* | *48,3* | *32* | *49,2* | *107* | *54* | *20,6* | *143,7* | *187* | *22,7* | *14* | *12* | *30,2* | |
| | 1.90 | 1.26 | 1.94 | 4.22 | 2.12 | 0.81 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.19 | **SY 1.11/16 TF/AH** |
| | *48,3* | *32* | *49,2* | *107* | *54* | *20,6* | *143,7* | *187* | *22,7* | *14* | *12* | *30,2* | |
| | 2.12 | 1.38 | 2.03 | 4.50 | 2.25 | 0.87 | 6.19 | 7.99 | 1.02 | 0.71 | 5/8 | 1.28 | **SYM 1.11/16 TF** |
| | *54* | *35* | *51,6* | *114,5* | *57,2* | *22,2* | *157,2* | *203* | *26* | *18* | *16* | *32,6* | |
| **1 3/4** | 1.89 | 1.26 | 1.94 | 4.23 | 2.13 | 0.83 | 5.65 | 7.36 | 0.89 | 0.55 | 1/2 | 1.19 | **SY 1.3/4 TF** |
| *44,45* | *48* | *32* | *49,2* | *107,5* | *54* | *21* | *143,5* | *187* | *22,5* | *14* | *12* | *30,2* | |
| | 2.05 | 1.42 | 1.94 | 4.23 | 2.13 | 0.79 | 5.65 | 7.48 | 0.93 | 0.67 | 9/16 | 1.19 | **SYJ 1.3/4 TF** |
| | *52* | *36* | *49,2* | *107,5* | *54* | *20* | *143,5* | *190* | *23,5* | *17* | *14* | *30,2* | |
| | 2.13 | 1.34 | 2.03 | 4.49 | 2.25 | 0.87 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.28 | **SYM 1.3/4 TF** |
| | *54* | *34* | *51,6* | *114* | *57,2* | *22* | *157* | *203* | *26* | *18* | *16* | *32,6* | |
| **1 15/16** | 2.13 | 1.34 | 2.03 | 4.49 | 2.25 | 0.87 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.28 | **SY 1.15/16 TF** |
| *49,212* | *54* | *34* | *51,6* | *114* | *57,2* | *22* | *157* | *203* | *26* | *18* | *16* | *32,6* | |
| | 2.13 | 1.34 | 2.03 | 4.49 | 2.25 | 0.87 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.28 | **SY 1.15/16 TF/AH** |
| | *54* | *34* | *51,6* | *114* | *57,2* | *22* | *157* | *203* | *26* | *18* | *16* | *32,6* | |
| | 2.13 | 1.34 | 2.03 | 4.46 | 2.19 | 0.84 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.28 | **SYH 1.15/16 TF** |
| | *54* | *34* | *51,6* | *113,5* | *55,6* | *21,4* | *157* | *203* | *26* | *18* | *16* | *32,6* | |
| | 2.38 | 1.57 | 2.19 | 5.00 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.71 | 5/8 | 1.31 | **SYM 1.15/16 TF** |
| | *60,4* | *40* | *55,6* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *33,4* | |
| **2** | 2.36 | 1.57 | 2.19 | 4.96 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.71 | 5/8 | 1.31 | **SY 2. TF** |
| *50,8* | *60* | *40* | *55,6* | *126* | *63,5* | *24* | *171,5* | *219* | *27,5* | *18* | *16* | *33,4* | |
| | 2.36 | 1.57 | 2.19 | 4.96 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.79 | 5/8 | 1.31 | **SYJ 2. TF** |
| | *60* | *40* | *55,6* | *126* | *63,5* | *24* | *171,5* | *219* | *27,5* | *20* | *16* | *33,4* | |
| | 2.38 | 1.57 | 2.19 | 5.00 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.71 | 5/8 | 1.31 | **SY 2. TF/AH** |
| | *60,4* | *40* | *55,6* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *33,4* | |
| **2 3/16** | 2.38 | 1.57 | 2.19 | 5.00 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.71 | 5/8 | 1.31 | **SY 2.3/16 TF** |
| *55,563* | *60,4* | *40* | *55,6* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *33,4* | |
| | 2.38 | 1.57 | 2.19 | 5.00 | 2.50 | 0.94 | 6.75 | 8.62 | 1.08 | 0.71 | 5/8 | 1.31 | **SY 2.3/16 TF/AH** |
| | *60,4* | *40* | *55,6* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *33,4* | |
| | 2.36 | 1.65 | 2.56 | 5.50 | 2.75 | 1.02 | 7.50 | 9.45 | 1.16 | 0.71 | 5/8 | 1.56 | **SYM 2.3/16 TF** |
| | *60* | *42* | *65,1* | *139,5* | *69,9* | *26* | *190,5* | *240* | *29,5* | *18* | *16* | *39,7* | |
| **2 1/4** | 2.36 | 1.65 | 2.56 | 5.50 | 2.75 | 1.02 | 7.50 | 9.45 | 1.16 | 0.71 | 5/8 | 1.56 | **SY 2.1/4 TF** |
| *57,15* | *60* | *42* | *65,1* | *139,5* | *69,9* | *26* | *190,5* | *240* | *29,5* | *18* | *16* | *39,7* | |
| | 2.36 | 1.65 | 2.56 | 5.44 | 2.69 | 1.00 | 7.50 | 9.45 | 1.16 | 0.71 | 5/8 | 1.56 | **SYH 2.1/4 TF** |
| | *60* | *42* | *65,1* | *138* | *68,3* | *25,4* | *190,5* | *240* | *29,5* | *18* | *16* | *39,7* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 1.11/16 TF** | SY 509 U | YAR 209-111-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.30<br>*2,40* |
| **SY 1.11/16 TF/AH** | SY 509 U/AH | YAR 209-111-2F/AH | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.30<br>*2,40* |
| **SYM 1.11/16 TF** | SYM 510 U | YAR 210-111-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.60<br>*3,00* |
| **SY 1.3/4 TF** | SY 509 M | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.85<br>*2,20* |
| **SYJ 1.3/4 TF** | SYJ 509 | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.30<br>*2,40* |
| **SYM 1.3/4 TF** | SY 510 U | YAR 210-112-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.75<br>*3,05* |
| **SY 1.15/16 TF** | SY 510 U | YAR 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.30<br>*2,85* |
| **SY 1.15/16 TF/AH** | SY 510 U/AH | YAR 210-115-2F/AH | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.30<br>*2,85* |
| **SYH 1.15/16 TF** | SYH 510 U | YAR 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.45<br>*2,90* |
| **SYM 1.15/16 TF** | SY 511 U | YAR 211-115-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.80<br>*4,00* |
| **SY 2. TF** | SY 511 M | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.25<br>*3,75* |
| **SYJ 2. TF** | SYJ 511 | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.50<br>*3,85* |
| **SY 2. TF/AH** | SY 511 U/AH | YAR 211-200-2F/AH | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.80<br>*4,00* |
| **SY 2.3/16 TF** | SY 511 U | YAR 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.95<br>*3,60* |
| **SY 2.3/16 TF/AH** | SY 511 U/AH | YAR 211-203-2F/AH | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.40<br>*3,80* |
| **SYM 2.3/16 TF** | SY 512 U | YAR 212-203-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 12.0<br>*5,45* |
| **SY 2.1/4 TF** | SY 512 U | YAR 212-204-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 12.0<br>*5,45* |
| **SYH 2.1/4 TF** | SYH 512 U | YAR 212-204-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.4<br>*4,70* |

## Y-bearing plummer block units with a cast housing and grub screws, inch shafts
d **2 7/16 – 3** in



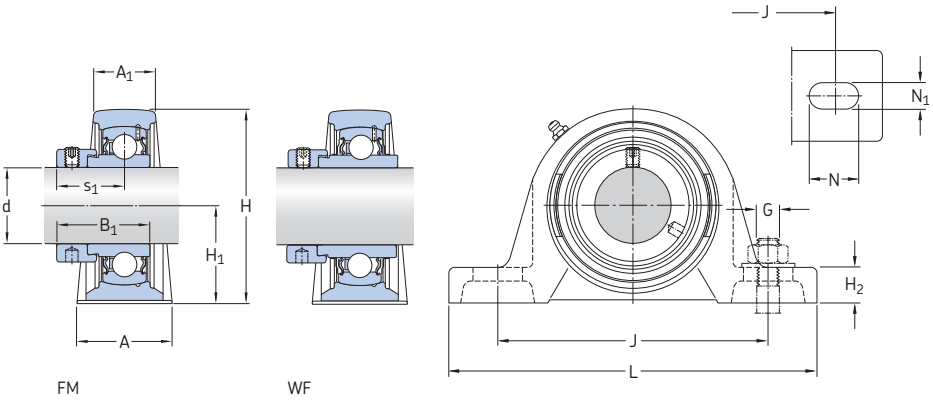

TF

| **Dimensions** | | | | | | | | | | | | | **Designation** Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **2 7/16** | 2.36 | 1.65 | 2.56 | 5.50 | 2.75 | 1.02 | 7.50 | 9.45 | 1.16 | 0.71 | 5/8 | 1.56 | **SY 2.7/16 TF** |
| *61,913* | *60* | *42* | *65,1* | *139,5* | *69,9* | *26* | *190,5* | *240* | *29,5* | *18* | *16* | *39,7* | |
| | 2.36 | 1.65 | 2.56 | 5.44 | 2.69 | 1.00 | 7.50 | 9.45 | 1.16 | 0.71 | 5/8 | 1.56 | **SYH 2.7/16 TF** |
| | *60* | *42* | *65,1* | *138* | *68,3* | *25,4* | *190,5* | *240* | *29,5* | *18* | *16* | *39,7* | |
| | 2.56 | 1.73 | 2.75 | 6.04 | 3.00 | 1.50 | 8.00 | 10.24 | 1.16 | 0.87 | 3/4 | 1.56 | **SYM 2.7/16 TF** |
| | *65* | *44* | *69,9* | *153,5* | *76,2* | *38,1* | *203,2* | *260* | *29,5* | *22* | *20* | *39,7* | |
| **2 1/2** | 2.56 | 1.73 | 2.69 | 5.94 | 3.00 | 1.14 | 7.99 | 10.12 | 1.38 | 0.87 | 3/4 | 1.69 | **SY 2.1/2 TF** |
| *63,5* | *65* | *44* | *68,3* | *151* | *76,2* | *29* | *203* | *257* | *35* | *22* | *20* | *42,9* | |
| | 2.76 | 1.93 | 2.69 | 5.94 | 3.00 | 1.06 | 7.99 | 10.43 | 1.38 | 0.98 | 3/4 | 1.69 | **SYJ 2.1/2 TF** |
| | *70* | *49* | *68,3* | *151* | *76,2* | *27* | *203* | *265* | *35* | *25* | *20* | *42,9* | |
| | 2.56 | 1.73 | 2.75 | 6.04 | 3.00 | 1.54 | 8.00 | 10.24 | 1.16 | 0.87 | 3/4 | 1.56 | **SYM 2.1/2 TF** |
| | *65* | *44* | *69,9* | *153,5* | *76,2* | *39,1* | *203,2* | *260* | *29,5* | *22* | *20* | *39,7* | |
| **2 11/16** | 2.56 | 1.73 | 2.69 | 5.87 | 3.00 | 1.14 | 7.99 | 10.12 | 1.38 | 0.87 | 3/4 | 1.69 | **SY 2.11/16 TF** |
| *68,263* | *65* | *44* | *68,3* | *149* | *76,2* | *29* | *203* | *257* | *35* | *22* | *20* | *42,9* | |
| | 3.00 | 1.89 | 2.88 | 6.97 | 3.50 | 1.86 | 9.00 | 12 | 1.38 | 0.88 | 3/4 | 1.81 | **SYM 2.11/16 TF** |
| | *76,2* | *48* | *73,1* | *177* | *88,9* | *47,2* | *228,6* | *305* | *35* | *22,2* | *20* | *46,1* | |
| **2 3/4** | 2.82 | 1.89 | 2.88 | 6.54 | 3.25 | 1.29 | 8.50 | 10.98 | 1.38 | 0.88 | 3/4 | 1.81 | **SY 2.3/4 TF** |
| *69,85* | *71,6* | *48* | *73,1* | *166* | *82,6* | *32,8* | *215,9* | *279* | *35* | *22,2* | *20* | *46,1* | |
| **2 15/16** | 2.82 | 1.89 | 3.07 | 6.54 | 3.25 | 1.29 | 8.50 | 10.98 | 1.38 | 0.88 | 3/4 | 1.81 | **SY 2.15/16 TF** |
| *74,613* | *71,6* | *48* | *77,9* | *166* | *82,6* | *32,8* | *215,9* | *279* | *35* | *22,2* | *20* | *46,1* | |
| | 3.07 | 2.05 | 3.07 | 6.97 | 3.50 | 1.87 | 9.00 | 12 | 1.38 | 0.88 | 3/4 | 1.88 | **SYM 2.15/16 TF** |
| | *78* | *52* | *77,9* | *177* | *88,9* | *47,6* | *228,6* | *305* | *35* | *22,2* | *20* | *47,7* | |
| **3** | 3.07 | 2.05 | 3.07 | 6.97 | 3.50 | 1.87 | 9.00 | 12 | 1.38 | 0.88 | 3/4 | 1.88 | **SYM 3. TF** |
| *76,2* | *78* | *52* | *77,9* | *177* | *88,9* | *47,6* | *228,6* | *305* | *35* | *22,2* | *20* | *47,7* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 2.7/16 TF** | SY 512 U | YAR 212-207-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.0<br>*4,55* |
| **SYH 2.7/16 TF** | SYH 512 U | YAR 212-207-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.3<br>*4,65* |
| **SYM 2.7/16 TF** | SY 514 U | YAR 214-207-2F | 14 040<br>*62,4* | 9 900<br>*44* | 420<br>*1,86* | 2 800 | 16.0<br>*7,25* |
| **SY 2.1/2 TF** | SY 513 M | YAR 213-208-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 12.8<br>*5,80* |
| **SYJ 2.1/2 TF** | SYJ 513 | YAR 213-208-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 13.8<br>*6,25* |
| **SYM 2.1/2 TF** | SY 514 U | YAR 214-208-2F | 14 040<br>*62,4* | 9 900<br>*44* | 420<br>*1,86* | 2 800 | 15.4<br>*7,00* |
| **SY 2.11/16 TF** | SY 513 U | YAR 213-211-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 12.5<br>*5,70* |
| **SYM 2.11/16 TF** | SYM 515 U | YAR 215-211-2F | 14 920<br>*66,3* | 11 030<br>*49* | 460<br>*2,04* | 2 600 | 23.8<br>*10,8* |
| **SY 2.3/4 TF** | SY 515 U | YAR 215-212-2F | 14 920<br>*66,3* | 11 030<br>*49* | 460<br>*2,04* | 2 600 | 17.7<br>*8,00* |
| **SY 2.15/16 TF** | SY 515 U | YAR 215-215-2F | 16 380<br>*72,8* | 11 930<br>*53* | 460<br>*2,04* | 2 400 | 16.6<br>*7,55* |
| **SYM 2.15/16 TF** | SY 516 U | YAR 216-215-2F | 16 380<br>*72,8* | 11 930<br>*53* | 490<br>*2,16* | 2 400 | 22.8<br>*10,3* |
| **SYM 3. TF** | SY 516 U | YAR 216-300-2F | 16 380<br>*72,8* | 11 930<br>*53* | 490<br>*2,16* | 2 400 | 22.4<br>*10,2* |

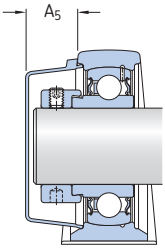
## Y-bearing plummer block units with a cast housing and an eccentric locking collar, metric shafts

d **15 – 60** mm




FM WF

| Dimensions | | | | | | | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | | | kN | | kN | r/min | – |
| **15** | 32 | 18 | 28,6 | 57 | 30,2 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 22,1 | 9,56 | 4,75 | 0,2 | 9 500 | **SY 15 FM** |
| **17** | 32 | 18 | 28,6 | 57 | 30,2 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 22,1 | 9,56 | 4,75 | 0,2 | 9 500 | **SY 17 FM** |
| **20** | 32 | 21 | 31 | 65 | 33,3 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 23,5 | 12,7 | 6,55 | 0,28 | 8 500 | **SY 20 FM** |
| | 32 | 21 | 43,7 | 65 | 33,3 | 14 | 97 | 127 | 20,5 | 11,5 | 10 | 26,6 | 12,7 | 6,55 | 0,28 | 8 500 | **SY 20 WF** |
| **25** | 36 | 22 | 31 | 70,5 | 36,5 | 16 | 102 | 130 | 19,5 | 11,5 | 10 | 23,5 | 14 | 7,8 | 0,335 | 7 000 | **SY 25 FM** |
| | 36 | 22 | 44,4 | 70,5 | 36,5 | 16 | 102 | 130 | 19,5 | 11,5 | 10 | 26,9 | 14 | 7,8 | 0,335 | 7 000 | **SY 25 WF** |
| **30** | 40 | 25 | 35,7 | 82,5 | 42,9 | 17 | 117,5 | 152 | 23,5 | 14 | 12 | 26,7 | 19,5 | 11,2 | 0,475 | 6 300 | **SY 30 FM** |
| | 40 | 25 | 48,4 | 82,5 | 42,9 | 17 | 117,5 | 152 | 23,5 | 14 | 12 | 30,1 | 19,5 | 11,2 | 0,475 | 6 300 | **SY 30 WF** |
| **35** | 45 | 27 | 38,9 | 93 | 47,6 | 19 | 126 | 160 | 21 | 14 | 12 | 29,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SY 35 FM** |
| | 45 | 27 | 51,1 | 93 | 47,6 | 19 | 126 | 160 | 21 | 14 | 12 | 32,3 | 25,5 | 15,3 | 0,655 | 5 300 | **SY 35 WF** |
| **40** | 48 | 30 | 43,7 | 99 | 49,2 | 19 | 135,5 | 175 | 24,5 | 14 | 12 | 32,7 | 30,7 | 19 | 0,8 | 4 800 | **SY 40 FM** |
| | 48 | 30 | 56,3 | 99 | 49,2 | 19 | 135,5 | 175 | 24,5 | 14 | 12 | 34,9 | 30,7 | 19 | 0,8 | 4 800 | **SY 40 WF** |
| **45** | 48 | 32 | 43,7 | 107,5 | 54 | 21 | 143,5 | 187 | 22,5 | 14 | 12 | 32,7 | 33,2 | 21,6 | 0,915 | 4 300 | **SY 45 FM** |
| | 48 | 32 | 56,3 | 107,5 | 54 | 21 | 143,5 | 187 | 22,5 | 14 | 12 | 34,9 | 33,2 | 21,6 | 0,915 | 4 300 | **SY 45 WF** |
| **50** | 54 | 34 | 43,7 | 114,5 | 57,2 | 22 | 157 | 203 | 26 | 18 | 16 | 32,7 | 35,1 | 23,2 | 0,98 | 4 000 | **SY 50 FM** |
| | 54 | 34 | 62,7 | 114,5 | 57,2 | 22 | 157 | 203 | 26 | 18 | 16 | 38,1 | 35,1 | 23,2 | 0,98 | 4 000 | **SY 50 WF** |
| **55** | 60 | 40 | 48,4 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 18 | 16 | 36,4 | 43,6 | 29 | 1,25 | 3 600 | **SY 55 FM** |
| | 60 | 40 | 71,4 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 18 | 16 | 43,6 | 43,6 | 29 | 1,25 | 3 600 | **SY 55 WF** |
| **60** | 60 | 42 | 53,1 | 138 | 69,9 | 26,5 | 190,5 | 240 | 29,5 | 18 | 16 | 39,6 | 52,7 | 36 | 1,53 | 3 400 | **SY 60 FM** |
| | 60 | 42 | 77,8 | 138 | 69,9 | 26,5 | 190,5 | 240 | 29,5 | 18 | 16 | 46,8 | 52,7 | 36 | 1,53 | 3 400 | **SY 60 WF** |

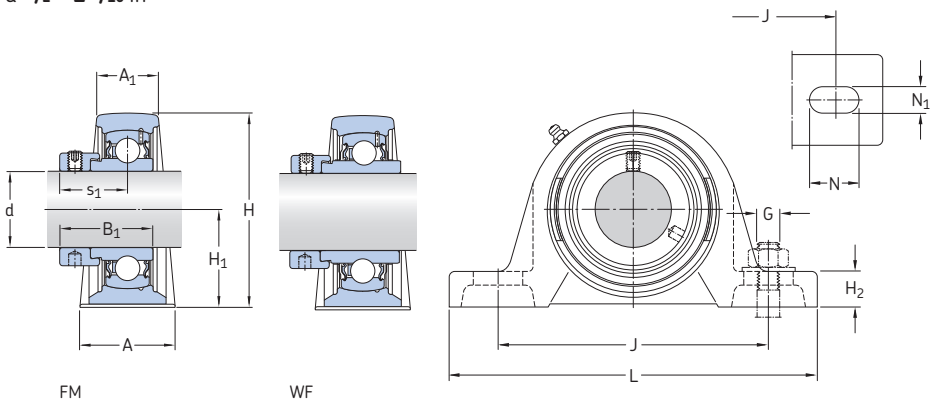





| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit | **Appropriate end cover** Designation | Dimension $A_5$ |
|---|---|---|---|---|---|
| – | | | kg | – | mm |
| **SY 15 FM** | SY 503 M | YET 203/15 | 0,53 | – | – |
| **SY 17 FM** | SY 503 M | YET 203 | 0,52 | – | – |
| **SY 20 FM** | SY 504 M | YET 204 | 0,59 | ECY 204 | 18,5 |
| **SY 20 WF** | SY 504 M | YEL 204-2F | 0,62 | ECY 204 | 18,5 |
| **SY 25 FM** | SY 505 M | YET 205 | 0,73 | ECY 205 | 18 |
| **SY 25 WF** | SY 505 M | YEL 205-2F | 0,78 | ECY 205 | 18 |
| **SY 30 FM** | SY 506 M | YET 206 | 1,10 | ECY 206 | 20 |
| **SY 30 WF** | SY 506 M | YEL 206-2F | 1,20 | ECY 206 | 20 |
| **SY 35 FM** | SY 507 M | YET 207 | 1,55 | ECY 207 | 22 |
| **SY 35 WF** | SY 507 M | YEL 207-2F | 1,60 | ECY 207 | 22 |
| **SY 40 FM** | SY 508 M | YET 208 | 1,85 | ECY 208 | 23,5 |
| **SY 40 WF** | SY 508 M | YEL 208-2F | 1,95 | ECY 208 | 23,5 |
| **SY 45 FM** | SY 509 M | YET 209 | 2,25 | ECY 209 | 23 |
| **SY 45 WF** | SY 509 M | YEL 209-2F | 2,35 | ECY 209 | 23 |
| **SY 50 FM** | SY 510 M | YET 210 | 2,75 | ECY 210 | 29,5 |
| **SY 50 WF** | SY 510 M | YEL 210-2F | 2,90 | ECY 210 | 29,5 |
| **SY 55 FM** | SY 511 M | YET 211 | 3,65 | ECY 211 | 34 |
| **SY 55 WF** | SY 511 M | YEL 211-2F | 3,90 | ECY 211 | 34 |
| **SY 60 FM** | SY 512 M | YET 212 | 4,45 | ECY 212 | 35,5 |
| **SY 60 WF** | SY 512 M | YEL 212-2F | 4,75 | ECY 212 | 35,5 |

## Y-bearing plummer block units with a cast housing and an eccentric locking collar, inch shafts

d **1/2 – 1 5/16** in

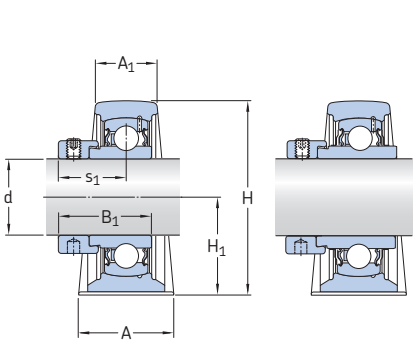



| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **1/2** | 1.26 | 0.71 | 1.13 | 2.21 | 1.19 | 0.55 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.87 | **SY 1/2 FM** |
| *12,7* | *32* | *18* | *28,6* | *56* | *30,2* | *14* | *97* | *127* | *20,5* | *11,5* | *10* | *22,1* | |
| **3/4** | 1.26 | 0.83 | 1.22 | 2.52 | 1.31 | 0.55 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 0.94 | **SY 3/4 FM** |
| *19,05* | *32* | *21* | *31* | *64* | *33,3* | *14* | *97* | *127* | *20,5* | *11,5* | *10* | *24* | |
| | 1.26 | 0.83 | 1.72 | 2.46 | 1.25 | 0.49 | 3.82 | 5.00 | 0.81 | 0.45 | 3/8 | 1.05 | **SYH 3/4 WF** |
| | *32* | *21* | *43,7* | *62,5* | *31,8* | *12,5* | *97* | *127* | *20,5* | *11,5* | *10* | *26,6* | |
| **15/16** | 1.42 | 0.87 | 1.22 | 2.76 | 1.44 | 0.63 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.93 | **SY 15/16 FM** |
| *23,813* | *36* | *22* | *31* | *70* | *36,5* | *16* | *102* | *130* | *19,5* | *11,5* | *10* | *23,5* | |
| **1** | 1.42 | 0.87 | 1.22 | 2.63 | 1.31 | 0.51 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 0.93 | **SYH 1. FM** |
| *25,4* | *36* | *22* | *31* | *67* | *33,4* | *12,9* | *102* | *130* | *19,5* | *11,5* | *10* | *23,5* | |
| | 1.42 | 0.87 | 1,75 | 2.63 | 1.31 | 0.51 | 4.02 | 5.12 | 0.77 | 0.45 | 3/8 | 1.06 | **SYH 1. WF** |
| | *36* | *22* | *44,4* | *67* | *33,4* | *12,9* | *102* | *130* | *19,5* | *11,5* | *10* | *26,9* | |
| **1 1/8** | 1.57 | 0.98 | 1.41 | 3.23 | 1.69 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 1.05 | **SY 1.1/8 FM** |
| *28,575* | *40* | *25* | *35,7* | *82* | *42,9* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *26,7* | |
| | 1.57 | 0.98 | 1.91 | 3.14 | 1.56 | 0.58 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 1.19 | **SYH 1.1/8 WF** |
| | *40* | *25* | *48,4* | *80* | *39,7* | *14,8* | *117,5* | *152* | *23,5* | *14* | *12* | *30,1* | |
| **1 3/16** | 1.57 | 0.98 | 1.41 | 3.23 | 1.69 | 0.65 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 1.05 | **SY 1.3/16 FM** |
| *30,163* | *40* | *25* | *35,7* | *82* | *42,9* | *16,5* | *117,5* | *152* | *23,5* | *14* | *12* | *26,7* | |
| | 1.57 | 0.98 | 1.41 | 3.14 | 1.56 | 0.58 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 1.05 | **SYH 1.3/16 FM** |
| | *40* | *25* | *35,7* | *80* | *39,7* | *14,8* | *117,5* | *152* | *23,5* | *14* | *12* | *26,7* | |
| | 1.57 | 0.98 | 1.91 | 3.14 | 1.56 | 0.58 | 4.63 | 5.98 | 0.93 | 0.55 | 1/2 | 1.19 | **SYH 1.3/16 WF** |
| | *40* | *25* | *48,4* | *80* | *39,7* | *14,8* | *117,5* | *152* | *23,5* | *14* | *12* | *30,1* | |
| **1 1/4** | 1.77 | 1.06 | 1.53 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SY 1.1/4 FM** |
| *31,75* | *45* | *27* | *38,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *29,4* | |
| | 1.77 | 1.06 | 1.53 | 3.60 | 1.81 | 0.69 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SYH 1.1/4 FM** |
| | *45* | *27* | *38,9* | *91,5* | *46,1* | *17,5* | *126* | *160* | *21* | *14* | *12* | *29,4* | |
| | 1.77 | 1.06 | 2.01 | 3.60 | 1.81 | 0.69 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.27 | **SYH 1.1/4 WF** |
| | *45* | *27* | *51,1* | *91,5* | *46,1* | *17,5* | *126* | *160* | *21* | *14* | *12* | *32,3* | |
| **1 5/16** | 1.77 | 1.06 | 1.53 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SY 1.5/16 FM** |
| *33,338* | *45* | *27* | *38,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *29,4* | |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 1/2 FM** | SY 503 U | YET 203-008 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.32<br>*0,60* |
| **SY 3/4 FM** | SY 504 U | YET 204-012 | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.37<br>*0,62* |
| **SYH 3/4 WF** | SYH 504 U | YEL 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.45<br>*0,66* |
| **SY 15/16 FM** | SY 505 U | YET 205-015 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.65<br>*0,75* |
| **SYH 1. FM** | SYH 505 U | YET 205-100 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.63<br>*0,74* |
| **SYH 1. WF** | SYH 505 U | YEL 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.73<br>*0,79* |
| **SY 1.1/8 FM** | SY 506 U | YET 206-102 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.45<br>*1,10* |
| **SYH 1.1/8 WF** | SYH 506 U | YEL 206-102-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 3.20<br>*1,45* |
| **SY 1.3/16 FM** | SY 506 U | YET 206-103 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.45<br>*1,10* |
| **SYH 1.3/16 FM** | SYH 506 U | YET 206-103 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.55<br>*1,15* |
| **SYH 1.3/16 WF** | SYH 506 U | YEL 206-103-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.65<br>*1,20* |
| **SY 1.1/4 FM** | SY 507 U | YET 207-104 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.75<br>*1,70* |
| **SYH 1.1/4 FM** | SYH 507 U | YET 207-104 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.55<br>*1,60* |
| **SYH 1.1/4 WF** | SYH 507 U | YEL 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 4.10<br>*1,85* |
| **SY 1.5/16 FM** | SY 507 U | YET 207-105 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.65<br>*1,65* |

## Y-bearing plummer block units with a cast housing and an eccentric locking collar, inch shafts

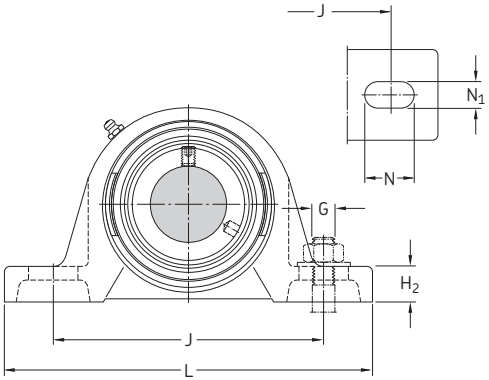
d **1 3/8 – 2** in




FM



WF

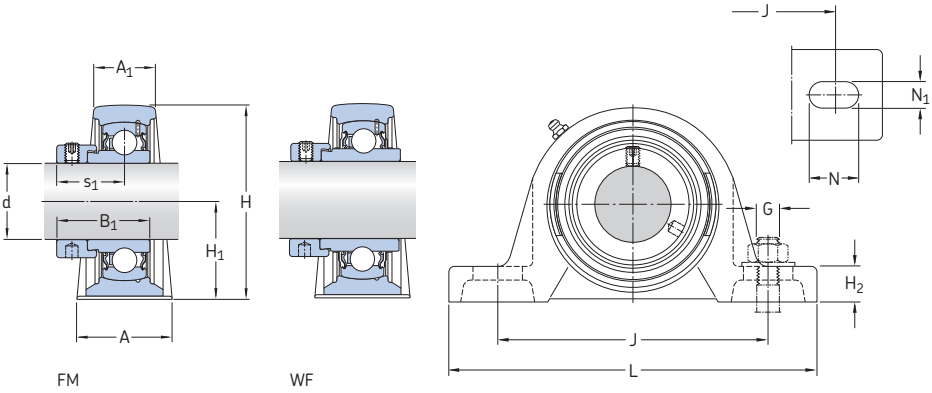



| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **1 3/8** | 1.77 | 1.06 | 1.53 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SY 1.3/8 FM** |
| *34,925* | *45* | *27* | *38,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *29,4* | |
| | 1.77 | 1.06 | 2.01 | 3.60 | 1.81 | 0.69 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.27 | **SYH 1.3/8 WF** |
| | *45* | *27* | *51,1* | *91,5* | *46,1* | *17,5* | *126* | *160* | *21* | *14* | *12* | *32,3* | |
| **1 7/16** | 1.77 | 1.06 | 1.53 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SY 1.7/16 FM** |
| *36,513* | *45* | *27* | *38,9* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *29,4* | |
| | 1.77 | 1.06 | 2.01 | 3.66 | 1.87 | 0.75 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.27 | **SY 1.7/16 WF** |
| | *45* | *27* | *51,1* | *93* | *47,6* | *19* | *126* | *160* | *21* | *14* | *12* | *32,3* | |
| | 1.77 | 1.06 | 1.53 | 3.60 | 1.81 | 0.69 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.16 | **SYH 1.7/16 FM** |
| | *45* | *27* | *38,9* | *91,5* | *46,1* | *17,5* | *126* | *160* | *21* | *14* | *12* | *29,4* | |
| | 1.77 | 1.06 | 2.01 | 3.60 | 1.81 | 0.69 | 4.96 | 6.30 | 0.83 | 0.55 | 1/2 | 1.27 | **SYH 1.7/16 WF** |
| | *45* | *27* | *51,1* | *91,5* | *46,1* | *17,5* | *126* | *160* | *21* | *14* | *12* | *32,3* | |
| **1 1/2** | 1.89 | 1.18 | 1.72 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.31 | **SY 1.1/2 FM** |
| *38,1* | *48* | *30* | *43,7* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *33,2* | |
| | 1.89 | 1.18 | 2.22 | 3.90 | 1.94 | 0.75 | 5.33 | 6.89 | 0.96 | 0.55 | 1/2 | 1.37 | **SYH 1.1/2 WF** |
| | *48* | *30* | *56,3* | *99* | *49,2* | *19* | *135,5* | *175* | *24,5* | *14* | *12* | *34,9* | |
| **1 11/16** | 1.90 | 1.26 | 1.72 | 4.22 | 2.12 | 0.81 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.29 | **SY 1.11/16 FM** |
| *42,863* | *48,3* | *32* | *43,7* | *107* | *54* | *20,6* | *143,7* | *187* | *22,7* | *14* | *12* | *32,7* | |
| | 1.90 | 1.26 | 2.22 | 4.16 | 2.06 | 0.79 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.37 | **SYH 1.11/16 WF** |
| | *48,3* | *32* | *56,3* | *105,5* | *52,4* | *20* | *143,7* | *187* | *22,7* | *14* | *12* | *34,9* | |
| **1 3/4** | 1.90 | 1.26 | 1.72 | 4.22 | 2.12 | 0.81 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.29 | **SY 1.3/4 FM** |
| *44,45* | *48,3* | *32* | *43,7* | *107* | *54* | *20,6* | *143,7* | *187* | *22,7* | *14* | *12* | *32,7* | |
| | 1.90 | 1.26 | 2.22 | 4.16 | 2.06 | 0.79 | 5.66 | 7.36 | 0.89 | 0.55 | 1/2 | 1.37 | **SYH 1.3/4 WF** |
| | *48,3* | *32* | *56,3* | *105,5* | *52,4* | *20* | *143,7* | *187* | *22,7* | *14* | *12* | *34,9* | |
| **1 15/16** | 2.13 | 1.34 | 1.72 | 4.49 | 2.25 | 0.87 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.29 | **SY 1.15/16 FM** |
| *49,213* | *54* | *34* | *43,7* | *114* | *57,2* | *22* | *157* | *203* | *26* | *18* | *16* | *32,7* | |
| | 2.13 | 1.34 | 2.47 | 4.49 | 2.25 | 0.87 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.50 | **SY 1.15/16 WF** |
| | *54* | *34* | *62,7* | *114* | *57,2* | *22* | *157* | *203* | *26* | *18* | *16* | *38,1* | |
| | 2.13 | 1.34 | 2.47 | 4.46 | 2.19 | 0.84 | 6.18 | 7.99 | 1.02 | 0.71 | 5/8 | 1.50 | **SYH 1.15/16 WF** |
| | *54* | *34* | *62,7* | *113,5* | *55,6* | *21,4* | *157* | *203* | *26* | *18* | *16* | *38,1* | |
| **2** | 2.38 | 1.57 | 1.91 | 5.00 | 2.50 | 0.94 | 6.75 | 8.63 | 1.08 | 0.71 | 5/8 | 1.41 | **SY 2. FM** |
| *50,8* | *60,4* | *40* | *48,4* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *35,9* | |
| | 2.38 | 1.57 | 1.91 | 4.98 | 2.44 | 0.92 | 6.75 | 8.63 | 1.08 | 0.71 | 5/8 | 1.41 | **SYH 2. FM** |
| | *60,4* | *40* | *48,4* | *126,5* | *61,9* | *23,3* | *171,5* | *219* | *27,5* | *18* | *16* | *35,9* | |
| | 2.38 | 1.57 | 2.81 | 4.98 | 2.44 | 0.92 | 6.75 | 8.63 | 1.08 | 0.71 | 5/8 | 1.72 | **SYH 2. WF** |
| | *60,4* | *40* | *71,4* | *126,5* | *61,9* | *23,3* | *171,5* | *219* | *27,5* | *18* | *16* | *43,6* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 1.3/8 FM** | SY 507 U | YET 207-106 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.65<br>*1,65* |
| **SYH 1.3/8 WF** | SYH 507 U | YEL 207-106-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.95<br>*1,80* |
| **SY 1.7/16 FM** | SY 507 U | YET 207-107 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.60<br>*1,63* |
| **SY 1.7/16 WF** | SY 507 U | YEL 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.75<br>*1,70* |
| **SYH 1.7/16 FM** | SYH 507 U | YET 207-107 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.40<br>*1,55* |
| **SYH 1.7/16 WF** | SYH 507 U | YEL 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.65<br>*1,65* |
| **SY 1.1/2 FM** | SY 508 U | YET 208-108 | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.95<br>*1,80* |
| **SYH 1.1/2 WF** | SYH 508 U | YEL 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.50<br>*2,05* |
| **SY 1.11/16 FM** | SY 509 U | YET 209-111 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.05<br>*2,30* |
| **SYH 1.11/16 WF** | SYH 509 U | YEL 209-111-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.85<br>*2,65* |
| **SY 1.3/4 FM** | SY 509 U | YET 209-112 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.95<br>*2,25* |
| **SYH 1.3/4 WF** | SYH 509 U | YEL 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.30<br>*2,40* |
| **SY 1.15/16 FM** | SY 510 U | YET 210-115 | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.05<br>*2,75* |
| **SY 1.15/16 WF** | SY 510 U | YEL 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.50<br>*2,95* |
| **SYH 1.15/16 WF** | SYH 510 U | YEL 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.50<br>*2,95* |
| **SY 2. FM** | SY 511 U | YET 211-200 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.40<br>*3,80* |
| **SYH 2. FM** | SYH 511 U | YET 211-200 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.80<br>*4,00* |
| **SYH 2. WF** | SYH 511 U | YEL 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 9.25<br>*4,20* |

## Y-bearing plummer block units with a cast housing and an eccentric locking collar, inch shafts

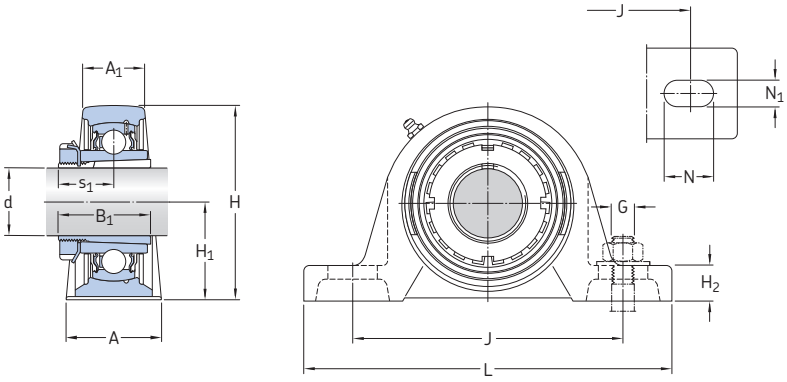
d **2 3/16 – 2 7/16** in




| Dimensions | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | – |
| **2 3/16** | 2.38 | 1.57 | 1.91 | 5.00 | 2.50 | 0.94 | 6.75 | 8.63 | 1.08 | 0.71 | 5/8 | 1.41 | **SY 2.3/16 FM** |
| *55,563* | *60,4* | *40* | *48,4* | *127* | *63,5* | *23,8* | *171,5* | *219* | *27,5* | *18* | *16* | *35,9* | |
| | 2.38 | 1.57 | 2.81 | 4.98 | 2.44 | 0.92 | 6.75 | 8.63 | 1.08 | 0.71 | 5/8 | 1.72 | **SYH 2.3/16 WF** |
| | *60,4* | *40* | *71,4* | *126,5* | *61,9* | *23,3* | *171,5* | *219* | *27,5* | *18* | *16* | *43,6* | |
| **2 7/16** | 2.36 | 1.65 | 3.06 | 5.50 | 2.75 | 1.02 | 7.50 | 9.45 | 1.15 | 0.71 | 5/8 | 1.84 | **SYH 2.7/16 WF** |
| *61,913* | *60* | *42* | *77,8* | *139,5* | *69,9* | *26* | *190,5* | *240* | *29,1* | *18* | *16* | *46,7* | |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SY 2.3/16 FM** | SY 511 U | YET 211-203 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.05<br>*3,65* |
| **SYH 2.3/16 WF** | SYH 511 U | YEL 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.70<br>*3,95* |
| **SYH 2.7/16 WF** | SYH 512 U | YEL 212-207-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.8<br>*4,90* |

## Y-bearing plummer block units with a cast housing and an adapter sleeve, metric shafts
d **20 – 60** mm

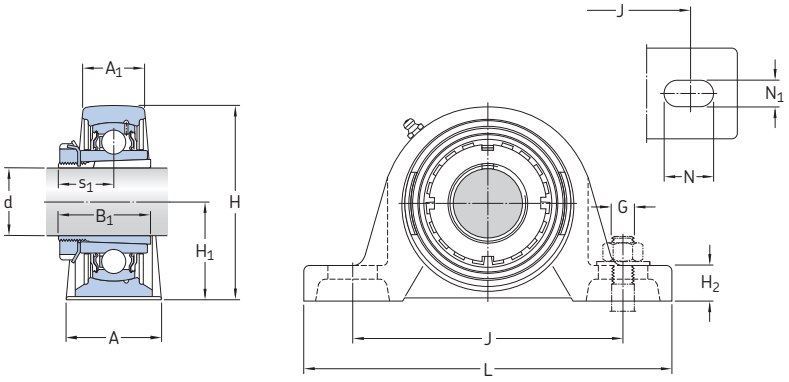



| Dimensions | | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | dynamic | static | | Bearing unit | Adapter sleeve |
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | | | kN | | kN | – | |
| **20** | 38 | 24 | 35 | 70,5 | 36,5 | 16 | 102 | 140 | 21,5 | 13 | 12 | 20 | 14 | 7,8 | 0,335 | **SYJ 25 KF** | **H 2305** |
| **25** | 42 | 27 | 38 | 82,5 | 42,9 | 16 | 118 | 165 | 24 | 17 | 14 | 22 | 19,5 | 11,2 | 0,475 | **SYJ 30 KF** | **H 2306** |
| **30** | 46 | 28 | 43 | 93 | 47,6 | 17 | 129 | 167 | 24 | 17 | 14 | 24,3 | 25,5 | 15,3 | 0,655 | **SYJ 35 KF** | **H 2307** |
| **35** | 49 | 31 | 46 | 99 | 49,2 | 18 | 136,5 | 184 | 25,5 | 17 | 14 | 27 | 30,7 | 19 | 0,8 | **SYJ 40 KF** | **H 2308** |
| **40** | 52 | 36 | 50 | 107,5 | 54 | 20 | 143,5 | 190 | 23,5 | 17 | 14 | 28,5 | 33,2 | 21,6 | 0,915 | **SYJ 45 KF** | **H 2309** |
| **45** | 58 | 38 | 55 | 114,5 | 57,2 | 22 | 157,5 | 206 | 26,5 | 20 | 16 | 30,5 | 35,1 | 23,2 | 0,98 | **SYJ 50 KF** | **H 2310** |
| **50** | 60 | 40 | 59 | 126 | 63,5 | 24 | 171,5 | 219 | 27,5 | 20 | 16 | 32,5 | 43,6 | 29 | 1,25 | **SYJ 55 KF** | **H 2311** |
| **55** | 65 | 47 | 62 | 138 | 69,8 | 26,5 | 188,5 | 241 | 29,5 | 20 | 16 | 34,3 | 52,7 | 36 | 1,53 | **SYJ 60 KF** | **H 2312** |
| **60** | 70 | 49 | 65 | 151 | 76,2 | 27 | 203 | 265 | 35 | 25 | 20 | 35,8 | 57,2 | 40 | 1,7 | **SYJ 65 KF** | **H 2313** |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations** Bearing unit without adapter sleeve | Separate components of the bearing unit Housing | Bearing | **Limiting speed** | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|
| – | | | r/min | kg |
| **SYJ 25 KF** | SYJ 505 | YSA 205-2FK | 7 000 | 0,63 |
| **SYJ 30 KF** | SYJ 506 | YSA 206-2FK | 6 300 | 0,90 |
| **SYJ 35 KF** | SYJ 507 | YSA 207-2FK | 5 300 | 1,25 |
| **SYJ 40 KF** | SYJ 508 | YSA 208-2FK | 4 800 | 1,80 |
| **SYJ 45 KF** | SYJ 509 | YSA 209-2FK | 4 300 | 2,10 |
| **SYJ 50 KF** | SYJ 510 | YSA 210-2FK | 4 000 | 2,75 |
| **SYJ 55 KF** | SYJ 511 | YSA 211-2FK | 3 600 | 3,85 |
| **SYJ 60 KF** | SYJ 512 | YSA 212-2FK | 3 400 | 5,00 |
| **SYJ 65 KF** | SYJ 513 | YSA 213-2FK | 3 000 | 6,35 |

## Y-bearing plummer block units with a cast housing and an adapter sleeve, inch shafts
d 3/4 – 2 1/8 in

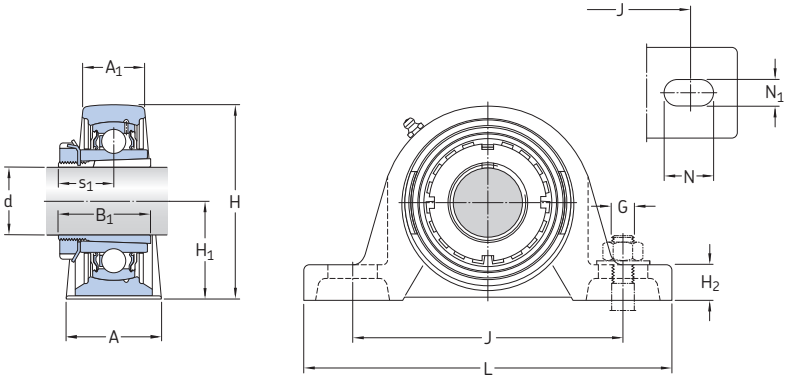



| Dimensions | | | | | | | | | | | | | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Bearing unit | Adapter sleeve |
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | | |
| in/*mm* | | | | | | | | | | | | | – | |
| **3/4**<br>*19,05* | 1.50<br>*38* | 0.94<br>*24* | 1.38<br>*35* | 2.78<br>*70,5* | 1.44<br>*36,5* | 0.63<br>*16* | 4.02<br>*102* | 5.51<br>*140* | 0.85<br>*21,5* | 0.51<br>*13* | 1/2<br>*12* | 0.79<br>*20* | **SYJ 25 KF** | **HE 2305** |
| **15/16**<br>*23,813* | 1.65<br>*42* | 1.06<br>*27* | 1.50<br>*38* | 3.25<br>*82,5* | 1.69<br>*42,9* | 0.63<br>*16* | 4.65<br>*118* | 6.50<br>*165* | 0.94<br>*24* | 0.67<br>*17* | 9/16<br>*14* | 0.87<br>*22* | **SYJ 30 KF** | **HA 2306** |
| **1**<br>*25,4* | 1.65<br>*42* | 1.06<br>*27* | 1.50<br>*38* | 3.25<br>*82,5* | 1.69<br>*42,9* | 0.63<br>*16* | 4.65<br>*118* | 6.50<br>*165* | 0.94<br>*24* | 0.67<br>*17* | 9/16<br>*14* | 0.87<br>*22* | **SYJ 30 KF** | **HE 2306** |
| **1 3/16**<br>*30,163* | 1.81<br>*46* | 1.1<br>*28* | 1.69<br>*43* | 3.66<br>*93* | 1.87<br>*47,6* | 0.67<br>*17* | 5.08<br>*129* | 6.57<br>*167* | 0.94<br>*24* | 0.67<br>*17* | 9/16<br>*14* | 0.96<br>*24,3* | **SYJ 35 KF** | **HA 2307** |
| **1 1/4**<br>*31,75* | 1.93<br>*49* | 1.22<br>*31* | 1.81<br>*46* | 3.90<br>*99* | 1.94<br>*49,2* | 0.71<br>*18* | 5.37<br>*136,5* | 7.24<br>*184* | 1.00<br>*25,5* | 0.67<br>*17* | 9/16<br>*14* | 1.06<br>*27* | **SYJ 40 KF** | **HE 2308** |
| **1 7/16**<br>*36,513* | 2.05<br>*52* | 1.42<br>*36* | 1.97<br>*50* | 4.23<br>*107,5* | 2.13<br>*54* | 0.79<br>*20* | 5.65<br>*143,5* | 7.48<br>*190* | 0.93<br>*23,5* | 0.67<br>*17* | 9/16<br>*14* | 1.12<br>*28,5* | **SYJ 45 KF** | **HA 2309** |
| **1 1/2**<br>*38,1* | 2.05<br>*52* | 1.42<br>*36* | 1.97<br>*50* | 4.23<br>*107,5* | 2.13<br>*54* | 0.79<br>*20* | 5.65<br>*143,5* | 7.48<br>*190* | 0.93<br>*23,5* | 0.67<br>*17* | 9/16<br>*14* | 1.12<br>*28,5* | **SYJ 45 KF** | **HE 2309** |
| **1 5/8**<br>*41,275* | 2.28<br>*58* | 1.5<br>*38* | 2.17<br>*55* | 4.51<br>*114,5* | 2.25<br>*57,2* | 0.87<br>*22* | 6.20<br>*157,5* | 8.11<br>*206* | 1.04<br>*26,5* | 0.79<br>*20* | 5/8<br>*16* | 1.20<br>*30,5* | **SYJ 50 KF** | **HS 2310** |
| **1 11/16**<br>*42,863* | 2.28<br>*58* | 1.5<br>*38* | 2.17<br>*55* | 4.51<br>*114,5* | 2.25<br>*57,2* | 0.87<br>*22* | 6.20<br>*157,5* | 8.11<br>*206* | 1.04<br>*26,5* | 0.79<br>*20* | 5/8<br>*16* | 1.20<br>*30,5* | **SYJ 50 KF** | **HA 2310** |
| **1 3/4**<br>*44,45* | 2.28<br>*58* | 1.5<br>*38* | 2.17<br>*55* | 4.51<br>*114,5* | 2.25<br>*57,2* | 0.87<br>*22* | 6.20<br>*157,5* | 8.11<br>*206* | 1.04<br>*26,5* | 0.79<br>*20* | 5/8<br>*16* | 1.20<br>*30,5* | **SYJ 50 KF** | **HE 2310** |
| **1 15/16**<br>*49,213* | 2.36<br>*60* | 1.57<br>*40* | 2.32<br>*59* | 4.96<br>*126* | 2.50<br>*63,5* | 0.94<br>*24* | 6.75<br>*171,5* | 8.62<br>*219* | 1.08<br>*27,5* | 0.79<br>*20* | 5/8<br>*16* | 1.28<br>*32,5* | **SYJ 55 KF** | **HA 2311** |
| **2**<br>*50,8* | 2.36<br>*60* | 1.57<br>*40* | 2.32<br>*59* | 4.96<br>*126* | 2.50<br>*63,5* | 0.94<br>*24* | 6.75<br>*171,5* | 8.62<br>*219* | 1.08<br>*27,5* | 0.79<br>*20* | 5/8<br>*16* | 1.28<br>*32,5* | **SYJ 55 KF** | **HE 2311 B** |
| **2 1/8**<br>*53,975* | 2.56<br>*65* | 1.85<br>*47* | 2.44<br>*62* | 5.43<br>*138* | 2.75<br>*69,8* | 1.04<br>*26,5* | 7.42<br>*188,5* | 9.49<br>*241* | 1.16<br>*29,5* | 0.79<br>*20* | 5/8<br>*16* | 1.35<br>*34,3* | **SYJ 60 KF** | **HS 2312** |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations** Bearing unit without adapter sleeve | Separate components of the bearing unit Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SYJ 25 KF** | SYJ 505 | YSA 205-2FK | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.40<br>*0,63* |
| **SYJ 30 KF** | SYJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.00<br>*0,90* |
| **SYJ 30 KF** | SYJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.00<br>*0,90* |
| **SYJ 35 KF** | SYJ 507 | YSA 207-2FK | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.75<br>*1,25* |
| **SYJ 40 KF** | SYJ 508 | YSA 208-2FK | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.95<br>*1,80* |
| **SYJ 45 KF** | SYJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.70<br>*2,15* |
| **SYJ 45 KF** | SYJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.65<br>*2,10* |
| **SYJ 50 KF** | SYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.05<br>*2,75* |
| **SYJ 50 KF** | SYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.05<br>*2,75* |
| **SYJ 50 KF** | SYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.05<br>*2,75* |
| **SYJ 55 KF** | SYJ 511 | YSA 211-2FK | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.50<br>*3,85* |
| **SYJ 55 KF** | SYJ 511 | YSA 211-2FK | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.50<br>*3,85* |
| **SYJ 60 KF** | SYJ 512 | YSA 212-2FK | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 11.0<br>*5,00* |

## Y-bearing plummer block units with a cast housing and an adapter sleeve, inch shafts
d **2 3/16 – 2 3/8** in



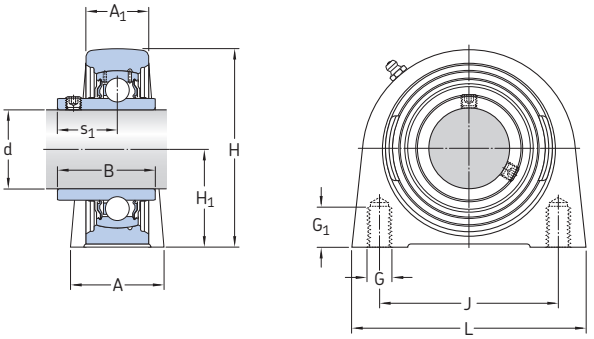

| Dimensions | | | | | | | | | | | | | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Bearing unit | Adapter sleeve |
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | $s_1$ | | |
| in/*mm* | | | | | | | | | | | | | – | |
| **2 3/16** | 2.76 | 1.93 | 2.56 | 5.94 | 3.00 | 1.06 | 7.99 | 10.43 | 1.38 | 0.98 | 3/4 | 1.41 | **SYJ 65 KF** | **HA 2313** |
| *55,563* | *70* | *49* | *65* | *151* | *76,2* | *27* | *203* | *265* | *35* | *25* | *20* | *35,8* | | |
| **2 1/4** | 2.76 | 1.93 | 2.56 | 5.94 | 3.00 | 1.06 | 7.99 | 10.43 | 1.38 | 0.98 | 3/4 | 1.41 | **SYJ 65 KF** | **HE 2313** |
| *57,15* | *70* | *49* | *65* | *151* | *76,2* | *27* | *203* | *265* | *35* | *25* | *20* | *35,8* | | |
| **2 3/8** | 2.76 | 1.93 | 2.56 | 5.94 | 3.00 | 1.06 | 7.99 | 10.43 | 1.38 | 0.98 | 3/4 | 1.41 | **SYJ 65 KF** | **HS 2313** |
| *60,325* | *70* | *49* | *65* | *151* | *76,2* | *27* | *203* | *265* | *35* | *25* | *20* | *35,8* | | |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations** Bearing unit without adapter sleeve | Separate components of the bearing unit Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **SYJ 65 KF** | SYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 14.5<br>*6,55* |
| **SYJ 65 KF** | SYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 14.5<br>*6,55* |
| **SYJ 65 KF** | SYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 14.0<br>*6,35* |

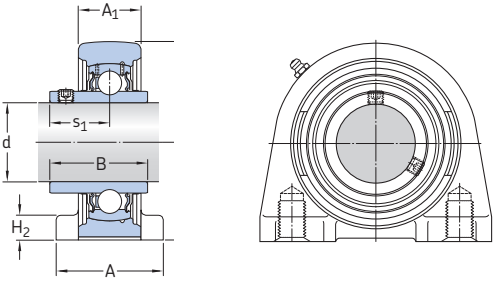
## Y-bearing plummer block units with a shortened cast housing and grub screws, metric shafts

d **20 – 50** mm




SYF

| Dimensions | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | G | $G_1$ | $s_1$ | dynamic C | static $C_0$ | $P_u$ | with shaft tolerance h6 | Bearing unit |
| mm | | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 32 | 21 | 31 | 65 | 33,3 | – | 50,8 | 65 | M 8 | 14 | 18,3 | 12,7 | 6,55 | 0,28 | 8 500 | **SYF 20 TF** |
| | 38 | 24 | 31 | 63 | 30,2 | 8 | 52 | 76 | M 10 | 12 | 18,3 | 12,7 | 6,55 | 0,28 | 8 500 | **SYFJ 20 TF** |
| **25** | 36 | 22 | 34,1 | 70,5 | 36,5 | – | 50,8 | 70 | M 10 | 15 | 19,8 | 14 | 7,8 | 0,335 | 7 000 | **SYF 25 TF** |
| | 38 | 25 | 34,1 | 73 | 36,5 | 10 | 56 | 84 | M 10 | 15 | 19,8 | 14 | 7,8 | 0,335 | 7 000 | **SYFJ 25 TF** |
| **30** | 40 | 25 | 38,1 | 83 | 42,9 | – | 76,2 | 98 | M 10 | 15 | 22,2 | 19,5 | 11,2 | 0,475 | 6 300 | **SYF 30 TF** |
| | 48 | 28,5 | 38,1 | 85 | 42,9 | 10 | 66 | 94 | M 14 | 18 | 22,2 | 19,5 | 11,2 | 0,475 | 6 300 | **SYFJ 30 TF** |
| **35** | 45 | 27 | 42,9 | 93 | 47,6 | – | 82,6 | 103 | M 10 | 15 | 25,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SYF 35 TF** |
| | 48 | 30,5 | 42,9 | 96 | 47,6 | 12 | 80 | 110 | M 14 | 20 | 25,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SYFJ 35 TF** |
| **40** | 48 | 30 | 49,2 | 99 | 49,2 | – | 88,9 | 116 | M 12 | 20 | 30,2 | 30,7 | 19 | 0,8 | 4 800 | **SYF 40 TF** |
| | 54 | 31,5 | 49,2 | 101 | 49,2 | 12 | 84 | 116 | M 14 | 20 | 30,2 | 30,7 | 19 | 0,8 | 4 800 | **SYFJ 40 TF** |
| **45** | 48 | 32 | 49,2 | 107,5 | 54 | – | 95,3 | 120 | M 12 | 22 | 30,2 | 33,2 | 21,6 | 0,915 | 4 300 | **SYF 45 TF** |
| | 54 | 33,5 | 49,2 | 109 | 54,2 | 12 | 90 | 120 | M 14 | 25 | 30,2 | 33,2 | 21,6 | 0,915 | 4 300 | **SYFJ 45 TF** |
| **50** | 54 | 34 | 51,6 | 114,5 | 57,2 | – | 101,6 | 135 | M 16 | 25,5 | 32,6 | 35,1 | 23,2 | 0,98 | 4 000 | **SYF 50 TF** |
| | 60 | 35,5 | 51,6 | 117 | 57,2 | 14 | 94 | 130 | M 16 | 25 | 32,6 | 35,1 | 23,2 | 0,98 | 4 000 | **SYFJ 50 TF** |

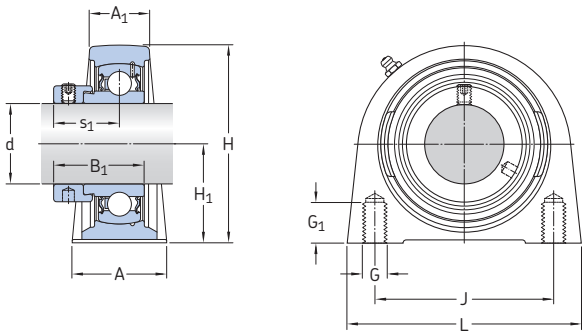



SYFJ

| Designations<br>Bearing unit | Separate components<br>Housing | <br>Bearing | Mass<br>Bearing unit |
|---|---|---|---|
| – | | | kg |
| **SYF 20 TF** | SYF 504 | YAR 204-2F | 0,43 |
| **SYFJ 20 TF** | SYFJ 504 | YAR 204-2F | 0,54 |
| **SYF 25 TF** | SYF 505 | YAR 205-2F | 0,52 |
| **SYFJ 25 TF** | SYFJ 505 | YAR 205-2F | 0,67 |
| **SYF 30 TF** | SYF 506 | YAR 206-2F | 0,90 |
| **SYFJ 30 TF** | SYFJ 506 | YAR 206-2F | 1,00 |
| **SYF 35 TF** | SYF 507 | YAR 207-2F | 1,20 |
| **SYFJ 35 TF** | SYFJ 507 | YAR 207-2F | 1,40 |
| **SYF 40 TF** | SYF 508 | YAR 208-2F | 1,50 |
| **SYFJ 40 TF** | SYFJ 508 | YAR 208-2F | 1,60 |
| **SYF 45 TF** | SYF 509 | YAR 209-2F | 1,80 |
| **SYFJ 45 TF** | SYFJ 509 | YAR 209-2F | 1,85 |
| **SYF 50 TF** | SYF 510 | YAR 210-2F | 2,20 |
| **SYFJ 50 TF** | SYFJ 510 | YAR 210-2F | 2,30 |

## Y-bearing plummer block units with a shortened cast housing and an eccentric locking collar, metric shafts

d **20 – 50** mm

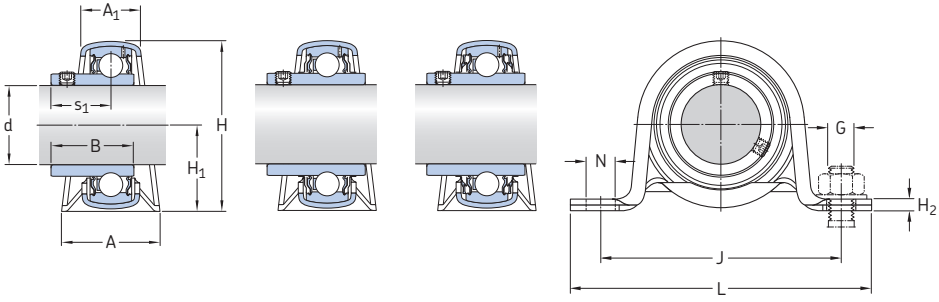



| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | J | L | G | $G_1$ | $s_1$ | dynamic C | static $C_0$ | $P_u$ | with shaft tolerance | Bearing unit h6 |
| mm | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 32 | 21 | 31 | 65 | 33,3 | 50,8 | 65 | M 8 | 14 | 23,5 | 12,7 | 6,55 | 0,28 | 8 500 | **SYF 20 FM** |
| **25** | 36 | 22 | 31 | 70,5 | 36,5 | 50,8 | 70 | M 10 | 15 | 23,5 | 14 | 7,8 | 0,335 | 7 000 | **SYF 25 FM** |
| **30** | 40 | 25 | 35,7 | 83 | 42,9 | 76,2 | 98 | M 10 | 15 | 26,7 | 19,5 | 11,2 | 0,475 | 6 300 | **SYF 30 FM** |
| **35** | 45 | 27 | 38,9 | 93 | 47,6 | 82,6 | 103 | M 10 | 15 | 29,4 | 25,5 | 15,3 | 0,655 | 5 300 | **SYF 35 FM** |
| **40** | 48 | 30 | 43,7 | 99 | 49,2 | 88,9 | 116 | M 12 | 20 | 32,7 | 30,7 | 19 | 0,8 | 4 800 | **SYF 40 FM** |
| **45** | 48 | 32 | 43,7 | 107,5 | 54 | 95,3 | 120 | M 12 | 22 | 32,7 | 33,2 | 21,6 | 0,915 | 4 300 | **SYF 45 FM** |
| **50** | 54 | 34 | 43,7 | 114,5 | 57,2 | 101,6 | 135 | M 16 | 25,5 | 32,7 | 35,1 | 23,2 | 0,98 | 4 000 | **SYF 50 FM** |

| Designations | | | Mass |
|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit |
| | Housing | Bearing | |
| – | | | kg |
| **SYF 20 FM** | SYF 504 | YET 204 | 0,43 |
| **SYF 25 FM** | SYF 505 | YET 205 | 0,52 |
| **SYF 30 FM** | SYF 506 | YET 206 | 0,90 |
| **SYF 35 FM** | SYF 507 | YET 207 | 1,20 |
| **SYF 40 FM** | SYF 508 | YET 208 | 1,50 |
| **SYF 45 FM** | SYF 509 | YET 209 | 1,80 |
| **SYF 50 FM** | SYF 510 | YET 210 | 2,20 |

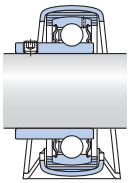
## Y-bearing plummer block units with a pressed steel housing and grub screws, metric shafts

d **12 – 35** mm

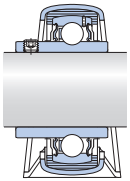



P + YAT P + YAR-2F P + YAR-2RF

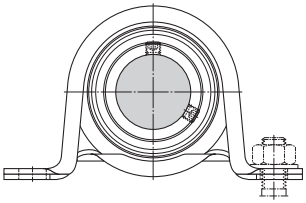
| Dimensions | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Permissible housing load | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | dynamic | static | | radial | Bearing unit No order |
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | G | $s_1$ | C | $C_0$ | $P_u$ | | designation |
| mm | | | | | | | | | | | | kN | | kN | kN | – |
| **12** | 26 | 18 | 27,4 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,25 | P 12 TF |
| | 32 | 21 | 27,4 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-12 TF |
| **15** | 26 | 18 | 27,4 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,25 | P 15 TF |
| | 32 | 21 | 27,4 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-15 TF |
| **17** | 26 | 18 | 22,1 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,25 | P 17 RM |
| | 26 | 18 | 27,4 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,25 | P 17 TF |
| | 32 | 21 | 22,1 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-17 RM |
| | 32 | 21 | 27,4 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 15,9 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-17 TF |
| **20** | 32 | 21 | 25,5 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 18,3 | 12,7 | 6,55 | 0,28 | 1,7 | P 20 RM |
| | 32 | 21 | 31 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 18,3 | 12,7 | 6,55 | 0,28 | 1,7 | P 20 TF |
| | 32 | 21 | 31 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 18,3 | 12,7 | 6,55 | 0,28 | 1,7 | P 20 TR |
| | 32 | 24 | 25,5 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 1,8 | P 52 R-20 RM |
| | 32 | 24 | 31 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 18,3 | 12,7 | 6,55 | 0,28 | 1,8 | P 52 R-20 TF |
| **25** | 32 | 24 | 27,2 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 19,5 | 14 | 7,8 | 0,335 | 1,8 | P 25 RM |
| | 32 | 24 | 34,1 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 19,8 | 14 | 7,8 | 0,335 | 1,8 | P 25 TF |
| | 32 | 24 | 34,1 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 19,8 | 14 | 7,8 | 0,335 | 1,8 | P 25 TR |
| | 38 | 25 | 27,2 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 19,5 | 14 | 7,8 | 0,335 | 2,6 | P 62 R-25 RM |
| | 38 | 25 | 34,1 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 19,8 | 14 | 7,8 | 0,335 | 2,6 | P 62 R-25 TF |
| **30** | 38 | 25 | 30,2 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 21 | 19,5 | 11,2 | 0,475 | 2,6 | P 30 RM |
| | 38 | 25 | 38,1 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 22,2 | 19,5 | 11,2 | 0,475 | 2,6 | P 30 TF |
| | 38 | 25 | 38,1 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 22,2 | 19,5 | 11,2 | 0,475 | 2,6 | P 30 TR |
| | 41 | 27 | 30,2 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 21 | 19,5 | 11,2 | 0,475 | 3,3 | P 72 R-30 RM |
| | 41 | 27 | 38,1 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 22,2 | 19,5 | 11,2 | 0,475 | 3,3 | P 72 R-30 TF |
| **35** | 41 | 27 | 33 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 23,3 | 25,5 | 15,3 | 0,655 | 3,3 | P 35 RM |
| | 41 | 27 | 42,9 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 25,4 | 25,5 | 15,3 | 0,655 | 3,3 | P 35 TF |
| | 41 | 27 | 42,9 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 25,4 | 25,5 | 15,3 | 0,655 | 3,3 | P 35 TR |
| | 43 | 29 | 33 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 23,3 | 25,5 | 15,3 | 0,655 | 3,8 | P 80 R-35 RM |
| | 43 | 29 | 42,9 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 25,4 | 25,5 | 15,3 | 0,655 | 3,8 | P 80 R-35 TF |



P + RIS + YAT



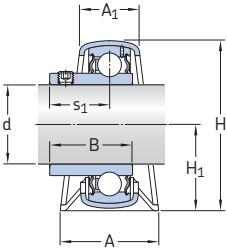
P + RIS + YAR-2F



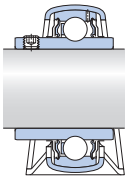
| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | Rubber seating ring | **Mass** Bearing unit |
|---|---|---|---|---|
| – | – | | | kg |
| P 12 TF | **P 40** | **YAR 203/12-2F** | **–** | 0,18 |
| P 47 R-12 TF | **P 47** | **YAR 203/12-2F** | **RIS 203** | 0,22 |
| P 15 TF | **P 40** | **YAR 203/15-2F** | **–** | 0,17 |
| P 47 R-15 TF | **P 47** | **YAR 203/15-2F** | **RIS 203** | 0,21 |
| P 17 RM | **P 40** | **YAT 203** | **–** | 0,15 |
| P 17 TF | **P 40** | **YAR 203-2F** | **–** | 0,16 |
| P 47 R-17 RM | **P 47** | **YAT 203** | **RIS 203** | 0,19 |
| P 47 R-17 TF | **P 47** | **YAR 203-2F** | **RIS 203** | 0,20 |
| P 20 RM | **P 47** | **YAT 204** | **–** | 0,19 |
| P 20 TF | **P 47** | **YAR 204-2F** | **–** | 0,22 |
| P 20 TR | **P 47** | **YAR 204-2RF** | **–** | 0,22 |
| P 52 R-20 RM | **P 52** | **YAT 204** | **RIS 204** | 0,23 |
| P 52 R-20 TF | **P 52** | **YAR 204-2F** | **RIS 204** | 0,26 |
| P 25 RM | **P 52** | **YAT 205** | **–** | 0,24 |
| P 25 TF | **P 52** | **YAR 205-2F** | **–** | 0,27 |
| P 25 TR | **P 52** | **YAR 205-2RF** | **–** | 0,27 |
| P 62 R-25 RM | **P 62** | **YAT 205** | **RIS 205** | 0,35 |
| P 62 R-25 TF | **P 62** | **YAR 205-2F** | **RIS 205** | 0,38 |
| P 30 RM | **P 62** | **YAT 206** | **–** | 0,42 |
| P 30 TF | **P 62** | **YAR 206-2F** | **–** | 0,47 |
| P 30 TR | **P 62** | **YAR 206-2RF** | **–** | 0,47 |
| P 72 R-30 RM | **P 72** | **YAT 206** | **RIS 206** | 0,53 |
| P 72 R-30 TF | **P 72** | **YAR 206-2F** | **RIS 206** | 0,58 |
| P 35 RM | **P 72** | **YAT 207** | **–** | 0,57 |
| P 35 TF | **P 72** | **YAR 207-2F** | **–** | 0,67 |
| P 35 TR | **P 72** | **YAR 207-2RF** | **–** | 0,67 |
| P 80 R-35 RM | **P 80** | **YAT 207** | **RIS 207** | 0,64 |
| P 80 R-35 TF | **P 80** | **YAR 207-2F** | **RIS 207** | 0,74 |

## Y-bearing plummer block units with a pressed steel housing and grub screws, metric shafts

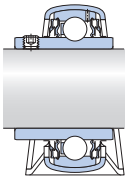
d **40 – 45** mm



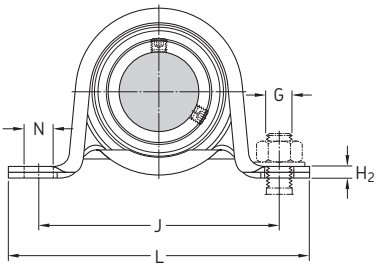

P + YAT



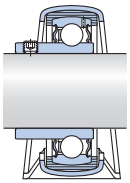
P + YAR-2F



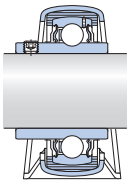
P + YAR-2RF



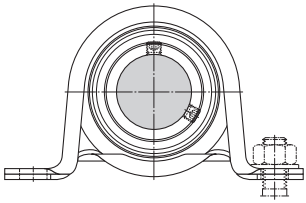

| Dimensions | | | | | | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Permissible housing load | Designation Bearing unit No order |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | G | $s_1$ | C | $C_0$ | $P_u$ | radial | designation |
| mm | | | | | | | | | | | | kN | | kN | kN | – |
| **40** | 43 | 29 | 36 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 25,3 | 30,7 | 19 | 0,8 | 3,8 | P 40 RM |
| | 43 | 29 | 49,2 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 30,2 | 30,7 | 19 | 0,8 | 3,8 | P 40 TF |
| | 43 | 29 | 49,2 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 30,2 | 30,7 | 19 | 0,8 | 3,8 | P 40 TR |
| | 45 | 31 | 36 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 25,3 | 30,7 | 19 | 0,8 | 4,2 | P 85 R-40 RM |
| | 45 | 31 | 49,2 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 30,2 | 30,7 | 19 | 0,8 | 4,2 | P 85 R-40 TF |
| **45** | 45 | 31 | 37 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 25,8 | 33,2 | 21,6 | 0,915 | 4,2 | P 45 RM |
| | 45 | 31 | 49,2 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 30,2 | 33,2 | 21,6 | 0,915 | 4,2 | P 45 TF |
| | 45 | 31 | 49,2 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 30,2 | 33,2 | 21,6 | 0,915 | 4,2 | P 45 TR |



P + RIS + YAT

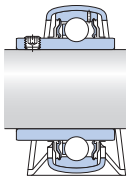


P + RIS + YAR-2F

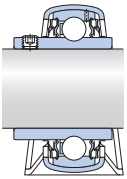


| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | Rubber seating ring | **Mass** Bearing unit |
|---|---|---|---|---|
| – | – | | | kg |
| P 40 RM | **P 80** | **YAT 208** | **–** | 0,80 |
| P 40 TF | **P 80** | **YAR 208-2F** | **–** | 0,92 |
| P 40 TR | **P 80** | **YAR 208-2RF** | **–** | 0,92 |
| P 85 R-40 RM | **P 85** | **YAT 208** | **RIS 208** | 0,93 |
| P 85 R-40 TF | **P 85** | **YAR 208-2F** | **RIS 208** | 1,05 |
| P 45 RM | **P 85** | **YAT 209** | **–** | 0,88 |
| P 45 TF | **P 85** | **YAR 209-2F** | **–** | 1,00 |
| P 45 TR | **P 85** | **YAR 209-2RF** | **–** | 1,00 |

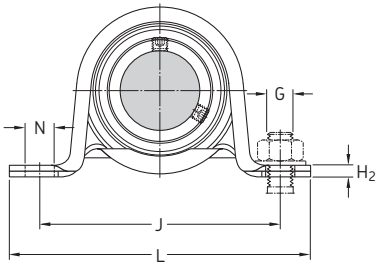
## Y-bearing plummer block units with a pressed steel housing and grub screws, inch shafts
d **3/4 – 1 3/4** in



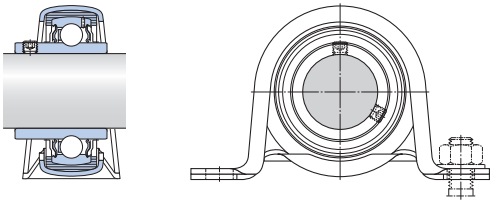
P + YAR-2F



P + YAR-2RF




| Dimensions | | | | | | | | | | | | Designation<br>Bearing unit<br>No order<br>designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | B | H | $H_1$ | $H_2$ | J | L | N | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | – |
| **3/4** | 1.26 | 0.83 | 1.22 | 1.97 | 0.99 | 0.12 | 2.99 | 3.90 | 0.38 | 5/16 | 0.72 | P 3/4 TF |
| *19,05* | *32* | *21* | *31* | *50* | *25,2* | *3* | *76* | *99* | *9,6* | *8* | *18,3* | |
| | 1.26 | 0.83 | 1.22 | 1.97 | 0.99 | 0.12 | 2.99 | 3.90 | 0.38 | 5/16 | 0.72 | P 3/4 TR |
| | *32* | *21* | *31* | *50* | *25,2* | *3* | *76* | *99* | *9,6* | *8* | *18,3* | |
| | 1.26 | 0.94 | 1.22 | 2.20 | 1.11 | 0.13 | 3.39 | 4.25 | 0.44 | 3/8 | 0.72 | P 52 R-3/4 TF |
| | *32* | *24* | *31* | *56* | *28,3* | *3,2* | *86* | *108* | *11,2* | *10* | *18,3* | |
| **1** | 1.26 | 0.94 | 1.34 | 2.20 | 1.11 | 0.13 | 3.39 | 4.25 | 0.44 | 3/8 | 0.78 | P 1. TF |
| *25,4* | *32* | *24* | *34,1* | *56* | *28,3* | *3,2* | *86* | *108* | *11,2* | *10* | *19,8* | |
| | 1.26 | 0.94 | 1.34 | 2.20 | 1.11 | 0.13 | 3.39 | 4.25 | 0.44 | 3/8 | 0.78 | P 1. TR |
| | *32* | *24* | *34,1* | *56* | *28,3* | *3,2* | *86* | *108* | *11,2* | *10* | *19,8* | |
| | 1.50 | 0.98 | 1.34 | 2.60 | 1.30 | 0.16 | 3.74 | 4.69 | 0.44 | 3/8 | 0.78 | P 62 R-1. TF |
| | *38* | *25* | *34,1* | *66* | *32,9* | *4* | *95* | *119* | *11,2* | *10* | *19,8* | |
| **1 1/4** | 1.61 | 1.06 | 1.69 | 3.07 | 1.54 | 0.20 | 4.17 | 5.12 | 0.44 | 3/8 | 1.00 | P 1.1/4 TF |
| *31,75* | *41* | *27* | *42,9* | *78* | *39,2* | *5* | *106* | *130* | *11,2* | *10* | *25,4* | |
| | 1.61 | 1.06 | 1.69 | 3.07 | 1.54 | 0.20 | 4.17 | 5.12 | 0.44 | 3/8 | 1.00 | P 1.1/4 TR |
| | *41* | *27* | *42,9* | *78* | *39,2* | *5* | *106* | *130* | *11,2* | *10* | *25,4* | |
| | 1.69 | 1.14 | 1.69 | 3.39 | 1.71 | 0.20 | 4.72 | 5.83 | 0.55 | 1/2 | 1.00 | P 80 R-1.1/4 TF |
| | *43* | *29* | *42,9* | *86* | *43,5* | *5* | *120* | *148* | *14* | *12* | *25,4* | |
| **1 1/2** | 1.69 | 1.14 | 1.94 | 3.39 | 1.71 | 0.20 | 4.72 | 5.83 | 0.55 | 1/2 | 1.19 | P 1.1/2 TF |
| *38,1* | *43* | *29* | *49,2* | *86* | *43,5* | *5* | *120* | *148* | *14* | *12* | *30,2* | |
| | 1.69 | 1.14 | 1.94 | 3.39 | 1.71 | 0.20 | 4.72 | 5.83 | 0.55 | 1/2 | 1.19 | P 1.1/2 TR |
| | *43* | *29* | *49,2* | *86* | *43,5* | *5* | *120* | *148* | *14* | *12* | *30,2* | |
| | 1.77 | 1.22 | 1.94 | 3.62 | 1.83 | 0.24 | 5.04 | 6.14 | 0.55 | 1/2 | 1.19 | P 85 R-1.1/2 TF |
| | *45* | *31* | *49,2* | *92* | *46,4* | *6* | *128* | *156* | *14* | *12* | *30,2* | |
| **1 3/4** | 1.77 | 1.22 | 1.94 | 3.62 | 1.83 | 0.24 | 5.04 | 6.14 | 0.55 | 1/2 | 1.19 | P 1.3/4 TF |
| *44,45* | *45* | *31* | *49,2* | *92* | *46,4* | *6* | *128* | *156* | *14* | *12* | *30,2* | |
| | 1.77 | 1.22 | 1.94 | 3.62 | 1.83 | 0.24 | 5.04 | 6.14 | 0.55 | 1/2 | 1.19 | P 1.3/4 TR |
| | *45* | *31* | *49,2* | *92* | *46,4* | *6* | *128* | *156* | *14* | *12* | *30,2* | |

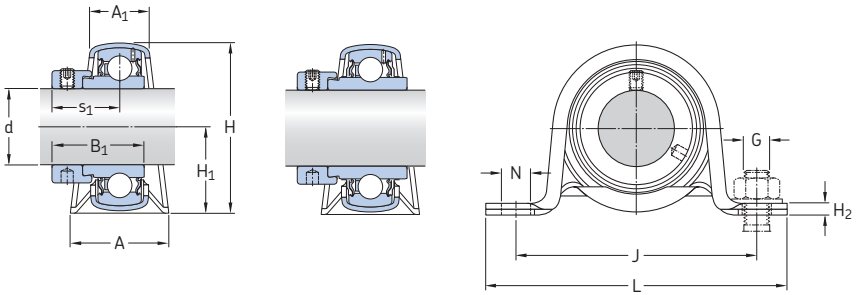


P + RIS + YAR-2F

| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | Rubber seating ring | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Permissible housing load** radial | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|---|
| – | – | | | lbf/*kN* | | lbf/*kN* | lbf/*kN* | lb/*kg* |
| P 3/4 TF | **P 47** | **YAR 204-012-2F** | **–** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 380<br>*1,7* | 0.51<br>*0,23* |
| P 3/4 TR | **P 47** | **YAR 204-012-2RF** | **–** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 380<br>*1,7* | 0.51<br>*0,23* |
| P 52 R-3/4 TF | **P 52** | **YAR 204-012-2F** | **RIS 204** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 410<br>*1,8* | 0.60<br>*0,27* |
| P 1. TF | **P 52** | **YAR 205-100-2F** | **–** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 410<br>*1,8* | 0.60<br>*0,27* |
| P 1. TR | **P 52** | **YAR 205-100-2RF** | **–** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 410<br>*1,8* | 0.60<br>*0,27* |
| P 62 R-1. TF | **P 62** | **YAR 205-100-2F** | **RIS 205** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 590<br>*2,6* | 0.84<br>*0,38* |
| P 1.1/4 TF | **P 72** | **YAR 207-104-2F** | **–** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 740<br>*3,3* | 1.61<br>*0,73* |
| P 1.1/4 TR | **P 72** | **YAR 207-104-2RF** | **–** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 740<br>*3,3* | 1.61<br>*0,73* |
| P 80 R-1.1/4 TF | **P 80** | **YAR 207-104-2F** | **RIS 207** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 860<br>*3,8* | 1.92<br>*0,87* |
| P 1.1/2 TF | **P 80** | **YAR 208-108-2F** | **–** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 860<br>*3,8* | 2.14<br>*0,97* |
| P 1.1/2 TR | **P 80** | **YAR 208-108-2RF** | **–** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 860<br>*3,8* | 2.14<br>*0,97* |
| P 85 R-1.1/2 TF | **P 85** | **YAR 208-108-2F** | **RIS 208** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 950<br>*4,2* | 2.45<br>*1,10* |
| P 1.3/4 TF | **P 85** | **YAR 209-112-2F** | **–** | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 950<br>*4,2* | 2.25<br>*1,00* |
| P 1.3/4 TR | **P 85** | **YAR 209-112-2RF** | **–** | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 950<br>*4,2* | 2.25<br>*1,00* |

## Y-bearing plummer block units with a pressed steel housing and an eccentric locking collar, metric shafts

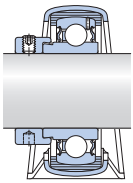
d **15 – 45** mm



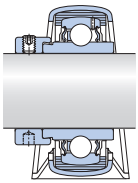

P + YET

P + YEL-2F

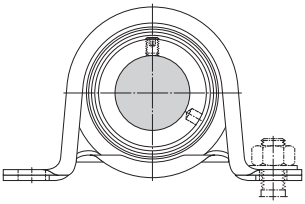
| Dimensions | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Permissible housing load | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | dynamic | static | | | Bearing unit |
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | G | $s_1$ | C | $C_0$ | $P_u$ | radial | No order designation |
| mm | | | | | | | | | | | | kN | | kN | kN | – |
| **15** | 26 | 18 | 28,6 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 22,1 | 9,56 | 4,75 | 0,2 | 1,25 | P 15 FM |
| | 32 | 21 | 28,6 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 22,1 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-15 FM |
| **17** | 26 | 18 | 28,6 | 44 | 22 | 3 | 68 | 86 | 9,6 | 8 | 22,1 | 9,56 | 4,75 | 0,2 | 1,25 | P 17 FM |
| | 32 | 21 | 28,6 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 22,1 | 9,56 | 4,75 | 0,2 | 1,7 | P 47 R-17 FM |
| **20** | 32 | 21 | 31 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 23,5 | 12,7 | 6,55 | 0,28 | 1,7 | P 20 FM |
| | 32 | 21 | 43,7 | 50 | 25,2 | 3 | 76 | 99 | 9,6 | 8 | 26,6 | 12,7 | 6,55 | 0,28 | 1,7 | P 20 WF |
| | 32 | 24 | 31 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 23,5 | 12,7 | 6,55 | 0,28 | 1,8 | P 52 R-20 FM |
| | 32 | 24 | 43,7 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 26,6 | 12,7 | 6,55 | 0,28 | 1,8 | P 52 R-20 WF |
| **25** | 32 | 24 | 31 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 23,5 | 14 | 7,8 | 0,335 | 1,8 | P 25 FM |
| | 32 | 24 | 44,4 | 56 | 28,3 | 3,2 | 86 | 108 | 11,2 | 10 | 26,9 | 14 | 7,8 | 0,335 | 1,8 | P 25 WF |
| | 38 | 25 | 31 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 23,5 | 14 | 7,8 | 0,335 | 2,6 | P 62 R-25 FM |
| | 38 | 25 | 44,4 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 26,9 | 14 | 7,8 | 0,335 | 2,6 | P 62 R-25 WF |
| **30** | 38 | 25 | 35,7 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 26,7 | 19,5 | 11,2 | 0,475 | 2,6 | P 30 FM |
| | 38 | 25 | 48,4 | 66 | 32,9 | 4 | 95 | 119 | 11,2 | 10 | 30,1 | 19,5 | 11,2 | 0,475 | 2,6 | P 30 WF |
| | 41 | 27 | 35,7 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 26,7 | 19,5 | 11,2 | 0,475 | 3,3 | P 72 R-30 FM |
| | 41 | 27 | 48,4 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 30,1 | 19,5 | 11,2 | 0,475 | 3,3 | P 72 R-30 WF |
| **35** | 41 | 27 | 38,9 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 29,4 | 25,5 | 15,3 | 0,655 | 3,3 | P 35 FM |
| | 41 | 27 | 51,1 | 78 | 39,2 | 5 | 106 | 130 | 11,2 | 10 | 32,3 | 25,5 | 15,3 | 0,655 | 3,3 | P 35 WF |
| | 43 | 29 | 38,9 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 29,4 | 25,5 | 15,3 | 0,655 | 3,8 | P 80 R-35 FM |
| | 43 | 29 | 51,1 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 32,3 | 25,5 | 15,3 | 0,655 | 3,8 | P 80 R-35 WF |
| **40** | 43 | 29 | 43,7 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 32,7 | 30,7 | 19 | 0,8 | 3,8 | P 40 FM |
| | 43 | 29 | 56,3 | 86 | 43,5 | 5 | 120 | 148 | 14 | 12 | 34,9 | 30,7 | 19 | 0,8 | 3,8 | P 40 WF |
| | 45 | 31 | 43,7 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 32,7 | 30,7 | 19 | 0,8 | 4,2 | P 85 R-40 FM |
| | 45 | 31 | 56,3 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 34,9 | 30,7 | 19 | 0,8 | 4,2 | P 85 R-40 WF |
| **45** | 45 | 31 | 43,7 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 32,7 | 33,2 | 21,6 | 0,915 | 4,2 | P 45 FM |
| | 45 | 31 | 56,3 | 92 | 46,4 | 6 | 128 | 156 | 14 | 12 | 34,9 | 33,2 | 21,6 | 0,915 | 4,2 | P 45 WF |



P + RIS + YET



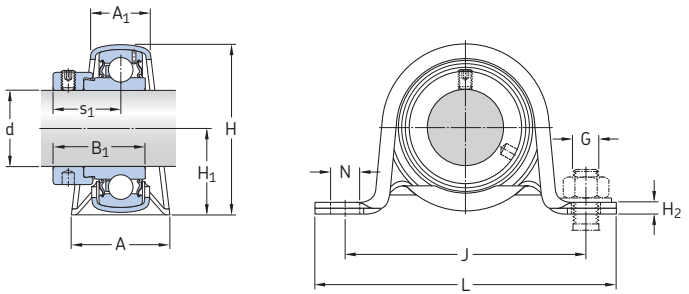
P + RIS + YEL-2F



| **Designation**<br>Bearing unit<br>No order designation | **Order designations**<br>Housing | Bearing | Rubber seating ring | **Mass**<br>Bearing unit |
|---|---|---|---|---|
| – | – | | | kg |
| P 15 FM | **P 40** | **YET 203/15** | **–** | 0,18 |
| P 47 R-15 FM | **P 47** | **YET 203/15** | **RIS 203** | 0,23 |
| P 17 FM | **P 40** | **YET 203** | **–** | 0,18 |
| P 47 R-17 FM | **P 47** | **YET 203** | **RIS 203** | 0,22 |
| P 20 FM | **P 47** | **YET 204** | **–** | 0,24 |
| P 20 WF | **P 47** | **YEL 204-2F** | **–** | 0,27 |
| P 52 R-20 FM | **P 52** | **YET 204** | **RIS 204** | 0,28 |
| P 52 R-20 WF | **P 52** | **YEL 204-2F** | **RIS 204** | 0,31 |
| P 25 FM | **P 52** | **YET 205** | **–** | 0,28 |
| P 25 WF | **P 52** | **YEL 205-2F** | **–** | 0,33 |
| P 62 R-25 FM | **P 62** | **YET 205** | **RIS 205** | 0,39 |
| P 62 R-25 WF | **P 62** | **YEL 205-2F** | **RIS 205** | 0,44 |
| P 30 FM | **P 62** | **YET 206** | **–** | 0,45 |
| P 30 WF | **P 62** | **YEL 206-2F** | **–** | 0,41 |
| P 72 R-30 FM | **P 72** | **YET 206** | **RIS 206 A** | 0,60 |
| P 72 R-30 WF | **P 72** | **YEL 206-2F** | **RIS 206 A** | 0,66 |
| P 35 FM | **P 72** | **YET 207** | **–** | 0,75 |
| P 35 WF | **P 72** | **YEL 207-2F** | **–** | 0,83 |
| P 80 R-35 FM | **P 80** | **YET 207** | **RIS 207 A** | 0,82 |
| P 80 R-35 WF | **P 80** | **YEL 207-2F** | **RIS 207 A** | 0,90 |
| P 40 FM | **P 80** | **YET 208** | **–** | 0,99 |
| P 40 WF | **P 80** | **YEL 208-2F** | **–** | 1,05 |
| P 85 R-40 FM | **P 85** | **YET 208** | **RIS 208 A** | 1,10 |
| P 85 R 40 WF | **P 85** | **YEL 208-2F** | **RIS 208 A** | 1,20 |
| P 45 FM | **P 85** | **YET 209** | **–** | 1,05 |
| P 45 WF | **P 85** | **YEL 209-2F** | **–** | 1,15 |

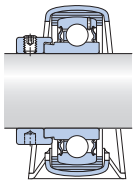
## Y-bearing plummer block units with a pressed steel housing and an eccentric locking collar, inch shafts

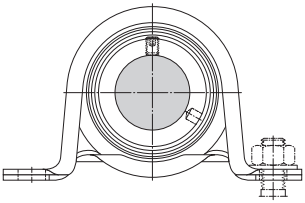
d **3/4 – 1 1/2** in




P + YET

| Dimensions | | | | | | | | | | | | Designation<br>Bearing unit<br>No order<br>designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $B_1$ | H | $H_1$ | $H_2$ | J | L | N | G | $s_1$ | |
| in/*mm* | | | | | | | | | | | | – |
| **3/4** | 1.26 | 0.83 | 1.22 | 1.97 | 0.99 | 0.12 | 2.99 | 3.90 | 0.38 | 5/16 | 0.93 | P 3/4 FM |
| *19,05* | *32* | *21* | *31* | *50* | *25,2* | *3* | *76* | *99* | *9,6* | *8* | *23,5* | |
| | 1.26 | 0.94 | 1.22 | 2.20 | 1.11 | 0.13 | 3.39 | 4.25 | 0.44 | 3/8 | 0.93 | P 52 R-3/4 FM |
| | *32* | *24* | *31* | *56* | *28,3* | *3,2* | *86* | *108* | *11,2* | *10* | *23,5* | |
| **1** | 1.26 | 0.94 | 1.22 | 2.20 | 1.11 | 0.13 | 3.39 | 4.25 | 0.44 | 3/8 | 0.93 | P 1. FM |
| *25,4* | *32* | *24* | *31* | *56* | *28,3* | *3,2* | *86* | *108* | *11,2* | *10* | *23,5* | |
| | 1.50 | 0.98 | 1.22 | 2.60 | 1.30 | 0.16 | 3.74 | 4.69 | 0.44 | 3/8 | 0.93 | P 62 R-1. FM |
| | *38* | *25* | *31* | *66* | *32,9* | *4* | *95* | *119* | *11,2* | *10* | *23,5* | |
| **1 1/2** | 1.69 | 1.14 | 1.72 | 3.39 | 1.71 | 0.20 | 4.72 | 5.83 | 0.55 | 1/2 | 1.29 | P 1.1/2 FM |
| *38,1* | *43* | *29* | *43,7* | *86* | *43,5* | *5* | *120* | *148* | *14* | *12* | *32,7* | |
| | 1.77 | 1.22 | 1.72 | 3.62 | 1.83 | 0.24 | 5.04 | 6.14 | 0.55 | 1/2 | 1.29 | P 85 R-1.1/2 FM |
| | *45* | *31* | *43,7* | *92* | *46,4* | *6* | *128* | *156* | *14* | *12* | *32,7* | |





P + RIS + YET

| **Designation**<br>Bearing unit<br>No order designation | **Order designations**<br>Housing | Bearing | Rubber seating ring | **Basic load ratings**<br>dynamic<br>C | static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Permissible housing load**<br>radial | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|---|
| – | – | | | lbf/*kN* | | lbf/*kN* | lbf/*kN* | lb/*kg* |
| P 3/4 FM | **P 47** | **YET 204-012** | **–** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 380<br>*1,7* | 0.57<br>*0,26* |
| P 52 R-3/4 FM | **P 52** | **YET 204-012** | **RIS 204** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 410<br>*1,8* | 0.66<br>*0,30* |
| P 1. FM | **P 52** | **YET 205-100** | **–** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 410<br>*1,8* | 0.62<br>*0,28* |
| P 62 R-1. FM | **P 62** | **YET 205-100** | **RIS 205** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 590<br>*2,6* | 0.86<br>*0,39* |
| P 1.1/2 FM | **P 80** | **YET 208-108** | **–** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 860<br>*3,8* | 2.25<br>*1,00* |
| P 85 R-1.1/2 FM | **P 85** | **YET 208-108** | **RIS 208 A** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 950<br>*4,2* | 2.55<br>*1,15* |


SKF

# Flanged Y-bearing units

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# Designs

SKF flanged Y-bearing units are available as standard in a wide variety of designs. The standard assortment includes flanged Y-bearing units with housings made of:

- composite material (→ **fig. 1**)
- grey cast iron (→ **fig. 2**)
- pressed sheet steel (→ **fig. 3**)

They are located on the shaft via the inner ring of the insert bearing with either:

- grub (set) screws
- an eccentric locking collar
- an adapter sleeve

The Y-bearing can be sealed with either:

- the standard integral seal
- the standard integral seal and an additional flinger
- the highly efficient multiple seal

For additional information about Y-bearings, refer to the section *Y-bearings*, starting on **page 79**.

Flanged Y-bearing units available from stock are listed in the product tables. Other units can be assembled by ordering the parts separately. The tables on **pages 168** to **169** show the wide variety of combinations of Y-bearings and flanged housings.

Fig. 1



Fig. 2



Fig. 3



# Flanged Y-TECH units

Flanged Y-TECH units have housings made of composite material. They were developed for bearing arrangements that must operate reliably in difficult environments for extended periods without maintenance. There are two standard series available:

- FYK series (→ **fig. 4**) with a square flange and four bolt holes
- FYTBK series (→ **fig. 5**) with an oval flange and two bolt holes

For additional information about Y-TECH flanged units for the food industry, refer to **page 252**.

Flanged Y-TECH units in the FYK series are fitted with Y-bearings in the:

- YAR 2-2F series, unit designation suffix TF
- YAR 2-2RF series, unit designation suffix TR

These units, which are attached to the shaft with grub screws, are in the standard SKF assortment.

**Fig. 4**



**Fig. 5**



Fig. 6



Fig. 7



Fig. 8



## Flanged Y-bearing units with a cast housing

Flanged Y-bearing units with a cast housing can be relubricated through a grease fitting in the housing. This makes them especially suitable for bearing arrangements that operate under any of the following conditions:

- high levels of contamination
- high speeds
- high temperatures
- relatively heavy loads

Three different housing designs are available:

- FY and FYJ series with a square flange and four holes for attachment bolts (→ **fig. 6**)
- FYC series with a round flange and four holes for attachment bolts (→ **fig. 7**)
- FYT, FYTB and FYTJ series with an oval flange and two holes for attachment bolts (→ **fig. 8**).

## Flanged Y-bearing units with a pressed steel housing

Flanged Y-bearing units with a pressed steel housing are designed for simple applications with limited loads and speeds. The two-part housing, which has no provision for relubrication, is ordered separately from the insert bearing, making a large number of combinations possible.

The flanged housings made of pressed steel are available in three different series:

- PF series with a round flange and three or four square holes for attachment bolts (→ **fig. 9**)
- PFD series with a triangular flange and three square holes for attachment bolts (→ **fig. 10**)
- PFT series with an oval flange and two square holes for attachment bolts (→ **fig. 11**).

Fig. 9



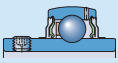
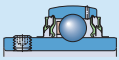
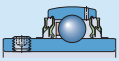
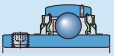
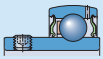
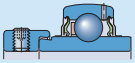
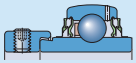
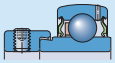
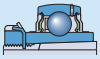

Fig. 10



Fig. 11



## Flanged Y-bearing units

| Flanged Y-bearing unit | Housings of composite material | | Cast housings | | | |
|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| **Y-bearings** | **FYK 5(00)** | **FYTBK 5(00)** | **FY 5(00)** | **FYJ 5(00)** | **FYM 5(00)** | **FYT 5(00)** |
| **YAR 2-2F**  | **FYK .. TF**<br>20–40 mm<br>3/4–1 1/2 in.[1] | **FYTBK .. TF**<br>20–35 mm<br>3/4–1 1/4 in.[1] | **FY .. TF**<br>12–65 mm<br>1/2–2 15/16 in. | **FYJ .. TF**<br>20–100 mm<br>3/4–2 1/2 in.[1] | **FYM .. TF**<br>1 7/16–3 in. | **FYT .. TF**<br>1/2–2 3/16 in. |
| **YAR 2-2RF**  | **FYK .. TR**<br>20–40 mm<br>3/4–1 1/2 in.[1] | **FYTBK .. TR**<br>20–35 mm<br>3/4–1 1/4 in.[1] | **FY .. TR**<br>20–60 mm<br>3/4–2 1/2 in.[1] | 20–60 mm[1]<br>3/4–2 1/2 in.[1] | – | – |
| **YAR 2-2RF/HV**  | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–35 mm[1]<br>3/4–1 7/16 in.[1] | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | – | – |
| **YAR 2-2RF/ VE495**  | 20–40 mm[1] | 20–35 mm[1] | 20–50 mm | 20–50 mm | – | – |
| **YAT 2**  | 20–40 mm[1] | 20–35 mm[1] | 17–50 mm[1] | 20–50 mm[1] | – | **FYT .. RM**<br>1/2–2 3/16 in. |
| **YEL 2-2F**  | 20–40 mm[1] | 20–35 mm[1] | **FY .. WF**<br>20–60 mm<br>1 –2 7/16 in. | 20–50 mm[1] | – | – |
| **YEL 2-2RF/ VL065**  | 20–40 mm[1] | 20–35 mm[1] | 20–40 mm[1] | 20–40 mm[1] | – | – |
| **YET 2**  | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–35 mm[1]<br>3/4–1 7/16 in.[1] | **FY .. FM**<br>15–60 mm<br>3/4–2 3/16 in. | 20–60 mm[1]<br>3/4–1 1/2 in.[1] | – | **FYT .. FM**<br>1/2–2 3/16 in. |
| **YSA 2-2FK on adapter sleeve**  | 20–35 mm[1]<br>3/4–1 1/4 in.[1] | 20–30 mm[1]<br>3/4–1 3/16 in.[1] | 20–60 mm[1]<br>3/4–2 3/8 in.[1] | **FYJ .. KF**<br>20–60 mm<br>3/4–2 3/8 in. | – | – |
| **17262(00)**  | 20–40 mm[1] | 20–35 mm[1] | 17–60 mm[1] | 20–60 mm[1] | – | – |

[1] Parts must be ordered separately.

| Flanged Y-bearing unit | Cast housings | | | Pressed steel housings | | |
|---|---|---|---|---|---|---|
| Y-bearings | FYTB 5(00) | FYTJ 5(00) | FYC 5(00) | PF | PFD | PFT |
| **YAR 2-2F** | **FYTB .. TF**<br>12–50 mm<br>3/4–1 3/4 in. | **FYTJ .. TF**<br>20–50 mm<br>3/4–1 3/4 in. | **FYC .. TF**<br>20–65 mm<br>3/4–2 1/2 in.[1] | 12–50 mm[1]<br>3/4–1 3/4 in.[1] | 12–40 mm[1]<br>3/4–1 1/2 in.[1] | 12–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF** | **FYTB .. TR**<br>20–50 mm<br>3/4–1 3/4 in.[1] | 20–50 mm[1]<br>3/4–1 3/4 in.[1] | 20–65 mm[1]<br>3/4–2 1/2 in.[1] | 20–35 mm[1]<br>3/4–1 3/4 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF/HV** | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–50 mm<br>3/4–1 15/16 in. | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YAR 2-2RF/ VE495** | 20–50 mm | 20–50 mm | 20–50 mm | 20–50 mm | 20–40 mm[1] | 20–40 mm[1] |
| **YAT 2** | 17–50 mm[1] | 20–50 mm[1] | 20–50 mm[1] | 17–50 mm[1]<br>5/8–1 15/16 in.[1] | 17–40 mm[1]<br>5/8–1 1/2 in.[1] | 17–40 mm[1]<br>5/8–1 1/2 in.[1] |
| **YEL 2-2F** | **FYTB .. WF**<br>20–50 mm | 20–50 mm[1] | 20–60 mm[1] | 20–50 mm[1]<br>1/2–1 15/16 in.[1] | 20–40 mm[1]<br>1/2–1 1/2 in.[1] | 20–40 mm[1]<br>1/2–1 1/2 in.[1] |
| **YEL 2-2RF/ VL065** | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] | 20–40 mm[1] |
| **YET 2** | **FYTB .. FM**<br>15–50 mm<br>3/4–1 1/2 in.[1] | 20–50 mm[1]<br>3/4–1 1/2 in.[1] | 20–40 mm[1]<br>3/4–1 1/2 in.[1] | 15–50 mm[1]<br>3/4–1 3/4 in.[1] | 15–40 mm[1]<br>3/4–1 1/2 in.[1] | 15–40 mm[1]<br>3/4–1 1/2 in.[1] |
| **YSA 2-2FK on adapter sleeve** | 20–45 mm[1]<br>3/4–1 3/4 in.[1] | **FYTJ .. KF**<br>20–45 mm<br>3/4–1 3/4 in. | 20–60 mm[1]<br>3/4–2 3/8 in.[1] | 20–45 mm[1]<br>3/4–1 3/4 in.[1] | 20–35 mm[1]<br>3/4–1 3/4 in.[1] | 20–35 mm[1]<br>3/4–1 3/4 in.[1] |
| **17262(00)** | 17–50 mm[1] | 20–50 mm[1] | 20–60 mm[1] | 17–50 mm[1] | 17–40 mm[1] | 17–40 mm[1] |

[1] Parts must be ordered separately.

# Data – general

## Dimensions

The boundary dimensions for most flanged Y-bearing housings are in accordance with the following standards:

- Housings in the FY, FYT and FYTB series are in accordance with ISO 3228:1993.
- Housings in the FYJ, FYTJ and FYC series are in accordance with JIS B 1559-1995.
- Housings in the PF, PFD and PFT series are in accordance with ISO 3228:1993.

## Tolerances

For flanged Y-bearing units with a cast housing, the tolerance for the total width T of the unit (→ **fig. 12**) is:

- ±0,5 mm for units up to and including 50 mm bore diameter
- ±0,6 mm for larger units

For flanged Y-bearing units with housings made of composite material or grey cast iron, the outside diameter of the bearing is matched to the diameter of the housing bore so that the outer ring is prevented from turning in its seat, but still able to compensate for misalignment.

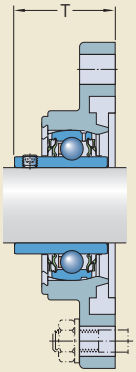
Additional information about tolerances for the inner ring bore are listed in the section *Y-bearings* on **page 89**.

## Radial internal clearance

The Y-bearing used in a flanged Y-bearing unit has the same radial internal clearance as a similarly sized individual Y-bearing.

Additional information about the radial internal clearance can be found in the section *Y-bearings* on **page 90**.

Fig. 12




## Materials

**Composite housings**
These housings are made of injection moulded glass fibre reinforced polyamide 6. A steel coil embedded in the housing adds greater stability to the form of the housing, even if temperatures are elevated.

The bolt holes for housings in the FYK and FYTBK series are reinforced with zinc-plated sheet steel inserts. The standard housing colour is black.

**Cast housings**
Cast housings are manufactured from grey cast iron EN-GJL HB195 in accordance with EN 1561:1997.

**Pressed steel housings**
Pressed steel housings are made from cold-rolled steel and are zinc-coated for corrosion protection.

## Load carrying ability of the housings

Housings made of either composite material or grey cast iron are able to withstand the same dynamic and static loads as the Y-bearings they incorporate. These Y-bearing units can also be used for applications where shock loads or variable axial loads occur.

If SKF Y-bearing units are to be used in an application where health, safety, or the environment is at risk, contact the SKF application engineering service during the design phase.

Pressed steel housings have a lower load carrying capacity than their insert bearings. Permissible radial loads are specified in the product tables. The axial load should not exceed 20% of the permissible radial load.

If the Y-bearing units will be subjected to shock loads or variable axial loads, a grey cast iron or Y-TECH housing should always be used.

Flanged composite housings and most grey cast iron housings have a recess (→ **fig. 13a**), or shoulder (→ **fig. 13b**) at the back for accurate positioning, either on an appropriate shoulder or in a bore in the machine wall.

An appropriate shoulder can be provided by one of the following methods:

- machining the wall accordingly (→ **fig. 13c**)
- attaching an appropriate washer to the wall by several screws (→ **fig. 13d**)

Furthermore, these features relieve the attachment bolts of radial forces.

## Attaching to a support surface

Flanged Y-bearing units have two, three or four bolt holes through which they can be attached to their support surface with threaded fasteners. These bolt holes are:

- round and reinforced with pressed steel inserts in composite housings
- drilled and round in cast housings
- square in pressed steel housings

In the absence of a centring shoulder and when heavy loads apply, SKF recommends doweling the housing to its support surface. Dimples for the dowel pin holes are cast into housings in the FY, FYJ, FYTB and FYTJ series. Information on the position and size of the holes for these dowel pins is provided in **table 1**, **page 172**.

**Fig. 13**

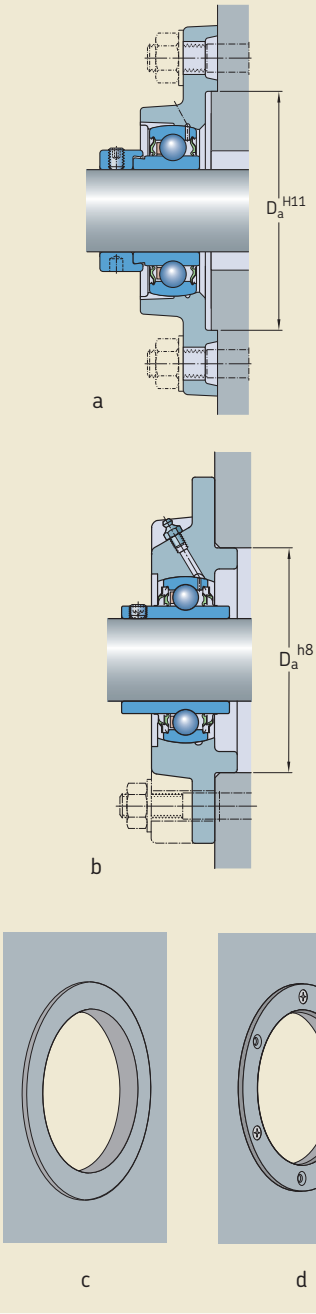
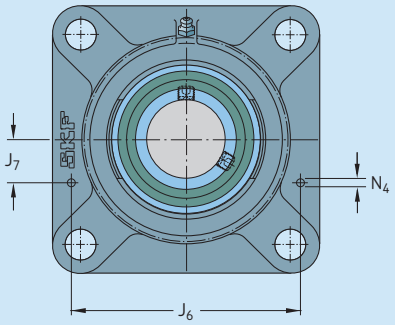
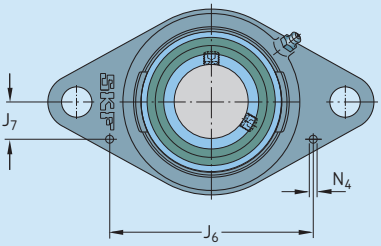


Table 1

**Position and size of dowel pin holes for flanged Y-bearing housings made of grey cast iron**




| Housing size | Dimensions for housings in the FY, FYJ series | | | FYT, FYTB, FYTJ series | | |
|---|---|---|---|---|---|---|
| | $J_6$ | $J_7$ | $N_4$ | $J_6$ | $J_7$ | $N_4$ |
| – | mm | | | | | |
| **503** | 66 | 12 | 4 | 61,5 | 11 | 2 |
| **504** | 74 | 16 | 4 | 74 | 11,5 | 2 |
| **505** | 83 | 19 | 4 | 81 | 12 | 4 |
| **506** | 96 | 24,5 | 4 | 99 | 12,5 | 4 |
| **507** | 106 | 29 | 4 | 106 | 15 | 5 |
| **508** | 118 | 34 | 4 | 116 | 16 | 6 |
| **509** | 123 | 33,5 | 5 | 120 | 18 | 6 |
| **510** | 129 | 35,5 | 5 | 127 | 20 | 6 |
| **511** | 148 | 45 | 5 | 154 | 18 | 6 |
| **512** | 161 | 49,5 | 5 | – | – | – |
| **513** | 169 | 51 | 6 | – | – | – |
| **514** | 169 | 49 | 8 | – | – | – |
| **515** | 176 | 51,5 | 8 | – | – | – |
| **516** | 184 | 51,5 | 8 | – | – | – |
| **518** | 207 | 52,5 | 8 | – | – | – |
| **520** | 233 | 55 | 8 | – | – | – |

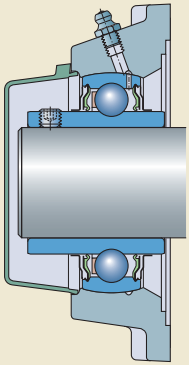
## End covers

To protect the shaft ends and avoid any accidents, end covers are available for flanged Y-TECH units and most flanged Y-bearing units with a cast housing (→ **fig. 14**).

In the product tables, end covers in the ECY 2 series are shown together with the appropriate bearing unit. The designation of the end cover is listed together with the distance that the end cover protrudes from the housing.

For additional information about end covers, refer to the section *Design of Y-bearing arrangements*, on **page 47**.

Fig. 14



## Grease fills

All standard SKF flanged Y-bearing units are filled with a high-quality long-lasting grease containing a lithium-calcium thickener that has a consistency of 2 on the NLGI scale.

For additional information about lubricants and lubrication, refer to the section *Lubrication and maintenance*, starting on **page 48**.

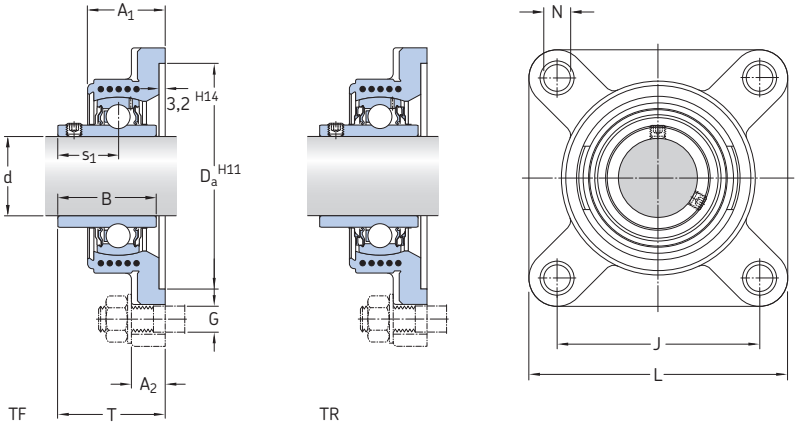
## Mounting

The procedure for mounting a flanged Y-bearing unit depends on:

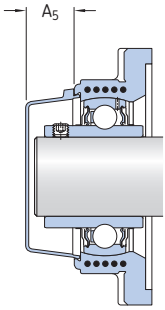
- the design of the housing
- the method used to attach the unit to the shaft

These methods are described in detail in the section *Mounting instructions*, starting on **page 52**.

## Flanged Y-TECH units with a housing with a square flange and grub screws, metric shafts
d **20 – 40** mm



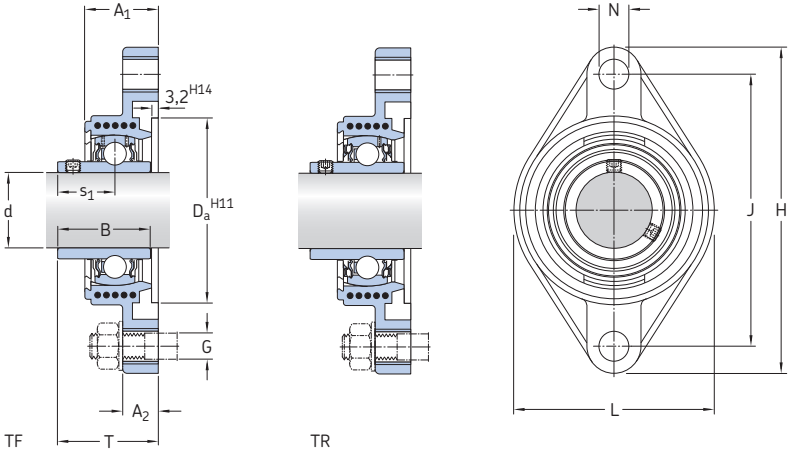

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | with shaft tolerance h6 | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 30 | 15 | 31 | 68,3 | 63,5 | 86 | 12 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYK 20 TF** |
| | 30 | 15 | 31 | 68,3 | 63,5 | 86 | 12 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 5 000 | **FYK 20 TR** |
| **25** | 31 | 15 | 34,1 | 74,6 | 70 | 95 | 12 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 7 000 | **FYK 25 TF** |
| | 31 | 15 | 34,1 | 74,6 | 70 | 95 | 12 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 4 300 | **FYK 25 TR** |
| **30** | 33 | 15,3 | 38,1 | 93,7 | 82,5 | 108 | 12 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYK 30 TF** |
| | 33 | 15,3 | 38,1 | 93,7 | 82,5 | 108 | 12 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 3 800 | **FYK 30 TR** |
| **35** | 35 | 17 | 42,9 | 106,4 | 92 | 118 | 14,5 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYK 35 TF** |
| | 35 | 17 | 42,9 | 106,4 | 92 | 118 | 14,5 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 3 200 | **FYK 35 TR** |
| **40** | 39 | 17 | 49,2 | 115,9 | 101,5 | 130 | 14,5 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 4 800 | **FYK 40 TF** |
| | 39 | 17 | 49,2 | 115,9 | 101,5 | 130 | 14,5 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 2 800 | **FYK 40 TR** |



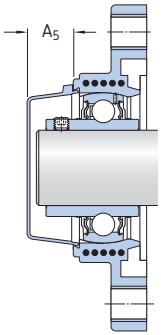



| **Designations** | | | **Mass** | **Appropriate end cover** | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **FYK 20 TF** | FYK 504 | YAR 204-2F | 0,26 | ECY 204 | 18,5 |
| **FYK 20 TR** | FYK 504 | YAR 204-2RF | 0,26 | ECY 204 | 18,5 |
| **FYK 25 TF** | FYK 505 | YAR 205-2F | 0,33 | ECY 205 | 18 |
| **FYK 25 TR** | FYK 505 | YAR 205-2RF | 0,33 | ECY 205 | 18 |
| **FYK 30 TF** | FYK 506 | YAR 206-2F | 0,48 | ECY 206 | 20 |
| **FYK 30 TR** | FYK 506 | YAR 206-2RF | 0,48 | ECY 206 | 20 |
| **FYK 35 TF** | FYK 507 | YAR 207-2F | 0,66 | ECY 207 | 22 |
| **FYK 35 TR** | FYK 507 | YAR 207-2RF | 0,66 | ECY 207 | 22 |
| **FYK 40 TF** | FYK 508 | YAR 208-2F | 0,87 | ECY 208 | 23,5 |
| **FYK 40 TR** | FYK 508 | YAR 208-2RF | 0,87 | ECY 208 | 23,5 |

## Flanged Y-TECH units with a housing with an oval flange and grub screws, metric shafts
d **20 – 35** mm




| Dimensions | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | dynamic | static | | with shaft tolerance h6 | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | H | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 29,5 | 15 | 31 | 50,8 | 112 | 90 | 60,5 | 12 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYTBK 20 TF** |
| | 29,5 | 15 | 31 | 50,8 | 112 | 90 | 60,5 | 12 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 5 000 | **FYTBK 20 TR** |
| **25** | 30 | 15 | 34,1 | 63,5 | 124 | 99 | 70 | 12 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 7 000 | **FYTBK 25 TF** |
| | 30 | 15 | 34,1 | 63,5 | 124 | 99 | 70 | 12 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 4 300 | **FYTBK 25 TR** |
| **30** | 33 | 15 | 38,1 | 76,2 | 142,5 | 116,5 | 83 | 12 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYTBK 30 TF** |
| | 33 | 15 | 38,1 | 76,2 | 142,5 | 116,5 | 83 | 12 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 3 800 | **FYTBK 30 TR** |
| **35** | 35 | 17 | 42,9 | 88,9 | 156 | 130 | 96 | 14,5 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYTBK 35 TF** |
| | 35 | 17 | 42,9 | 88,9 | 156 | 130 | 96 | 14,5 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 3 200 | **FYTBK 35 TR** |

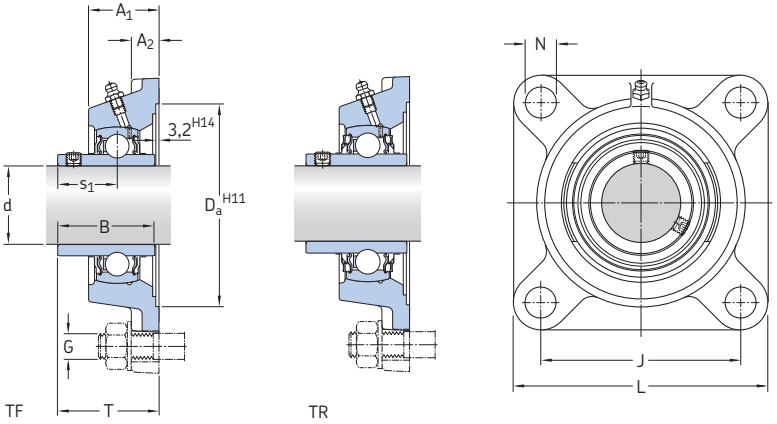




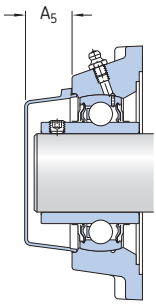

| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit | **Appropriate end cover** Designation | Dimension $A_5$ |
|---|---|---|---|---|---|
| – | | | kg | – | mm |
| **FYTBK 20 TF** | FYTBK 504 | YAR 204-2F | 0,24 | ECY 204 | 18,5 |
| **FYTBK 20 TR** | FYTBK 504 | YAR 204-2RF | 0,24 | ECY 204 | 18,5 |
| **FYTBK 25 TF** | FYTBK 505 | YAR 205-2F | 0,29 | ECY 205 | 18 |
| **FYTBK 25 TR** | FYTBK 505 | YAR 205-2RF | 0,29 | ECY 205 | 18 |
| **FYTBK 30 TF** | FYTBK 506 | YAR 206-2F | 0,44 | ECY 206 | 20 |
| **FYTBK 30 TR** | FYTBK 506 | YAR 206-2RF | 0,44 | ECY 206 | 20 |
| **FYTBK 35 TF** | FYTBK 507 | YAR 207-2F | 0,61 | ECY 207 | 22 |
| **FYTBK 35 TR** | FYTBK 507 | YAR 207-2RF | 0,61 | ECY 207 | 22 |

## Flanged Y-bearing units with a cast housing with a square flange and grub screws, metric shafts

d **12 – 60** mm




| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | kN | | kN | r/min | – |
| **12** | 26 | 11 | 27,4 | 55,6 | 54 | 76 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FY 12 TF** |
| **15** | 26 | 11 | 27,4 | 55,6 | 54 | 76 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FY 15 TF** |
| **17** | 26 | 11 | 27,4 | 55,6 | 54 | 76 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FY 17 TF** |
| **20** | 29,5 | 11 | 31 | 68,3 | 63,5 | 86 | 11,5 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FY 20 TF** |
| | 25,5 | 12 | 31 | 68,3 | 64 | 86 | 12 | 10 | 18,3 | 33,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYJ 20 TF** |
| | 29,5 | 11 | 31 | 68,3 | 63,5 | 86 | 11,5 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 5 000 | **FY 20 TR** |
| **25** | 30 | 12 | 34,1 | 74,6 | 70 | 95 | 11,5 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 7 000 | **FY 25 TF** |
| | 27 | 14 | 34,1 | 74,6 | 70 | 95 | 12 | 10 | 19,8 | 35,8 | 14 | 7,8 | 0,335 | 7 000 | **FYJ 25 TF** |
| | 30 | 12 | 34,1 | 74,6 | 70 | 95 | 11,5 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 4 300 | **FY 25 TR** |
| **30** | 32,5 | 13 | 38,1 | 93,7 | 82,5 | 108 | 11,5 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FY 30 TF** |
| | 31 | 14 | 38,1 | 93,7 | 83 | 108 | 12 | 10 | 22,2 | 40,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYJ 30 TF** |
| | 32,5 | 13 | 38,1 | 93,7 | 82,5 | 108 | 11,5 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 3 800 | **FY 30 TR** |
| **35** | 34,5 | 13 | 42,9 | 106,4 | 92 | 118 | 14 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FY 35 TF** |
| | 34 | 16 | 42,9 | 106,4 | 92 | 118 | 14 | 12 | 25,4 | 44,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYJ 35 TF** |
| | 34,5 | 13 | 42,9 | 106,4 | 92 | 118 | 14 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 3 200 | **FY 35 TR** |
| **40** | 38,5 | 14 | 49,2 | 115,9 | 101,5 | 130 | 14 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 4 800 | **FY 40 TF** |
| | 36 | 16 | 49,2 | 115,9 | 102 | 130 | 16 | 14 | 30,2 | 51,2 | 30,7 | 19 | 0,8 | 4 800 | **FYJ 40 TF** |
| | 38,5 | 14 | 49,2 | 115,9 | 101,5 | 130 | 14 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 2 800 | **FY 40 TR** |
| **45** | 39 | 14 | 49,2 | 119,1 | 105 | 137 | 16 | 14 | 30,2 | 54,2 | 33,2 | 21,6 | 0,915 | 4 300 | **FY 45 TF** |
| | 38 | 18 | 49,2 | 119,1 | 105 | 137 | 16 | 14 | 30,2 | 52,2 | 33,2 | 21,6 | 0,915 | 4 300 | **FYJ 45 TF** |
| | 39 | 14 | 49,2 | 119,1 | 105 | 137 | 16 | 14 | 30,2 | 54,2 | 33,2 | 21,6 | 0,915 | 2 400 | **FY 45 TR** |
| **50** | 43 | 15 | 51,6 | 125,4 | 111 | 143 | 18 | 16 | 32,6 | 60,6 | 35,1 | 23,2 | 0,98 | 4 000 | **FY 50 TF** |
| | 40 | 18 | 51,6 | 125,4 | 111 | 143 | 16 | 14 | 32,6 | 54,6 | 35,1 | 23,2 | 0,98 | 4 000 | **FYJ 50 TF** |
| | 43 | 15 | 51,6 | 125,4 | 111 | 143 | 18 | 16 | 32,6 | 60,6 | 35,1 | 23,2 | 0,98 | 2 200 | **FY 50 TR** |
| **55** | 47,5 | 16 | 55,6 | 150,8 | 130 | 162 | 18 | 16 | 33,4 | 64,4 | 43,6 | 29 | 1,25 | 3 600 | **FY 55 TF** |
| | 43 | 20 | 55,6 | 150,8 | 130 | 162 | 19 | 16 | 33,4 | 58,4 | 43,6 | 29 | 1,25 | 3 600 | **FYJ 55 TF** |
| | 47,5 | 16 | 55,6 | 150,8 | 130 | 162 | 18 | 16 | 33,4 | 64,4 | 43,6 | 29 | 1,25 | 1 900 | **FY 55 TR** |
| **60** | 52 | 17 | 65,1 | 161,9 | 143 | 175 | 18 | 16 | 39,7 | 73,7 | 52,7 | 36 | 1,53 | 3 400 | **FY 60 TF** |
| | 48 | 20 | 65,1 | 161,9 | 143 | 175 | 19 | 16 | 39,7 | 68,7 | 52,7 | 36 | 1,53 | 3 400 | **FYJ 60 TF** |
| | 52 | 17 | 65,1 | 161,9 | 143 | 175 | 18 | 16 | 39,7 | 73,7 | 52,7 | 36 | 1,53 | 1 800 | **FY 60 TR** |

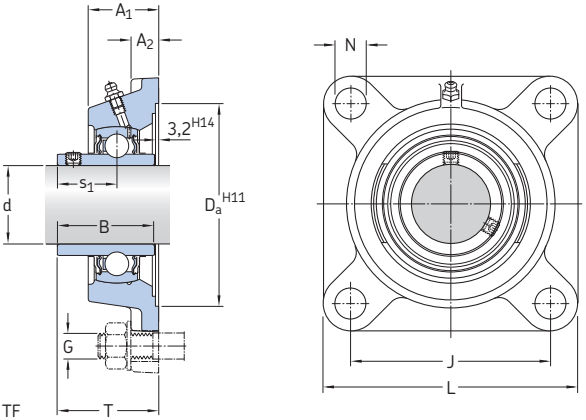




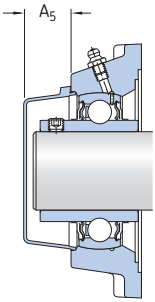

| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit | **Appropriate end cover** Designation | Dimension $A_5$ |
|---|---|---|---|---|---|
| – | | | kg | – | mm |
| **FY 12 TF** | FY 503 M | YAR 203/12-2F | 0,47 | – | – |
| **FY 15 TF** | FY 503 M | YAR 203/15-2F | 0,45 | – | – |
| **FY 17 TF** | FY 503 M | YAR 203-2F | 0,44 | – | – |
| **FY 20 TF** | FY 504 M | YAR 204-2F | 0,60 | ECY 204 | 18,5 |
| **FYJ 20 TF** | FYJ 504 | YAR 204-2F | 0,65 | – | – |
| **FY 20 TR** | FY 504 M | YAR 204-2RF | 0,60 | ECY 204 | 18,5 |
| **FY 25 TF** | FY 505 M | YAR 205-2F | 0,77 | ECY 205 | 18 |
| **FYJ 25 TF** | FYJ 505 | YAR 205-2F | 0,86 | – | – |
| **FY 25 TR** | FY 505 M | YAR 205-2RF | 0,77 | ECY 205 | 18 |
| **FY 30 TF** | FY 506 M | YAR 206-2F | 1,10 | ECY 206 | 20 |
| **FYJ 30 TF** | FYJ 506 | YAR 206-2F | 1,20 | – | – |
| **FY 30 TR** | FY 506 M | YAR 206-2RF | 1,10 | ECY 206 | 20 |
| **FY 35 TF** | FY 507 M | YAR 207-2F | 1,40 | ECY 207 | 22 |
| **FYJ 35 TF** | FYJ 507 | YAR 207-2F | 1,50 | – | – |
| **FY 35 TR** | FY 507 M | YAR 207-2RF | 1,40 | ECY 207 | 22 |
| **FY 40 TF** | FY 508 M | YAR 208-2F | 1,90 | ECY 208 | 23,5 |
| **FYJ 40 TF** | FYJ 508 | YAR 208-2F | 1,80 | – | – |
| **FY 40 TR** | FY 508 M | YAR 208-2RF | 1,90 | ECY 208 | 23,5 |
| **FY 45 TF** | FY 509 M | YAR 209-2F | 2,10 | ECY 209 | 23 |
| **FYJ 45 TF** | FYJ 509 | YAR 209-2F | 2,45 | – | – |
| **FY 45 TR** | FY 509 M | YAR 209-2RF | 2,10 | ECY 209 | 23 |
| **FY 50 TF** | FY 510 M | YAR 210-2F | 2,50 | ECY 210 | 29,5 |
| **FYJ 50 TF** | FYJ 510 | YAR 210-2F | 3,15 | – | – |
| **FY 50 TR** | FY 510 M | YAR 210-2RF | 2,50 | ECY 210 | 29,5 |
| **FY 55 TF** | FY 511 M | YAR 211-2F | 3,60 | ECY 211 | 34 |
| **FYJ 55 TF** | FYJ 511 | YAR 211-2F | 3,45 | – | – |
| **FY 55 TR** | FY 511 M | YAR 211-2RF | 3,60 | ECY 211 | 34 |
| **FY 60 TF** | FY 512 M | YAR 212-2F | 4,60 | ECY 212 | 35,5 |
| **FYJ 60 TF** | FYJ 512 | YAR 212-2F | 4,50 | – | – |
| **FY 60 TR** | FY 512 M | YAR 212-2RF | 4,60 | ECY 212 | 35,5 |

## Flanged Y-bearing units with a cast housing with a square flange and grub screws, metric shafts

d **65 – 100** mm




| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | kN | | kN | r/min | – |
| **65** | 52,5 | 17 | 68,3 | 161,9 | 149,5 | 187 | 18 | 16 | 42,9 | 76,9 | 57,2 | 40 | 1,7 | 3 000 | **FY 65 TF** |
| | 50 | 20 | 68,3 | 161,9 | 149 | 187 | 19 | 16 | 42,9 | 72,9 | 57,2 | 40 | 1,7 | 3 000 | **FYJ 65 TF** |
| **70** | 50,3 | 21,3 | 69,9 | 161,9 | 152 | 193 | 19 | 16 | 39,7 | 70,7 | 62,4 | 44 | 1,86 | 2 800 | **FYJ 70 TF** |
| **75** | 53,6 | 22,1 | 73,1 | 179,4 | 159 | 200 | 19 | 16 | 46,1 | 80,1 | 66,3 | 49 | 2,04 | 2 600 | **FYJ 75 TF** |
| **80** | 54,5 | 22 | 77,9 | 179,4 | 165 | 208 | 23 | 20 | 47,7 | 81,7 | 72,8 | 53 | 2,16 | 2 400 | **FYJ 80 TF** |
| **90** | 63,4 | 23,4 | 89 | 193,7 | 187 | 235 | 23 | 20 | 54 | 94 | 95,6 | 72 | 2,7 | 2 000 | **FYJ 90 TF** |
| **100** | 70 | 25 | 98,4 | 215,9 | 210 | 265 | 27 | 24 | 63,4 | 107,5 | 124 | 93 | 3,35 | 1 900 | **FYJ 100 TF** |

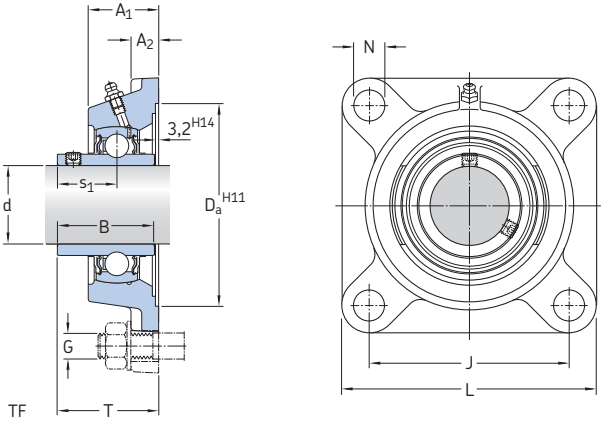





| Designations | | | Mass | Appropriate end cover | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **FY 65 TF** | FY 513 M | YAR 213-2F | 5,30 | ECY 213 | 35,5 |
| **FYJ 65 TF** | FYJ 513 | YAR 213-2F | 5,80 | – | – |
| **FYJ 70 TF** | FYJ 514 | YAR 214-2F | 6,00 | – | – |
| **FYJ 75 TF** | FYJ 515 | YAR 215-2F | 6,80 | – | – |
| **FYJ 80 TF** | FYJ 516 | YAR 216-2F | 7,60 | – | – |
| **FYJ 90 TF** | FYJ 518 | YAR 218-2F | 11,5 | – | – |
| **FYJ 100 TF** | FYJ 520 | YAR 220-2F | 15,2 | – | – |

## Flanged Y-bearing units with a cast housing with a square flange and grub screws, inch shafts

d **1/2 – 1 1/4** in

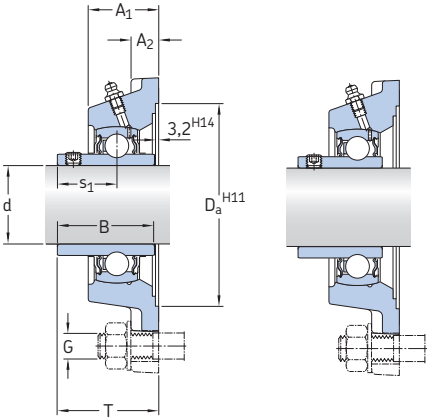



| Dimensions | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | J | L | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | – |
| **1/2** | 0.92 | 0.39 | 1.08 | 2.13 | 3.00 | 3/8 | 0.63 | 1.20 | **FY 1/2 TF** |
| *12,7* | *23,4* | *9,9* | *27,4* | *54* | *76,2* | *10* | *15,9* | *30,6* | |
| **5/8** | 0.92 | 0.39 | 1.08 | 2.13 | 3.00 | 3/8 | 0.63 | 1.20 | **FY 5/8 TF** |
| *15,875* | *23,4* | *9,9* | *27,4* | *54* | *76,2* | *10* | *15,9* | *30,6* | |
| **3/4** | 1.16 | 0.43 | 1.22 | 2.50 | 3.39 | 3/8 | 0.72 | 1.47 | **FY 3/4 TF** |
| *19,05* | *29,5* | *11* | *31* | *63,5* | *86* | *10* | *18,3* | *37,3* | |
| | 1.00 | 0.47 | 1.22 | 2.52 | 3.39 | 3/8 | 0.72 | 1.31 | **FYJ 3/4 TF** |
| | *25,5* | *12* | *31* | *64* | *86* | *10* | *18,3* | *33,3* | |
| **13/16** | 1.18 | 0.47 | 1.34 | 2.76 | 3.74 | 7/16 | 0.78 | 1.53 | **FY 13/16 TF** |
| *20,638* | *30* | *12* | *34,1* | *70* | *95* | *10* | *19,8* | *38,8* | |
| **7/8** | 1.18 | 0.47 | 1.34 | 2.76 | 3.74 | 7/16 | 0.78 | 1.53 | **FY 7/8 TF** |
| *22,225* | *30* | *12* | *34,1* | *70* | *95* | *10* | *19,8* | *38,8* | |
| **15/16** | 1.18 | 0.47 | 1.34 | 2.76 | 3.74 | 7/16 | 0.78 | 1.53 | **FY 15/16 TF** |
| *23,813* | *30* | *12* | *34,1* | *70* | *95* | *10* | *19,8* | *38,8* | |
| **1** | 1.18 | 0.47 | 1.34 | 2.76 | 3.74 | 3/8 | 0.78 | 1.53 | **FY 1. TF** |
| *25,4* | *30* | *12* | *34,1* | *70* | *95* | *10* | *19,8* | *38,8* | |
| | 1.06 | 0.55 | 1.34 | 2.76 | 3.74 | 3/8 | 0.78 | 1.41 | **FYJ 1. TF** |
| | *27* | *14* | *34,1* | *70* | *95* | *10* | *19,8* | *35,8* | |
| **1 1/16** | 1.28 | 0.51 | 1.50 | 3.25 | 4.25 | 7/16 | 0.87 | 1.66 | **FY 1.1/16 TF** |
| *26,9875* | *32,5* | *13* | *38,1* | *82,5* | *108* | *10* | *22,2* | *42,2* | |
| **1 1/8** | 1.28 | 0.51 | 1.50 | 3.25 | 4.25 | 7/16 | 0.87 | 1.66 | **FY 1.1/8 TF** |
| *28,575* | *32,5* | *13* | *38,1* | *82,5* | *108* | *10* | *22,2* | *42,2* | |
| **1 3/16** | 1.28 | 0.51 | 1.50 | 3.25 | 4.25 | 7/16 | 0.87 | 1.66 | **FY 1.3/16 TF** |
| *30,163* | *32,5* | *13* | *38,1* | *82,5* | *108* | *10* | *22,2* | *42,2* | |
| **1 1/4** | 1.36 | 0.51 | 1.69 | 3.62 | 4.65 | 1/2 | 1.00 | 1.83 | **FY 1.1/4 TF** |
| *31,75* | *34,5* | *13* | *42,9* | *92* | *118* | *12* | *25,4* | *46,4* | |
| | 1.34 | 0.51 | 1.69 | 3.62 | 4.65 | 1/2 | 1.00 | 1.75 | **FYJ 1.1/4 TF** |
| | *34* | *16* | *42,9* | *92* | *118* | *12* | *25,4* | *44,4* | |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load**<br>limit<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FY 1/2 TF** | FY 503 U | YAR 203-008-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.00<br>*0,46* |
| **FY 5/8 TF** | FY 503 U | YAR 203-010-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.05<br>*0.95* |
| **FY 3/4 TF** | FY 504 M | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.35<br>*0,61* |
| **FYJ 3/4 TF** | FYJ 504 | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.45<br>*0,66* |
| **FY 13/16 TF** | FY 505 U | YAR 205-013-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.80<br>*0,81* |
| **FY 7/8 TF** | FY 505 U | YAR 205-014-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.75<br>*0,80* |
| **FY 15/16 TF** | FY 505 U | YAR 205-015-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.70<br>*0,78* |
| **FY 1. TF** | FY 505 M | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.70<br>*0,77* |
| **FYJ 1. TF** | FYJ 505 | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.90<br>*0,86* |
| **FY 1.1/16 TF** | FY 506 U | YAR 206-101-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.45<br>*1,10* |
| **FY 1.1/8 TF** | FY 506 U | YAR 206-102-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.50<br>*1,10* |
| **FY 1.3/16 TF** | FY 506 U | YAR 206-103-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.40<br>*1,10* |
| **FY 1.1/4 TF** | FY 507 M | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.20<br>*1,45* |
| **FYJ 1.1/4 TF** | FYJ 507 | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.40<br>*1,55* |

## Flanged Y-bearing units with a cast housing with a square flange and grub screws, inch shafts

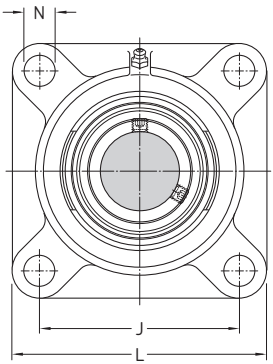
d **1 5/16 – 1 15/16** in




FY .. TF



FY .. RM

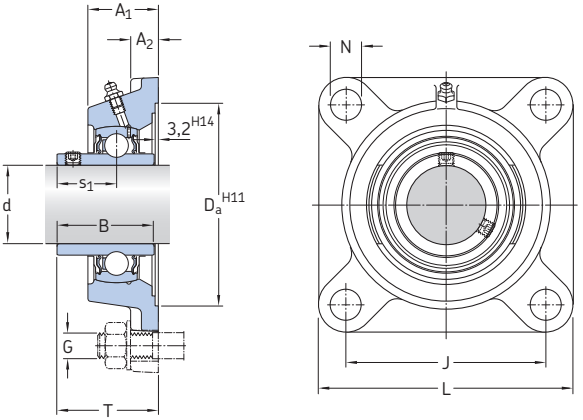



| Dimensions | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | J | L | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | – |
| **1 5/16** | 1.36 | 0.51 | 1.69 | 3.62 | 4.65 | 1/2 | 1.00 | 1.83 | **FY 1.5/16 TF** |
| *33,338* | 34,5 | 13 | 42,9 | 92 | 118 | 12 | 25,4 | 46,4 | |
| **1 3/8** | 1.36 | 0.51 | 1.69 | 3.62 | 4.65 | 1/2 | 1.00 | 1.83 | **FY 1.3/8 TF** |
| *34,925* | *34,5* | *13* | *42,9* | *92* | *118* | *12* | *25,4* | *46,4* | |
| **1 7/16** | 1.36 | 0.51 | 1.69 | 3.62 | 4.65 | 1/2 | 1.00 | 1.83 | **FY 1.7/16 TF** |
| *36,513* | *34,5* | *13* | *42,9* | *92* | *118* | *12* | *25,4* | *46,4* | |
| | 1.52 | 0.55 | 1.94 | 4.00 | 5.12 | 1/2 | 1.19 | 2.13 | **FYM 1.7/16 TF** |
| | *38,5* | *14* | *49,2* | *101,5* | *130* | *12* | *30,2* | *54,2* | |
| **1 1/2** | 1.52 | 0.55 | 1.94 | 4.00 | 5.12 | 1/2 | 1.19 | 2.13 | **FY 1.1/2 TF** |
| *38,1* | *38,5* | *14* | *49,2* | *101,5* | *130* | *12* | *30,2* | *54,2* | |
| | 1.42 | 0.63 | 1.94 | 4.02 | 5.12 | 9/16 | 1.19 | 2.02 | **FYJ 1.1/2 TF** |
| | *36* | *16* | *49,2* | *102* | *130* | *14* | *30,2* | *51,2* | |
| | 1.54 | 0.55 | 1.94 | 4.13 | 5.39 | 9/16 | 1.19 | 2.13 | **FYM 1.1/2 TF** |
| | *39* | *14* | *49,2* | *105* | *137* | *14* | *30,2* | *54,2* | |
| **1 5/8** | 1.54 | 0.55 | 1.94 | 4.13 | 5.39 | 9/16 | 1.19 | 2.13 | **FY 1.5/8 TF** |
| *41,275* | *39* | *14* | *49,2* | *105* | *137* | *14* | *30,2* | *54,2* | |
| **1 11/16** | 1.69 | 0.59 | 2.03 | 4.37 | 5.63 | 9/16 | 1.28 | 2.39 | **FYM 1.11/16 TF** |
| *42,863* | *43* | *15* | *51,6* | *111* | *143* | *14* | *32,6* | *60,6* | |
| **1 3/4** | 1.54 | 0.55 | 1.94 | 4.13 | 5.39 | 9/16 | 1.19 | 2.13 | **FY 1.3/4 TF** |
| *44,45* | *39* | *14* | *49,2* | *105* | *137* | *14* | *30,2* | *54,2* | |
| | 1.54 | 0.55 | 1.63 | 4.13 | 5.39 | 9/16 | 1.20 | 2.13 | **FY 1.3/4 RM** |
| | *39* | *14* | *41,5* | *105* | *137* | *14* | *30,5* | *54,2* | |
| | 1.50 | 0.71 | 1.94 | 4.13 | 5.39 | 9/16 | 1.19 | 2.06 | **FYJ 1.3/4 TF** |
| | *38* | *18* | *49,2* | *105* | *137* | *14* | *30,2* | *52,2* | |
| | 1.69 | 0.59 | 2.03 | 4.37 | 5.63 | 9/16 | 1.28 | 2.39 | **FYM 1.3/4 TF** |
| | *43* | *15* | *51,6* | *111* | *143* | *14* | *32,6* | *60,6* | |
| **1 15/16** | 1.69 | 0.59 | 2.03 | 4.37 | 5.63 | 9/16 | 1.28 | 2.39 | **FY 1.15/16 TF** |
| *49,213* | *43* | *15* | *51,6* | *111* | *143* | *14* | *32,6* | *60,6* | |
| | 1.87 | 0.63 | 2.19 | 5.12 | 6.38 | 5/8 | 1.31 | 2.54 | **FYM 1.15/16 TF** |
| | *47,5* | *16* | *55,6* | *130* | *162* | *16* | *33,4* | *64,4* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load** limit $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FY 1.5/16 TF** | FY 507 U | YAR 207-105-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.20<br>*1,45* |
| **FY 1.3/8 TF** | FY 507 U | YAR 207-106-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.15<br>*1,40* |
| **FY 1.7/16 TF** | FY 507 U | YAR 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.05<br>*1,40* |
| **FYM 1.7/16 TF** | FY 508 U | YAR 208-107-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.50<br>*2,00* |
| **FY 1.1/2 TF** | FY 508 M | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.20<br>*1,90* |
| **FYJ 1.1/2 TF** | FYJ 508 | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.30<br>*1,95* |
| **FYM 1.1/2 TF** | FY 509 U | YAR 209-108-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.50<br>*2,50* |
| **FY 1.5/8 TF** | FY 509 U | YAR 209-110-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.40<br>*2,20* |
| **FYM 1.11/16 TF** | FY 510 U | YAR 210-111-2F | 7 900<br>*35.1* | 5 220<br>*23.2* | 220<br>*0.98* | 4 000 | 5.50<br>*2,50* |
| **FY 1.3/4 TF** | FY 509 M | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.75<br>*2,15* |
| **FY 1.3/4 RM** | FY 509 U | YAT 209-112 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.40<br>*2,00* |
| **FYJ 1.3/4 TF** | FYJ 509 | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.50<br>*2,50* |
| **FYM 1.3/4 TF** | FY 510 U | YAR 210-112-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.50<br>*2,50* |
| **FY 1.15/16 TF** | FY 510 U | YAR 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.25<br>*2,50* |
| **FYM 1.15/16 TF** | FY 511 U | YAR 211-115-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 9.00<br>*4,00* |

## Flanged Y-bearing units with a cast housing with a square flange and grub screws, inch shafts

d **2 – 3** in

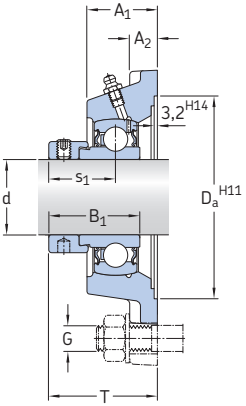



| Dimensions | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | J | L | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | – |
| **2** | 1.87 | 0.63 | 2.19 | 5.12 | 6.38 | 5/8 | 1.31 | 2.54 | **FY 2. TF** |
| *50,8* | *47,5* | *16* | *55,6* | *130* | *162* | *16* | *33,4* | *64,4* | |
| | 1.69 | 0.79 | 2.19 | 5.12 | 6.38 | 5/8 | 1.31 | 2.30 | **FYJ 2. TF** |
| | *43* | *20* | *55,6* | *130* | *162* | *16* | *33,4* | *58,4* | |
| **2 3/16** | 1.87 | 0.63 | 2.19 | 5.12 | 6.38 | 5/8 | 1.31 | 2.54 | **FY 2.3/16 TF** |
| *55,563* | *47,5* | *16* | *55.6* | *130* | *162* | *16* | *33,4* | *64,4* | |
| | 2.05 | 0.67 | 2.56 | 5.63 | 6.89 | 5/8 | 1.56 | 2.90 | **FYM 2.3/16 TF** |
| | *52* | *17* | *65,1* | *143* | *175* | *16* | *39,7* | *73,7* | |
| **2 1/4** | 2.05 | 0.67 | 2.56 | 5.63 | 6.89 | 5/8 | 1.56 | 2.90 | **FY 2.1/4 TF** |
| *57,15* | *52* | *17* | *65,1* | *143* | *175* | *16* | *39,7* | *73,7* | |
| **2 7/16** | 2.05 | 0.67 | 2.56 | 5.63 | 6.89 | 5/8 | 1.56 | 2.90 | **FY 2.7/16 TF** |
| *61,913* | *52* | *17* | *65,1* | *143* | *175* | *16* | *39,7* | *73,7* | |
| | 2.25 | 0.69 | 2.75 | 5.88 | 7.37 | 5/8 | 1.56 | 3.00 | **FYM 2.7/16 TF** |
| | *57,15* | *17,5* | *69,6* | *149,3* | *187,5* | *16* | *39,7* | *76,2* | |
| **2 1/2** | 2.07 | 0.67 | 2.69 | 5.89 | 7.36 | 5/8 | 1.69 | 3.03 | **FY 2.1/2 TF** |
| *63,5* | *52,5* | *17* | *68,3* | *149,5* | *187* | *16* | *42,9* | *76,9* | |
| | 1.97 | 0.78 | 2.69 | 5.87 | 7.36 | 5/8 | 1.69 | 2.87 | **FYJ 2.1/2 TF** |
| | *50* | *20* | *68,3* | *149* | *187* | *16* | *42,9* | *72,9* | |
| **2 11/16** | 2.07 | 0.65 | 2.69 | 5.89 | 7.36 | 5/8 | 1.69 | 2.85 | **FY 2.11/16 TF** |
| *68,263* | *52,5* | *16,5* | *68,3* | *149,5* | *187* | *16* | *42,9* | *72,4* | |
| **2 3/4** | 2.56 | 0.75 | 2.88 | 6.00 | 7.75 | 3/4 | 1.82 | 3.44 | **FY 2.3/4 TF** |
| *69,85* | *65,1* | *19* | *73,1* | *152,4* | *197* | *20* | *46,1* | *87,4* | |
| **2 15/16** | 2.56 | 0.75 | 2.88 | 6.00 | 7.75 | 3/4 | 1.82 | 3.44 | **FY 2.15/16 TF** |
| *74,613* | *65,1* | *19* | *73,1* | *152,4* | *197* | *20* | *46,1* | *87.4* | |
| | 2.31 | 0.87 | 3.07 | 6.00 | 7.75 | 3/4 | 1.88 | 3.25 | **FYM 2.15/16 TF** |
| | *58,7* | *22,2* | *77,9* | *152,4* | *197* | *20* | *47,7* | *82,6* | |
| **3** | 2.31 | 0.87 | 3.07 | 6.00 | 7.75 | 3/4 | 1.88 | 3.25 | **FYM 3. TF** |
| *76,2* | *58,7* | *22,2* | *77,9* | *152,4* | *197* | *20* | *47,7* | *82,6* | |

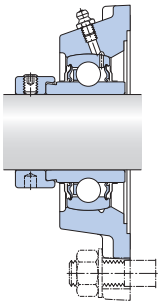
| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load** limit $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FY 2. TF** | FY 511 M | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.25<br>*3,75* |
| **FYJ 2. TF** | FYJ 511 | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.95<br>*3,60* |
| **FY 2.3/16 TF** | FY 511 U | YAR 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.85<br>*3,55* |
| **FYM 2.3/16 TF** | FY 512 U | YAR 212-203-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 11.0<br>*5,00* |
| **FY 2.1/4 TF** | FY 512 U | YAR 212-204-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.5<br>*4,75* |
| **FY 2.7/16 TF** | FY 512 U | YAR 212-207-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.0<br>*4,60* |
| **FYM 2.7/16 TF** | FY 514 U | YAR 214-207-2F | 14 040<br>*62,4* | 9 900<br>*44* | 420<br>*1,86* | 2 800 | 13.0<br>*6,0* |
| **FY 2.1/2 TF** | FY 513 M | YAR 213-208-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 11.9<br>*5,40* |
| **FYJ 2.1/2 TF** | FYJ 513 | YAR 213-208-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 13.0<br>*5,90* |
| **FY 2.11/16 TF** | FY 513 U | YAR 213-211-2F | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 11.5<br>*5,10* |
| **FY 2.3/4 TF** | FY 515 U | YAR 215-212-2F | 14 920<br>*66,3* | 11 030<br>*49* | 460<br>*2,04* | 2 600 | 13.5<br>*6,10* |
| **FY 2.15/16 TF** | FY 515 U | YAR 215-215-2F | 14 920<br>*66,3* | 11 030<br>*49* | 460<br>*2,04* | 2 600 | 18.0<br>*8,15* |
| **FYM 2.15/16 TF** | FY 516 U | YAR 216-215-2F | 16 380<br>*72,8* | 11 930<br>*53* | 490<br>*2,16* | 2 400 | 17.5<br>*8,00* |
| **FYM 3. TF** | FY 516 U | YAR 216-300-2F | 16 380<br>*72,8* | 11 930<br>*53* | 490<br>*2,16* | 2 400 | 17.5<br>*8,00* |

## Flanged Y-bearing units with a cast housing with a square flange and an eccentric locking collar, metric shafts

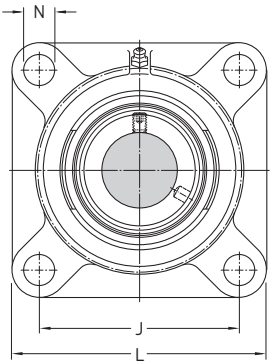
d **15 – 60** mm



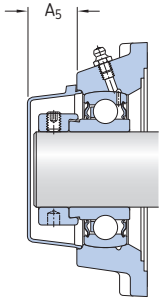

FM



WF




| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | with shaft tolerance h6 | Bearing unit |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | kN | | kN | r/min | – |
| **15** | 26 | 11 | 28,6 | 55,6 | 54 | 76 | 11,5 | 10 | 22,1 | 39,1 | 9,56 | 4,75 | 0,2 | 9 500 | **FY 15 FM** |
| **17** | 26 | 11 | 28,6 | 55,6 | 54 | 76 | 11,5 | 10 | 22,1 | 39,1 | 9,56 | 4,75 | 0,2 | 9 500 | **FY 17 FM** |
| **20** | 29,5 | 11 | 31 | 68,3 | 63,5 | 86 | 11,5 | 10 | 23,5 | 42,5 | 12,7 | 6,55 | 0,28 | 8 500 | **FY 20 FM** |
| | 29,5 | 11 | 43,7 | 68,3 | 63,5 | 86 | 11,5 | 10 | 26,6 | 45,6 | 12,7 | 6,55 | 0,28 | 8 500 | **FY 20 WF** |
| **25** | 30 | 12 | 31 | 74,6 | 70 | 95 | 11,5 | 10 | 23,5 | 42,5 | 14 | 7,8 | 0,335 | 7 000 | **FY 25 FM** |
| | 30 | 12 | 44,4 | 74,6 | 70 | 95 | 11,5 | 10 | 26,9 | 45,6 | 14 | 7,8 | 0,335 | 7 000 | **FY 25 WF** |
| **30** | 32,5 | 13 | 35,7 | 93,7 | 82,5 | 108 | 11,5 | 10 | 26,7 | 46,7 | 19,5 | 11,2 | 0,475 | 6 300 | **FY 30 FM** |
| | 32,5 | 13 | 48,4 | 93,7 | 82,5 | 108 | 11,5 | 10 | 30,1 | 50,1 | 19,5 | 11,2 | 0,475 | 6 300 | **FY 30 WF** |
| **35** | 34,5 | 13 | 38,9 | 106,4 | 92 | 118 | 14 | 12 | 29,4 | 50,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FY 35 FM** |
| | 34,5 | 13 | 51,1 | 106,4 | 92 | 118 | 14 | 12 | 32,3 | 53,3 | 25,5 | 15,3 | 0,655 | 5 300 | **FY 35 WF** |
| **40** | 38,5 | 14 | 43,7 | 115,9 | 101,5 | 130 | 14 | 12 | 32,7 | 56,7 | 30,7 | 19 | 0,8 | 4 800 | **FY 40 FM** |
| | 38,5 | 14 | 56,3 | 115,9 | 101,5 | 130 | 14 | 12 | 34,9 | 58,9 | 30,7 | 19 | 0,8 | 4 800 | **FY 40 WF** |
| **45** | 39 | 14 | 43,7 | 119,1 | 105 | 137 | 16 | 14 | 32,7 | 56,7 | 33,2 | 21,6 | 0,915 | 4 300 | **FY 45 FM** |
| | 39 | 14 | 56,3 | 119,1 | 105 | 137 | 16 | 14 | 34,9 | 58,9 | 33,2 | 21,6 | 0,915 | 4 300 | **FY 45 WF** |
| **50** | 43 | 15 | 43,7 | 125,4 | 111 | 143 | 18 | 16 | 32,7 | 60,7 | 35,1 | 23,2 | 0,98 | 4 000 | **FY 50 FM** |
| | 43 | 15 | 62,7 | 125,4 | 111 | 143 | 18 | 16 | 38,1 | 66,1 | 35,1 | 23,2 | 0,98 | 4 000 | **FY 50 WF** |
| **55** | 47,5 | 16 | 48,4 | 150,8 | 130 | 162 | 18 | 16 | 36,4 | 67,4 | 43,6 | 29 | 1,25 | 3 600 | **FY 55 FM** |
| | 47,5 | 16 | 71,4 | 150,8 | 130 | 162 | 18 | 16 | 43,6 | 74,6 | 43,6 | 29 | 1,25 | 3 600 | **FY 55 WF** |
| **60** | 52 | 17 | 53,1 | 161,9 | 143 | 175 | 18 | 16 | 39,6 | 73,6 | 52,7 | 36 | 1,53 | 3 400 | **FY 60 FM** |
| | 52 | 17 | 77,8 | 161,9 | 143 | 175 | 18 | 16 | 46,8 | 80,8 | 52,7 | 36 | 1,53 | 3 400 | **FY 60 WF** |

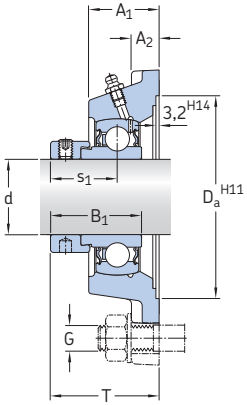




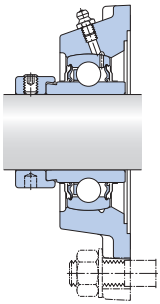

| Designations | | | Mass | Appropriate end cover | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **FY 15 FM** | FY 503 M | YET 203/15 | 0,47 | – | – |
| **FY 17 FM** | FY 503 M | YET 203 | 0,48 | – | – |
| **FY 20 FM** | FY 504 M | YET 204 | 0,62 | ECY 204 | 18,5 |
| **FY 20 WF** | FY 504 M | YEL 204-2F | 0,65 | ECY 204 | 18,5 |
| **FY 25 FM** | FY 505 M | YET 205 | 0,78 | ECY 205 | 18 |
| **FY 25 WF** | FY 505 M | YEL 205-2F | 0,83 | ECY 205 | 18 |
| **FY 30 FM** | FY 506 M | YET 206 | 1,10 | ECY 206 | 20 |
| **FY 30 WF** | FY 506 M | YEL 206-2F | 1,20 | ECY 206 | 20 |
| **FY 35 FM** | FY 507 M | YET 207 | 1,50 | ECY 207 | 22 |
| **FY 35 WF** | FY 507 M | YEL 207-2F | 1,55 | ECY 207 | 22 |
| **FY 40 FM** | FY 508 M | YET 208 | 1,95 | ECY 208 | 23,5 |
| **FY 40 WF** | FY 508 M | YEL 208-2F | 2,05 | ECY 208 | 23,5 |
| **FY 45 FM** | FY 509 M | YET 209 | 2,15 | ECY 209 | 23 |
| **FY 45 WF** | FY 509 M | YEL 209-2F | 2,25 | ECY 209 | 23 |
| **FY 50 FM** | FY 510 M | YET 210 | 2,55 | ECY 210 | 29,5 |
| **FY 50 WF** | FY 510 M | YEL 210-2F | 2,70 | ECY 210 | 29,5 |
| **FY 55 FM** | FY 511 M | YET 211 | 3,60 | ECY 211 | 34 |
| **FY 55 WF** | FY 511 M | YEL 211-2F | 3,85 | ECY 211 | 34 |
| **FY 60 FM** | FY 512 M | YET 212 | 4,70 | ECY 212 | 35,5 |
| **FY 60 WF** | FY 512 M | YEL 212-2F | 5,00 | ECY 212 | 35,5 |

## Flanged Y-bearing units with a cast housing with a square flange and an eccentric locking collar, inch shafts

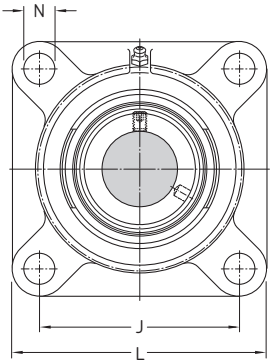
d **5/8 – 1 3/4** in




FM



WF

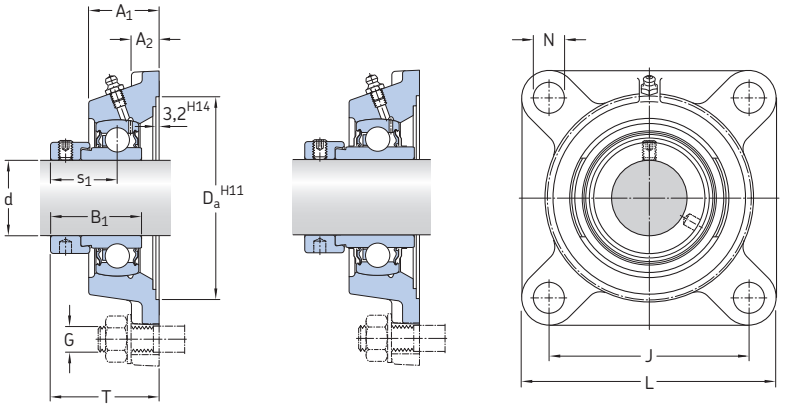



| **Dimensions** | | | | | | | | | **Designation** Bearing unit |
|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | J | L | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | – |
| **5/8** | 0.92 | 0.39 | 1.13 | 2.13 | 3.00 | 3/8 | 0.87 | 1.45 | **FY 5/8 FM** |
| *15,875* | *23,4* | *9,9* | *28,6* | *54* | *76,2* | *10* | *22,1* | *36,8* | |
| **3/4** | 1.16 | 0.43 | 1.22 | 2.50 | 3.39 | 3/8 | 0.93 | 1.68 | **FY 3/4 FM** |
| *19,05* | *29,5* | *11* | *31* | *63,5* | *86* | *10* | *23,5* | *42,5* | |
| **7/8** | 1.18 | 0.47 | 1.22 | 2.76 | 3.74 | 7/16 | 0.93 | 1.67 | **FY 7/8 FM** |
| *22,225* | *30* | *12* | *31* | *70* | *95* | *10* | *23,5* | *42,5* | |
| **1** | 1.18 | 0.47 | 1.22 | 2.76 | 3.74 | 7/16 | 0.93 | 1.67 | **FY 1. FM** |
| *25,4* | *30* | *12* | *31* | *70* | *95* | *10* | *23,5* | *42,5* | |
| | 1.18 | 0.47 | 1.75 | 2.76 | 3.74 | 7/16 | 1.06 | 1.81 | **FY 1. WF** |
| | *30* | *12* | *44,4* | *70* | *95* | *10* | *26,9* | *45,9* | |
| **1 1/8** | 1.28 | 0.51 | 1.41 | 3.25 | 4.25 | 7/16 | 1.05 | 1.84 | **FY 1.1/8 FM** |
| *28,575* | *32,5* | *13* | *35,7* | *82,5* | *108* | *10* | *26,7* | *46,7* | |
| **1 3/16** | 1.28 | 0.51 | 1.41 | 3.25 | 4.25 | 7/16 | 1.05 | 1.84 | **FY 1.3/16 FM** |
| *30,163* | *32,5* | *13* | *35,7* | *82,5* | *108* | *10* | *26,7* | *46,7* | |
| **1 1/4** | 1.36 | 0.51 | 1.53 | 3.62 | 4.65 | 1/2 | 1.16 | 1.98 | **FY 1.1/4 FM** |
| *31,75* | *34,5* | *13* | *38,9* | *92* | *118* | *12* | *29,4* | *50,4* | |
| | 1.36 | 0.51 | 2.01 | 3.62 | 4.65 | 1/2 | 1.27 | 2.10 | **FY 1.1/4 WF** |
| | *34,5* | *13* | *51,1* | *92* | *118* | *12* | *32,3* | *53,3* | |
| **1 3/8** | 1.36 | 0.51 | 1.53 | 3.62 | 4.65 | 1/2 | 1.16 | 1.98 | **FY 1.3/8 FM** |
| *34,925* | *34,5* | *13* | *38,9* | *92* | *118* | *12* | *29,4* | *50,4* | |
| **1 7/16** | 1.36 | 0.51 | 1.53 | 3.62 | 4.65 | 1/2 | 1.16 | 1.98 | **FY 1.7/16 FM** |
| *36,513* | *34,5* | *13* | *38,9* | *92* | *118* | *12* | *29,4* | *50,4* | |
| **1 1/2** | 1.52 | 0.55 | 1.72 | 4.00 | 5.12 | 1/2 | 1.29 | 2.22 | **FY 1.1/2 FM** |
| *38,1* | *38,5* | *14* | *43,7* | *101,5* | *130* | *12* | *32,7* | *56,5* | |
| | 1.52 | 0.55 | 2.22 | 4.00 | 5.12 | 1/2 | 1.37 | 2.32 | **FY 1.1/2 WF** |
| | *38,5* | *14* | *56,3* | *101,5* | *130* | *12* | *34,9* | *58,9* | |
| **1 11/16** | 1.54 | 0.55 | 1.72 | 4.13 | 5.39 | 9/16 | 1.29 | 2.22 | **FY 1.11/16 FM** |
| *42,863* | *39* | *14* | *43,7* | *105* | *137* | *14* | *32,7* | *56,5* | |
| **1 3/4** | 1.54 | 0.55 | 1.72 | 4.13 | 5.39 | 9/16 | 1.29 | 2.22 | **FY 1.3/4 FM** |
| *44,45* | *39* | *14* | *43,7* | *105* | *137* | *14* | *32,7* | *56,5* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FY 5/8 FM** | FY 503 U | YET 203-010 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 1.05<br>*0,47* |
| **FY 3/4 FM** | FY 504 U | YET 204-012 | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.40<br>*0,63* |
| **FY 7/8 FM** | FY 505 U | YET 205-014 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.80<br>*0,81* |
| **FY 1. FM** | FY 505 U | YET 205-100 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.70<br>*0,78* |
| **FY 1. WF** | FY 505 U | YEL 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.80<br>*0,82* |
| **FY 1.1/8 FM** | FY 506 U | YET 206-102 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.50<br>*1,10* |
| **FY 1.3/16 FM** | FY 506 U | YET 206-103 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.45<br>*1,10* |
| **FY 1.1/4 FM** | FY 507 U | YET 207-104 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.40<br>*1,55* |
| **FY 1.1/4 WF** | FY 507 U | YEL 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.55<br>*1,60* |
| **FY 1.3/8 FM** | FY 507 U | YET 207-106 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.25<br>*1,50* |
| **FY 1.7/16 FM** | FY 507 U | YET 207-107 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.20<br>*1,45* |
| **FY 1.1/2 FM** | FY 508 U | YET 208-108 | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.40<br>*2,00* |
| **FY 1.1/2 WF** | FY 508 U | YEL 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 4.65<br>*2,10* |
| **FY 1.11/16 FM** | FY 509 U | YET 209-111 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.85<br>*2,20* |
| **FY 1.3/4 FM** | FY 509 U | YET 209-112 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.75<br>*2,15* |

## Flanged Y-bearing units with a cast housing with a square flange and an eccentric locking collar, inch shafts

d **1 15/16 – 2 7/16** in



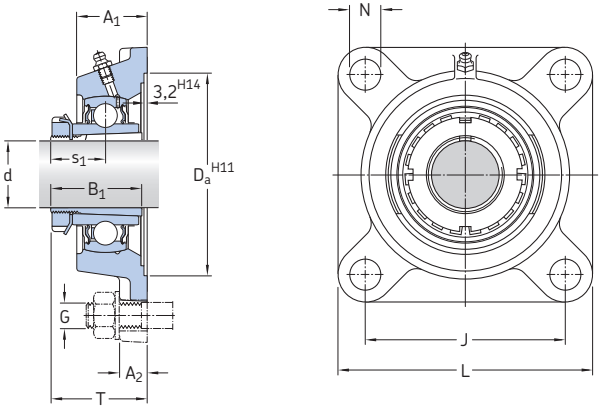

FM WF

| Dimensions | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | J | L | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | – |
| **1 15/16** | 1.69 | 0.59 | 1.72 | 4.37 | 5.63 | 9/16 | 1.29 | 2.39 | **FY 1.15/16 FM** |
| *49,213* | *43* | *15* | *43,7* | *111* | *143* | *14* | *32,7* | *60,7* | |
| | 1.69 | 0.59 | 2.47 | 4.37 | 5.63 | 9/16 | 1.50 | 2.60 | **FY 1.15/16 WF** |
| | *43* | *15* | *62,7* | *111* | *143* | *14* | *38,1* | *66,1* | |
| **2** | 1.87 | 0.63 | 1.91 | 5.12 | 6.38 | 5/8 | 1.43 | 2.65 | **FY 2. FM** |
| *50,8* | *47,5* | *16* | *48,4* | *130* | *162* | *16* | *36,4* | *67,4* | |
| **2 3/16** | 1.87 | 0.63 | 1.91 | 5.12 | 6.38 | 5/8 | 1.43 | 2.65 | **FY 2.3/16 FM** |
| *55,563* | *47,5* | *16* | *48,4* | *130* | *162* | *16* | *36,4* | *67,4* | |
| | 1.87 | 0.63 | 2.81 | 5.12 | 6.38 | 5/8 | 1.72 | 2.94 | **FY 2.3/16 WF** |
| | *47,5* | *16* | *71,4* | *130* | *162* | *16* | *43,6* | *74,6* | |
| **2 7/16** | 2.05 | 0.67 | 3.06 | 5.63 | 6.89 | 5/8 | 1.84 | 3.18 | **FY 2.7/16 WF** |
| *61,913* | *52* | *17* | *77,8* | *143* | *175* | *16* | *46,8* | *80,8* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FY 1.15/16 FM** | FY 510 U | YET 210-115 | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.60<br>*2,55* |
| **FY 1.15/16 WF** | FY 510 U | YEL 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.05<br>*2,75* |
| **FY 2. FM** | FY 511 U | YET 211-200 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.25<br>*3,75* |
| **FY 2.3/16 FM** | FY 511 U | YET 211-203 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8,00<br>*3,65* |
| **FY 2.3/16 WF** | FY 511 U | YEL 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.50<br>*3,85* |
| **FY 2.7/16 WF** | FY 512 U | YEL 212-207-2F | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 11.0<br>*5,05* |

## Flanged Y-bearing units with a cast housing with a square flange and an adapter sleeve, metric shafts

d **20 – 60** mm



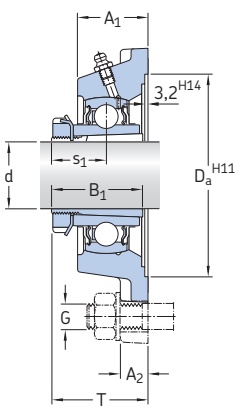

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | Bearing unit | Adapter sleeve |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | kN | | kN | – | |
| **20** | 27 | 14 | 35 | 74,6 | 70 | 95 | 12 | 10 | 20 | 36 | 14 | 7,8 | 0,335 | **FYJ 25 KF** | **H 2305** |
| **25** | 31 | 14 | 38 | 93,7 | 83 | 108 | 12 | 10 | 22 | 40 | 19,5 | 11,2 | 0,475 | **FYJ 30 KF** | **H 2306** |
| **30** | 34 | 16 | 43 | 106,4 | 92 | 118 | 14 | 12 | 24,3 | 43,3 | 25,5 | 15,3 | 0,655 | **FYJ 35 KF** | **H 2307** |
| **35** | 36 | 16 | 46 | 115,9 | 102 | 130 | 16 | 14 | 27 | 48 | 30,7 | 19 | 0,8 | **FYJ 40 KF** | **H 2308** |
| **40** | 38 | 18 | 50 | 119,1 | 105 | 137 | 16 | 14 | 28,5 | 50,5 | 33,2 | 21,6 | 0,915 | **FYJ 45 KF** | **H 2309** |
| **45** | 40 | 18 | 55 | 125,4 | 111 | 143 | 16 | 14 | 30,5 | 52,5 | 35,1 | 23,2 | 0,98 | **FYJ 50 KF** | **H 2310** |
| **50** | 43 | 20 | 59 | 150,8 | 130 | 162 | 19 | 16 | 32,5 | 57,5 | 43,6 | 29 | 1,25 | **FYJ 55 KF** | **H 2311** |
| **55** | 48 | 20 | 62 | 161,9 | 143 | 175 | 19 | 16 | 34,3 | 63,3 | 52,7 | 36 | 1,53 | **FYJ 60 KF** | **H 2312** |
| **60** | 50 | 20 | 65 | 161,9 | 149 | 187 | 19 | 16 | 35,8 | 65,8 | 57,2 | 40 | 1,7 | **FYJ 65 KF** | **H 2313** |

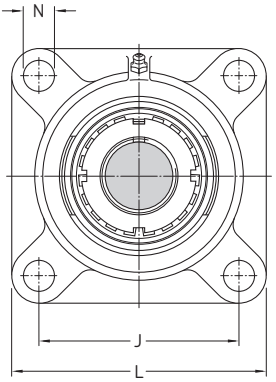
[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations** Bearing unit without adapter sleeve | Separate components of the bearing unit Housing | Bearing | **Limiting speed** | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|
| – | | | r/min | kg |
| **FYJ 25 KF** | FYJ 505 | YSA 205-2FK | 7 000 | 0,73 |
| **FYJ 30 KF** | FYJ 506 | YSA 206-2FK | 6 300 | 1,05 |
| **FYJ 35 KF** | FYJ 507 | YSA 207-2FK | 5 300 | 1,35 |
| **FYJ 40 KF** | FYJ 508 | YSA 208-2FK | 4 800 | 1,75 |
| **FYJ 45 KF** | FYJ 509 | YSA 209-2FK | 4 300 | 2,10 |
| **FYJ 50 KF** | FYJ 510 | YSA 210-2FK | 4 000 | 2,80 |
| **FYJ 55 KF** | FYJ 511 | YSA 211-2FK | 3 600 | 3,60 |
| **FYJ 60 KF** | FYJ 512 | YSA 212-2FK | 3 400 | 4,60 |
| **FYJ 65 KF** | FYJ 513 | YSA 213-2FK | 3 000 | 6,00 |

## Flanged Y-bearing units with a cast housing with a square flange and an adapter sleeve, inch shafts

d **3/4 – 2 1/8** in



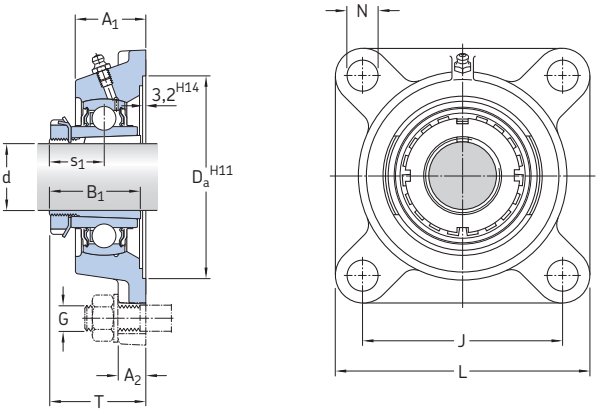

| Dimensions | | | | | | | | | | | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Bearing unit | Adapter sleeve |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | J | L | N | G | $s_1$ | T | | |
| in/*mm* | | | | | | | | | | | – | |
| **3/4**<br>*19,05* | 1.06<br>*27* | 0.55<br>*14* | 1.38<br>*35* | 2.94<br>*74,6* | 2.76<br>*70* | 3.74<br>*95* | 0.47<br>*12* | 3/8<br>*10* | 0.79<br>*20* | 1.42<br>*36* | **FYJ 25 KF** | **HE 2305** |
| **15/16**<br>*23,813* | 1.22<br>*31* | 0.55<br>*14* | 1.50<br>*38* | 3.69<br>*93,7* | 3.27<br>*83* | 4.25<br>*108* | 0.47<br>*12* | 3/8<br>*10* | 0.87<br>*22* | 1.57<br>*40* | **FYJ 30 KF** | **HA 2306** |
| **1**<br>*25,4* | 1.22<br>*31* | 0.55<br>*14* | 1.50<br>*38* | 3.69<br>*93,7* | 3.27<br>*83* | 4.25<br>*108* | 0.47<br>*12* | 3/8<br>*10* | 0.87<br>*22* | 1.57<br>*40* | **FYJ 30 KF** | **HE 2306** |
| **1 3/16**<br>*30,163* | 1.34<br>*34* | 0.63<br>*16* | 1.69<br>*43* | 4.19<br>*106,4* | 3.62<br>*92* | 4.65<br>*118* | 0.55<br>*14* | 1/2<br>*12* | 0.96<br>*24,3* | 1.70<br>*43,3* | **FYJ 35 KF** | **HA 2307** |
| **1 1/4**<br>*31,75* | 1.42<br>*36* | 0.63<br>*16* | 1.81<br>*46* | 4.56<br>*115,9* | 4.02<br>*102* | 5.12<br>*130* | 0.63<br>*16* | 9/16<br>*14* | 1.06<br>*27* | 1.89<br>*48* | **FYJ 40 KF** | **HE 2308** |
| **1 7/16**<br>*36,513* | 1.50<br>*38* | 0.71<br>*18* | 1.97<br>*50* | 4.69<br>*119,1* | 4.13<br>*105* | 5.39<br>*137* | 0.63<br>*16* | 9/16<br>*14* | 1.12<br>*28,5* | 1.99<br>*50,5* | **FYJ 45 KF** | **HA 2309** |
| **1 1/2**<br>*38,1* | 1.50<br>*38* | 0.71<br>*18* | 1.97<br>*50* | 4.69<br>*119,1* | 4.13<br>*105* | 5.39<br>*137* | 0.63<br>*16* | 9/16<br>*14* | 1.12<br>*28,5* | 1.99<br>*50,5* | **FYJ 45 KF** | **HE 2309** |
| **1 5/8**<br>*41,275* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.94<br>*125,4* | 4.37<br>*111* | 5.63<br>*143* | 0.63<br>*16* | 9/16<br>*14* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYJ 50 KF** | **HS 2310** |
| **1 11/16**<br>*42,863* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.94<br>*125,4* | 4.37<br>*111* | 5.63<br>*143* | 0.63<br>*16* | 9/16<br>*14* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYJ 50 KF** | **HA 2310** |
| **1 3/4**<br>*44,45* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.94<br>*125,4* | 4.37<br>*111* | 5.63<br>*143* | 0.63<br>*16* | 9/16<br>*14* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYJ 50 KF** | **HE 2310** |
| **1 15/16**<br>*49,213* | 1.69<br>*43* | 0.79<br>*20* | 2.32<br>*59* | 5.94<br>*150,8* | 5.12<br>*130* | 6.38<br>*162* | 0.75<br>*19* | 5/8<br>*16* | 1.28<br>*32,5* | 2.26<br>*57,5* | **FYJ 55 KF** | **HA 2311** |
| **2**<br>*50,8* | 1.69<br>*43* | 0.79<br>*20* | 2.32<br>*59* | 5.94<br>*150,8* | 5.12<br>*130* | 6.38<br>*162* | 0.75<br>*19* | 5/8<br>*16* | 1.28<br>*32,5* | 2.26<br>*57,5* | **FYJ 55 KF** | **HE 2311 B** |
| **2 1/8**<br>*53,975* | 1.89<br>*48* | 0.79<br>*20* | 2.44<br>*62* | 6.37<br>*161,9* | 5.63<br>*143* | 6.89<br>*175* | 0.75<br>*19* | 5/8<br>*16* | 1.35<br>*34,3* | 2.49<br>*63,3* | **FYJ 60 KF** | **HS 2312** |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations**<br>Bearing unit without adapter sleeve | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting** speed | **Mass**<br>Bearing unit + sleeve |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FYJ 25 KF** | FYJ 505 | YSA 205-2FK | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.60<br>*0,73* |
| **FYJ 30 KF** | FYJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.35<br>*1,05* |
| **FYJ 30 KF** | FYJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.30<br>*1,05* |
| **FYJ 35 KF** | FYJ 507 | YSA 207-2FK | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.00<br>*1,35* |
| **FYJ 40 KF** | FYJ 508 | YSA 208-2FK | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.85<br>*1,75* |
| **FYJ 45 KF** | FYJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.75<br>*2,15* |
| **FYJ 45 KF** | FYJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.65<br>*2,10* |
| **FYJ 50 KF** | FYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.30<br>*2,85* |
| **FYJ 50 KF** | FYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.25<br>*2,85* |
| **FYJ 50 KF** | FYJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 6.15<br>*2,80* |
| **FYJ 55 KF** | FYJ 511 | YSA 211-2FK | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.95<br>*3,60* |
| **FYJ 55 KF** | FYJ 511 | YSA 211-2FK | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.95<br>*3,60* |
| **FYJ 60 KF** | FYJ 512 | YSA 212-2FK | 11 860<br>*52,7* | 8 100<br>*36* | 340<br>*1,53* | 3 400 | 10.0<br>*4,60* |

## Flanged Y-bearing units with a cast housing with a square flange and an adapter sleeve, inch shafts

d **2 3/16 – 2 3/8** in



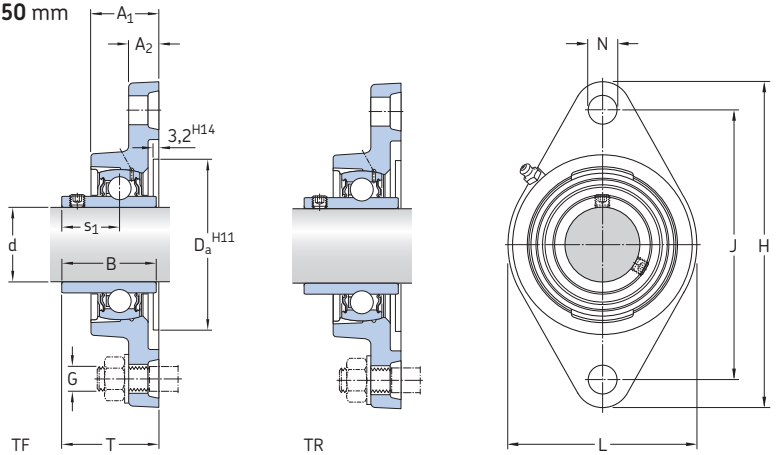

| Dimensions | | | | | | | | | | | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Bearing unit | Adapter sleeve |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | J | L | N | G | $s_1$ | T | | |
| in/*mm* | | | | | | | | | | | – | |
| **2 3/16** | 1.97 | 0.79 | 2.56 | 6.37 | 5.87 | 7.36 | 0.75 | 5/8 | 1.41 | 2.59 | **FYJ 65 KF** | **HA 2313** |
| *55,563* | *50* | *20* | *65* | *161,9* | *149* | *187* | *19* | *16* | *35,8* | *65,8* | | |
| **2 1/4** | 1.97 | 0.79 | 2.56 | 6.37 | 5.87 | 7.36 | 0.75 | 5/8 | 1.41 | 2.59 | **FYJ 65 KF** | **HE 2313** |
| *57,15* | *50* | *20* | *65* | *161,9* | *149* | *187* | *19* | *16* | *35,8* | *65,8* | | |
| **2 3/8** | 1.97 | 0.79 | 2.56 | 6.37 | 5.87 | 7.36 | 0.75 | 5/8 | 1.41 | 2.59 | **FYJ 65 KF** | **HS 2313** |
| *60,325* | *50* | *20* | *65* | *161,9* | *149* | *187* | *19* | *16* | *35,8* | *65,8* | | |

[1] Bearing unit and adapter sleeve to be ordered separately

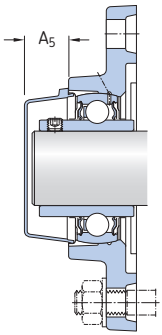
| **Designations** Bearing unit without adapter sleeve | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting** speed | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FYJ 65 KF** | FYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 13.5<br>*6,20* |
| **FYJ 65 KF** | FYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 13.5<br>*6,10* |
| **FYJ 65 KF** | FYJ 513 | YSA 213-2FK | 12 870<br>*57,2* | 9 000<br>*40* | 380<br>*1,7* | 3 000 | 13.5<br>*6,00* |

## Flanged Y-bearing units with a cast housing with an oval flange and grub screws, metric shafts

d **12 – 50** mm




| Dimensions | | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Limiting speed | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | dynamic | static | | with shaft tolerance | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | H | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | | kN | | kN | r/min | – |
| **12** | 26 | 11 | 27,4 | 50,8 | 98,5 | 76,5 | 57 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FYTB 12 TF** |
| **15** | 26 | 11 | 27,4 | 50,8 | 98,5 | 76,5 | 57 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FYTB 15 TF** |
| **17** | 26 | 11 | 27,4 | 50,8 | 98,5 | 76,5 | 57 | 11,5 | 10 | 15,9 | 32,9 | 9,56 | 4,75 | 0,2 | 9 500 | **FYTB 17 TF** |
| **20** | 29,5 | 11 | 31 | 50,8 | 112 | 90 | 60,5 | 11,5 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYTB 20 TF** |
| | 25,5 | 12 | 31 | 50,8 | 112 | 90 | 60 | 12 | 10 | 18,3 | 33,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYTJ 20 TF** |
| | 29,5 | 11 | 31 | 50,8 | 112 | 90 | 60,5 | 11,5 | 10 | 18,3 | 37,3 | 12,7 | 6,55 | 0,28 | 5 000 | **FYTB 20 TR** |
| **25** | 30 | 12 | 34,1 | 63,5 | 124 | 99 | 70 | 11,5 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 7 000 | **FYTB 25 TF** |
| | 27 | 14 | 34,1 | 63,5 | 130 | 99 | 68 | 16 | 14 | 19,8 | 35,8 | 14 | 7,8 | 0,335 | 7 000 | **FYTJ 25 TF** |
| | 30 | 12 | 34,1 | 63,5 | 124 | 99 | 70 | 11,5 | 10 | 19,8 | 38,8 | 14 | 7,8 | 0,335 | 4 300 | **FYTB 25 TR** |
| **30** | 32,5 | 13 | 38,1 | 76,2 | 141,5 | 116,5 | 83 | 11,5 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYTB 30 TF** |
| | 30,5 | 13,5 | 38,1 | 76,2 | 148 | 117 | 80 | 16 | 14 | 22,2 | 40,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYTJ 30 TF** |
| | 32,5 | 13 | 38,1 | 76,2 | 141,5 | 116,5 | 83 | 11,5 | 10 | 22,2 | 42,2 | 19,5 | 11,2 | 0,475 | 3 800 | **FYTB 30 TR** |
| **35** | 34,5 | 13 | 42,9 | 88,9 | 156 | 130 | 96 | 14 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYTB 35 TF** |
| | 34 | 16 | 42,9 | 88,9 | 161 | 130 | 96 | 16 | 14 | 25,4 | 44,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYTJ 35 TF** |
| | 34,5 | 13 | 42,9 | 88,9 | 156 | 130 | 96 | 14 | 12 | 25,4 | 46,4 | 25,5 | 15,3 | 0,655 | 3 200 | **FYTB 35 TR** |
| **40** | 38,5 | 14 | 49,2 | 88,9 | 171,5 | 143,5 | 102 | 14 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 4 800 | **FYTB 40 TF** |
| | 36 | 16 | 49,2 | 88,9 | 175 | 144 | 100 | 16 | 14 | 30,2 | 51,2 | 30,7 | 19 | 0,8 | 4 800 | **FYTJ 40 TF** |
| | 38,5 | 14 | 49,2 | 88,9 | 171,5 | 143,5 | 102 | 14 | 12 | 30,2 | 54,2 | 30,7 | 19 | 0,8 | 2 800 | **FYTB 40 TR** |
| **45** | 39 | 14 | 49,2 | 98,4 | 178,5 | 148,5 | 111 | 16 | 14 | 30,2 | 54,2 | 33,2 | 21,6 | 0,915 | 4 300 | **FYTB 45 TF** |
| | 38 | 18 | 49,2 | 98,4 | 188 | 148 | 108 | 19 | 16 | 30,2 | 52,2 | 33,2 | 21,6 | 0,915 | 4 300 | **FYTJ 45 TF** |
| | 39 | 14 | 49,2 | 98,4 | 178,5 | 148,5 | 111 | 16 | 14 | 30,2 | 54,2 | 33,2 | 21,6 | 0,915 | 2 400 | **FYTB 45 TR** |
| **50** | 43 | 15 | 51,6 | 101,6 | 189 | 157 | 116 | 18 | 16 | 32,6 | 60,6 | 35,1 | 23,2 | 0,98 | 4 000 | **FYTB 50 TF** |
| | 40 | 18 | 51,6 | 101,6 | 195 | 157 | 115 | 19 | 16 | 32,6 | 54,6 | 35,1 | 23,2 | 0,98 | 4 000 | **FYTJ 50 TF** |
| | 43 | 15 | 51,6 | 101,6 | 189 | 157 | 116 | 18 | 16 | 32,6 | 60,6 | 35,1 | 23,2 | 0,98 | 2 200 | **FYTB 50 TR** |

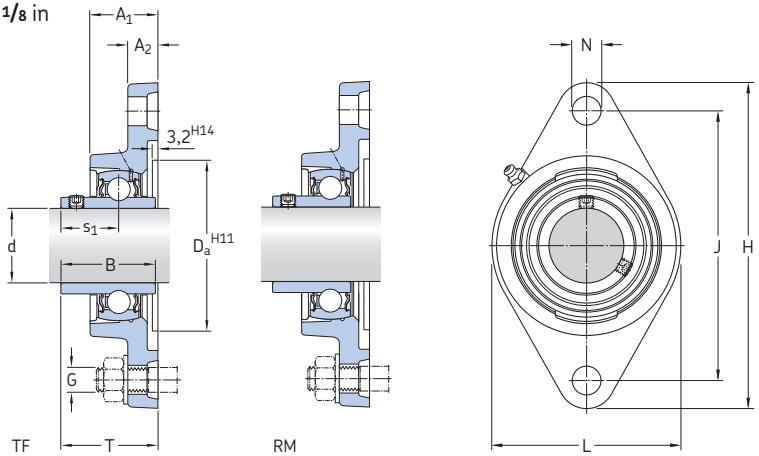





| Designations | | | Mass | Appropriate end cover | |
|---|---|---|---|---|---|
| Bearing unit | Separate components | | Bearing unit | Designation | Dimension |
| | Housing | Bearing | | | $A_5$ |
| – | | | kg | – | mm |
| **FYTB 12 TF** | FYTB 503 M | YAR 203/12-2F | 0,42 | – | – |
| **FYTB 15 TF** | FYTB 503 M | YAR 203/15-2F | 0,40 | – | – |
| **FYTB 17 TF** | FYTB 503 M | YAR 203-2F | 0,39 | – | – |
| **FYTB 20 TF** | FYTB 504 M | YAR 204-2F | 0,50 | ECY 204 | 18,5 |
| **FYTJ 20 TF** | FYTJ 504 | YAR 204-2F | 0,43 | – | – |
| **FYTB 20 TR** | FYTB 504 M | YAR 204-2RF | 0,50 | ECY 204 | 18,5 |
| **FYTB 25 TF** | FYTB 505 M | YAR 205-2F | 0,63 | ECY 205 | 18 |
| **FYTJ 25 TF** | FYTJ 505 | YAR 205-2F | 0,58 | – | – |
| **FYTB 25 TR** | FYTB 505 M | YAR 205-2RF | 0,63 | ECY 205 | 18 |
| **FYTB 30 TF** | FYTB 506 M | YAR 206-2F | 0,93 | ECY 206 | 20 |
| **FYTJ 30 TF** | FYTJ 506 | YAR 206-2F | 0,93 | – | – |
| **FYTB 30 TR** | FYTB 506 M | YAR 206-2RF | 0,93 | ECY 206 | 20 |
| **FYTB 35 TF** | FYTB 507 M | YAR 207-2F | 1,25 | ECY 207 | 22 |
| **FYTJ 35 TF** | FYTJ 507 | YAR 207-2F | 1,15 | – | – |
| **FYTB 35 TR** | FYTB 507 M | YAR 207-2RF | 1,25 | ECY 207 | 22 |
| **FYTB 40 TF** | FYTB 508 M | YAR 208-2F | 1,65 | ECY 208 | 23,5 |
| **FYTJ 40 TF** | FYTJ 508 | YAR 208-2F | 1,55 | – | – |
| **FYTB 40 TR** | FYTB 508 M | YAR 208-2RF | 1,65 | ECY 208 | 23,5 |
| **FYTB 45 TF** | FYTB 509 M | YAR 209-2F | 1,80 | ECY 209 | 23 |
| **FYTJ 45 TF** | FYTJ 509 | YAR 209-2F | 2,20 | – | – |
| **FYTB 45 TR** | FYTB 509 M | YAR 209-2RF | 1,80 | ECY 209 | 23 |
| **FYTB 50 TF** | FYTB 510 M | YAR 210-2F | 2,15 | ECY 210 | 29,5 |
| **FYTJ 50 TF** | FYTJ 510 | YAR 210-2F | 3,10 | – | – |
| **FYTB 50 TR** | FYTB 510 M | YAR 210-2RF | 2,15 | ECY 210 | 29,5 |

## Flanged Y-bearing units with a cast housing with an oval flange and grub screws, inch shafts

d **1/2 – 1 1/8** in

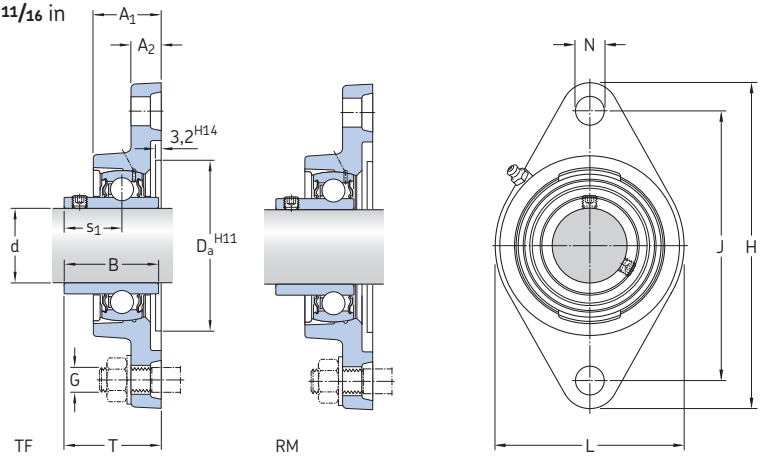



| Dimensions | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | H | J | L | N | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | | | – |
| **1/2** | 0.92 | 0.45 | 0.89 | 3.88 | 3.00 | 2.13 | 0.44 | 3/8 | 0.63 | 1.20 | **FYT 1/2 RM** |
| *12,7* | *23,4* | *11,5* | *22,5* | *98,5* | *76,2* | *54* | *11,1* | *10* | *16* | *30,6* | |
| | 0.92 | 0.45 | 1.08 | 3.88 | 3.00 | 2.13 | 0.44 | 3/8 | 0.63 | 1.20 | **FYT 1/2 TF** |
| | *23,4* | *11,5* | *27,4* | *98,5* | *76,2* | *54* | *11,1* | *10* | *15,9* | *30,6* | |
| **5/8** | 0.92 | 0.45 | 0.89 | 3.88 | 3.00 | 2.13 | 0.44 | 3/8 | 0.63 | 1.20 | **FYT 5/8 RM** |
| *15,875* | *23,4* | *11,5* | *22,5* | *98,5* | *76,2* | *54* | *11,1* | *10* | *16* | *30,6* | |
| | 0.92 | 0.45 | 1.08 | 3.88 | 3.00 | 2.13 | 0.44 | 3/8 | 0.63 | 1.20 | **FYT 5/8 TF** |
| | *23,4* | *11,5* | *27,4* | *98,5* | *76,2* | *54* | *11,1* | *10* | *15,9* | *30,6* | |
| **3/4** | 0.97 | 0.44 | 1.00 | 4.41 | 3.53 | 2.38 | 0.44 | 3/8 | 0.72 | 1.28 | **FYT 3/4 RM** |
| *19,05* | *24,6* | *11,1* | *25,5* | *111,9* | *89,7* | *60,5* | *11,1* | *10* | *18,3* | *32,6* | |
| | 0.97 | 0.44 | 1.22 | 4.41 | 3.53 | 2.38 | 0.44 | 3/8 | 0.72 | 1.28 | **FYT 3/4 TF/AH** |
| | *24,6* | *11,1* | *31* | *111,9* | *89,7* | *60,5* | *11,1* | *10* | *18,3* | *32,6* | |
| | 1.16 | 0.43 | 1.22 | 4.41 | 3.54 | 2.38 | 0.45 | 3/8 | 0.72 | 1.47 | **FYTB 3/4 TF** |
| | *29,5* | *11* | *31* | *112* | *90* | *60,5* | *11,5* | *10* | *18,3* | *37,3* | |
| | 1.00 | 0.47 | 1.22 | 4.41 | 3.54 | 2.36 | 0.47 | 3/8 | 0.72 | 1.31 | **FYTJ 3/4 TF** |
| | *25,5* | *12* | *31* | *112* | *90* | *60* | *12* | *10* | *18,3* | *33,3* | |
| **7/8** | 1.18 | 0.47 | 1.34 | 4.88 | 3.89 | 2.76 | 0.50 | 7/16 | 0.78 | 1.53 | **FYT 7/8 TF** |
| *22,225* | *30* | *12* | *34,1* | *124* | *98,8* | *70* | *12,7* | *11* | *19,8* | *38,8* | |
| **15/16** | 1.18 | 0.47 | 1.07 | 4.88 | 3.89 | 2.76 | 0.50 | 7/16 | 0.77 | 1.53 | **FYT 15/16 RM** |
| *23,813* | *30* | *12* | *27,2* | *124* | *98,8* | *70* | *12,7* | *11* | *19,5* | *38,8* | |
| | 1.18 | 0.47 | 1.34 | 4.88 | 3.89 | 2.76 | 0.50 | 7/16 | 0.78 | 1.53 | **FYT 15/16 TF** |
| | *30* | *12* | *34,1* | *124* | *98,8* | *70* | *12,7* | *10* | *19,8* | *38,8* | |
| **1** | 1.18 | 0.47 | 1.07 | 4.88 | 3.89 | 2.76 | 0.50 | 7/16 | 0.77 | 1.53 | **FYT 1. RM** |
| *25,4* | *30* | *12* | *27,2* | *124* | *98,8* | *70* | *12,7* | *10* | *19,5* | *38,8* | |
| | 1.18 | 0.47 | 1.34 | 4.88 | 3.89 | 2.76 | 0.50 | 7/16 | 0.78 | 1.53 | **FYT 1. TF** |
| | *30* | *12* | *34,1* | *124* | *98,8* | *70* | *12,7* | *10* | *19,8* | *38,8* | |
| | 1.18 | 0.47 | 1.34 | 4.88 | 3.90 | 2.76 | 0.45 | 3/8 | 0.78 | 1.53 | **FYTB 1. TF** |
| | *30* | *12* | *34,1* | *124* | *99* | *70* | *11,5* | *10* | *19,8* | *38,8* | |
| | 1.06 | 0.55 | 1.34 | 5.12 | 3.90 | 2.68 | 0.63 | 9/16 | 0.78 | 1.41 | **FYTJ 1. TF** |
| | *27* | *14* | *34,1* | *130* | *99* | *68* | *16* | *14* | *19,8* | *35,8* | |
| **1 1/8** | 1.28 | 0.51 | 1.50 | 5.57 | 4.60 | 3.27 | 0.50 | 7/16 | 0.87 | 1.66 | **FYT 1.1/8 TF** |
| *28,575* | *32,5* | *13* | *38,1* | *141,5* | *116,9* | *83* | *12,7* | *10* | *22,2* | *42,2* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load** limit $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbs/*kN* | | lbs/*kN* | r/min | lb/*kg* |
| **FYT 1/2 RM** | FYT 503 U | YAT 203-008 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.68<br>*0,31* |
| **FYT 1/2 TF** | FYT 503 U | YAR 203-008-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.73<br>*0,33* |
| **FYT 5/8 RM** | FYT 503 U | YAT 203-010 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.66<br>*0,30* |
| **FYT 5/8 TF** | FYT 503 U | YAR 203-010-2F | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.68<br>*0,31* |
| **FYT 3/4 RM** | FYT 504 U | YAT 204-012 | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.05<br>*0,47* |
| **FYT 3/4 TF/AH** | FYT 504 U/AH | YAR 204-012-2F/AH | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.10<br>*0,50* |
| **FYTB 3/4 TF** | FYTB 504 M | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.10<br>*0,50* |
| **FYTJ 3/4 TF** | FYTJ 504 | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 0.95<br>*0,43* |
| **FYT 7/8 TF** | FYT 505 U | YAR 205-014-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.45<br>*0,66* |
| **FYT 15/16 RM** | FYT 505 U | YAT 205-015 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.35<br>*0,61* |
| **FYT 15/16 TF** | FYT 505 U | YAR 205-015-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.40<br>*0,64* |
| **FYT 1. RM** | FYT 505 U | YAT 205-100 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.30<br>*0,60* |
| **FYT 1. TF** | FYT 505 U | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.30<br>*0,60* |
| **FYTB 1. TF** | FYTB 505 M | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.40<br>*0,63* |
| **FYTJ 1. TF** | FYTJ 505 | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.30<br>*0,58* |
| **FYT 1.1/8 TF** | FYT 506 U | YAR 206-102-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.10<br>*0,95* |

## Flanged Y-bearing units with a cast housing with an oval flange and grub screws, inch shafts

d **1 3/16 – 1 11/16** in

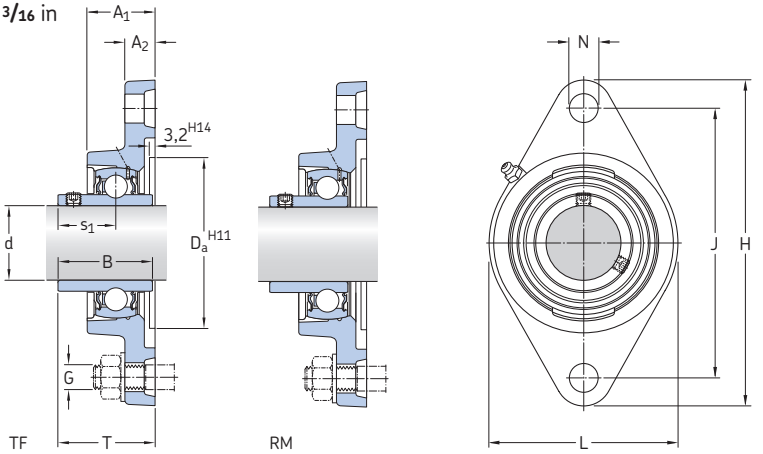



| Dimensions | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | H | J | L | N | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | | | – |
| **1 3/16** | 1.28 | 0.51 | 1.22 | 5.57 | 4.60 | 3.27 | 0.50 | 7/16 | 0.87 | 1.66 | **FYT 1.3/16 RM** |
| *30,163* | *32,5* | *13* | *31* | *141,5* | *116,9* | *83* | *12,7* | *10* | *22* | *42,2* | |
| | 1.28 | 0.51 | 1.50 | 5.57 | 4.60 | 3.27 | 0.50 | 7/16 | 0.87 | 1.66 | **FYT 1.3/16 TF** |
| | *32,5* | *13* | *38,1* | *141,5* | *116,9* | *83* | *12,7* | *10* | *22,2* | *42,2* | |
| **1 1/4** | 1.36 | 0.51 | 1.38 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.1/4 RM** |
| *31,75* | *34,5* | *13* | *35* | *156* | *130,2* | *96* | *14,3* | *12* | *25,5* | *46,4* | |
| | 1.36 | 0.51 | 1.69 | 6.14 | 5.12 | 3.78 | 0.55 | 1/2 | 1.00 | 1.83 | **FYTB 1.1/4 TF** |
| | *34,5* | *13* | *42,9* | *156* | *130* | *96* | *14* | *12* | *25,4* | *46,4* | |
| | 1.34 | 0.63 | 1.69 | 6.34 | 5.12 | 3.78 | 0.63 | 9/16 | 1.00 | 1.75 | **FYTJ 1.1/4 TF** |
| | *34* | *16* | *42,9* | *161* | *130* | *96* | *16* | *14* | *25,4* | *44,4* | |
| **1 5/16** | 1.36 | 0.51 | 1.69 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.5/16 TF** |
| *33,338* | *34,5* | *13* | *42,9* | *156* | *130,2* | *96* | *14,3* | *12* | *25,4* | *46,4* | |
| **1 3/8** | 1.36 | 0.51 | 1.38 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.3/8 RM** |
| *34,925* | *34,5* | *13* | *35* | *156* | *130,2* | *96* | *14,3* | *12* | *25,5* | *46,4* | |
| | 1.36 | 0.51 | 1.69 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.3/8 TF** |
| | *34,5* | *13* | *42,9* | *156* | *130,2* | *96* | *14,3* | *12* | *25,4* | *46,4* | |
| **1 7/16** | 1.36 | 0.51 | 1.38 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.7/16 RM** |
| *36,513* | *34,5* | *13* | *35* | *156* | *130,2* | *96* | *14,3* | *12* | *25,5* | *46,4* | |
| | 1.36 | 0.51 | 1.69 | 6.14 | 5.13 | 3.78 | 0.56 | 1/2 | 1.00 | 1.83 | **FYT 1.7/16 TF** |
| | *34,5* | *13* | *42,9* | *156* | *130,2* | *96* | *14,3* | *12* | *25,4* | *46,4* | |
| **1 1/2** | 1.52 | 0.55 | 1.57 | 6.75 | 5.66 | 4.02 | 0.56 | 1/2 | 1.12 | 2.07 | **FYT 1.1/2 RM** |
| *38,1* | *38,5* | *14* | *40* | *171,5* | *143,7* | *102* | *14,3* | *12* | *28,5* | *52,6* | |
| | 1.52 | 0.55 | 1.94 | 6.75 | 5.66 | 4.02 | 0.56 | 1/2 | 1.19 | 2.13 | **FYT 1.1/2 TF** |
| | *38,5* | *14* | *49,2* | *171,5* | *143,7* | *102* | *14,3* | *12* | *30,2* | *54,2* | |
| | 1.52 | 0.55 | 1.94 | 6.75 | 5.65 | 4.02 | 0.55 | 1/2 | 1.19 | 2.13 | **FYTB 1.1/2 TF** |
| | *38,5* | *14* | *49,2* | *171,5* | *143,5* | *102* | *14* | *12* | *30,2* | *54,2* | |
| | 1.42 | 0.63 | 1.94 | 6.89 | 5.67 | 3.94 | 0.63 | 9/16 | 1.19 | 2.02 | **FYTJ 1.1/2 TF** |
| | *36* | *16* | *49,2* | *175* | *144* | *100* | *16* | *14* | *30,2* | *51,2* | |
| **1 5/8** | 1.54 | 0.55 | 1.94 | 7.03 | 5.84 | 4.37 | 0.63 | 9/16 | 1.19 | 2.13 | **FYT 1.5/8 TF** |
| *41,275* | *39* | *14* | *49,2* | *178,5* | *148,4* | *111* | *15,9* | *14* | *30,2* | *54,2* | |
| **1 11/16** | 1.54 | 0.55 | 1.63 | 7.03 | 5.84 | 4.37 | 0.63 | 9/16 | 1.20 | 2.13 | **FYT 1.11/16 RM** |
| *42,863* | *39* | *14* | *41,5* | *178,5* | *148,4* | *111* | *15,9* | *14* | *30,5* | *54,2* | |
| | 1.54 | 0.55 | 1.94 | 7.03 | 5.84 | 4.37 | 0.63 | 9/16 | 1.19 | 2.13 | **FYT 1.11/16 TF** |
| | *39* | *14* | *49,2* | *178,5* | *148,4* | *111* | *15,9* | *14* | *30,2* | *54,2* | |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load**<br>limit<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbs/*kN* | | lbs/*kN* | r/min | lb/*kg* |
| **FYT 1.3/16 RM** | FYT 506 U | YAT 206-103 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 1.95<br>*0,88* |
| **FYT 1.3/16 TF** | FYT 506 U | YAR 206-103-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.05<br>*0,93* |
| **FYT 1.1/4 RM** | FYT 507 U | YAT 207-104 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.65<br>*1,21* |
| **FYTB 1.1/4 TF** | FYTB 507 U | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.10<br>*1,40* |
| **FYTJ 1.1/4 TF** | FYTJ 507 U | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.85<br>*1,30* |
| **FYT 1.5/16 TF** | FYT 507 U | YAR 207-105-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.85<br>*1,30* |
| **FYT 1.3/8 RM** | FYT 507 U | YAT 207-106 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.60<br>*1,15* |
| **FYT 1.3/8 TF** | FYT 507 U | YAR 207-106-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.80<br>*1,27* |
| **FYT 1.7/16 RM** | FYT 507 U | YAT 207-107 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.50<br>*1,14* |
| **FYT 1.7/16 TF** | FYT 507 U | YAR 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.75<br>*1,25* |
| **FYT 1.1/2 RM** | FYT 508 U | YAT 208-108 | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.55<br>*1,60* |
| **FYT 1.1/2 TF** | FYT 508 U | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.60<br>*1,70* |
| **FYTB 1.1/2 TF** | FYTB 508 M | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.75<br>*1,70* |
| **FYTJ 1.1/2 TF** | FYTJ 508 | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.55<br>*1,60* |
| **FYT 1.5/8 TF** | FYT 509 U | YAR 209-110-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.20<br>*1,90* |
| **FYT 1.11/16 RM** | FYT 509 U | YAT 209-111 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 3.85<br>*1,74* |
| **FYT 1.11/16 TF** | FYT 509 U | YAR 209-111-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.10<br>*1,86* |

## Flanged Y-bearing units with a cast housing with an oval flange and grub screws, inch shafts

d **1 3/4 – 2 3/16** in

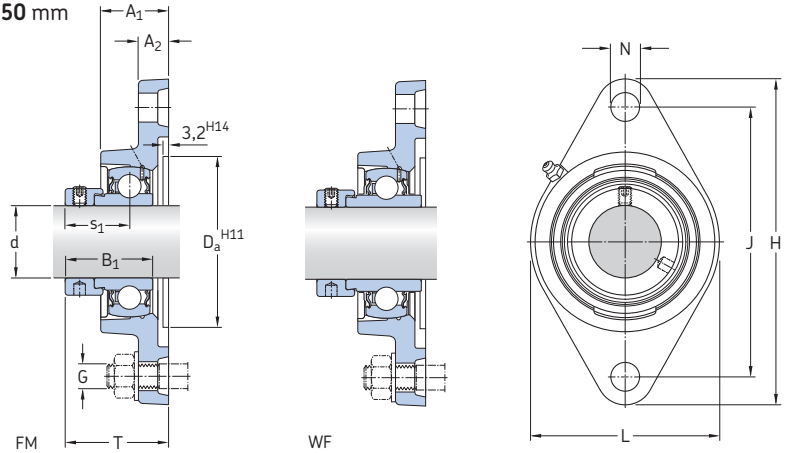



| Dimensions | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | H | J | L | N | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | | | – |
| **1 3/4** | 1.54 | 0.55 | 1.63 | 7.03 | 5.84 | 4.37 | 0.63 | 9/16 | 1.20 | 2.13 | **FYT 1.3/4 RM** |
| *44,45* | *39* | *14* | *41,5* | *178,5* | *148,4* | *111* | *15,9* | *14* | *30,5* | *54,2* | |
| | 1.54 | 0.55 | 1.94 | 7.03 | 5.84 | 4.37 | 0.63 | 9/16 | 1.19 | 2.13 | **FYT 1.3/4 TF** |
| | *39* | *14* | *49,2* | *178,5* | *148,4* | *111* | *15,9* | *14* | *30,2* | *54,2* | |
| | 1.54 | 0.55 | 1.94 | 7.03 | 5.85 | 4.37 | 0.63 | 9/16 | 1.19 | 2.13 | **FYTB 1.3/4 TF** |
| | *39* | *14* | *49,2* | *178,5* | *148,5* | *111* | *16* | *14* | *30,2* | *54,2* | |
| | 1.50 | 0.71 | 1.94 | 7.40 | 5.83 | 4.25 | 0.75 | 5/8 | 1.19 | 2.06 | **FYTJ 1.3/4 TF** |
| | *38* | *18* | *49,2* | *188* | *148* | *108* | *19* | *16* | *30,2* | *52,2* | |
| **1 15/16** | 1.69 | 0.59 | 1.69 | 7.44 | 6.19 | 4.57 | 0.63 | 9/16 | 1.26 | 2.37 | **FYT 1.15/16 RM** |
| *49,213* | *43* | *15* | *43* | *189* | *157,2* | *116* | *15,9* | *14* | *32* | *60,1* | |
| | 1.69 | 0.59 | 2.03 | 7.44 | 6.19 | 4.57 | 0.63 | 9/16 | 1.28 | 2.39 | **FYT 1.15/16 TF** |
| | *43* | *15* | *51,6* | *189* | *157,2* | *116* | *15,9* | *14* | *32,6* | *60,6* | |
| **2** | 1.88 | 0.81 | 1.77 | 8.50 | 7.25 | 5.00 | 0.75 | 5/8 | 1.28 | 2.45 | **FYT 2. RM** |
| *50,8* | *47,6* | *20,6* | *45* | *216* | *184,2* | *127* | *19* | *16* | *32,5* | *62,3* | |
| | 1.88 | 0.81 | 2.19 | 8.50 | 7.25 | 5.00 | 0.75 | 5/8 | 1.32 | 2.47 | **FYT 2. TF** |
| | *47,6* | *20,6* | *55,6* | *216* | *184,2* | *127* | *19* | *16* | *33,4* | *62,8* | |
| **2 3/16** | 1.88 | 0.81 | 1.77 | 8.50 | 7.25 | 5.00 | 0.75 | 5/8 | 1.28 | 2.45 | **FYT 2.3/16 RM** |
| *55,563* | *47,6* | *20,6* | *45* | *216* | *184,2* | *127* | *19* | *16* | *32,5* | *62,3* | |
| | 1.88 | 0.81 | 2.19 | 8.50 | 7.25 | 5.00 | 0.75 | 5/8 | 1.32 | 2.47 | **FYT 2.3/16 TF** |
| | *47,6* | *20,6* | *55,6* | *216* | *184,2* | *127* | *19* | *16* | *33,4* | *62,8* | |

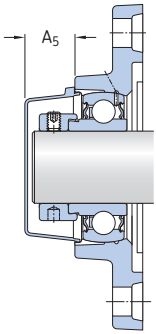
| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load** limit $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbs/*kN* | | lbs/*kN* | r/min | lb/*kg* |
| **FYT 1.3/4 RM** | FYT 509 U | YAT 209-112 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 3.75<br>*1,70* |
| **FYT 1.3/4 TF** | FYT 509 U | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 3.95<br>*1,80* |
| **FYTB 1.3/4 TF** | FYTB 509 M | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 3.95<br>*1,80* |
| **FYTJ 1.3/4 TF** | FYTJ 509 | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.85<br>*2,20* |
| **FYT 1.15/16 RM** | FYT 510 U | YAT 210-115 | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 4.65<br>*2,10* |
| **FYT 1.15/16 TF** | FYT 510 U | YAR 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 4.95<br>*2,25* |
| **FYT 2. RM** | FYT 511 U | YAT 211-200 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.30<br>*3,30* |
| **FYT 2. TF** | FYT 511 U | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.60<br>*3,45* |
| **FYT 2.3/16 RM** | FYT 511 U | YAT 211-203 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 6.90<br>*3,10* |
| **FYT 2.3/16 TF** | FYT 511 U | YAR 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.20<br>*3,25* |

## Flanged Y-bearing units with a cast housing with an oval flange and an eccentric locking collar, metric shafts

d **15 – 50** mm




| Dimensions | | | | | | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Limiting speed with shaft tolerance h6 | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | | kN | | kN | r/min | – |
| **15** | 26 | 11 | 28,6 | 50,8 | 98,5 | 76,5 | 57 | 11,5 | 10 | 22,1 | 39,1 | 9,56 | 4,75 | 0,2 | 9 500 | **FYTB 15 FM** |
| **17** | 26 | 11 | 28,6 | 50,8 | 98,5 | 76,5 | 57 | 11,5 | 10 | 22,1 | 39,1 | 9,56 | 4,75 | 0,2 | 9 500 | **FYTB 17 FM** |
| **20** | 29,5 | 11 | 31 | 50,8 | 112 | 90 | 60,5 | 11,5 | 10 | 23,5 | 42,5 | 12,7 | 6,55 | 0,28 | 8 500 | **FYTB 20 FM** |
| | 29,5 | 11 | 43,7 | 50,8 | 112 | 90 | 60,5 | 11,5 | 10 | 26,6 | 45,6 | 12,7 | 6,55 | 0,28 | 8 500 | **FYTB 20 WF** |
| **25** | 30 | 12 | 31 | 63,5 | 124 | 99 | 70 | 11,5 | 10 | 23,5 | 42,5 | 14 | 7,8 | 0,335 | 7 000 | **FYTB 25 FM** |
| | 30 | 12 | 44,4 | 63,5 | 124 | 99 | 70 | 11,5 | 10 | 26,9 | 45,9 | 14 | 7,8 | 0,335 | 7 000 | **FYTB 25 WF** |
| **30** | 32,5 | 13 | 35,7 | 76,2 | 141,5 | 116,5 | 83 | 11,5 | 10 | 26,7 | 46,7 | 19,5 | 11,2 | 0,475 | 6 300 | **FYTB 30 FM** |
| | 32,5 | 13 | 48,4 | 76,2 | 141,5 | 116,5 | 83 | 11,5 | 10 | 30,1 | 50,1 | 19,5 | 11,2 | 0,475 | 6 300 | **FYTB 30 WF** |
| **35** | 34,5 | 13 | 38,9 | 88,9 | 156 | 130 | 96 | 14 | 12 | 29,4 | 50,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYTB 35 FM** |
| | 34,5 | 13 | 51,1 | 88,9 | 156 | 130 | 96 | 14 | 12 | 32,3 | 53,3 | 25,5 | 15,3 | 0,655 | 5 300 | **FYTB 35 WF** |
| **40** | 38,5 | 14 | 43,7 | 88,9 | 171,5 | 143,5 | 102 | 14 | 12 | 32,7 | 56,7 | 30,7 | 19 | 0,8 | 4 800 | **FYTB 40 FM** |
| | 38,5 | 14 | 56,3 | 88,9 | 171,5 | 143,5 | 102 | 14 | 12 | 34,9 | 58,9 | 30,7 | 19 | 0,8 | 4 800 | **FYTB 40 WF** |
| **45** | 39 | 14 | 43,7 | 98,4 | 178,5 | 148,5 | 111 | 16 | 14 | 32,7 | 56,7 | 33,2 | 21,6 | 0,915 | 4 300 | **FYTB 45 FM** |
| | 39 | 14 | 56,3 | 98,4 | 178,5 | 148,5 | 111 | 16 | 14 | 34,9 | 58,9 | 33,2 | 21,6 | 0,915 | 4 300 | **FYTB 45 WF** |
| **50** | 43 | 15 | 43,7 | 101,6 | 189 | 157 | 116 | 18 | 16 | 32,7 | 60,7 | 35,1 | 23,2 | 0,98 | 4 000 | **FYTB 50 FM** |
| | 43 | 15 | 62,7 | 101,6 | 189 | 157 | 116 | 18 | 16 | 38,1 | 66,1 | 35,1 | 23,2 | 0,98 | 4 000 | **FYTB 50 WF** |

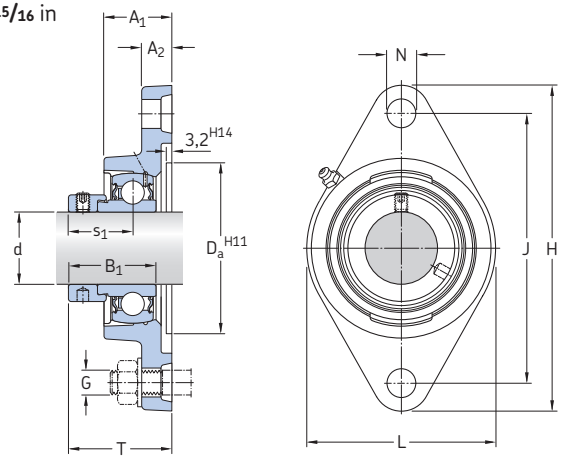





| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit | **Appropriate end cover** Designation | Dimension $A_5$ |
|---|---|---|---|---|---|
| – | | | kg | – | mm |
| **FYTB 15 FM** | FYTB 503 M | YET 203/15 | 0,42 | – | – |
| **FYTB 17 FM** | FYTB 503 M | YET 203 | 0,41 | – | – |
| **FYTB 20 FM** | FYTB 504 M | YET 204 | 0,52 | ECY 204 | 18,5 |
| **FYTB 20 WF** | FYTB 504 M | YEL 204-2F | 0,55 | ECY 204 | 18,5 |
| **FYTB 25 FM** | FYTB 505 M | YET 205 | 0,64 | ECY 205 | 18 |
| **FYTB 25 WF** | FYTB 505 M | YEL 205-2F | 0,69 | ECY 205 | 18 |
| **FYTB 30 FM** | FYTB 506 M | YET 206 | 0,95 | ECY 206 | 20 |
| **FYTB 30 WF** | FYTB 506 M | YEL 206-2F | 1,00 | ECY 206 | 20 |
| **FYTB 35 FM** | FYTB 507 M | YET 207 | 1,30 | ECY 207 | 22 |
| **FYTB 35 WF** | FYTB 507 M | YEL 207-2F | 1,40 | ECY 207 | 22 |
| **FYTB 40 FM** | FYTB 508 M | YET 208 | 1,70 | ECY 208 | 23,5 |
| **FYTB 40 WF** | FYTB 508 M | YEL 208-2F | 1,80 | ECY 208 | 23,5 |
| **FYTB 45 FM** | FYTB 509 M | YET 209 | 1,85 | ECY 209 | 23 |
| **FYTB 45 WF** | FYTB 509 M | YEL 209-2F | 1,95 | ECY 209 | 23 |
| **FYTB 50 FM** | FYTB 510 M | YET 210 | 2,20 | ECY 210 | 29,5 |
| **FYTB 50 WF** | FYTB 510 M | YEL 210-2F | 2,35 | ECY 210 | 29,5 |

## Flanged Y-bearing units with a cast housing with an oval flange and an eccentric locking collar, inch shafts

d **1/2 – 1 15/16** in

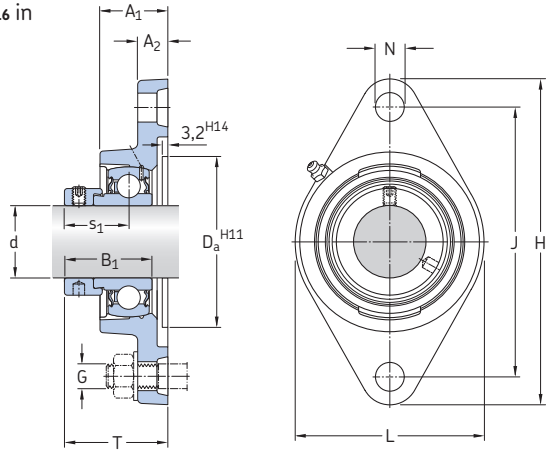



| Dimensions | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | H | J | L | N | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | | | – |
| **1/2**<br>*12,7* | 0.92<br>*23,4* | 0.45<br>*11,5* | 1.13<br>*26,6* | 3.88<br>*98,5* | 3.00<br>*76,2* | 2.13<br>*54* | 0.44<br>*11,1* | 3/8<br>*10* | 0.87<br>*22,1* | 1.45<br>*36,8* | **FYT 1/2 FM** |
| **5/8**<br>*15,875* | 0.92<br>*23,4* | 0.45<br>*11,5* | 1.13<br>*28,6* | 3.88<br>*98,5* | 3.00<br>*76,2* | 2.13<br>*54* | 0.44<br>*11,1* | 3/8<br>*10* | 0.87<br>*22,1* | 1.45<br>*36,8* | **FYT 5/8 FM** |
| **3/4**<br>*19,05* | 0.97<br>*24,6* | 0.44<br>*11,1* | 1.22<br>*31* | 4.41<br>*112* | 3.53<br>*89,7* | 2.38<br>*60,3* | 0.44<br>*11,1* | 3/8<br>*10* | 0.93<br>*23,5* | 1.49<br>*37,8* | **FYT 3/4 FM** |
| **7/8**<br>*22,225* | 1.18<br>*30* | 0.47<br>*12* | 1.22<br>*31* | 4.88<br>*124* | 3.89<br>*98,8* | 2.76<br>*70* | 0.50<br>*12,7* | 7/16<br>*10* | 0.93<br>*23,5* | 1.67<br>*42,5* | **FYT 7/8 FM** |
| **15/16**<br>*23,813* | 1.18<br>*30* | 0.47<br>*12* | 1.22<br>*31* | 4.88<br>*124* | 3.89<br>*98,8* | 2.76<br>*70* | 0.50<br>*12,7* | 7/16<br>*10* | 0.93<br>*23,5* | 1.67<br>*42,5* | **FYT 15/16 FM** |
| **1**<br>*25,4* | 1.18<br>*30* | 0.47<br>*12* | 1.22<br>*31* | 4.88<br>*124* | 3.89<br>*98,8* | 2.76<br>*70* | 0.50<br>*12,7* | 7/16<br>*10* | 0.93<br>*23,5* | 1.67<br>*42,5* | **FYT 1. FM** |
| **1 1/8**<br>*28,575* | 1.28<br>*32,5* | 0.51<br>*13* | 1.41<br>*35,7* | 5.57<br>*141,5* | 4.59<br>*116,9* | 3.27<br>*83* | 0.50<br>*12,7* | 7/16<br>*10* | 1.05<br>*26,7* | 1.84<br>*46,7* | **FYT 1.1/8 FM** |
| **1 3/16**<br>*30,163* | 1.28<br>*32,5* | 0.51<br>*13* | 1.41<br>*35,7* | 5.57<br>*141,5* | 4.59<br>*116,9* | 3.27<br>*83* | 0.50<br>*12,7* | 7/16<br>*10* | 1.05<br>*26,7* | 1.84<br>*46,7* | **FYT 1.3/16 FM** |
| **1 1/4**<br>*31,75* | 1.36<br>*34,5* | 0.51<br>*13* | 1.53<br>*38,9* | 6.14<br>*156* | 5.13<br>*130,2* | 3.78<br>*96* | 0.56<br>*14,3* | 1/2<br>*12* | 1.16<br>*29,4* | 1.98<br>*50,4* | **FYT 1.1/4 FM** |
| **1 3/8**<br>*34,925* | 1.36<br>*34,5* | 0.51<br>*13* | 1.53<br>*38,9* | 6.14<br>*156* | 5.13<br>*130,2* | 3.78<br>*96* | 0.56<br>*14,3* | 1/2<br>*12* | 1.16<br>*29,4* | 1.98<br>*50,4* | **FYT 1.3/8 FM** |
| **1 7/16**<br>*36,513* | 1.36<br>*34,5* | 0.51<br>*13* | 1.53<br>*38,9* | 6.14<br>*156* | 5.13<br>*130,2* | 3.78<br>*96* | 0.56<br>*14,3* | 1/2<br>*12* | 1.16<br>*29,4* | 1.98<br>*50,4* | **FYT 1.7/16 FM** |
| **1 1/2**<br>*38,1* | 1.52<br>*38,5* | 0.55<br>*14* | 1.72<br>*43,7* | 6.75<br>*171,5* | 5.66<br>*143,7* | 4.02<br>*102* | 0.56<br>*14,3* | 1/2<br>*12* | 1.29<br>*32,7* | 2.24<br>*56,5* | **FYT 1.1/2 FM** |
| **1 3/4**<br>*44,45* | 1.54<br>*39* | 0.55<br>*14* | 1.72<br>*43,7* | 7.03<br>*178,5* | 5.84<br>*148,4* | 4.37<br>*111* | 0.63<br>*15,9* | 9/16<br>*14* | 1.29<br>*32,7* | 2.23<br>*56,7* | **FYT 1.3/4 FM** |
| **1 15/16**<br>*49,213* | 1.69<br>*43* | 0.59<br>*15* | 1.72<br>*43,7* | 7.44<br>*189* | 6.19<br>*157,2* | 4.57<br>*116* | 0.63<br>*15,9* | 9/16<br>*14* | 1.29<br>*32,7* | 2.39<br>*60,7* | **FYT 1.15/16 FM** |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FYT 1/2 FM** | FYT 503 U | YET 203-008 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.77<br>*0,35* |
| **FYT 5/8 FM** | FYT 503 U | YET 203-010 | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 9 500 | 0.75<br>*0,34* |
| **FYT 3/4 FM** | FYT 504 U | YET 204-012 | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.15<br>*0,53* |
| **FYT 7/8 FM** | FYT 505 U | YET 205-014 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.45<br>*0,67* |
| **FYT 15/16 FM** | FYT 505 U | YET 205-015 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.45<br>*0,66* |
| **FYT 1. FM** | FYT 505 U | YET 205-100 | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.40<br>*0,64* |
| **FYT 1.1/8 FM** | FYT 506 U | YET 206-102 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.15<br>*0,98* |
| **FYT 1.3/16 FM** | FYT 506 U | YET 206-103 | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.15<br>*0,97* |
| **FYT 1.1/4 FM** | FYT 507 U | YET 207-104 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.10<br>*1,40* |
| **FYT 1.3/8 FM** | FYT 507 U | YET 207-106 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.95<br>*1,35* |
| **FYT 1.7/16 FM** | FYT 507 U | YET 207-107 | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.90<br>*1,30* |
| **FYT 1.1/2 FM** | FYT 508 U | YET 208-108 | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.80<br>*1,75* |
| **FYT 1.3/4 FM** | FYT 509 U | YET 209-112 | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.10<br>*1,85* |
| **FYT 1.15/16 FM** | FYT 510 U | YET 210-115 | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.05<br>*2.30* |

## Flanged Y-bearing units with a cast housing with an oval flange and an eccentric locking collar, inch shafts

d **2 – 2 3/16** in

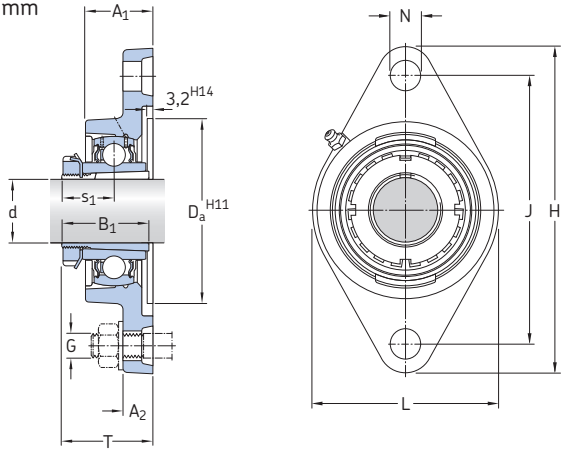



| Dimensions | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | H | J | L | N | G | $s_1$ | T | |
| in/*mm* | | | | | | | | | | | – |
| **2**<br>*50,8* | 1.88<br>*47,6* | 0.81<br>*20,6* | 1.91<br>*48,4* | 8.50<br>*216* | 7.25<br>*184,2* | 5.00<br>*127* | 0.75<br>*19,0* | 5/8<br>*16* | 1.43<br>*36,4* | 2.59<br>*65,8* | **FYT 2. FM** |
| **2 3/16**<br>*55,563* | 1.88<br>*47,6* | 0.81<br>*20,6* | 1.91<br>*48,4* | 8.50<br>*216* | 7.25<br>*184,2* | 5.00<br>*127* | 0.75<br>*19,0* | 5/8<br>*16* | 1.43<br>*36,4* | 2.59<br>*65,8* | **FYT 2.3/16 FM** |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FYT 2. FM** | FYT 511 U | YET 211-200 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.60<br>*3,45* |
| **FYT 2.3/16 FM** | FYT 511 U | YET 211-203 | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 7.35<br>*3,35* |

## Flanged Y-bearing units with a cast housing with an oval flange and an adapter sleeve, metric shafts

d **20 – 45** mm



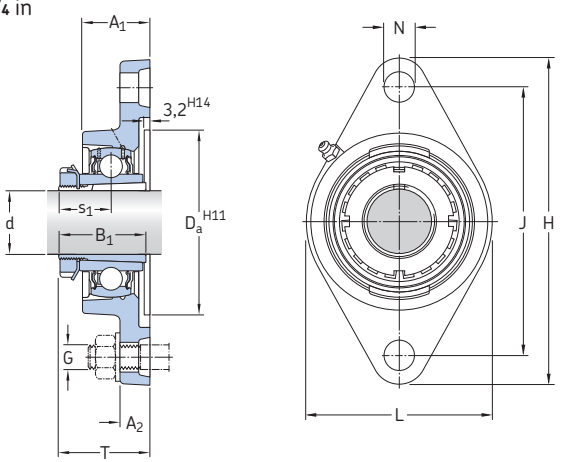

| Dimensions | | | | | | | | | | | | Basic load ratings dynamic | static | Fatigue load limit | Designations[1] Bearing unit | Adapter sleeve |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | J | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | | |
| mm | | | | | | | | | | | | kN | | kN | – | |
| **20** | 27 | 14 | 35 | 63,5 | 130 | 99 | 68 | 16 | 14 | 20 | 36 | 14 | 7,8 | 0,335 | **FYTJ 25 KF** | **H 2305** |
| **25** | 30,5 | 13,5 | 38 | 76,2 | 148 | 117 | 80 | 16 | 14 | 22 | 40 | 19,5 | 11,2 | 0,475 | **FYTJ 30 KF** | **H 2306** |
| **30** | 34 | 16 | 43 | 88,9 | 161 | 130 | 96 | 16 | 14 | 24,3 | 43,3 | 25,5 | 15,3 | 0,655 | **FYTJ 35 KF** | **H 2307** |
| **35** | 36 | 16 | 46 | 88,9 | 175 | 144 | 100 | 16 | 14 | 27 | 48 | 30,7 | 19 | 0,8 | **FYTJ 40 KF** | **H 2308** |
| **40** | 38 | 18 | 50 | 98,4 | 188 | 148 | 108 | 19 | 16 | 28,5 | 50,5 | 33,2 | 21,6 | 0,915 | **FYTJ 45 KF** | **H 2309** |
| **45** | 40 | 18 | 55 | 101,6 | 195 | 157 | 115 | 19 | 16 | 30,5 | 52,5 | 35,1 | 23,2 | 0,98 | **FYTJ 50 KF** | **H 2310** |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations** Bearing unit without adapter sleeve | Separate components of the bearing unit Housing | Bearing | **Limiting speed** | **Mass** Bearing unit + sleeve |
|---|---|---|---|---|
| – | | | r/min | kg |
| **FYTJ 25 KF** | FYTJ 505 | YSA 205-2FK | 7 000 | 0,72 |
| **FYTJ 30 KF** | FYTJ 506 | YSA 206-2FK | 6 300 | 0,83 |
| **FYTJ 35 KF** | FYTJ 507 | YSA 207-2FK | 5 300 | 1,30 |
| **FYTJ 40 KF** | FYTJ 508 | YSA 208-2FK | 4 800 | 1,65 |
| **FYTJ 45 KF** | FYTJ 509 | YSA 209-2FK | 4 300 | 2,20 |
| **FYTJ 50 KF** | FYTJ 510 | YSA 210-2FK | 4 000 | 2,55 |

## Flanged Y-bearing units with a cast housing with an oval flange and an adapter sleeve, inch shafts

d **3/4 – 1 3/4** in



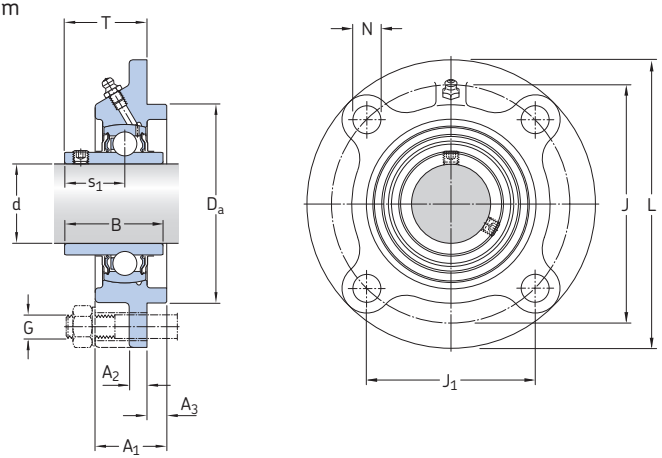

| Dimensions | | | | | | | | | | | | Designations[1] | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Bearing unit | Adapter sleeve |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | J | L | N | G | $s_1$ | T | | |
| in/*mm* | | | | | | | | | | | | – | |
| **3/4**<br>*19,05* | 1.06<br>*27* | 0.55<br>*14* | 1.38<br>*35* | 2.50<br>*63,5* | 5.12<br>*130* | 3.90<br>*99* | 2.68<br>*68* | 0.63<br>*16* | 9/16<br>*14* | 0.79<br>*20* | 1.42<br>*36* | **FYTJ 25 KF** | **HE 2305** |
| **15/16**<br>*23,813* | 1.20<br>*30,5* | 0.53<br>*13,5* | 1.50<br>*38* | 3.00<br>*76,2* | 5.83<br>*148* | 4.61<br>*117* | 3.15<br>*80* | 0.63<br>*16* | 9/16<br>*14* | 0.87<br>*22* | 1.57<br>*40* | **FYTJ 30 KF** | **HA 2306** |
| **1**<br>*25,4* | 1.20<br>*30,5* | 0.53<br>*13,5* | 1.50<br>*38* | 3.00<br>*76,2* | 5.83<br>*148* | 4.61<br>*117* | 3.15<br>*80* | 0.63<br>*16* | 9/16<br>*14* | 0.87<br>*22* | 1.57<br>*40* | **FYTJ 30 KF** | **HE 2306** |
| **1 3/16**<br>*30,163* | 1.34<br>*34* | 0.63<br>*16* | 1.69<br>*43* | 3.50<br>*88,9* | 6.34<br>*161* | 5.12<br>*130* | 3.78<br>*96* | 0.63<br>*16* | 9/16<br>*14* | 0.96<br>*24,3* | 1.70<br>*43,3* | **FYTJ 35 KF** | **HA 2307** |
| **1 1/4**<br>*31,75* | 1.42<br>*36* | 0.63<br>*16* | 1.81<br>*46* | 3.50<br>*88,9* | 6.89<br>*175* | 5.67<br>*144* | 3.94<br>*100* | 0.63<br>*16* | 9/16<br>*14* | 1.06<br>*27* | 1.89<br>*48* | **FYTJ 40 KF** | **HE 2308** |
| **1 7/16**<br>*36,513* | 1.50<br>*38* | 0.71<br>*18* | 1.97<br>*50* | 3.87<br>*98,4* | 7.40<br>*188* | 5.83<br>*148* | 4.25<br>*108* | 0.75<br>*19* | 5/8<br>*16* | 1.12<br>*28,5* | 1.99<br>*50,5* | **FYTJ 45 KF** | **HA 2309** |
| **1 1/2**<br>*38,1* | 1.50<br>*38* | 0.71<br>*18* | 1.97<br>*50* | 3.87<br>*98,4* | 7.40<br>*188* | 5.83<br>*148* | 4.25<br>*108* | 0.75<br>*19* | 5/8<br>*16* | 1.12<br>*28,5* | 1.99<br>*50,5* | **FYTJ 45 KF** | **HE 2309** |
| **1 5/8**<br>*41,275* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.00<br>*101,6* | 7.68<br>*195* | 6.18<br>*157* | 4.53<br>*115* | 0.75<br>*19* | 5/8<br>*16* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYTJ 50 KF** | **HS 2310** |
| **1 11/16**<br>*42,863* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.00<br>*101,6* | 7.68<br>*195* | 6.18<br>*157* | 4.53<br>*115* | 0.75<br>*19* | 5/8<br>*16* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYTJ 50 KF** | **HA 2310** |
| **1 3/4**<br>*44,45* | 1.57<br>*40* | 0.71<br>*18* | 2.17<br>*55* | 4.00<br>*101,6* | 7.68<br>*195* | 6.18<br>*157* | 4.53<br>*115* | 0.75<br>*19* | 5/8<br>*16* | 1.20<br>*30,5* | 2.07<br>*52,5* | **FYTJ 50 KF** | **HE 2310** |

[1] Bearing unit and adapter sleeve to be ordered separately

| **Designations**<br>Bearing unit without adapter sleeve | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load**<br>limit<br>$P_u$ | **Limiting speed** | **Mass**<br>Bearing unit + sleeve |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **FYTJ 25 KF** | FYTJ 505 | YSA 205-2FK | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.60<br>*0,72* |
| **FYTJ 30 KF** | FYTJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 1.85<br>*0,83* |
| **FYTJ 30 KF** | FYTJ 506 | YSA 206-2FK | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 1.85<br>*0,83* |
| **FYTJ 35 KF** | FYTJ 507 | YSA 207-2FK | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 2.85<br>*1,30* |
| **FYTJ 40 KF** | FYTJ 508 | YSA 208-2FK | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 4 800 | 3.65<br>*1,65* |
| **FYTJ 45 KF** | FYTJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.85<br>*2,20* |
| **FYTJ 45 KF** | FYTJ 509 | YSA 209-2FK | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 4.85<br>*2,20* |
| **FYTJ 50 KF** | FYTJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.60<br>*2,55* |
| **FYTJ 50 KF** | FYTJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.60<br>*2,55* |
| **FYTJ 50 KF** | FYTJ 510 | YSA 210-2FK | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.60<br>*2,55* |

## Flanged Y-bearing units with a cast housing with a round flange and grub screws, metric shafts

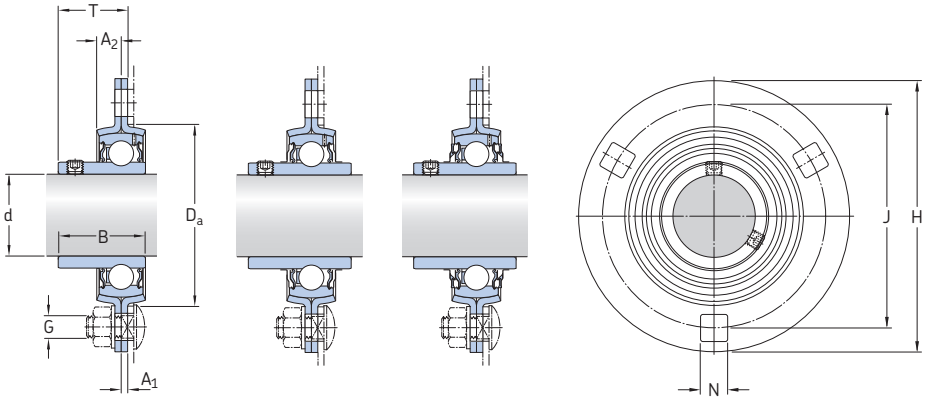
d **20 – 65** mm




| **Dimesions** | | | | | | | | | | | | | **Basic load ratings** dynamic | static | **Fatigue load limit** | **Limiting speed** with shaft tolerance | **Designation** Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $A_3$ | B | $D_a$ h8 | J | $J_1$ | L | N | G | $s_1$ | T | C | $C_0$ | $P_u$ | h6 | |
| mm | | | | | | | | | | | | | kN | | kN | r/min | – |
| **20** | 25,5 | 7 | 5 | 31 | 62 | 78 | 55,2 | 100 | 12 | 10 | 18,3 | 28,3 | 12,7 | 6,55 | 0,28 | 8 500 | **FYC 20 TF** |
| **25** | 27 | 7 | 6 | 34,1 | 70 | 90 | 63,6 | 115 | 12 | 10 | 19,8 | 29,8 | 14 | 7,8 | 0,335 | 7 000 | **FYC 25 TF** |
| **30** | 31 | 8 | 8 | 38,1 | 80 | 100 | 70,7 | 125 | 12 | 10 | 22,2 | 32,2 | 19,5 | 11,2 | 0,475 | 6 300 | **FYC 30 TF** |
| **35** | 34 | 9 | 8 | 42,9 | 90 | 110 | 77,8 | 135 | 14 | 12 | 25,4 | 36,4 | 25,5 | 15,3 | 0,655 | 5 300 | **FYC 35 TF** |
| **40** | 36 | 9 | 10 | 49,2 | 100 | 120 | 84,9 | 145 | 14 | 12 | 30,2 | 41,2 | 30,7 | 19 | 0,8 | 4 800 | **FYC 40 TF** |
| **45** | 38 | 14 | 12 | 49,2 | 105 | 132 | 93,3 | 160 | 16 | 14 | 30,2 | 40,2 | 33,2 | 21,6 | 0,915 | 4 300 | **FYC 45 TF** |
| **50** | 40 | 14 | 12 | 51,6 | 110 | 138 | 97,6 | 165 | 16 | 14 | 32,6 | 42,6 | 35,1 | 23,2 | 0,98 | 4 000 | **FYC 50 TF** |
| **55** | 43 | 15 | 12 | 55,6 | 125 | 150 | 106,1 | 185 | 19 | 16 | 33,4 | 46,4 | 43,6 | 29 | 1,25 | 3 600 | **FYC 55 TF** |
| **60** | 48 | 15 | 12 | 65,1 | 135 | 160 | 113,1 | 195 | 19 | 16 | 39,7 | 56,7 | 52,7 | 36 | 1,53 | 3 400 | **FYC 60 TF** |
| **65** | 50 | 15 | 14 | 68,3 | 145 | 170 | 120,2 | 205 | 19 | 16 | 42,9 | 58,9 | 55,9 | 40 | 1,7 | 3 000 | **FYC 65 TF** |

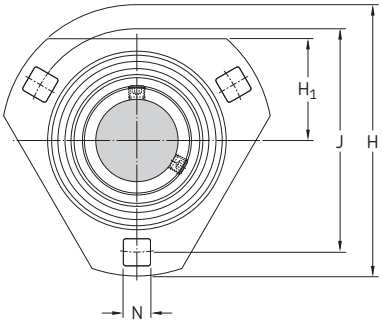
| **Designations** Bearing unit | Separate components Housing | Bearing | **Mass** Bearing unit |
|---|---|---|---|
| – | | | kg |
| **FYC 20 TF** | FYC 504 | YAR 204-2F | 0,70 |
| **FYC 25 TF** | FYC 505 | YAR 205-2F | 0,93 |
| **FYC 30 TF** | FYC 506 | YAR 206-2F | 1,35 |
| **FYC 35 TF** | FYC 507 | YAR 207-2F | 1,55 |
| **FYC 40 TF** | FYC 508 | YAR 208-2F | 2,00 |
| **FYC 45 TF** | FYC 509 | YAR 209-2F | 2,65 |
| **FYC 50 TF** | FYC 510 | YAR 210-2F | 2,80 |
| **FYC 55 TF** | FYC 511 | YAR 211-2F | 4,30 |
| **FYC 60 TF** | FYC 512 | YAR 212-2F | 4,90 |
| **FYC 65 TF** | FYC 513 | YAR 213-2F | 5,70 |

## Flanged Y-bearing units with a pressed steel housing and grub screws, metric shafts
d **12 – 25** mm

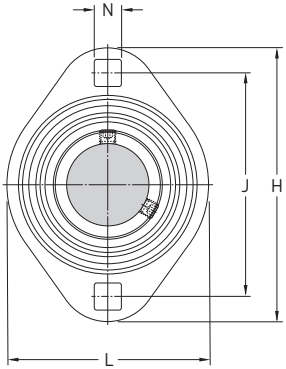



YAT YAR-2F YAR-2RF PF

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Permissible housing load | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | H | $H_1$/L | J | N | G | T | C | $C_0$ | $P_u$ | radial | No order designation |
| mm | | | | | | | | | | | kN | | kN | kN | – |
| **12** | 2 | 7 | 27,4 | 49 | 81 | – | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PF 12 TF |
| | 2 | 7 | 27,4 | 49 | 81 | 29 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 12 TF |
| | 2 | 7 | 27,4 | 49 | 81 | 59 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 12 TF |
| **15** | 2 | 7 | 27,4 | 49 | 81 | – | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PF 15 TF |
| | 2 | 7 | 27,4 | 49 | 81 | 29 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 15 TF |
| | 2 | 7 | 27,4 | 49 | 81 | 59 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 15 TF |
| **17** | 2 | 7 | 22,1 | 49 | 81 | – | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PF 17 RM |
| | 2 | 7 | 27,4 | 49 | 81 | – | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PF 17 TF |
| | 2 | 7 | 22,1 | 49 | 81 | 29 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 17 RM |
| | 2 | 7 | 27,4 | 49 | 81 | 29 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 17 TF |
| | 2 | 7 | 22,1 | 49 | 81 | 59 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 17 RM |
| | 2 | 7 | 27,4 | 49 | 81 | 59 | 63 | 7,1 | 6 | 17,9 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 17 TF |
| **20** | 2 | 8 | 25,5 | 55 | 91 | – | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PF 20 RM |
| | 2 | 8 | 31 | 55 | 91 | – | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PF 20 TF |
| | 2 | 8 | 31 | 55 | 91 | – | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PF 20 TR |
| | 2 | 8 | 25,5 | 55 | 91 | 32 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFD 20 RM |
| | 2 | 8 | 31 | 55 | 91 | 32 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFD 20 TF |
| | 2 | 8 | 31 | 55 | 91 | 32 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFD 20 TR |
| | 2 | 8 | 25,5 | 55 | 91 | 67 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFT 20 RM |
| | 2 | 8 | 31 | 55 | 91 | 67 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFT 20 TF |
| | 2 | 8 | 31 | 55 | 91 | 67 | 71,5 | 8,7 | 8 | 20,3 | 12,7 | 6,55 | 0,28 | 3,3 | PFT 20 TR |
| **25** | 2 | 9 | 27,2 | 60 | 95 | – | 76 | 8,7 | 8 | 21,5 | 14 | 7,8 | 0,335 | 3,6 | PF 25 RM |
| | 2 | 9 | 34,1 | 60 | 95 | – | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PF 25 TF |
| | 2 | 9 | 34,1 | 60 | 95 | – | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PF 25 TR |
| | 2 | 9 | 27,2 | 60 | 95 | 34 | 76 | 8,7 | 8 | 21,5 | 14 | 7,8 | 0,335 | 3,6 | PFD 25 RM |
| | 2 | 9 | 34,1 | 60 | 95 | 34 | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PFD 25 TF |
| | 2 | 9 | 34,1 | 60 | 95 | 34 | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PFD 25 TR |
| | 2 | 9 | 27,2 | 60 | 95 | 71 | 76 | 8,7 | 8 | 21,5 | 14 | 7,8 | 0,335 | 3,6 | PFT 25 RM |
| | 2 | 9 | 34,1 | 60 | 95 | 71 | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PFT 25 TF |
| | 2 | 9 | 34,1 | 60 | 95 | 71 | 76 | 8,7 | 8 | 21,8 | 14 | 7,8 | 0,335 | 3,6 | PFT 25 TR |




PFD

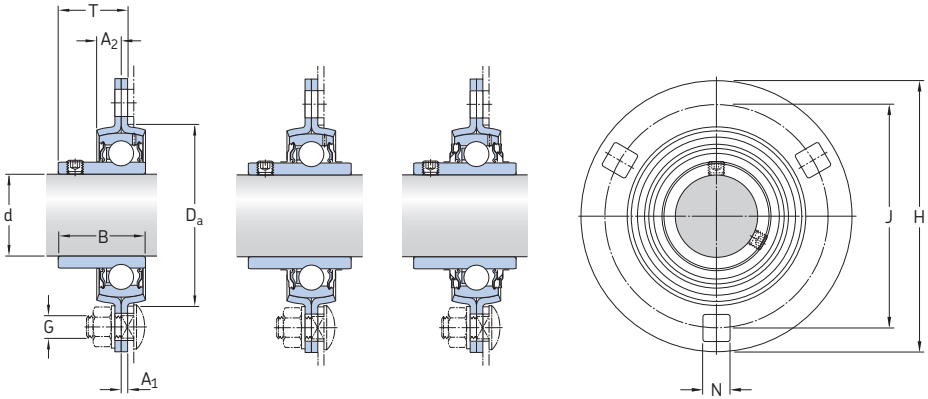



PFT



| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | **Mass** Bearing unit |
|---|---|---|---|
| – | – | | kg |
| PF 12 TF | **PF 40** | **YAR 203/12-2F** | 0,26 |
| PFD 12 TF | **PFD 40** | **YAR 203/12-2F** | 0,19 |
| PFT 12 TF | **PFT 40** | **YAR 203/12-2F** | 0,19 |
| PF 15 TF | **PF 40** | **YAR 203/15-2F** | 0,25 |
| PFD 15 TF | **PFD 40** | **YAR 203/15-2F** | 0,18 |
| PFT 15 TF | **PFT 40** | **YAR 203/15-2F** | 0,18 |
| PF 17 RM | **PF 40** | **YAT 203** | 0,22 |
| PF 17 TF | **PF 40** | **YAR 203-2F** | 0,24 |
| PFD 17 RM | **PFD 40** | **YAT 203** | 0,16 |
| PFD 17 TF | **PFD 40** | **YAR 203-2F** | 0,17 |
| PFT 17 RM | **PFT 40** | **YAT 203** | 0,16 |
| PFT 17 TF | **PFT 40** | **YAR 203-2F** | 0,17 |
| PF 20 RM | **PF 47** | **YAT 204** | 0,29 |
| PF 20 TF | **PF 47** | **YAR 204-2F** | 0,32 |
| PF 20 TR | **PF 47** | **YAR 204-2RF** | 0,32 |
| PFD 20 RM | **PFD 47** | **YAT 204** | 0,23 |
| PFD 20 TF | **PFD 47** | **YAR 204-2F** | 0,26 |
| PFD 20 TR | **PFD 47** | **YAR 204-2RF** | 0,26 |
| PFT 20 RM | **PFT 47** | **YAT 204** | 0,20 |
| PFT 20 TF | **PFT 47** | **YAR 204-2F** | 0,23 |
| PFT 20 TR | **PFT 47** | **YAR 204-2RF** | 0,23 |
| PF 25 RM | **PF 52** | **YAT 205** | 0,33 |
| PF 25 TF | **PF 52** | **YAR 205-2F** | 0,36 |
| PF 25 TR | **PF 52** | **YAR 205-2RF** | 0,36 |
| PFD 25 RM | **PFD 52** | **YAT 205** | 0,30 |
| PFD 25 TF | **PFD 52** | **YAR 205-2F** | 0,33 |
| PFD 25 TR | **PFD 52** | **YAR 205-2RF** | 0,33 |
| PFT 25 RM | **PFT 52** | **YAT 205** | 0,25 |
| PFT 25 TF | **PFT 52** | **YAR 205-2F** | 0,28 |
| PFT 25 TR | **PFT 52** | **YAR 205-2RF** | 0,28 |

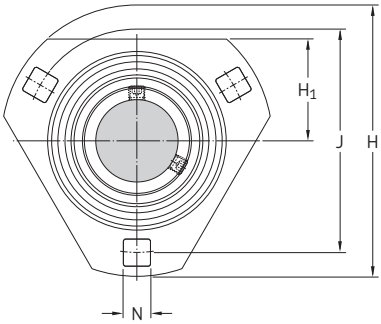
## Flanged Y-bearing units with a pressed steel housing and grub screws, metric shafts
d **30 – 50** mm



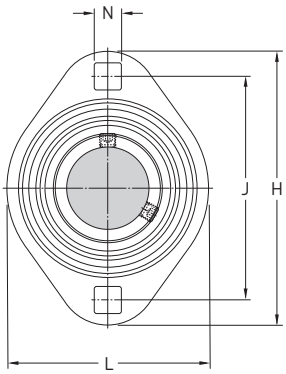

YAT YAR-2F YAR-2RF PF[1)]

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Permissible housing load | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | | Bearing unit |
| d | $A_1$ | $A_2$ | B | $D_a$ | H | $H_1$/L | J | N | G | T | C | $C_0$ | $P_u$ | radial | No order designation |
| mm | | | | | | | | | | | kN | | kN | kN | – |
| **30** | 2,5 | 9,5 | 30,2 | 71 | 112 | – | 90,5 | 10,5 | 10 | 23,5 | 19,5 | 11,2 | 0,475 | 5 | PF 30 RM |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | – | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PF 30 TF |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | – | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PF 30 TR |
| | 2,5 | 9,5 | 30,2 | 71 | 112 | 38 | 90,5 | 10,5 | 10 | 23,5 | 19,5 | 11,2 | 0,475 | 5 | PFD 30 RM |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | 38 | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PFD 30 TF |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | 38 | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PFD 30 TR |
| | 2,5 | 9,5 | 30,2 | 71 | 112 | 84 | 90,5 | 10,5 | 10 | 23,5 | 19,5 | 11,2 | 0,475 | 5 | PFT 30 RM |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | 84 | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PFT 30 TF |
| | 2,5 | 9,5 | 38,1 | 71 | 112 | 84 | 90,5 | 10,5 | 10 | 24,7 | 19,5 | 11,2 | 0,475 | 5 | PFT 30 TR |
| **35** | 2,5 | 10 | 33 | 81 | 122 | – | 100 | 11 | 10 | 25,8 | 25,5 | 15,3 | 0,655 | 6,5 | PF 35 RM |
| | 2,5 | 10 | 42,9 | 81 | 122 | – | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PF 35 TF |
| | 2,5 | 10 | 42,9 | 81 | 122 | – | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PF 35 TR |
| | 2,5 | 10 | 33 | 81 | 122 | 45 | 100 | 11 | 10 | 25,8 | 25,5 | 15,3 | 0,655 | 6,5 | PFD 35 RM |
| | 2,5 | 10 | 42,9 | 81 | 122 | 45 | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFD 35 TF |
| | 2,5 | 10 | 42,9 | 81 | 122 | 45 | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFD 35 TR |
| | 2,5 | 10 | 33 | 81 | 122 | 94 | 100 | 11 | 10 | 25,8 | 25,5 | 15,3 | 0,655 | 6,5 | PFT 35 RM |
| | 2,5 | 10 | 42,9 | 81 | 122 | 94 | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFT 35 TF |
| | 2,5 | 10 | 42,9 | 81 | 122 | 94 | 100 | 11 | 10 | 27,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFT 35 TR |
| **40** | 3,5 | 10 | 36 | 91 | 148 | – | 119 | 13,5 | 12 | 28,8 | 30,7 | 19 | 0,8 | 7,5 | PF 40 RM |
| | 3,5 | 10 | 49,2 | 91 | 148 | – | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PF 40 TF |
| | 3,5 | 10 | 49,2 | 91 | 148 | – | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PF 40 TR |
| | 3,5 | 10 | 36 | 91 | 148 | 53 | 119 | 13,5 | 12 | 28,8 | 30,7 | 19 | 0,8 | 7,5 | PFD 40 RM |
| | 3,5 | 10 | 49,2 | 91 | 148 | 53 | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PFD 40 TF |
| | 3,5 | 10 | 49,2 | 91 | 148 | 53 | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PFD 40 TR |
| | 3,5 | 10 | 36 | 91 | 148 | 104 | 119 | 13,5 | 12 | 28,8 | 30,7 | 19 | 0,8 | 7,5 | PFT 40 RM |
| | 3,5 | 10 | 49,2 | 91 | 148 | 104 | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PFT 40 TF |
| | 3,5 | 10 | 49,2 | 91 | 148 | 104 | 119 | 13,5 | 12 | 33,7 | 30,7 | 19 | 0,8 | 7,5 | PFT 40 TR |
| **45** | 3,5 | 10,5 | 37 | 97 | 149 | – | 120,6 | 13,5 | 12 | 29,3 | 33,2 | 21,6 | 0,915 | 8,3 | PF 45 RM |
| | 3,5 | 10,5 | 49,2 | 97 | 149 | – | 120,6 | 13,5 | 12 | 33,7 | 33,2 | 21,6 | 0,915 | 8,3 | PF 45 TF |
| | 3,5 | 10,5 | 49,2 | 97 | 149 | – | 120,6 | 13,5 | 12 | 33,7 | 33,2 | 21,6 | 0,915 | 8,3 | PF 45 TR |
| **50** | 4 | 11 | 38,9 | 102 | 155 | – | 127 | 13,5 | 12 | 31,6 | 35,1 | 23,2 | 0,98 | 9 | PF 50 RM |
| | 4 | 11 | 51,6 | 102 | 155 | – | 127 | 13,5 | 12 | 36,6 | 35,1 | 23,2 | 0,98 | 9 | PF 50 TF |
| | 4 | 11 | 51,6 | 102 | 155 | – | 127 | 13,5 | 12 | 36,6 | 35,1 | 23,2 | 0,98 | 9 | PF 50 TR |

[1)] Housings PF 80, PF 85 and PF 90 have four attachment bolt holes.




PFD

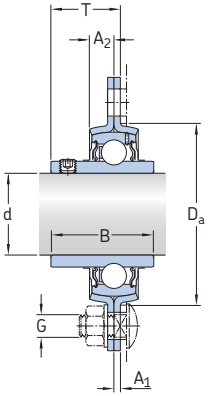



PFT

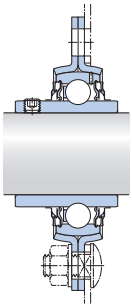


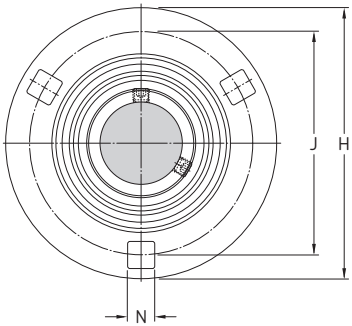
| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | **Mass** Bearing unit |
|---|---|---|---|
| – | – | | kg |
| PF 30 RM | **PF 62** | **YAT 206** | 0,53 |
| PF 30 TF | **PF 62** | **YAR 206-2F** | 0,58 |
| PF 30 TR | **PF 62** | **YAR 206-2RF** | 0,58 |
| PFD 30 RM | **PFD 62** | **YAT 206** | 0,42 |
| PFD 30 TF | **PFD 62** | **YAR 206-2F** | 0,47 |
| PFD 30 TR | **PFD 62** | **YAR 206-2RF** | 0,47 |
| PFT 30 RM | **PFT 62** | **YAT 206** | 0,41 |
| PFT 30 TF | **PFT 62** | **YAR 206-2F** | 0,46 |
| PFT 30 TR | **PFT 62** | **YAR 206-2RF** | 0,46 |
| PF 35 RM | **PF 72** | **YAT 207** | 0,67 |
| PF 35 TF | **PF 72** | **YAR 207-2F** | 0,77 |
| PF 35 TR | **PF 72** | **YAR 207-2RF** | 0,77 |
| PFD 35 RM | **PFD 72** | **YAT 207** | 0,54 |
| PFD 35 TF | **PFD 72** | **YAR 207-2F** | 0,64 |
| PFD 35 TR | **PFD 72** | **YAR 207-2RF** | 0,64 |
| PFT 35 RM | **PFT 72** | **YAT 207** | 0,55 |
| PFT 35 TF | **PFT 72** | **YAR 207-2F** | 0,65 |
| PFT 35 TR | **PFT 72** | **YAR 207-2RF** | 0,65 |
| PF 40 RM | **PF 80** | **YAT 208** | 1,20 |
| PF 40 TF | **PF 80** | **YAR 208-2F** | 1,30 |
| PF 40 TR | **PF 80** | **YAR 208-2RF** | 1,30 |
| PFD 40 RM | **PFD 80** | **YAT 208** | 0,90 |
| PFD 40 TF | **PFD 80** | **YAR 208-2F** | 1,00 |
| PFD 40 TR | **PFD 80** | **YAR 208-2RF** | 1,00 |
| PFT 40 RM | **PFT 80** | **YAT 208** | 0,78 |
| PFT 40 TF | **PFT 80** | **YAR 208-2F** | 0,90 |
| PFT 40 TR | **PFT 80** | **YAR 208-2RF** | 0,90 |
| PF 45 RM | **PF 85** | **YAT 209** | 1,25 |
| PF 45 TF | **PF 85** | **YAR 209-2F** | 1,35 |
| PF 45 TR | **PF 85** | **YAR 209-2RF** | 1,35 |
| PF 50 RM | **PF 90** | **YAT 210** | 1,40 |
| PF 50 TF | **PF 90** | **YAR 210-2F** | 1,55 |
| PF 50 TR | **PF 90** | **YAR 210-2RF** | 1,55 |

## Flanged Y-bearing units with a pressed steel housing and grub screws, inch shafts
d **5/8 – 1 1/4** in



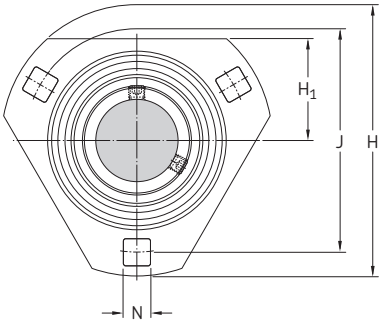
YAR-2F


YAR-2RF

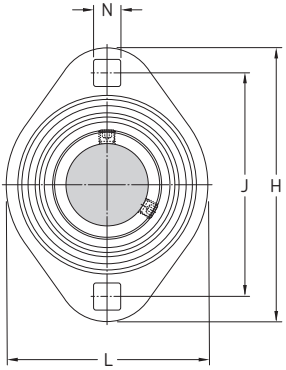


PF

| Dimensions | | | | | | | | | | | Designation<br>Bearing unit<br>No order<br>designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | $D_a$ | H | $H_1$/L | J | N | G | T | |
| in/*mm* | | | | | | | | | | | – |
| **5/8** | 0.08 | 0.28 | 1.08 | 1.93 | 3.19 | – | 2.48 | 0.28 | 1/4 | 0.70 | PF 5/8 TF |
| *15,875* | *2* | *7* | *27,4* | *49* | *81* | – | *63* | *7,1* | *6* | *17,9* | |
| **3/4** | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | – | 2.82 | 0.34 | 5/16 | 0.80 | PF 3/4 TF |
| *19,05* | *2* | *8* | *31* | *55* | *91* | – | *71,5* | *8,7* | *8* | *20,3* | |
| | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | – | 2.82 | 0.34 | 5/16 | 0.80 | PF 3/4 TR |
| | *2* | *8* | *31* | *55* | *91* | – | *71,5* | *8,7* | *8* | *20,3* | |
| | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | 1.26 | 2.82 | 0.34 | 5/16 | 0.80 | PFD 3/4 TF |
| | *2* | *8* | *31* | *55* | *91* | *32* | *71,5* | *8,7* | *8* | *20,3* | |
| | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | 1.26 | 2.82 | 0.34 | 5/16 | 0.80 | PFD 3/4 TR |
| | *2* | *8* | *31* | *55* | *91* | *32* | *71,5* | *8,7* | *8* | *20,3* | |
| | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | 2.64 | 2.82 | 0.34 | 5/16 | 0.80 | PFT 3/4 TF |
| | *2* | *8* | *31* | *55* | *91* | *67* | *71,5* | *8,7* | *8* | *20,3* | |
| | 0.08 | 0.32 | 1.22 | 2.17 | 3.58 | 2.64 | 2.82 | 0.34 | v | 0.80 | PFT 3/4 TR |
| | *2* | *8* | *31* | *55* | *91* | *67* | *71,5* | *8,7* | *8* | *20,3* | |
| **1** | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | – | 2.99 | 0.34 | 5/16 | 0.86 | PF 1. TF |
| *25,4* | *2* | *9* | *34,1* | *60* | *95* | – | *76* | *8,7* | *8* | *21,8* | |
| | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | – | 2.99 | 0.34 | 5/16 | 0.86 | PF 1. TR |
| | *2* | *9* | *34,1* | *60* | *95* | – | *76* | *8,7* | *8* | *21,8* | |
| | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | 1.34 | 2.99 | 0.34 | 5/16 | 0.86 | PFD 1. TF |
| | *2* | *9* | *34,1* | *60* | *95* | *34* | *76* | *8,7* | *8* | *21,8* | |
| | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | 1.34 | 2.99 | 0.34 | 5/16 | 0.86 | PFD 1. TR |
| | *2* | *9* | *34,1* | *60* | *95* | *34* | *76* | *8,7* | *8* | *21,8* | |
| | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | 2.80 | 2.99 | 0.34 | 5/16 | 0.86 | PFT 1. TF |
| | *2* | *9* | *34,1* | *60* | *95* | *71* | *76* | *8,7* | *8* | *21,8* | |
| | 0.08 | 0.35 | 1.34 | 2.36 | 3.74 | 2.80 | 2.99 | 0.34 | 5/16 | 0.86 | PFT 1. TR |
| | *2* | *9* | *34,1* | *60* | *95* | *71* | *76* | *8,7* | *8* | *21,8* | |
| **1 1/4** | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | – | 3.94 | 0.43 | 3/8 | 1.10 | PF 1.1/4 TF |
| *31,75* | *2,5* | *10* | *42,9* | *81* | *122* | – | *100* | *11* | *10* | *27,9* | |
| | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | – | 3.94 | 0.43 | 3/8 | 1.10 | PF 1.1/4 TR |
| | *2,5* | *10* | *42,9* | *81* | *122* | – | *100* | *11* | *10* | *27,9* | |
| | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | 1.77 | 3.94 | 0.43 | 3/8 | 1.10 | PFD 1.1/4 TF |
| | *2,5* | *10* | *42,9* | *81* | *122* | *45* | *100* | *11* | *10* | *27,9* | |
| | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | 1.77 | 3.94 | 0.43 | 3/8 | 1.10 | PFD 1.1/4 TR |
| | *2,5* | *10* | *42,9* | *81* | *122* | *45* | *100* | *11* | *10* | *27,9* | |
| | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | 3.7 | 3.94 | 0.43 | 3/8 | 1.10 | PFT 1.1/4 TF |
| | *2,5* | *10* | *42,9* | *81* | *122* | *94* | *100* | *11* | *10* | *27,9* | |
| | 0.10 | 0.39 | 1.69 | 3.19 | 4.80 | 3.7 | 3.94 | 0.43 | 3/8 | 1.10 | PFT 1.1/4 TR |
| | *2,5* | *10* | *42,9* | *81* | *122* | *94* | *100* | *11* | *10* | *27,9* | |



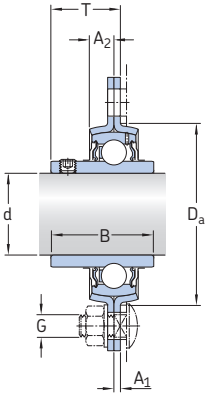

PFD



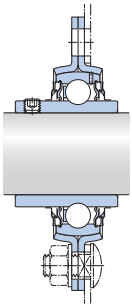

PFT

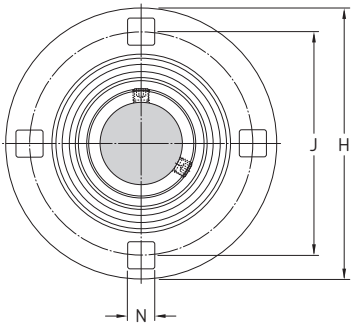
| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Permissible housing load radial** | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | lbf/*kN* | lb/*kg* |
| PF 5/8 TF | **PF 40** | **YAR 203-010-2F** | 2 150<br>*9,56* | 1 070<br>*4,75* | 50<br>*0,2* | 560<br>*2,5* | 0.49<br>*0,22* |
| PF 3/4 TF | **PF 47** | **YAR 204-012-2F** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.66<br>*0,30* |
| PF 3/4 TR | **PF 47** | **YAR 204-012-2RF** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.66<br>*0,30* |
| PFD 3/4 TF | **PFD 47** | **YAR 204-012-2F** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.53<br>*0,24* |
| PFD 3/4 TR | **PFD 47** | **YAR 204-012-2RF** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.53<br>*0,24* |
| PFT 3/4 TF | **PFT 47** | **YAR 204-012-2F** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.53<br>*0,24* |
| PFT 3/4 TR | **PFT 47** | **YAR 204-012-2RF** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.53<br>*0,24* |
| PF 1. TF | **PF 52** | **YAR 205-100-2F** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.77<br>*0,35* |
| PF 1. TR | **PF 52** | **YAR 205-100-2RF** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.77<br>*0,35* |
| PFD 1. TF | **PFD 52** | **YAR 205-100-2F** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.64<br>*0,29* |
| PFD 1. TR | **PFD 52** | **YAR 205-100-2RF** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.64<br>*0,29* |
| PFT 1. TF | **PFT 52** | **YAR 205-100-2F** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.62<br>*0,28* |
| PFT 1. TR | **PFT 52** | **YAR 205-100-2RF** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.62<br>*0,28* |
| PF 1.1/4 TF | **PF 72** | **YAR 207-104-2F** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.85<br>*0,83* |
| PF 1.1/4 TR | **PF 72** | **YAR 207-104-2RF** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.85<br>*0,83* |
| PFD 1.1/4 TF | **PFD 72** | **YAR 207-104-2F** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.50<br>*0,69* |
| PFD 1.1/4 TR | **PFD 72** | **YAR 207-104-2RF** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.50<br>*0,69* |
| PFT 1.1/4 TF | **PFT 72** | **YAR 207-104-2F** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.50<br>*0,69* |
| PFT 1.1/4 TR | **PFT 72** | **YAR 207-104-2RF** | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 1 460<br>*6,5* | 1.50<br>*0,69* |

## Flanged Y-bearing units with a pressed steel housing and grub screws, inch shafts
d **1 1/2 – 1 3/4** in



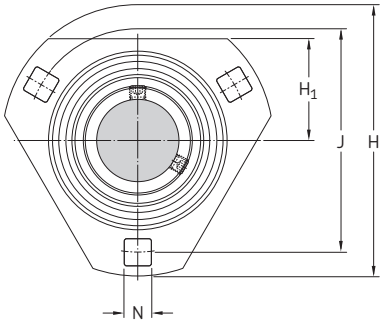
YAR-2F


YAR-2RF

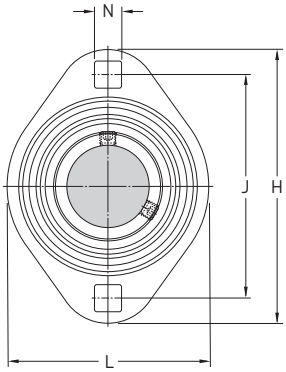


PF

| Dimensions | | | | | | | | | | | Designation<br>Bearing unit<br>No order<br>designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | B | $D_a$ | H | $H_1$/L | J | N | G | T | |
| in/*mm* | | | | | | | | | | | – |
| **1 1/2** | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | – | 4.69 | 0.53 | 1/2 | 1.33 | PF 1.1/2 TF |
| *38,1* | *3,5* | *10* | *49,2* | *91* | *148* | – | *119* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | – | 4.69 | 0.53 | 1/2 | 1.33 | PF 1.1/2 TR |
| | *3,5* | *10* | *49,2* | *91* | *148* | – | *119* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | 2.09 | 4.69 | 0.53 | 1/2 | 1.33 | PFD 1.1/2 TF |
| | *3,5* | *10* | *49,2* | *91* | *148* | *53* | *119* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | 2.09 | 4.69 | 0.53 | 1/2 | 1.33 | PFD 1.1/2 TR |
| | *3,5* | *10* | *49,2* | *91* | *148* | *53* | *119* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | 4.09 | 4.69 | 0.53 | 1/2 | 1.33 | PFT 1.1/2 TF |
| | *3,5* | *10* | *49,2* | *91* | *148* | *104* | *119* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.39 | 1.94 | 3.58 | 5.83 | 4.09 | 4.69 | 0.53 | 1/2 | 1.33 | PFT 1.1/2 TR |
| | *3,5* | *10* | *49,2* | *91* | *148* | *104* | *119* | *13,5* | *12* | *33,7* | |
| **1 3/4** | 0.14 | 0.41 | 1.94 | 3.82 | 5.87 | – | 4.75 | 0.53 | 1/2 | 1.33 | PF 1.3/4 TF |
| *44,45* | *3,5* | *10,5* | *49,2* | *97* | *149* | – | *120,6* | *13,5* | *12* | *33,7* | |
| | 0.14 | 0.41 | 1.94 | 3.82 | 5.87 | – | 4.75 | 0.53 | 1/2 | 1.33 | PF 1.3/4 TR |
| | *3,5* | *10,5* | *49,2* | *97* | *149* | – | *120,6* | *13,5* | *12* | *33,7* | |




PFD



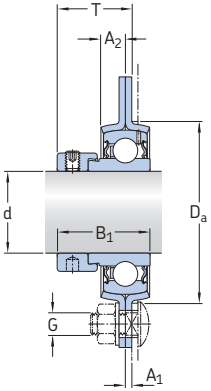

PFT



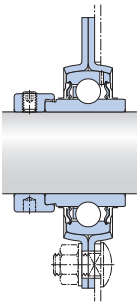
| **Designation**<br>Bearing unit<br>No order designation | **Order designations**<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Permissible housing load radial** | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | lbf/*kN* | lb/*kg* |
| PF 1.1/2 TF | **PF 80** | **YAR 208-108-2F** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 1.80<br>*0,81* |
| PF 1.1/2 TR | **PF 80** | **YAR 208-108-2RF** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 1.80<br>*0,81* |
| PFD 1.1/2 TF | **PFD 80** | **YAR 208-108-2F** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.35<br>*1,05* |
| PFD 1.1/2 TR | **PFD 80** | **YAR 208-108-2RF** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.35<br>*1.05* |
| PFT 1.1/2 TF | **PFT 80** | **YAR 208-108-2F** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.10<br>*0,95* |
| PFT 1.1/2 TR | **PFT 80** | **YAR 208-108-2RF** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.10<br>*0,95* |
| PF 1.3/4 TF | **PF 85** | **YAR 209-112-2F** | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 1 870<br>*8,3* | 2.75<br>*1,25* |
| PF 1.3/4 TR | **PF 85** | **YAR 209-112-2RF** | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 1 870<br>*8,3* | 2.75<br>*1,25* |

## Flanged Y-bearing units with a pressed steel housing and an eccentric locking collar, metric shafts

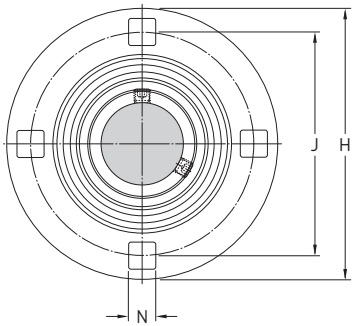
d **15 – 35** mm




YET

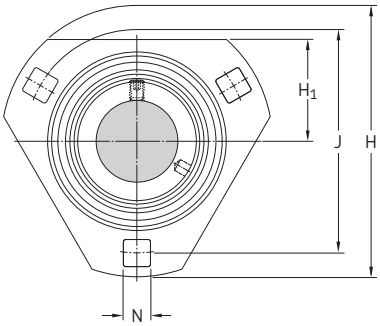


YEL .. -2F

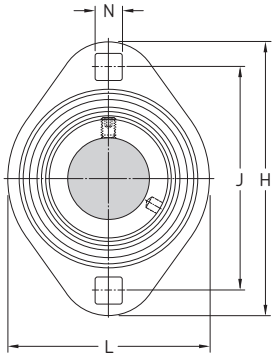



PF

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load limit | Permissible housing load | Designation Bearing unit No order |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | | radial | |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | $H_1$/L | J | N | G | T | C | $C_0$ | $P_u$ | | designation |
| mm | | | | | | | | | | | kN | | kN | kN | – |
| **15** | 2 | 7 | 28,6 | 49 | 81 | – | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PF 15 FM |
| | 2 | 7 | 28,6 | 49 | 81 | 29 | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 15 FM |
| | 2 | 7 | 28,6 | 49 | 81 | 59 | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 15 FM |
| **17** | 2 | 7 | 28,6 | 49 | 81 | – | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PF 17 FM |
| | 2 | 7 | 28,6 | 49 | 81 | 29 | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PFD 17 FM |
| | 2 | 7 | 28,6 | 49 | 81 | 59 | 63 | 7,1 | 6 | 24,1 | 9,56 | 4,75 | 0,2 | 2,5 | PFT 17 FM |
| **20** | 2 | 8 | 31 | 55 | 91 | – | 71,5 | 8,7 | 8 | 25,5 | 12,7 | 6,55 | 0,28 | 3,3 | PF 20 FM |
| | 2 | 8 | 43,7 | 55 | 91 | – | 71,5 | 8,7 | 8 | 28,6 | 12,7 | 6,55 | 0,28 | 3,3 | PF 20 WF |
| | 2 | 8 | 31 | 55 | 91 | 32 | 71,5 | 8,7 | 8 | 25,5 | 12,7 | 6,55 | 0,28 | 3,3 | PFD 20 FM |
| | 2 | 8 | 43,7 | 55 | 91 | 32 | 71,5 | 8,7 | 8 | 28,6 | 12,7 | 6,55 | 0,28 | 3,3 | PFD 20 WF |
| | 2 | 8 | 31 | 55 | 91 | 67 | 71,5 | 8,7 | 8 | 25,5 | 12,7 | 6,55 | 0,28 | 3,3 | PFT 20 FM |
| | 2 | 8 | 43,4 | 55 | 91 | 67 | 71,5 | 8,7 | 8 | 28,6 | 12,7 | 6,55 | 0,28 | 3,3 | PFT 20 WF |
| **25** | 2 | 9 | 31 | 60 | 95 | – | 76 | 8,7 | 8 | 25,5 | 14 | 7,8 | 0,335 | 3,6 | PF 25 FM |
| | 2 | 9 | 44,4 | 60 | 95 | – | 76 | 8,7 | 8 | 28,9 | 14 | 7,8 | 0,335 | 3,6 | PF 25 WF |
| | 2 | 9 | 31 | 60 | 95 | 34 | 76 | 8,7 | 8 | 25,5 | 14 | 7,8 | 0,335 | 3,6 | PFD 25 FM |
| | 2 | 9 | 44,4 | 60 | 95 | 34 | 76 | 8,7 | 8 | 28,9 | 14 | 7,8 | 0,335 | 3,6 | PFD 25 WF |
| | 2 | 9 | 31 | 60 | 95 | 71 | 76 | 8,7 | 8 | 25,5 | 14 | 7,8 | 0,335 | 3,6 | PFT 25 FM |
| | 2 | 9 | 44,4 | 60 | 95 | 71 | 76 | 8,7 | 8 | 28,9 | 14 | 7,8 | 0,335 | 3,6 | PFT 25 WF |
| **30** | 2,5 | 9,5 | 35,7 | 71 | 112 | – | 90,5 | 10,5 | 10 | 29,2 | 19,5 | 11,2 | 0,475 | 5 | PF 30 FM |
| | 2,5 | 9,5 | 48,4 | 71 | 112 | – | 90,5 | 10,5 | 10 | 32,6 | 19,5 | 11,2 | 0,475 | 5 | PF 30 WF |
| | 2,5 | 9,5 | 35,7 | 71 | 112 | 38 | 90,5 | 10,5 | 10 | 29,2 | 19,5 | 11,2 | 0,475 | 5 | PFD 30 FM |
| | 2,5 | 9,5 | 48,4 | 71 | 112 | 38 | 90,5 | 10,5 | 10 | 32,6 | 19,5 | 11,2 | 0,475 | 5 | PFD 30 WF |
| | 2,5 | 9,5 | 35,7 | 71 | 112 | 84 | 90,5 | 10,5 | 10 | 29,2 | 19,5 | 11,2 | 0,475 | 5 | PFT 30 FM |
| | 2,5 | 9,5 | 48,4 | 71 | 112 | 84 | 90,5 | 10,5 | 10 | 32,6 | 19,5 | 11,2 | 0,475 | 5 | PFT 30 WF |
| **35** | 2,5 | 10 | 38,9 | 81 | 122 | – | 100 | 11 | 10 | 31,9 | 25,5 | 15,3 | 0,655 | 6,5 | PF 35 FM |
| | 2,5 | 10 | 51,1 | 81 | 122 | – | 100 | 11 | 10 | 34,8 | 25,5 | 15,3 | 0,655 | 6,5 | PF 35 WF |
| | 2,5 | 10 | 38,9 | 81 | 122 | 45 | 100 | 11 | 10 | 31,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFD 35 FM |
| | 2,5 | 10 | 51,1 | 81 | 122 | 45 | 100 | 11 | 10 | 34,8 | 25,5 | 15,3 | 0,655 | 6,5 | PFD 35 WF |
| | 2,5 | 10 | 38,9 | 81 | 122 | 94 | 100 | 11 | 10 | 31,9 | 25,5 | 15,3 | 0,655 | 6,5 | PFT 35 FM |
| | 2,5 | 10 | 51,1 | 81 | 122 | 94 | 100 | 11 | 10 | 34,8 | 25,5 | 15,3 | 0,655 | 6,5 | PFT 35 WF |




PFD



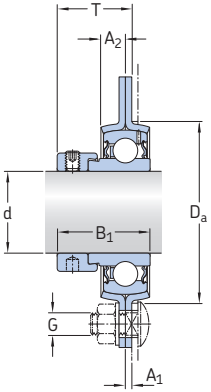

PFT



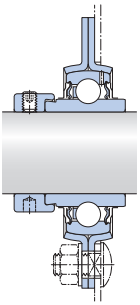
| **Designation** Bearing unit No order designation | **Order designations** Housing | Bearing | **Mass** Bearing unit |
|---|---|---|---|
| – | – | | kg |
| PF 15 FM | **PF 40** | **YET 203/15** | 0,24 |
| PFD 15 FM | **PFD 40** | **YET 203/15** | 0,21 |
| PFT 15 FM | **PFT 40** | **YET 203/15** | 0,21 |
| PF 17 FM | **PF 40** | **YET 203** | 0,22 |
| PFD 17 FM | **PFD 40** | **YET 203** | 0,20 |
| PFT 17 FM | **PFT 40** | **YET 203** | 0,19 |
| PF 20 FM | **PF 47** | **YET 204** | 0,30 |
| PF 20 WF | **PF 47** | **YEL 204-2F** | 0,33 |
| PFD 20 FM | **PFD 47** | **YET 204** | 0,26 |
| PFD 20 WF | **PFD 47** | **YEL 204-2F** | 0,29 |
| PFT 20 FM | **PFT 47** | **YET 204** | 0,25 |
| PFT 20 WF | **PFT 47** | **YEL 204-2F** | 0,28 |
| PF 25 FM | **PF 52** | **YET 205** | 0,35 |
| PF 25 WF | **PF 52** | **YEL 205-2F** | 0,40 |
| PFD 25 FM | **PFD 52** | **YET 205** | 0,30 |
| PFD 25 WF | **PFD 52** | **YEL 205-2F** | 0,35 |
| PFT 25 FM | **PFT 52** | **YET 205** | 0,29 |
| PFT 25 WF | **PFT 52** | **YEL 205-2F** | 0,34 |
| PF 30 FM | **PF 62** | **YET 206** | 0,56 |
| PF 30 WF | **PF 62** | **YEL 206-2F** | 0,62 |
| PFD 30 FM | **PFD 62** | **YET 206** | 0,48 |
| PFD 30 WF | **PFD 62** | **YEL 206-2F** | 0,54 |
| PFT 30 FM | **PFT 62** | **YET 206** | 0,46 |
| PFT 30 WF | **PFT 62** | **YEL 206-2F** | 0,52 |
| PF 35 FM | **PF 72** | **YET 207** | 0,70 |
| PF 35 WF | **PF 72** | **YEL 207-2F** | 0,78 |
| PFD 35 FM | **PFD 72** | **YET 207** | 0,66 |
| PFD 35 WF | **PFD 72** | **YEL 207-2F** | 0,74 |
| PFT 35 FM | **PFT 72** | **YET 207** | 0,72 |
| PFT 35 WF | **PFT 72** | **YEL 207-2F** | 0,80 |

## Flanged Y-bearing units with a pressed steel housing and an eccentric locking collar, metric shafts

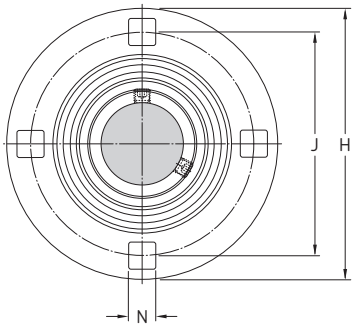
d **40 – 50** mm




YET

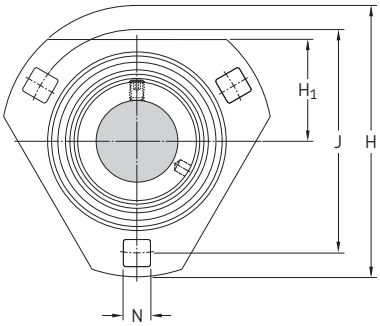


YEL .. -2F

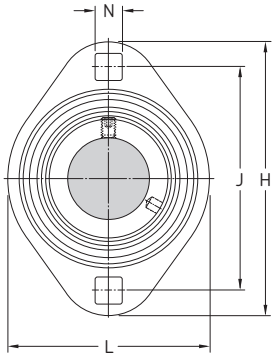



PF

| Dimensions | | | | | | | | | | | Basic load ratings | | Fatigue load | Permissible housing load | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | dynamic | static | limit | radial | Bearing unit No order |
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | $H_1$/L | J | N | G | T | C | $C_0$ | $P_u$ | | designation |
| mm | | | | | | | | | | | kN | | kN | kN | – |
| **40** | 3,5 | 10 | 43,7 | 91 | 148 | – | 119 | 13,5 | 12 | 36,2 | 30,7 | 19 | 0,8 | 7,5 | PF 40 FM |
| | 3,5 | 10 | 56,3 | 91 | 148 | – | 119 | 13,5 | 12 | 38,4 | 30,7 | 19 | 0,8 | 7,5 | PF 40 WF |
| | 3,5 | 10 | 43,7 | 91 | 148 | 53 | 119 | 13,5 | 12 | 36,2 | 30,7 | 19 | 0,8 | 7,5 | PFD 40 FM |
| | 3,5 | 10 | 56,3 | 91 | 148 | 53 | 119 | 13,5 | 12 | 38,4 | 30,7 | 19 | 0,8 | 7,5 | PFD 40 WF |
| | 3,5 | 10 | 43,7 | 91 | 148 | 104 | 119 | 13,5 | 12 | 36,2 | 30,7 | 19 | 0,8 | 7,5 | PFT 40 FM |
| | 3,5 | 10 | 56,3 | 91 | 148 | 104 | 119 | 13,5 | 12 | 38,4 | 30,7 | 19 | 0,8 | 7,5 | PFT 40 WF |
| **45** | 3,5 | 10,5 | 43,7 | 97 | 149 | – | 120,6 | 13,5 | 12 | 36,2 | 33,2 | 21,6 | 0,915 | 8,3 | PF 45 FM |
| | 3,5 | 10,5 | 56,3 | 97 | 149 | – | 120,6 | 13,5 | 12 | 38,4 | 33,2 | 21,6 | 0,915 | 8,3 | PF 45 WF |
| **50** | 4 | 11 | 43,7 | 102 | 155 | – | 127 | 13,5 | 12 | 36,7 | 35,1 | 23,2 | 0,98 | 9 | PF 50 FM |
| | 4 | 11 | 62,7 | 102 | 155 | – | 127 | 13,5 | 12 | 42,1 | 35,1 | 23,2 | 0,98 | 9 | PF 50 WF |




PFD



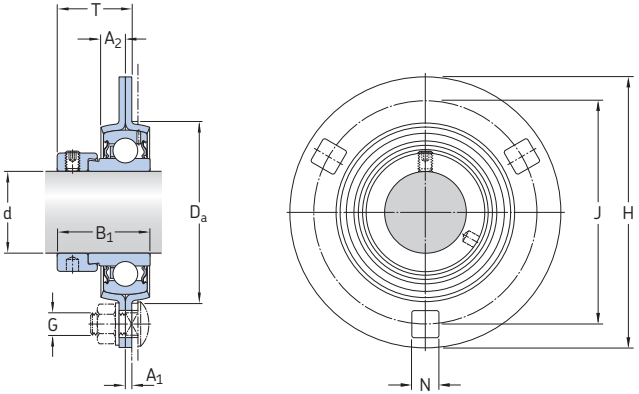

PFT



| Designation<br>Bearing unit<br>No order designation | Order designations<br>Housing | <br>Bearing | Mass<br>Bearing unit |
|---|---|---|---|
| – | – | | kg |
| PF 40 FM | **PF 80** | **YET 208** | 1,20 |
| PF 40 WF | **PF 80** | **YEL 208-2F** | 1,30 |
| PFD 40 FM | **PFD 80** | **YET 208** | 1,05 |
| PFD 40 WF | **PFD 80** | **YEL 208-2F** | 1,15 |
| PFT 40 FM | **PFT 80** | **YET 208** | 0,94 |
| PFT 40 WF | **PFT 80** | **YEL 208-2F** | 1,00 |
| PF 45 FM | **PF 85** | **YET 209** | 1,30 |
| PF 45 WF | **PF 85** | **YEL 209-2F** | 1,40 |
| PF 50 FM | **PF 90** | **YET 210** | 1,50 |
| PF 50 WF | **PF 90** | **YEL 210-2F** | 1,65 |

## Flanged Y-bearing units with a pressed steel housing and an eccentric locking collar, inch shafts

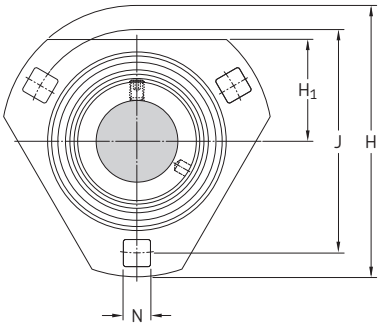
d **3/4 – 1 1/2** in



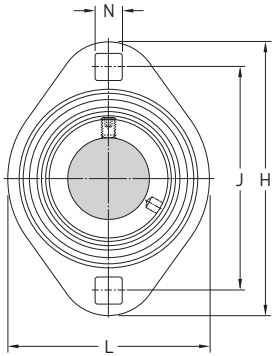

PF[1)]

| Dimensions | | | | | | | | | | | Designation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d | $A_1$ | $A_2$ | $B_1$ | $D_a$ | H | $H_1$/L | J | N | G | T | Bearing unit No order designation |
| in/*mm* | | | | | | | | | | | – |
| **3/4** | 0.08 | 0.31 | 1.22 | 2.17 | 3.58 | – | 2.81 | 0.34 | 5/16 | 1.00 | PF 3/4 FM |
| *19,05* | *2* | *8* | *31* | *55* | *91* | – | *71,5* | *8,7* | *8* | *25,5* | |
| | 0.08 | 0.31 | 1.22 | 2.17 | 3.58 | 1.26 | 2.81 | 0.34 | 5/16 | 1.00 | PFD 3/4 FM |
| | *2* | *8* | *31* | *55* | *91* | *32* | *71,5* | *8,7* | *8* | *25,5* | |
| | 0.08 | 0.31 | 1.22 | 2.17 | 3.58 | 2.64 | 2.81 | 0.34 | 5/16 | 1.00 | PFT 3/4 FM |
| | *2* | *8* | *31* | *55* | *91* | *67* | *71,5* | *8,7* | *8* | *25,5* | |
| **1** | 0.08 | 0.35 | 1.22 | 2.36 | 3.74 | – | 2.99 | 0.34 | 5/16 | 1.00 | PF 1. FM |
| *25,4* | *2* | *9* | *31* | *60* | *95* | – | *76* | *8,7* | *8* | *25,5* | |
| | 0.08 | 0.35 | 1.22 | 2.36 | 3.74 | 1.34 | 2.99 | 0.34 | 5/16 | 1.00 | PFD 1. FM |
| | *2* | *9* | *31* | *60* | *95* | *34* | *76* | *8,7* | *8* | *25,5* | |
| | 0.08 | 0.35 | 1.22 | 2.36 | 3.74 | 2.8 | 2.99 | 0.34 | 5/16 | 1.00 | PFT 1. FM |
| | *2* | *9* | *31* | *60* | *95* | *71* | *76* | *8,7* | *8* | *25,5* | |
| **1 1/2** | 0.14 | 0.39 | 1.72 | 3.58 | 5.83 | – | 4.69 | 0.53 | 1/2 | 1.43 | PF 1.1/2 FM |
| *38,1* | *3,5* | *10* | *43,7* | *91* | *148* | – | *119* | *13,5* | *12* | *36,2* | |
| | 0.14 | 0.39 | 1.72 | 3.58 | 5.83 | 2.09 | 4.69 | 0.53 | 1/2 | 1.43 | PFD 1.1/2 FM |
| | *3,5* | *10* | *43,7* | *91* | *148* | *53* | *119* | *13,5* | *12* | *36,2* | |
| | 0.14 | 0.39 | 1.72 | 3.58 | 5.83 | 4.09 | 4.69 | 0.53 | 1/2 | 1.43 | PFT 1.1/2 FM |
| | *3,5* | *10* | *43,7* | *91* | *148* | *104* | *119* | *13,5* | *12* | *36,2* | |

[1)] Housing PF 80 has four attachment bolt holes.




PFD




PFT



| **Designation**<br>Bearing unit<br>No order designation | **Order designations**<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load**<br>limit<br>$P_u$ | **Permissible housing load**<br>radial | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | – | | lbf/*kN* | | lbf/*kN* | lbf/*kN* | lb/*kg* |
| PF 3/4 FM | **PF 47** | **YET 204-012** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.70<br>*0,31* |
| PFD 3/4 FM | **PFD 47** | **YET 204-012** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.60<br>*0,27* |
| PFT 3/4 FM | **PFT 47** | **YET 204-012** | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 740<br>*3,3* | 0.60<br>*0,26* |
| PF 1. FM | **PF 52** | **YET 205-100** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.80<br>*0,35* |
| PFD 1. FM | **PFD 52** | **YET 205-100** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.80<br>*0,35* |
| PFT 1. FM | **PFT 52** | **YET 205-100** | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 810<br>*3,6* | 0.60<br>*0,29* |
| PF 1.1/2 FM | **PF 80** | **YET 208-108** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.70<br>*1,25* |
| PFD 1.1/2 FM | **PFD 80** | **YET 208-108** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.30<br>*1,05* |
| PFT 1.1/2 FM | **PFT 80** | **YET 208-108** | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 1 690<br>*7,5* | 2.20<br>*0,98* |


SKF

# Y-bearing take-up units

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Load carrying ability of the housings ..... 237
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inch shafts ..... 240
5.2 Y-bearing take-up units with a cast housing and an eccentric locking collar, metric shafts ..... 244

# Designs

Y-bearing take-up units consist of a cast housing and an insert bearing (→ **fig. 1**). These units are typically mounted in take-up frames and connected by an adjustment screw. A grease fitting is provided in the housing for relubrication. Standard Y-bearing take-up units can be located on the shaft via the inner ring of the insert bearing with either:

- grub (set) screws
- an eccentric locking collar

The Y-bearing is sealed with either:

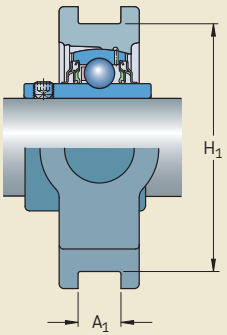
- the standard integral seal
- the standard integral seal and an additional flinger

For additional information about Y-bearings, refer to the section *Y-bearings*, starting on **page 79**.

Fig. 1



Fig. 2




# Data – general

## Dimensions

The boundary dimensions of SKF Y-bearing take-up housings in the:

- TU series are in accordance with ISO 3228:1993
- TUJ series are in accordance with JIS B 1559-1995

## Tolerances

The tolerances (→ **fig. 2**), which are in accordance with ISO 3228:1993, are:

- ± 0,25 mm for the distance between the guide surfaces $H_1$
- within the tolerance range H13 for the width of the guide surfaces $A_1$

Information about the tolerances of the inner ring bore diameter can be found in the section *Y-bearings* on **page 89**.

## Radial internal clearance

The Y-bearing used in a Y-bearing take-up unit has the same radial internal clearance as a similarly sized individual Y-bearing. The values for radial internal clearance can be found in the section *Y-bearings* on **page 90**.

## Materials

The housings for Y-bearing take-up units are manufactured from grey cast iron EN-GJL HB195 in accordance with EN 1561:1997.

## Load carrying ability of the housings

Cast housings can withstand the same dynamic and static loads as their insert bearings. Therefore, Y-bearing take-up units may also be used where shock loads or variable axial loads occur, provided the adjustment screw and the way it is secured to the Y-bearing take-up unit is sufficiently strong.

If SKF Y-bearing units are to be used in an application where health, safety, or the environment is at risk, contact the SKF application engineering service during the design phase.

## End covers

To protect the shaft ends and avoid any accidents, end covers are available for Y-bearing take-up units in the TU series (→ **fig. 3**).

In the product tables, end covers in the ECY 2 series are shown together with the appropriate bearing unit. The designation of the end cover is listed, together with the distance that the end cover protrudes from the housing.

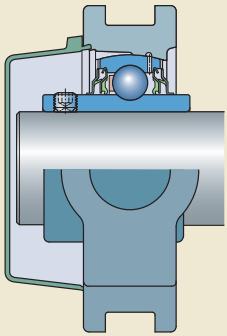
For additional information about end covers, refer to the section *Design of Y-bearing arrangements* on **page 47**.

## Grease fills

All standard SKF Y-bearing take-up units are filled with a high-quality, long-lasting grease containing a lithium-calcium thickener that has a consistency of 2 on the NLGI scale.

For additional information about lubricants and lubrication, refer to the section *Lubrication and maintenance*, starting on **page 48**.

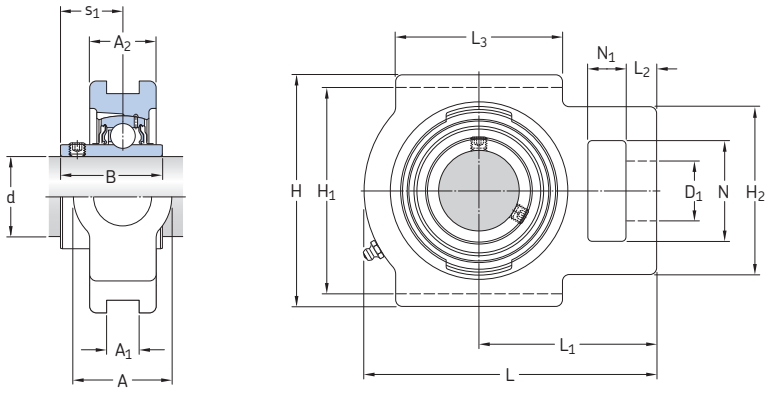
Fig. 3



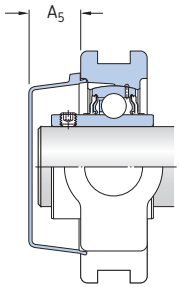
## Mounting

The mounting procedures for a Y-bearing take-up unit depend on the method used to attach the unit to the shaft. The procedures are briefly described in the section *Mounting instructions*, starting on **page 52**.

## Y-bearing take-up units with a cast housing and grub screws, metric shafts
d **20 – 60** mm

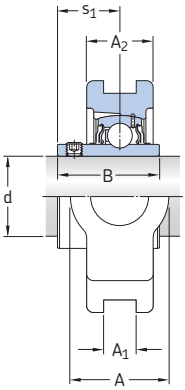


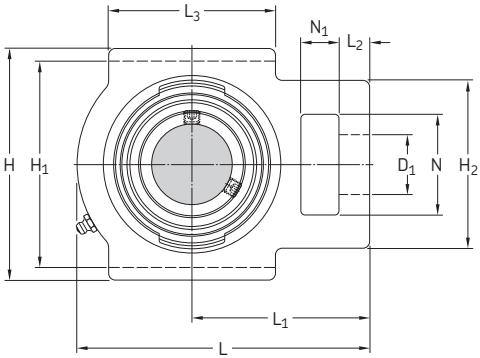

| Dimensions | | | | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $A_2$ | B | $D_1$ | H | $H_1$ | $H_2$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | $s_1$ | |
| mm | | | | | | | | | | | | | | | | – |
| **20** | 34 | 13,5 | 25 | 31 | 19 | 92 | 76 | 54 | 97 | 62 | 10 | 54 | 32 | 16 | 18,3 | **TU 20 TF** |
| | 34 | 12 | 25 | 31 | 19 | 92 | 76 | 54 | 97 | 62 | 10 | 54 | 32 | 16 | 18,3 | **TUJ 20 TF** |
| **25** | 34 | 13,5 | 25 | 34,1 | 19 | 91 | 76 | 53 | 100 | 64 | 10 | 52 | 33 | 16 | 19,8 | **TU 25 TF** |
| | 34 | 12 | 25 | 34,1 | 19 | 91 | 76 | 53 | 100 | 64 | 10 | 52 | 33 | 16 | 19,8 | **TUJ 25 TF** |
| **30** | 37 | 13,5 | 28 | 38,1 | 22 | 104 | 89 | 56 | 114 | 70 | 10 | 57 | 37 | 16 | 22,2 | **TU 30 TF** |
| | 37 | 12 | 28 | 38,1 | 22 | 104 | 89 | 56 | 114 | 70 | 10 | 57 | 37 | 16 | 22,2 | **TUJ 30 TF** |
| **35** | 37 | 13,5 | 30 | 42,9 | 22 | 103 | 89 | 64 | 129 | 78 | 12 | 64 | 38 | 17 | 25,4 | **TU 35 TF** |
| | 37 | 12 | 30 | 42,9 | 22 | 103 | 89 | 64 | 129 | 78 | 12 | 64 | 38 | 17 | 25,4 | **TUJ 35 TF** |
| **40** | 49 | 17,5 | 33 | 49,2 | 29 | 115 | 101 | 83 | 145 | 88 | 15 | 83 | 50 | 19 | 30,2 | **TU 40 TF** |
| | 49 | 16 | 33 | 49,2 | 29 | 115 | 102 | 83 | 145 | 88 | 15 | 83 | 50 | 19 | 30,2 | **TUJ 40 TF** |
| **45** | 49 | 17,5 | 35 | 49,2 | 29 | 117 | 101 | 83 | 144 | 87 | 15 | 83 | 49 | 19 | 30,2 | **TU 45 TF** |
| | 49 | 16 | 35 | 49,2 | 29 | 117 | 102 | 83 | 144 | 87 | 15 | 83 | 49 | 19 | 30,2 | **TUJ 45 TF** |
| **50** | 49 | 17,5 | 36 | 51,6 | 29 | 117 | 101 | 83 | 149 | 90 | 16 | 86 | 49 | 19 | 32,6 | **TU 50 TF** |
| | 49 | 16 | 36 | 51,6 | 29 | 117 | 102 | 83 | 149 | 90 | 16 | 86 | 49 | 19 | 32,6 | **TUJ 50 TF** |
| **55** | 64 | 27 | 41 | 55,6 | 35 | 146 | 130 | 102 | 171 | 106 | 19 | 95 | 64 | 25 | 33,4 | **TU 55 TF** |
| | 64 | 22 | 41 | 55,6 | 35 | 146 | 130 | 102 | 171 | 106 | 19 | 95 | 64 | 25 | 33,4 | **TUJ 55 TF** |
| **60** | 60 | 22 | 44 | 65,1 | 35 | 146 | 130 | 102 | 186 | 118 | 19 | 100 | 63,5 | 32 | 39,7 | **TUJ 60 TF** |




| Designations | | | Basic load ratings | | Fatigue load limit | Limiting speed | Mass | Appropriate end cover | |
|---|---|---|---|---|---|---|---|---|---|
| Bearing unit | Separate components | | dynamic | static | | with shaft tolerance h6 | Bearing unit | Designation | Dimension |
| | Housing | Bearing | C | $C_0$ | $P_u$ | | | | $A_5$ |
| – | | | kN | | kN | r/min | kg | – | mm |
| **TU 20 TF** | TU 504 M | YAR 204-2F | 12,7 | 6,55 | 0,28 | 8 500 | 0,73 | ECY 204 | 18,5 |
| **TUJ 20 TF** | TUJ 504 | YAR 204-2F | 12,7 | 6,55 | 0,28 | 8 500 | 0,76 | – | – |
| **TU 25 TF** | TU 505 M | YAR 205-2F | 14 | 7,8 | 0,335 | 7 000 | 0,77 | ECY 205 | 18 |
| **TUJ 25 TF** | TUJ 505 | YAR 205-2F | 14 | 7,8 | 0,335 | 7 000 | 0,82 | – | – |
| **TU 30 TF** | TU 506 M | YAR 206-2F | 19,5 | 11,2 | 0,475 | 6 300 | 1,25 | ECY 206 | 20 |
| **TUJ 30 TF** | TUJ 506 | YAR 206-2F | 19,5 | 11,2 | 0,475 | 6 300 | 1,28 | – | – |
| **TU 35 TF** | TU 507 M | YAR 207-2F | 25,5 | 15,3 | 0,655 | 5 300 | 1,45 | ECY 207 | 22 |
| **TUJ 35 TF** | TUJ 507 | YAR 207-2F | 25,5 | 15,3 | 0,655 | 5 300 | 1,50 | – | – |
| **TU 40 TF** | TU 508 M | YAR 208-2F | 30,7 | 19 | 0,8 | 4 800 | 2,30 | ECY 208 | 23,5 |
| **TUJ 40 TF** | TUJ 508 | YAR 208-2F | 30,7 | 19 | 0,8 | 4 800 | 2,35 | – | – |
| **TU 45 TF** | TU 509 M | YAR 209-2F | 33,2 | 21,6 | 0,915 | 4 300 | 2,30 | ECY 209 | 23 |
| **TUJ 45 TF** | TUJ 509 | YAR 209-2F | 33,2 | 21,6 | 0,915 | 4 300 | 2,35 | – | – |
| **TU 50 TF** | TU 510 M | YAR 210-2F | 35,1 | 23,2 | 0,98 | 4 000 | 2,40 | ECY 210 | 29,5 |
| **TUJ 50 TF** | TUJ 510 | YAR 210-2F | 35,1 | 23,2 | 0,98 | 4 000 | 2,50 | – | – |
| **TU 55 TF** | TU 511 M | YAR 211-2F | 43,6 | 29 | 1,25 | 3 600 | 3,85 | ECY 211 | 34 |
| **TUJ 55 TF** | TUJ 511 | YAR 211-2F | 43,6 | 29 | 1,25 | 3 600 | 4,00 | – | – |
| **TUJ 60 TF** | TUJ 512 | YAR 212-2F | 52,7 | 36 | 1,53 | 3 400 | 5,00 | – | – |

## Y-bearing take-up units with a cast housing and grub screws, inch shafts
d **3/4 – 1 7/16** in

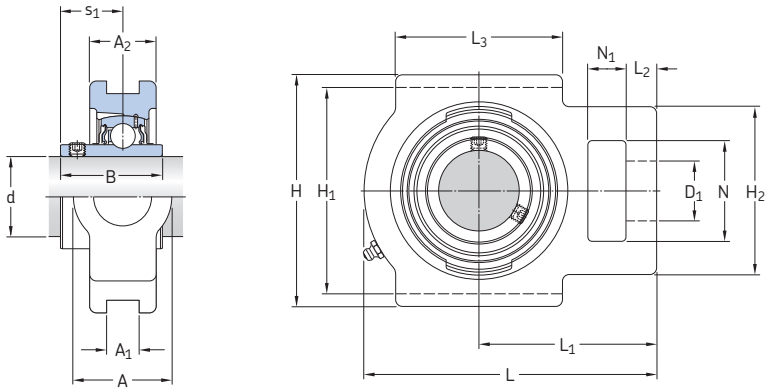



| **Dimensions** | | | | | | | | | | | | | | | | **Designation** Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $A_2$ | B | $D_1$ | H | $H_1$ | $H_2$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | | | | – |
| **3/4**<br>*19,05* | 1.34<br>*34* | 0.53<br>*13,5* | 0.98<br>*25* | 1.22<br>*31* | 0.75<br>*19* | 3.62<br>*92* | 2.99<br>*76* | 2.13<br>*54* | 3.82<br>*97* | 2.44<br>*62* | 0.39<br>*10* | 2.13<br>*54* | 1.26<br>*32* | 0.63<br>*16* | 0.72<br>*18,3* | **TU 3/4 TF** |
| **13/16**<br>*20,638* | 1.34<br>*34* | 0.53<br>*13,5* | 0.98<br>*25* | 1.34<br>*34,1* | 0.75<br>*19* | 3.58<br>*91* | 2.99<br>*76* | 2.09<br>*53* | 3.94<br>*100* | 2.52<br>*64* | 0.39<br>*10* | 2.05<br>*52* | 1.3<br>*33* | 0.63<br>*16* | 0.78<br>*19,8* | **TU 13/16 TF** |
| **7/8**<br>*22,225* | 1.34<br>*34* | 0.53<br>*13,5* | 0.98<br>*25* | 1.34<br>*34,1* | 0.75<br>*19* | 3.58<br>*91* | 2.99<br>*76* | 2.09<br>*53* | 3.94<br>*100* | 2.52<br>*64* | 0.39<br>*10* | 2.05<br>*52* | 1.3<br>*33* | 0.63<br>*16* | 0.78<br>*19,8* | **TU 7/8 TF** |
| **15/16**<br>*23,813* | 1.34<br>*34* | 0.53<br>*13,5* | 0.98<br>*25* | 1.34<br>*34,1* | 0.75<br>*19* | 3.58<br>*91* | 2.99<br>*76* | 2.09<br>*53* | 3.94<br>*100* | 2.52<br>*64* | 0.39<br>*10* | 2.05<br>*52* | 1.3<br>*33* | 0.63<br>*16* | 0.78<br>*19,8* | **TU 15/16 TF** |
| **1**<br>*25,4* | 1.34<br>*34* | 0.53<br>*13,5* | 0.98<br>*25* | 1.34<br>*34,1* | 0.75<br>*19* | 3.58<br>*91* | 2.99<br>*76* | 2.09<br>*53* | 3.94<br>*100* | 2.52<br>*64* | 0.39<br>*10* | 2.05<br>*52* | 1.3<br>*33* | 0.63<br>*16* | 0.78<br>*19,8* | **TU 1. TF** |
| **1 1/16**<br>*26,988* | 1.46<br>*37* | 0.53<br>*13,5* | 1.1<br>*28* | 1.5<br>*38,1* | 0.87<br>*22* | 4.09<br>*104* | 3.5<br>*89* | 2.2<br>*56* | 4.49<br>*114* | 2.76<br>*70* | 0.39<br>*10* | 2.24<br>*57* | 1.46<br>*37* | 0.63<br>*16* | 0.87<br>*22,2* | **TU 1.1/16 TF** |
| **1 1/8**<br>*28,575* | 1.46<br>*37* | 0.53<br>*13,5* | 1.1<br>*28* | 1.5<br>*38,1* | 0.87<br>*22* | 4.09<br>*104* | 3.5<br>*89* | 2.2<br>*56* | 4.49<br>*114* | 2.76<br>*70* | 0.39<br>*10* | 2.24<br>*57* | 1.46<br>*37* | 0.63<br>*16* | 0.87<br>*22,2* | **TU 1.1/8 TF** |
| **1 3/16**<br>*30,163* | 1.46<br>*37* | 0.53<br>*13,5* | 1.1<br>*28* | 1.5<br>*38,1* | 0.87<br>*22* | 4.09<br>*104* | 3.5<br>*89* | 2.2<br>*56* | 4.49<br>*114* | 2.76<br>*70* | 0.39<br>*10* | 2.24<br>*57* | 1.46<br>*37* | 0.63<br>*16* | 0.87<br>*22,2* | **TU 1.3/16 TF** |
| **1 1/4**<br>*31,75* | 1.46<br>*37* | 0.53<br>*13,5* | 1.18<br>*30* | 1.69<br>*42,9* | 0.87<br>*22* | 4.06<br>*103* | 3.5<br>*89* | 2.52<br>*64* | 5.08<br>*129* | 3.07<br>*78* | 0.47<br>*12* | 2.52<br>*64* | 1.5<br>*38* | 0.67<br>*17* | 1<br>*25,4* | **TU 1.1/4 TF** |
| **1 5/16**<br>*33,338* | 1.46<br>*37* | 0.53<br>*13,5* | 1.18<br>*30* | 1.69<br>*42,9* | 0.87<br>*22* | 4.06<br>*103* | 3.5<br>*89* | 2.52<br>*64* | 5.08<br>*129* | 3.07<br>*78* | 0.47<br>*12* | 2.52<br>*64* | 1.5<br>*38* | 0.67<br>*17* | 1<br>*25,4* | **TU 1.5/16 TF** |
| **1 3/8**<br>*34,925* | 1.46<br>*37* | 0.53<br>*13,5* | 1.18<br>*30* | 1.69<br>*42,9* | 0.87<br>*22* | 4.06<br>*103* | 3.5<br>*89* | 2.52<br>*64* | 5.08<br>*129* | 3.07<br>*78* | 0.47<br>*12* | 2.52<br>*64* | 1.5<br>*38* | 0.67<br>*17* | 1<br>*25,4* | **TU 1.3/8 TF** |
| **1 7/16**<br>*36,513* | 1.46<br>*37* | 0.53<br>*13,5* | 1.18<br>*30* | 1.69<br>*42,9* | 0.87<br>*22* | 4.06<br>*103* | 3.5<br>*89* | 2.52<br>*64* | 5.08<br>*129* | 3.07<br>*78* | 0.47<br>*12* | 2.52<br>*64* | 1.5<br>*38* | 0.67<br>*17* | 1<br>*25,4* | **TU 1.7/16 TF** |

| **Designations**<br>Bearing unit | Separate components<br>Housing | <br>Bearing | **Basic load ratings**<br>dynamic<br>C | <br>static<br>$C_0$ | **Fatigue load limit**<br>$P_u$ | **Limiting speed**<br>with shaft tolerance h6 | **Mass**<br>Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **TU 3/4 TF** | TU 504 U | YAR 204-012-2F | 2 860<br>*12,7* | 1 470<br>*6,55* | 60<br>*0,28* | 8 500 | 1.61<br>*0,73* |
| **TU 13/16 TF** | TU 505 U | YAR 205-013-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.79<br>*0,81* |
| **TU 7/8 TF** | TU 505 U | YAR 205-014-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.76<br>*0,80* |
| **TU 15/16 TF** | TU 505 U | YAR 205-015-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.72<br>*0,78* |
| **TU 1. TF** | TU 505 M | YAR 205-100-2F | 3 150<br>*14* | 1 760<br>*7,8* | 80<br>*0,335* | 7 000 | 1.68<br>*0,76* |
| **TU 1.1/16 TF** | TU 506 U | YAR 206-101-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.85<br>*1,30* |
| **TU 1.1/8 TF** | TU 506 U | YAR 206-102-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.80<br>*1,25* |
| **TU 1.3/16 TF** | TU 506 U | YAR 206-103-2F | 4 390<br>*19,5* | 2 520<br>*11,2* | 110<br>*0,475* | 6 300 | 2.75<br>*1,25* |
| **TU 1.1/4 TF** | TU 507 M | YAR 207-104-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.30<br>*1,50* |
| **TU 1.5/16 TF** | TU 507 U | YAR 207-105-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.30<br>*1,50* |
| **TU 1.3/8 TF** | TU 507 U | YAR 207-106-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.20<br>*1,45* |
| **TU 1.7/16 TF** | TU 507 U | YAR 207-107-2F | 5 740<br>*25,5* | 3 440<br>*15,3* | 150<br>*0,655* | 5 300 | 3.15<br>*1,45* |

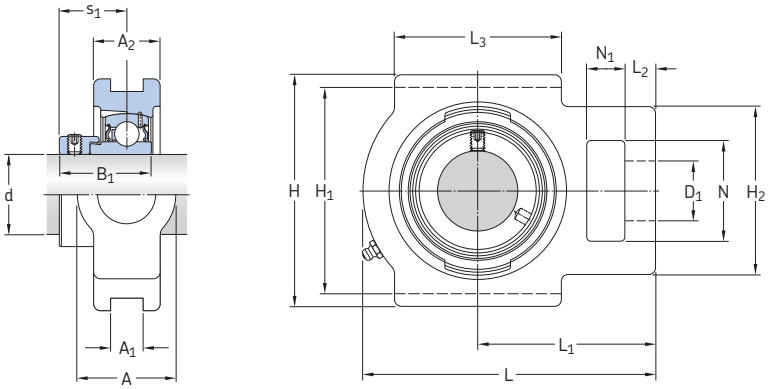
## Y-bearing take-up units with a cast housing and grub screws, inch shafts
d **1 1/2 – 2 3/16** in



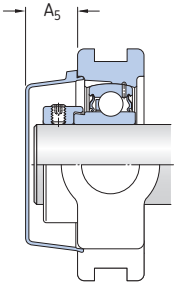

| Dimensions | | | | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $A_2$ | B | $D_1$ | H | $H_1$ | $H_2$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | $s_1$ | |
| in/*mm* | | | | | | | | | | | | | | | | – |
| **1 1/2** | 1.93 | 0.69 | 1.3 | 1.94 | 1.14 | 4.53 | 3.98 | 3.27 | 5.71 | 3.46 | 0.59 | 3.27 | 1.97 | 0.75 | 1.19 | **TU 1.1/2 TF** |
| *38,1* | *49* | *17,5* | *33* | *49,2* | *29* | *115* | *101* | *83* | *145* | *88* | *15* | *83* | *50* | *19* | *30,2* | |
| **1 11/16** | 1.93 | 0.69 | 1.38 | 1.94 | 1.14 | 4.61 | 3.98 | 3.27 | 5.67 | 3.43 | 0.59 | 3.27 | 1.93 | 0.75 | 1.19 | **TU 1.11/16 TF** |
| *42,863* | *49* | *17,5* | *35* | *49,2* | *29* | *117* | *101* | *83* | *144* | *87* | *15* | *83* | *49* | *19* | *30,2* | |
| **1 3/4** | 1.93 | 0.69 | 1.38 | 1.94 | 1.14 | 4.61 | 3.98 | 3.27 | 5.67 | 3.43 | 0.59 | 3.27 | 1.93 | 0.75 | 1.19 | **TU 1.3/4 TF** |
| *44,45* | *49* | *17,5* | *35* | *49,2* | *29* | *117* | *101* | *83* | *144* | *87* | *15* | *83* | *49* | *19* | *30,2* | |
| **1 15/16** | 1.93 | 0.69 | 1.42 | 2.03 | 1.14 | 4.61 | 3.98 | 3.27 | 5.87 | 3.54 | 0.63 | 3.39 | 1.93 | 0.75 | 1.28 | **TU 1.15/16 TF** |
| *49,213* | *49* | *17,5* | *36* | *51,6* | *29* | *117* | *101* | *83* | *149* | *90* | *16* | *86* | *49* | *19* | *32,6* | |
| **2** | 2.52 | 1.06 | 1.61 | 2.19 | 1.38 | 5.75 | 5.12 | 4.02 | 6.73 | 4.17 | 0.75 | 3.74 | 2.52 | 0.98 | 1.31 | **TU 2. TF** |
| *50,8* | *64* | *27* | *41* | *55,6* | *35* | *146* | *130* | *102* | *171* | *106* | *19* | *95* | *64* | *25* | *33,4* | |
| **2 3/16** | 2.52 | 1.06 | 1.61 | 2.19 | 1.38 | 5.75 | 5.12 | 4.02 | 6.73 | 4.17 | 0.75 | 3.74 | 2.52 | 0.98 | 1.31 | **TU 2.3/16 TF** |
| *55,563* | *64* | *27* | *41* | *55,6* | *35* | *146* | *130* | *102* | *171* | *106* | *19* | *95* | *64* | *25* | *33,4* | |

| **Designations** Bearing unit | Separate components Housing | Bearing | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** with shaft tolerance h6 | **Mass** Bearing unit |
|---|---|---|---|---|---|---|---|
| – | | | lbf/*kN* | | lbf/*kN* | r/min | lb/*kg* |
| **TU 1.1/2 TF** | TU 508 M | YAR 208-108-2F | 6 910<br>*30,7* | 4 280<br>*19* | 180<br>*0,8* | 5 300 | 4.95<br>*2,25* |
| **TU 1.11/16 TF** | TU 509 U | YAR 209-111-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.20<br>*2,35* |
| **TU 1.3/4 TF** | TU 509 U | YAR 209-112-2F | 7 470<br>*33,2* | 4 860<br>*21,6* | 210<br>*0,915* | 4 300 | 5.50<br>*2,50* |
| **TU 1.15/16 TF** | TU 510 U | YAR 210-115-2F | 7 900<br>*35,1* | 5 220<br>*23,2* | 220<br>*0,98* | 4 000 | 5.30<br>*2,40* |
| **TU 2. TF** | TU 511 M | YAR 211-200-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 4 000 | 8.80<br>*4,00* |
| **TU 2.3/16 TF** | TU 511 U | YAR 211-203-2F | 9 810<br>*43,6* | 6 530<br>*29* | 280<br>*1,25* | 3 600 | 8.40<br>*3,80* |

## Y-bearing take-up units with a cast housing and an eccentric locking collar, metric shafts
d **20 – 55** mm




| Dimensions | | | | | | | | | | | | | | | | Designation Bearing unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d | A | $A_1$ | $A_2$ | $B_1$ | $D_1$ | H | $H_1$ | $H_2$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | $s_1$ | |
| mm | | | | | | | | | | | | | | | | – |
| **20** | 34 | 13,5 | 25 | 31 | 19 | 92 | 76 | 54 | 97 | 62 | 10 | 54 | 32 | 16 | 23,5 | **TU 20 FM** |
| **25** | 34 | 13,5 | 25 | 31 | 19 | 91 | 76 | 53 | 100 | 64 | 10 | 52 | 33 | 16 | 23,5 | **TU 25 FM** |
| **30** | 37 | 13,5 | 28 | 35,7 | 22 | 104 | 89 | 56 | 114 | 70 | 10 | 57 | 37 | 16 | 26,7 | **TU 30 FM** |
| **35** | 37 | 13,5 | 30 | 38,9 | 22 | 103 | 89 | 64 | 129 | 78 | 12 | 64 | 38 | 17 | 29,4 | **TU 35 FM** |
| **40** | 49 | 17,5 | 33 | 43,7 | 29 | 115 | 101 | 83 | 145 | 88 | 15 | 83 | 50 | 19 | 32,7 | **TU 40 FM** |
| **45** | 49 | 17,5 | 35 | 43,7 | 29 | 117 | 101 | 83 | 144 | 87 | 15 | 83 | 49 | 19 | 32,7 | **TU 45 FM** |
| **50** | 49 | 17,5 | 36 | 43,7 | 29 | 117 | 101 | 83 | 149 | 90 | 16 | 86 | 49 | 19 | 32,7 | **TU 50 FM** |
| **55** | 64 | 27 | 41 | 48,4 | 35 | 146 | 130 | 102 | 171 | 106 | 19 | 95 | 64 | 25 | 36,4 | **TU 55 FM** |




| Designations | | | Basic load ratings | | Fatigue load limit | Limiting speed | Mass | Appropriate end cover | |
|---|---|---|---|---|---|---|---|---|---|
| Bearing unit | Separate components | | dynamic | static | | with shaft tolerance | Bearing unit | Designation | Dimension |
| | Housing | Bearing | C | $C_0$ | $P_u$ | h6 | | | $A_5$ |
| – | | | kN | | kN | r/min | kg | – | mm |
| **TU 20 FM** | TU 504 M | YET 204 | 12,7 | 6,55 | 0,28 | 8 500 | 0,73 | ECY 204 | 18,5 |
| **TU 25 FM** | TU 505 M | YET 205 | 14 | 7,8 | 0,335 | 7 000 | 0,77 | ECY 205 | 18 |
| **TU 30 FM** | TU 506 M | YET 206 | 19,5 | 11,2 | 0,475 | 6 300 | 1,25 | ECY 206 | 20 |
| **TU 35 FM** | TU 507 M | YET 207 | 25,5 | 15,3 | 0,655 | 5 300 | 1,45 | ECY 207 | 22 |
| **TU 40 FM** | TU 508 M | YET 208 | 30,7 | 19 | 0,8 | 4 800 | 2,30 | ECY 208 | 23,5 |
| **TU 45 FM** | TU 509 M | YET 209 | 33,2 | 21,6 | 0,915 | 4 300 | 2,30 | ECY 209 | 23 |
| **TU 50 FM** | TU 510 M | YET 210 | 35,1 | 23,2 | 0,98 | 4 000 | 2,40 | ECY 210 | 29,5 |
| **TU 55 FM** | TU 511 M | YET 211 | 43,6 | 29 | 1,25 | 3 600 | 3,85 | ECY 211 | 34 |


SKF
SKF

# SKF ConCentra ball bearings and units

**Design** ..... **249**

SKF ConCentra ball bearings and units (→ **fig. 1**) are part of SKF's extensive line of ready-to-install mounted products. SKF ConCentra ball bearings and units, with true concentric location on the shaft, are particularly well suited for applications where there are relatively high speeds and moderate loads and where vibration, low noise, and minimal maintenance are key operational parameters. SKF ConCentra ball bearings are available as single bearings or assembled with plummer block or flanged housings.

What sets the SKF ConCentra ball bearing unit apart from any other Y-bearing unit is its unique 360° locking mechanism. The locking mechanism is based on two mating surfaces, each with precision engineered inclined serrations. One set of serrations is machined into the bearing bore; the other set is machined into the outside diameter of the shaft sleeve. The shaft sleeve is also equipped with a mounting pressure ring (→ **fig. 2**).

The 360° grip on the shaft virtually eliminates the possibility of shaft damage and fretting corrosion.

By tightening the grub (set) screws in the mounting collar using the appropriate hexagonal key, the bearing inner ring is forced up the inclined planes of the stepped sleeve, thus providing a true concentric tight fit on the shaft (→ **fig. 3**).

In order to assist the mounting of SKF ConCentra ball bearing units, mounting kits are available from SKF (designation 626830) which include mounting instructions, hexagonal keys and torque indicators. Typical applications of SKF ConCentra ball bearings and units are industrial fans, conveyor systems, textile machines and agricultural machinery.

Fig. 1



Fig. 2

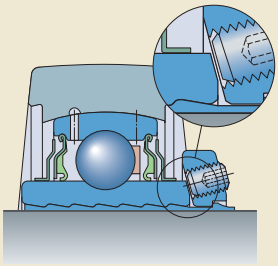
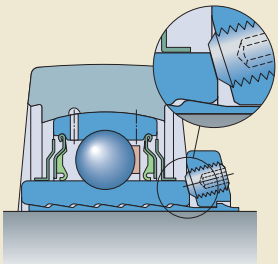


Fig. 3



## Design

SKF ConCentra ball bearing units are ready-to-mount and ready-to-operate. They are filled with a high-quality, long-lasting grease that provides maintenance-free operation in most cases. For operating conditions that make relubrication necessary, the units are provided with a grease fitting.

SKF ConCentra ball bearings and units are based on:

- SKF Y-bearings in the YSP 2 SB series
- the patented SKF ConCentra stepped sleeve
- cast iron housings in the SY 5(00) M, FY 5(00) M and FYTB 5(00) M series, SY 5(00) M, FY 5(00) M, FYTB 5(00) M series for metric shafts
- cast iron housings in the SY 5(00) U/AH, FY 5(00) U/AH, FYTB 5(00) U/AH series for inch shafts

Detailed information about these bearing units can be found in the publication *SKF ConCentra ball bearing units – true concentric locking, for fast and reliable mounting* and online at skf.com/bearings.



# SKF Food Line Y-bearing units

**Designs** ..... **252**

To meet the requirements of the food, beverage and pharmaceutical processing industries, SKF has developed a special range of Y-bearing units.

The housings for SKF Food Line Y-bearing units are made of three different materials:

- Composite with dedicated rugged design
- Cast stainless steel for heavy-duty applications
- Zinc-coated cast iron for a cost-effective solution

The units are equipped with Y-bearings made of stainless steel (YAR 2-2RF/HV series) or of high quality, carbon chromium steel with zinc coated inner and outer rings (YAR 2-2RF/VE495 series). The bearing inner rings are extended on both sides and are locked on the shaft with grub screws.

Fig. 1

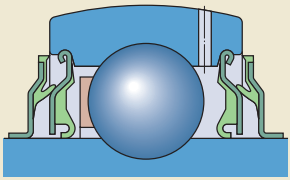


Fig. 2



The sealing arrangement, proven to be highly effective during washdowns, consists of a stainless steel supported, grease filled, multi-lip FDA approved synthetic rubber contacting and labyrinth seal with a stainless steel flinger. (→ **fig. 1**).

The SKF Food Line Y-bearing units are pre-lubricated for life with a non-toxic food-grade grease, based on a PAO oil and an aluminium-complex soap as a thickener (food industry approved NSF H1).

# Designs

## SKF Food Line Y-bearing units with composite housings

### Strong, lightweight, chemical resistant

Capable of resisting citric acids, cooking fats and most food and beverage processing chemicals, composite SKF Food Line Y-bearing housings are made from a thermoplastic material that is lighter than cast iron housings. The housing's spherical bore accommodates the insert bearing's spherical outer surface, enabling the unit to compensate for initial misalignment.

Other performance advantages include:

- High fracture strength – dedicated rugged design contributes to its fracture strength. Radial breaking load is far greater than the static load rating of the bearing. SKF Food Line Y-bearing units are estimated to have the highest fracture strength of any composite unit on the market.
- Flush mounting – A polyamide filled housing base or a solid base allow the units to seat flush with the mounting surface. This surface-to-surface mounting eliminates gaps where contaminants could potentially collect.
- Stability – Stainless steel bolt-hole inserts provide added strength and stability to each housing foot.

### Housing designs

SKF Food Line Y-bearing unit composite housings are available in the following designs (→ **fig. 2**):

- plummer block
- two- and four-bolt flange (oval or square shape)
- tapped base
- three-bolt bracket flange
- take-up

**Bearing designs**
SKF Food Line Y-bearing units with composite housings are available with Y-bearings made of stainless steel (YAR 2-2RF/HV series) or of high quality carbon chromium steel with zinc coated inner and outer rings (YAR 2-2RF/VE495 series).

## SKF Food Line Y-bearing units with stainless steel housings

**Extreme strength and toughness**
For extremely challenging food and beverage applications requiring superior durability and chemical resistance, housings cast from AISI 300 stainless steel may be the best solution.

**Strength** – Y-bearing housings are designed for applications where very heavy loads or shock loads are possible.
**Safety** – In applications where housing failure could result in injury, the safety factor inherent in cast steel is an advantage.
**Chemical resistance** – Compared to composite and zinc coated cast iron housings, cast stainless steel offers a higher level of resistance to aggressive washdown chemicals. Cast stainless housings are not affected by strong concentrations of chlorine, hydrogen peroxide or other chemicals.
**Smooth surfaces** – The smooth surfaces of cast SKF stainless steel housings make them easier to clean.The bases are machined flat with no recesses to trap debris and bacteria, and the exposed surfaces have no unnecessary crevices or pockets.

**Housing designs**
Stainless steel SKF Food Line Y-bearing housings are available in the following designs (**→ fig. 2**):

- plummer block
- two- and four-bolt flange (oval or square shape)
- tapped base

**Bearing designs**
SKF Food Line Y-bearing units with stainless steel housings are available with Y-bearings made of stainless steel (YAR 2-2RF/HV series).

## SKF Food Line Y-bearing units with coated cast iron housings

**Strong and corrosion resistant**
Strength, durability and long-term corrosion resistance make coated cast iron SKF housings an ideal choice for red meat, pork and poultry processing applications.

The heavy-duty cast iron is protected with a CrVI-free zinc coating on all housing surfaces for long-term corrosion resistance. The zinc coating eliminates the flaking problems associated with nickel plated products.

**Chemical resistance** – These zinc coated housings are resistant to the majority of common washdown solutions.

**Housing designs**
Coated cast iron SKF FL Y-bearing housings are available in the following designs:

- plummer blocks
- two- or four-bolt flange (oval or square shape)
- tapped base

**Bearing designs**
SKF Food Line Y-bearing units with coated cast iron housings are available with Y-bearings made of high quality carbon chromium steel with zinc coated inner and outer rings (YAR 2-2RF/VE495 series).

## End covers

**Secure fit, operator safety**
To enhance worker safety, SKF recommends using end covers in any situation where a shaft protrudes from a housing and is not otherwise safely and adequately guarded. Special End Covers, types ECW and ECL, are available for all SKF Food Line Y-bearing units and must be ordered separately.

Detailed information about SKF end covers can be found in the publication *SKF Food Line Y-bearing units – a maintenance-free solution for wet, abrasive and contaminating environments* or in the product information available online at skf.com/bearings.


SKF

# Product index

The product range listed in this catalogue includes almost 1 000 Y-bearings, Y-bearing units, Y-bearing housings, rubber seating rings, end covers and adapter sleeves. In order to enable the user to quickly find the technical data for a product known only by its designation, the products are listed by designation in alphanumerical order in this index. Each entry lists the page number on which the product can be found and gives a brief description of the product.

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# SKF bearing housings and roller bearing units



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**PUB BU/P1 13186/1 EN** · February 2015

This catalogue supersedes publication number 13186 EN.

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SKF bearing housings – overview, selection and application recommendations

Split plummer block housings – SNL 2, 3, 5 and 6 series

Split plummer block housings – SE 2, 3, 5 and 6 series

Split plummer block housings – SNLN 30 series

Split plummer block housings – SNL 30, 31 and 32 series

Split plummer block housings – SED 30, 31, 32 and 39 series

Split plummer block housings – SONL series

Split pillow blocks – SAF and SAW series

Split plummer blocks – SDAF series

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Two-bearing housings – PD series

Housings for paper machines – SBFN, SBPN and SDM series

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**Notice**
For important updates and changes to this catalogue, go to skf.com/errata

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# Unit conversions

**Unit conversions**

| Quantity | Unit | Conversion | | | |
|---|---|---|---|---|---|
| **Length** | inch | 1 mm | 0.03937 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 mi. | 1 mi. | 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 |
| | US gallon | 1 l | 0.2642 US gallon | 1 US gallon | 3,7854 l |
| **Speed, velocity** | foot per second | 1 m/s | 3.28 ft/s | 1 ft/s | 0,30480 m/s |
| | mile per hour | 1 km/h | 0.6214 mph | 1 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, stress** | pounds per square inch | 1 MPa | 145 psi | 1 psi | 6,8948 × $10^3$ Pa |
| | | 1 $N/mm^2$ | 145 psi | | |
| | | 1 bar | 14.5 psi | 1 psi | 0,068948 bar |
| **Moment** | pound-force inch | 1 Nm | 8.85 lbf-in | 1 lbf-in | 0,113 Nm |
| **Power** | foot-pound per second | 1 W | 0.7376 ft-lbf/s | 1 ft-lbf/s | 1,3558 W |
| | horsepower | 1 kW | 1.36 hp | 1 hp | 0,736 kW |
| **Temperature** | degree | Celsius | $t_C = 0.555\ (t_F - 32)$ | Fahrenheit | $t_F = 1,8\ t_C + 32$ |

# Foreword

This catalogue contains the standard assortment of SKF housings and roller bearing units typically used in industrial applications. To provide the highest levels of quality and customer service, these products are available worldwide through SKF sales channels. For information about lead times and deliveries, contact your local SKF representative or SKF Authorized Distributor.

The data in this catalogue reflects SKF's state-of-the-art technology and production capabilities as of 2015. The data contained within may differ from that shown in earlier catalogues because of redesign, technological developments, or revised calculation methods. SKF reserves the right to continually improve its products with respect to materials, design and manufacturing methods, some of which are driven by technological developments.

## Getting started

This catalogue contains detailed information about all standard SKF metric and inch bearing housings, some application specific housings and SKF roller bearing units. Roller bearing units consist of a housing, a spherical roller bearing, seals and lubricant. These ready-to-mount units can provide a number of advantages when compared to plummer (pillow) block or flanged housings. They are easy and safe to mount and do not require any additional parts.

The first section, which contains general technical information, is designed to help the reader select the best, most effective products for a particular application. In this section, shaft-bearing combinations, sealing solutions and lubrication methods are discussed in detail. Installation and maintenance information is also included. More practical information about mounting and maintenance is provided in the *SKF bearing maintenance handbook* (ISBN 978-91-978966-4-1).

## The latest developments

The latest innovations within the area of SKF bearing housings include:

**SE series housings – new housings in accordance with ISO 113**

SE plummer block housings supersede SNL plummer block housings in the 2, 3, 5 and 6 series, and are available in corresponding sizes, from size 507 up to 515-612. From size 516-613, SNL plummer block housings in the 2, 3, 5 and 6 series remains.

**SED series housings – largest housings in the standard range**

Split housings for bearings with shaft diameters from 430 mm up to 900 mm were typically not standard. A new design concept makes it possible to supply these exceptionally large housings as standard (→ *Split plummer block housings – SED 30, 31, 32 and 39 series*, **page 331**).

**Housings for sealed spherical roller bearings**

Sealed spherical roller bearings have been proven to enhance reliability under arduous operating conditions. Consequently, the SKF bearing housing assortment includes housings for these bearings.

**Roller bearing units with SKF ConCentra locking technology**

Like bearing units with a locking collar, SKF ConCentra roller bearing units are simple and safe to install. The unique SKF ConCentra locking technology provides a truly concentric fit on the shaft, which virtually eliminates fretting corrosion. These units provide the same running accuracy as housing assemblies with sleeve-mounted bearings. (→ *Metric roller bearing units – SYNT and FYNT series*, **page 659** or *Inch roller bearing units – SYE, SYR, FYE and FYR series*, **page 691**).



*SE series housing*



*SED series housing*



*Roller bearing unit with SKF ConCentra locking technology*

## How best to use this catalogue

The catalogue follows an easy principle:

- Chapter 1 provides basic information about bearing housings. It includes a product overview that compares different housing series, sizes, typical shaft-bearing combinations, sealing solutions and lubrication methods. (→ **pages 21** to **53**).
- Chapters 2 to 17 provide information specific to a bearing housing or bearing unit series. Basic design, variants, sealing options and design considerations are discussed in detail. Following that discussion are the product tables.
- Chapter 18 contains the indexes.

### Find a housing for a bearing quickly

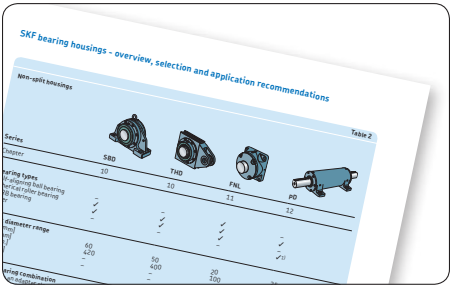
The bearing index (→ **page 742**) is a quick way to find a housing for a particular bearing. All bearings, which can be accommodated by a housing in this catalogue, are listed per bearing type and sorted alphanumerically, but with cylindrical bore bearings listed before tapered bore bearings.

### Find specific information quickly

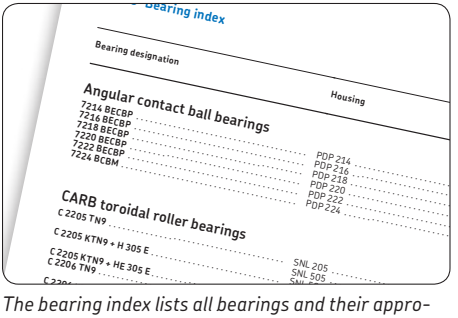
To make it easy to find specific information, there is a full table of contents at the front of the catalogue. In chapter 18, there is a product index and a full text index.

### Find product details quickly

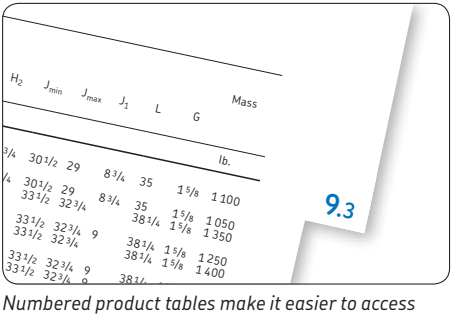
A quick way to access detailed product data is via the product table number. Product table numbers are listed in the full table of contents at the front of the catalogue, in the table of contents at the start of each product chapter and in the product and bearing indexes.




*Product overview*




*The bearing index lists all bearings and their appropriate housings*

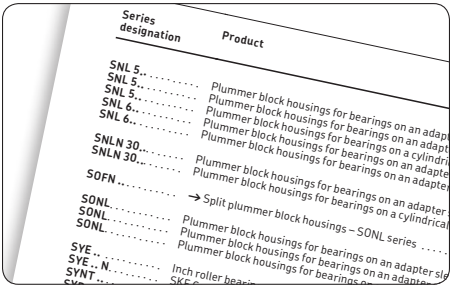



*Numbered product tables make it easier to access product data.*

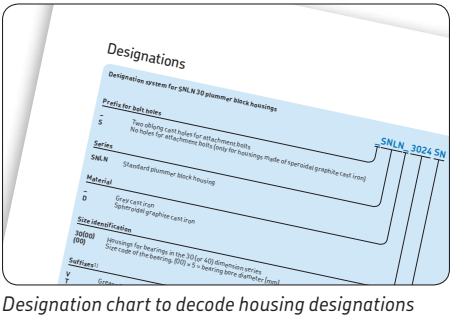
### Identify products

Product designations for SKF bearing housings typically contain information about the housing and additional features. To specify a housing or to find more information about an existing SKF housing, SKF product designations can be found in:

- Product index
  The product index at the end of the catalogue lists series designations and relates them to the relevant product chapter and product table.
- Designation charts
  Charts in each product chapter provide an overview of commonly used designation prefixes and suffixes.




*The product index makes finding information based on a bearing's designation easy.*




*Designation chart to decode housing designations*

### Units of measurement

This catalogue is for global use. Therefore, the predominant units of measurement are in accordance with ISO 80000-1. Imperial units are used whenever necessary. Unit conversions can be made using the conversion table (→ **page 10**).

For easier use, temperature values are provided in both, °C and °F. Temperature values are typically rounded. Therefore, the two values do not always match according to the conversion formula.

## More SKF housings and units

**Application specific housings**

The SKF design and manufacturing capabilities for bearing housings are not limited to the products described in this catalogue. SKF has supplied bearing and housing solutions for various applications including:

- main shaft support for wind turbines
- rudder or drive shaft support for ships
- rail bound vehicles
- moveable bridges
- housings for split bearings
- housings for converters in steel making

**Customized housings**

SKF can design custom housings using state-of-the-art finite element analysis. Prior to prototyping, SKF engineers can add their bearing, and seal expertise and confirm the integrity of the system on a virtual test rig. SKF housing manufacturing facilities are able to produce bearing housings for nearly all SKF rolling bearings.

**Y-bearing units**

Y-bearing units consist of a housing, a deep groove ball bearing, seals or shields and grease. These ready to mount units are available in a variety of shapes and sizes. For additional information about these products, visit skf.com/bearings.

**Previous housing series**

Some housing series are no longer available and are not listed in this catalogue. If replacement parts are required, especially for housings in the SOFN or SDG series, contact SKF.

# This is SKF

From one simple but inspired solution to a misalignment problem in a textile mill in Sweden, and fifteen employees in 1907, SKF has grown to become a global industrial knowledge leader. Over the years, we have built on our expertise in bearings, extending it to seals, mechatronics, services and lubrication systems. Our knowledge network includes 46 000 employees, 15 000 distributor partners, offices in more than 130 countries, and a growing number of SKF Solution Factory sites around the world.



**Research and development**

We have hands-on experience in over forty industries based on our employees' knowledge of real life conditions. In addition, our world-leading experts and university partners pioneer advanced theoretical research and development in areas including tribology, condition monitoring, asset management and bearing life theory. Our ongoing commitment to research and development helps us keep our customers at the forefront of their industries.




*SKF Solution Factory makes SKF knowledge and manufacturing expertise available locally to provide unique solutions and services to our customers.*

**Meeting the toughest challenges**

Our network of knowledge and experience, along with our understanding of how our core technologies can be combined, helps us create innovative solutions that meet the toughest of challenges. We work closely with our customers throughout the asset life cycle, helping them to profitably and responsibly grow their businesses.

**Working for a sustainable future**

Since 2005, SKF has worked to reduce the negative environmental impact from our operations and those of our suppliers. Our continuing technology development resulted in the introduction of the SKF BeyondZero portfolio of products and services which improve efficiency and reduce energy losses, as well as enable new technologies harnessing wind, solar and ocean power. This combined approach helps reduce the environmental impact both in our operations and our customers' operations.



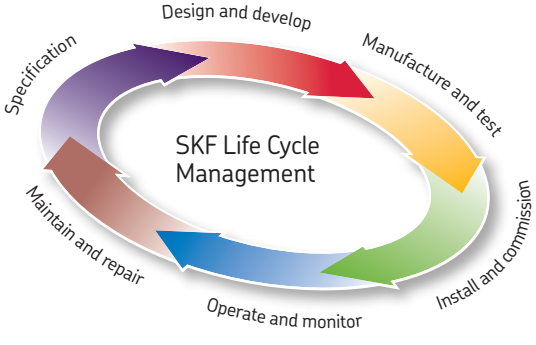



*Working with SKF IT and logistics systems and application experts, SKF Authorized Distributors deliver a valuable mix of product and application knowledge to customers worldwide.*

# SKF – the knowledge engineering company

## Our knowledge – your success

***SKF Life Cycle Management is how we combine our technology platforms and advanced services, and apply them at each stage of the asset life cycle, to help our customers to be more successful, sustainable and profitable.***




**Working closely with you**

Our objective is to help our customers improve productivity, minimize maintenance, achieve higher energy and resource efficiency, and optimize designs for long service life and reliability.

**Innovative solutions**

Whether the application is linear or rotary or a combination, SKF engineers can work with you at each stage of the asset life cycle to improve machine performance by looking at the entire application. This approach doesn't just focus on individual components like bearings or seals. It looks at the whole application to see how each component interacts with each other.

**Design optimization and verification**

SKF can work with you to optimize current or new designs with proprietary 3-D modelling software that can also be used as a virtual test rig to confirm the integrity of the design.



***Bearings***
*SKF is the world leader in the design, development and manufacture of high performance rolling bearings, plain bearings, bearing units and housings.*



***Machinery maintenance***
*Condition monitoring technologies and maintenance services from SKF can help minimize unplanned downtime, improve operational efficiency and reduce maintenance costs.*



***Sealing solutions***
*SKF offers standard seals and custom engineered sealing solutions to increase uptime, improve machine reliability, reduce friction and power losses, and extend lubricant life.*



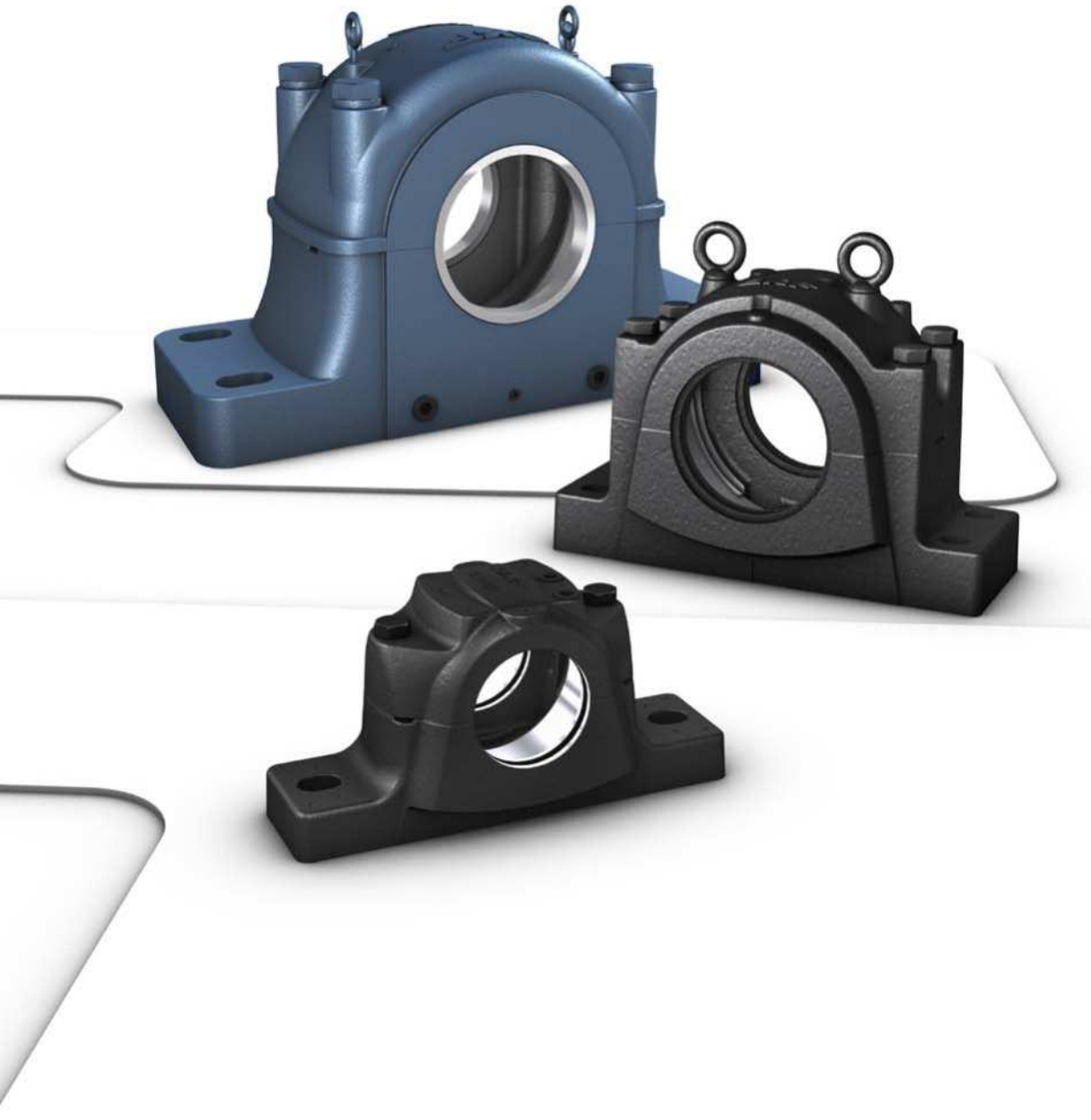
***Mechatronics***
*SKF fly-by-wire systems for aircraft and drive-by-wire systems for off-road, agricultural and forklift applications replace heavy, grease or oil consuming mechanical and hydraulic systems.*



***Lubrication solutions***
*From specialized lubricants to state-of-the-art lubrication systems and lubrication management services, lubrication solutions from SKF can help to reduce lubrication related downtime and lubricant consumption.*



***Actuation and motion control***
*With a wide assortment of products – from actuators and ball screws to profile rail guides – SKF can work with you to solve your most pressing linear system challenges.*



# SKF bearing housings – overview, selection and application recommendations


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# Basics

The purpose of a bearing housing is to:

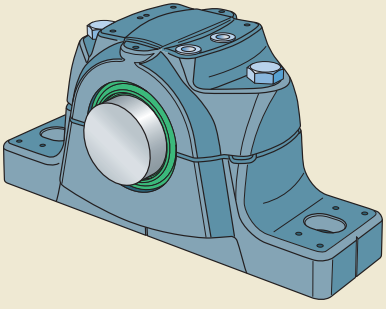
- support the bearing and transmit operating static and dynamic loads
- protect the bearing and lubricant from contaminants
- contain the lubricant and accommodate lubrication system components
- accommodate monitoring system components
- maximize the performance and service life of the incorporated bearings

# Terminology

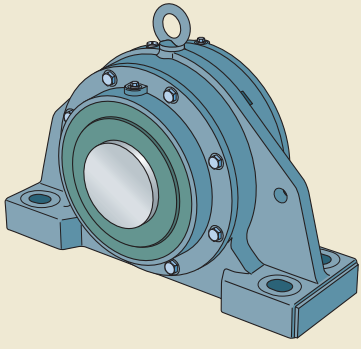
An overview of the terminology used in this catalogue is provided in **figs. 1** to **4**:

- types of bearing housings and bearing units (→ **fig. 1**)
- split plummer (pillow) block housings (→ **fig. 2**)
- housing and shaft arrangements (→ **figs. 3 and 4**)

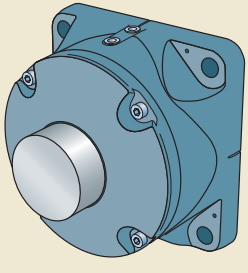
Fig. 1



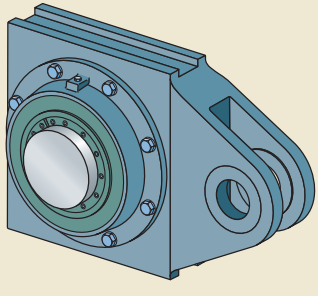
Split plummer (pillow) block housing



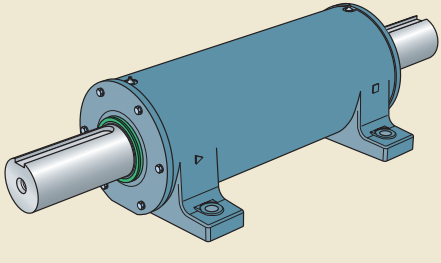
Non-split plummer (pillow) block housing



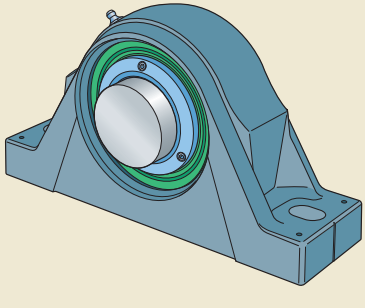
Flanged housing



Take-up housing



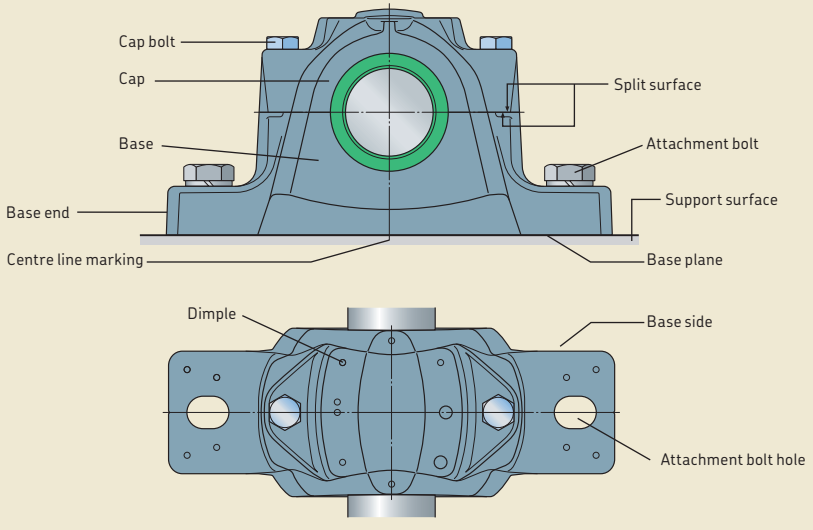
Two-bearing housing



Roller bearing unit

Fig. 2

**SE plummer (pillow) block housing**




**SONL plummer (pillow) block housing**

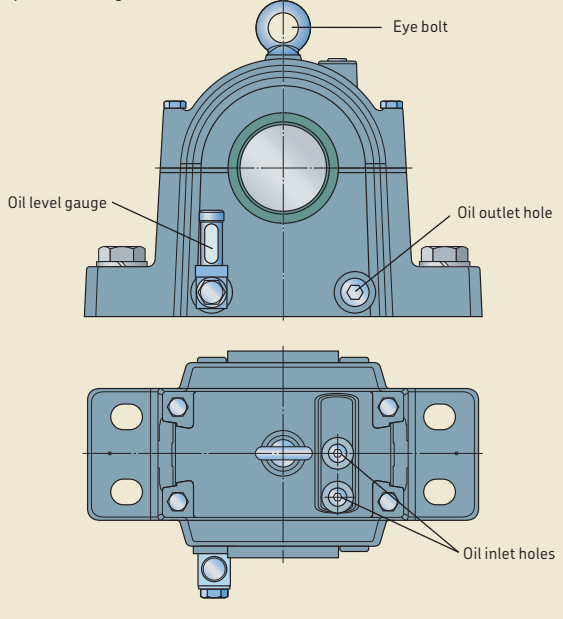
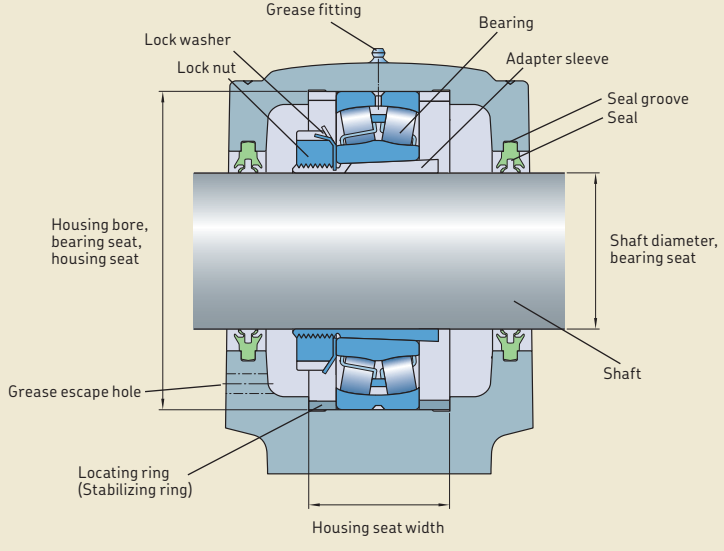


Fig. 3

**SE plummer (pillow) block housing**




**FNL flanged housing**

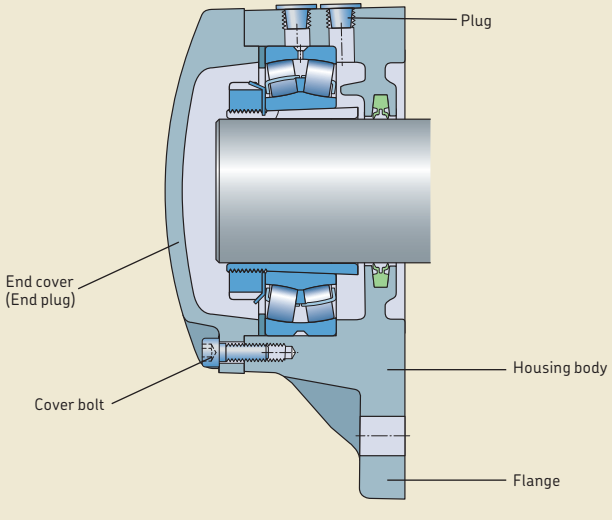
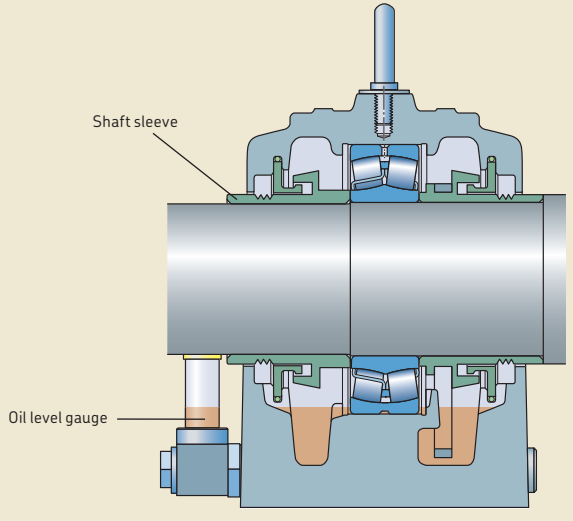
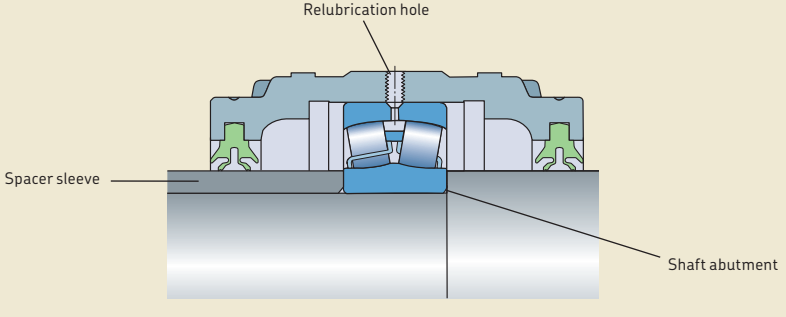


Fig. 4


Shaft sleeve
Oil level gauge


Relubrication hole
Spacer sleeve
Shaft abutment

# Overview of SKF bearing housings

## Assortment

The comprehensive assortment of SKF bearing housings is provided in **tables 1** to **4**, starting on **page 30**. SKF can also supply custom housings for specific applications and requirements. For additional information, contact the SKF application engineering service.

#### Split plummer (pillow) block housings

The main benefit of split plummer (pillow) block housings (→ **fig. 5**) is that they can accommodate preassembled shafts. Also, these housings simplify bearing inspections and maintenance because the shaft does not need to be disassembled.

The assortment of split plummer block housings is provided in **table 1** on **page 30**. Application-specific housings are provided in **table 4** on **page 34**.

#### Non-split plummer (pillow) block housings

Non-split plummer (pillow) block housings (→ **fig. 6**) are preferred when there are heavy loads acting in directions other than toward the support surface. They are also used when the housing has to be mounted from the end of the shaft.

The assortment of non-split plummer block housings is provided in **table 2** on **page 32**. Application-specific housings are provided in **table 4** on **page 34**.

#### Flanged housings

Flanged housings (→ **fig. 7**) provide a solution for applications that do not have a frame parallel to the shaft. The assortment of flanged housings is provided in **table 2** on **page 32**.

**Fig. 5**



**Fig. 6**

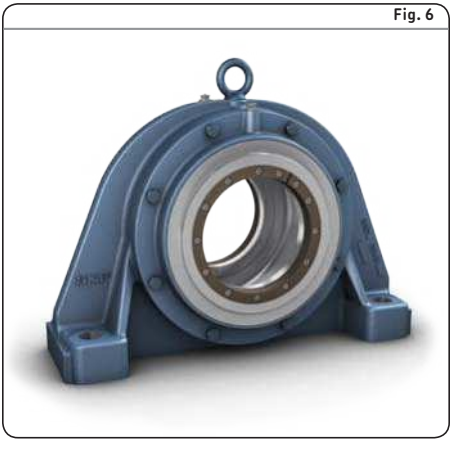


**Fig. 7**



### Take-up housings

Take-up housings (→ **fig. 8**) are typically used to maintain the tension in conveyor belt applications and are mounted onto a guide frame.

The assortment of take-up housings is provided in **table 2** on **page 32**.

### Two-bearing housings

Two-bearing housings (→ **fig. 9**) have intrinsically aligned bearing seats. As a result, they can accommodate rigid bearings, such as deep groove ball bearings, angular contact ball bearings and cylindrical roller bearings. Two-bearing housings are typically used in applications with an overhanging load.

The assortment of two-bearing housings is provided in **table 2** on **page 32**.

### Roller bearing units

Roller bearing units consist of a bearing, housing, lubricant and seals as well as a mechanism to lock the bearing inner ring onto the shaft (→ **fig. 10**). These ready-to-mount units are assembled, lubricated and sealed at the factory for maximum service life. Bearing units require very little maintenance. They are also easy to install and replace. Once a unit is bolted to its support surface, only the grub (set) screws in the collar need to be tightened.

The assortment of roller bearing units is provided in **table 3** on **page 33**.

### Application-specific housings

Application-specific housings have features that enable them to be used in special operating conditions. The assortment of application-specific housings is provided in **table 4** on **page 34**.

Fig. 8

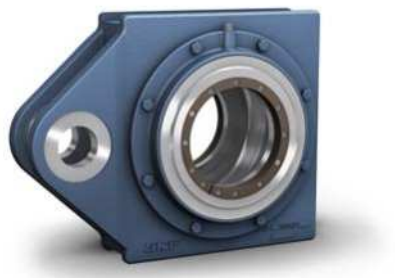


Fig. 9

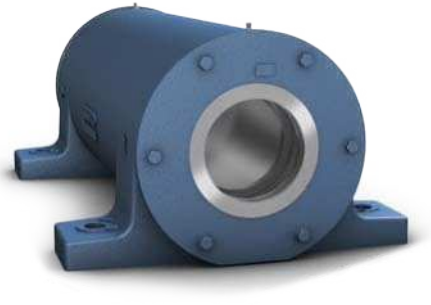


Fig. 10



## Housing materials

SKF housings are typically made of either grey cast iron or spheroidal graphite cast iron. For information about the material options available for a particular housing type, refer to **tables 1** to **4**, starting on **page 30**, or the relevant product chapter.

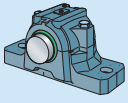
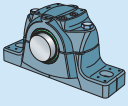
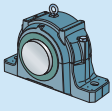
### Grey cast iron

Grey cast iron is the standard material for most SKF housings and is sufficient for the majority of applications. It is characterized by high strength, good damping capability and good thermal conductivity.

### Spheroidal graphite cast iron

Spheroidal graphite cast iron contains graphite nodules, making it ductile. It therefore provides a higher degree of strength and toughness than grey cast iron. On average, housings made of spheroidal graphite cast iron can withstand 1,8 times heavier loads compared to housings made of grey cast iron.

**Split plummer (pillow) block housings**

| Series |  SNL 2, 3, 5 and 6 |  SE 2, 3, 5 and 6 |  SNLN 30 |
|---|---|---|---|
| Chapter | 2 | 3 | 4 |
| **Bearing types** | | | |
| Self-aligning ball bearing | ✓ | ✓ | – |
| Spherical roller bearing | ✓ | ✓ | ✓ |
| CARB bearing | ✓ | ✓ | ✓ |
| **Shaft diameter range** | | | |
| from [mm] | 20 and 60 | 30 | 110 |
| to [mm] | 30 160 | 75 | 280 |
| from [*in.*] | *3/4* and *2 3/16* | *15/16* | – |
| to [*in.*] | *1* *5 1/2* | *2 1/2* | – |
| **Shaft-bearing combination** | | | |
| Bearing on an adapter sleeve | ✓ | ✓ | ✓ |
| Bearing on a withdrawal sleeve | ✓ | ✓ | ✓ |
| Bearing on a cylindrical seat | ✓ | ✓ | ✓ |
| **Sealing solutions** | | | |
| Lip seal | ✓ | ✓ | ✓[1] |
| Radial shaft seal | – | – | – |
| V-ring seal | ✓ | ✓ | ✓[1] |
| Felt seal | ✓ | ✓ | ✓[1] |
| Labyrinth seal | ✓ | ✓ | ✓ |
| Taconite heavy-duty seal | ✓ | ✓ | ✓ |
| Multi-seal | – | – | – |
| **Lubrication** | | | |
| Grease | ✓ | ✓ | ✓ |
| Oil | optional | optional[2] | – |
| **Materials** | | | |
| Grey cast iron | standard | standard | standard |
| Spheroidal graphite cast iron | optional | optional | optional |
| Cast steel | – | – | – |
| **Mounting** | | | |
| No attachment bolts | ✓ | ✓ | ✓ |
| Two-bolt mounting | ✓ | ✓ | ✓ |
| Four-bolt mounting | ✓ | ✓ | ✓ |
| Eight-bolt mounting | – | – | – |
| **Supersedes (SKF)** | SNH, SNA, SN | SNL 2,3,5 and 6, SNH, SNA, SN | SN 30 |
| **Replacement for (non-SKF)** | ISO 113 standard housing | ISO 113 standard housing | ISO 113 standard housing |

[1] Not available for sizes 34 and above.
[2] For sizes 518 to 532 circulating oil only.

Table 1

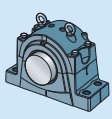
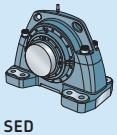
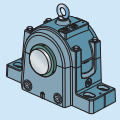
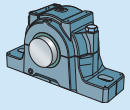
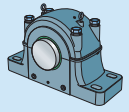
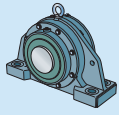
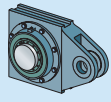
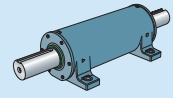
|  |  |  |  |  |
|---|---|---|---|---|
| **SNL 30, 31 and 32** | **SED** | **SONL** | **SAF, SAW** | **SDAF** |
| 5 | 6 | 7 | 8 | 9 |
| – | – | ✓ | ✓ | – |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| 115 | 430 | 75 | 40 | 85 |
| 530 | 900 | 240 | 220 | 530 |
| *4 7/16* | – | *2 15/16* | *1 3/16* | 2 15/16 |
| *19 1/2* | – | *8 15/16* | *10 1/2* | 20 |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| ✓ | – | – | – | – |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| – | – | – | – | – |
| – | – | – | ✓ | ✓ |
| – | – | – | – | – |
| – | – | – | – | ✓ |
| ✓ | – | ✓ | ✓ | ✓ |
| ✓ | – | – | ✓ | ✓ |
| – | ✓ | – | – | – |
| ✓ | ✓ | – | ✓ | ✓ |
| ✓ | ✓ | ✓ | ✓ | ✓ |
| standard | – | standard | standard | standard |
| optional | standard | optional | optional | optional |
| – | – | – | optional | optional |
| – | – | – | – | – |
| – | – | – | ✓ | – |
| ✓ | – | ✓ | ✓ | ✓ |
| – | ✓ | – | – | – |
| SD, SDD | – | SOFN 2, 5 | – | – |
| ISO 113 | – | – | – | – |
| standard housing | | | | |

Table 2

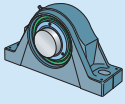
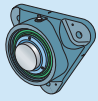
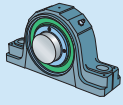
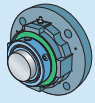
**Non-split housings**

| |  |  |  |  |
|---|---|---|---|---|
| **Series** | **SBD** | **THD** | **FNL** | **PD** |
| Chapter | 10 | 10 | 11 | 12 |
| **Bearing types** | | | | |
| Self-aligning ball bearing | – | – | ✓ | – |
| Spherical roller bearing | ✓ | ✓ | ✓ | ✓ |
| CARB bearing | ✓ | ✓ | ✓ | – |
| Other | – | – | – | ✓[1] |
| **Shaft diameter range** | | | | |
| from [mm] | 60 | 50 | 20 | 25 |
| to [mm] | 420 | 400 | 100 | 120 |
| from [*in.*] | – | – | – | – |
| to [*in.*] | – | – | – | – |
| **Shaft-bearing combination** | | | | |
| Bearing on an adapter sleeve | ✓ | ✓ | ✓ | – |
| Bearing on a withdrawal sleeve | – | – | – | – |
| Bearing on a cylindrical seat | ✓ | ✓ | – | ✓ |
| **Sealing solutions** | | | | |
| Lip seal | – | – | ✓ | – |
| V-ring seal | – | – | – | ✓ |
| Felt seal | – | – | – | ✓ |
| Labyrinth seal | ✓ | ✓ | – | – |
| **Lubrication** | | | | |
| Grease | ✓ | ✓ | ✓ | ✓ |
| Oil | – | – | – | optional |
| **Materials** | | | | |
| Grey cast iron | optional | optional | standard | standard |
| Spheroidal graphite cast iron | standard | standard | – | – |
| Cast steel | optional | optional | – | – |
| **Mounting** | | | | |
| No attachment bolts | – | n/a | – | – |
| Two-bolt mounting | – | n/a | – | – |
| Four-bolt mounting | ✓ | n/a | ✓[2] | ✓ |
| **Supersedes (SKF)** | – | – | 7225(00) | – |

[1] Typical bearings include deep groove ball bearings, angular contact ball bearings, and cylindrical roller bearings.
[2] Housings with a triangular flange have three attachment bolts.

Table 3

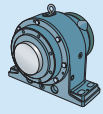
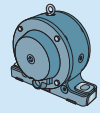
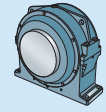
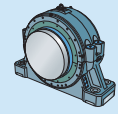
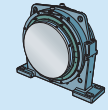
**Roller bearing units**

| |  |  |  |  |
|---|---|---|---|---|
| **Series** | **SYNT** | **FYNT** | **SYE .. N, SYR .. N, FSYE** | **FYE, FYR, FYRP** |
| Chapter | 16 | 16 | 17 | 17 |
| **Bearing types** | | | | |
| Self-aligning ball bearing | – | – | – | – |
| Spherical roller bearing | ✓ | ✓ | ✓ | ✓ |
| CARB bearing | – | – | – | – |
| **Shaft diameter range** | | | | |
| from [mm] | 35 | 35 | – | – |
| to [mm] | 100 | 100 | – | – |
| from [*in.*] | – | – | *1 7/16* | *1 7/16* |
| to [*in.*] | – | – | *4 15/16* | *4* |
| **Locking method** | | | | |
| SKF ConCentra | ✓ | ✓ | ✓ | ✓ |
| Locking collar | – | – | ✓ | ✓ |
| **Sealing solutions** | | | | |
| Lip seal | ✓ | ✓ | ✓ | ✓ |
| Radial shaft seal | ✓ | – | ✓ | ✓ |
| Labyrinth seal | ✓ | – | ✓ | ✓ |
| **Lubrication** | | | | |
| Grease | ✓ | ✓ | ✓ | ✓ |
| Oil | – | – | – | – |
| **Materials** | | | | |
| Grey cast iron | ✓ | ✓ | ✓ | ✓ |
| **Mounting** | | | | |
| No attachment bolts | – | – | – | – |
| Two-bolt mounting | ✓ | – | ✓ | – |
| Four-bolt mounting | – | ✓[1)] | ✓ | ✓ |
| **Supersedes (SKF)** | SYT | – | – | – |

[1)] Housings with a triangular flange have three attachment bolts.

Table 4

**Application-specific housings**

| Series | SBPN | SBFN | SDM | SKND | FSDR |
|---|---|---|---|---|---|
| |  |  |  |  |  |
| Chapter | 13 | 13 | 13 | 14 | 15 |
| **Application** | Drying cylinder | Felt roll | Yankee cylinder | Converter trunnion | Mill trunnion |
| **Bearing types** | | | | | |
| Self-aligning ball bearing | – | – | – | – | – |
| Spherical roller bearing | ✓ | ✓ | ✓ | ✓ | ✓ |
| CARB bearing | ✓ | ✓ | ✓ | ✓ | – |
| **Shaft diameter range** | | | | | |
| from [mm] | 180 | 60 | 340 | 530 | 825 |
| to [mm] | 320 | 180 | 670 | 1 180 | 1 460 |
| from [*in.*] | 1) | 1) | 1) | 1) | 1) |
| to [*in.*] | 1) | 1) | 1) | 1) | 1) |
| **Shaft-bearing combination** | | | | | |
| Bearing on an unthreaded sleeve | – | – | – | – | ✓2) |
| Bearing on a cylindrical seat | – | optional | – | ✓ | – |
| Bearing on a tapered seat | ✓ | ✓ | ✓ | – | – |
| **Sealing solutions** | | | | | |
| Lip seal | – | – | – | ✓ | – |
| V-ring seal | – | – | – | – | ✓ |
| Labyrinth seal | ✓ | ✓ | – | – | ✓ |
| Gap-type seal | – | – | ✓ | – | – |
| **Lubrication** | | | | | |
| Grease | – | – | – | ✓ | ✓ |
| Oil | ✓ | ✓ | ✓ | – | – |
| **Materials** | | | | | |
| Grey cast iron | ✓ | ✓ | ✓ | – | ✓ |
| Spheroidal graphite cast iron | – | – | – | ✓ | optional |
| **Mounting** | | | | | |
| No attachment bolts | – | – | – | – | – |
| Two-bolt mounting | – | ✓ | – | – | – |
| Four-bolt mounting | ✓ | optional | ✓ | ✓ | ✓ |
| **Supersedes (SKF)** | SBP | SBF2) | – | SDKD | – |

1) Contact SKF.
2) Housings are still available.

# Selecting a housing

When selecting a housing, many factors should be considered. The selection process depends not only on the bearing type and size but also on the ability of the housing to safely accommodate the magnitude and characteristics of all applied loads. Beside this, important considerations are mounting, maintenance, sealing options and bearing lubricant requirements.

### Search for a housing

To identify housings that are suitable for a specific bearing type, size and shaft-bearing combination, use the *Bearing index*, starting on **page 742**, or the online application *SKF Housing Select*, available at skf.com/housings. Also keep in mind that a roller bearing unit may be the preferred solution (→ **table 5**). An online search facility for bearing units is also available at skf.com/housings.

### Adjust the bearing selection

If there is no suitable housing for the selected bearing type or size, consider switching to a bearing that can be accommodated in a standard housing. The result will be a more cost-effective bearing/housing solution.

### Select the final housing variant

Once a housing has been selected, be sure that the housing and available sealing solutions will accommodate the loads, shaft-bearing combination, lubrication method and operating conditions, e.g. type and level of contaminants. Consider all housing variants, including those with a non-standard seat tolerance or special seals. For unique requirements, contact the SKF application engineering service.

**Table 5**

**Housing equivalents**

| Housing series | Roller bearing unit |
|---|---|
| **SNL 5 series** | SKF ConCentra roller bearing units in the SYNT series |
| **FNL series** | SKF ConCentra roller bearing units in the FYNT series |

# Environmental conditions

SKF housings are intended for both interior and exterior applications. The following corrosivity categories, in accordance with ISO 12944-2, are applicable for SKF housings:

- C2 for all housings except SE and SED plummer (pillow) block housings
- C3 for SE and SED plummer (pillow) block housings

Additional information about corrosivity categories is provided in **table 6**.

## Custom painting / corrosivity category

The standard colour and corrosivity category of an SKF housing is indicated in the relevant product chapter. SKF housings can also be supplied in other colours and/or corrosivity categories (→ **table 6**) or according to customer specifications. Housings that have a non-standard painting requirement are identified by the designation suffix P followed by a unique two- or three-digit number e.g. SNL 510-608/P76.

If a housing is going to be repainted, SKF recommends taking the following precautions prior to painting:

- Cover all housing openings. For housings with seal grooves, place discs cut from cardboard or plastic in the seal grooves. This is particularly important because residual chemicals or abrasives from the preparation process can lead to premature bearing and seal damage.
- Remove all grease fittings and protect all threaded holes with plugs.
- To avoid any chemical attack of the surface when washing painted castings, follow the instructions from the supplier of the washing chemicals regarding concentration, temperature, and time. The paint is resistant to commonly used low alkalescent washing chemicals.

# Sealing solutions

The performance of a sealing arrangement is vital to the cleanliness of the lubricant and the service life of the bearings. The type of seal should be selected based on the lubricant type and operating speed but levels of contamination and misalignment should also be considered.

There is a wide assortment of SKF housing seals. Some housings can accommodate different types of seals, while other housings are designed for one specific sealing solution. For information about the sealing solutions available for a particular housing or roller bearing unit, refer to **tables 1** to **4**, starting on **page 30**, or the relevant product chapter. The properties, application conditions and suitability of each sealing solution are also provided in the relevant product chapter.

### Converting circumferential to rotational speeds

To convert the circumferential speed limit of a sealing solution to the equivalent rotational speed, refer to **table 7**.

Table 6

**Corrosivity categories**[1]

| Corrosivity category | Examples of typical environments in a temperate climate<br>Exterior | Interior |
|---|---|---|
| **C1**<br>(very low) | – | Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels. |
| **C2**<br>(low) | Atmospheres with low levels of pollution. Typically inland rural areas. | Unheated buildings where condensation may occur, e.g. depots, sport halls. |
| **C3**<br>(medium) | Urban and industrial atmospheres with moderate levels of sulphur dioxide. Coastal areas with low salinity. | Production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies. |
| **C4**<br>(high) | Industrial and coastal areas with moderate salinity. | Chemical plants, swimming pools, coastal ship- and boatyards. |
| **C5-I**<br>(very high, industrial) | Industrial areas with high humidity and aggressive atmosphere. | Buildings or areas with almost permanent condensation and with high pollution. |
| **C5-M**<br>(very high, marine) | Coastal and offshore areas with high salinity.[2] | Buildings or areas with almost permanent condensation and with high pollution. |

[1] In accordance with ISO 12944-2.
[2] In hot, humid coastal areas, the mass loss or thickness loss can exceed the limits of category C5-M and special precautions should be taken when selecting protective paint systems.

Table 7

**Converting circumferential speed limits to rotational speeds**

| Shaft diameter at the seal lip | Rotational speed for circumferential speed limits | | | | | |
|---|---|---|---|---|---|---|
| | 2 m/s | 4 m/s | 7 m/s | 8 m/s | 12 m/s | 13 m/s |
| mm | r/min | | | | | |
| **20** | 1 910 | 3 820 | 6 680 | 7 640 | 11 460 | 12 410 |
| **25** | 1 530 | 3 060 | 5 350 | 6 110 | 9 170 | 9 930 |
| **30** | 1 270 | 2 550 | 4 460 | 5 090 | 7 640 | 8 280 |
| **35** | 1 090 | 2 180 | 3 820 | 4 370 | 6 550 | 7 090 |
| **40** | 950 | 1 910 | 3 340 | 3 820 | 5 730 | 6 210 |
| **45** | 850 | 1 700 | 2 970 | 3 400 | 5 090 | 5 520 |
| **50** | 760 | 1 530 | 2 670 | 3 060 | 4 580 | 4 970 |
| **55** | 690 | 1 390 | 2 430 | 2 780 | 4 170 | 4 510 |
| **60** | 640 | 1 270 | 2 230 | 2 550 | 3 820 | 4 140 |
| **65** | 590 | 1 180 | 2 060 | 2 350 | 3 530 | 3 820 |
| **70** | 550 | 1 090 | 1 910 | 2 180 | 3 270 | 3 550 |
| **75** | 510 | 1 020 | 1 780 | 2 040 | 3 060 | 3 310 |

continues on next page

cont. Table 7

**Converting circumferential speed limits to rotational speeds**

| Shaft diameter at the seal lip | Rotational speed for circumferential speed limits | | | | | |
|---|---|---|---|---|---|---|
| | 2 m/s | 4 m/s | 7 m/s | 8 m/s | 12 m/s | 13 m/s |
| mm | r/min | | | | | |
| **80** | 480 | 950 | 1 670 | 1 910 | 2 860 | 3 100 |
| **85** | 450 | 900 | 1 570 | 1 800 | 2 700 | 2 920 |
| **90** | 420 | 850 | 1 490 | 1 700 | 2 550 | 2 760 |
| **95** | 400 | 800 | 1 410 | 1 610 | 2 410 | 2 610 |
| **100** | 380 | 760 | 1 340 | 1 530 | 2 290 | 2 480 |
| **110** | 350 | 690 | 1 220 | 1 390 | 2 080 | 2 260 |
| **115** | 330 | 660 | 1 160 | 1 330 | 1 990 | 2 160 |
| **120** | 320 | 640 | 1 110 | 1 270 | 1 910 | 2 070 |
| **125** | 310 | 610 | 1 070 | 1 220 | 1 830 | 1 990 |
| **130** | 290 | 590 | 1 030 | 1 180 | 1 760 | 1 910 |
| **135** | 280 | 570 | 990 | 1 130 | 1 700 | 1 840 |
| **140** | 270 | 550 | 950 | 1 090 | 1 640 | 1 770 |
| **145** | 260 | 530 | 920 | 1 050 | 1 580 | 1 710 |
| **150** | 250 | 510 | 890 | 1 020 | 1 530 | 1 660 |
| **155** | 250 | 490 | 860 | 990 | 1 480 | 1 600 |
| **160** | 240 | 480 | 840 | 950 | 1 430 | 1 550 |
| **165** | 230 | 460 | 810 | 930 | 1 390 | 1 500 |
| **170** | 220 | 450 | 790 | 900 | 1 350 | 1 460 |
| **175** | 220 | 440 | 760 | 870 | 1 310 | 1 420 |
| **180** | 210 | 420 | 740 | 850 | 1 270 | 1 380 |
| **185** | 210 | 410 | 720 | 830 | 1 240 | 1 340 |
| **195** | 200 | 390 | 690 | 780 | 1 180 | 1 270 |
| **200** | 190 | 380 | 670 | 760 | 1 150 | 1 240 |
| **205** | 190 | 370 | 650 | 750 | 1 120 | 1 210 |
| **215** | 180 | 360 | 620 | 710 | 1 070 | 1 150 |
| **220** | 170 | 350 | 610 | 690 | 1 040 | 1 130 |
| **240** | 160 | 320 | 560 | 640 | 950 | 1 030 |
| **255** | 150 | 300 | 520 | 600 | 900 | 970 |
| **260** | 150 | 290 | 510 | 590 | 880 | 950 |
| **275** | 140 | 280 | 490 | 560 | 830 | 900 |
| **280** | 140 | 270 | 480 | 550 | 820 | 890 |
| **295** | 130 | 260 | 450 | 520 | 780 | 840 |
| **300** | 130 | 250 | 450 | 510 | 760 | 830 |
| **320** | 120 | 240 | 420 | 480 | 720 | 780 |
| **340** | 110 | 220 | 390 | 450 | 670 | 730 |
| **360** | 110 | 210 | 370 | 420 | 640 | 690 |
| **380** | 100 | 200 | 350 | 400 | 600 | 650 |
| **400** | 100 | 190 | 330 | 380 | 570 | 620 |
| **410** | 90 | 190 | 330 | 370 | 560 | 610 |
| **430** | 90 | 180 | 310 | 360 | 530 | 580 |
| **450** | 80 | 170 | 300 | 340 | 510 | 550 |
| **470** | 80 | 160 | 280 | 330 | 490 | 530 |
| **500** | 80 | 150 | 270 | 310 | 460 | 500 |

## The SKF three-barrier solution

For highly contaminated environments, SKF recommends the three-barrier solution. This cost-effective sealing solution can have a significant impact on bearing service life as contaminants have to pass through three barriers to reach the bearing (→ **fig. 11**):

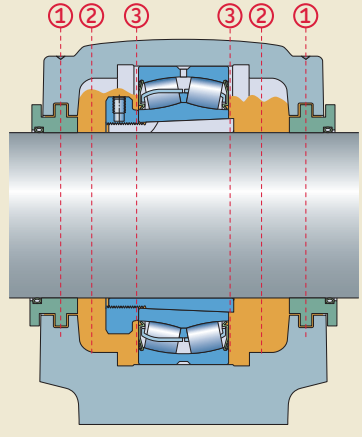
- 1st barrier – external housing seal
- 2nd barrier – housing grease
- 3rd barrier – integral bearing seal

The SKF three-barrier solution consists of a sealed SKF bearing, a housing with a 70 to 90% grease fill, and labyrinth housing seals.

Sealed bearings have integral contact seals that keep the lubricant in and contaminants out of the bearing cavity during operation. The seals also protect the bearing from the ingress of contaminants during installation. Using a sealed bearing also means that the grease used to fill the housing and labyrinth seals is independent of the lubrication requirements for the bearing. Therefore, environmentally friendly, biodegradable greases, such as SKF LGGB 2, can be used to fill the housing (→ skf.com/lubrication).

When the SKF self-aligning bearing system is used (→ **page 41**), the labyrinth seal for the CARB toroidal roller bearing should be replaced with a taconite seal.

**Fig. 11**



# Design considerations

SKF housings are typically designed for self-aligning ball bearings, spherical roller bearings and CARB toroidal roller bearings. These bearings are chosen because they are insensitive to initial misalignment, which normally occurs when the housings are spaced far apart.

Two-bearing housings have inherently aligned bearing seats and therefore can accommodate rigid bearings such as deep groove ball bearings, angular contact ball bearings and cylindrical roller bearings.

## Bearing arrangements

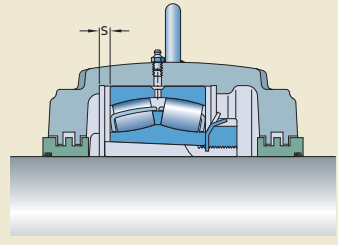
### Locating/non-locating bearing arrangements

Conventional locating/non-locating bearing arrangements (→ **fig. 15**) are designed to accommodate thermal elongation of the shaft. In these systems, the non-locating bearing must be able to move axially on its seat in the housing.

SKF housings can accommodate bearings in both the locating and non-locating positions. Most standard housings have a bearing seat that is sufficiently wide to enable axial displacement of the non-locating bearing (→ **fig. 12**, "s"). When these housings are used in the locating position, locating (stabilizing) ring(s) should be used to secure the bearing axially in the housing (→ **fig. 13**).

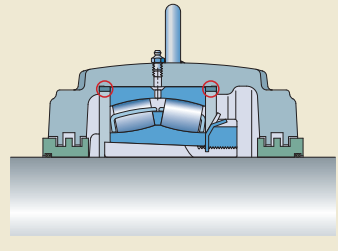
Some SKF housing series are available with a wide bearing seat for axial displacement, designation suffix L, and a bearing seat that matches the width of the bearing to locate it axially, designation suffix F (→ **fig. 14**).

**Fig. 12**



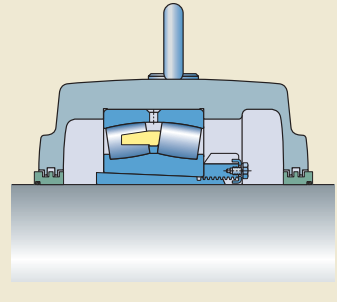

Wide bearing seat for the non-locating bearing position

**Fig. 13**



Locating bearing held axially by locating rings

**Fig. 14**



Locating bearing held axially by a matched bearing seat

### The SKF self-aligning bearing system

To accommodate misalignment and shaft deflections, conventional self-aligning bearing arrangements use spherical roller or self-aligning ball bearings in both the locating and non-locating bearing positions (→ **fig. 15**). To accommodate thermal elongation of the shaft in these arrangements, the non-locating bearing must be able to move axially on its seat in the housing. Any wear or damage to the housing seat results in a "stick-slip" condition that induces axial loads, friction, and heat into the bearing arrangement.

A better solution is to use a CARB toroidal roller bearing in the non-locating position (→ **fig. 15**). CARB bearings accommodate misalignment and shaft deflections. They also accommodate thermal elongation of the shaft within the bearing, with virtually no friction, to avoid induced axial loads.

Because CARB bearings do not accommodate axial loads, these bearings must always be secured axially in the housing, with either locating (stabilizing) rings or by using a housing variant with an F (or RA for some housings) in its designation suffix.

Compared to conventional self-aligning bearing arrangements, replacing the non-locating bearing with a CARB bearing increases the load carrying capacity of the bearing arrangement, enabling a more compact, and therefore lighter, bearing arrangement to be used. By virtually eliminating induced axial loads, vibration levels and temperatures are reduced and less grease is consumed, resulting in less maintenance. The solution contributes to improved reliability and extended bearing service life.

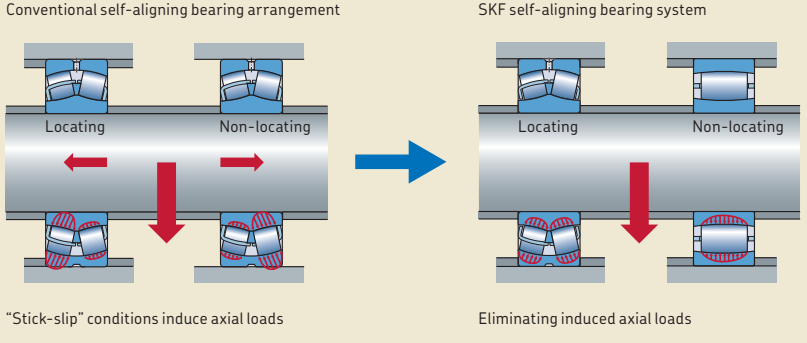
### Typical shaft-bearing combinations

Bearings in SKF housings can be mounted either directly on a shaft or on a sleeve on the shaft. There are four typical combinations (→ **table 8**, **pages 42–43**):

- plain shaft with bearing on an adapter sleeve
- stepped shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a withdrawal sleeve
- stepped shaft with bearing on a cylindrical seat

For information about the shaft-bearing combination alternatives for a particular housing type, refer to **tables 1** to **4**, starting on **page 30**, or the relevant product chapter.

**Fig. 15**



**Comparison of typical shaft-bearing combinations**

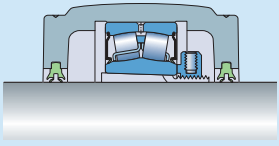
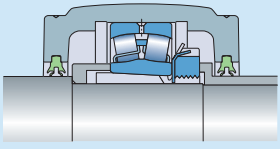
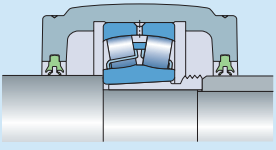
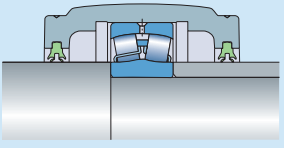
| |  **Plain shaft with bearing on an adapter sleeve** |  **Stepped shaft with bearing on an adapter sleeve** |
|---|---|---|
| **Shaft** | • Machining not required, drawn round bars (h9 or better) can be used<br>• Maximum shaft strength (no shoulders or undercuts) | • Machining required, typically two steps<br>• Shaft strength weakened by shoulders |
| **Bearing** | • Bearing can be mounted at any position on the shaft<br>• Internal clearance changes during mounting (proper drive-up required)<br>• Axial load carrying capacity limited by the adapter sleeve | • Bearing position determined accurately by the stepped ring<br>• Internal clearance changes during mounting (proper drive-up required)<br>• Axial load carrying capacity limited by the shaft sleeve or adapter sleeve in one direction and by the bearing and housing in the other direction |
| **Mounting and dismounting** | • 40% less mounting force required compared to other sleeve mounted arrangements as friction only occurs between two mating surfaces | • Other components on the shaft can be located axially against the bearing on its sleeve via spacer sleeves<br>• Easy dismounting as the bearing inner ring is in contact with the stepped ring |
| **Applications** | • Long shafts where more than two bearings are required for support<br>• When the final position of the bearing cannot be accurately determined prior to mounting<br>• When machine components are mounted using clamping or tensioning devices so that the shaft does not need to be machined | • Support of shaft ends<br>• Frequent mounting and dismounting |

Table 8

| | Stepped shaft with bearing on a withdrawal sleeve | Stepped shaft with bearing on a cylindrical seat |
|---|---|---|
| |  |  |
| Shaft | • Machining required, typically two steps<br>• Shaft strength weakened by shoulders | • Machining required, typically two steps<br>• Shaft strength weakened by shoulders<br>• Largest shaft diameter for a given bearing size |
| Bearing | • Bearing position determined accurately by the shaft shoulder<br>• Internal clearance changes during mounting (proper drive-up required)<br>• Axial load carrying capacity limited by the shaft sleeve or withdrawal sleeve in one direction and by the bearing and housing in the other direction | • Bearing position determined accurately by the shaft shoulder<br>• Internal clearance determined by the shaft seat tolerance<br>• Axial load carrying capacity limited by the bearing and housing |
| Other components | • Other components on the shaft can be located axially against the bearing on its sleeve via spacer sleeves<br>• Easy dismounting with a withdrawal sleeve and hydraulic nut | • Other components can be located axially against the bearing via spacer sleeves<br>• Suitable when large numbers of bearings have to be mounted<br>• Simple axial locating by shaft nut |
| Application | • Support of shaft ends<br>• Frequent mounting and dismounting | • Support of shaft ends<br>• Frequent mounting and dismounting<br>• Suitable for shock loads or where higher speeds or higher precision are required |

## Load carrying capacity

The load carrying capacity of a housing depends on many factors:

- the housing material and design and, where applicable, cap bolt strength
- the direction of the load
- the strength of the attachment bolts and support structure
- the condition of the support surface

SKF provides static housing load limits, either in the form of breaking loads or safe loads, for most housings. Where values are not provided, the load carrying capacity is higher for the housing than for the bearing.

Breaking loads can be used to calculate a permissible load, based on a selected safety factor. Safe loads already include a safety factor.

Special attention is required for split housings subjected to cyclic loads or dynamic imbalance. Under these conditions, cap bolt and housing cap strength ($P_{180°}$) should be analyzed carefully. For additional information, contact the SKF application engineering service.

### Breaking loads

For most SKF housings, guideline values for the breaking loads P are provided in the relevant product chapter. To obtain the permissible load for a housing, the guideline value should be divided by a factor based on the safety requirements and operating conditions of the application. In general engineering, a safety factor of 6 is typical. The permissible load can only be exploited if the housing is mounted properly and all bolts are tightened to the specified torque values. For split housings, the strength of the cap bolts should also be considered. A minimum safety factor of 2 against cap bolt yield should be used.

The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve (→ *Axial load carrying capacity for bearings on a sleeve*).

### Safe loads

In some regions, safe loads are used instead of breaking loads. These guideline values have been established using accepted engineering practices, taking safety and ultimate tensile strength of the materials into account. They reflect a safety factor of 5 against housing fracture, and where applicable, a minimum factor of 2 against cap bolt yield. The safe loads can only be fully exploited if the housing is mounted properly and all bolts are tightened to the correct torque values.

### Axial load carrying capacity for bearings on a sleeve

When using a bearing on a sleeve on a plain shaft, the axial load carrying capacity is limited either by the bearing, sleeve or housing.

For the axial load carrying capacity of the bearing, refer to the product information available online at skf.com/bearings. For the sleeve, the permissible axial load to safely prevent slippage on the shaft is determined by the friction between the shaft and sleeve. Provided the bearing is mounted correctly (→ skf/mount.com), the permissible axial load can be calculated from

$$F_{ap} = 0{,}003\ B\ d$$

where
$F_{ap}$ = maximum permissible axial load [kN]
B = bearing width [mm]
d = bearing bore diameter [mm]

Information about the axial load carrying capacity of the housing is provided in the relevant product chapter.

## Specifications for shafts and housing support surfaces

### Shaft

#### Bearing seat

Recommended fits for bearings on solid steel shafts in cast iron housings are provided in the SKF catalogue *Rolling bearings* and are available online at skf.com/bearings.

If adapter or withdrawal sleeves are used, the sleeve seat on the shaft should be machined to tolerance class h9Ⓔ or better. The total radial runnout should be IT5/2 for tolerance class h9Ⓔ.

If bearings are to be mounted directly onto the shaft, the cylindricity tolerance and total runout tolerance of the bearing seat should, depending on the requirements, be one to two IT tolerance grades better than the prescribed dimensional tolerance. Abutments for bearing rings should have a perpendicularity tolerance and total axial runout tolerance that is at least one IT tolerance grade better than the diameter tolerance of the associated cylindrical seat.

#### Seal seat or counterface

Recommendations are provided in the relevant product chapter. Generally, seal counterfaces should be machined to tolerance class h9Ⓔ or better and the cylindricity should be to tolerance grade IT5.

#### Surface roughness

At the sleeve and seal positions, the shaft surface should have a surface roughness $R_a \leq 3{,}2$ µm *(125 µin.)*. Recommendations for the surface roughness of cylindrical bearing seats are provided in the SKF catalogue *Rolling bearings* and are available online at skf.com/bearings.

### Housing support surface

To maximize bearing service life and prevent deformation of the housing bore, SKF recommends that the flatness of the housing support surface is to tolerance grade IT7 in accordance with ISO 1101. The surface should be finished to a surface roughness $R_a \leq 12{,}5$ µm *(500 µin.)*.

# Lubrication

## Grease selection

Grease selection is typically driven by the bearing and its operating conditions. The same grease can be used to fill the housing and lubricate the seal.

For information about SKF greases, refer to the product information available online at skf.com/lubrication. The SKF grease selection program *LubeSelect*, also available online at skf.com/lubrication, can be used to select an appropriate grease.

#### Biodegradable grease for housings with sealed bearings

If sealed bearings are used, the grease used to fill the housing and lubricate the housing seals does not need to be compatible with the grease inside the bearing. This is a good opportunity to use environmentally friendly grease such as SKF LGGB 2. It is a biodegradable, low toxicity grease. For additional information about this grease, refer to the product information available online at skf.com/lubrication.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are lubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70 to 80%. For the best protection against contaminants, use the SKF three-barrier solution (→ **page 39**).

Higher speeds can require a reduced grease fill. For additional information, contact the SKF application engineering service. Quantities for the initial grease fill are provided in the individual product chapters.

## Relubrication

#### Grease escape holes

Bearing arrangements in housings that have contact seals, e.g. double-lip or four-lip seals, can be equipped with a grease escape hole to allow used, excess grease to be purged from the housing. The escape hole should be positioned on the side opposite the grease inlet and if applicable, on the same side as the lock nut. For long relubrication intervals, it is often sufficient to remove the housing cap or cover and remove the old grease.

#### Relubrication via the outer ring

**CAUTION:** Care should be taken when relubricating spherical roller bearings in the non-locating position via their lubrication feature in the outer ring. There is a risk that the lubrication groove of the bearing will not be aligned with the hole in the centre of the housing cap and the lubricant will not reach the bearing. This can be the case when narrow bearings are mounted in housings with a wide housing seat, e.g. spherical roller bearings in the 222 series mounted in SNL 5(00) series housings, and the application is subjected to large axial movements. Under these circumstances, the bearings should be relubricated from the side.

Fig. 16



## SKF tools and products

SKF has a wide assortment of lubrication tools and products for SKF bearing housings. A brief overview is provided here. For additional information, refer to the product information available online at mapro.skf.com and skf.com/lubrication.

### Grease meter

The SKF grease meter LAGM 1000E (→ **fig. 16**) accurately measures grease discharge in volume or weight, and in both metric ($cm^3$ or g) and imperial (fl.oz. or oz.) units. It is suitable for all SKF bearing greases with a consistency class of up to 3 on the NLGI scale.

### Automatic lubricators

Automatic lubricators can prevent both over and under-greasing.

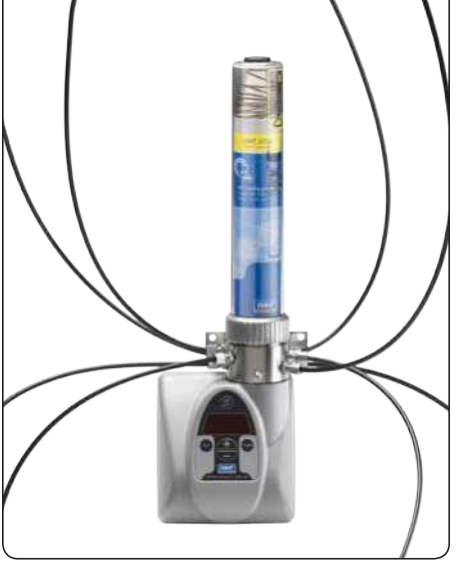
SKF SYSTEM 24 lubricators (→ **fig. 17**) are automatic single point lubricators suitable for a wide range of applications and operating conditions. They are compact, easy to install and have a transparent container to check the amount of lubricant that is available. There are two series of lubricators: Gas driven lubricators include LAGD 60 (60 ml) and LAGD 125 (125 ml); Electro-mechanical driven lubricators include LAGE 125 (122 ml) and LAGE 250 (250 ml).

The SKF MultiPoint lubricator LAGD 400 (→ **fig. 18**) is a centralized automatic lubricator that simultaneously lubricates up to eight points. It is compact, easy to install and has a transparent container to check the amount of lubricant that is available.

**Fig. 17**



**Fig. 18**



#### Oil levellers

SKF oil levellers LAHD 500 (→ **fig. 19**) and LAGH 1000 are designed to automatically adjust the oil level in a bearing housing. The levellers allow the oil level to be adjusted during operation, optimizing machine performance and increasing the service life of the bearings. The transparent container enables the oil level to be inspected.

#### Adapters to change connection threads

The assortment of adapters in the LAPN series (→ **fig. 20**) are available, to convert, for example, from a 1/8 – 27 NPSF thread to a G 1/4 thread.

#### Caps and tags for grease fittings

TLAC 50 caps and tags provide a space to properly identify the lubrication point(s) on a bearing housing as well as protect the grease fittings from the ingress of contaminants (→ **fig. 21**). The labels can also be used in conjunction with the SKF Lubrication Planner.

#### Centralized lubrication systems

The SKF Multilube pumping unit (→ **fig. 22**) is a compact, all-in-one unit for lubricating individual machines and equipment. Designed for indoor and outdoor use, the unit is suitable for all pumpable oils and greases and can be used in single line, dual line and progressive lubrication systems.

#### Circulating oil lubrication concept

Oil circulation lubrication is needed in applications where the lubrication point (bearing) must be cooled while lubricated. An oil circulation system consists of a pumping station with a large oil reservoir and oil flow meters.

SKF Flowline reservoir (→ **fig. 23**) is round in shape and the plate construction inside improves the oil movement so much, that the efficiency is over 90%. This means, the reservoir size can be reduced even down to 1/3 of the traditional reservoir and still the real retention time of the oil is the same or better. Plate construction makes water and air separation very effective and the oil remains in very good condition, which means longer bearing life.

Fig. 19




Fig. 20



Savings in the oil purchase and handling costs are significant and the entire pumping station can be installed in the space taken by the old reservoir only.

Oil flow meters are always needed as a part of an oil circulation system to regulate and monitor oil flow. SKF Flowline Monitor is a digital oil flow meter, where the measurement is viscosity compensated and the reading by clear numbers is always correct, independent of temperature. On-line monitoring and setting parameters can also be done remotely.

Fig. 22




Fig. 21



Fig. 23



# Mounting

Mounting instructions are supplied with most SKF bearing housings, or with the corresponding seal kit. For additional information about mounting, refer to the *SKF bearing maintenance handbook* or the information available online at skf.com/mount.

## Preparations prior to mounting

Mounting housings (and bearings) requires care, accuracy and the appropriate tools. Prior to mounting, do the following:

- Make sure that the work area is clean.
- Study any drawings or instructions to determine the correct order in which to assemble the various components.
- Make sure that all the necessary components and tools are at hand.
- Clean the support surface.
- Check that the support surface meets the requirements for flatness (→ *Specifications for shafts and housing support surfaces*, **page 45**).
- Check that the shaft seats and seal counterfaces meet the requirements for dimensional and form accuracy, roughness and hardness (→ *Specifications for shafts and housing support surfaces*, **page 45**).
- Chamfer or round any shaft edges over which a seal lip will pass.

## SKF tools and products

The SKF assortment of mounting tools and products includes mechanical tools, hydraulic tools, heating equipment and gloves. For additional information, refer to the product information available online at mapro.skf.com.

## Lifting housings

Many SKF bearing housings are supplied with eye bolts for safe and easy handling. The eye bolts are designed to support the weight of the housing only, and not the incorporated bearing or shaft.

When lifting, make sure that the eye bolts are only subjected to load in the direction of the shank axis. The load should be evenly distributed across the number of eye bolts.

## Attachment bolt tightening

Applying the specified torque to a bolt during installation is extremely important. Improper torque values can lead to machinery movement during operation. This can cause misalignment between machine parts, which will eventually lead to premature damage to bearings and other components.

Recommended tightening torque values are provided in the product chapters and are based on bolt manufacturers' recommendations.

All bolts should be tightened with an accurate torque wrench (in at least two stages) or a hydraulic bolt tensioner. SKF recommends using a HYDROCAM hydraulic bolt tensioner in applications where the attachment bolt has an end protruding above the tightening nut. These tensioners reduce the risk of over tightening and enable bolts to be installed accurately without the need of a torque wrench. The tensioners also provide uniform assembly preload or uniform bolt elongation.

## Using shims

Shims can be used to raise the centre height of a housing. SKF recommends using shims made of stainless sheet steel with sufficient strength and the ability to withstand corrosion from several media. Shims made from soft metals like copper or brass typically compress over time, causing looseness, which can eventually lead to misalignment. Whenever possible, use only one shim and never stack more than three shims.

**CAUTION:** Make sure that the shim covers the complete contact surface between the housing base and the support surface (→ **fig. 23**). If shims are placed under the housing feet only, the bearing seat can distort.

## Using locating (stabilizing) rings

A bearing in the locating position must be secured axially in the housing. If the bearing seat in the housing and the bearing width do not match, locating (stabilizing) rings (→ **fig. 24**) are required. Typically, two locating rings are required per housing. One ring should be placed on each side of the bearing. If only one locating ring is required, it should be installed on the same side as the lock nut. When placing

a locating ring in position, make sure that the open end of the locating ring is facing up.

CARB toroidal roller bearings, which are used exclusively in the non-locating position, require locating rings when the bearing seat in the housing and the bearing width do not match. For information about which locating rings are required for a bearing in a particular housing, refer to the relevant product chapter.

## Installing seals

The seal counterface should meet the specifications for surface roughness and roundness (→ *Specifications for shafts and housing support surfaces*, **page 45**), and should be clean. If the counterface shows any signs of wear, repair it. This can be done easily with an SKF SPEEDI-SLEEVE or a large diameter wear sleeve (LDSLV). If repair is not possible, replace the shaft.

In general, the seal and counterface should be coated lightly with the lubricant used in the application.

When installing seals, make sure that the seal is oriented correctly. Many seals are not symmetrical and can be installed to either exclude contaminants or retain the lubricant.

Split seals consist of two halves, which can be installed around the shaft. They are easier to replace and can ease mounting.

Felt seals should be soaked in hot oil prior to installation.

Fig. 23

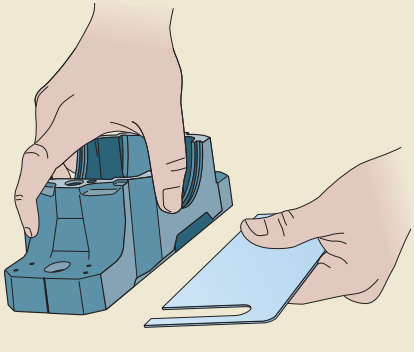
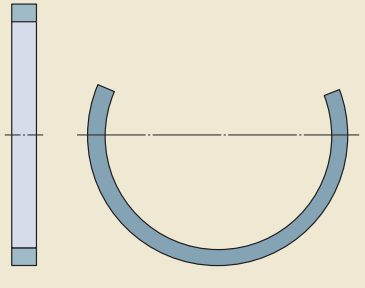


Fig. 24



## Inspection and condition monitoring

SKF housings and roller bearing units should be inspected regularly for damage and lubricant leaks. SKF also recommends a visual inspection of the seals, plugs, bolts and housing joints. The frequency of these inspections depends on the operating conditions and potential downtime consequences but should be done as part of a regularly scheduled maintenance program.

Where oil bath lubrication is used, the oil level should be monitored regularly. During operation, the oil level may drop below the minimum level. If that should happen, and oil needs to be added while the machine is running, keep the oil level well below the maximum oil level on the indicator or overfilling can result.

For additional information about inspection techniques and corrective maintenance actions, refer to the *SKF bearing maintenance handbook*.

SKF also recommends monitoring the condition of all bearings on a regular or continuous basis to detect early signs of bearing damage. Trending the condition of the bearing makes it possible to analyze the root cause of an impending failure, and plan for corrective action. Trending can also eliminate unplanned downtime. The most reliable way to do condition monitoring is through vibration analysis.

#### Vibration analysis

Many SKF housings are prepared for condition monitoring and are supplied with drilled and tapped holes to accommodate sensors. For other housings, dimples indicate the position where sensors can be located. For information about the condition monitoring possibilities for a particular housing type, refer to the relevant product chapter.

SKF has a comprehensive assortment of vibration detection, analysis and diagnostic products, from light hand-held instruments to fully integrated monitoring systems. For additional information, refer to the product information available online at skf.com/cm.

## Storage

SKF housings, roller bearing units and associated components, including the seals, should be stored under controlled temperature and humidity conditions in a clean, dry environment. Variations in temperature and humidity should be avoided but gradual, seasonal variations of a gradual nature are acceptable. As a general rule, SKF recommends the following storage conditions:

- temperature: < 30 °C *(< 85 °F)* for long-term storage
- relative humidity: < 60%
- If peaks above 65% occur regularly, a dehumidifier is required.
- temperature fluctuation: max. 3 °C / 48 hours

Under these conditions, housings can be stored for up to 10 years. Roller bearing units should not be subjected to vibration during storage as this could cause false brinelling damage to the bearing. Depending on the actual storage conditions, the lubricating properties of the initial grease fill might deteriorate. Generally SKF roller bearing units should not be stored for more than 3 years.



# Split plummer block housings SNL 2, 3, 5 and 6 series

**Bearing types**
- Self-aligning ball bearings
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 02, 03, 22, 23, 32

**Shaft diameter range**
- 20 to 30 mm and 60 to 160 mm
- 3/4 to 1 1/8 in. and 2 1/2 to 5 1/2 in.

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Four-lip
- Labyrinth
- Felt
- V-ring
- Heavy-duty

**Lubrication**
- Grease

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Two-bolt mounting
- Four-bolt mounting

**Compliance to standards**
- ISO 113 (two-bolt plummer block housings)

**Supersedes**
- SN, SNA, SNH series

SNL plummer block housings are the most popular SKF bearing housings on the market, developed to be the first choice for design, quality and economy.

SNL plummer block housings enable the incorporated bearings to achieve maximum service life with less need for maintenance. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements to be made.

For sizes 507 up to and including 515-612, SNL housings are replaced by a new generation of plummer block housings (→ *Split plummer block housings SE 2, 3, 5 and 6 series*, starting on **page 139**). From size 516-613 upward, SNL plummer block housings in the 2, 3, 5 and 6 series remains.

# Split plummer block housings SNL 2, 3, 5 and 6 series


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# Designations

**Designation system for SNL plummer (pillow) block housings**

_SNL_ 518-615 SN

**Prefixes for bolt holes**

| | |
|---|---|
| **_** | Two oblong cast holes for attachment bolts |
| **F** | Four oblong cast holes for attachment bolts |
| **S** | No holes for attachment bolts (drilled holes can be supplied) |

**Series**

| | |
|---|---|
| **SNL** | Standard plummer block housing |

**Material**

| | |
|---|---|
| **_** | Grey cast iron |
| **D** | Spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **2(00)** | Housing for bearings on a cylindrical seat, diameter series 2 |
| **3(00)** | Housing for bearings on a cylindrical seat, diameter series 3 |
| **5(00)** | Housing for bearings on an adapter sleeve, diameter series 2 |
| **6(00)** | Housing for bearings on an adapter sleeve, diameter series 3 |
| **..(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

**Suffixes**[1)]

| | |
|---|---|
| **V** | Grease escape hole in the housing base |
| **TURU** | Housing prepared for oil lubrication, including seals |
| **T** | Drilled and tapped hole 1/4-28 UNF at one side of the housing cap to lubricate a seal. Grease fitting AH 1/4-28 SAE-LT supplied with the housing |
| **TD** | Drilled and tapped hole 1/4-28 UNF at both sides of the housing cap to lubricate the seals. Two grease fittings AH 1/4-28 SAE-LT supplied with the housing |
| **SN** | Drilled and tapped M8 hole for sensor in position 3 (→ **fig. 16**, **page 83**) |
| **/MS1** | Two drilled holes for attachment bolts |
| **/MS2** | Four drilled holes for attachment bolts |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

## Split plummer block housings SNL 2, 3, 5 and 6 series

### Designation system for seals

**TSN 518 L_**

**Series**

| | |
|---|---|
| **TSN** | Seal for SNL plummer block housings |
| **FS** | Felt strip |
| **FSB** | Felt strip for high operating temperature |

**Size identification**

| | |
|---|---|
| **2(00)** | Housing for bearings with a cylindrical bore, diameter series 2 |
| **3(00)** | Housing for bearings with a cylindrical bore, diameter series 3 |
| **5(00)** | Housing for bearings on an adapter sleeve, diameter series 2 |
| **6(00)** | Housing for bearings on an adapter sleeve, diameter series 3 |
| **(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |
| **…** | For felt strips only, number indicating the length of the strip |

**Seal type**

| | |
|---|---|
| **A** | V-ring seal |
| **C** | Felt seal |
| **CB** | Felt seal for high operating temperature |
| **L** | Four-lip seal |
| **S** | Labyrinth seal |
| **NB** | Taconite heavy-duty seal with axial labyrinth and V-ring seal |
| **NC** | Taconite heavy-duty seal with axial labyrinth |
| **ND** | Taconite heavy-duty seal with radial labyrinth and V-ring seal |

**Indication for an inch shaft**

| | |
|---|---|
| **A, E** | Seal for inch shaft |

### Designation system for end covers

**ASNH 518-615**

**Series**

| | |
|---|---|
| **ASNH** | End cover for SNL plummer block housings |

**Size identification**

| | |
|---|---|
| **…** | Housing size identification |

### Designation system for locating rings

**FRB 17.5/160**

**Series**

| | |
|---|---|
| **FRB** | Locating ring for SKF bearing housings |

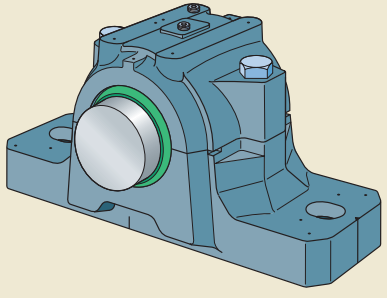
**Size identification**

| | |
|---|---|
| **…** | Width and outside diameter of the locating ring [mm] |

# Standard housing design

SNL plummer (pillow) block housings in the 2, 3, 5 and 6 series are split housings consisting of a cap and base (→ **fig. 1**). They have two holes cast into the base for attachment bolts. The housings are designed on the "building block" principle to enable a wider choice of bearings and seals as well as a variety of shaft-bearing combinations.

**Fig. 1**



## Features and benefits

SNL plummer block housings in the 2, 3, 5 and 6 series have the following features and benefits:

### Stiff housing

The housing base is reinforced with ribs and has extra material surrounding the holes for the attachment bolts (→ **fig. 2**). The attachment bolts can be preloaded to locate the housing without deforming the housings base or bore.

### Good heat dissipation

Additional ribs in the housing base (→ **fig. 3**) increase the contact area between the housing base and the support surface to improve the heat flow from the bearing outer ring to the support surface.

### Grease guiding system

For more efficient relubrication from the side, SNL housings from sizes 216 and 516-613 upwards have an integrated flange that guides grease from the grease fitting directly to the bearing (→ **fig. 4**).

### Caps and bases individually marked

The housing cap and base are matched during manufacture and are not interchangeable with the caps and bases of other housings. To prevent any mismatches, a unique serial number is marked on both the housing cap and the base (→ **fig. 5**).

### Dimples to locate accessories

Dimples cast into the housing cap indicate where grease fittings and condition monitoring sensors can be mounted for maximum effectiveness (→ **fig. 6**).

### Simple mounting

To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat and the housing bore axis are cast into the housing base. Dimples indicate the position for dowel pins (→ **fig. 7**). Mounting instructions are supplied with each seal pack.

Housings from size 524-620 and above are supplied with an eye bolt on the cap for safe and easy handling.

**Fig. 2**

**Reinforcement rib in the base**

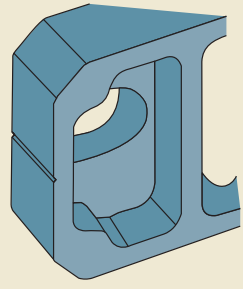


**Fig. 3**

**Extra rib for better heat conduction**

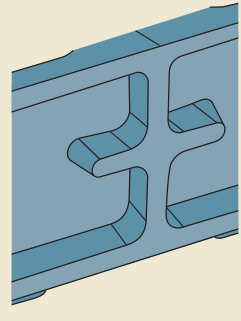


**Fig. 4**

**Grease guiding system**

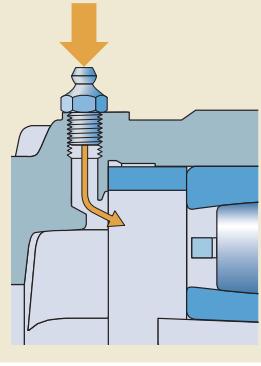


Fig. 5

**Individually marked cap and base**

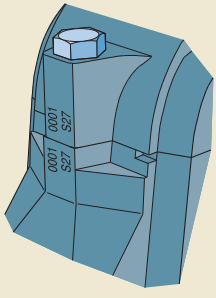



Fig. 6

**Dimples indicate positions for accessories**

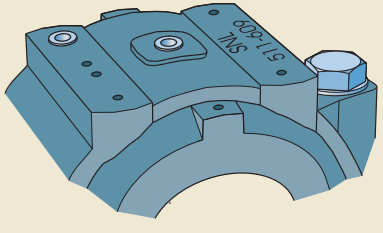
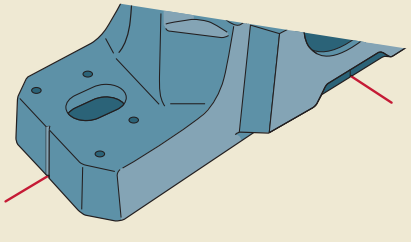



Fig. 7

**Cast indications mark the centre of the housing bore**



## Housing material

SNL housings are made of grey cast iron.

### Paint, corrosion protection

SNL housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating and engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

Boundary dimensions are in accordance with ISO 113 for two-bolt plummer block housings.

### Interchangeability

SNL plummer block housings in the 2, 3, 5 and 6 series are dimensionally interchangeable with the earlier SN, SNA and SNH series.

# Housing variants

In addition to standard design SNL plummer (pillow) block housings, a number of variants are also available. Variants include housings made of different materials, alternative attachment bolt hole configurations, different bearing seat tolerance classes and modifications for special applications.

## Housing material

For applications where extra strength is needed, SNL housings are also available in spheroidal graphite cast iron. Housings made of spheroidal graphite cast iron are available from size 516-613 and are supplied with a solid base (no holes for attachment bolts) as standard. From size 516-613 the housings can be supplied with four oblong holes cast in the base. All housings made of spheroidal graphite cast iron can be supplied with two drilled holes for attachment bolts (designation suffix /MS1).

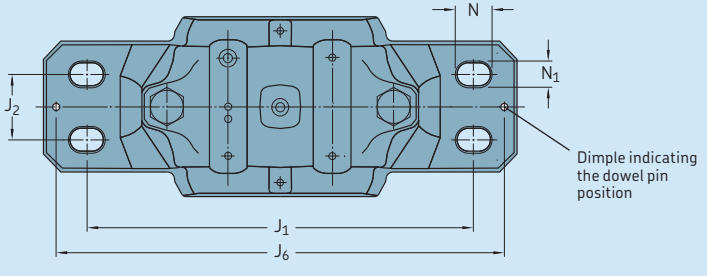
## Attachment bolt holes

SNL plummer block housings can be supplied with the following bolt hole configurations:

- four cast holes
  Dimensions are listed in **table 1**. These housings are designated FSNL.

**Table 1**

**Dimensions for four cast attachment bolt holes**




| Housing Size | | Dimensions N | $N_1$ | $J_1$ | $J_2$ | $J_6$ | Attachment bolts Size | Tightening torque[1] |
|---|---|---|---|---|---|---|---|---|
| – | | mm | | | | | – | Nm |
| **FSE 211** | **FSE 511-609** | 20 | 15 | 210 | 35 | 234 | M 12 | 80 |
| **FSE 212** | **FSE 512-610** | 20 | 15 | 210 | 35 | 234 | M 12 | 80 |
| **FSE 213** | **FSE 513-611** | 20 | 15 | 230 | 40 | 252 | M 12 | 80 |
| **FSE 215** | **FSE 515-612** | 20 | 15 | 230 | 40 | 257 | M 12 | 80 |
| **FSNL 216** | **FSNL 516-613** | 24 | 18 | 260 | 50 | 288 | M 16 | 200 |
| **FSNL 217** | **FSNL 517** | 24 | 18 | 260 | 50 | 292 | M 16 | 200 |
| **FSNL 218** | **FSNL 518-615** | 24 | 18 | 290 | 50 | 317 | M 16 | 200 |
| | **FSNL 519-616** | 24 | 18 | 290 | 50 | 317 | M 16 | 200 |
| | **FSNL 520-617** | 24 | 18 | 320 | 60 | 348 | M 16 | 200 |
| | **FSNL 522-619** | 24 | 18 | 350 | 70 | 378 | M 16 | 200 |
| | **FSNL 524-620** | 24 | 18 | 350 | 70 | 378 | M 16 | 200 |
| | **FSNL 526** | 28 | 22 | 380 | 70 | 414 | M 20 | 385 |
| | **FSNL 528** | 32 | 26 | 420 | 80 | 458 | M 24 | 665 |
| | **FSNL 530** | 32 | 26 | 450 | 90 | 486 | M 24 | 665 |
| | **FSNL 532** | 32 | 26 | 470 | 90 | 506 | M 24 | 665 |

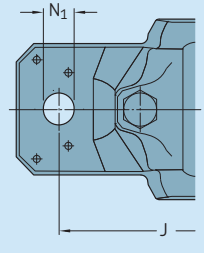
[1] Recommended by bolt manufacturers.

- four drilled holes
  These variants are available for housings with two cast bolt holes, designation SNL, and for housings made of spheroidal graphite cast iron with a solid base, designation SSNLD.
  Dimensions are listed in **table 2**. These housings have the designation suffix /MS2.
  All two-bolt housings have dimples, which mark the bolt hole positions for four-bolt mounting.

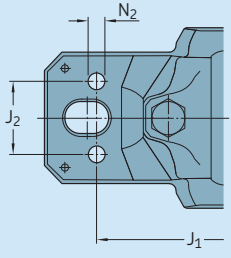
- two drilled holes
  This variant is available for housings made of spheroidal graphite cast iron with a solid base, designation SSNLD.
  Dimensions are listed in **table 2**. The housings have the designation suffix /MS1.

**Table 2**

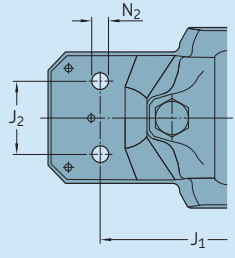
**Dimensions for drilled attachment bolt holes**




SSNLD.../MS1




SNL.../MS2




SSNLD.../MS2

| Housing Size | | Two drilled holes (/MS1) Dimensions J | $N_1$ | Appropriate bolt size | | Four drilled holes (/MS2) Dimensions $J_1$ | $J_2$ | $N_2$ | Appropriate bolt size | |
|---|---|---|---|---|---|---|---|---|---|---|
| – | | mm | | – | in. | mm | | | – | in. |
| **SNL 205** | **SNL 505** | – | – | – | – | 114 | 25 | 9 | M 8 | 5/16 |
| **SNL 206-305** | **SNL 506-605** | – | – | – | – | 130 | 29 | 9 | M 8 | 5/16 |
| **SE 207** | **SE 507-606** | – | – | – | – | 138 | 29 | 9 | M 8 | 5/16 |
| **SE 208-307** | **SE 508-607** | – | – | – | – | 160 | 34 | 11 | M 10 | 3/8 |
| **SE 209** | **SE 509** | – | – | – | – | 160 | 34 | 11 | M 10 | 3/8 |
| **(S)SE(D) 210** | **(S)SE(D) 510-608** | 170 | 15 | M 12 | 1/2 | 160 | 34 | 11 | M 10 | 3/8 |
| **(S)SE(D) 211** | **(S)SE(D) 511-609** | 210 | 18 | M 16 | 5/8 | 200 | 40 | 14 | M 12 | 1/2 |
| **(S)SE(D) 212** | **(S)SE(D) 512-610** | 210 | 18 | M 16 | 5/8 | 200 | 40 | 14 | M 12 | 1/2 |
| **(S)SE(D) 213** | **(S)SE(D) 513-611** | 230 | 18 | M 16 | 5/8 | 220 | 48 | 14 | M 12 | 1/2 |
| **(S)SE(D) 215** | **(S)SE(D) 515-612** | 230 | 18 | M 16 | 5/8 | 220 | 48 | 14 | M 12 | 1/2 |
| **(S)SNL(D) 216** | **(S)SNL(D) 516-613** | 260 | 22 | M 20 | 3/4 | 252 | 52 | 18 | M 16 | 5/8 |
| **(S)SNL(D) 217** | **(S)SNL(D) 517** | 260 | 22 | M 20 | 3/4 | 252 | 52 | 18 | M 16 | 5/8 |
| **(S)SNL(D) 218** | **(S)SNL(D) 518-615** | 290 | 22 | M 20 | 3/4 | 280 | 58 | 18 | M 16 | 5/8 |
| | **(S)SNL(D) 519-616** | 290 | 22 | M 20 | 3/4 | 280 | 58 | 18 | M 16 | 5/8 |
| | **(S)SNL(D) 520-617** | 320 | 26 | M 24 | 7/8 | 300 | 66 | 18 | M 16 | 5/8 |
| | **(S)SNL(D) 522-619** | 350 | 26 | M 24 | 7/8 | 320 | 74 | 18 | M 16 | 5/8 |
| | **(S)SNL(D) 524-620** | 350 | 26 | M 24 | 7/8 | 330 | 74 | 18 | M 16 | 5/8 |
| | **(S)SNL(D) 526** | 380 | 28 | M 24 | 1 | 370 | 80 | 22 | M 20 | 3/4 |
| | **(S)SNL(D) 528** | 420 | 35 | M 30 | 1 1/4 | 400 | 92 | 26 | M 24 | 7/8 |
| | **(S)SNL(D) 530** | 450 | 35 | M 30 | 1 1/4 | 430 | 100 | 26 | M 24 | 7/8 |
| | **(S)SNL(D) 532** | 470 | 35 | M 30 | 1 1/4 | 450 | 100 | 26 | M 24 | 7/8 |

### Bearing seat tolerance

SNL housings can be supplied with different bearing seat tolerance classes, e.g. for applications prone to vibration, with rotating outer ring load, or for applications operating at high temperatures.

For additional information, contact the SKF application engineering service.

### Housings for oil lubrication

For oil lubrication, special seals are required to prevent oil leakage. Oil seals require a modified housing and therefore these housings are supplied together with the seals as a unit. SNL housings are available for oil lubrication from size 516-613. The housing with oil seals is identified by the suffix TURU, e.g. SNL 524 TURU.

SNL plummer block housings have a small oil sump. Be careful not to overfill the sump, or leaks can result. SONL plummer block housings are specially designed for oil lubrication and may be more advantageous. For detailed information refer to *Split plummer block housings SONL series* (→ **page 349**).

## Sealing solutions

SNL plummer (pillow) block housings are available with different standard sealing solutions (→ **fig. 8**):

- four-lip seals (TSN .. L)
- V-ring seals (TSN .. A)
- felt seals (TSN .. C) or felt strips (FS 170)
- labyrinth seals (TSN .. S)
- taconite heavy-duty seals (TSN .. ND)
- end covers (ASNH ..)

**Table 3** provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, and does not substitute for testing a seal in its application.

**Fig. 8**

**Standard sealing solutions for SNL plummer block housings in the 2, 3, 5 and 6 series**

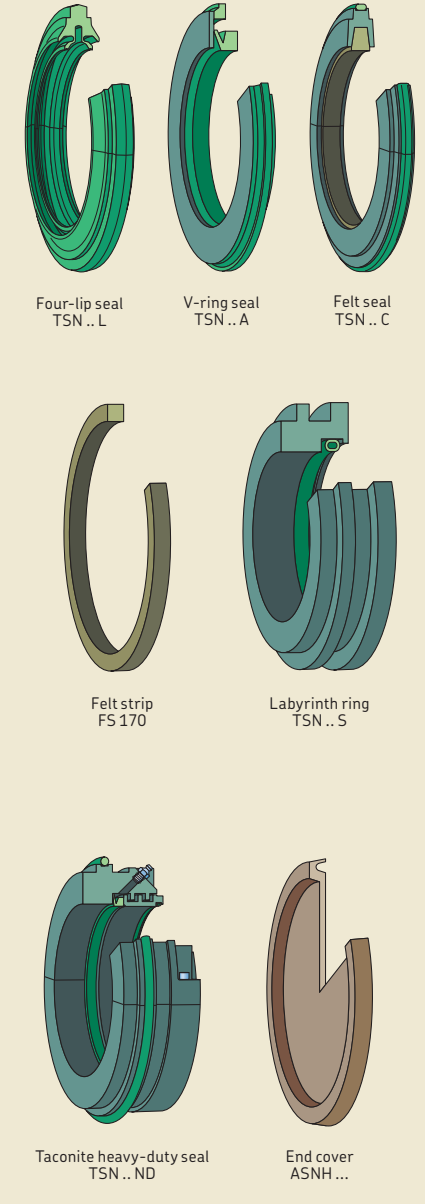


Table 3

**Standard sealing solutions for SNL plummer block housings**



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Seal** | | | | | | | |
| Type | Four-lip split | V-ring | Felt seal split | Felt strip split | Labyrinth | Taconite | End cover |
| Designation | TSN .. L | TSN .. A | TSN .. C | FS 170 | TSN .. S | TSN .. ND | ASNH .. |
| Material | thermoplastic polyester elastomer | nitrile rubber, steel | felt, nitrile rubber, aluminum | felt | steel, silicone | steel, nitrile rubber | polymer |
| Seals per pack | 2 seals | 2 seals | 2 seals | 1 strip[2] | 1 seal | 1 seal | 1 end cover |
| **Application conditions and requirements** | | | | | | | |
| Temperature [°C] | –40 to +100 | –40 to +100 | –40 to +100 | –40 to +100 | –50 to +200 | –40 to +100 | –40 to +110 |
| Temperature [°F] | –40 to +210 | –40 to +210 | –40 to +210 | –40 to +210 | –60 to +390 | –40 to +210 | –40 to +230 |
| Max. circumferential speed[1] [m/s] | 13 | 7[2] | 4[2] | 4[2] | not limited | 12 | n/a |
| Max. misalignment [°] | 1 to 0,5 | 1,5 to 1 | 0,5 | 0,5 | 0,3 | 0,5 | n/a |
| Low friction | ++ | ++ | – | – | ++ | + | n/a |
| Axial shaft displacement | ++ | – | ++ | ++ | + | + | n/a |
| Vertical arrangement | + | ++[3] | – – | – – | – – | – | ++ |
| Replacement | ++ | – | + | + | – | – | ++ |
| Shaft tolerance class | h9Ⓔ | n/a | h9Ⓔ | h9Ⓔ | h9Ⓔ | h9Ⓔ | n/a |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 | n/a | ≤ 3,2 | ≤ 3,2 | ≤ 3,2 | ≤ 3,2 | n/a |
| **Sealing suitability** | | | | | | | |
| Dust | ++ | + | – | – | – | ++ | ++ |
| Fine particles | ++ | + | – | – | + | ++ | ++ |
| Coarse particles | ++ | + | + | + | + | ++ | ++ |
| Chips | + | – – | + | + | ++ | ++ | ++ |
| Liquids when sprayed | + | + | – | – | – – | ++ | ++ |
| Direct sunlight | + | – – | ++ | ++ | ++ | ++ | ++ |

Symbols: n/a not applicable, ++ very suitable, + suitable, – limited suitability, – – unsuitable

[1] To convert circumferential speeds to rotational speeds → **table 7, page 37**
[2] Higher speeds are possible. For details, refer to the text about the relevant seal.
[3] For details see text about the relevant seal.

## Four-lip seals

Four-lip seals replace the former double-lip seals (TSN .. G). When compared to double-lip seals, the new seals are more effective. They also generate less friction, which enables higher shaft speeds. Four-lip seals are horizontally split and easy to mount.

The permissible angular misalignment for seals mounted on shafts ≤ 100 mm in diameter is approximately 1° and approximately 0,5° for larger shafts.

## V-ring seals

V-ring seals consist of a V-ring and a sheet steel sealing washer with a vulcanized rubber lip. The rubber lip fits into the seal groove in the housing. The washer is protected against corrosion.

V-rings can accommodate circumferential speeds up to 7 m/s. For circumferential speeds between 7 and 12 m/s, they should be located axially on the shaft. At speeds above 12 m/s, a support ring must be used to prevent the seal from lifting. Recommended dimensions for appropriate support rings for axial and radial location are provided in **table 4**. Housing sizes 205 to 211 and 306 to 314 cannot be used with a support ring and are therefore not suitable for V-ring seals at operating speeds above 7 m/s.

The permissible angular misalignment for V-ring seals is approximately 1,5° for a 50 mm shaft decreasing to approximately 1° for shaft diameters ≥ 150 mm.

The axial movement of the shaft relative to the housing is limited to ±1 mm for shaft diameters up to 65 mm, to approximately ±1,2 mm for shaft diameters up to 100 mm and to approximately ±1,5 mm for larger shaft diameters.

For arrangements with a vertical shaft, the V-ring of the lower seal should be mounted inside the housing.

## Felt seals or strips

Felt seals or strips are simple and effective. At circumferential speeds above 4 m/s, a small gap forms between the felt and shaft, transforming the contact seal into a non-contact, gap-type seal.

In applications where bearings are mounted on a plain shaft with an adapter sleeve, split felt ring seals are typically used.

If the bearings are to be installed on a stepped shaft with a cylindrical seat (housing sizes 205 to 218 inclusive), loose felt strips can be used. The strips are 170 mm in length. They should be cut to the correct length and soaked in hot oil for a few minutes prior to mounting. The required number of strips per housing (for both sides) is listed in the product tables (→ **pages 86** to **137**).

## Labyrinth seals

For applications where there are high speeds or extreme temperatures, SKF recommends using labyrinth seals. Labyrinth rings, mounted on the shaft, form a multi-stage labyrinth seal with the housing seal grooves. Hollow, silicone rubber cords (2 × 4 mm), supplied with the rings, hold the rings in place on the shaft.

## Taconite heavy-duty seals with a radial labyrinth

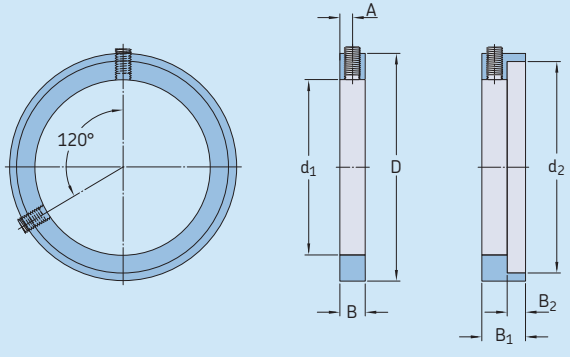
For bearing arrangements that must operate under highly contaminated conditions, such as those encountered in mining, taconite heavy-duty seals, which can be filled with grease, are recommended. Grease enhances the sealing effect and extends the service life of the seals.

Taconite heavy-duty seals are labyrinth seals combined with a V-ring seal. The inner ring of the labyrinth seal is solid but the outer ring is split. They can be relubricated via a grease fitting in the main body of the seal.

The axial movement of the shaft relative to the housing is limited to ±1 mm for shaft diameters up to 65 mm, approximately ±1,2 mm for shaft diameters up to 100 mm and ±1,5 mm for larger shaft diameters.

Table 4

**Recommended dimensions for support rings for V-ring seals**




7–12 m/s >12 m/s

| Shaft diameter | Dimensions | | | | | | | Grub screw to DIN 913 | V-ring seal Standard designation | Alternative designation |
|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$, $d_b$[1] | $d_1$ | $d_2$ | B | $B_1$ | $B_2$ | D | A | | | |
| – | mm | | | | | | | – | – | |
| **20** | 20 | 27,2 | 5 | 8,5 | 3,5 | 30 | 2,5 | M 3×5 | 20 VA R | CR 400200 |
| **25** | 25 | 32,1 | 5 | 8,5 | 3,5 | 35 | 2,5 | M 3×5 | 25 VA R | CR 400250 |
| **30** | 30 | 37,2 | 5 | 8,5 | 3,5 | 40 | 2,5 | M 3×5 | 30 VA R | CR 400300 |
| **35** | 35 | 42,2 | 5 | 8,5 | 3,5 | 45 | 2,5 | M 3×5 | 35 VA R | CR 400350 |
| **40** | 40 | 49,1 | 7 | 11,5 | 4,5 | 53 | 3,5 | M 4×5 | 40 VA R | CR 400400 |
| **45** | 45 | 54 | 7 | 11,5 | 4,5 | –[2] | 3,5 | M 4×5 | 45 VA R | CR 400450 |
| **50** | 50 | 59,1 | 7 | 11,5 | 4,5 | –[2] | 3,5 | M 4×5 | 50 VA R | CR 400500 |
| **55** | 55 | 64,1 | 7 | 11,5 | 4,5 | –[2] | 3,5 | M 4×5 | 55 VA R | CR 400550 |
| **60** | 60 | 69,1 | 7 | 11,5 | 4,5 | –[2] | 3,5 | M 4×5 | 60 VA R | CR 400600 |
| **65** | 65 | 74,1 | 7 | 11,5 | 4,5 | –[2] | 3,5 | M 4×5 | 65 VA R | CR 400650 |
| **70** | 70 | 81 | 9 | 15 | 6 | 84 | 4,5 | M 5×6 | 70 VA R | CR 400700 |
| **75** | 75 | 86 | 9 | 15 | 6 | 89,5 | 4,5 | M 5×6 | 75 VA R | CR 400750 |
| **80** | 80 | 91 | 9 | 15 | 6 | 94,5 | 4,5 | M 5×6 | 80 VA R | CR 400800 |
| **85** | 85 | 96 | 9 | 15 | 6 | 100 | 4,5 | M 5×6 | 85 VA R | CR 400850 |
| **90** | 90 | 101 | 9 | 15 | 6 | 105 | 4,5 | M 5×6 | 90 VA R | CR 400900 |
| **95** | 95 | 106 | 9 | 15 | 6 | 109 | 4,5 | M 5×6 | 95 VA R | CR 400950 |
| **100** | 100 | 111 | 9 | 15 | 6 | 115 | 4,5 | M 5×6 | 100 VA R | CR 401000 |
| **110** | 110 | 122,9 | 10 | 17,5 | 7,5 | 128 | 5 | M 6×8 | 110 VA R | CR 401100 |
| **115** | 115 | 127,4 | 10 | 17,5 | 7,5 | 133 | 5 | M 6×8 | 110 VA R | CR 401100 |
| **125** | 125 | 138,1 | 10 | 17,5 | 7,5 | 143 | 5 | M 6×8 | 130 VA R | CR 401300 |
| **135** | 135 | 147,5 | 10 | 17,5 | 7,5 | 153 | 5 | M 6×8 | 130 VA R | CR 401300 |
| **140** | 140 | 152,9 | 10 | 17,5 | 7,5 | 158 | 5 | M 6×8 | 140 VA R | CR 401400 |
| **145** | 145 | 158,1 | 10 | 17,5 | 7,5 | 163 | 5 | M 6×8 | 150 VA R | CR 401500 |
| **155** | 155 | 167,5 | 10 | 18,5 | 8,5 | 173 | 5 | M 6×8 | 150 VA R | CR 401500 |
| **165** | 165 | 179,9 | 10 | 18,5 | 8,5 | 185,5 | 5 | M 6×8 | 170 VA R | CR 401700 |
| **175** | 175 | 189,3 | 10 | 18,5 | 8,5 | 195 | 5 | M 6×8 | 170 VA R | CR 401700 |

[1] $d_a$: shaft diameter for bearings on an adapter sleeve
$d_b$: shaft diameter for bearings on stepped shafts
[2] Contact the SKF application engineering service for more information.

## End covers

Housings at the end of a shaft should have an end cover that fits into the seal groove in the housing.

For applications where temperatures exceed 110 °C *(230 °F)*, steel end covers should be used. These can be cut from sheet steel and placed in the seal groove. Use a hollow silicone rubber cord to hold the cover in place. Seal groove dimensions are provided in **table 5**.

Details of the permissible length of the shaft end are listed in **table 6**.

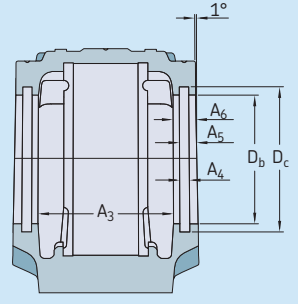
# Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**).

SNL housing seals can be used together with SKF sealed self-aligning bearings. When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting.

**Table 5**

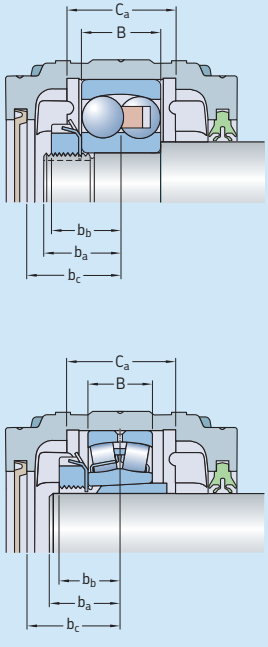
**Seal groove dimensions**




| 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 |
| **SE 207** | 58 | 5 | 8 | 11 | 56,5 | 64,5 |
| **SE 208-307** | 61 | 5 | 8 | 11 | 62 | 70,5 |
| **SE 209** | 59 | 5 | 9 | 12 | 67 | 75,5 |
| **SE 210** | 64 | 5 | 9 | 12 | 72 | 80,5 |
| **SE 211** | 69 | 5 | 9 | 12 | 77 | 85,5 |
| **SE 212** | 79 | 5 | 9 | 12 | 87 | 95,5 |
| **SE 213** | 82 | 5 | 9 | 13 | 92,5 | 101 |
| **SE 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 |
| **SE 507-606** | 59 | 5 | 8 | 11 | 46,5 | 54,5 |
| **SE 508-607** | 62 | 5 | 8 | 11 | 51,5 | 59,5 |
| **SE 509** | 60 | 5 | 9 | 12 | 56,5 | 64,5 |
| **SE 510-608** | 65 | 5 | 9 | 12 | 62 | 70,5 |
| **SE 511-609** | 70 | 5 | 9 | 12 | 67 | 75,5 |
| **SE 512-610** | 80 | 5 | 9 | 12 | 72 | 80,5 |
| **SE 513-611** | 83 | 5 | 9 | 13 | 77 | 85,5 |
| **SE 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 |

Table 6

**Permissible length of a shaft end**




| Housing Size | Dimensions | | | Widest bearing that fits the housing Designation | Dimensions | |
|---|---|---|---|---|---|---|
| | $b_a$[1] | $b_c$ | $C_a$ | | B | $b_b$ |
| – | mm | | | – | mm | |
| **SNL 205** | 18 | 24 | 25 | **22205 E** | 18 | 17 |
| **SNL 206-305** | 20 | 29 | 32 | **2305 E** | 24 | 19 |
| **SE 207** | 23 | 32 | 34 | **22207 E** | 23 | 20,5 |
| **SE 208-307** | 26 (22) | 33 | 39 | **2307 E** | 31 | 24,5 |
| **SE 209** | 25 | 32 | 30 | **22209 E** | 23 | 22,5 |
| **SE 210** | 28 (24) | 35 | 41 | **22210 E** | 23 | 23,5 |
| **SE 211** | 30 (25) | 37 | 44 | **22211 E** | 25 | 25 |
| **SE 212** | 33 (26) | 42 | 48 | **22212 E** | 28 | 27 |
| **SE 213** | 35 (30) | 45 | 51 | **22213 E** | 31 | 29,5 |
| **SE 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 EK** | 18 | 17 |
| **SNL 506-605** | 20 | 29 | 32 | **2305 EK** | 24 | 19 |
| **SE 507-606** | 23 | 32 | 34 | **2306 EK** | 27 | 21,5 |
| **SE 508-607** | 26 (22) | 33 | 39 | **2307 EK** | 31 | 24,5 |
| **SE 509** | 25 | 32 | 30 | **22209 EK** | 23 | 22,5 |
| **SE 510-608** | 28 (24) | 35 | 41 | **22308 EK** | 33 | 26,5 |
| **SE 511-609** | 30 (25) | 37 | 44 | **22309 EK** | 36 | 29 |
| **SE 512-610** | 33 (26) | 42 | 48 | **22310 EK** | 40 | 32 |
| **SE 513-611** | 35 (30) | 45 | 51 | **22311 EK** | 43 | 33,5 |
| **SE 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 measured from the centre of the housing seat. There are two special cases:
**1** For self-aligning ball bearings in the 12 series, values in brackets are suitable.
**2** For non-locating bearing arrangements, and in particular for the widest bearings, the values for $b_a$ must be adjusted if the bearing is not centered in the housing seat.

# Special seals

In addition to the standard seal assortment, SNL housings are available, on request, with high-temperature seals, taconite heavy-duty seals with an axial labyrinth, or custom seals for special applications.

## High-temperature seals

For high operating temperatures, up to 250 °C *(480 °F)*, high-temperature felt seals or strips should be used. The felt seals can accommodate circumferential speeds up to 2 m/s. They are identified by the designation suffix CB, e.g. TSN 516 CB. For additional information about the felt strips, contact the SKF application engineering service.

## Taconite heavy-duty seals with an axial labyrinth

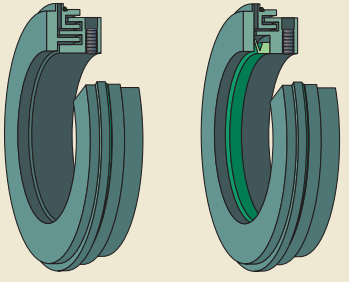
Taconite heavy-duty seals with an axial labyrinth (TSN .. NC or TSN .. NB, → **fig. 9**) can be used under the same conditions as taconite seals with a radial labyrinth. The seals are greased via a hole in the housing cap. Therefore, they can only be used with housings with the suffix T (at the end of a shaft) or the suffix TD (for through shafts).

TSN .. NB seals have a V-ring. It limits the axial movement of the shaft relative to the housing 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.

Specifications for the seals are listed in **table 7**.

**Fig. 9**

**Taconite heavy-duty seals**



TSN.. NC TSN.. NB

**Table 7**

**Taconite heavy-duty seals with an axial labyrinth**

| Seal | | |
|---|---|---|
| Designation | TSN .. NC | TSN .. NB |
| Size range | 515 to 532<br>612 to 620 | 515 to 532<br>612 to 620 |
| **Application conditions and requirements** | | |
| Temperature [°C] | –40 to +250 | –40 to +100 |
| Temperature [°F] | –40 to +480 | –40 to +210 |
| Max. circumferential speed [m/s][1)] | not limited | 12 |
| Max. misalignment [°] | 0,5 | 0,5 |
| Max. axial shaft displacement from a central position [mm] | ±2,5 | ±1 to 1,5 |
| Shaft tolerance class | h9Ⓔ | h9Ⓔ |

1) To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.

## Custom seals

SNL housings can be equipped with any type of seal that fits the seal groove dimensions in the housing. The relevant dimensions are provided in **table 5** on **page 68**.

If custom seals are to be used, SKF recommends ordering housings in the SNL 2 series rather than those in the 5 or 6 series. Housings in the SNL 2 series have a larger bore at the shaft entrance and can accommodate a wider choice of seal designs.

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

SNL plummer block housings in the 2, 3, 5 and 6 series can accommodate different shaft-bearing combinations (→ **fig. 10**):

- plain shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a cylindrical seat
- stepped shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a withdrawal sleeve

#### Plain shaft with bearing on an adapter sleeve

This arrangement is standard for housings in the SNL 5 and 6 series. Housings, appropriate parts and dimensions are listed in **product tables 2.1** (→ **page 86**) and **2.2** (→ **page 100**).

#### Stepped shaft with bearing on a cylindrical seat

This arrangement is standard for housings in the SNL 2 and 3 series, but can also be used for several housings in the SNL 5 and 6 series. Housings, appropriate parts and dimensions are listed in the **product table 2.3**, starting on **page 120**.

The bearing is located axially between a shaft shoulder and a spacer sleeve which is held in place by another component on the shaft. The outside diameter of the spacer sleeve must match the bore diameter of the seal. The spacer sleeve is not supplied with by SKF.

#### Stepped shaft with bearing on an adapter sleeve

When using an SNL plummer block housing for this arrangement, the dimensions of the abutment ring and the spacer sleeve must fit the housing. Abutment rings and spacer sleeves are not supplied by SKF.

#### Stepped shaft with bearing on a withdrawal sleeve

When using an SNL housing for this arrangement, the withdrawal sleeve must be located axially on the shaft. This can be done using a spacer sleeve that is held in place by another component. Using a lock nut can be difficult because of the limited space in the housing. The outside diameter of the spacer sleeve must be the same as the shaft abutment diameter $d_b$, (→ **product tables**) and it should be in accordance with the h9 Ⓔ tolerance class to fit the seal. The spacer sleeve is not supplied by SKF.

## Locating and non-locating bearing positions

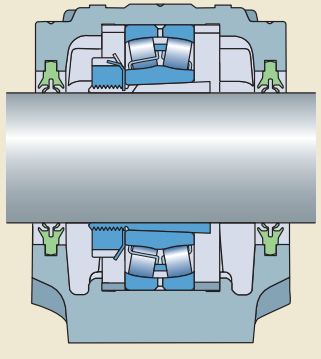
SNL housings can be used for both the locating and non-locating bearing positions.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing on both sides with locating rings. Appropriate locating rings are listed in the product tables.

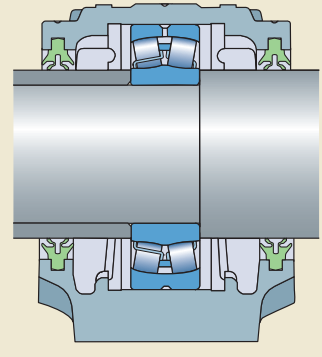
## Load carrying capacity

SNL housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing. If loads acting in other directions occur, or if the housing is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing, the cap bolts and the attachment bolts. When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

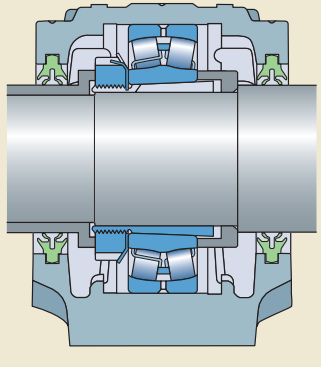
**Fig. 10**



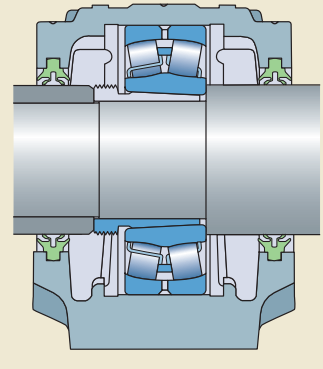
Plain shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a cylindrical seat



Stepped shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a withdrawal sleeve

#### Breaking loads and safety factors

Guideline values for the breaking loads of housings made of grey cast iron are listed in **table 8**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**). The permissible load can only be exploited if the cap bolts are tightened according to the torque values listed in **table 10** on **page 77**.

The limits for $P_{0°}$ apply only when the housing is not supported over its entire base.

The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

For housings made of spheroidal graphite cast iron, the values obtained from **tables 8** and **9** on **pages 75** and **76** respectively should be multiplied by a factor of 1,8.

#### Safe loads

In some countries, safe loads are used instead of breaking loads. Approximate safe loads are listed in **table 9** on **page 76**. These guideline values have been established using accepted engineering practices, taking safety, ultimate tensile strength of the materials and working stresses into account. They reflect a safety factor of 5 against fracture, and a minimum factor of 2 against cap bolt yield.

#### Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 8**), the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 13** on **page 82**. For FSNL housings, refer to **table 1** on **page 62.**

#### Load carrying capacity of the cap bolts

Approximate values for the yield points for cap bolts are provided in **table 10** on **page 77**. The values in **table 10** apply to 8.8 class cap bolts, which are supplied with SNL housings made of grey cast iron. SSNLD housings made of spheroidal graphite cast iron are supplied with 10.9 class cap bolts. For these cap bolts, the values obtained from **table 10** should be multiplied by a factor of 1,4.

If a safety factor of 6 is used for the permissible load of grey cast iron SNL housings, the cap bolts do not need to be considered. In this case, the permissible load of the housing is less than the permissible load for the cap bolts.

### Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 3**, **page 65**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

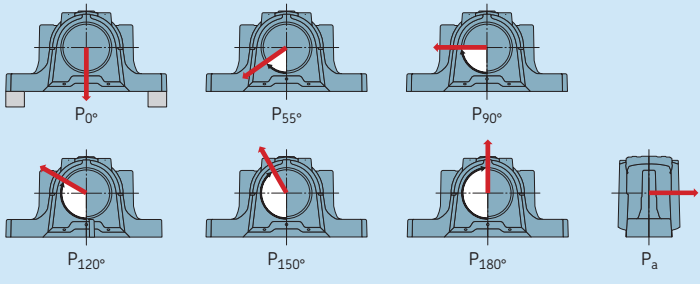
The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature. When temperatures outside the permissible range are expected, contact the SKF application engineering service.

### Operating speed

All seals, except non-contact labyrinth seals, limit the permissible operating speed. Speed limits for seals are provided in **table 3** on **page 65** and in **table 7** on **page 70**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

**Table 8**

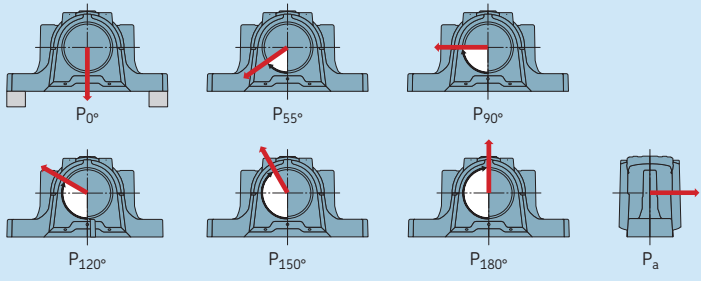
**Breaking loads for SNL plummer block housings**




| Housing Size | | Breaking loads $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|---|
| – | | kN | | | | | | |
| **SNL 205** | **SNL 505** | 100 | 155 | 95 | 70 | 60 | 80 | 52 |
| **SNL 206-305** | **SNL 506-605** | 130 | 170 | 100 | 80 | 65 | 85 | 55 |
| **SE 207** | **SE 507-606** | 140 | 190 | 115 | 85 | 80 | 95 | 60 |
| **SE 208-307** | **SE 508-607** | 150 | 215 | 130 | 95 | 85 | 110 | 70 |
| **SE 209** | **SE 509** | 160 | 230 | 140 | 100 | 90 | 115 | 75 |
| **SE 210** | **SE 510-608** | 170 | 265 | 155 | 120 | 110 | 130 | 85 |
| **(F)SE 211** | **(F)SE 511-609** | 190 | 275 | 170 | 125 | 115 | 140 | 90 |
| **(F)SE 212** | **(F)SE 512-610** | 210 | 300 | 180 | 130 | 120 | 150 | 100 |
| **(F)SE 213** | **(F)SE 513-611** | 270 | 340 | 205 | 150 | 130 | 170 | 110 |
| **(F)SE 215** | **(F)SE 515-612** | 290 | 410 | 250 | 185 | 160 | 205 | 135 |
| **(F)SNL 216** | **(F)SNL 516-613** | 350 | 430 | 260 | 190 | 175 | 215 | 140 |
| **(F)SNL 217** | **(F)SNL 517** | 370 | 480 | 290 | 205 | 190 | 240 | 155 |
| **(F)SNL 218** | **(F)SNL 518-615** | 430 | 550 | 340 | 250 | 215 | 275 | 180 |
| | **(F)SNL 519-616** | 450 | 580 | 350 | 260 | 230 | 290 | 190 |
| | **(F)SNL 520-617** | 470 | 620 | 370 | 280 | 250 | 310 | 200 |
| | **(F)SNL 522-619** | 600 | 680 | 410 | 310 | 275 | 340 | 220 |
| | **(F)SNL 524-620** | 800 | 790 | 470 | 350 | 320 | 400 | 260 |
| | **(F)SNL 526** | 900 | 900 | 540 | 410 | 360 | 450 | 295 |
| | **(F)SNL 528** | 1 000 | 1 050 | 630 | 470 | 430 | 530 | 345 |
| | **(F)SNL 530** | 1 100 | 1 200 | 730 | 540 | 480 | 600 | 390 |
| | **(F)SNL 532** | 1 300 | 1 450 | 860 | 640 | 570 | 720 | 470 |

Table 9

**Safe loads for SNL plummer block housings**




| Housing | | Safe loads for different load directions[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Size | | $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
| – | | kN/*lbf.* | | | | | | |
| **SNL 205** | **SNL 505** | 20 | 31 | 19 | 14 | 12 | 16 | 10,4 |
| | | *4 500* | *6 975* | *4 275* | *3 150* | *2 700* | *3 600* | *2 340* |
| **SNL 206-305** | **SNL 506-605** | 26 | 34 | 20 | 16 | 13 | 17 | 11 |
| | | *5 850* | *7 650* | *4 500* | *3 600* | *2 925* | *3 825* | *2 475* |
| **SE 207** | **SE 507-606** | 28 | 38 | 23 | 17 | 16 | 19 | 12 |
| | | *6 300* | *8 550* | *5 175* | *3 825* | *3 600* | *4 275* | *2 700* |
| **SE 208-307** | **SE 508-607** | 30 | 43 | 26 | 19 | 17 | 22 | 14 |
| | | *6 750* | *9 675* | *5 850* | *4 275* | *3 825* | *4 950* | *3 150* |
| **SE 209** | **SE 509** | 32 | 46 | 28 | 20 | 18 | 23 | 15 |
| | | *7 200* | *10 350* | *6 300* | *4 500* | *4 050* | *5 175* | *3 375* |
| **SE 210** | **SE 510-608** | 34 | 53 | 31 | 24 | 22 | 26 | 17 |
| | | *7 650* | *11 925* | *6 975* | *5 400* | *4 950* | *5 850* | *3 825* |
| **(F)SE 211** | **(F)SE 511-609** | 38 | 55 | 34 | 25 | 23 | 28 | 18 |
| | | *8 550* | *12 375* | *7 650* | *5 625* | *5 175* | *6 300* | *4 050* |
| **(F)SE 212** | **(F)SE 512-610** | 42 | 60 | 36 | 26 | 24 | 30 | 20 |
| | | *9 450* | *13 500* | *8 100* | *5 850* | *5 400* | *6 750* | *4 500* |
| **(F)SE 213** | **(F)SE 513-611** | 54 | 68 | 41 | 30 | 26 | 34 | 22 |
| | | *12 150* | *15 300* | *9 225* | *6 750* | *5 850* | *7 650* | *4 950* |
| **(F)SE 215** | **(F)SE 515-612** | 58 | 82 | 50 | 37 | 32 | 41 | 27 |
| | | *13 050* | *18 450* | *11 250* | *8 325* | *7 200* | *9 225* | *6 075* |
| **(F)SNL 216** | **(F)SNL 516-613** | 70 | 86 | 52 | 38 | 35 | 43 | 28 |
| | | *15 750* | *19 350* | *11 700* | *8 550* | *7 875* | *9 675* | *6 300* |
| **(F)SNL 217** | **(F)SNL 517** | 74 | 96 | 58 | 41 | 38 | 48 | 31 |
| | | *16 650* | *21 600* | *13 050* | *9 225* | *8 550* | *10 800* | *6 975* |
| **(F)SNL 219** | **(F)SNL 518-615** | 86 | 110 | 68 | 50 | 43 | 55 | 36 |
| | | *19 350* | *24 750* | *15 300* | *11 250* | *9 675* | *12 375* | *8 100* |
| | **(F)SNL 519-616** | 90 | 116 | 70 | 52 | 46 | 58 | 38 |
| | | *20 250* | *26 100* | *15 750* | *11 700* | *10 350* | *13 050* | *8 550* |
| | **(F)SNL 520-617** | 94 | 124 | 74 | 56 | 50 | 62 | 40 |
| | | *21 150* | *27 900* | *16 650* | *12 600* | *11 250* | *13 950* | *9 000* |
| | **(F)SNL 522-619** | 120 | 136 | 82 | 62 | 55 | 68 | 44 |
| | | *27 000* | *30 600* | *18 450* | *13 950* | *12 375* | *15 300* | *9 900* |
| | **(F)SNL 524-620** | 160 | 158 | 94 | 70 | 64 | 80 | 52 |
| | | *36 000* | *35 550* | *21 150* | *15 750* | *14 400* | *18 000* | *11 700* |
| | **(F)SNL 526** | 180 | 180 | 108 | 82 | 72 | 90 | 59 |
| | | *40 500* | *40 500* | *24 300* | *18 450* | *16 200* | *20 250* | *13 275* |
| | **(F)SNL 528** | 200 | 210 | 126 | 94 | 86 | 106 | 69 |
| | | *45 000* | *47 250* | *28 350* | *21 150* | *19 350* | *23 850* | *15 525* |
| | **(F)SNL 530** | 220 | 240 | 146 | 108 | 96 | 120 | 78 |
| | | *49 500* | *54 000* | *32 850* | *24 300* | *21 600* | *27 000* | *17 550* |
| | **(F)SNL 532** | 260 | 290 | 172 | 128 | 114 | 144 | 94 |
| | | *58 500* | *65 250* | *38 700* | *28 800* | *25 650* | *32 400* | *21 150* |

[1] The values are based on a safety factor of 5.

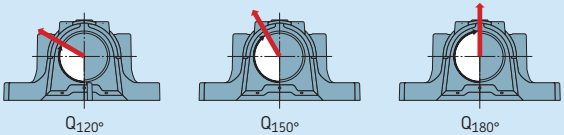
## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 10**). They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

**Table 10**

**Load carrying capacity and torque values for cap bolts and attachment bolts**




| Housing Size | | Cap bolts Yield point for two bolts $Q_{120°}$ | $Q_{150°}$ | $Q_{180°}$ | Size | Tightening torque | Attachment bolts[1] Size | Tightening torque[2] |
|---|---|---|---|---|---|---|---|---|
| – | | kN | | | – | Nm | – | Nm |
| **SNL 205** | **SNL 505** | 150 | 85 | 75 | M 10×40 | 50 | M 12 | 80 |
| **SNL 206-305** | **SNL 506-605** | 150 | 85 | 75 | M 10×40 | 50 | M 12 | 80 |
| **SE 207** | **SNL 507-606** | 150 | 85 | 75 | M 10×50 | 50 | M 12 | 80 |
| **SE 208-307** | **SNL 508-607** | 150 | 85 | 75 | M 10×50 | 50 | M 12 | 80 |
| **SE 209** | **SNL 509** | 150 | 85 | 75 | M 10×50 | 50 | M 12 | 80 |
| **SE 210** | **SNL 510-608** | 150 | 85 | 75 | M 10×55 | 50 | M 12 | 80 |
| **SE 211** | **SE 511-609** | 220 | 125 | 110 | M 12×60 | 80 | M 16 | 200 |
| **SE 212** | **SE 512-610** | 220 | 125 | 110 | M 12×60 | 80 | M 16 | 200 |
| **SE 213** | **SE 513-611** | 220 | 125 | 110 | M 12×65 | 80 | M 16 | 200 |
| **SE 215** | **SE 515-612** | 220 | 125 | 110 | M 12×65 | 80 | M 16 | 200 |
| **SNL 216** | **SNL 516-613** | 220 | 125 | 110 | M 12×70 | 80 | M 20 | 385 |
| **SNL 217** | **SNL 517** | 220 | 125 | 110 | M 12×80 | 80 | M 20 | 385 |
| **SNL 218** | **SNL 518-615** | 400 | 230 | 200 | M 16×90 | 150 | M 20 | 385 |
| | **SNL 519-616** | 400 | 230 | 200 | M 16×90 | 150 | M 20 | 385 |
| | **SNL 520-617** | 620 | 360 | 310 | M 20×100 | 200 | M 24 | 665 |
| | **SNL 522-619** | 620 | 360 | 310 | M 20×100 | 200 | M 24 | 665 |
| | **SNL 524-620** | 620 | 360 | 310 | M 20×110 | 200 | M 24 | 665 |
| | **SNL 526** | 900 | 520 | 450 | M 24×130 | 350 | M 24 | 665 |
| | **SNL 528** | 900 | 520 | 450 | M 24×130 | 350 | M 30 | 1 310 |
| | **SNL 530** | 900 | 520 | 450 | M 24×130 | 350 | M 30 | 1 310 |
| | **SNL 532** | 900 | 520 | 450 | M 24×130 | 350 | M 30 | 1 310 |

[1] Valid for SE and SNL housings only. For information about attachment bolts for FSE and FSNL housings, refer to **table 1** on **page 62**.
[2] Recommended by bolt manufacturers.

# Lubrication

SNL plummer (pillow) block housings in the 2, 3, 5 and 6 series with standard seals are intended for grease lubrication. For oil lubrication, housings with oil seals (→ **page 64**) or SONL plummer block housings (→ **page 349**) should be used.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70–80%. For best protection against contaminants, use the SKF three-barrier solution (→ **page 39**). For additional information, contact the SKF application engineering service.

Quantities for 20 and 40% grease fills are listed **table 11**. The values are valid for a typical lithium grease (about 0,95 g/cm³). They include grease for the bearing and the four-lip seals or the sealing washers of V-ring seals. The grease to fill labyrinth seals or taconite heavy-duty seals is not included. For sealed bearings, the values have to be adjusted.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

**Table 11**

**Initial grease fill**

| Housing | | Initial fill | |
|---|---|---|---|
| Size | | 20% | 40% |
| – | | g | |
| SNL 205 | SNL 505 | 15 | 25 |
| SNL 206-305 | SNL 506-605 | 25 | 40 |
| SE 207 | SE 507-606 | 30 | 50 |
| SE 208-307 | SE 508-607 | 35 | 55 |
| SE 209 | SE 509 | 40 | 60 |
| SE 210 | SE 510-608 | 45 | 70 |
| (F)SE 211 | (F)SE 511-609 | 55 | 90 |
| (F)SE 212 | (F)SE 512-610 | 80 | 135 |
| (F)SE 213 | (F)SE 513-611 | 100 | 160 |
| (F)SE 215 | (F)SE 515-612 | 125 | 210 |
| (F)SNL 216 | (F)SNL 516-613 | 170 | 280 |
| (F)SNL 217 | (F)SNL 517 | 200 | 330 |
| (F)SNL 218 | (F)SNL 518-615 | 260 | 430 |
| | (F)SNL 519-616 | 300 | 480 |
| | (F)SNL 520-617 | 390 | 630 |
| | (F)SNL 522-619 | 530 | 850 |
| | (F)SNL 524-620 | 630 | 1 000 |
| | (F)SNL 526 | 700 | 1 100 |
| | (F)SNL 528 | 900 | 1 400 |
| | (F)SNL 530 | 1 100 | 1 700 |
| | (F)SNL 532 | 1 300 | 2 000 |

## Relubrication

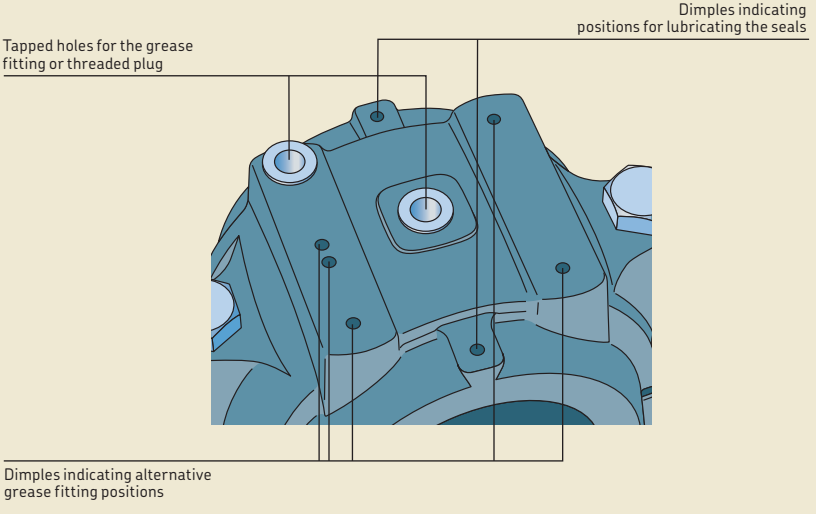
SNL plummer block housings enable relubrication of the incorporated bearings and seals (→ **fig. 11**):

- SNL housings have two holes that have been drilled and tapped for an AH 1/8-27 PTF grease fitting. On a new housing, the holes are covered by plastic plugs. These plugs should be replaced with the grease fitting and threaded plug supplied with the housing.
- If a larger grease fitting or other equipment has to be used, an adapter to change to a G 1/4 thread is available (→ **page 47**).
- Dimples cast into the top of the housing cap indicate alternative positions where holes can be drilled and tapped to accommodate a grease fitting for bearing or seal relubrication.

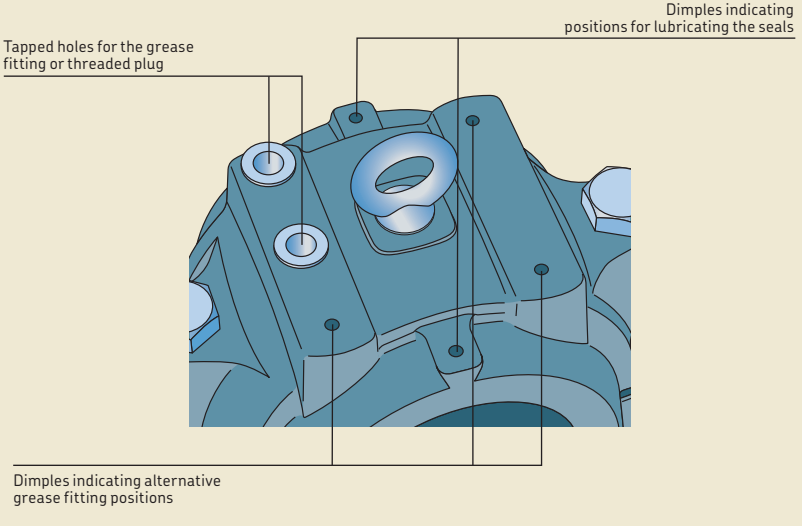
Fig. 11

**Relubrication possibilities**

**SNL housing up to size 218 or 522**




**SNL housing from size 524 and above**



### Relubrication via the outer ring

The hole in the centre of the cap should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 12**). When applying grease via the relubrication feature, the shaft should be rotating. Narrow bearings (dimension series 13 and 22) in the locating position can be displaced axially, so that the relubrication groove in the bearing does not line up with the relubrication hole in the housing cap. Make sure the bearing is sufficiently centred when relubricating.

### Relubrication from the side

When relubricating from the side, which is typically necessary for self-aligning ball bearings and CARB toroidal roller bearings, the offset hole in the housing should be used. An integrated flange in the housing guides grease from the grease fitting directly to the rolling elements (→ **fig. 13**). This grease guiding system is available on housings from sizes 216 and 516-613 upwards.

When bearings mounted on an adapter sleeve have to be relubricated from the side, the grease should be introduced from the side opposite the lock nut.

When bearings mounted at the end of a shaft have to be relubricated from the side, the grease should be applied at the point closest to the end cover.

### Relubrication from the side for housings with V-ring seals

When relubricating bearings from the side in housings with V-ring seals, mount an additional V-ring inside the housing on the side where grease is applied (→ **fig. 14**). This forces the grease to travel through the bearing and exit the housing on the opposite side.

SKF can supply an appropriate V-ring together with a splash plate that fits in the seal groove to cover a bit more than the top half of the housing. These sets are identified by the series designation ASNA followed by the housing size identification and the suffix V, e.g. ASNA 516 V.

### Grease escape hole

When four-lip seals (TSN .. L) or felt seals (TSN .. C or FS 170) are used, grease cannot escape via the seals. If relubrication is required, the housing should have a grease escape hole.

SNL housings can be supplied with a grease escape hole (suffix V). A grease escape hole can be drilled into the housing using the dimensions provided in **table 12**.

Fig. 12

Relubrication via the outer ring

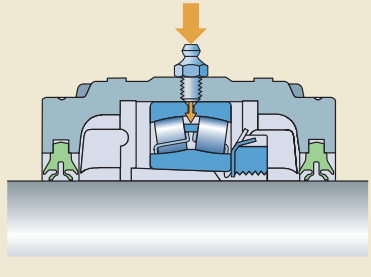


Fig. 13

Relubrication from the side

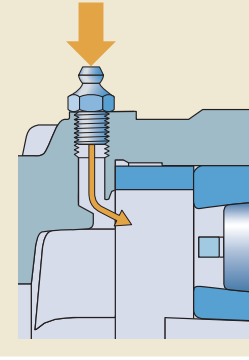
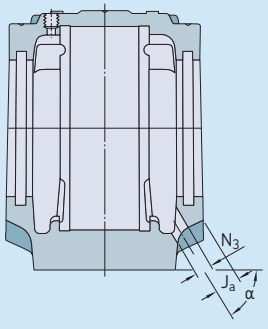


Table 12

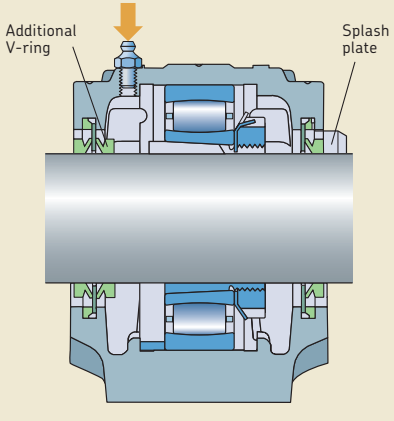
**Recommended dimensions for grease escape holes**




| Housing Size | | Dimensions $J_a$ | $N_3$ | α |
|---|---|---|---|---|
| – | | mm | | ° |
| SNL 205 | SNL 505 | 8,5 | 10 | 45 |
| SNL 206-305 | SNL 506-605 | 10 | 10 | 45 |
| SE 207 | SNL 507-606 | 10 | 10 | 45 |
| SE 208-307 | SE 508-607 | 9 | 10 | 45 |
| SE 209 | SE 509 | 10 | 10 | 45 |
| SE 210 | SE 510-608 | 11 | 10 | 45 |
| (F)SE 211 | (F)SE 511-609 | 10 | 12 | 45 |
| (F)SE 212 | (F)SE 512-610 | 9 | 12 | 45 |
| (F)SE 213 | (F)SE 513-611 | 13 | 12 | 45 |
| (F)SE 215 | (F)SE 515-612 | 12,5 | 12 | 45 |
| (F)SNL 216 | (F)SNL 516-613 | 14 | 16 | 45 |
| (F)SNL 217 | (F)SNL 517 | 17 | 16 | 45 |
| (F)SNL 218 | (F)SNL 518-615 | 20 | 16 | 40 |
| | (F)SNL 519-616 | 20 | 16 | 50 |
| | (F)SNL 520-617 | 21 | 16 | 50 |
| | (F)SNL 522-619 | 21 | 20 | 50 |
| | (F)SNL 524-620 | 24 | 20 | 55 |
| | (F)SNL 526 | 22 | 20 | 55 |
| | (F)SNL 528 | 23 | 20 | 50 |
| | (F)SNL 530 | 25 | 20 | 55 |
| | (F)SNL 532 | 25 | 20 | 60 |

Fig. 14

**V-ring seal and splash plate set mounted in an SNL housing**



# Mounting

SNL plummer (pillow) block housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

Mounting instructions for each housing are provided with the seal pack. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Torque specifications

Cap bolts should be tightened to the torque values listed in **table 10** on **page 77**. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 77**.

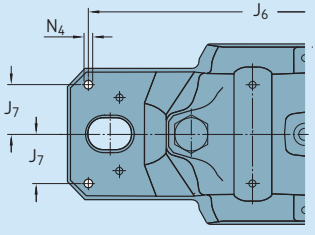
## Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, **page 74**).

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 13**. For FSNL housings, refer to **table 1** on **page 62**. Dimples cast into the housing base mark the recommended positions.

**Table 13**

**Position and size of dowel pin holes**




| Housing Size | | Dimensions $J_6$ | $J_7$ | $N_4$ |
|---|---|---|---|---|
| – | | mm | | |
| **SNL 205** | **SNL 505** | 152 | 16 | 5 |
| **SNL 206-305** | **SNL 506-605** | 172 | 19 | 5 |
| **SE 207** | **SE 507-606** | 172 | 19 | 5 |
| **SE 208-307** | **SE 508-607** | 188 | 22 | 6 |
| **SE 209** | **SE 509** | 188 | 22 | 6 |
| **SE 210** | **SE 510-608** | 188 | 22 | 6 |
| **SE 211** | **SE 511-609** | 234 | 24,5 | 8 |
| **SE 212** | **SE 512-610** | 234 | 27 | 8 |
| **SE 213** | **SE 513-611** | 252 | 29 | 8 |
| **SE 215** | **SE 515-612** | 257 | 29 | 8 |
| **SNL 216** | **SNL 516-613** | 288 | 33 | 8 |
| **SNL 217** | **SNL 517** | 292 | 33 | 8 |
| **SNL 218** | **SNL 518-615** | 317 | 35 | 8 |
| | **SNL 519-616** | 317 | 35 | 8 |
| | **SNL 520-617** | 348 | 39 | 8 |
| | **SNL 522-619** | 378 | 44 | 8 |
| | **SNL 524-620** | 378 | 44 | 8 |
| | **SNL 526** | 414 | 46 | 12 |
| | **SNL 528** | 458 | 54 | 12 |
| | **SNL 530** | 486 | 58 | 12 |
| | **SNL 532** | 506 | 58 | 12 |

# Condition monitoring

SNL housings have appropriate positions for condition monitoring sensors (→ **fig. 15**).

**Position 1** is a measurement point perpendicular to the shaft, and should be used when the housing is hung from its support or when loads act away from the support surface.

**Position 2** is a measurement point parallel to the shaft and should be used when the loads act toward the support surface.

Both positions 1 and 2 are in accordance with ISO 10816-1.

**Position 3** is a measurement point that is approximately 20° to 45° to the shaft axis.

**Fig. 15**

**Measurement points for condition monitoring**



# Accessories

The following accessories are available for SNL housings in the 2, 3, 5 and 6 series:

- Adapter for G 1/4 connections
- V-ring and splash plate sets (→ **page 80**)
- Automatic lubricators: SKF SYSTEM 24 and SKF MultiPoint
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).

# Ordering information

For SNL housings in the 2, 3, 5 and 6 series, each of the following items must be ordered separately:

- housing
- seals
- end cover
- locating rings
- bearing
- adapter sleeve

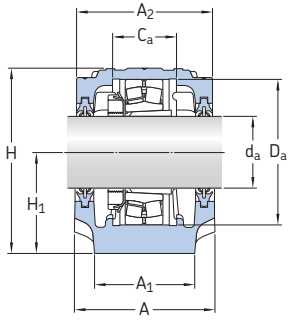
**Order example**

Two plummer block housings with four-lip seals are required for two 22218 EK spherical roller bearings on H 318 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

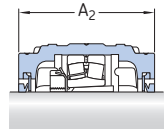
The following items should be ordered (in addition to the bearings and adapter sleeves):

- 2 housings SNL 518-615
- 2 four-lip seal packs TSN 518 L (each pack contains two seals)
- 1 end cover ASNH 518-615
- 2 locating rings FRB 12.5/160

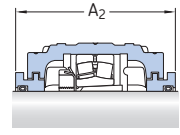
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 20 – 30 mm



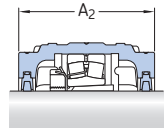

with TSN .. L



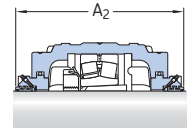

with TSN .. A




with TSN .. S



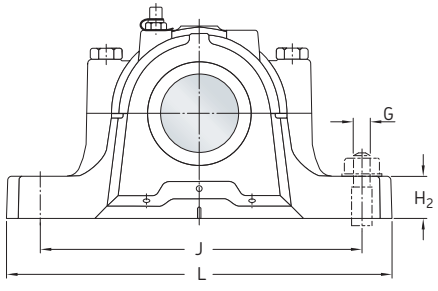

with TSN .. C

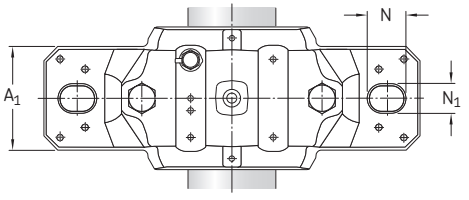



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **20** | **SNL 505** | 1205 EKTN9 | H 205 | FRB 5/52 | TSN 505 A | ASNH 505 | 67 |
| | | 2205 EKTN9 | H 305 | FRB 3.5/52 | TSN 505 C | | 67 |
| | | 22205 EK | H 305 | FRB 3.5/52 | TSN 505 S | | 80 |
| | | C 2205 KTN9 | H 305 E | FRB 3.5/52 | TSN 505 ND | | 125 |
| | **SNL 506-605** | 1305 EKTN9 | H 305 | FRB 7.5/62 | TSN 605 A | ASNH 506-605 | 77 |
| | | | | | TSN 605 C | | 77 |
| | | | | | TSN 605 S | | 89 |
| | | | | | TSN 605 ND | | 135 |
| **25** | **SNL 506-605** | 1206 EKTN9 | H 206 | FRB 8/62 | TSN 506 A | ASNH 506-605 | 77 |
| | | 2206 EKTN9 | H 306 | FRB 6/62 | TSN 506 C | | 77 |
| | | 22206 EK | H 306 | FRB 6/62 | TSN 506 S | | 89 |
| | | C 2206 KTN9 | H 306 E | FRB 6/62 | TSN 506 ND | | 135 |
| | **SE 507-606** | 1306 EKTN9 | H 306 | FRB 7.5/72 | TSN 606 A | ASNH 507-606 | 82 |
| | | 2306 K | H 2306 | FRB 3.5/72 | TSN 606 C | | 82 |
| | | 21306 CCK | H 306 | FRB 7.5/72 | TSN 606 S | | 94 |
| | | | | | TSN 606 ND | | 140 |
| **30** | **SE 507-606** | 1207 EKTN9 | H 207 | FRB 8.5/72 | TSN 507 L | ASNH 507-606 | 82 |
| | | 2207 EKTN9 | H 307 | FRB 5.5/72 | TSN 507 A | | 82 |
| | | 22207 EK | H 307 | FRB 5.5/72 | TSN 507 C | | 82 |
| | | C 2207 KTN9 | H 307 E | FRB 5.5/72 | TSN 507 S | | 94 |
| | | | | | TSN 507 ND | | 145 |
| | **SE 508-607** | 1307 EKTN9 | H 307 | FRB 9/80 | TSN 607 L | ASNH 508-607 | 85 |
| | | 2307 EKTN9 | H 2307 | FRB 4/80 | TSN 607 A | | 85 |
| | | 21307 CCK | H 307 | FRB 9/80 | TSN 607 C | | 85 |
| | | | | | TSN 607 S | | 97 |
| | | | | | TSN 607 ND | | 145 |

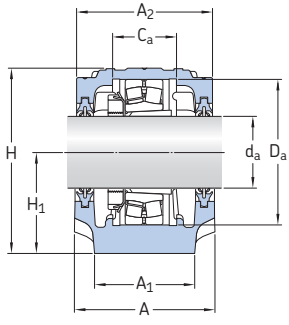
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



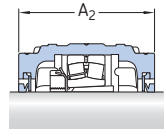




| Shaft diameter | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | mm | | | | | | | | | | | | kg |
| **20** | 67 | 46 | 25 | 52 | 74 | 40 | 19 | 130 | 165 | 20 | 15 | 12 | 1,45 |
| | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,00 |
| **25** | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,00 |
| | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,60 |
| **30** | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,60 |
| | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,40 |

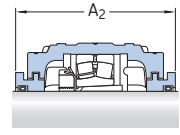
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 35 – 45 mm



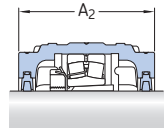

with TSN .. L



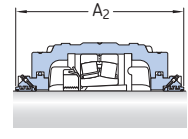

with TSN .. A




with TSN .. S



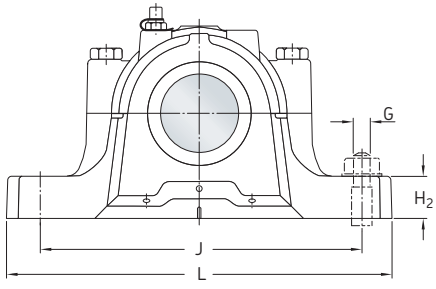

with TSN .. C

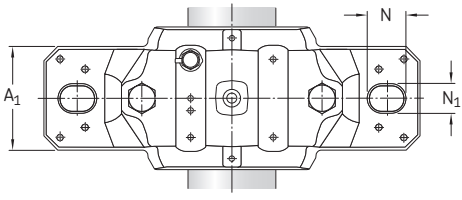



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **35** | **SE 508-607** | 1208 EKTN9 | H 208 | FRB 10.5/80 | TSN 508 L | ASNH 508-607 | 85 |
| | | 2208 EKTN9 | H 308 | FRB 8/80 | TSN 508 A | | 85 |
| | | 22208 EK | H 308 | FRB 8/80 | TSN 508 C | | 85 |
| | | BS2-2208-2CSK | H 2308 E | FRB 5.5/80 | TSN 508 S | | 97 |
| | | C 2208 KTN9 | H 308 E | FRB 8/80 | TSN 508 ND | | 150 |
| | **SE 510-608** | 1308 EKTN9 | H 308 | FRB 9/90 | TSN 608 L | ASNH 510-608 | 90 |
| | | 2308 EKTN9 | H 2308 | FRB 4/90 | TSN 608 A | | 90 |
| | | 21308 EK | H 308 | FRB 9/90 | TSN 608 C | | 90 |
| | | 22308 EK | H 2308 | FRB 4/90 | TSN 608 S | | 102 |
| | | | | | TSN 608 ND | | 150 |
| **40** | **SE 509** | 1209 EKTN9 | H 209 | FRB 5.5/85 | TSN 509 L | ASNH 509 | 85 |
| | | 2209 EKTN9 | H 309 | FRB 3.5/85 | TSN 509 A | | 85 |
| | | 22209 EK | H 309 | FRB 3.5/85 | TSN 509 C | | 85 |
| | | BS2-2209-2CSK | H 309 E | FRB 1/85 | TSN 509 S | | 97 |
| | | C 2209 KTN9 | H 309 E | FRB 3.5/85 | TSN 509 ND | | 150 |
| | **SE 511-609** | 1309 EKTN9 | H 309 | FRB 9.5/100 | TSN 609 L | ASNH 511-609 | 95 |
| | | 2309 EKTN9 | H 2309 | FRB 4/100 | TSN 609 A | | 95 |
| | | 21309 EK | H 309 | FRB 9.5/100 | TSN 609 C | | 95 |
| | | 22309 EK | H 2309 | FRB 4/100 | TSN 609 S | | 107 |
| | | | | | TSN 609 ND | | 155 |
| **45** | **SE 510-608** | 1210 EKTN9 | H 210 | FRB 10.5/90 | TSN 510 L | ASNH 510-608 | 90 |
| | | 2210 EKTN9 | H 310 | FRB 9/90 | TSN 510 A | | 90 |
| | | 22210 EK | H 310 | FRB 9/90 | TSN 510 C | | 90 |
| | | BS2-2210-2CSK | H 310 E | FRB 6.5/90 | TSN 510 S | | 102 |
| | | C 2210 KTN9 | H 310 E | FRB 9/90 | TSN 510 ND | | 155 |
| | **SE 512-610** | 1310 EKTN9 | H 310 | FRB 10.5/110 | TSN 610 L | ASNH 512-610 | 105 |
| | | 2310 K | H 2310 | FRB 4/110 | TSN 610 A | | 105 |
| | | 21310 EK | H 310 | FRB 10.5/110 | TSN 610 C | | 105 |
| | | 22310 EK | H 2310 | FRB 4/110 | TSN 610 S | | 117 |
| | | | | | TSN 610 ND | | 165 |

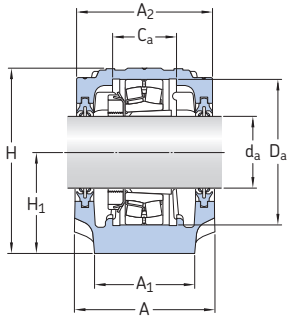
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



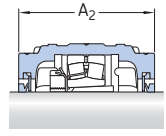




| Shaft diameter | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | mm | | | | | | | | | | | | kg |
| **35** | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,40 |
| | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,85 |
| **40** | 85 | 60 | 30 | 85 | 109 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,40 |
| | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,45 |
| **45** | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,85 |
| | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 6,15 |

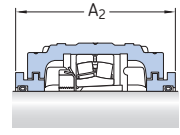
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 50 – 60 mm



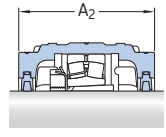

with TSN .. L



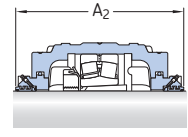

with TSN .. A




with TSN .. S



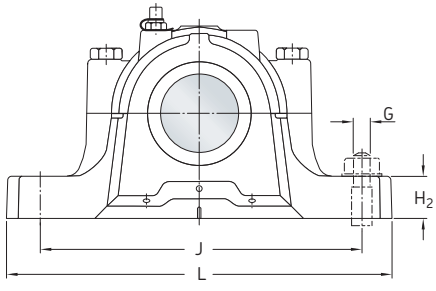

with TSN .. C

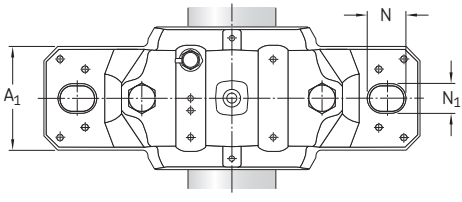



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **50** | **SE 511-609** | 1211 EKTN9 | H 211 | FRB 11.5/100 | TSN 511 L | ASNH 511-609 | 95 |
| | | 2211 EKTN9 | H 311 | FRB 9.5/100 | TSN 511 A | | 95 |
| | | 22211 EK | H 311 | FRB 9.5/100 | TSN 511 C | | 95 |
| | | BS2-2211-2CSK | H 311 E | FRB 6.5/100 | TSN 511 S | | 107 |
| | | C 2211 KTN9 | H 311 E | FRB 9.5/100 | TSN 511 ND | | 165 |
| | **SE 513-611** | 1311 EKTN9 | H 311 | FRB 11/120 | TSN 611 L | ASNH 513-611 | 110 |
| | | 2311 K | H 2311 | FRB 4/120 | TSN 611 A | | 110 |
| | | 21311 EK | H 311 | FRB 11/120 | TSN 611 C | | 110 |
| | | 22311 EK | H 2311 | FRB 4/120 | TSN 611 S | | 122 |
| | | | | | TSN 611 ND | | 170 |
| **55** | **SE 512-610** | 1212 EKTN9 | H 212 | FRB 13/110 | TSN 512 L | ASNH 512-610 | 105 |
| | | 2212 EKTN9 | H 312 | FRB 10/110 | TSN 512 A | | 105 |
| | | 22212 EK | H 312 | FRB 10/110 | TSN 512 C | | 105 |
| | | BS2-2212-2CSK | H 312 E | FRB 7/110 | TSN 512 S | | 117 |
| | | C 2212 KTN9 | H 312 E | FRB 10/110 | TSN 512 ND | | 175 |
| | **SE 515-612** | 1312 EKTN9 | H 312 | FRB 12.5/130 | TSN 612 L | ASNH 515-612 | 115 |
| | | 2312 K | H 2312 | FRB 5/130 | TSN 612 A | | 115 |
| | | 21312 EK | H 312 | FRB 12.5/130 | TSN 612 C | | 115 |
| | | 22312 EK | H 2312 | FRB 5/130 | TSN 612 S | | 127 |
| | | | | | TSN 612 ND | | 175 |
| **60** | **SE 513-611** | 1213 EKTN9 | H 213 | FRB 14/120 | TSN 513 L | ASNH 513-611 | 110 |
| | | 2213 EKTN9 | H 313 | FRB 10/120 | TSN 513 A | | 110 |
| | | 22213 EK | H 313 | FRB 10/120 | TSN 513 C | | 110 |
| | | BS2-2213-2CSK | H 2313 E | FRB 6.5/120 | TSN 513 S | | 122 |
| | | C 2213 KTN9 | H 313 E | FRB 10/120 | TSN 513 ND | | 180 |
| | **SNL 516-613** | 1313 EKTN9 | H 313 | FRB 12.5/140 | TSN 613 L | ASNH 516-613 | 120 |
| | | 2313 K | H 2313 | FRB 5/140 | TSN 613 A | | 120 |
| | | 21313 EK | H 313 | FRB 12.5/140 | TSN 613 C | | 120 |
| | | 22313 EK | H 2313 | FRB 5/140 | TSN 613 S | | 138 |
| | | | | | TSN 613 ND | | 180 |

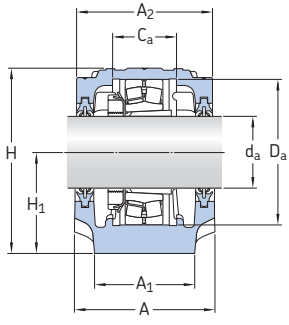
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



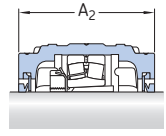




| Shaft diameter | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | mm | | | | | | | | | | | | kg |
| **50** | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,45 |
| | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,90 |
| **55** | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 6,15 |
| | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,55 |
| **60** | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,90 |
| | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 9,50 |

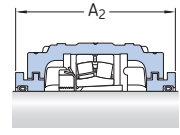
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 65 – 75 mm



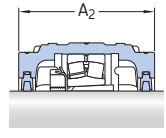

with TSN .. L



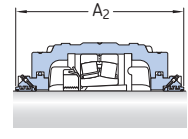

with TSN .. A




with TSN .. S



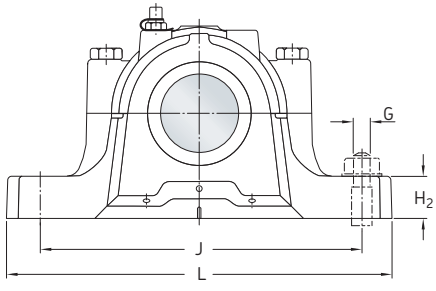

with TSN .. C

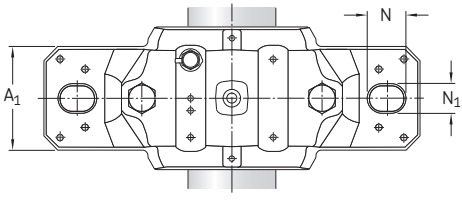



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **65** | **SE 515-612** | 1215 K | H 215 | FRB 15.5/130 | TSN 515 L | ASNH 515-612 | 115 |
| | | 2215 EKTN9 | H 315 | FRB 12.5/130 | TSN 515 A | | 115 |
| | | 22215 EK | H 315 | FRB 12.5/130 | TSN 515 C | | 115 |
| | | BS2-2215-2CSK | H 315 E | FRB 9/130 | TSN 515 S | | 127 |
| | | C 2215 K | H 315 E | FRB 12.5/130 | TSN 515 ND | | 175 |
| | **SNL 518-615** | 1315 K | H 315 | FRB 14/160 | TSN 615 L | ASNH 518-615 | 140 |
| | | 2315 K | H 2315 | FRB 5/160 | TSN 615 A | | 140 |
| | | 21315 EK | H 315 | FRB 14/160 | TSN 615 C | | 140 |
| | | 22315 EK | H 2315 | FRB 5/160 | TSN 615 S | | 158 |
| | | C 2315 K | H 2315 | FRB 5/160 | TSN 615 ND | | 200 |
| **70** | **SNL 516-613** | 1216 K | H 216 | FRB 16/140 | TSN 516 L | ASNH 516-613 | 120 |
| | | 2216 EKTN9 | H 316 | FRB 12.5/140 | TSN 516 A | | 120 |
| | | 22216 EK | H 316 | FRB 12.5/140 | TSN 516 C | | 120 |
| | | BS2-2216-2CSK | H 316 E | FRB 9/140 | TSN 516 S | | 138 |
| | | C 2216 K | H 316 E | FRB 12.5/140 | TSN 516 ND | | 205 |
| | **SNL 519-616** | 1316 K | H 316 | FRB 14.5/170 | TSN 616 L | ASNH 519-616 | 145 |
| | | 2316 K | H 2316 | FRB 5/170 | TSN 616 A | | 145 |
| | | 21316 EK | H 316 | FRB 14.5/170 | TSN 616 C | | 145 |
| | | 22316 EK | H 2316 | FRB 5/170 | TSN 616 S | | 163 |
| | | C 2316 K | H 2316 | FRB 5/170 | TSN 616 ND | | 205 |
| **75** | **SNL 517** | 1217 K | H 217 | FRB 16.5/150 | TSN 517 L | ASNH 517 | 125 |
| | | 2217 K | H 317 | FRB 12.5/150 | TSN 517 A | | 125 |
| | | 22217 EK | H 317 | FRB 12.5/150 | TSN 517 C | | 125 |
| | | BS2-2217-2CSK | H 317 E | FRB 8.5/150 | TSN 517 S | | 143 |
| | | C 2217 K | H 317 E | FRB 12.5/150 | TSN 517 ND | | 210 |
| | **SNL 520-617** | 1317 K | H 317 | FRB 14.5/180 | TSN 617 L | ASNH 520-617 | 160 |
| | | 2317 K | H 2317 | FRB 5/180 | TSN 617 A | | 160 |
| | | 21317 EK | H 317 | FRB 14.5/180 | TSN 617 C | | 160 |
| | | 22317 EK | H 2317 | FRB 5/180 | TSN 617 S | | 178 |
| | | C 2317 K | H 2317 | FRB 5/180 | TSN 617 ND | | 220 |

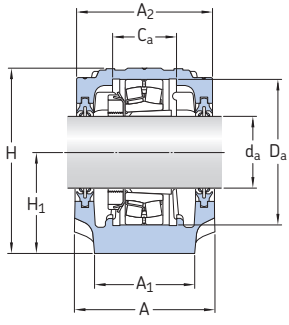
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



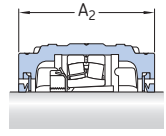




| Shaft diameter | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | mm | | | | | | | | | | | | kg |
| **65** | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,55 |
| | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 12,5 |
| **70** | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 9,50 |
| | 145 | 100 | 68 | 170 | 212 | 112 | 35 | 290 | 345 | 28 | 22 | 20 | 13,7 |
| **75** | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 10,0 |
| | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 17,6 |

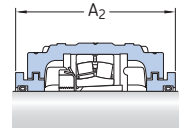
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 80 – 90 mm



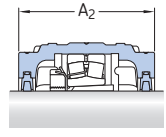

with TSN .. L



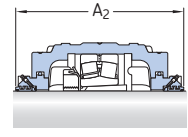

with TSN .. A




with TSN .. S



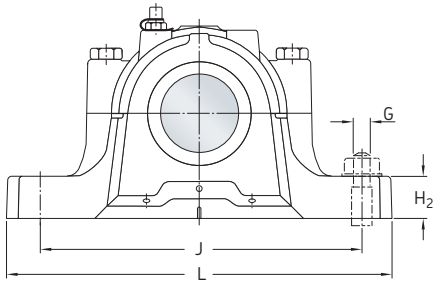

with TSN .. C

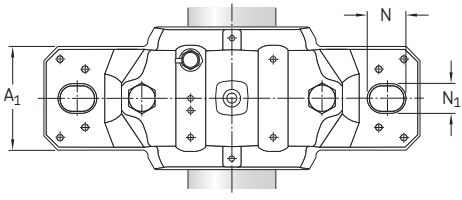



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **80** | **SNL 518-615** | 1218 K | H 218 | FRB 17.5/160 | TSN 518 L | ASNH 518-615 | 140 |
| | | 2218 K | H 318 | FRB 12.5/160 | TSN 518 A | | 140 |
| | | 22218 EK | H 318 | FRB 12.5/160 | TSN 518 C | | 140 |
| | | BS2-2218-2CSK | H 2318 E/L73 | FRB 8.5/160 | TSN 518 S | | 158 |
| | | 23218 CCK/W33 | H 2318 | FRB 6.25/160 | TSN 518 ND | | 225 |
| | | C 2218 K | H 318 E | FRB 12.5/160 | | | |
| **85** | **SNL 519-616** | 1219 K | H 219 | FRB 18/170 | TSN 519 L | ASNH 519-616 | 145 |
| | | 2219 KM | H 319 | FRB 12.5/170 | TSN 519 A | | 145 |
| | | 22219 EK | H 319 | FRB 12.5/170 | TSN 519 C | | 145 |
| | | C 2219 K | H 319 E | FRB 12.5/170 | TSN 519 S | | 163 |
| | | | | | TSN 519 ND | | 220 |
| | **SNL 522-619** | 1319 K | H 319 | FRB 17.5/200 | TSN 619 A | ASNH 522-619 | 175 |
| | | 2319 KM | H 2319 | FRB 6.5/200 | TSN 619 C | | 175 |
| | | 21319 EK | H 319 | FRB 17.5/200 | TSN 619 S | | 191 |
| | | 22319 EK | H 2319 | FRB 6.5/200 | TSN 619 ND | | 235 |
| | | C 2319 K | H 2319 | FRB 6.5/200 | | | |
| **90** | **SNL 520-617** | 1220 K | H 220 | FRB 18/180 | TSN 520 L | ASNH 520-617 | 160 |
| | | 2220 KM | H 320 | FRB 12/180 | TSN 520 A | | 160 |
| | | 22220 EK | H 320 | FRB 12/180 | TSN 520 C | | 160 |
| | | BS2-2220-2CS5K | H 2320 E | FRB 7.5/180 | TSN 520 S | | 178 |
| | | 23220 CCK/W33 | H 2320 | FRB 4.85/180 | TSN 520 ND | | 230 |
| | | C 2220 K | H 320 E | FRB 12/180 | | | |
| | **SNL 524-620** | 1320 K | H 320 | FRB 19.5/215 | TSN 620 A | ASNH 524-620 | 185 |
| | | 2320 KM | H 2320 | FRB 6.5/215 | TSN 620 C | | 185 |
| | | 21320 EK | H 320 | FRB 19.5/215 | TSN 620 S | | 199 |
| | | 22320 EK | H 2320 | FRB 6.5/215 | TSN 620 ND | | 240 |
| | | C 2320 K | H 2320 | FRB 6.5/215 | | | |

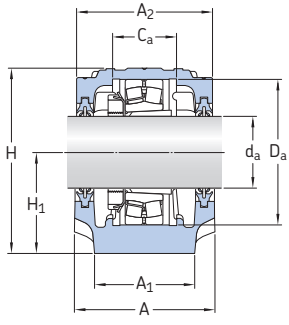
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



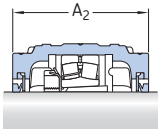




| Shaft diameter | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | mm | | | | | | | | | | | | kg |
| **80** | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 12,5 |
| **85** | 145 | 100 | 68 | 170 | 212 | 112 | 35 | 290 | 345 | 28 | 22 | 20 | 13,7 |
| | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | 22,0 |
| **90** | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 17,6 |
| | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | 26,2 |

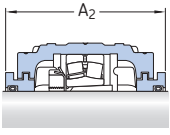
# 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
## $d_a$ 100 – 135 mm



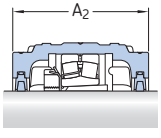

with TSN .. L



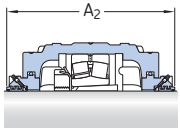

with TSN .. A




with TSN .. S



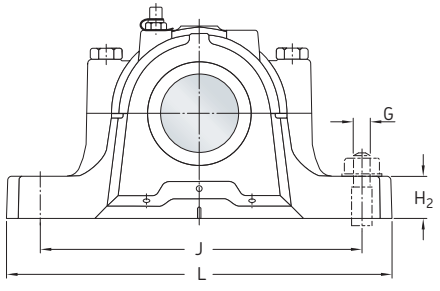

with TSN .. C

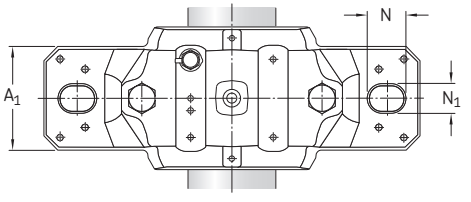



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **100** | **SNL 522-619** | 1222 K | H 222 | FRB 21/200 | TSN 522 L | ASNH 522-619 | 175 |
| | | 2222 KM | H 322 | FRB 13.5/200 | TSN 522 A | | 175 |
| | | 22222 EK | H 322 | FRB 13.5/200 | TSN 522 C | | 175 |
| | | BS2-2222-2CS5K | H 2322 E | FRB 8.5/200 | TSN 522 S | | 191 |
| | | 23222 CCK/W33 | H 2322 | FRB 5.1/200 | TSN 522 ND | | 250 |
| | | C 2222 K | H 322 E | FRB 13.5/200 | | | |
| **110** | **SNL 524-620** | 1224 KM | H 3024 | FRB 22/215 | TSN 524 L | ASNH 524-620 | 185 |
| | | 22224 EK | H 3124 | FRB 14/215 | TSN 524 A | | 185 |
| | | BS2-2224-2CS5K | H 2324 EH | FRB 8.5/215 | TSN 524 C | | 185 |
| | | 23224 CCK/W33 | H 2324 | FRB 5/215 | TSN 524 S | | 199 |
| | | C 2224 K | H 3124 L | FRB 14/215 | TSN 524 ND | | 260 |
| | | C 3224 K | H 2324 L | FRB 5/215 | | | |
| **115** | **SNL 526** | 22226 EK | H 3126 | FRB 13/230 | TSN 526 L | ASNH 526 | 190 |
| | | BS2-2226-2CS5K | H 2326 L | FRB 7.5/230 | TSN 526 A | | 190 |
| | | 23226 CCK/W33 | H 2326 | FRB 5/230 | TSN 526 C | | 190 |
| | | 23226-2CS5K | H 2326 L | FRB 5/230 | TSN 526 S | | 208 |
| | | C 2226 K | H 3126 L | FRB 13/230 | TSN 526 ND | | 265 |
| **125** | **SNL 528** | 22228 CCK/W33 | H 3128 | FRB 15/250 | TSN 528 L | ASNH 528 | 205 |
| | | 22228-2CS5K | H 3128 L | FRB 15/250 | TSN 528 A | | 205 |
| | | 23228 CCK/W33 | H 2328 | FRB 5/250 | TSN 528 C | | 205 |
| | | 23228-2CS5K | H 2328 | FRB 5/250 | TSN 528 S | | 223 |
| | | C 2228 K | H 3128 L | FRB 15/250 | TSN 528 ND | | 285 |
| **135** | **SNL 530** | 22230 CCK/W33 | H 3130 | FRB 16.5/270 | TSN 530 L | ASNH 530 | 220 |
| | | 22230-2CS5K | H 3130 | FRB 16.5/270 | TSN 530 A | | 220 |
| | | 23230 CCK/W33 | H 2330 | FRB 5/270 | TSN 530 C | | 220 |
| | | C 2230 K | H 3130 L | FRB 16.5/270 | TSN 530 S | | 241 |
| | | | | | TSN 530 ND | | 295 |

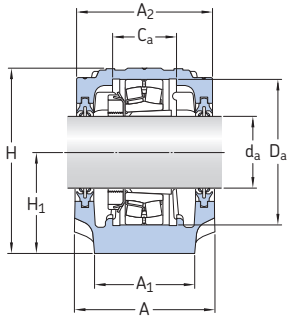
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



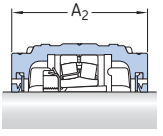




| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | | |
| mm | mm | | | | | | | | | | | | – | kg |
| **100** | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | – | 22,0 |
| **110** | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | M 10 | 26,2 |
| **115** | 190 | 130 | 90 | 230 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | M 10 | 33,0 |
| **125** | 205 | 150 | 98 | 250 | 302 | 150 | 50 | 420 | 500 | 42 | 35 | 30 | M 12 | 40,0 |
| **135** | 220 | 160 | 106 | 270 | 323 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | M 12 | 49,0 |

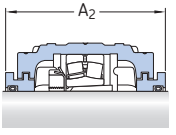
## 2.1 SNL and SE plummer block housings for bearings on an adapter sleeve, metric shafts
$d_a$ **140** mm



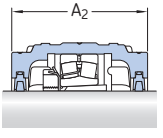

with TSN .. L



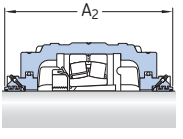

with TSN .. A




with TSN .. S



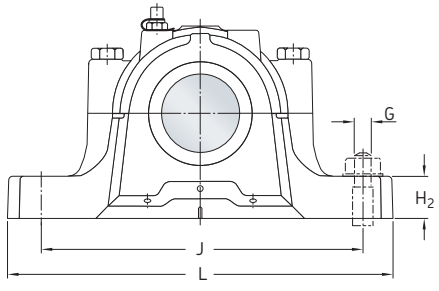

with TSN .. C

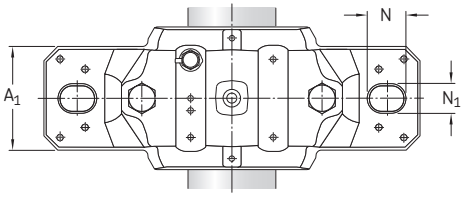



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **140** | **SNL 532** | 22232 CCK/W33<br>22232-2CS5K<br>23232 CCK/W33<br>C 3232 K | H 3132<br>H 3132<br>H 2332<br>H 2332 L | FRB 17/290<br>FRB 17/290<br>FRB 5/290<br>FRB 5/290 | TSN 532 L<br>TSN 532 A<br>TSN 532 C<br>TSN 532 S<br>TSN 532 ND | ASNH 532 | 235<br>235<br>235<br>254<br>315 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

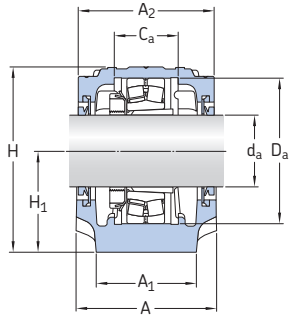


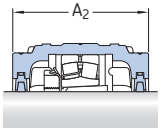

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | | |
| mm | mm | | | | | | | | | | | | – | kg |
| **140** | 235 | 160 | 114 | 290 | 344 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M 12 | 55,0 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

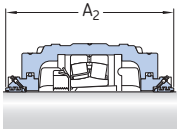
$d_a$ **3/4 – 1** in.
*19,05 – 25,4 mm*



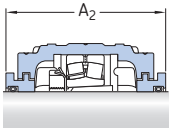

with TSN .. A




with TSN .. C



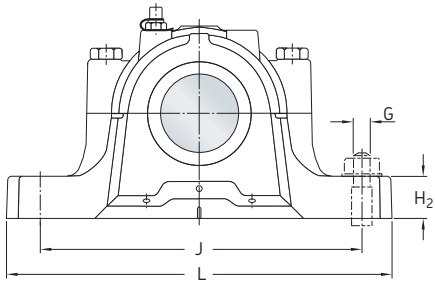

with TSN .. ND

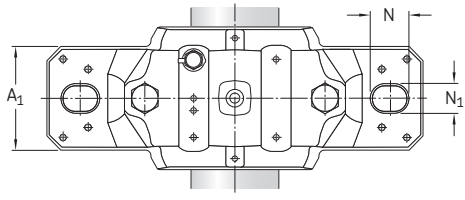



with TSN .. S

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **3/4**<br>*19,05* | **SNL 505** | 1205 EKTN9<br>2205 EKTN9<br>22205 EK<br>C 2205 KTN9 | HE 205<br>HE 305<br>HE 305<br>HE 305 E | FRB 5/52<br>FRB 3.5/52<br>FRB 3.5/52<br>FRB 3.5/52 | TSN 505 A<br>TSN 505 C<br>TSN 505 SE<br>TSN 505 NDE | ASNH 505 | 67<br>67<br>80<br>125 |
| | **SNL 506-605** | 1305 EKTN9 | HE 305 | FRB 7.5/62 | TSN 605 A<br>TSN 605 C<br>TSN 605 SE<br>TSN 605 NDE | ASNH 506-605 | 77<br>77<br>89<br>135 |
| **15/16**<br>*23,813* | **SNL 506-605** | 1206EKTN9<br>2206 EKTN9<br>22206 EK<br>C 2206 KTN9 | HA 206<br>HA 306<br>HA 306<br>HA 306 E | FRB 8/62<br>FRB 6/62<br>FRB 6/62<br>FRB 6/62 | TSN 506 A<br>TSN 506 C<br>TSN 506 SA<br>TSN 506 NDA | ASNH 506-605 | 77<br>77<br>89<br>135 |
| | **SE 507-606** | 1306 EKTN9<br>2306 K<br>21306 CCK | HA 306<br>HA 2306<br>HA 306 | FRB 7.5/72<br>FRB 3.5/72<br>FRB 7.5/72 | TSN 606 A<br>TSN 606 C<br>TSN 606 SA<br>TSN 606 NDA | ASNH 507-606 | 82<br>82<br>94<br>140 |
| **1**<br>*25,4* | **SNL 506-605** | 1206 EKTN9<br>2206 EKTN9<br>22206 EK<br>C 2206 KTN9 | HE 206<br>HE 306<br>HE 306<br>HE 306 E | FRB 8/62<br>FRB 6/62<br>FRB 6/62<br>FRB 6/62 | TSN 506 A<br>TSN 506 C<br>TSN 506 SE<br>TSN 506 NDE | ASNH 506-605 | 77<br>77<br>89<br>135 |
| | **SE 507-606** | 1306 EKTN9<br>2306 K<br>21306 CCK | HE 306<br>HE 2306<br>HE 2306 | FRB 7.5/72<br>FRB 3.5/72<br>FRB 7.5/72 | TSN 606 A<br>TSN 606 C<br>TSN 606 SE<br>TSN 606 NDE | ASNH 507-606 | 82<br>82<br>94<br>140 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

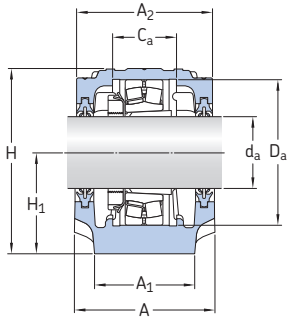


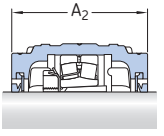

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **3/4**<br>*19,05* | 67 | 46 | 25 | 52 | 74 | 40 | 19 | 130 | 165 | 20 | 15 | 12 | 1/2 | 1,45 |
| | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,00 |
| **15/16**<br>*23,813* | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,00 |
| | 82 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,60 |
| **1**<br>*25,4* | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,00 |
| | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,60 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

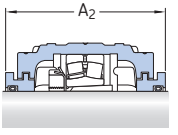
$d_a$ **1 3/16 – 1 7/16** in.
*30,163 – 36,513 mm*



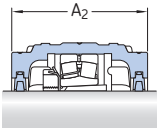

with TSN .. L



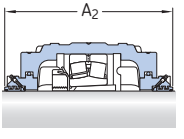

with TSN .. A




with TSN .. S



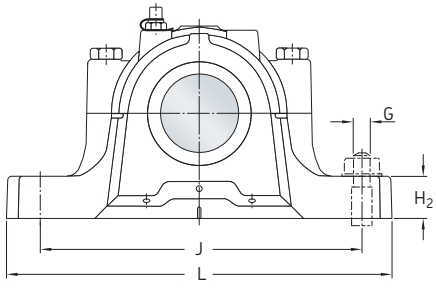

with TSN .. C

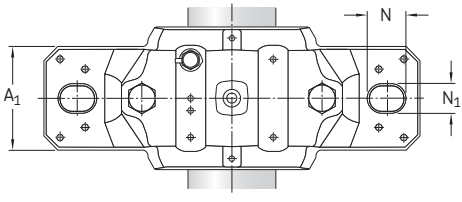



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **1 3/16**<br>*30,163* | **SE 507-606** | 1207 EKTN9<br>2207 EKTN9<br>22207 EK<br>C 2207 KTN9 | HA 207<br>HA 307<br>HA 307<br>HA 307 E | FRB 8.5/72<br>FRB 5.5/72<br>FRB 5.5/72<br>FRB 5.5/72 | TSN 507 L<br>TSN 507 A<br>TSN 507 C<br>TSN 507 SA<br>TSNA 507 NDA | ASNH 507-606 | 82<br>82<br>82<br>94<br>145 |
| | **SE 508-607** | 1307 EKTN9<br>2307 EKTN9<br>21307 CCK | HA 307<br>HA 2307<br>HA 307 | FRB 9/80<br>FRB 4/80<br>FRB 9/80 | TSN 607 L<br>TSN 607 A<br>TSN 607 C<br>TSN 607 SA<br>TSN 607 NDA | ASNH 508-607 | 85<br>85<br>85<br>97<br>145 |
| **1 1/4**<br>*31,75* | **SE 508-607** | 1208 EKTN9<br>2208 EKTN9<br>22208 EK<br>C 2208 KTN9 | HE 208<br>HE 308<br>HE 308<br>HE 308 E | FRB 10.5/80<br>FRB 8/80<br>FRB 8/80<br>FRB 8/80 | TSN 508 AE<br>TSN 508 CE<br>TSN 508 SE<br>TSN 508 NDE | ASNH 508-607 | 85<br>85<br>97<br>150 |
| | **SE 510-608** | 1308 EKTN9<br>2308 EKTN9<br>21308 EK<br>22308 EK | HE 308<br>HE 2308<br>HE 308<br>HE 2308 | FRB 9/90<br>FRB 4/90<br>FRB 9/90<br>FRB 4/90 | TSN 608 AE<br>TSN 608 CE<br>TSN 608 SE<br>TSN 608 NDE | ASNH 510-608 | 90<br>90<br>102<br>150 |
| **1 7/16**<br>*36,513* | **SE 509** | 1209 EKTN9<br>2209 EKTN9<br>22209 EK<br>BS2-2209-2CSK<br>C 2209 KTN9 | HA 209<br>HA 309<br>HA 309<br>HA 309 E<br>HA 309 E | FRB 5.5/85<br>FRB 3.5/85<br>FRB 3.5/85<br>FRB 1/85<br>FRB 3.5/85 | TSN 509 AE<br>TSN 509 CE<br>TSN 509 SA<br>TSN 509 NDA | ASNH 509 | 85<br>85<br>97<br>150 |
| | **SE 511-609** | 1309 EKTN9<br>2309 EKTN9<br>21309 EK<br>22309 EK | HA 309<br>HA 2309<br>HA 309<br>HA 2309 | FRB 9.5/100<br>FRB 4/100<br>FRB 9.5/100<br>FRB 4/100 | TSN 609 AE<br>TSN 609 CE<br>TSN 609 SA<br>TSN 609 NDA | ASNH 511-609 | 95<br>95<br>107<br>155 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

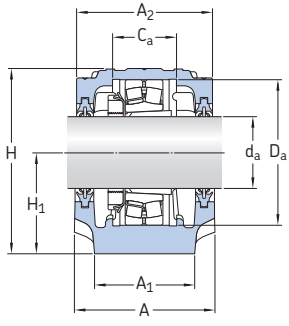


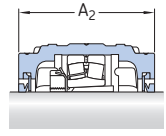

| Shaft diameter | Dimensions | | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **1 3/16** *30,163* | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1/2 | 2,60 |
| | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 2,90 |
| **1 1/4** *31,75* | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 3,40 |
| | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 12 | 12 | 1/2 | 3,85 |
| **1 7/16** *36,513* | 85 | 60 | 30 | 85 | 109 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 3,40 |
| | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5/8 | 5,45 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

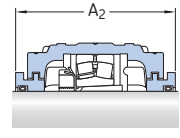
$d_a$ **1 1/2 – 1 3/4** in.
*38,1 – 44,45 mm*



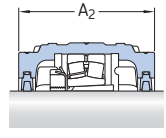

with TSN .. L



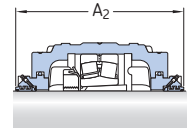

with TSN .. A




with TSN .. S



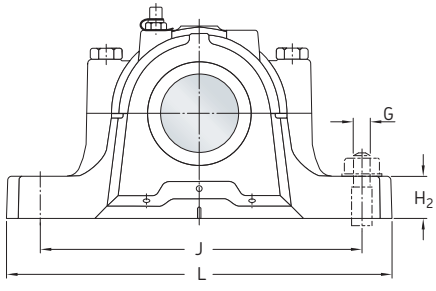

with TSN .. C

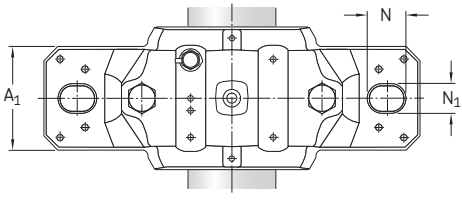



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **1 1/2**<br>*38,1* | **SE 509** | 1209 EKTN9<br>2209 EKTN9<br>22209 EK<br>BS2-2209-2CSK<br>C 2209 KTN9 | HE 209<br>HE 309<br>HE 309<br>HE 309 E<br>HE 309 E | FRB 5.5/85<br>FRB 3.5/85<br>FRB 3.5/85<br>FRB 1/85<br>FRB 3.5/85 | TSN 509 AE<br>TSN 509 CE<br>TSN 509 SE<br>TSN 509 NDE | ASNH 509 | 85<br>85<br>97<br>150 |
| | **SE 511-609** | 1309 EKTN9<br>2309 EKTN9<br>21309 EK<br>22309 EK | HE 309<br>HE 2309<br>HE 309<br>HE 2309 | FRB 9.5/100<br>FRB 4/100<br>FRB 9.5/100<br>FRB 4/100 | TSN 609 AE<br>TSN 609 CE<br>TSN 609 SE<br>TSN 609 NDE | ASNH 511-609 | 95<br>95<br>107<br>155 |
| **1 11/16**<br>*42,863* | **SE 510-608** | 1210 EKTN9<br>2210 EKTN9<br>22210 EK<br>BS2-2210-2CSK<br>C 2210 KTN9 | HA 210<br>HA 310<br>HA 310<br>HA 310 E<br>HA 310 E | FRB 10.5/90<br>FRB 9/90<br>FRB 9/90<br>FRB 6.5/90<br>FRB 9/90 | TSN 510 A<br>TSN 510 C<br>TSN 510 SA<br>TSN 510 NDA | ASNH 510-608 | 90<br>90<br>102<br>155 |
| | **SE 512-610** | 1310 EKTN9<br>2310 K<br>21310 EK<br>22310 EK | HA 310<br>HA 2310<br>HA 310<br>HA 2310 | FRB 10.5/110<br>FRB 4/110<br>FRB 10.5/110<br>FRB 4/110 | TSN 610 A<br>TSN 610 C<br>TSN 610 SA<br>TSN 610 NDA | ASNH 512-610 | 105<br>105<br>117<br>165 |
| **1 3/4**<br>*44,45* | **SE 510-608** | 1210 EKTN9<br>2210 EKTN9<br>22210 EK<br>BS2-2210-2CSK<br>C 2210 KTN9 | HE 210<br>HE 310<br>HE 310<br>HE 310 E<br>HE 310 E | FRB 10.5/90<br>FRB 9/90<br>FRB 9/90<br>FRB 6.5/90<br>FRB 9/90 | TSN 510 L<br>TSN 510 A<br>TSN 510 C<br>TSN 510 SE<br>TSN 510 NDE | ASNH 510-608 | 90<br>90<br>90<br>102<br>155 |
| | **SE 512-610** | 1310 EKTN9<br>2310 K<br>21310 EK<br>22310 EK | HE 310<br>HE 2310<br>HE 310<br>HE 2310 | FRB 10.5/110<br>FRB 4/110<br>FRB 10.5/110<br>FRB 4/110 | TSN 610 L<br>TSN 610 A<br>TSN 610 C<br>TSN 610 SE<br>TSN 610 NDE | ASNH 512-610 | 105<br>105<br>105<br>117<br>165 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

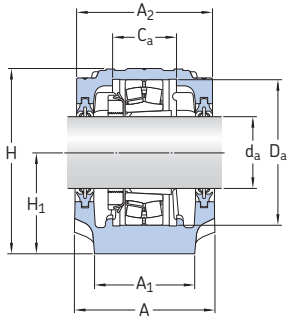


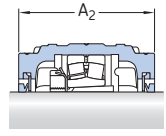

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **1 1/2** *38,1* | 85 | 60 | 30 | 85 | 109 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 3,40 |
| | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5/8 | 5,45 |
| **1 11/16** *42,863* | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 3,85 |
| | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 5/8 | 6,15 |
| **1 3/4** *44,45* | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 1/2 | 3,85 |
| | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 5/8 | 6,15 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

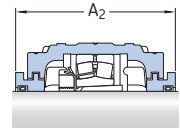
$d_a$ **1 15/16 – 2 3/16** in.
*49,213 – 55,563 mm*



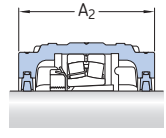

with TSN .. L



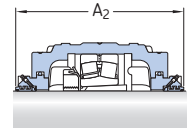

with TSN .. A




with TSN .. S



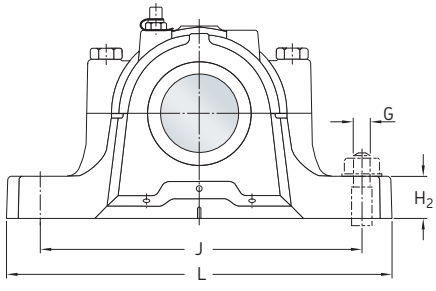

with TSN .. C

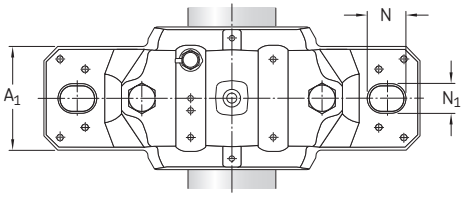



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **1 15/16**<br>*49,213* | **SE 511-609** | 1211 EKTN9<br>2211 EKTN9<br>22211 EK<br>BS2-2211-2CSK<br>C 2211 KTN9 | HA 211<br>HA 311<br>HA 311<br>HA 311 E<br>HA 311 E | FRB 11.5/100<br>FRB 9.5/100<br>FRB 9.5/100<br>FRB 6.5/100<br>FRB 9.5/100 | TSN 511 L<br>TSN 511 A<br>TSN 511 C<br>TSN 511 SA<br>TSN 511 NDA | ASNH 511-609 | 95<br>95<br>95<br>107<br>165 |
| | **SE 513-611** | 1311 EKTN9<br>2311 K<br>21311 EK<br>22311 EK | HA 311<br>HA 2311<br>HA 311<br>HA 2311 | FRB 11/120<br>FRB 4/120<br>FRB 11/120<br>FRB 4/120 | TSN 611 L<br>TSN 611 A<br>TSN 611 C<br>TSN 611 SA<br>TSN 611 NDA | ASNH 513-611 | 110<br>110<br>110<br>122<br>170 |
| **2**<br>*50,8* | **SE 511-609** | 1211 EKTN9<br>2211 EKTN9<br>22211 EK<br>BS2-2211-2CSK<br>C 2211 KTN9 | HE 211 B<br>HE 311 B<br>HE 311 B<br>HE 311 BE<br>HE 311 BE | FRB 11.5/100<br>FRB 9.5/100<br>FRB 9.5/100<br>FRB 6.5/100<br>FRB 9.5/100 | TSN 511 L<br>TSN 511 A<br>TSN 511 C<br>TSN 511 SE<br>TSN 511 NDE | ASNH 511-609 | 95<br>95<br>95<br>107<br>165 |
| | **SE 513-611** | 1311 EKTN9<br>2311 K<br>21311 EK<br>22311 EK | HE 311<br>HE 2311 B<br>HE 311<br>HE 2311 B | FRB 11/120<br>FRB 4/120<br>FRB 11/120<br>FRB 4/120 | TSN 611 L<br>TSN 611 A<br>TSN 611 C<br>TSN 611 SE<br>TSN 611 NDE | ASNH 513-611 | 110<br>110<br>110<br>122<br>170 |
| **2 3/16**<br>*55,563* | **SE 513-611** | 1213 EKTN9<br>2213 EKTN9<br>22213 EK<br>BS2-2213-2CSK<br>C 2213 KTN9 | HA 213<br>HA 313<br>HA 313<br>HA 2313 E<br>HA 313 E | FRB 14/120<br>FRB 10/120<br>FRB 10/120<br>FRB 6.5/120<br>FRB 10/120 | TSN 513 LA<br>TSN 513 AE<br>TSN 513 CE<br>TSN 513 SA<br>TSN 513 NDA | ASNH 513-611 | 110<br>110<br>110<br>122<br>180 |
| | **SNL 516-613** | 1313 EKTN9<br>2313 K<br>21313 EK<br>22313 EK | HA 313<br>HA 2313<br>HA 313<br>HA 2313 | FRB 12.5/140<br>FRB 5/140<br>FRB 12.5/140<br>FRB 5/140 | TSN 613 AE<br>TSN 613 CE<br>TSN 613 SA<br>TSN 613 NDA | ASNH 516-613 | 120<br>120<br>138<br>180 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

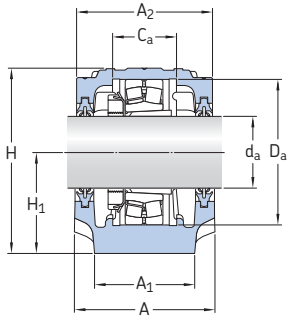


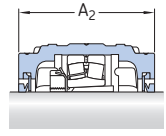

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **1 15/16** *49,213* | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5/8 | 5,45 |
| | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 5/8 | 7,90 |
| **2** *50,8* | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5/8 | 5,45 |
| | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 5/8 | 7,90 |
| **2 3/16** *55,563* | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 5/8 | 7,90 |
| | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 3/4 | 9,50 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

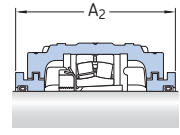
$d_a$ **2 1/4 – 2 1/2** in.
*57,15 – 63,5 mm*



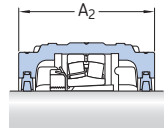

with TSN .. L



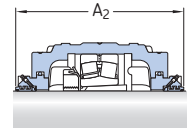

with TSN .. A




with TSN .. S



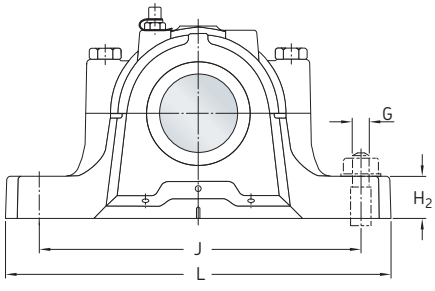

with TSN .. C

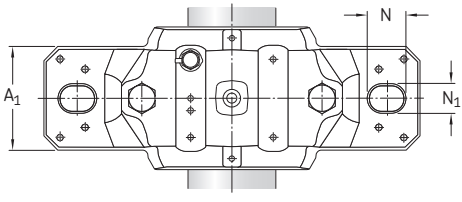



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **2 1/4**<br>*57,15* | **SE 513-611** | 1213 EKTN9<br>2213 EKTN9<br>22213 EK<br>BS2-2213-2CSK<br>C 2213 KTN9 | HE 213<br>HE 313<br>HE 313<br>HE 2313 E<br>HE 313 E | FRB 14/120<br>FRB 10/120<br>FRB 10/120<br>FRB 6.5/120<br>FRB 10/120 | TSN 513 A<br>TSN 513 CE<br>TSN 513 SE<br>TSN 513 NDE | ASNH 513-611 | 110<br>110<br>122<br>180 |
| | **SNL 516-613** | 1313 EKTN9<br>2313 K<br>21313 EK<br>22313 EK | HE 313<br>HE 2313<br>HE 313<br>HE 2313 | FRB 12.5/140<br>FRB 5/140<br>FRB 12.5/140<br>FRB 5/140 | TSN 613 A<br>TSN 613 CE<br>TSN 613 SE<br>TSN 613 NDE | ASNH 516-613 | 120<br>120<br>138<br>180 |
| **2 7/16**<br>*61,913* | **SE 515-612** | 1215 K<br>2215 EKTN9<br>22215 EK<br>BS2-2215-2CSK<br>C 2215 K | HA 215<br>HA 315<br>HA 315<br>HA 315 E<br>HA 315 E | FRB 15.5/130<br>FRB 12.5/130<br>FRB 12.5/130<br>FRB 9/130<br>FRB 12.5/130 | TSN 515 LA<br>TSN 515 AE<br>TSN 515 CE<br>TSN 515 SA<br>TSN 515 NDA | ASNH 515-612 | 115<br>115<br>115<br>127<br>175 |
| | **SNL 518-615** | 1315 K<br>2315 K<br>21315 EK<br>22315 EK<br>C 2315 K | HA 315<br>HA 2315<br>HA 315<br>HA 2315<br>HA 2315 | FRB 14/160<br>FRB 5/160<br>FRB 14/160<br>FRB 5/160<br>FRB 5/160 | TSN 615 AE<br>TSN 615 CE<br>TSN 615 SA<br>TSN 615 NDA | ASNH 518-615 | 140<br>140<br>158<br>200 |
| **2 1/2**<br>*63,5* | **SE 515-612** | 1215 K<br>2215 EKTN9<br>22215 EK<br>BS2-2215-2CSK<br>C 2215 K | HE 215<br>HE 315<br>HE 315<br>HE 315 E<br>HE 315 E | FRB 15.5/130<br>FRB 12.5/130<br>FRB 12.5/130<br>FRB 9/130<br>FRB 12.5/130 | TSN 515 A<br>TSN 515 C<br>TSN 515 SE<br>TSN 515 NDE | ASNH 515-612 | 115<br>115<br>127<br>175 |
| | **SNL 518-615** | 1315 K<br>2315 K<br>21315 EK<br>22315 EK<br>C 2315 K | HE 315<br>HE 2315<br>HE 315<br>HE 2315<br>HE 2315 | FRB 14/160<br>FRB 5/160<br>FRB 14/160<br>FRB 5/160<br>FRB 5/160 | TSN 615 A<br>TSN 615 C<br>TSN 615 SE<br>TSN 615 NDE | ASNH 518-615 | 140<br>140<br>158<br>200 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

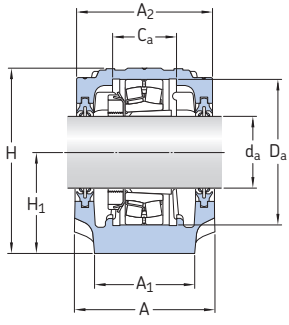


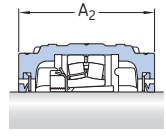

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **2 1/4**<br>*57,15* | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 5/8 | 7,90 |
| | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 3/4 | 9,50 |
| **2 7/16**<br>*61,913* | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 5/8 | 8,55 |
| | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 12,5 |
| **2 1/2**<br>*63,5* | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 5/8 | 8,55 |
| | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 12,5 |

# 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

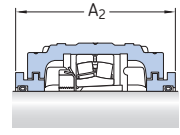
$d_a$ **2 11/16 – 2 15/16** in.
*68,263 – 74,613 mm*



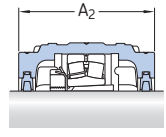

with TSN .. L



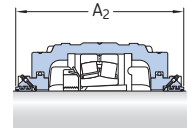

with TSN .. A




with TSN .. S



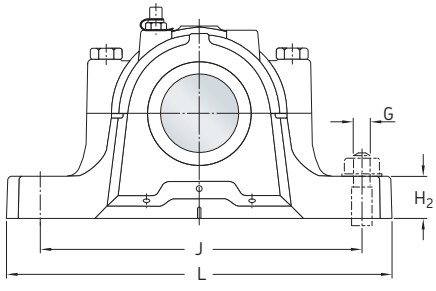

with TSN .. C

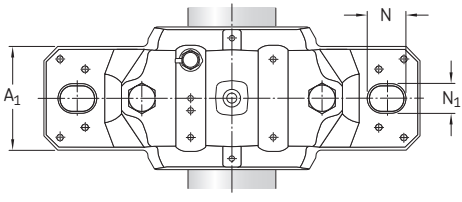



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **2 11/16** *68,263* | **SNL 516-613** | 1216 K | HA 216 | FRB 16/140 | TSN 516 A | ASNH 516-613 | 120 |
| | | 2216 EKTN9 | HA 316 | FRB 12.5/140 | TSN 516 C | | 120 |
| | | 22216 EK | HA 316 | FRB 12.5/140 | TSN 516 SA | | 138 |
| | | BS2-2216-2CSK | HA 316 E | FRB 9/140 | TSN 516 NDA | | 205 |
| | | C 2216 K | HA 316 E | FRB 12.5/140 | | | |
| | **SNL 519-616** | 1316 K | HA 316 | FRB 14.5/170 | TSN 616 A | ASNH 519-616 | 145 |
| | | 2316 K | HA 2316 | FRB 5/170 | TSN 616 C | | 145 |
| | | 21316 EK | HA 316 | FRB 14.5/170 | TSN 616 SA | | 163 |
| | | 22316 EK | HA 2316 | FRB 5/170 | TSN 616 NDA | | 205 |
| | | C 2316 K | HA 2316 | FRB 5/170 | | | |
| **2 3/4** *69,85* | **SNL 516-613** | 1216 K | HE 216 | FRB 16/140 | TSN 516 L | ASNH 516-613 | 120 |
| | | 2216 EKTN9 | HE 316 | FRB 12.5/140 | TSN 516 A | | 120 |
| | | 22216 EK | HE 316 | FRB 12.5/140 | TSN 516 C | | 120 |
| | | BS2-2216-2CSK | HE 316 E | FRB 9/140 | TSN 516 SE | | 138 |
| | | C 2216 K | HE 316 E | FRB 12.5/140 | TSN 516 NDE | | 205 |
| | **SNL 519-616** | 1316 K | HE 316 | FRB 14.5/170 | TSN 616 L | ASNH 519-616 | 145 |
| | | 2316 K | HE 2316 | FRB 5/170 | TSN 616 A | | 145 |
| | | 21316 EK | HE 316 | FRB 14.5/170 | TSN 616 C | | 145 |
| | | 22316 EK | HE 2316 | FRB 5/170 | TSN 616 SE | | 163 |
| | | C 2316 K | HE 2316 | FRB 5/170 | TSN 616 NDE | | 205 |
| **2 15/16** *74,613* | **SNL 517** | 1217 K | HA 217 | FRB 16.5/150 | TSN 517 L | ASNH 517 | 125 |
| | | 2217 K | HA 317 | FRB 12.5/150 | TSN 517 A | | 125 |
| | | 22217 EK | HA 317 | FRB 12.5/150 | TSN 517 C | | 125 |
| | | BS2-2217-2CSK | HA 317 E | FRB 8.5/150 | TSNA 517 SA | | 143 |
| | | C 2217 K | HA 317 E | FRB 12.5/150 | TSN 517 NDA | | 210 |
| | **SNL 520-617** | 1317 K | HA 317 | FRB 14.5/180 | TSN 617 L | ASNH 520-617 | 160 |
| | | 2317 K | HA 2317 | FRB 5/180 | TSN 617 A | | 160 |
| | | 21317 EK | HA 317 | FRB 14.5/180 | TSN 617 C | | 160 |
| | | 22317 EK | HA 2317 | FRB 5/180 | TSN 617 SA | | 178 |
| | | C 2317 K | HA 2317 | FRB 5/180 | TSN 617 NDA | | 220 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

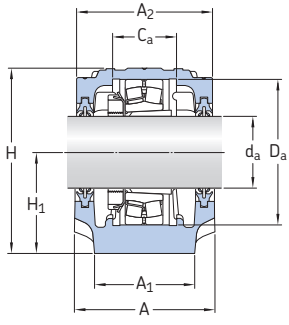


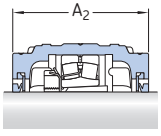

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **2 11/16** *68,263* | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 3/4 | 9,50 |
| | 145 | 100 | 68 | 170 | 212 | 112 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 13,7 |
| **2 3/4** *69,85* | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 3/4 | 9,50 |
| | 145 | 100 | 68 | 170 | 212 | 112 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 13,7 |
| **2 15/16** *74,613* | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 3/4 | 10,0 |
| | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 7/8 | 17,6 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

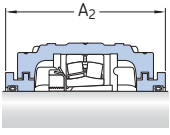
$d_a$ **3 – 3 1/4** in.
*76,2 – 82,55 mm*



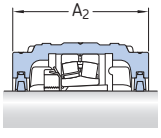

with TSN .. L



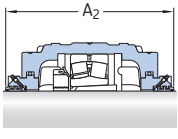

with TSN .. A




with TSN .. S



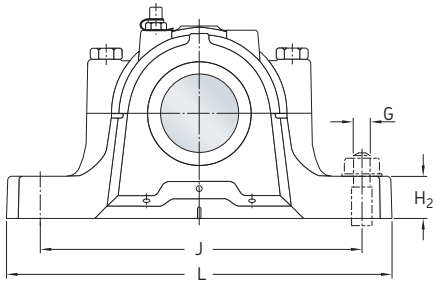

with TSN .. C

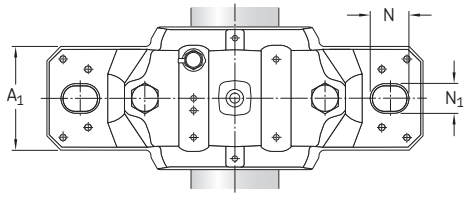



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **3** *76,2* | **SNL 517** | 1217 K | HE 217 | FRB 16.5/150 | TSN 517 L | ASNH 517 | 125 |
| | | 2217 K | HE 317 | FRB 12.5/150 | TSN 517 A | | 125 |
| | | 22217 EK | HE 317 | FRB 12.5/150 | TSN 517 C | | 125 |
| | | BS2-2217-2CSK | HE 317 E | FRB 8.5/150 | TSN 517 SE | | 143 |
| | | C 2217 K | HE 317 E | FRB 12.5/150 | TSN 517 NDE | | 210 |
| | **SNL 520-617** | 1317 K | H 317 | FRB 14.5/180 | TSN 617 L | ASNH 520-617 | 160 |
| | | 2317 K | HE 2317 | FRB 5/180 | TSN 617 A | | 160 |
| | | 21317 EK | H 317 | FRB 14.5/180 | TSN 617 C | | 160 |
| | | 22317 EK | HE 2317 | FRB 5/180 | TSN 617 SE | | 178 |
| | | C 2317 K | HE 2317 | FRB 5/180 | TSN 617 NDE | | 220 |
| **3 3/16** *80,963* | **SNL 518-615** | 1218 K | HA 218 | FRB 17.5/160 | TSN 518 L | ASNH 518-615 | 140 |
| | | 2218 K | HA 318 | FRB 12.5/160 | TSN 518 A | | 140 |
| | | 22218 EK | HA 318 | FRB 12.5/160 | TSN 518 CE | | 140 |
| | | BS2-2218-2CSK | HA 2318 E/L73 | FRB 8.5/160 | TSN 518 SA | | 158 |
| | | 23218 CCK/W33 | HA 2318 | FRB 6.25/160 | TSN 518 NDA | | 225 |
| | | C 2218 K | HA 318 E | FRB 12.5/160 | | | |
| **3 1/4** *82,55* | **SNL 518-615** | 1218 K | HE 218 | FRB 17.5/160 | TSN 518 A | ASNH 518-615 | 140 |
| | | 2218 K | HE 318 | FRB 12.5/160 | TSN 518 CE | | 140 |
| | | 22218 EK | HE 318 | FRB 12.5/160 | TSN 518 SE | | 158 |
| | | BS2-2218-2CSK | HE 2318 E/L73 | FRB 8.5/160 | TSN 518 NDE | | 225 |
| | | 23218 CCK/W33 | HE 2318 | FRB 6.25/160 | | | |
| | | C 2218 K | HE 318 E | FRB 12.5/160 | | | |
| | **SNL 522-619** | 1319 K | HE 319 | FRB 17.5/200 | TSN 619 A | ASNH 522-619 | 175 |
| | | 2319 KM | HE 2319 | FRB 6.5/200 | TSN 619 C | | 175 |
| | | 21319 EK | HE 319 | FRB 17.5/200 | TSN 619 SE | | 191 |
| | | 22319 EK | HE 2319 | FRB 6.5/200 | TSN 619 NDE | | 235 |
| | | C 2319 K | HE 2319 | FRB 6.5/200 | | | |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

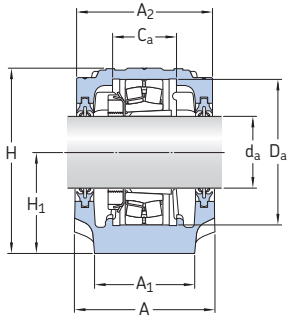


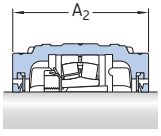

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | |
| in./*mm* | mm | | | | | | | | | | | | in. | kg |
| **3** *76,2* | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 3/4 | 10,0 |
| | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 7/8 | 17,6 |
| **3 3/16** *80,963* | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 12,5 |
| **3 1/4** *82,55* | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 3/4 | 12,5 |
| | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | 22,0 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

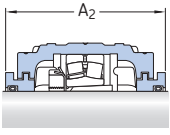
$d_a$ **3 7/16 – 3 15/16** in.
*87,313 – 100,012 mm*



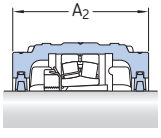

with TSN .. L



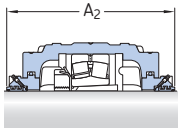

with TSN .. A




with TSN .. S



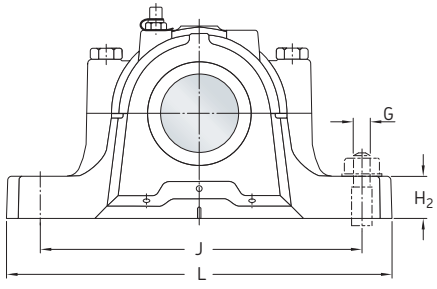

with TSN .. C

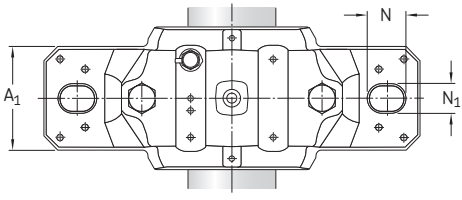



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **3 7/16**<br>*87,313* | **SNL 520-617** | 1220 K<br>2220 KM<br>22220 EK<br>BS2-2220-2CS5K<br>23220 CCK/W33<br>C 2220 K | HA 220<br>HA 320<br>HA 320<br>HA 2320 E<br>HA 2320<br>HA 320 E | FRB 18/180<br>FRB 12/180<br>FRB 12/180<br>FRB 7.5/180<br>FRB 4.85/180<br>FRB 12/180 | TSN 520 A<br>TSN 520 C<br>TSN 520 SA<br>TSN 520 NDA | ASNH 520-617 | 160<br>160<br>178<br>230 |
| | **SNL 524-620** | 1320 K<br>2320 KM<br>21320 EK<br>22320 EK<br>C 2320 K | HA 320<br>HA 2320<br>HA 320<br>HA 2320<br>HA 2320 | FRB 19.5/215<br>FRB 6.5/215<br>FRB 19.5/215<br>FRB 6.5/215<br>FRB 6.5/215 | TSN 620 A<br>TSN 620 C<br>TSN 620 SA<br>TSN 620 NDA | ASNH 524-620 | 185<br>185<br>199<br>240 |
| **3 1/2**<br>*88,9* | **SNL 520-617** | 1220 K<br>2220 KM<br>22220 EK<br>BS2-2220-2CS5K<br>23220 CCK/W33<br>C 2220 K | HE 220<br>HE 320<br>HE 320<br>HE 2320 E<br>HE 2320<br>HE 320 E | FRB 18/180<br>FRB 12/180<br>FRB 12/180<br>FRB 7.5/180<br>FRB 4.85/180<br>FRB 12/180 | TSN 520 A<br>TSN 520 C<br>TSN 520 SE<br>TSN 520 NDE | ASNH 520-617 | 160<br>160<br>178<br>230 |
| | **SNL 524-620** | 1320 K<br>2320 KM<br>21320 EK<br>22320 EK<br>C 2320 K | HE 320<br>HE 2320<br>HE 320<br>HE 2320<br>HE 2320 | FRB 19.5/215<br>FRB 6.5/215<br>FRB 19.5/215<br>FRB 6.5/215<br>FRB 6.5/215 | TSN 620 A<br>TSN 620 C<br>TSN 620 SE<br>TSN 620 NDE | ASNH 524-620 | 185<br>185<br>199<br>240 |
| **3 15/16**<br>*100,012* | **SNL 522-619** | 1222 K<br>2222 KM<br>22222 EK<br>BS2-2222-2CS5K<br>23222 CCK/W33<br>C 2222 K | H 222<br>H 322<br>H 322<br>H 2322 E<br>H 2322<br>H 322 E | FRB 21/200<br>FRB 13.5/200<br>FRB 13.5/200<br>FRB 8.5/200<br>FRB 5.1/200<br>FRB 13.5/200 | TSN 522 L<br>TSN 522 A<br>TSN 522 C<br>TSN 522 SA<br>TSN 522 NDA | ASNH 522-619 | 175<br>175<br>175<br>191<br>250 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

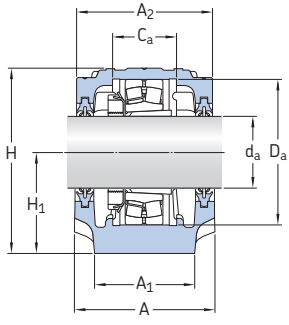


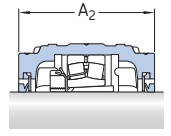

| Shaft diameter | Dimensions | | | | | | | | | | | | | Eye bolt acc. to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | in. | – | kg |
| **3 7/16** *87,313* | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 7/8 | – | 17,6 |
| | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | M 10 | 26,2 |
| **3 1/2** *88,9* | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 7/8 | – | 17,6 |
| | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | M 10 | 26,2 |
| **3 15/16** *100,012* | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | – | 22,0 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

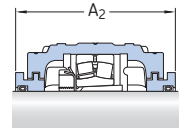
$d_a$ **4 – 4 1/2** in.
*101,6 – 114,3 mm*



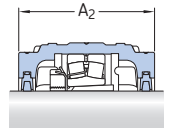

with TSN .. L



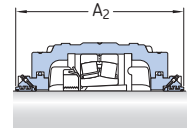

with TSN .. A




with TSN .. S



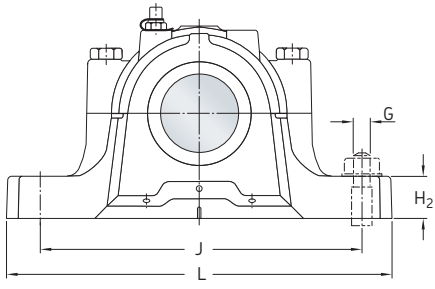

with TSN .. C

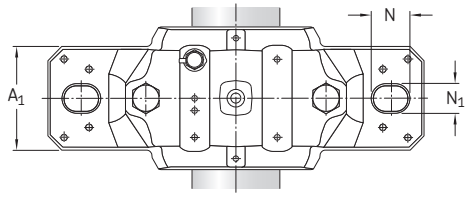



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **4** *101,6* | **SNL 522-619** | 1222 K<br>2222 KM<br>22222 EK<br>BS2-2222-2CS5K<br>23222 CCK/W33<br>C 2222 K | HE 222<br>HE 322<br>HE 322<br>HE 2322 E<br>HE 2322<br>HE 322 E | FRB 21/200<br>FRB 13.5/200<br>FRB 13.5/200<br>FRB 8.5/200<br>FRB 5.1/200<br>FRB 13.5/200 | TSN 522 L<br>TSN 522 A<br>TSN 522 C<br>TSN 522 SE<br>TSN 522 NDE | ASNH 522-619 | 175<br>175<br>175<br>191<br>250 |
| **4 3/16** *106,363* | **SNL 524-620** | 1224 KM<br>22224 EK<br>BS2-2224-2CS5K<br>23224 CCK/W33<br>C 3224 K | HA 3024<br>HA 3124<br>HA 2324 EH<br>HA 2324<br>HA 2324 L | FRB 22/215<br>FRB 14/215<br>FRB 8.5/215<br>FRB 5/215<br>FRB 5/215 | TSN 524 A<br>TSN 524 CE<br>TSN 524 SA<br>TSN 524 NDA | ASNH 524-620 | 185<br>185<br>199<br>260 |
| **4 1/4** *107,95* | **SNL 524-620** | 1224 KM<br>22224 EK<br>BS2-2224-2CS5K<br>23224 CCK/W33<br>C 2224 K<br>C 3224 K | HE 3024<br>HE 3124<br>HE 2324 EH<br>HE 2324<br>HE 3124 L<br>HE 2324 L | FRB 22/215<br>FRB 14/215<br>FRB 8.5/215<br>FRB 5/215<br>FRB 14/215<br>FRB 5/215 | TSN 524 A<br>TSN 524 C<br>TSN 524 SE<br>TSN 524 NDE | ASNH 524-620 | 185<br>815<br>199<br>260 |
| **4 7/16** *112,713* | **SNL 526** | 22226 EK<br>BS2-2226-2CS5K<br>23226 CCK/W33<br>23226-2CS5K<br>C 2226 K | HA 3126<br>HA 2326 L<br>HA 2326<br>HA 2326<br>HA 3126 L | FRB 13/230<br>FRB 7.5/230<br>FRB 5/230<br>FRB 5/230<br>FRB 13/230 | TSN 526 A<br>TSN 526 C<br>TSN 526 SA<br>TSN 526 NDA | ASNH 526 | 190<br>190<br>208<br>265 |
| **4 1/2** *114,3* | **SNL 526** | 22226 EK<br>BS2-2226-2CS5K<br>23226 CCK/W33<br>23226-2CS5K<br>C 2226 K | HE 3126<br>HE 2326 L<br>HE 2326<br>HE 2326<br>HE 3126 L | FRB 13/230<br>FRB 7.5/230<br>FRB 5/230<br>FRB 5/230<br>FRB 13/230 | TSN 526 L<br>TSN 526 A<br>TSN 526 C<br>TSN 526 SE<br>TSN 526 NDE | ASNH 526 | 190<br>190<br>190<br>208<br>265 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.

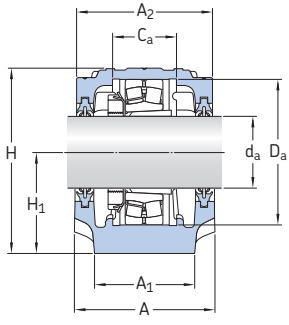


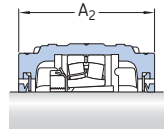

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | in. | – | kg |
| **4** *101,6* | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | – | 22,0 |
| **4 3/16** *106,363* | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | M 10 | 26,2 |
| **4 1/4** *107,95* | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | 7/8 | M 10 | 26,2 |
| **4 7/16** *112,713* | 190 | 130 | 90 | 230 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | 1 | M 10 | 33,0 |
| **4 1/2** *114,3* | 190 | 130 | 90 | 230 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | 1 | M 10 | 33,0 |

## 2.2 SNL and SE plummer block housings for bearings on an adapter sleeve, inch shafts

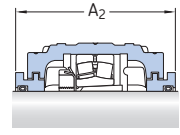
$d_a$ **4 15/16 – 5 1/2** in.
*125,413 – 139,7 mm*



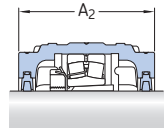

with TSN .. L



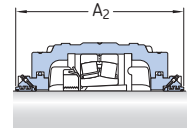

with TSN .. A




with TSN .. S



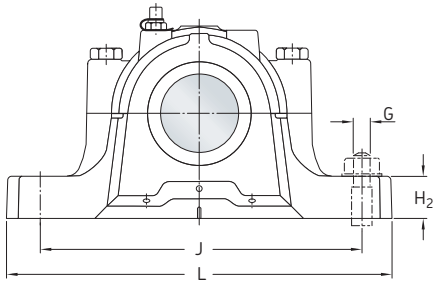

with TSN .. C

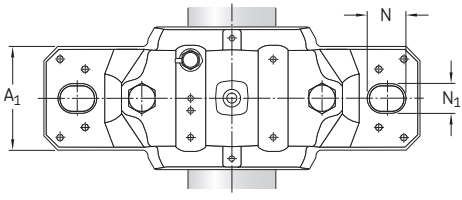



with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **4 15/16**<br>*125,413* | **SNL 528** | 22228 CCK/W33<br>22228-2CS5K<br>23228 CCK/W33<br>23228-2CS5K<br>C 2228 K | HA 3128<br>HA 3128 L<br>HA 2328<br>HA 2328<br>HA 3128 L | FRB 15/250<br>FRB 15/250<br>FRB 5/250<br>FRB 5/250<br>FRB 15/250 | TSN 528 L<br>TSN 528 A<br>TSN 528 C<br>TSN 528 SA<br>TSN 528 NDA | ASNH 528 | 205<br>205<br>205<br>223<br>285 |
| **5**<br>*127* | **SNL 528** | 22228 CCK/W33<br>22228-2CS5K<br>23228 CCK/W33<br>23228-2CS5K<br>C 2228 K | HE 3128<br>HA 3128 L<br>HE 2328<br>HA 2328<br>HE 3128 L | FRB 15/250<br>FRB 15/250<br>FRB 5/250<br>FRB 5/250<br>FRB 15/250 | TSN 528 A<br>TSN 528 C<br>TSN 528 SE<br>TSN 528 NDE | ASNH 528 | 205<br>205<br>223<br>285 |
| **5 3/16**<br>*131,763* | **SNL 530** | 22230 CCK/W33<br>22230-2CS5K<br>23230 CCK/W33<br>23230-2CS5K<br>C 2230 K | HA 3130<br>HA 3130<br>HA 2330<br>HA 2330<br>HA 3130 L | FRB 16.5/270<br>FRB 16.5/270<br>FRB 5/270<br>FRB 5/270<br>FRB 16.5/270 | TSN 530 A<br>TSN 530 C<br>TSN 530 SA<br>TSN 530 NDA | ASNH 530 | 220<br>220<br>241<br>295 |
| **5 1/4**<br>*133,35* | **SNL 530** | 22230 CCK/W33<br>22230-2CS5K<br>23230 CCK/W33<br>23230-2CS5K<br>C 2230 K | HE 3130<br>HE 3130<br>HE 2330<br>HE 2330<br>HE 3130 L | FRB 16.5/270<br>FRB 16.5/270<br>FRB 5/270<br>FRB 5/270<br>FRB 16.5/270 | TSN 530 A<br>TSN 530 C<br>TSN 530 SE<br>TSN 530 NDE | ASNH 530 | 220<br>220<br>241<br>295 |
| **5 7/16**<br>*138,113* | **SNL 532** | 22232 CCK/W33<br>22232-2CS5K<br>23232 CCK/W33<br>C 3232 K | HA 3132<br>HA 3132<br>HA 2332<br>HA 2332 L | FRB 17/290<br>FRB 17/290<br>FRB 5/290<br>FRB 5/290 | TSN 532 A<br>TSN 532 C<br>TSN 532 SA<br>TSN 532 NDA | ASNH 532 | 235<br>235<br>254<br>315 |
| **5 1/2**<br>*139,7* | **SNL 532** | 22232 CCK/W33<br>22232-2CS5K<br>23232 CCK/W33<br>C 3232 K | HE 3132<br>HE 3132<br>HE 2332<br>HE 2332 L | FRB 17/290<br>FRB 17/290<br>FRB 5/290<br>FRB 5/290 | TSN 532 L<br>TSN 532 A<br>TSN 532 C<br>TSN 532 SE<br>TSN 532 NDE | ASNH 532 | 235<br>235<br>235<br>254<br>315 |

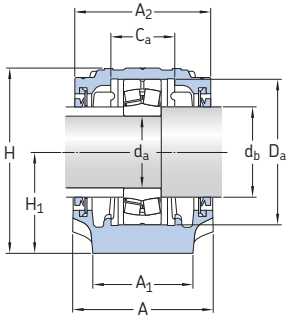
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00), self-aligning ball bearings, 222(00), 213(00), BS2...– spherical roller bearings, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same line only. Other adapter sleeve variants can also be used.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



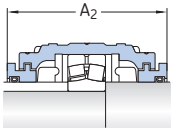




| Shaft diameter | Dimensions | | | | | | | | | | | | | Eye bolt acc. to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | in. | – | kg |
| **4 15/16** *125,413* | 205 | 150 | 98 | 250 | 302 | 150 | 50 | 420 | 500 | 42 | 35 | 30 | 1 1/4 | M 12 | 40,0 |
| **5** *127* | 205 | 150 | 98 | 250 | 302 | 150 | 50 | 420 | 500 | 42 | 35 | 30 | 1 1/4 | M 12 | 40,0 |
| **5 3/16** *131,763* | 220 | 160 | 106 | 270 | 323 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | 1 1/4 | M 12 | 49,0 |
| **5 1/4** *133,35* | 220 | 160 | 106 | 270 | 323 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | 1 1/4 | M 12 | 49,0 |
| **5 7/16** *138,113* | 235 | 160 | 114 | 290 | 344 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | 1 1/4 | M 12 | 55,0 |
| **5 1/2** *139,7* | 235 | 160 | 114 | 290 | 344 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | 1 1/4 | M 12 | 55,0 |

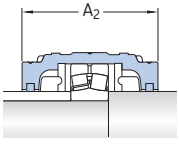
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **25 – 30** mm



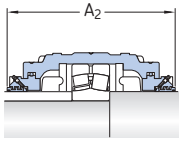

with TSN .. A




with TSN .. S



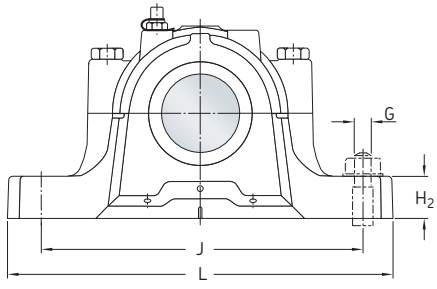

with FS 170

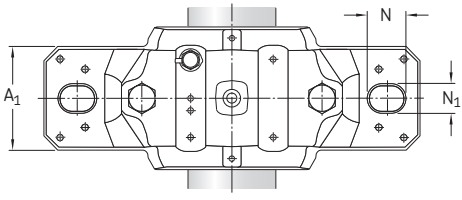



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **25** | **SNL 205** | 1205 ETN9<br>2205 ETN9<br>22205 E<br>BS2-2205-2CS<br>C 2205 TN9 | FRB 5/52<br>FRB 3.5/52<br>FRB 3.5/52<br>FRB 1/52<br>FRB 3.5/52 | TSN 205 S<br>TSN 205 ND | ASNH 505-605 | 90<br>140 |
| | **SNL 505** | 1205 ETN9<br>2205 ETN9<br>22205 E<br>BS2-2205-2CS<br>C 2205 TN9 | FRB 5/52<br>FRB 3.5/52<br>FRB 3.5/52<br>FRB 1/52<br>FRB 3.5/52 | 2 FS 170 | ASNH 505 | 67 |
| | **SNL 206-305** | 1305 ETN9<br>21305 CC<br>2305 ETN9 | FRB 7.5/62<br>FRB 7.5/62<br>FRB 4/62 | TSN 305 A<br>TSN 305 S<br>TSN 305 ND | ASNH 507-606 | 77<br>89<br>140 |
| **30** | **SNL 206-305** | 1206 ETN9<br>2206 ETN9<br>22206 E<br>BS2-2206-2CS<br>C 2206 TN9 | FRB 8/62<br>FRB 6/62<br>FRB 6/62<br>FRB 3.5/62<br>FRB 6/62 | TSN 206 A<br>TSN 206 S<br>TSN 206 ND | ASNH 507-606 | 77<br>89<br>150 |
| | **SNL 506-605** | 1206 ETN9<br>2206 ETN9<br>22206 E<br>BS2-2206-2CS<br>C 2206 TN9 | FRB 8/62<br>FRB 6/62<br>FRB 6/62<br>FRB 3.5/62<br>FRB 6/62 | 2 FS 170 | ASNH 506-605 | 77 |
| | **SE 507-606** | 1306 ETN9<br>21306 CC<br>2306 | FRB 7.5/72<br>FRB 7.5/72<br>FRB 3.5/72 | TSN 306 A<br>TSN 306 S<br>TSN 306 ND | ASNH 507-606 | 82<br>94<br>155 |

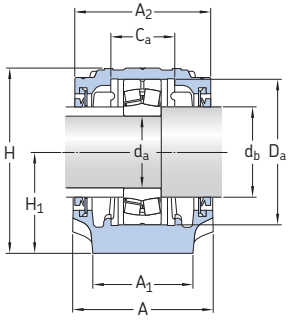
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



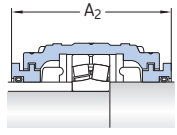




| Shaft diameter | | Dimensions | | | | | | | | | | | | Mass<br>Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | mm | | | | | | | | | | | | kg |
| **25** | 30 | 67 | 46 | 25 | 52 | 74 | 40 | 19 | 130 | 165 | 20 | 15 | 12 | 1,40 |
| | 30 | 67 | 46 | 25 | 52 | 74 | 40 | 19 | 130 | 165 | 20 | 15 | 12 | 1,40 |
| | 30 | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1,90 |
| **30** | 35 | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1,90 |
| | 35 | 77 | 52 | 32 | 62 | 89 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 1,90 |
| | 35 | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,60 |

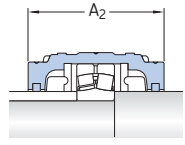
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **35 – 40** mm



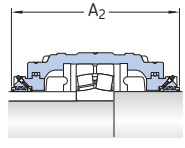

with TSN .. A



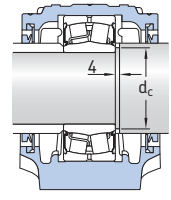

with TSN .. S




with FS 170

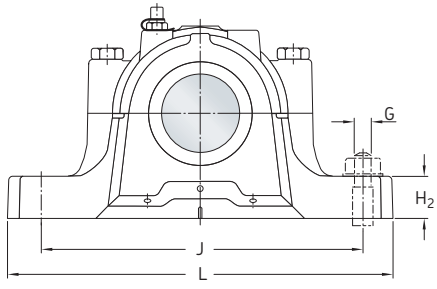


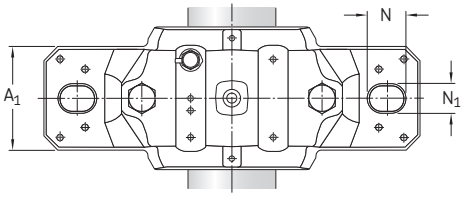

with TSN .. ND




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **35** | **SE 207** | 1207 E<br>2207 ETN9<br>22207 E<br>BS2-2207-2CS[3]<br>C 2207 TN9 | FRB 8.5/72<br>FRB 5.5/72<br>FRB 5.5/72<br>FRB 3/72<br>FRB 5.5/72 | TSN 207 A<br>TSN 207 S<br>TSN 207 ND | ASNH 509 | 82<br>96<br>160 |
| | **SE 507-606** | 1207 E<br>2207 ETN9<br>22207 E<br>BS2-2207-2CS[3]<br>C 2207 TN9 | FRB 8.5/72<br>FRB 5.5/72<br>FRB 5.5/72<br>FRB 3/72<br>FRB 5.5/72 | 4 FS 170 | ASNH 507-606 | 82 |
| | **SE 208-307** | 1307 ETN9<br>2307 ETN9<br>21307 CC | FRB 9/80<br>FRB 4/80<br>FRB 9/80 | TSN 307 A<br>TSN 307 S<br>TSN 307 ND | ASNH 510-608 | 85<br>99<br>145 |
| **40** | **SE 208-307** | 1208 ETN9<br>2208 ETN9<br>22208 E<br>BS2-2208-2CS[3]<br>C 2208 TN9 | FRB 10.5/80<br>FRB 8/80<br>FRB 8/80<br>FRB 5.5/80<br>FRB 8/80 | TSN 208 A<br>TSN 208 S<br>TSN 208 ND | ASNH 510-608 | 85<br>99<br>160 |
| | **SE 508-607** | 1208 ETN9<br>2208 ETN9<br>22208 E<br>BS2-2208-2CS[3]<br>C 2208 TN9 | FRB 10.5/80<br>FRB 8/80<br>FRB 8/80<br>FRB 5.5/80<br>FRB 8/80 | 4 FS 170 | ASNH 508-607 | 85 |
| | **SE 510-608** | 1308 ETN9<br>2308 ETN9<br>21308 E<br>22308 E<br>BS2-2308-2CS[3] | FRB 9/90<br>FRB 4/90<br>FRB 9/90<br>FRB 4/90<br>FRB 1.5/90 | TSN 308 A<br>TSN 308 S<br>TSN 308 ND | ASNH 510-608 | 90<br>102<br>167 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[3] The shaft must be modified according to the $d_c$ value for the bearing.

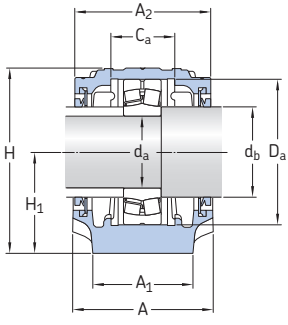


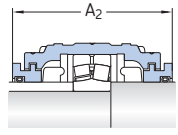

| Shaft diameter | | | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1] min | $d_c$[1] max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | kg |
| **35** | 45 | | | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,45 |
| | | 42 | 43 | | | | | | | | | | | | | |
| | 45 | | | 83 | 52 | 34 | 72 | 94 | 50 | 22 | 150 | 185 | 20 | 15 | 12 | 2,60 |
| | | 42 | 43 | | | | | | | | | | | | | |
| | 45 | – | – | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,30 |
| **40** | 50 | | | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,30 |
| | | 47 | 47 | | | | | | | | | | | | | |
| | 50 | | | 85 | 60 | 39 | 80 | 108 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,40 |
| | | 47 | 47 | | | | | | | | | | | | | |
| | 50 | | | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,85 |
| | | 47,5 | 47,5 | | | | | | | | | | | | | |

[1] Valid for some sealed spherical roller bearings only.

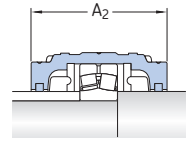
## 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
$d_a$ **45 – 50** mm



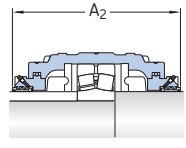

with TSN .. A



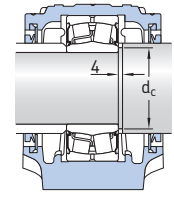

with TSN .. S




with FS 170

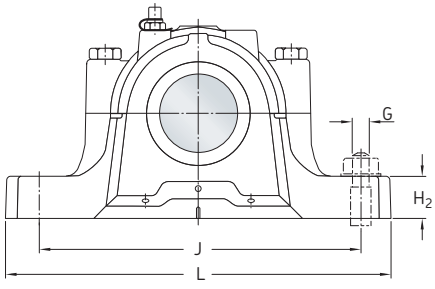


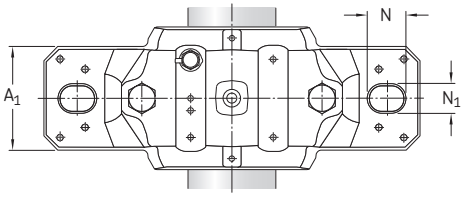

with TSN .. ND




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **45** | **SE 209** | 1209 ETN9<br>2209 ETN9<br>22209 E<br>BS2-2209-2CS[3]<br>C 2209 TN9 | FRB 5.5/85<br>FRB 3.5/85<br>FRB 3.5/85<br>FRB 1/85<br>FRB 3.5/85 | TSN 209 A<br>TSN 209 S<br>TSN 209 ND | ASNH 511-609 | 85<br>97<br>160 |
| | **SE 509** | 1209 ETN9<br>2209 ETN9<br>22209 E<br>BS2-2209-2CS[3]<br>C 2209 TN9 | FRB 5.5/85<br>FRB 3.5/85<br>FRB 3.5/85<br>FRB 1/85<br>FRB 3.5/85 | 4 FS 170 | ASNH 509 | 85 |
| | **SE 511-609** | 1309 ETN9<br>2309 ETN9<br>21309 E<br>22309 E | FRB 9.5/100<br>FRB 4/100<br>FRB 9.5/100<br>FRB 4/100 | TSN 309 A<br>TSN 309 S<br>TSN 309 ND | ASNH 511-609 | 95<br>107<br>172 |
| **50** | **SE 210** | 1210 ETN9<br>2210 ETN9<br>22210 E<br>BS2-2210-2CS[3]<br>C 2210 TN9 | FRB 10.5/90<br>FRB 9/90<br>FRB 9/90<br>FRB 6.5/90<br>FRB 9/90 | TSN 210 A<br>TSN 210 S<br>TSN 210 ND | ASNH 512-610 | 90<br>102<br>165 |
| | **SE 510-608** | 1210 ETN9<br>2210 ETN9<br>22210 E<br>BS2-2210-2CS[3]<br>C 2210 TN9 | FRB 10.5/90<br>FRB 9/90<br>FRB 9/90<br>FRB 6.5/90<br>FRB 9/90 | 4 FS 170 | ASNH 510-608 | 90 |
| | **SE 512-610** | 1310 ETN9<br>2310<br>21310 E<br>22310 E | FRB 10.5/110<br>FRB 4/110<br>FRB 10.5/110<br>FRB 4/110 | TSN 310 A<br>TSN 310 S<br>TSN 310 ND | ASNH 512-610 | 105<br>117<br>180 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[3] The shaft must be modified according to the $d_c$ value for the bearing.

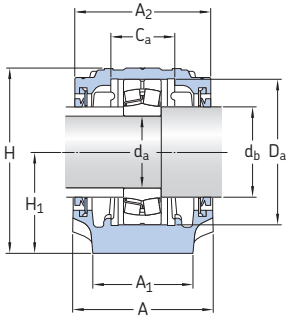


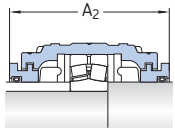

| Shaft diameter | | | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1) min | $d_c$[1) max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | kg |
| **45** | 55 | | | 85 | 60 | 30 | 85 | 109 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,20 |
| | | 52 | 53 | | | | | | | | | | | | | |
| | 55 | | | 85 | 60 | 30 | 85 | 109 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,40 |
| | | 52 | 53 | | | | | | | | | | | | | |
| | 55 | – | – | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,45 |
| **50** | 60 | | | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,65 |
| | | 57 | 58 | | | | | | | | | | | | | |
| | 60 | | | 90 | 60 | 41 | 90 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,85 |
| | | 57 | 58 | | | | | | | | | | | | | |
| | 60 | – | – | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 6,15 |

1) Valid for some sealed spherical roller bearings only.

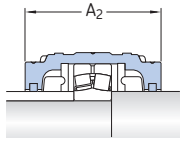
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
## $d_a$ 55 – 60 mm



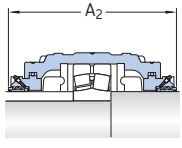

with TSN .. A



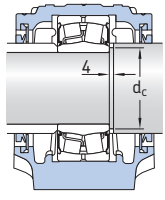

with TSN .. S




with FS 170

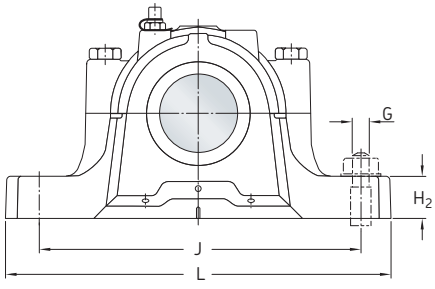


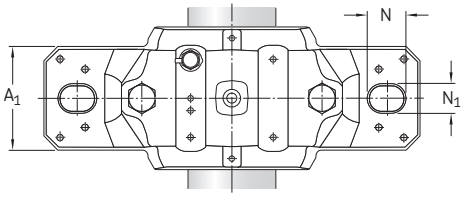

with TSN .. ND




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **55** | **SE 211** | 1211 ETN9<br>2211 ETN9<br>22211 E<br>BS2-2211-2CS[3]<br>C 2211 TN9 | FRB 11.5/100<br>FRB 9.5/100<br>FRB 9.5/100<br>FRB 6.5/100<br>FRB 9.5/100 | TSN 211 A<br>TSN 211 S<br>TSN 211 ND | ASNH 513-611 | 95<br>107<br>170 |
| | **SE 511-609** | 1211 ETN9<br>2211 ETN9<br>22211 E<br>BS2-2211-2CS[3]<br>C 2211 TN9 | FRB 11.5/100<br>FRB 9.5/100<br>FRB 9.5/100<br>FRB 6.5/100<br>FRB 9.5/100 | 4 FS 170 | ASNH 511-609 | 95 |
| | **SE 513-611** | 1311 ETN9<br>2311<br>21311 E<br>22311 E<br>BS2-2311-2CS | FRB 11/120<br>FRB 4/120<br>FRB 11/120<br>FRB 4/120<br>FRB 1/120 | TSN 311 A<br>TSN 311 S<br>TSN 311 ND | ASNH 513-611 | 110<br>122<br>185 |
| **60** | **SE 212** | 1212 ETN9<br>2212 ETN9<br>22212 E<br>BS2-2212-2CS[3]<br>C 2212 TN9 | FRB 13/110<br>FRB 10/110<br>FRB 10/110<br>FRB 7/110<br>FRB 10/110 | TSN 212 A<br>TSN 212 S<br>TSN 212 ND | ASNH 515-612 | 105<br>117<br>185 |
| | **SE 512-610** | 1212 ETN9<br>2212 ETN9<br>22212 E<br>BS2-2212-2CS[3]<br>C 2212 TN9 | FRB 13/110<br>FRB 10/110<br>FRB 10/110<br>FRB 7/110<br>FRB 10/110 | 4 FS 170 | ASNH 512-610 | 105 |
| | **SE 515-612** | 1312 ETN9<br>2312<br>21312 E<br>22312 E | FRB 12.5/130<br>FRB 5/130<br>FRB 12.5/130<br>FRB 5/130 | TSN 312 A<br>TSN 312 S<br>TSN 312 ND | ASNH 515-612 | 115<br>127<br>197 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[3] The shaft must be modified according to the $d_c$ value for the bearing.

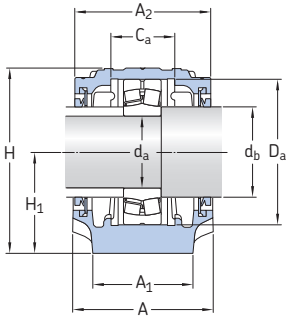


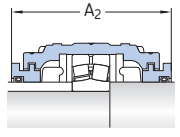

| Shaft diameter | | | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1) min | $d_c$[1) max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | kg |
| **55** | 65 | | | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,85 |
| | | 64 | 64 | | | | | | | | | | | | | |
| | 65 | | | 95 | 70 | 44 | 100 | 129 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,45 |
| | | 64 | 64 | | | | | | | | | | | | | |
| | 65 | – | – | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,90 |
| **60** | 70 | | | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 5,80 |
| | | 69 | 69 | | | | | | | | | | | | | |
| | 70 | | | 105 | 70 | 48 | 110 | 134 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 6,15 |
| | | 69 | 69 | | | | | | | | | | | | | |
| | 70 | – | – | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,55 |

1) Valid for some sealed spherical roller bearings only.

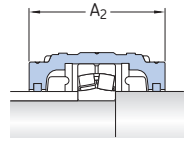
## 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **65 – 70** mm



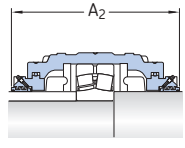

with TSN .. A




with TSN .. S



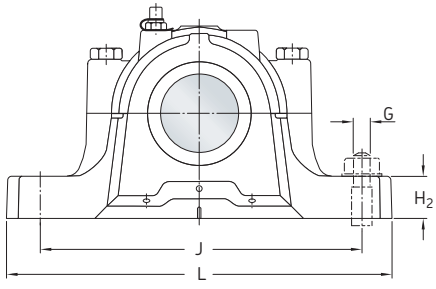

with FS 170

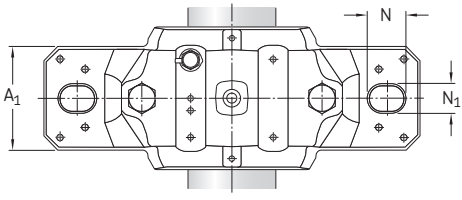



with TSN .. ND

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **65** | **SE 213** | 1213 ETN9<br>2213 ETN9<br>22213 E<br>BS2-2213-2CS<br>C 2213 TN9 | FRB 14/120<br>FRB 10/120<br>FRB 10/120<br>FRB 6.5/120<br>FRB 10/120 | TSN 213 A<br>TSN 213 S<br>TSN 213 ND | ASNH 516-613 | 110<br>128<br>190 |
| | **SE 513-611** | 1213 ETN9<br>2213 ETN9<br>22213 E<br>BS2-2213-2CS<br>C 2213 TN9 | FRB 14/120<br>FRB 10/120<br>FRB 10/120<br>FRB 6.5/120<br>FRB 10/120 | 4 FS 170 | ASNH 513-611 | 110 |
| | **SNL 516-613** | 1313 ETN9<br>2313<br>21313 E<br>22313 E | FRB 12.5/140<br>FRB 5/140<br>FRB 12.5/140<br>FRB 5/140 | TSN 313 A<br>TSN 313 S<br>TSN 313 ND | ASNH 516-613 | 120<br>138<br>200 |
| **70** | **SNL 517** | 1314<br>2314<br>21314 E<br>22314 E | FRB 13/150<br>FRB 5/150<br>FRB 13/150<br>FRB 5/150 | TSN 314 A<br>TSN 314 S<br>TSN 314 ND | ASNH 517 | 125<br>143<br>205 |

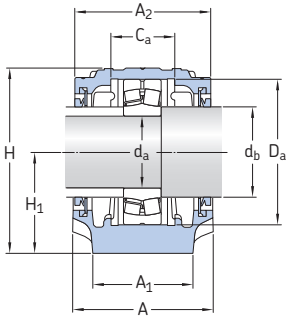
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



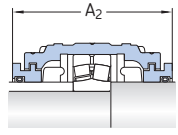




| Shaft diameter | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | mm | | | | | | | | | | | | kg |
| **65** | 75 | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,45 |
| | 75 | 110 | 80 | 51 | 120 | 150 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,90 |
| | 75 | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 9,50 |
| **70** | 80 | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 10,0 |

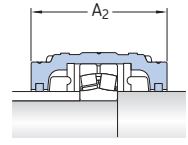
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **75 – 80** mm



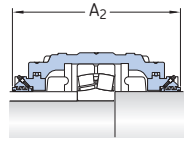

with TSN .. A



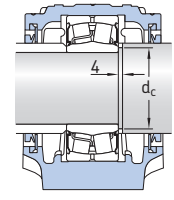

with TSN .. S




with FS 170

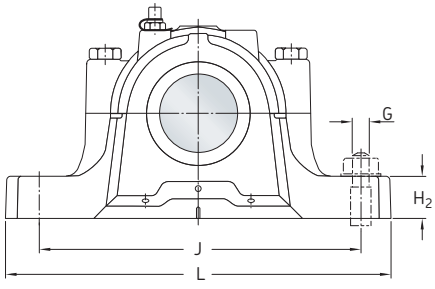


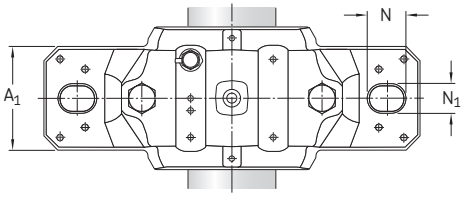

with TSN .. ND




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **75** | **SE 215** | 1215<br>2215 ETN9<br>22215 E<br>BS2-2215-2CS[3]<br>C 2215 | FRB 15.5/130<br>FRB 12.5/130<br>FRB 12.5/130<br>FRB 9/130<br>FRB 12.5/130 | TSN 215 A<br>TSN 215 S<br>TSN 215 ND | ASNH 518-615 | 115<br>133<br>195 |
| | **SE 515-612** | 1215<br>2215 ETN9<br>22215 E<br>BS2-2215-2CS[3]<br>C 2215 | FRB 15.5/130<br>FRB 12.5/130<br>FRB 12.5/130<br>FRB 9/130<br>FRB 12.5/130 | 4 FS 170 | ASNH 515-612 | 115 |
| | **SNL 518-615** | 1315<br>2315<br>21315 E<br>22315 E<br>C 2315 | FRB 14/160<br>FRB 5/160<br>FRB 14/160<br>FRB 5/160<br>FRB 5/160 | TSN 315 A<br>TSN 315 S<br>TSN 315 ND | ASNH 518-615 | 140<br>158<br>220 |
| **80** | **SNL 216** | 1216<br>2216 ETN9<br>22216 E<br>BS2-2216-2CS<br>C 2216 | FRB 16/140<br>FRB 12.5/140<br>FRB 12.5/140<br>FRB 9/140<br>FRB 12.5/140 | TSN 216 A<br>TSN 216 S<br>TSN 216 ND | ASNH 216 | 120<br>138<br>200 |
| | **SNL 516-613** | 1216<br>2216 ETN9<br>22216 E<br>BS2-2216-2CS<br>C 2216 | FRB 16/140<br>FRB 12.5/140<br>FRB 12.5/140<br>FRB 9/140<br>FRB 12.5/140 | 4 FS 170 | ASNH 516-613 | 120 |
| | **SNL 519-616** | 1316<br>2316<br>21316 E<br>22316 E<br>C 2316 | FRB 14.5/170<br>FRB 5/170<br>FRB 14.5/170<br>FRB 5/170<br>FRB 5/170 | TSN 316 A<br>TSN 316 S<br>TSN 316 ND | ASNH 519-616 | 145<br>163<br>218 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[3] The shaft must be modified according to the $d_c$ value for the bearing.

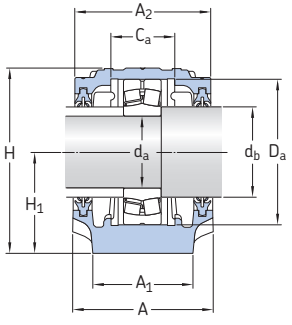


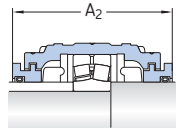

| Shaft diameter | | | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1) min | $d_c$[1) max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | kg |
| **75** | 85 | | | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,10 |
| | | 84 | 84 | | | | | | | | | | | | | |
| | 85 | | | 115 | 80 | 56 | 130 | 156 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,60 |
| | | 84 | 84 | | | | | | | | | | | | | |
| | 85 | – | – | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 12,5 |
| **80** | 90 | – | – | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 9,00 |
| | 90 | – | – | 120 | 90 | 58 | 140 | 177 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 9,00 |
| | 90 | – | – | 145 | 100 | 68 | 170 | 212 | 112 | 35 | 290 | 345 | 28 | 22 | 20 | 13,7 |

1) Valid for some sealed spherical roller bearings only.

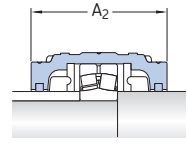
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **85 – 90** mm



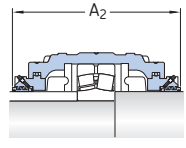

with TSN .. L



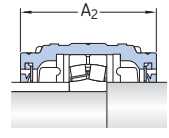

with TSN .. S




with FS 170



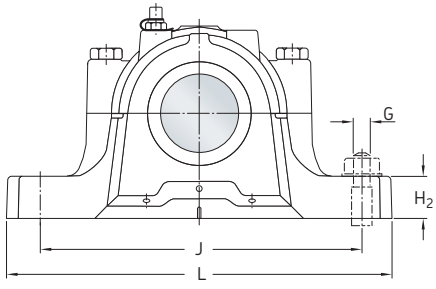

with TSN .. ND

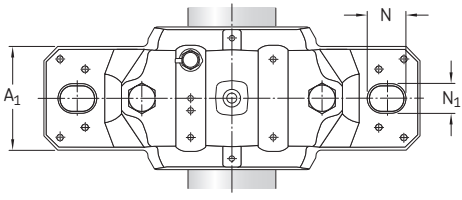



with TSN .. A

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **85** | **SNL 217** | 1217<br>2217<br>22217 E<br>BS2-2217-2CS<br>C 2217 | FRB 16.5/150<br>FRB 12.5/150<br>FRB 12.5/150<br>FRB 8.5/150<br>FRB 12.5/150 | TSN 217 A<br>TSN 217 S<br>TSN 217 ND | ASNH 217 | 125<br>143<br>205 |
| | **SNL 517** | 1217<br>2217<br>22217 E<br>BS2-2217-2CS<br>C 2217 | FRB 16.5/150<br>FRB 12.5/150<br>FRB 12.5/150<br>FRB 8.5/150<br>FRB 12.5/150 | 4 FS 170 | ASNH 517 | 125 |
| | **SNL 520-617** | 1317<br>2317<br>21317 E<br>22317 E<br>C 2317 | FRB 14.5/180<br>FRB 5/180<br>FRB 14.5/180<br>FRB 5/180<br>FRB 5/180 | TSN 317 A<br>TSN 317 S<br>TSN 317 ND | ASNH 520-617 | 160<br>178<br>238 |
| **90** | **SNL 218** | 1218<br>2218<br>22218 E<br>23218 CC/W33<br>BS2-2218-2CS<br>C 2218 | FRB 17.5/160<br>FRB 12.5/160<br>FRB 12.5/160<br>FRB 6.25/160<br>FRB 8.5/160<br>FRB 12.5/160 | TSN 218 L<br>TSN 218 A<br>TSN 218 S<br>TSN 218 ND | ASNH 218 | 140<br>140<br>158<br>220 |
| | **SNL 518-615** | 1218<br>2218<br>22218 E<br>23218 CC/W33<br>BS2-2218-2CS<br>C 2218 | FRB 17.5/160<br>FRB 12.5/160<br>FRB 12.5/160<br>FRB 6.25/160<br>FRB 8.5/160<br>FRB 12.5/160 | 4 FS 170 | ASNH 518-615 | 140 |

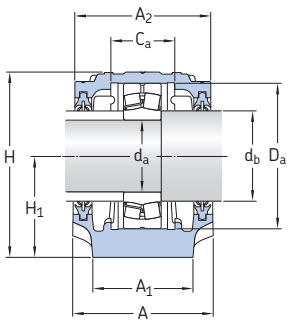
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.



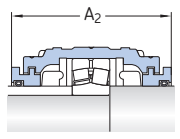




| Shaft diameter | | Dimensions | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | mm | | | | | | | | | | | | kg |
| **85** | 95 | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 9,50 |
| | 95 | 125 | 90 | 61 | 150 | 183 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 9,50 |
| | 95 | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 17,6 |
| **90** | 100 | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 11,8 |
| | 100 | 140 | 100 | 65 | 160 | 194 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 11,8 |

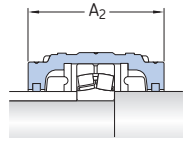
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **95 – 120** mm



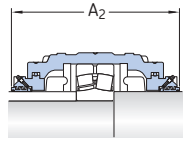

with TSN .. L



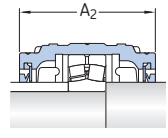

with TSN .. S



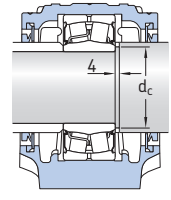

with FS 170




with TSN .. ND

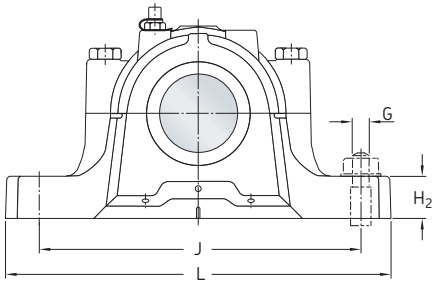


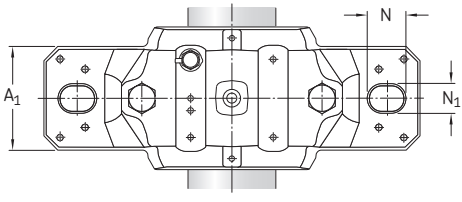

with TSN .. A




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **95** | **SNL 522-619** | 1319<br>2319 M<br>21319 E<br>22319 E<br>C 2319 | FRB 17.5/200<br>FRB 6.5/200<br>FRB 17.5/200<br>FRB 6.5/200<br>FRB 6.5/200 | TSN 319 A<br>TSN 319 S<br>TSN 319 ND | ASNH 522-619 | 175<br>191<br>253 |
| **100** | **SNL 520-617** | 1220<br>2220 M<br>22220 E<br>23220 CC/W33<br>23220-2CS<br>BS2-2220-2CS5[3]<br>C 2220 | FRB 18/180<br>FRB 12/180<br>FRB 12/180<br>FRB 4.85/180<br>FRB 4.85/180<br>FRB 7.5/180<br>FRB 12/180 | TSN 220 L<br>TSN 220 A<br>TSN 220 S<br>TSN 220 ND | ASNH 520-617 | 160<br>160<br>178<br>245 |
| | **SNL 524-620** | 1320<br>2320 M<br>21320 E<br>23220 CC/W33<br>C 2320 | FRB 19.5/215<br>FRB 6.5/215<br>FRB 19.5/215<br>FRB 6.5/215<br>FRB 6.5/215 | TSN 320 A<br>TSN 320 S<br>TSN 320 ND | ASNH 524-620 | 185<br>199<br>260 |
| **110** | **SNL 522-619** | 1222<br>2222 M<br>22222 E<br>BS2-2222-2CS5<br>23222 CC/W33<br>C 2222 | FRB 21/200<br>FRB 13.5/200<br>FRB 13.5/200<br>FRB 8.5/200<br>FRB 5.1/200<br>FRB 13.5/200 | TSN 222 L<br>TSN 222 A<br>TSN 222 S<br>TSN 222 ND | ASNH 522-619 | 175<br>175<br>191<br>255 |
| **120** | **SNL 524-620** | 1224 M<br>22224 E<br>BS2-2224-2CS5<br>23224 CC/W33<br>C 3224 | FRB 22/215<br>FRB 14/215<br>FRB 8.5/215<br>FRB 5/215<br>FRB 5/215 | TSN 224 L<br>TSN 224 A<br>TSN 224 S<br>TSN 224 ND | ASNH 524-620 | 185<br>185<br>199<br>270 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[3] The shaft must be modified according to the $d_c$ value for the bearing.

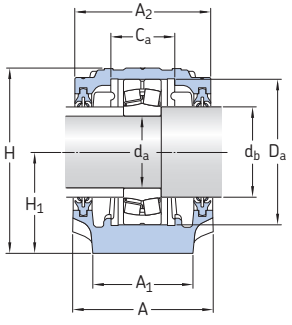


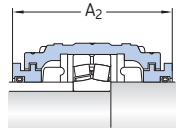

| Shaft diameter | | | | Dimensions | | | | | | | | | | | Eye bolt acc. to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1] min | $d_c$[1] max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | – kg |
| **95** | 110 | – | – | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | – 22,0 |
| **100** | 115 | | | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | – 17,6 |
| | | 112 | 114 | | | | | | | | | | | | | |
| | 115 | – | – | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | M 10 26,2 |
| **110** | 125 | – | – | 175 | 120 | 80 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | – 22,0 |
| **120** | 135 | – | – | 185 | 120 | 86 | 215 | 271 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | M 10 26,2 |

[1] Valid for some sealed spherical roller bearings only.

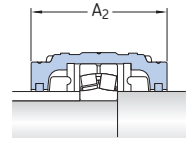
# 2.3 SNL and SE plummer block housings for bearings on a cylindrical seat
d **130 – 160** mm



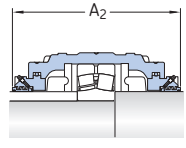

with TSN .. L



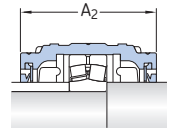

with TSN .. S




with FS 170



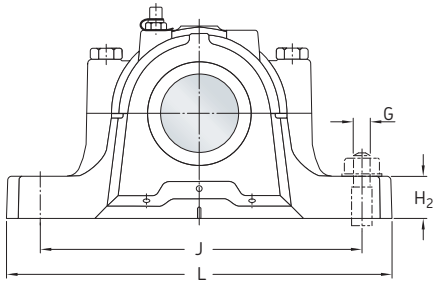

with TSN .. ND

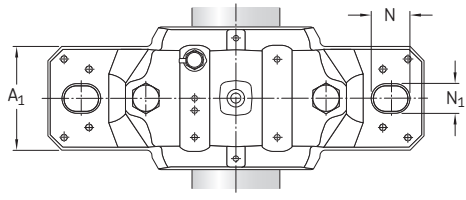



with TSN .. A

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **130** | **SNL 526** | 1226 M<br>22226 E<br>BS2-2226-2CS5<br>23226 CC/W33<br>23226-2CS5<br>C 2226 | FRB 22/230<br>FRB 13/230<br>FRB 7.5/230<br>FRB 5/230<br>FRB 5/230<br>FRB 13/230 | TSN 226 L<br>TSN 226 A<br>TSN 226 S<br>TSN 226 ND | ASNH 526 | 190<br>190<br>208<br>275 |
| **140** | **SNL 528** | 22228 CC/W33<br>22228-2CS5<br>23228 CC/W33<br>23228-2CS5<br>C 2228 | FRB 15/250<br>FRB 15/250<br>FRB 5/250<br>FRB 5/250<br>FRB 15/250 | TSN 228 L<br>TSN 228 A<br>TSN 228 S<br>TSN 228 ND | ASNH 528 | 205<br>205<br>223<br>290 |
| **150** | **SNL 530** | 22230 CC/W33<br>22230-2CS5<br>23230 CC/W33<br>23230-2CS5<br>C 2230 | FRB 16.5/270<br>FRB 16.5/270<br>FRB 5/270<br>FRB 5/270<br>FRB 16.5/270 | TSN 230 L<br>TSN 230 A<br>TSN 230 S<br>TSN 230 ND | ASNH 530 | 220<br>220<br>241<br>310 |
| **160** | **SNL 532** | 22232 CC/W33<br>22232-2CS5<br>23232 CC/W33<br>C 3232 | FRB 17/290<br>FRB 17/290<br>FRB 5/290<br>FRB 5/290 | TSN 232 A<br>TSN 232 S<br>TSN 232 ND | ASNH 532 | 235<br>254<br>325 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing. 12(00), 22(00), 13(00) – self-aligning ball bearings, 222(00), 213(00), BS2... – spherical roller bearings, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.




| Shaft diameter | | Dimensions | | | | | | | | | | | | Eye bolt acc. to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | | |
| mm | | mm | | | | | | | | | | | | – | kg |
| **130** | 145 | 190 | 130 | 90 | 230 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | M 10 | 33,0 |
| **140** | 155 | 205 | 150 | 98 | 250 | 302 | 150 | 50 | 420 | 500 | 42 | 35 | 30 | M 12 | 40,0 |
| **150** | 165 | 220 | 160 | 106 | 270 | 323 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | M 12 | 49,0 |
| **160** | 175 | 235 | 160 | 114 | 290 | 344 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M 12 | 55,0 |



# Split plummer block housings SE 2, 3, 5 and 6 series



**Bearing types**
- Self-aligning ball bearings
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 02, 03, 22, 23, 32

**Shaft diameter range**
- 25 to 75 mm
- 15/16 to 2 1/2 in.

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Four-lip
- Labyrinth
- Felt
- V-ring
- Heavy-duty

**Lubrication**
- Grease

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Two-bolt mounting
- Four-bolt mounting

**Compliance to standards**
- ISO 113 (two-bolt plummer block housings)

**Supersedes**
- SNL, SN, SNA, SNH series

SE plummer (pillow) block housings are a new generation of the most popular SKF bearing housings on the market – SNL plummer (pillow) block housings. With a number of new features and a stronger material grade, the upgraded housings continue to provide maximum reliability while meeting increasing demands. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements to be made.

SE plummer block housings supersede SNL plummer block housings in the 2, 3, 5 and 6 series, and are available in corresponding sizes, from size 507 up to 515-612. From size 516-613, SNL plummer block housings in the 2, 3, 5 and 6 series remains.

# Split plummer block housings SE 2, 3, 5 and 6 series


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# Designations



**Designation system for SE plummer (pillow) block housings**

**_SE_ 512-610 TD**

**Prefix for bolt holes**

| | |
|---|---|
| **_** | Two oblong cast holes for attachment bolts |
| **F** | Four oblong cast holes for attachment bolts |
| **S** | No holes for attachment bolts (drilled holes can be supplied) |

**Series**

| | |
|---|---|
| **SE** | Standard plummer block housing |

**Material**

| | |
|---|---|
| **_** | Grey cast iron |
| **D** | Spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **2(00)** | Housing for bearings on a cylindrical seat, diameter series 2 |
| **3(00)** | Housing for bearings on a cylindrical seat, diameter series 3 |
| **5(00)** | Housing for bearings on an adapter sleeve, diameter series 2 |
| **6(00)** | Housing for bearings on an adapter sleeve, diameter series 3 |
| **..(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

**Suffixes**[1)]

| | |
|---|---|
| **V** | Grease escape hole in the housing base |
| **T** | Drilled and tapped hole 1/4-28 UNF at one side of the housing cap to lubricate a seal. Grease fitting AH 1/4-28 SAE-LT supplied with the housing |
| **TD** | Drilled and tapped hole 1/4-28 UNF at both sides of the housing cap to lubricate the seals. Two grease fittings AH 1/4-28 SAE-LT supplied with the housing |
| **/MS1** | Two drilled holes for attachment bolts |
| **/MS2** | Four drilled holes for attachment bolts |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

## Split plummer block housings SE 2, 3, 5 and 6 series

### Designation system for seals

TSN 512 L_

**Series**

| | |
|---|---|
| **TSN** | Seal for SE plummer block housings |
| **FS** | Felt strip |
| **FSB** | Felt strip for high operating temperature |

**Size identification**

| | |
|---|---|
| **2(00)** | Housing for bearings with a cylindrical bore, diameter series 2 |
| **3(00)** | Housing for bearings with a cylindrical bore, diameter series 3 |
| **5(00)** | Housing for bearings on an adapter sleeve, diameter series 2 |
| **6(00)** | Housing for bearings on an adapter sleeve, diameter series 3 |
| **..(00)** | Size code of the bearing, (00) x 5 = bearing bore diameter [mm] |
| **...** | For felt strips only, number indicating the length of the strip |

**Seal type**

| | |
|---|---|
| **A** | V-ring seal |
| **C** | Felt seal |
| **CB** | Felt seal for high operating temperatures |
| **L** | Four-lip seal |
| **S** | Labyrinth seal |
| **NB** | Taconite seal with axial labyrinth and V-ring |
| **NC** | Taconite seal with axial labyrinth |
| **ND** | Taconite seal with radial labyrinth and V-ring |

**Indication for an inch shaft**

| | |
|---|---|
| **A, E** | Seal for inch shaft |

### Designation system for end covers

ASNH 512-610

**Series**

| | |
|---|---|
| **ASNH** | End cover for SE plummer block housings |

**Size identification**

| | |
|---|---|
| **...** | Housing size identification |

### Designation system for locating rings

FRB 13/110

**Series**

| | |
|---|---|
| **FRB** | Locating ring for SKF bearing housings |

**Size identification**

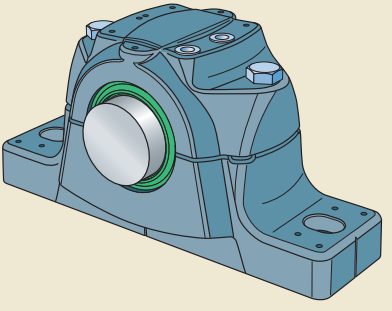
| | |
|---|---|
| **...** | Width and outside diameter of the locating ring [mm] |

# Standard housing design



SE plummer (pillow) block housings in the 2, 3, 5 and 6 series are split housings consisting of a cap and base (→ **fig. 1**). They have two holes cast into the base for attachment bolts. The housings are designed on the "building block" principle to enable a wider choice of bearings and seals as well as a variety of shaft-bearing combinations and lubrication methods.

**Fig. 1**



## Features and benefits

SE plummer block housings in the 2, 3, 5 and 6 series have the following features and benefits:

### Stiffer and more robust housing

The new, optimized design together with their stronger material grade make SE housings more robust compared to SNL housings.

With larger ribs in the base, and additional material around the holes for attachment bolts (→ **figs. 2** and **3**), SE housings are stiffer than their predecessors. The attachment bolts can be preloaded to locate the housing without deforming the base or housing bore.

### Better heat dissipation

The ribs around the perimeter and in the centre of the base (→ **fig. 3**) are larger, to increase the contact area between the base and support surface. This results in improved heat flow from the bearing outer ring to the support surface.

### Improved markings on the housing

The housing cap and base are matched during manufacture and are not interchangeable with the caps and bases of other housings. A unique serial number on both housing parts helps avoid any mismatches (→ **fig. 4**).

The designation on the housing cap has also been enhanced for readability and now contains the complete housing designation, i.e. with variant suffixes, for better traceability (→ **fig. 5**).

**Fig. 2**

**Reinforcement rib in the base**

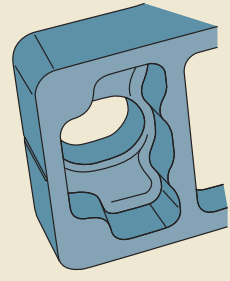


**Fig. 3**

**Enlarged central rib for better support and heat dissipation**

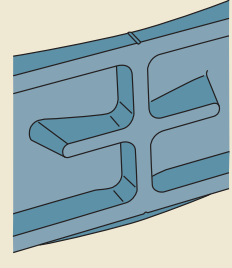
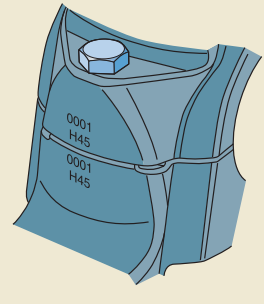


**Fig. 4**

**Individually marked cap and base**



### Dimples to locate accessories

Dimples cast into the housing cap indicate where grease fittings and condition monitoring sensors can be mounted for best results (→ **fig. 5**).

### Simpler mounting

The grease fitting kit contains torque values for the cap bolts and data for initial grease fills.

To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat and housing bore axis are cast into the housing base. Dimples indicate the position for dowel pins (→ **fig. 6**). Mounting instructions are supplied with each seal pack.

### Simpler maintenance

SE housings have a pry slot between the cap and base to ease removal of the cap during dismounting (→ **fig. 4**).

**Fig. 5**

**Dimples indicate positions for accessories**

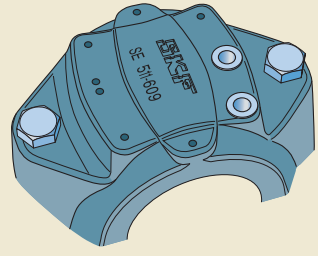
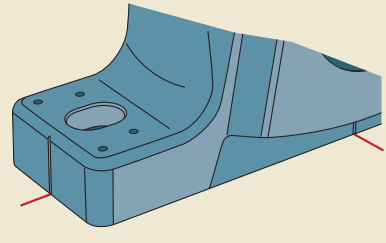



**Fig. 6**

**Cast indications mark the centre of the housing bore and bearing seat**



### Grease guiding system

For efficient relubrication from the side, SE housings from size 511 to 515 have an integrated flange that guides grease from the grease fitting directly to the bearing (→ **fig. 7**). This can reduce grease consumption and disposal costs.

### Grease level markings

To avoid over-filling, markings at each corner inside the housing base indicate the proper grease level for an initial 20 or 40% fill of the free space between housing and bearing (→ **fig. 8**).

### Better lubrication facilities

The hole in the housing cap for relubrication through the centre of the bearing is positioned off-centre relative to the shaft axis (→ **fig. 9**).

**Fig. 7**

**Grease guiding system**

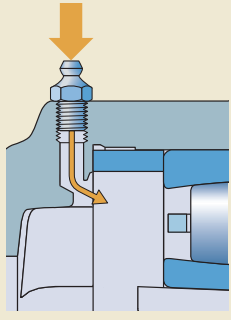


**Fig. 8**

**Grease level markings**

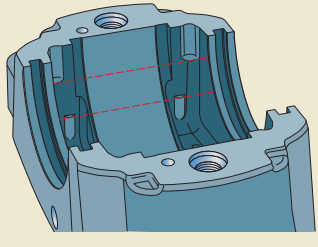
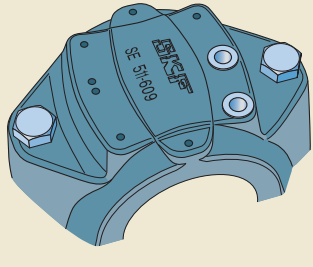


**Fig. 9**

**Improved position for relubrication**



**New position of grease escape hole**

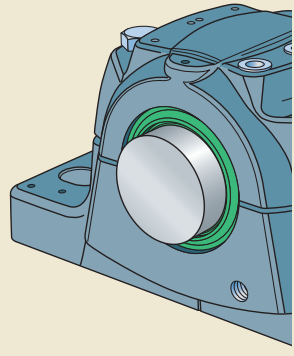
The grease escape hole, on housings with a V suffix, is parallel to the shaft (→ **fig. 10**) for easier access after the housing is mounted. The hole is threaded and plugged.

**Improved corrosion protection**

SE housings are well protected from corrosion. The corrosivity category of the paint is higher than for SNL housings (→ *Environmental conditions*, **page 36**).

**Fig. 10**

**New position of grease escape hole**



## Housing material

SE plummer block housings are made of an improved grade of grey cast iron compared to SNL housings.

### Paint, corrosion protection

SE plummer block housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C3 (i.e. exterior atmospheres with a moderate level of pollution; coastal areas with low salinity; interior atmospheres with high humidity and some air pollution). It is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

Boundary dimensions are in accordance with ISO 113 for two-bolt plummer block housings.

### Interchangeability

SE plummer block housings in the 2, 3, 5 and 6 series are dimensionally interchangeable with housings in the SNL 2, 3, 5 and 6 series and former plummer block housings in the SN, SNA and SNH series.

# Product data

SE plummer (pillow) block housings supersede SNL plummer (pillow) block housings for sizes 507 up to and including 515-612. Technical data for SE housings, such as hole, groove and dowel pin dimensions, shaft end lengths, loads, initial grease fills, and bolt torques, is included in the data tables in the chapter on SNL housings (→ *Split plummer block housings SNL 2, 3, 5 and 6 series*, starting on **page 55**).

The product tables for SE housings are also included in the chapter on SNL housings (→ **page 86**). When in doubt, contact the SKF application engineering service.

# Ordering information



For SE housings in the 2, 3, 5 and 6 series, each of the following items must be ordered separately:

- housing
- seals
- end cover
- locating rings
- bearing
- adapter sleeve

**Order example**

Two plummer block housings with four-lip seals are required for a 22212 EK spherical roller bearing on an H 312 adapter sleeve and a C 2212 KTN9 CARB toroidal roller bearing on an H 312 E adapter sleeve. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

The following items should be ordered (in addition to the bearings and adapter sleeves):

- 2 housings SE 512-610
- 2 four-lip seal packs TSN 512 L (each pack contains two seals)
- 1 end cover ASNH 512-610
- 4 locating rings FRB 10/110



# Split plummer block housings SNLN 30 series



**Bearing types**
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 30, 40

**Shaft diameter range**
- 110 to 280 mm

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Four-lip
- Labyrinth
- Felt
- V-ring
- Heavy-duty

**Lubrication**
- Grease

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Two-bolt mounting
- Four-bolt mounting

**Compliance to standards**
- ISO 113 (two-bolt plummer block housings)

**Supersedes**
- SN 30 series

SNLN 30 plummer (pillow) block housings are robust and versatile housings. They are designed for bearings in the 30 dimension series, and can also accommodate some bearings in the 40 dimension series for mounting on a cylindrical shaft seat. They enable the incorporated bearings to achieve maximum service life with less need for maintenance. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements to be made.

# Split plummer block housings SNLN 30 series


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# Designations

**Designation system for SNLN 30 plummer block housings**

_SNLN_ 3024 SN

**Prefix for bolt holes**

| | |
|---|---|
| **–** | Two oblong cast holes for attachment bolts |
| **S** | No holes for attachment bolts (only for housings made of speroidal graphite cast iron) |

**Series**

| | |
|---|---|
| **SNLN** | Standard plummer block housing |

**Material**

| | |
|---|---|
| **–** | Grey cast iron |
| **D** | Spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **30(00)** | Housings for bearings in the 30 (or 40) dimension series |
| **..(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

**Suffixes**[1)]

| | |
|---|---|
| **V** | Grease escape hole in the housing base |
| **T** | Drilled and tapped hole 1/4-28 UNF at one side of the housing cap to lubricate the seal. Grease fitting AH 1/4-28 SAE-LT supplied with the housing. |
| **TD** | Drilled and tapped hole 1/4-28 UNF at both sides of the housing cap to lubricate the seals. Two grease fittings AH 1/4-28 SAE-LT supplied with the housing. |
| **SN** | Drilled and tapped M8 hole for sensor in position 3 (→ **fig. 15**, **page 178**) |
| **/MS1** | Two drilled holes for attachment bolts |
| **/MS2** | Four drilled holes for attachment bolts |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

## Split plummer block housings SNLN 30 series

### Designation system for seals

**TSN 228 L**
**TNF 3048**

**Series**

| | |
|---|---|
| **TSN** | Seal for SNLN 30 plummer block housings |
| **TNF** | Taconite heavy-duty seal with axial labyrinth for housings from size 3034 to 3056 |

**Size identification**

| | |
|---|---|
| **30(00)** | For housings from size 3024 to 3056, for bearings on an adapter sleeve |
| **2(00)** | For housings from size 3024 to 3032, for bearings on a cylindrical seat |
| **30(00)/...** | For housings from size 3034 to 3056, for bearings on a cylindrical seat |

**Seal type**

| | |
|---|---|
| **A**[1)] | V-ring seal |
| **C**[1)] | Felt seal |
| **CB**[1)] | Felt seal for high operating temperature |
| **L**[1)] | Four-lip seal |
| **S** | Labyrinth seal |
| **NB**[1)] | Taconite heavy-duty seal with axial labyrinth and V-ring seal |
| **NC**[1)] | Taconite heavy-duty seal with axial labyrinth |
| **ND**[1)] | Taconite heavy-duty seal with radial labyrinth and V-ring seal |

[1)] For housings from size 3024 to 3032

### Designation system for end covers

**ASNH 526**
**ETS 3038**

**Series**

| | |
|---|---|
| **ASNH** | End cover of plastic for SNLN 30 plummer block housings, size 3024 to 3032 |
| **ETS** | End cover of grey cast iron for SNLN 30 plummer block housings, size 3034 to 3056 |

**Size identification**

| | |
|---|---|
| **524-620** | For housings size 3024 (series ASNH) |
| **5(00)** | For housings from size 3026 to 3032 (series ASNH) |
| **30(00)** | For housings from size 3034 to 3056 (series ETS) |
| **(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

### Designation system for locating rings

**FRB 12/180**

**Series**

| | |
|---|---|
| **FRB** | Locating ring for SKF bearing housings |

**Size identification**

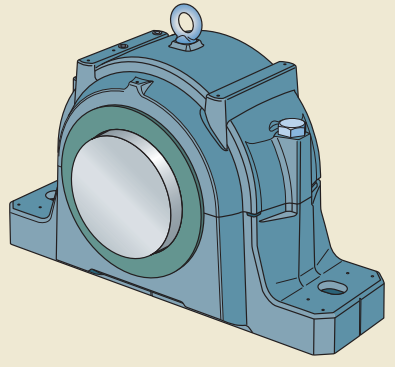
| | |
|---|---|
| **...** | Width and outside diameter of the locating ring [mm] |

# Standard housing design

SNLN 30 plummer (pillow) block housings are split housings consisting of a cap and base (→ **fig. 1**). They have two holes cast into the base for attachment bolts.

The housings are designed on the "building block" principle to enable a wider choice of bearings and seals as well as a variety of shaft-bearing combinations.

**Fig. 1**



## Features and benefits

SNLN 30 housings have the following features and benefits:

### Stiff housing

The housing base is reinforced with ribs and has extra material surrounding the holes for the attachment bolts (→ **fig. 2**). This virtually eliminates any distortion of the base and bearing seat during tightening of the attachment bolts.

### Good heat dissipation

The centre cross reinforcement in the housing base (→ **fig. 3**) increases the contact area between the housing base and the support surface to improve the heat flow from the bearing outer ring to the support surface.

### Grease guiding system

For more efficient relubrication from the side, SNLN 30 housings have an integrated flange that guides grease from the grease fitting directly to the bearing (→ **fig. 4**). This feature is available for housings up to and including size 3038.

**Fig. 2**

**Reinforcement rib in the base**

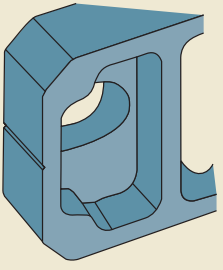


**Fig. 3**

**Centre cross for better heat dissipation**

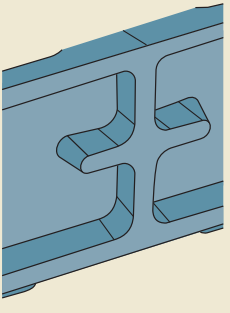
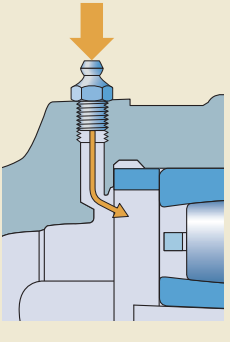


**Fig. 4**

**Grease guiding system**



### Caps and bases individually marked

The housing cap and base are matched during manufacture and are not interchangeable with the caps and bases of other housings. To prevent any mismatches, a unique serial number is marked on both the housing cap and the base (→ **fig. 5**).

### Dimples to locate accessories

Dimples cast into the housing cap indicate where grease fittings and condition monitoring sensors can be mounted for maximum effectiveness (→ **fig. 6**).

### Simple mounting

To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat and housing bore axis are cast into the housing base. Dimples indicate the position for dowel pins (→ **fig. 7**).

Mounting instructions are supplied with most seal packs[1]. Housings from size 3028 and above are supplied with an eye bolt on the cap for safe and easy handling.

**Fig. 5**

**Individually marked cap and base**



**Fig. 6**

**Dimples indicate positions for accessories**

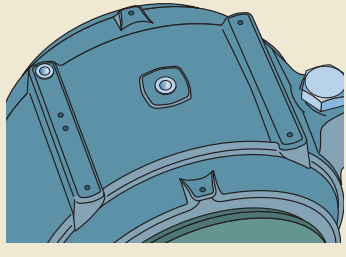
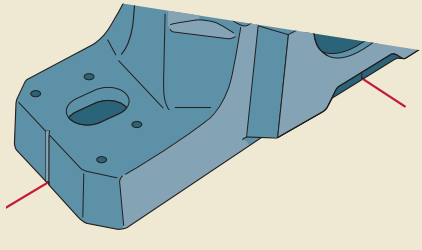


**Fig. 7**

**Cast indications mark the centre of the housing bore**



[1] The mounting instructions for housings from size 3024 to 3032, with seals in the 200 series, must be ordered separately.

## Housing material

SNLN 30 housings are made of grey cast iron.

### Paint, corrosion protection

SNLN 30 housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

Boundary dimensions are in accordance with ISO 113 for two-bolt plummer block housings.

### Interchangeability

SNLN 30 plummer block housings are dimensionally interchangeable with the earlier SN 30 housings.

# Housing variants

In addition to standard design SNLN 30 housings, a number of variants are also available. Variants include housings made of different materials, alternative attachment bolt hole configurations, different bearing seat tolerance classes and modifications for special applications.

## Housing material

For applications where extra strength is needed, SNLN 30 housings are also available in spheroidal graphite cast iron. These housings are supplied with a solid base, designation SSNLND.

## Attachment bolt holes

SNLN 30 plummer block housings can be supplied with the following bolt hole configurations:

- four drilled holes
  These variants are available for housings with two cast bolt holes, designation SNLN, and for housings made of spheroidal graphite cast iron with a solid base, designation SSNLND.
  Dimensions are listed in **table 1**. These housings have the designation suffix /MS2.
- two drilled holes
  These variants are available for housings made of spheroidal graphite cast iron with a solid base, designation SSNLND.
  Dimensions are listed in **table 1**. These housings have the designation suffix /MS1.

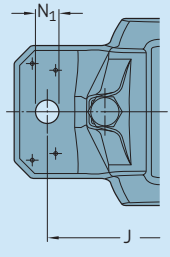
## Bearing seat tolerance

SNLN 30 housings can be supplied with different bearing seat tolerance classes, e.g. for applications prone to vibration, with rotating outer ring load or for applications operating at high temperatures.

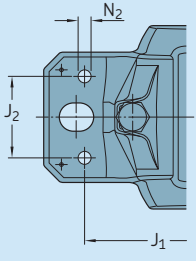
For additional information, contact the SKF application engineering service.

**Table 1**

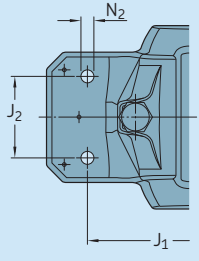
**Dimensions for drilled attachment bolt holes**




SSNLND.../MS1




SNLN.../MS2




SSNLND.../MS2

| Housing Size | Two bolt holes (/MS1) Dimensions J | $N_1$ | Appropriate bolt size | Four bolt holes (/MS2) Dimensions $J_1$ | $J_2$ | $N_2$ | Appropriate bolt size |
|---|---|---|---|---|---|---|---|
| – | mm | | | mm | | | |
| **SNLN 3024** | 320 | 26 | M24 | 300 | 66 | 18 | M16 |
| **SNLN 3026** | 350 | 26 | M24 | 320 | 74 | 18 | M16 |
| **SNLN 3028** | 350 | 26 | M24 | 330 | 74 | 18 | M16 |
| **SNLN 3030** | 380 | 28 | M24 | 370 | 80 | 22 | M20 |
| **SNLN 3032** | 390 | 28 | M24 | 380 | 80 | 22 | M20 |
| **SNLN 3034** | 450 | 35 | M30 | 430 | 100 | 26 | M24 |
| **SNLN 3036** | 470 | 35 | M30 | 450 | 100 | 26 | M24 |
| **SNLN 3038** | 470 | 35 | M30 | 450 | 100 | 26 | M24 |
| **SNLN 3040** | 515 | 35 | M30 | 500 | 100 | 26 | M24 |
| **SNLN 3044** | 580 | 42 | M36 | 560 | 105 | 28 | M24 |
| **SNLN 3048** | 610 | 42 | M36 | 580 | 115 | 28 | M24 |
| **SNLN 3052** | 680 | 48 | M42 | 630 | 120 | 35 | M30 |
| **SNLN 3056** | 720 | 48 | M42 | 650 | 132 | 35 | M30 |

# Sealing solutions

SNLN 30 plummer (pillow) block housings are available with different standard sealing solutions (→ **fig. 8**).

- four-lip seals (TSN .. L)
- V-ring seals (TSN .. A)
- felt seals (TSN .. C)
- labyrinth seals (TSN .. S)
- taconite heavy-duty seals (TSN .. ND, TNF ..)
- end covers (ASNH .., ETS ..)

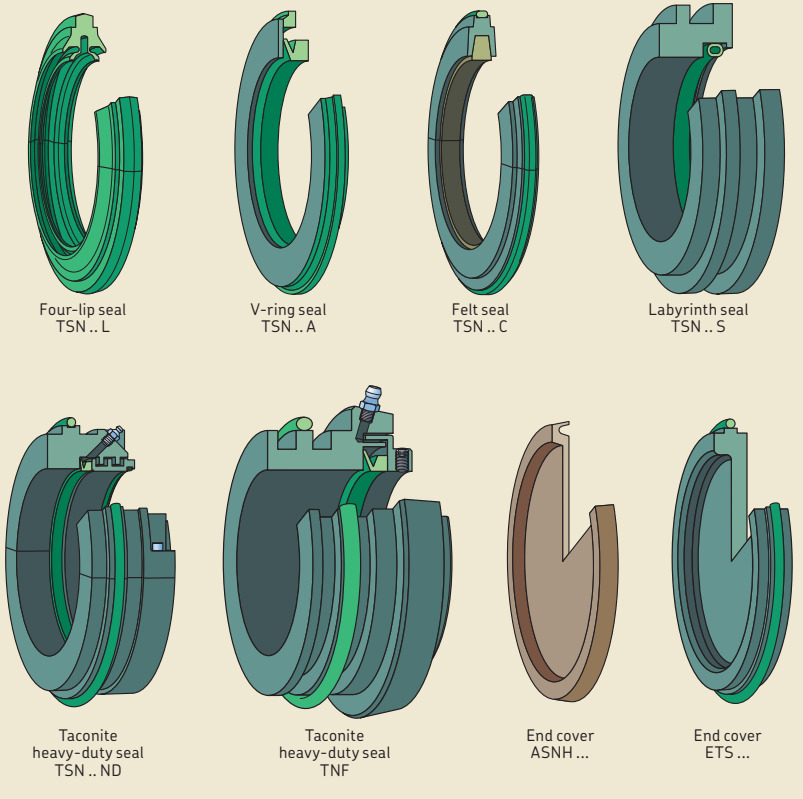
The housing size determines which sealing solutions can be used. **Table 2**, **page 162**, provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, and does not substitute for testing a seal in its application.

## Four-lip seals

Four-lip seals replace the former double-lip seals (TSN .. G). When compared to double-lip seals, the new seals are more effective. They also generate less friction, which enables higher shaft speeds. Four-lip seals are radially split and easy to mount.

Fig. 8

**Standard sealing solutions for SNLN 30 plummer block housings**



## V-ring seals

V-ring seals consist of a V-ring and a sheet steel sealing washer with a vulcanized rubber lip. The rubber lip fits into the seal groove in the housing. The washer is protected against corrosion.

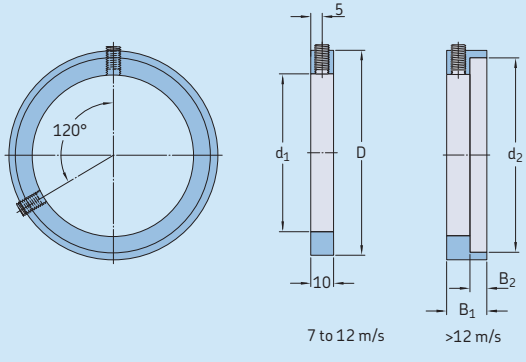
V-rings can accommodate circumferential speeds up to 7 m/s. For circumferential speeds between 7 and 12 m/s, they should be located axially on the shaft. At speeds above 12 m/s, a support ring must be used to prevent the seal from lifting. Recommended dimensions for appropriate support rings for axial and radial location are provided in **table 3**.

The permissible angular misalignment for seals mounted on shafts < 150 mm in diameter is approximately 1,5° and approximately 1° for larger shafts. The axial movement of the shaft relative to the housing is limited to ±1,5 mm.

For arrangements with a vertical shaft, the V-ring of the lower seal should be mounted inside the housing.

**Table 3**

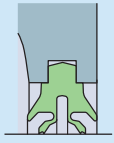
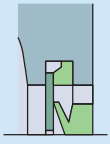
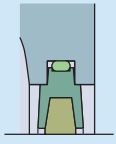
**Recommended dimensions for support rings for V-ring seals**




| Shaft diameter $d_a$ $d_b$[1] | Dimensions $d_1$ | $d_2$ | $B_1$ | $B_2$ | D | Grub screw to DIN 913 | V-ring seal Standard designation | Alternative designation |
|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | – | – | |
| **110** | 110 | 122,9 | 17,5 | 7,5 | 128 | M6 × 8 | 110 VA R | CR 401100 |
| **115** | 115 | 127,4 | 17,5 | 7,5 | 133 | M6 × 8 | 110 VA R | CR 401100 |
| **125** | 125 | 138,1 | 17,5 | 7,5 | 143 | M6 × 8 | 130 VA R | CR 401300 |
| **135** | 135 | 147,5 | 17,5 | 7,5 | 153 | M6 × 8 | 130 VA R | CR 401300 |
| **140** | 140 | 152,9 | 17,5 | 7,5 | 158 | M6 × 8 | 140 VA R | CR 401400 |
| **145** | 145 | 158,1 | 17,5 | 7,5 | 163 | M6 × 8 | 150 VA R | CR 401500 |
| **155** | 155 | 167,5 | 18,5 | 8,5 | 173 | M6 × 8 | 150 VA R | CR 401500 |
| **165** | 165 | 179,9 | 18,5 | 8,5 | 185,5 | M6 × 8 | 170 VA R | CR 401700 |
| **175** | 175 | 189,3 | 18,5 | 8,5 | 195 | M6 × 8 | 170 VA R | CR 401700 |

[1] $d_a$: shaft diameter for bearings on an adapter sleeve
$d_b$: shaft diameter for bearings on a stepped shaft

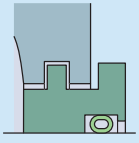
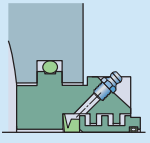
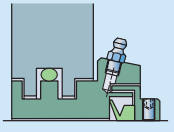
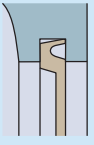
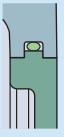
**Standard seals for SNLN 30 plummer block housings**

| Seal |  |  |  |
|---|---|---|---|
| Type | Four-lip split | V-ring | Felt split |
| Designation | TSN .. L | TSN .. A | TSN .. C |
| Size range for adapter sleeve mounting | 3024 to 3032 | 3024 to 3032 | 3024 to 3032 |
| Size range for cylindrical seat mounting | 224 to 230 | 224 to 232 | n/a |
| Material | thermoplastic polyester elastomer | nitrile rubber, steel | felt, nitrile rubber, aluminium |
| Seals per pack | 2 seals | 2 seals | 2 seals |
| **Application conditions and requirements** | | | |
| Temperature [°C] | –40 to +100 | –40 to +100 | –40 to +100 |
| Temperature [°F] | –40 to +210 | –40 to +210 | –40 to +210 |
| Max. circumferential speed[1] [m/s] | 13 | 7[2] | 4 |
| Max. misalignment [°] | 0,5 | 1 to 1,5 | 0,5 |
| Low friction | ++ | ++ | – |
| Axial shaft displacement | ++ | – | ++ |
| Vertical shaft arrangement | + | ++[3] | –– |
| Replacement | ++ | – | + |
| Shaft tolerance class | h9 Ⓔ | n/a | h9 Ⓔ |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 | n/a | ≤ 3,2 |
| **Sealing suitability** | | | |
| Dust | ++ | + | - |
| Fine particles | ++ | + | – |
| Coarse particles | ++ | + | + |
| Chips | + | –– | + |
| Liquids when sprayed | + | + | – |
| Direct sunlight | + | –– | ++ |

Symbols: n/a not applicable, ++ very suitable, + suitable, – limited suitability, –– unsuitable

1) To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.
2) Higher speeds are permissible if the V-ring is located axially on the shaft.
3) When the V-ring of the lower seal is mounted inboard

**Table 2**

| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
| Labyrinth | Taconite | Taconite | End cover | End cover |
| TSN .. S | TSN .. ND | TNF .. | ASNH .. | ETS .. |
| 3024 to 3056 | 3024 to 3032 | 3034 to 3056 | 3024 to 3032 | 3034 to 3056 |
| 224 to 232,<br>3034/185 to 3056/295 | 224 to 232 | 3034/185 to 3056/295 | | |
| steel or cast iron,<br>silicone | steel, nitrile rubber | steel, nitrile rubber | polymer | cast iron,<br>silicone |
| 1 seal | 1 seal | 1 seal | 1 end cover | 1 end cover |
| –50 to +200 | –40 to +100 | –40 to +100 | –40 to +110 | –50 to +200 |
| –60 to +390 | –40 to +210 | –40 to +210 | –40 to +230 | –60 to +390 |
| not limited | 12 | 12 | n/a | n/a |
| 0,3 | 0,5 | 0,3 | n/a | n/a |
| ++ | + | + | n/a | n/a |
| + | + | + | n/a | n/a |
| –– | – | – | ++ | ++ |
| – | – | – | ++ | ++ |
| h9 Ⓔ | h9 Ⓔ | h9 Ⓔ | n/a | n/a |
| ≤ 3,2 | ≤ 3,2 | n/a | n/a | n/a |
| – | ++ | ++ | ++ | ++ |
| + | ++ | ++ | ++ | ++ |
| + | ++ | ++ | ++ | ++ |
| ++ | ++ | ++ | ++ | ++ |
| –– | ++ | ++ | ++ | ++ |
| ++ | ++ | ++ | ++ | ++ |

### Felt seals

Felt seals are simple and effective. At circumferential speeds above 4 m/s, a small gap forms between the felt and shaft, transforming the contact seal into a non-contact, gap-type seal.

### Labyrinth seals

For applications where there are high speeds or extreme temperatures, SKF recommends using labyrinth seals. Labyrinth rings, mounted on the shaft, form a multi-stage labyrinth seal with the housing seal grooves. Hollow, silicone rubber cords, supplied with the rings, hold the rings in place on the shaft.

### Taconite heavy-duty seals

For bearing arrangements that must operate under highly contaminated conditions, such as those encountered in mining, taconite heavy-duty seals, which can be filled with grease, are recommended. Grease enhances the sealing effect and extends the service life of the seals. Taconite heavy-duty seals are labyrinth seals combined with a V-ring seal. The labyrinth ring is solid but the main body of the seal is split.

SNLN 30 housings from size 3024 to 3032 accommodate taconite seals with a radial labyrinth. SNLN 30 housings from size 3034 to 3056 accommodate solid taconite seals with an axial labyrinth. Both can be relubricated via a grease fitting in the main body of the seal.

The axial movement of the shaft relative to the housing is limited to ±1,5 mm for shaft diameters ranging from 110 to 150 mm, ±2 mm for shaft diameters ranging from 160 to 200 mm and ±4 mm for larger shaft diameters.

### End covers

Housings at the end of a shaft should have an end cover that fits into the seal groove in the housing.

For housings from size 3024 to 3032, the end covers are made of plastic and are suitable for operating temperatures from –40 to +110 °C *(–40 to +230 °F)*. For applications where temperatures exceed 110 °C *(230 °F)*, steel end covers should be used. These can be cut from sheet steel and placed in the seal groove. Use a hollow silicone rubber cord to hold the cover in place.

For housings from size 3034 to 3056, the end covers are made of grey cast iron and are suitable for operating temperatures from –50 to +200 °C *(–60 to +390 °F)*. They are inserted, together with a hollow silicone rubber cord, in the housing seal groove.

Details of the permissible length of the shaft end are provided in **table 4**.

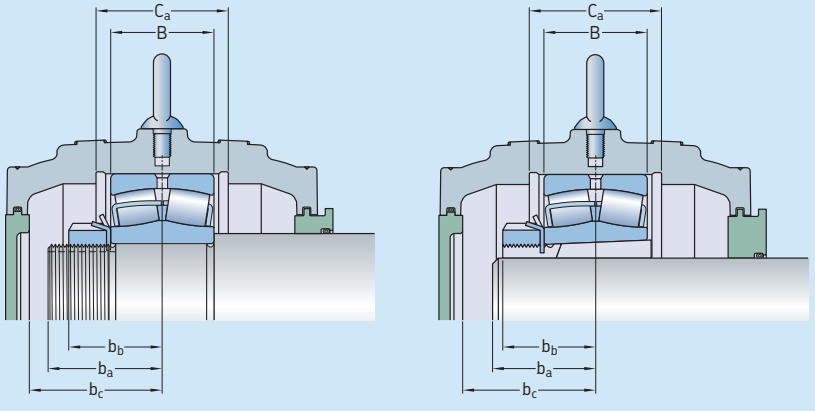
## Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**).

SNLN 30 housings can be used together with SKF sealed self-aligning bearings. When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting.

**Table 4**

**Permissible length of a shaft end**




| Housing Size | Dimensions | | | Appropriate bearing Designation | Dimensions | |
|---|---|---|---|---|---|---|
| | $b_a$[1] | $b_c$ | $C_a$ | | B | $b_b$ |
| – | mm | | | – | mm | |
| **SNLN 3024** | 48 | 70 | 70 | **23024** | 46 | 45 |
| **SNLN 3026** | 52 | 76 | 79 | **23026** | 52 | 49 |
| **SNLN 3028** | 53 | 75 | 79 | **23028** | 53 | 50,5 |
| **SNLN 3030** | 57 | 82 | 86 | **23030** | 56 | 54 |
| **SNLN 3032** | 60 | 82 | 90 | **23032** | 60 | 57,5 |
| **SNLN 3034** | 65 | 87 | 87 | **23034** | 67 | 62 |
| **SNLN 3036** | 69 | 94 | 94 | **23036** | 74 | 66,5 |
| **SNLN 3038** | 71 | 99 | 95 | **23038** | 75 | 68 |
| **SNLN 3040** | 75 | 98 | 102 | **23040** | 82 | 72,5 |
| **SNLN 3044** | 89 | 108 | 110 | **23044** | 90 | 86 |
| **SNLN 3048** | 95 | 110 | 112 | **23048** | 92 | 92 |
| **SNLN 3052** | 101 | 120 | 124 | **23052** | 104 | 98 |
| **SNLN 3056** | 106 | 123 | 126 | **23056** | 106 | 103 |

[1] For the non-locating bearing position, the values for $b_a$ must be adjusted if the bearing is not centred in the housing seat.

# Special seals

In addition to the standard seal assortment, SNLN 30 housings are available, on request, with high-temperature seals, taconite heavy-duty seals with an axial labyrinth or custom seals for special applications.

## High-temperature seals

For high operating temperatures, up to 250 °C *(480 °F)*, high-temperature felt seals should be used. The felt seals can accomodate circumferential speeds up to 2 m/s. They are identified by the designation suffix CB, e.g. TSN 3024 CB.

## Taconite heavy-duty seals with an axial labyrinth

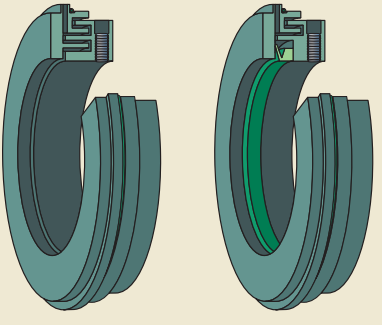
Taconite heavy-duty seals with an axial labyrinth (TSN .. NC or TSN .. NB, → **fig. 9**) can be used under the same conditions as taconite seals with a radial labyrinth. The seals are greased via a hole in the housing cap. Therefore, they can only be used with housings with the suffix T (at the end of a shaft) or the suffix TD (for through shafts).

TSN .. NB seals have a V-ring. It limits the axial movement of the shaft relative to the housing to ±1,5 mm.

Specifications for the seals are listed in **table 5**.

**Fig. 9**

**Taconite heavy-duty seals with an axial labyrinth**



TSN.. NC TSN.. NB

**Table 5**

**Taconite heavy-duty seals with an axial labyrinth**

| **Seal** | | |
|---|---|---|
| Designation | TSN .. NC | TSN .. NB |
| Size range | 3024 to 3032 | 3024 to 3032 |
| **Application conditions and requirements** | | |
| Temperature [°C] | –40 to +250 | –40 to +100 |
| Temperature [°F] | –40 to +480 | –40 to +210 |
| Max. circumferential speed[1] [m/s] | not limited | 12 |
| Max. misalignment [°] | 0,5 | 0,5 |
| Max. axial shaft displacement from a central position [mm] | ±2,5 | ±1,5 |
| Shaft tolerance class | h9 Ⓔ | h9 Ⓔ |

[1] To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37.**

## Custom seals

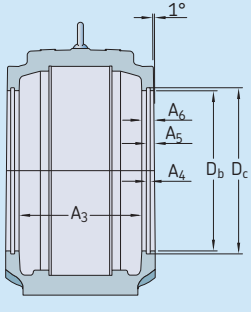
SNLN 30 housings can be equipped with any type of seal that fits the seal groove dimensions in the housing. The relevant dimensions are provided in **table 6**.

Custom seals can be supplied by SKF. For additional information, contact the SKF application engineering service.



**Table 6**

**Seal groove dimensions**




| Housing Size | Dimensions $A_3$ | $A_4$ | $A_5$ | $A_6$ | $D_b$ | $D_c$ |
|---|---|---|---|---|---|---|
| – | mm | | | | | |
| **SNLN 3024** | 130 | 6 | 10 | 15 | 157,5 | 167,5 |
| **SNLN 3026** | 142 | 6 | 10 | 15 | 167,5 | 177,5 |
| **SNLN 3028** | 141 | 6 | 11 | 16 | 177,5 | 187,5 |
| **SNLN 3030** | 154 | 6 | 11 | 16 | 192,5 | 202,5 |
| **SNLN 3032** | 156 | 6 | 11 | 15 | 202,5 | 212,5 |
| **SNLN 3034** | 177 | 6 | 11 | 15 | 212,5 | 222,5 |
| **SNLN 3036** | 192 | 6 | 11 | 15 | 225,5 | 232,5 |
| **SNLN 3038** | 198 | 6 | 11 | 17 | 232,5 | 242,5 |
| **SNLN 3040** | 197 | 8 | 14 | 20 | 242,5 | 254,5 |
| **SNLN 3044** | 217 | 8 | 14 | 20 | 262,5 | 274,5 |
| **SNLN 3048** | 217 | 8 | 16,5 | 25 | 282,5 | 294,5 |
| **SNLN 3052** | 236 | 8 | 16,5 | 25 | 302,5 | 314,5 |
| **SNLN 3056** | 245 | 8 | 16,5 | 25 | 322,5 | 334,5 |

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings, refer to the product information available online at skf.com/housings.

## Typical shaft-bearing combinations

SNLN 30 housings can accommodate different shaft-bearing combinations (→ **fig. 10**):

- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat
- Stepped shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a withdrawal sleeve

#### Plain shaft with bearing on an adapter sleeve

Housings, appropriate parts and dimensions are listed in **product table 4.1**, starting on **page 180**.

#### Stepped shaft with bearing on a cylindrical seat

Housings, appropriate parts and dimensions are listed in **product table 4.2**, starting on **page 184**.

The bearing is located axially between a shaft shoulder and a spacer sleeve, which is held in place by another component on the shaft. The outside diameter of the sleeve must match the bore diameter of the seal. The spacer sleeve is not supplied by SKF.

#### Stepped shaft with bearing on an adapter sleeve

When using an SNLN 30 housing for this arrangement, the dimensions of the abutment ring and the spacer sleeve must fit the housing. Abutment rings and spacer sleeves are not supplied by SKF.

#### Stepped shaft with bearing on a withdrawal sleeve

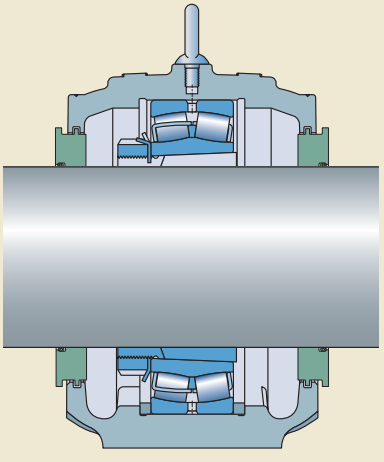
When using an SNLN 30 housing for this arrangement, the withdrawal sleeve must be located axially on the shaft. This can be done using a spacer sleeve that is held in place by another component. Using a lock nut can be difficult because of the limited space in the housing. The outside diameter of the spacer sleeve must be the same as the shaft abutment diameter, $d_b$, (→ **product tables**) and it should be in accordance with the h9Ⓔ tolerance class to fit the seal. The spacer sleeve is not supplied by SKF.

## Locating and non-locating bearing positions

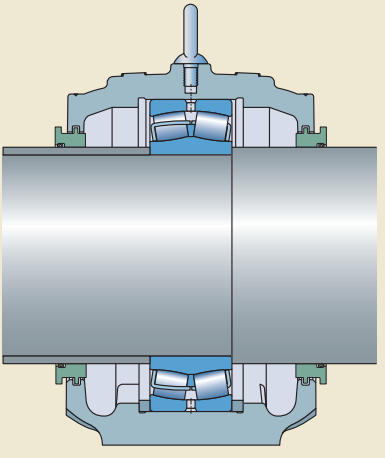
SNLN 30 housings can be used for both the locating and non-locating bearing positions.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing on both sides with locating rings. Appropriate locating rings are listed in the product tables.

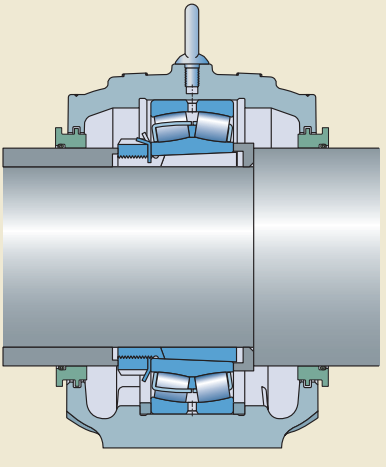
Fig. 10



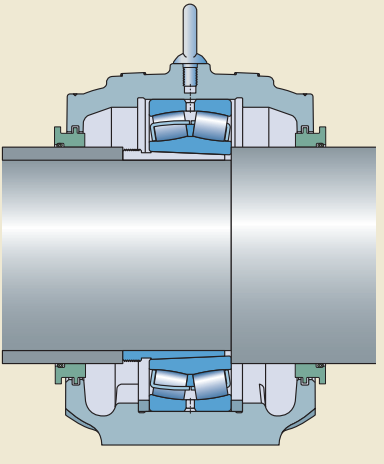
Plain shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a cylindrical seat



Stepped shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a withdrawal sleeve

## Load carrying capacity

SNLN 30 housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing. If loads acting in other directions occur, or if the housing is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing, the cap bolts and the attachment bolts. When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

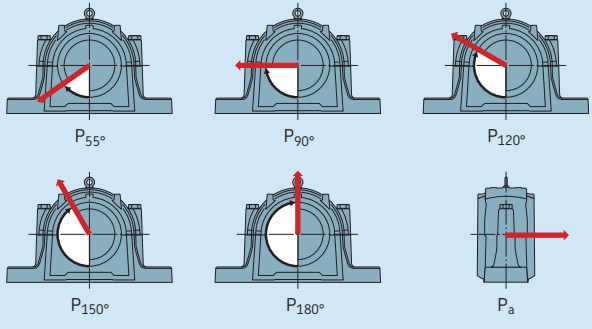
### Breaking loads and safety factors

Guideline values for the breaking loads of housings made of grey cast iron are listed in **table 7**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**). The permissible load can only be exploited if the cap bolts are tightened at least to the torque values listed in **table 8**.

If the housing is not supported over its entire base, the load carrying capacity for loads acting perpendicularly to the support surface may be affected. For additional information, contact the SKF application engineering service.

**Table 7**

**Breaking loads for SNLN 30 plummer block housings made of grey cast iron**




| Housing Size | Breaking loads $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|
| – | kN | | | | | |
| **SNLN 3024** | 520 | 310 | 230 | 210 | 260 | 90 |
| **SNLN 3026** | 620 | 370 | 280 | 250 | 310 | 110 |
| **SNLN 3028** | 700 | 420 | 310 | 280 | 350 | 120 |
| **SNLN 3030** | 780 | 470 | 350 | 310 | 390 | 130 |
| **SNLN 3032** | 840 | 500 | 380 | 340 | 420 | 150 |
| **SNLN 3034** | 1 000 | 600 | 450 | 400 | 500 | 170 |
| **SNLN 3036** | 1 160 | 700 | 520 | 460 | 580 | 200 |
| **SNLN 3038** | 1 300 | 780 | 580 | 520 | 650 | 220 |
| **SNLN 3040** | 1 480 | 890 | 670 | 590 | 740 | 260 |
| **SNLN 3044** | 1 700 | 1 020 | 760 | 680 | 850 | 300 |
| **SNLN 3048** | 1 880 | 1 130 | 850 | 750 | 940 | 330 |
| **SNLN 3052** | 2 120 | 1 270 | 950 | 850 | 1 060 | 370 |
| **SNLN 3056** | 2 240 | 1 340 | 1 000 | 900 | 1 120 | 390 |

For housings made of spheroidal graphite cast iron, the values obtained from **table 7** should be multiplied by a factor of 1,8.

The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

#### Additional housing support

When a housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 7**), the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

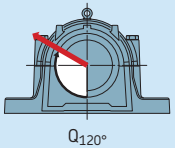
Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 11** on **page 177**.

### Load carrying capacity of the cap bolts

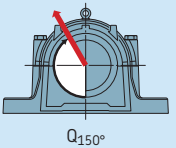
Approximate values for the yield points for cap bolts are provided in **table 8**. Recommended torque values are listed in the same table. The values in **table 8** apply to 8.8 class cap bolts, which are supplied with SNLN 30 housings made of grey cast iron. SSNLND housings made of spheroidal graphite cast iron are supplied

**Table 8**

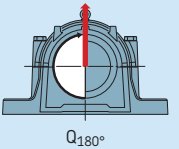
**Load carrying capacity and torque values for cap bolts and attachment bolts**



$Q_{120°}$



$Q_{150°}$



$Q_{180°}$

| Housing | Cap bolts | | | | | Attachment bolts | |
|---|---|---|---|---|---|---|---|
| Size | Yield point for two bolts | | | Size | Tightening torque | Size | Tightening torque[1] |
| | $Q_{120°}$ | $Q_{150°}$ | $Q_{180°}$ | | | | |
| – | kN | | | – | Nm | – | Nm |
| **SNLN 3024** | 620 | 360 | 310 | M 20×100 | 200 | M 24 | 665 |
| **SNLN 3026** | 620 | 360 | 310 | M 20×100 | 200 | M 24 | 665 |
| **SNLN 3028** | 620 | 360 | 310 | M 20×110 | 200 | M 24 | 665 |
| **SNLN 3030** | 900 | 520 | 450 | M 24×130 | 350 | M 24 | 665 |
| **SNLN 3032** | 900 | 520 | 450 | M 24×130 | 350 | M 24 | 665 |
| **SNLN 3034** | 900 | 520 | 450 | M 24×130 | 350 | M 30 | 1 310 |
| **SNLN 3036** | 900 | 520 | 450 | M 24×130 | 350 | M 30 | 1 310 |
| **SNLN 3038** | 900 | 520 | 450 | M 24×140 | 350 | M 30 | 1 310 |
| **SNLN 3040** | 900 | 520 | 450 | M 24×140 | 350 | M 30 | 1 310 |
| **SNLN 3044** | 1 430 | 825 | 715 | M 30×170 | 400 | M 36 | 2 280 |
| **SNLN 3048** | 1 430 | 825 | 715 | M 30×170 | 400 | M 36 | 2 280 |
| **SNLN 3052** | 2 100 | 1 200 | 1 050 | M 36×200 | 600 | M 42 | 3 640 |
| **SNLN 3056** | 2 100 | 1 200 | 1 050 | M 36×200 | 600 | M 42 | 3 640 |

[1] Recommended by bolt manufacturers

with 10.9 class cap bolts. For these cap bolts, the values obtained from **table 8** should be multiplied by a factor of 1,4.

If a safety factor of 6 is used for the permissible load of grey cast iron SNLN 30 housings, the cap bolts do not need to be considered. In this case, the permissible load of the housing is less than the permissible load for the cap bolts.

## Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 2**, **page 162**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

All seals, except non-contact labyrinth seals, limit the permissible operating speed. Speed limits for seals are provided in **table 2** on **page 162**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 8**, **page 171**). They are valid for oiled, but otherwise untreated, thread surfaces.

SKF cannot guarantee that tightening to the recommended value provides sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

# Lubrication

SNLN 30 plummer (pillow) block housings with standard seals are intended for grease lubrication.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70–80%. For best protection against contaminants, use the SKF three-barrier solution (→ **page 39**). For additional information, contact the SKF application engineering service.

Quantities for 20 and 40% grease fills are listed in **table 9**. The values are valid for a typical lithium grease (about 0,95 g/cm³). They include grease for the bearing and the four-lip seals or the sealing washers of V-ring seals. The grease to fill labyrinth seals or taconite heavy-duty seals is not included. For sealed bearings, the values have to be adjusted.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

**Table 9**

**Initial grease fill**

| **Housing** Size | **Initial fill** 20% | 40% |
|---|---|---|
| – | kg | |
| **SNLN 3024** | 0,25 | 0,45 |
| **SNLN 3026** | 0,35 | 0,65 |
| **SNLN 3028** | 0,50 | 0,70 |
| **SNLN 3030** | 0,50 | 0,90 |
| **SNLN 3032** | 0,50 | 1,0 |
| **SNLN 3034** | 0,75 | 1,4 |
| **SNLN 3036** | 0,95 | 1,8 |
| **SNLN 3038** | 1,0 | 1,9 |
| **SNLN 3040** | 1,1 | 2,0 |
| **SNLN 3044** | 1,5 | 2,7 |
| **SNLN 3048** | 1,5 | 2,8 |
| **SNLN 3052** | 2,1 | 3,8 |
| **SNLN 3056** | 2,3 | 4,2 |

## Relubrication

SNLN 30 plummer block housings enable relubrication of the incorporated bearings and seals (→ **fig. 11**):

- SNLN 30 housings have two holes that have been drilled and tapped for an AH 1/8-27 PTF grease fitting. On a new housing, the holes are covered by plastic plugs. These plugs should be replaced with the grease fitting and threaded plug supplied with the housing.
- If a larger grease fitting or other equipment has to be used, an adapter to change to a G 1/4 thread is available (→ **page 48**).
- Dimples cast into the top of the housing cap indicate alternative positions where holes can be drilled and tapped to accommodate a grease fitting for bearing or seal relubrication.

### Relubrication via the outer ring

The hole in the centre of the cap should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 12**). When applying grease via the relubrication feature, the shaft should be rotating.

### Relubrication from the side

When relubricating from the side, which is typically necessary for CARB toroidal roller bearings, the offset hole in the housing should be used. SNLN 30 housings from size 3024 to 3038 have an integral flange that guides grease from the grease fitting directly to the rolling elements (→ **fig. 13**).

When bearings mounted on an adapter sleeve have to be relubricated from the side, the grease should be introduced from the side opposite the lock nut.

When bearings mounted at the end of a shaft have to be relubricated from the side, the grease should be applied at the point closest to the end cover.

Fig. 12

Relubrication via the outer ring

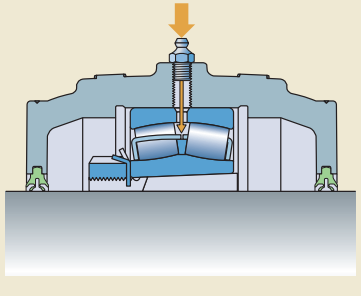


Fig. 13

Relubrication from the side

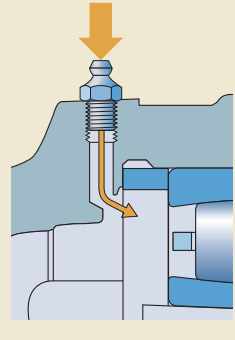
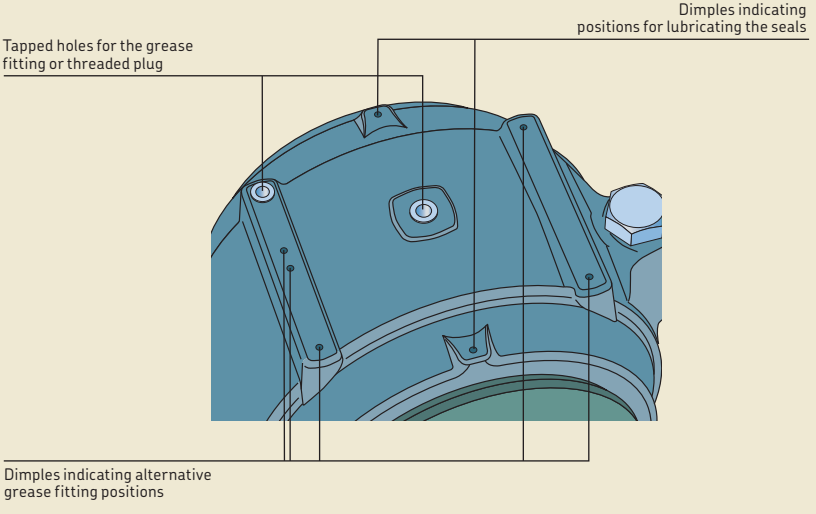


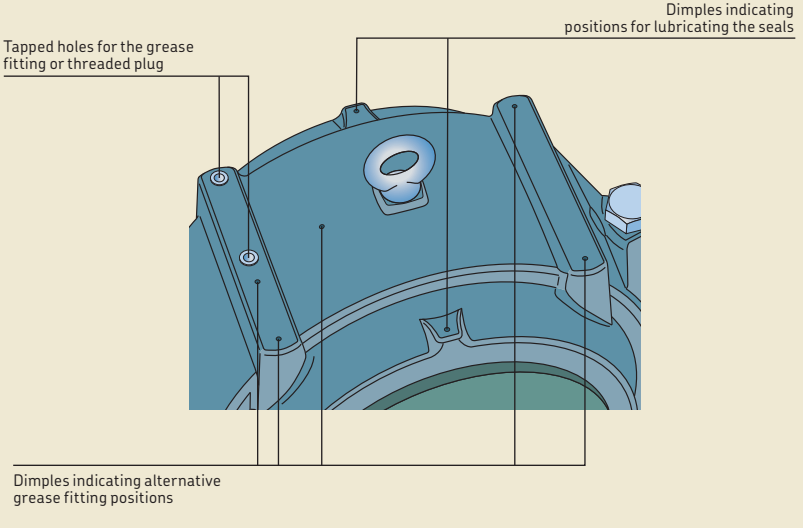
Fig. 11

**Relubrication possibilities**

**SNLN housings up to size 3024**




**SNLN housings from size 3028 and above**



### Relubrication from the side for housings with V-ring seals

When relubricating bearings from the side in housings with V-ring seals, mount an additional V-ring inside the housing on the side where grease is applied (→ **fig. 14**). This forces the grease to travel through the bearing and exit the housing on the opposite side.

SKF can supply an appropriate V-ring together with a splash plate that fits in the seal groove to cover a bit more than the top half of the housing. The sets are identified by the series designation ASNA followed by the housing size identification and the suffix V, e.g. ASNA 3024 V, and are available from size 3024 to 3032.

### Grease escape holes

When four-lip seals (TSN .. L) or felt seals (TSN .. C) are used, grease cannot escape via the seals. If relubrication is required, the housing should have a grease escape hole.

SNLN 30 housings can be supplied with a grease escape hole (designation suffix V). A grease escape hole can be drilled into the housing using the dimensions provided in **table 10**.

Fig. 14

**V-ring and splash plate set mounted in an SNLN 30 housing**

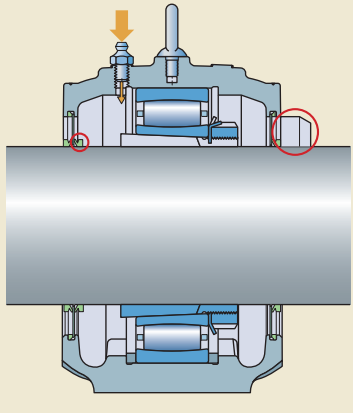
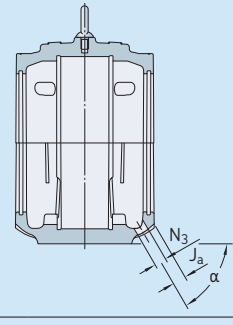


Table 10

**Recommended dimensions for grease escape hole**




| Housing Size | Dimensions $J_a$ | $N_3$ | α |
|---|---|---|---|
| – | mm | | |
| **SNLN 3024** | 21 | 16 | 65 |
| **SNLN 3026** | 21,5 | 20 | 60 |
| **SNLN 3028** | 24 | 20 | 60 |
| **SNLN 3030** | 22 | 20 | 55 |
| **SNLN 3032** | 18,5 | 20 | 50 |
| **SNLN 3034** | 25 | 20 | 60 |
| **SNLN 3036** | 25 | 20 | 60 |
| **SNLN 3038** | 25 | 20 | 60 |
| **SNLN 3040** | 32 | 20 | 65 |
| **SNLN 3044** | 32 | 25 | 60 |
| **SNLN 3048** | 32 | 25 | 55 |
| **SNLN 3052** | 32 | 25 | 55 |
| **SNLN 3056** | 32 | 25 | 50 |

# Mounting



SNLN 30 housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces*, **page 45**).

Mounting instructions for each housing are provided with the seal pack, except for housings from size 3024 to 3032 with seals in the TSN 2(00) series. For these housing/seal combinations, mounting instructions need to be ordered separately. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Torque specifications

Cap bolts should be tightened to the torque values listed in **table 8** on **page 171**. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 172**.

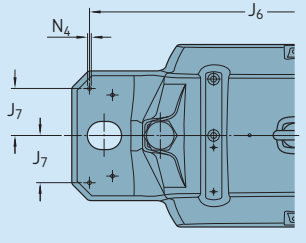
## Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, **page 171**).

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 11**. Dimples cast into the housing base mark the recommended positions.

**Table 11**

**Position and size of dowel pin holes**




| Housing Size | Dimensions $J_6$ | $J_7$ | $N_4$ |
|---|---|---|---|
| – | mm | | |
| **SNLN 3024** | 348 | 39 | 8 |
| **SNLN 3026** | 378 | 44 | 8 |
| **SNLN 3028** | 378 | 44 | 8 |
| **SNLN 3030** | 414 | 46 | 12 |
| **SNLN 3032** | 424 | 46 | 12 |
| **SNLN 3034** | 486 | 58 | 12 |
| **SNLN 3036** | 506 | 58 | 12 |
| **SNLN 3038** | 506 | 58 | 12 |
| **SNLN 3040** | 566 | 63 | 16 |
| **SNLN 3044** | 644 | 72 | 16 |
| **SNLN 3048** | 672 | 76 | 16 |
| **SNLN 3052** | 760 | 80 | 16 |
| **SNLN 3056** | 800 | 85 | 16 |

## Condition monitoring

SNLN 30 plummer (pillow) block housings have appropriate positions for condition monitoring sensors (→ **fig. 15**).

**Position 1** is a measurement point perpendicular to the shaft, and should be used when the housing is hung from its support or when loads act away from the support surface.

**Position 2** is a measurement point parallel to the shaft and should be used when loads act toward the support surface. Both positions 1 and 2 are in accordance with ISO 10816-1.

**Position 3** is a measurement point that is approximately 20° to 45° to the shaft axis.

## Accessories

The following accessories are available for SNLN 30 plummer (pillow) block housings:

- Adapter for G 1/4 connections: LAPN 1/8
- Automatic lubricators: SKF SYSTEM 24 and SKF MultiPoint
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).

**Fig. 15**

**Measurement points for condition monitoring**



# Ordering information

For SNLN 30 plummer (pillow) block housings, each of the following items must be ordered separately:

- housing
- seals
- end cover
- locating rings
- bearing
- adapter sleeve

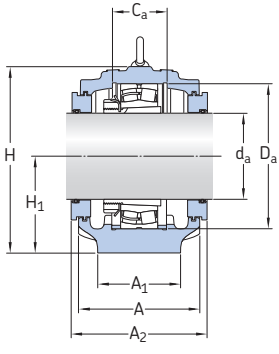
**Order example**

Two plummer block housings with four-lip seals are required for two 23024 CCK/W33 spherical roller bearings on H 3024 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

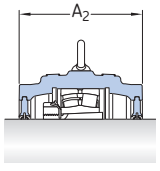
The following items should be ordered (in addition to the bearings and adapter sleeves):

- 2 housings SNLN 3024
- 2 four-lip seal packs TSN 3024 (each pack contains two seals)
- 1 end cover ASNH 524-620
- 2 locating rings FRB 12/180

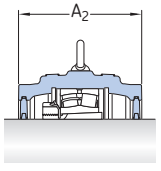
## 4.1 SNLN 30 plummer block housings for bearings on an adapter sleeve
$d_a$ **110 – 140** mm



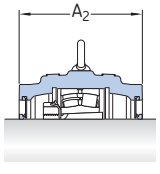
with TSN .. S



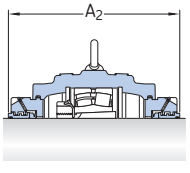
with TSN .. L



with TSN .. C



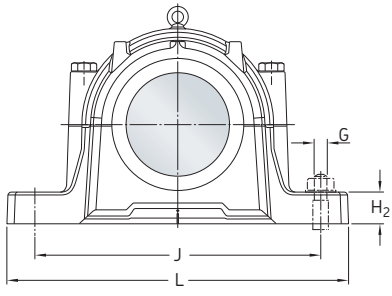
with TSN .. A

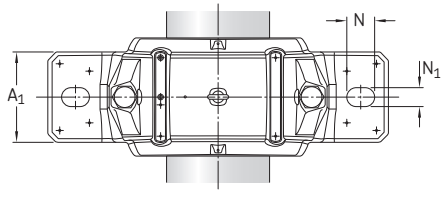


with TSN .. ND

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **110** | **SNLN 3024** | 23024 CCK/W33<br>C 3024 K | H 3024<br>H 3024 E | FRB 12/180<br>FRB 12/180 | TSN 3024 L<br>TSN 3024 A<br>TSN 3024 C<br>TSN 3024 S<br>TSN 3024 ND | ASNH 524-620 | 160<br>160<br>160<br>180<br>240 |
| **115** | **SNLN 3026** | 23026 CCK/W33<br>23026-2CS5K<br>C 3026 K | H 3026<br>H 3026 E<br>H 3026 | FRB 13,5/200<br>FRB 13,5/200<br>FRB 13,5/200 | TSN 3026 L<br>TSN 3026 A<br>TSN 3026 C<br>TSN 3026 S<br>TSN 3026 ND | ASNH 526 | 175<br>175<br>175<br>200<br>245 |
| **125** | **SNLN 3028** | 23028 CCK/W33<br>23028-2CS5K<br>C 3028 K | H 3028<br>H 3028 E<br>H 3028 E | FRB 13/210<br>FRB 13/210<br>FRB 13/210 | TSN 3028 L<br>TSN 3028 A<br>TSN 3028 C<br>TSN 3028 S<br>TSN 3028 ND | ASNH 528 | 175<br>175<br>175<br>195<br>255 |
| **135** | **SNLN 3030** | 23030 CCK/W33<br>23030-2CS5K<br>C 3030 KV | H 3030<br>H 3030 E<br>H 3030 | FRB 15/225<br>FRB 15/225<br>FRB 15/225 | TSN 3030 L<br>TSN 3030 A<br>TSN 3030 C<br>TSN 3030 S<br>TSN 3030 ND | ASNH 530 | 190<br>190<br>190<br>215<br>265 |
| **140** | **SNLN 3032** | 23032 CCK/W33<br>23032-2CS5K<br>C 3032 K | H 3032<br>H 3032 E<br>H 3032 E | FRB 15/240<br>FRB 15/240<br>FRB 15/240 | TSN 3032 L<br>TSN 3032 A<br>TSN 3032 C<br>TSN 3032 S<br>TSN 3032 ND | ASNH 532 | 190<br>190<br>190<br>215<br>270 |

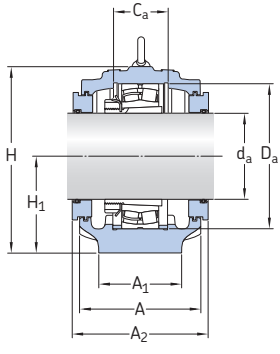
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
230(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same row only.
[3] The locating ring fits the bearing in the same row only. Two locating rings are required.



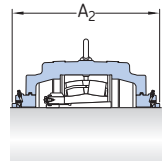




| **Shaft diameter** $d_a$ | **Dimensions** Housing A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | | | | | | | | – | kg |
| **110** | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | – | 17,5 |
| **115** | 175 | 120 | 79 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | – | 22,5 |
| **125** | 175 | 120 | 79 | 210 | 270 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | M10 | 30,0 |
| **135** | 190 | 130 | 86 | 225 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | M10 | 40,0 |
| **140** | 190 | 130 | 90 | 240 | 297 | 150 | 50 | 390 | 460 | 35 | 28 | 24 | M10 | 41,0 |

## 4.1 SNLN 30 plummer block housings for bearings on an adapter sleeve
$d_a$ **150 – 260** mm



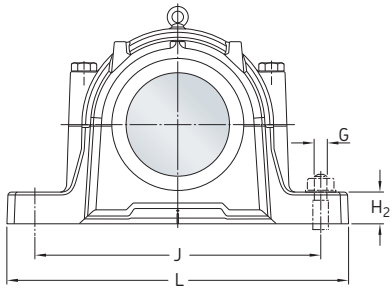

with TSN .. S

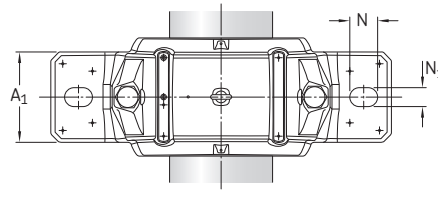



with TNF

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **150** | **SNLN 3034** | 23034 CCK/W33<br>23034-2CS5K<br>C 3034 K | H 3034<br>H 3034 E<br>H 3034 E | FRB 10/260<br>FRB 10/260<br>FRB 10/260 | TSN 3034 S<br>TNF 3034 | ETS 3034 | 230<br>266 |
| **160** | **SNLN 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | H 3036<br>H 3036 E<br>H 3036 | FRB 10/280<br>FRB 10/280<br>FRB 10/280 | TSN 3036 S<br>TNF 3036 | ETS 3036 | 245<br>280 |
| **170** | **SNLN 3038** | 23038 CCK/W33<br>C 3038 K | H 3038<br>H 3038 | FRB 10/290<br>FRB 10/290 | TSN 3038 S<br>TNF 3038 | ETS 3038 | 255<br>290 |
| **180** | **SNLN 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | H 3040<br>H 3040<br>H 3040 | FRB 10/310<br>FRB 10/310<br>FRB 10/310 | TSN 3040 S<br>TNF 3040 | ETS 3040 | 265<br>295 |
| **200** | **SNLN 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | OH 3044 H<br>OH 3044 H<br>OH 3044 H | FRB 10/340<br>FRB 10/340<br>FRB 10/340 | TSN 3044 S<br>TNF 3044 | ETS 3044 | 285<br>315 |
| **220** | **SNLN 3048** | 23048 CCK/W33<br>23048-2CS5K<br>C 3048 K | OH 3048 H<br>OH 3048 HE<br>OH 3048 H | FRB 10/360<br>FRB 10/360<br>FRB 10/360 | TSN 3048 S<br>TNF 3048 | ETS 3048 | 295<br>355 |
| **240** | **SNLN 3052** | 23052 CCK/W33<br>23052-2CS5K<br>C 3052 K | OH 3052 H<br>OH 3052 HE<br>OH 3052 H | FRB 10/400<br>FRB 10/400<br>FRB 10/400 | TSN 3052 S<br>TNF 3052 | ETS 3052 | 312<br>374 |
| **260** | **SNLN 3056** | 23056 CCK/W33<br>C 3056 K | OH 3056 H<br>OH 3056 H | FRB 10/420<br>FRB 10/420 | TSN 3056 S<br>TNF 3056 | ETS 3056 | 325<br>384 |

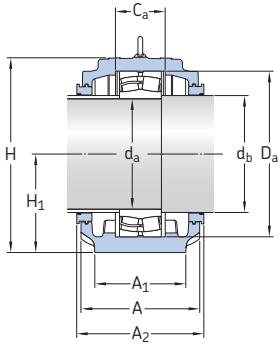
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
230(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same row only.
[3] The locating ring fits the bearing in the same row only. Two locating rings are required.



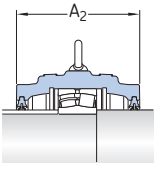




| **Shaft diameter** $d_a$ | **Dimensions** Housing A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | | | | | | | | – | kg |
| **150** | 210 | 160 | 87 | 260 | 322 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | M12 | 50,5 |
| **160** | 225 | 160 | 94 | 280 | 342 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M12 | 58,5 |
| **170** | 235 | 160 | 95 | 290 | 347 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M12 | 58,5 |
| **180** | 240 | 170 | 102 | 310 | 368 | 180 | 60 | 515 | 610 | 42 | 35 | 30 | M12 | 76,0 |
| **200** | 260 | 190 | 110 | 340 | 403 | 200 | 70 | 580 | 690 | 50 | 42 | 36 | M12 | 103 |
| **220** | 270 | 200 | 112 | 360 | 423 | 210 | 75 | 610 | 720 | 50 | 42 | 36 | M12 | 117 |
| **240** | 290 | 220 | 124 | 400 | 475 | 240 | 80 | 680 | 820 | 70 | 48 | 42 | M12 | 162 |
| **260** | 300 | 230 | 126 | 420 | 496 | 250 | 80 | 720 | 860 | 70 | 48 | 42 | M12 | 184 |

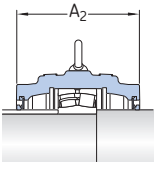
## 4.2 SNLN 30 plummer block housings for bearings on a cylindrical seat
d **120 – 150** mm



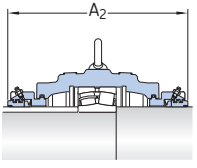
with TSN .. S



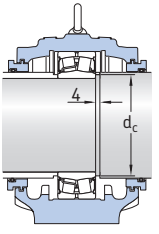
with TSN .. L



with TSN .. A

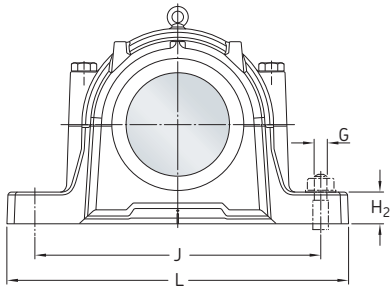


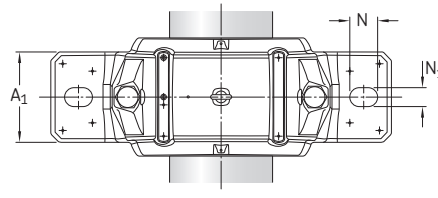
with TSN .. ND




| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **120** | **SNLN 3024** | 23024 CC/W33<br>23024-2CS5<br>24024 CC/W33<br>24024-2CS5<br>C 3024<br>C 4024 V<br>C 4024-2CS5V | FRB 12/180<br>FRB 12/180<br>FRB 5/180<br>FRB 5/180<br>FRB 12/180<br>FRB 5/180<br>FRB 5/180 | TSN 224 L<br>TSN 224 A<br>TSN 224 S<br>TSN 224 ND | ASNH 524-620 | 160<br>160<br>180<br>250 |
| **130** | **SNLN 3026** | 23026 CC/W33<br>23026-2CS5<br>24026 CC/W33<br>24026-2CS5<br>C 3026<br>C 4026<br>C 4026-2CS5V | FRB 13,5/200<br>FRB 13,5/200<br>FRB 5/200<br>FRB 5/200<br>FRB 13,5/200<br>FRB 5/200<br>FRB 5/200 | TSN 226 L<br>TSN 226 A<br>TSN 226 S<br>TSN 226 ND | ASNH 526 | 175<br>175<br>197<br>260 |
| **140** | **SNLN 3028** | 23028 CC/W33<br>23028-2CS5<br>24028 CC/W33<br>24028-2CS5<br>C 3028<br>C 4028 V<br>C 4028-2CS5V | FRB 13/210<br>FRB 13/210<br>FRB 5/210<br>FRB 5/210<br>FRB 13/210<br>FRB 5/210<br>FRB 5/210 | TSN 228 L<br>TSN 228 A<br>TSN 228 S<br>TSN 228 ND | ASNH 528 | 175<br>175<br>194<br>260 |
| **150** | **SNLN 3030** | 23030 CC/W33<br>23030-2CS5<br>24030 CC/W33<br>24030-2CS5<br>C 3030 V<br>C 4030 V<br>C 4030-2CS5V | FRB 15/225<br>FRB 15/225<br>FRB 5,5/225<br>FRB 5,5/225<br>FRB 15/225<br>FRB 5,5/225<br>FRB 5,5/225 | TSN 230 L<br>TSN 230 A<br>TSN 230 S<br>TSN 230 ND | ASNH 530 | 190<br>190<br>213<br>280 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
230(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same row only. Two locating rings are required.

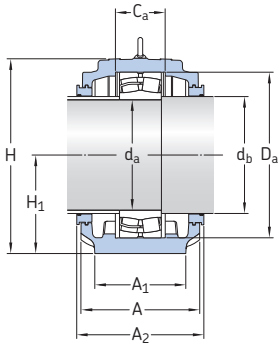


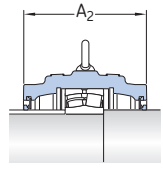

| **Shaft diameter** | | | | **Dimensions** Housing | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1] min | $d_c$[1] max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | | | | mm | | | | | | | | | | | | – | kg |
| **120** | 135 | 129 | 132 | 160 | 110 | 70 | 180 | 218 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | – | 17,5 |
| | | 129 | 130 | | | | | | | | | | | | | | |
| **130** | 145 | | | 175 | 120 | 79 | 200 | 242 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | – | 22,5 |
| | | 139 | 140 | | | | | | | | | | | | | | |
| **140** | 155 | | | 175 | 120 | 79 | 210 | 270 | 140 | 45 | 350 | 410 | 32 | 26 | 24 | M10 | 30,0 |
| | | 149 | 151 | | | | | | | | | | | | | | |
| **150** | 165 | | | 190 | 130 | 86 | 225 | 290 | 150 | 50 | 380 | 445 | 35 | 28 | 24 | M10 | 40,0 |
| | | 161 | 162 | | | | | | | | | | | | | | |

[1] Valid for the sealed spherical roller bearing in the same row only.

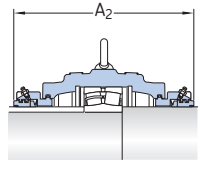
# 4.2 SNLN 30 plummer block housings for bearings on a cylindrical seat
d **160 – 280**mm



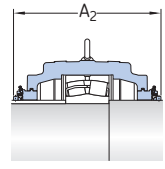

with TSN .. S



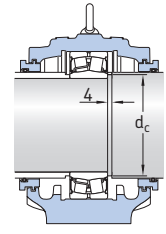

with TSN .. A




with TSN .. ND

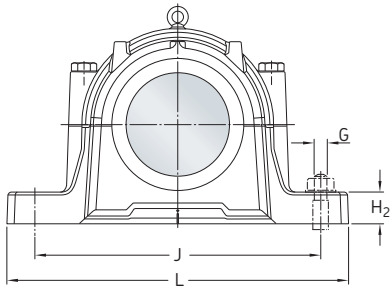


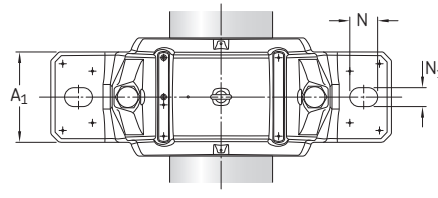

with TNF




| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **160** | **SNLN 3032** | 23032 CC/W33<br>23032-2CS5<br>24032 CC/W33<br>24032-2CS5<br>C 3032<br>C 4032<br>C 4032-2CS5V | FRB 15/240<br>FRB 15/240<br>FRB 5/240<br>FRB 5/240<br>FRB 15/240<br>FRB 5/240<br>FRB 5/240 | TSN 232 A<br>TSN 232 S<br>TSN 232 ND | ASNH 532 | 190<br>213<br>280 |
| **170** | **SNLN 3034** | 23034 CC/W33<br>23034-2CS5<br>C 3034 | FRB 10/260<br>FRB 10/260<br>FRB 10/260 | TSN 3034/185 S<br>TNF 3034/185 | ETS 3034 | 231<br>278 |
| **180** | **SNLN 3036** | 23036 CC/W33<br>23036-2CS5<br>C 3036 | FRB 10/280<br>FRB 10/280<br>FRB 10/280 | TSN 3036/195 S<br>TNF 3036/195 | ETS 3036 | 246<br>292 |
| **190** | **SNLN 3038** | 23038 CC/W33<br>C 3038 | FRB 10/290<br>FRB 10/290 | TSN 3038/205 S<br>TNF 3038/205 | ETS 3038 | 255<br>302 |
| **200** | **SNLN 3040** | 23040 CC/W33<br>23040-2CS5<br>C 3040 | FRB 10/310<br>FRB 10/310<br>FRB 10/310 | TSN 3040/215 S<br>TNF 3040/215 | ETS 3040 | 263<br>301 |
| **220** | **SNLN 3044** | 23044 CC/W33<br>23044-2CS5<br>C 3044 | FRB 10/340<br>FRB 10/340<br>FRB 10/340 | TSN 3044/235 S<br>TNF 3044/235 | ETS 3044 | 283<br>321 |
| **240** | **SNLN 3048** | 23048 CC/W33<br>23048-2CS5<br>C 3048 | FRB 10/360<br>FRB 10/360<br>FRB 10/360 | TSN 3048/255 S<br>TNF 3048/255 | ETS 3048 | 293<br>355 |
| **260** | **SNLN 3052** | 23052 CC/W33<br>23052-2CS5<br>C 3052 | FRB 10/400<br>FRB 10/400<br>FRB 10/400 | TSN 3052/275 S<br>TNF 3052/275 | ETS 3052 | 312<br>374 |
| **280** | **SNLN 3056** | 23056 CC/W33<br>C 3056 | FRB 10/420<br>FRB 10/420 | TSN 3056/295 S<br>TNF 3056/295 | ETS 3056 | 322<br>384 |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
230(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The locating ring fits the bearing in the same row only. Two locating rings are required.




| **Shaft diameter** | | | | **Dimensions** Housing | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$[1] min | $d_c$[1] max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | | |
| mm | | | | mm | | | | | | | | | | | | – | kg |
| **160** | 175 | | | 190 | 130 | 90 | 240 | 297 | 150 | 50 | 390 | 460 | 35 | 28 | 24 | M10 | 41,0 |
| | | 171 | 173 | | | | | | | | | | | | | | |
| **170** | 185 | | | 210 | 160 | 87 | 260 | 322 | 160 | 60 | 450 | 530 | 42 | 35 | 30 | M12 | 50,5 |
| **180** | 195 | | | 225 | 160 | 94 | 280 | 342 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M12 | 58,5 |
| **190** | 205 | | | 235 | 160 | 95 | 290 | 347 | 170 | 60 | 470 | 550 | 42 | 35 | 30 | M12 | 58,5 |
| **200** | 215 | | | 240 | 170 | 102 | 310 | 368 | 180 | 60 | 515 | 610 | 42 | 35 | 30 | M12 | 76,0 |
| **220** | 235 | | | 260 | 190 | 110 | 340 | 403 | 200 | 70 | 580 | 690 | 50 | 42 | 36 | M12 | 103 |
| **240** | 255 | | | 270 | 200 | 112 | 360 | 423 | 210 | 75 | 610 | 720 | 50 | 42 | 36 | M12 | 117 |
| **260** | 275 | | | 290 | 220 | 124 | 400 | 475 | 240 | 80 | 680 | 820 | 70 | 48 | 42 | M12 | 162 |
| **280** | 295 | | | 300 | 230 | 126 | 420 | 496 | 250 | 80 | 720 | 860 | 70 | 48 | 42 | M12 | 184 |

[1] Valid for the sealed spherical roller bearing in the same row only.



# Split plummer block housings SNL 30, 31 and 32 series



SNL plummer (pillow) block housings in the 30, 31 and 32 series are robust and suitable for tough operating conditions. They enable the incorporated bearings to achieve maximum service life with less need for maintenance. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements to be made.

**Bearing types**
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 30, 31, 32
- 22, 23, 40 (for some bearings)

**Shaft diameter range**
- 115 to 530 mm
- 4 7/16 to 19 1/2 in.

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Labyrinth
- Heavy-duty
- Oil seal

**Lubrication**
- Grease
- Oil

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Four-bolt mounting

**Compliance to standards**
- ISO 113 (four-bolt plummer block housings)

**Supersedes**
- SD, SDD series

# Split plummer block housings SNL 30, 31 and 32 series


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# Designations

**Designation system for SNL plummer block housings**

**SNLD 3134 SN**

**Series**

| | |
|---|---|
| **SNL** | Standard plummer block housing |

**Material**

| | |
|---|---|
| **–** | Grey cast iron |
| **D** | Spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **30(00)** | Housing for bearings in the 30 dimension series |
| **31(00)** | Housing for bearings in the 31 dimension series |
| **32(00)** | Housing for bearings in the 32 dimension series |
| **..34 to 96** | Size code, related to the bearing bore size |
| **../500 to /530** | Size code, related to the bearing bore size |

**Suffixes**[1)]

| | |
|---|---|
| **–** | Housing for bearings on an adapter sleeve and a plain shaft |
| **G** | Housing for bearings on a cylindrical seat and a stepped shaft |
| **L** | Housing for a non-locating bearing arrangement |
| **F** | Housing for a locating bearing arrangement |
| **TURT** | Housing prepared for oil lubrication, including seals, for use with spherical roller bearings |
| **TURA** | Housing prepared for oil lubrication, including seals, for use with CARB toroidal roller bearings |
| **TURP** | Housing with seals for circulating oil lubrication systems and large axial shaft movements |
| **V** | Housing with a grease escape hole in the base |
| **T** | Drilled and tapped hole 1/8-27 NPSF at one side of the housing cap (opposite the lock nut) for a grease fitting |
| **TD** | Drilled and tapped hole 1/8-27 NPSF at both sides of the housing cap for a grease fitting |
| **SN** | Drilled and tapped M8 hole for sensors |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

## Split plummer block housings SNL 30, 31 and 32 series

### Designation system for seals

TS 38
TNF 88/380

**Series**

| | |
|---|---|
| **TS** | Labyrinth seal |
| **TNF** | Taconite seal |
| **TSD** | Seal for oil lubrication |

**Size identification**

| | |
|---|---|
| **34 to 96** | Size code, related to the bearing bore size |
| **500 to 560** | Size code, related to the bearing bore size |
| **/...** | Bore diameter of the seal [mm] when differing from the standard |

### Designation system for end covers

ETS 34
ETS 3184 R

**Series**

| | |
|---|---|
| **ETS** | End cover for SNL plummer block housings in the 30, 31 and 32 series |

**Size identification**

| | |
|---|---|
| **...** | Size code, related to bearing or housing size |

**Suffix**

| | |
|---|---|
| **R** | End cover for oil lubricated housings |

### Designation system for locating rings

FRB 12/360

**Series**

| | |
|---|---|
| **FRB** | Locating ring for SKF bearing housings |

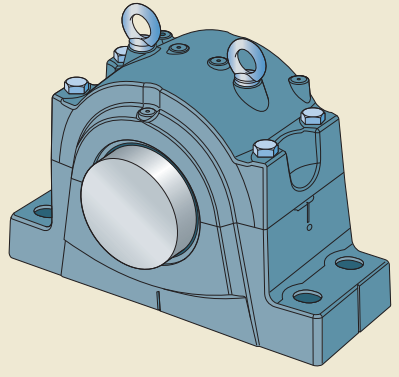
**Size identification**

| | |
|---|---|
| **...** | Width and outside diameter of the locating ring [mm] |

# Standard housing design

SNL plummer (pillow) block housings in the 30, 31 and 32 series, often referred to as “large SNL plummer block housings”, are split housings consisting of a cap and base (→ **fig. 1**). They have four holes cast into the base for attachment bolts. The housings are designed on the “building block” principle to enable a wider choice of bearings and seals as well as a variety of shaft-bearing combinations and lubrication methods.

**Fig. 1**



## Features and benefits

SNL plummer block housings in the 30, 31 and 32 series have the following features and benefits:

### Stiff housing

The housing base is reinforced with ribs and has extra material surrounding the holes for the attachment bolts (→ **fig. 2**). This virtually eliminates any distortion of the base and bearing seat during tightening of the attachment bolts.

### Good heat dissipation

The centre cross reinforcement in the housing base (→ **fig. 3**) increases the contact area between the housing base and the support surface to improve the heat flow from the bearing outer ring to the support surface.

### Caps and bases individually marked

The housing cap and base are matched during manufacture and are not interchangeable with the caps and bases of other housings. To prevent any mismatches, a unique serial number is marked on both the housing cap and the base (→ **fig. 4**).

### Dimples to locate accessories

Dimples cast into the housing cap indicate where grease fittings and condition monitoring sensors can be mounted for maximum effectiveness (→ **fig. 5**).

### Simple mounting

To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat and housing bore axis are cast into the housing base. Dimples indicate the position for dowel pins (→ **fig. 6**). Mounting instructions are supplied with each seal pack. The housings have two eyebolts on the cap for safe and easy handling.

**Fig. 2**

**Reinforcement rib in the base**

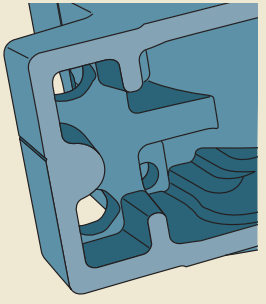


**Fig. 3**

**Centre cross for better heat conduction**

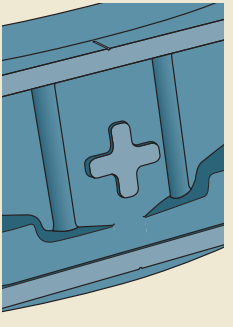


**Fig. 4**

**Individually marked cap and base**

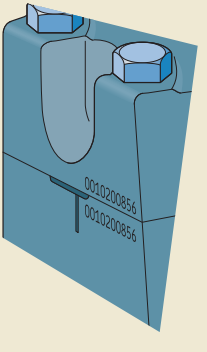


Fig. 5

**Dimples indicate positions for accessories**

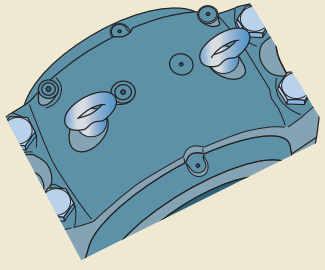
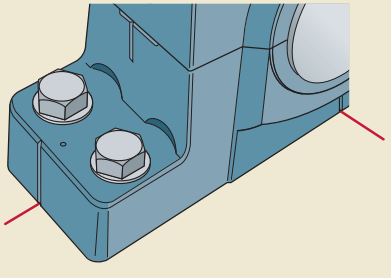


Fig. 6

**Cast indications mark the centre of the housing bore**



## Housing material

SNL plummer block housings are made of grey cast iron.

### Paint, corrosion protection

SNL housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

Where applicable, boundary dimensions are in accordance with ISO 113 for four-bolt plummer block housings. ISO 113 applies to housings with a bearing seat diameter $D_a \leq 540$ mm.

### Interchangeability

SNL plummer block housings in the 31 series are dimensionally interchangeable with the earlier SD housings.

SNL housings in the 30 and 32 series are dimensionally interchangeable with the earlier SD housings, except for the bearing position. The offset of the bearing centre compared to the centre of the housing differs (dimension s, → **product tables**).

# Housing variants

In addition to standard design SNL housings, a number of variants are also available. Variants include housings made of different materials, different bearing seat tolerance classes and modifications for special applications.

## Housing material

For applications where extra strength is needed, SNL housings are also available in spheroidal graphite cast iron.

## Bearing seat tolerance

SNL housings can be supplied with different bearing seat tolerance classes, e.g. for applications prone to vibration, with rotating outer ring load or for applications operating at high temperatures.

For additional information, contact the SKF application engineering service.

## Housings for oil lubrication

SNL housings in the 30, 31 and 32 series can be used for oil lubrication at relatively high speeds. When they are to be used for oil lubrication, the housings are modified to accommodate the special oil seals. As a result, large SNL housings for oil lubrication are supplied together with the seals, as a unit.

# Sealing solutions

SNL plummer (pillow) block housings in the 30, 31 and 32 series are available with different standard sealing solutions (→ **fig. 7**):

- labyrinth seals (TS ..)
- taconite heavy-duty seals (TNF ..)
- seals for oil lubrication (TSD .. U)
- end covers (ETS ..)

**Table 1** provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline and does not substitute for testing a seal in its application.

**Fig. 7**

**Standard sealing solutions for large SNL plummer block housings**

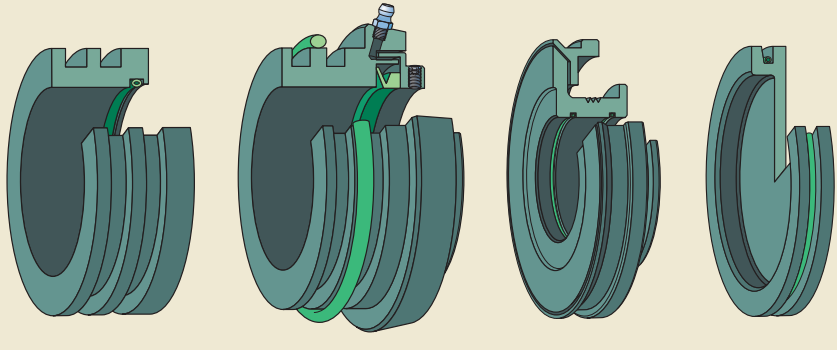
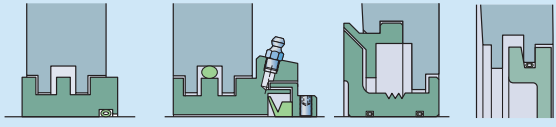


**Table 1**

**Standard seals for large SNL plummer block housings**



| Seal | | | | |
|---|---|---|---|---|
| Type | Labyrinth | Taconite | Oil | End cover |
| Designation | TS .. | TNF .. | TSD .. U[1] | ETS .. |
| Material | steel, silicone | steel, nitrile rubber | steel,silicone | steel, silicone |
| Seals per pack | 1 seal | 1 seal | 1 seal | 1 end cover |
| **Application conditions and requirements** | | | | |
| Temperature [°C] | –50 to +200 | –40 to +100 | –50 to +200 | –50 to +200 |
| Temperature [°F] | –60 to +390 | –40 to +210 | –60 to +390 | –60 to +390 |
| Max. circumferential speed [m/s] | not limited | 12 | not limited | n/a |
| Max. misalignment [°] | ≤ 0,3° | ≤ 0,3° | ≤ 0,3° | n/a |
| Low friction | ++ | + | ++ | n/a |
| Axial shaft displacement | + | + | + | n/a |
| Vertical shaft arrangement | –– | – | –– | ++ |
| Grease relubrication | + | + | n/a | ++ |
| Oil lubrication | –– | – | ++ | n/a |
| Replacement | – | – | – | ++ |
| Shaft tolerance class | h9Ⓔ | h9Ⓔ | h9Ⓔ | n/a |
| Shaft roughness $R_a$ [µm] | 3,2 | 3,2 | 3,2 | n/a |
| **Sealing suitability** | | | | |
| Dust | – | ++ | + | ++ |
| Fine particles | + | ++ | + | ++ |
| Coarse particles | + | ++ | + | ++ |
| Chips | ++ | ++ | ++ | ++ |
| Liquids when sprayed | –– | ++ | – | ++ |
| Direct sunlight | ++ | ++ | ++ | ++ |

Symbols: n/a not applicable, ++ very suitable, + suitable, – limited suitability, –– unsuitable

[1] The designation is valid for ordering spare parts. The oil seals are supplied together with the housing.

## Labyrinth seals

For applications where there are high speeds or extreme temperatures, SKF recommends using labyrinth seals. Labyrinth rings, mounted on the shaft, form a multi-stage labyrinth seal with the housing seal grooves. A hollow, silicone rubber cord, supplied with the ring, holds the ring in place on the shaft.

## Taconite heavy-duty seals

For shaft-bearing combinations that must operate under highly contaminated conditions, such as those encountered in mining, taconite heavy-duty seals, which can be filled with grease, are recommended. Grease enhances the sealing effect and extends the service life of the seals.

Taconite heavy-duty seals are labyrinth seals combined with a V-ring seal. The inner ring of the labyrinth seal is solid but the outer ring is split. They can be relubricated via a grease fitting in the main body of the seal.

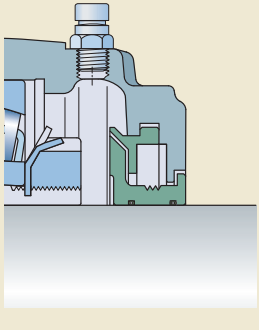
The axial movement of the shaft relative to the housing is limited to ± 2 mm for shaft diameters up to 200 mm and ± 4 mm for larger shaft diameters.

## Seals for oil lubrication

Seals for oil bath and circulating oil lubrication systems require a modified housing, and are therefore supplied together with the housing (→ **fig 8**).

Fig. 8

**Housing for oil lubrication**



The oil seals consist of a stationary part, which is fitted in the housing, and a labyrinth ring that rotates with the shaft. The labyrinth ring is held in place by two hollow silicone rubber cords, which also help to prevent oil leakage.

SNL housings with oil seals are identified by the designation suffix TURT for spherical roller bearings and TURA for CARB toroidal roller bearings. The seal by itself is designated TSD .. U.

SNL housings for inch shafts can also be used for oil lubrication. For additional information, contact the SKF application engineering service.

## End covers

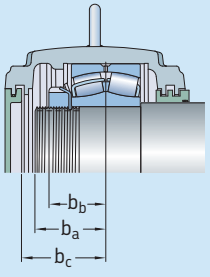
Housings at the end of a shaft should have an end cover that fits into the seal groove in the housing.

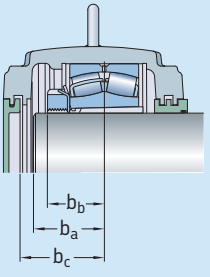
End covers, which are made of grey cast iron, are installed with a hollow, silicone rubber cord that holds the cover in place. End covers are available in two variants, one for grease lubrication and one for oil lubrication.

Details of the permissible length of the shaft end are listed in **table 2** on **page 199**.

Table 2

**Permissible length of a shaft end**




| Housing Size | Bearing | Dimensions $b_a$ min | $b_a$ max[1] | $b_b$ | $b_c$ |
|---|---|---|---|---|---|
| – | – | 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 |

| Housing Size | Bearing | Dimensions $b_a$ min | $b_a$ max[1] | $b_b$ | $b_c$ |
|---|---|---|---|---|---|
| – | – | mm | | | |
| **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 |
| **SNL 3234** | 23234 | 78 | 112 | 73 | 117,5 |
| **SNL 3236** | 23236 | 91 | 112 | 86 | 117,5 |
| **SNL 3238** | 23238 | 96 | 122 | 91 | 127,5 |
| **SNL 3240** | 23240 | 101 | 128 | 96 | 133,5 |
| **SNL 3244** | 23244 | 112 | 136 | 107 | 141,5 |
| **SNL 3248** | 23248 | 122 | 146 | 117 | 151,5 |
| **SNL 3252** | 23252 | 131 | 170 | 126 | 175,5 |
| **SNL 3256** | 23256 | 134 | 170 | 129 | 175,5 |
| **SNL 3260** | 23260 | 154 | 181 | 149 | 186,5 |
| **SNL 3264** | 23264 | 165 | 197 | 160 | 202,5 |
| **SNL 3268** | 23268 | 189 | 203 | 184 | 208,5 |
| **SNL 3272** | 23272 | 196 | 218 | 191 | 223,5 |
| **SNL 3276** | 23276 | 202 | 238 | 197 | 243,5 |
| **SNL 3280** | 23280 | 215 | 238 | 210 | 243,5 |
| **SNL 3284** | 23284 | 231 | 243 | 226 | 248,5 |
| **SNL 3288** | 23288 | 235 | 243 | 230 | 248,5 |

[1] For non-locating bearing arrangements, the values for $b_a$ must be adjusted if the bearing is not centred in the housing seat.

# Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**).

SNL housing seals in the 30, 31 and 32 series can be used together with sealed, self-aligning SKF bearings. When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting.

# Special seals

In addition to the standard seal assortment, SNL housings in the 30, 31 and 32 series are also available with seals for large axial movements. Custom seals for special applications are also available on request.

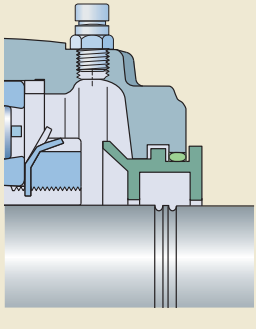
## Seals for large axial movements

Large SNL housings are available with seals that can accommodate large axial movements, a typical requirement of drying cylinders and felt rolls in paper machines. The double labyrinth seals are designed for circulating oil lubrication systems. The seals are fitted in a modified housing, designation suffix TURP, and are always supplied together with the housing.

SNL ... TURP housings are suitable for spherical roller and CARB toroidal roller bearings in the 30 and 31 dimension series from size 3036 to 30/530 and 3134 to 3196.

Fig. 9

**Seal for large axial movements**



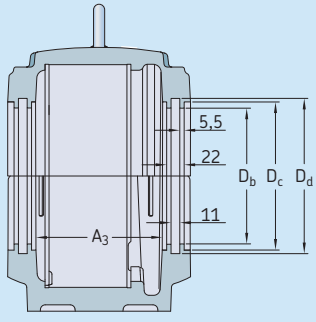
## Custom seals

SNL housings in the 30, 31 and 32 series can be equipped with any type of seal that fits the seal groove dimensions in the housing. The relevant dimensions are provided in **tables 3** and **4** on **pages 201** and **202**.

If custom seals are to be used, SKF recommends ordering housings in the SNL .. G series. Housings in the SNL .. G series have larger bores at the front and back of the housing and can accommodate a wider choice of seal designs.

Table 3

**Seal groove dimensions**

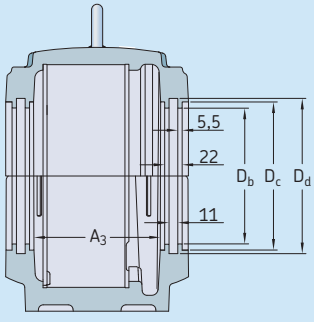



| Housing Size | Dimensions $A_3$ | $D_b$ | $D_c$ | $D_d$ |
|---|---|---|---|---|
| – | mm | | | |
| **SNL 3036** | 158 | 181,2 | 196,4 | 205,2 |
| **SNL 3038** | 168 | 191,4 | 206,4 | 215,4 |
| **SNL 3040** | 186 | 201,4 | 216,4 | 225,4 |
| **SNL 3044** | 206 | 221,4 | 236,4 | 245,4 |
| **SNL 3048** | 214 | 241,4 | 256,4 | 265,4 |
| **SNL 3052** | 231 | 261,6 | 276,6 | 285,6 |
| **SNL 3056** | 249 | 281,6 | 296,6 | 305,6 |
| **SNL 3060** | 249 | 301,6 | 316,6 | 325,6 |
| **SNL 3064** | 279 | 321,8 | 336,8 | 345,8 |
| **SNL 3068** | 299 | 342,4 | 357,4 | 366,4 |
| **SNL 3072** | 297 | 362,4 | 377,4 | 386,4 |
| **SNL 3076** | 328 | 382,4 | 397,4 | 406,4 |
| **SNL 3080** | 328 | 402,8 | 417,8 | 426,8 |
| **SNL 3084** | 328 | 422,8 | 437,8 | 446,8 |
| **SNL 3088** | 358 | 442,8 | 457,8 | 466,8 |
| **SNL 3092** | 388 | 463 | 478 | 487 |
| **SNL 3096** | 388 | 483 | 498 | 507 |
| **SNL 30/500** | 388 | 503 | 518 | 527 |
| **SNL 30/530** | 398 | 533 | 548 | 557 |
| **SNL 3134** | 159 | 171,2 | 186,4 | 195,2 |
| **SNL 3136** | 169 | 181,2 | 196,4 | 205,2 |
| **SNL 3138** | 187 | 191,4 | 206,4 | 215,4 |
| **SNL 3140** | 207 | 201,4 | 216,4 | 225,4 |
| **SNL 3144** | 215 | 221,4 | 236,4 | 245,4 |
| **SNL 3148** | 231 | 241,4 | 256,4 | 265,4 |
| **SNL 3152** | 249 | 261,6 | 276,6 | 285,6 |
| **SNL 3156** | 249 | 281,6 | 296,6 | 305,6 |
| **SNL 3160** | 280 | 301,6 | 316,8 | 325,6 |
| **SNL 3164** | 300 | 321,8 | 336,8 | 345,8 |
| **SNL 3168** | 328 | 342,4 | 357,4 | 366,4 |
| **SNL 3172** | 328 | 362,4 | 377,4 | 386,4 |

| Housing Size | Dimensions $A_3$ | $D_b$ | $D_c$ | $D_d$ |
|---|---|---|---|---|
| – | mm | | | |
| **SNL 3176** | 328 | 382,4 | 397,4 | 406,4 |
| **SNL 3180** | 358 | 402,8 | 417,8 | 426,8 |
| **SNL 3184** | 388 | 422,8 | 437,8 | 446,8 |
| **SNL 3188** | 388 | 442,8 | 457,8 | 466,8 |
| **SNL 3192** | 398 | 463 | 478 | 487 |
| **SNL 3196** | 398 | 483 | 498 | 507 |
| **SNL 3234** | 186 | 201,4 | 216,4 | 225,4 |
| **SNL 3236** | 187 | 191,4 | 206,4 | 215,4 |
| **SNL 3238** | 207 | 201,4 | 216,4 | 225,4 |
| **SNL 3240** | 214 | 241,4 | 256,4 | 265,4 |
| **SNL 3244** | 231 | 241,4 | 256,4 | 265,4 |
| **SNL 3248** | 249 | 261,6 | 276,6 | 285,6 |
| **SNL 3252** | 279 | 321,8 | 336,8 | 345,8 |
| **SNL 3256** | 280 | 301,6 | 316,8 | 325,6 |
| **SNL 3260** | 300 | 321,8 | 336,8 | 345,8 |
| **SNL 3264** | 328 | 342,4 | 357,4 | 366,4 |
| **SNL 3268** | 328 | 382,4 | 397,4 | 406,4 |
| **SNL 3272** | 358 | 402,8 | 417,8 | 426,8 |
| **SNL 3276** | 388 | 463 | 478 | 487 |
| **SNL 3280** | 388 | 442,8 | 457,8 | 466,8 |
| **SNL 3284** | 398 | 463 | 478 | 487 |
| **SNL 3288** | 398 | 483 | 498 | 507 |

Table 4

**Seal groove dimensions for SNL .. G housings**




| Housing Size | Dimensions $A_3$ | $D_b$ | $D_c$ | $D_d$ |
|---|---|---|---|---|
| – | mm | | | |
| **SNL 3036 G** | 156 | 221,4 | 236,4 | 245,4 |
| **SNL 3038 G** | 166 | 221,4 | 236,4 | 245,4 |
| **SNL 3040 G** | 184 | 241,4 | 256,4 | 265,4 |
| **SNL 3044 G** | 203 | 261,6 | 276,6 | 285,6 |
| **SNL 3048 G** | 211 | 281,6 | 296,6 | 305,6 |
| **SNL 3052 G** | 228 | 301,6 | 316,8 | 325,6 |
| **SNL 3056 G** | 247 | 321,8 | 336,8 | 345,8 |
| **SNL 3060 G** | 247 | 342,4 | 357,4 | 366,4 |
| **SNL 3064 G** | 277 | 362,4 | 377,4 | 386,4 |
| **SNL 3068 G** | 295 | 382,4 | 397,4 | 406,4 |
| **SNL 3072 G** | 293 | 402,8 | 417,8 | 426,8 |
| **SNL 3076 G** | 325 | 422,8 | 437,8 | 446,8 |
| **SNL 3080 G** | 325 | 463 | 478 | 487 |
| **SNL 3084 G** | 325 | 483 | 498 | 507 |
| **SNL 3088 G** | 354 | 503 | 518 | 527 |
| **SNL 3092 G** | 384 | 533 | 548 | 557 |
| **SNL 3096 G** | 384 | 533 | 548 | 557 |
| **SNL 30/500 G** | 384 | 563 | 578 | 587 |
| **SNL 30/530 G** | 392 | 603 | 618 | 627 |
| **SNL 3134 G** | 157 | 201,4 | 216,4 | 225,4 |
| **SNL 3136 G** | 166 | 221,4 | 236,4 | 245,4 |
| **SNL 3138 G** | 185 | 221,4 | 236,4 | 245,4 |
| **SNL 3140 G** | 204 | 241,4 | 256,4 | 265,4 |
| **SNL 3144 G** | 213 | 261,6 | 276,6 | 285,6 |
| **SNL 3148 G** | 230 | 281,6 | 296,6 | 305,6 |
| **SNL 3152 G** | 248 | 301,6 | 316,8 | 325,6 |
| **SNL 3156 G** | 248 | 321,8 | 336,8 | 345,8 |
| **SNL 3160 G** | 278 | 342,4 | 357,4 | 366,4 |
| **SNL 3164 G** | 297 | 362,4 | 377,4 | 386,4 |
| **SNL 3168 G** | 325 | 382,4 | 397,4 | 406,4 |
| **SNL 3172 G** | 325 | 402,8 | 417,8 | 426,8 |

| Housing Size | Dimensions $A_3$ | $D_b$ | $D_c$ | $D_d$ |
|---|---|---|---|---|
| – | mm | | | |
| **SNL 3176 G** | 325 | 422,8 | 437,8 | 446,8 |
| **SNL 3180 G** | 354 | 463 | 478 | 487 |
| **SNL 3184 G** | 384 | 483 | 498 | 507 |
| **SNL 3188 G** | 384 | 503 | 518 | 527 |
| **SNL 3192 G** | 395 | 533 | 548 | 557 |
| **SNL 3196 G** | 394 | 563 | 578 | 587 |
| **SNL 3234 G** | 186 | 201,4 | 216,4 | 225,4 |
| **SNL 3236 G** | 185 | 221,4 | 236,4 | 245,4 |
| **SNL 3238 G** | 204 | 241,4 | 256,4 | 265,4 |
| **SNL 3240 G** | 214 | 241,4 | 256,4 | 265,4 |
| **SNL 3244 G** | 230 | 281,6 | 296,6 | 305,6 |
| **SNL 3248 G** | 248 | 301,6 | 316,8 | 325,6 |
| **SNL 3252 G** | 279 | 321,8 | 336,8 | 345,8 |
| **SNL 3256 G** | 278 | 341,8 | 356,8 | 365,8 |
| **SNL 3260 G** | 297 | 361,8 | 376,8 | 385,8 |
| **SNL 3264 G** | 325 | 382,4 | 397,4 | 406,4 |
| **SNL 3268 G** | 328 | 382,4 | 397,4 | 406,4 |
| **SNL 3272 G** | 358 | 402,8 | 417,8 | 426,8 |
| **SNL 3276 G** | 387 | 463 | 478 | 487 |
| **SNL 3280 G** | 386 | 503 | 518 | 527 |
| **SNL 3284 G** | 393 | 533 | 548 | 557 |
| **SNL 3288 G** | 392 | 563 | 578 | 587 |

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

SNL housings in the 30, 31 and 32 series can accommodate different shaft-bearing combinations (→ **fig. 10**):

- plain shaft with bearing on an adapter sleeve
- stepped shaft with bearing on a cylindrical seat
- stepped shaft with bearing on a withdrawal sleeve

**Plain shaft with bearing on an adapter sleeve**

Housings, appropriate parts and dimensions are listed in **product tables 5.1** and **5.2**, starting on **pages 222** and **260** respectively.

**Stepped shaft with bearing on a cylindrical seat**

Housings, appropriate parts and dimensions are listed in **product table 5.3**, starting on **page 302**.

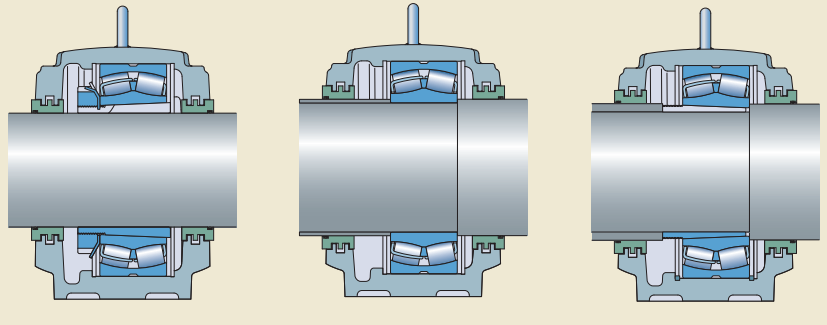
The bearing is located axially between a shaft shoulder and a spacer sleeve, which is held in place by another component on the shaft. The outside diameter of the sleeve must match the bore diameter of the seal. The sleeve is not supplied by SKF.

**Stepped shaft with bearing on a withdrawal sleeve**

When using an SNL housing for this arrangement, the withdrawal sleeve must be located axially on the shaft. This can be done using a spacer sleeve that is held in place by another component. Using a lock nut can be difficult because of the limited space in the housing. The outside diameter of the spacer sleeve must match the bore diameter of the seal. The spacer sleeve is not supplied by SKF.



**Fig. 10**



Plain shaft with bearing on an adapter sleeve

Stepped shaft with bearing on a cylindrical seat

Stepped shaft with bearing on a withdrawal sleeve

## Locating and non-locating bearing positions

SNL housings can be used for both the locating and non-locating bearing positions.

For smaller sizes, the housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing on both sides with locating rings. Appropriate locating rings are listed in the product tables.

Housings from sizes 3076, 3168 and 3264 upwards are supplied in two designs:

- Housings with the suffix F have a bearing seat that matches the bearing width. These housings should be used for spherical roller bearings in the locating position and CARB toroidal roller bearings.
- Housings with the suffix L have a bearing seat that is wider than the bearing. These housings should be used for spherical roller bearings in the non-locating position. The possible axial displacement is at least 20 mm.

## Load carrying capacity

SNL housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing. If loads acting in other directions occur, or if the housing is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing, the cap bolts and the attachment bolts. When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

### Breaking loads and safety factors

Guideline values for the breaking loads P for housings made of grey cast iron are listed in **table 5** on **page 205**.

To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**).

The permissible load can only be exploited if the cap bolts are tightened at least to the torque values listed in **table 7** on **page 210**.

The limits for $P_{0°}$ apply only when the housing is not supported over its entire base.

The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

For housings made of spheroidal graphite cast iron, the values obtained from **tables 5** and **6** should be multiplied by a factor of 1,8.

### Safe loads

In some countries, safe loads are used instead of breaking loads. Approximate safe loads are listed in **table 6** on **page 207**. These guideline values have been established using accepted engineering practices, taking safety, ultimate tensile strength of the materials and working stresses into account. They reflect a safety factor of 5 against fracture, and a minimum factor of 2 against cap bolt yield.

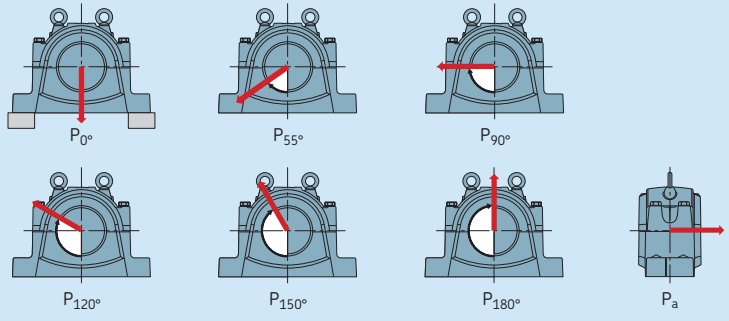
### Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load. When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 6** on **page 207**), the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 11** on **page 219**.

**Table 5**

**Breaking loads for large SNL plummer block housings made of grey cast iron**

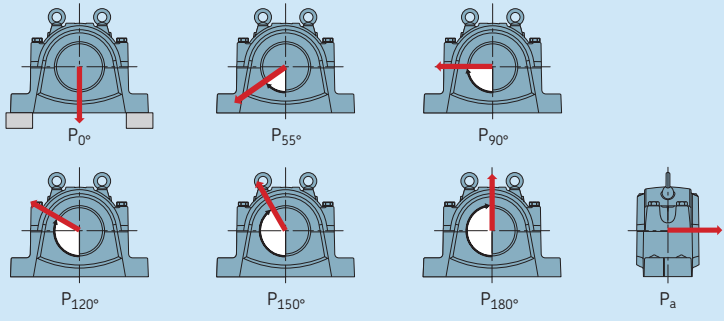



| Housing Size | Breaking loads $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|
| – | kN | | | | | | |
| **SNL 3036** | 1 700 | 2 100 | 1 000 | 760 | 680 | 850 | 550 |
| **SNL 3038** | 1 900 | 2 400 | 1 150 | 850 | 760 | 950 | 620 |
| **SNL 3040** | 2 200 | 2 700 | 1 300 | 1 000 | 880 | 1 100 | 710 |
| **SNL 3044** | 2 600 | 3 200 | 1 600 | 1 100 | 1 000 | 1 300 | 840 |
| **SNL 3048** | 3 100 | 4 000 | 1 900 | 1 400 | 1 300 | 1 600 | 1 000 |
| **SNL 3052** | 3 400 | 4 200 | 2 000 | 1 500 | 1 400 | 1 700 | 1 100 |
| **SNL 3056** | 3 800 | 4 700 | 2 300 | 1 700 | 1 500 | 1 900 | 1 200 |
| **SNL 3060** | 4 000 | 5 000 | 2 400 | 1 800 | 1 600 | 2 000 | 1 300 |
| **SNL 3064** | 4 800 | 6 000 | 2 900 | 2 200 | 1 900 | 2 400 | 1 500 |
| **SNL 3068** | 5 400 | 7 000 | 3 400 | 2 500 | 2 200 | 2 800 | 1 800 |
| **SNL 3072** | 5 400 | 7 000 | 3 400 | 2 500 | 2 200 | 2 800 | 1 800 |
| **SNL 3076** | 6 000 | 7 500 | 3 600 | 2 600 | 2 300 | 3 000 | 1 900 |
| **SNL 3080** | 6 000 | 7 700 | 3 600 | 2 700 | 2 400 | 3 000 | 2 000 |
| **SNL 3084** | 6 100 | 8 000 | 3 900 | 2 900 | 2 500 | 3 200 | 2 100 |
| **SNL 3088** | 7 000 | 8 700 | 4 200 | 3 100 | 2 700 | 3 500 | 2 200 |
| **SNL 3092** | 7 600 | 9 600 | 4 600 | 3 400 | 3 000 | 3 800 | 2 400 |
| **SNL 3096** | 7 600 | 9 600 | 4 600 | 3 400 | 3 000 | 3 800 | 2 400 |
| **SNL 30/500** | 8 000 | 10 000 | 4 800 | 3 600 | 3 100 | 4 000 | 2 500 |
| **SNL 30/530** | 8 000 | 11 200 | 5 400 | 4 000 | 3 500 | 4 400 | 2 800 |
| **SNL 3134** | 1 700 | 2 100 | 1 000 | 760 | 680 | 850 | 550 |
| **SNL 3136** | 1 900 | 2 400 | 1 150 | 850 | 760 | 950 | 620 |
| **SNL 3138** | 2 200 | 2 700 | 1 300 | 1 000 | 880 | 1 100 | 710 |
| **SNL 3140** | 2 600 | 3 200 | 1 600 | 1 100 | 1 000 | 1 300 | 840 |
| **SNL 3144** | 3 100 | 4 000 | 1 900 | 1 400 | 1 300 | 1 600 | 1 000 |
| **SNL 3148** | 3 400 | 4 200 | 2 000 | 1 500 | 1 400 | 1 700 | 1 100 |
| **SNL 3152** | 3 800 | 4 700 | 2 300 | 1 700 | 1 500 | 1 900 | 1 200 |
| **SNL 3156** | 4 000 | 5 000 | 2 400 | 1 800 | 1 600 | 2 000 | 1 300 |
| **SNL 3160** | 4 800 | 6 000 | 2 900 | 2 200 | 1 900 | 2 400 | 1 500 |
| **SNL 3164** | 5 400 | 7 000 | 3 400 | 2 500 | 2 200 | 2 800 | 1 800 |
| **SNL 3168** | 6 000 | 7 500 | 3 600 | 2 600 | 2 300 | 3 000 | 1 900 |
| **SNL 3172** | 6 000 | 7 700 | 3 600 | 2 700 | 2 400 | 3 000 | 2 000 |

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cont. Table 5

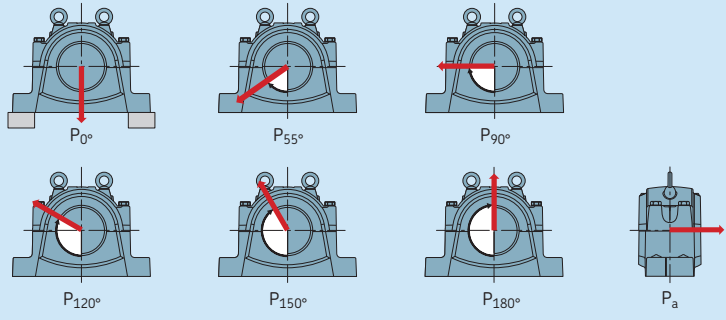
**Breaking loads for large SNL plummer block housings made of grey cast iron**




| Housing Size | Breaking loads $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|
| – | kN | | | | | | |
| **SNL 3176** | 6 100 | 8 000 | 3 900 | 2 900 | 2 500 | 3 200 | 2 100 |
| **SNL 3180** | 7 000 | 8 700 | 4 200 | 3 100 | 2 700 | 3 500 | 2 200 |
| **SNL 3184** | 7 600 | 9 600 | 4 600 | 3 400 | 3 000 | 3 800 | 2 400 |
| **SNL 3188** | 8 000 | 10 000 | 4 800 | 3 600 | 3 100 | 4 000 | 2 500 |
| **SNL 3192** | 8 400 | 10 700 | 5 200 | 3 800 | 3 300 | 4 200 | 2 700 |
| **SNL 3196** | 8 800 | 11 200 | 5 400 | 4 000 | 3 500 | 4 400 | 2 800 |
| **SNL 3234** | 2 200 | 2 700 | 1 300 | 1 000 | 880 | 1 100 | 710 |
| **SNL 3236** | 2 200 | 2 700 | 1 300 | 1 000 | 880 | 1 100 | 710 |
| **SNL 3238** | 2 600 | 3 200 | 1 600 | 1 100 | 1 000 | 1 300 | 840 |
| **SNL 3240** | 3 100 | 4 000 | 1 900 | 1 400 | 1 300 | 1 600 | 1 000 |
| **SNL 3244** | 3 400 | 4 200 | 2 000 | 1 500 | 1 400 | 1 700 | 650 |
| **SNL 3248** | 3 800 | 4 700 | 2 300 | 1 700 | 1 500 | 1 900 | 670 |
| **SNL 3252** | 4 800 | 6 000 | 2 900 | 2 200 | 1 900 | 2 400 | 1 150 |
| **SNL 3256** | 4 800 | 6 000 | 2 900 | 2 200 | 1 900 | 2 400 | 1 200 |
| **SNL 3260** | 5 400 | 7 000 | 3 400 | 2 500 | 2 200 | 2 800 | 1 600 |
| **SNL 3264** | 6 000 | 7 500 | 3 600 | 2 600 | 2 300 | 3 000 | 1 450 |
| **SNL 3268** | 6 100 | 8 000 | 3 900 | 2 900 | 2 500 | 3 200 | 1 850 |
| **SNL 3272** | 7 000 | 8 700 | 4 200 | 3 100 | 2 700 | 3 500 | 1 600 |
| **SNL 3276** | 7 600 | 9 600 | 4 600 | 3 400 | 3 000 | 3 800 | 2 100 |
| **SNL 3280** | 8 000 | 10 000 | 4 800 | 3 600 | 3 100 | 4 000 | 2 400 |
| **SNL 3284** | 8 400 | 10 700 | 5 200 | 3 800 | 3 300 | 4 200 | 2 600 |
| **SNL 3288** | 8 800 | 11 200 | 5 400 | 4 000 | 3 500 | 4 400 | 2 700 |

**Table 6**

**Safe loads for large SNL plummer block housings made of grey cast iron**



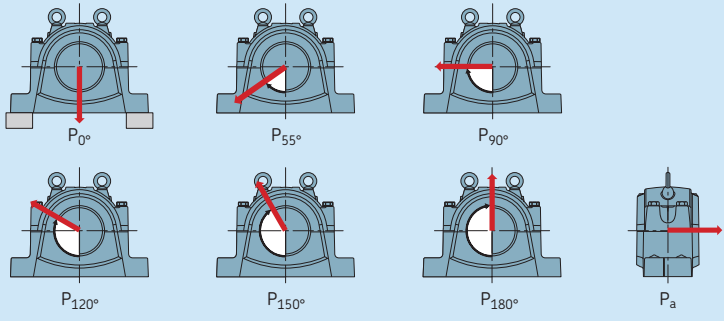

| Housing Size | Safe loads[1] $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|
| – | kN / *lbf.* | | | | | | |
| **SNL 3036** | 340 | 420 | 200 | 152 | 136 | 170 | 110 |
| | *76 500* | *94 500* | *45 000* | *34 200* | *30 600* | *38 250* | *24 750* |
| **SNL 3038** | 380 | 480 | 230 | 170 | 152 | 190 | 124 |
| | *85 500* | *108 000* | *51 750* | *38 250* | *34 200* | *42 750* | *27 900* |
| **SNL 3040** | 440 | 540 | 260 | 200 | 176 | 220 | 142 |
| | *99 000* | *121 500* | *58 500* | *45 000* | *39 600* | *49 500* | *31 950* |
| **SNL 3044** | 520 | 640 | 320 | 220 | 200 | 260 | 168 |
| | *117 000* | *144 000* | *72 000* | *49 500* | *45 000* | *58 500* | *37 800* |
| **SNL 3048** | 620 | 800 | 380 | 280 | 260 | 320 | 200 |
| | *139 500* | *180 000* | *85 500* | *63 000* | *58 500* | *72 000* | *45 000* |
| **SNL 3052** | 680 | 840 | 400 | 300 | 280 | 340 | 220 |
| | *153 000* | *189 000* | *90 000* | *67 500* | *63 000* | *76 500* | *49 500* |
| **SNL 3056** | 760 | 940 | 460 | 340 | 300 | 380 | 240 |
| | *171 000* | *211 500* | *103 500* | *76 500* | *67 500* | *85 500* | *54 000* |
| **SNL 3060** | 800 | 1 000 | 480 | 360 | 320 | 400 | 260 |
| | *180 000* | *225 000* | *108 000* | *81 000* | *72 000* | *90 000* | *58 500* |
| **SNL 3064** | 960 | 1 200 | 580 | 440 | 380 | 480 | 300 |
| | *216 000* | *270 000* | *130 500* | *99 000* | *85 500* | *108 000* | *67 500* |
| **SNL 3068** | 1 080 | 1 400 | 680 | 500 | 440 | 560 | 360 |
| | *243 000* | *315 000* | *153 000* | *112 500* | *99 000* | *126 000* | *81 000* |
| **SNL 3072** | 1 080 | 1 080 | 680 | 500 | 440 | 560 | 360 |
| | *243 000* | *243 000* | *153 000* | *112 500* | *99 000* | *126 000* | *81 000* |
| **SNL 3076** | 1 200 | 1 500 | 720 | 520 | 460 | 600 | 380 |
| | *270 000* | *337 500* | *162 000* | *117 000* | *103 500* | *135 000* | *85 500* |
| **SNL 3080** | 1 200 | 1 540 | 720 | 540 | 480 | 600 | 400 |
| | *270 000* | *346 500* | *162 000* | *121 500* | *108 000* | *135 000* | *90 000* |
| **SNL 3084** | 1 220 | 1 600 | 780 | 580 | 500 | 640 | 420 |
| | *274 500* | *360 000* | *175 500* | *130 500* | *112 500* | *144 000* | *94 500* |
| **SNL 3088** | 1 400 | 1 740 | 840 | 620 | 540 | 700 | 440 |
| | *315 000* | *391 500* | *189 000* | *139 500* | *121 500* | *157 500* | *99 000* |
| **SNL 3092** | 1 520 | 1 920 | 920 | 680 | 600 | 760 | 480 |
| | *342 000* | *432 000* | *207 000* | *153 000* | *135 000* | *171 000* | *108 000* |
| **SNL 3096** | 1 520 | 1 920 | 920 | 680 | 600 | 760 | 480 |
| | *342 000* | *432 000* | *207 000* | *153 000* | *135 000* | *171 000* | *108 000* |
| **SNL 30/500** | 1 600 | 2 000 | 960 | 720 | 620 | 800 | 500 |
| | *360 000* | *450 000* | *216 000* | *162 000* | *139 500* | *180 000* | *112 500* |
| **SNL 30/530** | 1 760 | 2 240 | 1 080 | 800 | 700 | 880 | 560 |
| | *396 000* | *504 000* | *243 000* | *180 000* | *157 500* | *198 000* | *126 000* |

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[1] The values are based on a safety factor of 5.

cont. Table 6

**Safe loads for large SNL plummer block housings made of grey cast iron**



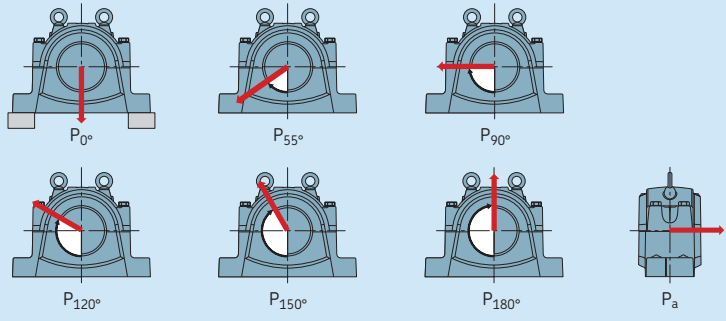

| Housing Size | Safe loads[1] $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|
| – | kN / *lbf.* | | | | | | |
| **SNL 3134** | 340 | 420 | 200 | 152 | 136 | 170 | 110 |
| | *76 500* | *94 500* | *45 000* | *34 200* | *30 600* | *38 250* | *24 750* |
| **SNL 3136** | 380 | 480 | 230 | 170 | 152 | 190 | 124 |
| | *85 500* | *108 000* | *51 750* | *38 250* | *34 200* | *42 750* | *27 900* |
| **SNL 3138** | 440 | 540 | 260 | 200 | 176 | 220 | 142 |
| | *99 000* | *121 500* | *58 500* | *45 000* | *39 600* | *49 500* | *31 950* |
| **SNL 3140** | 520 | 640 | 320 | 220 | 200 | 260 | 168 |
| | *117 000* | *144 000* | *72 000* | *49 500* | *45 000* | *58 500* | *37 800* |
| **SNL 3144** | 620 | 800 | 380 | 280 | 260 | 320 | 200 |
| | *139 500* | *180 000* | *85 500* | *63 000* | *58 500* | *72 000* | *45 000* |
| **SNL 3148** | 680 | 840 | 400 | 300 | 280 | 340 | 220 |
| | *153 000* | *189 000* | *90 000* | *67 500* | *63 000* | *76 500* | *49 500* |
| **SNL 3152** | 760 | 940 | 460 | 340 | 300 | 380 | 240 |
| | *171 000* | *211 500* | *103 500* | *76 500* | *67 500* | *85 500* | *54 000* |
| **SNL 3156** | 800 | 1 000 | 480 | 360 | 320 | 400 | 260 |
| | *180 000* | *225 000* | *108 000* | *81 000* | *72 000* | *90 000* | *58 500* |
| **SNL 3160** | 960 | 1 200 | 580 | 440 | 380 | 480 | 300 |
| | *216 000* | *270 000* | *130 500* | *99 000* | *85 500* | *108 000* | *67 500* |
| **SNL 3164** | 1 080 | 1 400 | 680 | 500 | 440 | 560 | 360 |
| | *243 000* | *315 000* | *153 000* | *112 500* | *99 000* | *126 000* | *81 000* |
| **SNL 3168** | 1 200 | 1 500 | 720 | 520 | 460 | 600 | 380 |
| | *270 000* | *337 500* | *162 000* | *117 000* | *103 500* | *135 000* | *85 500* |
| **SNL 3172** | 1 200 | 1 540 | 720 | 540 | 480 | 600 | 400 |
| | *270 000* | *346 500* | *162 000* | *121 500* | *108 000* | *135 000* | *90 000* |
| **SNL 3176** | 1 220 | 1 600 | 780 | 580 | 500 | 640 | 420 |
| | *274 500* | *360 000* | *175 500* | *130 500* | *112 500* | *144 000* | *94 500* |
| **SNL 3180** | 1 400 | 1 740 | 840 | 620 | 540 | 700 | 440 |
| | *315 000* | *391 500* | *189 000* | *139 500* | *121 500* | *157 500* | *99 000* |
| **SNL 3184** | 1 520 | 1 920 | 920 | 680 | 600 | 760 | 480 |
| | *342 000* | *432 000* | *207 000* | *153 000* | *135 000* | *171 000* | *108 000* |
| **SNL 3188** | 1 600 | 2 000 | 960 | 720 | 620 | 800 | 500 |
| | *360 000* | *450 000* | *216 000* | *162 000* | *139 500* | *180 000* | *112 500* |
| **SNL 3192** | 1 680 | 2 140 | 1 040 | 760 | 660 | 840 | 540 |
| | *378 000* | *481 500* | *234 000* | *171 000* | *148 500* | *189 000* | *121 500* |
| **SNL 3196** | 1 760 | 2 240 | 1 080 | 800 | 700 | 880 | 560 |
| | *396 000* | *504 000* | *243 000* | *180 000* | *157 500* | *198 000* | *126 000* |

continues on next page

[1] The values are based on a safety factor of 5.

cont. Table 6

**Safe loads for large SNL plummer block housings made of grey cast iron**




| Housing Size | Safe loads[1] $P_{0°}$ | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|
| – | kN / *lbf.* | | | | | | |
| **SNL 3234** | 440 | 540 | 260 | 200 | 176 | 220 | 142 |
| | *99 000* | *121 500* | *58 500* | *45 000* | *39 600* | *49 500* | *31 950* |
| **SNL 3236** | 440 | 540 | 260 | 200 | 176 | 220 | 142 |
| | *99 000* | *121 500* | *58 500* | *45 000* | *39 600* | *49 500* | *31 950* |
| **SNL 3238** | 520 | 640 | 320 | 220 | 200 | 260 | 168 |
| | *117 000* | *144 000* | *72 000* | *49 500* | *45 000* | *58 500* | *37 800* |
| **SNL 3240** | 620 | 800 | 380 | 280 | 260 | 320 | 200 |
| | *139 500* | *180 000* | *85 500* | *63 000* | *58 500* | *72 000* | *45 000* |
| **SNL 3244** | 680 | 840 | 400 | 300 | 280 | 340 | 130 |
| | *153 000* | *189 000* | *90 000* | *67 500* | *63 000* | *76 500* | *29 250* |
| **SNL 3248** | 760 | 940 | 460 | 340 | 300 | 380 | 134 |
| | *171 000* | *211 500* | *103 500* | *76 500* | *67 500* | *85 500* | *30 150* |
| **SNL 3252** | 960 | 1 200 | 580 | 440 | 380 | 480 | 230 |
| | *216 000* | *270 000* | *130 500* | *99 000* | *85 500* | *108 000* | *51 750* |
| **SNL 3256** | 960 | 1 200 | 580 | 440 | 380 | 480 | 240 |
| | *216 000* | *270 000* | *130 500* | *99 000* | *85 500* | *108 000* | *54 000* |
| **SNL 3260** | 1 080 | 1 400 | 680 | 500 | 440 | 560 | 320 |
| | *243 000* | *315 000* | *153 000* | *112 500* | *99 000* | *126 000* | *72 000* |
| **SNL 3264** | 1 200 | 1 500 | 720 | 520 | 460 | 600 | 290 |
| | *270 000* | *337 500* | *162 000* | *117 000* | *103 500* | *135 000* | *65 250* |
| **SNL 3268** | 1 220 | 1 600 | 780 | 580 | 500 | 640 | 370 |
| | *274 500* | *360 000* | *175 500* | *130 500* | *112 500* | *144 000* | *83 250* |
| **SNL 3272** | 1 400 | 1 740 | 840 | 620 | 540 | 700 | 320 |
| | *315 000* | *391 500* | *189 000* | *139 500* | *121 500* | *157 500* | *72 000* |
| **SNL 3276** | 1 520 | 1 920 | 920 | 680 | 600 | 760 | 420 |
| | *342 000* | *432 000* | *207 000* | *153 000* | *135 000* | *171 000* | *94 500* |
| **SNL 3280** | 1 520 | 1 920 | 920 | 680 | 600 | 760 | 480 |
| | *342 000* | *432 000* | *207 000* | *153 000* | *135 000* | *171 000* | *108 000* |
| **SNL 3284** | 1 680 | 2 140 | 1 040 | 760 | 660 | 840 | 520 |
| | *378 000* | *481 500* | *234 000* | *171 000* | *148 500* | *189 000* | *117 000* |
| **SNL 3288** | 1 760 | 2 240 | 1 080 | 800 | 700 | 880 | 540 |
| | *396 000* | *504 000* | *243 000* | *180 000* | *157 500* | *198 000* | *121 500* |

[1] The values are based on a safety factor of 5.

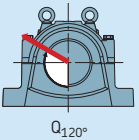
### Load carrying capacity of the cap bolts

Approximate values for the yield points for cap bolts are provided in **table 7**. The values in **table 7** apply to 8.8 strength cap bolts, which are supplied with SNL and SNLD housings.

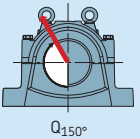
If a safety factor of 6 is used for the permissible load of grey cast iron SNL housings, the cap bolts do not need to be considered. In this case, the permissible load of the housing is less than the permissible load for the cap bolts.

**Table 7**

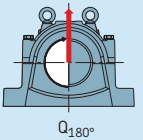
**Load carrying capacity and torque values for cap bolts and attachment bolts**



$Q_{120°}$



$Q_{150°}$



$Q_{180°}$

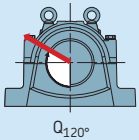
| Housing | Cap bolts | | | | | Attachment bolts | |
|---|---|---|---|---|---|---|---|
| Size | Yield point for four bolts $Q_{120°}$ | $Q_{150°}$ | $Q_{180°}$ | Size | Tightening torque | Size | Tightening torque[1] |
| – | kN | | | – | Nm | – | Nm |
| **SNL 3036** | 1 800 | 1 040 | 900 | M 24×140 | 350 | M 24 | 665 |
| **SNL 3038** | 1 800 | 1 040 | 900 | M 24×140 | 350 | M 24 | 665 |
| **SNL 3040** | 1 800 | 1 040 | 900 | M 24×150 | 350 | M 24 | 665 |
| **SNL 3044** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **SNL 3048** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **SNL 3052** | 2 860 | 1 650 | 1 430 | M 30×180 | 400 | M 30 | 1 310 |
| **SNL 3056** | 2 860 | 1 650 | 1 430 | M 30×200 | 400 | M 36 | 2 280 |
| **SNL 3060** | 2 860 | 1 650 | 1 430 | M 30×200 | 400 | M 36 | 2 280 |
| **SNL 3064** | 2 860 | 1 650 | 1 430 | M 30×220 | 400 | M 36 | 2 280 |
| **SNL 3068** | 2 860 | 1 650 | 1 430 | M 30×220 | 400 | M 36 | 2 280 |
| **SNL 3072** | 2 860 | 1 650 | 1 430 | M 30×220 | 400 | M 36 | 2 280 |
| **SNL 3076** | 4 200 | 2 400 | 2 100 | M 36×240 | 600 | M 36 | 2 280 |
| **SNL 3080** | 4 200 | 2 400 | 2 100 | M 36×240 | 600 | M 36 | 2 280 |
| **SNL 3084** | 4 200 | 2 400 | 2 100 | M 36×240 | 600 | M 36 | 2 280 |
| **SNL 3088** | 4 200 | 2 400 | 2 100 | M 36×240 | 600 | M 42 | 3 640 |
| **SNL 3092** | 5 800 | 3 350 | 2 900 | M 42×280 | 850 | M 42 | 3 640 |
| **SNL 3096** | 5 800 | 3 350 | 2 900 | M 42×280 | 850 | M 42 | 3 640 |
| **SNL 30/500** | 5 800 | 3 350 | 2 900 | M 42×280 | 850 | M 42 | 3 640 |
| **SNL 30/530** | 5 800 | 3 350 | 2 900 | M 42×320 | 850 | M 48 | 5 450 |
| **SNL 3134** | 1 800 | 1 040 | 900 | M 24×140 | 350 | M 24 | 665 |
| **SNL 3136** | 1 800 | 1 040 | 900 | M 24×140 | 350 | M 24 | 665 |
| **SNL 3138** | 1 800 | 1 040 | 900 | M 24×150 | 350 | M 24 | 665 |
| **SNL 3140** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **SNL 3144** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **SNL 3148** | 2 860 | 1 650 | 1 430 | M 30×180 | 400 | M 30 | 1 310 |

continues on next page

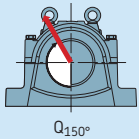
[1] Recommended by bolt manufacturers

cont. Table 7

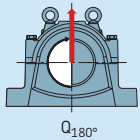
**Load carrying capacity and torque values for cap bolts and attachment bolts**



$Q_{120°}$



$Q_{150°}$



$Q_{180°}$

| **Housing** Size | **Cap bolts** Yield point for four bolts $Q_{120°}$ | $Q_{150°}$ | $Q_{180°}$ | Size | Tightening torque | **Attachment bolts** Size | Tightening torque[1] |
|---|---|---|---|---|---|---|---|
| – | kN | | | – | Nm | – | Nm |
| **SNL 3152** | 2 860 | 1 650 | 1 430 | M 30x200 | 400 | M 36 | 2 280 |
| **SNL 3156** | 2 860 | 1 650 | 1 430 | M 30x200 | 400 | M 36 | 2 280 |
| **SNL 3160** | 2 860 | 1 650 | 1 430 | M 30x220 | 400 | M 36 | 2 280 |
| **SNL 3164** | 2 860 | 1 650 | 1 430 | M 30x220 | 400 | M 36 | 2 280 |
| **SNL 3168** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 36 | 2 280 |
| **SNL 3172** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 36 | 2 280 |
| **SNL 3176** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 36 | 2 280 |
| **SNL 3180** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 42 | 3 640 |
| **SNL 3184** | 5 800 | 3 350 | 2 900 | M 42x280 | 850 | M 42 | 3 640 |
| **SNL 3188** | 5 800 | 3 350 | 2 900 | M 42x280 | 850 | M 42 | 3 640 |
| **SNL 3192** | 5 800 | 3 350 | 2 900 | M 42x300 | 850 | M 42 | 3 640 |
| **SNL 3196** | 5 800 | 3 350 | 2 900 | M 42x320 | 850 | M 48 | 5 450 |
| **SNL 3234** | 1 800 | 1 040 | 900 | M 24x150 | 350 | M 24 | 665 |
| **SNL 3236** | 1 800 | 1 040 | 900 | M 24x150 | 350 | M 24 | 665 |
| **SNL 3238** | 1 800 | 1 040 | 900 | M 24x160 | 350 | M 30 | 1 310 |
| **SNL 3240** | 1 800 | 1 040 | 900 | M 24x160 | 350 | M 30 | 1 310 |
| **SNL 3244** | 2 860 | 1 650 | 1 430 | M 30x180 | 400 | M 30 | 1 310 |
| **SNL 3248** | 2 860 | 1 650 | 1 430 | M 30x200 | 400 | M 36 | 2 280 |
| **SNL 3252** | 2 860 | 1 650 | 1 430 | M 30x220 | 400 | M 36 | 2 280 |
| **SNL 3256** | 2 860 | 1 650 | 1 430 | M 30x220 | 400 | M 36 | 2 280 |
| **SNL 3260** | 2 860 | 1 650 | 1 430 | M 30x220 | 400 | M 36 | 2 280 |
| **SNL 3264** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 36 | 2 280 |
| **SNL 3268** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 36 | 2 280 |
| **SNL 3272** | 4 200 | 2 400 | 2 100 | M 36x240 | 600 | M 42 | 3 640 |
| **SNL 3276** | 5 800 | 3 350 | 2 900 | M 42x280 | 850 | M 42 | 3 640 |
| **SNL 3280** | 5 800 | 3 350 | 2 900 | M 42x280 | 850 | M 42 | 3 640 |
| **SNL 3284** | 5 800 | 3 350 | 2 900 | M 42x300 | 850 | M 42 | 3 640 |
| **SNL 3288** | 5 800 | 3 350 | 2 900 | M 42x320 | 850 | M 48 | 5 450 |

[1] Recommended by bolt manufactures

### Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 1**, **page 197**), and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

### Operating speed

The permissible operating speed is not limited by the housing, except when taconite seals are used. The maximum speeds for taconite seals are provided in **table 1** on **page 197**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

### Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts, in accordance with ISO 4014, can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 7**). They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

## Lubrication

SNL housings in the 30, 31 and 32 series with labyrinth or taconite seals are intended for grease lubrication. For oil lubrication, modified housings with oil seals (→ **page 198**) or SONL plummer block housings (→ **page 349**) should be used.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com /bearings.

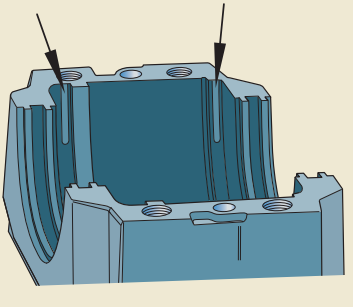
### Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

The housing base has markings to show the height of a 40% grease fill (→ **fig. 11**). For highly contaminated environments and slow speeds, fill the housing to 70–80%. For best protection against contaminants, use the SKF three-barrier solution (→ **page 39**). For additional information, contact the SKF application engineering service.

Quantites for 20 and 40% grease fills are listed in **table 8** on **page 213**. The values are valid for a typical lithium grease (about

Fig. 11



0,95 g/cm$^3$). They include the grease for the bearing, but not the grease to fill the seals. For sealed bearings, the values have to be adjusted.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

## Relubrication

SNL plummer block housings enable relubrication of the incorporated bearings and seals. There are three drilled and tapped holes for an AH 1/8-27 PTF grease fitting: two in the cap (one centred and one offset), and one in the base. Each hole is sealed at delivery with a threaded plug.

Dimples cast into the top of the housing cap indicate alternative positions where holes can be drilled and tapped to accommodate a grease fitting. The two dimples on the outer sides of the central ridge indicate the position for lubrication holes for the seals.

The following items are supplied with each housing:

- a grease fitting, designation AH 1/8-27 PTF, with a plastic cover (fitting protector)
- a grease fitting, designation M1 G 1/8
- an adapter, designation LAPN 1/8

The adapter transforms the 1/8-27 NPSF thread to a G 1/4, which enables the use of grease lubricators such as SKF MultiPoint.



**Table 8**

**Initial grease fill**

| Housing Size | Initial fill 20% | 40% | Housing Size | Initial fill 20% | 40% |
|---|---|---|---|---|---|
| – | kg | | – | kg | |
| **SNL 3036** | 0,70 | 1,20 | **SNL 3134** | 0,70 | 1,10 |
| **SNL 3038** | 0,90 | 1,50 | **SNL 3136** | 0,90 | 1,40 |
| **SNL 3040** | 1,20 | 2,00 | **SNL 3138** | 1,20 | 1,80 |
| **SNL 3044** | 1,60 | 2,70 | **SNL 3140** | 1,50 | 2,30 |
| **SNL 3048** | 1,80 | 3,00 | **SNL 3144** | 1,70 | 2,70 |
| **SNL 3052** | 2,30 | 3,90 | **SNL 3148** | 2,20 | 3,40 |
| **SNL 3056** | 2,80 | 4,90 | **SNL 3152** | 2,80 | 4,30 |
| **SNL 3060** | 3,10 | 5,20 | **SNL 3156** | 2,90 | 4,40 |
| **SNL 3064** | 4,10 | 7,00 | **SNL 3160** | 4,00 | 6,20 |
| **SNL 3068** | 5,10 | 8,70 | **SNL 3164** | 5,00 | 7,70 |
| **SNL 3072** | 6,20 | 11,0 | **SNL 3168** | 6,20 | 9,40 |
| **SNL 3076** | 6,30 | 11,0 | **SNL 3172** | 6,40 | 9,70 |
| **SNL 3080** | 6,70 | 11,5 | **SNL 3176** | 6,40 | 9,60 |
| **SNL 3084** | 7,00 | 12,0 | | | |
| **SNL 3088** | 8,50 | 14,5 | **SNL 3180** | 8,00 | 12,0 |
| **SNL 3092** | 11,0 | 19,0 | **SNL 3184** | 10,0 | 15,0 |
| **SNL 3096** | 11,0 | 18,5 | **SNL 3188** | 10,5 | 16,0 |
| **SNL 30/500** | 11,5 | 20,0 | **SNL 3192** | 12,0 | 17,5 |
| **SNL 30/530** | 13,0 | 21,5 | **SNL 3196** | 12,0 | 17,0 |
| **SNL 3234** | 1,20 | 1,90 | **SNL 3260** | 4,80 | 6,90 |
| **SNL 3236** | 1,20 | 1,90 | **SNL 3264** | 6,00 | 8,60 |
| **SNL 3238** | 1,40 | 2,20 | **SNL 3268** | 6,30 | 8,40 |
| **SNL 3240** | 1,70 | 2,50 | **SNL 3272** | 7,80 | 10,5 |
| **SNL 3244** | 2,10 | 3,00 | **SNL 3276** | 8,90 | 12,5 |
| **SNL 3248** | 2,70 | 3,80 | **SNL 3280** | 10,5 | 14,5 |
| **SNL 3252** | 3,80 | 5,60 | **SNL 3284** | 11,5 | 15,0 |
| **SNL 3256** | 3,90 | 5,60 | **SNL 3288** | 12,0 | 15,0 |

### Relubrication via the outer ring

The hole in the centre of the cap or the hole in the base should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 12**). When applying grease via the relubrication feature, the shaft should be rotating. Narrow bearings (dimension series 13 and 22) in the locating position can be axially displaced, so that the relubrication groove in the bearing does not line up with the relubrication hole in the housing cap. Make sure the bearing is sufficiently centred when relubricating.

### Relubrication from the side

When relubricating from the side, which is typically necessary for CARB toroidal roller bearings, the offset hole in the housing should be used (→ **fig. 12**).

When bearings mounted on an adapter sleeve have to be relubricated from the side, the grease should be introduced from the side opposite the lock nut.

When bearings mounted at the end of a shaft have to be relubricated from the side, the grease should be applied at the point closest to the end cover.

### Grease escape holes

If frequent relubrication is required, SKF recommends having grease escape holes (→ **fig. 13**). Dimensions can be found in **table 9**. SNL housings supplied with grease escape holes are identified by the suffix V, e.g. SNL 3134 V.

Fig. 13

Grease escape hole

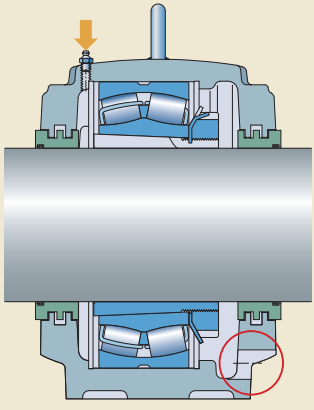
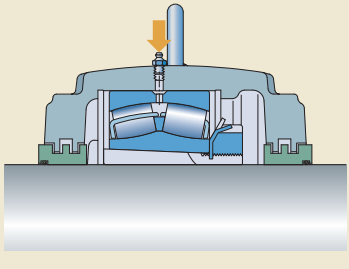
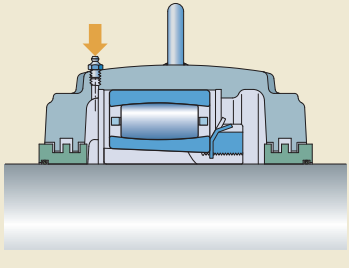


Fig. 12



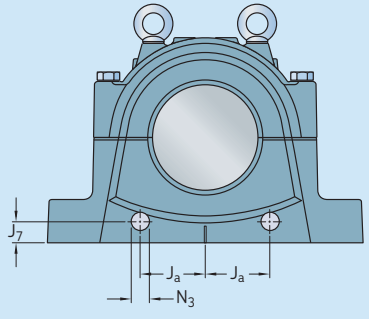
Lubricating the bearing via the outer ring



Lubricating the bearing from the side

**Table 9**

**Recommended dimensions for grease escape holes**




| Housing | | | Dimensions | | |
|---|---|---|---|---|---|
| Size | | | $J_a$ | $J_7$ | $N_3$ |
| – | | | mm | | |
| **SNL 3036** | **SNL 3134** | | 105 | 34 | 30 |
| **SNL 3038** | **SNL 3136** | | 110 | 38 | 30 |
| **SNL 3040** | **SNL 3138** | **SNL 3234** | 120 | 36 | 30 |
| **SNL 3044** | **SNL 3140** | **SNL 3236** | 120 | 36 | 30 |
| | | **SNL 3238** | 120 | 36 | 30 |
| **SNL 3048** | **SNL 3144** | **SNL 3240** | 130 | 42 | 40 |
| **SNL 3052** | **SNL 3148** | **SNL 3244** | 145 | 43 | 40 |
| **SNL 3056** | **SNL 3152** | **SNL 3248** | 150 | 44 | 40 |
| **SNL 3060** | **SNL 3156** | | 165 | 51 | 40 |
| **SNL 3064** | **SNL 3160** | **SNL 3252** | 180 | 53 | 40 |
| **SNL 3068** | **SNL 3164** | **SNL 3256** | 180 | 53 | 40 |
| **SNL 3072** | | **SNL 3260** | 180 | 53 | 40 |
| **SNL 3076** | **SNL 3168** | **SNL 3264** | 185 | 51 | 40 |
| **SNL 3080** | **SNL 3172** | | 220 | 51 | 40 |
| **SNL 3084** | **SNL 3176** | **SNL 3268** | 220 | 53 | 40 |
| **SNL 3088** | **SNL 3180** | **SNL 3272** | 230 | 58 | 40 |
| **SNL 3092** | **SNL 3184** | **SNL 3276** | 260 | 58 | 40 |
| **SNL 3096** | **SNL 3188** | **SNL 3280** | 260 | 58 | 40 |
| **SNL 30/500** | | | 260 | 58 | 40 |
| **SNL 30/530** | **SNL 3192** | **SNL 3284** | 280 | 58 | 40 |
| | **SNL 3196** | **SNL 3288** | 280 | 58 | 40 |

## Oil lubrication

SNL housings in the 30, 31 and 32 series can be used in applications where there are relatively high speeds and the bearings are lubricated via an oil bath or circulating oil lubrication system.

The housings must be modified to accommodate one of the following oil seals:

- TURT or TURA for oil bath or circulating oil lubrication system (→ **page 198**)
- TURP for circulating oil lubrication system and large axial movements (→ **page 200**)

Recommended oil levels can be found in **table 10a**, **10b** and **10c** on **page 216–218**.

Housings modified for oil lubrication are not stock items. Check availability prior to ordering.

Table 10a

**Recommended oil levels**[1)]

| **Housing** Size | **Shaft diameter** | **Design and bearing series** TURT 230 | | 222 | | 223 | | TURA C 30 | | C 22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. |
| – | mm | mm | | | | | | | | | |
| **SNL 3036** | 160 | 48 | 54 | | | | | 47 | 55 | | |
| **SNL 3038** | 140 | | | 57 | 67 | | | | | | |
| | 170 | 51 | 58 | | | | | 49 | 57 | | |
| **SNL 3040** | 150 | | | 58 | 69 | | | | | 55 | 69 |
| | 180 | 53 | 62 | | | | | 50 | 60 | | |
| **SNL 3044** | 200 | 59 | 69 | | | | | 57 | 68 | | |
| **SNL 3048** | 150 | | | | | 72 | 86 | | | | |
| | 180 | | | 65 | 79 | | | | | | |
| | 220 | 59 | 68 | | | | | 58 | 69 | | |
| **SNL 3052** | 240 | 62 | 73 | | | | | 59 | 72 | | |
| **SNL 3056** | 180 | | | | | 86 | 103 | | | | |
| | 260 | 72 | 83 | | | | | 68 | 81 | | |
| **SNL 3060** | 280 | 75 | 87 | | | | | 74 | 88 | | |
| **SNL 3064** | 240 | | | 91 | 112 | | | | | | |
| | 300 | 85 | 97 | | | | | 82 | 96 | | |
| **SNL 3068** | 320 | 88 | 102 | | | | | 81 | 99 | | |
| **SNL 3072** | 340 | 80 | 94 | | | | | 74 | 92 | | |
| **SNL 3076** | 360 | 87 | 102 | | | | | 87 | 105 | | |
| **SNL 3080** | 380 | 80 | 97 | | | | | 76 | 97 | | |
| **SNL 3084** | 400 | 80 | 97 | | | | | 77 | 99 | | |
| **SNL 3088** | 410 | 87 | 104 | | | | | 89 | 111 | | |
| **SNL 3092** | 430 | 103 | 122 | | | | | 100 | 119 | | |
| **SNL 3096** | 450 | 95 | 113 | | | | | 92 | 111 | | |
| **SNL 30/500** | 470 | 93 | 112 | | | | | 94 | 113 | | |
| **SNL 30/530** | 500 | 107 | 128 | | | | | 110 | 134 | | |

[1)] The oil level is measured from the base of the housing. Mark the min and max level on the oil level gauge.

**Table 10b**

**Recommended oil levels**[1)]

| Housing Size | Shaft diameter | Design and bearing series | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TURT | | | | | | TURA | | | |
| | | 231 | | 222 | | 223 | | C 31 | | C 22 | |
| | | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. |
| – | mm | mm | | | | | | | | | |
| **SNL 3134** | 115 | | | | | 55 | 66 | | | | |
| | 150 | 50 | 56 | | | | | 48 | 58 | | |
| **SNL 3136** | 125 | | | | | 58 | 69 | | | | |
| | 160 | 52 | 59 | | | | | 49 | 61 | | |
| **SNL 3138** | 135 | | | | | 59 | 71 | | | | |
| | 160 | | | 53 | 64 | | | | | | |
| | 170 | 54 | 61 | | | | | 48 | 61 | | |
| **SNL 3140** | 140 | | | | | 71 | 84 | | | | |
| | 170 | | | 65 | 77 | | | | | 64 | 80 |
| | 180 | 65 | 74 | | | | | 60 | 73 | | |
| **SNL 3144** | 200 | 62 | 71 | | | | | 56 | 70 | | |
| **SNL 3148** | 170 | | | | | 75 | 91 | | | | |
| | 200 | | | 69 | 84 | | | | | | |
| | 220 | 68 | 78 | | | | | 64 | 81 | 67 | 90 |
| **SNL 3152** | 220 | | | 70 | 87 | | | | | | |
| | 240 | 72 | 83 | | | | | 65 | 83 | | |
| **SNL 3156** | 200 | | | | | 87 | 106 | | | | |
| | 260 | 81 | 93 | | | | | 74 | 92 | | |
| **SNL 3160** | 220 | | | | | 90 | 112 | | | | |
| | 260 | | | 81 | 102 | | | | | | |
| | 280 | 85 | 98 | | | | | 78 | 98 | | |
| **SNL 3164** | 240 | | | | | 93 | 116 | | | | |
| | 280 | | | 83 | 107 | | | | | | |
| | 300 | 89 | 103 | | | | | 84 | 108 | | |
| **SNL 3168** | 260 | | | | | 96 | 121 | | | | |
| | 300 | | | 85 | 112 | | | | | | |
| | 320 | 93 | 108 | | | | | 84 | 110 | | |
| **SNL 3172** | 340 | 90 | 106 | | | | | 84 | 110 | | |
| **SNL 3176** | 360 | 91 | 108 | | | | | 87 | 111 | | |
| **SNL 3180** | 340 | | | 98 | 124 | | | | | | |
| | 380 | 99 | 116 | | | | | 88 | 111 | | |
| **SNL 3184** | 400 | 108 | 128 | | | | | 103 | 129 | | |
| **SNL 3188** | 410 | 106 | 125 | | | | | 106 | 133 | | |
| **SNL 3192** | 430 | 109 | 130 | | | | | 103 | 131 | | |
| **SNL 3196** | 450 | 116 | 137 | | | | | 112 | 139 | | |

[1)] The oil level is measured from the base of the housing. Mark the min and max level on the oil level gauge.

Table 10c

**Recommended oil levels**[1)]

| **Housing** Size | **Shaft diameter** | **Design and bearing series** TURT 232 | | C 32 | |
|---|---|---|---|---|---|
| | | min. | max. | min. | max. |
| – | mm | mm | | | |
| **SNL 3232** | 140 | | | 54 | 68 |
| **SNL 3234** | 150 | 61 | 69 | | |
| **SNL 3236** | 160 | 56 | 64 | 47 | 61 |
| **SNL 3238** | 170 | 68 | 77 | | |
| **SNL 3240** | 180 | 70 | 79 | | |
| **SNL 3244** | 200 | 73 | 83 | | |
| **SNL 3248** | 220 | 75 | 87 | | |
| **SNL 3252** | 240 | 98 | 111 | | |
| **SNL 3256** | 260 | 87 | 101 | | |
| **SNL 3260** | 280 | 91 | 106 | | |
| **SNL 3264** | 300 | 95 | 111 | | |
| **SNL 3268** | 320 | 98 | 115 | | |
| **SNL 3272** | 340 | 106 | 124 | | |
| **SNL 3276** | 360 | 121 | 141 | | |
| **SNL 3280** | 380 | 114 | 135 | | |
| **SNL 3284** | 400 | 117 | 139 | | |
| **SNL 3288** | 410 | 124 | 147 | | |

[1)] The oil level is measured from the base of the housing. Mark the min and max level on the oil level gauge.

# Mounting

SNL plummer (pillow) block housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

Mounting instructions for each housing are provided with the seal pack. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Torque specifications

Cap bolts should be tightened to the torque values listed in **table 7** on **page 210**. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 212**.

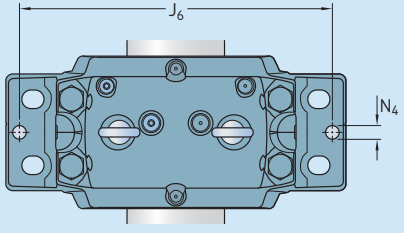
## Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, **page 204**).

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 11**.

**Table 11**

**Position and size of dowel pin holes**




| Housing Size | | | Dimensions $J_6$ | $N_4$ max |
|---|---|---|---|---|
| – | | | mm | |
| **SNL 3036** | **SNL 3134** | | 470 | 20 |
| **SNL 3038** | **SNL 3136** | | 490 | 20 |
| **SNL 3040** | **SNL 3138** | **SNL 3234** | 520 | 20 |
| | | **SNL 3236** | 520 | 20 |
| **SNL 3044** | **SNL 3140** | **SNL 3238** | 560 | 20 |
| **SNL 3048** | **SNL 3144** | **SNL 3240** | 590 | 20 |
| **SNL 3052** | **SNL 3148** | **SNL 3244** | 650 | 20 |
| **SNL 3056** | **SNL 3152** | **SNL 3248** | 720 | 20 |
| **SNL 3060** | **SNL 3156** | | 740 | 20 |
| **SNL 3064** | **SNL 3160** | **SNL 3252** | 770 | 25 |
| | | **SNL 3256** | 770 | 25 |
| **SNL 3068** | **SNL 3164** | **SNL 3260** | 820 | 25 |
| **SNL 3072** | | | 820 | 25 |
| **SNL 3076** | **SNL 3168** | **SNL 3264** | 880 | 25 |
| **SNL 3080** | **SNL 3172** | | 920 | 30 |
| **SNL 3084** | **SNL 3176** | **SNL 3268** | 960 | 30 |
| **SNL 3088** | **SNL 3180** | **SNL 3272** | 1 020 | 35 |
| **SNL 3092** | **SNL 3184** | **SNL 3276** | 1 070 | 35 |
| **SNL 3096** | | | 1 070 | 35 |
| **SNL 30/500** | **SNL 3188** | **SNL 3280** | 1 120 | 35 |
| | **SNL 3192** | **SNL 3284** | 1 160 | 40 |
| **SNL 30/530** | **SNL 3196** | **SNL 3288** | 1 210 | 40 |

# Condition monitoring

SNL housings in the 30, 31 and 32 series have appropriate positions for condition monitoring sensors (→ **fig. 14**).

**Postition 1** is a measurement point perpendicular to the shaft and should be used when loads act away from the support surface.

**Position 2** is a measurement point perpendicular to the shaft and should be used when loads act toward the support surface.

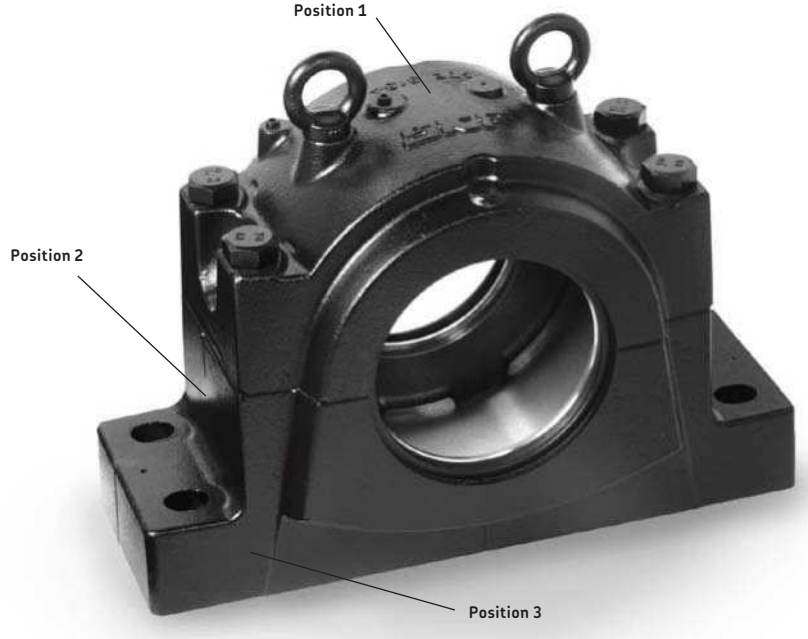
**Position 3** is a measurement point parallel to the shaft and should be used when loads act toward the support surface.

All three positions are in accordance with ISO 10816-1.

For additional information about condition monitoring, as well as the measurement tools and systems available from SKF, contact your local SKF representative or SKF Authorized Distributor.

Fig. 14

**Measurement points for condition monitoring**



## Accessories

The following accessories are available for SNL housings in the 30, 31 and 32 series:

- Oil leveller: LAHD
- Automatic lubricators: SKF SYSTEM 24 or SKF MultiPoint. If frequent relubrication is required and SKF SYSTEM 24 is to be used, combine it with LAPM 4 (Manifold 4 to 1).
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47)**.

## Ordering information

For SNL housings in the 30, 31 and 32 series, each of the following items must be ordered separately:

- housing
- seals
- end cover
- locating rings
- bearing
- adapter sleeve

**Order example**

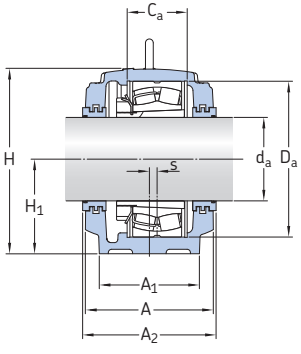
Two plummer block housings with labyrinth seals are required for two 23036 CCK/W33 bearings on H 3036 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housings will accommodate the locating bearing and a through shaft.

The following items should be ordered (in addition to the bearings and adapter sleeves):

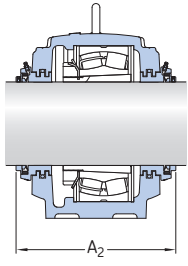
- 2 housings SNL 3036
- 3 labyrinth seals TS 36
- 1 end cover ETS 36
- 2 locating rings FRB 17/280

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

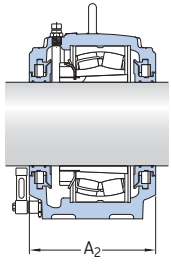
$d_a$ **115 – 150** mm




Labyrinth seals, TS design



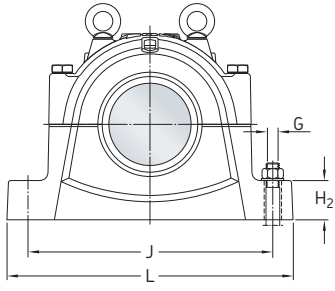

Taconite seals, TNF design

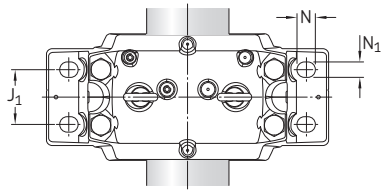



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **115** | **SNL 3134** | 22326 CCK/W33<br>22326-2CS5K | H 2326<br>H 2326 | 2 FRB 7.5/280<br>2 FRB 7.5/280 | TS 34/115<br>TNF 34/115 | ETS 34 | 240<br>299 |
| **125** | **SNL 3136** | 22328 CCK/W33<br>22328-2CS5K | H 2328<br>H 2328 | 2 FRB 7/300<br>2 FRB 7/300 | TS 36/125<br>TNF 36/125 | ETS 36 | 250<br>310 |
| **135** | **SNL 3138** | 22330 CCK/W33<br>22330-2CS5K | H 2330<br>H 2330 | 2 FRB 8/320<br>2 FRB 8/320 | TS 38/135<br>TNF 38/135 | ETS 38 | 270<br>330 |
| **140** | **SNL 3038** | 22232 CCK/W33<br>22232-2CS5K<br>23232 CCK/W33<br>C 3232 K | H 3132<br>H 3132<br>H 2332<br>H 2332 L | 2 FRB 17.5/290<br>2 FRB 17.5/290<br>2 FRB 5.5/290<br>2 FRB 5.5/290 | TS 38/140<br>TNF 38/140 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22332 CCK/W33<br>22332-2CS5K | H 2332<br>H 2332 | 2 FRB 9/340<br>2 FRB 9/340 | TS 40/140<br>TNF 40/140 | ETS 40 | 290<br>347 |
| **150** | **SNL 3134** | 23134 CCK/W33<br>23134-2CS5K<br>C 3134 K | H 3134<br>H 3134 E<br>H 3134 L | 2 FRB 10/280<br>2 FRB 10/280<br>2 FRB 10/280 | TS 34<br>TNF 34 | ETS 34 | 240<br>299 |
| | **SNL 3134 TURT** | 23134 CCK/W33 | H 3134 | 2 FRB 10/280 | included | ETS 3134 R | 225 |
| | **SNL 3134 TURA** | C 3134 K | H 3134 E | 2 FRB 10/280 | included | ETS 3134 R | 225 |
| | **SNL 3234** | 23234 CCK/W33 | H 2334 | 2 FRB 6/310 | TS 40/150<br>TNF 40/150 | ETS 40 | 270<br>327 |
| | **SNL 3040** | 22234 CCK/W33<br>22234-2CS5K<br>C 2234 K | H 3134<br>H 3134<br>H 3134 L | 2 FRB 18/310<br>2 FRB 18/310<br>2 FRB 18/310 | TS 40/150<br>TNF 40/150 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CCK/W33 | H 2334 | 2 FRB 10/360 | TS 48/150<br>TNF 48/150 | ETS 48 | 300<br>380 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

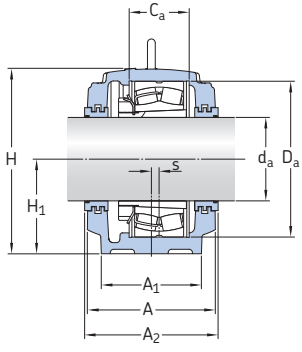


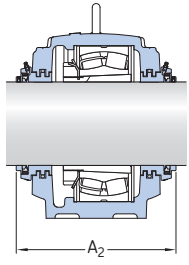

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **115** | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| **125** | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| **135** | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| **140** | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| **150** | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

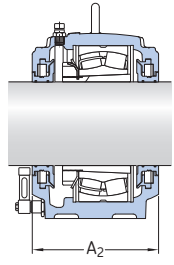
$d_a$ **160** mm




Labyrinth seals, TS design



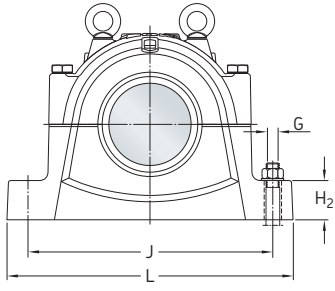

Taconite seals, TNF design

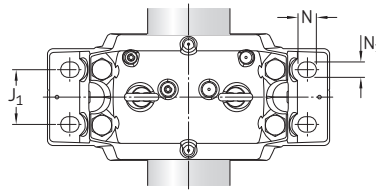



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **160** | **SNL 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | H 3036<br>H 3036 E<br>H 3036 | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 17/280 | TS 36<br>TNF 36 | ETS 36 | 240<br>300 |
| | **SNL 3036 TURT** | 23036 CCK/W33 | H 3036 | 2 FRB 17/280 | included | ETS 3036 R | 225 |
| | **SNL 3036 TURA** | C 3036 K | H 3036 | 2 FRB 17/280 | included | ETS 3036 R | 225 |
| | **SNL 3136** | 23136 CCK/W33<br>23136-2CS5K<br>C 3136 K | H 3136<br>H 3136 L<br>H 3136 L | 2 FRB 10/300<br>2 FRB 10/300<br>2 FRB 10/300 | TS 36<br>TNF 36 | ETS 36 | 250<br>310 |
| | **SNL 3136 TURT** | 23136 CCK/W33 | H 3136 | 2 FRB 10/300 | included | ETS 3136 R | 235 |
| | **SNL 3136 TURA** | C 3136 K | H 3136 L | 2 FRB 10/300 | included | ETS 3136 R | 235 |
| | **SNL 3236** | 23236 CCK/W33<br>C 3236 K | H 2336<br>H 2336 | 2 FRB 6/320<br>2 FRB 6/320 | TS 38/160<br>TNF 38/160 | ETS 38 | 270<br>330 |
| | **SNL 3138** | 22236 CCK/W33<br>22236-2CS5K | H 3136<br>H 3136 | 2 FRB 19/320<br>2 FRB 19/320 | TS 38/160<br>TNF 38/160 | ETS 38 | 270<br>330 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

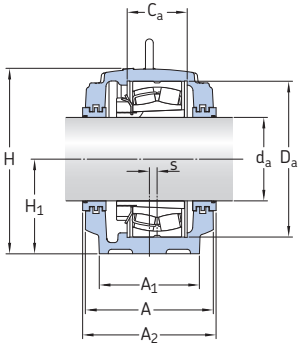


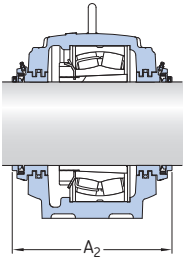

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **160** | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

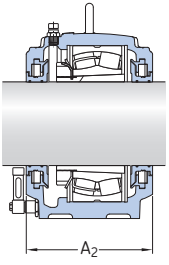
$d_a$ **170** mm




Labyrinth seals, TS design



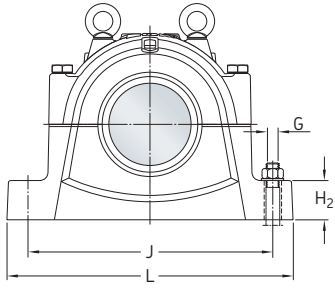

Taconite seals, TNF design

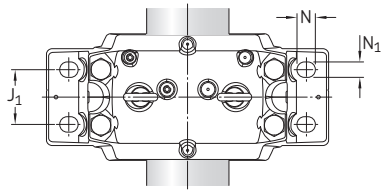



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **170** | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | H 3038<br>H 3038 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38<br>TNF 38 | ETS 38 | 250<br>312 |
| | **SNL 3038 TURT** | 23038 CCK/W33 | H 3038 | 4 FRB 10/290 | included | ETS 3038 R | 235 |
| | **SNL 3038 TURA** | C 3038 K | H 3038 | 4 FRB 10/290 | included | ETS 3038 R | 235 |
| | **SNL 3138** | 23138 CCK/W33<br>23138-2CS5K<br>C 3138 KV | H 3138<br>H 3138<br>H 3138 | 2 FRB 10/320<br>2 FRB 10/320<br>2 FRB 10/320 | TS 38<br>TNF 38 | ETS 38 | 270<br>330 |
| | **SNL 3138 TURT** | 23138 CCK/W33 | H 3138 | 2 FRB 10/320 | included | ETS 3138 R | 255 |
| | **SNL 3138 TURA** | C 3138 KV | H 3138 | 2 FRB 10/320 | included | ETS 3138 R | 255 |
| | **SNL 3238** | 23238 CCK/W33 | H 2338 | 2 FRB 6/340 | TS 40/170<br>TNF 40/170 | ETS 40 | 290<br>347 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | H 3138<br>H 3138<br>H 3138 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/170<br>TNF 40/170 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | H 2338 | 2 FRB 8/400 | TS 48/170<br>TNF 48/170 | ETS 48 | 315<br>396 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

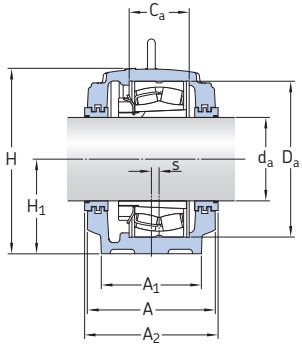


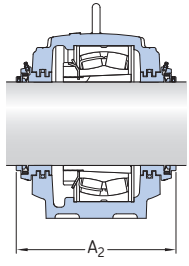

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **170** | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

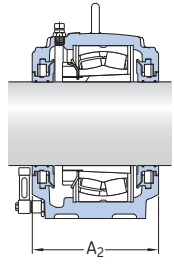
$d_a$ **180** mm




Labyrinth seals, TS design



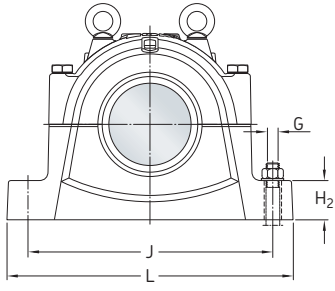

Taconite seals, TNF design

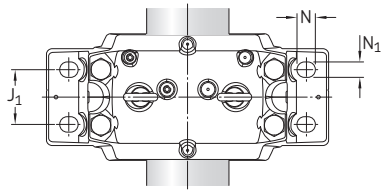



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **180** | **SNL 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | H 3040<br>H 3040<br>H 3040 | 4 FRB 10/310<br>4 FRB 10/310<br>4 FRB 10/310 | TS 40<br>TNF 40 | ETS 40 | 270<br>327 |
| | **SNL 3040 TURT** | 23040 CCK/W33 | H 3040 | 4 FRB 10/310 | included | ETS 3040 R | 255 |
| | **SNL 3040 TURA** | C 3040 K | H 3040 | 4 FRB 10/310 | included | ETS 3040 R | 255 |
| | **SNL 3140** | 23140 CCK/W33<br>23140-2CS5K<br>C 3140 K | H 3140<br>H 3140<br>H 3140 | 2 FRB 10/340<br>2 FRB 10/340<br>2 FRB 10/340 | TS 40<br>TNF 40 | ETS 40 | 290<br>347 |
| | **SNL 3140 TURT** | 23140 CCK/W33 | H 3140 | 2 FRB 10/340 | included | ETS 3140 R | 275 |
| | **SNL 3140 TURA** | C 3140 K | H 3140 | 2 FRB 10/340 | included | ETS 3140 R | 275 |
| | **SNL 3240** | 23240 CCK/W33 | H 2340 | 2 FRB 6/360 | TS 48/180<br>TNF 48/180 | ETS 48 | 300<br>380 |
| | **SNL 3048** | 22240 CCK/W33<br>22240-2CS5K | H 3140<br>H 3140 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48/180<br>TNF 48/180 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CCK/W33 | H 2340 | 2 FRB 14/420 | TS 56/180<br>TNF 56/180 | ETS 56 | 330<br>404 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



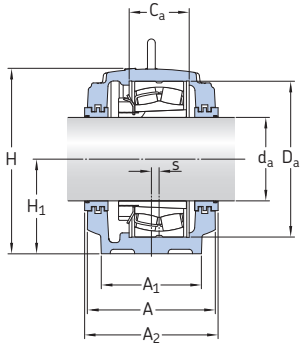





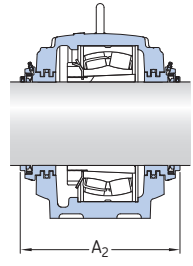

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **180** | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

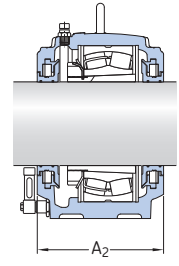
$d_a$ **200** mm




Labyrinth seals, TS design



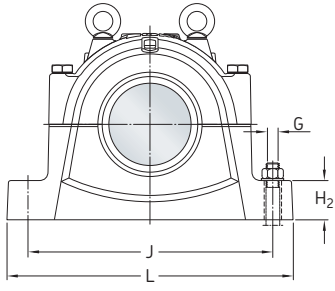

Taconite seals, TNF design

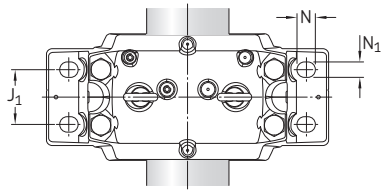



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **200** | **SNL 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | OH 3044 H<br>OH 3044 H<br>OH 3044 H | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 44<br>TNF 44 | ETS 44 | 290<br>349 |
| | **SNL 3044 TURT** | 23044 CCK/W33 | OH 3044 H | 4 FRB 10/340 | included | ETS 3044 R | 275 |
| | **SNL 3044 TURA** | C 3044 K | OH 3044 H | 4 FRB 10/340 | included | ETS 3044 R | 275 |
| | **SNL 3144** | 23144 CCK/W33<br>23144-2CS5K<br>C 3144 K | OH 3144 H<br>OH 3144 HTL<br>OH 3144 HTL | 2 FRB 10/370<br>2 FRB 10/370<br>2 FRB 10/370 | TS 44<br>TNF 44 | ETS 44 | 300<br>357 |
| | **SNL 3144 TURT** | 23144 CCK/W33 | OH 3144 H | 2 FRB 10/370 | included | ETS 3144 R | 285 |
| | **SNL 3144 TURA** | C 3144 K | OH 3144 HTL | 2 FRB 10/370 | included | ETS 3144 R | 285 |
| | **SNL 3244** | 23244 CCK/W33 | OH 2344 H | 2 FRB 10/400 | TS 48/200<br>TNF 48/200 | ETS 48 | 315<br>396 |
| | **SNL 3148** | 22244 CCK/W33<br>22244-2CS5K<br>C 2244 K | OH 3144 H<br>OH 3144 H<br>OH 3144 H | 4 FRB 10/400<br>4 FRB 10/400<br>4 FRB 10/400 | TS 48/200<br>TNF 48/200 | ETS 48 | 315<br>396 |
| | **SNL 3156** | 22344 CCK/W33 | OH 2344 H | 2 FRB 10.5/460 | TS 56/200<br>TNF 56/200 | ETS 56 | 330<br>404 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

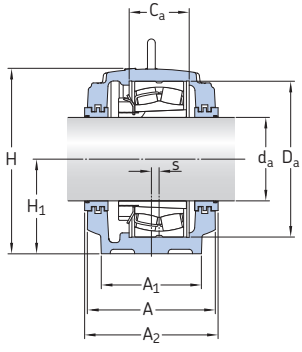


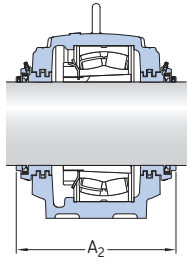

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **200** | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 290 | 240 | 140 | 370 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 138 |
| | 290 | 240 | 140 | 370 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 138 |
| | 290 | 240 | 140 | 370 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 138 |
| | 310 | 260 | 164 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

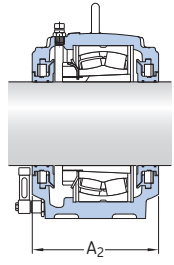
$d_a$ **220** mm




Labyrinth seals, TS design



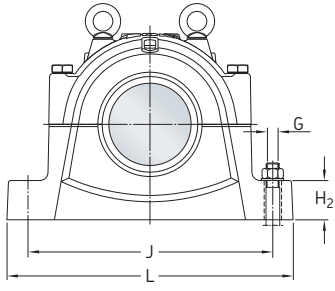

Taconite seals, TNF design

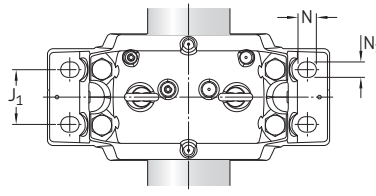



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **220** | **SNL 3048** | 23048 CCK/W33<br>23048-2CS5K<br>C 3048 K | OH 3048 H<br>OH 3048 HE<br>OH 3048 H | 4 FRB 12/360<br>4 FRB 12/360<br>4 FRB 12/360 | TS 48<br>TNF 48 | ETS 48 | 300<br>380 |
| | **SNL 3048 TURT** | 23048 CCK/W33 | OH 3048 H | 4 FRB 12/360 | included | ETS 3048 R | 285 |
| | **SNL 3048 TURA** | C 3048 K | OH 3048 H | 4 FRB 12/360 | included | ETS 3048 R | 285 |
| | **SNL 3148** | 23148 CCK/W33<br>23148-2CS5K<br>C 3148 K | OH 3148 H<br>OH 3148 HTL<br>OH 3148 HTL | 2 FRB 10/400<br>2 FRB 10/400<br>2 FRB 10/400 | TS 48<br>TNF 48 | ETS 48 | 315<br>396 |
| | **SNL 3148 TURT** | 23148 CCK/W33 | OH 3148 H | 2 FRB 10/400 | included | ETS 3148 R | 305 |
| | **SNL 3148 TURA** | C 3148 K | OH 3148 HTL | 2 FRB 10/400 | included | ETS 3148 R | 305 |
| | **SNL 3248** | 23248 CCK/W33 | OH 2348 H | 2 FRB 10/440 | TS 52/220<br>TNF 52/220 | ETS 52 | 330<br>406 |
| | **SNL 3152** | 22248 CCK/W33 | OH 3148 H | 2 FRB 22/440 | TS 52/220<br>TNF 52/220 | ETS 52 | 330<br>412 |
| | **SNL 3160** | 22348 CCK/W33 | OH 2348 H | 2 FRB 12.5/500 | TS 60/220<br>TNF 60/220 | ETS 60 | 360<br>434 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



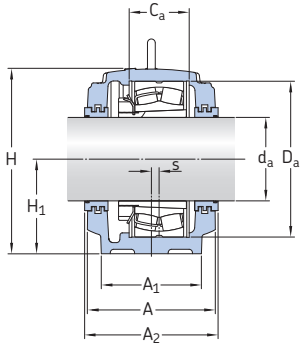





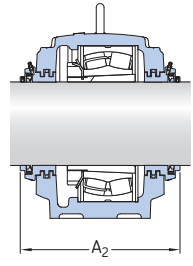

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **220** | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 320 | 280 | 180 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

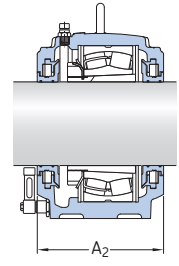
$d_a$ **240** mm




Labyrinth seals, TS design



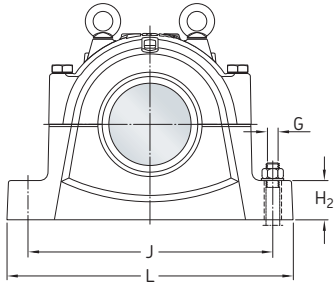

Taconite seals, TNF design

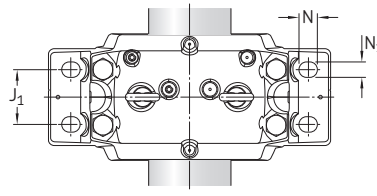



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **240** | **SNL 3052** | 23052 CCK/W33<br>23052-2CS5K<br>C 3052 K | OH 3052 H<br>OH 3052 HE<br>OH 3052 H | 2 FRB 22/400<br>2 FRB 22/400<br>2 FRB 22/400 | TS 52<br>TNF 52 | ETS 52 | 315<br>394 |
| | **SNL 3052 TURT** | 23052 CCK/W33 | OH 3052 H | 2 FRB 22/400 | included | ETS 3052 R | 305 |
| | **SNL 3052 TURA** | C 3052 K | OH 3052 H | 2 FRB 22/400 | included | ETS 3052 R | 305 |
| | **SNL 3152** | 23152 CCK/W33<br>23152-2CS5K<br>C 3152 K | OH 3152 H<br>OH 3152 HTL<br>OH 3152 HTL | 2 FRB 10/440<br>2 FRB 10/440<br>2 FRB 10/440 | TS 52<br>TNF 52 | ETS 52 | 330<br>412 |
| | **SNL 3152 TURT** | 23152 CCK/W33 | OH 3152 H | 2 FRB 10/440 | included | ETS 3152 R | 315 |
| | **SNL 3152 TURA** | C 3152 K | OH 3152 HTL | 2 FRB 10/440 | included | ETS 3152 R | 315 |
| | **SNL 3252** | 23252 CCK/W33 | OH 2352 H | 2 FRB 10/480 | TS 64/240<br>TNF 64/240 | ETS 64 | 360<br>434 |
| | **SNL 3064** | 22252 CCK/W33 | OH 3152 H | 2 FRB 25.5/480 | TS 64/240<br>TNF 64/240 | ETS 64 | 360<br>434 |
| | **SNL 3164** | 22352 CCK/W33 | OH 2352 H | 2 FRB 15.5/540 | TS 64/240<br>TNF 64/240 | ETS 64 | 380<br>454 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



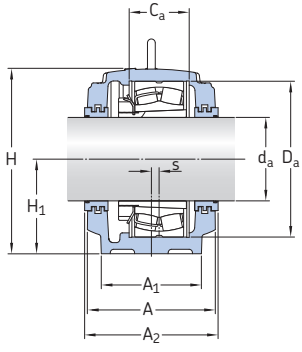





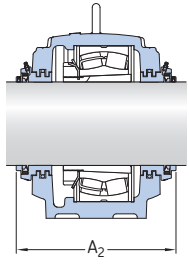

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **240** | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 350 | 310 | 194 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

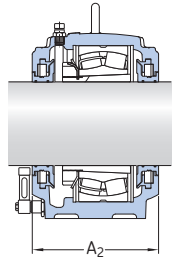
$d_a$ **260** mm




Labyrinth seals, TS design



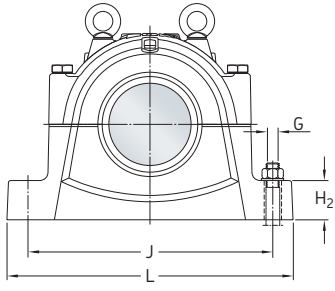

Taconite seals, TNF design

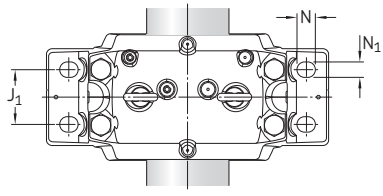



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **260** | **SNL 3056** | 23056 CCK/W33<br>C 3056 K | OH 3056 H<br>OH 3056 H | 6 FRB 10/420<br>6 FRB 10/420 | TS 56<br>TNF 56 | ETS 56 | 330<br>404 |
| | **SNL 3056 TURT** | 23056 CCK/W33 | OH 3056 H | 6 FRB 10/420 | included | ETS 3056 R | 315 |
| | **SNL 3056 TURA** | C 3056 K | OH 3056 H | 6 FRB 10/420 | included | ETS 3056 R | 315 |
| | **SNL 3156** | 23156 CCK/W33<br>23156-2CS5K<br>C 3156 K | OH 3156 H<br>OH 3156 HTL<br>OH 3156 HTL | 2 FRB 10/460<br>2 FRB 10/460<br>2 FRB 10/460 | TS 56<br>TNF 56 | ETS 56 | 330<br>404 |
| | **SNL 3156 TURT** | 23156 CCK/W33 | OH 3156 H | 2 FRB 10/460 | included | ETS 3156 R | 315 |
| | **SNL 3156 TURA** | C 3156 K | OH 3156 HTL | 2 FRB 10/460 | included | ETS 3156 R | 315 |
| | **SNL 3256** | 23256 CCK/W33 | OH 2356 H | 2 FRB 10/500 | TS 60/260<br>TNF 60/260 | ETS 60 | 360<br>434 |
| | **SNL 3160** | 22256 CCK/W33 | OH 3156 H | 2 FRB 25/500 | TS 60/260<br>TNF 60/260 | ETS 60 | 360<br>434 |
| | **SNL 3168 L** | 22356 CCK/W33 | OH 2356 H | 2 FRB 17.5/580 | TS 68/260<br>TNF 68/260 | ETS 68 | 410<br>483 |

1) 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
3) The locating rings fit the bearing in the same line only.

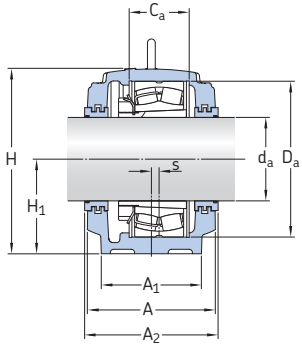


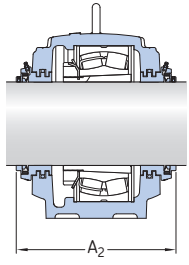

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **260** | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 350 | 310 | 196 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

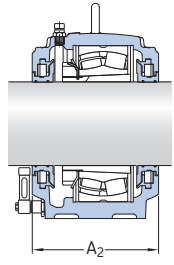
$d_a$ **280** mm




Labyrinth seals, TS design



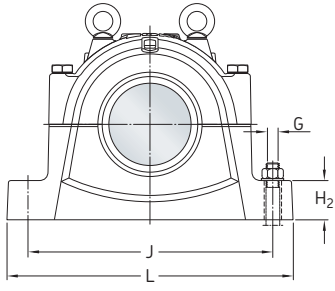

Taconite seals, TNF design

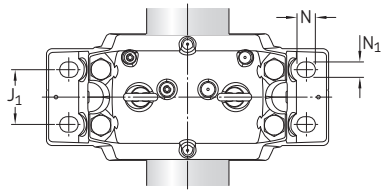



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **280** | **SNL 3060** | 23060 CCK/W33<br>C 3060 KM | OH 3060 H<br>OH 3060 H | 2 FRB 25/460<br>2 FRB 25/460 | TS 60<br>TNF 60 | ETS 60 | 330<br>404 |
| | **SNL 3060 TURT** | 23060 CCK/W33 | OH 3060 H | 2 FRB 25/460 | included | ETS 3060 R | 315 |
| | **SNL 3060 TURA** | C 3060 KM | OH 3060 H | 2 FRB 25/460 | included | ETS 3060 R | 315 |
| | **SNL 3160** | 23160 CCK/W33<br>23160-2CS5K<br>C 3160 K | OH 3160 H<br>OH 3160 HE<br>OH 3160 H | 2 FRB 10/500<br>2 FRB 10/500<br>2 FRB 10/500 | TS 60<br>TNF 60 | ETS 60 | 360<br>434 |
| | **SNL 3160 TURT** | 23160 CCK/W33 | OH 3160 H | 2 FRB 10/500 | included | ETS 3160 R | 345 |
| | **SNL 3160 TURA** | C 3160 K | OH 3160 H | 2 FRB 10/500 | included | ETS 3160 R | 345 |
| | **SNL 3260** | 23260 CCK/W33 | OH 3260 H | 2 FRB 10/540 | TS 64/280<br>TNF 64/280 | ETS 64 | 380<br>454 |
| | **SNL 3164** | 22260 CCK/W33 | OH 3160 H | 2 FRB 28/540 | TS 64/280<br>TNF 64/280 | ETS 64 | 380<br>454 |

1) 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
3) The locating rings fit the bearing in the same line only.



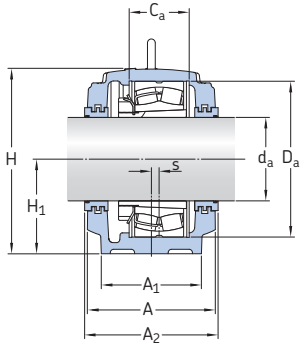





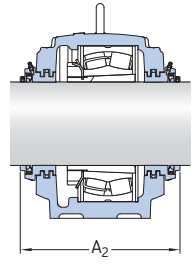

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **280** | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 370 | 330 | 212 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

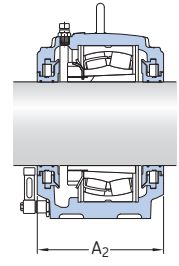
$d_a$ **300** mm




Labyrinth seals, TS design



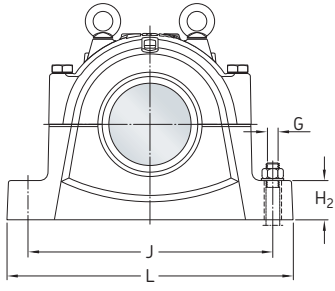

Taconite seals, TNF design

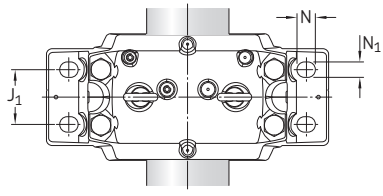



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **300** | **SNL 3064** | 23064 CCK/W33<br>C 3064 KM | OH 3064 H<br>OH 3064 H | 6 FRB 10/480<br>6 FRB 10/480 | TS 64<br>TNF 64 | ETS 64 | 360<br>434 |
| | **SNL 3064 TURT** | 23064 CCK/W33 | OH 3064 H | 6 FRB 10/480 | included | ETS 3064 R | 345 |
| | **SNL 3064 TURA** | C 3064 KM | OH 3064 H | 6 FRB 10/480 | included | ETS 3064 R | 345 |
| | **SNL 3164** | 23164 CCK/W33<br>23164-2CS5K<br>C 3164 KM | OH 3164 H<br>OH 3164 H<br>OH 3164 H | 2 FRB 10/540<br>2 FRB 10/540<br>2 FRB 10/540 | TS 64<br>TNF 64 | ETS 64 | 380<br>454 |
| | **SNL 3164 TURT** | 23164 CCK/W33 | OH 3164 H | 2 FRB 10/540 | included | ETS 3164 R | 365 |
| | **SNL 3164 TURA** | C 3164 KM | OH 3164 H | 2 FRB 10/540 | included | ETS 3164 R | 365 |
| | **SNL 3264 F** | 23264 CCK/W33 | OH 3264 H | – | TS 68/300<br>TNF 68/300 | ETS 68 | 410<br>483 |
| | **SNL 3264 L** | 23264 CCK/W33 | OH 3264 H | – | TS 68/300<br>TNF 68/300 | ETS 68 | 410<br>483 |
| | **SNL 3168 F** | 22264 CCK/W33 | OH 3164 H | 2 FRB 20/580 | TS 68/300<br>TNF 68/300 | ETS 68 | 410<br>483 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

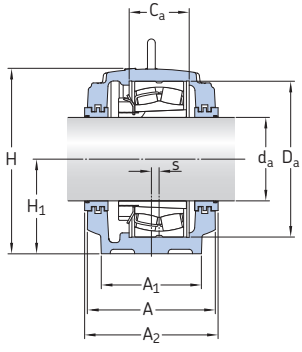


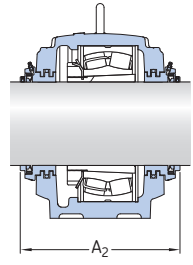

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **300** | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 400 | 360 | 208 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 228 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

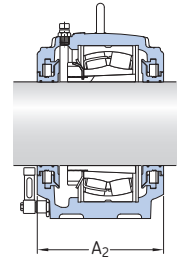
$d_a$ **320** mm




Labyrinth seals, TS design



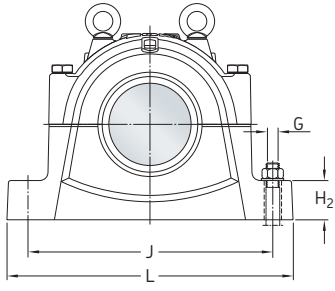

Taconite seals, TNF design

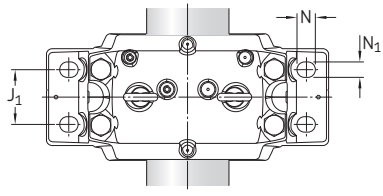



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **320** | **SNL 3068** | 23068 CCK/W33<br>C 3068 KM | OH 3068 H<br>OH 3068 H | 4 FRB 16/520<br>4 FRB 16/520 | TS 68<br>TNF 68 | ETS 68 | 380<br>453 |
| | **SNL 3068 TURT** | 23068 CCK/W33 | OH 3068 H | 4 FRB 16/520 | included | ETS 3068 R | 365 |
| | **SNL 3068 TURA** | C 3068 KM | OH 3068 H | 4 FRB 16/520 | included | ETS 3068 R | 365 |
| | **SNL 3168 F** | 23168 CCK/W33<br>23168-2CS5K<br>C 3168 KM | OH 3168 H<br>OH 3168 HE<br>OH 3168 H | –<br>–<br>– | TS 68<br>TNF 68 | ETS 68 | 410<br>483 |
| | **SNL 3168 FTURT** | 23168 CCK/W33 | OH 3168 H | – | included | ETS 3168 R | 395 |
| | **SNL 3168 FTURA** | C 3168 KM | OH 3168 H | – | included | ETS 3168 R | 395 |
| | **SNL 3168 L** | 23168 CCK/W33 | OH 3168 H | – | TS 68<br>TNF 68 | ETS 68 | 410<br>483 |
| | **SNL 3168 LTURT** | 23168 CCK/W33 | OH 3168 H | – | included | ETS 3168 R | 395 |
| | **SNL 3268 F** | 23268 CAK/W33 | OH 3268 H | – | TS 76/320<br>TNF 76/320 | ETS 76 | 410<br>483 |
| | **SNL 3268 L** | 23268 CAK/W33 | OH 3268 H | – | TS 76/320<br>TNF 76/320 | ETS 76 | 410<br>483 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

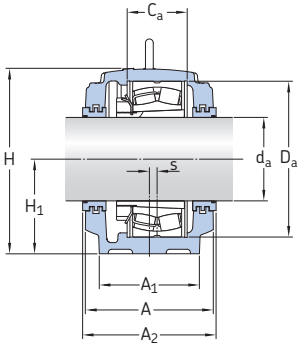


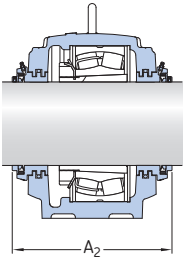

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **320** | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 360 | 224 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 244 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

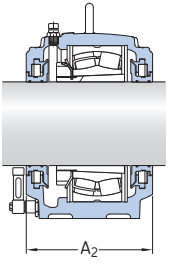
$d_a$ **340** mm




Labyrinth seals, TS design



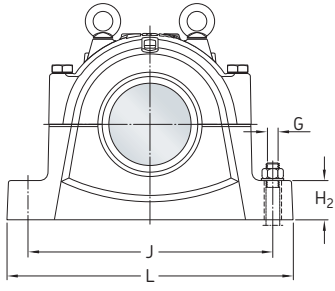

Taconite seals, TNF design

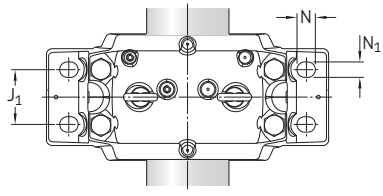



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm |
| **340** | **SNL 3072** | 23072 CCK/W33<br>C 3072 KM | OH 3072 H<br>OH 3072 H | 4 FRB 16/540<br>4 FRB 16/540 | TS 72<br>TNF 72 | ETS 72 | 380<br>453 |
| | **SNL 3072 TURT** | 23072 CCK/W33 | OH 3072 H | 4 FRB 16/540 | included | ETS 3072 R | 365 |
| | **SNL 3072 TURA** | C 3072 KM | OH 3072 H | 4 FRB 16/540 | included | ETS 3072 R | 365 |
| | **SNL 3172 F** | 23172 CCK/W33<br>23172-2CS5K<br>C 3172 KM | OH 3172 H<br>OH 3172 HE<br>OH 3172 H | –<br>–<br>– | TS 72<br>TNF 72 | ETS 72 | 410<br>483 |
| | **SNL 3172 FTURT** | 23172 CCK/W33 | OH 3172 H | – | included | ETS 3172 R | 395 |
| | **SNL 3172 FTURA** | C 3172 KM | OH 3172 H | – | included | ETS 3172 R | 395 |
| | **SNL 3172 L** | 23172 CCK/W33<br>23172-2CS5K | OH 3172 H<br>OH 3172 HE | –<br>– | TS 72<br>TNF 72 | ETS 72 | 410<br>483 |
| | **SNL 3172 LTURT** | 23172 CCK/W33 | OH 3172 H | – | included | ETS 3172 R | 395 |
| | **SNL 3272 F** | 23272 CAK/W33 | OH 3272 H | – | TS 80/340<br>TNF 80/340 | ETS 80 | 440<br>513 |
| | **SNL 3272 L** | 23272 CAK/W33 | OH 3272 H | – | TS 80/340<br>TNF 80/340 | ETS 80 | 440<br>513 |
| | **SNL 3180 L** | 22272 CAK/W33 | OH 3172 H | 2 FRB 25/650 | TS 80/340<br>TNF 80/340 | ETS 80 | 440<br>513 |

1) 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.
3) The locating rings fit the bearing in the same line only.

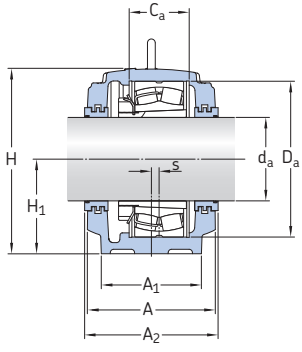


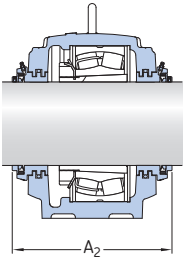

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **340** | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 212 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 400 | 360 | 212 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 430 | 390 | 232 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 252 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

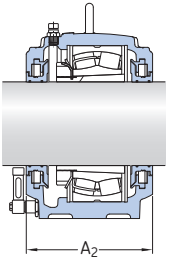
$d_a$ **360** mm




Labyrinth seals, TS design



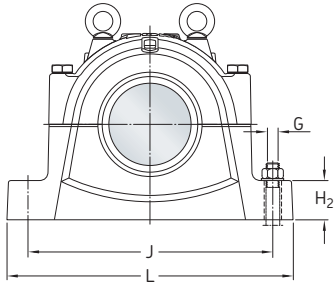

Taconite seals, TNF design

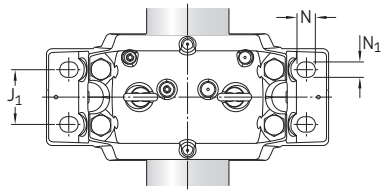



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **360** | **SNL 3076 F** | 23076 CCK/W33<br>C 3076 KM | OH 3076 H<br>OH 3076 H | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3076 FTURT** | 23076 CCK/W33 | OH 3076 H | included | ETS 3076 R | 395 |
| | **SNL 3076 FTURA** | C 3076 KM | OH 3076 H | included | ETS 3076 R | 395 |
| | **SNL 3076 L** | 23076 CCK/W33 | OH 3076 H | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3076 LTURT** | 23076 CCK/W33 | OH 3076 H | included | ETS 3076 R | 395 |
| | **SNL 3176 F** | 23176 CAK/W33<br>C 3176 KMB | OH 3176 H<br>OH 3176 HE | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3176 FTURT** | 23176 CAK/W33 | OH 3176 H | included | ETS 3176 R | 395 |
| | **SNL 3176 FTURA** | C 3176 KMB | OH 3176 HE | included | ETS 3176 R | 395 |
| | **SNL 3176 L** | 23176 CAK/W33 | OH 3176 H | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3176 LTURT** | 23176 CAK/W33 | OH 3176 H | included | ETS 3176 R | 395 |
| | **SNL 3276 F** | 23276 CAK/W33 | OH 3276 H | TS 92/360<br>TNF 92/360 | ETS 92 | 470<br>543 |
| | **SNL 3276 L** | 23276 CAK/W33 | OH 3276 H | TS 92/360<br>TNF 92/360 | ETS 92 | 470<br>543 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

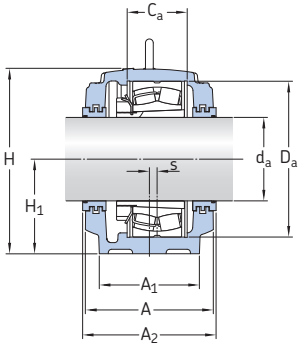


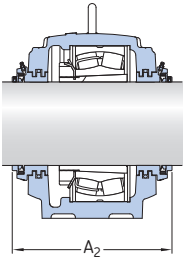

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **360** | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 214 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 400 | 360 | 214 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 460 | 420 | 240 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 260 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |

## 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

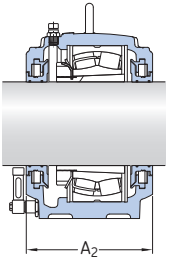
$d_a$ **380** mm




Labyrinth seals, TS design



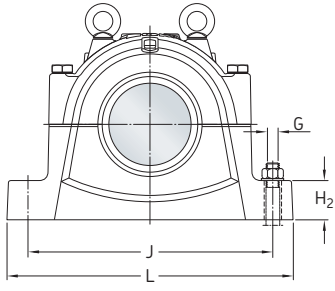

Taconite seals, TNF design

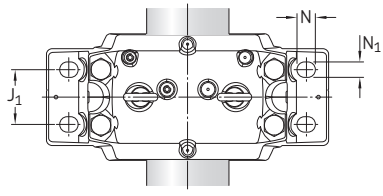



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **380** | **SNL 3080 F** | 23080 CCK/W33<br>C 3080 KM | OH 3080 H<br>OH 3080 H | TS 80<br>TNF 80 | ETS 80 | 410<br>483 |
| | **SNL 3080 FTURT** | 23080 CCK/W33 | OH 3080 H | included | ETS 3080 R | 395 |
| | **SNL 3080 FTURA** | C 3080 KM | OH 3080 H | included | ETS 3080 R | 395 |
| | **SNL 3080 L** | 23080 CCK/W33 | OH 3080 H | TS 80<br>TNF 80 | ETS 80 | 410<br>483 |
| | **SNL 3080 LTURT** | 23080 CCK/W33 | OH 3080 H | included | ETS 3080 R | 395 |
| | **SNL 3180 F** | 23180 CAK/W33<br>23180-2CS5K<br>C 3180 KM | OH 3180 H<br>OH 3180 HE<br>OH 3180 H | TS 80<br>TNF 80 | ETS 80 | 440<br>513 |
| | **SNL 3180 FTURT** | 23180 CAK/W33 | OH 3180 H | included | ETS 3180 R | 425 |
| | **SNL 3180 FTURA** | C 3180 KM | OH 3180 H | included | ETS 3180 R | 425 |
| | **SNL 3180 L** | 23180 CAK/W33<br>23180-2CS5K | OH 3180 H<br>OH 3180 HE | TS 80<br>TNF 80 | ETS 80 | 440<br>513 |
| | **SNL 3180 LTURT** | 23180 CAK/W33 | OH 3180 H | included | ETS 3180 R | 425 |
| | **SNL 3280 F** | 23280 CAK/W33 | OH 3280 H | TS 88/380<br>TNF 88/380 | ETS 88 | 470<br>543 |
| | **SNL 3280 L** | 23280 CAK/W33 | OH 3280 H | TS 88/380<br>TNF 88/380 | ETS 88 | 470<br>543 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

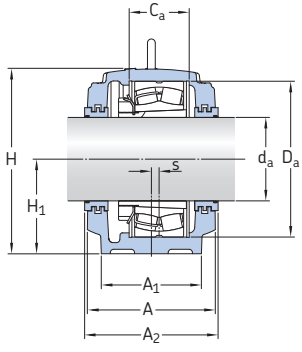


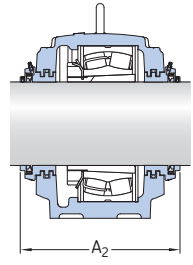

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **380** | 400 | 360 | 148 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 148 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 148 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 460 | 430 | 256 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 276 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

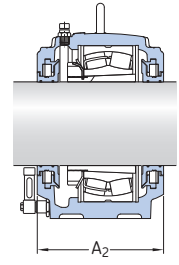
$d_a$ **400** mm




Labyrinth seals, TS design



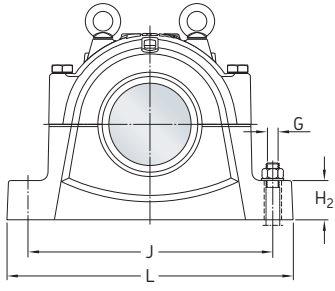

Taconite seals, TNF design

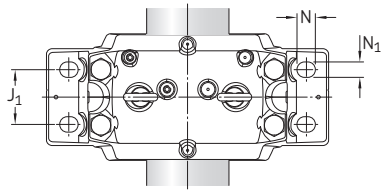



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **400** | **SNL 3084 F** | 23084 CAK/W33<br>C 3084 KM | OH 3084 H<br>OH 3084 H | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3084 FTURT** | 23084 CAK/W33 | OH 3084 H | included | ETS 3084 R | 395 |
| | **SNL 3084 FTURA** | C 3084 KM | OH 3084 H | included | ETS 3084 R | 395 |
| | **SNL 3084 L** | 23084 CAK/W33 | OH 3084 H | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3084 LTURT** | 23084 CAK/W33 | OH 3084 H | included | ETS 3084 R | 395 |
| | **SNL 3184 F** | 23184 CKJ/W33<br>C 3184 KM | OH 3184 H<br>OH 3184 H | TS 84<br>TNF 84 | ETS 84 | 470<br>543 |
| | **SNL 3184 FTURT** | 23184 CKJ/W33 | OH 3184 H | included | ETS 3184 R | 450 |
| | **SNL 3184 FTURA** | C 3184 KM | OH 3184 H | included | ETS 3184 R | 450 |
| | **SNL 3184 L** | 23184 CKJ/W33 | OH 3184 H | TS 84<br>TNF 84 | ETS 84 | 470<br>543 |
| | **SNL 3184 LTURT** | 23184 CKJ/W33 | OH 3184 H | included | ETS 3184 R | 450 |
| | **SNL 3284 F** | 23284 CAK/W33 | OH 3284 H | TS 92/400<br>TNF 92/400 | ETS 92 | 480<br>553 |
| | **SNL 3284 L** | 23284 CAK/W33 | OH 3284 H | TS 92/400<br>TNF 92/400 | ETS 92 | 480<br>553 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

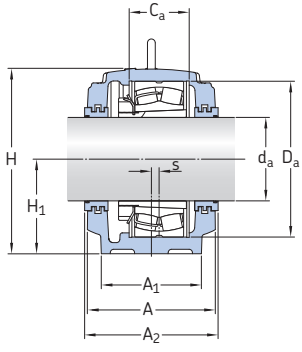


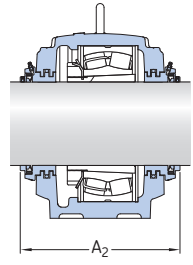

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **400** | 400 | 360 | 150 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 150 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 150 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 244 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 460 | 420 | 244 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 470 | 440 | 272 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | M 48 | 865 |
| | 470 | 440 | 292 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | M 48 | 859 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

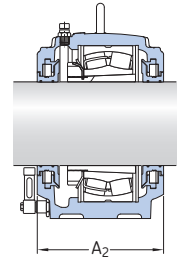
$d_a$ **410** mm




Labyrinth seals, TS design



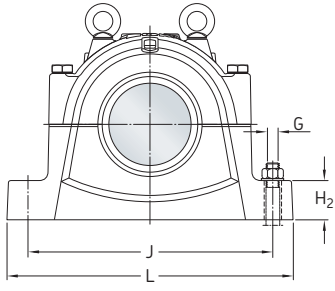

Taconite seals, TNF design

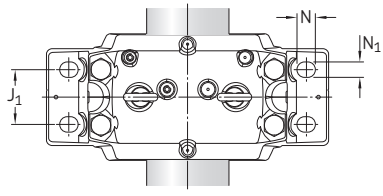



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **410** | **SNL 3088 F** | 23088 CAK/W33<br>C 3088 KMB | OH 3088 H<br>OH 3088 HE | TS 88<br>TNF 88 | ETS 88 | 440<br>513 |
| | **SNL 3088 FTURT** | 23088 CAK/W33 | OH 3088 H | included | ETS 3088 R | 425 |
| | **SNL 3088 FTURA** | C 3088 KMB | OH 3088 HE | included | ETS 3088 R | 425 |
| | **SNL 3088 L** | 23088 CAK/W33 | OH 3088 H | TS 88<br>TNF 88 | ETS 88 | 440<br>513 |
| | **SNL 3088 LTURT** | 23088 CAK/W33 | OH 3088 H | included | ETS 3088 R | 425 |
| | **SNL 3188 F** | 23188 CAK/W33<br>C 3188 KMB | OH 3188 H<br>OH 3188 HE | TS 88<br>TNF 88 | ETS 88 | 470<br>543 |
| | **SNL 3188 FTURT** | 23188 CAK/W33 | OH 3188 H | included | ETS 3188 R | 450 |
| | **SNL 3188 FTURA** | C 3188 KMB | OH 3188 HE | included | ETS 3188 R | 450 |
| | **SNL 3188 L** | 23188 CAK/W33 | OH 3188 H | TS 88<br>TNF 88 | ETS 88 | 470<br>543 |
| | **SNL 3188 LTURT** | 23188 CAK/W33 | OH 3188 H | included | ETS 3188 R | 450 |
| | **SNL 3288 F** | 23288 CAK/W33 | OH 3288 H | TS 96/410<br>TNF 96/410 | ETS 96 | 480<br>553 |
| | **SNL 3288 L** | 23288 CAK/W33 | OH 3288 H | TS 96/410<br>TNF 96/410 | ETS 96 | 480<br>553 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

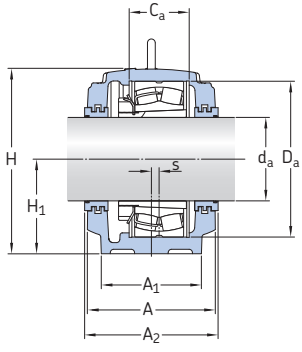


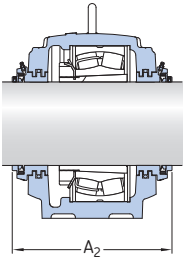

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **410** | 430 | 390 | 157 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 157 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 157 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 246 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| | 460 | 430 | 246 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| | 470 | 440 | 280 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | M 48 | 947 |
| | 470 | 440 | 300 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | M 48 | 941 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

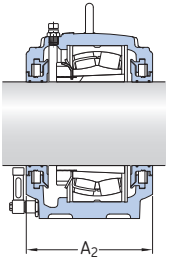
$d_a$ **430** mm




Labyrinth seals, TS design



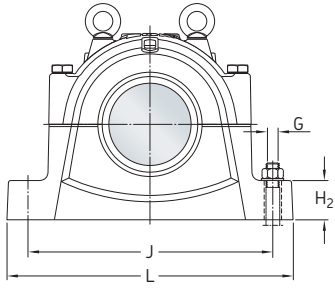

Taconite seals, TNF design

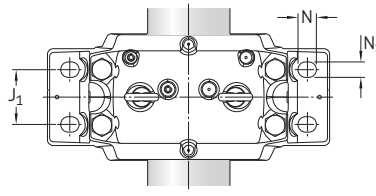



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **430** | **SNL 3092 F** | 23092 CAK/W33<br>C 3092 KM | OH 3092 H<br>OH 3092 H | TS 92<br>TNF 92 | ETS 92 | 470<br>543 |
| | **SNL 3092 FTURT** | 23092 CAK/W33 | OH 3092 H | included | ETS 3092 R | 455 |
| | **SNL 3092 FTURA** | C 3092 KM | OH 3092 H | included | ETS 3092 R | 455 |
| | **SNL 3092 L** | 23092 CAK/W33 | OH 3092 H | TS 92<br>TNF 92 | ETS 92 | 470<br>543 |
| | **SNL 3092 LTURT** | 23092 CAK/W33 | OH 3092 H | included | ETS 3092 R | 455 |
| | **SNL 3192 F** | 23192 CAK/W33<br>C 3192 KM | OH 3192 H<br>OH 3192 H | TS 92<br>TNF 92 | ETS 92 | 480<br>553 |
| | **SNL 3192 FTURT** | 23192 CAK/W33 | OH 3192 H | included | ETS 3192 R | 465 |
| | **SNL 3192 FTURA** | C 3192 KM | OH 3192 H | included | ETS 3192 R | 465 |
| | **SNL 3192 L** | 23192 CAK/W33 | OH 3192 H | TS 92<br>TNF 92 | ETS 92 | 480<br>553 |
| | **SNL 3192 LTURT** | 23192 CAK/W33 | OH 3192 H | included | ETS 3192 R | 465 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

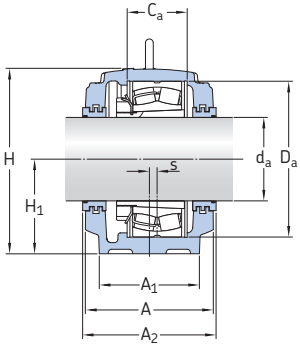


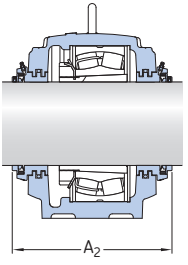

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **430** | 460 | 420 | 163 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 163 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 163 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 224 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 460 | 420 | 224 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 470 | 440 | 240 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 865 |
| | 470 | 440 | 240 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 865 |
| | 470 | 440 | 240 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 865 |
| | 470 | 440 | 260 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 859 |
| | 470 | 440 | 260 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 859 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

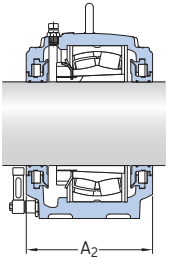
$d_a$ **450** mm




Labyrinth seals, TS design



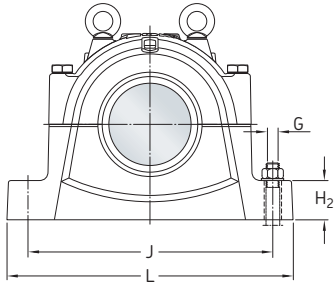

Taconite seals, TNF design

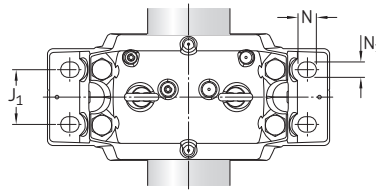



Oil seals, TURT/TURA design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **450** | **SNL 3096 F** | 23096 CAK/W33<br>C 3096 KM | OH 3096 H<br>OH 3096 H | TS 96<br>TNF 96 | ETS 96 | 470<br>543 |
| | **SNL 3096 FTURT** | 23096 CAK/W33 | OH 3096 H | included | ETS 3096 R | 455 |
| | **SNL 3096 FTURA** | C 3096 KM | OH 3096 H | included | ETS 3096 R | 455 |
| | **SNL 3096 L** | 23096 CAK/W33 | OH 3096 H | TS 96<br>TNF 96 | ETS 96 | 470<br>543 |
| | **SNL 3096 LTURT** | 23096 CAK/W33 | OH 3096 H | included | ETS 3096 R | 455 |
| | **SNL 3196 F** | 23196 CAK/W33<br>C 3196 KMB | OH 3196 H<br>OH 3196 HE | TS 96<br>TNF 96 | ETS 96 | 480<br>553 |
| | **SNL 3196 FTURT** | 23196 CAK/W33 | OH 3196 H | included | ETS 3196 R | 465 |
| | **SNL 3196 FTURA** | C 3196 KMB | OH 3196 HE | included | ETS 3196 R | 465 |
| | **SNL 3196 L** | 23196 CAK/W33 | OH 3196 H | TS 96<br>TNF 96 | ETS 96 | 480<br>553 |
| | **SNL 3196 LTURT** | 23196 CAK/W33 | OH 3196 H | included | ETS 3196 R | 465 |

[1] 222(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

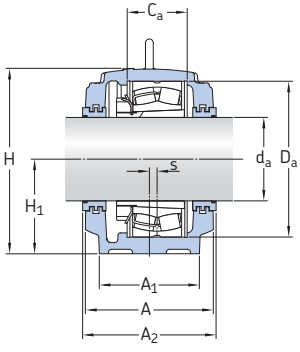


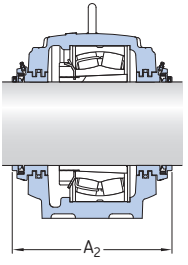

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **450** | 460 | 420 | 165 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 165 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 165 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 470 | 440 | 248 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 248 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 248 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 268 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |
| | 470 | 440 | 268 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |

# 5.1 Large SNL plummer block housings for bearings on an adapter sleeve, metric shafts

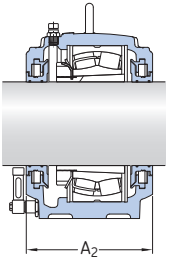
$d_a$ **470 – 500** mm




Labyrinth seals, TS design



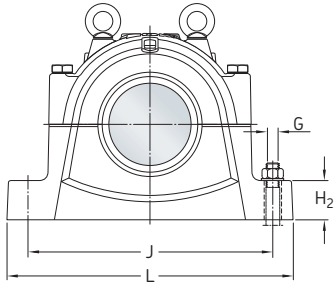

Taconite seals, TNF design

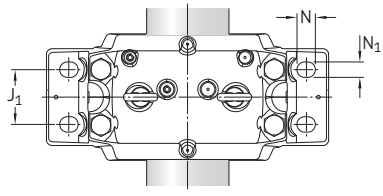



Oil seals, TURT/TURA design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **470** | **SNL 30/500 F** | 230/500 CAK/W33<br>C 30/500 KM | OH 30/500 H<br>OH 30/500 H | TS 500<br>TNF 500 | ETS 500 | 470<br>543 |
| | **SNL 30/500 FTURT** | 230/500 CAK/W33 | OH 30/500 H | included | ETS 30/500 R | 455 |
| | **SNL 30/500 FTURA** | C 30/500 KM | OH 30/500 H | included | ETS 30/500 R | 455 |
| | **SNL 30/500 L** | 230/500 CAK/W33 | OH 30/500 H | TS 500<br>TNF 500 | ETS 500 | 470<br>543 |
| | **SNL 30/500 LTURT** | 230/500 CAK/W33 | OH 30/500 H | included | ETS 30/500 R | 455 |
| **500** | **SNL 30/530 F** | 230/530 CAK/W33<br>C 30/530 KM | OH 30/530 H<br>OH 30/530 H | TS 530<br>TNF 530 | ETS 530 | 480<br>553 |
| | **SNL 30/530 FTURT** | 230/530 CAK/W33 | OH 30/530 H | included | ETS 30/530 R | 465 |
| | **SNL 30/530 FTURA** | C 30/530 KM | OH 30/530 H | included | ETS 30/530 R | 465 |
| | **SNL 30/530 L** | 230/530 CAK/W33 | OH 30/530 H | TS 530<br>TNF 530 | ETS 530 | 480<br>553 |
| | **SNL 30/530 LTURT** | 230/530 CAK/W33 | OH 30/530 H | included | ETS 30/530 R | 465 |

[1] 222(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. Only typical adapter sleeves are listed. Other variants can also fit the housing.

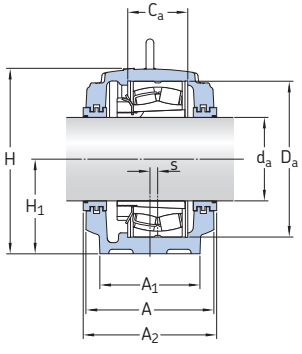


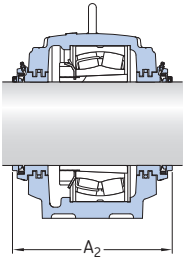

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | – | kg |
| **470** | 460 | 430 | 167 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 167 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 167 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| **500** | 470 | 440 | 185 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 185 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 185 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 470 | 440 | 248 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |
| | 470 | 440 | 248 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **4 7/16 – 5 1/2** in.
*112,713 – 139,700 mm*



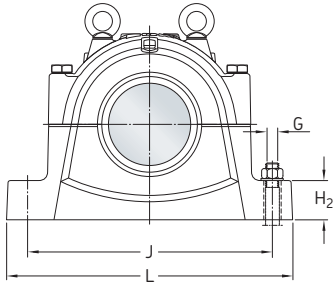

Labyrinth seals,
TS design

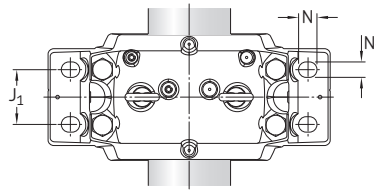



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **4 7/16**<br>*112,713* | **SNL 3134** | 22326 CCK/W33<br>22326-2CS5K | HA 2326<br>HA 2326 | 2 FRB 7.5/280<br>2 FRB 7.5/280 | TS 34/4.7/16<br>TNF 34/4.7/16 | ETS 34 | 240<br>299 |
| **4 1/2**<br>*114,300* | **SNL 3134** | 22326 CCK/W33<br>22326-2CS5K | HE 2326<br>HE 2326 | 2 FRB 7.5/280<br>2 FRB 7.5/280 | TS 34/4.1/2<br>TNF 34/4.1/2 | ETS 34 | 240<br>299 |
| **4 15/16**<br>*125,413* | **SNL 3136** | 22328 CCK/W33<br>22328-2CS5K | HA 2328<br>HA 2328 | 2 FRB 7/300<br>2 FRB 7/300 | TS 36/4.15/16<br>TNF 36/4.15/16 | ETS 36 | 250<br>310 |
| **5**<br>*127,000* | **SNL 3136** | 22328 CCK/W33<br>22328-2CS5K | HE 2328<br>HE 2328 | 2 FRB 7/300<br>2 FRB 7/300 | TS 36/5<br>TNF 36/5 | ETS 36 | 250<br>310 |
| **5 3/16**<br>*131,763* | **SNL 3138** | 22330 CCK/W33<br>22330-2CS5K | HA 2330<br>HA 2330 | 2 FRB 8/320<br>2 FRB 8/320 | TS 38/5.3/16<br>TNF 38/5.3/16 | ETS 38 | 270<br>330 |
| **5 1/4**<br>*133,350* | **SNL 3138** | 22330 CCK/W33<br>22330-2CS5K | HE 2330<br>HE 2330 | 2 FRB 8/320<br>2 FRB 8/320 | TS 38/5.1/4<br>TNF 38/5.1/4 | ETS 38 | 270<br>330 |
| **5 7/16**<br>*138,113* | **SNL 3038** | 22232 CCK/W33<br>22232-2CS5K<br>C 3232 K | HA 3132<br>HA 3132<br>HA 2332 L | 2 FRB 17.5/290<br>2 FRB 17.5/290<br>2 FRB 5.5/290 | TS 38/5.7/16<br>TNF 38/5.7/16 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22332 CCK/W33<br>22332-2CS5K | HA 2332<br>HA 2332 | 2 FRB 9/340<br>2 FRB 9/340 | TS 40/5.7/16<br>TNF 40/5.7/16 | ETS 40 | 290<br>347 |
| **5 1/2**<br>*139,700* | **SNL 3038** | 22232 CCK/W33<br>22232-2CS5K<br>C 3232 K | HE 3132<br>HE 3132<br>HE 2332 L | 2 FRB 17.5/290<br>2 FRB 17.5/290<br>2 FRB 5.5/290 | TS 38/5.1/2<br>TNF 38/5.1/2 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22332 CCK/W33<br>22332-2CS5K | HE 2332<br>HE 2332 | 2 FRB 9/340<br>2 FRB 9/340 | TS 40/5.1/2<br>TNF 40/5.1/2 | ETS 40 | 290<br>347 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



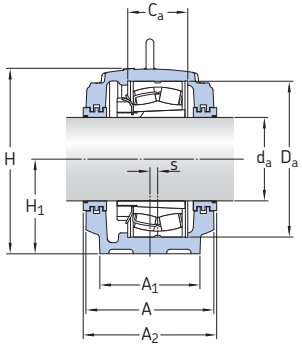





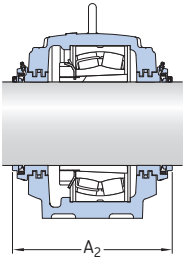

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **4 7/16** *112,713* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| **4 1/2** *114,300* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| **4 15/16** *125,413* | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| **5** *127,000* | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| **5 3/16** *131,763* | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| **5 1/4** *133,350* | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| **5 7/16** *138,113* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| **5 1/2** *139,700* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **5 13/16 – 5 15/16** in.
*147,638 – 150,813 mm*



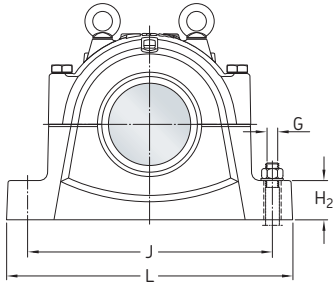

Labyrinth seals,
TS design

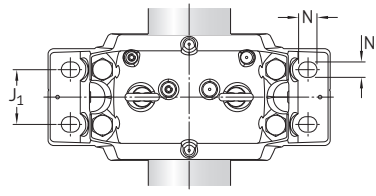



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **5 13/16** *147,638* | **SNL 3040** | 22234 CCK/W33<br>22234-2CS5K<br>C 2234 K | H 3134/5.13/16<br>H 3134/5.13/16<br>H 3134/5.13/16 L | 2 FRB 18/310<br>2 FRB 18/310<br>2 FRB 18/310 | TS 40/5.13/16<br>TNF 40/5.13/16 | ETS 40 | 270<br>327 |
| | **SNL 3234** | 23234 CCK/W33 | H 2334/5.13/16 | 2 FRB 6/310 | TS 40/5.13/16<br>TNF 40/5.13/16 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CCK/W33 | H 2334/5.13/16 | 2 FRB 10/360 | TS 48/5.13/16<br>TNS 48/5.13/16 | ETS 48 | 300<br>380 |
| **5 7/8** *149,225* | **SNL 3040** | 22234 CCK/W33<br>22234-2CS5K<br>C 2234 K | H 3134/5.7/8<br>H 3134/5.7/8<br>H 3134/5.7/8 L | 2 FRB 18/310<br>2 FRB 18/310<br>2 FRB 18/310 | TS 40/5.7/8<br>TNF 40/5.7/8 | ETS 40 | 270<br>327 |
| | **SNL 3234** | 23234 CCK/W33 | H 2334/5.7/8 | 2 FRB 6/310 | TS 40/5.7/8<br>TNF 40/5.7/8 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CCK/W33 | H 2334/5.7/8 | 2 FRB 10/360 | TS 48/5.7/8<br>TNF 48/5.7/8 | ETS 48 | 300<br>380 |
| **5 15/16** *150,813* | **SNL 3134** | 23134 CCK/W33<br>23134-2CS5K<br>C 3134 K | HA 3134<br>HA 3134<br>HA 3134 E | 2 FRB 10/280<br>2 FRB 10/280<br>2 FRB 10/280 | TS 34/5.15/16<br>TNF 34/5.15/16 | ETS 34 | 240<br>299 |
| | **SNL 3234** | 23234 CCK/W33 | HA 2334 | 2 FRB 6/310 | TS 40/5.15/16<br>TNF 40/5.15/16 | ETS 40 | 270<br>327 |
| | **SNL 3040** | 22234 CCK/W33<br>22234-2CS5K | HA 3134<br>HA 3134 | 2 FRB 18/310<br>2 FRB 18/310 | TS 40/5.15/16<br>TNF 40/5.15/16 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CCK/W33 | HA 2334 | 2 FRB 10/360 | TS 48/5.15/16<br>TNF 48/5.15/16 | ETS 48 | 300<br>380 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



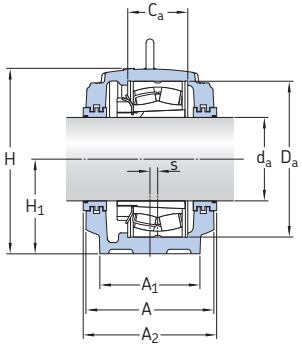





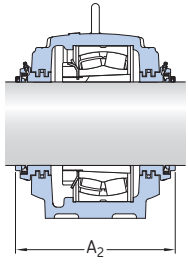

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **5 13/16** *147,638* | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| **5 7/8** *149,225* | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| **5 15/16** *150,813* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **6 – 6 3/8** in.
*152,4 – 161,925 mm*



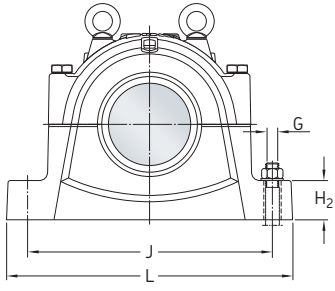

Labyrinth seals,
TS design

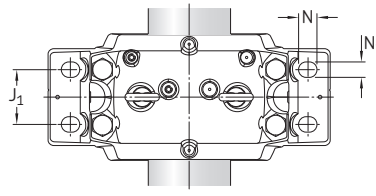



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **6**<br>*152,4* | **SNL 3134** | 23134 CCK/W33<br>23134-2CS5K | HE 3134<br>HE 3134 | 2 FRB 10/280<br>2 FRB 10/280 | TS 34/6<br>TNF 34/6 | ETS 34 | 240<br>299 |
| | **SNL 3234** | 23234 CCK/W33 | HE 2334 | 2 FRB 6/310 | TS 40/6<br>TNF 40/6 | ETS 40 | 270<br>327 |
| | **SNL 3040** | 22234 CCK/W33<br>22234-2CS5K | HE 3134<br>HE 3134 | 2 FRB 18/310<br>2 FRB 18/310 | TS 40/6<br>TNF 40/6 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CCK/W33 | HE 2334 | 2 FRB 10/360 | TS 48/6<br>TNF 48/6 | ETS 48 | 300<br>380 |
| **6 5/16**<br>*160,338* | **SNL 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | H 3036/6.5/16<br>H 3036/6.5/16 E<br>H 3036/6.5/16 | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 17/280 | TS 36/6.5/16<br>TNF 36/6.5/16 | ETS 36 | 240<br>300 |
| | **SNL 3138** | 22236 CCK/W33<br>22236-2CS5K | H 3136/6.5/16<br>H 3136/6.5/16 | 2 FRB 19/320<br>2 FRB 19/320 | TS 38/6.5/16<br>TNF 38/6.5/16 | ETS 38 | 270<br>330 |
| **6 3/8**<br>*161,925* | **SNL 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | H 3036/6.3/8<br>H 3036/6.3/8 E<br>H 3036/6.3/8 | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 17/280 | TS 36/6.3/8<br>TNF 36/6.3/8 | ETS 36 | 240<br>300 |
| | **SNL 3138** | 22236 CCK/W33<br>22236-2CS5K | H 3136/6.3/8<br>H 3136/6.3/8 | 2 FRB 19/320<br>2 FRB 19/320 | TS 38/6.3/8<br>TNF 38/6.3/8 | ETS 38 | 270<br>330 |

1) 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
3) The locating rings fit the bearing in the same line only.



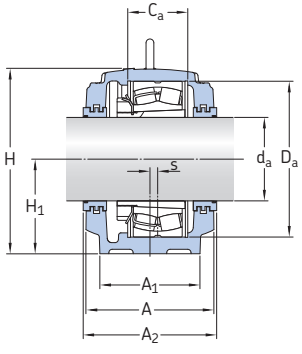





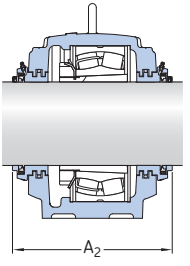

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **6** *152,4* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| **6 5/16** *160,338* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| **6 3/8** *161,925* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **6 7/16 – 6 1/2** in.
*163,513 – 165,1 mm*



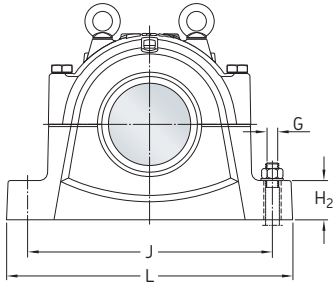

Labyrinth seals,
TS design

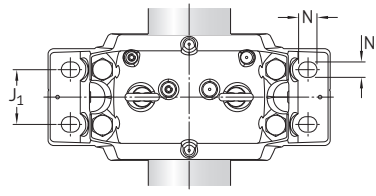



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **6 7/16**<br>*163,513* | **SNL 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | HA 3036<br>HA 3036 E<br>HA 3036 | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 17/280 | TS 36/6.7/16<br>TNF 36/6.7/16 | ETS 36 | 240<br>300 |
| | **SNL 3136** | 23136 CCK/W33<br>23136-2CS5K<br>C 3136 K | HA 3136<br>HA 3136 L<br>HA 3136 L | 2 FRB 10/300<br>2 FRB 10/300<br>2 FRB 10/300 | TS 36/6.7/16<br>TNF 36/6.7/16 | ETS 36 | 250<br>310 |
| | **SNL 3236** | 23236 CCK/W33<br>C 3236 K | HA 2336<br>HA 2336 | 2 FRB 6/320<br>2 FRB 6/320 | TS 38/6.7/16<br>TNF 38/6.7/16 | ETS 38 | 270<br>330 |
| | **SNL 3138** | 22236 CCK/W33<br>22236-2CS5K | HA 3136<br>HA 3136 | 2 FRB 19/320<br>2 FRB 19/320 | TS 38/6.7/16<br>TNF 38/6.7/16 | ETS 38 | 270<br>330 |
| **6 1/2**<br>*165,1* | **SNL 3036** | 23036 CCK/W33<br>23036-2CS5K<br>C 3036 K | HE 3036<br>HE 3036 E<br>HE 3036 | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 17/280 | TS 36/6.1/2<br>TNF 36/6.1/2 | ETS 36 | 240<br>300 |
| | **SNL 3136** | 23136 CCK/W33<br>23136-2CS5K<br>C 3136 K | HE 3136<br>HE 3136 L<br>HE 3136 L | 2 FRB 10/300<br>2 FRB 10/300<br>2 FRB 10/300 | TS 36/6.1/2<br>TNF 36/6.1/2 | ETS 36 | 250<br>310 |
| | **SNL 3138** | 22236 CCK/W33<br>22236-2CS5K | HE 3136<br>HE 3136 | 2 FRB 19/320<br>2 FRB 19/320 | TS 38/6.1/2<br>TNF 38/6.1/2 | ETS 38 | 270<br>330 |
| | **SNL 3236** | 23236 CCK/W33<br>C 3236 K | HE 2336<br>HE 2336 | 2 FRB 6/320<br>2 FRB 6/320 | TS 38/6.1/2<br>TNF 38/6.1/2 | ETS 38 | 270<br>330 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

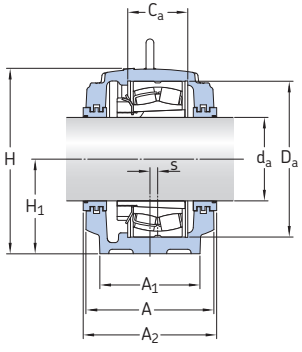


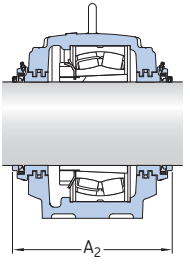

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **6 7/16** *163,513* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| **6 1/2** *165,1* | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | 1 | M 16 | 69,5 |
| | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **6 3/4 – 6 13/16** in.
*171,45 – 173,038 mm*



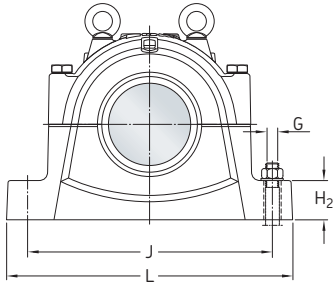

Labyrinth seals, TS design

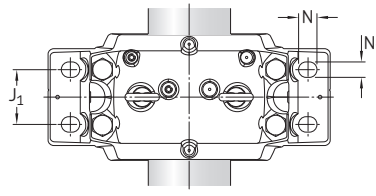



Taconite seals, TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **6 3/4** *171,45* | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | HE 3038<br>HE 3038 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38/6.3/4<br>TNF 38/6.3/4 | ETS 38 | 250<br>312 |
| | **SNL 3138** | 23138 CCK/W33<br>23138-2CS5K<br>C 3138 KV | HE 3138<br>HE 3138 L<br>HE 3138 | 2 FRB 10/320<br>2 FRB 10/320<br>2 FRB 10/320 | TS 38/6.3/4<br>TNF 38/6.3/4 | ETS 38 | 270<br>330 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | HE 3138<br>HE 3138<br>HE 3138 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/6.3/4<br>TNF 40/6.3/4 | ETS 40 | 290<br>347 |
| | **SNL 3238** | 23238 CCK/W33 | HE 2338 | 2 FRB 6/340 | TS 40/6.3/4<br>TNF 40/6.3/4 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | HE 2338 | 2 FRB 8/400 | TS 48/6.3/4<br>TNF 48/6.3/4 | ETS 48 | 315<br>396 |
| **6 13/16** *173,038* | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | H 3038/6.13/16<br>H 3038/6.13/16 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38/6.13/16<br>TNF 38/6.13/16 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | H 3138/6.13/16<br>H 3138/6.13/16<br>H 3138/6.13/16 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/6.13/16<br>TNF 40/6.13/16 | ETS 40 | 290<br>347 |
| | **SNL 3238** | 23238 CCK/W33 | H 2338/6.13/16 | 2 FRB 6/340 | TS 40/6.13/16<br>TNF 40/6.13/16 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | H 2338/6.13/16 | 2 FRB 8/400 | TS 48/6.13/16<br>TNF 48/6.13/16 | ETS 48 | 315<br>396 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



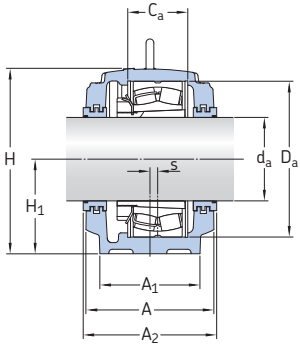





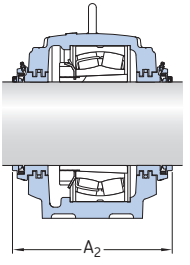

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **6 3/4** *171,45* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| **6 13/16** *173,038* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **6 7/8 – 6 15/16** in.
*174,625 – 176,213 mm*



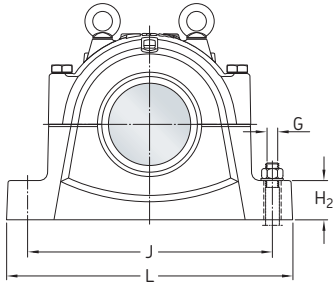

Labyrinth seals,
TS design

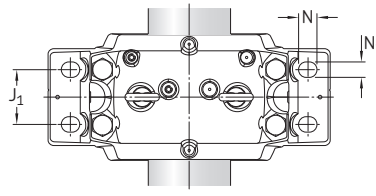



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **6 7/8**<br>*174,625* | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | H 3038/6.7/8<br>H 3038/6.7/8 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38/6.7/8<br>TNF 38/6.7/8 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | H 3138/6.7/8<br>H 3138/6.7/8<br>H 3138/6.7/8 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/6.7/8<br>TNF 40/6.7/8 | ETS 40 | 290<br>347 |
| | **SNL 3238** | 23238 CCK/W33 | H 2338/6.7/8 | 2 FRB 6/340 | TS 40/6.7/8<br>TNF 40/6.7/8 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | H 2338/6.7/8 | 2 FRB 8/400 | TS 48/6.7/8<br>TNF 48/6.7/8 | ETS 48 | 315<br>396 |
| **6 15/16**<br>*176,213* | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | HA 3038<br>HA 3038 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38/6.15/16<br>TNF 38/6.15/16 | ETS 38 | 250<br>312 |
| | **SNL 3138** | 23138 CCK/W33<br>23138-2CS5K<br>C 3138 KV | HA 3138<br>HA 3138 L<br>HA 3138 | 2 FRB 10/320<br>2 FRB 10/320<br>2 FRB 10/320 | TS 38/6.15/16<br>TNF 38/6.15/16 | ETS 38 | 270<br>330 |
| | **SNL 3238** | 23238 CCK/W33 | HA 2338 | 2 FRB 6/340 | TS 40/6.15/16<br>TNF 40/6.15/16 | ETS 40 | 290<br>347 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | HA 3138<br>HA 3138<br>HA 3138 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/6.15/16<br>TNF 40/6.15/16 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | HA 2338 | 2 FRB 8/400 | TS 48/6.15/16<br>TNF 48/6.15/16 | ETS 48 | 315<br>396 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



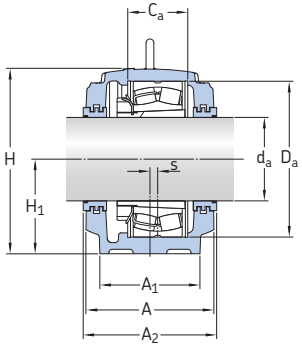





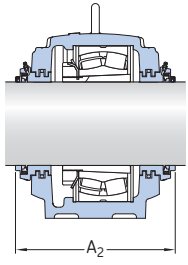

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **6 7/8** *174,625* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| **6 15/16** *176,213* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **7** in.
*177,8 mm*



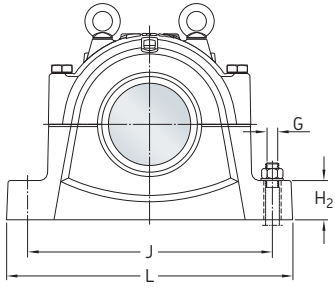

Labyrinth seals,
TS design

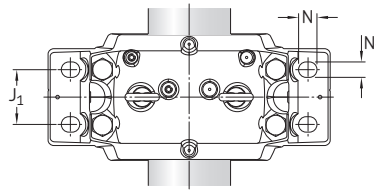



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **7**<br>*177,8* | **SNL 3038** | 23038 CCK/W33<br>C 3038 K | H 3038/7<br>H 3038/7 | 4 FRB 10/290<br>4 FRB 10/290 | TS 38/7<br>TNF 38/7 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22238 CCK/W33<br>22238-2CS5K<br>C 2238 K | H 3138/7<br>H 3138/7<br>H 3138/7 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 40/7<br>TNF 40/7 | ETS 40 | 290<br>347 |
| | **SNL 3238** | 23238 CCK/W33 | H 2338/7 | 2 FRB 6/340 | TS 40/7<br>TNF 40/7 | ETS 40 | 290<br>347 |
| | **SNL 3148** | 22338 CCK/W33 | H 2338/7 | 2 FRB 8/400 | TS 48/7<br>TNF 48/7 | ETS 48 | 315<br>396 |
| | **SNL 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | HE 3040<br>HE 3040<br>HE 3040 | 4 FRB 10/310<br>4 FRB 10/310<br>4 FRB 10/310 | TS 40/7<br>TNF 40/7 | ETS 40 | 270<br>327 |
| | **SNL 3140** | 23140 CCK/W33<br>23140-2CS5K<br>C 3140 K | HE 3140<br>HE 3140<br>HE 3140 | 2 FRB 10/340<br>2 FRB 10/340<br>2 FRB 10/340 | TS 40/7<br>TNF 40/7 | ETS 40 | 290<br>347 |
| | **SNL 3048** | 22240 CCK/W33<br>22240-2CS5K | HE 3140<br>HE 3140 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48/7<br>TNF 48/7 | ETS 48 | 300<br>380 |
| | **SNL 3240** | 23240 CCK/W33 | HE 2340 | 2 FRB 6/360 | TS 48/7<br>TNF 48/7 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CCK/W33 | HE 2340 | 2 FRB 14/420 | TS 56/7<br>TNF 56/7 | ETS 56 | 330<br>404 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



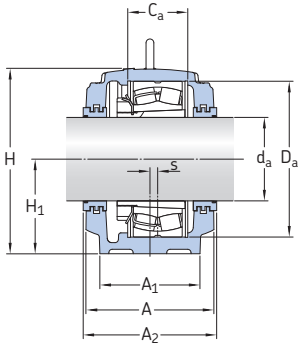





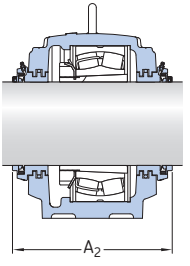

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **7**<br>*177,8* | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | 1 | M 16 | 77,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **7 1/8 – 7 3/16** in.
*180,975 – 182,563 mm*



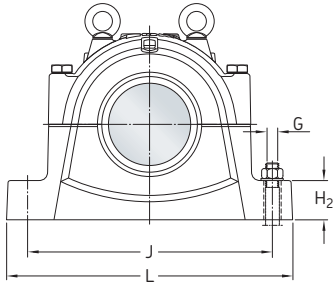

Labyrinth seals,
TS design

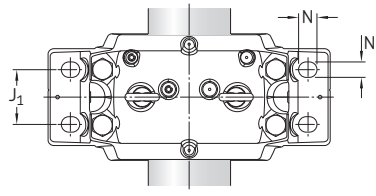



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **7 1/8**<br>*180,975* | **SNL 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | H 3040/7.1/8<br>H 3040/7.1/8<br>H 3040/7.1/8 | 4 FRB 10/310<br>4 FRB 10/310<br>4 FRB 10/310 | TS 40/7.1/8<br>TNF 40/7.1/8 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22240 CCK/W33<br>22240-2CS5K | H 3140/7.1/8<br>H 3140/7.1/8 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48/7.1/8<br>TNF 48/7.1/8 | ETS 48 | 300<br>380 |
| | **SNL 3240** | 23240 CCK/W33 | H 2340/7.1/8 | 2 FRB 6/360 | TS 48/7.1/8<br>TNF 48/7.1/8 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CCK/W33 | H 2340/7.1/8 | 2 FRB 14/420 | TS 56/7.1/8<br>TNF 56/7.1/8 | ETS 56 | 330<br>404 |
| **7 3/16**<br>*182,563* | **SNL 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | HA 3040<br>HA 3040<br>HA 3040 | 4 FRB 10/310<br>4 FRB 10/310<br>4 FRB 10/310 | TS 40/7.3/16<br>TNF 40/7.3/16 | ETS 40 | 270<br>327 |
| | **SNL 3140** | 23140 CCK/W33<br>23140-2CS5K<br>C 3140 K | HA 3140<br>HA 3140<br>HA 3140 | 2 FRB 10/340<br>2 FRB 10/340<br>2 FRB 10/340 | TS 40/7.3/16<br>TNF 40/7.3/16 | ETS 40 | 290<br>347 |
| | **SNL 3240** | 23240 CCK/W33 | HA 2340 | 2 FRB 6/360 | TS 48/7.3/16<br>TNF 48/7.3/16 | ETS 48 | 300<br>380 |
| | **SNL 3048** | 22240 CCK/W33<br>22240-2CS5K | HA 3140<br>HA 3140 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48/7.3/16<br>TNF 48/7.3/16 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CCK/W33 | HA 2340 | 2 FRB 14/420 | TS 56/7.13/16<br>TNF 56/7.13/16 | ETS 56 | 330<br>404 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

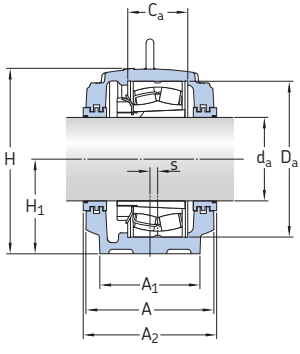


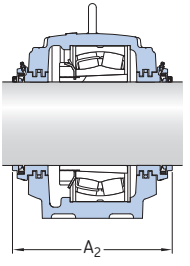

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **7 1/8** *180,975* | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| **7 3/16** *182,563* | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **7 1/4 – 7 7/8** in.
*184,15 – 200,025 mm*



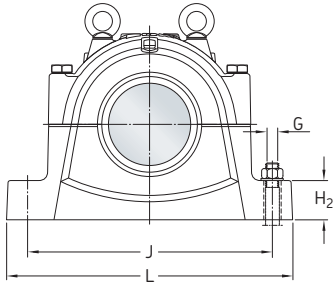

Labyrinth seals,
TS design

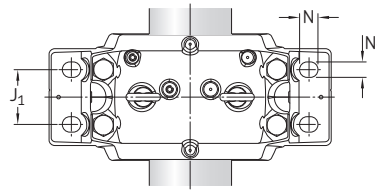



Taconite seals,
TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **7 1/4**<br>*184,15* | **SNL 3040** | 23040 CCK/W33<br>23040-2CS5K<br>C 3040 K | H 3040/7.1/4<br>H 3040/7.1/4<br>H 3040/7.1/4 | 4 FRB 10/310<br>4 FRB 10/310<br>4 FRB 10/310 | TS 40/7.1/4<br>TNF 40/7.1/4 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22240 CCK/W33<br>22240-2CS5K | H 3140/7.1/4<br>H 3140/7.1/4 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48/7.1/4<br>TNF 48/7.1/4 | ETS 48 | 300<br>380 |
| | **SNL 3240** | 23240 CCK/W33 | H 2340/7.1/4 | 2 FRB 6/360 | TS 48/7.1/4<br>TNF 48/7.1/4 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CCK/W33 | H 2340/7.1/4 | 2 FRB 14/420 | TS 56/7.1/4<br>TNF 56/7.1/4 | ETS 56 | 330<br>404 |
| **7 13/16**<br>*198,438* | **SNL 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | OH 3044/7.13/16 H<br>OH 3044/7.13/16 H<br>OH 3044/7.13/16 H | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 44/7.13/16<br>TNF 44/7.13/16 | ETS 44 | 290<br>349 |
| | **SNL 3148** | 22244 CCK/W33 | OH 3144/7.13/16 H | 4 FRB 10/400 | TS 48/7.13/16<br>TNF 48/7.13/16 | ETS 48 | 315<br>396 |
| **7 7/8**<br>*200,025* | **SNL 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | OH 3044/7.7/8 H<br>OH 3044/7.7/8 H<br>OH 3044/7.7/8 H | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 44/7.7/8<br>TNF 44/7.7/8 | ETS 44 | 290<br>349 |
| | **SNL 3148** | 22244 CCK/W33 | OH 3144/7.7/8 H | 4 FRB 10/400 | TS 48/7.7/8<br>TNF 48/7.7/8 | ETS 48 | 315<br>396 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



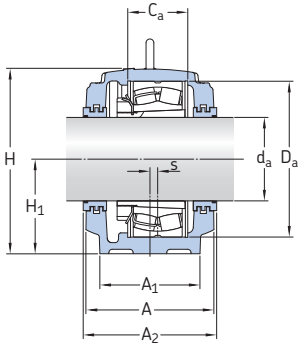





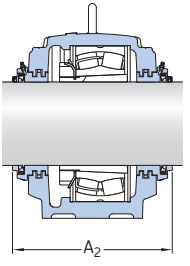

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **7 1/4** *184,15* | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | 1 | M 20 | 97,5 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| **7 13/16** *198,438* | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| **7 7/8** *200,025* | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **7 15/16 – 8 7/16** in.
*201,613 – 214,312 mm*



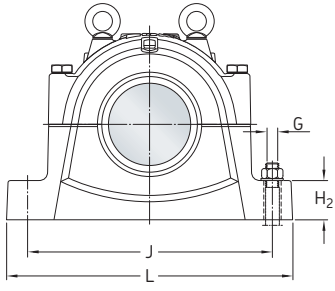

Labyrinth seals, TS design

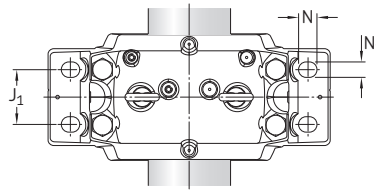



Taconite seals, TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **7 15/16** *201,613* | **SNL 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | H 3044/7.15/16<br>H 3044/7.15/16<br>H 3044/7.15/16 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 44/7.15/16<br>TNF 44/7.15/16 | ETS 44 | 290<br>349 |
| | **SNL 3144** | 23144 CCK/W33<br>23144-2CS5K<br>C 3144 K | H 3144/7.15/16<br>H 3144/7.15/16 TL<br>H 3144/7.15/16 TL | 2 FRB 10/370<br>2 FRB 10/370<br>2 FRB 10/370 | TS 44/7.15/16<br>TNF 44/7.15/16 | ETS 44 | 300<br>357 |
| | **SNL 3148** | 22244 CCK/W33<br>22244-2CS5K<br>C 2244 K | H 3144/7.15/16<br>H 3144/7.15/16<br>H 3144/7.15/16 | 4 FRB 10/400<br>4 FRB 10/400<br>4 FRB 10/400 | TS 48/7.15/16<br>TNF 48/7.15/16 | ETS 48 | 315<br>396 |
| | **SNL 3244** | 23244 CCK/W33 | H 2344/7.15/16 | 2 FRB 10/400 | TS 48/7.15/16<br>TNF 48/7.15/16 | ETS 48 | 315<br>396 |
| | **SNL 3156** | 22344 CCK/W33 | H 2344/7.15/16 | 2 FRB 10.5/460 | TS 56/7.15/16<br>TNF 56/7.15/16 | ETS 56 | 330<br>404 |
| **8** *203,2* | **SNL 3044** | 23044 CCK/W33<br>23044-2CS5K<br>C 3044 K | H 3044/8<br>H 3044/8<br>H 3044/8 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 44/8<br>TNF 44/8 | ETS 44 | 290<br>349 |
| | **SNL 3148** | 22244 CCK/W33<br>22244-2CS5K<br>C 2244 K | H 3144/8<br>H 3144/8<br>H 3144/8 | 4 FRB 10/400<br>4 FRB 10/400<br>4 FRB 10/400 | TS 48/8<br>TNF 48/8 | ETS 48 | 315<br>396 |
| **8 7/16** *214,312* | **SNL 3048** | 23048 CCK/W33<br>23048-2CS5K<br>C 3048 K | OH 3048/8.7/16 H<br>OH 3048/8.7/16 HE<br>OH 3048/8.7/16 H | 4 FRB 12/360<br>4 FRB 12/360<br>4 FRB 12/360 | TS 48/8.7/16<br>TNF 48/8.7/16 | ETS 48 | 300<br>380 |
| | **SNL 3152** | 22248 CCK/W33 | OH 3148/8.7/16 | 2 FRB 22/440 | TS 52/8.7/16<br>TNF 52/8.7/16 | ETS 52 | 330<br>412 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



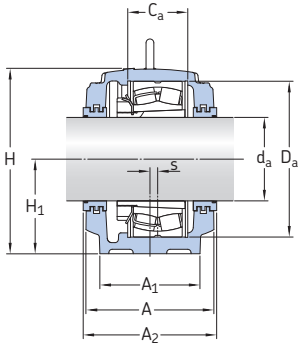





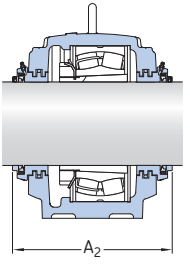

| Shaft diameter | Dimensions | | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **7 15/16** *201,613* | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 290 | 240 | 140 | 370 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 138 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 310 | 260 | 164 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 25 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| **8** *203,2* | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | 1 1/4 | M 20 | 123 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| **8 7/16** *214,312* | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **8 1/2 – 9 7/16** in.
*215,9 – 239,713 mm*



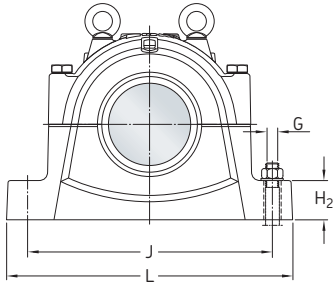

Labyrinth seals, TS design

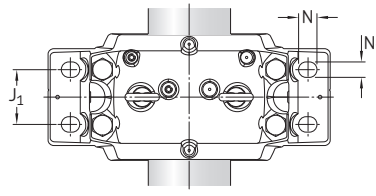



Taconite seals, TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **8 1/2**<br>*215,9* | **SNL 3048** | 23048 CCK/W33<br>23048-2CS5K<br>C 3048 K | OH 3048/8.1/2 H<br>OH 3048/8.1/2 HE<br>OH 3048/8.1/2 H | 4 FRB 12/360<br>4 FRB 12/360<br>4 FRB 12/360 | TS 48/8.1/2<br>TNF 48/8.1/2 | ETS 48 | 300<br>380 |
| | **SNL 3152** | 22248 CCK/W33 | OH 3148/8.1/2 H | 2 FRB 22/440 | TS 52/8.1/2<br>TNF 52/8.1/2 | ETS 52 | 330<br>412 |
| **8 15/16**<br>*227,013* | **SNL 3048** | 23048 CCK/W33<br>23048-2CS5K<br>C 3048 K | H 3048/8.15/16<br>H 3048/8.15/16 E<br>H 3048/8.15/16 | 4 FRB 12/360<br>4 FRB 12/360<br>4 FRB 12/360 | TS 48/8.15/16<br>TNF 48/8.15/16 | ETS 48 | 300<br>380 |
| | **SNL 3148** | 23148 CCK/W33<br>23148-2CS5K<br>C 3148 K | H 3148/8.15/16<br>H 3148/8.15/16 TL<br>H 3148/8.15/16 TL | 2 FRB 10/400<br>2 FRB 10/400<br>2 FRB 10/400 | TS 48/8.15/16<br>TNF 48/8.15/16 | ETS 48 | 315<br>396 |
| | **SNL 3248** | 23248 CCK/W33 | H 2348/8.15/16 | 2 FRB 10/440 | TS 52/8.15/16<br>TNF 52/8.15/16 | ETS 52 | 330<br>406 |
| | **SNL 3152** | 22248 CCK/W33 | H 3148/8.15/16 | 2 FRB 22/440 | TS 52/8.15/16<br>TNF 52/8.15/16 | ETS 52 | 330<br>412 |
| | **SNL 3160** | 22348 CCK/W33 | H 2348/8.15/16 | 2 FRB 12.5/500 | TS 60/8.15/16<br>TNH 60/8.15/16 | ETS 60 | 360<br>434 |
| **9 7/16**<br>*239,713* | **SNL 3052** | 23052 CCK/W33<br>23052-2CS5K<br>C 3052 K | OH 3052/9.7/16 H<br>OH 3052/9.7/16 HE<br>OH 3052/9.7/16 H | 2 FRB 22/400<br>2 FRB 22/400<br>2 FRB 22/400 | TS 52/9.7/16<br>TNF 52/9.7/16 | ETS 52 | 315<br>394 |
| | **SNL 3152** | 23152 CCK/W33<br>23152-2CS5K<br>C 3152 K | OH 3152/9.7/16 H<br>OH 3152/9.7/16 HTL<br>OH 3152/9.7/16 HTL | 2 FRB 10/440<br>2 FRB 10/440<br>2 FRB 10/440 | TS 52/9.7/16<br>TNF 52/9.7/16 | ETS 52 | 330<br>412 |
| | **SNL 3252** | 23252 CCK/W33 | OH 2352/9.7/16 H | 2 FRB 10/480 | TS 64/9.7/16<br>TNF 64/9.7/16 | ETS 64 | 360<br>434 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

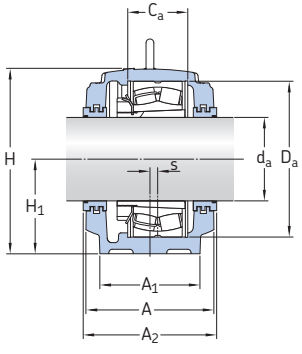


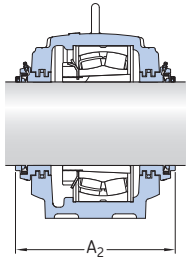

| Shaft diameter | Dimensions | | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **8 1/2** *215,9* | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| **8 15/16** *227,013* | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | 1 1/4 | M 20 | 139 |
| | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 320 | 280 | 180 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| **9 7/16** *239,713* | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 350 | 310 | 194 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **9 1/2 – 10** in.
*241,3 – 254 mm*



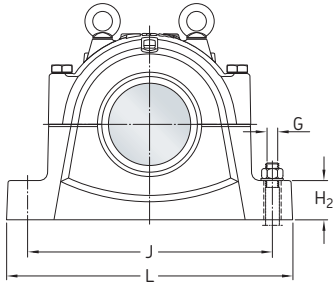

Labyrinth seals,
TS design

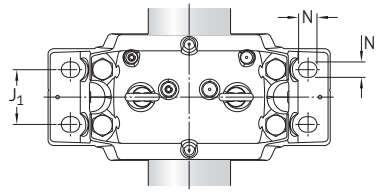



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **9 1/2**<br>*241,3* | **SNL 3052** | 23052 CCK/W33<br>23052-2CS5K<br>C 3052 K | H 3052/9.1/2<br>H 3052/9.1/2 E<br>H 3052/9.1/2 | 2 FRB 22/400<br>2 FRB 22/400<br>2 FRB 22/400 | TS 52/9.1/2<br>TNF 52/9.1/2 | ETS 52 | 315<br>394 |
| | **SNL 3152** | 23152 CCK/W33<br>23152-2CS5K<br>C 3152 K | H 3152/9.1/2<br>H 3152/9.1/2 TL<br>H 3152/9.1/2 TL | 2 FRB 10/440<br>2 FRB 10/440<br>2 FRB 10/440 | TS 52/9.1/2<br>TNF 52/9.1/2 | ETS 52 | 330<br>412 |
| | **SNL 3064** | 22252 CCK/W33 | H 3152/9.1/2 | 2 FRB 25.5/480 | TS 64/9.1/2<br>TNF 64/9.1/2 | ETS 64 | 360<br>434 |
| | **SNL 3252** | 23252 CCK/W33 | H 2352/9.1/2 | 2 FRB 10/480 | TS 64/9.1/2<br>TNF 64/9.1/2 | ETS 64 | 360<br>434 |
| | **SNL 3164** | 22352 CCK/W33 | H 2352/9.1/2 | 2 FRB 15.5/540 | TS 64/9.1/2<br>TNF 64/9.1/2 | ETS 64 | 380<br>454 |
| **9 15/16**<br>*252,413* | **SNL 3056** | 23056 CCK/W33<br>C 3056 K | OH 3056/9.15/16 H<br>OH 3056/9.15/16 H | 6 FRB 10/420<br>6 FRB 10/420 | TS 56/9.15/16<br>TNF 56/9.15/16 | ETS 56 | 330<br>404 |
| **10**<br>*254* | **SNL 3056** | 23056 CCK/W33<br>C 3056 K | OH 3056/10 H<br>OH 3056/10 H | 6 FRB 10/420<br>6 FRB 10/420 | TS 56/10<br>TNF 56/10 | ETS 56 | 330<br>404 |
| | **SNL 3156** | 23156 CCK/W33<br>23156-2CS5K<br>C 3156 K | OH 3156/10 H<br>OH 3156/10 HTL<br>OH 3156/10 HTL | 2 FRB 10/460<br>2 FRB 10/460<br>2 FRB 10/460 | TS 56/10<br>TNF 56/10 | ETS 56 | 330<br>404 |
| | **SNL 3160** | 22256 CCK/W33 | OH 3156/10 H | 2 FRB 25/500 | TS 60/10<br>TNF 60/10 | ETS 60 | 360<br>434 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



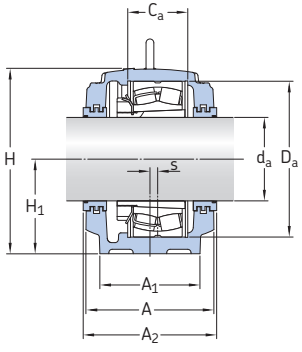





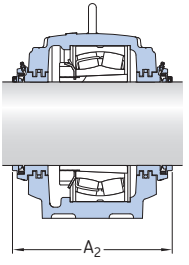

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **9 1/2** *241,3* | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | 1 1/4 | M 24 | 187 |
| | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 350 | 310 | 194 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| **9 15/16** *252,413* | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| **10** *254* | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |

# 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **10 7/16 – 10 1/2** in.
*265,113 – 266,7 mm*



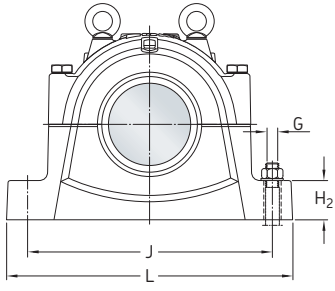

Labyrinth seals, TS design

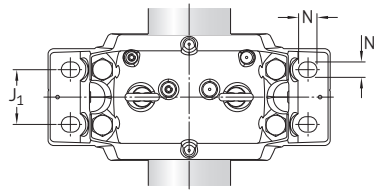



Taconite seals, TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **10 7/16**<br>*265,113* | **SNL 3056** | 23056 CCK/W33<br>C 3056 K | H 3056/10.7/16<br>H 3056/10.7/16 | 6 FRB 10/420<br>6 FRB 10/420 | TS 56/10.7/16<br>TNF 56/10.7/16 | ETS 56 | 330<br>404 |
| | **SNL 3156** | 23156 CCK/W33<br>23156-2CS5K<br>C 3156 K | H 3156/10.7/16<br>H 3156/10.7/16 TL<br>H 3156/10.7/16 TL | 2 FRB 10/460<br>2 FRB 10/460<br>2 FRB 10/460 | TS 56/10.7/16<br>TNF 56/10.7/16 | ETS 56 | 330<br>404 |
| | **SNL 3256** | 23256 CCK/W33 | H 2356/10.7/16 | 2 FRB 10/500 | TS 60/10.7/16<br>TNF 60/10.7/16 | ETS 60 | 360<br>434 |
| | **SNL 3160** | 22256 CCK/W33 | H 3156/10.7/16 | 2 FRB 25/500 | TS 60/10.7/16<br>TNF 60/10.7/16 | ETS 60 | 360<br>434 |
| | **SNL 3168 L** | 22356 CCK/W33 | H 2356/10.7/16 | 2 FRB 17.5/580 | TS 68/10.7/16<br>TNF 68/10.7/16 | ETS 68 | 410<br>483 |
| **10 1/2**<br>*266,7* | **SNL 3056** | 23056 CCK/W33<br>C 3056 K | H 3056/10.1/2<br>H 3056/10.1/2 | 6 FRB 10/420<br>6 FRB 10/420 | TS 56/10.1/2<br>TNF 56/10.1/2 | ETS 56 | 330<br>404 |
| | **SNL 3156** | 23156 CCK/W33<br>23156-2CS5K<br>C 3156 K | H 3156/10.1/2<br>H 3156/10.1/2 TL<br>H 3156/10.1/2 TL | 2 FRB 10/460<br>2 FRB 10/460<br>2 FRB 10/460 | TS 56/10.1/2<br>TNF 56/10.1/2 | ETS 56 | 330<br>404 |
| | **SNL 3160** | 22256 CCK/W33 | H 3156/10.1/2 | 2 FRB 25/500 | TS 60/10.1/2<br>TNF 60/10.1/2 | ETS 60 | 360<br>434 |
| | **SNL 3256** | 23256 CCK/W33 | H 2356/10.1/2 | 2 FRB 10/500 | TS 60/10.1/2<br>TNF 60/10.1/2 | ETS 60 | 360<br>434 |
| | **SNL 3168 L** | 22356 CCK/W33 | H 2356/10.1/2 | 2 FRB 17.5/580 | TS 68/10.1/2<br>TNF 68/10.1/2 | ETS 68 | 410<br>483 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



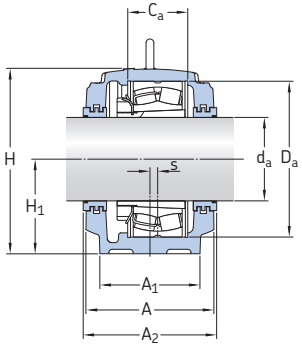





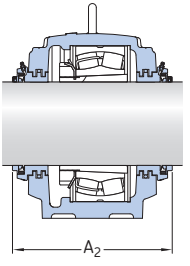

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **10 7/16** *265,113* | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| | 350 | 310 | 196 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| **10 1/2** *266,7* | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | 1 1/2 | M 24 | 221 |
| | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 350 | 310 | 196 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **10 15/16 – 11 1/2** in.
*277,813 – 292,1 mm*



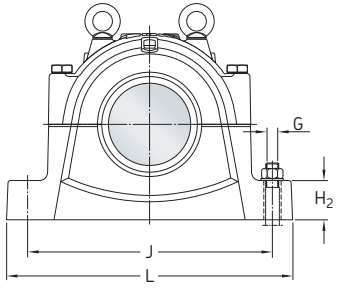

Labyrinth seals, TS design

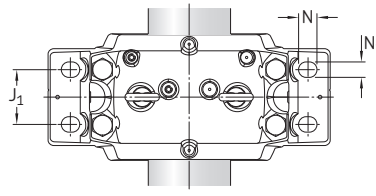



Taconite seals, TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **10 15/16**<br>*277,813* | **SNL 3060** | 23060 CCK/W33<br>C 3060 KM | OH 3060/10.15/16 H<br>OH 3060/10.15/16 H | 2 FRB 25/460<br>2 FRB 25/460 | TS 60/10.15/16<br>TNF 60/10.15/16 | ETS 60 | 330<br>404 |
| | **SNL 3160** | 23160 CCK/W33<br>23160-2CS5K<br>C 3160 K | OH 3160/10.15/16 H<br>OH 3160/10.15/16 HE<br>OH 3160/10.15/16 H | 2 FRB 10/500<br>2 FRB 10/500<br>2 FRB 10/500 | TS 60/10.15/16<br>TNF 60/10.15/16 | ETS 60 | 360<br>434 |
| | **SNL 3260** | 23260 CCK/W33 | OH 3260/10.15/16 H | 2 FRB 10/540 | TS 64/10.15/16<br>TNF 64/10.15/16 | ETS 64 | 380<br>454 |
| | **SNL 3164** | 22260 CCK/W33 | OH 3160/10.15/16 H | 2 FRB 28/540 | TS 64/10.15/16<br>TNF 64/10.15/16 | ETS 64 | 380<br>454 |
| **11**<br>*279,4* | **SNL 3060** | 23060 CCK/W33<br>C 3060 KM | OH 3060/11 H<br>OH 3060/11 H | 2 FRB 25/460<br>2 FRB 25/460 | TS 60/11<br>TNF 60/11 | ETS 60 | 330<br>404 |
| | **SNL 3160** | 23160 CCK/W33<br>23160-2CS5K<br>C 3160 K | OH 3160/11 H<br>OH 3160/11 HE<br>OH 3160/11 H | 2 FRB 10/500<br>2 FRB 10/500<br>2 FRB 10/500 | TS 60/11<br>TNF 60/11 | ETS 60 | 360<br>434 |
| | **SNL 3164** | 22260 CCK/W33 | OH 3160/11 H | 2 FRB 28/540 | TS 64/11<br>TNF 64/11 | ETS 64 | 380<br>454 |
| | **SNL 3260** | 23260 CCK/W33 | OH 3260/11 H | 2 FRB 10/540 | TS 64/11<br>TNF 64/11 | ETS 64 | 380<br>454 |
| **11 7/16**<br>*290,513* | **SNL 3064** | 23064 CCK/W33<br>C 3064 KM | OH 3064/11.7/16 H<br>OH 3064/11.7/16 H | 6 FRB 10/480<br>6 FRB 10/480 | TS 64/11.7/16<br>TNF 64/11.7/16 | ETS 64 | 360<br>434 |
| **11 1/2**<br>*292,1* | **SNL 3168 F** | 22264 CCK/W33 | OH 3164/11.1/2 H | 2 FRB 20/580 | TS 68/11.1/2<br>TNF 68/11.1/2 | ETS 68 | 410<br>483 |
| | **SNL 3064** | 23064 CCK/W33<br>C 3064 KM | OH 3064/11.1/2 H<br>OH 3064/11.1/2 H | 6 FRB 10/480<br>6 FRB 10/480 | TS 64/11.1/2<br>TNF 64/11.1/2 | ETS 64 | 360<br>434 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



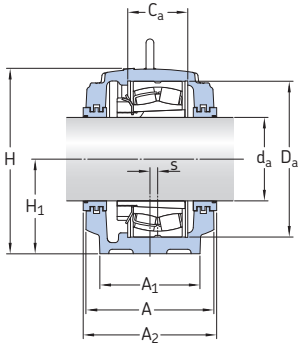





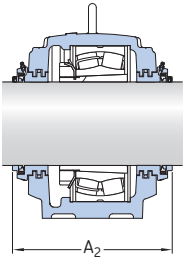

| Shaft diameter | Dimensions | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **10 15/16** *277,813* | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 370 | 330 | 212 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| **11** *279,4* | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | 1 1/2 | M 24 | 252 |
| | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 370 | 330 | 212 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| **11 7/16** *290,513* | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| **11 1/2** *292,1* | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **11 15/16 – 12** in.
*303,213 – 304,8 mm*



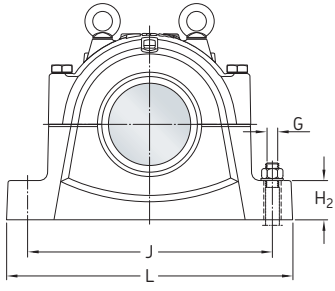

Labyrinth seals,
TS design

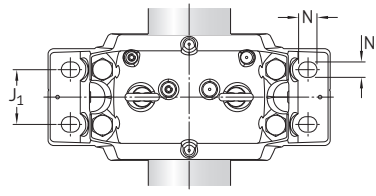



Taconite seals,
TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **11 15/16**<br>*303,213* | **SNL 3064** | 23064 CCK/W33<br>C 3064 KM | H 3064/11.15/16<br>H 3064/11.15/16 | 6 FRB 10/480<br>6 FRB 10/480 | TS 64/11.15/16<br>TNF 64/11.15/16 | ETS 64 | 360<br>434 |
| | **SNL 3164** | 23164 CCK/W33<br>23164-2CS5K<br>C 3164 KM | H 3164/11.15/16<br>H 3164/11.15/16<br>H 3164/11.15/16 | 2 FRB 10/540<br>2 FRB 10/540<br>2 FRB 10/540 | TS 64/11.15/16<br>TNF 64/11.15/16 | ETS 64 | 380<br>454 |
| | **SNL 3264 F** | 23264 CCK/W33 | H 3264/11.15/16 | – | TS 68/11.15/16<br>TNF 68/11.15/16 | ETS 68 | 410<br>483 |
| | **SNL 3264 L** | 23264 CCK/W33 | H 3264/11.15/16 | – | TS 68/11.15/16<br>TNF 68/11.15/16 | ETS 68 | 410<br>483 |
| **12**<br>*304,8* | **SNL 3064** | 23064 CCK/W33<br>C 3064 KM | H 3064/12<br>H 3064/12 | 6 FRB 10/480<br>6 FRB 10/480 | TS 64/12<br>TNF 64/12 | ETS 64 | 360<br>434 |
| | **SNL 3164** | 23164 CCK/W33<br>23164-2CS5K<br>C 3164 KM | H 3164/12<br>H 3164/12<br>H 3164/12 | 2 FRB 10/540<br>2 FRB 10/540<br>2 FRB 10/540 | TS 64/12<br>TNF 64/12 | ETS 64 | 380<br>454 |
| | **SNL 3168 F** | 22264 CCK/W33 | H 3164/12 | 2 FRB 20/580 | TS 68/12<br>TNF 68/12 | ETS 68 | 410<br>483 |
| | **SNL 3264 F** | 23264 CCK/W33 | H 3264/12 | – | TS 68/12<br>TNF 68/12 | ETS 68 | 410<br>483 |
| | **SNL 3264 L** | 23264 CCK/W33 | H 3264/12 | – | TS 68/12<br>TNF 68/12 | ETS 68 | 410<br>483 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



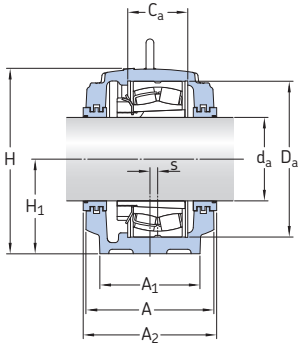





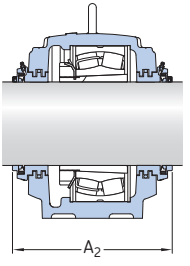

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **11 15/16** *303,213* | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 208 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 228 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| **12** *304,8* | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | 1 1/2 | M 30 | 301 |
| | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 208 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 228 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **12 7/16 – 12 1/2** in.
*315,913 – 317,5 mm*



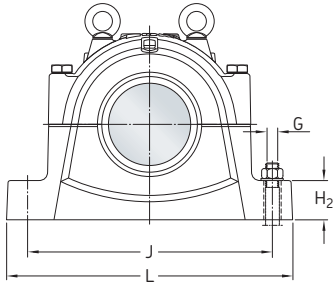

Labyrinth seals, TS design

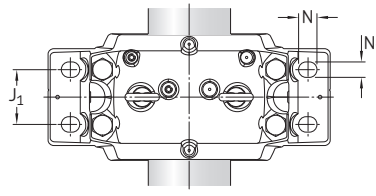



Taconite seals, TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **12 7/16**<br>*315,913* | **SNL 3068** | 23068 CCK/W33<br>C 3068 KM | OH 3068/12.7/16 H<br>OH 3068/12.7/16 H | 4 FRB 16/520<br>4 FRB 16/520 | TS 68/12.7/16<br>TNF 68/12.7/16 | ETS 68 | 380<br>453 |
| | **SNL 3168 F** | 23168 CCK/W33<br>23168-2CS5K<br>C 3168 KM | OH 3168/12.7/16 H<br>OH 3168/12.7/16 HE<br>OH 3168/12.7/16 H | –<br>– | TS 68/12.7/16<br>TNF 68/12.7/16 | ETS 68 | 410<br>483 |
| | **SNL 3168 L** | 23168 CCK/W33<br>23168-2CS5K | OH 3168/12.7/16 H<br>OH 3168/12.7/16 HE | – | TS 68/12.7/16<br>TNF 68/12.7/16 | ETS 68 | 410<br>483 |
| | **SNL 3268 F** | 23268 CAK/W33 | OH 3268/12.7/16 H | – | TS 76/12.7/16<br>TNF 76/12.7/16 | ETS 76 | 410<br>483 |
| | **SNL 3268 L** | 23268 CAK/W33 | OH 3268/12.7/16 H | – | TS 76/12.7/16<br>TNF 76/12.7/16 | ETS 76 | 410<br>483 |
| **12 1/2**<br>*317,5* | **SNL 3068** | 23068 CCK/W33<br>C 3068 KM | OH 3068/12.1/2 H<br>OH 3068/12.1/2 H | 4 FRB 16/520<br>4 FRB 16/520 | TS 68/12.1/2<br>TNF 68/12.1/2 | ETS 68 | 380<br>453 |
| | **SNL 3168 F** | 23168 CCK/W33<br>23168-2CS5K<br>C 3168 KM | OH 3168/12.1/2 H<br>OH 3168/12.1/2 HE<br>OH 3168/12.1/2 H | –<br>–<br>– | TS 68/12.1/2<br>TNF 68/12.1/2 | ETS 68 | 410<br>483 |
| | **SNL 3168 L** | 23168 CCK/W33<br>23168-2CS5K | OH 3168/12.1/2 H<br>OH 3168/12.1/2 HE | –<br>– | TS 68/12.1/2<br>TNF 68/12.1/2 | ETS 68 | 410<br>483 |
| | **SNL 3268 F** | 23268 CAK/W33 | OH 3268/12.1/2 H | – | TS 76/12.1/2<br>TNF 76/12.1/2 | ETS 76 | 410<br>483 |
| | **SNL 3268 L** | 23268 CAK/W33 | OH 3268/12.1/2 H | – | TS 76/12.1/2<br>TNF 76/12.1/2 | ETS 76 | 410<br>483 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability. Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.



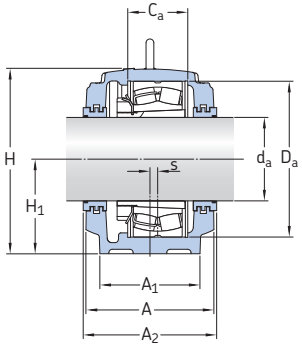





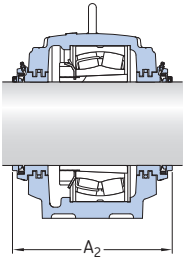

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **12 7/16** *315,913* | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| | 400 | 360 | 224 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 473 |
| | 400 | 360 | 244 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 470 |
| **12 1/2** *317,5* | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| | 400 | 360 | 224 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 473 |
| | 400 | 360 | 244 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 470 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **12 15/16 – 13 7/16** in.
*328,613 – 341,313 mm*



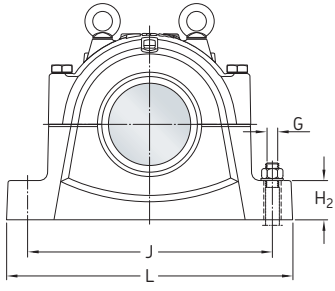

Labyrinth seals,
TS design

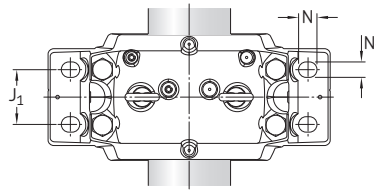



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **12 15/16**<br>*328,613* | **SNL 3072** | 23072 CCK/W33<br>C 3072 KM | OH 3072/12.15/16 H<br>OH 3072/12.15/16 H | 4 FRB 16/540<br>4 FRB 16/540 | TS 72/12.15/16<br>TNF 72/12.15/16 | ETS 72 | 380<br>453 |
| **13**<br>*330,2* | **SNL 3072** | 23072 CCK/W33<br>C 3072 KM | OH 3072/13 H<br>OH 3072/13 H | 4 FRB 16/540<br>4 FRB 16/540 | TS 72/13<br>TNF 72/13 | ETS 72 | 380<br>453 |
| | **SNL 3180 L** | 22272 CAK/W33 | OH 3172/13 H | 2 FRB 25/650 | TS 80/13<br>TNF 80/13 | ETS 80 | 440<br>513 |
| **13 7/16**<br>*341,313* | **SNL 3072** | 23072 CCK/W33<br>C 3072 KM | H 3072/13.7/16<br>H 3072/13.7/16 | 4 FRB 16/540<br>4 FRB 16/540 | TS 72/13.7/16<br>TNF 72/13.7/16 | ETS 72 | 380<br>453 |
| | **SNL 3172 F** | 23172 CCK/W33<br>C 3172 KM | H 3172/13.7/16<br>H 3172/13.7/16 | –<br>– | TS 72/13.7/16<br>TNF 72/13.7/16 | ETS 72 | 410<br>483 |
| | **SNL 3172 L** | 23172 CCK/W33 | H 3172/13.7/16 | – | TS 72/13.7/16<br>TNF 72/13.7/16 | ETS 72 | 410<br>483 |
| | **SNL 3272 F** | 23272 CAK/W33 | H 3272/13.7/16 | – | TS 80/13.7/16<br>TNF 80/13.7/16 | ETS 80 | 440<br>513 |
| | **SNL 3272 L** | 23272 CAK/W33 | H 3272/13.7/16 | – | TS 80/13.7/16<br>TNF 80/13.7/16 | ETS 80 | 440<br>513 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)...– spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

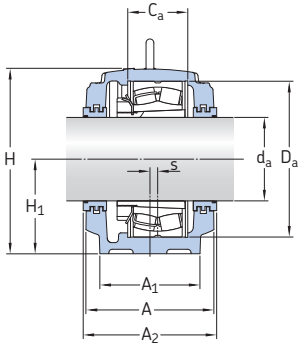


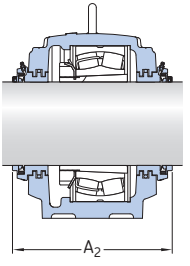

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **12 15/16** *328,613* | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| **13** *330,2* | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| **13 7/16** *341,313* | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 458 |
| | 400 | 360 | 212 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 454 |
| | 430 | 390 | 232 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 430 | 390 | 252 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |

# 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **13 1/2 – 13 15/16** in.
*342,9 – 354,013 mm*



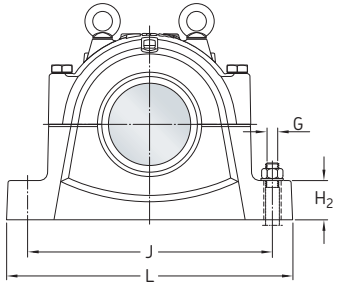

Labyrinth seals,
TS design

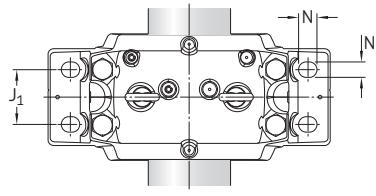



Taconite seals,
TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm |
| **13 1/2**<br>*342,9* | **SNL 3072** | 23072 CCK/W33<br>C 3072 KM | H 3072/13.1/2<br>H 3072/13.1/2 | 4 FRB 16/540<br>4 FRB 16/540 | TS 72/13.1/2<br>TNF 72/13.1/2 | ETS 72 | 380<br>453 |
| | **SNL 3172 F** | 23172 CCK/W33<br>C 3172 KM | H 3172/13.1/2<br>H 3172/13.1/2 | –<br>– | TS 72/13.1/2<br>TNF 72/13.1/2 | ETS 72 | 410<br>483 |
| | **SNL 3172 L** | 23172 CCK/W33 | H 3172/13.1/2 | – | TS 72/13.1/2<br>TNF 72/13.1/2 | ETS 72 | 410<br>483 |
| | **SNL 3180 L** | 22272 CAK/W33 | H 3172/13.1/2 | 2 FRB 25/650 | TS 80/13.1/2<br>TNF 80/13.1/2 | ETS 80 | 440<br>513 |
| | **SNL 3272 F** | 23272 CAK/W33 | H 3272/13.1/2 | – | TS 80/13.1/2<br>TNF 80/13.1/2 | ETS 80 | 440<br>513 |
| | **SNL 3272 L** | 23272 CAK/W33 | H 3272/13.1/2 | – | TS 80/13.1/2<br>TNF 80/13.1/2 | ETS 80 | 440<br>513 |
| **13 15/16**<br>*354,013* | **SNL 3076 F** | 23076 CCK/W33<br>C 3076 KM | OH 3076/13.15/16 H<br>OH 3076/13.15/16 H | –<br>– | TS 76/13.15/16<br>TNF 76/13.15/16 | ETS 76 | 410<br>483 |
| | **SNL 3076 L** | 23076 CCK/W33 | OH 3076/13.15/16 H | – | TS 76/13.15/16<br>TNF 76/13.15/16 | ETS 76 | 410<br>483 |
| | **SNL 3176 F** | 23176 CAK/W33<br>C 3176 KMB | OH 3176/13.15/16 H<br>OH 3176/13.15/16 HE | –<br>– | TS 76/13.15/16<br>TNF 76/13.15/16 | ETS 76 | 410<br>483 |
| | **SNL 3176 L** | 23176 CAK/W33 | OH 3176/13.15/16 H | – | TS 76/13.15/16<br>TNF 76/13.15/16 | ETS 76 | 410<br>483 |
| | **SNL 3276 F** | 23276 CAK/W33 | OH 3276/13.15/16 H | – | TS 92/13.15/16<br>TNF 92/13.15/16 | ETS 92 | 470<br>543 |
| | **SNL 3276 L** | 23276 CAK/W33 | OH 3276/13.15/16 H | – | TS 92/13.15/16<br>TNF 92/13.15/16 | ETS 92 | 470<br>543 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.
[3] The locating rings fit the bearing in the same line only.

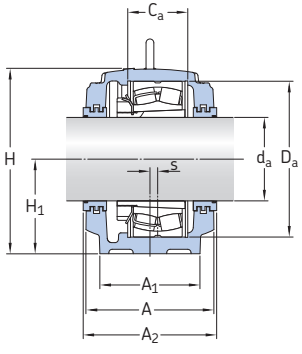


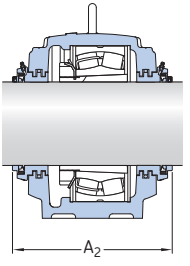

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **13 1/2** *342,9* | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | 1 1/2 | M 30 | 339 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 458 |
| | 400 | 360 | 212 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 454 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 430 | 390 | 232 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 430 | 390 | 252 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| **13 15/16** *354,013* | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 473 |
| | 400 | 360 | 214 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 470 |
| | 460 | 420 | 240 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 260 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **14 – 15** in.
*355,6 – 381 mm*



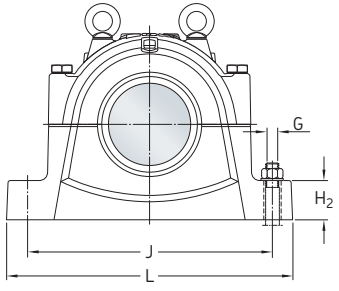

Labyrinth seals,
TS design

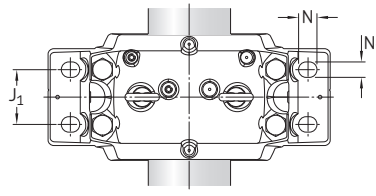



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | mm |
| **14**<br>*355,6* | **SNL 3076 F** | 23076 CCK/W33<br>C 3076 KM | OH 3076/14 H<br>OH 3076/14 H | TS 76/14<br>TNF 76/14 | ETS 76 | 410<br>483 |
| | **SNL 3076 L** | 23076 CCK/W33 | OH 3076/14 H | TS 76/14<br>TNF 76/14 | ETS 76 | 410<br>483 |
| | **SNL 3176 F** | 23176 CAK/W33<br>C 3176 KMB | OH 3176/14 H<br>OH 3176/14 HE | TS 76/14<br>TNF 76/14 | ETS 76 | 410<br>483 |
| | **SNL 3176 L** | 23176 CAK/W33 | OH 3176/14 H | TS 76/14<br>TNF 76/14 | ETS 76 | 410<br>483 |
| | **SNL 3276 F** | 23276 CAK/W33 | OH 3276/14 H | TS 92/14<br>TNF 92/14 | ETS 92 | 470<br>543 |
| | **SNL 3276 L** | 23276 CAK/W33 | OH 3276/14 H | TS 92/14<br>TNF 92/14 | ETS 92 | 470<br>543 |
| **15**<br>*381* | **SNL 3080 F** | 23080 CCK/W33<br>C 3080 KM | H 3080/15<br>H 3080/15 | TS 80/15<br>TNF 80/15 | ETS 80 | 410<br>483 |
| | **SNL 3080 L** | 23080 CCK/W33 | H 3080/15 | TS 80/15<br>TNF 80/15 | ETS 80 | 410<br>483 |
| | **SNL 3180 F** | 23180 CAK/W33<br>C 3180 KM | H 3180/15<br>H 3180/15 | TS 80/15<br>TNF 80/15 | ETS 80 | 440<br>513 |
| | **SNL 3180 L** | 23180 CAK/W33 | H 3180/15 | TS 80/15<br>TNF 80/15 | ETS 80 | 440<br>513 |
| | **SNL 3280 F** | 23280 CAK/W33 | H 3280/15 | TS 88/15<br>TNF 88/15 | ETS 88 | 470<br>543 |
| | **SNL 3280 L** | 23280 CAK/W33 | H 3280/15 | TS 88/15<br>TNF 88/15 | ETS 88 | 470<br>543 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.



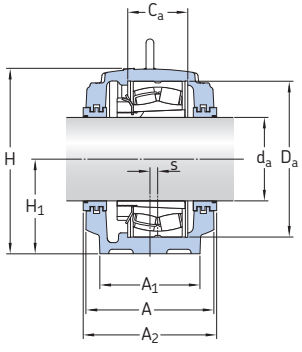





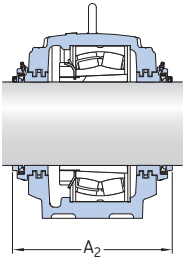

| **Shaft diameter** | **Dimensions** | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **14** *355,6* | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 430 |
| | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | 1 1/2 | M 30 | 427 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 473 |
| | 400 | 360 | 214 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 470 |
| | 460 | 420 | 240 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 260 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |
| **15** *381* | 400 | 360 | 148 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 458 |
| | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 454 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 460 | 420 | 256 | 720 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 276 | 720 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **15 3/4 – 16 1/2** in.
*400,05 – 419,1 mm*



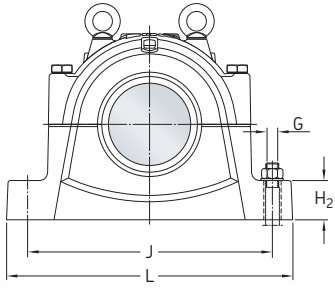

Labyrinth seals,
TS design

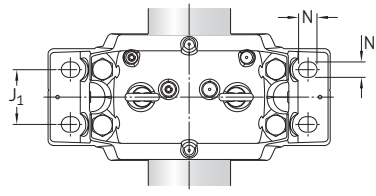



Taconite seals,
TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | mm |
| **15 3/4**<br>*400,05* | **SNL 3084 F** | 23084 CAK/W33<br>C 3084 KM | H 3084/15.3/4<br>H 3084/15.3/4 | TS 84/15.3/4<br>TNF 84/15.3/4 | ETS 84 | 410<br>483 |
| | **SNL 3084 L** | 23084 CAK/W33 | H 3084/15.3/4 | TS 84/15.3/4<br>TNF 84/15.3/4 | ETS 84 | 410<br>483 |
| | **SNL 3184 F** | 23184 CKJ/W33<br>C 3184 KM | H 3184/15.3/4<br>H 3184/15.3/4 | TS 84/15.3/4<br>TNF 84/15.3/4 | ETS 84 | 470<br>543 |
| | **SNL 3184 L** | 23184 CKJ/W33 | H 3184/15.3/4 | TS 84/15.3/4<br>TNF 84/15.3/4 | ETS 84 | 470<br>543 |
| | **SNL 3284 F** | 23284 CAK/W33 | H 3284/15.3/4 | TS 92/15.3/4<br>TNF 92/15.3/4 | ETS 92 | 480<br>553 |
| | **SNL 3284 L** | 23284 CAK/W33 | H 3284/15.3/4 | TS 92/15.3/4<br>TNF 92/15.3/4 | ETS 92 | 480<br>553 |
| **16 1/2**<br>*419,1* | **SNL 3088 F** | 23088 CAK/W33<br>C 3088 KMB | OH 3088/16.1/2 H<br>OH 3088/16.1/2 HE | TS 88/16.1/2<br>TNF 88/16.1/2 | ETS 88 | 440<br>513 |
| | **SNL 3088 L** | 23088 CAK/W33 | OH 3088/16.1/2 H | TS 88/16.1/2<br>TNF 88/16.1/2 | ETS 88 | 440<br>513 |
| | **SNL 3188 F** | 23188 CAK/W33<br>C 3188 KMB | OH 3188/16.1/2 H<br>OH 3188/16.1/2 HE | TS 88/16.1/2<br>TNF 88/16.1/2 | ETS 88 | 470<br>543 |
| | **SNL 3188 L** | 23188 CAK/W33 | OH 3188/16.1/2 H | TS 88/16.1/2<br>TNF 88/16.1/2 | ETS 88 | 470<br>543 |
| | **SNL 3288 F** | 23288 CAK/W33 | OH 3288/16.1/2 H | TS 96/16.1/2<br>TNF 96/16.1/2 | ETS 96 | 480<br>553 |
| | **SNL 3288 L** | 23288 CAK/W33 | OH 3288/16.1/2 H | TS 96/16.1/2<br>TNF 96/16.1/2 | ETS 96 | 480<br>553 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.

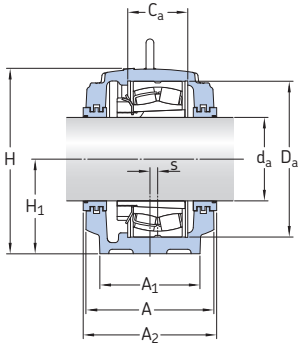


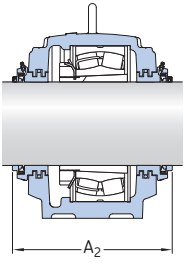

| Shaft diameter | Dimensions | | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **15 3/4** *400,05* | 400 | 360 | 150 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 473 |
| | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | 1 1/2 | M 36 | 470 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 244 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |
| | 470 | 440 | 272 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | 1 3/4 | M 48 | 865 |
| | 470 | 440 | 292 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | 1 3/4 | M 48 | 859 |
| **16 1/2** *419,1* | 430 | 390 | 157 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | 1 3/4 | M 42 | 595 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 755 |
| | 460 | 430 | 246 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 751 |
| | 470 | 440 | 280 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | 2 | M 48 | 947 |
| | 470 | 440 | 300 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | 2 | M 48 | 941 |

## 5.2 Large SNL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **17 – 19 1/2** in.
*431,8 – 495,3 mm*



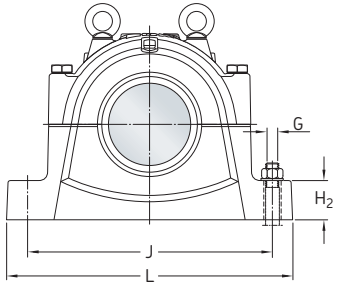

Labyrinth seals,
TS design

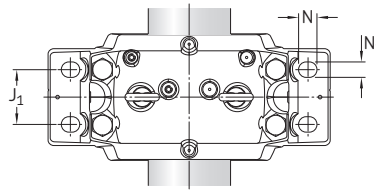



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | mm |
| **17**<br>*431,8* | **SNL 3092 F** | 23092 CAK/W33<br>C 3092 KM | OH 3092/17 H<br>OH 3092/17 H | TS 92/17<br>TNF 92/17 | ETS 92 | 470<br>543 |
| | **SNL 3092 L** | 23092 CAK/W33 | OH 3092/17 H | TS 92/17<br>TNF 92/17 | ETS 92 | 470<br>543 |
| | **SNL 3192 F** | 23192 CAK/W33<br>C 3192 KM | OH 3192/17 H<br>OH 3192/17 H | TS 92/17<br>TNF 92/17 | ETS 92 | 480<br>553 |
| | **SNL 3192 L** | 23192 CAK/W33 | OH 3192/17 H | TS 92/17<br>TNF 92/17 | ETS 92 | 480<br>553 |
| **18**<br>*457,2* | **SNL 3096 F** | 23096 CAK/W33<br>C 3096 KM | OH 3096/18 H<br>OH 3096/18 H | TS 96/18<br>TNF 96/18 | ETS 96 | 470<br>543 |
| | **SNL 3096 L** | 23096 CAK/W33 | OH 3096/18 H | TS 96/18<br>TNF 96/18 | ETS 96 | 470<br>543 |
| | **SNL 3196 F** | 23196 CAK/W33<br>C 3196 KMB | OH 3196/18 H<br>OH 3196/18 HE | TS 96/18<br>TNF 96/18 | ETS 96 | 480<br>553 |
| | **SNL 3196 L** | 23196 CAK/W33 | OH 3196/18 H | TS 96/18<br>TNF 96/18 | ETS 96 | 480<br>553 |
| **18 1/2**<br>*469,9* | **SNL 30/500 F** | 230/500 CAK/W33<br>C 30/500 KM | OH 30/500/18.1/2 H<br>OH 30/500/18.1/2 H | TS 30/500/18.1/2<br>TNF 30/500/18.1/2 | ETS 500 | 470<br>543 |
| | **SNL 30/500 L** | 230/500 CAK/W33 | OH 30/500/18.1/2 H | TS 30/500/18.1/2<br>TNF 30/500/18.1/2 | ETS 500 | 470<br>543 |
| **19 1/2**<br>*495,3* | **SNL 30/530 F** | 230/530 CAK/W33<br>C 30/530 KM | OH 30/530/19.1/2 H<br>OH 30/530/19.1/2 H | TS 30/530/19.1/2<br>TNF 30/530/19.1/2 | ETS 530 | 480<br>553 |
| | **SNL 30/530 L** | 230/530 CAK/W33 | OH 30/530/19.1/2 H | TS 30/530/19.1/2<br>TNF 30/530/19.1/2 | ETS 530 | 480<br>553 |

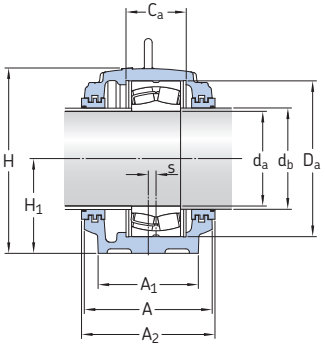
[1] 222(00), 223(00), 230(00), 231(00), 232(00)... – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only. If an oil lubricated adapter sleeve is wanted, contact SKF for availability.
Only typical adapter sleeves are listed. Other variants can also fit the housing.



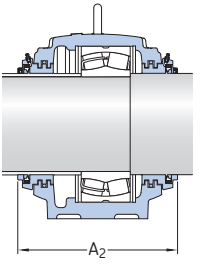




| Shaft diameter | Dimensions | | | | | | | | | | | | | | | Eye bolt according to DIN 580 | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | G | | |
| in./*mm* | mm | | | | | | | | | | | | | | in. | – | kg |
| **17** *431,8* | 460 | 420 | 163 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 224 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |
| | 470 | 440 | 240 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | 1 3/4 | M 48 | 865 |
| | 470 | 440 | 260 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | 1 3/4 | M 48 | 859 |
| **18** *457,2* | 460 | 420 | 165 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 716 |
| | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 709 |
| | 470 | 440 | 248 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | 2 | M 48 | 947 |
| | 470 | 440 | 268 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | 2 | M 48 | 941 |
| **18 1/2** *469,9* | 460 | 430 | 167 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 755 |
| | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | 1 3/4 | M 42 | 751 |
| **19 1/2** *495,3* | 470 | 440 | 185 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | 2 | M 48 | 947 |
| | 470 | 440 | 248 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | 2 | M 48 | 941 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **130 – 170** mm



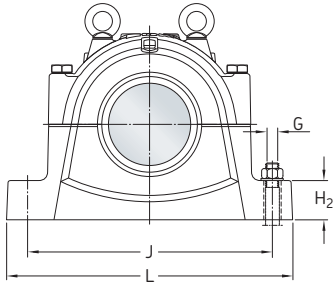

Labyrinth seals,
TS design

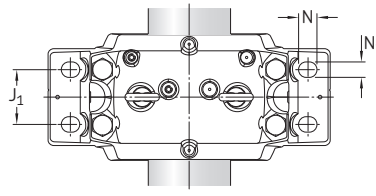



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **130** | **SNL 3134** | 22326 CC/W33<br>22326-2CS5 | 2 FRB 7.5/280<br>2 FRB 7.5/280 | TS 34<br>TNF 34 | ETS 34 | 240<br>299 |
| **140** | **SNL 3136** | 22328 CC/W33<br>22328-2CS5 | 2 FRB 7/300<br>2 FRB 7/300 | TS 36<br>TNF 36 | ETS 36 | 250<br>310 |
| **150** | **SNL 3138** | 22330 CC/W33<br>22330-2CS5 | 2 FRB 8/320<br>2 FRB 8/320 | TS 38<br>TNF 38 | ETS 38 | 270<br>330 |
| **160** | **SNL 3038** | 22232 CC/W33<br>22232-2CS5<br>23232 CC/W33<br>C 3232 | 2 FRB 17.5/290<br>2 FRB 17.5/290<br>2 FRB 5.5/290<br>2 FRB 5.5/290 | TS 38/180<br>TNF 38/180 | ETS 38 | 250<br>312 |
| | **SNL 3140** | 22332 CC/W33<br>22332-2CS5 | 2 FRB 9/340<br>2 FRB 9/340 | TS 40<br>TNF 40 | ETS 40 | 290<br>347 |
| **170** | **SNL 3134 G** | 23134 CC/W33<br>23134-2CS5 | 2 FRB 10/280<br>2 FRB 10/280 | TS 40<br>TNF 40 | ETS 40 | 240<br>299 |
| | **SNL 3234 G** | 23234 CC/W33 | 2 FRB 6/310 | TS 40/190<br>TNF 40/190 | ETS 40 | 270<br>327 |
| | **SNL 3040** | 22234 CC/W33<br>22234-2CS5<br>C 2234 | 2 FRB 18/310<br>2 FRB 18/310<br>2 FRB 18/310 | TS 40/190<br>TNF 40/190 | ETS 40 | 270<br>327 |
| | **SNL 3048** | 22334 CC/W33 | 2 FRB 10/360 | TS 48/190<br>TNF 48/190 | ETS 48 | 300<br>380 |

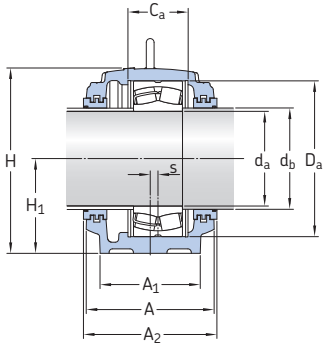
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



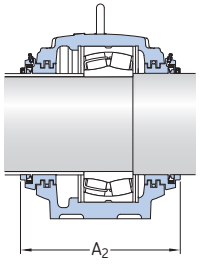




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **130** | 150 | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| **140** | 160 | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| **150** | 170 | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| **160** | 180 | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 180 | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| **170** | 180 | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | 190 | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 190 | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 190 | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |

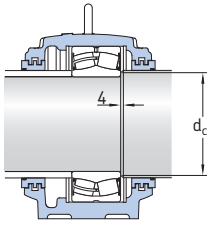
# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
## $d_a$ 180 – 190 mm




Labyrinth seals,
TS design

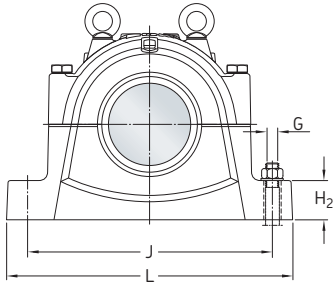


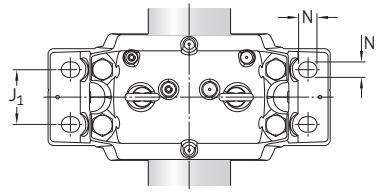

Taconite seals,
TNF design




| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **180** | **SNL 3036 G** | 23036 CC/W33<br>23036-2CS5[3]<br>24036 CC/W33<br>24036-2CS5[3]<br>C 3036<br>C 4036 V<br>C 4036-2CS5V | 2 FRB 17/280<br>2 FRB 17/280<br>2 FRB 4/280<br>2 FRB 4/280<br>2 FRB 17/280<br>2 FRB 4/280<br>2 FRB 4/280 | TS 44<br>TNF 44 | ETS 44 | 240<br>301 |
| | **SNL 3136 G** | 23136 CC/W33<br>23136-2CS5<br>C 3136 | 2 FRB 10/300<br>2 FRB 10/300<br>2 FRB 10/300 | TS 44<br>TNF 44 | ETS 44 | 250<br>311 |
| | **SNL 3138 G** | 22236 CC/W33<br>22236-2CS5 | 2 FRB 19/320<br>2 FRB 19/320 | TS 44<br>TNF 44 | ETS 44 | 270<br>329 |
| | **SNL 3236 G** | 23236 CC/W33<br>C 3236 | 2 FRB 6/320<br>2 FRB 6/320 | TS 44<br>TNF 44 | ETS 44 | 270<br>329 |
| **190** | **SNL 3038 G** | 23038 CC/W33<br>24038 CC/W33<br>C 3038<br>C 4038<br>C 4038-2CS5V | 4 FRB 10/290<br>2 FRB 7.5/290<br>4 FRB 10/290<br>2 FRB 7.5/290<br>2 FRB 7.5/290 | TS 44<br>TNF 44 | ETS 44 | 250<br>311 |
| | **SNL 3138 G** | 23138 CC/W33<br>23138-2CS5<br>C 3138 | 2 FRB 10/320<br>2 FRB 10/320<br>2 FRB 10/320 | TS 44<br>TNF 44 | ETS 44 | 270<br>329 |
| | **SNL 3238 G** | 23238 CC/W33 | 2 FRB 6/340 | TS 48/210<br>TNF 48/210 | ETS 48 | 290<br>372 |
| | **SNL 3140 G** | 22238 CC/W33<br>22238-2CS5<br>C 2238 | 4 FRB 10/340<br>4 FRB 10/340<br>4 FRB 10/340 | TS 48/210<br>TNF 48/210 | ETS 48 | 290<br>372 |
| | **SNL 3148** | 22338 CC/W33 | 2 FRB 8/400 | TS 48/210<br>TNF 48/210 | ETS 48 | 315<br>396 |

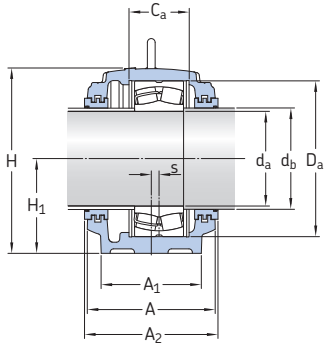
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.
[3] The shaft must be modified according to the $d_c$ value for the bearing.



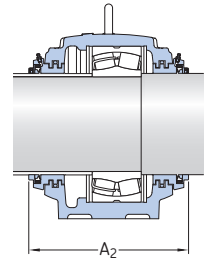




| **Shaft diameter** | | | | **Dimensions** Housings | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | $d_c$ min | $d_c$ max | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | | | | mm | | | | | | | | | | | | | | – | kg |
| **180** | 200 | 191 | 199 | 230 | 180 | 108 | 280 | 333 | 170 | 70 | 430 | 100 | 510 | 34 | 28 | 14 | 24 | M 16 | 69,5 |
| | | 191 | 194 | | | | | | | | | | | | | | | | |
| | 200 | – | – | 240 | 190 | 116 | 300 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 200 | – | – | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 200 | – | – | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| **190** | 200 | – | – | 240 | 190 | 115 | 290 | 353 | 180 | 75 | 450 | 110 | 530 | 34 | 28 | 15 | 24 | M 16 | 77,5 |
| | 200 | – | – | 260 | 210 | 124 | 320 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 210 | – | – | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 210 | – | – | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 210 | – | – | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **200** mm



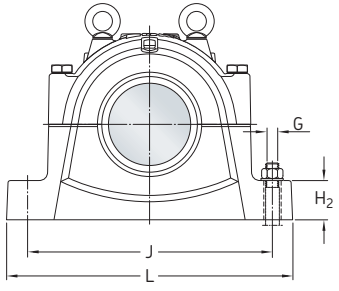

Labyrinth seals,
TS design

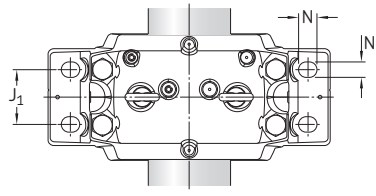



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **200** | **SNL 3040 G** | 23040 CC/W33<br>23040-2CS5<br>24040 CC/W33<br>C 3040<br>C 4040 V<br>C 4040-2CS5V | 4 FRB 10/310<br>4 FRB 10/310<br>2 FRB 6.5/310<br>4 FRB 10/310<br>2 FRB 6.5/310<br>2 FRB 6.5/310 | TS 48<br>TNF 48 | ETS 48 | 270<br>352 |
| | **SNL 3140 G** | 23140 CC/W33<br>23140-2CS5<br>C 3140 | 2 FRB 10/340<br>2 FRB 10/340<br>2 FRB 10/340 | TS 48<br>TNF 48 | ETS 48 | 290<br>372 |
| | **SNL 3240 G** | 23240 CC/W33<br>23240-2CS5 | 2 FRB 6/360<br>2 FRB 6/360 | TS 48<br>TNF 48 | ETS 48 | 300<br>380 |
| | **SNL 3048** | 22240 CC/W33<br>22240-2CS5 | 2 FRB 21/360<br>2 FRB 21/360 | TS 48<br>TNF 48 | ETS 48 | 300<br>380 |
| | **SNL 3056** | 22340 CC/W33 | 2 FRB 14/420 | TS 56/220<br>TNF 56/220 | ETS 56 | 330<br>404 |

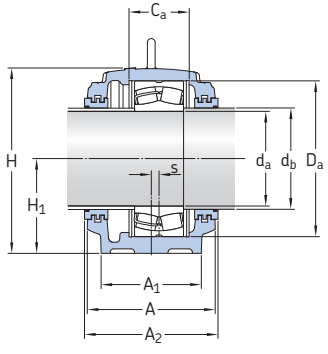
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



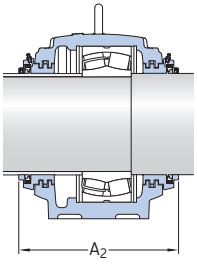




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **200** | 220 | 260 | 210 | 122 | 310 | 375 | 190 | 80 | 480 | 120 | 560 | 34 | 28 | 10 | 24 | M 20 | 97,5 |
| | 220 | 280 | 230 | 132 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 220 | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 220 | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 220 | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **220** mm



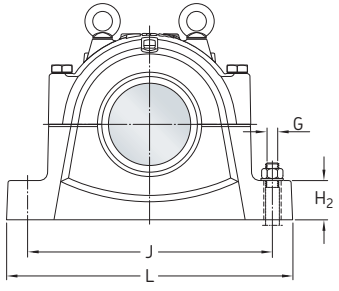

Labyrinth seals,
TS design

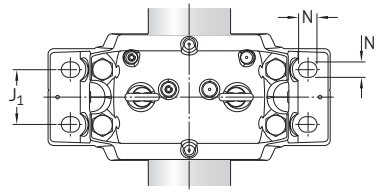



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **220** | **SNL 3044 G** | 23044 CC/W33<br>23044-2CS5<br>24044 CC/W33<br>C 3044<br>C 4044 V | 4 FRB 10/340<br>4 FRB 10/340<br>2 FRB 6/340<br>4 FRB 10/340<br>2 FRB 6/340 | TS 52<br>TNF 52 | ETS 52 | 290<br>364 |
| | **SNL 3144 G** | 23144 CC/W33<br>23144-2CS5<br>C 3144 | 2 FRB 10/370<br>2 FRB 10/370<br>2 FRB 10/370 | TS 52<br>TNF 52 | ETS 52 | 300<br>372 |
| | **SNL 3244 G** | 23244 CC/W33 | 2 FRB 10/400 | TS 56/240<br>TNF 56/240 | ETS 56 | 315<br>386 |
| | **SNL 3148 G** | 22244 CC/W33<br>22244-2CS5<br>C 2244 | 4 FRB 10/400<br>4 FRB 10/400<br>4 FRB 10/400 | TS 56/240<br>TNF 56/240 | ETS 56 | 315<br>386 |
| | **SNL 3156** | 22344 CC/W33 | 2 FRB 10.5/460 | TS 56/240<br>TNF 56/240 | ETS 56 | 330<br>404 |

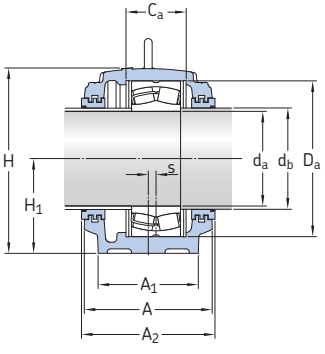
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



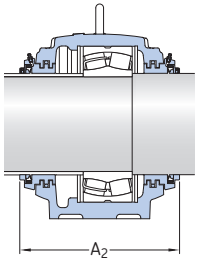




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **220** | 240 | 280 | 230 | 130 | 340 | 411 | 210 | 85 | 510 | 130 | 610 | 42 | 35 | 10 | 30 | M 20 | 123 |
| | 240 | 290 | 240 | 140 | 370 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 138 |
| | 240 | 310 | 260 | 164 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 240 | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 240 | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |

## 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **240 – 260** mm



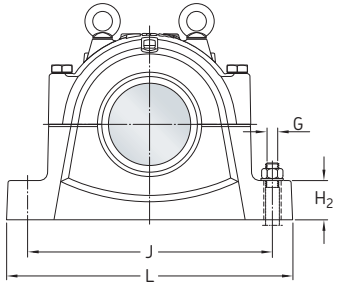

Labyrinth seals,
TS design

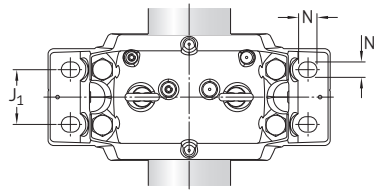



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **240** | **SNL 3048 G** | 23048 CC/W33<br>23048-2CS5<br>24048 CC/W33<br>C 3048 | 4 FRB 12/360<br>4 FRB 12/360<br>2 FRB 11/360<br>4 FRB 12/360 | TS 56<br>TNF 56 | ETS 56 | 300<br>370 |
| | **SNL 3148 G** | 23148 CC/W33<br>23148-2CS5<br>C 3148 | 2 FRB 10/400<br>2 FRB 10/400<br>2 FRB 10/400 | TS 56<br>TNF 56 | ETS 56 | 315<br>386 |
| | **SNL 3248 G** | 23248 CC/W33 | 2 FRB 10/440 | TS 60/260<br>TNF 60/260 | ETS 60 | 330<br>404 |
| | **SNL 3152 G** | 22248 CC/W33 | 2 FRB 22/440 | TS 60/260<br>TNF 60/260 | ETS 60 | 330<br>412 |
| | **SNL 3160** | 22348 CC/W33 | 2 FRB 12.5/500 | TS 60/260<br>TNF 60/260 | ETS 60 | 360<br>434 |
| **260** | **SNL 3052 G** | 23052 CC/W33<br>23052-2CS5<br>24052 CC/W33<br>C 3052 | 2 FRB 22/400<br>2 FRB 22/400<br>2 FRB 4/400<br>2 FRB 22/400 | TS 60<br>TNF 60 | ETS 60 | 315<br>394 |
| | **SNL 3152** | 23152 CC/W33<br>23152-2CS5<br>C 3152 | 2 FRB 10/440<br>2 FRB 10/440<br>2 FRB 10/440 | TS 60<br>TNF 60 | ETS 60 | 330<br>412 |
| | **SNL 3252 G** | 23252 CC/W33 | 2 FRB 10/480 | TS 64/280<br>TNF 64/280 | ETS 64 | 360<br>434 |
| | **SNL 3064** | 22252 CC/W33 | 2 FRB 25.5/480 | TS 64/280<br>TNF 64/280 | ETS 64 | 360<br>434 |
| | **SNL 3164** | 22352 CC/W33 | 2 FRB 15.5/540 | TS 64/290<br>TNF 64/290 | ETS 64 | 380<br>454 |

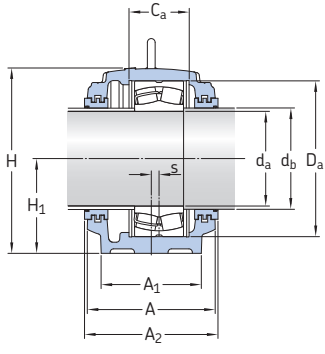
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



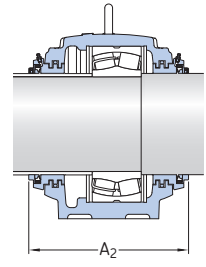




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **240** | 260 | 290 | 240 | 140 | 360 | 434 | 220 | 90 | 540 | 140 | 640 | 42 | 35 | 12 | 30 | M 20 | 139 |
| | 260 | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 260 | 320 | 280 | 180 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 260 | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 260 | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| **260** | 280 | 310 | 260 | 148 | 400 | 474 | 240 | 95 | 600 | 150 | 700 | 42 | 35 | 12 | 30 | M 24 | 187 |
| | 280 | 320 | 280 | 164 | 440 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 280 | 350 | 310 | 194 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 280 | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 290 | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **280 – 300** mm



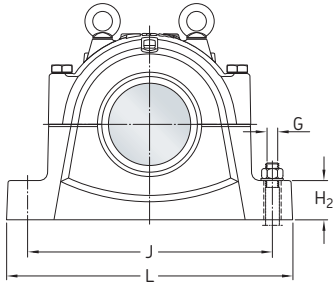

Labyrinth seals,
TS design

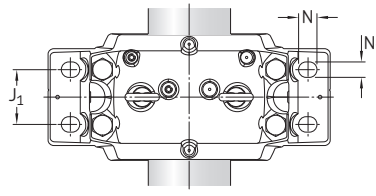



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **280** | **SNL 3056 G** | 23056 CC/W33<br>24056 CC/W33<br>C 3056 | 6 FRB 10/420<br>2 FRB 13/420<br>6 FRB 10/420 | TS 64<br>TNF 64 | ETS 64 | 330<br>404 |
| | **SNL 3156 G** | 23156 CC/W33<br>23156-2CS5<br>C 3156 | 2 FRB 10/460<br>2 FRB 10/460<br>2 FRB 10/460 | TS 64<br>TNF 64 | ETS 64 | 330<br>404 |
| | **SNL 3256 G** | 23256 CC/W33 | 2 FRB 10/500 | TS 68/300<br>TNF 68/300 | ETS 68 | 360<br>433 |
| | **SNL 3160 G** | 22256 CC/W33 | 2 FRB 25/500 | TS 68/300<br>TNF 68/300 | ETS 68 | 360<br>433 |
| | **SNL 3168 L** | 22356 CC/W33 | 2 FRB 17.5/580 | TS 68/310<br>TNF 68/310 | ETS 68 | 410<br>483 |
| **300** | **SNL 3060 G** | 23060 CC/W33<br>24060 CC/W33<br>C 3060 M<br>C 4060 M | 2 FRB 25/460<br>2 FRB 4/460<br>2 FRB 25/460<br>2 FRB 4/460 | TS 68<br>TNF 68 | ETS 68 | 330<br>403 |
| | **SNL 3160 G** | 23160 CC/W33<br>23160-2CS5<br>C 3160 | 2 FRB 10/500<br>2 FRB 10/500<br>2 FRB 10/500 | TS 68<br>TNF 68 | ETS 68 | 360<br>433 |
| | **SNL 3260 G** | 23260 CC/W33 | 2 FRB 10/540 | TS 72/320<br>TNF 72/320 | ETS 72 | 380<br>453 |
| | **SNL 3164 G** | 22260 CC/W33 | 2 FRB 28/540 | TS 72/320<br>TNF 72/320 | ETS 72 | 380<br>453 |

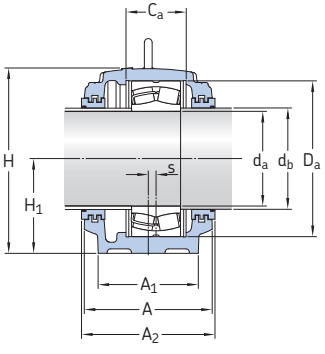
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



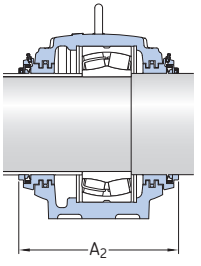




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **280** | 300 | 320 | 280 | 166 | 420 | 516 | 260 | 100 | 650 | 160 | 770 | 50 | 42 | 13 | 36 | M 24 | 221 |
| | 300 | 320 | 280 | 166 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 300 | 350 | 310 | 196 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 300 | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 310 | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| **300** | 320 | 320 | 280 | 168 | 460 | 550 | 280 | 105 | 670 | 160 | 790 | 50 | 42 | 16 | 36 | M 24 | 252 |
| | 320 | 350 | 310 | 180 | 500 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 320 | 370 | 330 | 212 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 320 | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
## $d_a$ 320 – 340 mm



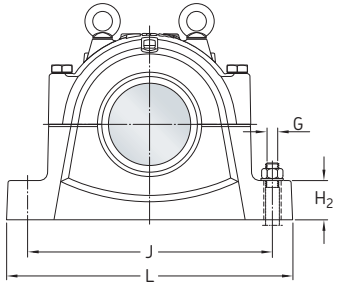

Labyrinth seals,
TS design

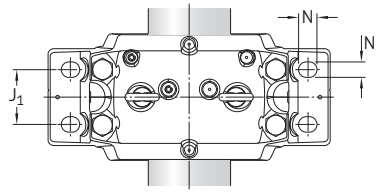



Taconite seals,
TNF design

| Shaft diameter $d_a$ | Housing | Appropriate parts Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **320** | **SNL 3064 G** | 23064 CC/W33<br>24064 CC/W33<br>C 3064 M | 6 FRB 10/480<br>2 FRB 10.5/480<br>6 FRB 10/480 | TS 72<br>TNF 72 | ETS 72 | 360<br>433 |
| | **SNL 3164 G** | 23164 CC/W33<br>23164-2CS5<br>C 3164 M | 2 FRB 10/540<br>2 FRB 10/540<br>2 FRB 10/540 | TS 72<br>TNF 72 | ETS 72 | 380<br>453 |
| | **SNL 3264 GF** | 23264 CC/W33 | – | TS 76/340<br>TNF 76/340 | ETS 76 | 410<br>483 |
| | **SNL 3264 GL** | 23264 CC/W33 | – | TS 76/340<br>TNF 76/340 | ETS 76 | 410<br>483 |
| | **SNL 3168 GF** | 22264 CC/W33 | 2 FRB 20/580 | TS 76/340<br>TNF 76/340 | ETS 76 | 410<br>483 |
| **340** | **SNL 3068 G** | 23068 CC/W33<br>24068 CC/W33<br>C 3068 M | 4 FRB 16/520<br>2 FRB 8.5/520<br>4 FRB 16/520 | TS 76<br>TNF 76 | ETS 76 | 380<br>453 |
| | **SNL 3168 GF** | 23168 CC/W33<br>23168-2CS5<br>C 3168 M | –<br>–<br>– | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3168 GL** | 23168 CC/W33<br>23168-2CS5 | –<br>– | TS 76<br>TNF 76 | ETS 76 | 410<br>483 |
| | **SNL 3268 GF** | 23268 CA/W33 | – | TS 76/370<br>TNF 76/370 | ETS 76 | 410<br>483 |
| | **SNL 3268 GL** | 23268 CA/W33 | – | TS 76/370<br>TNF 76/370 | ETS 76 | 410<br>483 |

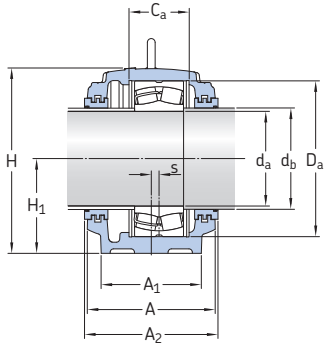
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



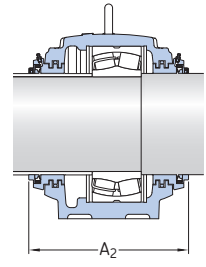




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **320** | 340 | 350 | 310 | 181 | 480 | 591 | 300 | 110 | 710 | 190 | 830 | 50 | 42 | 22 | 36 | M 30 | 301 |
| | 340 | 370 | 330 | 196 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 340 | 400 | 360 | 208 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 340 | 400 | 360 | 228 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 340 | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| **340** | 360 | 370 | 330 | 197 | 520 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 360 | 400 | 360 | 190 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 360 | 400 | 360 | 210 | 580 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 370 | 400 | 360 | 224 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 370 | 400 | 360 | 244 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **360** mm



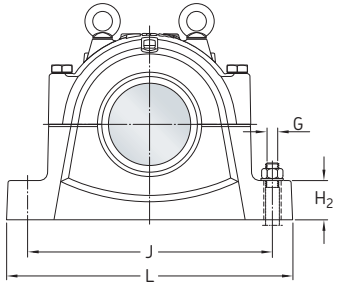

Labyrinth seals,
TS design

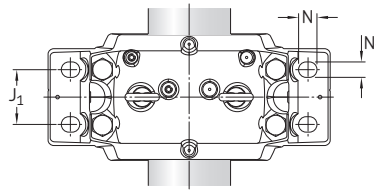



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Locating ring[2] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|---|
| mm | – | – | | | | mm |
| **360** | **SNL 3072 G** | 23072 CC/W33<br>24072 CC/W33<br>C 3072 M | 4 FRB 16/540<br>2 FRB 9/540<br>4 FRB 16/540 | TS 80<br>TNF 80 | ETS 80 | 380<br>453 |
| | **SNL 3172 GF** | 23172 CC/W33<br>23172-2CS5<br>C 3172 M | –<br>–<br>– | TS 80<br>TNF 80 | ETS 80 | 410<br>483 |
| | **SNL 3172 GL** | 23172 CC/W33<br>23172-2CS5 | –<br>– | TS 80<br>TNF 80 | ETS 80 | 410<br>483 |
| | **SNL 3272 GF** | 23272 CA/W33 | – | TS 80/390<br>TNF 80/390 | ETS 80 | 440<br>513 |
| | **SNL 3272 GL** | 23272 CA/W33 | – | TS 80/390<br>TNF 80/390 | ETS 80 | 440<br>513 |
| | **SNL 3180 L** | 22272 CA/W33 | 2 FRB 25/650 | TS 80/390<br>TNF 80/390 | ETS 80 | 440<br>513 |

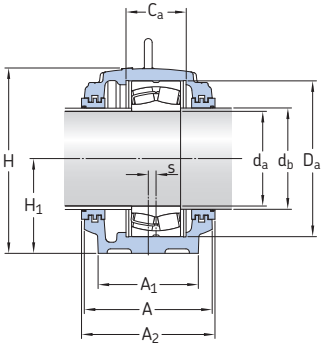
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The locating rings fit the bearing in the same line only.



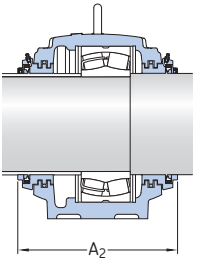




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **360** | 380 | 370 | 330 | 198 | 540 | 631 | 320 | 115 | 750 | 200 | 880 | 50 | 42 | 23 | 36 | M 30 | 339 |
| | 380 | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 380 | 400 | 360 | 212 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 390 | 430 | 390 | 232 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 390 | 430 | 390 | 252 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 390 | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |

## 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **380** mm



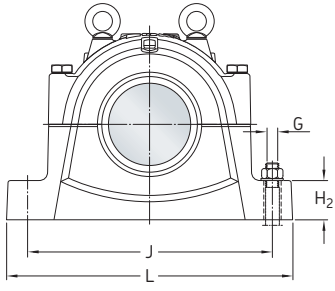

Labyrinth seals,
TS design

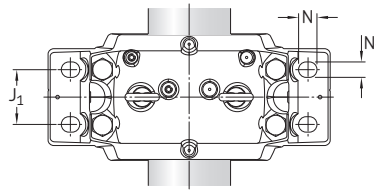



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1)] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **380** | **SNL 3076 GF** | 23076 CC/W33<br>C 3076 M | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3076 GL** | 23076 CC/W33 | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3176 GF** | 23176 CA/W33 | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3176 GL** | 23176 CA/W33 | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 3276 GF** | 23276 CA/W33 | TS 92/410<br>TNF 92/410 | ETS 92 | 470<br>543 |
| | **SNL 3276 GL** | 23276 CA/W33 | TS 92/410<br>TNF 92/410 | ETS 92 | 470<br>543 |
| | **SNL 4076 GF** | 24076 CC/W33 | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |
| | **SNL 4076 GL** | 24076 CC/W33 | TS 84<br>TNF 84 | ETS 84 | 410<br>483 |

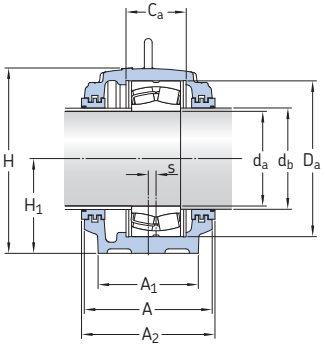
1) 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.



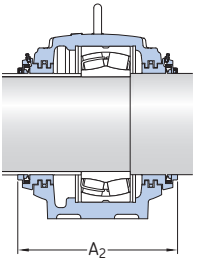




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **380** | 400 | 400 | 360 | 135 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |
| | 400 | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 400 | 400 | 360 | 214 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 410 | 460 | 420 | 240 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 410 | 460 | 420 | 260 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 400 | 400 | 360 | 180 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 430 |
| | 400 | 400 | 360 | 200 | 560 | 675 | 340 | 120 | 810 | 220 | 950 | 50 | 42 | 24 | 36 | M 30 | 427 |

## 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **400** mm



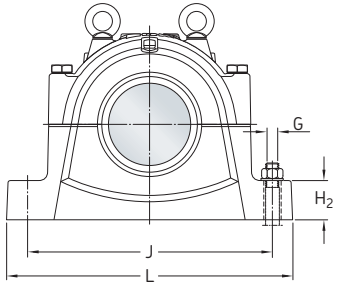

Labyrinth seals,
TS design

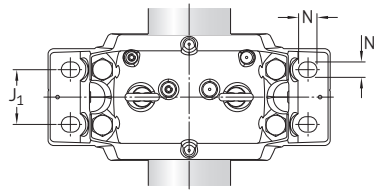



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1)] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **400** | **SNL 3080 GF** | 23080 CC/W33<br>C 3080 M | TS 92<br>TNF 92 | ETS 92 | 410<br>483 |
| | **SNL 3080 GL** | 23080 CC/W33 | TS 92<br>TNF 92 | ETS 92 | 410<br>483 |
| | **SNL 3180 GF** | 23180 CA/W33<br>23180-2CS5<br>C 3180 M | TS 92<br>TNF 92 | ETS 92 | 440<br>513 |
| | **SNL 3180 GL** | 23180 CA/W33<br>23180-2CS5 | TS 92<br>TNF 92 | ETS 92 | 440<br>513 |
| | **SNL 3280 GF** | 23280 CA/W33 | TS 500/430<br>TNF 500/430 | ETS 500 | 470<br>543 |
| | **SNL 3280 GL** | 23280 CA/W33 | TS 500/430<br>TNF 500/430 | ETS 500 | 470<br>543 |
| | **SNL 4080 GF** | 24080 ECCJ/W33 | TS 92<br>TNF 92 | ETS 92 | 410<br>483 |
| | **SNL 4080 GL** | 24080 ECCJ/W33 | TS 92<br>TNF 92 | ETS 92 | 410<br>483 |

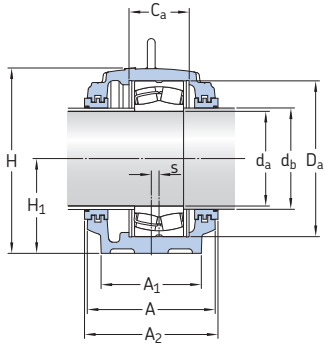
1) 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.



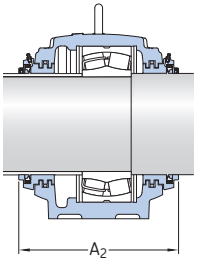




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **400** | 430 | 400 | 360 | 148 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 430 | 400 | 360 | 192 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |
| | 430 | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 430 | 390 | 220 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 430 | 460 | 430 | 256 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 745 |
| | 430 | 460 | 430 | 276 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 740 |
| | 430 | 400 | 360 | 200 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 458 |
| | 430 | 400 | 360 | 220 | 600 | 695 | 350 | 120 | 840 | 220 | 1 000 | 50 | 42 | 30 | 36 | M 36 | 454 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **420** mm



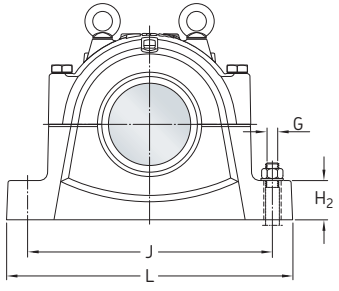

Labyrinth seals,
TS design

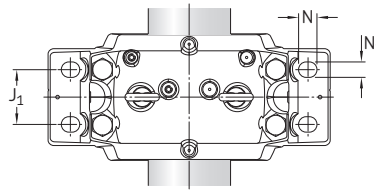



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **420** | **SNL 3084 GF** | 23084 CA/W33<br>C 3084 M | TS 96<br>TNF 96 | ETS 96 | 410<br>483 |
| | **SNL 3084 GL** | 23084 CA/W33 | TS 96<br>TNF 96 | ETS 96 | 410<br>483 |
| | **SNL 3184 GF** | 23184 CJ/W33<br>C 3184 M | TS 96<br>TNF 96 | ETS 96 | 470<br>543 |
| | **SNL 3184 GL** | 23184 CJ/W33 | TS 96<br>TNF 96 | ETS 96 | 470<br>543 |
| | **SNL 3284 GF** | 23284 CA/W33 | TS 530/460<br>TNF 530/460 | ETS 530 | 480<br>553 |
| | **SNL 3284 GL** | 23284 CA/W33 | TS 530/460<br>TNF 530/460 | ETS 530 | 480<br>553 |
| | **SNL 4084 GF** | 24084 ECA/W33 | TS 96<br>TNF 96 | ETS 96 | 410<br>483 |
| | **SNL 4084 GL** | 24084 ECA/W33 | TS 96<br>TNF 96 | ETS 96 | 410<br>483 |

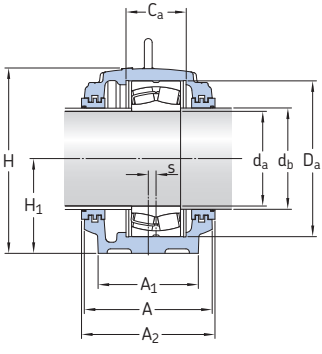
[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.



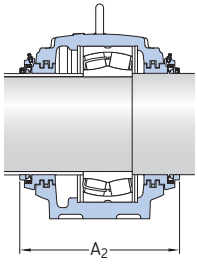




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **420** | 450 | 400 | 360 | 150 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 450 | 400 | 360 | 194 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |
| | 450 | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 450 | 460 | 420 | 244 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 460 | 470 | 440 | 272 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | M 48 | 865 |
| | 460 | 470 | 440 | 292 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 40 | 42 | M 48 | 859 |
| | 450 | 400 | 360 | 200 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 473 |
| | 450 | 400 | 360 | 220 | 620 | 715 | 360 | 120 | 870 | 220 | 1 040 | 50 | 42 | 30 | 36 | M 36 | 470 |

## 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **440** mm



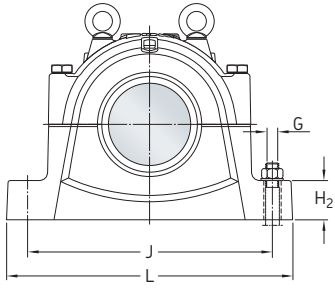

Labyrinth seals,
TS design

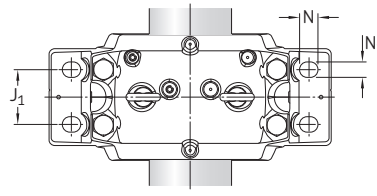



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1)] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **440** | **SNL 3088 GF** | 23088 CA/W33<br>C 3088 MB | TS 500<br>TNF 500 | ETS 500 | 440<br>513 |
| | **SNL 3088 GL** | 23088 CA/W33 | TS 500<br>TNF 500 | ETS 500 | 440<br>513 |
| | **SNL 3188 GF** | 23188 CA/W33 | TS 500<br>TNF 500 | ETS 500 | 470<br>543 |
| | **SNL 3188 GL** | 23188 CA/W33 | TS 500<br>TNF 500 | ETS 500 | 470<br>543 |
| | **SNL 3288 GF** | 23288 CA/W33 | TS 560/480<br>TNF 560/480 | ETS 560 | 480<br>553 |
| | **SNL 3288 GL** | 23288 CA/W33 | TS 560/480<br>TNF 560/480 | ETS 560 | 480<br>553 |
| | **SNL 4088 GF** | 24088 ECA/W33 | TS 500<br>TNF 500 | ETS 500 | 440<br>513 |
| | **SNL 4088 GL** | 24088 ECA/W33 | TS 500<br>TNF 500 | ETS 500 | 440<br>513 |

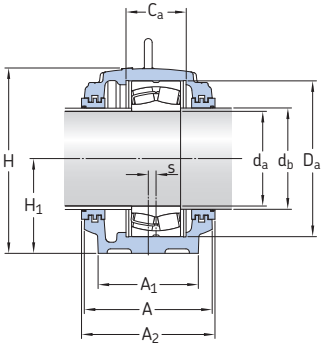
1) 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.



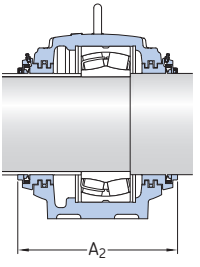




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **440** | 470 | 430 | 390 | 157 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 470 | 430 | 390 | 200 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 470 | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 470 | 460 | 430 | 246 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| | 480 | 470 | 440 | 280 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | M 48 | 947 |
| | 480 | 470 | 440 | 300 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 40 | 48 | M 48 | 941 |
| | 470 | 430 | 390 | 212 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |
| | 470 | 430 | 390 | 232 | 650 | 755 | 380 | 125 | 950 | 240 | 1 120 | 60 | 48 | 30 | 42 | M 42 | 595 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **460 – 480** mm



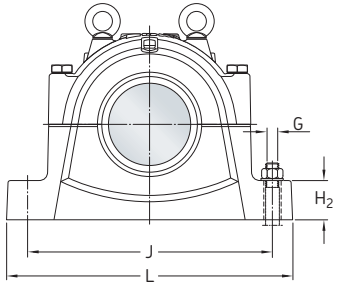

Labyrinth seals,
TS design

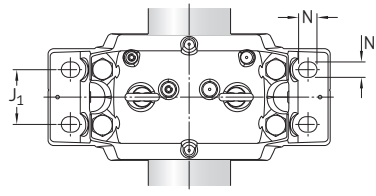



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **460** | **SNL 3092 GF** | 23092 CA/W33<br>C 3092 M | TS 530<br>TNF 530 | ETS 530 | 470<br>543 |
| | **SNL 3092 GL** | 23092 CA/W33 | TS 530<br>TNF 530 | ETS 530 | 470<br>543 |
| | **SNL 3192 GF** | 23192 CA/W33<br>C 3192 M | TS 530<br>TNF 530 | ETS 530 | 480<br>553 |
| | **SNL 3192 GL** | 23192 CA/W33 | TS 530<br>TNF 530 | ETS 530 | 480<br>553 |
| | **SNL 4092 GF** | 24092 ECA/W33 | TS 530<br>TNF 530 | ETS 530 | 470<br>543 |
| | **SNL 4092 GL** | 24092 ECA/W33 | TS 530<br>TNF 530 | ETS 530 | 470<br>543 |
| **480** | **SNL 3096 GF** | 23096 CA/W33<br>C 3096 M | TS 530/510<br>TNF 530/510 | ETS 530 | 470<br>543 |
| | **SNL 3096 GL** | 23096 CA/W33 | TS 530/510<br>TNF 530/510 | ETS 530 | 470<br>543 |
| | **SNL 3196 GF** | 23196 CA/W33 | TS 560/520<br>TNF 560/520 | ETS 560 | 480<br>553 |
| | **SNL 3196 GL** | 23196 CA/W33 | TS 560/520<br>TNF 560/520 | ETS 560 | 480<br>553 |
| | **SNL 4096 GF** | 24096 ECA/W33 | TS 530/510<br>TNF 530/510 | ETS 530 | 470<br>543 |
| | **SNL 4096 GL** | 24096 ECA/W33 | TS 530/510<br>TNF 530/510 | ETS 530 | 470<br>543 |

[1] 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing.
Only typical bearings are listed. Other bearing variants can also fit the housing.

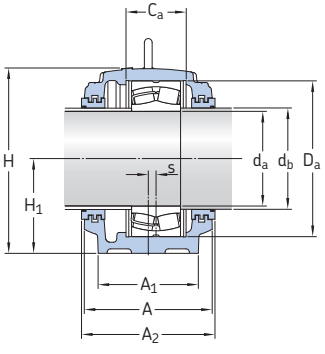


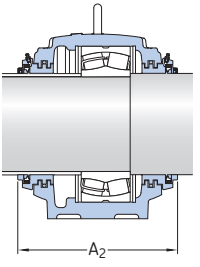



| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **460** | 500 | 460 | 420 | 163 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 500 | 460 | 420 | 224 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 500 | 470 | 440 | 240 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 865 |
| | 500 | 470 | 440 | 260 | 760 | 880 | 440 | 145 | 1 070 | 260 | 1 280 | 60 | 48 | 35 | 42 | M 48 | 859 |
| | 500 | 460 | 420 | 218 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 500 | 460 | 420 | 238 | 680 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| **480** | 510 | 460 | 420 | 165 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 510 | 460 | 420 | 224 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |
| | 520 | 470 | 440 | 248 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 520 | 470 | 440 | 268 | 790 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |
| | 510 | 460 | 420 | 218 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 716 |
| | 510 | 460 | 420 | 238 | 700 | 810 | 410 | 130 | 1 000 | 260 | 1 170 | 60 | 48 | 35 | 42 | M 42 | 709 |

# 5.3 Large SNL plummer block housings for bearings on a cylindrical seat
$d_a$ **500 – 530** mm



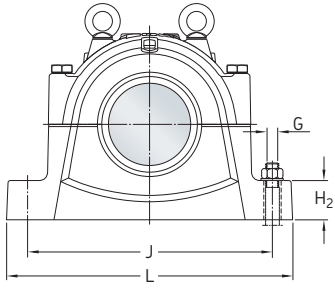

Labyrinth seals,
TS design

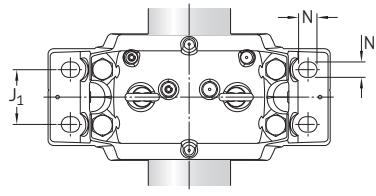



Taconite seals,
TNF design

| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing[1)] | Seals | End cover | Width incl. seals $A_2$ |
|---|---|---|---|---|---|
| mm | – | – | | | mm |
| **500** | **SNL 30/500 GF** | 230/500 CA/W33<br>C 30/500 M | TS 560<br>TNF 560 | ETS 560 | 470<br>543 |
| | **SNL 30/500 GL** | 230/500 CA/W33 | TS 560<br>TNF 560 | ETS 560 | 470<br>543 |
| | **SNL 40/500 GF** | 240/500 ECA/W33 | TS 560<br>TNF 560 | ETS 560 | 470<br>543 |
| | **SNL 40/500 GL** | 240/500 ECA/W33 | TS 560<br>TNF 560 | ETS 560 | 470<br>543 |
| **530** | **SNL 30/530 GF** | 230/530 CA/W33<br>C 30/530 M | TS 600<br>TNF 600 | ETS 600 | 480<br>553 |
| | **SNL 30/530 GL** | 230/530 CA/W33 | TS 600<br>TNF 600 | ETS 600 | 480<br>553 |
| | **SNL 40/530 GF** | 240/530 ECA/W33 | TS 600<br>TNF 600 | ETS 600 | 480<br>553 |
| | **SNL 40/530 GL** | 240/530 ECA/W33 | TS 600<br>TNF 600 | ETS 600 | 480<br>553 |

1) 222(00), 223(00), 230(00), 231(00), 232(00), 240(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.




| **Shaft diameter** | **Dimensions** Housings | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_b$ | A | $A_1$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | | |
| mm | mm | | | | | | | | | | | | | | | – | kg |
| **500** | 530 | 460 | 430 | 167 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 530 | 460 | 430 | 226 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| | 530 | 460 | 430 | 218 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 755 |
| | 530 | 460 | 430 | 238 | 720 | 835 | 420 | 135 | 1 030 | 260 | 1 220 | 60 | 48 | 35 | 42 | M 42 | 751 |
| **530** | 560 | 470 | 440 | 185 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 560 | 470 | 440 | 248 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |
| | 560 | 470 | 440 | 250 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 947 |
| | 560 | 470 | 440 | 270 | 780 | 920 | 460 | 155 | 1 110 | 260 | 1 330 | 70 | 56 | 35 | 48 | M 48 | 941 |



# Split plummer block housings SED 30, 31, 32 and 39 series

**Bearing types**
- Spherical roller bearings

**Bearing dimension series**
- 30, 31, 32 and 39

**Shaft diameter range**
- 430 to 900 mm

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seal**
- Multi-seal

**Lubrication**
- Grease
- Oil

**Material**
- Spheroidal graphite cast iron

**Mounting**
- Eight-bolt mounting

**Compliance to standards**
- Not standardized

SED plummer (pillow) block housings are large split housings designed to accommodate heavy loads acting perpendicular toward the support surface within an angle of ±55°. These types of loads are typically encountered in conveyors, mills and crushers.

# Split plummer block housings SED 30, 31, 32 and 39 series


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# Designations

**Designation system for SED plummer block housings**

**SED 31/530 AL**

**Series**

| | |
|---|---|
| **SED** | Standard plummer block housing, spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **30..** | Housing for bearings in the 30 dimension series |
| **31..** | Housing for bearings in the 31 dimension series |
| **32..** | Housing for bearings in the 32 dimension series |
| **39..** | Housing for bearings in the 39 dimension series |
| **..92 and ..96** | Size code, related to the bearing bore size |
| **../500 to /950** | Size code, related to the bearing bore size |

**Suffixes**[1)]

| | |
|---|---|
| **–** | Housing for bearings on an adapter sleeve and a plain shaft |
| **G** | Housing for bearings on a cylindrical seat and a stepped shaft |
| **A** | Housing for shaft end, one side closed |
| **B** | Housing for a through shaft |
| **F** | Housing for the locating bearing position |
| **L** | Housing for the non-locating bearing position |
| **RT** | Housing prepared for circulating oil lubrication |
| **V** | Grease escape hole in the cover |
| **P01 to P..** | Paint variant according to customer specification (no symbol indicates SKF standard paint) |

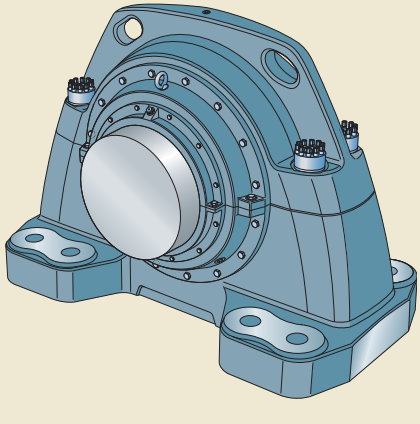
[1)] When multiple suffixes are used, they are listed in the same order as shown here.

# Standard housing design

SED plummer (pillow) block housings are large symmetrical, split housings consisting of a housing base, cap and two split covers (→ **fig. 1**). The covers are bolted to the base/cap with hexagon head bolts on each side. The housings have eight drilled attachment bolts holes in the base as standard. Two cast holes in the cap facilitate handling.

The SED housing series consists of six different housing bodies. Each housing body can accommodate multiple bearing series and sizes. The bearing envelope, the outside diameter and width, determine the cover design and the dimensions of both the cover and bearing seat.

Fig. 1



## Features and benefits

SED plummer block housings have the following features and benefits:

### Stiff housing

Standard SED housings are made of spheroidal graphite cast iron. The housings are reinforced with ribs in the base, an integral flange on the cap, and additional material around the attachment bolt holes (→ **fig. 2**). This design contributes to the overall stiffness of the housing and minimizes the total weight.

### Easy mounting

The housing base and cap are held together by four Superbolt® multi-jack tensioners (up to size M 80) (→ **fig. 3**). Each bolt consists of 10 to 14 M 16 hexagon head bolts that can be installed easily by one person using a torque wrench.

### Machined base ends

SED housings have machined base ends. This makes alignment easier and provides good contact with stops when they are used (→ **fig. 4**).

### Safe, easy handling

All housing parts are prepared for safe, easy handling and lifting. There are two holes cast into the integral flange on the cap (→ **fig. 5**). The housing base and covers can be lifted with eye bolts inserted into existing threaded holes.

### Grease/oil escape holes

SED housings have three drilled and tapped holes in the base for evacuation of grease or oil, as standard (→ **fig. 6**).

® Superbolt is a trademark of the Nord-Lock Group.

Fig. 4

**Machined base ends**

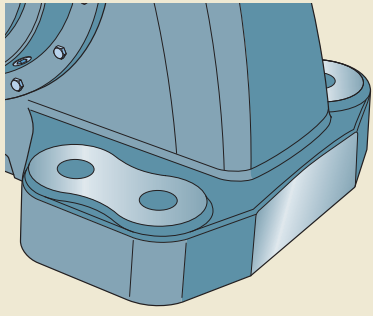


Fig. 2

**Stiff housing**

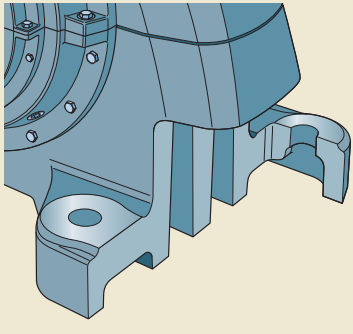


Fig. 5

**Lifting holes**

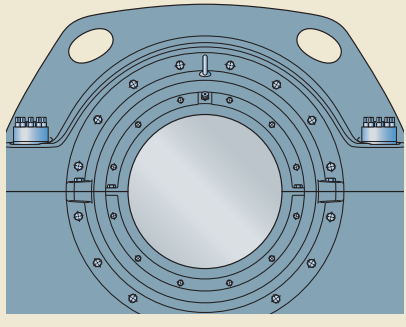


Fig. 3

**Superbolts**

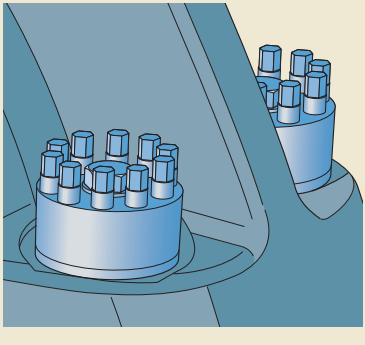
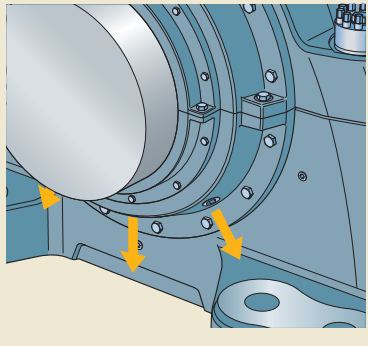


Fig. 6

**Grease/oil escape holes**



### Housing material

SED plummer block housings are made of spheroidal graphite cast iron.

#### Paint, corrosion protection

SED housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C3, i.e. exterior atmospheres with a moderate level of pollution; coastal areas with low salinity; interior atmospheres with high humidity and some air pollution (→ *Environmental conditions*, **page 36**). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

### Dimension standards

The dimensions of SED housings are not standardized either nationally or internationally.

## Housing variants

In addition to standard design SED housings, a number of variants are also available. Variants include housings painted to other colours and corrosivity categories, housings with a narrower base and differently positioned attachment bolt holes, housings suitable for bearings on a cylindrical seat on stepped shafts, and housings modified for circulating oil lubrication.

For additional information, contact the SKF application engineering service.

### Housings for circulating oil lubrication systems

Housings modified for circulating oil lubrication systems have a threaded oil outlet hole in each cover (designation suffix RT). The tapped hole used for grease relubrication can be used as the oil inlet.

# Sealing solutions

## Multi-seals

SED plummer block housings are supplied standard with a multi-seal on each side, which consists of an integrated labyrinth seal and a three stage labyrinth ring. An O-ring holds the labyrinth ring in place on the shaft. The radial shaft seal is installed in the radial seal cover, which is then mounted onto the labyrinth seal cover.

The multi-seal is designed for both grease and circulating oil lubrication. The seal can be relubricated via a grease fitting in the radial seal cover (→ **fig. 7**).

**Table 1** provides an overview of the characteristics and suitability of the multi-seal. This information should be used a guideline, which cannot substitute for testing a seal in its application.

## End covers

SED housings are supplied with a cover for either shaft ends or through shafts:

- Housings with a cover for shaft ends have the designation suffix A.
- Housings with a cover for through shafts have the designation suffix B.

For details about the permissible length of the shaft end, contact the SKF application engineering service.

**Fig. 7**

**Multi-seal**

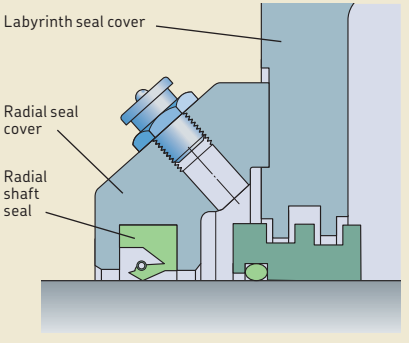



**Table 1**

**Multi-seals for SED plummer block housings**

| **Seal** | |
|---|---|
| Type | Integrated labyrinth and radial shaft seal |
| Material | grey cast iron, nitrile rubber |
| **Application conditions and requirements** | |
| Temperature [°C] | –40 to +100 |
| Temperature [°F] | –40 to +210 |
| Max. circumferential speed[1] [m/s] | 7,5 |
| Max. misalignment [°] | 0,3 |
| Low friction | suitable |
| Shaft tolerance class | h9Ⓔ |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 |
| **Sealing suitability** | |
| Dust | ++ |
| Fine particles | ++ |
| Coarse particles | ++ |
| Chips | ++ |
| Liquids when sprayed | + |
| Direct sunlight | ++ |

Symbols: ++ very suitable + suitable

[1] Limited by the radial shaft seal

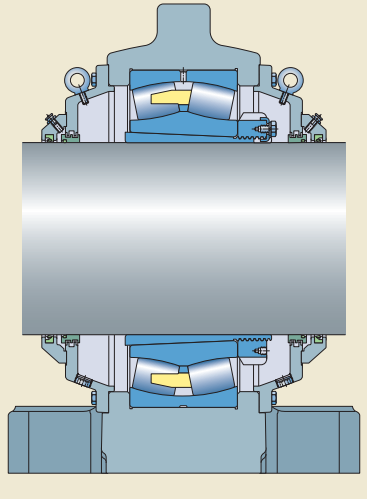
# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on a sleeve* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

Fig. 8



## Typical shaft-bearing combinations

SED housings can accommodate different shaft-bearing combinations:

- plain shaft with bearing on an adapter sleeve (→ **fig. 8**)
- stepped shaft with bearing on a cylindrical seat

**Plain shaft with bearing on an adapter sleeve**

This arrangement is standard for SED housings. Housings, appropriate parts and dimensions are listed in **product table 6.1** starting on **page 344**.

**Stepped shaft with bearing on a cylindrical seat**

Housings to accommodate this shaft arrangement are available on request. For additional information, contact the SKF application engineering service.

## Locating and non-locating bearing positions

SED housings can be used for both the locating and non-locating bearing positions and are supplied in two designs:

- Housings with the designation suffix F have a bearing seat that matches the bearing width. These housings should be used for spherical roller bearings in the locating position and CARB toroidal roller bearings in the non-locating position.
- Housings with the designation suffix L have a bearing seat that is wider than the bearing. These housings should be used for spherical roller bearings in the non-locating position. The possible axial displacement of the bearing is listed in the product tables (parameter “s”).

## Load carrying capacity

SED housings are intended for loads acting perpendicularly toward the support surface within an angle of ±55°. If loads acting in other directions occur, contact the SKF application engineering service.

### Breaking loads and safety factors

Guideline values for the breaking loads for housings made of spheroidal graphite cast iron are listed in **table 2**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**).

The permissible load can only be exploited if the cap bolts are tightened at least to the torque values listed in **table 3** on **page 339**.

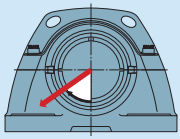
If the housing is not supported over its entire base, the load carrying capacity may be affected. For additional information, contact the SKF application engineering service.

### Additional housing support

When loads acting parallel to the support surface occur, a sufficiently strong stop should be provided to counter the load.

**Table 2**

**Breaking loads for SED plummer block housings**



$P_{55°}$

| Housing body<br>Size | Breaking loads<br>$P_{55°}$ |
|---|---|
| – | kN |
| **1** | 26 000 |
| **2** | 30 000 |
| **3** | 35 000 |
| **4** | 48 000 |
| **5** | 49 000 |
| **6** | 69 000 |

**Table 3**

**Tightening torque values for cap bolts**

| Housing body<br>Size | Cap bolts (Superbolts)<br>Designation to ISO 262<br>Grade 10.9 bolt body | Jack bolt<br>Size | Tightening torque |
|---|---|---|---|
| – | – | | Nm |
| **1** | SB12-M 68x6x300/W | M 16x1,5 | 350 |
| **2** | SB12-M 68x6x300/W | M 16x1,5 | 350 |
| **3** | SB12-M 72x6x300/W | M 16x1,5 | 350 |
| **4** | SB12-M 80x6x350/W | M 16x1,5 | 350 |
| **5** | SB12-M 80x6x350/W | M 16x1,5 | 350 |
| **6** | SB12-M 80x6x350/W | M 16x1,5 | 350 |

## Operating temperature

The permissible operating temperature is mainly limited by the seal (→ **table 3**, **page 339**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

The seals can limit the permissible operating speed. They are suitable for circumferential speeds of up to 7,5 m/s.

For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

## Attachment bolt recommendations

SKF recommends using Superbolt multi-jack tensioners as attachment bolts for easier and more reliable mounting compared to standard hexagon head bolts. In typical applications, 10.9 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger, 12.9 class bolts.

**Torque values for cover bolts and attachment bolts**

| **Housing body** | **Cover bolts** | | **Radial seal cover** | |
|---|---|---|---|---|
| Size | **Cover** Size | Tightening torque | Size | Tightening torque |
| – | – | Nm | – | Nm |
| **1** | M 16/M 24 | 200/665 | M 10 | 50 |
| **2** | M 16/M 24 | 200/665 | M 10 | 50 |
| **3** | M 16/M 24 | 200/665 | M 10 | 50 |
| **4** | M 16/M 24 | 200/665 | M 10 | 50 |
| **5** | M 16/M 24 | 200/665 | M 10 | 50 |
| **6** | M 16/M 24 | 200/665 | M 10 | 50 |

[1] L = length

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values typically recommended by bolt manufacturers (→ **table 4**). They are valid for oiled, but otherwise untreated thread surfaces. Hexagon head bolts tightened to the recommended torque value cannot accommodate any load in the direction of the bolt axis. SKF cannot guarantee that tightening to the recommended value provides sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.



**Table 4**

| **Housing body** | **Attachment bolts** | | | | |
|---|---|---|---|---|---|
| | **Superbolts** | | | **Hexagon head bolts** | |
| Size | Grade 10.9 bolt body[1)] | Jack bolt | | Size | Tightening torque |
| | | Size | Tightening torque | | |
| – | – | | Nm | – | Nm |
| **1** | SB12-M 72x6xL/W | M 16x1,5 | 350 | M 72 | 26 500 |
| **2** | SB12-M 72x6xL/W | M 16x1,5 | 350 | M 72 | 26 500 |
| **3** | SB12-M 80x6xL/W | M 16x1,5 | 350 | M 80 | 36 600 |
| **4** | SB12-M 80x6xL/W | M 16x1,5 | 350 | M 80 | 36 600 |
| **5** | SB12-M 80x6xL/W | M 16x1,5 | 350 | M 80 | 36 600 |
| **6** | SB12-M 80x6xL/W | M 16x1,5 | 350 | M 80 | 36 600 |

# Lubrication

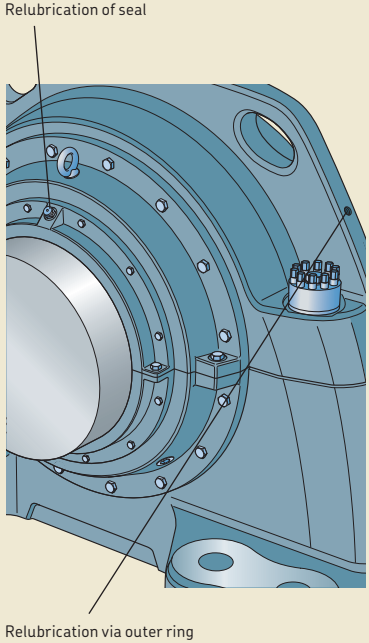
SED plummer block housings are intended for both grease and circulating oil lubrication systems. The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

## Initial grease fill

If no other requirements exist, the free space in the bearing as well as the gaps of the labyrinth seal should be completely filled with grease and the free space in the housing should be filled to 20% of its volume. For highly contaminated environments and slow speeds, fill the housing to 70–80%.

For additional information, contact the SKF application engineering service.

Fig. 9




## Relubrication

SED plummer block housings enable relubrication of the incorporated bearings and seals. They have two holes that have been drilled and tapped for a button-head grease fitting (→ **fig. 9**). The holes are in accordance with DIN 3404 and used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring). When applying grease via the relubrication feature, the shaft should be rotating.

## Grease/oil escape holes

SED housings have three drilled and tapped holes in the base for evacuation of grease or oil, as standard (→ **fig. 6**, **page 335**) as the grease or oil cannot escape via the seal if relubrication is required.

When grease lubrication is used, these escape holes can also be used for spot checks of grease quality.

## Oil lubrication

SED housings with the designation suffix RT can be used for circulating oil lubrication systems. The same holes that are used for grease relubrication (via the annular groove and lubrication holes in the outer ring of the bearing) can be used as the oil inlet.

# Mounting

SED housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces*, **page 45**). For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Torque specifications

Cap, cover and attachment bolts should be tightened to the torque values listed in **tables 3** and **4**, **pages 339** and **340**. The cover bolts are in accordance with ISO 4017. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 340**.

### Supporting the housing

A stop should be used to accommodate loads acting parallel to the support surface. The stop also makes alignment during mounting easier.

### Eye bolts

All separate components are prepared for lifting. There is an integral flange on the cap with two cast holes. The housing base can be lifted with eye bolts inserted into the threaded holes for the cap bolts.

Various threaded holes in the covers can be used for inserting eye bolts.

## Condition monitoring

SED housings have a drilled and tapped hole at the integral flange on the cap specially designed for the SKF wireless vibration sensor, CMWA 8800[1)].

The CMWA 8800 Wireless Condition Monitoring Node is a combined sensor and wireless communication node that measures both vibration and temperature. The device uses the WirelessHART communication protocol, which offers a simple, reliable and secure means of transmitting machine vibration and temperature data wirelessly back to a host computer network.

SED housings also have additional positions for other sensors (→ **fig. 10**).

**Position 1** is a measurement point perpendicular to the shaft appropriate for temperature sensors.

**Position 2** is a measurement point perpendicular or parallel to the shaft appropriate for vibration sensors.

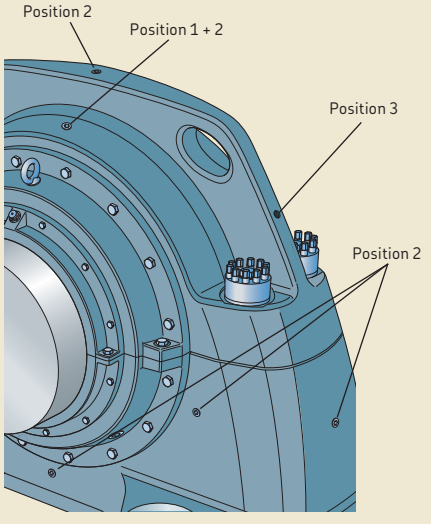
**Position 3** is a drilled hole for lubrication perpendicular to the shaft that can be used for both temperature and vibration sensors.

## Accessories

There are several accessories available for SED housings, including centralized lubrication systems and condition monitoring sensors. For additional information, refer to *SKF tools and products* (→ **page 47**).

1) Check availability before ordering.

**Fig. 10**




## Ordering information

SED housings are supplied with the appropriate covers, multi-seals and a wireless condition monitoring sensor. Bearings and adapter sleeves must be ordered separately.

**Order example**

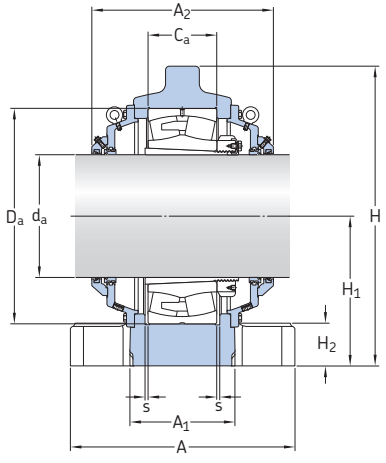
Two plummer block housings are required for two 230/560 CAK/W33 spherical roller bearings on OH 30/560 H adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

The following items should be ordered:

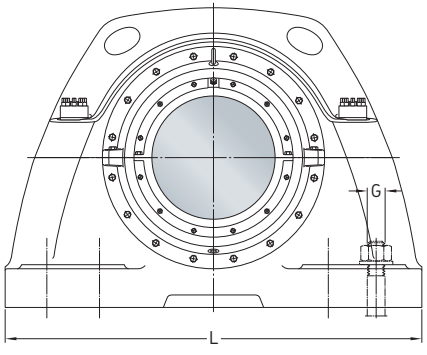
- 1 housing SED 30/560 BF
- 1 housing SED 30/560 AL

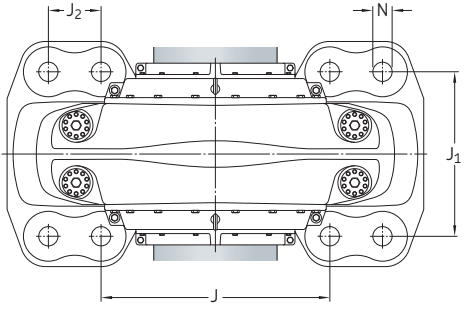
## 6.1 SED plummer block housings for bearings on an adapter sleeve

$d_a$ **430 – 750** mm




| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing | Adapter seleeve | **Mass** Housing | Housing body Size |
|---|---|---|---|---|---|
| mm | – | – | | kg | – |
| **430** | **SED 3292** | 23292 CAK/W33 | OH 3292 H | 2 300 | 1 |
| **450** | **SED 3296** | 23296 CAK/W33 | OH 3296 H | 2 900 | 2 |
| **470** | **SED 31/500** | 231/500 CAK/W33 | OH 31/500 H | 2 300 | 1 |
| | **SED 32/500** | 232/500 CAK/W33 | OH 32/500 H | 3 550 | 4 |
| **500** | **SED 31/530** | 231/530 CAK/W33 | OH 31/530 H | 2 300 | 1 |
| | **SED 32/530** | 232/530 CAK/W33 | OH 32/530 H | 3 550 | 4 |
| **530** | **SED 30/560** | 230/560 CAK/W33 | OH 30/560 H | 2 300 | 1 |
| | **SED 31/560** | 231/560 CAK/W33 | OH 31/560 H | 2 900 | 2 |
| | **SED 32/560** | 232/560 CAK/W33 | OH 32/560 H | 3 550 | 4 |
| **560** | **SED 39/600** | 239/600 CAK/W33 | OH 39/600 H | 2 300 | 1 |
| | **SED 30/600** | 230/600 CAK/W33 | OH 30/600 H | 2 300 | 1 |
| | **SED 31/600** | 231/600 CAK/W33 | OH 31/600 H | 3 550 | 4 |
| | **SED 32/600** | 232/600 CAK/W33 | OH 32/600 H | 3 550 | 4 |
| **600** | **SED 39/630** | 239/630 CAK/W33 | OH 39/630 H | 2 300 | 1 |
| | **SED 30/630** | 230/630 CAK/W33 | OH 30/630 H | 2 900 | 2 |
| | **SED 31/630** | 231/630 CAK/W33 | OH 31/630 H | 3 550 | 4 |
| **630** | **SED 39/670** | 239/670 CAK/W33 | OH 39/670 H | 2 900 | 2 |
| | **SED 30/670** | 230/670 CAK/W33 | OH 30/670 H | 2 900 | 2 |
| | **SED 31/670** | 231/670 CAK/W33 | OH 31/670 H | 4 175 | 5 |
| | **SED 32/670** | 232/670 CAK/W33 | OH 32/670 H | 6 500 | 6 |
| **670** | **SED 39/710** | 239/710 CAK/W33 | OH 39/710 H | 2 900 | 2 |
| | **SED 30/710** | 230/710 CAK/W33 | OH 30/710 H | 3 600 | 3 |
| | **SED 31/710** | 231/710 CAK/W33 | OH 31/710 H | 4 175 | 5 |
| | **SED 32/710** | 232/710 CAK/W33 | OH 32/710 H | 6 500 | 6 |
| **710** | **SED 39/750** | 239/750 CAK/W33 | OH 39/750 H | 2 900 | 2 |
| | **SED 30/750** | 230/750 CAK/W33 | OH 30/750 H | 3 600 | 3 |
| | **SED 31/750** | 231/750 CAK/W33 | OH 31/750 H | 6 500 | 6 |
| | **SED 32/750** | 232/750 CAK/W33 | OH 32/750 H | 6 500 | 6 |
| **750** | **SED 39/800** | 239/800 CAK/W33 | OH 39/800 H | 3 600 | 3 |
| | **SED 30/800** | 230/800 CAK/W33 | OH 30/800 H | 4 175 | 5 |
| | **SED 31/800** | 231/800 CAK/W33 | OH 31/800 H | 6 500 | 6 |



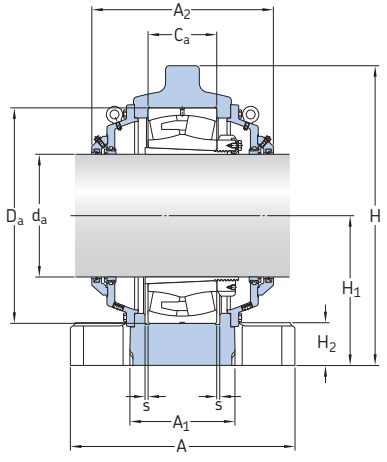





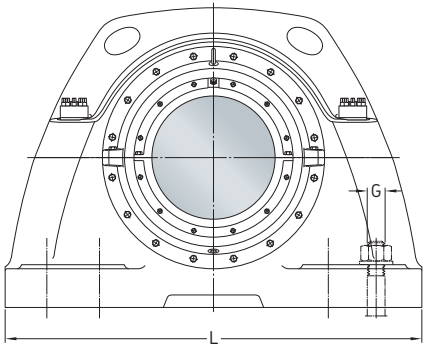

| Shaft diameter | Dimensions | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $A_2$ | $D_a$ | $C_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $J_2$ | G | s |
| mm | mm | | | | | | | | | | | | | | |
| **430** | 860 | 400 | 696 | 830 | 296 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 8 |
| **450** | 920 | 450 | 731 | 870 | 310 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 9 |
| **470** | 860 | 400 | 696 | 830 | 264 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 8 |
| | 1 000 | 500 | 786 | 920 | 336 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 9 |
| **500** | 860 | 400 | 696 | 870 | 272 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 9 |
| | 1 000 | 500 | 786 | 980 | 355 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 10 |
| **530** | 860 | 400 | 696 | 820 | 195 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 8 |
| | 920 | 450 | 731 | 920 | 280 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 9 |
| | 1 000 | 500 | 786 | 1 030 | 365 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 10 |
| **560** | 860 | 400 | 696 | 800 | 150 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 8 |
| | 860 | 400 | 696 | 870 | 200 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 9 |
| | 1 000 | 500 | 786 | 980 | 300 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 10 |
| | 1 000 | 500 | 801 | 1 090 | 388 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 11 |
| **600** | 860 | 400 | 696 | 850 | 165 | 1 150 | 575 | 165 | 880 | 630 | 1 600 | 76 | 200 | 72 | 8 |
| | 920 | 450 | 731 | 920 | 212 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 9 |
| | 1 000 | 500 | 786 | 1 030 | 315 | 1 325 | 675 | 195 | 1 100 | 780 | 1 900 | 84 | 210 | 80 | 10 |
| **630** | 920 | 450 | 731 | 900 | 170 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 9 |
| | 920 | 450 | 731 | 980 | 230 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 10 |
| | 1 000 | 480 | 801 | 1 090 | 336 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 11 |
| | 1 200 | 600 | 898 | 1 220 | 438 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 12 |
| **670** | 920 | 450 | 731 | 950 | 180 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 9 |
| | 900 | 420 | 711 | 1 030 | 236 | 1 350 | 675 | 195 | 1 110 | 685 | 1 900 | 84 | 210 | 80 | 10 |
| | 1 000 | 480 | 810 | 1 150 | 345 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 11 |
| | 1 200 | 600 | 909 | 1 280 | 450 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 13 |
| **710** | 920 | 450 | 731 | 1 000 | 185 | 1 230 | 630 | 175 | 940 | 700 | 1 700 | 76 | 205 | 72 | 10 |
| | 900 | 420 | 711 | 1 090 | 250 | 1 350 | 675 | 195 | 1 110 | 685 | 1 900 | 84 | 210 | 80 | 11 |
| | 1 200 | 600 | 886 | 1 220 | 365 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 12 |
| | 1 200 | 600 | 929 | 1 360 | 475 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 14 |
| **750** | 900 | 420 | 711 | 1 060 | 195 | 1 350 | 675 | 195 | 1 110 | 685 | 1 900 | 84 | 210 | 80 | 11 |
| | 1 000 | 480 | 796 | 1 150 | 258 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 11 |
| | 1 200 | 600 | 886 | 1 280 | 375 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 13 |

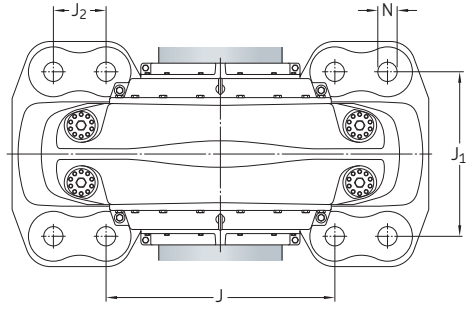
## 6.1 SED plummer block housings for bearings on an adapter sleeve

$d_a$ **800 – 900** mm




| **Shaft diameter** $d_a$ | **Housing** | **Appropriate parts** Bearing | Adapter seleeve | **Mass** Housing | Housing body Size |
|---|---|---|---|---|---|
| mm | – | – | | kg | – |
| **800** | **SED 39/850** | 239/850 CAK/W33 | OH 39/850 H | 3 600 | 3 |
| | **SED 30/850** | 230/850 CAK/W33 | OH 30/850 H | 4 175 | 5 |
| | **SED 31/850** | 231/850 CAK/W33 | OH 31/850 H | 6 500 | 6 |
| **850** | **SED 39/900** | 239/900 CAK/W33 | OH 39/900 H | 3 600 | 3 |
| | **SED 30/900** | 230/900 CAK/W33 | OH 30/900 H | 4 175 | 5 |
| **900** | **SED 39/950** | 239/950 CAK/W33 | OH 39/950 H | 4 175 | 5 |
| | **SED 30/950** | 230/950 CAK/W33 | OH 30/950 H | 4 175 | 5 |




| Shaft diameter | Dimensions | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $A_2$ | $D_a$ | $C_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N | $J_2$ | G | s |
| mm | mm | | | | | | | | | | | | | | |
| **800** | 900 | 420 | 711 | 1 120 | 200 | 1 350 | 675 | 195 | 1 110 | 685 | 1 900 | 84 | 210 | 80 | 11 |
| | 1 000 | 480 | 796 | 1 220 | 272 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 12 |
| | 1 200 | 600 | 897 | 1 360 | 400 | 1 715 | 840 | 215 | 1 350 | 920 | 2 200 | 84 | 210 | 80 | 14 |
| **850** | 900 | 420 | 711 | 1 180 | 206 | 1 350 | 675 | 195 | 1 110 | 685 | 1 900 | 84 | 210 | 80 | 12 |
| | 1 000 | 480 | 796 | 1 280 | 280 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 13 |
| **900** | 1 000 | 480 | 796 | 1 250 | 224 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 12 |
| | 1 000 | 480 | 796 | 1 360 | 300 | 1 650 | 840 | 215 | 1 300 | 770 | 2 100 | 84 | 210 | 80 | 14 |



# Split plummer block housings SONL series

**Bearing types**
- Self-aligning ball bearings
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 22

**Shaft diameter range**
- 75 to 240 mm
- 2 15/16 to 8 15/16 in.

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Labyrinth

**Lubrication**
- Oil bath lubrication with a pick-up ring
- Circulating oil lubrication systems

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Four-bolt mounting

**Compliance to standards**
- Not standardized

**Supersedes**
- SOFN in the 2(00) and 5(00) series

SONL plummer (pillow) block housings are specially designed for oil lubrication. They can accommodate high temperatures and bearings operating at high speeds. They have a strong, stiff design and are characterized by a number of built-in features that maximize the effects of the lubricant and extend bearing service life.

SONL housings can be found in applications ranging from fans and flywheels to paper machines and emergency power generators.

# Split plummer block housings SONL series


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# Designations

**Designation system for SONL plummer block housings**

SONLD 215-517 RA

**Series**

| | |
|---|---|
| **SONL** | Plummer (pillow) block housing for oil lubrication |

**Material**

| | |
|---|---|
| **–** | Grey cast iron |
| **D** | Spheroidal graphite cast iron |

**Size identification**

| | |
|---|---|
| **2(00)-5(00)** | Housing for bearings on a cylindrical seat or adapter sleeve, diameter series 2 |
| **..(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

**Suffix**

| | |
|---|---|
| **RA** | Housing for CARB toroidal roller and self-aligning ball bearings when using a circulating oil lubrication system |

**Designation system for end covers**

ECO 217-517

**Series**

| | |
|---|---|
| **ECO** | End cover with two rubber O-rings for SONL plummer block housings |

**Size identification**

| | |
|---|---|
| **2(00)-5(00)** | Housing size identification |

**Designation system for seal kits**

TSO 217 A

**Series**

| | |
|---|---|
| **TSO 2** | Seal kit for bearings on a cylindrical seat |
| **TSO 5** | Seal kit for bearings on an adapter sleeve |

**Size identification**

| | |
|---|---|
| **(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |
| **/...** | Additional size identification for inch shafts, shaft diameter [in.] |

**Suffixes**

| | |
|---|---|
| **–** | Seal kit for through shafts |
| **A** | Seal kit for shaft ends |
| **/VZ643** | Seal kit for bearings on a cylindrical seat and a plain shaft |

**Designation system for oil level gauges and oil pick up rings when sold separately**

**GG-TSO 217-517/V51**

**GG-TSO** Oil level gauge

**Size identification**

**2(00)-5(00)** Housing size identification

**Suffix**

**/V51** Signifies spare part

**GH-TSO 217-517/V51**

**GH-TSO** Oil pick-up ring

**Size identification**

**2(00)-5(00)** Housing size identification

**Suffixes**

**/V51** Oil pick-up ring – steel (signifies spare parts with standard performance)
**/MB** Oil pick-up ring – brass (replacement for standard)

**Designation system for oil cooling tubes**

**AVA-0001/1**

**Series**

**AVA** Oil cooling tube

**Size identification**

**0001** Basic size to fit G 3/4 to G 1 1/2 oil outlets
**/1** For housings SONL 217-517 and SONL 218-518
**/2** For housings SONL 220-520 and SONL 222-522
**/3** For housings SONL 224-524 to SONL 232-532
**/4** For housings SONL 234-534 to SONL 248-548

**Designation system for locating rings**

**FRB 11/230**

**Series**

**FRB** Locating ring for SKF bearing housings

**Size identification**

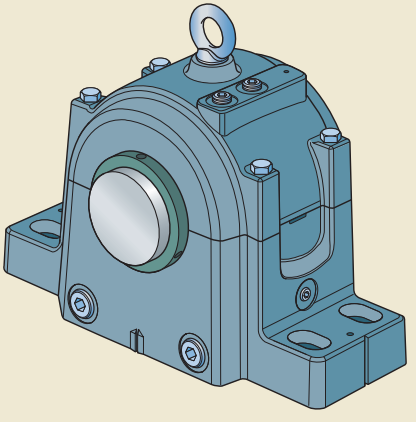
**.../...** Width and outside diameter of the locating ring [mm]

# Standard housing design

SONL plummer (pillow) block housings (→ **fig. 1**) are split housings consisting of a cap and base. They have four holes cast into the base for attachment bolts.

The housings incorporate a number of design features that make them suitable for oil lubrication in order to achieve higher speeds.

**Fig. 1**



## Features and benefits

SONL plummer block housings have the following features and benefits:

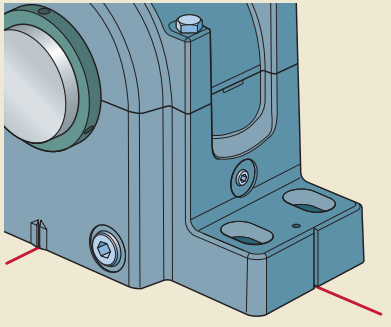
### Simple mounting

To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat and housing bore axis are cast into the housing base. Dimples indicate the position for dowel pins (→ **fig. 2**).

SONL housings have significantly fewer components than earlier SOFN housings. Their four cap bolts are loosened prior to delivery for easy removal.

Mounting instructions are supplied with each seal kit. The housings have an eye bolt on the cap for safe and easy handling.

Fig. 2

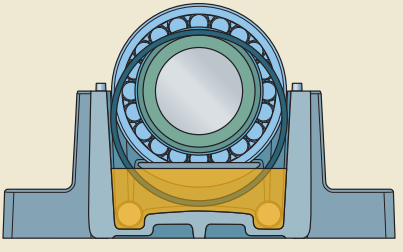


### Deep sump for lower operating temperatures

SONL housings have a deep sump that holds a large volume of oil so that heat can be dissipated effectively (→ **fig. 3**). This cooling effect extends the service life of both the lubricant and the bearing.

If operating conditions require it, auxiliary oil cooling tubes are available. These can be installed through the oil outlet holes in the housing base.

Fig. 3



### Strong, stiff and simple design

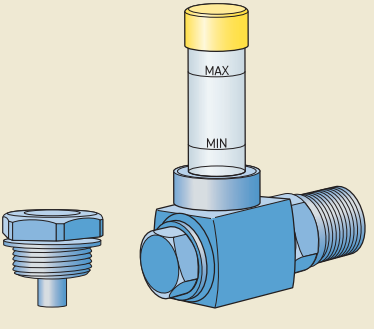
The simple, sturdy design of SONL housings provides maximum support and reduces the risk of deforming the cap or base during installation. Dowel pins between the cap and base are off-centre so that the cap can only be installed one way.

### Comprehensive seal kits

In addition to the seals, seal kits for SONL housings are supplied standard with (→ **fig. 4**):

- an oil level gauge that makes it easy to visually check the level and condition of the oil
- a magnetic plug that screws into one of the four tapped holes in the housing base. This plug attracts metal particles, extending the service life of the lubricant and bearing.

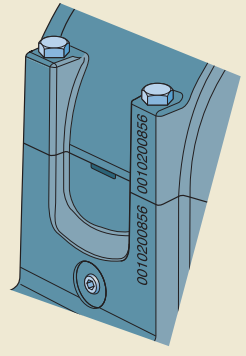
Fig. 4



#### Caps and bases individually marked

The housing cap and base are matched during manufacture and are not interchangeable with the caps and bases of other housings. To prevent any mismatches, a unique serial number is marked on both the housing cap and the base (→ **fig. 5**).

Fig. 5




## Housing material

SONL plummer block housings are made of grey cast iron.

#### Paint, corrosion protection

SONL plummer block housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

The dimensions of SONL plummer block housings are not standardized either nationally or internationally.

#### Interchangeability

SONL plummer block housings are dimensionally interchangeable with the earlier SOFN housings in the 2(00) and 5(00) series.

3(00) and 6(00) series SOFN housings are still available. For additional information, contact the SKF application engineering service.

# Housing variants

In addition to standard design SONL plummer (pillow) block housings, a number of variants are also available. Variants include housings made of different materials, different bearing seat tolerance classes and additional tapped holes for circulating oil lubrication systems.

## Housing material

For applications where extra strength is needed, SONL housings are also available in spheroidal graphite cast iron.

## Bearing seat tolerance

SONL housings can be supplied with different bearing seat tolerance classes, e.g. for applications prone to vibration or with rotating outer ring load.

For additional information, contact the SKF application engineering service.

## Housings for circulating oil lubrication systems

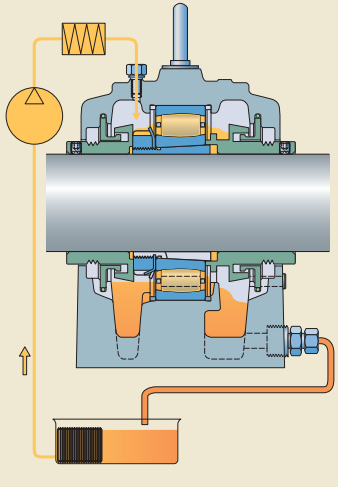
In applications where CARB toroidal roller and self-aligning ball bearings are lubricated by a circulating oil lubrication system, SKF recommends using SONL .. RA housings. These housings are designed for bearings that are lubricated from the side and require a slightly higher oil level than spherical roller bearings.

In SONL .. RA housings, the holes that connect the two halves of the oil sump are positioned higher than in standard housings. This enables oil to reach the rolling elements of the bearing (→ **fig. 6**).

For additional information, refer to *Using circulating oil lubrication with CARB and self-aligning ball bearings* on **page 367**.

Fig. 6

SONL .. RA housing



# Sealing solutions

SONL housings are equipped with non-contact labyrinth seals (→ **fig. 7**). These seals retain the lubricating oil and prevent contaminants from entering the housing. The oil retaining effect is enhanced by oil traps that return oil that has passed through the labyrinth back to the oil reservoir. **Table 1** provides an overview of the seal characteristics and suitability. This information should be used as a guideline and does not substitute for testing the seal in its application.

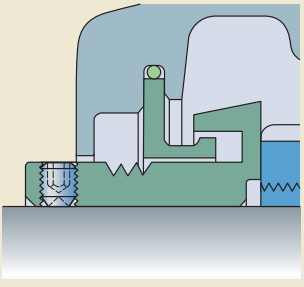
A labyrinth seal consists of a shaft sleeve and a labyrinth ring, to form a multi-stage labyrinth. The sleeve has a clearance fit on the shaft while the labyrinth ring is stationary and mounted in the housing with an O-ring. To guide the oil pick-up ring, one shaft sleeve is provided with a groove.

The shaft sleeve can be locked onto the shaft in different ways:

- Shaft sleeves for bearings on an adapter sleeve (TSO 5..) are locked by grub screws in the shaft sleeve.
- Shaft sleeves for bearings on a cylindrical seat (TSO 2..) must be locked by an adapter ring, end plate or similar component (not supplied by SKF) on the shaft. Details for locking are shown in **product table 7.3** (→ **page 378**).

Fig. 7

**Labyrinth seal**



## Seal kits

The seals for SONL housings are supplied as kits and must be ordered separately.

Seal kits for housings for a through shaft, designation TSO (→ **fig. 8**, **page 358**), include:

- 2 labyrinth rings with O-rings
- 2 shaft sleeves, one of them for the oil pick-up ring
- 1 oil pick-up ring
- 1 oil level gauge
- 1 magnetic plug
- mounting instructions



Table 1

**Standard seal kits for SONL plummer block housings**

| Seal kit | For through shaft | For shaft end |
|---|---|---|
| Type | Labyrinth | Labyrinth |
| Designation | TSO | TSO .. A |
| Material | grey cast iron, nitrile rubber | grey cast iron, nitrile rubber |
| Seals per pack | 2 seals | 1 seal + 1 end cover |

| Application conditions and requirements | |
|---|---|
| Temperature [°C] | –40 to +110 |
| Temperature [°F] | –40 to +230 |
| Max. misalignment [°] | 0,3 |
| Low friction | ++ |
| Axial shaft displacement | ++ |
| Shaft tolerance class | [1] |
| Shaft roughness $R_a$ [µm] | 3,2 |

Symbol: ++ very suitable

[1] For information about shaft tolerances, refer to the section *Shaft specifications* on **page 362**.

Seal kits for housings for a shaft end, designation TSO .. A (→ **fig. 9**), include:

- 1 labyrinth ring with O-ring
- 1 shaft sleeve
- 1 end cover with O-rings
- 1 oil pick-up ring
- 1 oil level gauge
- 1 magnetic plug
- mounting instructions

Both the oil level gauge and the oil pick-up ring can be supplied separately.

**Seal kits for bearings mounted on a cylindrical seat on plain shafts**

For bearings mounted on a cylindrical seat on plain shafts, a kit with the designation TSO 2../VZ643 must be used. The seal kit includes two shaft sleeves with the same bore diameter.

## End covers

Housings at the end of a shaft should have an end cover that fits into the seal groove in the housing (→ **fig. 10**).

End covers, which are made of grey cast iron, are installed with two O-rings that hold the cover in place.

**Fig. 8**

**Seal kit for a through shaft**

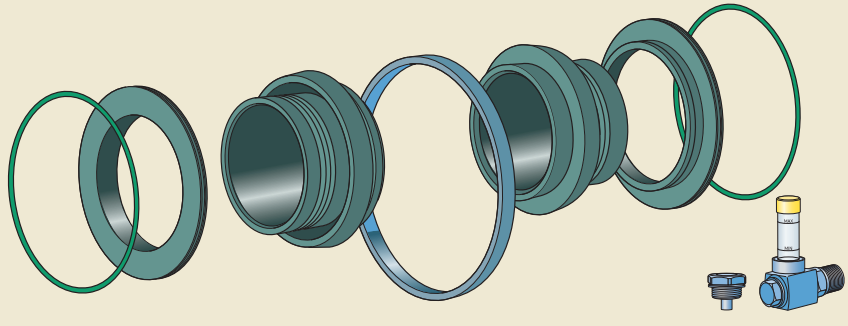
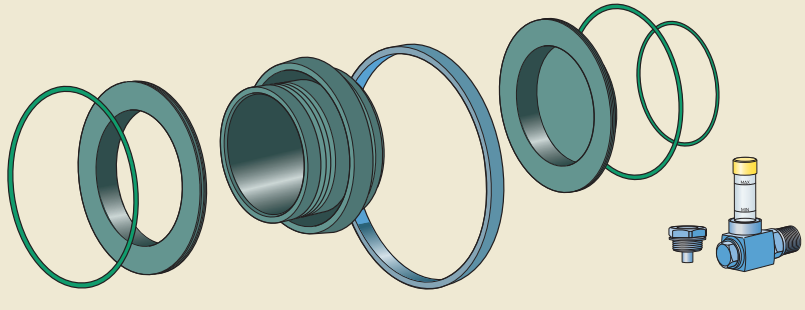


**Fig. 9**

**Seal kit for a shaft end**



Details of the permissible length of the shaft end are listed in the product tables.

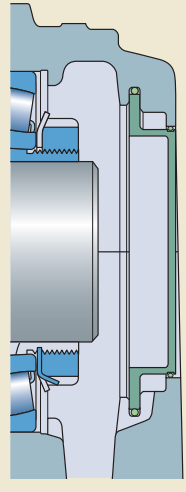
End covers are supplied as a part of the TSO .. A seal kit, but can also be ordered separately.

## High-temperature seals

SKF can supply sealing solutions for high operating temperatures. For additional information, contact the SKF application engineering service.

Fig. 10

End cover



# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

SONL plummer (pillow) block housings can accommodate different shaft-bearing combinations (→ **fig. 11**):

- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat
- Plain shaft with bearing on a cylindrical seat

**Plain shaft with bearing on an adapter sleeve**

Housings, appropriate parts and dimensions are listed in **product tables 7.1** (→ **page 370**) and **7.2** (→ **page 374**).

**Stepped shaft with bearing on a cylindrical seat**

Housings, appropriate parts and dimensions are listed in **product table 7.3** (→ **page 378**).

The bearing is located axially by an inboard labyrinth seal shaft sleeve that abuts the shaft shoulder, and an outboard labyrinth seal shaft sleeve that is held in place by another component (not supplied by SKF). The outside diameter of this component must be at least as large as that of the sleeve.

**Plain shaft with bearing on a cylindrical seat**

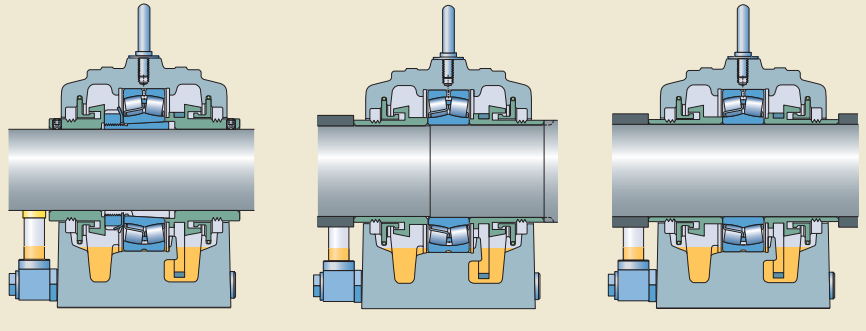
When using an SONL housing for this arrangement, a /VZ643 seal kit must be used. The bearing and labyrinth seal shaft sleeves must be located axially on both sides by other components (not supplied by SKF) on the shaft.

## Locating and non-locating bearing positions

SONL housings can be used for both the locating and non-locating bearing positions.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing on both sides with locating rings. Appropriate locating rings are listed in the product tables.

Fig. 11



Plain shaft with bearing on an adapter sleeve

Stepped shaft with bearing on a cylindrical seat

Plain shaft with bearing on a cylindrical seat

## Load carrying capacity

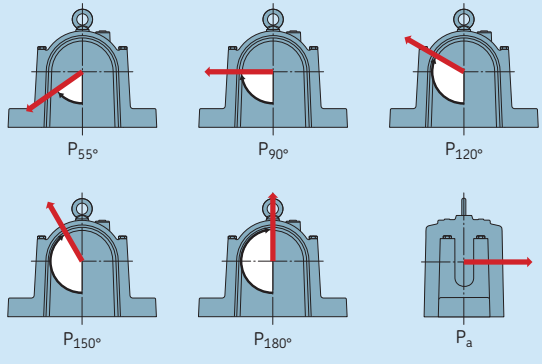
SONL housings are intended for loads acting perpendicularly toward the support surface. The housings should always be supported over the entire base. Perpendicular loads acting towards the base are limited only by the bearing. If loads acting in other directions occur, be sure that the magnitude of the load is permissible for the housing, the cap bolts and the attachment bolts. When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

### Breaking loads and safety factors

Guideline values for the breaking loads P for housings made of grey cast iron are listed in **table 2**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying*

**Table 2**

**Breaking loads for SONL plummer block housings made of grey cast iron**




| Housing Size | Breaking loads $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|
| – | kN | | | | | |
| **217-517** | 690 | 260 | 190 | 180 | 230 | 90 |
| **218-518** | 900 | 350 | 250 | 230 | 300 | 120 |
| **220-520** | 1 080 | 450 | 300 | 280 | 360 | 140 |
| **222-522** | 1 260 | 500 | 350 | 320 | 420 | 170 |
| **224-524** | 2 100 | 780 | 580 | 540 | 700 | 280 |
| **226-526** | 2 550 | 980 | 700 | 650 | 850 | 340 |
| **228-528** | 2 550 | 1 020 | 700 | 650 | 850 | 340 |
| **230-530** | 3 000 | 1 230 | 830 | 770 | 1 000 | 400 |
| **232-532** | 3 000 | 1 230 | 830 | 770 | 1 000 | 400 |
| **234-534** | 3 360 | 1 330 | 940 | 860 | 1 120 | 450 |
| **236-536** | 3 750 | 1 530 | 1 040 | 960 | 1 250 | 500 |
| **238-538** | 3 750 | 1 530 | 1 040 | 960 | 1 250 | 500 |
| **240-540** | 4 950 | 2 000 | 1 380 | 1 270 | 1 650 | 660 |
| **244-544** | 6 350 | 2 550 | 1 750 | 1 600 | 2 100 | 840 |
| **248-548** | 6 350 | 2 550 | 1 750 | 1 600 | 2 100 | 840 |

*capacity*, **page 44**). The permissible load can only be exploited if the cap bolts are tightened at least to the torque values listed in **table 3**. The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

For housings made of spheroidal graphite cast iron, the values obtained from **table 2** on **page 361** should be multiplied by a factor of 1,8.

#### Additional housing support

When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 2** on **page 361**), the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 8** on **page 368**.

#### Load carrying capacity of the cap bolts

Approximate values for the yield points for four cap bolts are provided in **table 3**. The values in **table 3** apply to 8.8 class cap bolts, which are supplied with SONL housings.

## Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 1**, **page 357**), the oil level gauge and the lubricant. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings. The permissible operating temperature for the oil level gauge is 110 °C *(230 °F)*.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

The permissible operating speed of the incorporated bearing is not limited by the housing.

## Shaft specifications

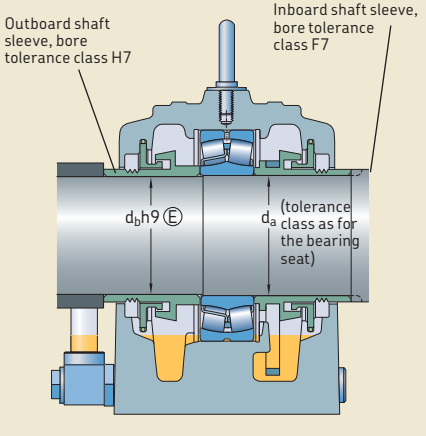
For bearings mounted on an adapter sleeve, the recommended shaft tolerance class is h9Ⓔ. A cylindricity tolerance of IT5/2 is satisfactory. The same specifications are applicable for the seats of labyrinth seal shaft sleeves.

For bearings mounted on a cylindrical seat on stepped shafts (→ **fig. 12**), follow the guidelines in the SKF catalogue *Rolling bearings* for the bearing seat. The bore of the shaft sleeve of the inboard labyrinth seal is in accordance with the F7 tolerance class and fits bearing seats machined to typical tolerances. The bore of the shaft sleeve of the outboard labyrinth seal is in accordance with the H7 tolerance class and fits shafts machined to the h9Ⓔ tolerance class.

For bearings mounted on a cylindrical seat on plain shafts, the bore of the shaft sleeves of the labyrinth seals is in accordance with F7 tolerance class and fits bearing seats machined to typical tolerances.

**Fig. 12**

**Shaft specifications**



## Attachment bolt recommendations

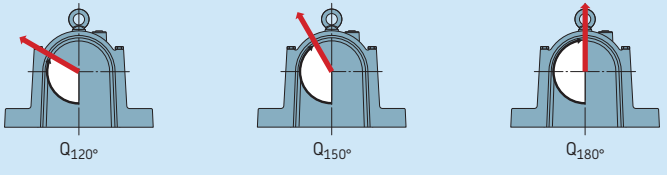
In typical applications, 8.8 class hexagon head bolts, in accordance with ISO 4014, can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 3**). They are valid for oiled, but otherwise untreated thread surfaces. SKF cannot guarantee that tightening to the recommended value provides sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.



**Table 3**

**Load carrying capacity and torque values for cap bolts and attachment bolts**




| **Housing** Size | **Cap bolts** Yield point for four bolts $Q_{120°}$ | $Q_{150°}$ | $Q_{180°}$ | Designation to ISO 4014 | Tightening torque | **Attachment bolts** Size | Tightening torque[1] |
|---|---|---|---|---|---|---|---|
| – | kN | | | – | Nm | – | Nm |
| **217-517** | 300 | 170 | 150 | M 10×75 | 50 | M 20 | 385 |
| **218-518** | 440 | 250 | 220 | M 12×80 | 80 | M 20 | 385 |
| **220-520** | 440 | 250 | 220 | M 12×90 | 80 | M 24 | 665 |
| **222-522** | 440 | 250 | 220 | M 12×90 | 80 | M 24 | 665 |
| **224-524** | 800 | 460 | 400 | M 16×110 | 150 | M 24 | 665 |
| **226-526** | 800 | 460 | 400 | M 16×120 | 150 | M 24 | 665 |
| **228-528** | 1 250 | 720 | 620 | M 20×130 | 200 | M 30 | 1 310 |
| **230-530** | 1 250 | 720 | 620 | M 20×140 | 200 | M 30 | 1 310 |
| **232-532** | 1 250 | 720 | 620 | M 20×140 | 200 | M 30 | 1 310 |
| **234-534** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **236-536** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 30 | 1 310 |
| **238-538** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 36 | 2 280 |
| **240-540** | 1 800 | 1 040 | 900 | M 24×160 | 350 | M 36 | 2 280 |
| **244-544** | 1 800 | 1 040 | 900 | M 24×180 | 400 | M 36 | 2 280 |
| **248-548** | 2 860 | 1 650 | 1 430 | M 30×200 | 400 | M 36 | 2 280 |

[1] Recommended by bolt manufacturers.

# Lubrication

SONL plummer (pillow) block housings are designed for two methods of oil lubrication:

- oil bath lubrication with a pick-up ring
- circulating oil

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

## Oil bath lubrication with a pick-up ring

Oil bath lubrication with a pick-up ring is typically used with SONL housings (→ **fig. 13**). It provides a uniform supply of lubricant to the bearing.

This oil lubrication method uses a ring that hangs loosely from the labyrinth seal shaft sleeve on one side of the bearing. It hangs deep into the oil reservoir in the bottom half of the housing. As the shaft rotates, the ring follows, picking up oil from the sump and bringing it to a collecting trough. The oil then flows through the bearing and back into the oil sump.

In the fifty years that this lubrication method has been used, there has not been any record of wear where the ring contacts its seat on the labyrinth seal shaft sleeve – regardless of the shaft dimensions, or speed of the application.

### Oil quantities

Housings should be filled with the recommended oil quantities listed in **table 4**. Markings on the inside of the housing base and on the oil level gauge indicate the correct oil level. To avoid leakage, do not exceed the recommended oil level. The oil pick-up ring enables a wide range between maximum and minimum oil levels. This results in a correspondingly long period between refills or oil changes.

The minimum and maximum levels indicated on the oil level gauge apply to standstill. The oil level may drop during operation and may vary even more during start-up. If oil is replenished during operation, keep the level 5 mm below the maximum mark.

**Fig. 13**

**Oil bath lubrication with a pick-up ring**

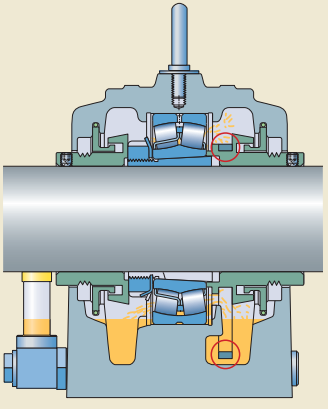


**Table 4**

**Oil quantities**

| **Housing** Size | **Oil fill** min | max |
|---|---|---|
| – | l | |
| **217-517** | 0,3 | 0,4 |
| **218-518** | 0,3 | 0,5 |
| **220-520** | 0,4 | 0,6 |
| **222-522** | 0,6 | 0,9 |
| **224-524** | 0,9 | 1,3 |
| **226-526** | 0,9 | 1,4 |
| **228-528** | 1 | 1,5 |
| **230-530** | 1 | 1,7 |
| **232-532** | 1,3 | 2 |
| **234-534** | 2,5 | 3,5 |
| **236-536** | 2,9 | 4,2 |
| **238-538** | 3,1 | 4,5 |
| **240-540** | 3 | 4,5 |
| **244-544** | 3,8 | 5,8 |
| **248-548** | 4,8 | 6,9 |

### Precaution after machine stops

Before start-up, the oil level should be filled to the maximum mark on the oil level gauge. This is even more important after longer machine stops to avoid the possibility of dry-running the bearing until the oil pick-up ring delivers a sufficient amount of lubricant.

After shorter machine stops, a sufficient amount of oil remains in the oil sump and in the bearing to provide lubricant during start-up.

### Magnetic plugs

Each seal kit contains a magnetic plug. The plug can be fitted in one of the oil outlet holes in the housing base. The plug attracts metal contaminants in the oil, to extend bearing service life.

### Special oil pick-up ring for use on shafts with electromagnetic clutches

If shafts with electromagnetic clutches are to be supported in SONL housings, the standard steel oil pick-up ring must be replaced by a brass ring (GH-TSO ...-.../MB). Appropriate brass rings are listed in **table 5**.

### Oil cooling tubes

In high temperature applications, where an oil pick-up ring is used, auxiliary cooling tubes should be installed (→ **fig. 14**, **page 366**). They use water, which has to be provided via an external system, to cool the oil in the housing. The pressure of the cooling medium should not exceed 4 bar.

Oil cooling tubes are available in different sizes (→ **table 6**). Depending on the need, one or two cooling tubes can be installed via the oil outlet holes in the housing base. Detailed mounting instructions are provided with the products.

Oil cooling tubes are identified by the basic designation AVA-0001 followed by a size identification, e.g. AVA-0001/3.

### Oil outlets

Tapped holes in the housing base that are not used for the oil level gauge or cooling tubes can be used as oil outlets.



**Table 5**

**Brass oil pick-up rings**

| **Housing** Size | **Pick-up ring** Designation |
|---|---|
| **217-517** | GH-TSO 217-517/MB |
| **218-518** | GH-TSO 218-518/MB |
| **220-520** | GH-TSO 220-520/MB |
| **222-522** | GH-TSO 222-522/MB |
| **224-524** | GH-TSO 224-524/MB |
| **226-526** | GH-TSO 226-526/MB |
| **228-528** | GH-TSO 228-528/MB |
| **230-530** | GH-TSO 230-530/MB |
| **232-532** | GH-TSO 232-532/MB |
| **234-534** | GH-TSO 234-534/MB |
| **236-536** | GH-TSO 236-536/MB |
| **238-538** | GH-TSO 238-538/MB |
| **240-540** | GH-TSO 240-540/MB |
| **244-544** | GH-TSO 244-544/MB |
| **248-548** | GH-TSO 248-548/MB |

**Table 6**

**Oil cooling tubes**

| **Housing** Size | **Oil cooling tube** Designation |
|---|---|
| **217-517 and 218-518** | AVA-0001/1 |
| **220-520 and 222-522** | AVA-0001/2 |
| **224-524 to 232-532** | AVA-0001/3 |
| **234-534 to 248-548** | AVA-0001/4 |

Fig. 14

Oil cooling tubes

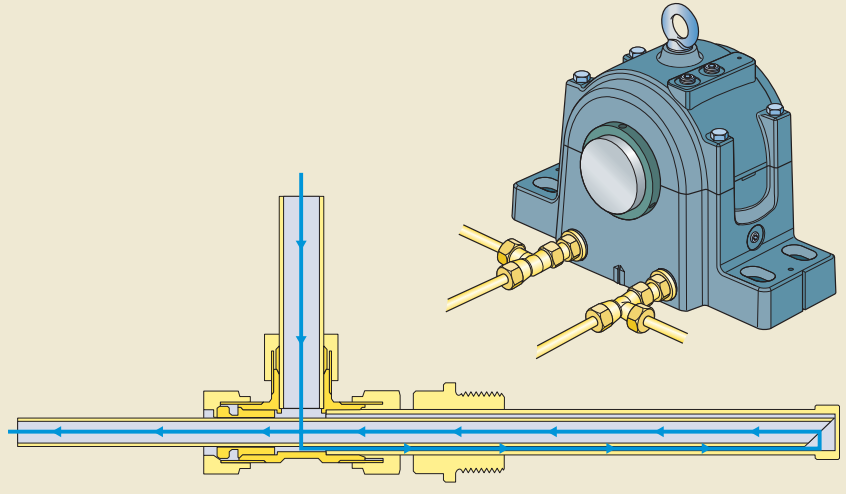
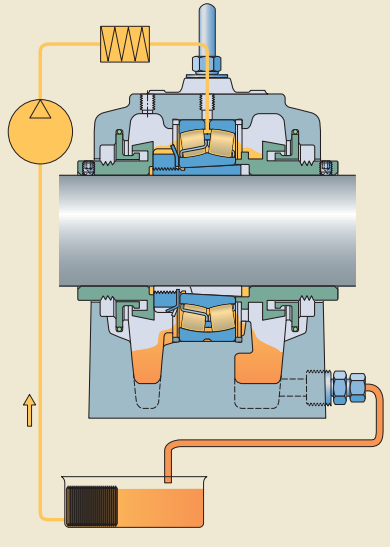


Fig. 15

Circulating oil lubrication system



## Circulating oil lubrication systems

Circulating oil lubrication systems are generally preferred when high speeds generate an excessive amount of heat, or when there are high ambient temperatures. For this lubrication method, the oil pick-up ring should not be used and the oil level gauge is not needed.

A circulating oil lubrication system typically has supply lines attached to the housing cap and drain lines attached to the base (→ **fig. 15**). Circulation is normally produced with the aid of a pump. After the oil has passed through the bearing, it drains from the housing and flows into a tank. It is filtered and, if required, cooled before being returned to the housing. Proper filtering and cooling of the oil are important factors for bearing and oil service life, and can provide improved machinery performance as well as cost savings.

SKF supplies different standard solutions for circulating oil lubrication systems. For smaller systems, e.g. 1–2 fans or pumps, the SM-100 Oil Circulating Unit is available. For larger systems, SKF Flowline is available.

Relevant abutment dimensions for connecting a circulating oil lubrication system to an SONL housing are listed in **table 7**.

### Using a circulating oil lubrication system with spherical roller bearings

SONL housings have two tapped holes in the cap that can be used as oil inlets. The hole in the centre of the cap should be used to lubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring).

The housing base has four tapped holes that can be used as oil outlets.

### Using a circulating oil lubrication system with CARB and self-aligning ball bearings

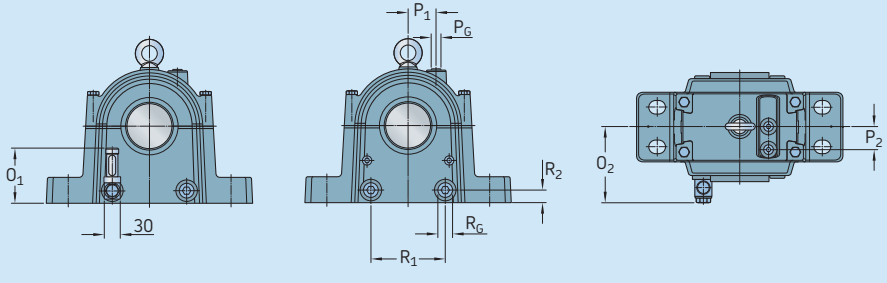
In a circulating oil lubrication system, CARB toroidal roller bearings and self-aligning ball bearings, which are relubricated from the side, require another design compared to spherical roller bearings, to allow the oil to pass through the bearing. Therefore, SONL housings with the designation suffix RA (→ **page 356**) are recommended.

SONL .. RA housings have two tapped holes in the cap that can be used as oil inlets. For CARB toroidal roller and self-aligning ball bearings, always use the offset oil inlet hole in the housing cap, and two oil outlet holes on the opposite side of the housing, to make sure the oil has to pass through the bearing and to get enough outlet capacity.



**Table 7**

**Abutment dimensions for circulating oil lubrication systems and oil bath lubrication with a pick-up ring**




| Housing Size | Dimensions $P_G$ | $P_1$ | $P_2$ | $R_G$ | $R_1$ | $R_2$ | $O_1$ | $O_2$ |
|---|---|---|---|---|---|---|---|---|
| – | in. | mm | | in. | mm | | | |
| **217-517** | G 3/8 | 47,5 | 40 | G 3/4 | 118 | 22 | 97 | 138 |
| **218-518** | G 3/8 | 50 | 41 | G 3/4 | 128 | 22 | 97 | 142 |
| **220-520** | G 3/8 | 50 | 47 | G 3/4 | 144 | 22 | 97 | 150 |
| **222-522** | G 3/8 | 55 | 53 | G 3/4 | 162 | 23 | 98 | 163 |
| **224-524** | G 3/8 | 55 | 65 | G 3/4 | 178 | 25 | 100 | 179 |
| **226-526** | G 3/8 | 60 | 69 | G 3/4 | 192 | 25 | 120 | 184 |
| **228-528** | G 3/8 | 65 | 72 | G 3/4 | 200 | 26 | 121 | 187 |
| **230-530** | G 3/8 | 65 | 73 | G 3/4 | 220 | 26 | 121 | 187 |
| **232-532** | G 3/8 | 65 | 78 | G 3/4 | 252 | 26 | 121 | 196 |
| **234-534** | G 3/4 | 85 | 88 | G 1.1/2 | 268 | 41 | 136 | 215 |
| **236-536** | G 3/4 | 85 | 93 | G 1.1/2 | 278 | 41 | 136 | 220 |
| **238-538** | G 3/4 | 85 | 98 | G 1.1/2 | 298 | 41 | 166 | 225 |
| **240-540** | G 3/4 | 85 | 100 | G 1.1/2 | 320 | 41 | 166 | 229 |
| **244-544** | G 3/4 | 105 | 108 | G 1.1/2 | 360 | 41 | 166 | 239 |
| **248-548** | G 3/4 | 110 | 115 | G 1.1/2 | 400 | 41 | 216 | 244 |

# Mounting

SONL plummer (pillow) block housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

Mounting instructions for each housing are provided with the seal kit. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Torque specifications

Cap bolts should be tightened to the torque values listed in **table 3** on **page 363**. For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 363**.

## Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, on **page 362**).

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 8**. Dimples cast into the housing base mark the recommended positions.

# Condition monitoring

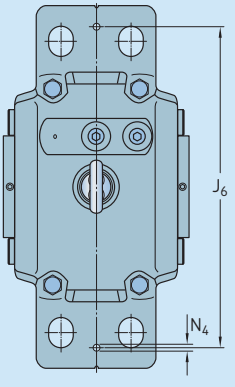
SONL plummer (pillow) block housings have appropriate positions for condition monitoring sensors (→ **fig. 16**).

**Position 1** is a measurement point perpendicular to the shaft and is in accordance with ISO 10816-1.

**Position 2** is a measurement point parallel to the shaft and should be used when loads act toward the support surface.

**Table 8**

**Position and size of dowel pin holes**




| Housing Size | Dimensions $J_6$ | $N_4$ max |
|---|---|---|
| – | mm | |
| **217-517** | 290 | 6 |
| **218-518** | 320 | 8 |
| **220-520** | 350 | 8 |
| **222-522** | 370 | 8 |
| **224-524** | 370 | 8 |
| **226-526** | 390 | 8 |
| **228-528** | 430 | 8 |
| **230-530** | 460 | 12 |
| **232-532** | 480 | 12 |
| **234-534** | 530 | 20 |
| **236-536** | 570 | 20 |
| **238-538** | 640 | 20 |
| **240-540** | 630 | 20 |
| **244-544** | 690 | 20 |
| **248-548** | 800 | 20 |

## Accessories

Condition monitoring sensors are available for SONL plummer (pillow) block housings.

For additional information, refer to *SKF tools and products* (→ **page 47**).

## Ordering information

For SONL plummer (pillow) block housings, each of the following items must be ordered separately:

- housing
- seal kit (see **page 358** for details)
- locating rings
- bearing
- adapter sleeve

**Order example**

Two plummer block housings are required for two 22224 EK spherical roller bearings on H 3124 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing on a through shaft. The oil needs to be cooled by two oil cooling tubes per housing.

The following items should be ordered:

- 2 housings SONL 224-524
- 1 seal kit TSO 524
- 1 seal kit TSO 524 A
- 2 locating rings FRB 12/215
- 4 oil cooling tubes AVA 0001/3

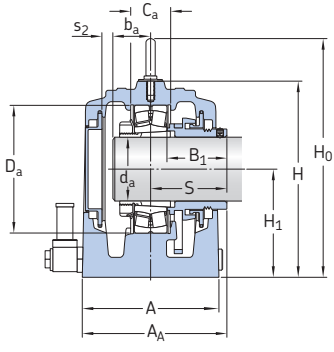


**Fig. 16**

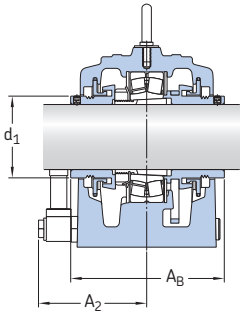
**Measurement points for condition monitoring**



# 7.1 SONL plummer block housings for bearings on an adapter sleeve, metric shafts
$d_a$ **75 – 150** mm



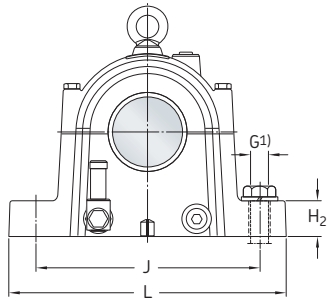

Housing for shaft end

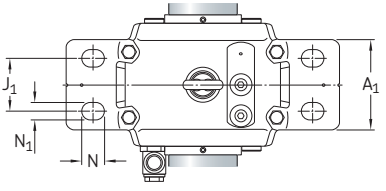



Housing for through shaft

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seal kit for through shaft[4] | End cover | **Dimensions** Housing A | $A_1$ | $A_2$ | $A_A$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm | | | |
| **75** | **SONL 217-517** | 2217 K<br>22217 EK<br>C 2217 K | H 317<br>H 317<br>H 317 E | FRB 5/150<br>FRB 5/150<br>FRB 5/150 | TSO 517 | ECO 217-517 | 163 | 110 | 138 | 172 |
| **80** | **SONL 218-518** | 2218 K<br>22218 EK<br>C 2218 K | H 318<br>H 318<br>H 318 E | FRB 5/160<br>FRB 5/160<br>FRB 5/160 | TSO 518 | ECO 218-518 | 170 | 120 | 142 | 180 |
| **90** | **SONL 220-520** | 2220 KM<br>22220 EK<br>C 2220 K | H 320<br>H 320<br>H 320 E | FRB 7/180<br>FRB 7/180<br>FRB 7/180 | TSO 520 | ECO 220-520 | 186 | 130 | 150 | 196 |
| **100** | **SONL 222-522** | 2222 KM<br>22222 EK<br>C 2222 K | H 322<br>H 322<br>H 322 E | FRB 9/200<br>FRB 9/200<br>FRB 9/200 | TSO 522 | ECO 222-522 | 213 | 145 | 163 | 221 |
| **110** | **SONL 224-524** | 22224 EK<br>C 2224 K | H 3124<br>H 3124 L | FRB 12/215<br>FRB 12/215 | TSO 524 | ECO 224-524 | 245 | 170 | 179 | 261 |
| **115** | **SONL 226-526** | 22226 EK<br>C 2226 K | H 3126<br>H 3126 L | FRB 11/230<br>FRB 11/230 | TSO 526 | ECO 226-526 | 255 | 180 | 184 | 263 |
| **125** | **SONL 228-528** | 22228 CCK/W33<br>C 2228 K | H 3128<br>H 3128 L | FRB 11/250<br>FRB 11/250 | TSO 528 | ECO 228-528 | 260 | 190 | 187 | 270 |
| **135** | **SONL 230-530** | 22230 CCK/W33<br>C 2230 K | H 3130<br>H 3130 L | FRB 10/270<br>FRB 10/270 | TSO 530 | ECO 230-530 | 260 | 190 | 187 | 270 |
| **140** | **SONL 232-532** | 22232 CCK/W33 | H 3132 | FRB 12/290 | TSO 532 | ECO 232-532 | 278 | 205 | 196 | 297 |
| **150** | **SONL 234-534** | 22234 CCK/W33<br>C 2234 K | H 3134<br>H 3134 L | FRB 14/310<br>FRB 14/310 | TSO 534 | ECO 234-534 | 310 | 230 | 215 | 330 |

[1] 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[4] Seal kits for a shaft end have the designation suffix A, i.e. TSO .. A.



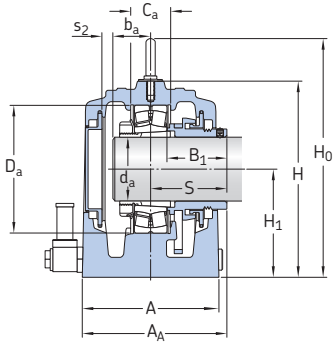





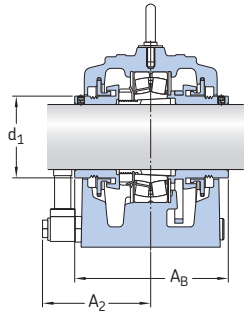

| **Shaft diameter** $d_a$ | **Dimensions** Housing $A_B$ | $d_1$ | $B_1$ | $C_a$ | $D_a$ | $b_a$ | $s_2$ | H | $H_0$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | S | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | | | | | | | | | | | | | – | kg |
| **75** | 180 | 96 | 72 | 46 | 150 | 40 | 19 | 230 | 283 | 125 | 35 | 260 | 60 | 330 | 28 | 22 | 90 | M 10 | 26 |
| **80** | 190 | 100 | 75 | 50 | 160 | 42 | 19 | 245 | 298 | 135 | 45 | 290 | 70 | 360 | 28 | 22 | 95 | M 12 | 33 |
| **90** | 206 | 112 | 80 | 60 | 180 | 46 | 25 | 270 | 323 | 145 | 50 | 320 | 75 | 400 | 32 | 26 | 103 | M 12 | 42 |
| **100** | 229 | 120 | 88 | 71 | 200 | 52 | 32,5 | 290 | 343 | 160 | 50 | 347 | 75 | 420 | 32 | 26 | 114,5 | M 12 | 53 |
| **110** | 276 | 135 | 109 | 82 | 215 | 56 | 47 | 315 | 386 | 170 | 55 | 347 | 90 | 420 | 32 | 26 | 138 | M 16 | 72 |
| **115** | 270 | 145 | 103 | 86 | 230 | 60 | 43 | 335 | 406 | 180 | 60 | 377 | 100 | 450 | 35 | 28 | 135 | M 16 | 87 |
| **125** | 280 | 160 | 106 | 90 | 250 | 63 | 42 | 355 | 426 | 190 | 65 | 415 | 100 | 500 | 42 | 35 | 140 | M 20 | 102 |
| **135** | 280 | 170 | 103,5 | 93 | 270 | 67,5 | 37,5 | 375 | 446 | 200 | 65 | 450 | 115 | 540 | 42 | 35 | 140 | M 20 | 115 |
| **140** | 316 | 178 | 118 | 104 | 290 | 73 | 42 | 406 | 477 | 215 | 65 | 470 | 120 | 560 | 42 | 35 | 158 | M 20 | 141 |
| **150** | 350 | 195 | 132 | 114 | 310 | 77 | 54 | 440 | 530 | 235 | 70 | 515 | 130 | 610 | 42 | 35 | 175 | M 24 | 190 |

[1] For sizes and tightening torques of the attachment bolts refer to **table 3** on **page 363**.

# 7.1 SONL plummer block housings for bearings on an adapter sleeve, metric shafts
$d_a$ **160 – 220** mm



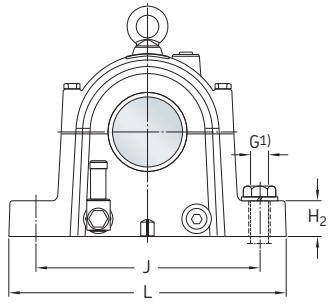

Housing for shaft end

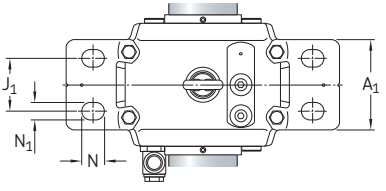



Housing for through shaft

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seal kit for through shaft[4] | End cover | **Dimensions** Housing A | $A_1$ | $A_2$ | $A_A$ |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | mm | | | |
| **160** | **SONL 236-536** | 22236 CCK/W33 | H 3136 | FRB 14/320 | TSO 536 | ECO 236-536 | 320 | 240 | 220 | 340 |
| **170** | **SONL 238-538** | 22238 CCK/W33<br>C 2238 K | H 3138<br>H 3138 | FRB 14/340<br>FRB 14/340 | TSO 538 | ECO 238-538 | 330 | 250 | 225 | 350 |
| **180** | **SONL 240-540** | 22240 CCK/W33 | H 3140 | FRB 14/360 | TSO 540 | ECO 240-540 | 338 | 260 | 229 | 358 |
| **200** | **SONL 244-544** | 22244 CCK/W33<br>C 2244 K | OH 3144 H<br>OH 3144 H | FRB 14/400<br>FRB 14/400 | TSO 544 | ECO 244-544 | 358 | 280 | 239 | 381 |
| **220** | **SONL 248-548** | 22248 CCK/W33 | OH 3148 H | FRB 14/440 | TSO 548 | ECO 248-548 | 368 | 290 | 244 | 394 |

[1] 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[4] Seal kits for a shaft end have the designation suffix A, i.e. TSO .. A.



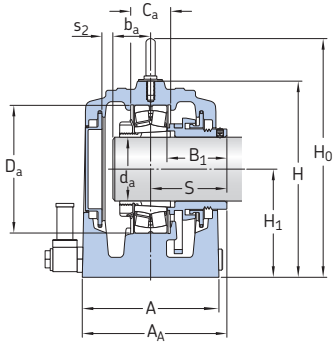



| **Shaft diameter** $d_a$ | **Dimensions** Housing $A_B$ | $d_1$ | $B_1$ | $C_a$ | $D_a$ | $b_a$ | $s_2$ | $H$ | $H_0$ | $H_1$ | $H_2$ | $J$ | $J_1$ | $L$ | $N$ | $N_1$ | $S$ | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | | | | | | | | | | | | | | | | – | kg |
| **160** | 360 | 205 | 137 | 114 | 320 | 78 | 53,5 | 455 | 545 | 245 | 75 | 545 | 150 | 650 | 42 | 35 | 180 | M 24 | 213 |
| **170** | 370 | 220 | 139 | 120 | 340 | 82 | 52,5 | 480 | 570 | 260 | 85 | 590 | 150 | 720 | 50 | 42 | 185 | M 24 | 249 |
| **180** | 378 | 227 | 140 | 126 | 360 | 86 | 51 | 510 | 600 | 275 | 85 | 600 | 160 | 730 | 50 | 42 | 189 | M 24 | 273 |
| **200** | 404 | 255 | 148 | 136 | 400 | 95 | 50 | 565 | 674 | 305 | 95 | 670 | 180 | 820 | 50 | 42 | 202 | M 24 | 361 |
| **220** | 420 | 270 | 150 | 148 | 440 | 105 | 45,5 | 625 | 734 | 340 | 100 | 740 | 190 | 900 | 50 | 42 | 210 | M 24 | 456 |

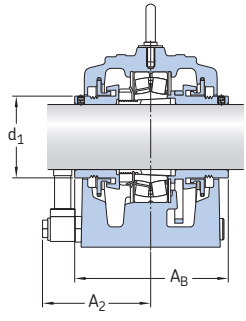
[1] For sizes and tightening torques of the attachment bolts refer to **table 3** on **page 363**.

## 7.2 SONL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **2 15/16 – 5 3/16** in.
*74,613 – 131,763 mm*



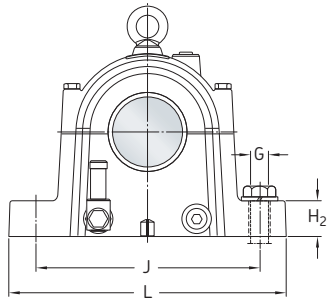

Housing for shaft end

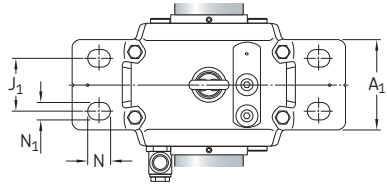



Housing for through shaft

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seal kit for through shaft[4] | End cover | **Dimensions** Housing A | $A_1$ | $A_2$ | $A_A$ |
|---|---|---|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm | | | |
| **2 15/16**<br>*74,613* | **SONL 217-517** | 2217 K<br>22217 EK<br>C 2217 K | HA 317<br>HA 317<br>HA 317 E | FRB 5/150<br>FRB 5/150<br>FRB 5/150 | TSO 517/2.15/16 | ECO 217-517 | 163 | 110 | 138 | 172 |
| **3 3/16**<br>*80,963* | **SONL 218-518** | 2218 K<br>22218 EK<br>C 2218 K | HA 318<br>HA 318<br>HA 318 E | FRB 5/160<br>FRB 5/160<br>FRB 5/160 | TSO 518/3.3/16 | ECO 218-518 | 170 | 120 | 142 | 180 |
| **3 7/16**<br>*87,313* | **SONL 220-520** | 2220 KM<br>22220 EK<br>C 2220 K | HA 320<br>HA 320<br>HA 320 E | FRB 7/180<br>FRB 7/180<br>FRB 7/180 | TSO 520/3.7/16 | ECO 220-520 | 186 | 130 | 150 | 196 |
| **3 15/16**<br>*100,013* | **SONL 222-522** | 2222 KM<br>22222 EK<br>C 2222 K | H 322<br>H 322<br>H 322 E | FRB 9/200<br>FRB 9/200<br>FRB 9/200 | TSO 522/3.15/16 | ECO 222-522 | 213 | 145 | 163 | 221 |
| **4 3/16**<br>*106,363* | **SONL 224-524** | 22224 EK<br>C 2224 K | HA 3124<br>HA 3124 L | FRB 12/215<br>FRB 12/215 | TSO 524/4.3/16 | ECO 224-524 | 245 | 170 | 179 | 261 |
| **4 7/16**<br>*112,713* | **SONL 226-526** | 22226 EK<br>C 2226 K | HA 3126<br>HA 3126 L | FRB 11/230<br>FRB 11/230 | TSO 526/4.7/16 | ECO 226-526 | 255 | 180 | 184 | 263 |
| **4 15/16**<br>*125,413* | **SONL 228-528** | 22228 CCK/W33<br>C 2228 K | HA 3128<br>HA 3128 L | FRB 11/250<br>FRB 11/250 | TSO 528/4.15/16 | ECO 228-528 | 260 | 190 | 187 | 270 |
| **5 3/16**<br>*131,763* | **SONL 230-530** | 22230 CCK/W33<br>C 2230 K | HA 3130<br>HA 3130 L | FRB 10/270<br>FRB 10/270 | TSO 530/5.3/16 | ECO 230-530 | 260 | 190 | 187 | 270 |

[1] 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] The adapter sleeve fits the bearing in the same line only.
[3] The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
[4] Seal kits for a shaft end have the designation suffix A, i.e. TSO .. A.



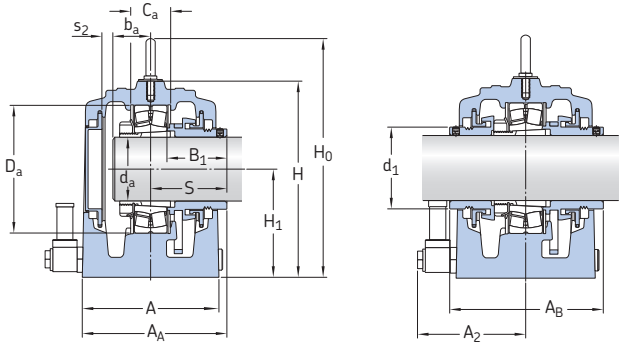






| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_B$ | $d_1$ | $B_1$ | $C_a$ | $D_a$ | $b_a$ | $s_2$ | H | $H_0$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | S | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | | | | | in. | – | kg |
| **2 15/16** *74,613* | 180 | 96 | 72 | 46 | 150 | 40 | 19 | 230 | 283 | 125 | 35 | 260 | 60 | 330 | 28 | 22 | 90 | 20 | 3/4 | M 10 | 26 |
| **3 3/16** *80,963* | 190 | 100 | 75 | 50 | 160 | 42 | 19 | 245 | 298 | 135 | 45 | 290 | 70 | 360 | 28 | 22 | 95 | 20 | 3/4 | M 12 | 33 |
| **3 7/16** *87,313* | 206 | 112 | 80 | 60 | 180 | 47 | 25 | 270 | 323 | 145 | 50 | 320 | 75 | 400 | 32 | 26 | 103 | 24 | 7/8 | M 12 | 42 |
| **3 15/16** *100,013* | 229 | 120 | 88 | 71 | 200 | 52 | 32,5 | 290 | 343 | 160 | 50 | 347 | 75 | 420 | 32 | 26 | 114,5 | 24 | 7/8 | M 12 | 53 |
| **4 3/16** *106,363* | 276 | 135 | 109 | 82 | 215 | 56 | 47 | 315 | 386 | 170 | 55 | 347 | 90 | 420 | 32 | 26 | 138 | 24 | 7/8 | M 16 | 72 |
| **4 7/16** *112,713* | 270 | 145 | 103 | 86 | 230 | 60 | 43 | 335 | 406 | 180 | 60 | 377 | 100 | 450 | 35 | 28 | 135 | 24 | 1 | M 16 | 87 |
| **4 15/16** *125,413* | 280 | 160 | 106 | 90 | 250 | 63 | 42 | 355 | 426 | 190 | 65 | 415 | 100 | 500 | 42 | 35 | 140 | 30 | 1 1/4 | M 20 | 102 |
| **5 3/16** *131,763* | 280 | 170 | 103,5 | 93 | 270 | 67,5 | 37,5 | 375 | 446 | 200 | 65 | 450 | 115 | 540 | 42 | 35 | 140 | 30 | 1 1/4 | M 20 | 115 |

## 7.2 SONL plummer block housings for bearings on an adapter sleeve, inch shafts

$d_a$ **5 7/16 – 8 15/16** in.
*138,113 – 227,013 mm*

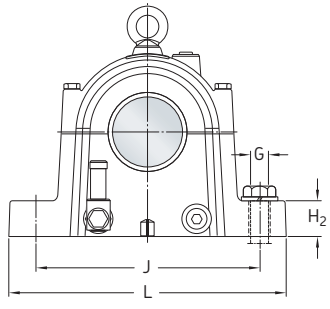


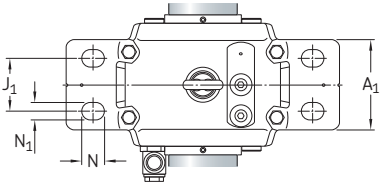

Housing for shaft end

Housing for through shaft

| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring[3] | Seal kit for through shaft[4] | End cover | **Dimensions** Housing A | $A_1$ | $A_2$ | $A_A$ |
|---|---|---|---|---|---|---|---|---|---|---|
| in./*mm* | – | – | | | | | mm | | | |
| **5 7/16**<br>*138,113* | **SONL 232-532** | 22232 CCK/W33 | HA 3132 | FRB 12/290 | TSO 532/5.7/16 | ECO 232-532 | 278 | 205 | 196 | 297 |
| **5 15/16**<br>*150,813* | **SONL 234-534** | 22234 CCK/W33<br>C 2234 K | HA 3134<br>HA 3134 L | FRB 14/310<br>FRB 14/310 | TSO 534/5.15/16 | ECO 234-534 | 310 | 230 | 215 | 330 |
| **6 7/16**<br>*163,513* | **SONL 236-536** | 22236 CCK/W33 | HA 3136 | FRB 14/320 | TSO 536/6.7/16 | ECO 236-536 | 320 | 240 | 220 | 340 |
| **6 15/16**<br>*176,213* | **SONL 238-538** | 22238 CCK/W33<br>C 2238 K | HA 3138<br>HA 3138 | FRB 14/340<br>FRB 14/340 | TSO 538/6.15/16 | ECO 238-538 | 330 | 250 | 225 | 350 |
| **7 3/16**<br>*182,563* | **SONL 240-540** | 22240 CCK/W33 | HA 3140 | FRB 14/360 | TSO 540/7.3/16 | ECO 240-540 | 338 | 260 | 229 | 358 |
| **7 15/16**<br>*201,613* | **SONL 244-544** | 22244 CCK/W33<br>C 2244 K | H 3044/7.15/16<br>H 3044/7.15/16 | FRB 14/400<br>FRB 14/400 | TSO 544/7.15/16 | ECO 244-544 | 358 | 280 | 239 | 381 |
| **8 15/16**<br>*227,013* | **SONL 248-548** | 22248 CCK/W33 | H 3148/8.15/16 | FRB 14/440 | TSO 548/8.15/16 | ECO 248-548 | 368 | 290 | 244 | 394 |

1) 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The adapter sleeve fits the bearing in the same line only.
3) The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
4) Seal kits for a shaft end have the designation suffix A, i.e. TSO .. A.

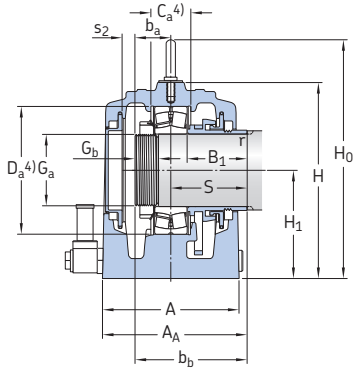


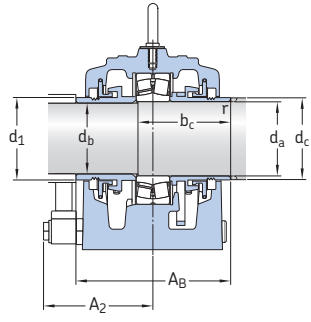



| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | | | | | | | | **Eye bolt** according to DIN 580 | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_B$ | $d_1$ | $B_1$ | $C_a$ | $D_a$ | $b_a$ | $s_2$ | H | $H_0$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | S | G | G | |
| in./*mm* | mm | | | | | | | | | | | | | | | | | | in. | – | kg |
| **5 7/16** *138,113* | 316 | 178 | 118 | 104 | 290 | 73 | 42 | 406 | 477 | 215 | 65 | 470 | 120 | 560 | 42 | 35 | 158 | 30 | 1 1/4 | M 20 | 141 |
| **5 15/16** *150,813* | 350 | 195 | 132 | 114 | 310 | 77 | 54 | 440 | 530 | 235 | 70 | 515 | 130 | 610 | 42 | 35 | 175 | 30 | 1 1/4 | M 24 | 190 |
| **6 7/16** *163,513* | 360 | 205 | 137 | 114 | 320 | 78 | 53,5 | 455 | 545 | 245 | 75 | 545 | 150 | 650 | 42 | 35 | 180 | 30 | 1 1/4 | M 24 | 213 |
| **6 15/16** *176,213* | 370 | 220 | 139 | 120 | 340 | 82 | 52,5 | 480 | 570 | 260 | 85 | 590 | 150 | 720 | 50 | 42 | 185 | 36 | 1 1/2 | M 24 | 249 |
| **7 3/16** *182,563* | 378 | 227 | 140 | 126 | 360 | 86 | 51 | 510 | 600 | 275 | 85 | 600 | 160 | 730 | 50 | 42 | 189 | 36 | 1 1/2 | M 24 | 273 |
| **7 15/16** *201,613* | 404 | 255 | 148 | 136 | 400 | 95 | 50 | 565 | 674 | 305 | 95 | 670 | 180 | 820 | 50 | 42 | 202 | 36 | 1 1/2 | M 24 | 361 |
| **8 15/16** *227,013* | 420 | 270 | 150 | 148 | 440 | 105 | 45,5 | 625 | 734 | 340 | 100 | 740 | 190 | 900 | 50 | 42 | 210 | 36 | 1 1/2 | M 24 | 456 |

# 7.3 SONL plummer block housings for bearings on a cylindrical seat and a stepped shaft
$d_a$ **85 – 160** mm



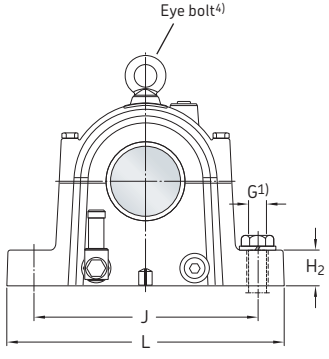

Housing for shaft end

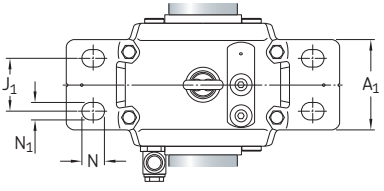



Housing for through shaft

| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing 1) | Locating ring 2) | Lock nut | Locking washer | Seal kit for through shaft 3) | End cover | Dimensions Housing A | $A_1$ | $A_2$ | $A_A$ | $A_B$ | $d_1$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | | mm | | | | | |
| **85** | **SONL 217-517** | 2217<br>22217 E<br>C 2217 | FRB 5/150<br>FRB 5/150<br>FRB 5/150 | KM 17<br>KM 17<br>KMFE 17 | MB 17<br>MB 17<br>– | TSO 217 | ECO 217-517 | 163 | 110 | 138 | 172 | 180 | 96 |
| **90** | **SONL 218-518** | 2218<br>22218 E<br>C 2218 | FRB 5/160<br>FRB 5/160<br>FRB 5/160 | KM 18<br>KM 18<br>KMFE 18 | MB 18<br>MB 18<br>– | TSO 218 | ECO 218-518 | 170 | 120 | 142 | 180 | 190 | 100 |
| **100** | **SONL 220-520** | 2220 M<br>22220 E<br>C 2220 | FRB 7/180<br>FRB 7/180<br>FRB 7/180 | KM 20<br>KM 20<br>KMFE 20 | MB 20<br>MB 20<br>– | TSO 220 | ECO 220-520 | 186 | 130 | 150 | 196 | 206 | 112 |
| **110** | **SONL 222-522** | 2222 M<br>22222 E<br>C 2222 | FRB 9/200<br>FRB 9/200<br>FRB 9/200 | KM 22<br>KM 22<br>KMFE 22 | MB 22<br>MB 22<br>– | TSO 222 | ECO 222-522 | 213 | 145 | 163 | 221 | 229 | 120 |
| **120** | **SONL 224-524** | 22224 E<br>C 2224 | FRB 12/215<br>FRB 12/215 | KM 24<br>KML 24 | MB 24<br>MBL 24 | TSO 224 | ECO 224-524 | 245 | 170 | 179 | 261 | 276 | 135 |
| **130** | **SONL 226-526** | 22226 E<br>C 2226 | FRB 11/230<br>FRB 11/230 | KM 26<br>KML 26 | MB 26<br>MBL 26 | TSO 226 | ECO 226-526 | 255 | 180 | 184 | 263 | 270 | 145 |
| **140** | **SONL 228-528** | 22228 CC<br>C 2228 | FRB 11/250<br>FRB 11/250 | KM 28<br>KML 28 | MB 28<br>MBL 28 | TSO 228 | ECO 228-528 | 260 | 190 | 187 | 270 | 280 | 160 |
| **150** | **SONL 230-530** | 22230 CC<br>C 2230 | FRB 10/270<br>FRB 10/270 | KM 30<br>KML 30 | MB 30<br>MBL 30 | TSO 230 | ECO 230-530 | 260 | 190 | 187 | 270 | 280 | 170 |
| **160** | **SONL 232-532** | 22232 CC | FRB 12/290 | KM 32 | MB 32 | TSO 232 | ECO 232-532 | 278 | 205 | 196 | 297 | 316 | 178 |

1) 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
3) TSO .. is the seal kit for through shaft. For shaft ends, order TSO .. A. ECO .. is the end cover.
4) For $C_a$, $D_a$ and eye bolt sizes, refer to **product tables 7.1** and **7.2**.



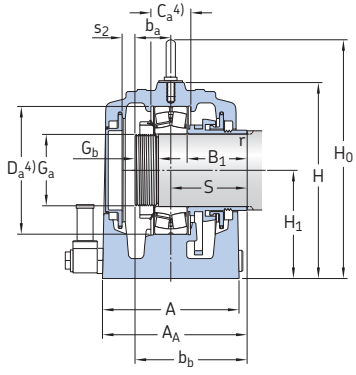





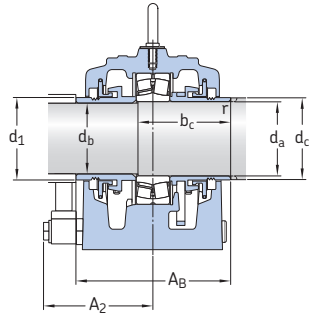

| Shaft diameter | Dimensions Housing | | | | | | | | | | | | Shaft | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $B_1$ | $s_2$ | H | $H_0$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | S | $b_a$ | $b_b$ | $b_c$ | $d_b$ | $d_c$ min | $G_a$ | $G_b$ | r | |
| mm | mm | | | | | | | | | | | | | | | | | | | | kg |
| **85** | 72 | 19 | 230 | 283 | 125 | 35 | 260 | 60 | 330 | 28 | 22 | 90 | 40 | 130 | 105 | 83 | 91 | M 85×2 | 24 | 1,6 | 26 |
| **90** | 75 | 19 | 245 | 298 | 135 | 45 | 290 | 70 | 360 | 28 | 22 | 95 | 42 | 137 | 112 | 88 | 96 | M 90×2 | 24 | 1,6 | 33 |
| **100** | 80 | 25 | 270 | 323 | 145 | 50 | 320 | 75 | 400 | 32 | 26 | 103 | 46 | 150 | 123 | 98 | 106 | M 100×2 | 26 | 1,6 | 42 |
| **110** | 88 | 32,5 | 290 | 343 | 160 | 50 | 347 | 75 | 420 | 32 | 26 | 114,5 | 52 | 167 | 138 | 108 | 116 | M 110×2 | 28 | 1,6 | 52 |
| **120** | 109 | 47 | 315 | 386 | 170 | 55 | 347 | 90 | 420 | 32 | 26 | 138 | 56 | 194 | 164 | 118 | 126 | M 120×2 | 29 | 1,6 | 70 |
| **130** | 103 | 43 | 335 | 406 | 180 | 60 | 377 | 100 | 450 | 35 | 28 | 135 | 60 | 195 | 164 | 128 | 138 | M 130×2 | 31 | 1,6 | 84 |
| **140** | 106 | 42 | 355 | 426 | 190 | 65 | 415 | 100 | 500 | 42 | 35 | 140 | 63 | 203 | 170 | 138 | 148 | M 140×2 | 32 | 1,6 | 100 |
| **150** | 103,5 | 37,5 | 375 | 446 | 200 | 65 | 450 | 115 | 540 | 42 | 35 | 140 | 68 | 207,5 | 173 | 148 | 158 | M 150×2 | 34 | 1,6 | 113 |
| **160** | 118 | 42 | 406 | 477 | 215 | 65 | 470 | 120 | 560 | 42 | 35 | 158 | 73 | 231 | 195 | 158 | 168 | M 160×3 | 36 | 1,6 | 136 |

1) For sizes and tightening torques of the attachment bolts refer to **table 3** on **page 363**.

# 7.3 SONL plummer block housings for bearings on a cylindrical seat and a stepped shaft
$d_a$ **170 – 240** mm



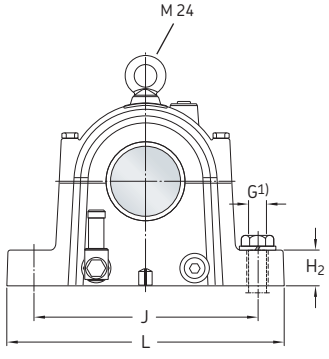

Housing for shaft end

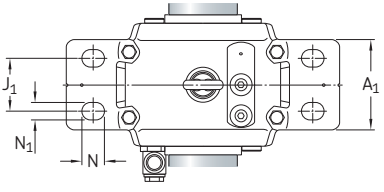



Housing for through shaft

| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Locating ring[2] | Lock nut | Locking washer | Seal kit for through shaft[3] | End cover | Dimensions Housing A | $A_1$ | $A_2$ | $A_A$ | $A_B$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | | | | mm | | | | |
| **170** | **SONL 234-534** | 22234 CC/W33<br>C 2234 | FRB 14/310<br>FRB 14/310 | KM 34<br>KML 34 | MB 34<br>MBL 34 | TSO 234 | ECO 234-534 | 310 | 230 | 215 | 330 | 350 |
| **180** | **SONL 236-536** | 22236 CC/W33 | FRB 14/320 | KM 36 | MB 36 | TSO 236 | ECO 236-536 | 320 | 240 | 220 | 340 | 360 |
| **190** | **SONL 238-538** | 22238 CC/W33<br>C 2238 | FRB 14/340<br>FRB 14/340 | KM 38<br>KML 38 | MB 38<br>MBL 38 | TSO 238 | ECO 238-538 | 330 | 250 | 225 | 350 | 370 |
| **200** | **SONL 240-540** | 22240 CC/W33 | FRB 14/360 | KM 40 | MB 40 | TSO 240 | ECO 240-540 | 338 | 260 | 229 | 358 | 378 |
| **220** | **SONL 244-544** | 22244 CC/W33<br>C 2244 | FRB 14/400<br>FRB 14/400 | HM 44 T<br>HM 44 T | MB 44<br>MB 44 | TSO 244 | ECO 244-544 | 358 | 280 | 239 | 381 | 404 |
| **240** | **SONL 248-548** | 22248 CC/W33 | FRB 14/440 | HM 48 T | MB 48 | TSO 248 | ECO 248-548 | 368 | 290 | 244 | 394 | 420 |

1) 222(00) – spherical roller bearing, C ... – CARB toroidal roller bearing
Only typical bearings are listed. Other bearing variants can also fit the housing.
2) The locating ring fits the bearing in the same line only. Two locating rings are required for each housing.
3) Seal kits for a shaft end have the designation suffix A, i.e. TSO .. A.
4) The values for $C_a$ and $D_a$ can be found, for each housing size, in **product tables 7.1** and **7.2**.

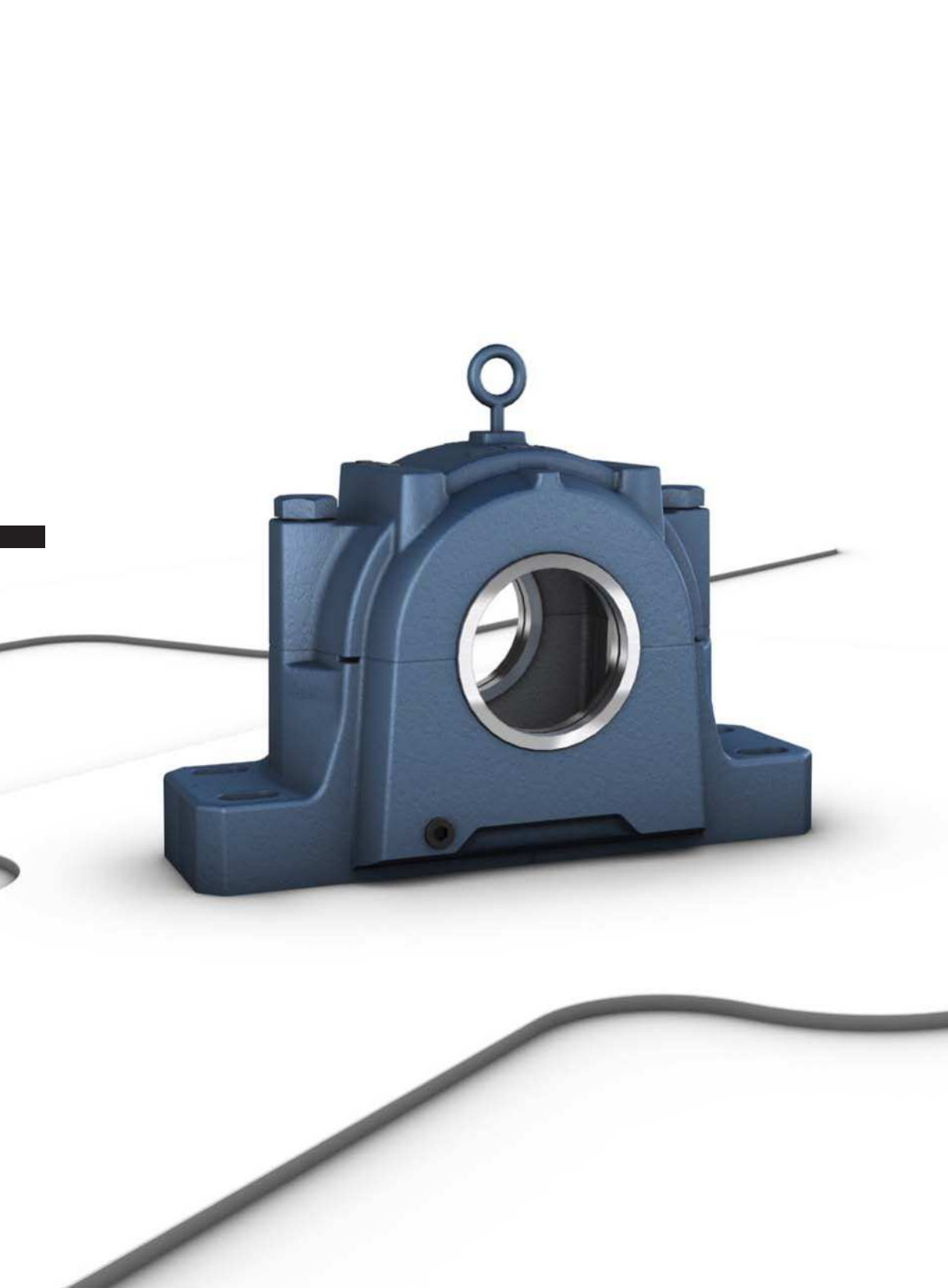





| Shaft diameter | Dimensions Housing | | | | | | | | | | | | Shaft | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $d_1$ | $B_1$ | $s_2$ | H | $H_0$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | S | $b_a$ | $b_b$ | $b_c$ | $d_b$ | $d_c$ min | $G_a$ | $G_b$ | r | |
| mm | mm | | | | | | | | | | | | | | | | | | | | | kg |
| **170** | 195 | 132 | 54 | 440 | 530 | 235 | 70 | 515 | 130 | 610 | 42 | 35 | 175 | 77 | 252 | 213 | 168 | 180 | M 170×3 | 38 | 3 | 185 |
| **180** | 205 | 137 | 53,5 | 455 | 545 | 245 | 75 | 545 | 150 | 650 | 42 | 35 | 180 | 78 | 258 | 223 | 177 | 196 | M 180×3 | 39 | 4 | 208 |
| **190** | 220 | 139 | 52,5 | 480 | 570 | 260 | 85 | 590 | 150 | 720 | 50 | 42 | 185 | 82 | 267 | 231 | 188 | 208 | M 190×3 | 40 | 4 | 244 |
| **200** | 227 | 140 | 51 | 510 | 600 | 275 | 85 | 600 | 160 | 730 | 50 | 42 | 189 | 86 | 275 | 233 | 198 | 218 | M 200×3 | 41 | 4 | 267 |
| **220** | 255 | 148 | 50 | 565 | 674 | 305 | 95 | 670 | 180 | 820 | 50 | 42 | 202 | 95 | 297 | 256 | 218 | 238 | Tr 220×4 | 45 | 4 | 355 |
| **240** | 270 | 150 | 45,5 | 625 | 734 | 340 | 100 | 740 | 190 | 900 | 50 | 42 | 210 | 105 | 315 | 270 | 238 | 258 | Tr 240×4 | 49 | 4 | 450 |

[1] For sizes andtightening torques of the attachment bolts refer to **table 3** on **page 363**.



# Split pillow blocks SAF and SAW series (inch dimensions)

**Bearing types**
- Spherical roller bearings (SAF and SAW)
- Self-aligning ball bearings (SAF)
- CARB toroidal roller bearings (SAF)

**Bearing dimension series**
- 12, 13, 22, 23, 30 (SAF)
- 22, 32 (SAW)

**Shaft diameter range**
- 1 3/16 to 10 1/2 in. (SAF)
- 3 3/16 to 7 15/16 in. (SAW)

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Labyrinth
- Contact
- Heavy-duty

**Lubrication**
- Grease
- Oil

**Materials**
- Grey cast iron
- Cast steel
- Spheroidal graphite cast iron

**Mounting**
- Two-bolt mounting
- Four-bolt mounting

SAF and SAW split pillow (plummer) block housings are popular SKF bearing housings with inch dimensions, developed to be the first choice for design, quality and economy.

SAF and SAW housings enable the incorporated bearings to achieve maximum service life with less need for maintenance. Different housing variants and seal designs are available, making the use of tailored housings virtually unnecessary and enabling cost-effective bearing arrangements.

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

# Split pillow blocks SAF and SAW series (inch dimensions)


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# Designations

**Designation system for SAF and SAW pillow (plummer) blocks**

_SAF _22634 TA

**Prefix for bolt holes**

| | |
|---|---|
| **F** | Four-bolt base (SAF housings) |

**Series**

| | |
|---|---|
| **S** | Standard pillow block housing |
| **A** | Inch dimensions |
| **F** | Labyrinth seal |
| **W** | Wide bearing seat |
| **B** | Pillow block with sealed bearing |

**Material**

| | |
|---|---|
| **–** | Cast iron (standard) |
| **D** | Ductile iron |
| **S** | Cast steel |

**Size identification**

| | |
|---|---|
| **13(00)** | Kits with self-aligning ball bearings with a cylindrical bore, diameter series 3 |
| **15(00)** | Kits with self-aligning ball bearings on an adapter sleeve, diameter series 2 |
| **16(00)** | Kits with self-aligning ball bearings on an adapter sleeve, diameter series 3 |
| **222(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 2 |
| **223(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 3 |
| **225(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 2 |
| **226(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 3 |
| **230(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 0 |
| **232(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 2 |
| **235(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 2 |
| **C22(00)** | Kits with CARB toroidal roller bearings with a cylindrical bore, diameter series 2 |
| **C23(00)** | Kits with CARB toroidal roller bearings with a cylindrical bore, diameter series 3 |
| **C25(00)** | Kits with CARB toroidal roller bearings on an adapter sleeve, diameter series 2 |
| **C26(00)** | Kits with CARB toroidal roller bearings on an adapter sleeve, diameter series 3 |
| **C30(00)** | KA Kits with CARB toroidal roller bearings on an adapter sleeve, diameter series 0 |
| **..(00)** | Size code of the bearing, (00) x 5 = bearing bore diameter [mm] |

**Suffixes**[1)]

| | |
|---|---|
| **T** | Taconite seal with contact element |
| **TV** | Taconite seal with V-ring |
| **TA or TVA** | Taconite seal with button head grease fitting |
| **TB or TVB** | Taconite seal with giant button head grease fitting |
| **TLC** | PosiTrac Plus seal |
| **Y** | One end closed (i.e. supplied with end plug) |
| **-11** | Four-bolt base (cast steel SAFS only) |
| **/VZ...** | Special feature / modification |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

# Standard housing design

SAF and SAW housings are split pillow (plummer) block housings consisting of a cap and base. SAF housings have two or four holes cast into the base for attachment bolts. SAW housings have four cast holes.

SAF housings are available in two designs depending on the series. The designs share the same dimensions. SAF housings in the 2(00) and 5(00) series follow the M5 design (→ **fig. 1**), while housings in the 3(00) and 6(00) series follow the A design (→ **fig. 2**).

SAF and SAW (→ **fig. 3**) housings share the same external dimensions, except for the width of a few SAW sizes. These housings are wider to accommodate wider 32 series bearings or to accomodate the larger axial displacement of bearings in the 22 series.

Fig. 1

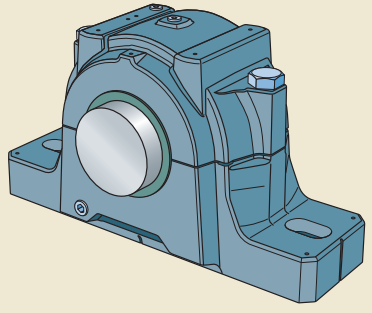


Fig. 2

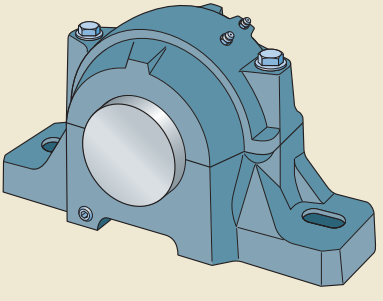
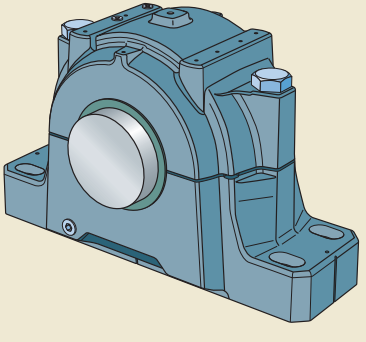


Fig. 3



## Features and benefits

SAF and SAW housings share some of the following features and benefits:

**Simple mounting and dismounting**

To simplify mounting and make alignment more accurate, the feet of SAF and SAW housings have a flat, square design.

To make it easier to separate the cap and base, pry slots are cast into the housing. Smaller sizes have sphered dowel pins to further ease cap removal.

Mounting instructions are supplied with each housing.

**Caps and bases individually marked**

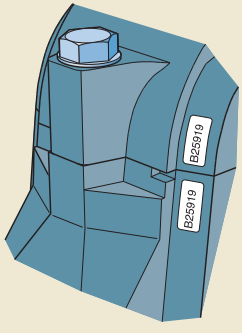
The housing base and cap are matched during manufacture and are not interchangeable with the caps and bases of other housings. To help avoid mismatch, each cap and base are numbered (→ **fig. 4**).

**Grease or oil lubrication**

These housings are designed to accommodate both grease and oil lubrication. The sump in the housing base acts as a reservoir to provide an adequate quantity of grease or oil.

Fig. 4

**Individually marked cap and base**




## Housing material

SAF and SAW housings are made of grey cast iron.

### Paint, corrosion protection

SAF and SAW pillow block housings are painted blue (RAL 5001) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Special paints or preservatives can be supplied on request. Unpainted surfaces are protected by a solventless rust inhibitor.

# Housing variants

In addition to standard design SAF and SAW pillow (plummer) block housings, a number of variants are also available. Additional features include:

- milled foot pads to provide a uniform flat surface for fasteners
- special machining for lubrication and condition monitoring systems
- different bearing seat tolerance classes
- special seals
- machined base ends, to enable precision positioning

For additional information contact the SKF application engineering service.

## Housing material

For applications where extra strength is needed, SAF housings are also available in cast steel, designation SAFS. Check availability prior to ordering. Cast steel housings come in three different designs. The different designs share the same dimensions as SAF housings made of grey cast iron.

SAF housings are also available in ductile iron (spheroidal graphite cast iron), designation SAFD, from size 509 to 544 and from size 215 to 244. For additional information, contact the SKF application engineering service.

# Sealing solutions

SAF and SAW pillow (plummer) block housings are available with different standard sealing solutions (→ **fig. 5**):

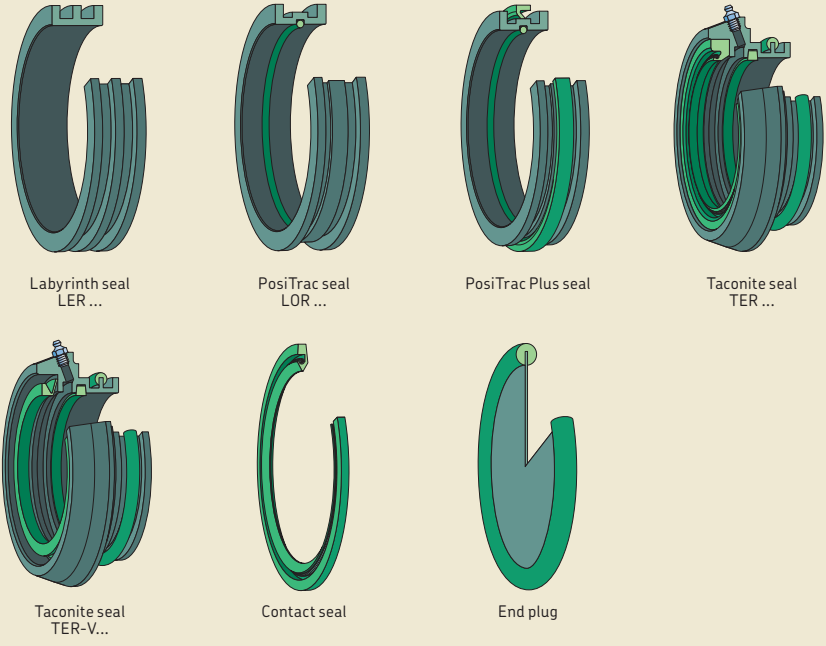
- labyrinth seals (standard or PosiTrac)
- labyrinth seals with internal contact element (PosiTrac Plus)
- taconite heavy-duty seals
- contact seals
- end plugs (end covers)

**Table 1**, **page 390** provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, which cannot substitute for testing a seal in its application. **Table 2** on **page 392** provides an overview about which seals fit what housing.

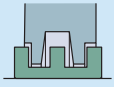
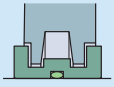


**Fig. 5**

**Standard sealing solutions for SAF and SAW pillow block housings**



**Standard seals for SAF and SAW housings**


| Seal | | | |
|---|---|---|---|
| Type | Labyrinth | PosiTrac | PosiTrac Plus |
| Designation | LER | LOR | LOR and B-10724 |
| Material | aluminum | aluminum and nitrile rubber | aluminum and nitrile rubber |
| **Application conditions and requirements** | | | |
| Temperature [°F] | –30 to 300 | –30 to 220 | –30 to 220 |
| Max. circumferential speed | same as bearing | same as bearing | limited |
| Misalignment [°] | 0.3 | 0.3 | 0.3 |
| Low friction | ++ | ++ | + |
| Axial shaft displacement | ++ | + | – |
| Vertical arrangement | – | – | ++ |
| Grease relubrication | + | + | + |
| Oil lubrication | – | – | ++ |
| Replacement | – | – | – |
| **Sealing suitability** | | | |
| Dust | – | – | + |
| Fine particles | – | – | + |
| Coarse particles | + | + | + |
| Chips | + | + | – |
| Liquids when sprayed | – – | – – | – |
| Direct sunlight | + | + | + |

Symbols: n/a not applicable, ++ very suitable, + suitable, – limited suitability, – – unsuitable

**Table 1**






| Contact | Taconite | Taconite (V-ring seal) | End plug |
|---|---|---|---|
| B-9784 | TER | TER V | EPR |
| nitrile rubber | steel, felt and nitrile rubber | steel, felt and nitrile rubber | steel and nitrile rubber |
| –30 to 220 | –30 to 220 | –30 to 220 | –30 to 220 |
| limited | limited | limited | n/a |
| 0.1 | 0.1 | 0.5 | n/a |
| – | – – | – – | n/a |
| + | + | – | n/a |
| ++ | ++ | ++ | ++ |
| + | ++ | ++ | n/a |
| ++ | + | + | ++ |
| + | + | + | + |
| + | ++ | ++ | + |
| + | ++ | ++ | + |
| + | ++ | ++ | + |
| – | ++ | ++ | – |
| – | + | + | + |
| + | + | + | + |

8

**Seal chart for SAF and SAW housings**

| Shaft diameter | $d_a$ 0(00) Series | $d_a$ 5(00) Series | $d_a$ 6(00) Series | $d_b$ 2(00) Series | $d_c$ 2(00) Series | $d_b$ 3(00) Series | $d_c$ 3(00) Series | Labyrinth seal[1] Ring seal | O-ring for LOR[2] |
|---|---|---|---|---|---|---|---|---|---|
| in. | – | | | | | | | | |
| 1 1/8 | | 507 | | | | | | LER-13 | – |
| 1 3/16 | | 507* | | | | | | LER-14 | – |
| 1 1/4 | | 507 | | | | | | LER-15 | – |
| 1 3/8 | | 509 | 609 | | | | | LER-16 | – |
| 1 7/16 | | 509* | 609* | | | | 308* | LER-17 | – |
| 1 1/2 | | 509 | 609 | | | | | LER-18 | – |
| 1 5/8 | | 510 | 610 | | | | | LER-19 | – |
| 1 11/16 | | 510* | 610* | | | | 309* | LER-20 | – |
| 1 3/4 | | 510 | 610 | | | | | LER-21 | – |
| 1 13/16 | | 511 | 611 | | | | | LER-22 | – |
| 1 7/8 | | 511 | 611 | | | | 310* | LER-23 | – |
| 1 15/16 | | 511* | 611* | | | 308* | | LER-24 | – |
| 2 | | 511 | 611 | | | | | LER-25 | – |
| 2 | | 513 | | | | | | LER-26 | – |
| 2 1/16 | | 513 | | | | | 311* | LER-27 | – |
| 2 1/8 | | 513 | | | | 309* | | LER-28 | – |
| 2 1/8 | | | 613 | | | | 312 | LOR-31 | AS-568-034 |
| 2 3/16 | | 513* | | | | | | LER-29 | – |
| 2 3/16 | | | 613* | | | | 312 | LOR-32 | AS-568-035 |
| 2 1/4 | | 513 | | | | | | LER-30 | – |
| 2 1/4 | | | 613 | | | | 312* | LOR-33 | AS-568-035 |
| 2 5/16 | | | | 210 | | 310 | | LER-34 | – |
| 2 3/8 | | | | 210 | | 310* | | LER-35 | – |
| 2 3/8 | | 515 | 615 | | 213 | | 313 | LOR-36 | AS-568-036 |
| 2 7/16 | | 515* | 615* | | 213* | | 313* | LOR-37 | AS-568-037 |
| 2 1/2 | | | | | | 311 | | LER-39 | – |
| 2 1/2 | | 515 | 615 | | 213 | | 313 | LOR-38 | AS-568-037 |
| 2 9/16 | | | | | | 311* | | LER-40 | – |
| 2 9/16 | | 516 | 616 | | | | 314 | LOR-42 | AS-568-038 |
| 2 5/8 | | | | | | 311 | | LER-41 | – |
| 2 5/8 | | 516 | 616 | | | | 314* | LOR-43 | AS-568-038 |
| 2 11/16 | | 516* | 616* | | | | 314 | LOR-44 | AS-568-039 |
| 2 3/4 | | 516 | 616 | | | | 314 | LOR-45 | AS-568-039 |
| 2 13/16 | | | 617 | | | | | LOR-182 | AS-568-149 |
| 2 13/16 | | | | | 215* | 312 | 315* | LOR-46 | AS-568-040 |
| 2 13/16 | | 517 | | 213 | 216 | 313 | | LOR-51 | AS-568-040 |
| 2 3/16 | | | | | | | 316 | LOR-57 | AS-568-150 |
| 2 7/8 | | | 617 | | | | | LOR-183 | AS-568-150 |
| 2 7/8 | | | | | 215 | 312* | 315 | LOR-47 | AS-568-040 |
| 2 7/8 | | 517 | | 213 | 216 | 313 | | LOR-52 | AS-568-040 |
| 2 7/8 | | | | | | | 316 | LOR-58 | AS-568-150 |
| 2 15/16 | | | 617* | | | | | LOR-184 | AS-568-151 |

The table continues on next spread.

* = Standard shaft diameter, all others are optional shaft diameters
1) Speed rating is the same as bearing speed rating
2) O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors

**Table 2**

| Contact seal[3] | Speed limit[4] | Taconite seals with contact seal[5] | with V-ring seal | Speed limit [4] | End plug |
|---|---|---|---|---|---|
| | r/min | – | | r/min | – |
| – | – | TER-13 | TER-13 V | 2 250 | EPR-2 |
| – | – | TER-14 | TER-14 V | 2 250 | EPR-2 |
| – | – | TER-15 | TER-15 V | 2 250 | EPR-2 |
| – | – | TER-16 | TER-16 V | 2 175 | EPR-3 |
| B-9784-12 | 3 800 | TER-17 | TER-17 V | 2 175 | EPR-3 |
| – | – | TER-18 | TER-18 V | 2 175 | EPR-3 |
| – | – | TER-19 | TER-19 V | 1 800 | EPR-4 |
| B-9784-15 | 3 400 | TER-20 | TER-20 V | 1 800 | EPR-4 |
| – | – | TER-21 | TER-21 V | 1 800 | EPR-4 |
| – | – | TER-22 | TER-22 V | 1 575 | EPR-5 |
| – | – | TER-23 | TER-23 V | 1 575 | EPR-5 |
| B-9784-19 | 2 950 | TER-24 | TER-24 V | 1 575 | EPR-5 |
| – | – | TER-25 | TER-25 V | 1 575 | EPR-5 |
| B-9784-21 | 2 950 | TER-26 | TER-26 V | 1 450 | EPR-6 |
| – | – | TER-27 | TER-27 V | 1 450 | EPR-6 |
| – | – | TER-28 | TER-28 V | 1 450 | EPR-6 |
| B-10724-32 | 2 600 | TER-31 | TER-31 V | 1 400 | EPR-7 |
| B-9784-24 | 2 600 | TER-29 | TER-29 V | 1 400 | EPR-6 |
| B-10724-32 | 2 600 | TER-32 | TER-32 V | 1 400 | EPR-7 |
| – | - | TER-30 | TER-30 V | 1 400 | EPR-6 |
| B-10724-32 | 2 600 | TER-33 | TER-33 V | 1 075 | EPR-7 |
| – | – | TER-34 | TER-34 V | 1 300 | – |
| – | – | TER-35 | TER-35 V | 1 300 | – |
| B-10724-37 | 2 350 | TER-36 | TER-36 V | 1 250 | EPR-7 |
| B-10724-37 | 2 350 | TER-37 | TER-37 V | 1 250 | EPR-7 |
| B-9784-37 | – | TER-39 | TER-39 V | 1 250 | – |
| B-10724-37 | 2 350 | TER-38 | TER-38 V | 1 250 | EPR-7 |
| B-9784-35 | – | TER-40 | TER-40 V | 1 200 | – |
| B-10724-44 | 2 150 | TER-42 | TER-42 V | 1 150 | EPR-8 |
| – | – | TER-41 | TER-41 V | 1 150 | – |
| B-10724-44 | 2 150 | TER-43 | TER-43 V | 1 150 | EPR-8 |
| B-10724-44 | 2 150 | TER-44 | TER-44 V | 1 150 | EPR-8 |
| B-10724-44 | 2 150 | TER-45 | TER-45 V | 1 150 | EPR-8 |
| B-10724-184 | 1 950 | TER-182 | TER-182 V | 1 050 | EPR-10 |
| B-10724-44 | 2 150 | TER-46 | TER-46 V | 900 | EPR-8 |
| B-10724-53 | 1 950 | TER-51 | TER-51 V | 1 050 | EPR-9 |
| B-10724-184 | 1 900 | TER-57 | TER-57 V | 850 | EPR-10 |
| B-10724-184 | 1 950 | TER-183 | TER-183 V | 1 050 | EPR-10 |
| B-10724-44 | 2 150 | TER-47 | TER-47 V | 1 075 | EPR-8 |
| B-10724-53 | 1 950 | TER-52 | TER-52 V | 1 050 | EPR-9 |
| B-10724-184 | 1 900 | TER-58 | TER-58 V | 850 | EPR-10 |
| B-10724-184 | 1 950 | TER-184 | TER-184 V | 1 050 | EPR-10 |

[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 speed limit
[5] Most taconite seals and all V-ring versions are made to order, contact SKF for availabilty

**Seal chart for SAF and SAW housings**

| Shaft diameter | $d_a$ 0(00) Series | $d_a$ 5(00) Series | $d_a$ 6(00) Series | $d_b$ 2(00) Series | $d_c$ 2(00) Series | $d_b$ 3(00) Series | $d_c$ 3(00) Series | Labyrinth seal[1) ] Ring seal | O-ring for LOR[2)] |
|---|---|---|---|---|---|---|---|---|---|
| in. | – | | | | | | | | |
| 2 15/16 | | 517* | | 213 | 216 | 313 | | LOR-53 | AS-568-141 |
| 2 15/16 | | | | | | | 316 | LOR-59 | AS-568-151 |
| 3 | | | 617 | | | | | LOR-185 | AS-568-151 |
| 3 | | 517 | | 213 | 216* | 313 | | LOR-54 | AS-568-041 |
| 3 | | | | | | | 316* | LOR-60 | AS-568-151 |
| 3 1/16 | | 518 | 618 | | | | 317 | LOR-186 | 38309-186 |
| 3 1/16 | | | | 213* | 216 | 313* | | LOR-55 | 38309-55 |
| 3 1/16 | | | | | 217 | | | LOR-61 | 38309-61 |
| 3 1/8 | | 518 | 618 | | | | 317 | LOR-187 | AS-568-152 |
| 3 1/8 | | | | 213 | 216 | 313 | | LOR-56 | AS-568-042 |
| 3 1/8 | | | | | 217 | 314 | | LOR-62 | AS-568-042 |
| 3 3/16 | | 518* | 618* | | | | 317* | LOR-188 | AS-568-152 |
| 3 3/16 | | | | | 217* | 314 | | LOR-63 | AS-568-042 |
| 3 1/4 | | 518 | 618 | | | | 317 | LOR-189 | AS-568-152 |
| 3 1/4 | | | | | 217 | 314* | | LOR-64 | AS-568-042 |
| 3 5/16 | | 520 | 620 | | 220 | | | LOR-100 | 38309-100 |
| 3 5/16 | | | | | 217 | | | LOR-65 | 38309-65 |
| 3 5/16 | | | | | 218 | | 318 | LOR-190 | 38309-190 |
| 3 3/8 | | | | 215/216 | | 315 | | LOR-78 | AS-568-043 |
| 3 3/8 | | | | | 217 | | | LOR-66 | AS-568-043 |
| 3 3/8 | | 520 | 620 | | 220 | | | LOR-101 | AS-568-153 |
| 3 3/8 | | | | | 218* | | 318* | LOR-191 | AS-568-153 |
| 3 7/16 | | | | 215*/216 | | 315* | | LOR-79 | AS-568-043 |
| 3 7/16 | | 520* | 620* | | 220 | | | LOR-102 | AS-568-153 |
| 3 1/2 | | | | 215/216 | | 315 | | LOR-80 | AS-568-043 |
| 3 1/2 | | 520 | 620 | | 220 | | | LOR-103 | AS-568-153 |
| 3 9/16 | | | | 215/216 | | 315 | | LOR-81 | 38309-81 |
| 3 9/16 | | | | | | 316 | | LOR-83 | 38309-83 |
| 3 5/8 | | | | 215/216* | | 315 | | LOR-82 | AS-568-044 |
| 3 5/8 | | | | | | 316* | | LOR-84 | AS-568-154 |
| 3 11/16 | | | | | | 316 | | LOR-85 | AS-568-154 |
| 3 11/16 | | | | | | | 320 | LOR-104 | AS-568-154 |
| 3 3/4 | | | | | | 316 | | LOR-86 | AS-568-154 |
| 3 3/4 | | | | | | | 320 | LOR-105 | AS-568-154 |
| 3 13/16 | | | | | | 316 | | LOR-87 | 38309-87 |
| 3 13/16 | | | | | 320* | 220* | | LOR-106 | 38309-106 |
| 3 13/16 | | 522 | 622 | | | 317 | | LOR-107 | 38309-107 |
| 3 7/8 | | 522 | 622 | | | 317 | | LOR-108 | AS-568-155 |
| 3 7/8 | | | | 217 | | | | LOR-88 | AS-568-045 |
| 3 15/16 | | 522* | 622* | | | 317* | | LOR-109 | AS-568-155 |
| 3 15/16 | | | | 217* | | | | LOR-89 | AS-568-045 |
| 4 | | 522 | 622 | | | 317 | | LOR-110 | AS-568-155 |

The table continues on next spread.

* = Standard shaft diameter, all others are optional shaft diameters
1) Speed rating is the same as bearing speed rating
2) O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors

**cont. Table 2**

| Contact seal[3] | Speed limit[4] | Taconite seals with contact seal[5] | with V-ring seal | Speed limit [4] | End plug |
|---|---|---|---|---|---|
| | r/min | – | | r/min | – |
| B-10724-53 | 1 950 | TER-53 | TER-53 V | 1 050 | EPR-9 |
| B-10724-184 | 1 900 | TER-59 | TER-59 V | 850 | EPR-10 |
| B-10724-184 | 1 950 | TER-185 | TER-185 V | 1 050 | EPR-10 |
| B-10724-53 | 1 950 | TER-54 | TER-54 V | 850 | EPR-9 |
| B-10724-184 | 1 900 | TER-60 | TER-60 V | 850 | EPR-10 |
| B-10724-188 | 1 800 | TER-186 | TER-186 V | 950 | EPR-11 |
| B-10724-53 | 1 950 | TER-55 | TER-55 V | 1 000 | EPR-9 |
| B-10724-64 | 1 450 | TER-61 | TER-61 V | 775 | EPR-9 |
| B-10724-188 | 1 800 | TER-187 | TER-187 V | 950 | EPR-11 |
| B-10724-53 | 1 950 | TER-56 | TER-56 V | 1 000 | EPR-9 |
| B-10724-64 | 1 450 | TER-62 | TER-62 V | 775 | EPR-9 |
| B-10724-188 | 1 800 | TER-188 | TER-188 V | 950 | EPR-11 |
| B-10724-64 | 1 450 | TER-63 | TER-63 V | 775 | EPR-9 |
| B-10724-188 | 1 800 | TER-189 | TER-189 V | 950 | EPR-11 |
| B-10724-64 | 1 450 | TER-64 | TER-64 V | 925 | EPR-9 |
| B-10724-102 | 1 650 | TER-100 | TER-100 V | 900 | EPR-12 |
| B-10724-64 | 1 450 | TER-65 | TER-65 V | 775 | EPR-9 |
| B-10724-188 | 1 800 | TER-190 | TER-190 V | 750 | EPR-11 |
| B-10724-79 | 1 650 | TER-78 | TER-78 V | 900 | – |
| B-10724-64 | 1 450 | TER-66 | TER-66 V | 775 | EPR-9 |
| B-10724-102 | 1 650 | TER-101 | TER-101 V | 900 | EPR-12 |
| B-10724-188 | 1 800 | TER-191 | TER-191 V | 750 | EPR-11 |
| B-10724-79 | 1 450 | TER-79 | TER-79 V | 900 | – |
| B-10724-102 | 1 650 | TER-102 | TER-102 V | 900 | EPR-12 |
| B-10724-79 | 1 450 | TER-80 | TER-80 V | 900 | – |
| B-10724-102 | 1 650 | TER-103 | TER-103 V | 900 | EPR-12 |
| B-10724-79 | 1 450 | TER-81 | TER-81 V | 900 | – |
| B-10724-106 | 1 275 | TER-83 | TER-83 V | 850 | EPR-12 |
| B-10724-79 | 1 450 | TER-82 | TER-82 V | 850 | – |
| B-10724-106 | 1 275 | TER-84 | TER-84 V | 850 | EPR-12 |
| B-10724-106 | 1 275 | TER-85 | TER-85 V | 850 | EPR-12 |
| B-10724-106 | 1 275 | TER-104 | TER-104 V | 675 | EPR-12 |
| B-10724-106 | 1 275 | TER-86 | TER-86 V | 850 | EPR-12 |
| B-10724-106 | 1 275 | TER-105 | TER-105 V | 675 | EPR-12 |
| B-10724-106 | 1 275 | TER-87 | TER-87 V | 850 | EPR-12 |
| B-10724-106 | 1 275 | TER-106 | TER-106 V | 675 | EPR-12 |
| B-10724-109 | 1 450 | TER-107 | TER-107 V | 775 | EPR-13 |
| B-10724-109 | 1 450 | TER-108 | TER-108 V | 775 | EPR-13 |
| B-10724-89 | 1 450 | TER-88 | TER-88 V | 775 | – |
| B-10724-109 | 1 450 | TER-109 | TER-109 V | 775 | EPR-13 |
| B-10724-89 | 1 450 | TER-89 | TER-89 V | 775 | – |
| B-10724-109 | 1 450 | TER-110 | TER-110 V | 775 | EPR-13 |

[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 speed limit
[5] Most taconite seals and all V-ring versions are made to order, contact SKF for availabilty

**Seal chart for SAF and SAW housings**

| Shaft diameter | $d_a$ 0(00) Series | $d_a$ 5(00) Series | $d_a$ 6(00) Series | $d_b$ 2(00) Series | $d_c$ 2(00) Series | $d_b$ 3(00) Series | $d_c$ 3(00) Series | Labyrinth seal[1] Ring seal | O-ring for LOR[2] |
|---|---|---|---|---|---|---|---|---|---|
| in. | – | | | | | | | | |
| 4 | | | | 217 | | | | LOR-90 | AS-568-045 |
| 4 1/16 | 024 | 524 | 624 | 218 | 222 | 318 | 322 | LOR-111 | 38309-111 |
| 4 1/8 | 024 | 524 | 624 | 218* | 222 | 318* | 322 | LOR-112 | AS-568-156 |
| 4 3/16 | 024* | 524* | 624* | 218 | 222* | 318 | 322* | LOR-113 | AS-568-156 |
| 4 1/4 | 024 | 524 | 624 | 218 | 222 | 318 | 322 | LOR-114 | AS-568-156 |
| 4 5/16 | 026 | 526 | 626 | 220 | 224 | 320 | 324 | LOR-115 | 38309-115 |
| 4 3/8 | 026 | 526 | 626 | 220 | 224 | 320 | 324 | LOR-116 | AS-568-157 |
| 4 7/16 | 026* | 526* | 626* | 220 | 224 | 320 | 324 | LOR-117 | AS-568-157 |
| 4 1/2 | 026 | 526 | 626 | 220* | 224 | 320* | 324 | LOR-118 | AS-568-157 |
| 4 9/16 | | | | 220 | 224* | 320 | 324* | LOR-119 | 38309-119 |
| 4 13/16 | 028 | 528 | 628 | 222 | 226 | 322 | 326 | LOR-120 | 38309-120 |
| 4 7/8 | 028 | 528 | 628 | 222* | 226 | 322* | 326 | LOR-121 | AS-568-159 |
| 4 15/16 | 028* | 528* | 628* | 222 | 226* | 322 | 326* | LOR-122 | AS-568-159 |
| 5 1/8 | 030 | 530 | 630 | 224 | 228 | 324 | 328 | LOR-124 | AS-568-160 |
| 5 3/16 | 030* | 530* | 630* | 224 | 228 | 324 | 328 | LOR-125 | AS-568-160 |
| 5 1/4 | 030 | 530 | 630 | 224 | 228 | 324 | 328 | LOR-126 | AS-568-160 |
| 5 5/16 | 030 | | | 224* | 228* | 324* | 328* | LOR-127 | 38309-127 |
| 5 3/8 | 30 | | | 224 | 228 | 324 | 328 | LOR-128 | AS-568-161 |
| 5 3/8 | 032 | 532 | 632 | | | | | LOR-129 | AS-568-253 |
| 5 7/16 | 032* | 532* | 632* | | | | | LOR-130 | AS-568-254 |
| 5 1/2 | 032 | 532 | 632 | | | | | LOR-131 | AS-568-254 |
| 5 5/8 | | | | 226 | 230 | 326 | 330 | LOR-132 | AS-568-162 |
| 5 11/16 | | | | 226 | 230 | 326 | 330 | LOR-133 | AS-568-162 |
| 5 3/4 | | | | 226 | 230* | 326 | 330* | LOR-134 | AS-568-162 |
| 5 13/16 | 034 | 534 | 634 | | 232 | | 332 | LOR-138 | AS-568-257 |
| 5 13/16 | | | | 226 | 230 | 326 | 330 | LOR-135 | 38309-135 |
| 5 7/8 | 034 | 534 | 634 | | 232 | | 332 | LOR-139 | AS-568-257 |
| 5 7/8 | | | | 226* | 230 | 326* | 330 | LOR-136 | AS-568-163 |
| 5 15/16 | 034* | 534* | 634* | | 232 | | 332 | LOR-140 | AS-568-258 |
| 5 15/16 | | | | 226 | 230 | 326 | 330 | LOR-137 | AS-568-163 |
| 6 | 034 | 534 | 634 | | 232 | | 332 | LOR-141 | AS-568-258 |
| 6 1/16 | | | | | 232* | | 332* | LOR-142 | 38309-142 |
| 6 3/16 | | | | 228 | | 328 | | LOR-143 | AS-568-164 |
| 6 1/4 | | | | 228* | | 328* | | LOR-144 | AS-568-164 |
| 6 5/16 | | | | 228 | | 328 | | LOR-145 | 38309-145 |
| 6 5/16 | 036 | 536 | | | 234 | | 334 | LOR-146 | 38309-146 |
| 6 3/8 | 036 | 536 | | | 234 | | 334 | LOR-147 | AS-568-260 |
| 6 7/16 | 036* | 536* | | | 234 | | 334* | LOR-148 | AS-568-260 |
| 6 1/2 | 036 | 536 | | | 234 | | 334 | LOR-149 | AS-568-260 |
| 6 9/16 | | | | 230 | | 330 | | LOR-150 | 38309-150 |

The table continues on next spread.

* = Standard shaft diameter, all others are optional shaft diameters
1) Speed rating is the same as bearing speed rating
2) O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors

**cont. Table 2**

| Contact seal[3] | Speed limit[4] | Taconite seals with contact seal[5] | with V-ring seal | Speed limit [4] | End plug |
|---|---|---|---|---|---|
| | r/min | – | | r/min | – |
| B-10724-89 | 1 450 | TER-90 | TER-90 V | 775 | – |
| B-10724-113 | 1 350 | TER-111 | TER-111 V | 750 | EPR-14 |
| B-10724-113 | 1 350 | TER-112 | TER-112 V | 750 | EPR-14 |
| B-10724-113 | 1 350 | TER-113 | TER-113 V | 725 | EPR-14 |
| B-10724-113 | 1 350 | TER-114 | TER-114 V | 725 | EPR-14 |
| B-10724-117 | 1 300 | TER-115 | TER-115 V | 700 | EPR-15 |
| B-10724-117 | 1 300 | TER-116 | TER-116 V | 700 | EPR-15 |
| B-10724-117 | 1 300 | TER-117 | TER-117 V | 700 | EPR-15 |
| B-10724-117 | 1 300 | TER-118 | TER-118 V | 675 | EPR-15 |
| B-10724-117 | 1 300 | TER-119 | TER-119 V | 675 | EPR-15 |
| B-10724-122 | 1 150 | TER-120 | TER-120 V | 625 | EPR-27 |
| B-10724-122 | 1 150 | TER-121 | TER-121 V | 625 | EPR-27 |
| B-10724-122 | 1 150 | TER-122 | TER-122 V | 625 | EPR-27 |
| B-10724-125 | 1 075 | TER-124 | TER-124 V | 590 | EPR-16 |
| B-10724-125 | 1 075 | TER-125 | TER-125 V | 590 | EPR-16 |
| B-10724-125 | 1 075 | TER-126 | TER-126 V | 575 | EPR-16 |
| B-10724-125 | 1 075 | TER-127 | TER-127 V | 575 | EPR-16 |
| B-10724-125 | 1 075 | TER-128 | TER-128 V | 575 | EPR-16 |
| B-10724-130 | 1 050 | TER-129 | TER-129 V | 560 | EPR-16 |
| B-10724-130 | 1 050 | TER-130 | TER-130 V | 560 | EPR-16 |
| B-10724-130 | 1 050 | TER-131 | TER-131 V | 560 | EPR-16 |
| B-10724-134 | 850 | TER-132 | TER-132 V | 460 | EPR-17 |
| B-10724-134 | 850 | TER-133 | TER-133 V | 460 | EPR-17 |
| B-10724-134 | 850 | TER-134 | TER-134 V | 460 | EPR-17 |
| B-10724-140 | 950 | TER-138 | TER-138 V | 520 | EPR-18 |
| B-10724-134 | 850 | TER-135 | TER-135 V | 520 | EPR-17 |
| B-10724-140 | 950 | TER-139 | TER-139 V | 520 | EPR-18 |
| B-10724-134 | 850 | TER-136 | TER-136 V | 520 | EPR-17 |
| B-10724-140 | 950 | TER-140 | TER-140 V | 520 | EPR-18 |
| B-10724-134 | 850 | TER-137 | TER-137 V | 520 | EPR-17 |
| B-10724-140 | 950 | TER-141 | TER-141 V | 500 | EPR-18 |
| B-10724-140 | 950 | TER-142 | TER-142 V | 500 | EPR-18 |
| B-10724-144 | 925 | TER-143 | TER-143 V | 490 | – |
| B-10724-144 | 925 | TER-144 | TER-144 V | 490 | – |
| B-10724-144 | 925 | TER-145 | TER-145 V | 490 | – |
| B-10724-148 | 875 | TER-146 | TER-146 V | 460 | EPR-19 |
| B-10724-148 | 875 | TER-147 | TER-147 V | 460 | EPR-19 |
| B-10724-148 | 875 | TER-148 | TER-148 V | 460 | EPR-19 |
| B-10724-148 | 875 | TER-149 | TER-149 V | 460 | EPR-19 |
| B-10724-151 | 850 | TER-150 | TER-150 V | 460 | – |

[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 speed limit
[5] Most taconite seals and all V-ring versions are made to order, contact SKF for availabilty

**Seal chart for SAF and SAW housings**

| Shaft diameter | $d_a$ 0(00) | $d_a$ 5(00) | $d_a$ 6(00) | $d_b$ 2(00) | $d_c$ 2(00) | $d_b$ 3(00) | $d_c$ 3(00) | Labyrinth seal[1] Ring seal | O-ring for LOR[2] |
|---|---|---|---|---|---|---|---|---|---|
| | Series | Series | Series | Series | Series | Series | Series | | |
| in. | – | | | | | | | | |
| 6 5/8 | | | | 230* | | 330* | | LOR-151 | AS-568-166 |
| 6 11/16 | | | | 230 | | 330 | | LOR-152 | AS-568-166 |
| 6 13/16 | 038 | 538 | 638 | 232 | 236 | 332 | | LOR-153 | 38309-153 |
| 6 7/8 | 038 | 538 | 638 | 232 | 236* | 332 | | LOR-154 | AS-568-262 |
| 6 15/16 | 038* | 538* | 638* | 232 | 236 | 332 | | LOR-155 | AS-568-262 |
| 7 | 038 | 538 | 638 | 232* | 236 | 332* | | LOR-156 | AS-568-262 |
| 7 1/16 | | | | 232 | 236 | 332 | | LOR-157 | 38309-157 |
| 7 1/8 | 040 | 540 | 640 | | 238 | | 338 | LOR-158 | AS-568-263 |
| 7 3/16 | 040* | 540* | 640* | | 238 | | 338 | LOR-159 | AS-568-263 |
| 7 1/4 | 040 | 540 | 640 | | 238* | | 338* | LOR-160 | AS-568-263 |
| 7 7/16 | | | | 234* | 240 | 334* | 340 | LOR-161 | AS-568-264 |
| 7 1/2 | | | | 234 | 240 | 334 | 340 | LOR-162 | AS-568-264 |
| 7 9/16 | | | | 234 | 240 | 334 | 340 | LOR-163 | AS-568-265 |
| 7 5/8 | | | | 234 | 240* | 334 | 340* | LOR-164 | AS-568-265 |
| 7 13/16 | 044 | 544 | | 236* | | | | LOR-165 | AS-568-266 |
| 7 7/8 | 044 | 544 | | 236 | | | | LOR-166 | AS-568-266 |
| 7 15/16 | 044* | 544* | | 236 | | | | LOR-167 | AS-568-266 |
| 8 | 044 | 544 | | 236 | | | | LOR-168 | AS-568-266 |
| 8 1/4 | | | | 238 | 244 | 338 | | LOR-169 | AS-568-267 |
| 8 5/16 | | | | 238 | 244* | 338 | | LOR-170 | AS-568-268 |
| 8 3/8 | | | | 238* | 244 | 338* | | LOR-171 | AS-568-268 |
| 8 7/16 | | | | 238 | 244 | 338 | | LOR-172 | AS-568-268 |
| 8 7/16 | 048 | | | | | | | LOR-550 | AS-568-268 |
| 8 1/2 | | | | 238 | 244 | 338 | | LOR-173 | AS-568-268 |
| 8 1/2 | 048 | | | | | | | LOR-551 | AS-568-268 |
| 8 11/16 | | | | 240 | | 340 | | LOR-174 | AS-568-269 |
| 8 3/4 | | | | 240* | | 340* | | LOR-175 | AS-568-269 |
| 8 13/16 | | | | 240 | | 340 | | LOR-176 | AS-568-270 |
| 8 7/8 | | | | 240 | | 340 | | LOR-177 | AS-568-270 |
| 8 15/16 | 048* | | | | | | | LOR-552 | AS-568-270 |
| 9 | 048 | | | | | | | LOR-513 | AS-568-270 |
| 9 7/16 | 052* | | | | | | | LOR-553 | AS-568-272 |
| 9 1/2 | 052 | | | 244 | | | | LOR-178 | AS-568-272 |
| 9 9/16 | | | | 244* | | | | LOR-179 | AS-568-273 |
| 9 5/8 | | | | 244 | | | | LOR-180 | AS-568-273 |
| 9 11/16 | | | | 244 | | | | LOR-181 | AS-568-273 |
| 9 15/16 | 056* | | | | | | | LOR-607 | AS-568-274 |
| 10 | 056 | | | | | | | LOR-568 | AS-568-274 |
| 10 7/16 | 056* | | | | | | | LOR-606 | AS-568-275 |
| 10 1/2 | 056 | | | | | | | LOR-519 | AS-568-275 |

* = Standard shaft diameter, all others are optional shaft diameters
1) Speed rating is the same as bearing speed rating
2) O-ring supplied with LOR is for replacement only, AS-568-### are industry standard O-rings available at most SKF authorized distributors

**cont. Table 2**

| Contact seal[3] | Speed limit[4] | Taconite seals with contact seal[5] | with V-ring seal | Speed limit [4] | End plug |
|---|---|---|---|---|---|
| | r/min | – | | r/min | – |
| B-10724-151 | 850 | TER-151 | TER-151 V | 460 | – |
| B-10724-151 | 850 | TER-152 | TER-152 V | 460 | – |
| B-10724-155 | 825 | TER-153 | TER-153 V | 440 | EPR-21 |
| B-10724-155 | 825 | TER-154 | TER-154 V | 440 | EPR-21 |
| B-10724-155 | 825 | TER-155 | TER-155 V | 440 | EPR-21 |
| B-10724-155 | 825 | TER-156 | TER-156 V | 440 | EPR-21 |
| B-10724-155 | 825 | TER-157 | TER-157 V | 440 | EPR-21 |
| B-10724-159 | 800 | TER-158 | TER-158 V | 425 | EPR-21 |
| B-10724-159 | 800 | TER-159 | TER-159 V | 425 | EPR-21 |
| B-10724-159 | 800 | TER-160 | TER-160 V | 425 | EPR-21 |
| B-10724-161 | 650 | TER-161 | TER-161 V | 410 | EPR-22 |
| B-10724-161 | 650 | TER-162 | TER-162 V | 410 | EPR-22 |
| B-10724-161 | 650 | TER-163 | TER-163 V | 410 | EPR-22 |
| B-10724-161 | 650 | TER-164 | TER-164 V | 390 | EPR-22 |
| B-10724-167 | 725 | TER-165 | TER-165 V | 390 | EPR-23 |
| B-10724-167 | 725 | TER-166 | TER-166 V | 390 | EPR-23 |
| B-10724-167 | 725 | TER-167 | TER-167 V | 385 | EPR-23 |
| B-10724-167 | 725 | TER-168 | TER-168 V | 385 | EPR-23 |
| B-10724-170 | 600 | TER-169 | TER-169 V | 365 | EPR-24 |
| B-10724-170 | 600 | TER-170 | TER-170 V | 365 | EPR-24 |
| B-10724-170 | 600 | TER-171 | TER-171 V | 365 | EPR-24 |
| B-10724-170 | 600 | TER-172 | TER-172 V | 365 | EPR-24 |
| B-10724-552 | 680 | TER-550 | TER-550 V | 360 | X-5217-4 |
| B-10724-170 | 600 | TER-173 | TER-173 V | 360 | EPR-24 |
| B-10724-552 | 680 | TER-551 | TER-551 V | 360 | X-5217-4 |
| B-10724-175 | 650 | TER-174 | TER-174 V | 350 | EPR-25 |
| B-10724-175 | 650 | TER-175 | TER-175 V | 350 | EPR-25 |
| B-10724-175 | 650 | TER-176 | TER-176 V | 350 | EPR-25 |
| B-10724-175 | 650 | TER-177 | TER-177 V | 350 | EPR-25 |
| B-10724-552 | 640 | TER-552 | TER-552 V | 340 | X-5217-4 |
| B-10724-552 | 640 | TER-513 | TER-513 V | 340 | X-5217-4 |
| B-10724-178 | 600 | TER-553 | TER-553 V | 325 | X-5217-2 |
| B-10724-178 | 600 | TER-178 | TER-178 V | 320 | X-5217-2 |
| B-10724-178 | 600 | TER-179 | TER-179 V | 315 | X-5217-2 |
| B-10724-178 | 600 | TER-180 | TER-180 V | 315 | X-5217-2 |
| B-10724-178 | 600 | TER-181 | TER-181 V | 315 | X-5217-2 |
| B-10724-607 | 575 | TER-607 | TER-607 V | 310 | X-5217-2 |
| B-10724-607 | 575 | TER-568 | TER-568 V | 305 | X-5217-2 |
| B-10724-606 | 550 | TER-606 | TER-606 V | 295 | X-5217-1 |
| B-10724-606 | 550 | TER-519 | TER-519 V | 290 | X-5217-1 |

[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 speed limit
[5] Most taconite seals and all V-ring versions are made to order, contact SKF for availabilty

## Labyrinth seals

Labyrinth seals are the standard sealing solution for SAF and SAW housings. They are available in two variants depending on housing size:

- Labyrinth seals with the designation LER, also called triple ring seals, are supplied standard with small SAF housings (shaft diameter ≤ 2 5/8 inch). The rings form a multistage labyrinth seal with the housing seal grooves. If operating conditions warrant it, the sealing effect can be enhanced by filling the cavity between the housing and seal ring with grease.
- PosiTrac labyrinth seals, designation LOR, are supplied standard with larger SAF (shaft diameter ≥ 2 1/8 inch) and all SAW housings. These seals have an additional O-ring made of acrylonitrile-butadiene rubber (NBR) to make the labyrinth ring rotate with the shaft.

## Labyrinth rings with an internal contact element

PosiTrac Plus seals consist of a PosiTrac labyrinth ring (designation LOR) and a contact element made of acrylonitrile-butadiene rubber (NBR). The labyrinth ring is located on the shaft and held in place by an O-ring. The contact element is located in the seal groove in the housing. It can be mounted either for best contaminant exclusion or for best lubricant retention (→ **fig. 6**). When the contact element is mounted for best contaminant exclusion, the sealing effect can be enhanced by filling the seal cavity with grease. The designation for the contact element is B 10724 followed by a size code, for example B 10724-122.

## Taconite heavy-duty seals

Taconite seals consist of an inboard felt seal, a grease cavity and an outboard seal that is available in two designs:

- Seals in the TER series have a split contact seal.
- Seals in the TER-V series have a V-ring seal.

To further protect against the ingress of contaminants, SKF taconite seals have a grease fitting to purge grease and any trapped contaminants from the seal cavity, through the outboard seal.

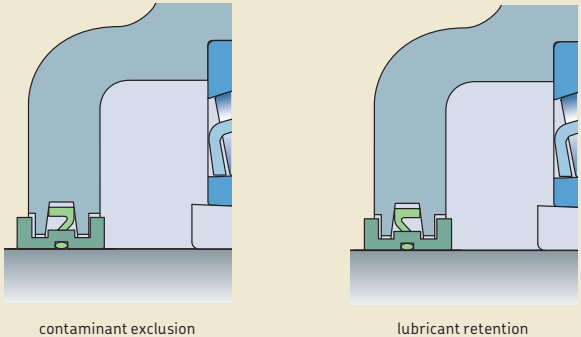
## Contact seals

Contact seals are solid seals that fit into the seal groove. Contact seals are available for smaller housing sizes (SAF 513 and smaller) where PosiTrac Plus seals are not available. The designation for contact seals is B 9784 followed by a size code, e.g. B 9784-15.

## End plugs

Housings at the end of a shaft should have an end plug (end cover) that fits into the seal

**Fig. 6**



contaminant exclusion | lubricant retention

groove in the housing. The plug consists of a metal plate with a strip made of acrylonitrile-butadiene rubber (NBR). Details of the permissible length of the shaft end are listed in the product tables. End plugs are identified by the designation EPR, followed by a size code, for example EPR 7.

## Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**).

SAF housings for sealed spherical roller bearings are identified by the designation SAF 5(00) W. Complete pillow blocks are identified by the designation SAF B225(00). For additional information, contact the SKF application engineering service.

When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting.

## Special seals

In addition to the standard seal assortment, SAF and SAW pillow (plummer) block housings are available, on request, with high-temperature contact seals or high-speed contact seals.

### High-temperature seals

High-temperature contact seals (designation LORP) consist of a PTFE labyrinth ring with an FKM (fluoro rubber) O-ring and a PTFE contact element. The PTFE contact element is available separately (designation B-10785). High-temperature seals can accommodate operating temperatures up to 400 °F. The limiting speed for the bearing can be attained.

### High-speed seals

High-speed contact seals consist of an aluminium labyrinth ring with an NBR O-ring (designation LOR) and a PTFE contact element (designation B-10785). With PTFE contact elements, the limiting speed for the bearing can be attained.



**WARNING!**
Seals made of FKM (fluoro rubber) exposed to an open flame or temperatures above 570 °F are a health and environmental hazard! Contact SKF for detailed safety instructions.

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

SAF and SAW pillow (plummer) block housings can accommodate different shaft-bearing combinations (→ **fig. 7**):

- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

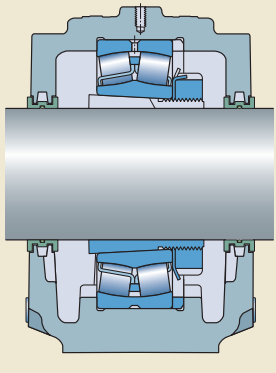
**Plain shaft with bearing on an adapter sleeve**

SAF pillow blocks in the 15, 16, 225, 226, 230, C25, C26 and C30 series and SAW pillow blocks in the 235 series accommodate bearings on an adapter sleeve on plain shafts. Housings, appropriate parts and dimensions are listed in **product tables 8.1** (→ **page 418**), **8.2** (→ **page 424**) and **8.3** (→ **page 430**).

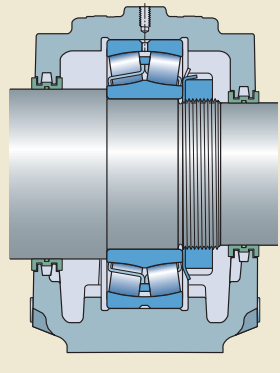
**Stepped shaft with bearing on a cylindrical seat**

SAF pillow blocks in the 13, 222, 223, C22 and C23 series and SAW pillow blocks in the 232 series accommodate bearings on a cylindrical seat on stepped shafts. Housings, appropriate parts and dimensions are listed in the **product tables 8.4** (→ **page 434**), **8.5** (→ **page 436**) and **8.6** (→ **page 444**).

Fig. 7



Plain shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a cylindrical seat

## Locating and non-locating bearing positions

SAF and SAW housings can be used for both the locating and non-locating bearing position.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing with one or two stabilizing (locating) rings. Appropriate stabilizing rings are listed in the product tables.

## Load carrying capacity

SAF and SAW housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing.

If loads acting in other directions occur, check that the magnitude of the load is permissible for the housing and the attachment bolts. Guideline values for the safe loads of the housings are provided in **tables 3** to **5** on **pages 404** to **407**. The safe loads have been calculated using a safety factor of 5 against fracture and a factor of 2 against cap bolt yield. For housings made of spheroidal graphite cast iron the values obtained from **table 3** on **page 404** should be multiplied by a factor of 1,8.

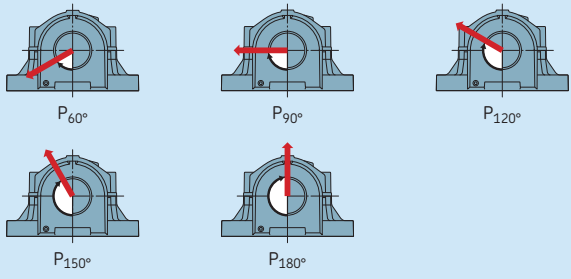
If the housing is not supported over its entire base, the load carrying capacity for vertical loads may be affected. For additional information, contact the SKF application engineering service.

For a purely axial force, static or dynamic, the permissible load on the pillow block housing should not exceed 65% of $P_{180°}$. If the incorporated bearing is mounted on a sleeve, check the permissible axial load for the sleeve.

When housings are subjected to cyclic loads or dynamic imbalance, contact the SKF application engineering service.

Table 3

**Safe loads and cap bolt information for SAF cast iron housings**



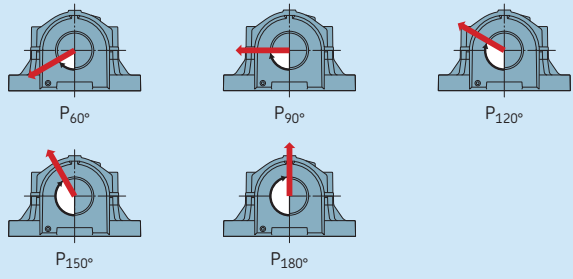

| Housing Size | | | Recommended safe loads $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | Cap bolt (no.) Size | Torque | SAE grade |
|---|---|---|---|---|---|---|---|---|---|---|
| – | | | lbf. | | | | | in. | ft.-lbs. | |
| | 509 | | 4 700 | 2 800 | 1 700 | 1 500 | 1 800 | (2) 7/16-14 | 45 | 5 |
| 308 | | | 7 300 | 4 400 | 2 800 | 2 500 | 3 100 | (2) 1/2-13 | 110 | 8 |
| | 510 | | 6 500 | 3 900 | 2 500 | 2 200 | 2 800 | (2) 7/16-14 | 45 | 5 |
| 309 | | 609 | 7 900 | 4 700 | 3 000 | 2 700 | 3 300 | (2) 1/2-13 | 110 | 8 |
| | 511 | | 10 100 | 6 100 | 3 900 | 3 500 | 4 300 | (2) 1/2-13 | 60 | 5 |
| 310 | | 610 | 8 800 | 5 300 | 3 200 | 2 900 | 3 500 | (2) 1/2-13 | 110 | 8 |
| | 513 | | 11 300 | 6 800 | 4 000 | 3 600 | 4 300 | (2) 1/2-13 | 60 | 5 |
| 311 | | 611 | 9 700 | 5 800 | 3 600 | 3 300 | 4 000 | (2) 1/2-13 | 110 | 8 |
| 311* | | 611* | 8 000 | 4 800 | 3 000 | 2 700 | 3 200 | (2) 1/2-13 | 110 | 8 |
| 312 | | | 11 100 | 6 700 | 4 100 | 3 700 | 4 500 | (2) 1/2-13 | 110 | 8 |
| 312* | | | 9 500 | 5 700 | 3 500 | 3 100 | 3 800 | (2) 1/2-13 | 110 | 8 |
| | 515 | | 17 000 | 10 200 | 6 300 | 5 700 | 6 800 | (2) 1/2-13 | 60 | 5 |
| | 515* | | 12 200 | 7 300 | 4 500 | 4 100 | 5 000 | (2) 1/2-13 | 60 | 5 |
| 313 | | 613 | 18 700 | 11 200 | 6 800 | 6 000 | 7 100 | (2) 5/8-11 | 220 | 8 |
| 313* | | 613* | 13 600 | 8 100 | 4 900 | 4 400 | 5 200 | (2) 5/8-11 | 220 | 8 |
| 216 | 516 | | 18 700 | 11 200 | 6 800 | 6 000 | 7 100 | (2) 5/8-11 | 110 | 5 |
| 216* | 516* | | 13 600 | 8 100 | 4 900 | 4 400 | 5 200 | (2) 5/8-11 | 110 | 5 |
| 314 | | | 20 800 | 12 500 | 7 800 | 6 900 | 8 500 | (2) 5/8-11 | 220 | 8 |
| 314* | | | 20 800 | 12 500 | 7 800 | 6 900 | 8 500 | (2) 5/8-11 | 220 | 8 |
| 217 | 517 | | 19 000 | 11 400 | 7 100 | 6 400 | 7 800 | (2) 5/8-11 | 110 | 5 |
| 217* | 517* | | 13 800 | 8 300 | 5 200 | 4 700 | 5 700 | (2) 5/8-11 | 110 | 5 |
| 218 | 518 | | 27 200 | 16 300 | 10 200 | 9 100 | 11 200 | (2) 5/8-11 | 110 | 5 |
| 218* | 518* | | 22 800 | 13 700 | 8 600 | 7 800 | 9 500 | (2) 5/8-11 | 110 | 5 |
| 315 | | 615 | 27 200 | 16 300 | 10 200 | 9 100 | 11 200 | (2) 5/8-11 | 220 | 8 |
| 315* | | 615* | 22 800 | 13 700 | 8 600 | 7 800 | 9 500 | (2) 5/8-11 | 220 | 8 |
| 316 | | 616 | 19 300 | 11 600 | 7 200 | 6 500 | 7 800 | (2) 3/4-10 | 380 | 8 |
| 316* | | 616* | 20 800 | 12 500 | 7 600 | 6 900 | 8 300 | (2) 3/4-10 | 380 | 8 |

continues on next page

* When the bearing housing can be supplied with either a two- or four-bolt base, the asterisk allowable loads for the four-bolt base option

cont. Table 3

**Safe loads and cap bolt information for SAF cast iron housings**

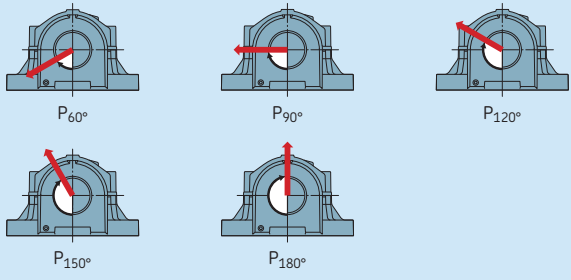



| Housing Size | | | | | Recommended safe loads $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | Cap bolt (no.) Size | Torque | SAE grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | | | | | lbf. | | | | | in. | ft.-lbs. | |
| | | 317 | | 617 | 21 200 | 12 700 | 8 000 | 7 200 | 8 600 | (2) 3/4-10 | 380 | 8 |
| | | 317* | | 617* | 23 300 | 14 000 | 8 800 | 8 000 | 9 600 | (2) 3/4-10 | 380 | 8 |
| 024 | 220 | | 520 | | 30 500 | 18 300 | 11 400 | 10 400 | 12 500 | (2) 3/4-10 | 150 | 5 |
| 024* | 220* | | 520* | | 26 700 | 16 000 | 10 000 | 9 000 | 11 000 | (2) 3/4-10 | 150 | 5 |
| | | 318 | | 618 | 28 800 | 17 300 | 11 000 | 10 000 | 12 200 | (2) 3/4-10 | 380 | 8 |
| 026 | 222 | | 522 | | 33 400 | 20 000 | 12 500 | 11 400 | 13 700 | (2) 3/4-10 | 150 | 5 |
| | 224 | | 524 | | 41 700 | 25 000 | 16 300 | 15 000 | 18 300 | (2) 1-8 | 295 | 5 |
| 028 | | 320 | | 620 | 41 700 | 25 000 | 16 300 | 15 000 | 18 300 | (2) 1-8 | 900 | 8 |
| | 226 | | 526 | | 42 500 | 25 500 | 16 600 | 15 300 | 19 000 | (2) 1-8 | 295 | 5 |
| 030/032 | | 322 | | 622 | 42 500 | 25 500 | 16 600 | 15 300 | 19 000 | (2) 1-8 | 900 | 8 |
| 034 | 228 | | 528 | | 55 900 | 33 500 | 21 200 | 19 300 | 23 200 | (2) 1-8 | 295 | 5 |
| | 230 | 324 | 530 | 624 | 51 700 | 31 000 | 19 600 | 18 000 | 21 600 | (4) 3/4-10 | 150 | 5 |
| 036/038 | 232 | 326 | 532 | 626 | 50 900 | 30 500 | 19 300 | 17 600 | 21 200 | (4) 3/4-10 | 150 | 5 |
| 040 | 234 | 328 | 534 | 628 | 52 600 | 31 500 | 19 300 | 17 300 | 20 800 | (4) 3/4-10 | 150 | 5 |
| | 236 | 330 | 536 | 630 | 52 600 | 31 500 | 19 000 | 17 000 | 20 000 | (4) 3/4-10 | 150 | 5 |
| 044 | 238 | 332 | 538 | 632 | 65 100 | 39 000 | 24 000 | 21 200 | 25 500 | (4) 7/8-9 | 200 | 5 |
| 048 | 240 | 334 | 540 | 634 | 81 800 | 49 000 | 30 500 | 27 000 | 32 500 | (4) 7/8-9 | 200 | 5 |
| 052 | 244 | 338 | 544 | 638 | 95 100 | 57 000 | 36 000 | 32 500 | 39 000 | (4) 1-8 | 295 | 5 |
| 056 | | 340 | | 640 | 101 000 | 61 000 | 38 000 | 34 000 | 41 500 | (4) 1 1/2-6 | 750 | 5 |

* When the bearing housing can be supplied with either a two- or four-bolt base, the asterisk allowable loads for the four-bolt base option

Table 4

**Safe loads and cap bolt information for SAFS cast steel housings**

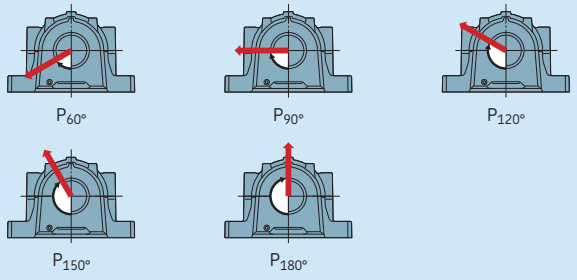



| Housing Size | | | | | Recommended safe loads $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | Cap bolt (no.) Size | Torque | SAE grade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | | | | | lbf. | | | | | in. | ft.-lbs. | |
| | | | 515 | | 23 300 | 13 400 | 8 300 | 7 500 | 9 000 | (2) 1/2-13 | 110 | 8 |
| | | | 515* | | 17 000 | 10 200 | 6 400 | 5 700 | 6 900 | (2) 1/2-13 | 110 | 8 |
| | 216 | | 516 | | 31 000 | 18 600 | 11 200 | 10 000 | 11 800 | (2) 5/8-11 | 220 | 8 |
| | 216* | | 516* | | 31 000 | 18 600 | 11 200 | 10 000 | 11 800 | (2) 5/8-11 | 220 | 8 |
| | 217 | | 517 | | 17 700 | 10 600 | 6 500 | 6 000 | 7 200 | (2) 5/8-11 | 220 | 8 |
| | 217* | | 517* | | 18 700 | 11 200 | 7 100 | 6 400 | 7 600 | (2) 5/8-11 | 220 | 8 |
| | 218 | | 518 | | 31 700 | 19 000 | 12 000 | 10 800 | 13 200 | (4) 1/2-13 | 110 | 8 |
| | 218* | | 518* | | 35 400 | 21 200 | 13 400 | 12 200 | 14 600 | (4) 1/2-13 | 110 | 8 |
| 024 | 220 | | 520 | | 31 700 | 19 000 | 11 800 | 10 800 | 12 900 | (4) 5/8-11 | 220 | 8 |
| 024* | 220* | | 520* | | 39 400 | 23 600 | 14 600 | 13 200 | 16 000 | (4) 5/8-11 | 220 | 8 |
| 026 | 222 | | 522 | | 40 000 | 24 000 | 15 000 | 13 400 | 16 300 | (4) 5/8-11 | 220 | 8 |
| | 224 | | 524 | | 55 900 | 33 500 | 21 200 | 19 600 | 24 000 | (4) 5/8-11 | 220 | 8 |
| 028 | | 320 | | 620 | 55 900 | 33 500 | 21 200 | 19 600 | 24 000 | (4) 5/8-11 | 220 | 8 |
| 030 | 226 | 322 | 526 | 622 | 69 300 | 41 500 | 28 000 | 26 500 | 34 000 | (4) 3/4-10 | 380 | 8 |
| 032 | | | | | 69 300 | 41 500 | 28 000 | 26 500 | 34 000 | (4) 3/4-10 | 380 | 8 |
| | 228 | | 528 | | 67 600 | 40 500 | 26 000 | 23 600 | 28 500 | (4) 7/8-9 | 600 | 8 |
| 034 | | | | | 67 600 | 40 500 | 26 000 | 23 600 | 28 500 | (4) 7/8-9 | 600 | 8 |
| | 230 | 324 | 530 | 624 | 88 500 | 53 000 | 33 500 | 30 500 | 36 500 | (4) 7/8-9 | 600 | 8 |
| 036 | 232 | 326 | 532 | 626 | 77 600 | 46 500 | 30 000 | 27 000 | 32 500 | (4) 7/8-9 | 600 | 8 |
| 038 | | | | | 77 600 | 46 500 | 30 000 | 27 000 | 32 500 | (4) 7/8-9 | 600 | 8 |
| 040 | 234 | 328 | 534 | 628 | 77 600 | 46 500 | 28 500 | 25 500 | 30 000 | (4) 1-8 | 900 | 8 |
| | 238 | 330 | 536 | 630 | 120 200 | 72 000 | 44 000 | 39 000 | 45 500 | (2) 1 3/8-6 | 2380 | 8 |
| 044 | 238 | 332 | 538 | 632 | 93 500 | 56 000 | 34 000 | 30 500 | 36 000 | (4) 1 1/8-7 | 1280 | 8 |
| 048 | 240 | 334 | 540 | 634 | 125 200 | 75 000 | 46 500 | 41 500 | 50 000 | (4) 1 1/4-7 | 1820 | 8 |
| 052 | 244 | 338 | 544 | 638 | 155 300 | 93 000 | 58 500 | 53 000 | 64 000 | (4) 1 1/2-6 | 3160 | 8 |
| 056 | | 340 | | 640 | 150 300 | 90 000 | 56 000 | 50 000 | 60 000 | (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 safe loads for the four-bolt base option

**Table 5**

**Safe loads and cap bolt information for SAW housings made of grey cast iron**




| Housing | Recommended safe loads | | | | | Cap bolt | | |
|---|---|---|---|---|---|---|---|---|
| Size | $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | (no.) size | Torque | SAE grade |
| – | lbf. | | | | | in. | ft.-lbs. | |
| 520 | 26 720 | 16 000 | 10 000 | 9 000 | 11 000 | (2) 3/4-10 | 380 | 8 |
| 526 | 42 585 | 25 500 | 16 600 | 15 300 | 19 000 | (2) 1-8 | 900 | 8 |
| 528 | 43 420 | 26 000 | 16 600 | 15 000 | 18 300 | (4) 7/8-9 | 165 | 2 |
| 538 | 65 130 | 39 000 | 24 000 | 21 200 | 25 500 | (4) 7/8-9 | 600 | 8 |
| 540 | 81 830 | 49 000 | 30 500 | 27 000 | 32 500 | (4) 7/8-9 | 600 | 8 |
| 544 | 95 190 | 57 000 | 36 000 | 32 500 | 39 000 | (4) 1-8 | 900 | 8 |



#### Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

When loads act at angles between 60° and 120°, or when the axial loads are greater than 25% of $P_{180°}$, the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface. Dimples indicating the recommended positions for dowel pins are cast into the base of the housing.

## Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 1**, **page 390**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor. The housing paint is heat resistant up to 175 °F material temperature or 210 °F ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

All seals, except non-contact labyrinth seals, limit the permissible operating speed. Speed limits for seals are provided in **table 2** on **page 392**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

## Shaft specifications

**Table 6** lists the recommended shaft diameter tolerances. The values $d_a$, $d_b$ and $d_c$ are listed in the product tables starting on **page 418**. The tolerance class for the bearing shaft seat should be selected from the SKF catalogue *Rolling bearings*.

## Attachment bolt recommendations

In typical applications, 8.8 class (SAE J429, Grade 5) hexagon head bolts can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger, 10.9 class (SAE J429, Grade 8) bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

**Table 6**

**Recommended shaft diameter tolerances**

| Nominal diameter | | Diameter tolerance limits | | | |
|---|---|---|---|---|---|
| | | Adapter mounting | | Cylindrical mounting | |
| | | $d_a$ | | $d_b$ and $d_c$ | |
| over | incl. | high | low | high | low |
| in. | | | | | |
| 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 |

# Lubrication

SAF and SAW pillow (plummer) blocks can accommodate grease, oil bath or circulating oil lubrication systems. Any sealing solution can be used with grease lubrication, while for oil lubrication SKF does not recommend using labyrinth rings in the LER series.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70 to 80%. For best protection again contaminants, use the SKF three-barrier solution (→ **page 39**). For additional information, contact the SKF application engineering service.

Quantities for 20% and 40% grease fills are listed in **tables 7** and **8**. The values are valid for a typical lithium grease (about 0.57 oz/in$^3$). The grease to fill labyrinth seals or taconite heavy-duty seals is not included. For sealed bearings, the values have to be adjusted.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

**Table 7**

**Initial grease fill for SAF housings**

| Housing Size | | | | | Initial fill 20 % | 40% |
|---|---|---|---|---|---|---|
| – | | | | | oz | |
| | | | 507 | | 0.7 | 1.3 |
| | | | 509 | | 0.9 | 1.8 |
| | | | 510 | | 1.1 | 2.3 |
| | | 308 | | | 1.1 | 2.3 |
| | | 309 | | 609 | 1.4 | 2.9 |
| | | | 511 | | 1.4 | 2.9 |
| | | 310 | | 610 | 1.9 | 3.8 |
| | | | 513 | | 1.9 | 3.8 |
| | | 311 | | 611 | 2.4 | 4.8 |
| | | | 515 | | 2.4 | 4.8 |
| | | 312 | | | 3.1 | 6.2 |
| | 216 | 313 | 516 | 613 | 3.1 | 6.2 |
| | 217 | | 517 | | 3.9 | 7.7 |
| | | 314 | | | 3.9 | 7.7 |
| | 218 | 315 | 518 | 615 | 5.0 | 10.1 |
| | | 316 | | 616 | 6.4 | 12.9 |
| | | 317 | | 617 | 6.4 | 12.9 |
| 024 | 220 | | 520 | | 6.4 | 12.9 |
| | | 318 | | 618 | 8.2 | 17 |
| 026 | 222 | | 522 | | 8.2 | 17 |
| 028 | 224 | 320 | 524 | 620 | 13.4 | 27 |
| 030 | 226 | 322 | 526 | 622 | 13.5 | 27 |
| 032 | | | | | 13.5 | 27 |
| 034 | 228 | | 528 | | 17 | 35 |
| | 230 | 324 | 530 | 624 | 22 | 44 |
| 036 | 232 | 326 | 532 | 626 | 28 | 57 |
| 038 | | | | | 28 | 57 |
| 040 | 234 | 328 | 534 | 628 | 31 | 62 |
| | 236 | 330 | 536 | 630 | 46 | 93 |
| 044 | 238 | 332 | 538 | 632 | 59 | 119 |
| 048 | 240 | 334 | 540 | 634 | 76 | 152 |
| 052 | 244 | 338 | 544 | 638 | 97 | 194 |
| 056 | | 340 | | 640 | 124 | 248 |

**Table 8**

**Initial grease fill for SAW housings**

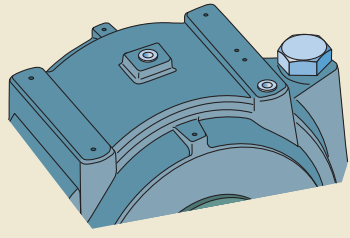
| Housing Size | | Initial fill 20 % | 40% |
|---|---|---|---|
| – | | oz | |
| 218 | 518 | 5.0 | 10.1 |
| 220 | 520 | 6.4 | 12.9 |
| 222 | 522 | 15 | 30 |
| 224 | 524 | 13.4 | 27 |
| 226 | 526 | 13.5 | 27 |
| 228 | 528 | 30 | 60 |
| 230 | 530 | 22 | 44 |
| 323 | 532 | 28 | 57 |
| 234 | 534 | 31 | 62 |
| 236 | 536 | 46 | 93 |
| 238 | 538 | 59 | 119 |
| 240 | 540 | 76 | 152 |
| 244 | 544 | 97 | 194 |

## Relubrication

SAF and SAW housing caps have two drilled and tapped lubrication holes, one centred and one offset, (→ **fig. 8**) that are sealed with standard pipe plugs.

The housings also have dimples on the cap where holes can be drilled and tapped if other positions are required. Two dimples on the outer sides of the central ridge indicate the position of lubrication holes to lubricate labyrinth seals. All SAF and SAW housing bases are equipped with a drain plug on each side (→ **fig. 9**) to purge or drain old lubricants or to serve as an outlet for circulating oil. The sump in the housing base is large enough to accommodate a sufficient quantity of lubricant to provide reliable long-term operation.

Fig. 8

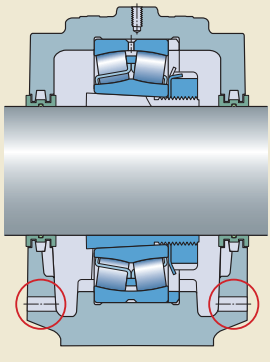


### Relubrication via the outer ring

The hole in the centre of the cap should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 10**). When applying grease via the relubrication feature, the shaft should be rotating.

Narrow bearings (dimension series 13 and 22) in the locating position can be displaced axially, so that the relubrication groove in the bearing does not line up with the relubrication hole in the housing cap. Make sure the bearing is sufficiently centred when relubricating.

Fig. 9



### Relubrication from the side

When relubricating from the side, which is typically necessary for self-aligning ball bearings and CARB toroidal roller bearings, the offset hole in the housing should be used.

SAF housings from size 507 to 528 have an integral flange that guides grease from the grease fitting directly to the rolling elements (→ **fig. 11**).

When bearings mounted on an adapter sleeve have to be relubricated from the side, the grease should be introduced from the side opposite the lock nut.

When bearings mounted at the end of a shaft have to be relubricated from the side, the grease should be applied at the point closest to the end plug.

Fig. 10

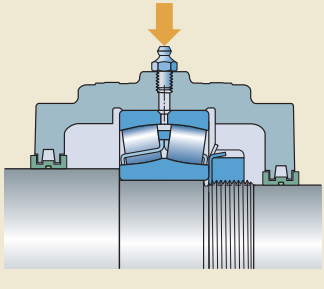


Fig. 11

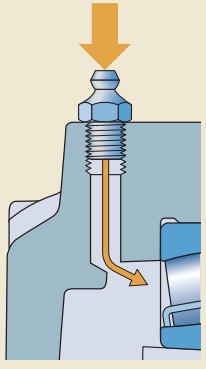


Table 9

**Oil level for SAW housings**

| Housing series | | Oil level[1] |
|---|---|---|
| 232(00) | 235(00) | |
| – | | in. |
| 23226 | 23528 | 2 1/16 |
| 23220 | 23526 | 2 3/8 |
| 23236 | | 2 7/16 |
| 23238 | 23538 | 2 1/2 |
| 23240 | 23540 | 2 1/2 |
| 23244 | 23544 | 3 3/16 |

[1] The oil level is measured from the base of the housing. Mark the static and running level on the oil level gauge.

## Oil lubrication

### Oil bath lubrication

The level of oil should be at about the centre of the lowermost rolling element when the bearing is stationary. Values for the oil level are listed in **tables 9** and **table 10** (**→ page 412**). For higher speeds, the level should be slightly lower to reduce the effects of lubricant churning – about 1/8 in. above the corner of the outer ring raceway of the bearing. For additional information contact the SKF application engineering service.

An oil sight glass should be used to monitor the oil level during operation. It can be mounted to one of the drain holes in the housing base. The static oil level should be marked on the sight glass during 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.

**Oil level for SAF housings**

| Oil level[1] | Housing series 13(00) | 15(00) | 16(00) | 222(00) | 223(00) | 225(00) | 226(00) |
|---|---|---|---|---|---|---|---|
| in. | – | | | | | | |
| 7/8 | | 1507 | | | | 22507 | |
| 31/32 | | | | | | 22509 | |
| 1 | | 1509 | | | | | |
| 1 3/32 | | | | | | 22510, 22513 | |
| 1 1/8 | | 1510 | | | | 22515 | |
| 1 3/16 | | 1513 | | | | 22511 | |
| 1 7/32 | 1308 | | | | | | |
| 1 1/4 | | 1511, 1515 | | 22216 | | 22516 | |
| 1 9/32 | | | | | 22309 | | 22609 |
| 1 5/16 | 1309 | 1516 | 1609 | | 22312 | | |
| 1 13/32 | | | | | 22313 | | 22613 |
| 1 3/8 | 1312 | | | 22217 | 22310 | 22517 | 22610 |
| 1 7/16 | 1310, 1313 | 1517 | 1610, 1613 | | 22311 | | 22611 |
| 1 15/32 | | | | | 22314 | | |
| 1 1/2 | 1311 | 1518 | 1611 | 22218 | | 22518 | |
| 1 9/16 | 1314 | | | | | | |
| 1 19/32 | | | | | 22315 | | 22615 |
| 1 21/32 | | 1520 | | 22220 | | 22520 | |
| 1 11/16 | 1315 | | 1615 | | 22316 | | 22616 |
| 1 23/32 | | | | | | | |
| 1 3/4 | | | | | 22317 | | 22617 |
| 1 25/32 | | 1522 | | 22222 | | 22520 | |
| 1 13/16 | 1316 | | 1616 | | 22308 | | |
| 1 27/32 | | | | 22224 | | 22524 | |
| 1 7/8 | 1317 | | 1617 | | 22318 | | 22618 |
| 1 15/16 | | | | | | | |
| 2 | 1318 | | 1618 | 22230 | | 22530 | |
| 2 1/32 | | | | 22228 | 22320 | 22528 | 22620 |
| 2 1/16 | | | | 22232 | | 22532 | |
| 2 5/32 | | | | 22234 | | 22534 | |
| 2 3/16 | 1320 | | 1620 | | | | |
| 2 7/32 | | | | | | | |
| 2 1/4 | | | | | | | |
| 2 11/32 | | | | 22226 | | 22526 | |
| 2 3/8 | | | | 22236 | 22324 | 22536 | 22624 |
| 2 13/32 | | | | | 22322 | | 22622 |
| 2 7/16 | | | | 22238 | 22326 | 22538 | 22626 |
| 2 15/32 | | | | 22240 | | 22540 | |
| 2 1/2 | 1322 | | 1622 | | | | |
| 2 9/16 | | | | | 22328 | | 22628 |
| 2 5/8 | | | | | 22330 | | 22630 |
| 2 11/16 | | | | | 22332 | | 22632 |
| 2 3/4 | | | | | 22334 | | 22634 |
| 2 7/8 | | | | | | | |
| 3 1/8 | | | | 22244 | | 22544 | |
| 3 3/8 | | | | | 22338 | | 22638 |
| 3 7/16 | | | | | 22340 | | 22640 |

[1] The oil level is measured from the base of the housing. Mark the min. and max. level on the oil level gauge.

**Table 10**

| 230(00)KA | C22(00) | C23(00) | C25(00) | C26(00) | C30(00)KA | **Oil level**[1] |
|---|---|---|---|---|---|---|
| | | | | | | in. |
| | | | C2507<br>C2509 | | | 7/8<br>31/32<br>1 |
| | | | C2510, C2513<br>C2515<br>C2511 | | | 1 3/32<br>1 1/8<br>1 3/16 |
| | C2216 | | C2516 | | | 1 7/32<br>1 1/4<br>1 9/32 |
| | C2217 | | C2517 | | | 1 5/16<br>1 13/32<br>1 3/8 |
| | C2218 | C2314 | C2518 | | | 1 7/16<br>1 15/32<br>1 1/2 |
| 23024 KA | C2220 | C2315 | C2520 | C2615 | | 1 9/16<br>1 19/32<br>1 21/32 |
| 23026 KA<br>23034 KA | | C2316<br>C2317 | | C2616<br>C2617 | | 1 11/16<br>1 23/32<br>1 3/4 |
| 223028 KA | C2222 | | C2520 | | | 1 25/32<br>1 13/16<br>1 27/32 |
| 23038 KA<br>23040 KA | C2230 | C2318 | C2530 | C2618 | C3038 KA<br>C3040 KA | 1 7/8<br>1 15/16<br>2 |
| 23032 KA<br>23036 KA | C2228<br>C2234 | C2320 | C2528<br>C2534 | C2620 | C3036 KA | 2 1/32<br>2 1/16<br>2 5/32 |
| 23030 KA, 23048 KA<br>23044 KA | | | | | C3048 KA<br>C3044 KA | 2 3/16<br>2 7/32<br>2 1/4 |
| | C2226 | | C2526 | | | 2 11/32<br>2 3/8<br>2 13/32 |
| | C2238 | | C2538 | | | 2 7/16<br>2 15/32<br>2 1/2 |
| | | | | | | 2 9/16<br>2 5/8<br>2 11/16 |
| 23052 KA<br>23056 KA | C2224 | | C2544 | | C3052 KA<br>C3056 KA | 2 3/4<br>2 7/8<br>3 1/8 |
| | | | | | | 3 3/8<br>3 7/16 |

8

Fig. 12

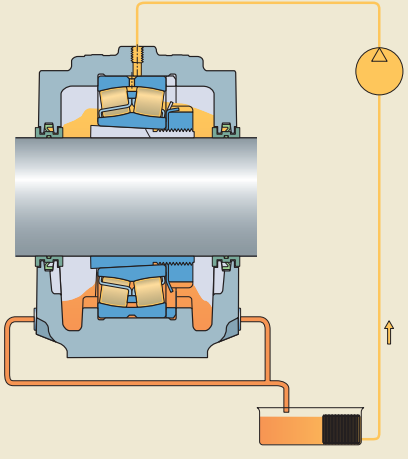
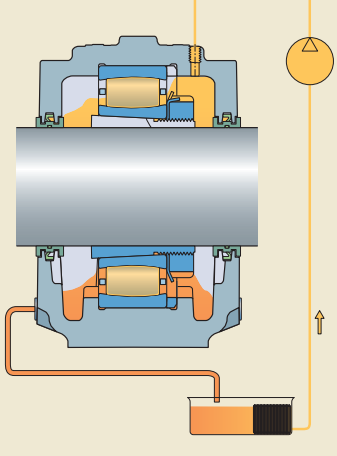


Fig. 13



### Circulating oil lubrication systems

When using a circulating oil lubrication system with SAF and SAW pillow blocks, oil is introduced through one of the inlet holes in the housing cap and drained from one or both holes in the base. For spherical roller bearings, oil should be introduced through the centre hole in the cap and drained from both sides of the base (→ **fig. 12**). For self-aligning ball bearings and CARB toroidal roller bearings, oil should be introduced through the offset hole in the cap and drained from the opposite side of the base so that oil is forced through the bearing (→ **fig. 13**).

Drains should lead downward immediately outside of the housing to prevent the accumulation of oil in the housing. Too high an oil level can result in higher operating temperatures due to churning of the lubricant. The drain piping must be adequately sized and arranged to provide adequate drainage. 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 enlarged drain holes. For additional information, contact the SKF application engineering service.

## Mounting

SAF and SAW pillow (plummer) block housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**). Mounting instructions are provided with each housing. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

### Cap bolt torque specifications

Cap bolts should be tightened to the torque values listed in **tables 3** to **5** on **pages 404** to **407**.

### Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the

housing support surface (→ *Additional housing support*, **page 407**).

## Condition monitoring

SAF and SAW pillow (plummer) block housings have appropriate positions for condition monitoring sensors. These housings provide a flat area to attach sensors for different condition monitoring equipment. (→ **fig. 14**)

**Position 1** is a measurement point perpendicular to the shaft, and should be used when the housing is hung from its support or when loads act away from the support surface.

**Position 2** is a measurement point parallel to the shaft and should be used when loads act toward the support surface.

Both positions 1 and 2 are in accordance with ISO 10816-1.

**Position 3** is a measurement point that is approximately 20° to 45° to the shaft axis.

SAF and SAW housings have dimples cast into the housing cap to show where condition monitoring sensors can be mounted for maximum effectiveness.

## Accessories

The following accessories are available for SAF and SAW pillow (plummer) block housings:

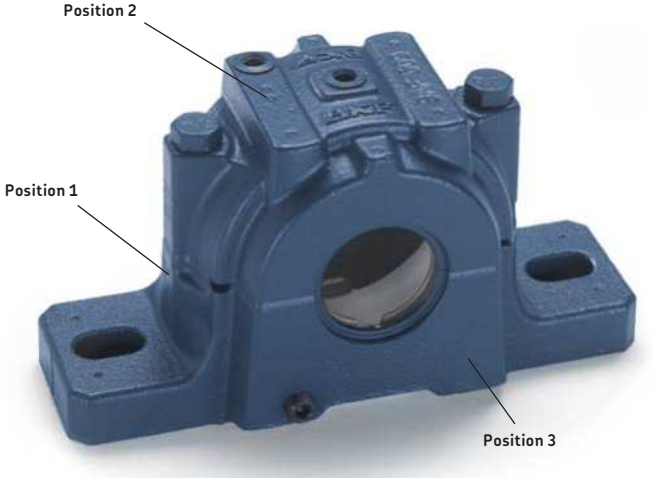
- Automatic lubricators: SKF SYSTEM 24 and SKF SYSTEM Multipoint
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).



**Fig. 14**

**Measurement points for condition monitoring**



# Ordering information

SAF and SAW pillow (plummer) blocks are typically supplied as complete kits including housing, seals, bearing, adapter sleeve (or nut and washer) and a standard stabilizing (locating) ring. A complete pillow block is specified by a designation provided in the product tables. Optional features can be specified with a prefix and suffixes. If several suffixes are required, put them in alphabetical order.

All pillow block parts can also be supplied separately. Designations for the different parts are listed in the product tables.

Optional components are listed in the product tables and in **table 2** on **page 392**.

#### Order example

A shaft with 4 3/16 inch diameter has to be supported by two SAF pillow blocks with 22224 EK spherical roller bearings on an adapter sleeve, one at the shaft end for the non-locating bearing position and one for a through shaft at the locating bearing position. The housings should be sealed with PosiTrac Plus seals.

The following items should be ordered:

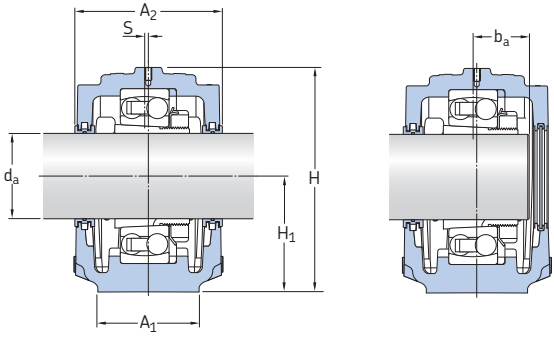
- 1 pillow block SAF 22524 TLCY
- 1 pillow block SAF 22524 TLC

The delivery will contain:

- 2 housings SAF 524
- 2 spherical roller bearings 22224 EK
- 2 adapter sleeves with lock nuts SNW 24x4.3/16
- 2 locating rings SR 24-20
- 4 labyrinth rings with O-rings LOR 113
- 3 contact elements B-10724-113
- 1 end plug EPR 14

# 8.1 SAF pillow blocks with self-aligning ball bearings on an adapter sleeve Series SAF 15(00) and 16(00)

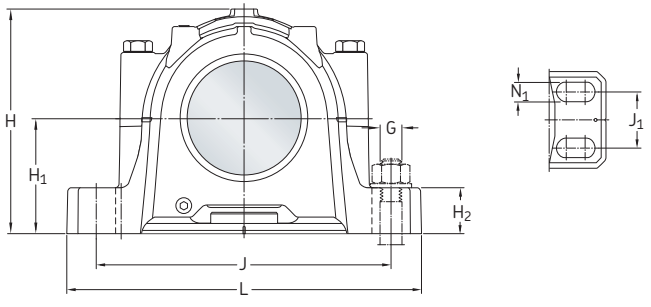
$d_a$ **1 3/16 – 2 11/16** in.




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| **Shaft diameter** $d_a$ | **Complete pillow block** | **Components** Pillow block housing | Bearing[1] | Adapter assembly | (Qty), Stabilizing Ring, reqiured[2] | Labyrinth ring (2 incl.) | **Mass** |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **1 3/16** | **SAF 1507** | SAF 507 | 1207 EKTN9 | SNW 7x1.3/16 | (1) SR 7-6 | LER 14 | 8 |
| **1 7/16** | **SAF 1509** | SAF 509 | 1209 EKTN9 | SNW 9x1.7/16 | (1) SR 9-0 | LER 17 | 12 |
| | **SAF 1609** | SAF 609 | 1309 EKTN9 | SNW 9x1.7/16 | (2) SR 1609 | LER 17 | 19 |
| **1 11/16** | **SAF 1510** | SAF 510 | 1210 EKTN9 | SNW 10x1.11/16 | (1) SR 10-8 | LER 20 | 13 |
| | **SAF 1610** | SAF 610 | 1310 EKTN9 | SNW 10x1.11/16 | (2) SR 1610 | LER 20 | 22 |
| **1 15/16** | **SAF 1511** | SAF 511 | 1211 EKTN9 | SNW 11x1.15/16 | (1) SR 11-9 | LER 24 | 16 |
| | **SAF 1611** | SAF 611 | 1311 EKTN9 | SNW 11x1.15/16 | (2) SR 1611 | LER 24 | 27 |
| | **FSAF 1611** | FSAF 611 | 1311 EKTN9 | SNW 11x1.15/16 | (2) SR 1611 | LER 24 | 27 |
| **2 3/16** | **SAF 1513** | SAF 513 | 1213 EKTN9 | SNW 13x2.3/16 | (2) SR 13-0 | LER 29 | 20 |
| | **SAF 1613** | SAF 613 | 1313 EKTN9 | SNW 13x2.3/16 | (2) SR 1613 | LOR 32 | 38 |
| | **FSAF 1613** | FSAF 613 | 1313 EKTN9 | SNW 13x2.3/16 | (2) SR 1613 | LOR 32 | 38 |
| **2 7/16** | **SAF 1515** | SAF 515 | 1215 K | SNW 15x2.7/16 | (2) SR 15-0 | LOR 37 | 28 |
| | **FSAF 1515** | FSAF 515 | 1215 K | SNW 15x2.7/16 | (2) SR 15-0 | LOR 37 | 28 |
| | **SAF 1615** | SAF 615 | 1315 K | SNW 15x2.7/16 | (2) SR 1615 | LOR 37 | 47 |
| | **FSAF 1615** | FSAF 615 | 1315 K | SNW 15x2.7/16 | (2) SR 1615 | LOR 37 | 47 |
| **2 11/16** | **SAF 1516** | SAF 516 | 1216 K | SNW 16x2.11/16 | (2) SR 1516 | LOR 44 | 37 |
| | **FSAF 1516** | FSAF 516 | 1216 K | SNW 16x2.11/16 | (2) SR 1516 | LOR 44 | 37 |
| | **SAF 1616** | SAF 616 | 1316 K | SNW 16x2.11/16 | (2) SR 1616 | LOR 44 | 66 |
| | **FSAF 1616** | FSAF 616 | 1316 K | SNW 16 2.11/16 | (2) SR 1616 | LOR 44 | 66 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] For SAF 1513,1515 and FSAF 1515 one stablilizing ring is included in each kit. For all others, discard enclosed stab rings (for SRB) and purchase stab rings separately

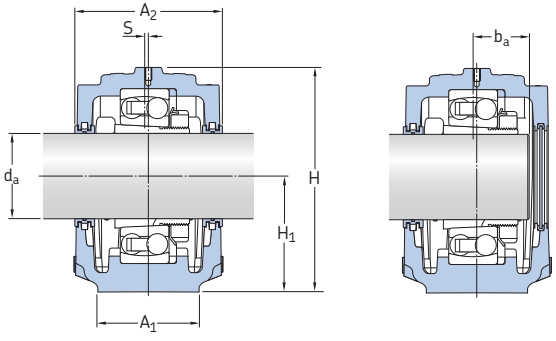



**Complete pillow block**
**Designation** Dimensions

| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | in. | | | | | | | | | | | | |
| **SAF 1507** | 2 | 3 1/4 | 3/16 | 13/16 | 3 29/32 | 2.000 | 13/16 | 5 5/8 | 6 1/8 | – | 7 1/2 | 5/8 | 1/2 |
| **SAF 1509** | 2 3/8 | 3 1/2 | 3/16 | 15/16 | 4 7/16 | 2.250 | 13/16 | 6 1/4 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 1609** | 2 3/4 | 4 1/4 | 0 | 1 1/16 | 5 5/16 | 2.750 | 1 | 7 3/8 | 7 7/8 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 1510** | 2 3/8 | 3 1/2 | 3/16 | 1 1/64 | 4 13/16 | 2.500 | 15/16 | 6 1/2 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 1610** | 2 3/4 | 4 5/8 | 0 | 1 5/32 | 5 13/16 | 3.000 | 1 1/8 | 7 3/4 | 9 | – | 10 5/8 | 3/4 | 5/8 |
| **SAF 1511** | 2 3/4 | 3 7/8 | 3/16 | 1 1/32 | 5 1/4 | 2.750 | 15/16 | 7 3/8 | 8 1/4 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 1611** | 3 1/8 | 4 7/8 | 0 | 1 3/16 | 6 3/16 | 3.250 | 1 3/16 | 9 1/2 | 8 1/8 | – | 11 | 3/4 | 5/8 |
| **FSAF 1611** | 3 1/8 | 4 7/8 | 0 | 1 3/16 | 6 3/16 | 3.250 | 1 3/16 | 9 1/2 | 8 1/8 | 2 | 11 | 5/8 | 1/2 |
| **SAF 1513** | 3 1/8 | 4 1/2 | 0 | 1 9/64 | 5 13/16 | 3.000 | 1 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **SAF 1613** | 3 1/2 | 5 5/16 | 0 | 1 11/32 | 6 19/32 | 3.500 | 1 1/4 | 11 | 9 5/8 | – | 13 | 7/8 | 3/4 |
| **FSAF 1613** | 3 1/2 | 5 5/16 | 0 | 1 11/32 | 6 19/32 | 3.500 | 1 1/4 | 11 | 9 5/8 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 1515** | 3 1/8 | 4 11/16 | 0 | 1 7/32 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **FSAF 1515** | 3 1/8 | 4 11/16 | 0 | 1 7/32 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **SAF 1615** | 3 7/8 | 5 7/8 | 0 | 1 15/32 | 7 9/16 | 4.000 | 1 5/8 | 11 5/8 | 10 3/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF 1615** | 3 7/8 | 5 7/8 | 0 | 1 15/32 | 7 9/16 | 4.000 | 1 5/8 | 11 5/8 | 10 3/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |
| **SAF 1516** | 3 1/2 | 5 | 0 | 1 1/4 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 1516** | 3 1/2 | 5 | 0 | 1 1/4 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 11/16 | 5/8 |
| **SAF 1616** | 3 7/8 | 6 1/2 | 0 | 1 1/2 | 8 1/4 | 4.250 | 1 3/4 | 12 5/8 | 10 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF 1616** | 3 7/8 | 6 1/2 | 0 | 1 1/2 | 8 1/4 | 4.250 | 1 3/4 | 12 5/8 | 10 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |

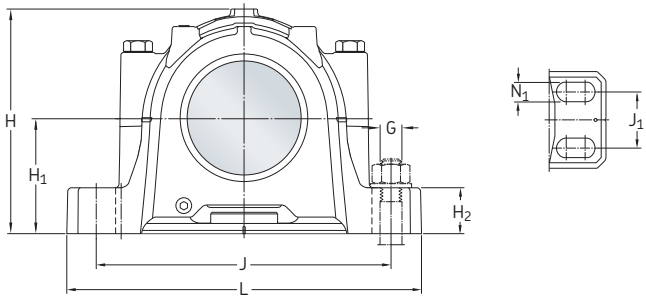
## 8.1 SAF pillow blocks with self-aligning ball bearings on an adapter sleeve Series SAF 15(00) and 16(00)

$d_a$ **2 15/16 – 3 15/16** in.




| Shaft diameter $d_a$ | Complete pillow block | Components Pillow block housing | Bearing[1] | Adapter assembly | (Qty), Stabilizing Ring, reqiured[2] | Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **2 15/16** | **SAF 1517** | SAF 517 | 1217 K | SNW 17x2.15/16 | (2) SR 1517 | LOR 53 | 38 |
| | **FSAF 1517** | FSAF 517 | 1217 K | SNW 17x2.15/16 | (2) SR 1517 | LOR 53 | 38 |
| | **SAF 1617** | SAF 617 | 1317 K | SNW 17x2.15/16 | (2) SR 1617 | LOR 184 | 69 |
| | **FSAF 1617** | FSAF 617 | 1317 K | SNW 17x2.15/16 | (2) SR 1617 | LOR 184 | 69 |
| **3 3/16** | **SAF 1518** | SAF 518 | 1218 K | SNW 18x3.3/16 | (2) SR 1518 | LOR 188 | 47 |
| | **FSAF 1518** | FSAF 518 | 1218 K | SNW 18x3.3/16 | (2) SR 1518 | LOR 188 | 47 |
| | **SAF 1618** | SAF 618 | 1318 K | SNW 18x3.3/16 | (2) SR 1618 | LOR 188 | 91 |
| **3 7/16** | **SAF 1520** | SAF 520 | 1220 K | SNW 20x3.7/16 | (2) SR 1520 | LOR 102 | 62 |
| | **FSAF 1520** | FSAF 520 | 1220 K | SNW 20x3.7/16 | (2) SR 1520 | LOR 102 | 62 |
| | **SAF 1620** | SAF 620 | 1320 K | SNW 20x3.7/16 | (2) SR 1620 | LOR 102 | 101 |
| **3 15/16** | **SAF 1522** | SAF 522 | 1222 K | SNW 22x3.15/16 | (2) SR 1522 | LOR 109 | 73 |
| | **SAF 1622** | SAF 622 | 1322 KM | SNW 22x3.15/16 | (2) SR 1622 | LOR 109 | 138 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] For SAF 1513,1515 and FSAF 1515 one stablilizing ring is included in each kit. For all others, discard enclosed stab rings (for SRB) and purchase stab rings separately

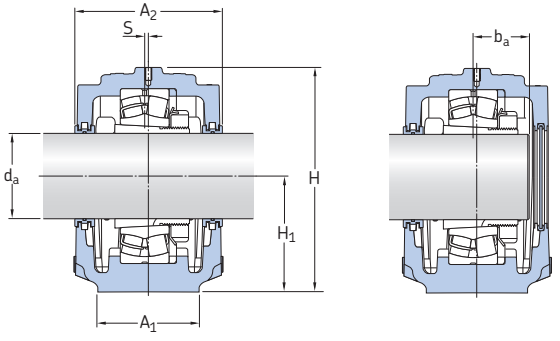



**Complete pillow block**
**Designation** Dimensions

| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | in. | | | | | | | | | | | | |
| **SAF 1517** | 3 1/2 | 5 | 0 | 1 5/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 1517** | 3 1/2 | 5 | 0 | 1 5/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 1617** | 4 3/8 | 6 3/4 | 0 | 1 9/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 1617** | 4 3/8 | 6 3/4 | 0 | 1 9/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF 1518** | 3 7/8 | 5 7/8 | 0 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 1/4 | 11 3/4 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF 1518** | 3 7/8 | 5 7/8 | 0 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |
| **SAF 1618** | 4 3/8 | 6 7/8 | 0 | 1 11/16 | 9 3/16 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **SAF 1520** | 4 3/8 | 6 1/32 | 0 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 1520** | 4 3/8 | 6 1/32 | 0 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAF 1620** | 4 3/4 | 7 5/16 | 0 | 1 27/32 | 10 3/16 | 5.250 | 2 1/8 | 14 1/2 | 13 1/4 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 1522** | 4 3/4 | 6 1/2 | 0 | 2 1/8 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 1622** | 5 1/4 | 8 1/8 | 0 | 1 5/16 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |

## 8.2 SAF and SAW pillow blocks with spherical roller bearings on an adapter sleeve
## Series SAF 225(00), 226(00), 230(00)KA and SAW series 235(00)

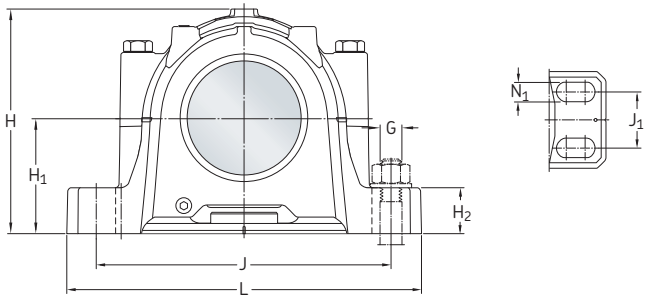
$d_a$ **1 3/16 – 2 11/16** in.




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| Shaft diameter $d_a$ | Complete pillow block | Components Pillow block housing | Bearing[1] | Adapter assembly | Stabilizing ring (1 incl.) | Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **1 3/16** | **SAF 22507** | SAF 507 | 22207 EK | SNW 7x1.3/16 | 36053-6 | LER 14 | 8 |
| **1 7/16** | **SAF 22509** | SAF 509 | 22209 EK | SNW 9x1.7/16 | SR 9-9 | LER 17 | 12 |
| | **SAF 22609** | SAF 609 | 22309 EK | SNW 109x1.7/16 | SR 11-9 | LER 17 | 20 |
| **1 11/16** | **SAF 22510** | SAF 510 | 22210 EK | SNW 10x1.11/16 | SR 10-0 | LER 20 | 13 |
| | **SAF 22610** | SAF 610 | 22310 EK | SNW 110x1.11/16 | SR 0-10 | LER 20 | 24 |
| **1 15/16** | **SAF 22511** | SAF 511 | 22211 EK | SNW 11x1.15/16 | SR 11-0 | LER 24 | 16 |
| | **SAF 22611** | SAF 611 | 22311 EK | SNW 111x1.15/16 | SR 13-11 | LER 24 | 29 |
| | **FSAF 22611** | FSAF 611 | 22311 EK | SNW 111x1.15/16 | SR 13-11 | LER 24 | 29 |
| **2 3/16** | **SAF 22513** | SAF 513 | 22213 EK | SNW 13x2.3/16 | SR 13-0 | LER 29 | 23 |
| | **SAF 22613** | SAF 613 | 22313 EK | SNW 113x2.3/16 | SR 16-13 | LOR 32 | 40 |
| | **FSAF 22613** | FSAF 613 | 22313 EK | SNW 113x2.3/16 | SR 16-13 | LOR 32 | 40 |
| **2 7/16** | **SAF 22515** | SAF 515 | 22215 EK | SNW 15x2.7/16 | SR 15-0 | LOR 37 | 28 |
| | **SAF 22615** | SAF 615 | 22315 CCK/W33 | SNW 115x2.7/16 | SR 18-15 | LOR 37 | 52 |
| | **FSAF 22515** | FSAF 515 | 22215 EK | SNW 15x2.7/16 | SR 15-0 | LOR 37 | 28 |
| | **FSAF 22615** | FSAF 615 | 22315 CCK/W33 | SNW 115x2.7/16 | SR 18-15 | LOR 37 | 52 |
| **2 11/16** | **SAF 22516** | SAF 516 | 22216 EK | SNW 16x2.11/16 | SR 16-13 | LOR 44 | 37 |
| | **SAF 22616** | SAF 616 | 22316 CCK/W33 | SNW 116x2.11/16 | SR 19-16 | LOR 44 | 71 |
| | **FSAF 22516** | FSAF 516 | 22216 EK | SNW 16x2.11/16 | SR 16-13 | LOR 44 | 37 |
| | **FSAF 22616** | FSAF 616 | 22316 CCK/W33 | SNW 116x2.11/16 | SR 19-16 | LOR 44 | 71 |

[1] Optional internal radial clearance (e.g. C3) available on request

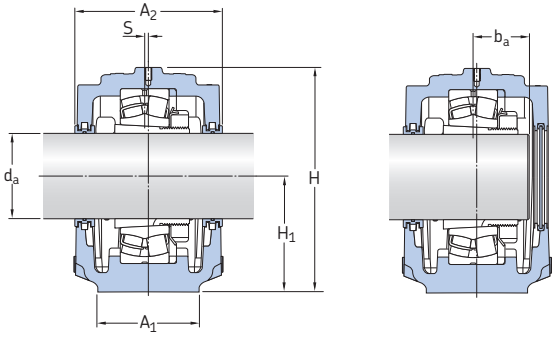



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22507** | 2 | 3 1/4 | 5/64 | 13/16 | 3 29/32 | 2.000 | 13/16 | 5 5/8 | 6 1/8 | – | 7 1/2 | 5/8 | 1/2 |
| **SAF 22509** | 2 3/8 | 3 1/2 | 7/64 | 15/16 | 4 7/16 | 2.250 | 13/16 | 6 1/4 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 22609** | 2 3/4 | 4 1/4 | 3/16 | 1 5/16 | 5 5/16 | 2.750 | 1 | 7 3/8 | 7 7/8 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 22510** | 2 3/8 | 3 1/2 | 9/64 | 1 1/64 | 4 13/16 | 2.500 | 15/16 | 6 1/2 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 22610** | 2 3/4 | 4 5/8 | 3/16 | 1 7/16 | 5 13/16 | 3.000 | 11/8 | 7 3/4 | 9 | – | 10 5/8 | 3/4 | 5/8 |
| **SAF 22511** | 2 3/4 | 3 7/8 | 1/8 | 1 13/64 | 5 1/4 | 2.750 | 15/16 | 7 3/8 | 8 1/4 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 22611** | 3 1/8 | 4 7/8 | 3/16 | 1 1/2 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **FSAF 22611** | 3 1/8 | 4 7/8 | 3/16 | 1 1/2 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | 2 | 11 | 5/8 | 1/2 |
| **SAF 22513** | 3 1/8 | 4 1/2 | 5/32 | 1 25/64 | 5 13/16 | 3.000 | 1 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **SAF 22613** | 3 1/2 | 5 5/16 | 3/16 | 1 11/16 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 22613** | 3 1/2 | 5 5/16 | 3/16 | 1 11/16 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 22515** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **SAF 22615** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF 22515** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **FSAF 22615** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |
| **SAF 22516** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF 22616** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF 22516** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 11/16 | 5/8 |
| **FSAF 22616** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |

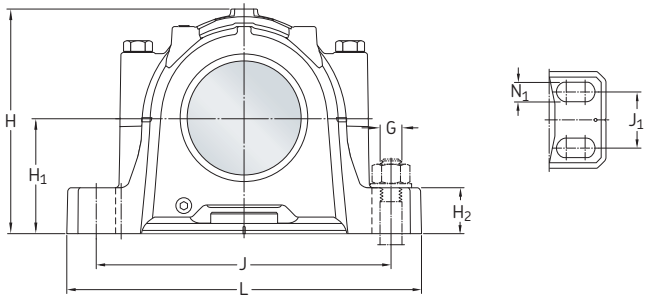
## 8.2 SAF and SAW pillow blocks with spherical roller bearings on an adapter sleeve
## Series SAF 225(00), 226(00), 230(00)KA and SAW series 235(00)

$d_a$ **2 15/16 – 4 3/16** in.




| Shaft diameter $d_a$ | Complete pillow block | Components Pillow block housing | Bearing[1] | Adapter assembly | Stabilizing ring (1 incl.) | Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **2 15/16** | **SAF 22517** | SAF 517 | 22217 EK | SNW 17x2.15/16 | SR 17-14 | LOR 53 | 39 |
| | **SAF 22617** | SAF 617 | 22317 CCK/W33 | SNW 117x2.15/16 | SR 20-17 | LOR 184 | 75 |
| | **FSAF 22517** | FSAF 517 | 22217 EK | SNW 17x2.15/16 | SR 17-14 | LOR 53 | 39 |
| | **FSAF 22617** | FSAF 617 | 22317 CCK/W33 | SNW 117x2.15/16 | SR 20-17 | LOR 184 | 75 |
| **3 3/16** | **SAF 22518** | SAF 518 | 22218 EK | SNW 18x3.3/16 | SR 18-15 | LOR 188 | 47 |
| | **SAF 22618** | SAF 618 | 22318 CCK/W33 | SNW 118x3.3/36 | SR 21-18 | LOR 188 | 97 |
| | **FSAF 22518** | FSAF 518 | 22218 EK | SNW 18x3.3/16 | SR 18-15 | LOR 188 | 47 |
| | **SAW 23518** | SAW 518 | 23218 CCK/W33 | SNW 118x3.3/16 | SR 18-15 | LOR 188 | 50 |
| **3 7/16** | **SAF 22520** | SAF 520 | 22220 EK | SNW 20x3.7/16 | SR 20-17 | LOR 102 | 62 |
| | **SAF 22620** | SAF 620 | 22320 CCK/W33 | SNW 120x3.7/16 | SR 24-20 | LOR 102 | 113 |
| | **FSAF 22520** | FSAF 520 | 22220 EK | SNW 20x3.7/16 | SR 20-17 | LOR 102 | 62 |
| | **SAW 23520** | SAW 520 | 23220 CCK/W33 | SNW 120x3.7/16 | SR 20-17 | LOR 102 | 75 |
| **3 15/16** | **SAF 22522** | SAF 522 | 22222 EK | SNW 22x3.15/16 | SR 22-19 | LOR 109 | 73 |
| | **SAF 22622** | SAF 622 | 22322 CCK/W33 | SNW 122x3.15/16 | SR 0-22 | LOR 109 | 153 |
| | **SAWS 23522** | SAWS 522 | 23222 CCK/W33 | SNW 122x3.15/16 | SR 22-19 | LOR 109 | 96 |
| **4 3/16** | **SAF 22524** | SAF 524 | 22224 EK | SNW 24x4.3/16 | SR 24-20 | LOR 113 | 104 |
| | **SAF 22624** | SAF 624 | 22324 CCK/W33 | SNW 124x4.3/16 | SR 0-24 | LOR 113 | 206 |
| | **SAF 23024 KA x 4.3/16** | SAF 024 x 4.3/16 | 23024 CCK/W33 | SNW 3024x4.3/16 | 38151-24[2] | LOR 113 | 63 |
| | **FSAF 23024 KA x 4.3/16** | FSAF 024 x 4.3/16 | 23024 CCK/W33 | SNW 3024x4.3/16 | 38151-24[2] | LOR 113 | 63 |
| | **SAW 22524** | SAW 524 | 23224 CCK/W33 | SNW 124x4.3/16 | SR 24-20 | LOR 113 | 110 |

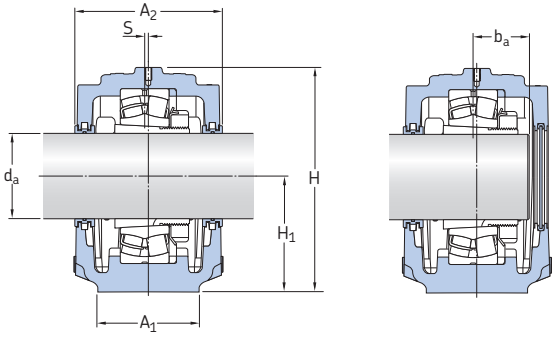
[1] Optional internal radial clearance (e.g. C3) available on request
[2] Two stabilizing rings are required, but none are included.




| Complete pillow block Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22517** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF 22617** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 22517** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **FSAF 22617** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF 22518** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 1/4 | 11 3/4 | – | 13 3/4 | 7/8 | 3/4 |
| **SAF 22618** | 4 3/8 | 6 7/8 | 3/16 | 2 3/16 | 9 1/4 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **FSAF 22518** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |
| **SAW 23518** | 3 7/8 | 5 7/8 | 3/16 | 1 29/32 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |
| **SAF 22520** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **SAF 22620** | 4 3/4 | 7 5/16 | 3/16 | 2 7/16 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **FSAF 22520** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAW 23520** | 4 3/8 | 6 13/16 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 5/8 | 1/2 |
| **SAF 22522** | 4 3/4 | 6 1/2 | 3/16 | 2 1/8 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22622** | 5 1/4 | 8 1/8 | 3/16 | 2 5/8 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |
| **SAWS 23522** | 4 3/4 | 7 7/8 | 3/16 | 2 3/82 | 9 5/8 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22524** | 4 3/4 | 7 3/8 | 3/16 | 2 9/32 | 10 1/8 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22624** | 6 1/4 | 8 3/8 | 3/16 | 2 13/16 | 12 1/2 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF 23024 KA x 4.3/16** | 4 3/8 | 6 1/8 | 0 | 1 29/32 | 8 9/16 | 4 1/2 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 23024 KA x 4.3/16** | 4 3/8 | 6 1/8 | 0 | 1 29/32 | 8 9/16 | 4 1/2 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAW 22524** | 4 3/4 | 7 3/8 | 3/16 | 2 17/32 | 10 1/8 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |

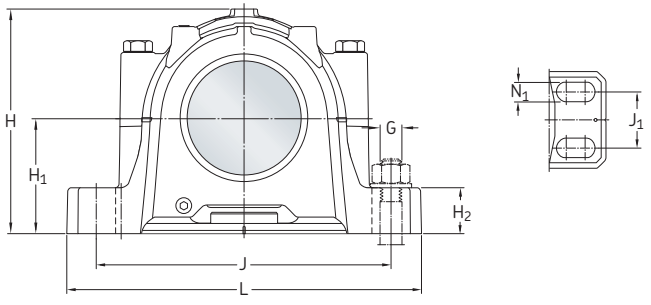
## 8.2 SAF and SAW pillow blocks with spherical roller bearings on an adapter sleeve
## Series SAF 225(00), 226(00), 230(00)KA and SAW series 235(00)

$d_a$ **4 7/16 – 5 15/16** in.




| Shaft diameter $d_a$ | Complete pillow block | Components: Pillow block housing | Components: Bearing[1] | Components: Adapter assembly | Components: Stabilizing ring (1 incl.) | Components: Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **4 7/16** | **SAF 22526** | SAF 526 | 22226 EK | SNW 26x4.7/16 | SR 26-0 | LOR 117 | 144 |
| | **SAF 22626** | SAF 626 | 22326 CCK/W33 | SNW 126x4.7/16 | SR 0-26 | LOR 117 | 233 |
| | **SAF 23026 KA x 4.7/16** | SAF 026 KA x 4.7/16 | 23026 CCK/W33 | SNW 3026x4.7/16 | 38151-26[2] | LOR 117 | 74 |
| | **SAW 23526** | SAW 526 | 23226 CCK/W33 | SNW 126x4.7/16 | SR 26-0 | LOR 117 | 155 |
| **4 15/16** | **SAF 22528** | SAF 528 | 22228 CCK/W33 | SNW 28x4.15/16 | SR 28-0 | LOR 122 | 157 |
| | **SAF 22628** | SAF 628 | 22328 CCK/W33 | SNW 128x4.15/16 | SR 0-28 | LOR 122 | 296 |
| | **SAF 23028 KA x 4.15/16** | SAF 028 KA x 4.15/16 | 23028 CCK/W33 | SNW 3028x4.15/16 | 36053-50[2] | LOR 122 | 138 |
| | **SAW 23528** | SAW 528 | 23228 CCK/W33 | SNW 128x4.15/16 | SR 28-0 | LOR 122 | 180 |
| **5 3/16** | **SAF 22530** | SAF 530 | 22230 CCK/W33 | SNW 30x5.3/16 | SR 30-0 | LOR 125 | 202 |
| | **SAF 22630** | SAF 630 | 22330 CCK/W33 | SNW 130x5.3/16 | SR 36-30 | LOR 125 | 322 |
| | **SAF 23030 KA x 5.3/16** | SAF 030 KA x 5.3/16 | 23030 CCK/W33 | SNW 3030x5.3/16 | SR 0-21[2] | LOR 125 | 149 |
| | **SAW 23530** | SAW 530 | 23230 CCK/W33 | SNW 130x5.3/16 | SR 30-0 | LOR 125 | 220 |
| **5 7/16** | **SAF 22532** | SAF 532 | 22232 CCK/W33 | SNW 32x5.7/16 | SR 32-0 | LOR 130 | 223 |
| | **SAF 22632** | SAF 632 | 22332 CCK/W33 | SNW 132x5.7/16 | SR 38-32 | LOR 130 | 401 |
| | **SAF 23032 KA x 5.7/16** | SAF 032 KA x 5.7/16 | 23032 CCK/W33 | SNW 3032x5.7/16 | 38151-32[2] | LOR 130 | 175 |
| | **SAW 23532** | SAW 532 | 23232 CCK/W33 | SNW 132x5.7/16 | SR 32-0 | LOR 130 | 240 |
| **5 15/16** | **SAF 22534** | SAF 534 | 22234 CCK/W33 | SNW 34x5.15/16 | SR 34-0 | LOR 140 | 278 |
| | **SAF 22634** | SAF 634 | 22334 CCK/W33 | SNW 134x5.15/16 | SR 40-34 | LOR 140 | 510 |
| | **SAF 23034 KA x 5.15/16** | SAF 034 KA x 5.15/16 | 23034 CCK/W33 | SNW 3034x5.15/16 | SR 0-24[2] | LOR 140 | 148 |
| | **SAW 23534** | SAW 534 | 23234 CCK/W33 | SNW 134x5.15/16 | SR 34-0 | LOR 140 | 297 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] Two stabilizing rings are required, but none are included.

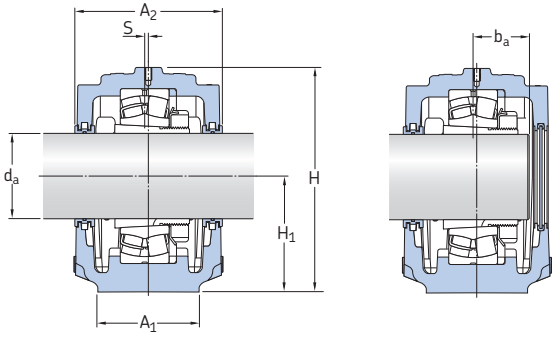



**Complete pillow block**
Designation

Dimensions

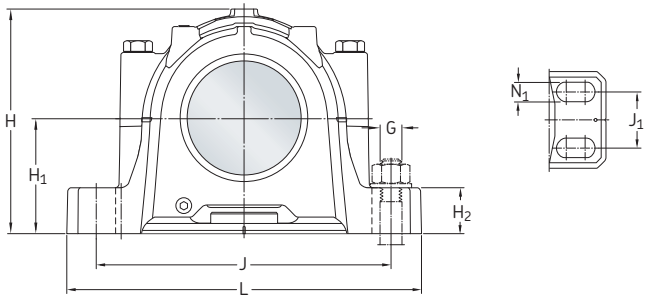
| Designation | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | in. | | | | | | | | | | | | |
| **SAF 22526** | 5 1/4 | 7 5/8 | 3/16 | 2 15/32 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF 22626** | 6 1/4 | 8 3/4 | 3/16 | 3 | 13 5/16 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF 23026 KA x 4.7/16** | 4 3/4 | 6 1/2 | 0 | 2 3/32 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAW 23526** | 5 1/4 | 7 5/8 | 3/16 | 2 3/4 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF 22528** | 5 7/8 | 7 5/8 | 3/16 | 2 29/64 | 12 1/32 | 6.000 | 2 3/8 | 15 5/8 | 17 3/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF 22628** | 6 3/4 | 9 5/8 | 3/16 | 3 1/4 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF 23028 KA x 4.15/16** | 4 3/4 | 7 3/8 | 0 | 2 5/32 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAW 23528** | 5 7/8 | 9 1/8 | 3/16 | 2 31/32 | 11 3/4 | 6.000 | 2 3/8 | 16 | 17 1/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF 22530** | 6 1/4 | 8 1/2 | 3/16 | 2 39/64 | 12 5/8 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF 22630** | 7 1/8 | 9 3/4 | 3/16 | 3 7/16 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |
| **SAF 23030 KA x 5.3/16** | 5 1/4 | 8 1/8 | 0 | 2 9/32 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |
| **SAW 23530** | 6 1/4 | 8 1/2 | 3/16 | 3 1/8 | 12 5/8 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF 22532** | 6 1/4 | 8 3/4 | 3/16 | 2 31/32 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF 22632** | 7 1/2 | 10 3/4 | 3/16 | 3 5/8 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF 23032 KA x 5.7/16** | 5 1/4 | 8 1/8 | 0 | 2 7/16 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |
| **SAW 23532** | 6 1/4 | 8 3/4 | 3/16 | 3 7/16 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF 22534** | 6 3/4 | 9 9/16 | 3/16 | 3 1/8 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF 22634** | 8 | 11 1/4 | 3/16 | 3 3/4 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 23034 KA x 5.15/16** | 5 7/8 | 7 5/8 | 0 | 2 19/32 | 12 1/32 | 6.000 | 2 3/8 | 15 5/8 | 17 3/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAW 23534** | 6 3/4 | 9 9/16 | 3/16 | 3 19/12 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |

## 8.2 SAF and SAW pillow blocks with spherical roller bearings on an adapter sleeve
## Series SAF 225(00), 226(00), 230(00)KA and SAW series 235(00)
$d_a$ **6 7/16 – 10 7/16** in.




| Shaft diameter $d_a$ | Complete pillow block | Components: Pillow block housing | Components: Bearing[1] | Components: Adapter assembly | Components: Stabilizing ring (1 incl.) | Components: Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **6 7/16** | **SAF 22536** | SAF 536 | 22236 CCK/W33 | SNW 36x6.7/16 | SR 36-30 | LOR 148 | 301 |
| | **SAF 23036 KA x 6.7/17** | SAF 036 KA x 6.7/16 | 23036 CCK/W33 | SNW 3036x6.7/16 | 38151-36[2] | LOR 148 | 209 |
| | **SAW 23536** | SAW 536 | 23236 CCK/W33 | SNW 136x6.7/16 | SR 36-30 | LOR 148 | 325 |
| **6 15/16** | **SAF 22538** | SAF 538 | 22238 CCK/W33 | SNW 38x6.15/16 | SR 38-32 | LOR 155 | 374 |
| | **SAF 22638** | SAF 638 | 22338 CCK/W33 | SNW 138x6.15/16 | SR 44-38 | LOR 155 | 609 |
| | **SAF 23038 KA x 6.15/16** | SAF 038 KA x 6.15/16 | 23038 CCK/W33 | SNW 3038x6.15/16 | 38151-38[2] | LOR 155 | 200 |
| | **SAW 23538** | SAW 538 | 23238 CCK/W33 | SNW 138x6.15/16 | SR 38-32 | LOR 155 | 430 |
| **7 3/16** | **SAF 22540** | SAF 540 | 22240 CCK/W33 | SNW 40x7.3/16 | SR 40-34 | LOR 159 | 443 |
| | **SAF 22640** | SAF 640 | 22340 CCK/W33 | SNW 140x7.3/16 | SR 0-40 | LOR 159 | 902 |
| | **SAF 23040 KA x 7.3/16** | SAF 040 KA x 7.3/16 | 23040 CCK/W33 | SNW 3040x7.3/16 | 38151-40[2] | LOR 159 | 259 |
| | **SAW 23540** | SAW 540 | 23240 CCK/W33 | SNW 140x7.3/16 | SR 40-34 | LOR 159 | 515 |
| **7 15/16** | **SAF 22544** | SAF 544 | 22244 CCK/W33 | SNW 44x7.15/16 | SR 44-38 | LOR 167 | 577 |
| | **SAF 23044 KA x 7.15/16** | SAF 044 KA x 7.15/16 | 23044 CCK/W33 | SNW 3044x7.15/16 | 36053-140[2] | LOR 167 | 386 |
| | **SAW 23544** | SAW 544 | 23244 CCK/W33 | SNW 144x7.15/16 | SR 44-38 | LOR 167 | 710 |
| **8 15/16** | **SAF 23048 KA x 8.15/16** | SAF 048 KA x 8.15/16 | 23048 CCK/W33 | SNP 3048x8.15/16 | A-8897[2] | LOR 552 | 474 |
| **9 7/16** | **SAF 23052 KA x 9.7/16** | SAF 052 KA x 9.7/16 | 23052 CCK/W33 | SNP 3052x9.7/16 | A-8898[2] | LOR 553 | 530 |
| **9 15/16** | **SAF 23056 KA x 9.15/16** | SAF 056 KA x 9.15/16 | 23056 CACK/W33 | SNP 3056x9.15/16 | A-8819[2] | LOR 607 | 800 |
| **10 7/16** | **SAF 23056 KA x 10.7/16** | SAF 056 KA x 10.7/16 | 23056 CACK/W33 | SNP 3056x10.7/16 | A-8819[2] | LOR 606 | 800 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] Two stabilizing rings are required, but none are included.

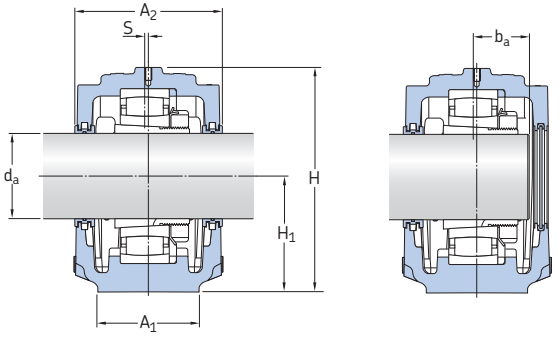



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22536** | 7 1/8 | 10 | 3/16 | 3 9/64 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |
| **SAF 23036 KA x 6.7/16** | 6 1/4 | 8 3/4 | 0 | 2 25/32 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAW 23536** | 7 1/8 | 10 | 3/16 | 3 21/32 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |
| **SAF 22538** | 7 1/2 | 10 3/4 | 3/16 | 3 19/64 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF 22638** | 8 3/4 | 12 | 3/16 | 4 1/16 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF 23038 KA x 6.15/16** | 6 1/4 | 8 3/4 | 0 | 2 13/16 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAW 23538** | 7 1/2 | 10 7/8 | 3/16 | 3 27/32 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF 22540** | 8 | 11 1/4 | 3/16 | 3 1/2 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 22640** | 9 | 12 3/8 | 3/16 | 4 1/8 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |
| **SAF 23040 KA x 7.3/16** | 6 3/4 | 9 9/16 | 0 | 3 1/32 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAW 23540** | 8 | 11 3/8 | 3/16 | 4 1/16 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 22544** | 8 3/4 | 12 | 3/16 | 3 5/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF 23044 KA x 7.15/16** | 7 1/2 | 10 3/4 | 0 | 3 7/32 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAW 23544** | 8 3/4 | 12 1/8 | 3/16 | 4 15/32 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF 23048 KA x 8.15/16** | 8 | 11 1/4 | 0 | 3 9/16 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 23052 KA x 9.7/16** | 8 3/4 | 12 | 0 | 3 7/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF 23056 KA x 9.15/16** | 9 | 12 3/8 | 0 | 4 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |
| **SAF 23056 KA x 10.7/16** | 9 | 12 3/8 | 0 | 4 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |

# 8.3 SAF pillow blocks with CARB bearings on an adapter sleeve Series SAF C25(00), C26(00) and C30(00)

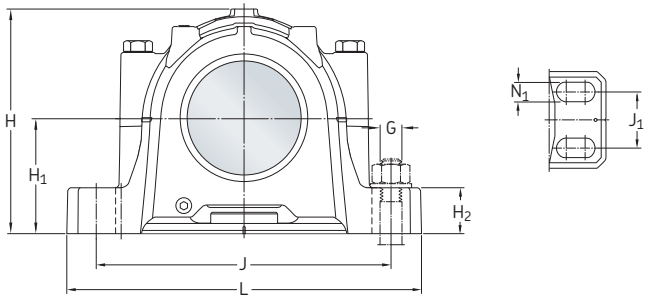
$d_a$ **1 3/16 – 3 3/16** in.




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| **Shaft diameter** d | **Complete pillow block** | **Components** Pillow block housing | Bearing[1] | Adapter assembly | Stabilizing ring (1 incl.) | Labyrinth ring (2 incl.) | **Mass** |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **1 3/16** | **SAF C2507** | SAF 507 | C 2207 KTN9 | HA 307 E | 36053-6 | LER 14 | 8 |
| **1 7/16** | **SAF C2509** | SAF 509 | C 2209 KTN9 | HA 309 E | SR 9-9 | LER 17 | 12 |
| **1 11/16** | **SAF C2510** | SAF 510 | C 2210 KTN9 | HA 310 E | SR 10-0 | LER 20 | 13 |
| **1 15/16** | **SAF C2511** | SAF 511 | C 2211 KTN9 | HA 311 E | SR 11-0 | LER 24 | 16 |
| **2 3/16** | **SAF C2513** | SAF 513 | C 2213 KTN9 | HA 313 E | SR 13-0 | LER 29 | 23 |
| **2 7/16** | **SAF C2515** | SAF 515 | C 2215 K | HA 315 E | SR 15-0 | LOR 37 | 28 |
| | **SAF C2615** | SAF 615 | C 2315 K | HA 2315 | SR 18-15 | LOR 37 | 52 |
| | **FSAF C2515** | FSAF 515 | C 2215 K | HA 315 E | SR 15-0 | LOR 37 | 28 |
| | **FSAF C2615** | FSAF 615 | C 2315 K | HA 2315 | SR 18-15 | LOR 37 | 52 |
| **2 11/16** | **SAF C2516** | SAF 516 | C 2216 K | HA 316 E | SR 16-13 | LOR 44 | 37 |
| | **SAF C2616** | SAF 616 | C 2316 K | HA 2316 | SR 19-16 | LOR 44 | 71 |
| | **FSAF C2516** | FSAF 516 | C 2216 K | HA 316 E | SR 16-13 | LOR 44 | 37 |
| | **FSAF C2616** | FSAF 616 | C 2316 K | HA 2316 | SR 19-16 | LOR 44 | 71 |
| **2 15/16** | **SAF C2517** | SAF 517 | C 2217 K | HA 317 E | SR 17-14 | LOR 53 | 38 |
| | **SAF C2617** | SAF 617 | C 2317 K | HA 2317 | SR 20-17 | LOR 184 | 75 |
| | **FSAF C2517** | FSAF 517 | C 2217 K | HA 317 E | SR 17-14 | LOR 53 | 38 |
| | **FSAF C2617** | FSAF 617 | C 2317 K | HA 2317 | SR 20-17 | LOR 184 | 75 |
| **3 3/16** | **SAF C2518** | SAF 518 | C 2218 K | HA 318 E | SR 18-15 | LOR 188 | 46 |
| | **SAF C2618** | SAF 618 | C 2318 K | HA 2318 | SR 21-18 | LOR 188 | 97 |
| | **FSAF C2518** | FSAF 518 | C 2218 K | HA 318 E | SR 18-15 | LOR 188 | 46 |

[1] Optional internal radial clearance (e.g. C3) available on request

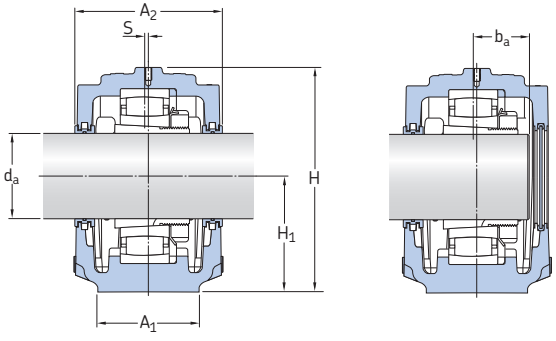



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF C2507** | 2 | 3 1/4 | 5/64 | 13/16 | 3 29/32 | 2.000 | 13/16 | 5 5/8 | 6 1/8 | – | 7 1/2 | 5/8 | 1/2 |
| **SAF C2509** | 2 3/8 | 3 1/2 | 7/64 | 1 3/32 | 4 7/16 | 2.250 | 13/16 | 6 1/4 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF C2510** | 2 3/8 | 3 1/2 | 9/64 | 1 5/32 | 4 13/16 | 2.500 | 15/16 | 6 1/2 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF C2511** | 2 3/4 | 3 7/8 | 1/8 | 1 13/64 | 5 1/4 | 2.750 | 15/16 | 7 3/8 | 8 1/4 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF C2513** | 3 1/8 | 4 1/2 | 5/32 | 1 25/64 | 5 13/16 | 3.000 | 1 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **SAF C2515** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **SAF C2615** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF C2515** | 31/8 | 4 11/16 | 1/8 | 17/16 | 6 7/32 | 3.250 | 11/8 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **FSAF C2615** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |
| **SAF C2516** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF C2616** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF C2516** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 11/16 | 5/8 |
| **FSAF C2616** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |
| **SAF C2517** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF C2617** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF C2517** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **FSAF C2617** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF C2518** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 1/4 | 11 3/4 | – | 13 3/4 | 7/8 | 3/4 |
| **SAF C2618** | 4 3/8 | 6 7/8 | 3/16 | 2 3/16 | 9 1/4 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **FSAF C2518** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |

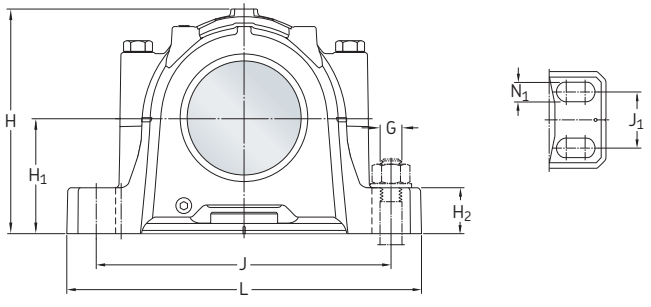
## 8.3 SAF pillow blocks with CARB bearings on an adapter sleeve
## Series SAF C25(00), C26(00) and C30(00)

$d_a$ **3 7/16 – 10 7/16** in.




| Shaft diameter d | Complete pillow block | Components Pillow block housing | Bearing[1] | Adapter assembly | Stabilizing ring (1 incl.) | Labyrinth ring (2 incl.) | Mass |
|---|---|---|---|---|---|---|---|
| in. | – | – | | | | | lb. |
| **3 7/16** | **SAF C2520** | SAF 520 | C 2220 K | HA 320 E | SR 20-17 | LOR 102 | 61 |
| | **SAF C2620** | SAF 620 | C 2320 K | HA 2320 | SR 24-20 | LOR 102 | 113 |
| | **FSAF C2520** | FSAF 520 | C 2220 K | HA 320 E | SR 20-17 | LOR 102 | 61 |
| **3 15/16** | **SAF C2522** | SAF 522 | C 2222 K | H 322 E | SR 22-19 | LOR 109 | 72 |
| **4 7/16** | **SAF C2526** | SAF 526 | C 2226 K | HA 3126 E | SR 26-0 | LOR 117 | 143 |
| **4 15/16** | **SAF C2528** | SAF 528 | C 2228 K | HA 3128 E | SR 28-0 | LOR 122 | 155 |
| **5 3/16** | **SAF C2530** | SAF 530 | C 2230 K | HA 3130 L | SR 30-0 | LOR 125 | 194 |
| **5 15/16** | **SAF C2534** | SAF 534 | C 2234 K | HA 3134 L | SR 34-0 | LOR 140 | 273 |
| **6 7/16** | **SAF C3036 KA x 6.7/16** | SAF 036 KA x 6.7/16 | C 3036 K | HA 3036 | 38151-36[2] | LOR 148 | 272 |
| **6 15/16** | **SAF C2538** | SAF 538 | C 2238 K | HA 3138 | SR 38-32 | LOR 155 | 364 |
| | **SAF C3038 KA x 6.15/16** | SAF 038 KA x 6.15/16 | C 3038 K | HA 3038 | 38151-38[2] | LOR 155 | 284 |
| **7 3/16** | **SAF C3040 KA x 7.3/16** | SAF 040 KA x 7.3/16 | C 3040 K | HA 3040 | 38151-40[2] | LOR 159 | 367 |
| **7 15/16** | **SAF C2544** | SAF 544 | C 2244 K | H 3144/201.612 | SR 44-38 | LOR 167 | 569 |
| | **SAF C3044 KA x 7.15/16** | SAF 044 KA x 7.15/16 | C 3044 K | H 3044/201.6 | 36053-140[2] | LOR 167 | 386 |
| **8 15/16** | **SAF C3048 KA x 8.15/16** | SAF 048 KA x 8.15/16 | C 3048 K | H 3048/227 | A-8897[2] | LOR 552 | 474 |
| **9 7/16** | **SAF C3052 KA x 9.7/16** | SAF 052 KA x 9.7/16 | C 3052 K | H 3052/239.7 | A-8898[2] | LOR 553 | 530 |
| **9 15/16** | **SAF C3056 KA x 9.15/16** | SAF 056 KA x 9.15/16 | C 3056 K | H 3056/252.4 | A-8819[2] | LOR 607 | 800 |
| **10 7/16** | **SAF C3056 KA x 10.7/16** | SAF 056 KA x 10.7/16 | C 3056 K | H 3056/265.1 | A-8819[2] | LOR 606 | 800 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] Two stabilizing rings are required, but none are included.



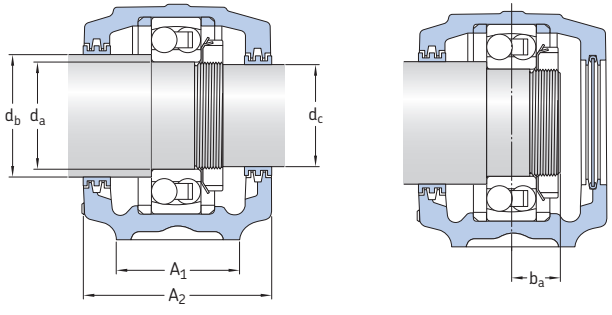

**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G | |
| – | in. | | | | | | | | | | | | | |
| **SAF C2520** | | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **SAF C2620** | | 4 3/4 | 7 5/16 | 3/16 | 2 7/16 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **FSAF C2520** | | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAF C2522** | | 4 3/4 | 6 1/2 | 3/16 | 2 1/8 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF C2526** | | 5 1/4 | 7 5/8 | 3/16 | 2 15/32 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF C2528** | | 5 7/8 | 7 5/8 | 3/16 | 2 29/64 | 12 1/32 | 6.000 | 2 3/8 | 15 5/8 | 17 3/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF C2530** | | 6 1/4 | 8 1/2 | 3/16 | 2 39/64 | 12 5/8 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF C2534** | | 6 3/4 | 9 9/16 | 3/16 | 3 1/8 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF C3036 KA x 6.7/16** | | 6 1/4 | 8 3/4 | 0 | 2 25/32 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF C2538** | | 7 1/2 | 10 3/4 | 3/16 | 3 19/64 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF C3038 KA x 6.15/16** | | 6 1/4 | 8 3/4 | 0 | 2 13/16 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF C3040 KA x 7.3/16** | | 6 3/4 | 9 9/16 | 0 | 3 1/32 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF C2544** | | 8 3/4 | 12 | 3/16 | 3 5/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF C3044 KA x 7.15/16** | | 7 1/2 | 10 3/4 | 0 | 3 7/32 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF C3048 KA x 8.15/16** | | 8 | 11 1/4 | 0 | 3 9/16 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF C3052 KA x 9.7/16** | | 8 3/4 | 12 | 0 | 3 7/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAF C3056 KA x 9.15/16** | | 9 | 12 3/8 | 0 | 4 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |
| **SAF C3056 KA x 10.7/16** | | 9 9 | 12 3/8 | 0 | 4 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |

# 8.4 SAF pillow blocks with self-aligning ball bearings with a cylindrical bore Series SAF 13(00)

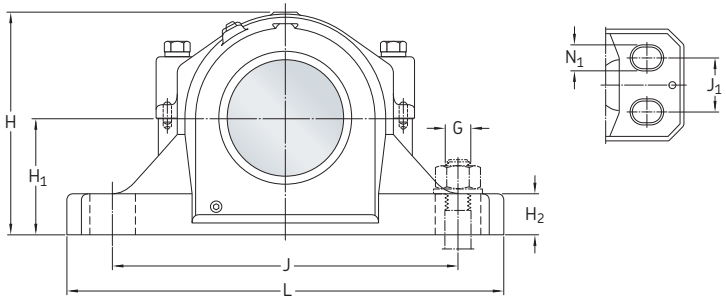
$d_a$ **40 – 110** mm

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.




| Shaft diameter | | | Complete pillow block | Components | | | | | | Lock nut | Locking washer | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring (2 required) | Labyrinth seals Shaft diameter $d_b$ | Shaft diameter $d_c$ | | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | | | | | | | |
| mm | in. | | – | – | | | | | | | | lb. |
| **40** | 1 15/16 | 1 7/16 | **SAF 1308** | SAF 308 | 1308 ETN9 | SR 1608 | LER 24 | LER 17 | | N 08 | W 08 | 14 |
| **45** | 2 1/8 | 1 11/16 | **SAF 1309** | SAF 309 | 1309 ETN9 | SR 1609 | LER 28 | LER 20 | | N 09 | W 09 | 18 |
| **50** | 2 3/8 | 1 7/8 | **SAF 1310** | SAF 310 | 1310 ETN9 | SR 1610 | LER 35 | LER 23 | | N 10 | W 10 | 21 |
| **55** | 2 9/16 | 2 1/16 | **SAF 1311** | SAF 311 | 1311 ETN9 | SR 1611 | LER 40 | LER 27 | | N 11 | W 11 | 25 |
| | | | **FSAF 1311** | FSAF 311 | 1311 ETN9 | SR 1611 | LER 40 | LER 27 | | N 11 | W 11 | 25 |
| **60** | 2 7/8 | 2 1/4 | **SAF 1312** | SAF 312 | 1312 ETN9 | SR 1612 | LOR 47 | LOR 33 | | N 12 | W 12 | 29 |
| | | | **FSAF 1312** | FSAF 312 | 1312 ETN9 | SR 1612 | LOR 47 | LOR 33 | | N 12 | W 12 | 29 |
| **65** | 3 1/16 | 2 7/16 | **SAF 1313** | SAF 313 | 1313 ETN9 | SR 1613 | LOR 55 | LOR 37 | | N 13 | W 13 | 35 |
| | | | **FSAF 1313** | FSAF 313 | 1313 ETN9 | SR 1613 | LOR 55 | LOR 37 | | N 13 | W 13 | 35 |
| **70** | 3 1/4 | 2 5/8 | **SAF 1314** | SAF 314 | 1314 | SR 1614 | LOR 64 | LOR 43 | | N 14 | W 14 | 40 |
| | | | **FSAF 1314** | FSAF 314 | 1314 | SR 1614 | LOR 64 | LOR 43 | | N 14 | W 14 | 40 |
| **75** | 3 7/16 | 2 13/16 | **SAF 1315** | SAF 315 | 1315 | SR 1615 | LOR 79 | LOR 46 | | AN 15 | W 15 | 44 |
| | | | **FSAF 1315** | FSAF 315 | 1315 | SR 1615 | LOR 79 | LOR 46 | | AN 15 | W 15 | 44 |
| **80** | 3 5/8 | 3 | **SAF 1316** | SAF 316 | 1316 | SR 1616 | LOR 84 | LOR 60 | | AN 16 | W 16 | 63 |
| | | | **FSAF 1316** | FSAF 316 | 1316 | SR 1616 | LOR 84 | LOR 60 | | AN 16 | W 16 | 63 |
| **85** | 3 15/16 | 3 3/16 | **SAF 1317** | SAF 317 | 1317 | SR 1617 | LOR 109 | LOR 188 | | AN 17 | W 17 | 66 |
| | | | **FSAF 1317** | FSAF 317 | 1317 | SR 1617 | LOR 109 | LOR 188 | | AN 17 | W 17 | 66 |
| **90** | 4 1/8 | 3 3/8 | **SAF 1318** | SAF 318 | 1318 | SR 1618 | LOR 112 | LOR 191 | | AN 18 | W 18 | 86 |
| **100** | 4 1/2 | 3 13/16 | **SAF 1320** | SAF 320 | 1320 | SR 1620 | LOR 118 | LOR 106 | | AN 20 | W 20 | 97 |
| **110** | 4 7/8 | 4 3/16 | **SAF 1322** | SAF 322 | 1322 | SR 1622 | LOR 121 | LOR 113 | | AN 22 | W 22 | 132 |

[1] Optional internal radial clearance (e.g. C3) available on request

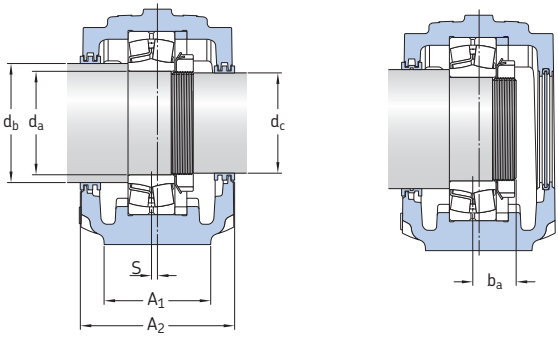



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | |
| **SAF 1308** | 2 3/8 | 4 | 1 1/64 | 4 13/16 | 2.500 | 1 | 6 1/2 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 1309** | 2 3/4 | 4 1/4 | 1 1/16 | 5 5/16 | 2.750 | 1 | 7 3/8 | 7 7/8 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 1310** | 2 3/4 | 4 5/8 | 1 5/32 | 5 13/16 | 3.000 | 11/8 | 7 3/4 | 9 | – | 10 5/8 | 3/4 | 5/8 |
| **SAF 1311** | 3 1/8 | 5 | 1 3/16 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **FSAF 1311** | 3 1/8 | 5 | 1 3/16 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | 2 | 11 | 5/8 | 1/2 |
| **SAF 1312** | 3 1/8 | 5 1/4 | 1 1/4 | 6 3/8 | 3.250 | 1 3/16 | 9 5/8 | 8 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **FSAF 1312** | 3 1/8 | 5 1/4 | 1 1/4 | 6 3/8 | 3.250 | 1 3/16 | 9 5/8 | 8 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **SAF 1313** | 3 1/2 | 5 5/16 | 1 11/32 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 1313** | 3 1/2 | 5 5/16 | 1 11/32 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 1314** | 3 1/2 | 5 3/8 | 1 3/8 | 7 3/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 1314** | 3 1/2 | 5 3/8 | 1 3/8 | 7 3/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 1315** | 3 7/8 | 5 7/8 | 1 15/32 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF 1315** | 3 7/8 | 5 7/8 | 1 15/32 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |
| **SAF 1316** | 3 7/8 | 6 1/2 | 1 1/2 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF 1316** | 3 7/8 | 6 1/2 | 1 1/2 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |
| **SAF 1317** | 4 3/8 | 6 3/4 | 1 9/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 1317** | 4 3/8 | 6 3/4 | 1 9/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF 1318** | 4 3/8 | 6 7/8 | 1 11/16 | 9 1/4 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **SAF 1320** | 4 3/4 | 7 3/8 | 1 27/32 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 1322** | 5 1/4 | 8 1/8 | 1 15/16 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |

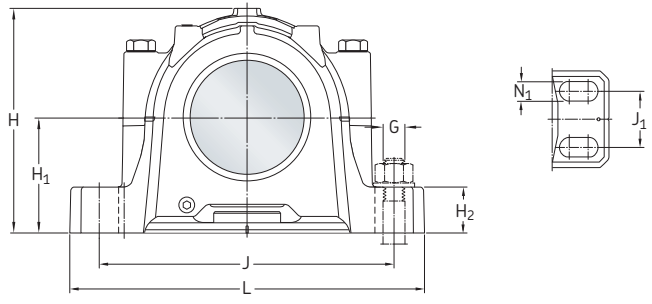
# 8.5 SAF and SAW pillow blocks with spherical roller bearings with a cylindrical bore
## Series SAF 222(00), 223(00) and SAW series 232(00)
$d_a$ **40 – 75** mm

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.




| Shaft diameter | | | Complete pillow block | Components | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring | Labyrinth seals | | Lock nut | Locking washer | |
| | | | | | | | Shaft diameter | Shaft diameter | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | (1 incl.) | $d_b$ | $d_c$ | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **40** | 1 15/16 | 1 7/16 | **SAF 22308** | SAF 308 | 22308 E | SR 10-8 | LER 24 | LER 17 | N 08 | W 08 | 15 |
| **45** | 2 1/8 | 1 11/16 | **SAF 22309** | SAF 309 | 22309 E | SR 11-9 | LER 28 | LER 20 | N 09 | W 09 | 19 |
| **50** | 2 3/8 | 1 7/8 | **SAF 22310** | SAF 310 | 22310 E | SR 0-10 | LER 35 | LER 23 | N 10 | W 10 | 22 |
| **55** | 2 9/16 | 2 1/16 | **SAF 22311** | SAF 311 | 22311 E | SR 13-11 | LER 40 | LER 27 | N 11 | W 11 | 27 |
| | | | **FSAF 22311** | FSAF 311 | 22311 E | SR 13-11 | LER 40 | LER 27 | N 11 | W 11 | 27 |
| **60** | 2 7/8 | 2 1/4 | **SAF 22312** | SAF 312 | 22312 E | SR 15-12 | LOR 47 | LOR 33 | N 12 | W 12 | 31 |
| | | | **FSAF 22312** | FSAF 312 | 22312 E | SR 15-12 | LOR 47 | LOR 33 | N 12 | W 12 | 31 |
| **65** | 3 1/16 | 2 7/16 | **SAF 22213** | SAF 213 | 22213 E | SR 13-0 | LOR 55 | LOR 37 | N 13 | W 13 | 22 |
| | | | **SAF 22313** | SAF 313 | 22313 E | SR 16-13 | LOR 55 | LOR 37 | N 13 | W 13 | 38 |
| | | | **FSAF 22313** | FSAF 313 | 22313 E | SR 16-13 | LOR 55 | LOR 37 | N 13 | W 13 | 38 |
| **70** | 3 1/4 | 2 5/8 | **SAF 22314** | SAF 314 | 22314 CC/W33 | SR 17-14 | LOR 64 | LOR 43 | N 14 | W 14 | 42 |
| | | | **FSAF 22314** | FSAF 314 | 22314 CC/W33 | SR 17-14 | LOR 64 | LOR 43 | N 14 | W 14 | 42 |
| **75** | 3 7/16 | 2 13/16 | **SAF 22215** | SAF 215 | 22215 E | SR 15-0 | LOR 79 | LOR 46 | AN 15 | W 15 | 27 |
| | | | **SAF 22315** | SAF 315 | 22315 CC/W33 | SR 18-15 | LOR 79 | LOR 46 | AN 15 | W 15 | 48 |
| | 3 7/16 | 2 13/16 | **FSAF 22215** | FSAF 215 | 22215 E | SR 15-0 | LOR 79 | LOR 46 | AN 15 | W 15 | 27 |
| | | | **FSAF 22315** | FSAF 315 | 22315 CC/W33 | SR 18-15 | LOR 79 | LOR 46 | AN 15 | W 15 | 48 |

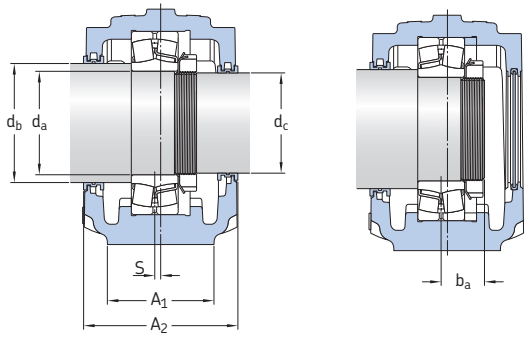
[1] Optional internal radial clearance (e.g. C3) available on request




**Complete pillow block**

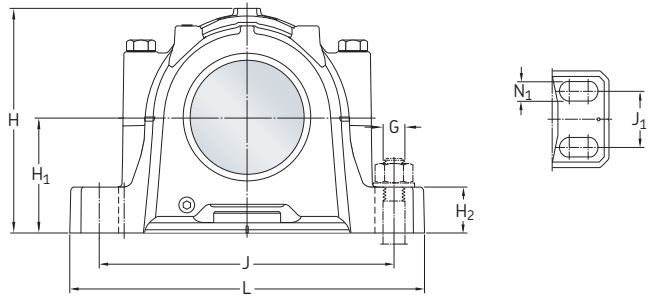
| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22308** | 2 3/8 | 4 | 3/16 | 1 5/32 | 4 13/16 | 2.500 | 1 | 6 1/2 | 7 | – | 8 1/4 | 5/8 | 1/2 |
| **SAF 22309** | 2 3/4 | 4 1/4 | 3/16 | 1 5/16 | 5 5/16 | 2.750 | 1 | 7 3/8 | 7 7/8 | – | 9 5/8 | 3/4 | 5/8 |
| **SAF 22310** | 2 3/4 | 4 5/8 | 3/16 | 1 7/16 | 5 13/16 | 3.000 | 1 1/8 | 7 3/4 | 9 | – | 10 5/8 | 3/4 | 5/8 |
| **SAF 22311** | 3 1/8 | 4 7/8 | 3/16 | 1 1/2 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **FSAF 22311** | 3 1/8 | 4 7/8 | 3/16 | 1 1/2 | 6 3/16 | 3.250 | 1 3/16 | 8 1/8 | 9 1/2 | 2 | 11 | 5/8 | 1/2 |
| **SAF 22312** | 3 1/8 | 5 1/4 | 3/16 | 1 9/16 | 6 3/8 | 3.250 | 1 3/16 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **FSAF 22312** | 3 1/8 | 5 1/4 | 3/16 | 1 9/16 | 6 3/8 | 3.250 | 1 3/16 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **SAF 22213** | 3 1/8 | 4 1/2 | 5/32 | 1 25/64 | 5 13/16 | 3.000 | 1 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **SAF 22313** | 3 1/2 | 5 5/16 | 3/16 | 1 11/16 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 22313** | 3 1/2 | 5 5/16 | 3/16 | 1 11/16 | 6 19/32 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 22314** | 3 1/2 | 5 3/8 | 3/16 | 1 11/16 | 7 3/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF 22314** | 3 1/2 | 5 3/8 | 3/16 | 1 11/16 | 7 3/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF 22215** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **SAF 22315** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF 22215** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **FSAF 22315** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |

## 8.5 SAF and SAW pillow blocks with spherical roller bearings with a cylindrical bore
## Series SAF 222(00), 223(00) and SAW series 232(00)
$d_a$ **80 – 110** mm




| Shaft diameter | | | Complete pillow block | Components | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring | Labyrinth seals | | Lock nut | Locking washer | |
| | | | | | | | Shaft diameter | Shaft diameter | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | (1 incl.) | $d_b$ | $d_c$ | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **80** | 3 5/8 | 3 | **SAF 22216** | SAF 216 | 22216 E | SR 16-13 | LOR 82 | LOR 54 | AN 16 | W 16 | 34 |
| | | | **SAF 22316** | SAF 316 | 22316 CC/W33 | SR 19-16 | LOR 84 | LOR 60 | AN 16 | W 16 | 67 |
| | 3 5/8 | 3 | **FSAF 22216** | FSAF 216 | 22216 E | SR 16-13 | LOR 82 | LOR 54 | AN 16 | W 16 | 34 |
| | | | **FSAF 22316** | FSAF 316 | 22316 CC/W33 | SR 19-16 | LOR 84 | LOR 60 | AN 16 | W 16 | 67 |
| **85** | 3 15/16 | 3 3/16 | **SAF 22217** | SAF 217 | 22217 E | SR 17-14 | LOR 89 | LOR 63 | AN 17 | W 17 | 37 |
| | | | **SAF 22317** | SAF 317 | 22317 CC/W33 | SR 20-17 | LOR 109 | LOR 188 | AN 17 | W 17 | 71 |
| | 3 15/16 | 3 3/16 | **FSAF 22217** | FSAF 217 | 22217 E | SR 17-14 | LOR 89 | LOR 63 | AN 17 | W 17 | 35 |
| | | | **FSAF 22317** | FSAF 317 | 22317 CC/W33 | SR 20-17 | LOR 109 | LOR 188 | AN 17 | W 17 | 71 |
| **90** | 4 1/8 | 3 3/8 | **SAF 22218** | SAF 218 | 22218 E | SR 18-15 | LOR 112 | LOR 191 | AN 18 | W 18 | 44 |
| | | | **SAF 22318** | SAF 318 | 22318 CC/W33 | SR 21-18 | LOR 112 | LOR 191 | AN 18 | W 18 | 92 |
| | 4 1/8 | 3 3/8 | **FSAF 22218** | FSAF 218 | 22218 E | SR 18-15 | LOR 112 | LOR 191 | AN 18 | W 18 | 44 |
| | | | **SAW 23218** | SAW 218 | 23218 CC/W33 | SR 18-15 | LOR 112 | LOR 191 | AN 18 | W 18 | 48 |
| **100** | 4 1/2 | 3 13/16 | **SAF 22220** | SAF 220 | 22220 E | SR 20-17 | LOR 118 | LOR 106 | AN 20 | W 20 | 59 |
| | | | **SAF 22320** | SAF 320 | 22320 CC/W33 | SR 24-20 | LOR 118 | LOR 106 | AN 20 | W 20 | 107 |
| | 4 1/2 | 3 13/16 | **FSAF 22220** | FSAF 220 | 22220 E | SR 20-17 | LOR 118 | LOR 106 | AN 20 | W 20 | 59 |
| | | | **SAW 23220** | SAW 220 | 23220 CC/W33 | SR 20-17 | LOR 118 | LOR 106 | AN 20 | W 20 | 80 |
| **110** | 4 7/8 | 4 3/16 | **SAF 22222** | SAF 222 | 22222 E | SR 22-19 | LOR 121 | LOR 113 | AN 22 | W 22 | 68 |
| | | | **SAF 22322** | SAF 322 | 22322 CC/W33 | SR 0-22 | LOR 121 | LOR 113 | AN 22 | W 22 | 145 |
| | | | **SAWS 23222** | SAWS 222 | 23222 CC/W33 | SR 22-19 | LOR 121 | LOR 113 | AN 22 | W 22 | 91 |

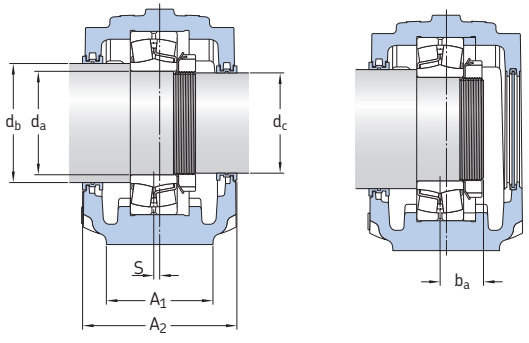
[1] Optional internal radial clearance (e.g. C3) available on request




**Complete pillow block**

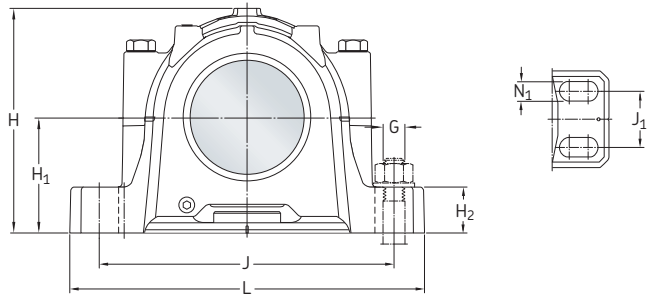
| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22216** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF 22316** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF 22216** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 11/16 | 5/8 |
| **FSAF 22316** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |
| **SAF 22217** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF 22317** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF 22217** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **FSAF 22317** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF 22218** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 1/4 | 11 3/4 | – | 13 3/4 | 7/8 | 3/4 |
| **SAF 22318** | 4 3/8 | 6 7/8 | 3/16 | 2 3/16 | 9 1/4 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **FSAF 22218** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |
| **SAW 23218** | 3 7/8 | 5 7/8 | 3/16 | 1 29/32 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |
| **SAF 22220** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **SAF 22320** | 4 3/4 | 7 5/16 | 3/16 | 2 7/16 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **FSAF 22220** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAW 23220** | 4 3/8 | 6 3/16 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 5/8 | 1/2 |
| **SAF 22222** | 4 3/4 | 6 1/2 | 3/16 | 2 1/8 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22322** | 5 1/4 | 8 1/8 | 3/16 | 2 5/8 | 11 5/16 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 1 | 7/8 |
| **SAWS 23222** | 4 3/4 | 7 7/8 | 3/16 | 2 3/8 | 9 5/8 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |

# 8.5 SAF and SAW pillow blocks with spherical roller bearings with a cylindrical bore
## Series SAF 222(00), 223(00) and SAW series 232(00)
$d_a$ **120 – 180** mm




| Shaft diameter | | | Complete pillow block | Components | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring | Labyrinth seals | | Lock nut | Locking washer | |
| | | | | | | | Shaft diameter | Shaft diameter | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | (1 incl.) | $d_b$ | $d_c$ | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **120** | 5 5/16 | 4 9/16 | **SAF 22224** | SAF 224 | 22224 E | SR 24-20 | LOR 127 | LOR 119 | AN 24 | W 24 | 97 |
| | | | **SAF 22324** | SAF 324 | 22324 CC/W33 | SR 0-24 | LOR 127 | LOR 119 | AN 24 | W 24 | 201 |
| | | | **SAW 23224** | SAW 224 | 23224 CC/W33 | SR 24-20 | LOR 127 | LOR 119 | AN 24 | W 24 | 105 |
| **130** | 5 7/8 | 4 15/16 | **SAF 22226** | SAF 226 | 22226 E | SR 26-0 | LOR 136 | LOR 122 | AN 26 | W 26 | 134 |
| | | | **SAF 22326** | SAF 326 | 22326 CC/W33 | SR 0-26 | LOR 136 | LOR 122 | AN 26 | W 26 | 221 |
| | | | **SAW 23226** | SAW 226 | 23226 CC/W33 | SR 26-0 | LOR 136 | LOR 122 | AN 26 | W 26 | 155 |
| **140** | 6 1/4 | 5 5/16 | **SAF 22228** | SAF 228 | 22228 CC/W33 | SR 28-0 | LOR 144 | LOR 127 | AN 28 | W 28 | 149 |
| | | | **SAF 22328** | SAF 328 | 22328 CC/W33 | SR 0-28 | LOR 144 | LOR 127 | AN 28 | W 28 | 283 |
| | | | **SAW 23228** | SAW 228 | 23228 CC/W33 | SR 28-0 | LOR 144 | LOR 127 | AN 28 | W 28 | 180 |
| **150** | 6 5/8 | 5 3/4 | **SAF 22230** | SAF 230 | 22230 CC/W33 | SR 30-0 | LOR 151 | LOR 134 | AN 30 | W 30 | 187 |
| | | | **SAF 22330** | SAF 330 | 22330 CC/W33 | SR 36-30 | LOR 151 | LOR 134 | AN 30 | W 30 | 313 |
| | | | **SAW 23230** | SAW 230 | 23230 CC/W33 | SR 30-0(1) | LOR 151 | LOR 134 | AN 30 | W 30 | 204 |
| **160** | 7 | 6 1/16 | **SAF 22232** | SAF 232 | 22232 CC/W33 | SR 32-0 | LOR 156 | LOR 142 | AN 32 | W 32 | 208 |
| | | | **SAF 22332** | SAF 332 | 22332 CC/W33 | SR 38-32 | LOR 156 | LOR 142 | AN 32 | W 32 | 385 |
| | | | **SAW 23232** | SAW 232 | 23232 CC/W33 | SR 32-0(1) | LOR 156 | LOR 142 | AN 32 | W 32 | 245 |
| **170** | 7 7/16 | 6 7/16 | **SAF 22234** | SAF 234 | 22234 CC/W33 | SR 34-0 | LOR 161 | LOR 148 | AN 34 | W 34 | 263 |
| | | | **SAF 22334** | SAF 334 | 22334 CC/W33 | SR 40-34 | LOR 161 | LOR 148 | AN 34 | W 34 | 449 |
| | | | **SAW 23234** | SAW 234 | 23234 CC/W3 | SR 34-0(1) | LOR 161 | LOR 148 | AN 34 | W 34 | 298 |
| **180** | 7 13/16 | 6 7/8 | **SAF 22236** | SAF 236 | 22236 CC/W33 | SR 36-30 | LOR 165 | LOR 154 | AN 36 | W 36 | 286 |
| | | | **SAW 23236** | SAW 236 | 23236 CC/W33 | SR 36-30 | LOR 165 | LOR 154 | AN 36 | W 36 | 286 |

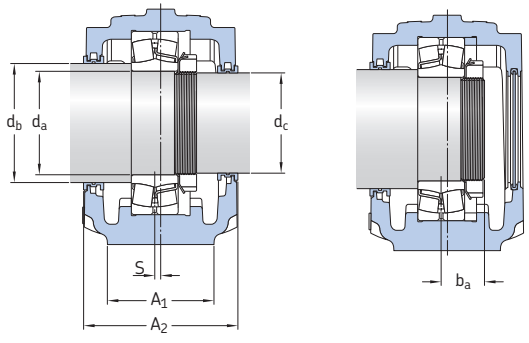
[1] Optional internal radial clearance (e.g. C3) available on request




**Complete pillow block**

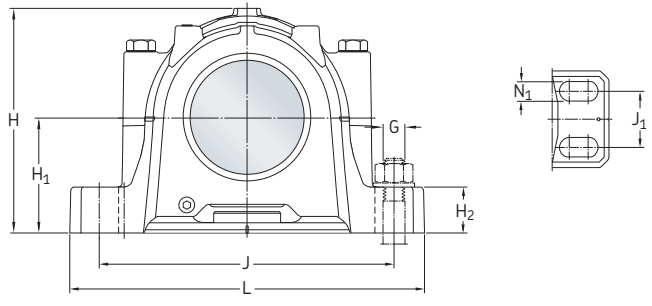
| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22224** | 4 3/4 | 7 3/8 | 3/16 | 2 9/32 | 10 1/8 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22324** | 6 1/4 | 8 3/8 | 3/16 | 2 13/16 | 12 1/2 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAW 23224** | 4 3/4 | 7 3/8 | 3/16 | 2 17/32 | 10 1/8 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF 22226** | 5 1/4 | 7 5/8 | 3/16 | 2 15/32 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF 22326** | 6 1/4 | 8 3/4 | 3/16 | 3 | 13 5/16 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAW 23226** | 5 1/4 | 7 5/8 | 3/16 | 2 3/4 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF 22228** | 5 7/8 | 7 5/8 | 3/16 | 2 29/64 | 12 1/32 | 6.000 | 2 3/8 | 15 5/8 | 17 3/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF 22328** | 6 3/4 | 9 3/8 | 3/16 | 3 1/4 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAW 23228** | 5 7/8 | 9 1/8 | 3/16 | 2 31/32 | 11 3/4 | 6.000 | 2 3/8 | 16 | 17 1/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF 22230** | 6 1/4 | 8 1/2 | 3/16 | 2 39/64 | 12 5/8 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF 22330** | 7 1/8 | 9 3/4 | 3/16 | 3 7/16 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |
| **SAW 23230** | 6 1/4 | 8 1/2 | 3/16 | 3 1/16 | 12 1/2 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 3/4 | 1 |
| **SAF 22232** | 6 1/4 | 8 3/4 | 3/16 | 2 31/32 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF 22332** | 7 1/2 | 10 3/4 | 3/16 | 3 5/8 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAW 23232** | 6 1/4 | 8 7/8 | 3/16 | 3 1/4 | 13 1/4 | 6.688 | 2 5/8 | 17 3/8 | 19 1/4 | 3 3/4 | 22 | 1 1/8 | 1 |
| **SAF 22234** | 6 3/4 | 9 9/16 | 3/16 | 3 1/8 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF 22334** | 8 | 11 1/4 | 3/16 | 3 3/4 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAW 23234** | 6 3/4 | 9 1/2 | 3/16 | 3 15/32 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF 22236** | 7 1/8 | 10 | 3/16 | 3 9/64 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |
| **SAW 23236** | 7 1/8 | 10 | 3/16 | 3 21/32 | 14 7/8 | 7.500 | 3 | 20 7/8 | 23 5/8 | 4 5/8 | 26 3/4 | 1 1/8 | 1 |

# 8.5 SAF and SAW pillow blocks with spherical roller bearings with a cylindrical bore
## Series SAF 222(00), 223(00) and SAW series 232(00)
$d_a$ **190 – 220** mm




| Shaft diameter | | | Complete pillow block | Components | | | | | Lock nut | Locking washer | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring (1 incl.) | Labyrinth seals Shaft diameter $d_b$ | Shaft diameter $d_c$ | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | | | | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **190** | 8 3/8 | 7 1/4 | **SAF 22238** | SAF 238 | 22238 CC/W33 | SR 38-32 | LOR 171 | LOR 160 | AN 38 | W 38 | 356 |
| | | | **SAF 22338** | SAF 338 | 22338 CC/W33 | SR 44-38 | LOR 171 | LOR 160 | AN 38 | W 38 | 589 |
| | | | **SAW 23238** | SAW 238 | 23238 CC/W33 | SR 38-32 | LOR 171 | LOR 160 | AN 38 | W 38 | 430 |
| **200** | 8 3/4 | 7 5/8 | **SAF 22240** | SAF 240 | 22240 CC/W33 | SR 40-34 | LOR 175 | LOR 164 | AN 40 | W 40 | 408 |
| | | | **SAF 22340** | SAF 340 | 22340 CC/W33 | SR 0-40 | LOR 175 | LOR 164 | AN 40 | W 40 | 809 |
| | | | **SAW 23240** | SAW 240 | 23240 CC/W33 | SR 40-34 | LOR 175 | LOR 164 | AN 40 | W 40 | 515 |
| **220** | 9 9/16 | 8 5/16 | **SAF 22244** | SAF 244 | 22244 CC/W33 | SR 44-38 | LOR 179 | LOR 170 | N 44 | W 44 | 535 |
| | | | **SAW 23244** | SAW 244 | 23244 CC/W33 | SR 44-38 | LOR 179 | LOR 170 | N 44 | W 44 | 710 |

[1] Optional internal radial clearance (e.g. C3) available on request

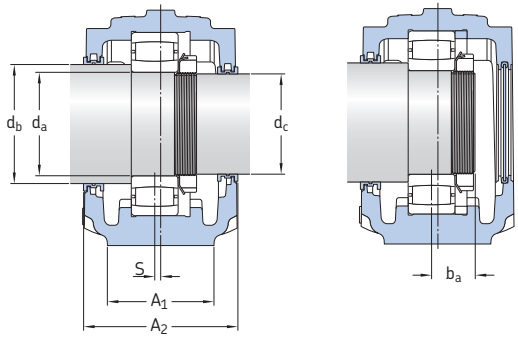



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF 22238** | 7 1/2 | 10 3/4 | 3/16 | 3 19/64 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF 22338** | 8 3/4 | 12 | 3/16 | 4 1/16 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAW 23238** | 7 1/2 | 10 7/8 | 3/16 | 3 27/32 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF 22240** | 8 | 11 1/4 | 3/16 | 3 1/2 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 22340** | 9 | 12 3/8 | 3/16 | 4 1/8 | 19 1/2 | 9.875 | 4 | 26 1/4 | 29 1/2 | 5 1/2 | 34 1/4 | 1 5/8 | 1 1/2 |
| **SAW 23240** | 8 | 11 3/8 | 3/16 | 4 1/16 | 16 1/2 | 8.250 | 3 3/8 | 22 1/2 | 25 | 5 | 29 1/2 | 1 3/8 | 1 1/4 |
| **SAF 22244** | 8 3/4 | 12 | 3/16 | 3 5/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |
| **SAW 23244** | 8 3/4 | 12 1/8 | 3/16 | 4 15/32 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |

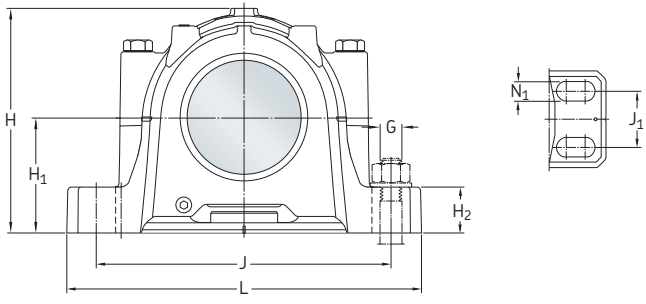
# 8.6 SAF pillow blocks with CARB bearings with a cylindrical bore
## Series SAF C22(00) and C23(00)
$d_a$ **65 – 90** mm

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.




| Shaft diameter | | | Complete pillow block | Components | | | | | Lock nut | Locking washer | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring (1 incl.) | Labyrinth seals[2] Shaft diameter $d_b$ | Shaft diameter $d_c$ | | | |
| $d_a$ | $d_b$ | $d_c$ | | | | | | | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **65** | 3 1/16 | 2 7/16 | **SAF C2213** | SAF 213 | C 2213 TN9 | SR 13-0 | LOR 55 | LOR 37 | KMFE 13 | – | 22 |
| **70** | 3 1/4 | 2 5/8 | **SAF C2314** | SAF 314 | C 2314 | SR 17-14 | LOR 64 | LOR 43 | N 14 | W 14 | 42 |
| | | | **FSAF C2314** | FSAF 314 | C 2314 | SR 17-14 | LOR 64 | LOR 43 | N 14 | W 14 | 42 |
| **75** | 3 7/16 | 2 13/16 | **SAF C2215** | SAF 215 | C 2215 | SR 15-0 | LOR 79 | LOR 46 | KMFE 15 | – | 27 |
| | | | **SAF C2315** | SAF 315 | C 2315 | SR 18-15 | LOR 79 | LOR 46 | AN 15 | W 15 | 48 |
| | 3 7/16 | 2 13/16 | **FSAF C2215** | FSAF 215 | C 2215 | SR 15-0 | LOR 79 | LOR 46 | KMFE 15 | – | 27 |
| | | | **FSAF C2315** | FSAF 315 | C 2315 | SR 18-15 | LOR 79 | LOR 46 | AN 15 | W 15 | 48 |
| **80** | 3 5/8 | 3 | **SAF C2216** | SAF 216 | C 2216 | SR 16-13 | LOR 82 | LOR 54 | KMFE 16 | – | 34 |
| | | | **SAF C2316** | SAF 316 | C 2316 | SR 19-16 | LOR 84 | LOR 60 | AN 16 | W 16 | 67 |
| | 3 5/8 | 3 | **FSAF C2216** | FSAF 216 | C 2216 | SR 16-13 | LOR 82 | LOR 54 | KMFE 16 | – | 34 |
| | | | **FSAF C2316** | FSAF 316 | C 2316 | SR 19-16 | LOR 84 | LOR 60 | AN 16 | W 16 | 67 |
| **85** | 3 15/16 | 3 3/16 | **SAF C2217** | SAF 217 | C 2217 | SR 17-14 | LOR 89 | LOR 63 | KMFE 17 | – | 35 |
| | | | **SAF C2317** | SAF 317 | C 2317 | SR 20-17 | LOR 109 | LOR 188 | AN 17 | W 17 | 71 |
| | 3 15/16 | 3 3/16 | **FSAF C2217** | FSAF 217 | C 2217 | SR 17-14 | LOR 89 | LOR 63 | KMFE 17 | – | 35 |
| | | | **FSAF C2317** | FSAF 317 | C 2317 | SR 20-17 | LOR 109 | LOR 188 | AN 17 | W 17 | 71 |
| **90** | 4 1/8 | 3 3/8 | **SAF C2218** | SAF 218 | C 2218 | SR 18-15 | LOR 112 | LOR 191 | KMFE 18 | – | 44 |
| | | | **SAF C2318** | SAF 318 | C 2318 | SR 21-18 | LOR 112 | LOR 191 | AN 18 | W 18 | 92 |
| | 4 1/8 | 3 3/8 | **FSAF C2218** | FSAF 218 | C 2218 | SR 18-15 | LOR 112 | LOR 191 | KMFE 18 | – | 44 |

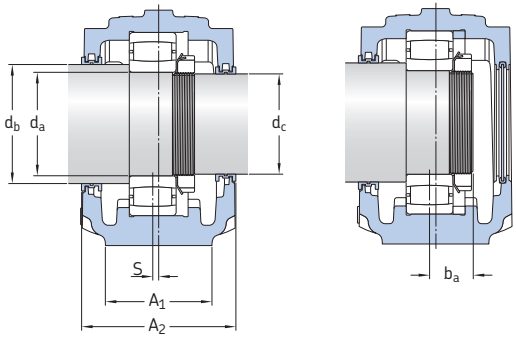
[1] Optional internal radial clearance (e.g. C3) available on request
[2] For the best possible axial displacement capability, an LER type seal can be used instead of the LOR type seal that comes standard with the housing (→ **table 1**, **page 390**)




**Complete pillow block**

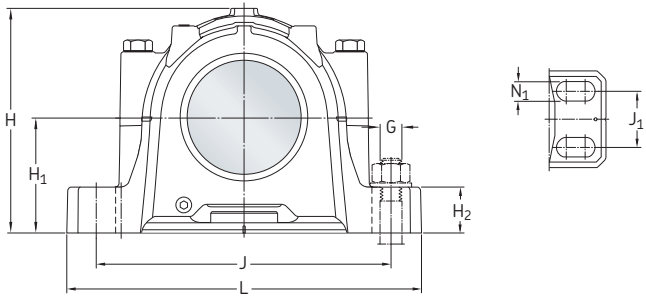
| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF C2213** | 3 1/8 | 4 1/2 | 5/32 | 1 25/64 | 5 13/16 | 3.000 | 1 | 8 1/8 | 9 1/2 | – | 11 | 3/4 | 5/8 |
| **SAF C2314** | 3 1/2 | 5 3/8 | 3/16 | 1 11/16 | 7 3/8 | 3.751 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **FSAF C2314** | 3 1/2 | 5 3/8 | 3/16 | 1 11/16 | 7 3/8 | 3.751 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **SAF C2215** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | – | 11 1/4 | 3/4 | 5/8 |
| **SAF C2315** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | – | 13 3/4 | 7/8 | 3/4 |
| **FSAF C2215** | 3 1/8 | 4 11/16 | 1/8 | 1 7/16 | 6 7/32 | 3.250 | 1 1/8 | 8 5/8 | 9 5/8 | 1 7/8 | 11 1/4 | 5/8 | 1/2 |
| **FSAF C2315** | 3 7/8 | 5 7/8 | 3/16 | 1 7/8 | 7 9/16 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 3/4 | 5/8 |
| **SAF C2216** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF C2316** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | – | 14 1/4 | 7/8 | 3/4 |
| **FSAF C2216** | 3 1/2 | 5 | 3/16 | 1 15/32 | 6 11/16 | 3.500 | 1 1/4 | 9 5/8 | 11 | 2 1/8 | 13 | 11/16 | 5/8 |
| **FSAF C2316** | 3 7/8 | 6 1/2 | 3/16 | 1 15/16 | 8 1/4 | 4.250 | 1 3/4 | 10 5/8 | 12 5/8 | 2 1/8 | 14 1/4 | 3/4 | 5/8 |
| **SAF C2217** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | – | 13 | 7/8 | 3/4 |
| **SAF C2317** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **FSAF C2217** | 3 1/2 | 5 | 3/16 | 1 9/16 | 7 1/8 | 3.750 | 1 1/4 | 9 7/8 | 11 | 2 1/8 | 13 | 3/4 | 5/8 |
| **FSAF C2317** | 4 3/8 | 6 3/4 | 3/16 | 2 1/16 | 8 3/4 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 7/8 | 3/4 |
| **SAF C2218** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 1/4 | 11 3/4 | – | 13 3/4 | 7/8 | 3/4 |
| **SAF C2318** | 4 3/8 | 6 7/8 | 3/16 | 2 3/16 | 9 3/16 | 4.750 | 2 | 12 | 13 1/2 | 2 1/4 | 15 1/2 | 7/8 | 3/4 |
| **FSAF C2218** | 3 7/8 | 5 7/8 | 3/16 | 1 3/4 | 7 19/32 | 4.000 | 1 5/8 | 10 3/8 | 11 5/8 | 2 1/8 | 13 3/4 | 11/16 | 5/8 |

# 8.6 SAF pillow blocks with CARB bearings with a cylindrical bore
## Series SAF C22(00) and C23(00)
$d_a$ **100 – 220** mm



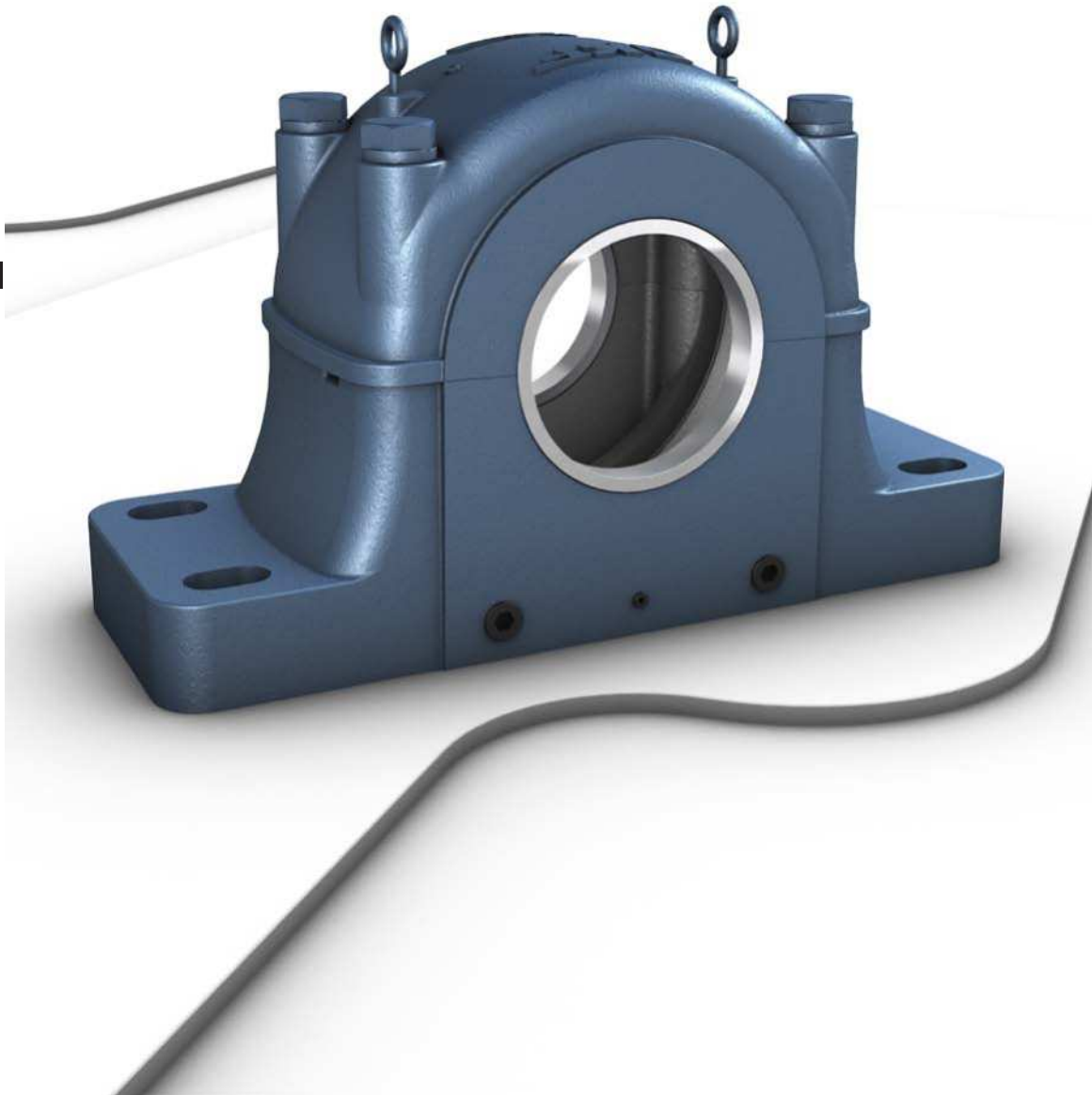

| Shaft diameter | | | Complete pillow block | Components | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring | Labyrinth seals[2] | | Lock nut | Locking washer | |
| $d_a$ | $d_b$ | $d_c$ | | | | (1 incl.) | Shaft diameter $d_b$ | Shaft diameter $d_c$ | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **100** | 4 1/2 | 3 13/16 | **SAF C2220** | SAF 220 | C 2220 | SR 20-17 | LOR 118 | LOR 106 | KMFE 20 | – | 59 |
| | | | **SAF C2320** | SAF 320 | C 2320 | SR 24-20 | LOR 118 | LOR 106 | AN 20 | W 20 | 107 |
| | 4 1/2 | 3 13/16 | **FSAF C2220** | FSAF 220 | C 2220 | SR 20-17 | LOR 118 | LOR 106 | KMFE 20 | – | 59 |
| **110** | 4 7/8 | 4 3/16 | **SAF C2222** | SAF 222 | C 2222 | SR 22-19 | LOR 121 | LOR 113 | KMFE 22 | – | 88 |
| **130** | 5 7/8 | 4 15/16 | **SAF C2226** | SAF 226 | C 2226 | SR 26-0 | LOR 136 | LOR 122 | KML 26 | MBL 26 | 134 |
| **140** | 6 1/4 | 5 5/16 | **SAF C2228** | SAF 228 | C 2228 | SR 28-0 | LOR 144 | LOR 127 | KML 28 | MBL 28 | 149 |
| **150** | 6 5/8 | 5 3/4 | **SAF C2230** | SAF 230 | C 2230 | SR 30-0 | LOR 151 | LOR 134 | KML 30 | MBL 30 | 187 |
| **170** | 7 7/16 | 6 7/16 | **SAF C2234** | SAF 234 | C 2234 | SR 34-0 | LOR 161 | LOR 148 | KML 34 | MBL 34 | 263 |
| **190** | 8 3/8 | 7 1/4 | **SAF C2238** | SAF 238 | C 2238 | SR 38-32 | LOR 171 | LOR 160 | KML 38 | MBL 38 | 356 |
| **220** | 9 9/16 | 8 5/16 | **SAF C2244** | SAF 244 | C 2244 | SR 44-38 | LOR 179 | LOR 170 | KML 44 | MBL 44 | 535 |

[1] Optional internal radial clearance (e.g. C3) available on request
[2] For improved axial displacement capability, an LER type seal can be used instead of the LOR type seal that comes standard with the housing (→ **table 1**, **page 390**)




**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | $N_1$ | G |
| – | in. | | | | | | | | | | | | |
| **SAF C2220** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | – | 15 1/4 | 1 | 7/8 |
| **SAF C2320** | 4 3/4 | 7 5/16 | 3/16 | 2 7/16 | 10 3/16 | 5.250 | 2 1/8 | 13 1/4 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **FSAF C2220** | 4 3/8 | 6 1/32 | 3/16 | 1 59/64 | 8 9/16 | 4.500 | 1 3/4 | 11 5/8 | 13 1/8 | 2 3/8 | 15 1/4 | 13/16 | 3/4 |
| **SAF C2222** | 4 3/4 | 6 1/2 | 3/16 | 2 1/8 | 9 7/16 | 4.938 | 2 | 12 5/8 | 14 1/2 | 2 3/4 | 16 1/2 | 7/8 | 3/4 |
| **SAF C2226** | 5 1/4 | 7 5/8 | 3/16 | 2 15/32 | 11 5/8 | 6.000 | 2 3/8 | 14 5/8 | 16 | 3 1/4 | 18 3/8 | 15/16 | 7/8 |
| **SAF C2228** | 5 7/8 | 7 5/8 | 3/16 | 2 29/64 | 12 1/32 | 6.000 | 2 3/8 | 15 5/8 | 17 3/8 | 3 3/8 | 20 1/8 | 1 1/8 | 1 |
| **SAF C2230** | 6 1/4 | 8 1/2 | 3/16 | 2 39/64 | 12 5/8 | 6.312 | 2 1/2 | 17 | 18 1/4 | 3 3/4 | 21 1/4 | 1 1/8 | 1 |
| **SAF C2234** | 6 3/4 | 9 9/16 | 3/16 | 3 1/8 | 14 3/16 | 7.062 | 2 3/4 | 19 3/8 | 21 5/8 | 4 1/4 | 24 3/4 | 1 1/8 | 1 |
| **SAF C2238** | 7 1/2 | 10 3/4 | 3/16 | 3 19/64 | 15 11/16 | 7.875 | 3 1/8 | 21 5/8 | 24 3/8 | 4 1/2 | 28 | 1 3/8 | 1 1/4 |
| **SAF C2244** | 8 3/4 | 12 | 3/16 | 3 5/8 | 18 5/8 | 9.500 | 3 3/4 | 24 3/4 | 27 7/8 | 5 1/4 | 32 3/4 | 1 5/8 | 1 1/2 |



# Split pillow blocks SDAF series including the extended range (inch dimensions)

**Bearing types**
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 22, 23 (SDAF)
- 30, 31, 32 (SDAF extended range)

**Shaft diameter range**
- 2 15/16 to 9 9/16 in. (SDAF)
- 9 in. and larger (SDAF extended range)

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

**Seals**
- Labyrinth
- Contact
- Heavy-duty

**Lubrication**
- Grease
- Oil

**Materials**
- Grey cast iron
- Ductile iron (Spheroidal graphite cast iron)
- Cast steel

**Mounting**
- Four-bolt mounting

**Compliance to standards**
- Not standardized

All SDAF housings, which include the SDAF extended range, are heavy duty split pillow (plummer) block housings designed for tough operating conditions where heavy loads and shock loads require a housing that is exceptionally sturdy. All SDAF housings are made to order.

SDAF housings can accommodate bearings in the 22 and 23 dimension series for shaft diameters ranging from 2 15/16 to 9 9/16 inches. SDAF extended range housings can accommodate bearings in the 30, 31 and 32 dimension series for shaft diameters ranging from 8 15/16 to 20 inches and larger. Housings in the extended range are typically customized to meet the needs of a particular application.

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

# Split pillow blocks SDAF series including the extended range (inch dimensions)


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# Designations

**Designation system for SDAF housings and standard SDAF extended range housings**

**SDAF_22634 TA**

**Housing series**

| | |
|---|---|
| **S** | Standard pillow block |
| **D** | Heavy-duty series |
| **A** | Inch dimensions |
| **F** | Labyrinth seal |

**Material**

| | |
|---|---|
| **–** | Cast iron (standard) |
| **D** | Ductile iron (spheroidal graphite cast iron) |
| **S** | Cast steel |

**Size identification**

| | |
|---|---|
| **222(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 2 |
| **223(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 3 |
| **225(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 2 |
| **226(00)** | Kits with spherical roller bearings on an adapter sleeve, diameter series 3 |
| **230(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 0 |
| **230(00) KA** | Kits with spherical roller bearings on an adapter sleeve, diameter series 0 |
| **231(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 1 |
| **231(00) KA** | Kits with spherical roller bearings on an adapter sleeve, diameter series 1 |
| **232(00)** | Kits with spherical roller bearings with a cylindrical bore, diameter series 2 |
| **232(00) KA** | Kits with spherical roller bearings on an adapter sleeve, diameter series 2 |
| **..20 to 96** | Size code, related to the bearing bore size |
| **../500 to /530** | Size code, related to the bearing bore size |

**Suffix**[1)]

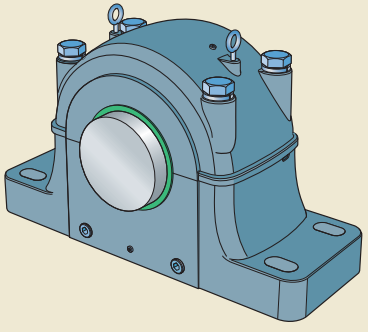
| | |
|---|---|
| **T** | Taconite seal with contact seal or bolt-on taconite seals |
| **TV** | Taconite seal with V-ring |
| **TA or TVA** | Taconite seal with button head grease fitting |
| **TB or TVB** | Taconite seal with giant button head grease fitting |
| **Y** | One end closed (i.e. supplied with end plugs) |
| **/VZ...** | Special feature / modification |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

# Standard housing design

All SDAF housings, which include the extended range, are split pillow (plummer) block housings consisting of a cap and base (→ **fig. 1**). Their robust design can accommodate shock loads and heavy loads from any direction. All SDAF housings have four holes in the base for attachment bolts and tapped holes in their caps for eye bolts.

Fig. 1



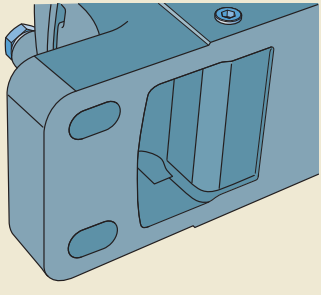
## Features and benefits

All SDAF housings share the following features and benefits:

### Stiff housing

The caps and bases are reinforced with extra material (→ **fig. 2**). This improves heat flow away from the bearing outer ring and avoids distortion of the housing bore.

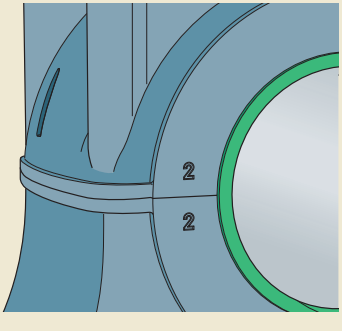
Fig. 2



### Caps and bases individually marked

The housing base and cap of all SDAF housings are matched during manufacture and are not interchangeable with the caps and bases of other housings. To help avoid mismatch, each cap and base are numbered (→ **fig. 3**).

Fig. 3



### Housing material

SDAF housings are made standard from ASTM A48 grade 30 grey cast iron, which is equivalent to ISO 185 grade 200. SDAF extended range housings are made standard from ASTM A48 grade 40 grey cast iron, which is equivalent to ISO 185 grade 275.

### Paint, corrosion protection

All SDAF housings are painted blue (RAL 5001). The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low levels of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water solvent based 1- or 2-component paints.

Unpainted surfaces are protected with a rust inhibitor. Special paints or preservatives can be supplied on request.

## Housing variants and customization

SDAF and SDAF extended range housings are available with design variants. All variants are individually engineered to meet the requirements of the specific application. Customized variants can include:

- drilled bolt holes in the base
- solid base
- special machining for lubrication
- special housing bore tolerances
- special seals
- milled base ends
- special machining for condition monitoring systems

Because of the highly customized nature of the SDAF extended range housings, the SKF application engineering service and the customer work together to specify and design each housing. This flexible approach provides a host of options tailored to the application, to provide a safe, reliable and cost-effective solution. For additional information contact the SKF application engineering service.

SDAF extended range housings are made-to-order to accommodate any special features that may be required.

### Housing material

For applications where extra strength is needed, all SDAF housings are also available in the following materials:

- ductile iron, ASTM A339 grade 60-45-10
- ductile iron, ASTM A339 grade 80-60-03
- cast steel, ASTM A27 grade U-60-30

# Sealing solutions

SDAF housings are available with the following sealing solutions (→ **fig. 4**):

- labyrinth seals (standard)
- labyrinth seals with an internal contact element (PosiTrac Plus)
- taconite heavy-duty seals
- contact seals
- end plugs (end covers)

PosiTrac, PosiTrac Plus and contact seals are not available for SDAF extended range housings.

**Table 1**, **page 456**, provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, and does not substitute for testing a seal in its application. **Tables 2** and **3** on **page 458** and **460** provide an overview about which seals fit what housing.

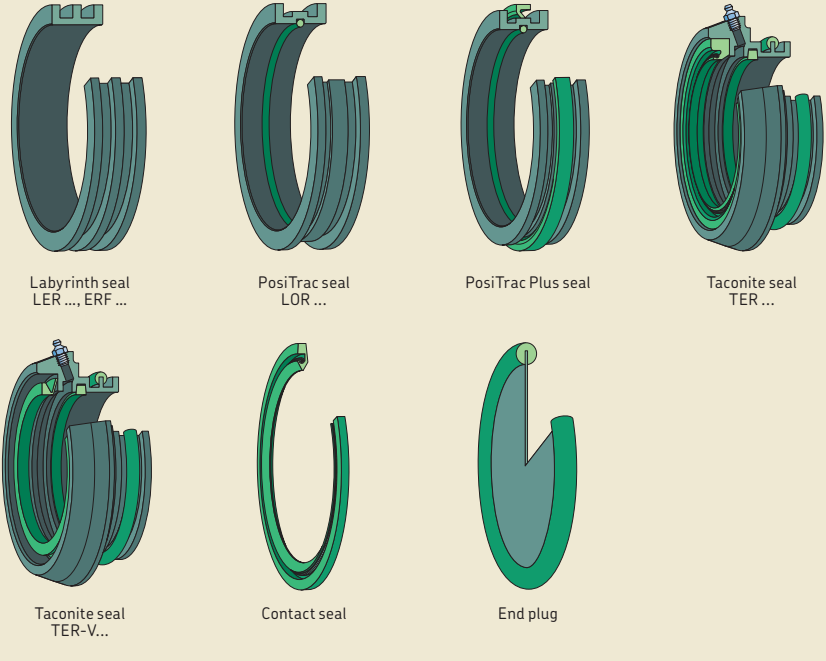
## Labyrinth seals

Labyrinth seals are the standard sealing solution for all SDAF housings. They form a multi-stage labyrinth seal with the seal grooves in the housing. If operating conditions require it, the sealing effect can be enhanced by filling the cavity between the housing and labyrinth ring with grease.

### Labyrinth seals for SDAF housings

SDAF housings are supplied with either standard labyrinth seals (designation LER) or PosiTrac labyrinth seals (designation LOR). Both are made of aluminium (→ **fig. 4**). The PosiTrac labyrinth seals have an additional O-ring made of acrylonitrile-butadiene rubber (NBR) to make the labyrinth ring rotate with the shaft. Whether the standard labyrinth seal or the PosiTrac seal are supplied depends on housing size.

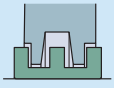
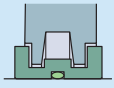
**Fig. 4**



**Labyrinth seals for SDAF extended range housings**

SDAF extended range housings are supplied as standard with labyrinth rings made of steel, designation ERF (→ **fig. 4**). Special labyrinth rings with O-ring bore inserts are available on request.

**Standard seals for SDAF and SDAF extended range plummer block housings**

| Seal |  |  |  |
|---|---|---|---|
| Type | Labyrinth | PosiTrac | PosiTrac Plus |
| Designation | LER, ERF | LOR | LOR with B-10724 |
| Material | aluminum or steel | aluminum, nitrile rubber | aluminum, nitrile rubber |
| **Application conditions and requirements** | | | |
| Temperature [°F] | –30 to 300 | –30 to 220 | –30 to 220 |
| Max. circumferential speed | same as bearing | same as bearing | limited[1] |
| Misalignment [°] | 0,3 | 0,3 | 0,3 |
| Low friction | ++ | ++ | + |
| Axial shaft displacement | ++ | + | – |
| Vertical shaft arrangement | – | – | ++ |
| Grease relubrication | + | + | + |
| Oil lubrication | – | – | ++ |
| Replacement | + | + | + |
| **Sealing suitability** | | | |
| Dust | – | – | + |
| Fine particles | – | – | + |
| Coarse particles | + | + | + |
| Chips | + | + | – |
| Liquids when sprayed | –– | –– | – |
| Direct sunlight | + | + | + |

Symbol:
- n/a not applicable
- ++ very suitable
- + suitable
- – limited suitability
- –– unsuitable

[1] For speed limits → **tables 2** and **3**.
[2] For more information, contact the SKF application engineering service.

**Table 1**

| | | | | |
|---|---|---|---|---|
|  |  |  | |  |
| Contact | Taconite | Taconite (V-ring seal) | Bolt-on taconite split | End plug |
| B-9784 | TER | TER V | –[2] | EPR, X 5217 |
| nitrile rubber | steel, felt, nitrile rubber | steel, felt, nitrile rubber | cast iron, steel, nitrile rubber | steel, nitrile rubber |
| –30 to 220 | –30 to 220 | –30 to 220 | –30 to 220 | –30 to 220 |
| limited[1] | limited[1] | limited[1] | limited | n/a |
| 0,1 | 0,1 | 0,5 | 0,5 | n/a |
| – | –– | –– | –– | n/a |
| + | + | – | – | n/a |
| ++ | ++ | ++ | ++ | ++ |
| + | ++ | ++ | ++ | n/a |
| ++ | + | + | + | ++ |
| + | + | + | + | + |
| + | ++ | ++ | ++ | + |
| + | ++ | ++ | ++ | + |
| + | ++ | ++ | ++ | + |
| – | ++ | ++ | ++ | – |
| – | + | + | + | + |
| + | + | + | + | + |

9

**Seal chart for SDAF and SDAFS split pillow block housings**

| Shaft diameter | $d_a$ 5(00) Series | $d_a$ 6(00) Series | $d_b$ 2(00) Series | $d_c$ 2(00) Series | $d_b$ 3(00) Series | $d_c$ 3(00) Series | Labyrinth seal[1] Ring seal | O-Ring for LOR[2] |
|---|---|---|---|---|---|---|---|---|
| in. | in. | | | | | | | |
| 2 13/16 | | 617 | | | | | LOR-57 | AS-568-150 |
| 2 7/8 | | 617 | | | | | LOR-58 | AS-568-150 |
| 2 15/16 | | 617* | | | | | LOR-59 | AS-568-151 |
| 3 | | 617 | | | | | LOR-60 | AS-568-151 |
| 3 1/16 | | 618 | | | | | LER-67 | – |
| 4 9/16 | 526 | 626 | | | | | LOR-119 | 38309-119 |
| 4 1/2 | | | 220* | | 320* | | LER-205 | – |
| 4 9/16 | 528 | | | 224* | | 324* | LOR-119 | 38309-119 |
| 4 7/8 | 528 | | 222* | | 322* | | LOR-121 | AS-568-159 |
| 4 15/16 | 528* | | | 226* | | 326* | LOR-122 | AS-568-159 |
| 5 1/8 | 530 | 630 | | | | | LOR-124 | AS-568-160 |
| 5 3/16 | 530* | 630* | | | | | LOR-125 | AS-568-160 |
| 5 1/4 | 530 | 630 | | | | | LOR-126 | AS-568-160 |
| 5 5/16 | 530 | 630 | 224* | 228* | 324* | | LOR-127 | 38309-127 |
| 5 3/8 | 530 | 630 | | | | | LOR-128 | AS-568-161 |
| 5 3/8 | 532 | | | | | | LOR-129 | AS-568-253 |
| 5 7/16 | 532* | | | | | | LOR-130 | AS-568-254 |
| 5 1/2 | 532 | | | | | | LOR-131 | AS-568-254 |
| 5 7/16 | | 632* | | | | | LER-211 | – |
| 5 3/4 | | | | 230* | | 330* | LOR-134 | AS-568-162 |
| 5 7/8 | | | 226* | | 326* | | LOR-136 | AS-568-163 |
| 5 15/16 | | 634* | | | | | LER-215 | – |
| 6 1/16 | | | | 232* | | | LOR-142 | 38309-142 |
| 6 1/16 | | | | | | 332* | LER-217 | – |
| 6 1/4 | | | | | 228* | | LOR 144 | AS-568-164 |
| 6 5/16 | 536 | | | | | | LOR-146 | 38309-146 |
| 6 3/8 | 536 | | | | | | LOR-147 | AS-568-260 |
| 6 7/16 | 536* | | | | | | LOR-148 | AS-568-260 |
| 6 1/2 | 536 | | | | | | LOR-149 | AS-568-260 |
| 6 7/16 | | 636* | | | | 334* | LER-220 | – |
| 6 5/8 | | | 230* | | 330* | | LOR-151 | AS-568-166 |
| 6 7/8 | | | | 236* | | | LOR-154 | AS-568-262 |
| 6 7/8 | | | | | | 336* | LER-223 | – |
| 6 15/16 | 538* | 638* | | | | | LER-224 | – |
| 7 | | | 232* | | | | LOR-156 | AS-568-262 |
| 7 | | | | | 332* | | LER-225 | – |
| 7 3/16 | 540* | 640* | | | | | LER-228 | – |
| 7 1/4 | | | | 238* | | 338* | LER-229 | – |
| 7 7/16 | | | | | 334* | | LER-230 | – |
| 7 5/8 | | | | 240* | | | LER-233 | - |
| 7 13/16 | | | 236* | | | | LOR-165 | AS-568-266 |
| 7 13/16 | | | | | 336* | | LER-234 | – |
| 7 15/16 | 544* | | | | | | LER-236 | – |
| 8 5/16 | | | | 244* | | | LER-239 | – |
| 8 3/8 | | | 238* | | 338* | | LER-240 | – |
| 8 3/4 | | | 240* | | | | LER-244 | – |
| 9 9/16 | | | 244* | | | | LER-248 | – |

* = Standard shaft diameter, all others are optional shaft diameters
1) Speed rating is the same as bearing speed rating.
2) O-ring supplied with LOR is for replacement only, AS-568-... are industry standard O-rings available.
3) B-10724-... contact seals together with LOR labyrinth seals form PosiTrac Plus seals.

Table 2

| Contact seal[3] | Speed limit[4] | Taconite seals with contact seal[5] | with V-Ring seal | Speed limit[4] | End plug |
|---|---|---|---|---|---|
| – | r/min | – | | r/min | – |
| B-10724-184 | 1 950 | TER-57 | TER-57 V | 1 050 | EPR-10 |
| B-10724-184 | 1 950 | TER-58 | TER-58 V | 1 050 | EPR-10 |
| B-10724-184 | 1 950 | TER-59 | TER-59 V | 1 050 | EPR-10 |
| B-10724-184 | 1 950 | TER-60 | TER-60 V | 1 050 | EPR-10 |
| –[6] | | TER-67 | TER-67 V | 950 | EPR-11 |
| B-10724-117 | 1 300 | TER-119 | TER-119 V | 700 | EPR-15 |
| –[6] | – | TER-205 | TER-205 V | 675 | – |
| B-10724-117 | 1 300 | TER-119 | TER-119 V | 575 | EPR-15 |
| B-10724-122 | 1 150 | TER-121 | TER-121 V | 625 | – |
| B-10724-122 | 1 150 | TER-122 | TER-122 V | 520 | EPR-27 |
| B-10724-125 | 1 075 | TER-124 | TER-124 V | 590 | EPR-16 |
| B-10724-125 | 1 075 | TER-125 | TER-125 V | 590 | EPR-16 |
| B-10724-125 | 1 075 | TER-126 | TER-126 V | 590 | EPR-16 |
| B-10724-125 | 1 075 | TER-127 | TER-127 V | 575 | – |
| B-10724-125 | 1 075 | TER-128 | TER-128 V | 575 | EPR-16 |
| B-10724-130 | 1 050 | TER-129 | TER-129 V | 575 | EPR-16 |
| B-10724-130 | 1 050 | TER-130 | TER-130 V | 560 | EPR-16 |
| B-10724-130 | 1 050 | TER-131 | TER-131 V | 560 | EPR-16 |
| –[6] | – | TER-211 | TER-211 V | 560 | EPR-17 |
| B-10724-130 | 1 050 | TER-134 | TER-134 V | 460 | EPR-17 |
| B-10724-130 | 1 050 | TER-136 | TER-136 V | 520 | – |
| –[6] | – | TER-215 | TER-215 V | 515 | EPR-19 |
| B-10724-140 | 950 | TER-142 | TER-142 V | 435 | EPR-18 |
| –[6] | – | TER-217 | TER-217 V | 435 | EPR-19 |
| B-10724-144 | 925 | TER-144 | TER-144 V | – | – |
| B-10724-148 | 875 | TER-146 | TER-146 V | 475 | EPR-19 |
| B-10724-148 | 875 | TER-147 | TER-147 V | 475 | EPR-19 |
| B-10724-148 | 875 | TER-148 | TER-148 V | 475 | EPR-19 |
| B-10724-148 | 875 | TER-149 | TER-149 V | 475 | EPR-19 |
| –[6] | – | TER-220 | TER-220 V | 475 | EPR-26 |
| B-10724-151 | 850 | TER-151 | TER-151 V | 460 | – |
| B-10724-155 | 825 | TER-154 | TER-154 V | 390 | EPR-21 |
| B-9784-130 | 750 | TER-223 | TER-223 V | 390 | EPR-21 |
| –[6] | – | TER-224 | TER-224 V | 440 | EPR-21 |
| B-10724-155 | 825 | TER-156 | TER-156 V | 435 | – |
| –[6] | – | TER-225 | TER-225 V | 435 | – |
| B-9784-140 | 800 | TER-228 | TER-228 V | 425 | EPR-22 |
| B-9784-141 | 700 | TER-229 | TER-229 V | 365 | EPR-22 |
| –[6] | – | TER-230 | TER-230 V | 410 | – |
| B-9784-146 | 650 | TER-233 | TER-233 V | 350 | EPR-23 |
| B-17024-167 | 725 | TER-165 | TER-165 V | 390 | – |
| B-9784-148 | 750 | TER-234 | TER-234 V | 390 | – |
| –[6] | – | TER-236 | TER-236 V | 385 | EPR-24 |
| –[6] | – | TER-239 | TER-239 V | 315 | EPR-25 |
| –[6] | – | TER-240 | TER-240 V | 365 | – |
| B-9784-159 | 650 | TER-244 | TER-244 V | 350 | – |
| –[6] | – | TER-248 | TER-248 V | 315 | – |

[4] For stepped shaft housing designs, the largest shaft diameter defines the speed limit.
[5] Most taconite seals are made to order; contact SKF for availability, all V ring versions are made to order.
[6] For more information contact the SKF application engineering service.

Table 3

**Seal chart for SDAF extended range housings**

| Shaft diameter | $d_a$ 230(00) Series | $d_a$ 231(00) Series | $d_a$ 232(00) Series | Labyrinth seal[1] Ring seal | Taconite seal[2] with contact seal | with V-ring seal | Speed limit | End plug |
|---|---|---|---|---|---|---|---|---|
| in. | – | | | – | – | | r/min. | – |
| **8 15/16** | | | 3248 KA*[3] | 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*[3] | 3252 KA*[3] | 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 |
| **14** | 3076 KA | 3176 KA | | ERF-876 | TER-876 | TER-876 V | 215 | X-5217-12 |
| **14 15/16** | 3080 KA*[3] | | | ERF-882 | TER-882 | TER-882 V | 200 | – |
| **14 15/16** | | 3180 KA*[3] | 3280 KA*[3] | ERF-976 | TER-976 | TER-976 V | 200 | – |
| **15** | 3080 KA*[3] | | | ERF-847 | TER-847 | TER-847 V | 200 | X-5217-21 |
| **15 3/4** | 3084 KA*[3] | | | ERF-969 | TER-969 | TER-969 V | 185 | X-5217-23 |
| **15 3/4** | | 3184 KA*[3] | 3284 KA*[3] | ERF-907 | TER-907 | TER-907 V | 185 | X-5217-5 |
| **16 1/2** | 3088 KA*[3] | 3188 KA*[3] | 3288 KA*[3] | ERF-958 | TER-958 | TER-958 V | 180 | – |
| **17** | 3092 KA*[3] | 3192 KA*[3] | | ERF-838 | TER-838 | TER-838 V | 175 | X-5217-48 |
| **18** | 3096 KA*[3] | 3196 KA*[3] | | ERF-888 | TER-888 | TER-888 V | 170 | – |
| **18 1/2** | 230/500 KA*[3] | | | ERF-978 | TER-978 | TER-978 V | 170 | – |
| **19 1/2** | 230/500 KA*[3] | | | 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
2) Bolt-on taconite seals should be used when taconite seals in the TER series are not available.
3) Contact the SKF application engineering service to review alternative optional shaft diameters as special machining of housing labyrinth grooves may be required.

## Labyrinth rings with an internal contact element

PosiTrac Plus seals consist of a PosiTrac labyrinth ring (designation LOR) and a contact element made of acrylonitrile-butadiene rubber (NBR). The labyrinth ring is located on the shaft and held in place by an O-ring. The contact element is located in the seal groove in the housing. It can be mounted either for best contaminant exclusion or for best lubricant retention (→ **fig. 5**). When the contact element is mounted for best contaminant exclusion, the sealing effect can be enhanced by filling the seal cavity with grease. The designation for the contact element is B 10724 followed by a size code, for example B 10724-122.

## Taconite heavy-duty seals

Taconite seals consist of an inboard felt seal, a grease cavity and an outboard seal that is available in two designs (→ **fig. 4**, **page 454**):

- Seals in the TER series include a split radial shaft seal made of NBR.
- Seals in the TER-V series include a V-ring seal.

To further protect against the ingress of contaminants, SKF taconite seals have a grease fitting to purge old grease and any trapped contaminants from the seal cavity, through the outboard seal.

Taconite heavy-duty seals are available for all smaller SDAF housings, but not all housings in the extended range.

### Bolt-on taconite seals

Bolt-on taconite seals consist of a split cast iron auxiliary cover, a split radial shaft seal, a grease fitting and all mounting hardware. Bolt-on taconite seals were developed to accommodate the SDAF extended range housing and provide the equivalent sealing protection as the other taconite heavy-duty seals. All bolt-on taconite seals are custom manu-

factured during the production of the housing and should be ordered together with the housing.

Bolt-on taconite seals are available for all SDAF extended range housings. For SDAF extended range housings, the designation suffix T indicates bolt-on taconite seals, e.g. SDAF 23272 KAT x 13 7/16.

## Contact seals

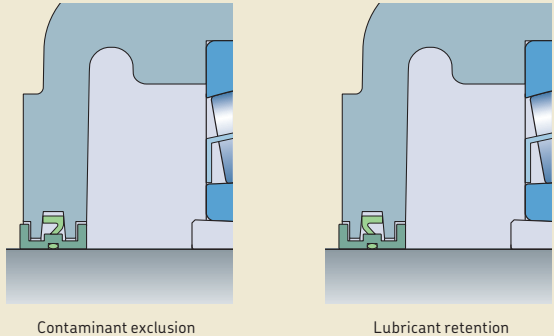
Contact seals are spring-loaded radial shaft seals made of NBR and fit into the seal groove in the housing (→ **fig. 4**, **page 454**). Contact seals are available for shaft diameters 6 7/8 and larger, where PosiTrac seals are not available. The designation for contact seals is B 9784 followed by a size code, e.g. B 9784-130.

## End plugs

Housings at the end of a shaft should have an end plug (end cover) that fits into the seal groove in the housing (→ **fig. 4**, **page 454**). The plug consists of a metal plate with a strip made of acrylonitrile-butadiene rubber (NBR). Details of the permissible length of the shaft end are listed in the product tables. End plugs for SDAF and SDAF extended range housings are identified by the series designation EPR or X 5217, followed by the size identification.



**Fig. 5**



Contaminant exclusion | Lubricant retention

# Special seals

In addition to the standard seal assortment, high-temperature contact seals and high-speed seals are available on request, for SDAF housings.

## High-temperature seals

High-temperature contact seals (designation LORP) consist of a PTFE labyrinth ring with an FKM (fluoro rubber) O-ring and a PTFE contact element. The PTFE contact element is available separately (designation B-10785).

High-temperature seals can accommodate operating temperatures up to 400 °F. The limiting speed for the bearing can be attained.

## High-speed seals

High-speed contact seals consist of an aluminium labyrinth ring with an NBR O-ring (designation LOR) and a PTFE contact element (designation B-10785). With PTFE contact elements, the limiting speed for the bearing can be attained.

**WARNING!**
Seals made of FKM (flouro rubber) or PTFE exposed to an open flame or temperatures above 570 °F are a health and environmental hazard! Contact SKF for detailed safety instructions.

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

All SDAF housings can accommodate different shaft-bearing combinations (→ **fig. 6**):

- Plain shaft with bearing on an adapter sleeve
- Stepped shaft with bearing on a cylindrical seat

#### Plain shaft with bearing on an adapter sleeve

This arrangement is standard for SDAF pillow blocks in the 225 and 226 series and for SDAF extended range housings in the 230..KA, 231..KA and 232..KA series. Housings, appropriate parts and dimensions are listed in product **tables 9.1** (→ **page 472**) and **9.3** (→ **page 476**).

#### Stepped shaft with bearing on a cylindrical seat

This arrangement is standard for SDAF housings in the 222 and 223 series and for SDAF extended range housings in the 230, 231 and 232 series. Housings, appropriate parts and dimensions are listed in product **tables 9.2** (→ **page 474**) and **9.4** (→ **page 480**).

## Locating and non-locating bearing positions

All SDAF housings can be used for both the locating and non-locating bearing positions.

The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing with stabilizing (locating) rings. Appropriate stabilizing rings are supplied with smaller SDAF housings. For SDAF extended range housings, the stabilizing rings must be ordered separately.

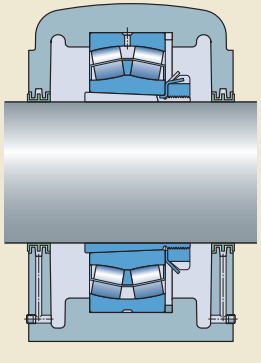
## Load carrying capacity

All SDAF housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing.

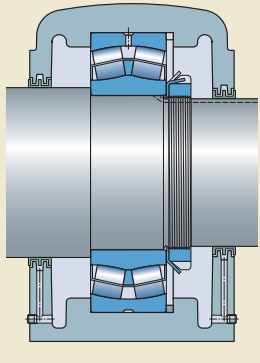
If loads acting in other directions occur, or if the housing is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing and the attachment bolts.



Fig. 6



Plain shaft with bearing on an adapter sleeve



Stepped shaft with bearing on a cylindrical seat

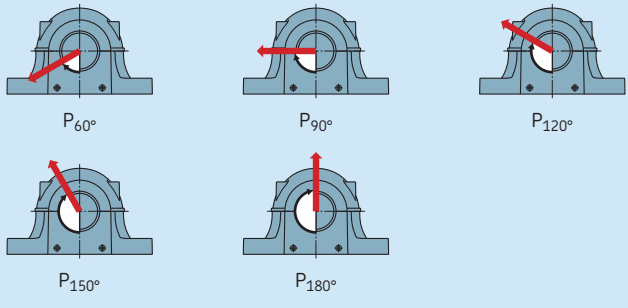
### Load carrying capacity of the housing

Guideline values for the safe loads of housings made of grey cast iron are listed in **tables 4** and **5**. The safe loads have been calculated using a safety factor of 5 against base fracture and a factor of 2 against cap bolt yield.

For housings made of ductile iron, the values obtained from **tables 4** and **5** should be multiplied by a factor of 1,5 for ASTM A339 grade 60-45-10. For information about ASTM A339 grade 80-60-03, contact the SKF application engineering service. For purely axial loads, static or dynamic, the loads on the housing should not exceed 65% of $P_{180°}$. For bearings mounted on adapter sleeves, the permissible axial load is dependent on the adapter sleeve.

**Table 4**

**Safe loads and cap bolt information for SDAF cast iron housings**



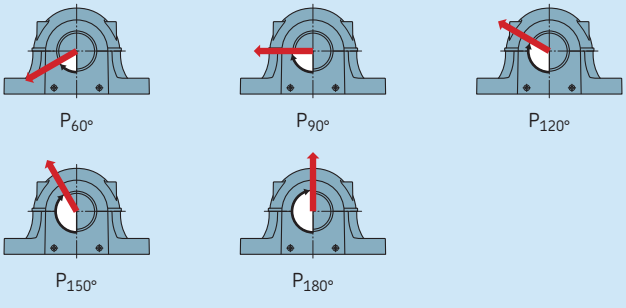

| Housing Size | | | | Recommended safe loads | | | | | Cap bolt information | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | Cap bolt size | Torque | SAE grade |
| – | | | | lbf. | | | | | in. | ft.-lbs. | |
| **220** | **317** | **520** | **617** | 40 080 | 24 000 | 15 000 | 13 700 | 16 600 | 3/4-10 | 175 | 2 |
| | **318** | | **618** | 45 900 | 27 500 | 17 300 | 16 000 | 19 300 | 3/4-10 | 175 | 2 |
| **222** | | **522** | | 51 700 | 31 000 | 19 600 | 17 600 | 21 200 | 7/8-9 | 165 | 2 |
| **224** | **320** | **524** | **620** | 54 000 | 36 500 | 23 600 | 21 600 | 26 500 | 7/8-9 | 165 | 2 |
| **226** | **322** | **526** | **622** | 60 100 | 36 000 | 23 600 | 21 600 | 27 000 | 7/8-9 | 165 | 2 |
| **230** | **324** | **530** | **624** | 85 100 | 51 000 | 32 000 | 29 000 | 35 500 | 1.1/8-7 | 350 | 2 |
| **232** | **326** | **532** | **626** | 83 500 | 50 000 | 31 500 | 28 500 | 34 500 | 1.1/8-7 | 350 | 2 |
| **238** | **332** | **538** | **632** | 127 000 | 76 500 | 47 500 | 43 000 | 52 000 | 1.1/4-7 | 350 | 2 |
| **240** | **334** | **540** | **634** | 150 000 | 90 000 | 56 000 | 50 000 | 60 000 | 1.1/4-7 | 350 | 2 |
| | **336** | | **636** | 141 000 | 85 000 | 53 000 | 48 000 | 57 000 | 1.3/8-6 | 350 | 2 |
| **244** | **338** | **544** | **638** | 152 000 | 91 500 | 57 000 | 52 000 | 63 000 | 1.3/8-6 | 660 | 2 |
| | **340** | | **640** | 144 000 | 86 500 | 54 000 | 49 000 | 58 500 | 1.3/8-6 | 660 | 2 |

### Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load. When loads act at angles between 60° and 120°, or when the axial loads are greater than 5% of $P_{180°}$, the housing should be pinned to the support surface or a stop should be provided to counter the load. The dowel pins or stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

**Table 5**

**Safe loads and cap bolt information for SDAF extended range cast iron housings**




| Housing Size | | | Recommended safe loads $P_{60°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | Cap bolt information Cap bolt size | Torque | SAE grade |
|---|---|---|---|---|---|---|---|---|---|---|
| – | | | lbf. | | | | | in. | ft.-lbs. | |
| | **3152** | **3248** | 294 000 | 17 600 | 110 000 | 98 000 | 118 000 | 1.1/2-6 | 1950 | 5 |
| **3060** | **3156** | **3252** | 408 000 | 245 000 | 156 000 | 143 000 | 176 000 | 1.1/2-6 | 1950 | 5 |
| **3064** | **3160** | **3256** | 408 000 | 245 000 | 156 000 | 143 000 | 176 000 | 1.1/2-6 | 1950 | 5 |
| **3068** | **3160** | **3256** | 408 000 | 245 000 | 156 000 | 143 000 | 176 000 | 1.1/2-6 | 1950 | 5 |
| **3072** | **3164** | **3260** | 442 000 | 265 000 | 170 000 | 153 000 | 186 000 | 1.3/4-5 | 2280 | 5 |
| **3076** | | | 442 000 | 265 000 | 170 000 | 153 000 | 186 000 | 1.3/4-5 | 2280 | 5 |
| | **3168** | **3264** | 517 000 | 310 000 | 200 000 | 186 000 | 228 000 | 1.7/8-5 | 2860 | 5 |
| **3080** | **3172** | **3268** | 650 000 | 390 000 | 245 000 | 224 000 | 275 000 | 1.3/4-5 | 2280 | 5 |
| **3084** | **3176** | | 650 000 | 390 000 | 245 000 | 224 000 | 275 000 | 1.3/4-5 | 2280 | 5 |
| **3088** | **3180** | **3272** | 717 000 | 430 000 | 275 000 | 250 000 | 305 000 | 1.7/8-5 | 2860 | 5 |
| **3092** | | **3276** | 717 000 | 430 000 | 275 000 | 250 000 | 305 000 | 1.7/8-5 | 2860 | 5 |
| **3096** | **3184** | **3280** | 1 050 000 | 630 000 | 405 000 | 375 000 | 465 000 | 2-4.1/4 | 3440 | 5 |
| **30/500** | **3188** | | 1 050 000 | 630 000 | 405 000 | 375 000 | 465 000 | 2-4.1/4 | 3440 | 5 |
| **30/530** | **3192** | **3284** | 900 000 | 540 000 | 345 000 | 320 000 | 400 000 | 2.1/4-4.1/2 | 5030 | 5 |
| | **3196** | **3288** | 900 000 | 540 000 | 345 000 | 320 000 | 400 000 | 2.1/4-4.1/2 | 5030 | 5 |

## Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 1** on **page 456**) and the lubricant in the bearing. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor. For additional information, contact the SKF application engineering service.

The housing paint is heat resistant up to 175 °F material temperature or 210 °F ambient temperature. When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

All seals, except non-contact labyrinth seals, limit the permissible operating speed. Speed limits for seals are provided in **table 1** on **page 456**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

### Shaft specifications

**Table 6** lists the recommended shaft diameter tolerances. The values $d_a$, $d_b$ and $d_c$ are listed in the product tables starting on **page 472**. The tolerance class for the bearing shaft seat should be selected from the SKF rolling bearings catalogue.

**Table 6**

**Shaft tolerances**

| Nominal diameter | | Diameter tolerance limits | | | |
|---|---|---|---|---|---|
| | | Adapter mounting | | Cylindrical mounting | |
| over | incl. | $d_a$ | | $d_b$, $d_c$ | |
| | | high | low | high | low |
| in. | | in. | | | |
| 1/2 | 1 | 0 | −0.002 | – | – |
| 1 | 2 | 0 | −0.003 | 0 | −0.003 |
| 2 | 4 | 0 | −0.004 | 0 | −0.003 |
| 4 | 6 | 0 | −0.005 | 0 | −0.003 |
| 6 | 10 | 0 | −0.006 | 0 | −0.004 |
| 10 | 15 | 0 | −0.006 | 0 | −0.005 |
| 15 | | 0 | −0.006 | 0 | −0.006 |

## Attachment bolt recommendations

In typical applications, 8.8 class (SAE J429, Grade 5) hexagon head bolts can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger, 10.9 class (SAE J429, Grade 8) bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufactures. They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

# Lubrication

All SDAF pillow blocks can accommodate grease, oil bath or circulating oil lubrication systems. Any sealing solution can be used with grease lubrication, while for oil lubrication SKF does not recommend using labyrinth rings in the LER series.

The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the information available online at skf.com/bearings.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70 to 80%. For additional information, contact the SKF application engineering service.

Quantities for 20 and 40% fills are listed in **tables 7** and **8**. The values are valid for a typical lithium grease (about 0.57 oz/in$^3$). The grease to fill labyrinth seals or taconite heavy-duty seals is not included.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

**Table 7**

**Initial grease fill for SDAF pillow block housings**

| Housing Size | | | | Initial fill 20% | 40% |
|---|---|---|---|---|---|
| – | | | | oz. | |
| | 316 | | 616 | 7 | 14 |
| 220 | 317 | 520 | 617 | 7 | 14 |
| | 318 | | 618 | 9 | 18 |
| 222 | | 522 | | 9 | 18 |
| 224 | 320 | 524 | 620 | 14 | 28 |
| 226 | 322 | 526 | 622 | 14 | 28 |
| 228 | | 528 | | 18 | 36 |
| 230 | 324 | 530 | 624 | 22 | 44 |
| 232 | 326 | 532 | 626 | 28 | 57 |
| 234 | 328 | 534 | 628 | 31 | 62 |
| 236 | 330 | 536 | 630 | 46 | 93 |
| 238 | 332 | 538 | 632 | 59 | 119 |
| 240 | 334 | 540 | 634 | 76 | 152 |
| | 336 | | 636 | 90 | 180 |
| 244 | 338 | 544 | 638 | 97 | 194 |
| | 340 | | 640 | 124 | 248 |

**Table 8**

**Initial grease fill for SDAF extended range pillow block housings**

| Housing Size | | | Initial fill 20% | 40% |
|---|---|---|---|---|
| – | | | lb. | |
| | 3152 | 3248 | 4 | 8 |
| 3060 | 3156 | 3252 | 6 | 13 |
| 3064 | 3160 | 3256 | 6 | 11 |
| 3072 | 3164 | | 7 | 14 |
| 3076 | | 3260 | 7 | 15 |
| | 3168 | 3264 | 9 | 18 |
| 3080 | 3172 | | 9 | 19 |
| 3084 | 3176 | | 7 | 14 |
| 3088 | 3180 | 3268 | 9 | 19 |
| | | 3272 | 11 | 22 |
| 3092 | | 3276 | 9 | 19 |
| 3096 | 3184 | | 16 | 32 |
| | 3188 | | 14 | 28 |
| 30/500 | | 3280 | 15 | 31 |
| 30/530 | 3192 | 3284 | 14 | 29 |
| | 3196 | 3288 | 13 | 27 |
| | | 3292 | 19 | 38 |
| | | 3296 | 16 | 32 |

## Relubrication

All SDAF housings have one drilled and tapped lubrication hole in the centre of the cap (→ **fig. 7**). The hole is plugged on delivery.

All housing bases are equipped with a drain plug on each side to purge or drain old lubricant or to serve as an outlet for circulating oil (→ **fig. 8**). The sump in the housing base is large enough to accommodate a sufficient quantity of lubricant to provide reliable long-term operation.

#### Relubrication via the outer ring

The hole in the centre of the cap should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 9**). When applying grease via the relubrication feature, the shaft should be rotating.

Fig. 7

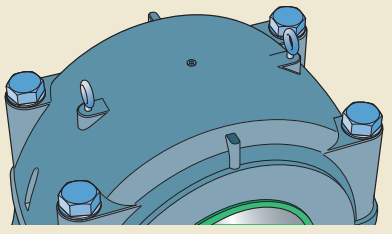
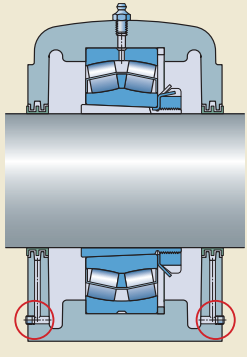


Fig. 8



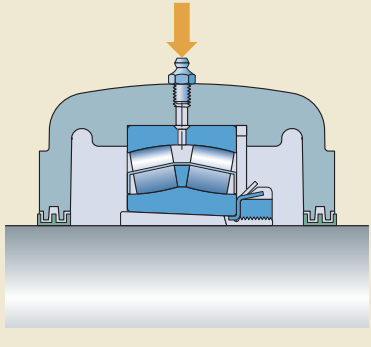
## Oil lubrication

#### Oil bath lubrication

The level of oil should be at about the centre of the lowermost rolling element when the bearing is stationary. For more information about oil levels, contact the SKF application engineering service. For higher speeds, the level should be slightly lower to reduce the effects of lubricant churning – about 1/8 inch above the corner of the outer ring raceway of the bearing.

An oil sight glass should be used to monitor the oil level during operation. It can be mounted into one of the drain holes in the housing base. The static oil level should be marked on the sight glass prior to operation and a running level should be marked 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.

Fig. 9



**Circulating oil lubrication system**

When using a circulating oil lubrication system with any SDAF housing, oil is introduced through the inlet holes in the housing cap and drained from one or both sides of the base.

Drains should lead downward immediately outside of the housing to prevent oil from accumulating in the housing. Too high an oil level can result in higher operating temperatures due to churning of the lubricant. The drain pipes must be adequately sized and arranged to allow oil to drain from the housing. Additional considerations may be necessary when using a circulating oil system. These can include special housing seals, cross drilling the housing sump, wet sump requirements, flow rates, and drain hole dimensions. For more information, contact the SKF application engineering service.

# Mounting

All SDAF housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**). Mounting instructions are provided with the housing. For information about mounting rolling bearings, refer to skf.com/mount.

## Cap bolt torque specifications

Cap bolts should be tightened to the torque values listed in **tables 4** and **5** on **page 464** and **465**.

## Pinning or supporting the housing

Some load conditions may require the housing to be pinned to its support surface or a stop to accommodate loads acting parallel to the housing support surface (→ *Additional housing support*, **page 465**).

# Condition monitoring

All SDAF pillow block housings support condition monitoring during operation. They offer space to attach sensors on the cap, side and front faces of the housing for different condition monitoring equipment.

For additional information about condition monitoring and the measurement tools and systems available from SKF, contact the SKF application engineering service.

# Ordering information

SDAF pillow blocks are available as complete kits including housing, seals, bearing (and adapter sleeve), locking device and a standard locating ring. A complete pillow block is specified by a designation provided in the product tables for the different series. Optional features can be specified with prefix and suffixes. If several suffixes are required, put them in alphabetical order.

SDAF extended range pillow blocks are typically sold as housing only including labyrinth seals. Complete kits are available that include housing, seals, bearing, adapter assembly or locking device and locating ring.

All pillow block parts can also be supplied as individual components. Order designations for the different parts are listed in the product tables for the different series.

### Order example

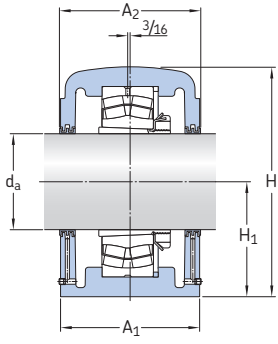
A shaft with 4 3/16 inch diameter has to be supported by two SDAF pillow (plummer) blocks with 22224 EK spherical roller bearings on adapter sleeves, one at the shaft end for a non-locating bearing position and one for a through shaft at the locating bearing position. The housings should be sealed with PosiTrac Plus seals.

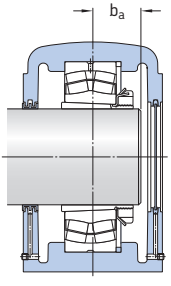
Order:
- 1 pillow block SDAF 22524 TLCY
- 1 pillow block SDAF 22524 TLC

The delivery will contain:
- 2 housings SDAF 524
- 2 spherical roller bearings 22224 EK
- 2 adapter sleeves with lock nuts SNW 24x4.3/16
- 2 locating rings SR 24-20
- 3 labyrinth rings with O-rings LOR 113
- 3 contact elements B-10724-113
- 1 end plug EPR 14

## 9.1 SDAF pillow blocks with spherical roller bearings on an adapter sleeve
## Series SDAF 225(00), 226(00)

$d_a$ **2 15/16 – 7 15/16** in.

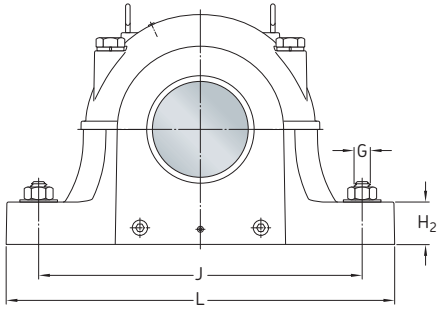


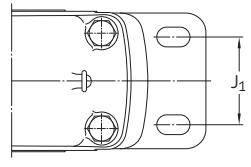




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| **Shaft diameter** Standard $d_a$ | Optional[1] | **Complete pillow block** | **Components** Pillow block housing | Bearing[2] | Adapter assembly | Stabilizing ring[3] (1 incl.) | Labyrinth ring (2 incl.) | **Mass** |
|---|---|---|---|---|---|---|---|---|
| in. | | – | – | | | | | lb. |
| **2 15/16** | 2 13/16, 2 7/8, 3 | **SDAF 22617** | SDAF 617 | 22317 EK | SNW 117 | SR 20-17 | LER 59 | 84 |
| **3 7/16** | 3 5/16, 3 3/8, 3 1/2 | **SDAF 22520**<br>**SDAF 22620** | SDAF 520<br>SDAF 620 | 22220 EK<br>22320 EK | SNW 20<br>SNW 120 | SR 20-17<br>SR 24-20 | LER 75<br>LER 75 | 96<br>164 |
| **3 15/16** | 3 13/16, 3 7/8, 4 | **SDAFS 22522**[4]<br>**SDAF 22622** | SDAFS 522<br>SDAF 622 | 22222 EK<br>22322 EK | SNW 22<br>SNW 122 | SR 22-19<br>SR 0-22 | LER 93<br>LER 93 | 105<br>178 |
| **4 3/16** | 4 1/16, 4 1/8, 4 1/4 | **SDAF 22524**<br>**SDAF 22624** | SDAF 524<br>SDAF 624 | 22224 EK<br>22324 CCK/W33 | SNW 24<br>SNW 124 | SR 24-20<br>SR 0-24 | LOR 113<br>LOR 113 | 125<br>272 |
| **4 7/16** | 4 5/16, 4 3/8, 4 1/2 | **SDAF 22526**<br>**SDAF 22626** | SDAF 526<br>SDAF 626 | 22226 EK<br>22326 CCK/W33 | SNW 26<br>SNW 126 | SR 26-0<br>SR 0-26 | LOR 117<br>LOR 117 | 199<br>340 |
| **4 15/16** | 4 13/16, 4 7/8, 5 | **SDAFS 22528**[4] | SDAFS 528 | 22228 CCK/W33 | SNW 28 | SR 28-0 | LOR 122 | 220 |
| **5 3/16** | 5 1/8, 5 1/4 | **SDAF 22530** | SDAF 530 | 22230 CCK/W33 | SNW 30 | SR 30-0 | LOR 125 | 259 |
| **5 7/16** | 5 3/8, 5 1/2 | **SDAF 22532**<br>**SDAF 22632** | SDAF 532<br>SDAF 632 | 22232 CCK/W33<br>22332 CCK/W33 | SNW 32<br>SNW 132 | SR 32-0<br>SR 38-32 | LOR 130<br>LER 211 | 330<br>455 |
| **5 15/16** | 5 13/16, 5 7/8, 6 | **SDAF 22634** | SDAF 634 | 22334 CCK/W33 | SNW 134 | SR 40-34 | LER 215 | 530 |
| **6 7/16** | 6 5/16, 6 3/8, 6 1/2 | **SDAF 22536** | SDAF 536 | 22236 CCK/W33 | SNW 36 | SR 36-30 | LOR 148 | 403 |
| **6 7/16** | 6 5/16, 6 3/8, 6 1/2 | **SDAF 22636** | SDAF 636 | 22336 CCK/W33 | SNW 136 | SR 0-36 | LER 220 | 630 |
| **6 15/16** | 6 13/16, 6 7/8, 7 | **SDAF 22538**<br>**SDAF 22638** | SDAF 538<br>SDAF 638 | 22238 CCK/W33<br>22338 CCK/W33 | SNW 38<br>SNW 138 | SR 38-32<br>SR 44-38 | LER 224<br>LER 224 | 454<br>792 |
| **7 3/16** | 7 1/8, 7 1/4 | **SDAF 22540** | SDAF 540 | 22240 CCK/W33 | SNW 40 | SR 40-34 | LER 228 | 544 |
| **7 15/16** | 7 13/16, 7 7/8, 8 | **SDAF 22544** | SDAF 544 | 22244 CCK/W33 | SNW 44 | SR 44-38 | LER 236 | 795 |

1) Optional shaft diameters require different adapter sleeve and seals.
2) Optional internal radial clearance (e.g. C3) available on request.
3) For a free unit, discard the enclosed stabilizing ring.
4) Available only in steel.

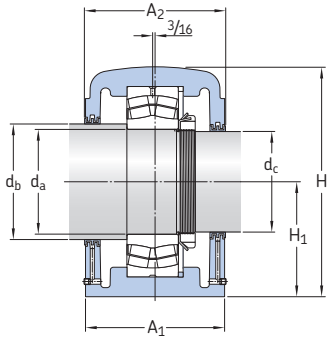


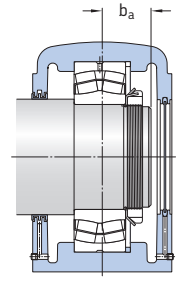




**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G |
| – | in. | | | | | | | | | | |
| **SDAF 22617** | 6 | 6 3/4 | 2 1/16 | 8 15/16 | 4 1/2 | 1 7/8 | 11 5/8 | 13 1/8 | 3 3/8 | 15 1/4 | 3/4 |
| **SDAF 22520** | 6 | 6 3/4 | 1 59/64 | 8 15/16 | 4 1/2 | 1 7/8 | 11 5/8 | 13 1/8 | 3 3/8 | 15 1/4 | 3/4 |
| **SDAF 22620** | 6 7/8 | 7 3/8 | 2 7/16 | 10 1/2 | 5 1/4 | 2 1/4 | 13 1/4 | 14 1/2 | 4 1/8 | 16 1/2 | 7/8 |
| **SDAFS 22522** | 6 3/4 | 7 1/4 | 2 1/8 | 9 7/8 | 4 15/16 | 2 1/8 | 12 5/8 | 14 1/2 | 4 | 16 1/2 | 7/8 |
| **SDAF 22622** | 7 1/2 | 8 | 2 5/8 | 11 7/8 | 6 | 2 3/8 | 14 5/8 | 16 | 4 1/2 | 18 3/8 | 1 |
| **SDAF 22524** | 6 7/8 | 7 3/8 | 2 9/32 | 10 1/2 | 5 1/4 | 2 1/4 | 13 1/4 | 14 1/2 | 4 1/8 | 16 1/2 | 7/8 |
| **SDAF 22624** | 7 7/8 | 8 3/8 | 2 13/16 | 12 9/16 | 6 5/16 | 2 1/2 | 17 | 18 1/4 | 4 3/4 | 21 1/4 | 1 1/8 |
| **SDAF 22526** | 7 1/2 | 8 | 2 15/32 | 11 7/8 | 6 | 2 3/8 | 14 5/8 | 16 | 4 1/2 | 18 3/8 | 1 |
| **SDAF 22626** | 8 1/4 | 8 3/4 | 3 | 13 7/16 | 6 11/16 | 2 1/2 | 17 3/8 | 19 1/4 | 5 | 22 | 1 1/8 |
| **SDAFS 22528** | 7 1/2 | 7 13/16 | – | 12 1/16 | 6 | 2 3/8 | 16 | 17 1/8 | 4 1/2 | 20 1/8 | 1 1/8 |
| **SDAF 22530** | 7 7/8 | 8 3/8 | 2 49/64 | 12 9/16 | 6 5/16 | 2 1/2 | 17 | 18 1/4 | 4 3/4 | 21 1/4 | 1 1/8 |
| **SDAF 22532** | 8 1/4 | 8 3/4 | 2 31/32 | 13 7/16 | 6 11/16 | 2 1/2 | 17 3/8 | 19 1/4 | 5 | 22 | 1 1/8 |
| **SDAF 22632** | 10 | 10 5/8 | 3 5/8 | 16 | 7 7/8 | 3 | 21 1/2 | 23 1/2 | 6 1/4 | 27 5/8 | 1 3/8 |
| **SDAF 22634** | 10 1/2 | 11 1/8 | 3 3/4 | 16 7/8 | 8 1/4 | 3 1/4 | 23 | 25 | 6 3/4 | 28 3/4 | 1 3/8 |
| **SDAF 22536** | 9 3/8 | 10 | 3 9/64 | 15 3/16 | 7 1/2 | 2 3/4 | 20 7/8 | 23 5/8 | 5 7/8 | 26 3/4 | 1 1/4 |
| **SDAF 22636** | 10 3/4 | 11 3/8 | 3 15/16 | 17 15/16 | 8 7/8 | 3 1/4 | 24 1/8 | 26 3/8 | 6 7/8 | 30 1/2 | 1 1/2 |
| **SDAF 22538** | 10 | 10 5/8 | 3 19/64 | 16 | 7 7/8 | 3 | 21 1/2 | 23 1/2 | 6 1/4 | 27 5/8 | 1 3/8 |
| **SDAF 22638** | 11 1/4 | 11 7/8 | 4 1/16 | 19 | 9 1/2 | 3 1/2 | 25 5/8 | 27 7/8 | 7 1/4 | 32 | 1 1/2 |
| **SDAF 22540** | 10 1/2 | 11 1/8 | 3 1/2 | 16 7/8 | 8 1/4 | 3 1/4 | 23 | 25 | 6 3/4 | 28 3/4 | 1 3/8 |
| **SDAF 22544** | 11 1/4 | 11 7/8 | 3 5/8 | 19 | 9 1/2 | 3 1/2 | 25 5/8 | 27 7/8 | 7 1/4 | 32 | 1 1/2 |

# 9.2 SDAF pillow blocks with spherical roller bearings with a cylindrical bore
## Series SDAF 222(00), 223(00)
$d_a$ **85 – 220** mm

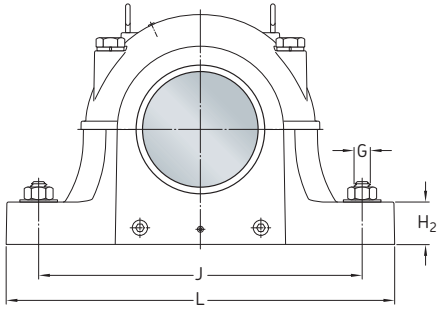


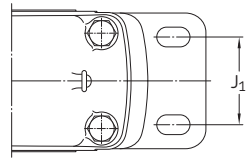




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| Shaft diameter | | | Complete pillow block | Components | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring[2] (1 incl.) | Labyrith seal Shaft | Labyrith seal Shaft | Lock nut | Lock washer | |
| $d_a$ | $d_b$ | $d_c$ | | | | | $d_b$ | $d_c$ | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **85** | 3 15/16 | 3 3/16 | **SDAF 22317** | SDAF 317 | 22317 E | SR 20-17 | LER 93 | LER 69 | AN 17 | W 17 | 83 |
| **100** | 4 1/2 | 3 13/16 | **SDAF 22220** | SDAF 220 | 22220 E | SR 20-17 | LER 205 | LER 87 | AN 20 | W 20 | 80 |
| | | | **SDAF 22320** | SDAF 320 | 22320 E | SR 24-20 | LER 205 | LER 87 | AN 20 | W 20 | 141 |
| **110** | 4 7/8 | 4 3/16 | **SDAFS 22222**[3] | SDAFS 222 | 22222 E | SR 22-19 | LOR 121 | LOR 113 | AN 22 | W 22 | 102 |
| | | | **SDAF 22322** | SDAF 322 | 22322 E | SR 0-22 | LOR 121 | LOR 113 | AN 22 | W 22 | 172 |
| **120** | 5 5/16 | 4 9/16 | **SDAF 22224** | SDAF 224 | 22224 E | SR 24-20 | LOR 127 | LOR 119 | AN 24 | W 24 | 118 |
| | | | **SDAF 22324** | SDAF 324 | 22324 CC/W33 | SR 0-24 | LOR 127 | LOR 119 | AN 24 | W 24 | 304 |
| **130** | 5 7/8 | 4 15/16 | **SDAF 22226** | SDAF 226 | 22226 E | SR 26-0 | LOR 136 | LOR 122 | AN 26 | W 26 | 169 |
| | | | **SDAF 22326** | SDAF 326 | 22326 CC/W33 | SR 0-26 | LOR 136 | LOR 122 | AN 26 | W 26 | 330 |
| **140** | 6 1/4 | 5 5/16 | **SDAFS 22228**[3] | SDAFS 228 | 22228 CC/W33 | SR 28-0 | LOR 144 | LOR 127 | AN 28 | W 28 | 175 |
| | | | **SDAF 22328** | SDAF 328 | 22328 CC/W33 | SR 0 28 | LOR 144 | LOR 127 | AN 28 | W 28 | 331 |
| **150** | 6 5/8 | 5 3/4 | **SDAF 22230** | SDAF 230 | 22230 CC/W33 | SR 30-0 | LOR 151 | LOR 134 | AN 30 | W 30 | 200 |
| | | | **SDAF 22330** | SDAF 330 | 22330 CC/W33 | SR 36-30 | LOR 151 | LOR 134 | AN 30 | W 30 | 466 |
| **160** | 7 | 6 1/16 | **SDAF 22232** | SDAF 232 | 22232 CC/W33 | SR 32-0 | LOR 156 | LOR 142 | AN 32 | W 32 | 264 |
| | | | **SDAF 22332** | SDAF 332 | 22332 CC/W33 | SR 38-32 | LER 225 | LER 217 | AN 32 | W 32 | 537 |
| **170** | 7 7/16 | 6 7/16 | **SDAF 22334** | SDAF 334 | 22334 CC/W33 | SR 40-34 | LER 230 | LER 220 | AN 34 | W 34 | 554 |
| **180** | 7 13/16 | 6 7/8 | **SDAF 22236** | SDAF 236 | 22236 CC/W33 | SR 36-30 | LOR 165 | LOR 154 | AN 36 | W 36 | 436 |
| | | | **SDAF 22336** | SDAF 336 | 22336 CC/W33 | SR 0-36 | LER 234 | LER 223 | AN 36 | W 36 | 623 |
| **190** | 8 3/8 | 7 1/4 | **SDAF 22238** | SDAF 238 | 22238 CC/W33 | SR 38-32 | LER 240 | LER 229 | AN 38 | W 38 | 510 |
| | | | **SDAF 22338** | SDAF 338 | 22338 CC/W33 | SR 44-38 | LER 240 | LER 229 | AN 38 | W 38 | 734 |
| **200** | 8 3/4 | 7 5/8 | **SDAF 22240** | SDAF 240 | 22240 CC/W33 | SR 40-34 | LER 244 | LER 233 | AN 40 | W 40 | 389 |
| **220** | 9 9/16 | 8 5/16 | **SDAF 22244** | SDAF 244 | 22244 CC/W33 | SR 44-38 | LER 248 | LER 239 | N 44 | W 44 | 787 |

[1] Optional internal radial clearance (e.g. C3) available on request.
[2] For a free unit, discard the enclosed stabilizing ring.
[3] Available only in steel.



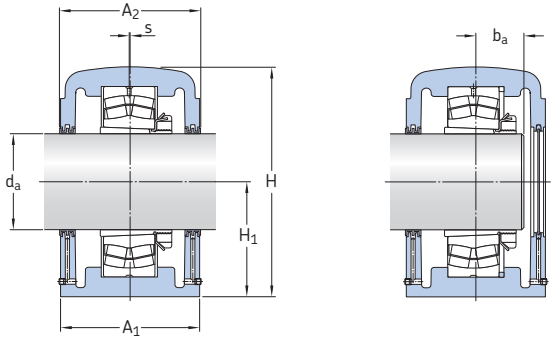




**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G |
| – | in. | | | | | | | | | | |
| **SDAF 22317** | 6 | 6 3/4 | 2 1/16 | 8 15/16 | 4 1/2 | 1 7/8 | 11 5/8 | 13 1/8 | 3 3/8 | 15 1/4 | 3/4 |
| **SDAF 22220** | 6 | 6 3/4 | 1 59/64 | 8 15/16 | 4 1/2 | 1 7/8 | 11 5/8 | 13 1/8 | 3 3/8 | 15 1/4 | 3/4 |
| **SDAF 22320** | 6 7/8 | 7 3/8 | 2 7/16 | 10 1/2 | 5 1/4 | 2 1/4 | 13 1/4 | 14 1/2 | 4 1/8 | 16 1/2 | 7/8 |
| **SDAFS 22222** | 6 3/4 | 7 1/4 | 2 1/8 | 9 7/8 | 4 15/16 | 2 1/8 | 12 5/8 | 14 1/2 | 4 | 16 1/2 | 7/8 |
| **SDAF 22322** | 7 1/2 | 8 | 2 5/8 | 11 7/8 | 6 | 2 3/8 | 14 5/8 | 16 | 4 1/2 | 18 3/8 | 1 |
| **SDAF 22224** | 6 7/8 | 7 3/8 | 2 9/32 | 10 1/2 | 5 1/4 | 2 1/4 | 13 1/4 | 14 1/2 | 4 1/8 | 16 1/2 | 7/8 |
| **SDAF 22324** | 7 7/8 | 8 3/8 | 2 13/16 | 12 9/16 | 6 5/16 | 2 1/2 | 17 | 18 1/4 | 4 3/4 | 21 1/4 | 1 1/8 |
| **SDAF 22226** | 7 1/2 | 8 | 2 15/32 | 11 7/8 | 6 | 2 3/8 | 14 5/8 | 16 | 4 1/2 | 18 3/8 | 1 |
| **SDAF 22326** | 8 1/4 | 8 3/4 | 3 | 13 7/16 | 6 11/16 | 2 1/2 | 17 3/8 | 19 1/4 | 5 | 22 | 1 1/8 |
| **SDAFS 22228** | 7 1/2 | 7 3/16 | – | 12 1/16 | 6 | 2 3/8 | 16 | 17 1/8 | 4 1/2 | 20 1/8 | 1 |
| **SDAF 22328** | 9 | 9 3/8 | 3 1/4 | 14 1/4 | 7 1/16 | 2 1/2 | 19 3/8 | 21 5/8 | 5 1/2 | 24 3/4 | 1 1/4 |
| **SDAF 22230** | 7 7/8 | 8 3/8 | 2 49/64 | 12 9/16 | 6 5/16 | 2 1/2 | 17 | 18 1/4 | 4 3/4 | 21 1/4 | 1 1/8 |
| **SDAF 22330** | 9 3/8 | 9 3/4 | 3 7/16 | 15 3/16 | 7 1/2 | 2 3/4 | 20 7/8 | 23 5/8 | 5 7/8 | 26 3/4 | 1 1/4 |
| **SDAF 22232** | 8 1/4 | 8 3/4 | 2 31/32 | 13 7/16 | 6 11/16 | 2 1/2 | 17 3/8 | 19 1/4 | 5 | 22 | 1 1/8 |
| **SDAF 22332** | 10 | 10 5/8 | 3 5/8 | 16 | 7 7/8 | 3 | 21 1/2 | 23 1/2 | 6 1/4 | 27 5/8 | 1 3/8 |
| **SDAF 22334** | 10 1/2 | 11 1/8 | 3 3/4 | 16 7/8 | 8 1/4 | 3 1/4 | 23 | 25 | 6 3/4 | 28 3/4 | 1 3/8 |
| **SDAF 22236** | 9 3/8 | 10 | 3 9/64 | 15 3/16 | 7 1/2 | 2 3/4 | 20 7/8 | 23 5/8 | 5 7/8 | 26 3/4 | 1 1/4 |
| **SDAF 22336** | 10 3/4 | 11 3/8 | 3 7/8 | 17 15/16 | 8 7/8 | 3 1/4 | 24 1/8 | 26 3/8 | 6 7/8 | 30 1/2 | 1 1/2 |
| **SDAF 22238** | 10 | 10 5/8 | 3 19/64 | 16 | 7 7/8 | 3 | 21 1/2 | 23 1/2 | 6 1/4 | 27 5/8 | 1 3/8 |
| **SDAF 22338** | 11 1/4 | 11 7/8 | 4 1/16 | 19 | 9 1/2 | 3 1/2 | 25 5/8 | 27 7/8 | 7 1/4 | 32 | 1 1/2 |
| **SDAF 22240** | 10 1/2 | 11 1/8 | 3 1/2 | 16 7/8 | 8 1/4 | 3 1/4 | 23 | 25 | 6 3/4 | 28 3/4 | 1 3/8 |
| **SDAF 22244** | 11 1/4 | 11 7/8 | 3 5/8 | 19 | 9 1/2 | 3 1/2 | 25 5/8 | 27 7/8 | 7 1/4 | 32 | 1 1/2 |

# 9.3 Extended range pillow blocks with spherical roller bearings on an adapter sleeve
## Series SDAF 230(00) KA, 231(00) KA, 232(00) KA

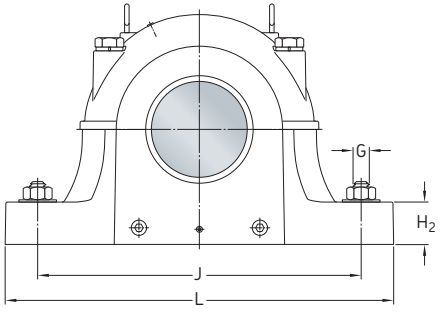
$d_a$ **8 15/16 – 14 15/16** in.

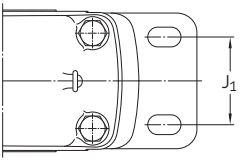



**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| **Shaft diameter** Stand-ard $d_a$ | Op-tional[1] | **Complete pillow block** | **Components** Pillow block housing | Bearing[2] | Adapter assembly | Stabilizing ring[3] (2 req'd) | Laby-rinth ring (2 incl.) |
|---|---|---|---|---|---|---|---|
| in. | | – | – | | | | |
| **8 15/16** | 9 | **SDAF 23248 KA x 8 15/16** | SDAF 3248 KA x 8 15/16 | 23248 CACK/W33 | SNP 148 x 8 15/16 | 36053-114 | ERF 914 |
| **9 7/16** | 9 1/2 | **SDAF 23152 KA x 9 7/16** | SDAF 3152 KA x 9 7/16 | 23152 CACK/W33 | SNP 3152 x 9 7/16 | 36053-114 | ERF 891 |
| | | **SDAF 23252 KA x 9 7/16** | SDAF 3252 KA x 9 7/16 | 23252 CACK/W33 | SNP 152 x 9 7/16 | A 8968 | ERF 891 |
| **10 7/16** | 10 1/2 | **SDAF 23156 KA x 10 7/16** | SDAF 3156 KA x 10 7/16 | 23156 CACK/W33 | SNP 3156 x 10 7/16 | A 8967 | ERF 973 |
| | | **SDAF 23256 KA x 10 7/16** | SDAF 3256 KA x 10 7/16 | 23256 CACK/W33 | SNP 3256 x 10 7/16 | 36053-157 | ERF 973 |
| **10 15/16** | 11 | **SDAF 23060 KA x 10 15/16** | SDAF 3060 KA x 10 15/16 | 23060 CACK/W33 | SNP 3060 x 10 15/16 | A 8967[4] | ERF 858 |
| | | **SDAF 23160 KA x 10 15/16** | SDAF 3160 KA x 10 15/16 | 23160 CACK/W33 | SNP 3160 x 10 15/16 | 36053-157 | ERF 858 |
| **10 15/16** | 11 | **SDAF 23260 KA x 10 15/16** | SDAF 3260 KA x 10 15/16 | 23260 CACK/W33 | SNP 3260 x 10 15/16 | 36053-130 | ERF 1002 |
| **11 7/16** | 11 1/2 | **SDAF 23064 KA x 11 7/16** | SDAF 3064 KA x 11 7/16 | 23064 CCK/W33 | SNP 3064 x 11 7/16 | A 8968[4] | ERF 861 |
| **11 15/16** | 12 | **SDAF 23064 KA x 11 15/16** | SDAF 3064 KA x 11 15/16 | 23064 CCK/W33 | SNP 3064 x 11 15/16 | A 8968[4] | ERF 859 |
| | | **SDAF 23164 KA x 11 15/16** | SDAF 3164 KA x 11 15/16 | 23164 CACK/W33 | SNP 3164 x 11 15/16 | A 8970 | ERF 900 |
| | | **SDAF 23264 KA x 11 15/16** | SDAF 3264 KA x 11 15/16 | 23264 CACK/W33 | SNP 3264 x 11 15/16 | 36053-137 | ERF 900 |
| **12 7/16** | 12 1/2 | **SDAF 23068 KA x 12 7/16** | SDAF 3068 KA x 12 7/16 | 23068 CACK/W33 | SNP 3068 x 12 7/16 | A 8969[4] | ERF 865 |
| | | **SDAF 23168 KA x 12 7/16** | SDAF 3168 KA x 12 7/16 | 23168 CACK/W33 | SNP 3168 x 12 7/16 | 36053-137 | ERF 975 |
| | | **SDAF 23268 KA x 12 7/16** | SDAF 3268 KA x 12 7/16 | 23268 CAK/W33 | SNP 3268 x 12 7/16 | 36053-143 | ERF 975 |
| **12 15/16** | 13 | **SDAF 23072 KA x 12 15/16** | SDAF 3072 KA x 12 15/16 | 23072 CACK/W33 | SNP 3072 x 12 15/16 | A 8970[4] | ERF 869 |
| **13 7/16** | 13 1/2 | **SDAF 23072 KA x 13 7/16** | SDAF 3072 KA x 13 7/16 | 23072 CACK/W33 | SNP 3072 x 13 7/16 | A 8970[4] | ERF 872 |
| | | **SDAF 23172 KA x 13 7/16** | SDAF 3172 KA x 13 7/16 | 23172 CCK/W33 | SNP 3172 x 13 7/16 | 36053-167 | ERF 872 |
| | | **SDAF 23272 KA x 13 7/16** | SDAF 3272 KA x 13 7/16 | 23272 CAK/W33 | SNP 3272 x 13 7/16 | 36053-150 | ERF 979 |
| **13 15/16** | 14 | **SDAF 23076 KA x 13 15/16** | SDAF 3076 KA x 13 15/16 | 23076 CACK/W33 | SNP 3076 x 13 15/16 | A 8971[4] | ERF 875 |
| | | **SDAF 23176 KA x 13 15/16** | SDAF 3176 KA x 13 15/16 | 23176 CAK/W33 | SNP 3176 x 13 15/16 | 36053-143 | ERF 875 |
| | | **SDAF 23276 KA x 13 15/16** | SDAF 3276 KA x 13 15/16 | 23276 CAK/W33 | SNP 3276 x 13 15/16 | 36053-152 | ERF 977 |
| **14 15/16** | 15 | **SDAF 23180 KA x 14 15/16** | SDAF 3180 KA x 14 15/16 | 23180 CAK/W33 | SNP 3180 x 14 15/16 | 36053-150 | ERF 882 |
| | | **SDAF 23280 KA x 15** | SDAF 3280 KA x 15 | 23280 CAK/W33 | SNP 3280 x 15 | 36053-165 | ERF 976 |

[1] Requires different adapter sleeve and seals.
[2] Optional internal radial clearance (e.g. C3) available on request.
[3] For a held unit, order stabilizing rings separately.
[4] Only one stabilizing ring required.

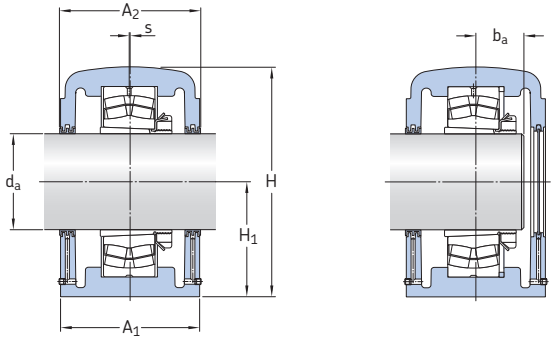



**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G | |
| – | in. | | | | | | | | | | | | lb. |
| **SDAF 23248 KA x 8 15/16** | 13 1/8 | 13 3/4 | 0 | 4 7/8 | 20 7/8 | 10 1/4 | 3 3/4 | 29 | 30 1/2 | 8 3/4 | 35 | 1 5/8 | 1 100 |
| **SDAF 23152 KA x 9 7/16** | 13 1/8 | 13 3/4 | 0 | 4 5/8 | 20 7/8 | 10 1/4 | 3 3/4 | 29 | 30 1/2 | 8 3/4 | 35 | 1 5/8 | 1 050 |
| **SDAF 23252 KA x 9 7/16** | 14 3/4 | 15 1/2 | 0 | 5 7/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | | 38 1/4 | 1 5/8 | 1 350 |
| **SDAF 23156 KA x 10 7/16** | 14 3/4 | 15 1/2 | 0 | 4 25/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 | 1 250 |
| **SDAF 23256 KA x 10 7/16** | 14 3/4 | 15 1/2 | 0 | 5 11/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | | 38 1/4 | 1 5/8 | 1 400 |
| **SDAF 23060 KA x 10 15/16** | 14 3/4 | 15 1/2 | 3/16 | 4 11/32 | 23 7/16 | 12 | 3 3/8 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 | 1 200 |
| **SDAF 23160 KA x 10 15/16** | 14 3/4 | 15 1/2 | 0 | 5 1/8 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 | 1 350 |
| **SDAF 23260 KA x 10 15/16** | 15 3/4 | 16 3/4 | 0 | 5 3/4 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 | 1 900 |
| **SDAF 23064 KA x 11 7/16** | 14 3/4 | 15 1/2 | 3/16 | 4 1/2 | 23 7/16 | 12 | 3 3/8 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 | 1 300 |
| **SDAF 23064 KA x 11 15/16** | 14 3/4 | 15 1/2 | 3/16 | 4 1/2 | 23 7/16 | 12 | 3 3/8 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 | 1 250 |
| **SDAF 23164 KA x 11 15/16** | 15 3/4 | 16 3/4 | 0 | 5 17/32 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 | 1 850 |
| **SDAF 23264 KA x 11 15/16** | 17 3/4 | 18 3/4 | 0 | 6 5/32 | 27 7/8 | 14 | 5 | 36 3/4 | 38 1/4 | 10 3/4 | 43 3/4 | 2 | 2 500 |
| **SDAF 23068 KA x 12 7/16** | 15 1/4 | 15 3/4 | 3/16 | 4 7/8 | 24 | 11 13/16 | 4 3/16 | 32 | 33 1/2 | 10 | 39 | 1 7/8 | 1 550 |
| **SDAF 23168 KA x 12 7/16** | 17 3/4 | 18 3/4 | 0 | 5 29/32 | 27 7/8 | 14 | 5 | 36 3/4 | 38 1/4 | 10 3/4 | 43 3/4 | 2 | 2 450 |
| **SDAF 23268 KA x 12 7/16** | 17 1/8 | 17 5/8 | 0 | 6 19/32 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 | 2 650 |
| **SDAF 23072 KA x 12 15/16** | 15 3/4 | 16 3/4 | 3/16 | 4 7/8 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 | 1 650 |
| **SDAF 23072 KA x 13 7/16** | 15 3/4 | 16 3/4 | 3/16 | 4 7/8 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 | 1 600 |
| **SDAF 23172 KA x 13 7/16** | 17 1/8 | 17 5/8 | 0 | 5 31/32 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 | 2 500 |
| **SDAF 23272 KA x 13 7/16** | 18 3/4 | 19 1/4 | 0 | 6 3/4 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 | 2 950 |
| **SDAF 23076 KA x 13 15/16** | 15 3/4 | 16 3/4 | 3/16 | 5 1/8 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 | 1 700 |
| **SDAF 23176 KA x 13 15/16** | 17 1/8 | 17 5/8 | 0 | 6 1/8 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 | 2 500 |
| **SDAF 23276 KA x 13 15/16** | 18 3/4 | 19 1/4 | 0 | 7 1/32 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 | 3 050 |
| **SDAF 23180 KA x 15** | 18 3/4 | 19 1/4 | 0 | 6 13/32 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 | 2 800 |
| **SDAF 23280 KA x 15** | 21 | 21 3/4 | 0 | 7 1/2 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 52 | 2 1/4 | 4 500 |

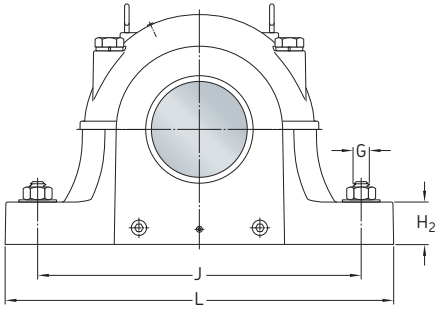
# 9.3 Extended range pillow blocks with spherical roller bearings on an adapter sleeve
## Series SDAF 230(00) KA, 231(00) KA, 232(00) KA
$d_a$ **15 – 19 1/2** in.

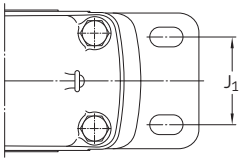



**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| **Shaft diameter** Stand-ard $d_a$ | Op-tional[1] | **Complete pillow block** | **Components** Pillow block housing | Bearing[2] | Adapter assembly | Stabilizing ring[3] (2 req'd) | Laby-rinth ring (2 incl.) |
|---|---|---|---|---|---|---|---|
| in. | | – | – | | | | |
| **15** | 14 15/16 | **SDAF 23080 KA x 15** | SDAF 3080 KA x 15 | 23080 CACK/W33 | SNP 3080 x 15 | 36053-153[4] | ERF 847 |
| **15 3/4** | –[5] | **SDAF 23084 KA x 15 3/4** | SDAF 3084 KA x 15 3/4 | 23084 CAK/W33 | SNP 3084 x 15 3/4 | 36053-143[4] | ERF 969 |
| | | **SDAF 23184 KA x 15 3/4** | SDAF 3184 KA x 15 3/4 | 23184 CAK/W33 | SNP 3184 x 15 3/4 | 36053-160 | ERF 907 |
| | | **SDAF 23284 KA x 15 3/4** | SDAF 3284 KA x 15 3/4 | 23284 CAK/W33 | SNP 3284 x 15 3/4 | 36053-154 | ERF 907 |
| **16 1/2** | –[5] | **SDAF 23088 KA x 16 1/2** | SDAF 3088 KA x 16 1/2 | 23088 CAK/W33 | SNP 3088 x 16 1/2 | 36053-150[4] | ERF 958 |
| | | **SDAF 23188 KA x 16 1/2** | SDAF 3188 KA x 16 1/2 | 23188 CAK/W33 | SNP 3188 x 16 1/2 | 36053-165 | ERF 958 |
| | | **SDAF 23288 KA x 16 1/2** | SDAF 3288 KA x 16 1/2 | 23288 CAK/W33 | SNP 3288 x 16 1/2 | 36053-159 | ERF 958 |
| **17** | –[5] | **SDAF 23092 KA x 17** | SDAF 3092 KA x 17 | 23092 CAK/W33 | SNP 3092 x 17 | 36053-152[4] | ERF 838 |
| | | **SDAF 23192 KA x 17** | SDAF 3192 KA x 17 | 23192 CAK/W33 | SNP 3192 x 17 | 36053-154 | ERF 838 |
| **18** | –[5] | **SDAF 23096 KA x 18** | SDAF 3096 KA x 18 | 23096 CAK/W33 | SNP 3096 x 18 | 36053-200[4] | ERF 888 |
| | | **SDAF 23196 KA x 18** | SDAF 3196 KA x 18 | 23196 CAK/W33 | SNP 3196 x 18 | 36053-159 | ERF 888 |
| **18 1/2** | –[5] | **SDAF 230/500 KA x 18 1/2** | SDAF 30/500 KA x 18 1/2 | 230/500 CAK/W33 | SNP 30/500 x 18 1/2 | 36053-165[4] | ERF 978 |
| **19 1/2** | –[5] | **SDAF 230/530 KA x 19 1/2** | SDAF 30/530 KA x 19 1/2 | 230/530 CAK/W33 | SNP 30/530 x 19 1/2 | 36053-166[4] | ERF 926 |

[1] Requires different adapter sleeve and seals.
[2] Optional internal radial clearance (e.g. C3) available on request.
[3] For a held unit, order stabilizing rings separately.
[4] Only one stabilizing ring required.
[5] Optional shaft sizes available on request.



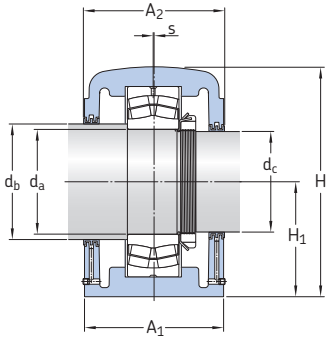



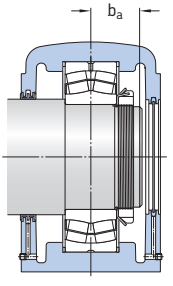

**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G | |
| – | in. | | | | | | | | | | | | lb. |
| **SDAF 23080 KA x 15** | 17 1/8 | 17 5/8 | 3/16 | 5 17/32 | 29 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 | 2 300 |
| **SDAF 23084 KA x 15 3/4** | 17 1/8 | 17 5/8 | 3/16 | 5 9/16 | 29 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 | 2 300 |
| **SDAF 23184 KA x 15 3/4** | 21 | 21 3/4 | 0 | 6 7/8 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 | 4 300 |
| **SDAF 23284 KA x 15 3/4** | 21 5/8 | 22 1/4 | 0 | 7 13/16 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 | 5 000 |
| **SDAF 23088 KA x 16 1/2** | 18 3/4 | 19 1/4 | 3/16 | 5 3/4 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 | 2 550 |
| **SDAF 23188 KA x 16 1/2** | 21 | 21 3/4 | 0 | 7 7/32 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 | 4 300 |
| **SDAF 23288 KA x 16 1/2** | 21 5/8 | 22 1/4 | 0 | 8 9/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 | 5 050 |
| **SDAF 23092 KA x 17** | 18 3/4 | 19 1/4 | 3/16 | 5 7/8 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 | 2 850 |
| **SDAF 23192 KA x 17** | 21 5/8 | 22 1/4 | 0 | 7 1/2 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 | 5 000 |
| **SDAF 23096 KA x 18** | 21 | 21 3/4 | 3/16 | 5 29/32 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 | 4 250 |
| **SDAF 23196 KA x 18** | 21 5/8 | 22 1/4 | 0 | 7 21/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 | 5 300 |
| **SDAF 230/500 KA x 18 1/2** | 21 | 21 3/4 | 3/16 | 6 1/2 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 | 4 350 |
| **SDAF 230/530 KA x 19 1/2** | 21 5/8 | 22 1/4 | 3/16 | 6 27/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 | 5 200 |

# 9.4 Extended range pillow blocks with spherical roller bearings with a cylindrical bore Series SDAF 230(00), 231(00), 232(00)

$d_a$ **240 – 420** mm

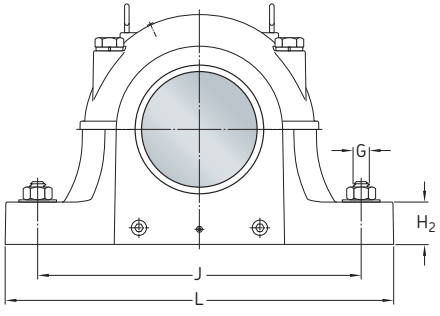


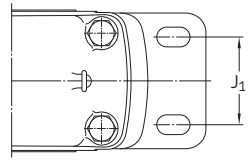




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| Shaft diameter | | | Complete pillow block | Components | | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring[2] (2 req'd) | Labyrinth seal Shaft $d_b$ | Shaft $d_c$ | Lock nut | Lock washer | |
| $d_a$ | $d_b$ | $d_c$ | | | | | | | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **240** | 10 1/2 | 9 3/16 | **SDAF 23248** | SDAF 3248 | 23248 CAC/W33 | 36053-114 | ERF 840 | ERF 923 | N 048 | PL 48 | 1 100 |
| **260** | 11 1/2 | 9 15/16 | **SDAF 23152** | SDAF 3152 | 23152 CAC/W33 | 36053-114 | ERF 832 | ERF 845 | N 052 | PL 52 | 1 050 |
| | 11 1/2 | 9 15/16 | **SDAF 23252** | SDAF 3252 | 23252 CAC/W33 | A 8968 | ERF 832 | ERF 845 | N 052 | PL 52 | 1 350 |
| **280** | 12 1/2 | 10 3/4 | **SDAF 23156** | SDAF 3156 | 23156 CAC/W33 | A 8967 | ERF 866 | ERF 826 | N 056 | PL 56 | 1 250 |
| | 12 1/2 | 10 3/4 | **SDAF 23256** | SDAF 3256 | 23256 CAC/W33 | 36053-157 | ERF 866 | ERF 826 | N 056 | PL 56 | 1 400 |
| **300** | 13 | 11 1/2 | **SDAF 23060** | SDAF 3060 | 23060 CAC/W33 | A 8967[3] | ERF 824 | ERF 832 | N 060 | PL 60 | 1 200 |
| | 13 | 11 1/2 | **SDAF 23160** | SDAF 3160 | 23160 CAC/W33 | 36053-157 | ERF 846 | ERF 856 | N 060 | PL 60 | 1 350 |
| | 13 | 11 1/2 | **SDAF 23260** | SDAF 3260 | 23260 CAC/W33 | 36053-130 | ERF 846 | ERF 856 | N 060 | PL 60 | 1 900 |
| **320** | 13 3/4 | 12 1/4 | **SDAF 23064** | SDAF 3064 | 23064 CC/W33 | A 8968[3] | ERF 943 | ERF 804 | N 064 | PL 64 | 1 300 |
| | 14 | 12 1/4 | **SDAF 23164** | SDAF 3164 | 23164 CAC/W33 | A 8970 | ERF 876 | ERF 983 | N 064 | PL 64 | 1 850 |
| | 14 | 12 1/4 | **SDAF 23264** | SDAF 3264 | 23264 CAC/W33 | 36053-137 | ERF 876 | ERF 983 | N 064 | PL 64 | 2 500 |
| **340** | 15 | 13 | **SDAF 23068** | SDAF 3068 | 23068 CAC/W33 | A 8969[3] | ERF 806 | ERF 824 | N 068 | PL 68 | 1 550 |
| | 15 | 13 | **SDAF 23168** | SDAF 3168 | 23168 CAC/W33 | 36053-137 | ERF 847 | ERF 846 | N 068 | PL 68 | 2 450 |
| | 15 | 13 | **SDAF 23268** | SDAF 3268 | 23268 CA/W33 | 36053-143 | ERF 847 | ERF 846 | N 068 | PL 68 | 2 650 |
| **360** | 15 3/4 | 13 3/4 | **SDAF 23072** | SDAF 3072 | 23072 CAC/W33 | A 8970[3] | ERF 969 | ERF 874 | N 072 | PL 72 | 1 650 |
| | 16 | 13 3/4 | **SDAF 23172** | SDAF 3172 | 23172 CC/W33 | 36053-167 | ERF 809 | ERF 874 | N 072 | PL 72 | 2 500 |
| | 16 | 13 3/4 | **SDAF 23272** | SDAF 3272 | 23272 CA/W33 | 36053-150 | ERF 965 | ERF 981 | N 072 | PL 72 | 2 950 |
| **380** | 16 3/4 | 14 1/2 | **SDAF 23076** | SDAF 3076 | 23076 CAC/W33 | A 8971[3] | ERF 822 | ERF 950 | N 076 | PL 76 | 1 700 |
| | 17 | 14 1/2 | **SDAF 23176** | SDAF 3176 | 23176 CA/W33 | 36053-143 | ERF 811 | ERF 950 | N 076 | PL 76 | 2 500 |
| | 17 | 14 1/2 | **SDAF 23276** | SDAF 3276 | 23276 CA/W33 | 36053-152 | ERF 838 | ERF 984 | N 076 | PL 76 | 3 050 |
| **400** | 17 1/2 | 15 3/8 | **SDAF 23080** | SDAF 3080 | 23080 CAC/W33 | 36053-153[3] | ERF 999 | ERF 942 | N 080 | PL 80 | 2 300 |
| | 17 1/2 | 15 1/4 | **SDAF 23180** | SDAF 3180 | 23180 CA/W33 | 36053-150 | ERF 967 | ERF 895 | N 080 | PL 80 | 2 800 |
| | 17 1/2 | 15 1/4 | **SDAF 23280** | SDAF 3280 | 23280 CA/W33 | 36053-165 | ERF 967 | ERF 895 | N 080 | PL 80 | 4 500 |
| **420** | 18 | 16 | **SDAF 23084** | SDAF 3084 | 23084 CA/W33 | 36053-143[3] | ERF 812 | ERF 809 | N 084 | PL 84 | 2 300 |
| | 18 1/2 | 15 3/4 | **SDAF 23184** | SDAF 3184 | 23184 CA/W33 | 36053-160 | ERF 978 | ERF 907 | N 084 | PL 84 | 4 300 |
| | 18 1/2 | 15 3/4 | **SDAF 23284** | SDAF 3284 | 23284 CA/W33 | 36053-154 | ERF 978 | ERF 907 | N 084 | PL 84 | 5 000 |

[1] Optional internal radial clearance (e.g. C3) available on request.
[2] For a held unit, order stabilizing rings separately.
[3] Only one stabilizing ring required.



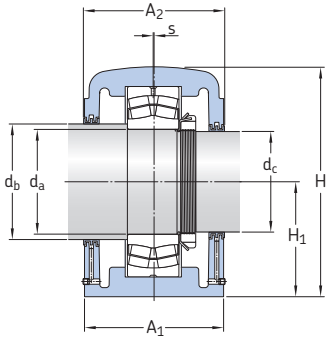



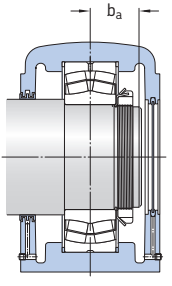

**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G |
| – | in. | | | | | | | | | | | |
| **SDAF 23248** | 13 1/8 | 13 3/4 | | 4 7/8 | 20 7/8 | 10 1/4 | 3 3/4 | 29 | 30 1/2 | 8 3/4 | 35 | 1 5/8 |
| **SDAF 23152** | 13 1/8 | 13 3/4 | | 4 5/8 | 20 7/8 | 10 1/4 | 3 3/4 | 29 | 30 1/2 | 8 3/4 | 35 | 1 5/8 |
| **SDAF 23252** | 14 3/4 | 15 1/2 | | 5 7/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 |
| **SDAF 23156** | 14 3/4 | 15 1/2 | | 4 25/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 |
| **SDAF 23256** | 14 3/4 | 15 1/2 | | 5 11/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 |
| **SDAF 23060** | 14 3/4 | 15 1/2 | 3/16 | 4 11/32 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | | 38 1/4 | 1 5/8 |
| **SDAF 23160** | 14 3/4 | 15 1/2 | | 5 1/8 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | 9 | 38 1/4 | 1 5/8 |
| **SDAF 23260** | 15 3/4 | 16 3/4 | | 5 3/4 | 25 3/4 | 12 13/16 | | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 |
| **SDAF 23064** | 14 3/4 | 15 1/2 | 3/16 | 4 1/2 | 23 7/16 | 12 | 4 | 32 3/4 | 33 1/2 | | 38 1/4 | 1 5/8 |
| **SDAF 23164** | 15 3/4 | 16 3/4 | | 5 17/32 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 |
| **SDAF 23264** | 17 3/4 | 18 3/4 | | 6 5/32 | 27 7/8 | 14 | 5 | 36 3/4 | 38 1/4 | 10 3/4 | 43 3/4 | 2 |
| **SDAF 23068** | 15 1/4 | 15 3/4 | 3/16 | 4 7/8 | 24 | 12 | 4 3/16 | 32 | 33 1/2 | 10 | 39 | 1 7/8 |
| **SDAF 23168** | 17 3/4 | 18 3/4 | | 5 29/32 | 27 7/8 | 14 | 5 | 36 3/4 | 38 1/4 | 10 3/4 | 43 3/4 | 2 |
| **SDAF 23268** | 17 1/8 | 17 5/8 | | 6 19/32 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 |
| **SDAF 23072** | 15 3/4 | 16 3/4 | 3/16 | 4 7/8 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 |
| **SDAF 23172** | 17 1/8 | 17 5/8 | | 5 31/32 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 |
| **SDAF 23272** | 18 3/4 | 19 1/4 | | 6 3/4 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 |
| **SDAF 23076** | 15 3/4 | 16 3/4 | 3/16 | 5 1/8 | 25 3/4 | 12 13/16 | 4 1/2 | 35 | 36 1/2 | 10 1/2 | 41 3/4 | 1 7/8 |
| **SDAF 23176** | 17 1/8 | 17 5/8 | | 6 1/8 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 |
| **SDAF 23276** | 18 3/4 | 19 1/4 | | 7 1/32 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 |
| **SDAF 23080** | 17 1/8 | 17 5/8 | 3/16 | 5 17/32 | 28 7/8 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 |
| **SDAF 23180** | 18 3/4 | 19 1/4 | | 6 13/32 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 |
| **SDAF 23280** | 21 | 21 3/4 | | 7 1/2 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 |
| **SDAF 23084** | 17 1/8 | 17 5/8 | 3/16 | 5 9/16 | 29 | 14 1/2 | 5 1/4 | 39 1/4 | 40 3/4 | 11 | 46 | 2 |
| **SDAF 23184** | 21 | 21 3/4 | | 6 7/8 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 |
| **SDAF 23284** | 21 5/8 | 22 1/4 | | 7 13/16 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 |

# 9.4 Extended range pillow blocks with spherical roller bearings with a cylindrical bore Series SDAF 230(00), 231(00), 232(00)

$d_a$ **440 – 530** mm

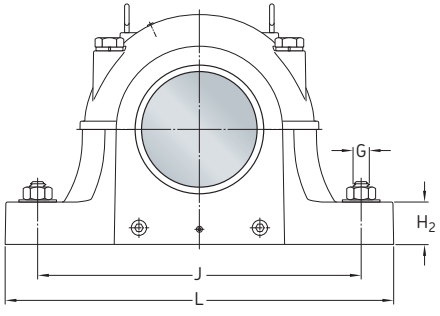


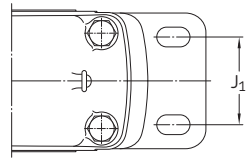




**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

| Shaft diameter | | | Complete pillow block | Components | | | | | | Mass |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Pillow block housing | Bearing[1] | Stabilizing ring[2] (2 req'd) | Labyrinth seal Shaft $d_b$ | Shaft $d_c$ | Lock nut | Lock washer | |
| $d_a$ | $d_b$ | $d_c$ | | | | | | | | | |
| mm | in. | | – | – | | | | | | | lb. |
| **440** | 19 1/2 | 17 | **SDAF 23088** | SDAF 3088 | 23088 CA/W33 | 36053-150 | ERF 926 | ERF 838 | N 088 | PL 88 | 2 550 |
| | 19 1/2 | 17 | **SDAF 23188** | SDAF 3188 | 23188 CA/W33 | 36053-165 | ERF 926 | ERF 838 | N 088 | PL 88 | 4 300 |
| | 19 1/2 | 17 | **SDAF 23288** | SDAF 3288 | 23288 CA/W33 | 36053-159 | ERF 926 | ERF 838 | N 088 | PL 88 | 5 050 |
| **460** | 20 | 17 3/4 | **SDAF 23092** | SDAF 3092 | 23092 CA/W33 | 36053-152 | ERF 808 | ERF 906 | N 092 | PL 92 | 2 850 |
| | 20 | 17 3/4 | **SDAF 23192** | SDAF 3192 | 23192 CA/W33 | 36053-154 | ERF 808 | ERF 906 | N 092 | PL 92 | 5 000 |
| **480** | 21 | 18 1/2 | **SDAF 23096** | SDAF 3096 | 23096 CA/W33 | 36053-200 | ERF 933 | ERF 978 | N 096 | PL 96 | 4 250 |
| | 21 | 18 1/2 | **SDAF 23196** | SDAF 3196 | 23196 CA/W33 | 36053-159 | ERF 933 | ERF 978 | N 096 | PL 96 | 5 300 |
| **500** | 21 | 19 | **SDAF 230/500** | SDAF 30/500 | 230/500 CA/W33 | 36053-165 | ERF 933 | ERF 922 | N 500 | PL 500 | 4 350 |
| **530** | 22 1/2 | 20 3/8 | **SDAF 230/530** | SDAF 30/530 | 230/530 CA/W33 | 36053-166 | ERF 997 | ERF 998 | N 530 | PL 530 | 5 200 |

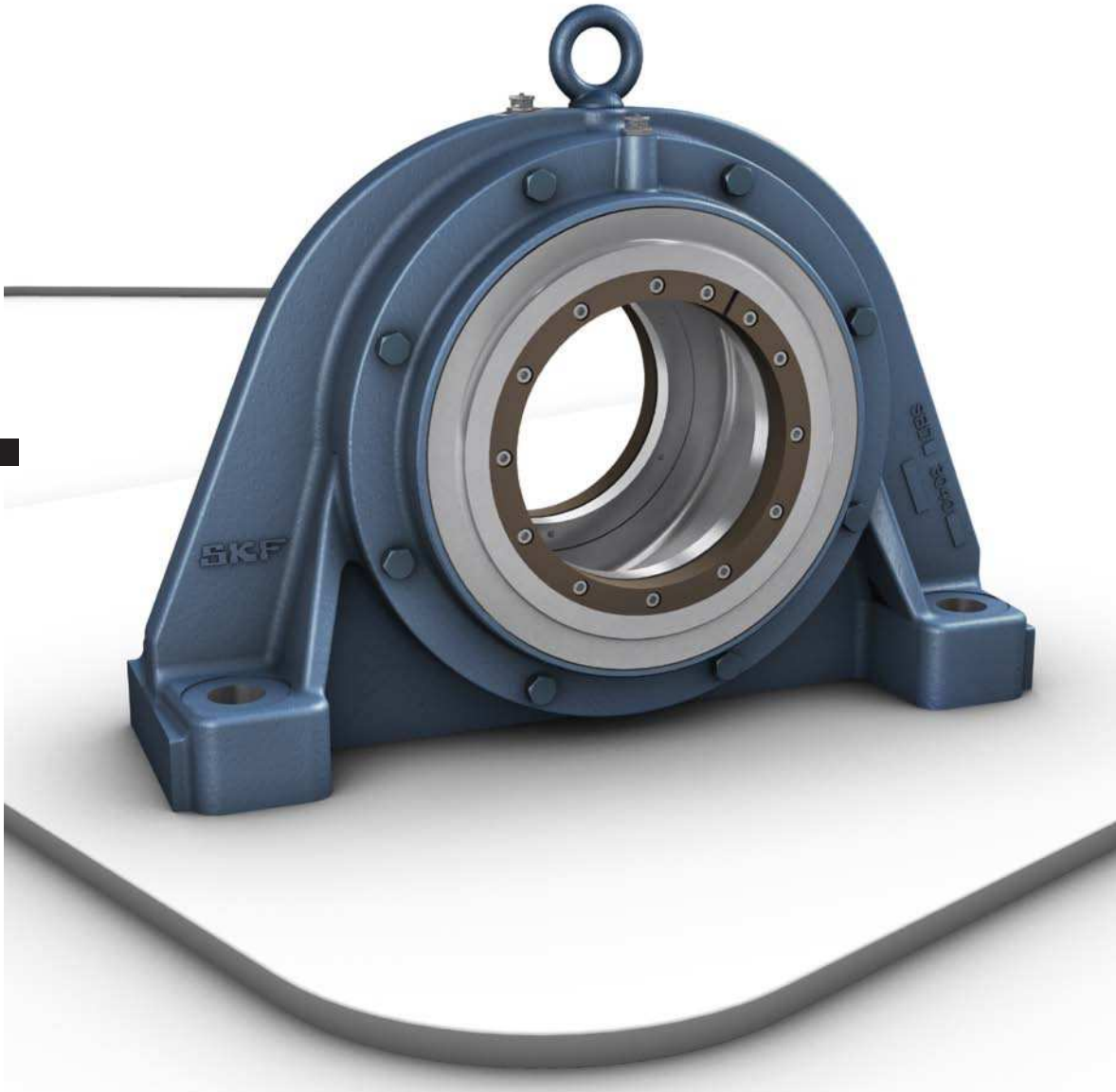
1) Optional internal radial clearance (e.g. C3) available on request.
2) For a held unit, order stabilizing rings separately.




**Complete pillow block**

| Designation | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $A_1$ | $A_2$ | S | $b_a$ | H | $H_1$ | $H_2$ | $J_{min}$ | $J_{max}$ | $J_1$ | L | G |
| – | in. | | | | | | | | | | | |
| **SDAF 23088** | 18 3/4 | 19 1/4 | | 5 3/4 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 |
| **SDAF 23188** | 21 | 21 3/4 | | 7 7/32 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 |
| **SDAF 23288** | 21 5/8 | 22 1/4 | | 8 9/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 |
| **SDAF 23092** | 18 3/4 | 19 1/4 | | 5 7/8 | 30 1/2 | 15 1/2 | 5 1/2 | 41 3/4 | 43 1/2 | 12 1/4 | 48 3/4 | 2 1/4 |
| **SDAF 23192** | 21 5/8 | 22 1/4 | | 7 1/2 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 |
| **SDAF 23096** | 21 | 21 3/4 | | 5 29/32 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 |
| **SDAF 23196** | 21 5/8 | 22 1/4 | | 7 21/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 |
| **SDAF 230/500** | 21 | 21 3/4 | | 6 1/2 | 33 3/4 | 17 | 5 1/2 | 44 3/8 | 46 1/8 | 14 1/2 | 53 | 2 1/4 |
| **SDAF 230/530** | 21 5/8 | 22 1/4 | | 6 27/32 | 35 3/4 | 18 | 5 3/4 | 47 1/8 | 48 7/8 | 15 | 54 1/4 | 2 1/2 |


SKF

# Non-split plummer block housings and take-up housings SBD and THD series

**Bearing types**
- Spherical roller bearings
- CARB toroidal roller bearings (optional)

**Bearing dimension series**
- 22, 30, 31, 32

**Shaft diameter range**
- 60 to 420 mm (SBD)
- 50 to 400 mm (THD)

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve (SBD and THD)
- Stepped shaft with bearing on an adapter sleeve (SBD)
- Stepped shaft with bearing on a cylindrical seat (SBD)
- Multi-stepped shaft with bearing on a cylindrical seat (SBD)

**Seals**
- Labyrinth
- Heavy-duty (optional)

**Lubrication**
- Grease

**Materials**
- Spheroidal graphite cast iron
- Cast steel (optional)
- Grey cast iron (optional)

**Mounting**
- Four-bolt mounting (SBD)

**Compliance to standards**
- Not standardized

SBD plummer (pillow) block housings and THD take-up housings are non-split housings designed to accommodate heavy loads acting in different directions. These types of loads are typically encountered in conveyors, roller beds and crushers. Highly reliable bearing arrangements can be designed using SBD or THD housings together with SKF Explorer bearings. In conveyors, SBD and THD housings are often used together.

# Non-split plummer block housings and take-up housings SBD and THD series


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# Designations

**Designation system for SBD plummer block housings and THD take-up housings**

**SBDD 2226 CAF**

**Series**

| | |
|---|---|
| **SBD** | Standard non-split plummer block housing |
| **THD** | Standard non-split take-up housing |

**Material**

| | |
|---|---|
| **D** | Spheroidal graphite cast iron |
| **S** | Cast steel |
| **C** | Grey cast iron |

**Size identification**

| | |
|---|---|
| **22(00)** | Housing for bearings in the 22 series |
| **30(00)** | Housing for bearings in the 30 series |
| **31(00)** | Housing for bearings in the 31 series |
| **32(00)** | Housing for bearings in the 32 series |
| **..(00)** | Size code of the bearing, (00) × 5 = bearing bore diameter [mm] |

**Suffixes**[1)]

| | |
|---|---|
| **–** | Housing for bearings on an adapter sleeve and a plain shaft |
| **C** | SBD housing for bearings on an adapter sleeve and a stepped shaft |
| **E** | SBD housing for bearings on a cylindrical seat and a stepped shaft |
| **G** | SBD housing for bearings on a cylindrical seat and a multi-stepped shaft |
| **A** | Housing for shaft end, one side closed |
| **B** | Housing for a through shaft |
| **F** | Housing for the locating bearing position |
| **L** | Housing for the non-locating bearing position |

[1)] When multiple suffixes are used, they are listed in the same order as shown here.

**Designation system for adapter rings**

**PSBD 115**

**Series**

| | |
|---|---|
| **PSBD** | Adapter ring for labyrinth seal |

**Size identification**

| | |
|---|---|
| **...** | Shaft diameter [mm] |

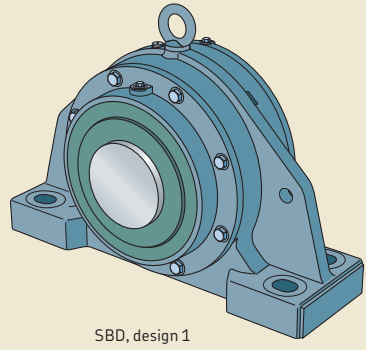
# Standard housing design

SBD plummer (pillow) block housings and THD take-up housings are non-split housings. They consist of a housing body and two covers. The covers are bolted to the body with six or eight bolts. SBD and THD housings are supplied with different covers depending on the shaft-bearing combination (→ **page 493**).

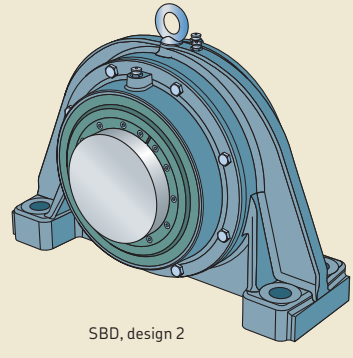
SBD housings are available in two designs (→ **fig. 1**), depending on the housing size. The main difference is the holes for the attachment bolts: one design has cast oblong holes, the other has drilled holes. Other design differences include the overall shape of the housing and the thickness of the reinforcement ribs.

THD housings have a special take-up design to maintain tension on a conveyor belt (→ **fig. 2**). SKF does not supply the frames.

**Fig. 1**

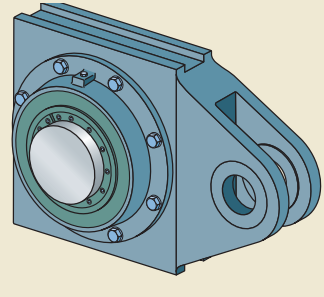


SBD, design 1



SBD, design 2

**Fig. 2**



THD

## Features and benefits

Standard SBD plummer block housings and THD take-up housings share some of the following features:

**Stiff housing**

Non-split housings provide a high degree of stiffness and can accommodate heavy radial loads in all directions.

**Narrow width**

SBD plummer block housings and THD take-up housings are narrow and can be used where space is limited (→ **fig. 3**).

**Machined base ends**

SBD housings have machined base ends to make alignment easier and provide good contact with stops when stops are used to accommodate loads parallel to the support surface (→ **fig. 4**).

**Eye bolts**

With the exception of the smallest housing (SBD 2213) all SBD plummer block housings have an eye bolt for safe and easy handling.

## Housing material

Standard SBD plummer block housings and THD take-up housing bodies are made of spheroidal graphite cast iron (series designation SBDD or THDD). Covers are made of grey cast iron.

### Paint, corrosion protection

SBD plummer block housings and THD take-up housings are painted blue (RAL 5007) using a solvent based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

Fig. 3

Narrow width

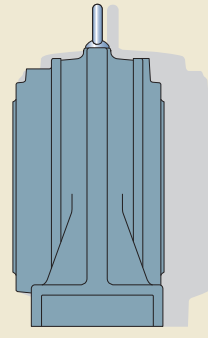
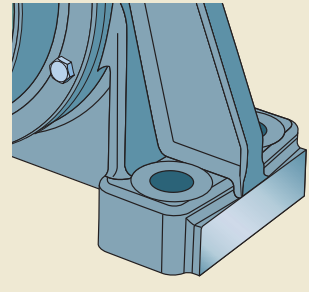


Fig. 4

Machined base ends



## Dimension standards

The dimensions of SBD and THD housings are not standardized either nationally or internationally.

# Housing variants

The following housing variants can be supplied on request:

- SBD or THD housings for CARB toroidal roller bearings
- SBD housings for bearings on a withdrawal sleeve
- Housings with taconite heavy-duty seals
- Housings made of cast steel (series designation SBDS or THDS)
- Housings made of grey cast iron (series designation SBDC or THDC)

For additional information about these variants, contact the SKF application engineering service.

# Sealing solutions

SBD plummer (pillow) block housings and THD take-up housings are supplied with labyrinth seals as standard. They can also be used with sealed spherical roller bearings, and variants are available for taconite heavy-duty seals.

## Standard seals

The labyrinth seal consists of a labyrinth ring made of grey cast iron, mounted on the shaft, which forms a multi-stage axial labyrinth with the seal grooves in the housing cover. The number of stages in the labyrinth ring varies with housing size.

In THD take-up housings, the labyrinth rings are locked on the shaft with adapter rings. In SBD plummer block housings, the labyrinth rings are locked in different ways depending on the housing type:

- fixed with an adapter ring (→ **fig. 5a**)
- clamped between the bearing and a shaft shoulder(→ **fig. 5b**)
- clamped between the bearing or the lock nut and another component on the shaft (→ **fig. 5c**)

The product tables show how the labyrinth rings are locked for the different housing designs. Adapter rings are supplied with the housing when needed. The adapter ring is identified by the prefix PSBD followed by the size (shaft diameter) in millimeters uncoded, e.g. PSBD 170. Adapter rings are listed in **table 1**.

In typical applications, the bearing and housing are completely filled with grease. Excess grease enters the labyrinths and improves the sealing effect. Most THD take-up housings and SBD plummer block housings have ducts to supply grease directly to the seals.

Seal characteristics are listed in **table 2**.

Fig. 5

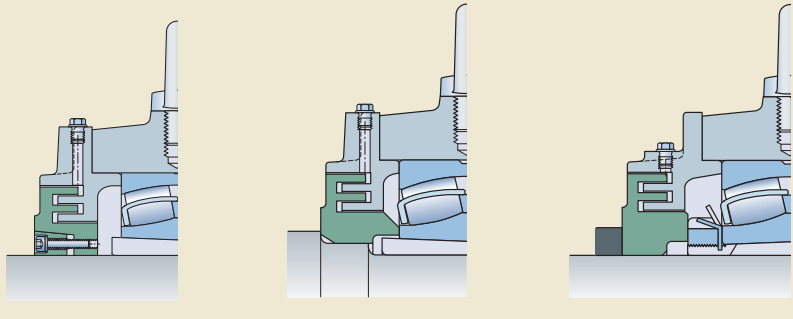
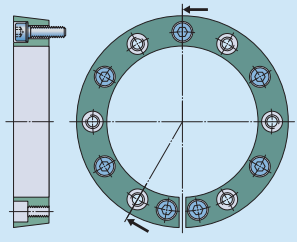


**Table 1**

**Adapter rings for SBD plummer block housings and THD take-up housings**



| Adapter ring | Adapter ring bolts | |
|---|---|---|
| | Size | Tightening torque |
| – | – | Nm |
| **PSBD 50** | M 3 | 1 |
| **PSBD 55** | M 3 | 1 |
| **PSBD 60** | M 4 | 2 |
| **PSBD 70** | M 5 | 4 |
| **PSBD 80** | M 5 | 4 |
| **PSBD 90** | M 5 | 4 |
| **PSBD 100** | M 5 | 4 |
| **PSBD 110** | M 5 | 4 |
| **PSBD 115** | M 5 | 4 |
| **PSBD 120** | M 5 | 4 |
| **PSBD 125** | M 5 | 4 |
| **PSBD 130** | M 5 | 4 |
| **PSBD 135** | M 6 | 7 |
| **PSBD 140** | M 6 | 7 |
| **PSBD 150** | M 6 | 7 |
| **PSBD 160** | M 6 | 7 |
| **PSBD 170** | M 6 | 7 |
| **PSBD 180** | M 6 | 7 |
| **PSBD 190** | M 6 | 7 |
| **PSBD 200** | M 8 | 10 |
| **PSBD 220** | M 8 | 10 |
| **PSBD 240** | M 8 | 10 |
| **PSBD 260** | M 8 | 10 |
| **PSBD 280** | M 8 | 10 |
| **PSBD 300** | M 8 | 10 |
| **PSBD 320** | M 8 | 10 |
| **PSBD 340** | M 10 | 12 |
| **PSBD 360** | M 10 | 12 |
| **PSBD 380** | M 10 | 12 |
| **PSBD 400** | M 10 | 12 |
| **PSBD 420** | M 10 | 12 |

**Table 2**

**Labyrinth seals for SBD plummer block and THD take-up housings**

| | |
|---|---|
| Material | |
| labyrinth ring | Cast iron |
| adapter ring | Fabric reinforced phenolic resin |

**Application conditions and requirements**

| | |
|---|---|
| Temperature | |
| with adapter ring | –30 to +100 °C *(–20 to +210 °F)* |
| without adapter ring | –50 to +200 °C *(–60 to +390 °F)* |
| Max. circumferential speed [m/s] | not limited |
| Max. misalignment [°] | 0,3 |
| Low friction | ++ |
| Axial shaft displacement | listed in the product tables |
| Shaft tolerance class | see *Shaft specifications*, **page 495** |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 |

**Sealing suitability**

| | |
|---|---|
| Dust | + |
| Fine particles | + |
| Coarse particles | + |
| Chips | ++ |
| Liquids when sprayed | –– |
| Direct sunlight | ++ |

Symbols: ++ very suitable
+ suitable
–– not suitable

## Using sealed bearings

Using sealed bearings in housings with standard seals is a good solution for highly contaminated environments. The sealed bearing together with the housing seal and grease provide three layers of protection (→ *SKF three-barrier solution*, **page 39**). SBD plummer block housings and THD take-up housings can, in most cases, be used together with self-aligning sealed SKF bearings. When using taconite heavy-duty seals, a sealed bearing does not enhance the sealing effect during operation, but still protects the bearing against contaminants during mounting. For additional information, contact the SKF application engineering service.

## Special seals

SBD plummer block housings and THD take-up housings are available with taconite heavy-duty seals. Taconite heavy-duty seals are grease filled labyrinth seals that include a V-ring. They can seal against taconite, a very fine-grained mineral which is extremely difficult to seal against.

Taconite seals require a modified housing, designation suffix /VZ335. For additional information, contact the SKF application engineering service.

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on sleeves* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

SBD plummer block housings can accommodate different shaft-bearing combinations (→ **fig. 6**):

- Plain shaft with bearing on an adapter sleeve, no designation suffix
- Stepped shaft with bearing on an adapter sleeve, designation suffix C
- Stepped shaft with bearing on a cylindrical seat, designation suffix E
- Multi-stepped shafts with bearings on a cylindrical seat, designation suffix G

THD take-up housings are available for bearings on an adapter sleeve on plain shafts (→ **fig. 7**).

**Fig. 7**

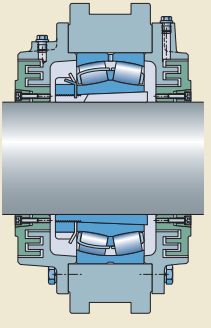
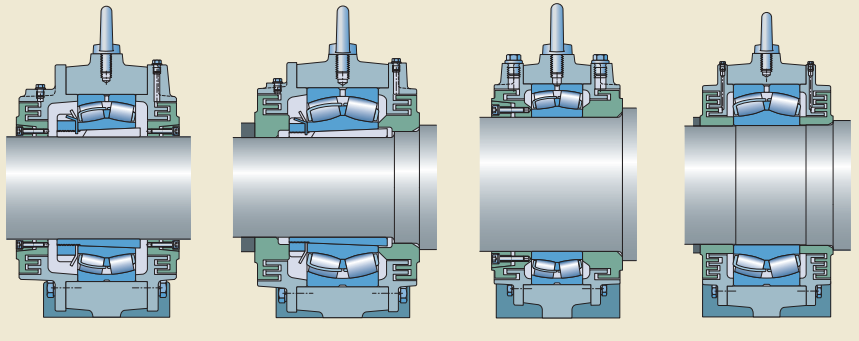




**Fig. 6**



Plain shaft with bearing on an adapter sleeve

Stepped shaft with bearing on an adapter sleeve, designation suffix C

Stepped shaft with bearing on a cylindrical seat, designation suffix E

Multi-stepped shaft with bearing on a cylindrical seat, designation suffix G

End plates to secure a bearing on a cylindrical seat at the end of a shaft (→ **fig. 8**) are not supplied by SKF. Suitable dimensions for end plates are provided in the product tables.

SBD and THD housing bodies are supplied with different covers to fit the following shaft arrangements:

- housing for a shaft end, designation suffix A
- housing for a through shaft, designation suffix B
- housing for a locating bearing, designation suffix F
- housing for a non-locating bearing, designation suffix L

When ordering, the suffixes should be combined; see the order example on **page 501**.

## Locating and non-locating bearing positions

SBD plummer block housings and THD take-up housings can be used for both the locating and non-locating bearing positions. The housing covers determine the width of the bearing seat. For a locating bearing, the covers provide a bearing seat that is the same width as the bearing (designation suffix F). For the non-locating bearing, the covers provide a bearing seat that is wider than the bearing (designation suffix L). The permissible axial displacement of the bearing is listed in the product tables (parameter "s").

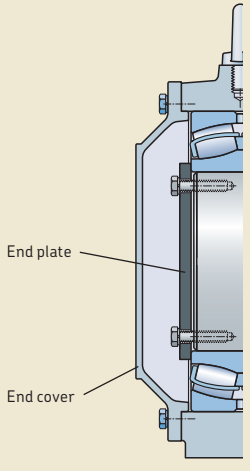
## Load carrying capacity

SBD plummer block housings and THD take-up housings are designed to accommodate radial loads acting in all directions as well as axial loads acting in both directions on the locating bearing position.

For SBD housings, the permissible radial loads depend on the bearing, the housing and the attachment bolts. Loads acting perpendicularly to the support surface are limited only by the bearing. SBD housings must be supported over the entire base area.

For information on the load carrying capacity of THD take-up housings, contact SKF application engineering service.

Fig. 8




### Breaking loads and safety factors

Guideline values for the breaking loads of housings made of spheroidal graphite cast iron are provided in **table 3** on **page 496**. To obtain the permissible load for a housing, the appropriate breaking load value should be divided by a factor selected based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**).

For SBD housings made of cast steel, the values obtained from **table 3** on **page 496** should be multiplied by a factor of 1,25. For housings made of grey cast iron, the values should be multiplied by a factor of 0,63.

The load $P_a$ is the axial breaking load of the housing. If the incorporated bearing is mounted on a sleeve, the permissible axial load for the sleeve must be checked.

### Additional housing support for SBD plummer block housings

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to provide a stop to counter the load.

When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **table 3** on **page 496**), a stop should be provided to counter the load. The

stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

### Operating temperature

The permissible operating temperature is mainly limited by the adapter ring (→ **table 2**, **page 491**) and the lubricant. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

### Operating speed

The permissible operating speed of the incorporated bearing is not limited by the housing.

### Shaft specifications

When a labyrinth ring is mounted on the same shaft diameter as the bearing, its seat should comply with the tolerances required by the bearing.

- Housings without suffix
  The recommended shaft tolerance class is h9Ⓔ.
- Housings with suffix C
  The recommended shaft tolerance class is h6Ⓔ(both under the adapter sleeve and the labyrinth rings).
- Housings with suffix E
  The recommended shaft tolerance class for bearings with a bore diameter up to 140 mm is p6Ⓔ, and for larger bearings r6Ⓔ. The shaft tolerance class under the outer labyrinth seal is h6Ⓔ.
- Housings with suffix G
  The recommended shaft tolerance class for bearings with a bore diameter up to 140 mm is p6Ⓔ, and for larger bearings r6Ⓔ. Where a labyrinth ring is mounted on a separate seat, the recommended shaft tolerance class is h6Ⓔ.

The recommended shaft tolerances under the labyrinth rings are also provided in the illustrations in the product tables.

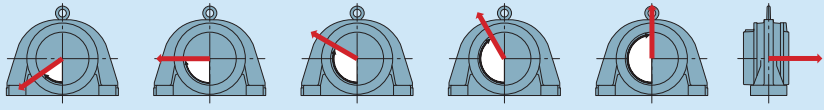
### Attachment bolt recommendations

In typical applications 8.8 class hexagonal bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 5** on **page 500**). They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

Table 3

**Breaking loads for SBDD housings** (spheroidal graphite cast iron housings)

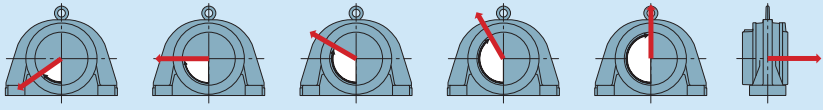



| Housing Size | | | | Breaking loads $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|---|---|
| – | | | | kN | | | | | |
| **2213** | | | | 1) | 1) | 1) | 1) | 1) | 1) |
| **2218** | | | | 1) | 1) | 1) | 1) | 1) | 1) |
| **2220** | **3024** | | | 1 040 | 840 | 800 | 640 | 800 | 160 |
| | | **3122** | | 1 500 | 1 200 | 1 320 | 1 060 | 1 320 | 265 |
| **2222** | **3026** | | | 1 240 | 1 000 | 880 | 720 | 880 | 175 |
| **2224** | **3028** | | | 1 400 | 1 120 | 960 | 800 | 960 | 190 |
| | | **3124** | **3222** | 1 470 | 1 180 | 1 320 | 1 060 | 1 320 | 265 |
| | | **3126** | **3224** | 1 580 | 1 260 | 1 360 | 1 090 | 1 360 | 270 |
| **2226** | **3030** | | | 1 600 | 1 280 | 1 680 | 1 360 | 1 680 | 320 |
| | | **3128** | **3226** | 1 800 | 1 440 | 1 360 | 1 090 | 1 360 | 270 |
| | **3032** | | | 1 800 | 1 440 | 1 760 | 1 440 | 1 760 | 350 |
| **2228** | **3034** | | | 2 160 | 1 720 | 1 760 | 1 440 | 1 760 | 350 |
| | | **3130** | **3228** | 2 160 | 1 720 | 1 400 | 1 120 | 1 400 | 280 |
| **2230** | **3036** | | | 2 400 | 1 920 | 1 760 | 1 440 | 1 760 | 350 |
| | | **3132** | **3230** | 2 440 | 1 960 | 1 440 | 1 150 | 1 440 | 290 |
| **2232** | **3038** | | | 2 640 | 2 120 | 1 920 | 1 520 | 1 920 | 385 |
| | | **3134** | **3232** | 2 800 | 2 240 | 1 520 | 1 220 | 1 520 | 305 |
| **2234** | **3040** | | | 3 080 | 2 440 | 2 400 | 1 920 | 2 400 | 480 |
| | | **3136** | **3234** | 3 360 | 2 680 | 1 600 | 1 280 | 1 600 | 320 |
| **2236** | | | | 3 480 | 2 800 | 2 720 | 2 160 | 2 720 | 545 |
| **2238** | **3044** | | | 3 480 | 2 800 | 2 720 | 2 160 | 2 720 | 545 |
| | | **3138** | **3236** | 3 600 | 2 920 | 1 680 | 1 340 | 1 680 | 335 |
| **2240** | **3048** | | | 3 960 | 3 160 | 3 840 | 3 040 | 3 840 | 770 |
| | | **3140** | **3238** | 4 400 | 3 560 | 1 800 | 1 440 | 1 800 | 360 |
| **2244** | **3052** | | | 4 440 | 3 560 | 3 920 | 3 120 | 3 920 | 785 |
| | | **3144** | **3240** | 4 800 | 3 880 | 2 000 | 1 600 | 2 000 | 400 |
| | **3056** | | | 5 160 | 4 120 | 4 800 | 3 840 | 4 800 | 960 |
| | | **3148** | **3244** | 5 360 | 4 320 | 2 400 | 1 920 | 2 400 | 480 |
| **2248** | **3060** | | | 5 720 | 4 560 | 4 960 | 4 000 | 4 960 | 990 |
| | | **3152** | **3248** | 6 000 | 4 840 | 2 800 | 2 240 | 2 800 | 560 |
| **2252** | **3064** | | | 6 280 | 5 040 | 5 360 | 4 240 | 5 360 | 1 040 |
| **2256** | **3068** | | | 6 920 | 5 520 | 5 360 | 4 240 | 5 360 | 1 040 |
| | | **3156** | **3252** | 7 360 | 5 920 | 3 280 | 2 640 | 3 280 | 655 |

1) Contact SKF for missing values

**Table 3 cont.**

**Breaking loads for SBDD housings** (spheroidal graphite cast iron housings)




| Housing Size | | | | Breaking loads $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ | $P_a$ |
|---|---|---|---|---|---|---|---|---|---|
| – | | | | kN | | | | | |
| **2260** | **3072** | | | 7 560 | 6 040 | 6 400 | 5 120 | 6 400 | 1 280 |
| | | **3160** | **3256** | 8 000 | 6 480 | 3 520 | 2 800 | 3 520 | 705 |
| | **3076** | | | 8 480 | 6 800 | 6 560 | 5 280 | 6 560 | 1 310 |
| | | **3164** | **3260** | 9 360 | 7 480 | 4 000 | 3 200 | 4 000 | 800 |
| **2264** | **3080** | | | 9 440 | 7 600 | 7 120 | 5 680 | 7 120 | 1 440 |
| | **3084** | | | 10 500 | 8 440 | 7 280 | 5 760 | 7 280 | 1 440 |
| | | **3168** | **3264** | 11 200 | 8 920 | 4 560 | 3 600 | 4 560 | 910 |
| | | **3172** | | 11 400 | 9 120 | 5 200 | 4 160 | 5 200 | 1 040 |
| | | **3176** | **3268** | 12 800 | 10 200 | 5 200 | 4 160 | 5 200 | 1 040 |
| | | **3180** | **3272** | 14 000 | 11 200 | 5 760 | 4 560 | 5 760 | 1 150 |
| | | | **3276** | 14 800 | 11 800 | 6 400 | 5 120 | 6 400 | 1 280 |
| | | **3184** | | 15 200 | 12 200 | 6 400 | 5 120 | 6 400 | 1 440 |
| | | | **3280** | 17 600 | 14 100 | 7 280 | 5 840 | 7 280 | 1 460 |
| | | | **3284** | 19 200 | 15 200 | 8 400 | 6 720 | 8 400 | 1 680 |

# Lubrication

SBD plummer (pillow) block housings and THD take-up housings are intended for grease lubrication. The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 70 to 80% of its volume.

At speeds above 1/3 of the bearing limiting speed, the values in **table 4** should be reduced by 20 to 30% to avoid high operating temperatures. For bearing limiting speeds, refer to the product information available online at skf.com/bearings.

For highly contaminated environments, use the SKF three-barrier solution (→ **page 39**). In this case, check that the housing can accommodate sealed, self-aligning SKF bearings. For additional information, contact the SKF application engineering service.

Grease quantities for an 80% fill are listed in **table 4**, **page 499**. The values are valid for a typical lithium grease (about 0,95 g/cm$^3$) and include the grease for the bearing.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned maintenance interval.

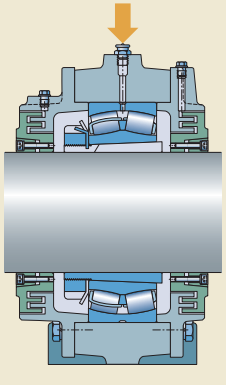
## Relubrication

Some high speed, high temperature or heavy load applications may require the bearing to be relubricated. SBD plummer block housings and THD take-up housings have a button head grease fitting to lubricate the bearing in accordance with DIN 3404 (→ **figs. 9** and **10**). SBD housings have the grease fitting centred at the top of the housing body, while THD housings have the grease fitting centered on the side of the housing body.

The grease fitting can only be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring). When applying grease via the relubrication feature, the shaft should be rotating.

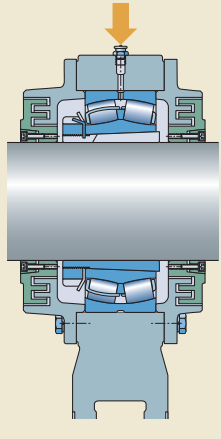
CARB toroidal roller bearings should be relubricated from the side and not via the

Fig. 9



Grease fitting in SBD housing

Fig. 10



Grease fitting in THD housing

Table 4

**Initial grease fill**

| Housing | Initial fill [1] Housing type A | B |
|---|---|---|
| – | kg | |
| **SBD 2213** | 0,10 | 0,10 |
| **SBD 2218** | 0,25 | 0,25 |
| **SBD 2220** | 0,90 | 0,40 |
| **SBD 2222** | 1,00 | 0,50 |
| **SBD 2224** | 1,00 | 0,50 |
| **SBD 2226** | 1,10 | 0,60 |
| **SBD 2228** | 1,20 | 0,80 |
| **SBD 2230** | 1,20 | 0,90 |
| **SBD 2232** | 1,30 | 1,00 |
| **SBD 2234** | 1,40 | 1,20 |
| **SBD 2236** | 1,80 | 1,50 |
| **SBD 2238** | 1,80 | 1,60 |
| **SBD 2240** | 2,00 | 1,80 |
| **SBD 2244** | 2,60 | 2,40 |
| **SBD 2248** | 3,60 | 3,40 |
| **SBD 2252** | 4,10 | 3,80 |
| **SBD 2256** | 5,20 | 4,90 |
| **SBD 2260** | 5,80 | 5,50 |
| **SBD 2264** | 7,90 | 7,50 |
| **SBD 3024** | 0,40 | 0,30 |
| **SBD 3026** | 0,50 | 0,40 |
| **SBD 3028** | 0,50 | 0,50 |
| **SBD 3030** | 0,60 | 0,60 |
| **SBD 3032** | 0,70 | 0,60 |
| **SBD 3034** | 0,80 | 0,70 |
| **SBD 3036** | 1,00 | 0,90 |
| **SBD 3038** | 1,10 | 1,00 |
| **SBD 3040** | 1,30 | 1,10 |
| **SBD 3044** | 1,70 | 1,50 |
| **SBD 3048** | 2,00 | 1,70 |
| **SBD 3052** | 2,50 | 2,30 |
| **SBD 3056** | 2,80 | 2,60 |
| **SBD 3060** | 3,70 | 3,30 |
| **SBD 3064** | 4,20 | 3,80 |
| **SBD 3068** | 5,20 | 4,70 |
| **SBD 3072** | 6,10 | 5,40 |
| **SBD 3076** | 6,90 | 6,00 |
| **SBD 3080** | 8,20 | 7,30 |
| **SBD 3084** | 8,90 | 7,90 |

| Housing | Initial fill [1] Housing type A | B |
|---|---|---|
| – | kg | |
| **SBD 3122** | 0,40 | 0,30 |
| **SBD 3124** | 0,50 | 0,40 |
| **SBD 3126** | 0,50 | 0,50 |
| **SBD 3128** | 0,70 | 0,60 |
| **SBD 3130** | 0,90 | 0,90 |
| **SBD 3132** | 1,20 | 1,10 |
| **SBD 3134** | 1,40 | 1,30 |
| **SBD 3136** | 1,60 | 1,50 |
| **SBD 3138** | 2,00 | 1,80 |
| **SBD 3140** | 2,40 | 2,10 |
| **SBD 3144** | 2,90 | 2,50 |
| **SBD 3148** | 3,40 | 3,00 |
| **SBD 3152** | 4,40 | 3,80 |
| **SBD 3156** | 4,80 | 4,20 |
| **SBD 3160** | 6,00 | 5,20 |
| **SBD 3164** | 7,50 | 6,40 |
| **SBD 3168** | 10,0 | 8,20 |
| **SBD 3172** | 11,8 | 9,30 |
| **SBD 3176** | 14,0 | 11,0 |
| **SBD 3180** | 15,5 | 12,5 |
| **SBD 3184** | 18,0 | 15,0 |
| **SBD 3222** | 0,60 | 0,50 |
| **SBD 3224** | 0,80 | 0,70 |
| **SBD 3226** | 0,90 | 0,80 |
| **SBD 3228** | 1,10 | 1,00 |
| **SBD 3230** | 1,30 | 1,30 |
| **SBD 3232** | 1,60 | 1,50 |
| **SBD 3234** | 1,80 | 1,80 |
| **SBD 3236** | 2,10 | 2,00 |
| **SBD 3238** | 2,40 | 2,30 |
| **SBD 3240** | 2,60 | 2,50 |
| **SBD 3244** | 3,40 | 3,30 |
| **SBD 3248** | 4,30 | 4,00 |
| **SBD 3252** | 5,10 | 4,80 |
| **SBD 3260** | 7,00 | 6,30 |
| **SBD 3264** | 8,20 | 7,30 |
| **SBD 3268** | 9,90 | 8,80 |
| **SBD 3272** | 12,0 | 10,5 |
| **SBD 3276** | 14,5 | 12,5 |
| **SBD 3280** | 18,0 | 16,0 |
| **SBD 3284** | 23,0 | 20,5 |

| Housing | Initial fill [1] Housing type A | B |
|---|---|---|
| – | kg | |
| **THD 2211** | 0,070 | 0,070 |
| **THD 2212** | 0,080 | 0,080 |
| **THD 2213** | 0,10 | 0,10 |
| **THD 2216** | 0,20 | 0,20 |
| **THD 2218** | 0,25 | 0,25 |
| **THD 2220** | 0,40 | 0,35 |
| **THD 2222** | 0,55 | 0,50 |
| **THD 2224** | 0,60 | 0,55 |
| **THD 2228** | 0,85 | 0,75 |
| **THD 3030** | 0,60 | 0,55 |
| **THD 3034** | 0,90 | 0,75 |
| **THD 3038** | 1,15 | 1,00 |
| **THD 3040** | 1,45 | 1,20 |
| **THD 3044** | 1,75 | 1,50 |
| **THD 3052** | 4,10 | 3,55 |
| **THD 3132** | 1,20 | 1,10 |
| **THD 3134** | 1,35 | 1,25 |
| **THD 3136** | 2,40 | 1,60 |
| **THD 3138** | 2,85 | 2,60 |
| **THD 3140** | 2,30 | 2,00 |
| **THD 3144** | 2,90 | 2,50 |
| **THD 3148** | 3,40 | 3,00 |
| **THD 3152** | 4,40 | 3,75 |
| **THD 3160** | 6,00 | 5,15 |
| **THD 3164** | 7,50 | 6,40 |
| **THD 3168** | 10,0 | 8,20 |
| **THD 3176** | 14,0 | 11,0 |

| Housing | Initial fill [1] Housing type A | B |
|---|---|---|
| – | kg | |
| **THD 3222** | 0,55 | 0,50 |
| **THD 3224** | 0,75 | 0,70 |
| **THD 3226** | 0,85 | 0,80 |
| **THD 3228** | 1,05 | 1,00 |
| **THD 3230** | 1,30 | 1,25 |
| **THD 3232** | 1,55 | 1,50 |
| **THD 3236** | 2,10 | 2,00 |
| **THD 3240** | 2,60 | 2,50 |
| **THD 3244** | 3,40 | 3,25 |
| **THD 3248** | 4,25 | 4,00 |
| **THD 3252** | 5,05 | 4,75 |
| **THD 3256** | 5,50 | 5,00 |
| **THD 3260** | 7,00 | 6,25 |
| **THD 3264** | 8,15 | 7,25 |
| **THD 3268** | 9,85 | 8,75 |
| **THD 3272** | 12,0 | 10,5 |
| **THD 3276** | 14,5 | 12,5 |
| **THD 3280** | 18,0 | 16,0 |
| **THD 3284** | 23,0 | 20,5 |

[1] Based on 80% fill

10

Table 5

**Cover bolts and attachment bolts**

| Housing Size | | | | Cover bolts | | Attachment bolts[1] | |
|---|---|---|---|---|---|---|---|
| 22(00) | 30(00) | 31(00) | 32(00) | Size | Tightening torque | Size | Tightening torque[2] |
| – | | | | – | Nm | – | Nm |
| **2211** | | | | M 8 | 25 | – | – |
| **2212** | | | | M 8 | 25 | – | – |
| **2213** | | | | M 8 | 25 | M 16 | 200 |
| **2216** | | | | M 8 | 25 | – | – |
| **2218** | **3024** | | | M 8 | 25 | M 20 | 385 |
| **2220** | | | | M 8 | 25 | M 20 | 385 |
| **2222** | **3026** | **3122** | | M 12 | 80 | M 20 | 385 |
| | | **3124** | | M 12 | 80 | M 20 | 385 |
| | | **3126** | | M 12 | 80 | M 20 | 385 |
| | | **3128** | | M 12 | 80 | M 20 | 385 |
| **2224** | **3028** | | | M 8 | 25 | M 24 | 665 |
| **2226** | **3030** | | | M 10 | 50 | M 24 | 665 |
| | **3032** | | | M 10 | 50 | M 24 | 665 |
| | | **3130** | **3222** | M 12 | 80 | M 24 | 665 |
| | | **3132** | **3224** | M 12 | 80 | M 24 | 665 |
| | | | **3226** | M 12 | 80 | M 24 | 665 |
| | | | **3228** | M 12 | 80 | M 24 | 665 |
| **2228** | **3034** | | | M 10 | 50 | M 30 | 1 310 |
| **2230** | **3036** | **3134** | | M 12 | 80 | M 30 | 1 310 |
| **2232** | **3038** | | | M 12 | 80 | M 30 | 1 310 |
| **2234** | **3040** | | | M 12 | 80 | M 30 | 1 310 |
| | | **3136** | **3230** | M 16 | 200 | M 30 | 1 310 |
| | | | **3232** | M 16 | 200 | M 30 | 1 310 |
| | | | **3234** | M 16 | 200 | M 30 | 1 310 |
| | | | **3236** | M 16 | 200 | M 30 | 1 310 |
| | | | **3238** | M 16 | 200 | M 30 | 1 310 |
| **2236** | **3044** | **3138** | **3240** | M 16 | 200 | M 36 | 2 280 |
| **2238** | **3048** | **3140** | | M 16 | 200 | M 36 | 2 280 |
| **2240** | **3052** | **3144** | | M 16 | 200 | M 36 | 2 280 |
| **2244** | **3056** | | | M 16 | 200 | M 36 | 2 280 |
| **2248** | **3060** | **3148** | **3244** | M 20 | 385 | M 36 | 2 280 |
| **2252** | **3064** | **3152** | **3248** | M 20 | 385 | M 36 | 2 280 |
| **2256** | **3068** | | **3252** | M 20 | 385 | M 36 | 2 280 |
| **2260** | **3072** | | | M 20 | 385 | M 36 | 2 280 |
| | | **3156** | **3256** | M 24 | 665 | M 36 | 2 280 |
| | | **3160** | | M 24 | 665 | M 36 | 2 280 |
| | | **3164** | | M 24 | 665 | M 36 | 2 280 |
| | **3076** | | | M 20 | 385 | M 48 | 5 450 |
| **2264** | **3080** | **3168** | **3260** | M 24 | 665 | M 48 | 5 450 |
| | **3084** | **3172** | **3264** | M 24 | 665 | M 48 | 5 450 |
| | | **3176** | **3268** | M 30 | 1 310 | M 56 | 8 710 |
| | | **3180** | **3272** | M 30 | 1 310 | M 64 | 13 100 |
| | | **3184** | **3276** | M 30 | 1 310 | M 64 | 13 100 |
| | | | **3280** | M 30 | 1 310 | M 64 | 13 100 |
| | | | **3284** | M 30 | 1 310 | M 64 | 13 100 |

[1] Valid for SBD housings only
[2] Recommended by bolt manufacturers

grease fitting. Therefore, CARB toroidal roller bearings need customized SBD and THD housings. For more information, contact the SKF application engineering service.

## Mounting

SBD and THD housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All associated components must meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

### Cover bolt torque specifications

Cover bolts should be tightened to the torque values listed in **table 5**. The cover bolts are in accordance with ISO-4017.

### Mounting and dismounting the adapter ring

The adapter ring, which locks the labyrinth ring in place, has plain holes for mounting and threaded holes for dismounting. The adapter ring bolts should be tightened to the torque values listed in **table 1** on **page 491**.

## Condition monitoring

If connections for condition monitoring sensors are required, contact the SKF application engineering service.

## Accessories

There are several accessories available for SBD and THD housings, including automatic lubricators, centralized lubrication systems and adapters for grease fittings. In some cases, an adapter is needed to attach the accessory to the housing. For additional information, refer to *SKF tools and products* (→ **page 47**).

## Ordering information

SBD plummer (pillow) block housings and THD take-up housings are supplied with the appropriate covers, labyrinth rings and, if needed, adapter rings. End plates to secure a bearing on a cylindrical seat at the end of a shaft are not supplied with the housings. Bearings and adapter sleeves must be ordered separately.

**Order example**

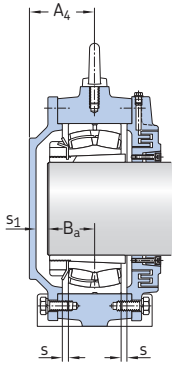
Two SBD plummer block housings are required for two 22213 E spherical roller bearings. One housing accommodates the non-locating bearing at the end of the shaft. The other housing accommodates the locating bearing and a through shaft.

The following items should be ordered:

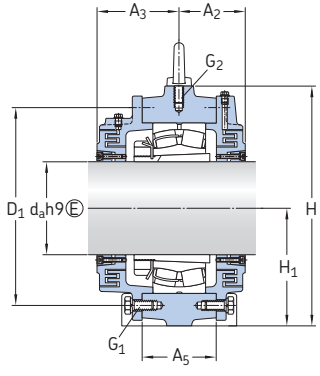
- 1 housing SBDD 2213 AL
- 1 housing SBDD 2213 BF

# 10.1 SBD plummer block housings for bearings on an adapter sleeve and a plain shaft

$d_a$ **60 – 140** mm



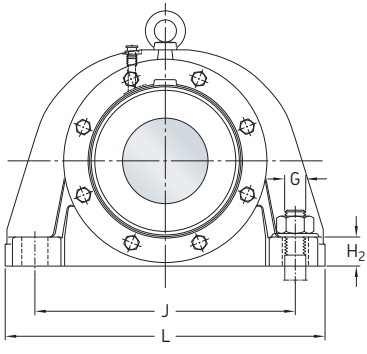

Type AL
Non-locating bearing
Housing for shaft end

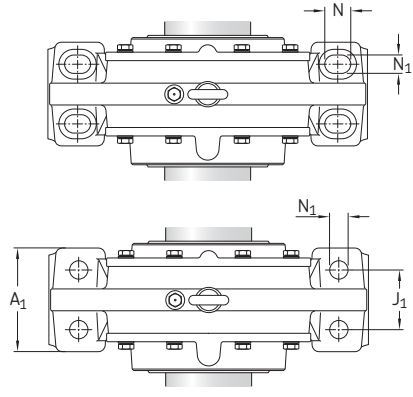



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Adapter ring (included) | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H |
| mm | – | – | | | mm | | | | | | |
| **60** | **SBDD 2213** | 22213 EK | H 313 | PSBD 60 | 95 | 50 | 65 | 45 | 58 | 135 | 165 |
| **80** | **SBDD 2218** | 22218 EK | H 318 | PSBD 80 | 110 | 60 | 70 | 51 | 55 | 185 | 220 |
| **90** | **SBDD 2220** | 22220 EK | H 320 | PSBD 90 | 110 | 70 | 85 | 63 | 56 | 195 | 230 |
| **100** | **SBDD 3122** | 23122 CCK/W33 | H 3122 | PSBD 100 | 150 | 81 | 102 | 83 | 80 | 215 | 270 |
| | **SBDD 2222** | 22222 EK | H 322 | PSBD 100 | 120 | 78 | 90 | 68 | 64 | 215 | 260 |
| | **SBDD 3222** | 23222 CCK/W33 | H 2322 | PSBD 100 | 130 | 91 | 103 | 76 | 90 | 230 | 285 |
| **110** | **SBDD 3024** | 23024 CCK/W33 | H 3024 | PSBD 110 | 110 | 63 | 83 | 63 | 56 | 195 | 230 |
| | **SBDD 3124** | 23124 CCK/W33 | H 3124 | PSBD 110 | 140 | 76 | 93 | 78 | 85 | 230 | 285 |
| | **SBDD 2224** | 22224 EK | H 3124 | PSBD 110 | 130 | 80,5 | 95,5 | 68 | 70 | 230 | 275 |
| | **SBDD 3224** | 23224 CCK/W33 | H 2334 | PSBD 110 | 140 | 93 | 108 | 78 | 95 | 245 | 305 |
| **115** | **SBDD 3026** | 23026 CCK/W33 | H 3026 | PSBD 115 | 120 | 68 | 88 | 68 | 64 | 215 | 260 |
| | **SBDD 3126** | 23126 CCK/W33 | H 3126 | PSBD 115 | 140 | 80 | 100 | 80 | 90 | 240 | 295 |
| | **SBDD 2226** | 22226 EK | H 3126 | PSBD 115 | 140 | 88 | 98 | 70 | 76 | 245 | 290 |
| | **SBDD 3226** | 23226 CCK/W33 | H 2336 | PSBD 115 | 150 | 103 | 108 | 78 | 100 | 260 | 325 |
| **125** | **SBDD 3028** | 23028 CCK/W33 | H 3028 | PSBD 125 | 130 | 68 | 88 | 68 | 70 | 230 | 275 |
| | **SBDD 3128** | 23128 CCK/W33 | H 3128 | PSBD 125 | 150 | 85 | 110 | 85 | 95 | 260 | 315 |
| | **SBDD 2228** | 22228 CCK/W33 | H 3128 | PSBD 125 | 160 | 94 | 104 | 83 | 82 | 275 | 330 |
| | **SBDD 3228** | 23228 CCK/W33 | H 2338 | PSBD 125 | 160 | 108 | 118 | 88 | 110 | 285 | 350 |
| **135** | **SBDD 3030** | 23030 CCK/W33 | H 3030 | PSBD 135 | 140 | 73 | 94 | 70 | 76 | 245 | 290 |
| | **SBDD 3130** | 23130 CCK/W33 | H 3130 | PSBD 135 | 200 | 93 | 113 | 93 | 102 | 285 | 345 |
| | **SBDD 2230** | 22230 CCK/W33 | H 3130 | PSBD 135 | 170 | 98 | 108 | 88 | 90 | 300 | 360 |
| | **SBDD 3230** | 23230 CCK/W33 | H 2330 | PSBD 135 | 170 | 113 | 123 | 93 | 120 | 305 | 375 |
| **140** | **SBDD 3032** | 23032 CCK/W33 | H 3032 | PSBD 140 | 150 | 78 | 98 | 76 | 76 | 260 | 310 |
| | **SBDD 3132** | 23132 CCK/W33 | H 3132 | PSBD 140 | 200 | 98 | 123 | 98 | 110 | 310 | 368 |
| | **SBDD 2232** | 22232 CCK/W33 | H 3132 | PSBD 140 | 180 | 101 | 116 | 88 | 96 | 315 | 370 |
| | **SBDD 3232** | 23232 CCK/W33 | H 2332 | PSBD 140 | 180 | 118 | 133 | 98 | 130 | 330 | 395 |

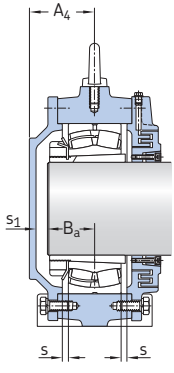
[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.



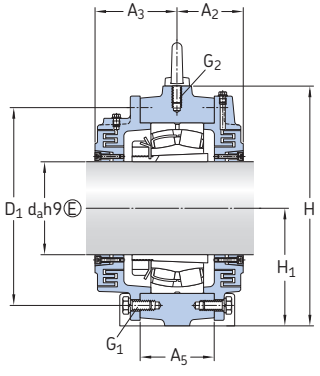




| **Shaft diam.** | **Dimensions** Housing | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Dimensions** Other | | **Mass** Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | | | | – | mm | | kg | |
| **60** | 80 | 25 | 220 | 50 | 280 | – | 19 | 2 | 16 | M 8 | – | 32 | 6 | 8,9 | 9,3 |
| **80** | 110 | 38 | 290 | 60 | 370 | – | 24 | 2 | 20 | M 8 | M 10 | 40 | 5 | 21 | 23 |
| **90** | 115 | 35 | 300 | 60 | 370 | – | 24 | 2 | 20 | M 8 | M 12 | 45 | 11 | 23 | 25 |
| **100** | 130 | 40 | 300 | 80 | 400 | 35 | 25 | 2 | 20 | M 12 | M 12 | 52 | 25 | 40 | 45 |
| | 130 | 38 | 340 | 60 | 410 | – | 24 | 2 | 20 | M 8 | M 12 | 50 | 11 | 37 | 40 |
| | 140 | 42 | 350 | 70 | 440 | – | 28 | 2 | 24 | M 12 | M 16 | 60 | 9 | 46 | 50 |
| **110** | 115 | 35 | 300 | 60 | 370 | – | 24 | 2 | 20 | M 8 | M 12 | 48 | 8 | 19 | 20 |
| | 140 | 40 | 330 | 80 | 410 | 35 | 25 | 2 | 20 | M 12 | M 12 | 56 | 13 | 45 | 50 |
| | 140 | 40 | 360 | 70 | 430 | – | 28 | 3 | 24 | M 8 | M 12 | 55 | 6 | 43 | 46 |
| | 150 | 42 | 370 | 75 | 470 | 35 | 30 | 2 | 24 | M 12 | M 16 | 64 | 7 | 50 | 55 |
| **115** | 130 | 38 | 340 | 60 | 410 | – | 24 | 2 | 20 | M 8 | M 12 | 52 | 9 | 28 | 30 |
| | 145 | 40 | 350 | 80 | 430 | 35 | 25 | 2 | 20 | M 12 | M 12 | 58 | 15 | 50 | 55 |
| | 145 | 42 | 370 | 80 | 455 | – | 28 | 3 | 24 | M 10 | M 12 | 57 | 5 | 52 | 56 |
| | 160 | 45 | 400 | 85 | 500 | 40 | 30 | 2 | 24 | M 12 | M 16 | 66 | 5 | 60 | 65 |
| **125** | 140 | 40 | 360 | 70 | 430 | – | 28 | 3 | 24 | M 8 | M 12 | 54 | 7 | 32 | 35 |
| | 155 | 45 | 380 | 85 | 470 | 35 | 25 | 2 | 20 | M 12 | M 12 | 62 | 16 | 58 | 65 |
| | 165 | 50 | 420 | 95 | 510 | – | 35 | 3 | 30 | M 10 | M 12 | 62 | 13 | 65 | 70 |
| | 170 | 50 | 430 | 85 | 530 | 40 | 30 | 3 | 24 | M 16 | M 20 | 72 | 9 | 74 | 80 |
| **135** | 145 | 42 | 370 | 80 | 455 | – | 28 | 3 | 24 | M 10 | M 12 | 56 | 6 | 37 | 40 |
| | 170 | 60 | 450 | 110 | 580 | 45 | 35 | 3 | 24 | M 12 | M 16 | 70 | 15 | 78 | 85 |
| | 180 | 52 | 450 | 100 | 540 | – | 35 | 3 | 30 | M 12 | M 16 | 66 | 14 | 77 | 82 |
| | 180 | 54 | 450 | 90 | 550 | 45 | 35 | 3 | 30 | M 16 | M 20 | 78 | 7 | 87 | 95 |
| **140** | 155 | 45 | 390 | 90 | 480 | – | 28 | 3 | 24 | M 10 | M 12 | 62 | 6 | 41 | 45 |
| | 180 | 55 | 430 | 110 | 540 | 40 | 30 | 3 | 24 | M 12 | M 16 | 75 | 15 | 90 | 100 |
| | 185 | 55 | 480 | 105 | 570 | – | 35 | 3 | 30 | M 12 | M 16 | 72 | 8 | 90 | 96 |
| | 190 | 58 | 490 | 105 | 600 | – | 35 | 3 | 30 | M 16 | M 20 | 84 | 6 | 100 | 110 |

# 10.1 SBD plummer block housings for bearings on an adapter sleeve and a plain shaft
## $d_a$ 150 – 240 mm



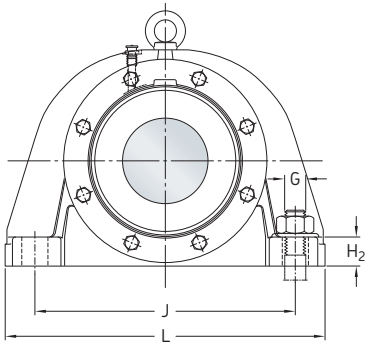

Type AL
Non-locating bearing
Housing for shaft end

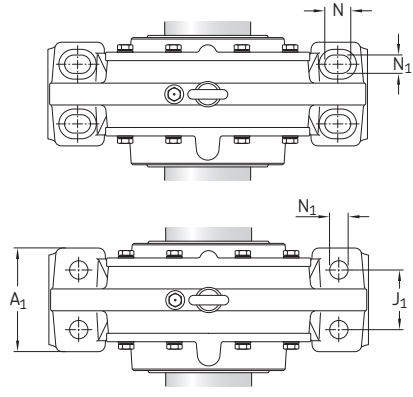



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Adapter ring (included) | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H |
| mm | – | – | | | mm | | | | | | |
| **150** | **SBDD 3034** | 23034 CCK/W33 | H 3034 | PSBD 150 | 160 | 78 | 103 | 83 | 82 | 280 | 330 |
| | **SBDD 3134** | 23134 CCK/W33 | H 3134 | PSBD 150 | 200 | 113 | 136 | 112 | 120 | 330 | 395 |
| | **SBDD 2234** | 22234 CCK/W33 | H 3134 | PSBD 150 | 190 | 112,5 | 127,5 | 97 | 104 | 335 | 400 |
| | **SBDD 3234** | 23234 CCK/W33 | H 2334 | PSBD 150 | 200 | 128 | 143 | 103 | 135 | 345 | 410 |
| **160** | **SBDD 3036** | 23036 CCK/W33 | H 3036 | PSBD 160 | 170 | 83 | 108 | 88 | 90 | 305 | 360 |
| | **SBDD 3136** | 23136 CCK/W33 | H 3136 | PSBD 160 | 200 | 118 | 138 | 116 | 125 | 350 | 410 |
| | **SBDD 2236** | 22236 CCK/W33 | H 3136 | PSBD 160 | 200 | 118 | 133 | 102 | 110 | 360 | 430 |
| | **SBDD 3236** | 23236 CCK/W33 | H 2336 | PSBD 160 | 210 | 133 | 148 | 108 | 140 | 360 | 430 |
| **170** | **SBDD 3038** | 23038 CCK/W33 | H 3038 | PSBD 170 | 180 | 93 | 118 | 88 | 96 | 315 | 370 |
| | **SBDD 3138** | 23138 CCK/W33 | H 3138 | PSBD 170 | 210 | 123 | 143 | 120 | 130 | 370 | 435 |
| | **SBDD 2238** | 22238 CCK/W33 | H 3138 | PSBD 170 | 200 | 118 | 133 | 102 | 110 | 370 | 430 |
| | **SBDD 3238** | 23238 CCK/W33 | H 2338 | PSBD 170 | 220 | 138 | 153 | 113 | 150 | 385 | 455 |
| **180** | **SBDD 3040** | 23040 CCK/W33 | H 3040 | PSBD 180 | 190 | 97 | 122 | 97 | 104 | 340 | 400 |
| | **SBDD 3140** | 23140 CCK/W33 | H 3140 | PSBD 180 | 220 | 127 | 147 | 127 | 135 | 380 | 455 |
| | **SBDD 2240** | 22240 CCK/W33 | H 3140 | PSBD 180 | 210 | 122 | 134,5 | 107 | 118 | 390 | 450 |
| | **SBDD 3240** | 23240 CCK/W33 | H 2340 | PSBD 180 | 240 | 138 | 158 | 118 | 165 | 405 | 475 |
| **200** | **SBDD 3044** | 23044 CCK/W33 | OH 3044 H | PSBD 200 | 200 | 102 | 137 | 102 | 110 | 370 | 430 |
| | **SBDD 3144** | 23144 CCK/W33 | OH 3144 H | PSBD 200 | 230 | 135 | 160 | 135 | 150 | 420 | 485 |
| | **SBDD 2244** | 22244 CCK/W33 | OH 3144 H | PSBD 200 | 220 | 124,5 | 159,5 | 117 | 128 | 435 | 500 |
| | **SBDD 3244** | 23244 CCK/W33 | OH 2344 H | PSBD 200 | 250 | 148 | 183 | 133 | 175 | 445 | 525 |
| **220** | **SBDD 3048** | 23048 CCK/W33 | OH 3048 H | PSBD 220 | 210 | 102 | 142 | 107 | 118 | 390 | 450 |
| | **SBDD 3148** | 23148 CCK/W33 | OH 3148 H | PSBD 220 | 250 | 152 | 182 | 142 | 160 | 455 | 550 |
| | **SBDD 2248** | 22248 CCK/W33 | OH 3148 H | PSBD 220 | 250 | 130 | 165 | 132 | 144 | 490 | 570 |
| | **SBDD 3248** | 23248 CCK/W33 | OH 2348 H | PSBD 220 | 250 | 148 | 188 | 148 | 190 | 490 | 590 |
| **240** | **SBDD 3052** | 23052 CCK/W33 | OH 3052 H | PSBD 240 | 220 | 107 | 147 | 117 | 128 | 435 | 500 |
| | **SBDD 3152** | 23152 CCK/W33 | OH 3152 H | PSBD 240 | 250 | 152 | 187 | 152 | 175 | 490 | 590 |
| | **SBDD 2252** | 22252 CCK/W33 | OH 3152 H | PSBD 240 | 260 | 145 | 182,5 | 137 | 154 | 520 | 590 |
| | **SBDD 3252** | 23252 CCK/W33 | OH 2352 H | PSBD 240 | 290 | 167 | 208 | 158 | 205 | 535 | 625 |

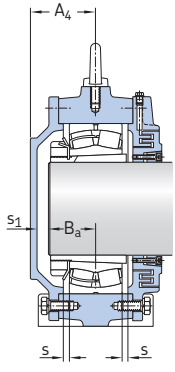
[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.



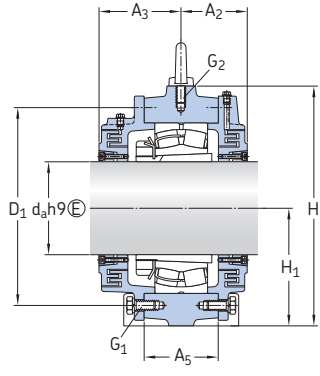




| **Shaft diam.** | **Dimensions** Housing | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Dimensions** Other | | **Mass** Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | | | | – | mm | | kg | |
| **150** | 165 | 50 | 420 | 95 | 510 | – | 35 | 3 | 30 | M 10 | M 12 | 66 | 9 | 50 | 55 |
| | 190 | 60 | 470 | 110 | 570 | 45 | 35 | 3 | 30 | M 12 | M 20 | 78 | 26 | 100 | 110 |
| | 200 | 60 | 510 | 110 | 600 | – | 35 | 4 | 30 | M 12 | M 16 | 75 | 14 | 103 | 110 |
| | 200 | 62 | 525 | 110 | 640 | 45 | 35 | 3 | 30 | M 16 | M 20 | 88 | 7 | 130 | 140 |
| **160** | 180 | 52 | 450 | 100 | 540 | – | 35 | 3 | 30 | M 12 | M 16 | 70 | 10 | 64 | 70 |
| | 200 | 60 | 490 | 105 | 600 | 45 | 35 | 3 | 30 | M 16 | M 20 | 82 | 26 | 118 | 130 |
| | 215 | 65 | 540 | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 78 | 14 | 112 | 120 |
| | 210 | 65 | 550 | 120 | 680 | 45 | 35 | 3 | 30 | M 16 | M 20 | 90 | 10 | 147 | 160 |
| **170** | 185 | 55 | 480 | 105 | 570 | – | 35 | 3 | 30 | M 12 | M 16 | 72 | 8 | 74 | 80 |
| | 210 | 65 | 550 | 120 | 680 | 45 | 30 | 3 | 36 | M 16 | M 20 | 88 | 22 | 146 | 160 |
| | 215 | 65 | 540 | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 82 | 10 | 126 | 135 |
| | 220 | 75 | 560 | 120 | 710 | 45 | 35 | 4 | 30 | M 16 | M 20 | 95 | 10 | 170 | 185 |
| **180** | 200 | 60 | 510 | 110 | 600 | – | 35 | 4 | 30 | M 12 | M 16 | 78 | 11 | 83 | 90 |
| | 220 | 85 | 560 | 120 | 710 | 52 | 42 | 3 | 36 | M 16 | M 24 | 95 | 22 | 175 | 190 |
| | 225 | 70 | 560 | 120 | 680 | – | 42 | 4 | 36 | M 16 | M 20 | 85 | 12 | 145 | 155 |
| | 235 | 75 | 640 | 140 | 780 | 52 | 42 | 4 | 36 | M 16 | M 24 | 100 | 10 | 200 | 220 |
| **200** | 215 | 65 | 540 | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 80 | 12 | 107 | 115 |
| | 235 | 75 | 640 | 140 | 780 | 52 | 42 | 4 | 36 | M 16 | M 24 | 100 | 25 | 205 | 220 |
| | 250 | 75 | 600 | 130 | 720 | – | 42 | 4 | 36 | M 16 | M 20 | 95 | 10 | 187 | 200 |
| | 260 | 80 | 700 | 140 | 850 | 52 | 42 | 4 | 36 | M 20 | M 24 | 112 | 11 | 270 | 290 |
| **220** | 225 | 70 | 560 | 120 | 680 | – | 42 | 4 | 36 | M 16 | M 20 | 85 | 12 | 120 | 130 |
| | 270 | 80 | 720 | 140 | 890 | 52 | 42 | 4 | 36 | M 20 | M 24 | 106 | 26 | 250 | 270 |
| | 285 | 85 | 690 | 150 | 820 | – | 42 | 5 | 36 | M 20 | M 24 | 105 | 15 | 235 | 250 |
| | 290 | 90 | 750 | 140 | 900 | 52 | 42 | 5 | 36 | M 20 | M 24 | 122 | 16 | 345 | 370 |
| **240** | 250 | 75 | 600 | 130 | 720 | – | 42 | 4 | 36 | M 16 | M 20 | 92 | 13 | 153 | 165 |
| | 290 | 90 | 750 | 140 | 900 | 52 | 42 | 4 | 36 | M 20 | M 24 | 118 | 24 | 300 | 320 |
| | 295 | 90 | 730 | 160 | 860 | – | 42 | 5 | 36 | M 20 | M 24 | 110 | 13 | 290 | 310 |
| | 310 | 95 | 800 | 160 | 960 | 65 | 42 | 5 | 36 | M 20 | M 24 | 132 | 16 | 435 | 470 |

# 10.1 SBD plummer block housings for bearings on an adapter sleeve and a plain shaft
## $d_a$ 260 – 400 mm



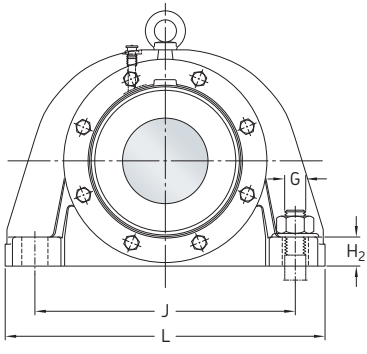

Type AL
Non-locating bearing
Housing for shaft end

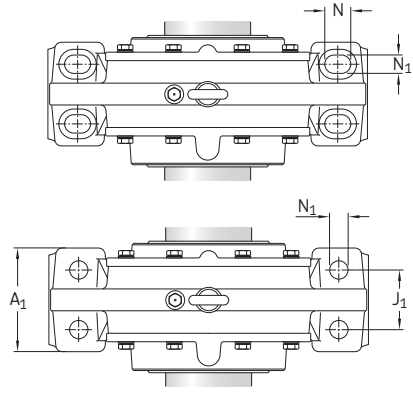



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Adapter ring (included) | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H |
| mm | – | – | | | mm | | | | | | |
| **260** | **SBDD 3056** | 23056 CCK/W33 | OH 3056 H | PSBD 260 | 240 | 117 | 157 | 122 | 128 | 455 | 520 |
| | **SBDD 3156** | 23156 CCK/W33 | OH 3156 H | PSBD 260 | 250 | 157 | 197 | 165 | 175 | 510 | 590 |
| | **SBDD 2256** | 22256 CCK/W33 | OH 3156 H | PSBD 260 | 270 | 152 | 192 | 147 | 158 | 555 | 630 |
| | **SBDD 3256** | 23256 CCK/W33 | OH 2356 H | PSBD 260 | 300 | 178 | 218 | 163 | 210 | 555 | 645 |
| **280** | **SBDD 3060** | 23060 CCK/W33 | OH 3060 H | PSBD 280 | 250 | 122 | 167 | 132 | 144 | 500 | 570 |
| | **SBDD 3160** | 23160 CCK/W33 | OH 3160 H | PSBD 280 | 300 | 162 | 207 | 167 | 190 | 550 | 655 |
| | **SBDD 2260** | 22260 CCK/W33 | OH 3160 H | PSBD 280 | 280 | 160 | 191 | 152 | 168 | 585 | 660 |
| | **SBDD 3260** | 23260 CCK/W33 | OH 3260 H | PSBD 280 | 330 | 182 | 222 | 187 | 230 | 600 | 705 |
| **300** | **SBDD 3064** | 23064 CCK/W33 | OH 3064 H | PSBD 300 | 260 | 122 | 172 | 137 | 154 | 520 | 590 |
| | **SBDD 3164** | 23164 CCK/W33 | OH 3164 H | PSBD 300 | 300 | 177 | 212 | 187 | 210 | 590 | 702 |
| | **SBDD 2264** | 22264 CCK/W33 | OH 3164 H | PSBD 300 | 320 | 175 | 202 | 167 | 180 | 640 | 720 |
| | **SBDD 3264** | 23264 CCK/W33 | OH 3264 H | PSBD 300 | 360 | 192 | 237 | 187 | 250 | 640 | 760 |
| **320** | **SBDD 3068** | 23068 CCK/W33 | OH 3068 H | PSBD 320 | 270 | 132 | 177 | 147 | 158 | 565 | 630 |
| | **SBDD 3168** | 23168 CCK/W33 | OH 3168 H | PSBD 320 | 360 | 197 | 242 | 237 | 220 | 630 | 735 |
| | **SBDD 3268** | 23268 CAK/W33 | OH 3268 H | PSBD 320 | 380 | 202 | 272 | 237 | 265 | 680 | 810 |
| **340** | **SBDD 3072** | 23072 CCK/W33 | OH 3072 H | PSBD 340 | 280 | 132 | 182 | 152 | 168 | 585 | 660 |
| | **SBDD 3172** | 23172 CCK/W33 | OH 3172 H | PSBD 340 | 370 | 197 | 247 | 243 | 225 | 650 | 760 |
| | **SBDD 3272** | 23272 CAK/W33 | OH 3272 H | PSBD 340 | 400 | 227 | 282 | 247 | 275 | 710 | 825 |
| **360** | **SBDD 3076** | 23076 CCK/W33 | OH 3076 H | PSBD 360 | 300 | 137 | 187 | 157 | 168 | 605 | 680 |
| | **SBDD 3176** | 23176 CAK/W33 | OH 3176 H | PSBD 360 | 380 | 202 | 257 | 254 | 230 | 680 | 790 |
| | **SBDD 3276** | 23276 CAK/W33 | OH 3276 H | PSBD 360 | 405 | 232 | 297 | 257 | 295 | 745 | 880 |
| **380** | **SBDD 3080** | 23080 CCK/W33 | OH 3080 H | PSBD 380 | 320 | 142 | 202 | 167 | 180 | 650 | 720 |
| | **SBDD 3180** | 23180 CAK/W33 | OH 3180 H | PSBD 380 | 400 | 197 | 262 | 247 | 235 | 710 | 845 |
| | **SBDD 3280** | 23280 CAK/W33 | OH 3280 H | PSBD 380 | 450 | 242 | 307 | 257 | 300 | 790 | 905 |
| **400** | **SBDD 3084** | 23084 CAK/W33 | OH 3084 H | PSBD 400 | 340 | 147 | 202 | 167 | 180 | 670 | 750 |
| | **SBDD 3184** | 23184 CKJ/W33 | OH 3184 H | PSBD 400 | 420 | 212 | 289 | 257 | 260 | 760 | 900 |
| | **SBDD 3284** | 23284 CAK/W33 | OH 3284 H | PSBD 400 | 470 | 252 | 317 | 267 | 315 | 835 | 955 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.

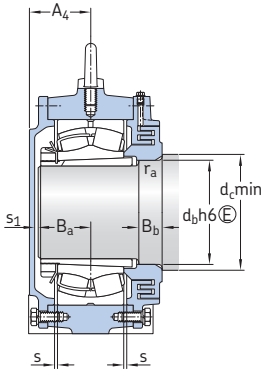


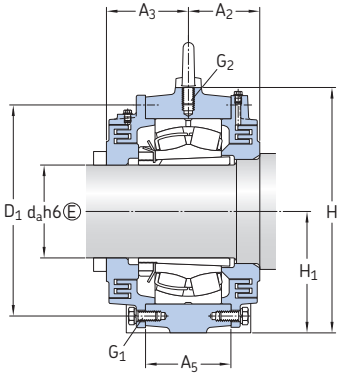

| **Shaft diam.** | **Dimensions** Housing | | | | | | | | | | **Eye bolt** acc. to DIN 580 | **Dimensions** Other | | **Mass** Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $H_1$ | $H_2$ | J | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | | | | – | mm | | kg | |
| **260** | 260 | 80 | 630 | 140 | 760 | – | 42 | 5 | 36 | M 16 | M 20 | 96 | 14 | 177 | 190 |
| | 290 | 90 | 750 | 140 | 900 | 65 | 42 | 5 | 36 | M 24 | M 24 | 120 | 35 | 325 | 350 |
| | 315 | 95 | 770 | 170 | 900 | – | 42 | 5 | 36 | M 20 | M 24 | 115 | 18 | 330 | 350 |
| | 320 | 100 | 840 | 170 | 1 000 | 65 | 42 | 5 | 36 | M 24 | M 30 | 135 | 16 | 490 | 530 |
| **280** | 285 | 85 | 690 | 150 | 820 | – | 42 | 5 | 36 | M 20 | M 24 | 105 | 15 | 215 | 230 |
| | 320 | 100 | 840 | 170 | 1 000 | 65 | 42 | 5 | 36 | M 24 | M 30 | 125 | 32 | 400 | 430 |
| | 330 | 100 | 820 | 180 | 960 | – | 42 | 5 | 36 | M 20 | M 24 | 120 | 17 | 400 | 430 |
| | 350 | 105 | 920 | 180 | 1 100 | 75 | 56 | 6 | 48 | M 24 | M 30 | 142 | 33 | 590 | 640 |
| **300** | 295 | 90 | 730 | 160 | 860 | – | 42 | 5 | 36 | M 20 | M 24 | 108 | 15 | 240 | 255 |
| | 350 | 100 | 940 | 160 | 1 150 | 65 | 42 | 5 | 36 | M 24 | M 30 | 135 | 40 | 490 | 530 |
| | 360 | 110 | 900 | 200 | 1 060 | – | 56 | 5 | 48 | M 24 | M 30 | 125 | 26 | 485 | 520 |
| | 370 | 115 | 960 | 200 | 1 150 | 75 | 56 | 6 | 48 | M 24 | M 30 | 152 | 21 | 700 | 760 |
| **320** | 315 | 95 | 770 | 170 | 900 | – | 42 | 6 | 36 | M 20 | M 24 | 120 | 13 | 280 | 305 |
| | 370 | 115 | 960 | 200 | 1 150 | 75 | 56 | 6 | 48 | M 24 | M 30 | 155 | 70 | 590 | 630 |
| | 390 | 125 | 980 | 200 | 1 200 | 75 | 60 | 6 | 56 | M 24 | M 36 | 175 | 47 | 830 | 900 |
| **340** | 330 | 100 | 820 | 180 | 960 | – | 42 | 6 | 36 | M 20 | M 24 | 120 | 17 | 315 | 340 |
| | 380 | 115 | 1 000 | 200 | 1 200 | 75 | 56 | 6 | 48 | M 24 | M 30 | 160 | 67 | 660 | 700 |
| | 410 | 130 | 1 040 | 210 | 1 280 | 80 | 68 | 7 | 64 | M 24 | M 36 | 180 | 51 | 950 | 1 020 |
| **360** | 340 | 105 | 840 | 190 | 1 000 | – | 56 | 6 | 48 | M 20 | M 24 | 124 | 17 | 350 | 380 |
| | 390 | 125 | 1 000 | 200 | 1 200 | 75 | 60 | 6 | 56 | M 30 | M 30 | 165 | 73 | 730 | 770 |
| | 425 | 135 | 1 100 | 225 | 1 350 | 85 | 68 | 7 | 64 | M 30 | M 36 | 186 | 55 | 1 060 | 1 140 |
| **380** | 360 | 110 | 900 | 200 | 1 060 | – | 56 | 6 | 48 | M 24 | M 30 | 134 | 17 | 420 | 450 |
| | 410 | 130 | 1 040 | 210 | 1 280 | 80 | 68 | 7 | 64 | M 30 | M 36 | 170 | 61 | 820 | 870 |
| | 450 | 145 | 1 160 | 240 | 1 430 | 85 | 68 | 7 | 64 | M 30 | M 36 | 196 | 45 | 1 240 | 1 330 |
| **400** | 375 | 115 | 940 | 210 | 1 100 | – | 56 | 6 | 48 | M 24 | M 30 | 135 | 16 | 465 | 500 |
| | 450 | 135 | 1 100 | 210 | 1 350 | 85 | 68 | 7 | 64 | M 30 | M 36 | 190 | 51 | 1 000 | 1 070 |
| | 470 | 150 | 1 220 | 255 | 1 500 | 90 | 72 | 8 | 64 | M 30 | M 36 | 212 | 39 | 1 500 | 1 600 |

# 10.2 SBD plummer block housings for bearings on an adapter sleeve and a stepped shaft

$d_a$ **90 – 150** mm



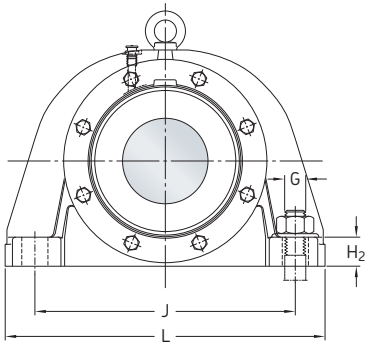

Type AL
Non-locating bearing
Housing for shaft end

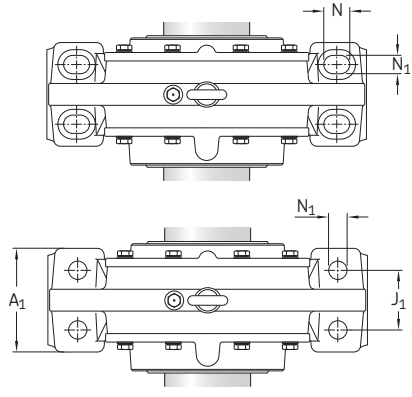



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Dimensions Housing | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J |
| mm | – | – | | mm | | | | | | | | | |
| **90** | **SBDD 2220 C** | 22220 EK | H 320 | 110 | 70 | 85 | 63 | 56 | 195 | 230 | 115 | 35 | 300 |
| **100** | **SBDD 3122 C** | 23122 CCK/W33 | H 3122 | 150 | 81 | 102 | 83 | 80 | 215 | 270 | 130 | 40 | 300 |
| | **SBDD 2222 C** | 22222 EK | H 322 | 120 | 78 | 90 | 68 | 64 | 215 | 260 | 130 | 38 | 340 |
| | **SBDD 3222 C** | 23222 CCK/W33 | H 2322 | 130 | 91 | 103 | 76 | 90 | 230 | 285 | 140 | 42 | 350 |
| **110** | **SBDD 3024 C** | 23024 CCK/W33 | H 3024 | 110 | 63 | 83 | 63 | 56 | 195 | 230 | 115 | 35 | 300 |
| | **SBDD 3124 C** | 23124 CCK/W33 | H 3124 | 140 | 76 | 93 | 78 | 85 | 230 | 285 | 140 | 40 | 330 |
| | **SBDD 2224 C** | 22224 EK | H 3124 | 130 | 80,5 | 95,5 | 68 | 70 | 230 | 275 | 140 | 40 | 360 |
| | **SBDD 3224 C** | 23224 CCK/W33 | H 2324 | 140 | 93 | 108 | 78 | 95 | 245 | 305 | 150 | 42 | 370 |
| **115** | **SBDD 3026 C** | 23026 CCK/W33 | H 3026 | 120 | 68 | 88 | 68 | 64 | 215 | 260 | 130 | 38 | 340 |
| | **SBDD 3126 C** | 23126 CCK/W33 | H 3126 | 140 | 80 | 100 | 80 | 90 | 240 | 295 | 145 | 40 | 350 |
| | **SBDD 2226 C** | 22226 EK | H 3126 | 140 | 88 | 98 | 70 | 70 | 245 | 290 | 145 | 42 | 370 |
| | **SBDD 3226 C** | 23226 CCK/W33 | H 2326 | 150 | 103 | 108 | 78 | 100 | 260 | 325 | 160 | 45 | 400 |
| **125** | **SBDD 3028 C** | 23028 CCK/W33 | H 3028 | 130 | 68 | 88 | 68 | 70 | 230 | 275 | 140 | 40 | 360 |
| | **SBDD 3128 C** | 23128 CCK/W33 | H 3128 | 150 | 85 | 110 | 85 | 95 | 260 | 315 | 155 | 45 | 380 |
| | **SBDD 2228 C** | 22228 CCK/W33 | H 3128 | 160 | 94 | 104 | 83 | 82 | 275 | 330 | 165 | 50 | 420 |
| | **SBDD 3228 C** | 23228 CCK/W33 | H 2328 | 160 | 108 | 118 | 88 | 110 | 285 | 350 | 170 | 50 | 430 |
| **135** | **SBDD 3030 C** | 23030 CCK/W33 | H 3030 | 140 | 73 | 94 | 70 | 76 | 245 | 290 | 145 | 42 | 370 |
| | **SBDD 3130 C** | 23130 CCK/W33 | H 3130 | 200 | 93 | 113 | 93 | 102 | 285 | 345 | 170 | 60 | 450 |
| | **SBDD 2230 C** | 22230 CCK/W33 | H 3130 | 170 | 98 | 108 | 88 | 90 | 300 | 360 | 180 | 52 | 450 |
| | **SBDD 3230 C** | 23230 CCK/W33 | H 2330 | 170 | 113 | 123 | 93 | 120 | 305 | 375 | 180 | 54 | 450 |
| **140** | **SBDD 3032 C** | 23032 CCK/W33 | H 3032 | 150 | 78 | 98 | 76 | 76 | 260 | 310 | 155 | 45 | 390 |
| | **SBDD 3132 C** | 23132 CCK/W33 | H 3132 | 200 | 98 | 123 | 98 | 110 | 310 | 368 | 180 | 55 | 430 |
| | **SBDD 2232 C** | 22232 CCK/W33 | H 3132 | 180 | 101 | 116 | 88 | 96 | 315 | 370 | 185 | 55 | 480 |
| | **SBDD 3232 C** | 23232 CCK/W33 | H 2332 | 180 | 118 | 133 | 98 | 130 | 330 | 395 | 190 | 58 | 490 |
| **150** | **SBDD 3034 C** | 23034 CCK/W33 | H 3034 | 160 | 78 | 103 | 83 | 82 | 280 | 330 | 165 | 50 | 420 |
| | **SBDD 3134 C** | 23134 CCK/W33 | H 3134 | 200 | 113 | 136 | 112 | 120 | 330 | 395 | 190 | 60 | 470 |
| | **SBDD 2234 C** | 22234 CCK/W33 | H 3134 | 190 | 112,5 | 127,5 | 97 | 104 | 335 | 400 | 200 | 60 | 510 |
| | **SBDD 3234 C** | 23234 CCK/W33 | H 2334 | 200 | 128 | 143 | 103 | 135 | 345 | 410 | 200 | 62 | 525 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.

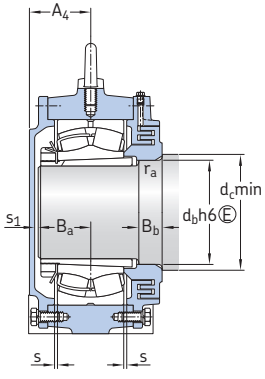


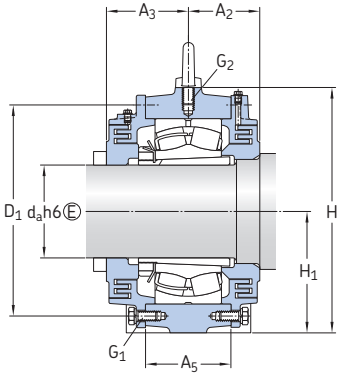

| Shaft diam. | Dimensions Housing | | | | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $B_b$ | $d_b$ | $d_c$ min | $r_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | – | mm | | | | | | kg | |
| **90** | 60 | 370 | – | 24 | 2 | 20 | M 8 | M 12 | 45 | 35 | 102 | 115 | 4 | 11 | 23 | 25 |
| **100** | 80 | 400 | 35 | 25 | 2 | 20 | M 12 | M 12 | 52 | 30 | 112 | 125 | 4 | 25 | 40 | 45 |
| | 60 | 410 | – | 24 | 2 | 20 | M 8 | M 12 | 50 | 35 | 112 | 125 | 4 | 11 | 37 | 40 |
| | 70 | 440 | 35 | 30 | 2 | 24 | M 12 | M 16 | 60 | 32 | 112 | 125 | 4 | 9 | 46 | 50 |
| **110** | 60 | 370 | – | 24 | 2 | 20 | M 8 | M 12 | 48 | 25 | 122 | 135 | 4 | 8 | 19 | 20 |
| | 80 | 410 | 35 | 25 | 2 | 20 | M 12 | M 12 | 56 | 30 | 122 | 135 | 4 | 13 | 45 | 50 |
| | 70 | 430 | – | 28 | 3 | 24 | M 8 | M 12 | 55 | 35 | 122 | 135 | 4 | 6 | 43 | 46 |
| | 75 | 470 | 35 | 30 | 2 | 24 | M 12 | M 16 | 64 | 32 | 122 | 135 | 4 | 7 | 50 | 55 |
| **115** | 60 | 410 | – | 24 | 2 | 20 | M 8 | M 12 | 52 | 25 | 132 | 150 | 6 | 9 | 28 | 30 |
| | 80 | 430 | 35 | 25 | 2 | 20 | M 12 | M 12 | 58 | 30 | 132 | 150 | 6 | 15 | 50 | 55 |
| | 80 | 455 | – | 28 | 3 | 24 | M 10 | M 12 | 57 | 40 | 132 | 150 | 6 | 5 | 52 | 56 |
| | 85 | 500 | 40 | 30 | 2 | 24 | M 12 | M 16 | 66 | 35 | 132 | 150 | 6 | 5 | 60 | 65 |
| **125** | 70 | 430 | – | 28 | 3 | 24 | M 8 | M 12 | 54 | 25 | 142 | 160 | 6 | 7 | 32 | 35 |
| | 85 | 470 | 35 | 25 | 2 | 24 | M 12 | M 12 | 62 | 30 | 142 | 160 | 6 | 16 | 58 | 65 |
| | 95 | 510 | – | 35 | 3 | 30 | M 10 | M 12 | 62 | 40 | 142 | 160 | 6 | 13 | 65 | 70 |
| | 85 | 530 | 40 | 30 | 3 | 24 | M 16 | M 20 | 72 | 35 | 142 | 160 | 6 | 9 | 74 | 80 |
| **135** | 80 | 455 | – | 28 | 3 | 24 | M 10 | M 12 | 56 | 25 | 152 | 170 | 6 | 6 | 37 | 40 |
| | 110 | 580 | 45 | 35 | 3 | 24 | M 12 | M 16 | 70 | 30 | 152 | 170 | 6 | 15 | 78 | 85 |
| | 100 | 540 | – | 35 | 3 | 30 | M 12 | M 16 | 66 | 40 | 152 | 170 | 6 | 14 | 77 | 82 |
| | 90 | 550 | 45 | 35 | 3 | 30 | M 16 | M 20 | 78 | 40 | 152 | 170 | 6 | 7 | 87 | 95 |
| **140** | 90 | 480 | – | 28 | 3 | 24 | M 10 | M 12 | 62 | 30 | 162 | 185 | 8 | 6 | 41 | 45 |
| | 110 | 540 | 40 | 30 | 3 | 24 | M 16 | M 12 | 75 | 30 | 162 | 185 | 8 | 15 | 90 | 100 |
| | 105 | 570 | – | 35 | 3 | 30 | M 16 | M 12 | 72 | 40 | 162 | 185 | 8 | 8 | 90 | 96 |
| | 105 | 600 | 45 | 35 | 3 | 30 | M 16 | M 20 | 84 | 40 | 162 | 185 | 8 | 6 | 100 | 110 |
| **150** | 95 | 510 | – | 35 | 4 | 30 | M 10 | M 12 | 66 | 30 | 172 | 195 | 8 | 9 | 50 | 55 |
| | 110 | 570 | 45 | 35 | 3 | 30 | M 12 | M 20 | 78 | 40 | 172 | 195 | 8 | 26 | 100 | 110 |
| | 110 | 600 | – | 35 | 4 | 30 | M 12 | M 16 | 75 | 45 | 172 | 195 | 8 | 14 | 103 | 110 |
| | 110 | 640 | 45 | 35 | 3 | 30 | M 16 | M 20 | 88 | 40 | 172 | 195 | 8 | 7 | 130 | 140 |

# 10.2 SBD plummer block housings for bearings on an adapter sleeve and a stepped shaft

$d_a$ **160 – 260** mm



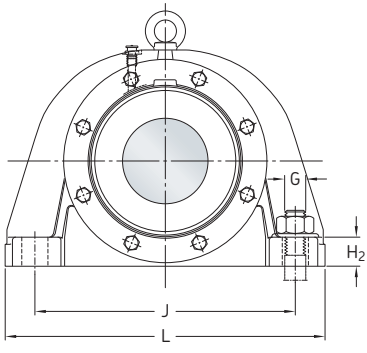

Type AL
Non-locating bearing
Housing for shaft end

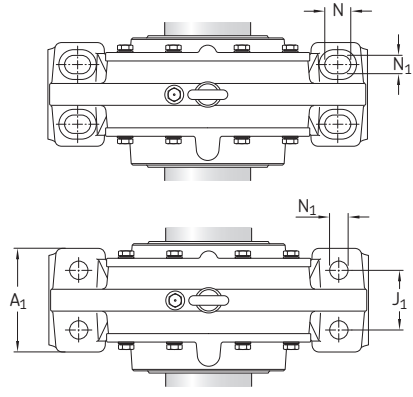



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Dimensions Housing | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J |
| mm | – | – | | mm | | | | | | | | | |
| **160** | **SBDD 3036 C** | 23036 CCK/W33 | H 3036 | 170 | 83 | 108 | 88 | 90 | 305 | 360 | 180 | 52 | 450 |
| | **SBDD 3136 C** | 23136 CCK/W33 | H 3136 | 200 | 118 | 138 | 116 | 125 | 350 | 410 | 200 | 60 | 490 |
| | **SBDD 2236 C** | 22236 CCK/W33 | H 3136 | 200 | 118 | 133 | 102 | 110 | 360 | 430 | 215 | 65 | 540 |
| | **SBDD 3236 C** | 23236 CCK/W33 | H 2336 | 210 | 133 | 148 | 108 | 140 | 360 | 430 | 210 | 65 | 550 |
| **170** | **SBDD 3038 C** | 23038 CCK/W33 | H 3038 | 180 | 93 | 118 | 88 | 96 | 315 | 370 | 185 | 55 | 480 |
| | **SBDD 3138 C** | 23138 CCK/W33 | H 3138 | 210 | 123 | 143 | 120 | 130 | 370 | 435 | 210 | 65 | 550 |
| | **SBDD 2238 C** | 22238 CCK/W33 | H 3138 | 200 | 118 | 133 | 102 | 110 | 370 | 430 | 215 | 65 | 540 |
| | **SBDD 3238 C** | 23238 CCK/W33 | H 2338 | 220 | 138 | 153 | 113 | 150 | 385 | 455 | 220 | 75 | 560 |
| **180** | **SBDD 3040 C** | 23040 CCK/W33 | H 3040 | 190 | 97 | 122 | 97 | 104 | 340 | 400 | 200 | 60 | 510 |
| | **SBDD 3140 C** | 23140 CCK/W33 | H 3140 | 220 | 127 | 147 | 127 | 135 | 380 | 455 | 220 | 85 | 560 |
| | **SBDD 2240 C** | 22240 CCK/W33 | H 3140 | 210 | 122 | 134,5 | 107 | 118 | 390 | 450 | 225 | 70 | 560 |
| | **SBDD 3240 C** | 23240 CCK/W33 | H 2340 | 240 | 138 | 158 | 118 | 165 | 405 | 475 | 235 | 75 | 640 |
| **200** | **SBDD 3044 C** | 23044 CCK/W33 | OH 3044 HB | 200 | 102 | 137 | 102 | 110 | 370 | 430 | 215 | 65 | 540 |
| | **SBDD 3144 C** | 23144 CCK/W33 | OH 3144 HB | 230 | 135 | 160 | 135 | 150 | 420 | 485 | 235 | 75 | 640 |
| | **SBDD 2244 C** | 22244 CCK/W33 | OH 3144 HB | 220 | 124,5 | 159,5 | 117 | 128 | 435 | 500 | 250 | 75 | 600 |
| | **SBDD 3244 C** | 23244 CCK/W33 | OH 2344 HB | 250 | 148 | 183 | 133 | 175 | 445 | 525 | 260 | 80 | 700 |
| **220** | **SBDD 3048 C** | 23048 CCK/W33 | OH 3048 HB | 210 | 102 | 142 | 107 | 118 | 390 | 450 | 225 | 70 | 560 |
| | **SBDD 3148 C** | 23148 CCK/W33 | OH 3148 HB | 250 | 152 | 182 | 142 | 160 | 455 | 550 | 270 | 80 | 720 |
| | **SBDD 2248 C** | 22248 CCK/W33 | OH 3148 HB | 250 | 130 | 165 | 132 | 144 | 490 | 570 | 285 | 85 | 690 |
| | **SBDD 3248 C** | 23248 CCK/W33 | OH 2348 HB | 250 | 148 | 188 | 148 | 190 | 490 | 590 | 290 | 90 | 750 |
| **240** | **SBDD 3052 C** | 23052 CCK/W33 | OH 3052 HB | 220 | 107 | 147 | 117 | 128 | 435 | 500 | 250 | 75 | 600 |
| | **SBDD 3152 C** | 23152 CCK/W33 | OH 3152 HB | 250 | 152 | 187 | 152 | 175 | 490 | 590 | 290 | 90 | 750 |
| | **SBDD 2252 C** | 22252 CCK/W33 | OH 3152 HB | 260 | 145 | 182,5 | 137 | 154 | 520 | 590 | 295 | 90 | 730 |
| | **SBDD 3252 C** | 23252 CCK/W33 | OH 2352 HB | 290 | 167 | 208 | 158 | 205 | 535 | 625 | 310 | 95 | 800 |
| **260** | **SBDD 3056 C** | 23056 CCK/W33 | OH 3056 HB | 240 | 117 | 157 | 122 | 128 | 455 | 520 | 260 | 80 | 630 |
| | **SBDD 3156 C** | 23156 CCK/W33 | OH 3156 HB | 250 | 157 | 197 | 165 | 175 | 510 | 590 | 290 | 90 | 750 |
| | **SBDD 2256 C** | 22256 CCK/W33 | OH 3156 HB | 270 | 152 | 192 | 147 | 158 | 555 | 630 | 315 | 95 | 770 |
| | **SBDD 3256 C** | 23256 CCK/W33 | OH 2356 HB | 300 | 178 | 218 | 163 | 210 | 555 | 645 | 320 | 100 | 840 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.

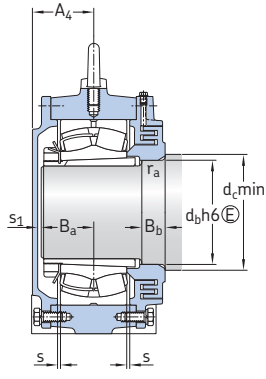


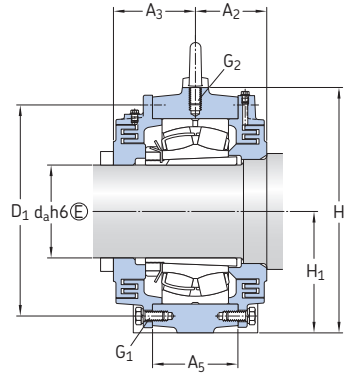

| **Shaft diam.** | **Dimensions** Housing | | | | | | | **Eye bolt** acc. to DIN 580 | **Dimensions** Shaft abutment and fillet | | | | | | **Mass** Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $B_b$ | $d_b$ | $d_c$ min | $r_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | – | mm | | | | | | kg | |
| **160** | 100 | 540 | – | 35 | 3 | 30 | M 12 | M 16 | 70 | 30 | 182 | 205 | 8 | 10 | 64 | 70 |
| | 105 | 600 | 45 | 35 | 3 | 30 | M 16 | M 20 | 82 | 40 | 182 | 205 | 8 | 26 | 118 | 130 |
| | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 78 | 45 | 182 | 205 | 8 | 14 | 112 | 120 |
| | 120 | 680 | 45 | 35 | 3 | 30 | M 16 | M 20 | 90 | 45 | 182 | 205 | 8 | 10 | 147 | 160 |
| **170** | 105 | 570 | – | 35 | 3 | 30 | M 12 | M 16 | 72 | 30 | 192 | 215 | 8 | 8 | 74 | 80 |
| | 120 | 680 | 45 | 35 | 3 | 36 | M 16 | M 20 | 88 | 40 | 192 | 215 | 8 | 22 | 146 | 160 |
| | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 82 | 45 | 192 | 215 | 8 | 10 | 126 | 135 |
| | 120 | 710 | 45 | 35 | 4 | 30 | M 16 | M 20 | 95 | 45 | 192 | 215 | 8 | 10 | 170 | 185 |
| **180** | 110 | 600 | – | 35 | 4 | 30 | M 12 | M 16 | 78 | 35 | 202 | 225 | 8 | 11 | 83 | 90 |
| | 120 | 710 | 52 | 42 | 3 | 36 | M 16 | M 24 | 95 | 40 | 202 | 225 | 8 | 22 | 175 | 190 |
| | 120 | 680 | – | 42 | 4 | 36 | M 16 | M 20 | 85 | 45 | 202 | 225 | 8 | 12 | 145 | 155 |
| | 140 | 780 | 52 | 42 | 4 | 36 | M 16 | M 24 | 100 | 45 | 202 | 225 | 8 | 10 | 200 | 220 |
| **200** | 115 | 640 | – | 42 | 4 | 36 | M 16 | M 20 | 80 | 35 | 222 | 245 | 8 | 12 | 107 | 115 |
| | 140 | 780 | 52 | 42 | 4 | 36 | M 16 | M 24 | 100 | 45 | 222 | 245 | 8 | 25 | 205 | 220 |
| | 130 | 720 | – | 42 | 4 | 36 | M 16 | M 20 | 95 | 45 | 222 | 245 | 8 | 10 | 187 | 200 |
| | 140 | 850 | 52 | 42 | 4 | 36 | M 20 | M 24 | 112 | 45 | 222 | 245 | 8 | 11 | 270 | 290 |
| **220** | 120 | 680 | – | 42 | 4 | 36 | M 16 | M 20 | 85 | 35 | 242 | 265 | 8 | 12 | 120 | 130 |
| | 140 | 890 | 52 | 42 | 4 | 36 | M 20 | M 24 | 106 | 50 | 242 | 265 | 8 | 26 | 250 | 270 |
| | 150 | 820 | – | 42 | 5 | 36 | M 20 | M 24 | 105 | 45 | 242 | 265 | 8 | 15 | 235 | 250 |
| | 140 | 900 | 52 | 42 | 5 | 36 | M 20 | M 24 | 122 | 45 | 242 | 265 | 8 | 16 | 345 | 370 |
| **240** | 130 | 720 | – | 42 | 4 | 36 | M 16 | M 20 | 92 | 35 | 262 | 285 | 8 | 13 | 153 | 165 |
| | 140 | 900 | 52 | 42 | 4 | 36 | M 20 | M 24 | 118 | 50 | 262 | 285 | 8 | 24 | 300 | 320 |
| | 160 | 860 | – | 42 | 5 | 36 | M 20 | M 24 | 110 | 50 | 262 | 285 | 8 | 13 | 290 | 310 |
| | 160 | 960 | 65 | 42 | 5 | 36 | M 20 | M 24 | 132 | 45 | 262 | 285 | 8 | 16 | 435 | 470 |
| **260** | 140 | 760 | – | 42 | 5 | 36 | M 16 | M 20 | 96 | 35 | 282 | 305 | 8 | 14 | 177 | 190 |
| | 140 | 900 | 65 | 42 | 5 | 36 | M 24 | M 24 | 120 | 50 | 282 | 305 | 8 | 35 | 325 | 350 |
| | 170 | 900 | – | 42 | 5 | 36 | M 20 | M 24 | 115 | 50 | 282 | 305 | 8 | 18 | 330 | 350 |
| | 170 | 1 000 | 65 | 42 | 5 | 36 | M 24 | M 30 | 135 | 50 | 282 | 305 | 8 | 16 | 490 | 530 |

# 10.2 SBD plummer block housings for bearings on an adapter sleeve and a stepped shaft

$d_a$ **280 – 400** mm



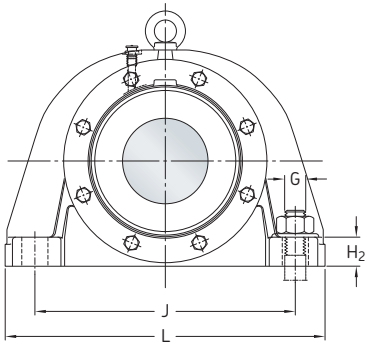

Type AL
Non-locating bearing
Housing for shaft end

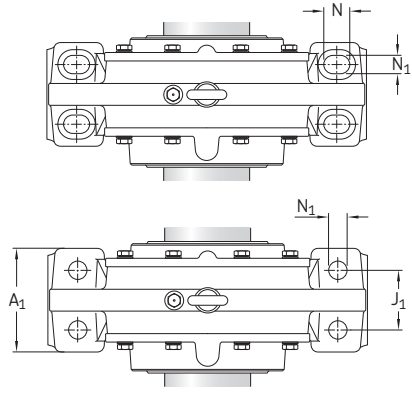



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Dimensions Housing | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J |
| mm | – | – | | mm | | | | | | | | | |
| **280** | **SBDD 3060 C** | 23060 CCK/W33 | OH 3060 HB | 250 | 122 | 167 | 132 | 144 | 500 | 570 | 285 | 85 | 690 |
| | **SBDD 3160 C** | 23160 CCK/W33 | OH 3160 HB | 300 | 162 | 207 | 167 | 190 | 550 | 655 | 320 | 100 | 840 |
| | **SBDD 2260 C** | 22260 CCK/W33 | OH 3160 HB | 280 | 160 | 191 | 152 | 168 | 585 | 660 | 330 | 100 | 820 |
| | **SBDD 3260 C** | 23260 CCK/W33 | OH 2360 HB | 330 | 182 | 222 | 187 | 230 | 600 | 705 | 350 | 105 | 920 |
| **300** | **SBDD 3064 C** | 23064 CCK/W33 | OH 3064 HB | 260 | 122 | 172 | 137 | 154 | 520 | 590 | 295 | 90 | 730 |
| | **SBDD 3164 C** | 23164 CCK/W33 | OH 3164 HB | 300 | 177 | 212 | 187 | 210 | 590 | 702 | 350 | 100 | 940 |
| | **SBDD 2264 C** | 22264 CCK/W33 | OH 3164 HB | 320 | 175 | 202 | 167 | 180 | 640 | 720 | 360 | 110 | 900 |
| | **SBDD 3264 C** | 23264 CCK/W33 | OH 2364 HB | 360 | 192 | 237 | 187 | 250 | 640 | 760 | 370 | 115 | 960 |
| **320** | **SBDD 3068 C** | 23068 CCK/W33 | OH 3068 HB | 270 | 132 | 177 | 147 | 158 | 565 | 630 | 315 | 95 | 770 |
| | **SBDD 3168 C** | 23168 CCK/W33 | OH 3168 HB | 360 | 197 | 242 | 237 | 220 | 630 | 735 | 370 | 115 | 960 |
| | **SBDD 3268 C** | 23268 CAK/W33 | OH 3268 HB | 380 | 202 | 272 | 237 | 265 | 680 | 810 | 390 | 125 | 980 |
| **340** | **SBDD 3072 C** | 23072 CCK/W33 | OH 3072 HB | 280 | 132 | 182 | 152 | 168 | 585 | 660 | 330 | 100 | 820 |
| | **SBDD 3172 C** | 23172 CCK/W33 | OH 3172 HB | 370 | 197 | 247 | 243 | 225 | 650 | 760 | 380 | 115 | 1 000 |
| | **SBDD 3272 C** | 23272 CAK/W33 | OH 3272 HB | 400 | 227 | 282 | 247 | 275 | 710 | 825 | 410 | 130 | 1 040 |
| **360** | **SBDD 3076 C** | 23076 CCK/W33 | OH 3076 HB | 300 | 137 | 187 | 157 | 168 | 605 | 680 | 340 | 105 | 840 |
| | **SBDD 3176 C** | 23176 CAK/W33 | OH 3176 HB | 380 | 202 | 257 | 254 | 230 | 680 | 790 | 390 | 125 | 1 000 |
| | **SBDD 3276 C** | 23276 CAK/W33 | OH 3276 HB | 405 | 232 | 297 | 257 | 295 | 745 | 880 | 425 | 135 | 1 100 |
| **380** | **SBDD 3080 C** | 23080 CCK/W33 | OH 3080 HB | 320 | 142 | 202 | 167 | 180 | 650 | 720 | 360 | 110 | 900 |
| | **SBDD 3180 C** | 23180 CAK/W33 | OH 3180 HB | 400 | 197 | 262 | 247 | 235 | 710 | 845 | 410 | 130 | 1 040 |
| | **SBDD 3280 C** | 23280 CAK/W33 | OH 3280 HB | 450 | 242 | 307 | 257 | 300 | 790 | 905 | 450 | 145 | 1 160 |
| **400** | **SBDD 3084 C** | 23084 CAK/W33 | OH 3084 HB | 340 | 147 | 202 | 167 | 180 | 670 | 750 | 375 | 115 | 940 |
| | **SBDD 3184 C** | 23184 CKJ/W33 | OH 3184 HB | 420 | 212 | 289 | 257 | 260 | 760 | 900 | 450 | 135 | 1 100 |
| | **SBDD 3284 C** | 23284 CAK/W33 | OH 3284 HB | 470 | 252 | 317 | 267 | 315 | 835 | 955 | 470 | 150 | 1 220 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.

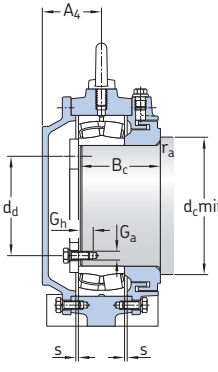


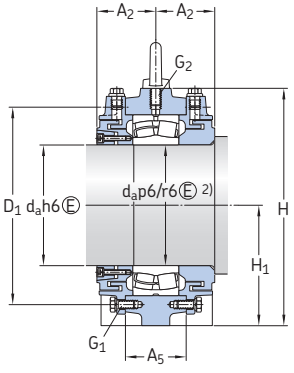

| Shaft diam. | Dimensions Housing | | | | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $J_1$ | L | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_a$ | $B_b$ | $d_b$ | $d_c$ min | $r_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | – | mm | | | | | | kg | |
| **280** | 150 | 820 | – | 42 | 5 | 36 | M 20 | M 24 | 105 | 35 | 302 | 325 | 8 | 15 | 215 | 230 |
| | 170 | 1 000 | 65 | 42 | 5 | 36 | M 24 | M 30 | 125 | 50 | 302 | 325 | 8 | 32 | 400 | 430 |
| | 180 | 960 | – | 42 | 5 | 36 | M 20 | M 24 | 120 | 50 | 302 | 325 | 8 | 17 | 400 | 430 |
| | 180 | 1 100 | 75 | 56 | 6 | 48 | M 24 | M 30 | 142 | 50 | 302 | 325 | 8 | 33 | 590 | 640 |
| **300** | 160 | 860 | – | 42 | 5 | 36 | M 20 | M 24 | 108 | 35 | 322 | 345 | 8 | 15 | 240 | 255 |
| | 160 | 1 150 | 65 | 42 | 5 | 36 | M 24 | M 30 | 135 | 50 | 322 | 345 | 8 | 40 | 490 | 530 |
| | 200 | 1 060 | – | 56 | 5 | 48 | M 24 | M 30 | 125 | 55 | 322 | 345 | 8 | 26 | 485 | 520 |
| | 200 | 1 150 | 75 | 56 | 6 | 48 | M 24 | M 30 | 152 | 50 | 322 | 345 | 8 | 21 | 700 | 760 |
| **320** | 170 | 900 | – | 42 | 6 | 36 | M 20 | M 24 | 120 | 40 | 342 | 365 | 8 | 13 | 280 | 305 |
| | 200 | 1 150 | 75 | 56 | 6 | 48 | M 24 | M 30 | 155 | 60 | 342 | 365 | 8 | 70 | 590 | 630 |
| | 200 | 1 200 | 75 | 60 | 6 | 56 | M 24 | M 36 | 175 | 50 | 342 | 365 | 8 | 47 | 830 | 900 |
| **340** | 180 | 960 | – | 42 | 6 | 36 | M 20 | M 24 | 120 | 40 | 362 | 385 | 8 | 17 | 315 | 340 |
| | 200 | 1 200 | 75 | 56 | 6 | 48 | M 24 | M 30 | 160 | 60 | 362 | 385 | 8 | 67 | 660 | 700 |
| | 210 | 1 280 | 80 | 68 | 7 | 64 | M 24 | M 36 | 180 | 70 | 362 | 385 | 8 | 51 | 950 | 1 020 |
| **360** | 190 | 1 000 | – | 56 | 6 | 48 | M 20 | M 24 | 124 | 40 | 382 | 405 | 8 | 17 | 350 | 380 |
| | 200 | 1 200 | 75 | 60 | 6 | 56 | M 30 | M 30 | 165 | 60 | 382 | 405 | 8 | 73 | 730 | 770 |
| | 225 | 1 350 | 85 | 68 | 7 | 64 | M 30 | M 36 | 186 | 70 | 382 | 405 | 8 | 55 | 1 060 | 1 140 |
| **380** | 200 | 1 060 | – | 56 | 6 | 48 | M 24 | M 30 | 134 | 40 | 402 | 425 | 8 | 17 | 420 | 450 |
| | 210 | 1 280 | 80 | 68 | 7 | 64 | M 30 | M 36 | 170 | 60 | 402 | 425 | 8 | 61 | 820 | 870 |
| | 240 | 1 430 | 85 | 68 | 7 | 64 | M 30 | M 36 | 196 | 70 | 402 | 425 | 8 | 45 | 1 240 | 1 330 |
| **400** | 210 | 1 100 | – | 56 | 6 | 48 | M 24 | M 30 | 135 | 40 | 422 | 445 | 8 | 16 | 465 | 500 |
| | 210 | 1 350 | 85 | 68 | 7 | 64 | M 30 | M 36 | 190 | 60 | 422 | 445 | 8 | 51 | 1 000 | 1 070 |
| | 255 | 1 500 | 90 | 72 | 8 | 64 | M 30 | M 36 | 212 | 70 | 422 | 445 | 8 | 39 | 1 500 | 1 600 |

# 10.3 SBD plummer block housings for bearings on a cylindrical seat and a stepped shaft

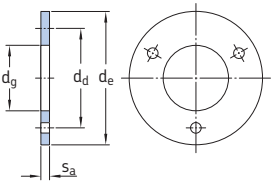
$d_a$ **100 – 170** mm




Type AL
Non-locating bearing
Housing for shaft end

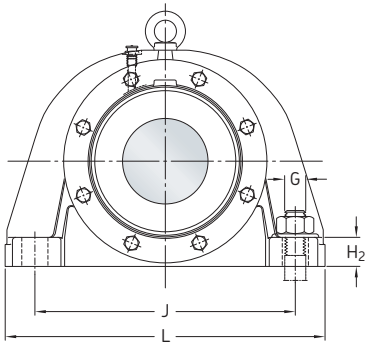


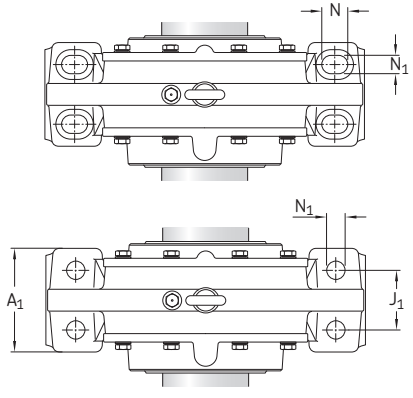

Type BF
Locating bearing
Housing for through shaft




| Shaft diam. | Housing | Appropriate parts | | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bearing[1] | Adapter ring (included) | Housing | | | | | | | | | | |
| $d_a$ | | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
| mm | – | – | | mm | | | | | | | | | | |
| **100** | **SBDD 2220 E** | 22220 E | PSBD 100 | 110 | 70 | 63 | 56 | 195 | 230 | 115 | 35 | 300 | 60 | 370 |
| **110** | **SBDD 3122 E** | 23122 CC/W33 | PSBD 110 | 150 | 81 | 83 | 80 | 215 | 270 | 130 | 40 | 300 | 80 | 400 |
| | **SBDD 2222 E** | 22222 E | PSBD 110 | 120 | 78 | 68 | 64 | 215 | 260 | 130 | 38 | 340 | 60 | 410 |
| | **SBDD 3222 E** | 23222 CC/W33 | PSBD 110 | 130 | 91 | 76 | 90 | 230 | 285 | 140 | 42 | 350 | 70 | 440 |
| **120** | **SBDD 3024 E** | 23024 CC/W33 | PSBD 120 | 110 | 63 | 63 | 56 | 195 | 230 | 115 | 35 | 300 | 60 | 370 |
| | **SBDD 3124 E** | 23124 CC/W33 | PSBD 120 | 140 | 76 | 78 | 85 | 230 | 285 | 140 | 40 | 330 | 80 | 410 |
| | **SBDD 2224 E** | 22224 E | PSBD 120 | 130 | 80,5 | 68 | 70 | 230 | 275 | 140 | 40 | 360 | 70 | 430 |
| | **SBDD 3224 E** | 23224 CC/W33 | PSBD 120 | 140 | 93 | 78 | 95 | 245 | 305 | 150 | 42 | 370 | 75 | 470 |
| **130** | **SBDD 3026 E** | 23026 CC/W33 | PSBD 130 | 120 | 68 | 68 | 64 | 215 | 260 | 130 | 38 | 340 | 60 | 410 |
| | **SBDD 3126 E** | 23126 CC/W33 | PSBD 130 | 140 | 80 | 80 | 90 | 240 | 295 | 145 | 40 | 350 | 80 | 430 |
| | **SBDD 2226 E** | 22226 E | PSBD 130 | 140 | 88 | 70 | 70 | 245 | 290 | 145 | 42 | 370 | 80 | 455 |
| | **SBDD 3226 E** | 23226 CC/W33 | PSBD 130 | 150 | 103 | 78 | 100 | 260 | 325 | 160 | 45 | 400 | 85 | 500 |
| **140** | **SBDD 3028 E** | 23028 CC/W33 | PSBD 140 | 130 | 68 | 68 | 70 | 230 | 275 | 140 | 40 | 360 | 70 | 430 |
| | **SBDD 3128 E** | 23128 CC/W33 | PSBD 140 | 150 | 85 | 85 | 95 | 260 | 315 | 155 | 45 | 380 | 85 | 470 |
| | **SBDD 2228 E** | 22228 CC/W33 | PSBD 140 | 160 | 94 | 83 | 82 | 275 | 330 | 165 | 50 | 420 | 95 | 510 |
| | **SBDD 3228 E** | 23228 CC/W33 | PSBD 140 | 160 | 108 | 88 | 110 | 285 | 350 | 170 | 50 | 430 | 85 | 530 |
| **150** | **SBDD 3030 E** | 23030 CC/W33 | PSBD 150 | 140 | 78 | 70 | 76 | 245 | 290 | 145 | 42 | 370 | 90 | 455 |
| | **SBDD 3130 E** | 23130 CC/W33 | PSBD 150 | 200 | 93 | 93 | 102 | 285 | 345 | 170 | 60 | 450 | 110 | 580 |
| | **SBDD 2230 E** | 22230 CC/W33 | PSBD 150 | 170 | 98 | 88 | 90 | 300 | 360 | 180 | 52 | 450 | 100 | 540 |
| | **SBDD 3230 E** | 23230 CC/W33 | PSBD 150 | 170 | 113 | 93 | 120 | 305 | 375 | 180 | 54 | 450 | 90 | 550 |
| **160** | **SBDD 3032 E** | 23032 CC/W33 | PSBD 160 | 150 | 78 | 76 | 76 | 260 | 310 | 155 | 45 | 390 | 90 | 480 |
| | **SBDD 3132 E** | 23132 CC/W33 | PSBD 160 | 200 | 98 | 98 | 110 | 310 | 368 | 180 | 55 | 430 | 110 | 540 |
| | **SBDD 2232 E** | 22232 CC/W33 | PSBD 160 | 180 | 101 | 88 | 96 | 315 | 370 | 185 | 55 | 480 | 105 | 570 |
| | **SBDD 3232 E** | 23232 CC/W33 | PSBD 160 | 180 | 118 | 98 | 130 | 330 | 395 | 190 | 58 | 490 | 105 | 600 |
| **170** | **SBDD 3034 E** | 23034 CC/W33 | PSBD 170 | 160 | 78 | 83 | 82 | 280 | 330 | 165 | 50 | 420 | 95 | 510 |
| | **SBDD 3134 E** | 23134 CC/W33 | PSBD 170 | 200 | 113 | 112 | 120 | 330 | 395 | 190 | 60 | 470 | 110 | 570 |
| | **SBDD 2234 E** | 22234 CC/W33 | PSBD 170 | 190 | 112,5 | 97 | 104 | 335 | 400 | 200 | 60 | 510 | 110 | 600 |
| | **SBDD 3234 E** | 23234 CC/W33 | PSBD 170 | 200 | 128 | 103 | 135 | 345 | 410 | 200 | 62 | 525 | 110 | 640 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Tolerance p6 for shaft diameters up to 140 mm and tolerance r6 for larger sizes.

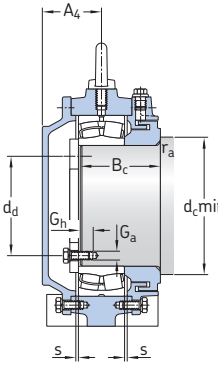


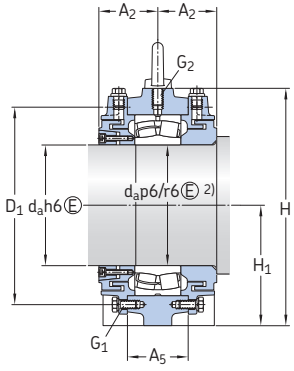

| Shaft diam. | Dimensions Housing | | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | End plate | | | | attachment bolts (for end plate) | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_c$ | $d_c$ min | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | | A | B |
| mm | mm | | | | | – | mm | | | | | | | | | | kg | |
| **100** | – | 24 | 2 | 20 | M 8 | M 12 | 90 | 115 | 4 | M 10 | 18 | 75 | 115 | 35 | 10 | M 10×30 | 23 | 25 |
| **110** | 35 | 25 | 2 | 20 | M 12 | M 12 | 107 | 125 | 4 | M 8 | 15 | 90 | 122 | 58 | 8 | M 8×25 | 40 | 45 |
| | – | 24 | 2 | 20 | M 8 | M 12 | 102 | 125 | 4 | M 10 | 18 | 85 | 128 | 42 | 10 | M 10×30 | 37 | 40 |
| | 35 | 30 | 2 | 24 | M 12 | M 16 | 123 | 125 | 4 | M 8 | 15 | 90 | 128 | 45 | 8 | M 8×25 | 46 | 50 |
| **120** | – | 24 | 2 | 20 | M 8 | M 12 | 84 | 135 | 4 | M 10 | 18 | 95 | 132 | 58 | 10 | M 10×30 | 19 | 20 |
| | 35 | 25 | 3 | 20 | M 12 | M 12 | 105 | 135 | 4 | M 8 | 15 | 100 | 133 | 67 | 8 | M 8×25 | 45 | 50 |
| | – | 28 | 3 | 24 | M 8 | M 12 | 107 | 135 | 4 | M 10 | 18 | 95 | 138 | 52 | 10 | M 10×30 | 43 | 46 |
| | 35 | 30 | 2 | 24 | M 12 | M 16 | 128 | 135 | 4 | M 10 | 18 | 95 | 138 | 45 | 10 | M 10×30 | 50 | 55 |
| **130** | – | 24 | 2 | 20 | M 8 | M 12 | 92 | 150 | 6 | M 10 | 18 | 105 | 145 | 65 | 10 | M 10×30 | 28 | 30 |
| | 35 | 25 | 2 | 20 | M 12 | M 12 | 110 | 150 | 6 | M 8 | 15 | 110 | 145 | 75 | 8 | M 8×25 | 50 | 55 |
| | – | 28 | 3 | 24 | M 10 | M 12 | 117 | 150 | 6 | M 10 | 18 | 105 | 150 | 60 | 10 | M 10×30 | 52 | 56 |
| | 40 | 30 | 2 | 24 | M 12 | M 16 | 140 | 150 | 6 | M 10 | 18 | 105 | 150 | 55 | 10 | M 10×30 | 60 | 65 |
| **140** | – | 28 | 3 | 24 | M 8 | M 12 | 92 | 160 | 6 | M 10 | 18 | 115 | 155 | 75 | 10 | M 10×30 | 32 | 35 |
| | 35 | 25 | 2 | 20 | M 12 | M 12 | 116 | 160 | 6 | M 10 | 18 | 115 | 155 | 75 | 10 | M 10×30 | 58 | 65 |
| | – | 35 | 3 | 30 | M 10 | M 12 | 125 | 160 | 6 | M 10 | 18 | 115 | 162 | 68 | 10 | M 10×30 | 65 | 70 |
| | 40 | 30 | 3 | 24 | M 16 | M 20 | 145 | 160 | 6 | M 10 | 18 | 115 | 160 | 60 | 10 | M 10×30 | 74 | 80 |
| **150** | – | 28 | 3 | 24 | M 10 | M 12 | 104 | 170 | 6 | M 10 | 18 | 125 | 165 | 85 | 10 | M 10×30 | 37 | 40 |
| | 45 | 35 | 3 | 24 | M 12 | M 16 | 130 | 170 | 6 | M 10 | 18 | 125 | 165 | 85 | 10 | M 10×30 | 78 | 85 |
| | – | 35 | 3 | 30 | M 12 | M 16 | 132 | 170 | 6 | M 10 | 18 | 125 | 175 | 75 | 10 | M 10×30 | 77 | 82 |
| | 45 | 35 | 3 | 30 | M 16 | M 20 | 158 | 170 | 6 | M 10 | 18 | 125 | 170 | 85 | 10 | M 10×30 | 87 | 95 |
| **160** | – | 28 | 3 | 24 | M 10 | M 12 | 105 | 185 | 8 | M 10 | 18 | 135 | 175 | 95 | 10 | M 10×30 | 41 | 45 |
| | 40 | 30 | 3 | 24 | M 12 | M 16 | 138 | 185 | 8 | M 10 | 18 | 135 | 175 | 95 | 10 | M 10×30 | 90 | 100 |
| | – | 35 | 3 | 30 | M 12 | M 16 | 138 | 185 | 8 | M 12 | 20 | 130 | 185 | 75 | 12 | M 12×30 | 90 | 96 |
| | 45 | 35 | 3 | 30 | M 16 | M 20 | 167 | 185 | 8 | M 12 | 20 | 130 | 185 | 70 | 12 | M 12×30 | 100 | 110 |
| **170** | – | 35 | 3 | 30 | M 10 | M 12 | 109 | 195 | 8 | M 10 | 18 | 145 | 185 | 105 | 10 | M 10×30 | 50 | 55 |
| | 45 | 35 | 3 | 30 | M 12 | M 20 | 154 | 195 | 8 | M 10 | 18 | 145 | 185 | 105 | 10 | M 10×30 | 100 | 110 |
| | – | 35 | 4 | 30 | M 12 | M 16 | 152 | 195 | 8 | M 16 | 25 | 130 | 200 | 60 | 16 | M 16×45 | 103 | 110 |
| | 45 | 35 | 3 | 30 | M 16 | M 20 | 179 | 195 | 8 | M 12 | 20 | 140 | 195 | 75 | 12 | M 12×30 | 130 | 140 |

# 10.3 SBD plummer block housings for bearings on a cylindrical seat and a stepped shaft

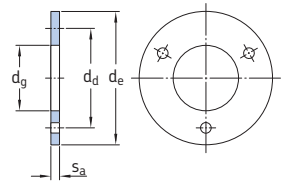
$d_a$ **180 – 280** mm




Type AL
Non-locating bearing
Housing for shaft end

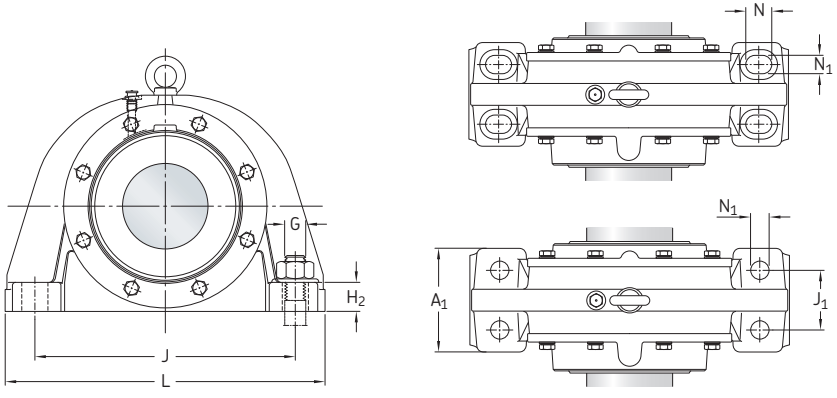



Type BF
Locating bearing
Housing for through shaft




| Shaft diam. | Housing | Appropriate parts | | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bearing[1] | Adapter ring (included) | Housing | | | | | | | | | | |
| $d_a$ | | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
| mm | – | – | | mm | | | | | | | | | | |
| **180** | **SBDD 3036 E** | 23036 CC/W33 | PSBD 180 | 170 | 88 | 88 | 90 | 305 | 360 | 180 | 52 | 450 | 100 | 540 |
| | **SBDD 3136 E** | 23136 CC/W33 | PSBD 180 | 200 | 118 | 116 | 125 | 350 | 410 | 200 | 60 | 490 | 105 | 600 |
| | **SBDD 2236 E** | 22236 CC/W33 | PSBD 180 | 200 | 118 | 102 | 110 | 360 | 430 | 215 | 65 | 540 | 115 | 640 |
| | **SBDD 3236 E** | 23236 CC/W33 | PSBD 180 | 210 | 133 | 108 | 140 | 360 | 430 | 210 | 65 | 550 | 120 | 680 |
| **190** | **SBDD 3038 E** | 23038 CC/W33 | PSBD 190 | 180 | 93 | 88 | 96 | 315 | 370 | 185 | 55 | 480 | 105 | 570 |
| | **SBDD 3138 E** | 23138 CC/W33 | PSBD 190 | 210 | 123 | 120 | 130 | 370 | 435 | 210 | 65 | 550 | 120 | 680 |
| | **SBDD 2238 E** | 22238 CC/W33 | PSBD 190 | 200 | 118 | 102 | 110 | 370 | 430 | 215 | 65 | 540 | 115 | 640 |
| | **SBDD 3238 E** | 23238 CC/W33 | PSBD 190 | 220 | 138 | 113 | 150 | 385 | 455 | 220 | 75 | 560 | 120 | 710 |
| **200** | **SBDD 3040 E** | 23040 CC/W33 | PSBD 200 | 190 | 97 | 97 | 104 | 340 | 400 | 200 | 60 | 510 | 110 | 600 |
| | **SBDD 3140 E** | 23140 CC/W33 | PSBD 200 | 220 | 127 | 127 | 135 | 380 | 455 | 220 | 85 | 560 | 120 | 710 |
| | **SBDD 2240 E** | 22240 CC/W33 | PSBD 200 | 210 | 122 | 107 | 118 | 390 | 450 | 225 | 70 | 560 | 120 | 680 |
| | **SBDD 3240 E** | 23240 CC/W33 | PSBD 200 | 240 | 138 | 118 | 165 | 405 | 475 | 235 | 75 | 640 | 140 | 780 |
| **220** | **SBDD 3044 E** | 23044 CC/W33 | PSBD 220 | 200 | 102 | 102 | 110 | 370 | 430 | 215 | 65 | 540 | 115 | 640 |
| | **SBDD 3144 E** | 23144 CC/W33 | PSBD 220 | 230 | 135 | 135 | 150 | 420 | 485 | 235 | 75 | 640 | 140 | 780 |
| | **SBDD 2244 E** | 22244 CC/W33 | PSBD 220 | 220 | 124,5 | 117 | 128 | 435 | 500 | 250 | 75 | 600 | 130 | 720 |
| | **SBDD 3244 E** | 23244 CC/W33 | PSBD 220 | 250 | 148 | 133 | 175 | 445 | 525 | 260 | 80 | 700 | 140 | 850 |
| **240** | **SBDD 3048 E** | 23048 CC/W33 | PSBD 240 | 210 | 102 | 107 | 118 | 290 | 450 | 225 | 70 | 560 | 120 | 680 |
| | **SBDD 3148 E** | 23148 CC/W33 | PSBD 240 | 250 | 152 | 142 | 160 | 455 | 550 | 270 | 80 | 720 | 140 | 890 |
| | **SBDD 2248 E** | 22248 CC/W33 | PSBD 240 | 250 | 130 | 132 | 144 | 490 | 570 | 285 | 85 | 690 | 150 | 820 |
| | **SBDD 3248 E** | 23248 CC/W33 | PSBD 240 | 250 | 148 | 148 | 190 | 490 | 590 | 290 | 90 | 750 | 140 | 900 |
| **260** | **SBDD 3052 E** | 23052 CC/W33 | PSBD 260 | 220 | 107 | 117 | 128 | 435 | 500 | 250 | 75 | 600 | 130 | 720 |
| | **SBDD 3152 E** | 23152 CC/W33 | PSBD 260 | 250 | 152 | 152 | 175 | 490 | 590 | 290 | 90 | 750 | 140 | 900 |
| | **SBDD 2252 E** | 22252 CC/W33 | PSBD 260 | 260 | 145 | 137 | 154 | 520 | 590 | 295 | 90 | 730 | 160 | 860 |
| | **SBDD 3252 E** | 23252 CC/W33 | PSBD 260 | 290 | 167 | 158 | 205 | 535 | 625 | 310 | 95 | 800 | 160 | 960 |
| **280** | **SBDD 3056 E** | 23056 CC/W33 | PSBD 280 | 240 | 117 | 122 | 128 | 455 | 520 | 260 | 80 | 630 | 140 | 760 |
| | **SBDD 3156 E** | 23156 CC/W33 | PSBD 280 | 250 | 157 | 165 | 175 | 510 | 590 | 290 | 90 | 750 | 140 | 900 |
| | **SBDD 2256 E** | 22256 CC/W33 | PSBD 280 | 270 | 152 | 147 | 158 | 555 | 630 | 315 | 95 | 770 | 170 | 900 |
| | **SBDD 3256 E** | 23256 CC/W33 | PSBD 280 | 300 | 178 | 163 | 210 | 555 | 645 | 320 | 100 | 840 | 170 | 1 000 |

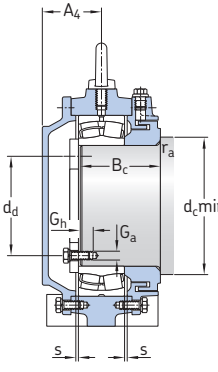
[1] Only typical bearings are listed. Other bearing variants can also fit the housing.



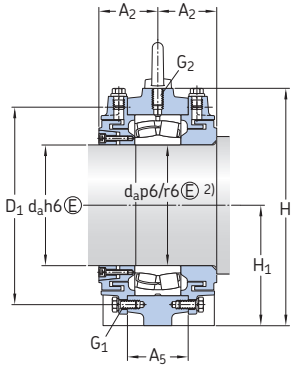

| Shaft diam. | Dimensions Housing | | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | End plate | | | | attachment bolts (for end plate) | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_c$ | $d_c$ min | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | | A | B |
| mm | mm | | | | | – | mm | | | | | | | | | | kg | |
| **180** | – | 35 | 3 | 30 | M 12 | M 16 | 122 | 205 | 8 | M 10 | 18 | 155 | 195 | 115 | 10 | M 10×30 | 64 | 70 |
| | 45 | 35 | 3 | 30 | M 16 | M 20 | 163 | 205 | 8 | M 12 | 20 | 150 | 195 | 105 | 12 | M 12×30 | 118 | 130 |
| | – | 42 | 4 | 36 | M 16 | M 20 | 157 | 205 | 8 | M 16 | 25 | 140 | 210 | 70 | 16 | M 16×45 | 112 | 120 |
| | 45 | 35 | 3 | 30 | M 16 | M 20 | 185 | 205 | 8 | M 12 | 20 | 150 | 205 | 85 | 12 | M 12×30 | 147 | 160 |
| **190** | – | 35 | 3 | 30 | M 12 | M 16 | 128 | 215 | 8 | M 12 | 20 | 160 | 205 | 115 | 12 | M 12×30 | 74 | 80 |
| | 45 | 35 | 3 | 36 | M 16 | M 20 | 172 | 215 | 8 | M 12 | 20 | 160 | 210 | 110 | 12 | M 12×30 | 146 | 160 |
| | – | 42 | 4 | 36 | M 16 | M 20 | 160 | 215 | 8 | M 16 | 25 | 150 | 220 | 80 | 16 | M 16×45 | 126 | 135 |
| | 45 | 35 | 4 | 30 | M 16 | M 20 | 197 | 215 | 8 | M 12 | 20 | 160 | 215 | 95 | 12 | M 12×30 | 170 | 185 |
| **200** | – | 35 | 4 | 30 | M 12 | M 16 | 135 | 225 | 8 | M 16 | 25 | 160 | 215 | 105 | 16 | M 16×45 | 83 | 90 |
| | 52 | 42 | 3 | 36 | M 16 | M 24 | 180 | 225 | 8 | M 12 | 20 | 170 | 220 | 120 | 12 | M 12×30 | 175 | 190 |
| | – | 42 | 4 | 36 | M 16 | M 20 | 167 | 225 | 8 | M 20 | 30 | 150 | 235 | 65 | 20 | M 20×55 | 145 | 155 |
| | 52 | 42 | 4 | 36 | M 16 | M 24 | 198 | 225 | 8 | M 16 | 25 | 160 | 230 | 80 | 16 | M 16×45 | 200 | 220 |
| **220** | – | 42 | 4 | 36 | M 16 | M 20 | 144 | 245 | 8 | M 16 | 25 | 180 | 240 | 120 | 16 | M 16×45 | 107 | 115 |
| | 52 | 42 | 4 | 36 | M 16 | M 24 | 191 | 245 | 8 | M 16 | 25 | 180 | 245 | 115 | 16 | M 16×45 | 205 | 220 |
| | – | 42 | 4 | 36 | M 16 | M 20 | 175 | 245 | 8 | M 20 | 30 | 170 | 260 | 80 | 20 | M 20×55 | 187 | 200 |
| | 52 | 42 | 4 | 36 | M 20 | M 24 | 216 | 245 | 8 | M 16 | 25 | 180 | 255 | 95 | 16 | M 16×45 | 270 | 290 |
| **240** | – | 42 | 4 | 36 | M 16 | M 20 | 145 | 265 | 8 | M 20 | 30 | 190 | 260 | 120 | 20 | M 20×55 | 120 | 130 |
| | 52 | 42 | 4 | 36 | M 20 | M 24 | 212 | 265 | 8 | M 16 | 25 | 200 | 265 | 135 | 16 | M 16×45 | 250 | 270 |
| | – | 42 | 5 | 36 | M 20 | M 24 | 186 | 265 | 8 | M 20 | 30 | 190 | 285 | 95 | 20 | M 20×55 | 235 | 250 |
| | 52 | 42 | 5 | 36 | M 20 | M 24 | 224 | 265 | 8 | M 16 | 25 | 200 | 280 | 110 | 16 | M 16×45 | 345 | 370 |
| **260** | – | 42 | 4 | 36 | M 16 | M 20 | 155 | 285 | 8 | M 20 | 30 | 210 | 285 | 135 | 20 | M 20×55 | 153 | 165 |
| | 52 | 42 | 4 | 36 | M 20 | M 24 | 220 | 285 | 8 | M 16 | 25 | 220 | 285 | 155 | 16 | M 16×45 | 300 | 320 |
| | – | 42 | 5 | 36 | M 20 | M 24 | 205 | 285 | 8 | M 20 | 30 | 210 | 305 | 95 | 20 | M 20×55 | 290 | 310 |
| | 65 | 42 | 5 | 36 | M 20 | M 24 | 249 | 285 | 8 | M 16 | 25 | 220 | 305 | 115 | 16 | M 16×45 | 435 | 470 |
| **280** | – | 42 | 5 | 36 | M 16 | M 20 | 166 | 305 | 8 | M 20 | 30 | 230 | 305 | 155 | 20 | M 20×55 | 177 | 190 |
| | 65 | 42 | 5 | 36 | M 24 | M 24 | 225 | 305 | 8 | M 16 | 25 | 240 | 305 | 175 | 16 | M 16×45 | 325 | 350 |
| | – | 42 | 5 | 36 | M 20 | M 24 | 212 | 305 | 8 | M 24 | 35 | 220 | 325 | 195 | 24 | M 24×65 | 330 | 350 |
| | 65 | 42 | 5 | 36 | M 24 | M 30 | 261 | 305 | 8 | M 20 | 30 | 230 | 325 | 80 | 20 | M 20×55 | 490 | 530 |

# 10.3 SBD plummer block housings for bearings on a cylindrical seat and a stepped shaft

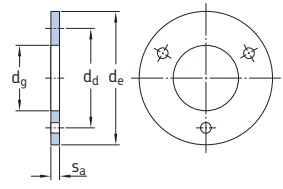
$d_a$ **300 – 420** mm




Type AL
Non-locating bearing
Housing for shaft end

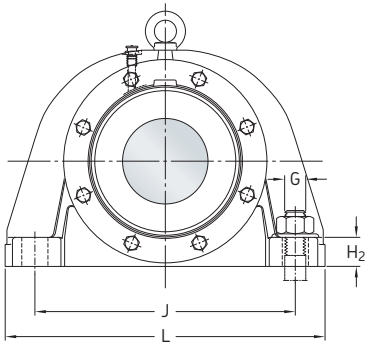


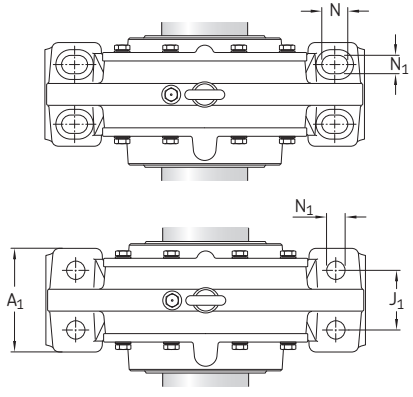

Type BF
Locating bearing
Housing for through shaft




| Shaft diam. | Housing | Appropriate parts | | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bearing[1] | Adapter ring (included) | Housing | | | | | | | | | | |
| $d_a$ | | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | $H$ | $H_1$ | $H_2$ | $J$ | $J_1$ | $L$ |
| mm | – | – | | mm | | | | | | | | | | |
| **300** | **SBDD 3060 E** | 23060 CC/W33 | PSBD 300 | 250 | 122 | 132 | 144 | 500 | 570 | 285 | 85 | 690 | 150 | 820 |
| | **SBDD 3160 E** | 23160 CC/W33 | PSBD 300 | 300 | 162 | 167 | 190 | 550 | 655 | 320 | 100 | 840 | 170 | 1 000 |
| | **SBDD 2260 E** | 22260 CC/W33 | PSBD 300 | 280 | 160 | 152 | 168 | 585 | 660 | 330 | 100 | 820 | 180 | 960 |
| | **SBDD 3260 E** | 23260 CC/W33 | PSBD 300 | 330 | 182 | 187 | 230 | 600 | 705 | 350 | 105 | 920 | 180 | 1 100 |
| **320** | **SBDD 3064 E** | 23064 CC/W33 | PSBD 320 | 260 | 122 | 137 | 154 | 520 | 590 | 295 | 90 | 730 | 160 | 860 |
| | **SBDD 3164 E** | 23164 CC/W33 | PSBD 320 | 300 | 177 | 187 | 210 | 590 | 702 | 350 | 100 | 940 | 160 | 1 150 |
| | **SBDD 2264 E** | 22264 CC/W33 | PSBD 320 | 320 | 175 | 167 | 180 | 640 | 720 | 360 | 110 | 900 | 200 | 1 060 |
| | **SBDD 3264 E** | 23264 CC/W33 | PSBD 320 | 360 | 192 | 187 | 250 | 640 | 760 | 370 | 115 | 960 | 200 | 1 150 |
| **340** | **SBDD 3068 E** | 23068 CC/W33 | PSBD 340 | 270 | 132 | 147 | 158 | 565 | 630 | 315 | 95 | 770 | 170 | 900 |
| | **SBDD 3168 E** | 23168 CC/W33 | PSBD 340 | 360 | 197 | 237 | 220 | 630 | 735 | 370 | 115 | 960 | 200 | 1 150 |
| | **SBDD 3268 E** | 23268 CA/W33 | PSBD 340 | 380 | 202 | 237 | 265 | 680 | 810 | 390 | 125 | 980 | 200 | 1 200 |
| **360** | **SBDD 3072 E** | 23072 CC/W33 | PSBD 360 | 280 | 132 | 152 | 168 | 585 | 660 | 330 | 100 | 820 | 180 | 960 |
| | **SBDD 3172 E** | 23172 CC/W33 | PSBD 360 | 370 | 197 | 243 | 225 | 650 | 760 | 380 | 115 | 1 000 | 200 | 1 200 |
| | **SBDD 3272 E** | 23272 CA/W33 | PSBD 360 | 400 | 227 | 247 | 275 | 710 | 825 | 410 | 130 | 1 040 | 210 | 1 280 |
| **380** | **SBDD 3076 E** | 23076 CC/W33 | PSBD 380 | 300 | 137 | 157 | 168 | 605 | 680 | 340 | 105 | 840 | 190 | 1 000 |
| | **SBDD 3176 E** | 23176 CA/W33 | PSBD 380 | 380 | 202 | 254 | 230 | 680 | 790 | 390 | 125 | 1 000 | 200 | 1 200 |
| | **SBDD 3276 E** | 23276 CA/W33 | PSBD 380 | 405 | 232 | 257 | 295 | 745 | 880 | 425 | 135 | 1 100 | 225 | 1 350 |
| **400** | **SBDD 3080 E** | 23080 CC/W33 | PSBD 400 | 320 | 142 | 167 | 180 | 650 | 720 | 360 | 110 | 900 | 200 | 1 060 |
| | **SBDD 3180 E** | 23180 CA/W33 | PSBD 400 | 400 | 197 | 247 | 235 | 710 | 845 | 410 | 130 | 1 040 | 210 | 1 280 |
| | **SBDD 3280 E** | 23280 CA/W33 | PSBD 400 | 450 | 242 | 257 | 300 | 790 | 905 | 450 | 145 | 1 160 | 240 | 1 430 |
| **420** | **SBDD 3084 E** | 23084 CA/W33 | PSBD 420 | 340 | 147 | 167 | 180 | 670 | 750 | 375 | 115 | 940 | 210 | 1 100 |
| | **SBDD 3184 E** | 23184 CJ/W33 | PSBD 420 | 420 | 212 | 257 | 260 | 760 | 900 | 450 | 135 | 1 100 | 210 | 1 350 |
| | **SBDD 3284 E** | 23284 CA/W33 | PSBD 420 | 470 | 252 | 267 | 315 | 835 | 955 | 470 | 150 | 1 220 | 255 | 1 500 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.

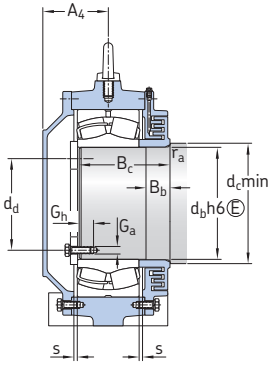


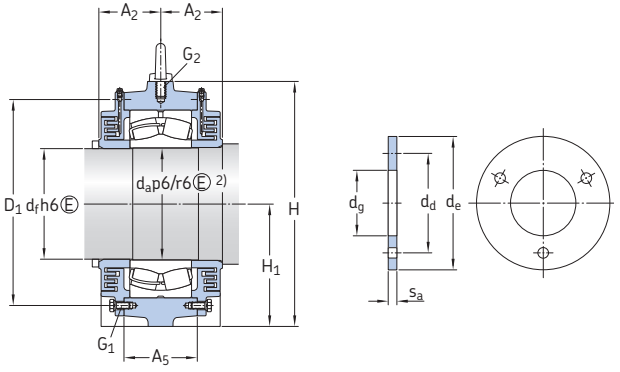

| Shaft diam. | Dimensions Housing | | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | End plate | | | | attachment bolts (for end plate) | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | N | $N_1$ | s | G | $G_1$ | $G_2$ | $B_c$ | $d_c$ min | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | | A | B |
| mm | mm | | | | | – | mm | | | | | | | | | | kg | |
| **300** | – | 42 | 5 | 36 | M 20 | M 24 | 177 | 325 | 8 | M 20 | 30 | 250 | 325 | 175 | 20 | M 20×55 | 215 | 230 |
| | 65 | 42 | 5 | 36 | M 24 | M 30 | 237 | 325 | 8 | M 20 | 30 | 250 | 325 | 175 | 20 | M 20×55 | 400 | 430 |
| | – | 42 | 5 | 36 | M 20 | M 24 | 225 | 325 | 8 | M 24 | 35 | 240 | 350 | 105 | 24 | M 24×65 | 400 | 430 |
| | 75 | 56 | 6 | 48 | M 24 | M 30 | 273 | 325 | 8 | M 20 | 30 | 250 | 350 | 120 | 20 | M 20×55 | 590 | 640 |
| **320** | – | 42 | 5 | 36 | M 20 | M 24 | 179 | 345 | 8 | M 20 | 30 | 270 | 345 | 195 | 20 | M 20×55 | 240 | 255 |
| | 65 | 42 | 5 | 36 | M 24 | M 30 | 260 | 345 | 8 | M 20 | 30 | 270 | 350 | 190 | 20 | M 20×55 | 490 | 530 |
| | – | 56 | 5 | 48 | M 24 | M 30 | 245 | 345 | 8 | M 24 | 35 | 260 | 375 | 120 | 24 | M 24×65 | 485 | 520 |
| | 75 | 56 | 6 | 48 | M 24 | M 30 | 291 | 345 | 8 | M 24 | 35 | 260 | 375 | 110 | 24 | M 24×65 | 700 | 760 |
| **340** | – | 42 | 6 | 36 | M 20 | M 24 | 194 | 365 | 8 | M 24 | 35 | 280 | 370 | 190 | 24 | M 24×65 | 280 | 305 |
| | 75 | 56 | 6 | 48 | M 24 | M 30 | 287 | 365 | 8 | M 24 | 35 | 280 | 370 | 190 | 24 | M 24×65 | 590 | 630 |
| | 75 | 60 | 6 | 56 | M 24 | M 36 | 308 | 365 | 8 | M 24 | 35 | 280 | 420 | 125 | 24 | M 24×65 | 830 | 900 |
| **360** | – | 42 | 6 | 36 | M 20 | M 24 | 194 | 385 | 8 | M 24 | 35 | 300 | 390 | 210 | 24 | M 24×65 | 315 | 340 |
| | 75 | 56 | 6 | 48 | M 24 | M 30 | 288 | 385 | 8 | M 24 | 35 | 300 | 390 | 210 | 24 | M 24×65 | 660 | 700 |
| | 80 | 68 | 7 | 64 | M 24 | M 36 | 337 | 385 | 8 | M 24 | 35 | 300 | 440 | 145 | 24 | M 24×65 | 950 | 1 020 |
| **380** | – | 56 | 6 | 48 | M 20 | M 24 | 200 | 405 | 8 | M 24 | 35 | 320 | 410 | 230 | 24 | M 24×65 | 350 | 380 |
| | 75 | 60 | 6 | 56 | M 30 | M 30 | 294 | 405 | 8 | M 24 | 35 | 320 | 410 | 230 | 24 | M 24×65 | 730 | 770 |
| | 85 | 68 | 7 | 64 | M 30 | M 36 | 346 | 405 | 8 | M 30 | 45 | 305 | 465 | 130 | 30 | M 30×80 | 1 060 | 1 140 |
| **400** | – | 56 | 6 | 48 | M 24 | M 30 | 211 | 425 | 8 | M 24 | 35 | 340 | 430 | 250 | 24 | M 24×65 | 420 | 450 |
| | 80 | 68 | 7 | 64 | M 30 | M 36 | 291 | 425 | 8 | M 24 | 35 | 340 | 430 | 250 | 24 | M 24×65 | 820 | 870 |
| | 85 | 68 | 7 | 64 | M 30 | M 36 | 364 | 425 | 8 | M 30 | 45 | 325 | 495 | 145 | 30 | M 30×80 | 1 240 | 1 330 |
| **420** | – | 56 | 6 | 48 | M 24 | M 30 | 217 | 445 | 8 | M 30 | 40 | 345 | 450 | 240 | 30 | M 30×80 | 465 | 500 |
| | 85 | 68 | 7 | 64 | M 30 | M 36 | 318 | 445 | 8 | M 30 | 45 | 345 | 450 | 240 | 30 | M 30×80 | 1 000 | 1 070 |
| | 90 | 72 | 8 | 64 | M 30 | M 36 | 380 | 445 | 8 | M 30 | 45 | 345 | 520 | 155 | 30 | M 30×80 | 1 500 | 1 600 |

# 10.4 SBD plummer block housings for bearings on a cylindrical seat and a multi-stepped shaft

$d_a$ **100 – 170** mm



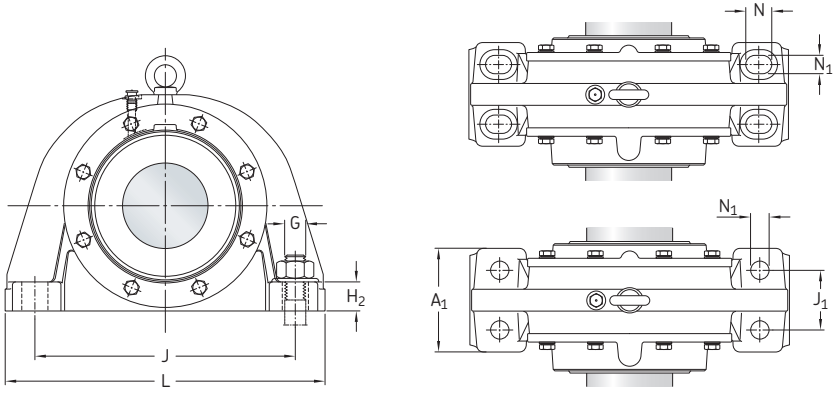

Type AL
Non-locating bearing
Housing for shaft end




Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate bearing[1] | Dimensions Housing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N |
| mm | – | – | mm | | | | | | | | | | | |
| **100** | **SBDD 2220 G** | 22220 E | 110 | 70 | 63 | 56 | 195 | 230 | 115 | 35 | 300 | 60 | 370 | – |
| **110** | **SBDD 3122 G** | 23122 CC/W33 | 150 | 81 | 83 | 80 | 215 | 270 | 130 | 40 | 300 | 80 | 400 | 35 |
| | **SBDD 2222 G** | 22222 E | 120 | 78 | 68 | 64 | 215 | 260 | 130 | 38 | 340 | 60 | 410 | – |
| | **SBDD 3222 G** | 23222 CC/W33 | 130 | 91 | 76 | 90 | 230 | 285 | 140 | 42 | 350 | 70 | 440 | 35 |
| **120** | **SBDD 3024 G** | 23024 CC/W33 | 110 | 63 | 63 | 56 | 195 | 230 | 115 | 35 | 300 | 60 | 370 | – |
| | **SBDD 3124 G** | 23124 CC/W33 | 140 | 76 | 78 | 85 | 230 | 285 | 140 | 40 | 330 | 80 | 410 | 35 |
| | **SBDD 2224 G** | 22224 E | 130 | 80,5 | 68 | 70 | 230 | 275 | 140 | 40 | 360 | 70 | 430 | – |
| | **SBDD 3224 G** | 23224 CC/W33 | 140 | 93 | 78 | 95 | 245 | 305 | 150 | 42 | 370 | 75 | 470 | 35 |
| **130** | **SBDD 3026 G** | 23026 CC/W33 | 120 | 68 | 68 | 64 | 215 | 260 | 130 | 38 | 340 | 60 | 410 | – |
| | **SBDD 3126 G** | 23126 CC/W33 | 140 | 80 | 80 | 90 | 240 | 295 | 145 | 40 | 350 | 80 | 430 | 35 |
| | **SBDD 2226 G** | 22226 E | 140 | 88 | 70 | 70 | 245 | 290 | 145 | 42 | 370 | 80 | 455 | – |
| | **SBDD 3226 G** | 23226 CC/W33 | 150 | 103 | 78 | 100 | 260 | 325 | 160 | 45 | 400 | 85 | 500 | 40 |
| **140** | **SBDD 3028 G** | 23028 CC/W33 | 130 | 68 | 68 | 70 | 230 | 275 | 140 | 40 | 360 | 70 | 430 | – |
| | **SBDD 3128 G** | 23128 CC/W33 | 150 | 85 | 85 | 95 | 260 | 315 | 155 | 45 | 380 | 85 | 470 | 35 |
| | **SBDD 2228 G** | 22228 CC/W33 | 160 | 94 | 83 | 82 | 275 | 330 | 165 | 50 | 420 | 95 | 510 | – |
| | **SBDD 3228 G** | 23228 CC/W33 | 160 | 108 | 88 | 110 | 285 | 350 | 170 | 50 | 430 | 85 | 530 | 40 |
| **150** | **SBDD 3030 G** | 23030 CC/W33 | 140 | 78 | 70 | 76 | 245 | 290 | 145 | 42 | 370 | 80 | 455 | – |
| | **SBDD 3130 G** | 23130 CC/W33 | 200 | 93 | 93 | 102 | 285 | 345 | 170 | 60 | 450 | 110 | 580 | 45 |
| | **SBDD 2230 G** | 22230 CC/W33 | 170 | 98 | 88 | 90 | 300 | 360 | 180 | 52 | 450 | 100 | 540 | – |
| | **SBDD 3230 G** | 23230 CC/W33 | 170 | 113 | 93 | 120 | 305 | 375 | 180 | 54 | 450 | 90 | 550 | 45 |
| **160** | **SBDD 3032 G** | 23032 CC/W33 | 150 | 78 | 76 | 76 | 260 | 310 | 155 | 45 | 390 | 90 | 480 | – |
| | **SBDD 3132 G** | 23132 CC/W33 | 200 | 98 | 98 | 110 | 310 | 368 | 180 | 55 | 430 | 110 | 540 | 40 |
| | **SBDD 2232 G** | 22232 CC/W33 | 180 | 101 | 88 | 96 | 315 | 370 | 185 | 55 | 480 | 105 | 570 | – |
| | **SBDD 3232 G** | 23232 CC/W33 | 180 | 118 | 98 | 130 | 330 | 395 | 190 | 58 | 490 | 105 | 600 | 45 |
| **170** | **SBDD 3034 G** | 23034 CC/W33 | 160 | 78 | 83 | 82 | 280 | 330 | 165 | 50 | 420 | 95 | 510 | – |
| | **SBDD 3134 G** | 23134 CC/W33 | 200 | 113 | 112 | 120 | 330 | 395 | 190 | 60 | 470 | 110 | 570 | 45 |
| | **SBDD 2234 G** | 22234 CC/W33 | 190 | 112,5 | 97 | 104 | 335 | 400 | 200 | 60 | 510 | 110 | 600 | – |
| | **SBDD 3234 G** | 23234 CC/W33 | 200 | 128 | 103 | 135 | 345 | 410 | 200 | 62 | 525 | 110 | 640 | 45 |

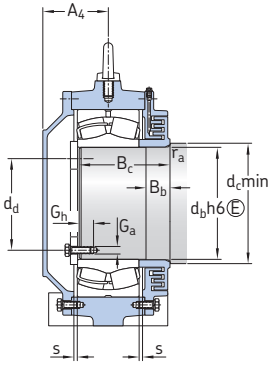
[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Tolerance p6 for shaft diameters up to 140 mm and tolerance r6 for larger sizes.



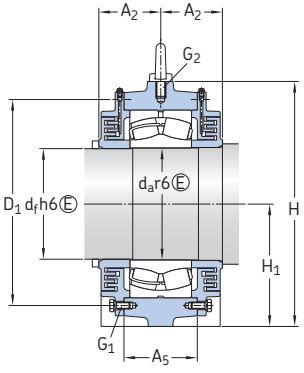

| Shaft diam. | Dimensions Housing | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | | End plate | | | | | | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | s | G | $G_1$ | $G_2$ | $B_b$ | $B_c$ | $d_b$ | $d_c$ min | $d_f$ | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | attachment bolts (for end plate) | A | B |
| mm | mm | | | | – | mm | | | | | | – | mm | | | | | | kg | |
| **100** | 24 | 2 | 20 | M 8 | M 12 | 35 | 90 | 102 | 115 | 98 | 4 | M 10 | 18 | 75 | 115 | 35 | 10 | M 10×30 | 23 | 25 |
| **110** | 25 | 2 | 20 | M 12 | M 12 | 30 | 107 | 112 | 125 | 108 | 4 | M 8 | 15 | 90 | 122 | 58 | 8 | M 8×25 | 40 | 45 |
| | 24 | 2 | 20 | M 8 | M 12 | 35 | 102 | 112 | 125 | 108 | 4 | M 10 | 18 | 85 | 128 | 42 | 10 | M 10×30 | 37 | 40 |
| | 30 | 2 | 24 | M 12 | M 16 | 32 | 123 | 112 | 125 | 108 | 4 | M 8 | 15 | 90 | 128 | 45 | 8 | M 8×25 | 46 | 50 |
| **120** | 24 | 2 | 20 | M 8 | M 12 | 25 | 84 | 122 | 135 | 118 | 4 | M 10 | 18 | 95 | 132 | 58 | 10 | M 10×30 | 19 | 20 |
| | 25 | 2 | 20 | M 12 | M 12 | 30 | 105 | 122 | 135 | 118 | 4 | M 8 | 15 | 100 | 133 | 67 | 8 | M 8×25 | 45 | 50 |
| | 28 | 3 | 24 | M 8 | M 12 | 35 | 107 | 122 | 135 | 118 | 4 | M 10 | 18 | 95 | 138 | 52 | 10 | M 10×30 | 43 | 46 |
| | 30 | 2 | 24 | M 12 | M 16 | 32 | 128 | 122 | 135 | 118 | 4 | M 10 | 18 | 95 | 138 | 45 | 10 | M 10×30 | 50 | 55 |
| **130** | 24 | 2 | 20 | M 8 | M 12 | 25 | 92 | 132 | 150 | 128 | 6 | M 10 | 18 | 105 | 145 | 65 | 10 | M 10×30 | 28 | 30 |
| | 25 | 2 | 20 | M 12 | M 12 | 30 | 110 | 132 | 150 | 128 | 6 | M 8 | 15 | 110 | 145 | 75 | 8 | M 8×25 | 50 | 55 |
| | 28 | 3 | 24 | M 10 | M 12 | 40 | 117 | 132 | 150 | 128 | 6 | M 10 | 18 | 105 | 150 | 60 | 10 | M 10×30 | 52 | 56 |
| | 30 | 2 | 24 | M 12 | M 16 | 35 | 140 | 132 | 150 | 128 | 6 | M 10 | 18 | 105 | 150 | 55 | 10 | M 10×30 | 60 | 65 |
| **140** | 28 | 3 | 24 | M 8 | M 12 | 25 | 92 | 142 | 160 | 138 | 6 | M 10 | 18 | 115 | 155 | 75 | 10 | M 10×30 | 32 | 35 |
| | 25 | 2 | 20 | M 12 | M 12 | 30 | 116 | 142 | 160 | 138 | 6 | M 10 | 18 | 115 | 155 | 75 | 10 | M 10×30 | 58 | 65 |
| | 35 | 3 | 30 | M 10 | M 12 | 40 | 125 | 142 | 160 | 138 | 6 | M 10 | 18 | 115 | 162 | 68 | 10 | M 10×30 | 65 | 70 |
| | 30 | 3 | 24 | M 16 | M 20 | 35 | 145 | 142 | 160 | 138 | 6 | M 10 | 18 | 115 | 160 | 60 | 10 | M 10×30 | 74 | 80 |
| **150** | 28 | 3 | 24 | M 10 | M 12 | 25 | 99 | 152 | 170 | 148 | 6 | M 10 | 18 | 125 | 165 | 85 | 10 | M 10×30 | 37 | 40 |
| | 35 | 3 | 24 | M 12 | M 16 | 30 | 130 | 152 | 170 | 148 | 6 | M 10 | 18 | 125 | 165 | 85 | 10 | M 10×30 | 78 | 85 |
| | 35 | 3 | 30 | M 12 | M 16 | 40 | 132 | 152 | 170 | 148 | 6 | M 10 | 18 | 125 | 175 | 75 | 10 | M 10×30 | 77 | 82 |
| | 35 | 3 | 30 | M 16 | M 20 | 40 | 158 | 152 | 170 | 148 | 6 | M 10 | 18 | 125 | 170 | 70 | 10 | M 10×30 | 87 | 95 |
| **160** | 28 | 3 | 24 | M 10 | M 12 | 30 | 105 | 162 | 185 | 158 | 8 | M 10 | 18 | 135 | 175 | 95 | 10 | M 10×30 | 41 | 45 |
| | 30 | 3 | 24 | M 12 | M 16 | 30 | 138 | 162 | 185 | 158 | 8 | M 10 | 18 | 135 | 178 | 92 | 10 | M 10×30 | 90 | 100 |
| | 35 | 3 | 30 | M 12 | M 16 | 40 | 138 | 162 | 185 | 158 | 8 | M 12 | 20 | 130 | 185 | 75 | 12 | M 12×30 | 90 | 96 |
| | 35 | 3 | 30 | M 16 | M 20 | 40 | 167 | 162 | 185 | 158 | 8 | M 12 | 20 | 130 | 185 | 70 | 12 | M 12×30 | 100 | 110 |
| **170** | 35 | 3 | 30 | M 10 | M 12 | 30 | 109 | 172 | 195 | 168 | 8 | M 10 | 18 | 145 | 185 | 105 | 10 | M 10×30 | 50 | 55 |
| | 35 | 3 | 30 | M 12 | M 20 | 40 | 154 | 172 | 195 | 168 | 8 | M 10 | 18 | 145 | 185 | 105 | 10 | M 10×30 | 100 | 110 |
| | 35 | 4 | 30 | M 12 | M 16 | 45 | 152 | 172 | 195 | 168 | 8 | M 16 | 25 | 130 | 200 | 60 | 16 | M 16×45 | 103 | 110 |
| | 35 | 3 | 30 | M 16 | M 20 | 40 | 179 | 172 | 195 | 168 | 8 | M 12 | 20 | 140 | 195 | 75 | 12 | M 12×30 | 130 | 140 |

# 10.4 SBD plummer block housings for bearings on a cylindrical seat and a multi-stepped shaft

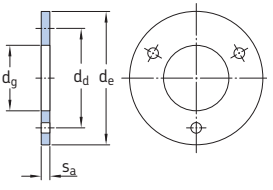
$d_a$ **180 – 280** mm




Type AL
Non-locating bearing
Housing for shaft end

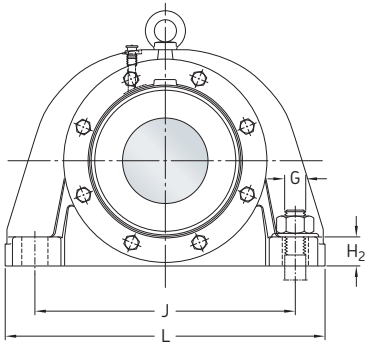


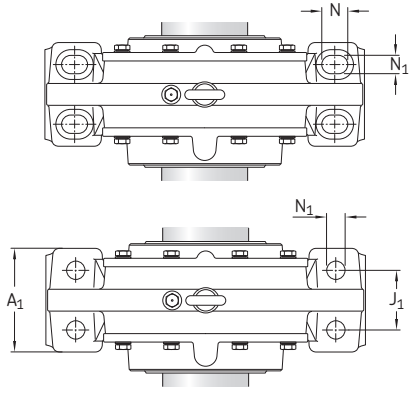

Type BF
Locating bearing
Housing for through shaft




| Shaft diam. | Housing | Appropriate bearing[1] | Dimensions Housing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | $H$ | $H_1$ | $H_2$ | $J$ | $J_1$ | $L$ | $N$ |
| mm | – | – | mm | | | | | | | | | | | |
| **180** | **SBDD 3036 G** | 23036 CC/W33 | 170 | 83 | 88 | 90 | 305 | 360 | 180 | 52 | 450 | 100 | 540 | – |
| | **SBDD 3136 G** | 23136 CC/W33 | 200 | 118 | 116 | 125 | 350 | 410 | 200 | 60 | 490 | 105 | 600 | 45 |
| | **SBDD 2236 G** | 22236 CC/W33 | 200 | 118 | 102 | 110 | 360 | 430 | 215 | 65 | 540 | 115 | 640 | – |
| | **SBDD 3236 G** | 23236 CC/W33 | 210 | 133 | 108 | 140 | 360 | 430 | 210 | 65 | 550 | 120 | 680 | 45 |
| **190** | **SBDD 3038 G** | 23038 CC/W33 | 180 | 93 | 88 | 96 | 315 | 370 | 185 | 55 | 480 | 105 | 570 | – |
| | **SBDD 3138 G** | 23138 CC/W33 | 210 | 123 | 120 | 130 | 370 | 435 | 210 | 65 | 550 | 120 | 680 | 45 |
| | **SBDD 2238 G** | 22238 CC/W33 | 200 | 118 | 102 | 110 | 370 | 430 | 215 | 65 | 540 | 115 | 640 | – |
| | **SBDD 3238 G** | 23238 CC/W33 | 220 | 138 | 113 | 150 | 385 | 455 | 220 | 75 | 560 | 120 | 710 | 45 |
| **200** | **SBDD 3040 G** | 23040 CC/W33 | 190 | 97 | 97 | 104 | 340 | 400 | 200 | 60 | 510 | 110 | 600 | – |
| | **SBDD 3140 G** | 23140 CC/W33 | 220 | 127 | 127 | 135 | 380 | 455 | 220 | 85 | 560 | 120 | 710 | 52 |
| | **SBDD 2240 G** | 22240 CC/W33 | 210 | 122 | 107 | 118 | 390 | 450 | 225 | 70 | 560 | 120 | 680 | – |
| | **SBDD 3240 G** | 23240 CC/W33 | 240 | 138 | 118 | 165 | 405 | 475 | 235 | 75 | 640 | 140 | 780 | 52 |
| **220** | **SBDD 3044 G** | 23044 CC/W33 | 200 | 102 | 102 | 110 | 370 | 430 | 215 | 65 | 540 | 115 | 640 | – |
| | **SBDD 3144 G** | 23144 CC/W33 | 230 | 135 | 135 | 150 | 420 | 485 | 235 | 75 | 640 | 140 | 780 | 52 |
| | **SBDD 2244 G** | 22244 CC/W33 | 220 | 124,5 | 117 | 128 | 435 | 500 | 250 | 75 | 600 | 130 | 720 | – |
| | **SBDD 3244 G** | 23244 CC/W33 | 250 | 148 | 133 | 175 | 445 | 525 | 260 | 80 | 700 | 140 | 850 | 52 |
| **240** | **SBDD 3048 G** | 23048 CC/W33 | 210 | 102 | 107 | 118 | 390 | 450 | 225 | 70 | 560 | 120 | 680 | – |
| | **SBDD 3148 G** | 23148 CC/W33 | 250 | 152 | 142 | 160 | 455 | 550 | 270 | 80 | 720 | 140 | 890 | 52 |
| | **SBDD 2248 G** | 22248 CC/W33 | 250 | 130 | 132 | 144 | 490 | 570 | 285 | 85 | 690 | 150 | 820 | – |
| | **SBDD 3248 G** | 23248 CC/W33 | 250 | 148 | 148 | 190 | 490 | 590 | 290 | 90 | 750 | 140 | 900 | 52 |
| **260** | **SBDD 3052 G** | 23052 CC/W33 | 220 | 107 | 117 | 128 | 435 | 500 | 250 | 75 | 600 | 130 | 720 | – |
| | **SBDD 3152 G** | 23152 CC/W33 | 250 | 152 | 152 | 175 | 490 | 590 | 290 | 90 | 750 | 140 | 900 | 52 |
| | **SBDD 2252 G** | 22252 CC/W33 | 260 | 145 | 137 | 154 | 520 | 590 | 295 | 90 | 730 | 160 | 860 | – |
| | **SBDD 3252 G** | 23252 CC/W33 | 290 | 167 | 158 | 205 | 535 | 625 | 310 | 95 | 800 | 160 | 960 | 65 |
| **280** | **SBDD 3056 G** | 23056 CC/W33 | 240 | 117 | 122 | 128 | 455 | 520 | 260 | 80 | 630 | 140 | 760 | – |
| | **SBDD 3156 G** | 23156 CC/W33 | 250 | 157 | 165 | 175 | 510 | 590 | 290 | 90 | 750 | 140 | 900 | 65 |
| | **SBDD 2256 G** | 22256 CC/W33 | 270 | 152 | 147 | 158 | 555 | 630 | 315 | 95 | 770 | 170 | 900 | – |
| | **SBDD 3256 G** | 23256 CC/W33 | 300 | 178 | 163 | 210 | 555 | 645 | 320 | 100 | 840 | 170 | 1 000 | 65 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.

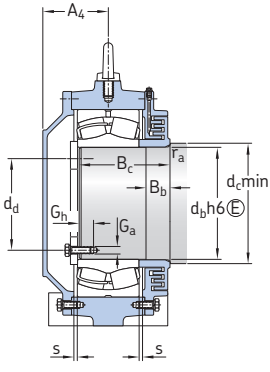


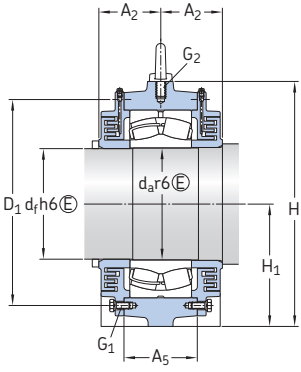

| Shaft diam. | Dimensions Housing | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | | End plate | | | | | | attachment bolts (for end plate) | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | s | G | $G_1$ | $G_2$ | $B_b$ | $B_c$ | $d_b$ | $d_c$ min | $d_f$ | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | | A | B |
| mm | mm | | | | – | mm | | | | | | – | mm | | | | | | kg | |
| **180** | 35 | 3 | 30 | M 12 | M 16 | 30 | 117 | 182 | 205 | 178 | 8 | M 10 | 18 | 155 | 195 | 115 | 10 | M 10×30 | 64 | 70 |
| | 35 | 3 | 30 | M 16 | M 20 | 40 | 163 | 182 | 205 | 178 | 8 | M 12 | 20 | 150 | 195 | 105 | 12 | M 12×30 | 118 | 130 |
| | 42 | 4 | 36 | M 16 | M 20 | 45 | 157 | 182 | 205 | 178 | 8 | M 16 | 25 | 140 | 210 | 70 | 16 | M 16×45 | 112 | 120 |
| | 35 | 3 | 30 | M 16 | M 20 | 45 | 185 | 182 | 205 | 178 | 8 | M 12 | 20 | 150 | 205 | 85 | 12 | M 12×30 | 147 | 160 |
| **190** | 35 | 3 | 30 | M 12 | M 16 | 30 | 128 | 192 | 215 | 188 | 8 | M 12 | 20 | 160 | 205 | 115 | 12 | M 12×30 | 74 | 80 |
| | 35 | 3 | 36 | M 16 | M 20 | 40 | 172 | 192 | 215 | 188 | 8 | M 12 | 20 | 160 | 210 | 110 | 12 | M 12×30 | 146 | 160 |
| | 42 | 4 | 36 | M 16 | M 20 | 45 | 160 | 192 | 215 | 188 | 8 | M 16 | 25 | 150 | 220 | 80 | 16 | M 16×45 | 126 | 135 |
| | 35 | 4 | 30 | M 16 | M 20 | 45 | 197 | 192 | 215 | 188 | 8 | M 12 | 20 | 160 | 215 | 95 | 12 | M 12×30 | 170 | 185 |
| **200** | 35 | 4 | 30 | M 12 | M 16 | 35 | 135 | 202 | 225 | 198 | 8 | M 16 | 25 | 160 | 215 | 105 | 16 | M 16×45 | 83 | 90 |
| | 42 | 3 | 36 | M 16 | M 24 | 40 | 180 | 202 | 225 | 198 | 8 | M 12 | 20 | 170 | 220 | 120 | 12 | M 12×30 | 175 | 190 |
| | 42 | 4 | 36 | M 16 | M 20 | 45 | 167 | 202 | 225 | 198 | 8 | M 20 | 30 | 150 | 235 | 65 | 20 | M 20×55 | 145 | 155 |
| | 42 | 4 | 36 | M 16 | M 24 | 45 | 198 | 202 | 225 | 198 | 8 | M 16 | 25 | 160 | 230 | 80 | 16 | M 16×45 | 200 | 220 |
| **220** | 42 | 4 | 36 | M 16 | M 20 | 35 | 144 | 222 | 245 | 218 | 8 | M 16 | 25 | 180 | 240 | 120 | 16 | M 16×45 | 107 | 115 |
| | 42 | 4 | 36 | M 16 | M 24 | 45 | 191 | 222 | 245 | 218 | 8 | M 16 | 25 | 180 | 245 | 115 | 16 | M 16×45 | 205 | 220 |
| | 42 | 4 | 36 | M 16 | M 20 | 45 | 175 | 222 | 245 | 218 | 8 | M 20 | 30 | 170 | 260 | 80 | 20 | M 20×55 | 187 | 200 |
| | 42 | 4 | 36 | M 20 | M 24 | 45 | 216 | 222 | 245 | 218 | 8 | M 16 | 25 | 180 | 255 | 95 | 16 | M 16×45 | 270 | 290 |
| **240** | 42 | 4 | 36 | M 16 | M 20 | 35 | 145 | 242 | 265 | 238 | 8 | M 20 | 30 | 190 | 260 | 120 | 20 | M 20×55 | 120 | 130 |
| | 42 | 4 | 36 | M 20 | M 24 | 50 | 212 | 242 | 265 | 238 | 8 | M 16 | 25 | 200 | 265 | 135 | 16 | M 16×45 | 250 | 270 |
| | 42 | 5 | 36 | M 20 | M 24 | 45 | 186 | 242 | 265 | 238 | 8 | M 20 | 30 | 190 | 285 | 95 | 20 | M 20×55 | 235 | 250 |
| | 42 | 5 | 36 | M 20 | M 24 | 45 | 224 | 242 | 265 | 238 | 8 | M 16 | 25 | 200 | 290 | 110 | 16 | M 16×45 | 345 | 370 |
| **260** | 42 | 4 | 36 | M 16 | M 20 | 35 | 155 | 262 | 285 | 258 | 8 | M 20 | 30 | 210 | 285 | 135 | 20 | M 20×55 | 153 | 165 |
| | 42 | 4 | 36 | M 20 | M 24 | 50 | 220 | 262 | 285 | 258 | 8 | M 16 | 25 | 220 | 285 | 155 | 16 | M 16×45 | 300 | 320 |
| | 42 | 5 | 36 | M 20 | M 24 | 50 | 205 | 262 | 285 | 258 | 8 | M 20 | 30 | 210 | 305 | 95 | 20 | M 20×55 | 290 | 310 |
| | 42 | 5 | 36 | M 20 | M 24 | 45 | 249 | 262 | 285 | 258 | 8 | M 16 | 25 | 220 | 305 | 115 | 16 | M 16×45 | 435 | 470 |
| **280** | 42 | 5 | 36 | M 16 | M 20 | 35 | 166 | 282 | 305 | 278 | 8 | M 20 | 30 | 230 | 305 | 155 | 20 | M 20×55 | 177 | 190 |
| | 42 | 5 | 36 | M 24 | M 24 | 50 | 225 | 282 | 305 | 278 | 8 | M 16 | 25 | 240 | 305 | 175 | 16 | M 16×45 | 325 | 350 |
| | 42 | 5 | 36 | M 20 | M 24 | 50 | 212 | 282 | 305 | 278 | 8 | M 24 | 35 | 220 | 325 | 195 | 24 | M 24×65 | 330 | 350 |
| | 42 | 5 | 36 | M 24 | M 30 | 50 | 261 | 282 | 305 | 278 | 8 | M 20 | 30 | 230 | 325 | 80 | 20 | M 20×55 | 490 | 530 |

# 10.4 SBD plummer block housings for bearings on a cylindrical seat and a multi-stepped shaft

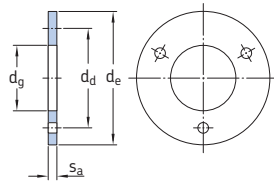
$d_a$ **300 – 420** mm




Type AL
Non-locating bearing
Housing for shaft end

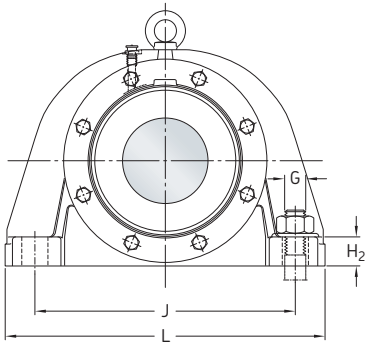


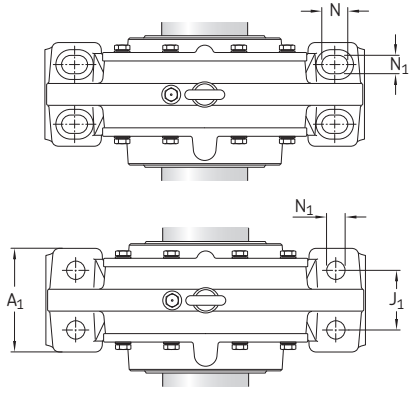

Type BF
Locating bearing
Housing for through shaft




| Shaft diam. | Housing | Appropriate bearing[1] | Dimensions Housing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | $A_1$ | $A_2$ | $A_4$ | $A_5$ | $D_1$ | H | $H_1$ | $H_2$ | J | $J_1$ | L | N |
| mm | – | – | mm | | | | | | | | | | | |
| **300** | **SBDD 3060 G** | 23060 CC/W33 | 250 | 122 | 132 | 144 | 500 | 570 | 285 | 85 | 690 | 150 | 820 | – |
| | **SBDD 3160 G** | 23160 CC/W33 | 300 | 162 | 167 | 190 | 550 | 655 | 320 | 100 | 840 | 170 | 1 000 | 65 |
| | **SBDD 2260 G** | 22260 CC/W33 | 280 | 160 | 152 | 168 | 585 | 660 | 330 | 100 | 820 | 180 | 960 | – |
| | **SBDD 3260 G** | 23260 CC/W33 | 330 | 182 | 187 | 230 | 600 | 705 | 350 | 105 | 920 | 180 | 1 100 | 75 |
| **320** | **SBDD 3064 G** | 23064 CC/W33 | 260 | 122 | 137 | 154 | 520 | 590 | 295 | 90 | 730 | 160 | 860 | – |
| | **SBDD 3164 G** | 23164 CC/W33 | 300 | 177 | 187 | 210 | 590 | 702 | 350 | 100 | 940 | 160 | 1 150 | 65 |
| | **SBDD 2264 G** | 22264 CC/W33 | 320 | 175 | 167 | 180 | 640 | 720 | 360 | 110 | 900 | 200 | 1 060 | – |
| | **SBDD 3264 G** | 23264 CC/W33 | 360 | 192 | 187 | 250 | 640 | 760 | 370 | 115 | 960 | 200 | 1 150 | 75 |
| **340** | **SBDD 3068 G** | 23068 CC/W33 | 270 | 132 | 147 | 158 | 565 | 630 | 315 | 95 | 770 | 170 | 900 | – |
| | **SBDD 3168 G** | 23168 CC/W33 | 360 | 197 | 237 | 220 | 630 | 735 | 370 | 115 | 960 | 200 | 1 150 | 75 |
| | **SBDD 3268 G** | 23268 CA/W33 | 380 | 202 | 237 | 265 | 680 | 810 | 390 | 125 | 980 | 200 | 1 200 | 75 |
| **360** | **SBDD 3072 G** | 23072 CC/W33 | 280 | 132 | 152 | 168 | 585 | 660 | 330 | 100 | 820 | 180 | 960 | – |
| | **SBDD 3172 G** | 23172 CC/W33 | 370 | 197 | 243 | 225 | 650 | 760 | 380 | 115 | 1 000 | 200 | 1 200 | 75 |
| | **SBDD 3272 G** | 23272 CA/W33 | 400 | 227 | 247 | 275 | 710 | 825 | 410 | 130 | 1 040 | 210 | 1 280 | 80 |
| **380** | **SBDD 3076 G** | 23076 CC/W33 | 300 | 137 | 157 | 168 | 605 | 680 | 340 | 105 | 840 | 190 | 1 000 | - |
| | **SBDD 3176 G** | 23176 CA/W33 | 380 | 202 | 254 | 230 | 680 | 790 | 390 | 125 | 1 000 | 200 | 1 200 | 75 |
| | **SBDD 3276 G** | 23276 CA/W33 | 405 | 232 | 257 | 295 | 745 | 880 | 425 | 135 | 1 100 | 225 | 1 350 | 85 |
| **400** | **SBDD 3080 G** | 23080 CC/W33 | 320 | 142 | 167 | 180 | 650 | 720 | 360 | 110 | 900 | 200 | 1 060 | - |
| | **SBDD 3180 G** | 23180 CA/W33 | 400 | 197 | 247 | 235 | 710 | 845 | 410 | 130 | 1 040 | 210 | 1 280 | 80 |
| | **SBDD 3280 G** | 23280 CA/W33 | 450 | 242 | 257 | 300 | 790 | 905 | 450 | 145 | 1 160 | 240 | 1 430 | 85 |
| **420** | **SBDD 3084 G** | 23084 CA/W33 | 340 | 147 | 167 | 180 | 670 | 750 | 375 | 115 | 940 | 210 | 1 100 | - |
| | **SBDD 3184 G** | 23184 CJ/W33 | 420 | 212 | 257 | 260 | 760 | 900 | 450 | 135 | 1 100 | 210 | 1 350 | 85 |
| | **SBDD 3284 G** | 23284 CA/W33 | 470 | 252 | 267 | 315 | 835 | 955 | 470 | 150 | 1 220 | 255 | 1 500 | 90 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.

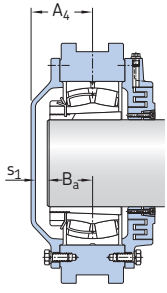


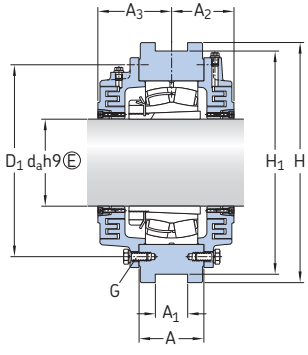

| Shaft diam. | Dimensions Housing | | | | Eye bolt acc. to DIN 580 | Dimensions Shaft abutment and fillet | | | | | | End plate | | | | | | attachment bolts (for end plate) | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | s | G | $G_1$ | $G_2$ | $B_b$ | $B_c$ | $d_b$ | $d_c$ min | $d_f$ | $r_a$ | $G_a$ | $G_h$ | $d_d$ | $d_e$ | $d_{gmax}$ | $s_a$ | | A | B |
| mm | mm | | | | – | mm | | | | | | – | mm | | | | | | kg | |
| **300** | 42 | 5 | 36 | M 20 | M 24 | 35 | 177 | 302 | 325 | 298 | 8 | M 20 | 30 | 250 | 325 | 175 | 20 | M 20×55 | 215 | 230 |
| | 42 | 5 | 36 | M 24 | M 30 | 50 | 237 | 302 | 325 | 298 | 8 | M 20 | 30 | 250 | 325 | 175 | 20 | M 20×55 | 400 | 430 |
| | 42 | 5 | 36 | M 20 | M 24 | 50 | 225 | 302 | 325 | 298 | 8 | M 24 | 35 | 240 | 350 | 105 | 24 | M 24×65 | 400 | 430 |
| | 56 | 6 | 48 | M 24 | M 30 | 50 | 273 | 302 | 325 | 298 | 8 | M 20 | 30 | 250 | 350 | 120 | 20 | M 20×55 | 590 | 640 |
| **320** | 42 | 5 | 36 | M 20 | M 24 | 35 | 179 | 322 | 345 | 318 | 8 | M 20 | 30 | 270 | 345 | 195 | 20 | M 20×55 | 240 | 255 |
| | 42 | 5 | 36 | M 24 | M 30 | 50 | 260 | 322 | 345 | 318 | 8 | M 20 | 30 | 270 | 350 | 190 | 20 | M 20×55 | 490 | 530 |
| | 56 | 5 | 48 | M 24 | M 30 | 55 | 245 | 322 | 345 | 318 | 8 | M 24 | 35 | 260 | 375 | 120 | 24 | M 24×65 | 485 | 520 |
| | 56 | 6 | 48 | M 24 | M 30 | 50 | 291 | 322 | 345 | 318 | 8 | M 24 | 35 | 260 | 375 | 110 | 24 | M 24×65 | 700 | 760 |
| **340** | 42 | 6 | 36 | M 20 | M 24 | 40 | 194 | 342 | 365 | 338 | 8 | M 24 | 35 | 280 | 370 | 190 | 24 | M 24×65 | 280 | 305 |
| | 56 | 6 | 48 | M 24 | M 30 | 60 | 287 | 342 | 365 | 338 | 8 | M 24 | 35 | 280 | 370 | 190 | 24 | M 24×65 | 590 | 630 |
| | 60 | 6 | 56 | M 24 | M 36 | 50 | 308 | 342 | 365 | 338 | 8 | M 24 | 35 | 280 | 420 | 125 | 24 | M 24×65 | 830 | 900 |
| **360** | 42 | 6 | 36 | M 20 | M 24 | 40 | 194 | 362 | 385 | 358 | 8 | M 24 | 35 | 300 | 390 | 210 | 24 | M 24×65 | 315 | 340 |
| | 56 | 6 | 48 | M 24 | M 30 | 60 | 288 | 362 | 385 | 358 | 8 | M 24 | 35 | 300 | 390 | 210 | 24 | M 24×65 | 660 | 700 |
| | 68 | 7 | 64 | M 24 | M 36 | 70 | 337 | 362 | 385 | 358 | 8 | M 24 | 35 | 300 | 440 | 145 | 24 | M 24×65 | 950 | 1 020 |
| **380** | 56 | 6 | 48 | M 20 | M 24 | 40 | 200 | 382 | 405 | 378 | 8 | M 24 | 35 | 320 | 410 | 230 | 24 | M 24×65 | 350 | 380 |
| | 60 | 6 | 56 | M 30 | M 30 | 60 | 294 | 382 | 405 | 378 | 8 | M 24 | 35 | 320 | 410 | 230 | 24 | M 24×65 | 730 | 770 |
| | 68 | 7 | 64 | M 30 | M 36 | 70 | 346 | 382 | 405 | 378 | 8 | M 30 | 45 | 305 | 465 | 130 | 30 | M 30×80 | 1 060 | 1 140 |
| **400** | 56 | 6 | 48 | M 24 | M 30 | 40 | 211 | 402 | 425 | 398 | 8 | M 24 | 35 | 340 | 430 | 250 | 24 | M 24×65 | 420 | 450 |
| | 68 | 7 | 64 | M 30 | M 36 | 60 | 291 | 402 | 425 | 398 | 8 | M 24 | 35 | 340 | 430 | 250 | 24 | M 24×65 | 820 | 870 |
| | 68 | 7 | 64 | M 30 | M 36 | 70 | 364 | 402 | 425 | 398 | 8 | M 30 | 45 | 325 | 475 | 145 | 30 | M 30×80 | 1 240 | 1 330 |
| **420** | 56 | 6 | 48 | M 24 | M 30 | 40 | 217 | 422 | 445 | 418 | 8 | M 30 | 40 | 345 | 450 | 240 | 30 | M 30×80 | 465 | 500 |
| | 68 | 7 | 64 | M 30 | M 36 | 60 | 318 | 422 | 445 | 418 | 8 | M 30 | 45 | 345 | 450 | 240 | 30 | M 30×80 | 1 000 | 1 070 |
| | 72 | 8 | 64 | M 30 | M 36 | 70 | 380 | 422 | 445 | 418 | 8 | M 30 | 45 | 345 | 520 | 155 | 30 | M 30×80 | 1 500 | 1 600 |

## 10.5 THD take-up housings for spherical roller bearings on an adapter sleeve and a plain shaft

$d_a$ **50 – 170** mm



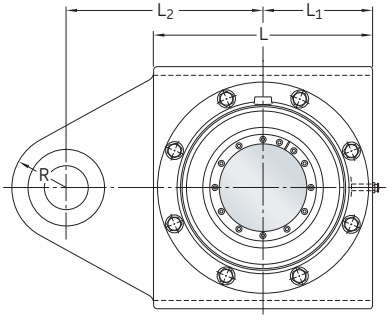

Type AL
Non-locating bearing
Housing for shaft end

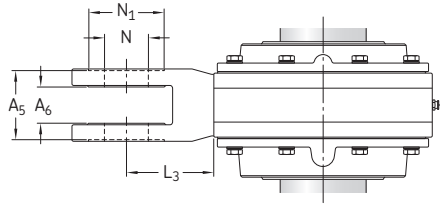



Type BF
Locating bearing
Housing for through shaft

| **Shaft diam.** | **Housing** | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | **Adapter ring** (incl.) Designation | **Dimensions** Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | | A | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $A_6$ |
| mm | – | – | | – | mm | | | | | | |
| **50** | **THDD 2211** | 22211 EK | H 311 | PSBD 50 | 60 | 34 | 49 | 55 | 38 | 42 | 22 |
| **55** | **THDD 2212** | 22212 EK | H 312 | PSBD 55 | 66 | 43 | 50 | 60 | 41 | 50 | 26 |
| **60** | **THDD 2213** | 22213 EK | H 313 | PSBD 60 | 78 | 53 | 50 | 63 | 53 | 66 | 30 |
| **70** | **THDD 2216** | 22216 EK | H 316 | PSBD 70 | 78 | 53 | 62 | 70 | 49 | 66 | 30 |
| **80** | **THDD 2218** | 22218 EK | H 318 | PSBD 80 | 78 | 53 | 67 | 83 | 63 | 66 | 30 |
| **90** | **THDD 2220** | 22220 EK | H 320 | PSBD 90 | 69 | 40 | 76 | 92 | 70 | 70 | 36 |
| **100** | **THDD 2222** | 22222 EK | H 322 | PSBD 100 | 78 | 53 | 85 | 97 | 75 | 76 | 40 |
| | **THDD 3222** | 23222 CCK/W33 | H 2322 | PSBD 100 | 90 | 53 | 91 | 103 | 76 | 100 | 44 |
| **110** | **THDD 2224** | 22224 EK | H 3124 | PSBD 110 | 78 | 53 | 84 | 99 | 72 | 76 | 40 |
| | **THDD 3224** | 23224 CCK/W33 | H 2324 | PSBD 110 | 95 | 53 | 93 | 108 | 78 | 100 | 44 |
| **115** | **THDD 3226** | 23226 CCK/W33 | H 2326 | PSBD 115 | 100 | 63 | 103 | 108 | 79 | 112 | 52 |
| **125** | **THDD 2228** | 22228 CCK/W33 | H 3128 | PSBD 125 | 83 | 53 | 80 | 102 | 90 | 74 | 40 |
| | **THDD 3228** | 23228 CCK/W33 | H 2328 | PSBD 125 | 110 | 63 | 108 | 118 | 88 | 112 | 52 |
| **135** | **THDD 3030** | 23030 CCK/W33 | H 3030 | PSBD 135 | 85 | 45 | 77,5 | 98,5 | 74,5 | 100 | 60 |
| | **THDD 3230** | 23232 CCK/W33 | H 2330 | PSBD 135 | 120 | 73 | 113 | 123 | 93 | 126 | 62 |
| **140** | **THDD 3132** | 23132 CCK/W33 | H 3132 | PSBD 140 | 116 | 74 | 101 | 126 | 101 | 132 | 62 |
| | **THDD 3232** | 23232 CCK/W33 | H 2332 | PSBD 140 | 130 | 83 | 118 | 133 | 98 | 126 | 62 |
| **150** | **THDD 3034** | 23034 CCK/W33 | H 3034 | PSBD 150 | 102 | 63 | 88 | 113 | 93 | 112 | 52 |
| | **THDD 3134** | 23134 CCK/W33 | H 3134 | PSBD 150 | 120 | 63 | 113 | 136 | 100 | 122 | 62 |
| **160** | **THDD 3136** | 23136 CCK/W33 | H 3136 | PSBD 160 | 120 | 60 | 115,5 | 135,5 | 113,5 | 130 | 64 |
| | **THDD 3236** | 23236 CCK/W33 | H 2336 | PSBD 160 | 140 | 93 | 133 | 148 | 108 | 140 | 72 |
| **170** | **THDD 3038** | 23038 CCK/W33 | H 3038 | PSBD 170 | 112 | 73 | 101 | 126 | 96 | 165 | 90 |
| | **THDD 3138** | 23138 CCK/W33 | H 3138 | PSBD 170 | 140 | 93 | 128 | 148 | 108 | 140 | 72 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.

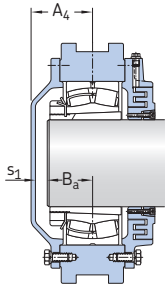


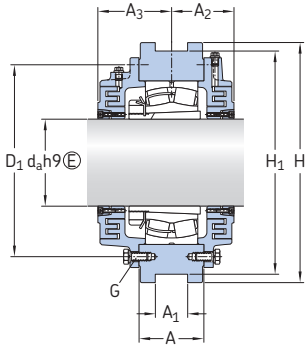

| Shaft diam. | Dimensions Housing | | | | | | | | | | | Shaft abutment | | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $D_1$ | H | $H_1$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | R | G | $B_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | | | | – | mm | | kg | |
| **50** | 115 | 150 | 135 | 150 | 75 | 105 | 30 | 20 | 40 | 30 | M 8 | 27 | 5 | 10 | 10 |
| **55** | 130 | 165 | 150 | 165 | 82,5 | 120 | 37,5 | 25 | 50 | 35 | M 8 | 30 | 5 | 12 | 12 |
| **60** | 140 | 180 | 155 | 160 | 80 | 145 | 65 | 30 | 60 | 40 | M 8 | 35 | 11 | 16 | 16 |
| **70** | 155 | 200 | 175 | 180 | 90 | 155 | 65 | 30 | 60 | 40 | M 8 | 36 | 6 | 22 | 23 |
| **80** | 180 | 230 | 200 | 210 | 105 | 170 | 65 | 30 | 60 | 40 | M 8 | 40 | 16 | 29 | 30 |
| **90** | 195 | 250 | 220 | 235 | 117,5 | 185 | 67,5 | 35 | 70 | 40 | M 8 | 45 | 18 | 35 | 37 |
| **100** | 215 | 270 | 240 | 255 | 125 | 200 | 70 | 40 | 75 | 45 | M 8 | 50 | 18 | 40 | 45 |
| | 230 | 300 | 270 | 270 | 135 | 195 | 60 | 50 | 95 | 60 | M 12 | 60 | 9 | 70 | 74 |
| **110** | 230 | 290 | 260 | 275 | 135 | 210 | 70 | 40 | 75 | 45 | M 8 | 55 | 10 | 45 | 48 |
| | 245 | 310 | 280 | 290 | 145 | 205 | 60 | 50 | 95 | 60 | M 12 | 64 | 7 | 75 | 80 |
| **115** | 260 | 335 | 305 | 300 | 155 | 220 | 75 | 60 | 110 | 70 | M 12 | 66 | 5 | 80 | 85 |
| **125** | 275 | 330 | 300 | 315 | 155 | 230 | 70 | 40 | 70 | 45 | M 12 | 62 | 20 | 56 | 61 |
| | 290 | 360 | 330 | 330 | 170 | 235 | 75 | 60 | 90 | 70 | M 16 | 72 | 8 | 95 | 101 |
| **135** | 245 | 320 | 290 | 280 | 140 | 235 | 90 | 50 | 95 | 70 | M 10 | 56 | 10 | 45 | 52 |
| | 305 | 385 | 355 | 360 | 180 | 260 | 80 | 70 | 120 | 80 | M 16 | 78 | 7 | 118 | 126 |
| **140** | 310 | 370 | 340 | 370 | 185 | 350 | 160 | 61 | 110 | 90 | M 12 | 75 | 18 | 136 | 146 |
| | 330 | 400 | 370 | 380 | 190 | 270 | 80 | 70 | 120 | 80 | M 16 | 84 | 6 | 140 | 150 |
| **150** | 280 | 360 | 330 | 325 | 165 | 255 | 90 | 45 | 100 | 70 | M 10 | 66 | 20 | 76 | 83 |
| | 330 | 380 | 350 | 375 | 190 | 395 | 160 | 60 | 160 | 80 | M 12 | 78 | 17 | 150 | 184 |
| **160** | 350 | 440 | 410 | 400 | 200 | 360 | 85 | 80 | 140 | 100 | M 16 | 82 | 23,5 | 160 | 172 |
| | 360 | 450 | 410 | 420 | 210 | 300 | 90 | 80 | 140 | 90 | M 16 | 90 | 10 | 165 | 178 |
| **170** | 315 | 390 | 360 | 380 | 195 | 350 | 130 | 45 | 120 | 70 | M 12 | 72 | 16 | 135 | 141 |
| | 365 | 450 | 410 | 420 | 210 | 300 | 90 | 80 | 140 | 90 | M 16 | 88 | 12 | 166 | 176 |

# 10.5 THD take-up housings for spherical roller bearings on an adapter sleeve and a plain shaft

$d_a$ **180 – 400** mm



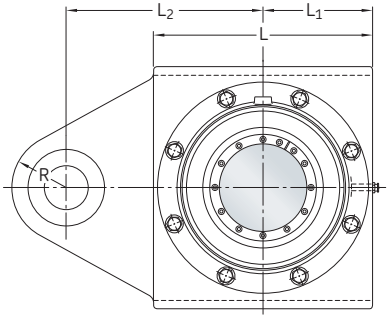

Type AL
Non-locating bearing
Housing for shaft end

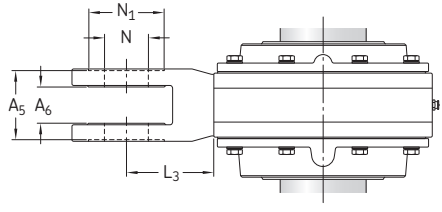



Type BF
Locating bearing
Housing for through shaft

| Shaft diam. | Housing | Appropriate parts Bearing[1] | Adapter sleeve[2] | Adapter ring (incl.) Designation | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | | A | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $A_6$ |
| mm | – | – | | – | mm | | | | | | |
| **180** | **THDD 3040** | 23040 CCK/W33 | H 3040 | PSBD 180 | 125 | 83 | 107 | 133 | 108 | 125 | 62 |
| | **THDD 3140** | 23140 CCK/W33 | H 3140 | PSBD 180 | 138 | 90 | 115 | 148,5 | 120 | 128 | 62 |
| | **THDD 3240** | 23240 CCK/W33 | H 2340 | PSBD 180 | 165 | 103 | 138 | 158 | 118 | 140 | 72 |
| **200** | **THDD 3044** | 23044 CCK/W33 | OH 3044 H | PSBD 200 | 120 | 65 | 107 | 142 | 107 | 145 | 70 |
| | **THDD 3144** | 23144 CCK/W33 | OH 3144 H | PSBD 200 | 150 | 103 | 135 | 160 | 135 | 144 | 74 |
| | **THDD 3244** | 23244 CCK/W33 | OH 2344 H | PSBD 200 | 175 | 103 | 148 | 183 | 133 | 240 | 173 |
| **220** | **THDD 3148** | 23148 CCK/W33 | OH 3148 H | PSBD 220 | 152 | 65 | 148 | 178 | 138 | 215 | 123 |
| | **THDD 3248** | 23248 CCK/W33 | OH 2348 H | PSBD 220 | 190 | 103 | 148 | 188 | 148 | 240 | 173 |
| **240** | **THDD 3052** | 23052 CCK/W33 | OH 3052 H | PSBD 240 | 135 | 65 | 110,5 | 150,5 | 120,5 | 215 | 123 |
| | **THDD 3152** | 23152 CCK/W33 | OH 3152 H | PSBD 240 | 175 | 80 | 152 | 187 | 152 | 225 | 135 |
| | **THDD 3252** | 23252 CCK/W33 | OH 2352 H | PSBD 240 | 205 | 103 | 167 | 208 | 158 | 240 | 173 |
| **260** | **THDD 3256** | 23256 CCK/W33 | OH 2356 H | PSBD 260 | 210 | 123 | 178 | 218 | 163 | 240 | 173 |
| **280** | **THDD 3160** | 23160 CCK/W33 | OH 3160 H | PSBD 280 | 195 | 103 | 165 | 210 | 170 | 240 | 173 |
| | **THDD 3260** | 23260 CCK/W33 | OH 3260 H | PSBD 280 | 230 | 123 | 182 | 222 | 187 | 240 | 173 |
| **300** | **THDD 3164** | 23164 CCK/W33 | OH 3164 H | PSBD 300 | 210 | 123 | 177 | 212 | 187 | 240 | 170 |
| | **THDD 3264** | 23264 CCK/W33 | OH 3264 H | PSBD 300 | 250 | 123 | 192 | 237 | 187 | 300 | 213 |
| **320** | **THDD 3168** | 23168 CCK/W33 | OH 3168 H | PSBD 320 | 220 | 150 | 197 | 242 | 237 | 300 | 180 |
| | **THDD 3268** | 23268 CAK/W33 | OH 3268 H | PSBD 320 | 265 | 123 | 202 | 272 | 237 | 300 | 213 |
| **340** | **THDD 3272** | 23272 CAK/W33 | OH 3272 H | PSBD 340 | 275 | 123 | 227 | 282 | 247 | 300 | 213 |
| **360** | **THDD 3176** | 23176 CAK/W33 | OH 3176 H | PSBD 360 | 230 | 120 | 202 | 257 | 254 | 300 | 200 |
| | **THDD 3276** | 23276 CAK/W33 | OH 3276 H | PSBD 360 | 295 | 123 | 232 | 297 | 257 | 300 | 213 |
| **380** | **THDD 3280** | 23280 CAK/W33 | OH 3280 H | PSBD 380 | 300 | 123 | 242 | 307 | 257 | 300 | 213 |
| **400** | **THDD 3284** | 23284 CAK/W33 | OH 3284 H | PSBD 400 | 315 | 123 | 252 | 317 | 267 | 300 | 213 |

[1] Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Only typical adapter sleeves are listed. Other variants can also fit the housing.




| Shaft diam. | Dimensions Housing | | | | | | | | | | | Shaft abutment | | Mass Housing type | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $D_1$ | H | $H_1$ | L | $L_1$ | $L_2$ | $L_3$ | N | $N_1$ | R | G | $B_a$ | $s_1$ | A | B |
| mm | mm | | | | | | | | | | – | mm | | kg | |
| **180** | 340 | 430 | 400 | 390 | 200 | 275 | 85 | 70 | 120 | 80 | M 12 | 78 | 22 | 160 | 167 |
| | 380 | 440 | 420 | 440 | 220 | 300 | 80 | 60 | 110 | 80 | M 16 | 95 | 15 | 175 | 190 |
| | 405 | 500 | 460 | 470 | 235 | 325 | 90 | 80 | 140 | 90 | M 16 | 100 | 10 | 270 | 290 |
| **200** | 370 | 480 | 440 | 430 | 210 | 325 | 100 | 60 | 100 | 80 | M 16 | 80 | 17 | 200 | 220 |
| | 420 | 510 | 480 | 470 | 235 | 530 | 260 | 100 | 175 | 120 | M 16 | 100 | 25 | 240 | 255 |
| | 445 | 540 | 500 | 520 | 260 | 575 | 245 | 100 | 175 | 150 | M 20 | 112 | 11 | 380 | 400 |
| **220** | 455 | 540 | 500 | 520 | 260 | 515 | 250 | 100 | 250 | 150 | M 20 | 106 | 22 | 310 | 360 |
| | 490 | 580 | 540 | 560 | 280 | 600 | 250 | 100 | 175 | 150 | M 20 | 122 | 16 | 460 | 485 |
| **240** | 435 | 540 | 500 | 500 | 245 | 515 | 260 | 100 | 250 | 150 | M 16 | 92 | 16,5 | 269 | 280 |
| | 490 | 570 | 540 | 550 | 275 | 565 | 270 | 100 | 250 | 150 | M 20 | 118 | 24 | 400 | 460 |
| | 540 | 610 | 570 | 590 | 305 | 615 | 220 | 100 | 200 | 150 | M 20 | 132 | 16 | 545 | 580 |
| **260** | 555 | 650 | 610 | 630 | 315 | 630 | 220 | 100 | 175 | 150 | M 24 | 135 | 16 | 590 | 630 |
| **280** | 550 | 650 | 610 | 625 | 312 | 630 | 250 | 100 | 240 | 150 | M 24 | 125 | 35 | 540 | 580 |
| | 600 | 670 | 630 | 670 | 335 | 650 | 220 | 100 | 175 | 150 | M 24 | 142 | 33 | 678 | 730 |
| **300** | 590 | 670 | 630 | 665 | 340 | 650 | 230 | 100 | 175 | 150 | M 24 | 135 | 40 | 650 | 690 |
| | 640 | 710 | 670 | 710 | 355 | 725 | 275 | 110 | 185 | 200 | M 24 | 152 | 21 | 800 | 860 |
| **320** | 630 | 740 | 700 | 740 | 370 | 720 | 310 | 120 | 240 | 200 | M 24 | 155 | 70 | 760 | 880 |
| | 680 | 750 | 700 | 750 | 375 | 750 | 285 | 110 | 185 | 200 | M 24 | 175 | 47 | 920 | 1 000 |
| **340** | 710 | 790 | 740 | 790 | 395 | 765 | 275 | 110 | 185 | 200 | M 24 | 180 | 51 | 1 050 | 1 120 |
| **360** | 680 | 790 | 740 | 750 | 375 | 750 | 320 | 110 | 230 | 200 | M 30 | 165 | 73 | 890 | 1 000 |
| | 745 | 820 | 780 | 810 | 420 | 780 | 310 | 110 | 230 | 200 | M 30 | 186 | 55 | 1 200 | 1 280 |
| **380** | 790 | 870 | 820 | 870 | 435 | 800 | 270 | 110 | 185 | 200 | M 30 | 196 | 45 | 1 480 | 1 580 |
| **400** | 835 | 925 | 860 | 925 | 463 | 825 | 262 | 110 | 185 | 200 | M 30 | 212 | 39 | 1 880 | 1 980 |


SKF
FNL 511 A

# Flanged housings FNL series

**Bearing types**
- Self-aligning ball bearings
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 02, 22

**Shaft diameter range**
- 20 to 100 mm

**Typical shaft-bearing combinations**
- Plain shaft with bearing on an adapter sleeve

**Seals**
- Double-lip

**Lubrication**
- Grease

**Materials**
- Grey cast iron

**Mounting**
- Three-bolt mounting
- Four-bolt mounting

**Compliance to standards**
- Not standardized

**Supersedes**
- 7225(00)

FNL flanged housings are well-proven machine parts that provide simple, reliable housing in applications without horizontal frames. They enable the full service life potential of the incorporated bearings to be exploited with less need for maintenance.

# Flanged housings FNL series


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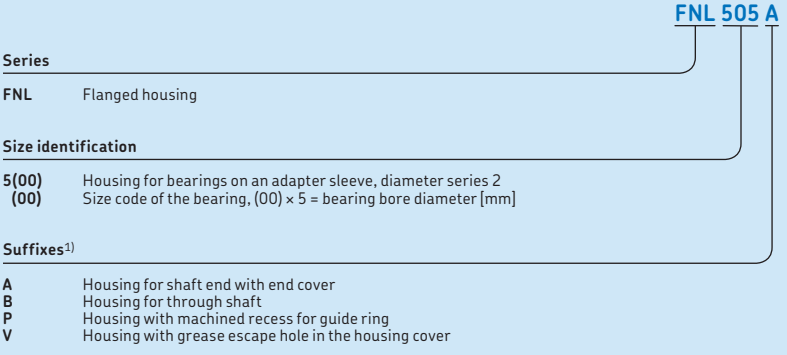
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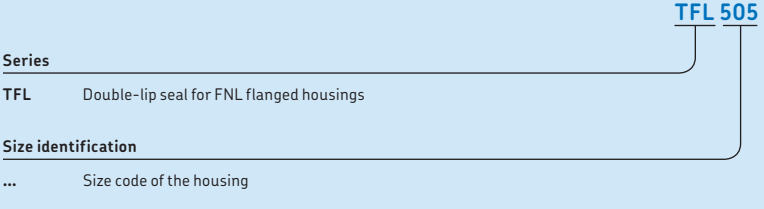
# Designations

**Designation system for FNL flanged housings**



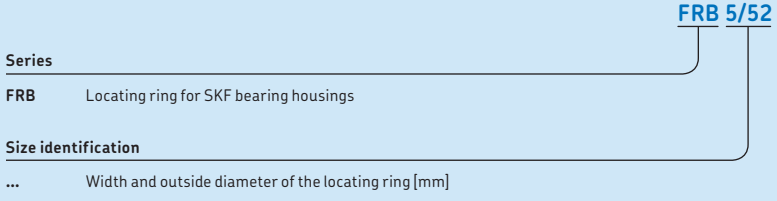

1) When multiple suffixes are used, they are listed in the same order as shown here.

**Designation system for seals**

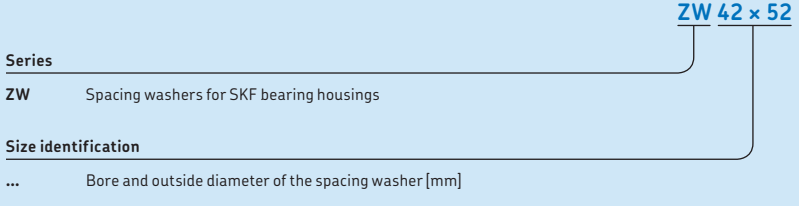


## Flanged housings FNL series

**Designation system for locating rings**




**Designation system for spacing washers**



# Standard housing design

FNL flanged housings are non-split housings that are produced in two designs depending on size. Smaller sizes up to and including size 13 have a triangular flange (→ **fig. 1**), larger sizes have a square flange (→ **fig. 2**). FNL housings are supplied with a cover either for shaft ends or for through shafts (→ **fig. 3**). The housings with a cover for shaft ends have the designation suffix A, the housings with a cover for through shafts have the designation suffix B.

**Fig. 1**

**FNL housing with triangular flange**

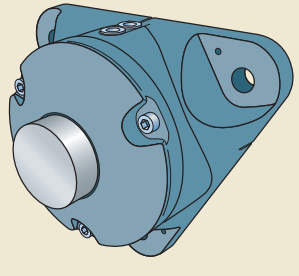


**Fig. 2**

**FNL housing with square flange**

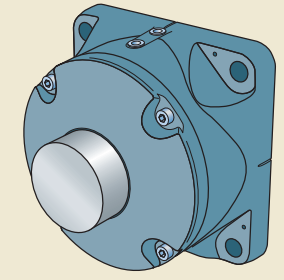
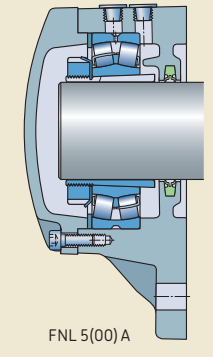
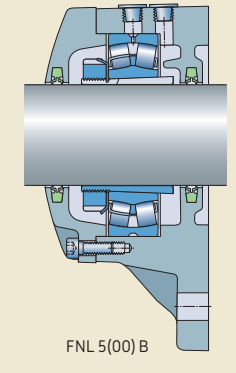


**Fig. 3**

**FNL housings for shaft end or through shaft**



FNL 5(00) A



FNL 5(00) B

## Features and benefits

FNL flanged housings have the following features and benefits:

**Simple mounting**

To simplify mounting and make alignment more accurate, lines cast into the housing flange indicate the centre of the housing bore. Dimples indicate the position for dowel pins (→ **fig. 4**).

**Grease guiding system**

An integrated flange guides grease from the grease fitting into the bearing (→ **fig. 5**).

**Low friction seals**

A low friction, double-lip seal on each side of the housing keeps grease in and contaminants out (→ **fig. 6**). These seals allow rotational speeds twice that of traditional felt seals.

**Drilled holes for relubrication**

FNL housings have two predrilled holes for relubrication. One is centered and enables relubrication via a lubrication feature in the bearing. The other is offset and enables relubrication from the side.

## Housing material

FNL flanged housings are made of grey cast iron.

### Paint, corrosion protection

FNL flanged housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

Fig. 4

**Cast indications mark the centre of the housing bore**

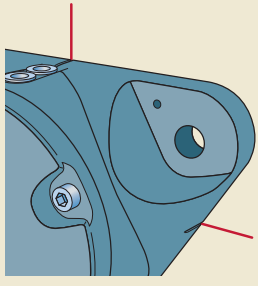


Fig. 5

**Grease guiding system**

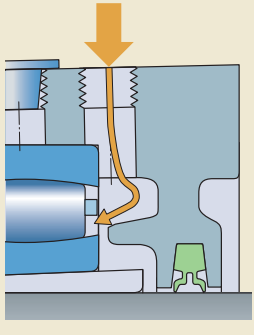
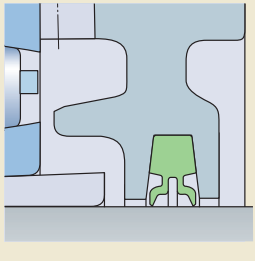


Fig. 6

**Low friction seals**



### Dimension standards

The dimensions of FNL flanged housings are not standardized either nationally or internationally.

### Interchangeability

FNL flanged housings are dimensionally interchangeable with the earlier 7225(00) housings.

## Housing variants

In addition to standard design FNL flanged housings, variants are also available. Variants include housings with centring recesses and grease escape holes.

### Centring recesses

FNL flanged housings can be supplied with a machined recess, which can be used to centre the housing on a shoulder. With this arrangement, the attachment bolts are not subjected to shear forces. The shoulder can be provided either by machining the wall or by attaching a guide ring to the wall.

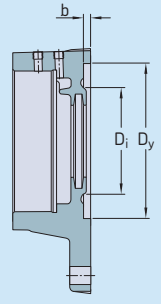
FNL housings with a machined recess can be supplied on request and are identified by the designation suffix P, e.g. FNL 511 BP. Dimensions for the recess and the shoulder or guide ring are listed in **table 1**.

### Grease escape hole

FNL flanged housings can be supplied with a grease escape hole in the cover (→ **fig. 7**). This housing variant can be supplied on request and is identified by the designation suffix V, e.g. FNL 511 AV.

**Table 1**

**Centring recess on FNL housings**




| Housing Size | Recess dimensions b | $D_y$ H8 | $D_i$ |
|---|---|---|---|
| – | mm | | |
| **FNL 505** | 3 | 60 | 35 |
| **FNL 506** | 3 | 70 | 48 |
| **FNL 507** | 4 | 80 | 53 |
| **FNL 508** | 4 | 90 | 60 |
| **FNL 509** | 4 | 100 | 65 |
| **FNL 510** | 5 | 100 | 68 |
| **FNL 511** | 5 | 105 | 78 |
| **FNL 512** | 5 | 120 | 90 |
| **FNL 513** | 5 | 130 | 90 |
| **FNL 515** | 6 | 150 | 105 |
| **FNL 516** | 6 | 150 | 110 |
| **FNL 517** | 6 | 170 | 120 |
| **FNL 518** | 7 | 170 | 120 |
| **FNL 520** | 6 | 200 | 140 |
| **FNL 522** | 6 | 220 | 160 |

**Fig. 7**

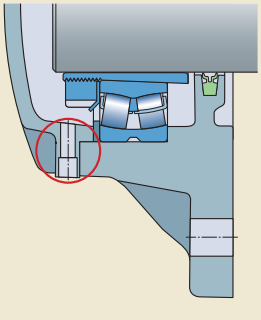
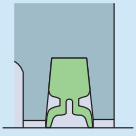


Table 2

**Double-lip seals for FNL flanged housings**



| | |
|---|---|
| Type | Double-lip |
| Designation | TFL 5.. |
| Size range | 505 to 522 |
| Material | HNBR (hydrogenated nitrile butadiene rubber) |

**Application conditions and requirements**

| | |
|---|---|
| Temperature [°C] | –25 to +120 |
| Temperature [°F] | –15 to +250 |
| Max. circumferential speed[1] [m/s] | 8 |
| Max. misalignment [°] | 0,5 |
| Low friction | + |
| Axial shaft displacement | ++ |
| Vertical shaft arrangement | + |
| Replacement | + |
| Shaft tolerance class | h9Ⓔ |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 |

**Sealing suitability**

| | |
|---|---|
| Dust | ++ |
| Fine particles | ++ |
| Coarse particles | ++ |
| Chips | + |
| Liquids when sprayed | + |
| Direct sunlight | + |

Symbols: ++ very suitable
+ suitable

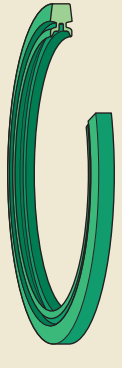
[1] To convert circumferential speeds to rotational speeds → **table 7** on **page 37**

# Sealing solutions

FNL flanged housings are equipped with low-friction, double-lip grease seals (→ **fig. 8**). **Table 2** provides an overview of the characteristics and suitability of the sealing solution. This information should be used as a guideline and does not substitute for testing a seal in its application.

Seals are supplied with the housing. If additional seals are needed, they can be ordered separately. They are identified by the designation prefix TFL followed by a number indicating the size, e.g. TFL 511.

Fig. 8



# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Axial load carrying capacity for bearings on a sleeve* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings and adapter sleeves, refer to the product information available online at skf.com/bearings.

## Typical shaft-bearing combinations

FNL flanged housings can accommodate bearings on an adapter sleeve on plain shafts.

## Locating and non-locating bearing positions

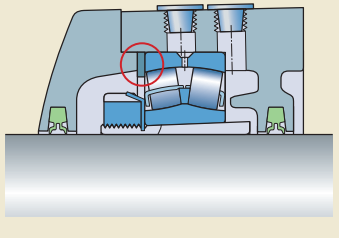
FNL housings can be used for both the locating and non-locating bearing positions. The housings are machined standard for bearings in the non-locating position. Bearings in the locating position as well as CARB toroidal roller bearings must be secured in the housing with a spacing washer or one or two locating rings (→ **fig. 9**). Appropriate spacing washers and locating rings are listed in the product tables.

When a spacing washer or only one locating ring is used, it should be inserted on the cover side of the bearing. When two locating rings are used, one should be placed on each side of the bearing.



**Fig. 9**

**Spherical roller bearing in the locating position**



## Load carrying capacity

The permissible radial loads for a flanged housing depend on the bearing, the breaking load of the housing and the strength of the attachment bolts. Guideline values for the breaking loads of the housings are provided in **table 3**.

The permissible axial loads for a flanged housing are limited by the friction between the sleeve and shaft.

### Additional housing support

When the housing is subjected to heavy radial loads, a stop or dowel pins should be used to relieve the load on the attachment bolts. A shoulder or a guide ring on the support surface engaging a centring recess can also be used. Whichever method is used, it should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 4**. Dimples cast into the housing flange mark the recommended positions.

## Operating temperature

The permissible operating temperature is mainly limited by the seals (→ **table 2**, **page 538**) and the lubricant. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

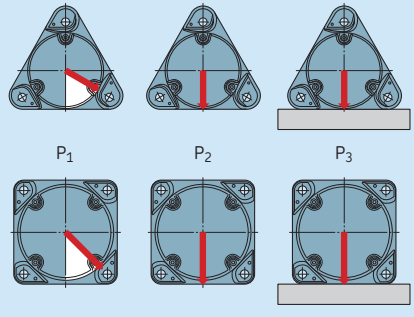
The housing material does not set any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

**Table 3**

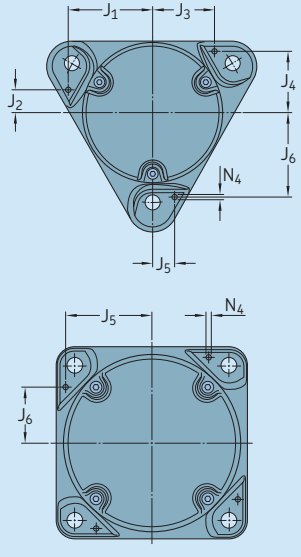
**Breaking loads for FNL housings**




| Housing Size | Breaking loads $P_1$ | $P_2$ | $P_3$ |
|---|---|---|---|
| – | kN | | |
| **FNL 505** | 50 | 40 | 80 |
| **FNL 506** | 60 | 45 | 85 |
| **FNL 507** | 70 | 50 | 90 |
| **FNL 508** | 80 | 55 | 95 |
| **FNL 509** | 90 | 60 | 100 |
| **FNL 510** | 100 | 65 | 105 |
| **FNL 511** | 110 | 80 | 110 |
| **FNL 512** | 120 | 95 | 115 |
| **FNL 513** | 130 | 110 | 190 |
| **FNL 515** | 140 | 125 | 265 |
| **FNL 516** | 150 | 140 | 340 |
| **FNL 517** | 160 | 155 | 415 |
| **FNL 518** | 170 | 170 | 490 |
| **FNL 520** | 180 | 185 | 565 |
| **FNL 522** | 190 | 200 | 640 |

**Table 4**

**Position and size of dowel pin holes**




| Housing Size | Dimensions $J_1$ | $J_2$ | $J_3$ | $J_4$ | $J_5$ | $J_6$ | $N_4$ max |
|---|---|---|---|---|---|---|---|
| – | mm | | | | | | |
| **FNL 505** | 44 | 12 | 33 | 32 | 12 | 44 | 5 |
| **FNL 506** | 51 | 13 | 37 | 37 | 13 | 51 | 5 |
| **FNL 507** | 57 | 16 | 42 | 41 | 15 | 57 | 5 |
| **FNL 508** | 65 | 17 | 48 | 47 | 16 | 66 | 6 |
| **FNL 509** | 71 | 20 | 53 | 52 | 18 | 72 | 6 |
| **FNL 510** | 71 | 20 | 53 | 52 | 18 | 72 | 6 |
| **FNL 511** | 77 | 21 | 57 | 56 | 21 | 77 | 6 |
| **FNL 512** | 84 | 22 | 62 | 61 | 22 | 84 | 8 |
| **FNL 513** | 90 | 24 | 66 | 66 | 24 | 90 | 8 |
| **FNL 515** | – | – | – | – | 85 | 55 | 8 |
| **FNL 516** | – | – | – | – | 87 | 54 | 8 |
| **FNL 517** | – | – | – | – | 93 | 63 | 8 |
| **FNL 518** | – | – | – | – | 95 | 60 | 8 |
| **FNL 520** | – | – | – | – | 112 | 72 | 8 |
| **FNL 522** | – | – | – | – | 122 | 78 | 8 |

## Operating speed

The seals can limit the permissible operating speed. They are suitable for circumferential speeds of up to 8 m/s. The corresponding rotational speeds are listed in **table 7** on **page 37**. For speed limits of the bearing, refer to the product information available online at skf.com/bearings.

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers in accordance with ISO 7089 or 7090. SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 6**, **page 544**). They are valid for oiled, but otherwise untreated, thread surfaces.

If the bearing arrangement is subjected to heavy radial loads, it may be necessary to use stronger, 10.9 class bolts.

SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, shoulder or guide ring can accommodate all occurring loads.

# Lubrication

FNL flanged housings are designed for grease lubrication. The lubricant should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 20 to 40% of its volume. A 40% grease fill is required when bearings have to be relubricated from the side, while a 20% grease fill is used when bearings are relubricated via the outer ring.

For highly contaminated environments and slow speeds, fill the housing to 70–80%. For additional information, contact the SKF application engineering service.

Quantities for 20 and 40% grease fills are listed in **table 5**.

The values are valid for a typical lithium grease (about 0,95 g/cm³). They include grease for the bearing and the seals.

In most applications, the initial grease fill will adequately lubricate the bearing until the grease is exchanged during the next planned inspection.

## Relubrication

Certain operating conditions such as high speeds, high temperatures or heavy loads may require relubrication. Therefore FNL housings have two holes that have been drilled and tapped for an AH 1/8-27 PTF grease fitting (→ **fig. 10**). On a new housing, the holes are covered by plastic plugs. These plugs should be replaced with the grease fitting and the threaded plug supplied with the housing. If a larger grease fitting or other equipment has to be used an adapter to change to a G 1/4 thread is available (→ **page 48**).

Excess grease can escape via the seals. If this is not enough, SKF can supply housings with a grease escape hole in the cover (designation suffix V) on request. SKF recommends removing the housing cover periodically to remove used grease. The time interval for this

**Table 5**

**Initial grease fill**

| Housing Size | Initial fill 20% | 40% |
|---|---|---|
| – | g | |
| **FNL 505** | 10 | 15 |
| **FNL 506** | 15 | 25 |
| **FNL 507** | 25 | 35 |
| **FNL 508** | 30 | 45 |
| **FNL 509** | 35 | 50 |
| **FNL 510** | 35 | 50 |
| **FNL 511** | 40 | 60 |
| **FNL 512** | 60 | 90 |
| **FNL 513** | 80 | 120 |
| **FNL 515** | 150 | 250 |
| **FNL 516** | 180 | 300 |
| **FNL 517** | 210 | 350 |
| **FNL 518** | 250 | 400 |
| **FNL 520** | 320 | 500 |
| **FNL 522** | 420 | 650 |

**Fig. 10**

**Relubrication holes**

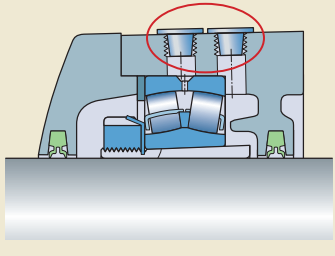


Fig. 11

**Relubrication via the outer ring**

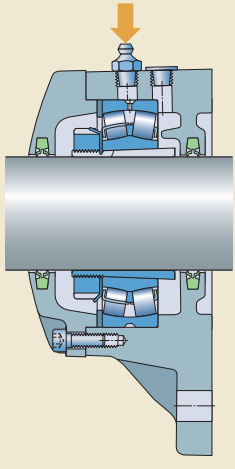
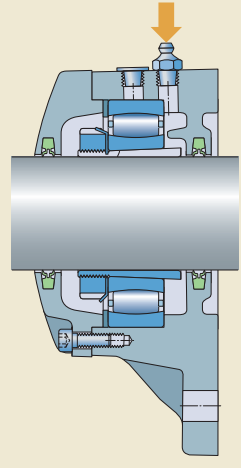


Fig. 12

**Relubrication from the side**



depends on the application, the size of the bearing and the amount of grease applied.

**Relubrication via the outer ring**

The hole closest to the cover should be used to relubricate spherical roller bearings with a relubrication feature (a lubrication groove and holes in the outer ring) (→ **fig. 11**). When applying grease via the relubrication feature the shaft should be rotating.

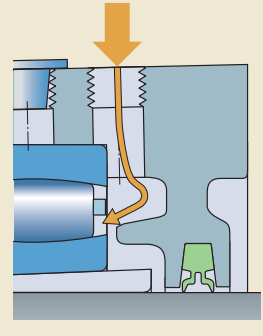
**Relubrication from the side**

When relubricating from the side, which is typically necessary for self-aligning ball bearings and CARB toroidal roller bearings, the hole closest to the flange should be used (→ **fig. 12**).

FNL flanged housings have an integral flange that guides grease from the grease fitting directly to the rolling elements (→ **fig. 13**).

Fig. 13

**Grease guiding system**



# Mounting

FNL housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

Mounting instructions are provided with the housing. For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

### Torque specifications

Cover bolts and attachment bolts should be tightened to the torque values listed in **table 6**.

# Condition monitoring

If connections for condition monitoring sensors are required, contact SKF.

# Accessories

There are several accessories available for FNL housings, including lubricators, central lubrication systems and adapters for grease fittings. For additional information, refer to *SKF tools and products* (→ **page 47**).

**Table 6**

**Tightening torque values for cover bolts and attachment bolts**

| Housing | Cover bolts | | Attachment bolts | |
|---|---|---|---|---|
| Size | Size | Tightening torque | Size | Tightening torque[1] |
| – | – | Nm | – | Nm |
| **FNL 505** | M 5 × 16 | 6 | M 10 | 50 |
| **FNL 506** | M 5 × 16 | 6 | M 10 | 50 |
| **FNL 507** | M 5 × 16 | 6 | M 12 | 80 |
| **FNL 508** | M 5 × 16 | 6 | M 12 | 80 |
| **FNL 509** | M 6 × 20 | 10 | M 12 | 80 |
| **FNL 510** | M 6 × 20 | 10 | M 12 | 80 |
| **FNL 511** | M 6 × 20 | 10 | M 12 | 80 |
| **FNL 512** | M 6 × 20 | 10 | M 12 | 80 |
| **FNL 513** | M 6 × 20 | 10 | M 12 | 80 |
| **FNL 515** | M 8 × 25 | 24 | M 16 | 200 |
| **FNL 516** | M 8 × 25 | 24 | M 16 | 200 |
| **FNL 517** | M 8 × 25 | 24 | M 16 | 200 |
| **FNL 518** | M 8 × 25 | 24 | M 16 | 200 |
| **FNL 520** | M 10 × 30 | 47 | M 20 | 385 |
| **FNL 522** | M 10 × 30 | 47 | M 20 | 385 |

[1] Recommended by bolt manufacturers

# Ordering information

FNL housings are supplied together with their standard seals. Each of the following items must be ordered separately:

- housing
- locating rings or spacing washer
- bearing
- adapter sleeve

**Order example**

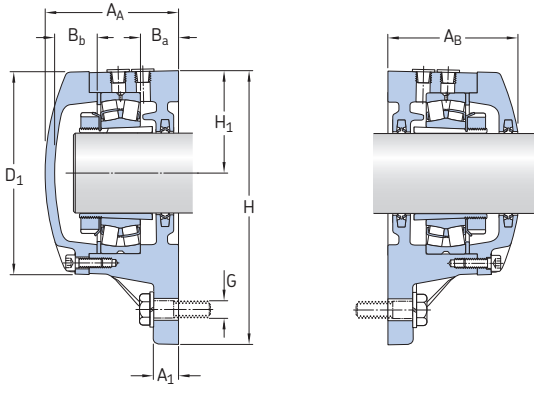
Two FNL flanged housings are required for two 22212 EK spherical roller bearings on H 312 adapter sleeves. One housing will accommodate the non-locating bearing at the end of the shaft. The other housing will accommodate the locating bearing and a through shaft.

The following items should be ordered (in addition to the bearings and adapter sleeves):

- 1 housing FNL 512 A
- 1 housing FNL 512 B
- 1 spacing washer ZW 90x110

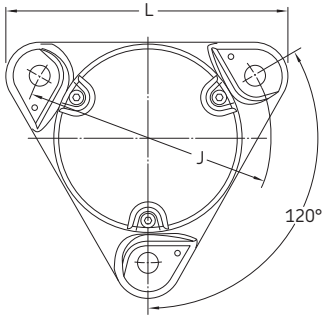
# 11.1 FNL flanged housings for bearings on adapter sleeves

$d_a$ **20 – 40** mm




| **Shaft diameter** $d_a$ | **Housing** for shaft end | for through shaft | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring or spacing washer[3] | Contact seal |
|---|---|---|---|---|---|---|
| mm | – | | – | | | |
| **20** | **FNL 505 A** | **FNL 505 B** | 1205 EKTN9<br>2205 EKTN9<br>22205 EK<br>C 2205 KTN9 | H 205<br>H 305<br>H 305<br>H 305 E | 1 FRB 5/52<br>1 ZW 42 × 52<br>1 ZW 42 × 52<br>1 ZW 42 × 52 | TFL 505 |
| **25** | **FNL 506 A** | **FNL 506 B** | 1206 EKTN9<br>2206 EKTN9<br>22206 EK<br>C 2206 KTN9 | H 206<br>H 306<br>H 306<br>H 306 E | 1 FRB 6/62<br>1 ZW 50×62<br>1 ZW 50×62<br>1 FRB 2/62 | TFL 506 |
| **30** | **FNL 507 A** | **FNL 507 B** | 1207 EKTN9<br>2207 EKTN9<br>22207 EK<br>C 2207 KTN9 | H 207<br>H 307<br>H 307<br>H 307 E | 1 FRB 8/72<br>1 ZW 65 × 72<br>1 ZW 65 × 72<br>1 ZW 65 × 72 | TFL 507 |
| **35** | **FNL 508 A** | **FNL 508 B** | 1208 EKTN9<br>2208 EKTN9<br>22208 EK<br>C 2208 KTN9 | H 208<br>H 308<br>H 308<br>H 308 E | 1 FRB 7/80<br>1 ZW 70 × 80<br>1 ZW 70 × 80<br>1 ZW 70 × 80 | TFL 508 |
| **40** | **FNL 509 A** | **FNL 509 B** | 1209 EKTN9<br>2209 EKTN9<br>22209 EK<br>C 2209 KTN9 | H 209<br>H 309<br>H 309<br>H 309 E | 1 FRB 6/85<br>1 ZW 75 × 85<br>1 ZW 75 × 85<br>1 ZW 75 × 85 | TFL 509 |

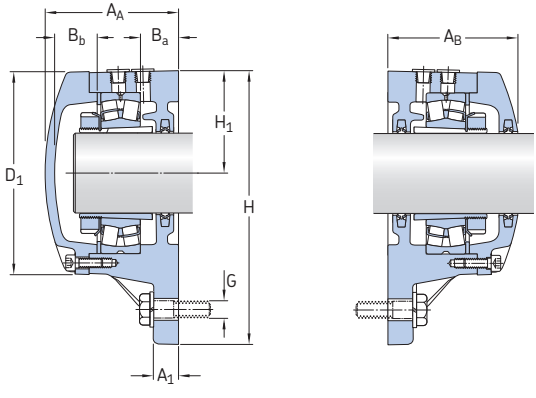
1) Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
12(00), 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C... – CARB toroidal roller bearing
2) The adapter sleeve fits the bearing in the same row only.
3) The locating ring or spacing washer fits the bearing in the same row only.




| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_A$ | $A_B$ | $A_1$ | $B_a$ | $B_b$ | $D_1$ | H | $H_1$ | J | L | G | |
| mm | mm | | | | | | | | | | | kg |
| **20** | 57 | 56,5 | 10 | 15 | 15 | 74 | 100 | 38 | 96 | 110 | 10 | 1,10 |
| **25** | 60,5 | 60 | 12 | 16 | 15 | 86 | 117 | 44 | 116 | 130 | 10 | 1,60 |
| **30** | 64,5 | 64 | 12 | 16 | 17 | 95 | 130 | 48,5 | 130 | 145 | 12 | 2,00 |
| **35** | 67 | 66 | 12 | 17 | 18 | 105 | 143 | 54 | 140 | 160 | 12 | 2,40 |
| **40** | 72 | 70,5 | 12 | 19 | 19 | 113 | 160 | 60 | 160 | 179 | 12 | 3,20 |

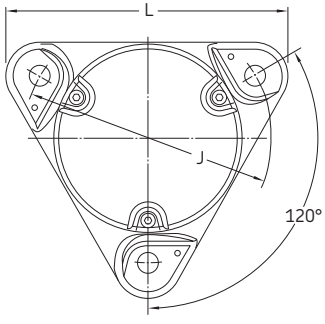
# 11.1 FNL flanged housings for bearings on adapter sleeves

$d_a$ **45 – 60** mm




| Shaft diameter $d_a$ | Housing for shaft end | for through shaft | Appropriate parts Bearing[1] | Adapter sleeve[2] | Locating ring or spacing washer[3] | Contact seal |
|---|---|---|---|---|---|---|
| mm | – | | – | | | |
| **45** | **FNL 510 A** | **FNL 510 B** | 1210 EKTN9<br>2210 EKTN9<br>22210 EK<br>C 2210 KTN9 | H 210<br>H 310<br>H 310<br>H 310 E | 1 FRB 5/90<br>1 ZW 80 × 90<br>1 ZW 80 × 90<br>1 ZW 80 × 90 | TFL 510 |
| **50** | **FNL 511 A** | **FNL 511 B** | 1211 EKTN9<br>2211 EKTN9<br>22211 EK<br>C 2211 KTN9 | H 211<br>H 311<br>H 311<br>H 311 E | 1 FRB 6/100<br>1 ZW 85 × 100<br>1 ZW 85 × 100<br>1 ZW 85 × 100 | TFL 511 |
| **55** | **FNL 512 A** | **FNL 512 B** | 1212 EKTN9<br>2212 EKTN9<br>22212 EK<br>C 2212 KTN9 | H 212<br>H 312<br>H 312<br>H 312 E | 1 FRB 8/110<br>1 ZW 90 × 110<br>1 ZW 90 × 110<br>1 FRB 2/110 | TFL 512 |
| **60** | **FNL 513 A** | **FNL 513 B** | 1213 EKTN9<br>2213 EKTN9<br>22213 EK<br>C 2213 KTN9 | H 213<br>H 313<br>H 313<br>H 313 E | 1 FRB 10/120<br>1 FRB 2/120<br>1 FRB 2/120<br>1 FRB 2/120 | TFL 513 |

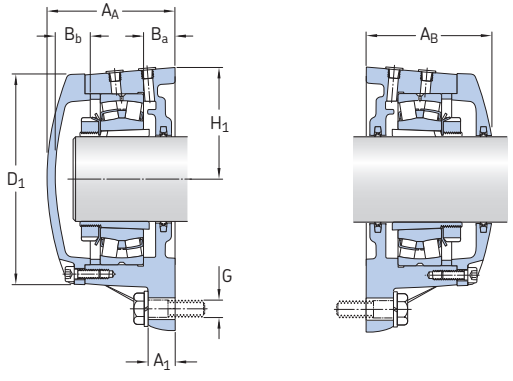
[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
12(00), 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same row only.
[3] The locating ring or spacing washer fits the bearing in the same row only.




| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_A$ | $A_B$ | $A_1$ | $B_a$ | $B_b$ | $D_1$ | H | $H_1$ | J | L | G | |
| mm | mm | | | | | | | | | | | kg |
| **45** | 77 | 75 | 15 | 22 | 21 | 118 | 160 | 60 | 160 | 179 | 12 | 3,50 |
| **50** | 84 | 82 | 15 | 24 | 23 | 127 | 172,5 | 65 | 170 | 192 | 12 | 4,30 |
| **55** | 85 | 83 | 15 | 23 | 22 | 142 | 189 | 72 | 180 | 210 | 12 | 5,20 |
| **60** | 88 | 86 | 15 | 22 | 24 | 152 | 203 | 78 | 190 | 225 | 12 | 6,30 |

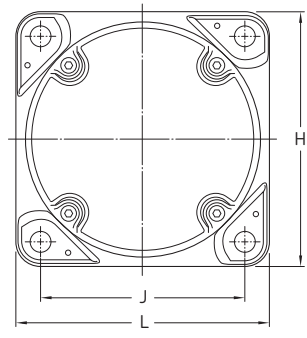
# 11.1 FNL flanged housings for bearings on adapter sleeves

$d_a$ **65 – 100** mm

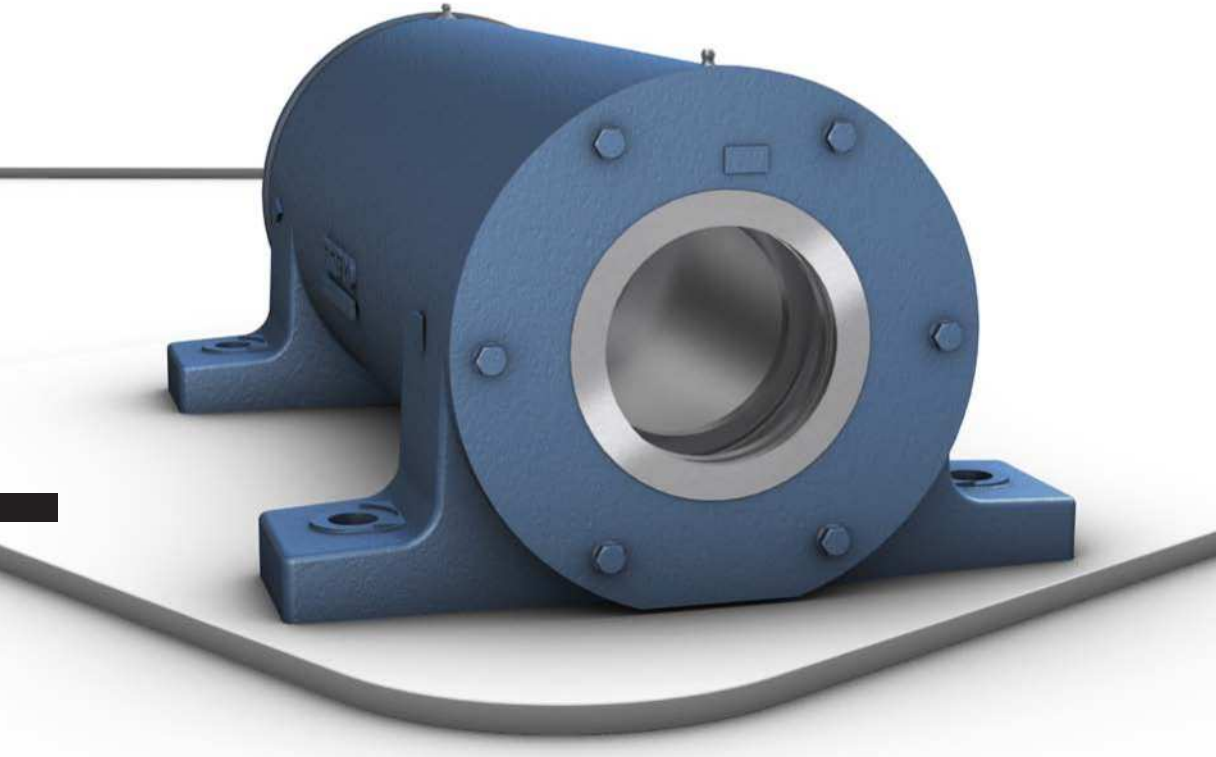



| **Shaft diameter** $d_a$ | **Housing** for shaft end | for through shaft | **Appropriate parts** Bearing[1] | Adapter sleeve[2] | Locating ring or spacing washer[3] | Contact seal |
|---|---|---|---|---|---|---|
| mm | – | | – | | | |
| **65** | **FNL 515 A** | **FNL 515 B** | 1215 K | H 215 | 2 FRB 8/130 | TFL 515 |
| | | | 2215 EKTN9 | H 315 | 1 FRB 10/130 | |
| | | | 22215 EK | H 315 | 1 FRB 10/130 | |
| | | | C 2215 K | H 315 E | 1 FRB 10/130 | |
| **70** | **FNL 516 A** | **FNL 516 B** | 1216 K | H 216 | 2 FRB 8,5/140 | TFL 516 |
| | | | 2216 EKTN9 | H 316 | 1 FRB 10/140 | |
| | | | 22216 EK | H 316 | 1 FRB 10/140 | |
| | | | C 2216 K | H 316 E | 1 FRB 10/140 | |
| **75** | **FNL 517 A** | **FNL 517 B** | 1217 K | H 217 | 2 FRB 9/150 | TFL 517 |
| | | | 2217 K | H 317 | 1 FRB 10/150 | |
| | | | 22217 EK | H 317 | 1 FRB 10/150 | |
| | | | C 2217 K | H 317 E | 1 FRB 10/150 | |
| **80** | **FNL 518 A** | **FNL 518 B** | 1218 K | H 218 | 2 FRB 10/160 | TFL 518 |
| | | | 2218 K | H 318 | 1 FRB 10/160 | |
| | | | 22218 EK | H 318 | 1 FRB 10/160 | |
| | | | C 2218 K | H 318 E | 1 FRB 10/160 | |
| **90** | **FNL 520 A** | **FNL 520 B** | 1220 K | H 220 | 1 FRB 10/180[4] | TFL 520 |
| | | | | | 1 FRB 12/180[4] | |
| | | | 2220 KM | H 320 | 1 FRB 10/180 | |
| | | | 22220 EK | H 320 | 1 FRB 10/180 | |
| | | | C 2220 K | H 320 E | 1 FRB 10/180 | |
| **100** | **FNL 522 A** | **FNL 522 B** | 1222 K | H 222 | 2 FRB 12,5/200 | TFL 522 |
| | | | 2222 KM | H 322 | 1 FRB 10/200 | |
| | | | 22222 EK | H 322 | 1 FRB 10/200 | |
| | | | C 2222 K | H 322 E | 1 FRB 10/200 | |

[1] Only the basic bearing designation is listed. Other bearing variants can also fit the housing.
12(00), 22(00) – self-aligning ball bearing, 222(00) – spherical roller bearing, C... – CARB toroidal roller bearing
[2] The adapter sleeve fits the bearing in the same row only.
[3] The locating ring or spacing washer fits the bearing in the same row only.
[4] One FRB 10/180 and one FRB 12/180 at each side of the bearing.




| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_A$ | $A_B$ | $A_1$ | $B_a$ | $B_b$ | $D_1$ | H | $H_1$ | J | L | G | |
| mm | mm | | | | | | | | | | | kg |
| **65** | 106 | 104 | 25 | 30 | 24 | 168 | 190 | 95 | 152 | 190 | 16 | 10,0 |
| **70** | 113 | 110 | 25 | 31 | 27 | 175 | 196 | 98 | 152 | 196 | 16 | 10,5 |
| **75** | 117,5 | 115 | 25 | 31 | 27 | 188 | 210 | 105 | 170 | 210 | 16 | 12,5 |
| **80** | 121 | 118 | 25 | 30 | 28 | 196 | 210 | 105 | 170 | 210 | 16 | 12,0 |
| **90** | 130 | 127 | 30 | 30 | 31 | 224 | 250 | 125 | 198 | 250 | 20 | 19,0 |
| **100** | 140 | 137 | 30 | 30 | 33 | 244 | 270 | 135 | 219 | 270 | 20 | 23,5 |



# Two-bearing housings PD series

**Bearing types**
- Single row deep groove ball bearings
- Single row angular contact ball bearings
- Single row cylindrical roller bearings

**Bearing dimension series**
- 62, 63
- 72, 73
- NU 22, NU 3, NJ 22, NJ 23, NJ 2, NJ 3

**Shaft diameter range**
- 25 to 120 mm

**Shaft-bearing combination**
- On a stepped shaft with bearings on a cylindrical seat

**Seals**
- Felt strip
- V-ring

**Lubrication**
- Grease
- Oil lubrication (optional)

**Materials**
- Grey cast iron

**Mounting**
- Four-bolt mounting

**Compliance to standards**
- Not standardized

SKF two-bearing housings were originally developed for fan shafts with an overhung impeller, but are also suitable for other applications with similar shaft arrangements.

Compared to the conventional shaft arrangement where two self-aligning bearings are mounted in separate plummer (pillow) block housings, two-bearing housings provide several advantages including improved running accuracy and quieter operation.

PD two-bearing housings can also be supplied as ready-to-mount units.

# Two-bearing housings PD series


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# Designations

**Designation system for PD two-bearing housings**

**PDR 319**

**Series**

| | |
|---|---|
| **PDN** | Housing for normal radial and axial loads |
| **PDP** | Housing for predominant or alternating axial loads |
| **PDR** | Housing for heavy radial loads |

**Size identification**

| | |
|---|---|
| **2(00)** | Housing for bearings in the 62, 72, NU 2, NJ 2, NJ 22, NJ 23, 222 and 223 series |
| **3(00)** | Housing for bearings in the 63, 73, NU 3 and NJ 3 series |
| **..(00)** | Size code of the bearings, (00) × 5 = bearing bore diameter [mm] |

**Designation system for shafts**

**VJ-PDPF 218**

**Prefix**

| | |
|---|---|
| **VJ-** | Shaft for two-bearing housings |

**Series**

| | |
|---|---|
| **PDNB** | For housings in the PDN series |
| **PDPF** | For housings in the PDP series |
| **PDRJ** | For housings in the PDR series |

**Size identification**

| | |
|---|---|
| **...** | Size identification of the housing |

**Designation system for PD two-bearing units**

**PDPF 220**
**PDNB 305 DD**

**Housing series**

| | |
|---|---|
| PDN | Housing for normal radial and axial loads |
| PDP | Housing for predominant or alternating axial loads |
| PDR | Housing for heavy radial loads |

**Size identification**

| | Non-locating bearing position | Locating bearing position | Housing series |
|---|---|---|---|
| **A** | Deep groove ball bearing | Two angular contact ball bearings | PDN |
| **B**[1)] | Deep groove ball bearing | Deep groove ball bearing | PDN |
| **D** | Cylindrical roller bearing | Cylindrical roller bearing | PDN |
| **E** | Cylindrical roller bearing | Deep groove ball bearing | PDN |
| **F**[1)] | Cylindrical roller bearing | Two angular contact ball bearings | PDN, PDP |
| **J**[1)] | Cylindrical roller bearing | Cylindrical roller bearing + Deep groove ball bearing | PDR |
| **L** | Spherical roller bearing | Spherical roller bearing | PDN |

**Size identification**

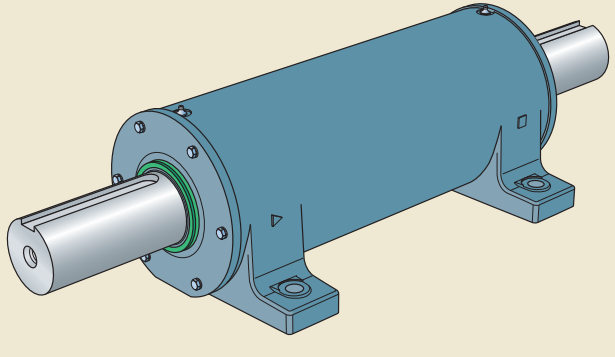
| | |
|---|---|
| **2(00)** | Housing for bearings in the 62, 72, NU 2, NJ 2, NJ 22, NJ 23, 222 and 223 series |
| **3(00)** | Housing for bearings in the 63, 73, NU 3 and NJ 3 series |
| **..(00)** | Size code of the bearings, (00) x 5 = bearing bore diameter [mm] |

**Suffixes**

| | |
|---|---|
| **DD** | Unit supplied with shaft spacers and a large bore in the covers at both sides |
| **U** | Unit supplied without shaft spacers (PDP and PDR units only) |

[1)] Standard units include PDNB, PDPF and PDRJ

**Fig. 1**



# Standard housing design

PD two-bearing housings are non-split housings with two bearing seats (→ **fig. 1**). They consist of a housing body and two covers that are bolted to the body with either four or six bolts. The housings have four holes drilled into the feet for attachment bolts.

PD housings are available in three series, each similar in their external design, but accommodating different bearing arrangements:

- PDN series, for normal radial and axial loads
- PDP series, for predominant or alternating axial loads
- PDR series, for heavy radial and normal axial loads

## Features and benefits

PD housings have the following features and benefits:

**Compact design**

The bearings are incorporated in one housing, which saves space.

**Smooth running**

The two bearing seats are concentric. Since bearing misalignment is avoided, rigid bearings can be used. The resulting stiff arrangement provides a high degree of running accuracy and enables high speeds.

**Quiet operation**

The accurate alignment of the rigid bearings in one housing enables quiet operation. For units with the designation PDNB, a wave spring washer in the smaller housing range further reduces noise levels.

**Available as units**

PD housings can also be supplied as units, complete with bearings and shaft. These ready-to-mount units are assembled and greased at the factory, saving time and reducing the risk of contaminating or damaging the bearings during assembly.

**Easy handling**

Large housings have two eye bolts for safe and easy handling.

## Housing material

PD two-bearing housings and their covers are made of grey cast iron.

**Paint, corrosion protection**

PD housings are painted blue (RAL 5007) using a solvent based alkyd paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low levels of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected with a solventless rust inhibitor.

## Dimension standards

The dimensions of PD two-bearing housings are not standardized either nationally or internationally.

## Housing variants

In addition to standard design PD housings, the following variants are available on request:

- housings for oil bath or circulating oil lubrication systems
- housings for vertical shaft arrangements

For additional information, contact the SKF application engineering service.

## Sealing solutions

PD two-bearing housings are designed for two sealing solutions:

- a V-ring seal, for housings in the PDN 2 and PDP series (→ **fig. 2**)
- a felt strip and a V-ring seal, for housings in the PDN 3 and PDR series (→ **fig. 3**)

**Table 1**, provides an overview of the properties and suitability of each sealing solution. This information should be used as a guideline, which cannot substitute for testing the seal in its application.

Housings in the PDN 3 and PDR series have felt strips, which are mounted in a groove in the cover. At circumferential speeds above 4 m/s, a small gap forms between the felt and the seal counterface.

The outboard V-ring seals (for all housing series) provide additional protection against contaminants. They can accommodate circumferential speeds up to 7 m/s.

PD housings are supplied with seals but the seals can also be ordered separately.

Fig. 2

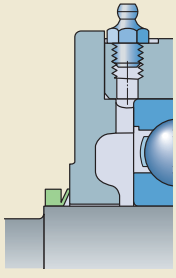


Fig. 3

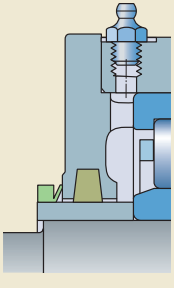
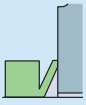
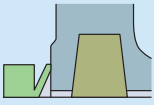


**Table 1**

**Standard seals for PD two-bearing housings**





| Seal | | |
|---|---|---|
| Type | V-ring seal | Felt strip and V-ring seal |
| Housing series | PDN 2, PDP | PDN 3, PDR |
| Material | nitrile rubber | felt, nitrile rubber |
| **Application conditions and requirements** | | |
| Temperature [°C] | –40 to +100 | –40 to +100 |
| Temperature [°F] | –40 to +210 | –40 to +210 |
| Max. circumferential speed[1] [m/s] | 7[2] | 4[3] |
| Low friction | ++ | – |
| Shaft tolerance class | → **page 564** | → **page 564** |
| Shaft roughness $R_a$ [µm] | 3,2 | 3,2 |
| **Sealing suitability** | | |
| Dust | + | + |
| Fine particles | + | + |
| Coarse particles | + | + |
| Chips | –– | + |
| Liquids when sprayed | + | + |
| Direct sunlight | –– | + |

Symbol: ++ very suitable
+ suitable
– limited suitability
–– unsuitable

1) To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.
2) If located axially, higher speeds are possible.
3) At higher speeds, a small gap forms between the felt and the shaft.

# Design considerations

For general information about system design, refer to the following sections:

- *Shaft seat tolerances* (→ skf.com/bearings)
- *Load carrying capacity* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

For additional information about rolling bearings, refer to the product information available online at skf.com/bearings.

## Shaft-bearing combinations

PD two-bearing housings accommodate bearings on a cylindrical seat on stepped shafts.

### Standard bearing arrangements

PD two-bearing housings can accommodate different bearing arrangements, depending on the series.

#### Housings in the PDN series

The bearing arrangement for housings in the PDN series comprises:

- two single row deep groove ball bearings in the 62 series for housings in the PDN 2 series (→ **fig. 4**)
- two single row deep groove ball bearings in the 63 series for housings in the PDN 3 series (→ **fig. 5**)

The bearing arrangements are intended for normal load conditions and relatively high speed operation. The arrangement for housings in the PDN 3 series can accommodate heavier loads than PDN 2 series housings.

A wave spring washer, supplied with housings up to size 218 or 316, preloads the bearings against each other to reduce noise levels. Units with spring-loaded bearings can accommodate axial loads in one direction only (→ *Mounting*, **page 568**).

Housings in the PDN series can also be used for other bearing combinations (→ *Non-standard bearing arrangements*, **page 562**).

#### Housings in the PDP series

The bearing arrangement for housings in the PDP series comprises (→ **fig. 6**):

- a single row cylindrical roller bearing in the NU 22 ECP series, in the non-locating bearing position
- a pair of universally matchable single row angular contact ball bearings in the 72 series, mounted back-to-back in the locating bearing position

This bearing arrangement accommodates axial loads in both directions and can support heavier loads than bearings in PDN series housings.

Housings in the PDP series can also accommodate other bearing combinations.

Fig. 4

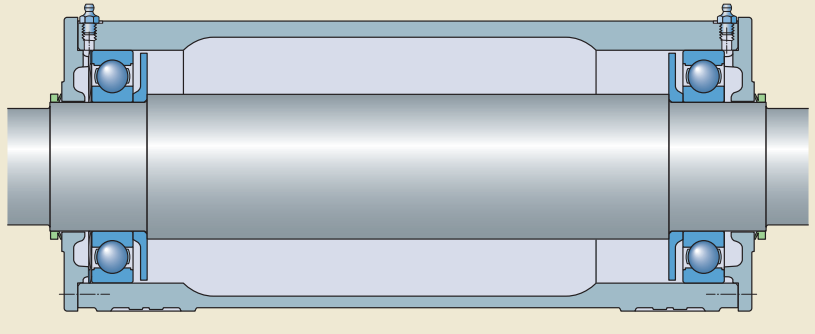


Fig. 5

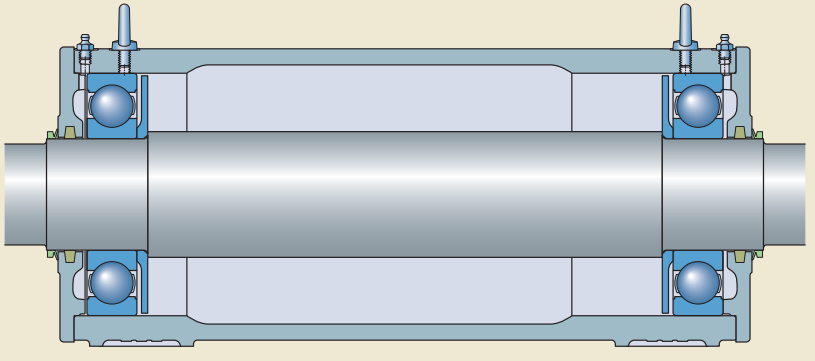
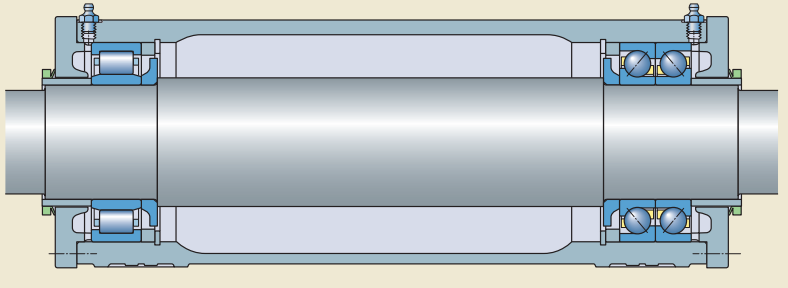


Fig. 6



### Housings in the PDR series

The bearing arrangement for housings in the PDR series comprises (→ **fig. 7**):

- a single row cylindrical roller bearing in the NU 3 ECP series, in the non-locating bearing position
- a cylindrical roller bearing in the NU 3 ECP series in combination with a single row deep groove ball bearing in the 63 series (with C3 clearance), in the locating bearing position

The deep groove ball bearing acts as a pure thrust bearing, accommodating the axial loads in both directions, and is mounted with radial clearance in the housing. To prevent the outer ring from turning, an O-ring is inserted in a groove in the cover that abuts the outer ring.

The bearings support heavier radial loads than bearings in both PDN and PDP series housings.

### Non-standard bearing arrangements

Housings in the PDN series are designed to accommodate two deep groove ball bearings. For special applications, the housings can be fitted with various combinations of deep groove ball bearings, angular contact ball bearings, cylindrical roller bearings and spherical roller bearings.

SKF can supply the following combinations, available as assembled units (→ **fig. 8**):

- PDNA .. DD units, incorporating a deep groove ball bearing in the non-locating bearing position and a pair of universally matchable angular contact ball bearings, mounted back-to-back, in the locating bearing position. Smaller housings accommodate axial loads in only one direction, while larger housings can withstand axial loads in both directions (**a**)
- PDND units, incorporating an NJ design cylindrical roller bearing on each end to form a cross-located ("floating") bearing arrangement (**b**)
- PDNE units, an NJ design cylindrical roller bearing and a deep groove ball bearing to form a cross-located ("floating") bearing arrangement (**c**)
- PDNF .. DD units, incorporating an NJ design cylindrical roller bearing and a pair of universally matchable angular contact ball bearings, mounted back-to-back, to form a cross-located ("floating") bearing arrangement (**d**)
- PDNL units, incorporating a spherical roller bearing on each end to form a cross-located ("floating") bearing arrangement (**e**)

Fig. 7

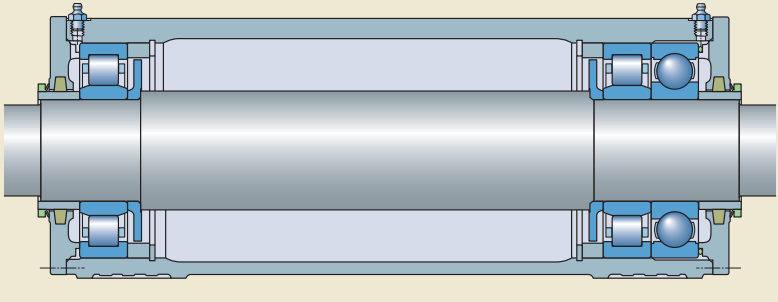
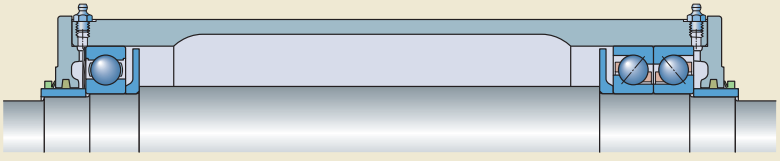
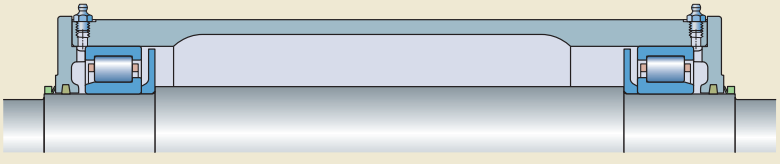


Fig. 8

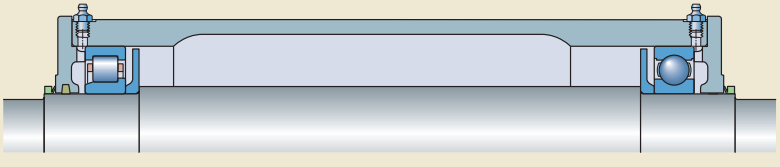
a)



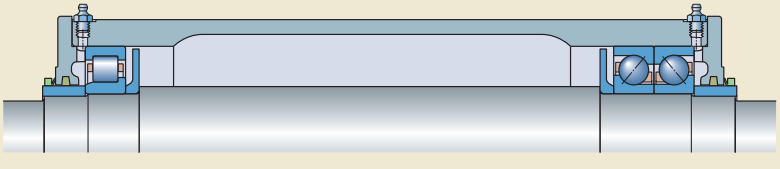
b)



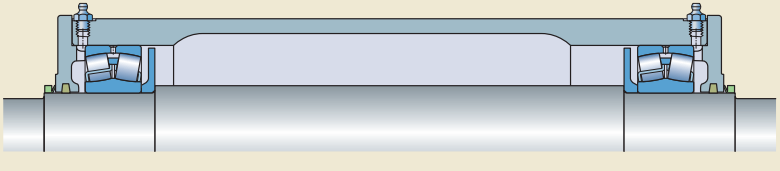
c)



d)



e)



## Bearing arrangements

Typically, PD two-bearing housings accommodate a locating and a non-locating bearing. In some applications, however, both bearings are used to locate the shaft axially, each in one direction. This is called a cross-located ("floating") bearing arrangement.

## Load carrying capacity

PD two-bearing housings are intended for loads acting perpendicularly toward the support surface. If the housing is supported over its four feet and the loads are purely perpendicular, loads are limited only by the bearings.

Housings in the PDN series that have bearings preloaded with a wave spring washer accommodate axial loads in one direction only.

## Operating temperature

The permissible operating temperature is mainly limited by the seals and lubricant. For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings. For temperature limits of the seals used in PD housings, refer to **table 1** on **page 559**.

The housing material does not set any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

The permissible operating speed of the incorporated bearings is limited by the V-ring and felt seals, but not by the housing. Speed limits of the seals are listed in **table 1** on **page 559**.

## Shaft specifications

Shafts for two-bearing housings can be machined according to the recommended dimensions provided in **product tables 13.4** to **13.7**. The bearing seats should be machined to the tolerance classes listed in **table 2**. The accuracy of form should be to tolerance grade IT5 for shaft diameters up to and including 60 mm and IT6 for larger diameter shafts. At the seal position, the shaft (or shaft sleeve) should comply with the same tolerance classes as the bearing seat.

SKF also supplies pre-machined shafts to fit PD housings. Their designations are provided in the product tables. The bearing seats and shaft ends are machined to the tolerance classes listed in **table 2** and **table 3** respectively.

Shafts are supplied with two keys and two end plates with attachment screws.

**Table 2**

**Bearing seat tolerance classes**

| Shaft diameter $d_a$ | | Tolerance class[1] for housing series | | | |
|---|---|---|---|---|---|
| over | incl. | PDN | PDP with angular contact ball bearings | cylindrical roller bearings | PDR |
| mm | | – | | | |
| **–** | **100** | k6 | k6 | m6 | m6 |
| **100** | **–** | k6 | m6 | m6 | m6 |

[1] The recommended tolerance classes are intended for light loaded bearings only (P < 0,05 C, see also skf.com/bearings). Tighter fits are required for heavier loads. For additional information, contact the SKF application engineering service.

**Table 3**

**Shaft end specifications**

| Shaft end diameter $d_b$ | | Tolerance class for housing series | | |
|---|---|---|---|---|
| over | incl. | PDN | PDP | PDR |
| mm | | – | | |
| **–** | **30** | j6 | m6 | m6 |
| **30** | **50** | k6 | m6 | m6 |
| **50** | **110** | m6 | m6 | m6 |

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If loads do not act perpendicularly towards the support surface, it may be necessary to use stronger, 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the values recommended by bolt manufacturers (→ **table 4**). They are valid for oiled, but otherwise untreated thread surfaces. SKF cannot confirm that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts and a sufficiently strong support can accommodate all occurring loads.

**Table 4**

**Cover bolts and attachment bolts**

| Housing series | | | | Cover bolts | | Attachment bolts | |
|---|---|---|---|---|---|---|---|
| PDN 2 | PDN 3 | PDP | PDR | Size | Tightening torque | Size | Tightening torque[1] |
| – | | | | – | Nm | – | Nm |
| **PDN 206** | **PDN 305** | | | M 6x20 | 10 | M 10 | 50 |
| **PDN 207** | **PDN 306** | | | M 6x20 | 10 | M 12 | 80 |
| **PDN 208** | **PDN 307** | | | M 6x20 | 10 | M 12 | 80 |
| **PDN 210** | **PDN 308** | | | M 6x20 | 10 | M 12 | 80 |
| **PDN 211** | **PDN 309** | | | M 6x20 | 10 | M 12 | 80 |
| **PDN 212** | **PDN 310** | | | M 6x20 | 10 | M 12 | 80 |
| **PDN 214** | **PDN 311** | | | M 8x25 | 25 | M 16 | 200 |
| **PDN 215** | **PDN 312** | **PDP 2214** | | M 8x25 | 25 | M 16 | 200 |
| **PDN 216** | **PDN 313** | **PDP 2216** | | M 8x25 | 25 | M 16 | 200 |
| | **PDN 314** | | | M 8x25 | 25 | M 16 | 200 |
| **PDN 218** | **PDN 315** | **PDP 2218** | **PDR 315** | M 8x30 | 25 | M 16 | 200 |
| | **PDN 316** | | **PDR 316** | M 10x30 | 50 | M 16 | 200 |
| **PDN 220** | **PDN 317** | **PDP 2220** | **PDR 317** | M 10x30 | 50 | M 16 | 200 |
| | **PDN 318** | | **PDR 318** | M 10x30 | 50 | M 16 | 200 |
| **PDN 222** | **PDN 319** | **PDP 2222** | **PDR 319** | M 10x35 | 50 | M 20 | 385 |
| **PDN 224** | **PDN 320** | **PDP 2224** | **PDR 320** | M 12x35 | 80 | M 20 | 385 |
| | **PDN 322** | | **PDR 322** | M 12x35 | 80 | M 24 | 665 |
| | **PDN 324** | | **PDR 324** | M 12x35 | 80 | M 30 | 1 310 |

[1] Recommended by bolt manufacturers.

# Lubrication

Standard PD two-bearing housings are designed for grease lubrication. Housings for oil lubrication are available on request.

The lubricant should be selected based on the operating conditions of the bearings. For additional information about lubricant selection, refer to the product information available online at skf.com.

## Flinger rings

PD housings are supplied with inboard flinger rings made of grey cast iron (→ **fig. 9**). The flinger rings serve to retain grease at the bearing position and to prevent over-lubrication. The excess grease is collected in the large space in the middle of the housing.

## Initial grease fill

If no other requirements exist, the free space in the bearings should be completely filled with grease and the free space between the cover and flinger ring should be filled to 100%.

### Initial grease fill for PD units

PD units are greased at the factory with SKF LGMT 2, a high-quality mineral oil based grease with a lithium thickener and good rust inhibiting properties. The operating temperature range of the grease is –30 to +110 °C *(–20 to +230 °F)*.

## Relubrication

Relubrication is possible via two G 1/4 or G 1/8 grease fittings (depending on size), one on each end of the housing (→ **fig. 10**). There is minimal risk of over-greasing because excess grease is collected in the large space in the middle of the housing. When applying grease via the grease fittings, the shaft should be rotating.

SKF recommends replenishing the housings with SKF LGMT 2, a high-quality mineral oil based grease with a lithium thickener and good rust inhibiting properties. For vertical shaft arrangements, SKF LGMT 3 grease should be used with half the interval required for a similar horizontal application.

To calculate the relubrication interval and the quantity of grease needed for replenishment, refer to the SKF catalogue *Rolling bearings* or skf.com/bearings.

## Oil lubrication

Where high speeds preclude the use of grease as a lubricant, large PD housings can be modified for oil bath or circulating oil lubrication systems. The housings are fitted with special oil seals. For additional information, contact the SKF application engineering service.



Fig. 9

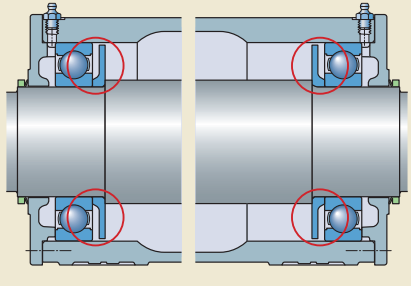
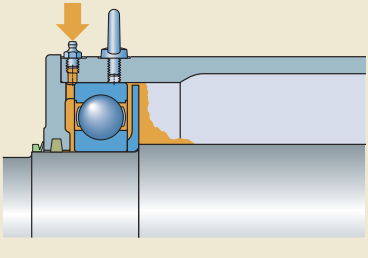


Fig. 10



# Mounting

PD housings must be mounted properly, using the correct tools. All the associated components must meet certain basic requirements and the support surface should meet the specifications provided under *Housing support surfaces* (→ **page 45**).

The housings have two markings (→ **fig. 11**):

- A "square" on one end denotes the position of the wider of the two bearing seats.
- A "triangle" on the other end indicates the direction in which the predominant axial load should be applied.

For information about mounting rolling bearings, refer to the *SKF bearing maintenance handbook* or skf.com/mount.

## Mounting PDN series housings

The wave spring washers, supplied with smaller housings in the PDN series, should be inserted between the bearing and the cover on the housing end marked with a triangle. The rotary components (impeller, pulley, coupling etc.) must be arranged so that the axial load $F_a$ produced in operation acts in the direction indicated by the triangle. SKF recommends using a hydraulic nut or press for these mounting operations.

## Mounting PD units

Installing PD units is simple because the unit just needs to be bolted to the support surface. The rotary components are then mounted onto the finished shaft ends secured by the keys, end plates, and attachment screws (with spring washers) provided.

Support the shaft properly when pressing components onto the shaft to prevent the mounting force acting on the bearings. Mounting instructions are available on request.

### Torque specifications

Cover bolts should be tightened to the torque values listed in **table 4** on **page 566**. The cover bolts are in accordance with ISO 4017.

For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 566**.

Fig. 11



## Condition monitoring

If connections for condition monitoring sensors are required, contact the SKF application engineering service.

## Accessories

The following accessories are available for PD two-bearing housings:

- Automatic lubricators: SKF SYSTEM 24 and SKF MultiPoint
- Grease meter: LAGM 1000E

For additional information, refer to *SKF tools and products* (→ **page 47**).

# Ordering information

## PD two-bearing housings

Housings in the PDN series are supplied with the following components:

- housing
- 2 covers, including 8 or 12 hexagon head bolts and spring washers depending on size
- 2 flinger rings
- 1 wave spring washer (up to and including size 218 for housings in the PDN 2 series, and size 316 for housings in the PDN 3 series)
- 2 seals (V-ring seals for housings in the PDN 2 series; V-ring seals and felt strips for housings in the PDN 3 series)

Housings in the PDP series are supplied with the following components:

- housing, including 2 eye bolts for housings size 224
- 2 covers, including 12 hexagon head bolts and washers
- 2 flinger rings
- 2 locating rings
- 2 spacer sleeves
- 2 shaft sleeves
- 2 V-ring seals

Housings in the PDR series are supplied with the following components:

- housing, including 2 eye bolts for housings from sizes 320 to 324
- 2 covers, including 12 hexagon head bolts and washers
- 2 flinger rings
- 2 spacer sleeves
- 2 shaft sleeves
- 2 seals (V-ring seals and felt strips)
- 1 O-ring

The bearings and shaft must be ordered separately. Shafts are supplied with two keys, and two end plates with attachment screws and spring washers.

Housings in the PDP and PDR series can be supplied without shaft sleeves. They are identified by the designation suffix U, e.g. PDR 315 U.

**Order example**

One PD housing is required for two 6309 bearings. The following components should be ordered:

- 1 housing PDN 309
- 1 shaft VJ-PDNB 309
- 2 bearings 6309

## PD two-bearing units

PD units are supplied assembled and ready-to-mount, complete with bearings and shaft.

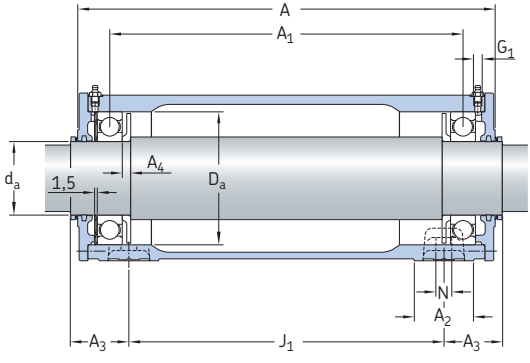
**Order example**

One PD housing is required for two 6309 bearings. The following items should be ordered:

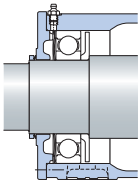
- 1 unit PDNB 309

12

# 12.1 Two-bearing housings in the PDN series
$d_a$ **25 – 80** mm



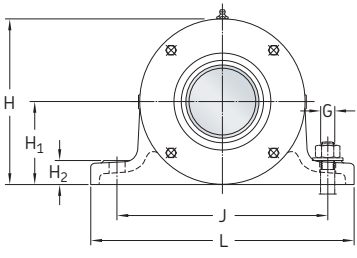

PDNB 3



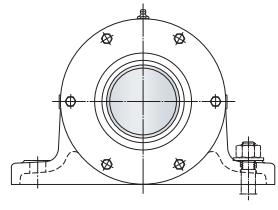
PDNB 2

| Shaft diameter | Housing | Appropriate parts | | | Spare parts | | Unit |
|---|---|---|---|---|---|---|---|
| | Designation[1] | Bearings | Shaft | Wave spring washer | V-ring | Felt strip | Designation[1] |
| $d_a$ | | | | | | | |
| mm | – | – | | | – | | – |
| **25** | **PDN 305** | 2 x 6305 | VJ-PDNB 305 | WF-62 | 25 VA R | FS 190 | **PDNB 305** |
| **30** | **PDN 206** | 2 x 6206 | VJ-PDNB 206 | WF-62 | 30 VA R | – | **PDNB 206** |
| | **PDN 306** | 2 x 6306 | VJ-PDNB 306 | WF-72 | 30 VA R | FS 190 | **PDNB 306** |
| **35** | **PDN 207** | 2 x 6207 | VJ-PDNB 207 | WF-72 | 35 VA R | – | **PDNB 207** |
| | **PDN 307** | 2 x 6307 | VJ-PDNB 307 | WF-80 | 35 VA R | FS 190 | **PDNB 307** |
| **40** | **PDN 208** | 2 x 6208 | VJ-PDNB 208 | WF-80 | 40 VA R | – | **PDNB 208** |
| | **PDN 308** | 2 x 6308 | VJ-PDNB 308 | WF-90 | 40 VA R | FS 190 | **PDNB 308** |
| **45** | **PDN 309** | 2 x 6309 | VJ-PDNB 309 | WF-100 | 45 VA R | FS 190 | **PDNB 309** |
| **50** | **PDN 210** | 2 x 6210 | VJ-PDNB 210 | WF-90 | 50 VA R | – | **PDNB 210** |
| | **PDN 310** | 2 x 6310 | VJ-PDNB 310 | WF-110 | 50 VA R | FS 260 | **PDNB 310** |
| **55** | **PDN 211** | 2 x 6211 | VJ-PDNB 211 | WF-100 | 55 VA R | – | **PDNB 211** |
| | **PDN 311** | 2 x 6311 | VJ-PDNB 311 | WF-120 | 55 VA R | FS 260 | **PDNB 311** |
| **60** | **PDN 212** | 2 x 6212 | VJ-PDNB 212 | WF-110 | 60 VA R | – | **PDNB 212** |
| | **PDN 312** | 2 x 6312 | VJ-PDNB 312 | WF-130 | 60 VA R | FS 260 | **PDNB 312** |
| **65** | **PDN 313** | 2 x 6313 | VJ-PDNB 313 | WF-140 | 65 VA R | FS 260 | **PDNB 313** |
| **70** | **PDN 214** | 2 x 6214 | VJ-PDNB 214 | WF-125 | 70 VA R | – | **PDNB 214** |
| | **PDN 314** | 2 x 6314 | VJ-PDNB 314 | WF-150 | 70 VA R | FS 330 | **PDNB 314** |
| **75** | **PDN 215** | 2 x 6215 | VJ-PDNB 215 | WF-130 | 75 VA R | – | **PDNB 215** |
| | **PDN 315** | 2 x 6315 | VJ-PDNB 315 | WF-160 | 75 VA R | FS 330 | **PDNB 315** |
| **80** | **PDN 216** | 2 x 6216 | VJ-PDNB 216 | WF-140 | 80 VA R | – | **PDNB 216** |
| | **PDN 316** | 2 x 6316 | VJ-PDNB 316 | WF-170 | 80 VA R | FS 330 | **PDNB 316** |

[1] For details about the components supplied, refer to the section *Ordering information* on **page 570**.



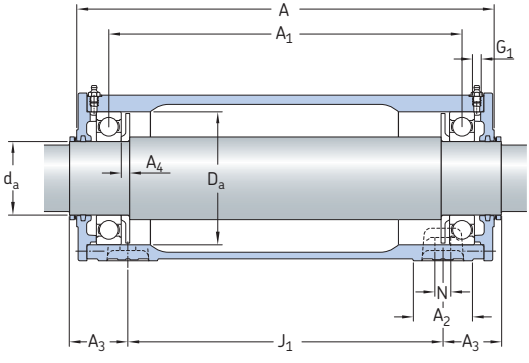

Sizes up to and including 211 and 309



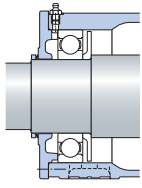
Sizes from 212 and 310

| Shaft diameter | Dimensions Housing | | | | | | | | | | | | | | | Mass Housing | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $D_a$ | H | $H_1$ JS11 | $H_2$ | J | $J_1$ | L | N | G | G | $G_1$ | | |
| mm | mm | | | | | | | | | | | | | | in. | – | kg | |
| **25** | 202 | 146,5 | 35 | 40,5 | 7 | 62 | 95 | 50 | 16 | 120 | 135 | 155 | 12 | 10 | 3/8 | G 1/8 | 5,1 | 7 |
| **30** | 197 | 147,5 | 35 | 37,5 | 7 | 62 | 95 | 50 | 16 | 120 | 135 | 155 | 12 | 10 | 3/8 | G 1/8 | 5,1 | 7,4 |
| | 226 | 171,5 | 40 | 45 | 7 | 72 | 100 | 50 | 18 | 130 | 150 | 160 | 15 | 12 | 1/2 | G 1/8 | 6,5 | 9,6 |
| **35** | 227 | 173,5 | 40 | 45 | 7 | 72 | 100 | 50 | 18 | 130 | 150 | 160 | 15 | 12 | 1/2 | G 1/8 | 6,5 | 10 |
| | 260 | 195,5 | 45 | 49,5 | 8 | 80 | 116 | 60 | 18 | 150 | 175 | 190 | 15 | 12 | 1/2 | G 1/8 | 9,1 | 13,5 |
| **40** | 259 | 198,5 | 45 | 49,5 | 8 | 80 | 116 | 60 | 18 | 150 | 175 | 190 | 15 | 12 | 1/2 | G 1/8 | 9,3 | 14,5 |
| | 315 | 255,5 | 52 | 53 | 10 | 90 | 121 | 60 | 20 | 150 | 225 | 190 | 15 | 12 | 1/2 | G 1/8 | 12,5 | 19,5 |
| **45** | 360 | 279,5 | 52 | 63 | 10 | 100 | 137 | 70 | 22 | 170 | 250 | 210 | 15 | 12 | 1/2 | G 1/8 | 15 | 24,5 |
| **50** | 314 | 258,5 | 52 | 52 | 10 | 90 | 121 | 60 | 20 | 150 | 225 | 190 | 15 | 12 | 1/2 | G 1/8 | 12,5 | 22,5 |
| | 377 | 311,5 | 60 | 59 | 10 | 110 | 142 | 70 | 25 | 170 | 275 | 210 | 15 | 12 | 1/2 | G 1/8 | 18 | 29,5 |
| **55** | 356 | 283,5 | 52 | 60,5 | 10 | 100 | 137 | 70 | 22 | 170 | 250 | 210 | 15 | 12 | 1/2 | G 1/8 | 15 | 27,5 |
| | 422 | 335,5 | 60 | 69 | 10 | 120 | 158 | 80 | 25 | 210 | 300 | 260 | 19 | 16 | 5/8 | G 1/8 | 23 | 39,5 |
| **60** | 376 | 316,5 | 60 | 58 | 10 | 110 | 142 | 70 | 25 | 170 | 275 | 210 | 15 | 12 | 1/2 | G 1/8 | 18 | 33 |
| | 460 | 383,5 | 70 | 68 | 10 | 130 | 165 | 80 | 25 | 210 | 340 | 260 | 19 | 16 | 5/8 | G 1/8 | 32,5 | 52,5 |
| **65** | 492 | 402,5 | 70 | 74 | 11 | 140 | 185 | 95 | 25 | 230 | 360 | 280 | 19 | 16 | 5/8 | G 1/4 | 32 | 57 |
| **70** | 459 | 390,5 | 70 | 69 | 10 | 125 | 165 | 80 | 25 | 210 | 340 | 260 | 19 | 16 | 5/8 | G 1/8 | 34,5 | 60,5 |
| | 512 | 420,5 | 70 | 76 | 11 | 150 | 190 | 95 | 25 | 230 | 380 | 290 | 19 | 16 | 5/8 | G 1/4 | 38 | 68,5 |
| **75** | 459 | 389,5 | 70 | 69 | 10 | 130 | 165 | 80 | 25 | 210 | 340 | 260 | 19 | 16 | 5/8 | G 1/8 | 32 | 62 |
| | 547 | 448,5 | 80 | 83,5 | 12 | 160 | 200 | 100 | 30 | 260 | 400 | 320 | 19 | 16 | 5/8 | G 1/4 | 43,5 | 80,5 |
| **80** | 493 | 409,5 | 70 | 76 | 11 | 140 | 185 | 95 | 25 | 230 | 360 | 280 | 19 | 16 | 5/8 | G 1/4 | 31 | 67 |
| | 556 | 466,5 | 80 | 78 | 12 | 170 | 220 | 112 | 30 | 260 | 420 | 320 | 19 | 16 | 5/8 | G 1/4 | 49,5 | 92 |

# 12.1 Two-bearing housings in the PDN series
## $d_a$ 85 – 120 mm



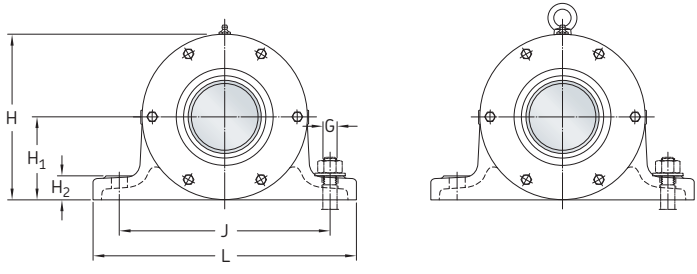

PDNB 3



PDNB 2

| Shaft diameter $d_a$ | Housing Designation[1] | Appropriate parts Bearings | Shaft | Wave spring washer | Spare parts V-ring | Felt strip | Unit Designation[1] |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | – | | – |
| **85** | **PDN 317** | 2 x 6317 | VJ-PDNB 317 | – | 85 VA R | FS 330 | **PDNB 317** |
| **90** | **PDN 218** | 2 x 6218 | VJ-PDNB 218 | WF-160 | 90 VA R | – | **PDNB 218** |
| | **PDN 318** | 2 x 6318 | VJ-PDNB 318 | – | 90 VA R | FS 370 | **PDNB 318** |
| **95** | **PDN 319** | 2 x 6319 | VJ-PDNB 319 | – | 95 VA R | FS 370 | **PDNB 319** |
| **100** | **PDN 220** | 2 x 6220 | VJ-PDNB 220 | – | 100 VA R | – | **PDNB 220** |
| | **PDN 320** | 2 x 6320 | VJ-PDNB 320 | – | 100 VA R | FS 460 | **PDNB 320** |
| **110** | **PDN 222** | 2 x 6222 | VJ-PDNB 222 | – | 110 VA R | – | **PDNB 222** |
| | **PDN 322** | 2 x 6322 | VJ-PDNB 322 | – | 110 VA R | FS 460 | **PDNB 322** |
| **120** | **PDN 224** | 2 x 6224 | VJ-PDNB 224 | – | 120 VA R | – | **PDNB 224** |
| | **PDN 324** | 2 x 6324 | VJ-PDNB 324 | – | 120 VA R | FS 460 | **PDNB 324** |

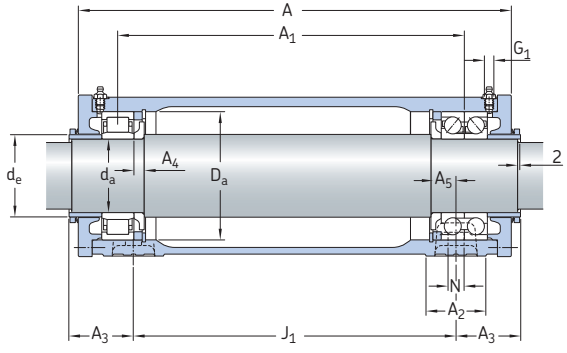
[1] For details about the components supplied, refer to the section *Ordering information* on **page 570**.




Sizes 224, and 320 and above (with M10 eye bolt)

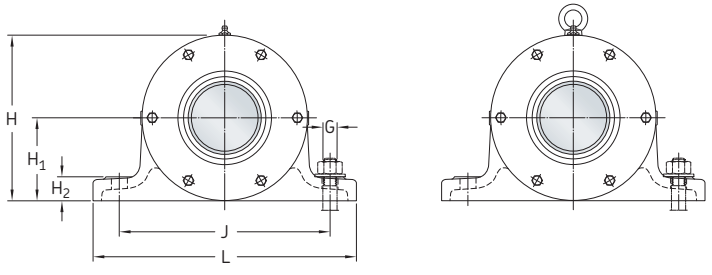
| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | | | | | **Mass** Housing | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $D_a$ | H | $H_1$ JS11 | $H_2$ | J | $J_1$ | L | N | G | $G_1$ | | |
| mm | mm | | | | | | | | | | | | | | in. | – | kg | |
| **85** | 590 | 486 | 80 | 85 | 12 | 180 | 225 | 112 | 30 | 290 | 440 | 350 | 19 | 16 | 5/8 | G 1/4 | 61 | 114 |
| **90** | 543 | 455,5 | 80 | 81 | 12 | 160 | 200 | 100 | 30 | 260 | 400 | 320 | 19 | 16 | 5/8 | G 1/4 | 42,5 | 96,5 |
| | 605 | 510 | 85 | 82,5 | 11 | 190 | 230 | 112 | 30 | 290 | 460 | 350 | 19 | 16 | 5/8 | G 1/4 | 71 | 134 |
| **95** | 648 | 540 | 90 | 94 | 13 | 200 | 253 | 125 | 36 | 320 | 480 | 400 | 24 | 20 | 3/4 | G 1/4 | 82,5 | 156 |
| **100** | 588 | 493 | 80 | 83,5 | 12 | 180 | 225 | 112 | 30 | 290 | 440 | 350 | 19 | 16 | 5/8 | G 1/4 | 60 | 130 |
| | 673 | 570 | 95 | 96,5 | 11,5 | 215 | 264 | 130 | 40 | 320 | 500 | 400 | 24 | 20 | 3/4 | G 1/4 | 92,5 | 177 |
| **110** | 634 | 547 | 90 | 88 | 13 | 200 | 253 | 125 | 36 | 320 | 480 | 400 | 24 | 20 | 3/4 | G 1/4 | 81 | 176 |
| | 686 | 580 | 95 | 94,5 | 10 | 240 | 296 | 150 | 40 | 380 | 520 | 450 | 28 | 24 | 1 | G 1/4 | 115 | 226 |
| **120** | 672 | 577 | 95 | 97 | 11,5 | 215 | 264 | 130 | 40 | 320 | 500 | 400 | 24 | 20 | 3/4 | G 1/4 | 90 | 207 |
| | 707 | 600 | 100 | 96 | 11,5 | 260 | 322 | 160 | 40 | 410 | 538 | 500 | 35 | 30 | 1 1/4 | G 1/4 | 135 | 276 |

## 12.2 Two-bearing housings in the PDP series
$d_a$ **70 – 120** mm




| **Shaft diameter** $d_a$ | **Housing** Designation[1] | **Appropriate parts** Bearings in the locating position | Bearing in the non-locating position | Shaft | V-ring | **Unit** Designation[1] | **Dimensions** Housing A | $A_1$ |
|---|---|---|---|---|---|---|---|---|
| mm | – | – | | – | | – | mm | |
| **70** | **PDP 214** | 2 x 7214 BECBP | NU 2214 ECP | VJ-PDPF 2214 | 80 VA R | **PDPF 2214** | 459 | 376,5 |
| **80** | **PDP 216** | 2 x 7216 BECBP | NU 2216 ECP | VJ-PDPF 2216 | 90 VA R | **PDPF 2216** | 493 | 394,5 |
| **90** | **PDP 218** | 2 x 7218 BECBP | NU 2218 ECP | VJ-PDPF 2218 | 100 VA R | **PDPF 2218** | 543 | 437 |
| **100** | **PDP 220** | 2 x 7220 BECBP | NU 2220 ECP | VJ-PDPF 2220 | 110 VA R | **PDPF 2220** | 585 | 470 |
| **110** | **PDP 222** | 2 x 7222 BECBP | NU 2222 ECP | VJ-PDPF 2222 | 120 VA R | **PDPF 2222** | 634 | 520,5 |
| **120** | **PDP 224** | 2 x 7224 BCBM | NU 2224 ECP | VJ-PDPF 2224 | 130 VA R | **PDPF 2224** | 672 | 548 |

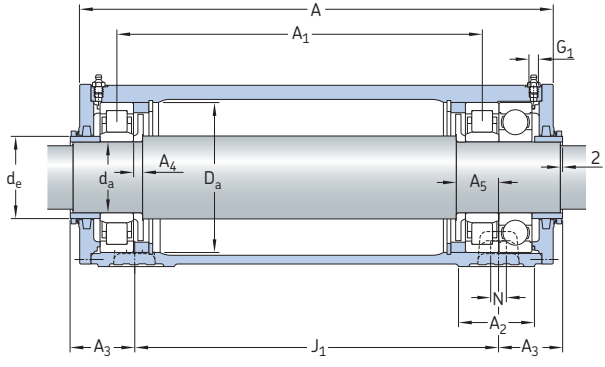
[1] For details about the components supplied, refer to the section *Ordering information* on **page 570**.




Size 224 (with M10 eye bolt)

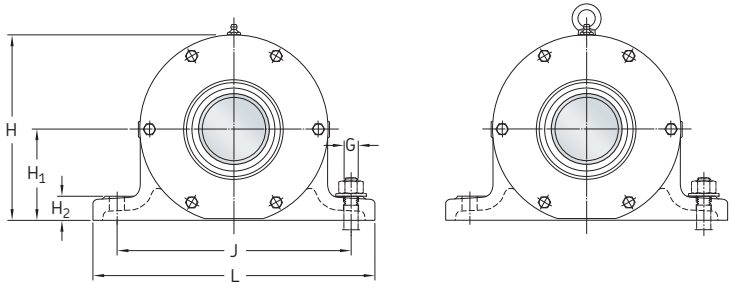
| **Shaft diameter** | **Dimensions** Housing | | | | | | | | | | | | | | | **Mass** Housing | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $d_e$ | $D_a$ | H | $H_1$ JS11 | $H_2$ | J | $J_1$ | L | N | G | $G_1$ | | |
| mm | mm | | | | | | | | | | | | | in. | – | kg | |
| **70** | 70 | 69 | 10 | 20 | 79 | 125 | 165 | 80 | 25 | 210 | 340 | 260 | 19 | 16 | 5/8 | G 1/8 | 35 | 63 |
| **80** | 70 | 76 | 11 | 24,5 | 90 | 140 | 185 | 95 | 25 | 230 | 360 | 280 | 19 | 16 | 5/8 | G 1/4 | 32 | 70,5 |
| **90** | 80 | 81 | 12 | 28,5 | 100 | 160 | 200 | 100 | 30 | 260 | 400 | 320 | 19 | 16 | 5/8 | G 1/4 | 43,5 | 100 |
| **100** | 80 | 83,5 | 12 | 36,5 | 112 | 180 | 225 | 112 | 30 | 290 | 440 | 350 | 19 | 16 | 5/8 | G 1/4 | 61,5 | 137 |
| **110** | 90 | 88 | 13 | 36,5 | 122 | 200 | 253 | 125 | 36 | 320 | 480 | 400 | 24 | 20 | 3/4 | G 1/4 | 82,5 | 185 |
| **120** | 95 | 97 | 11,5 | 33 | 132 | 215 | 264 | 130 | 40 | 320 | 500 | 400 | 24 | 20 | 3/4 | G 1/4 | 92 | 219 |

## 12.3 Two-bearing housings in the PDR series
$d_a$ **75 – 120** mm




| **Shaft diameter** $d_a$ | **Housing** Designation[1] | **Appropriate parts** Bearings in the locating position | Bearing in the non-locating position | Shaft | **Spare parts** V-ring | Felt strip | **Unit** Designation[1] |
|---|---|---|---|---|---|---|---|
| mm | – | – | | | – | | – |
| **75** | **PDR 315** | NU 315 ECP + 6315/C3 | NU 315 ECP | VJ-PDRJ 315 | 90 VA R | FS 370 | **PDRJ 315** |
| **80** | **PDR 316** | NU 316 ECP + 6316/C3 | NU 316 ECP | VJ-PDRJ 316 | 95 VA R | FS 370 | **PDRJ 316** |
| **85** | **PDR 317** | NU 317 ECP + 6317/C3 | NU 317 ECP | VJ-PDRJ 317 | 100 VA R | FS 460 | **PDRJ 317** |
| **90** | **PDR 318** | NU 318 ECP + 6318/C3 | NU 318 ECP | VJ-PDRJ 318 | 100 VA R | FS 460 | **PDRJ 318** |
| **95** | **PDR 319** | NU 319 ECP + 6319/C3 | NU 319 ECP | VJ-PDRJ 319 | 110 VA R | FS 460 | **PDRJ 319** |
| **100** | **PDR 320** | NU 320 ECP + 6320/C3 | NU 320 ECP | VJ-PDRJ 320 | 120 VA R | FS 460 | **PDRJ 320** |
| **110** | **PDR 322** | NU 322 ECP + 6322/C3 | NU 322 ECP | VJ-PDRJ 322 | 130 VA R | FS 510 | **PDRJ 322** |
| **120** | **PDR 324** | NU 324 ECP + 6324/C3 | NU 324 ECP | VJ-PDRJ 324 | 140 VA R | FS 680 | **PDRJ 324** |

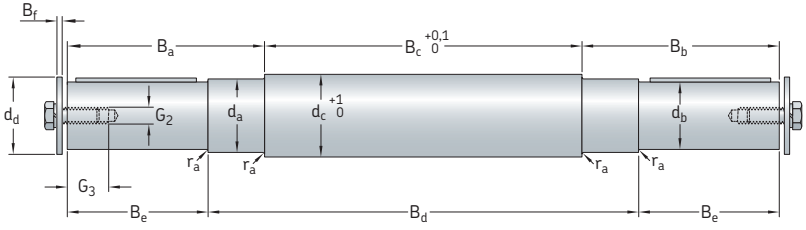
[1] For details about the components supplied, refer to the section *Ordering information* on **page 570**.




Size 320 and above (with M10 eye bolt)

| Shaft diameter | Dimensions Housing | | | | | | | | | | | | | | | | | | Mass Housing | Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | A | $A_1$ | $A_2$ | $A_3$ | $A_4$ | $A_5$ | $d_e$ | $D_a$ | H | $H_1$ JS11 | $H_2$ | J | $J_1$ | L | N | G | G | $G_1$ | | |
| mm | mm | | | | | | | | | | | | | | | | in. | – | kg | |
| **75** | 531 | 414 | 80 | 75,5 | 12 | 42 | 90 | 160 | 200 | 100 | 30 | 260 | 400 | 320 | 19 | 16 | 5/8 | G 1/4 | 45 | 85,5 |
| **80** | 552 | 430 | 80 | 76 | 12 | 46 | 95 | 170 | 220 | 112 | 30 | 260 | 420 | 320 | 19 | 16 | 5/8 | G 1/4 | 51 | 98,5 |
| **85** | 585 | 446 | 80 | 82,5 | 12 | 50 | 100 | 180 | 225 | 112 | 30 | 290 | 440 | 350 | 19 | 16 | 5/8 | G 1/4 | 62,5 | 120 |
| **90** | 603 | 468 | 85 | 81,5 | 11 | 50 | 105 | 190 | 230 | 112 | 30 | 290 | 460 | 350 | 19 | 16 | 5/8 | G 1/4 | 72 | 142 |
| **95** | 632 | 496 | 90 | 87,5 | 13 | 50 | 110 | 200 | 253 | 125 | 36 | 320 | 480 | 400 | 24 | 20 | 3/4 | G 1/4 | 84 | 164 |
| **100** | 671 | 524 | 95 | 97 | 11,5 | 46,5 | 120 | 215 | 264 | 130 | 40 | 320 | 500 | 400 | 24 | 20 | 3/4 | G 1/4 | 94 | 187 |
| **110** | 684 | 531 | 95 | 93,5 | 10 | 54,5 | 130 | 240 | 296 | 150 | 40 | 380 | 520 | 450 | 28 | 24 | 1 | G 1/4 | 117 | 240 |
| **120** | 705 | 546 | 100 | 95 | 11,5 | 62,5 | 140 | 260 | 322 | 160 | 40 | 410 | 538 | 500 | 35 | 30 | 1 1/4 | G 1/4 | 137 | 289 |

# 12.4 Shafts for two-bearing housings in the PDN 2 series
$d_a$ **30 – 120** mm

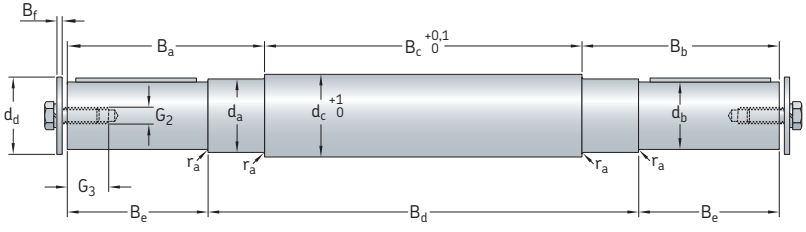



**Dimensions**
**Shaft**

| $d_a$ | $d_b$ | $d_c$ | $d_d$ | $B_a$ | $B_b$ | $B_c$ | $B_d$ | $B_e$ | $B_f$ | $r_a$ | $G_2$ | $G_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | | | | | | |
| **30** | 24 | 39 | 32 | 97 | 95,5 | 117,5 | 210 | 50 | 4 | 0,8 | 10 | 27 |
| **35** | 28 | 44 | 36 | 109,5 | 108 | 142,5 | 240 | 60 | 4 | 1,2 | 10 | 27 |
| **40** | 32 | 49 | 40 | 135,5 | 134 | 164,5 | 274 | 80 | 5 | 1,2 | 12 | 30 |
| **50** | 42 | 59 | 50 | 166 | 164,5 | 218,5 | 329 | 110 | 6 | 1,6 | 16 | 36 |
| **55** | 48 | 64 | 63 | 175 | 173,5 | 242,5 | 371 | 110 | 6 | 1,6 | 16 | 40 |
| **60** | 48 | 69 | 63 | 169 | 167,5 | 274,5 | 391 | 110 | 6 | 1,6 | 16 | 40 |
| **70** | 60 | 79 | 70 | 206,5 | 205 | 346,5 | 478 | 140 | 6 | 1,6 | 16 | 40 |
| **75** | 65 | 84 | 78 | 207,5 | 206 | 344,5 | 478 | 140 | 6 | 1,6 | 20 | 46 |
| **80** | 70 | 89 | 90 | 216 | 214,5 | 361,5 | 512 | 140 | 6 | 1,6 | 20 | 46 |
| **90** | 80 | 104 | 100 | 251 | 249,5 | 401,5 | 562 | 170 | 8 | 1,6 | 20 | 46 |
| **100** | 90 | 114 | 105 | 256 | 256 | 435 | 607 | 170 | 8 | 2,5 | 24 | 52 |
| **110** | 100 | 124 | 115 | 296,5 | 296,5 | 483 | 656 | 210 | 8 | 2,5 | 24 | 52 |
| **120** | 110 | 134 | 132 | 300 | 300 | 514 | 694 | 210 | 12 | 2,5 | 30 | 60 |

| **Shaft diameter** $d_a$ | **Appropriate parts** Housing | Bearings | Shaft | Shaft keys to ISO 773 | **Mass** Shaft only |
|---|---|---|---|---|---|
| mm | – | | | | kg |
| **30** | PDN 206 | 2 x 6206 | **VJ-PDNB 206** | 8x7x40 | 1,8 |
| **35** | PDN 207 | 2 x 6207 | **VJ-PDNB 207** | 8x7x40 | 2,85 |
| **40** | PDN 208 | 2 x 6208 | **VJ-PDNB 208** | 10x8x63 | 4,25 |
| **50** | PDN 210 | 2 x 6210 | **VJ-PDNB 210** | 12x8x80 | 7,65 |
| **55** | PDN 211 | 2 x 6211 | **VJ-PDNB 211** | 14x9x80 | 10,5 |
| **60** | PDN 212 | 2 x 6212 | **VJ-PDNB 212** | 14x9x80 | 13 |
| **70** | PDN 214 | 2 x 6214 | **VJ-PDNB 214** | 18x11x100 | 23 |
| **75** | PDN 215 | 2 x 6215 | **VJ-PDNB 215** | 18x11x100 | 26,5 |
| **80** | PDN 216 | 2 x 6216 | **VJ-PDNB 216** | 20x12x100 | 31,5 |
| **90** | PDN 218 | 2 x 6218 | **VJ-PDNB 218** | 22x14x140 | 47,5 |
| **100** | PDN 220 | 2 x 6220 | **VJ-PDNB 220** | 25x14x140 | 61 |
| **110** | PDN 222 | 2 x 6222 | **VJ-PDNB 222** | 28x16x180 | 83 |
| **120** | PDN 224 | 2 x 6224 | **VJ-PDNB 224** | 28x16x180 | 102 |

# 12.5 Shafts for two-bearing housings in the PDN 3 series
## $d_a$ 25 – 120 mm

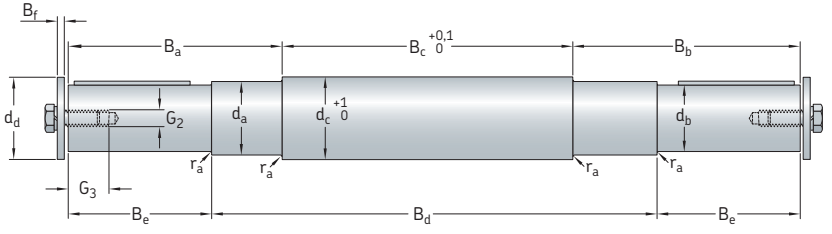



**Dimensions**
**Shaft**

| $d_a$ | $d_b$ | $d_c$ | $d_d$ | $B_a$ | $B_b$ | $B_c$ | $B_d$ | $B_e$ | $B_f$ | $r_a$ | $G_2$ | $G_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | | | | | | |
| **25** | 19 | 34 | 28 | 91 | 89,5 | 115,5 | 216 | 40 | 4 | 0,8 | 8 | 20 |
| **30** | 24 | 39 | 32 | 101,5 | 100 | 138,5 | 240 | 50 | 4 | 0,8 | 10 | 27 |
| **35** | 28 | 44 | 36 | 118,5 | 117 | 158,5 | 274 | 60 | 4 | 1,2 | 10 | 27 |
| **40** | 32 | 49 | 40 | 140 | 138,5 | 212,5 | 331 | 80 | 5 | 1,2 | 12 | 30 |
| **45** | 38 | 54 | 45 | 151,5 | 150 | 234,5 | 376 | 80 | 5 | 1,2 | 12 | 30 |
| **50** | 42 | 59 | 50 | 175 | 173,5 | 264,5 | 393 | 110 | 6 | 1,6 | 16 | 36 |
| **55** | 48 | 64 | 63 | 186,5 | 185 | 286,5 | 438 | 110 | 6 | 1,6 | 16 | 40 |
| **60** | 48 | 69 | 63 | 182,5 | 181 | 332,5 | 476 | 110 | 6 | 1,6 | 16 | 40 |
| **65** | 55 | 74 | 70 | 191 | 189,5 | 347,5 | 508 | 110 | 6 | 1,6 | 16 | 40 |
| **70** | 60 | 79 | 70 | 225 | 223,5 | 363,5 | 532 | 140 | 6 | 1,6 | 16 | 40 |
| **75** | 65 | 84 | 78 | 230,5 | 229 | 387,5 | 567 | 140 | 6 | 1,6 | 20 | 46 |
| **80** | 70 | 89 | 90 | 227 | 225,5 | 403,5 | 576 | 140 | 6 | 1,6 | 20 | 46 |
| **85** | 75 | 99 | 90 | 234,5 | 234,5 | 421 | 610 | 140 | 6 | 1,6 | 20 | 46 |
| **90** | 80 | 104 | 100 | 260 | 260 | 445 | 625 | 170 | 8 | 1,6 | 20 | 46 |
| **95** | 85 | 109 | 100 | 269,5 | 269,5 | 469 | 668 | 170 | 8 | 2,5 | 20 | 46 |
| **100** | 90 | 114 | 105 | 266,5 | 266,5 | 500 | 693 | 170 | 8 | 2,5 | 24 | 52 |
| **110** | 100 | 124 | 115 | 309,5 | 309,5 | 510 | 709 | 210 | 8 | 2,5 | 24 | 52 |
| **120** | 110 | 134 | 132 | 314 | 314 | 522 | 730 | 210 | 12 | 2,5 | 30 | 60 |

| Shaft diameter | Appropriate parts | | | | Mass |
|---|---|---|---|---|---|
| | Housing | Bearings | Shaft | Shaft keys to ISO 773 | Shaft only |
| $d_a$ | | | | | |
| mm | – | | | | kg |
| **25** | PDN 305 | 2 x 6305 | **VJ-PDNB 305** | 6x6x32 | 1,4 |
| **30** | PDN 306 | 2 x 6306 | **VJ-PDNB 306** | 8x7x40 | 2,2 |
| **35** | PDN 307 | 2 x 6307 | **VJ-PDNB 307** | 8x7x40 | 3,35 |
| **40** | PDN 308 | 2 x 6308 | **VJ-PDNB 308** | 10x8x63 | 5,25 |
| **45** | PDN 309 | 2 x 6309 | **VJ-PDNB 309** | 10x8x63 | 7,3 |
| **50** | PDN 310 | 2 x 6310 | **VJ-PDNB 310** | 12x8x80 | 9,85 |
| **55** | PDN 311 | 2 x 6311 | **VJ-PDNB 311** | 14x9x80 | 13 |
| **60** | PDN 312 | 2 x 6312 | **VJ-PDNB 312** | 14x9x80 | 15,5 |
| **65** | PDN 313 | 2 x 6313 | **VJ-PDNB 313** | 16x10x80 | 19,5 |
| **70** | PDN 314 | 2 x 6314 | **VJ-PDNB 314** | 18x11x100 | 25 |
| **75** | PDN 315 | 2 x 6315 | **VJ-PDNB 315** | 18x11x100 | 30 |
| **80** | PDN 316 | 2 x 6316 | **VJ-PDNB 316** | 20x12x100 | 34,5 |
| **85** | PDN 317 | 2 x 6317 | **VJ-PDNB 317** | 20x12x100 | 43 |
| **90** | PDN 318 | 2 x 6318 | **VJ-PDNB 318** | 22x14x140 | 51 |
| **95** | PDN 319 | 2 x 6319 | **VJ-PDNB 319** | 22x14x140 | 59,5 |
| **100** | PDN 320 | 2 x 6320 | **VJ-PDNB 320** | 25x14x140 | 67,5 |
| **110** | PDN 322 | 2 x 6322 | **VJ-PDNB 322** | 28x16x180 | 87,5 |
| **120** | PDN 324 | 2 x 6324 | **VJ-PDNB 324** | 28x16x180 | 106 |

# 12.6 Shafts for two-bearing housings in the PDP series
$d_a$ **70 – 120** mm

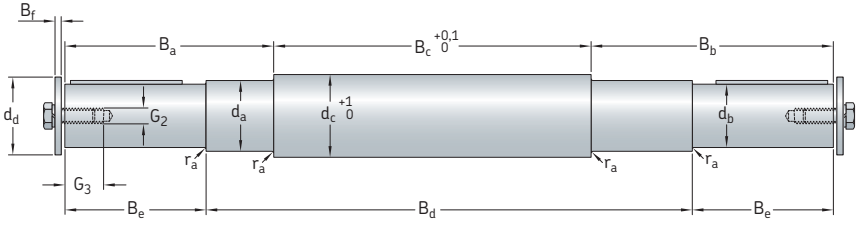



**Dimensions**
**Shaft**

| $d_a$ | $d_b$ | $d_c$ | $d_d$ | $B_a$ | $B_b$ | $B_c$ | $B_d$ | $B_e$ | $B_f$ | $r_a$ | $G_2$ | $G_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | | | | | | |
| **70** | 60 | 79 | 70 | 212 | 229 | 317 | 474 | 142 | 6 | 1,6 | 16 | 40 |
| **80** | 70 | 89 | 90 | 221,5 | 240,5 | 330 | 508 | 142 | 6 | 1,6 | 20 | 46 |
| **90** | 80 | 104 | 100 | 259,5 | 279,5 | 363 | 558 | 172 | 8 | 1,6 | 20 | 46 |
| **100** | 90 | 114 | 105 | 268 | 290 | 389 | 603 | 172 | 8 | 2,5 | 24 | 52 |
| **110** | 100 | 124 | 115 | 311,5 | 334,5 | 430 | 652 | 212 | 8 | 2,5 | 24 | 52 |
| **120** | 110 | 134 | 132 | 318 | 340 | 456 | 690 | 212 | 12 | 2,5 | 30 | 60 |

| **Shaft diameter** $d_a$ | **Appropriate parts** Housing | Bearings in the locating position | Bearing in the non-locating position | Shaft | Shaft keys to ISO 773 | **Mass** Shaft only |
|---|---|---|---|---|---|---|
| mm | – | | | | | kg |
| **70** | PDP 214 | 2 x 7214 BECBP | NU 2214 ECP | **VJ-PDPF 2214** | 18x11x100 | 23 |
| **80** | PDP 216 | 2 x 7216 BECBP | NU 2216 ECP | **VJ-PDPF 2216** | 20x12x100 | 32,5 |
| **90** | PDP 218 | 2 x 7218 BECBP | NU 2218 ECP | **VJ-PDPF 2218** | 22x14x140 | 46,5 |
| **100** | PDP 220 | 2 x 7220 BECBP | NU 2220 ECP | **VJ-PDPF 2220** | 25x14x140 | 60,5 |
| **110** | PDP 222 | 2 x 7222 BECBP | NU 2222 ECP | **VJ-PDPF 2222** | 28x16x180 | 82 |
| **120** | PDP 224 | 2 x 7224 BCBM | NU 2224 ECP | **VJ-PDPF 2224** | 28x16x180 | 101 |

# 12.7 Shafts for two-bearing housings in the PDR series
## $d_a$ 75 – 120 mm




**Dimensions**
**Shaft**

| $d_a$ | $d_b$ | $d_c$ | $d_d$ | $B_a$ | $B_b$ | $B_c$ | $B_d$ | $B_e$ | $B_f$ | $r_a$ | $G_2$ | $G_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | | | | | | | | | | | | |
| **75** | 65 | 84 | 78 | 220,5 | 257,5 | 353 | 547 | 142 | 6 | 1,6 | 20 | 46 |
| **80** | 70 | 89 | 90 | 223 | 262 | 367 | 568 | 142 | 6 | 1,6 | 20 | 46 |
| **85** | 75 | 99 | 90 | 231,5 | 272,5 | 381 | 601 | 142 | 6 | 1,6 | 20 | 46 |
| **90** | 80 | 104 | 100 | 258,5 | 301,5 | 403 | 619 | 172 | 8 | 1,6 | 20 | 46 |
| **95** | 85 | 109 | 100 | 262,5 | 307,5 | 425 | 651 | 172 | 8 | 2,5 | 20 | 46 |
| **100** | 90 | 114 | 105 | 266,5 | 313,5 | 454 | 690 | 172 | 8 | 2,5 | 24 | 52 |
| **110** | 100 | 124 | 115 | 308 | 358 | 461 | 703 | 212 | 8 | 2,5 | 24 | 52 |
| **120** | 110 | 134 | 132 | 312,5 | 367,5 | 468 | 724 | 212 | 12 | 2,5 | 30 | 60 |

| **Shaft diameter** $d_a$ | **Appropriate parts** Housing | Bearings in the locating position | Bearing in the non-locating position | Shaft | Shaft keys to ISO 773 | **Mass** Shaft only |
|---|---|---|---|---|---|---|
| mm | – | | | | | kg |
| **75** | PDR 315 | NU 315 ECP + 6315/C3 | NU 315 ECP | **VJ-PDRJ 315** | 18x11x100 | 29 |
| **80** | PDR 316 | NU 316 ECP + 6316/C3 | NU 316 ECP | **VJ-PDRJ 316** | 20x12x100 | 34 |
| **85** | PDR 317 | NU 317 ECP + 6317/C3 | NU 317 ECP | **VJ-PDRJ 317** | 20x12x100 | 42 |
| **90** | PDR 318 | NU 318 ECP + 6318/C3 | NU 318 ECP | **VJ-PDRJ 318** | 22x14x140 | 50,5 |
| **95** | PDR 319 | NU 319 ECP + 6319/C3 | NU 319 ECP | **VJ-PDRJ 319** | 22x14x140 | 58 |
| **100** | PDR 320 | NU 320 ECP + 6320/C3 | NU 320 ECP | **VJ-PDRJ 320** | 25x14x140 | 67 |
| **110** | PDR 322 | NU 322 ECP + 6322/C3 | NU 322 ECP | **VJ-PDRJ 322** | 28x16x180 | 86,5 |
| **120** | PDR 324 | NU 324 ECP + 6324/C3 | NU 324 ECP | **VJ-PDRJ 324** | 28x16x180 | 104 |


SKF

# Housings for paper machines SBFN, SBPN and SDM series

**Bearing types**
- Spherical roller bearings
- CARB toroidal roller bearings

**Bearing dimension series**
- 22, 23, 31 (SBFN series)
- 31 (SBPN series)
- 30, 31 (SDM series)

**Shaft diameter range**
- 60 to 180 mm (SBFN series)
- 180 to 320 mm (SBPN series)
- 340 to 670 mm (SDM series)

**Typical shaft-bearing combinations**
- Stepped shaft with a bearing on a tapered seat

**Seals**
- Labyrinth (SBFN and SBPN series)
- Gap-type seal with oil flinger (SDM series)

**Lubrication**
- Circulating oil lubrication systems

**Materials**
- Grey cast iron

**Mounting**
- Two-bolt mounting (SBFN series)
- Four-bolt mounting (SBPN and SDM series)

**Compliance to standards**
- Not standardized

**Supersedes**
- SBF, SBP series

With increasing demands placed on the output of paper machines, the operating conditions for housings, bearings and seals in this application are quite severe. Very high temperatures are typical and the risk of water contamination is always high. SKF provides housings for felt rolls, drying cylinders, and Yankee cylinders (used for producing tissue and board).

# Housings for paper machines SBFN, SBPN and SDM series


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# Designations

**Designation system for SKF housings for paper machines**[1)]

**A SBPN 3136 RA/P45**

**Prefix**

| | |
|---|---|
| **A** | Short, wide base (SBPN series only) |

**Series**

| | |
|---|---|
| **SBFN** | Non-split felt roll housing |
| **SBPN** | Non-split drying cylinder housing |
| **SDM** | Yankee cylinder housing (split) |

**Size identification**

| | |
|---|---|
| **22(00)** | Housing for bearings in the 22 dimension series |
| **23(00)** | Housing for bearings in the 23 dimension series |
| **30(00)** | Housing for bearings in the 30 dimension series |
| **31(00)** | Housing for bearings in the 31 dimension series |
| **..(00)** | Size code of the bearing, x 5 = bearing bore diameter [mm] |
| **../..** | Bearing bore diameter [mm] e.g. .../530 |

**Suffixes**[2)]

| | |
|---|---|
| **–** | Housing for metric thread connection arrangements (shaft, oil inlet and sensor attachment threads) (SBFN and SBPN series only) |
| **–** | Housing for metric thread connection arrangements (shaft, oil inlet and sensor attachment threads) and through shaft (SDM series only) |
| **A** | Housing for a shaft end, with end cover (SBFN and SBPN series only) |
| **B** | Housing for a through shaft (SBFN and SBPN series only) |
| **B..** | Housing for a through shaft with a modified outer cover for a steam box connection (B1 to B99) (SBPN and SDM series only) |
| **F** | Housing for the locating bearing position (drive side) |
| **RA** | Housing for a CARB toroidal roller bearing (front side) |
| **N9** | Housing for inch thread connection arrangements (shaft, oil inlet and sensor attachment threads) |
| **/P..** | Paint variant according to customer specification (P01 to P999) |

1) SNL ... TURP housings are included in the Designation system on **page 191**.
2) When multiple suffixes are used, they are listed in the same order as shown here.

# Standard housing design

SKF provides an assortment of housings for paper machines. The four standard housing series that are covered in this publication include:

- SBFN series, for felt rolls
- SBPN series, for drying cylinders
- SDM series, for Yankee cylinders
- SNL ... TURP series, for drying cylinders and felt rolls

SBFN felt roll housings (→ **fig. 1**) are non-split housings. They consist of a housing body and two covers with integrated seals. The base has two oblong cast holes for attachment bolts. Oblong attachment bolt holes enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft. For dimensions and detailed specifications of SBFN housings, contact SKF.

SBPN drying cylinder housings (→ **fig. 2**) are non-split housings. They consist of a housing body and two covers with integrated seals. The base has four cast holes for attachment bolts. Housings for spherical roller bearings have open-ended attachment bolt holes. Housings for CARB toroidal roller bearings have oblong attachment bolt holes. They enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft.

SDM Yankee cylinder housings (→ **fig. 3**) are split housings consisting of a cap, base and two covers with integrated seals. The inboard cover is split to enable removal of the cover without removing the cap. To facilitate handling, the cap has two integral flanges, with a hole cast into each one. The base has four holes for attachment bolts. Housings for spherical roller bearings have drilled attachment bolt holes. Housings for CARB toroidal roller bearings have oblong attachment bolt holes. They enable exact positioning of the housing during mounting to fully exploit the potential of CARB toroidal roller bearings to accommodate thermal elongation of the shaft.

For information about SNL ... TURP housings, refer to the chapter *Split plummer block housings SNL 30, 31 and 32 series*, starting on

**Fig. 1**

**SBFN felt roll housings**

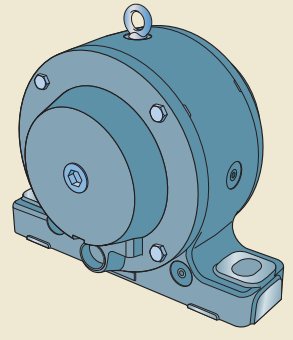


**Fig. 2**

**SBPN drying cylinder housings**

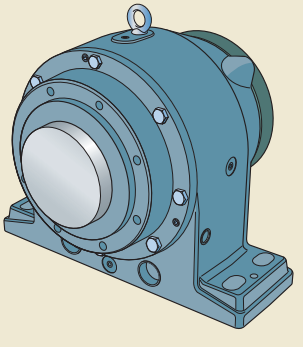


**Fig. 3**

**SDM yankee cylinder housings**

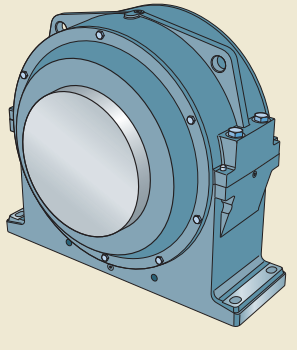
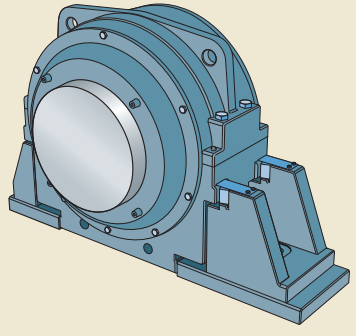


Fig. 4

**SDM Yankee cylinder rocker housings**



**page 189**. For information about other housings for felt rolls and drying cylinders such as SBF and SBP housings (predecessors to SBFN and SBPN housings respectively) as well as SDM Yankee cylinder housings on rockers (→ **fig. 4**), all of which can still be supplied by SKF, contact the SKF application engineering service.

## Features and benefits

SKF housings for paper machines have the following features and benefits:

#### Optimized designs

The housing designs are developed together with leading OEMs and are optimized to accommodate the arduous operating conditions present in paper machines.

#### Effective and maintenance-free seals

SBFN and SBPN housings have upgraded labyrinth seals compared to their predecessors, providing extra protection against liquid contaminants during operation and high pressure wash-downs. The seals also virtually eliminate oil leaks, even for high oil flow rates.

SDM housings have a maintenance-free, non-contact gap-type seal incorporated into each cover.

#### Prepared for condition monitoring

The housings have tapped holes to attach condition monitoring sensors.

#### Mounting in different positions

It is possible to mount SBFN housings at angles of 0°, 90°, 180° and 270°.

## Housing material

SKF housings for paper machines are made of grey cast iron.

#### Paint, corrosion protection

SBFN, SBPN and SDM housings are painted blue (RAL 5007) using a water based alkyd/acryl paint. The paint protects the housings in accordance with ISO 12944-2, corrosivity category C2 (→ **page 36**). Housings can be repainted with most water or solvent based one- or two-component paints. The housings can also be supplied painted according to customer specification (→ *Housing variants*, **page 594**).

Unpainted surfaces are protected with a solventless rust inhibitor.

## Dimension standards

SBFN, SBPN and SDM housings are not standardized either nationally or internationally.

# Housing variants

In addition to standard design housings for paper machines, a number of variants are also available. For additional information, contact the SKF application engineering service.

## Housings for connections with inch threads

SBFN, SBPN and SDM housings can be supplied with inch threads for connectors. Threads are in accordance with modified American National Form NS threads and all screws and bolts have UNC threads. Oil inlets and outlets are tapped with NPTF threads and holes for condition monitoring sensors have 5/16-18 UNC threads.

This housing variant is identified by the designation suffix N9, e.g. SBPN 3140 RAN9.

## Housings with special paint

SBFN, SBPN and SDM housings can be supplied painted according to customer specification. The housings are identified by the designation suffix P, followed by a number, e.g. SBFN 3136 RA/P45.

## Housings for steam joint connections

SBPN and SDM housings can be supplied with a modified cover to accommodate steam joint connections on through shafts (→ **fig. 5**). Various cover designs are available to suit the type of steam joint.

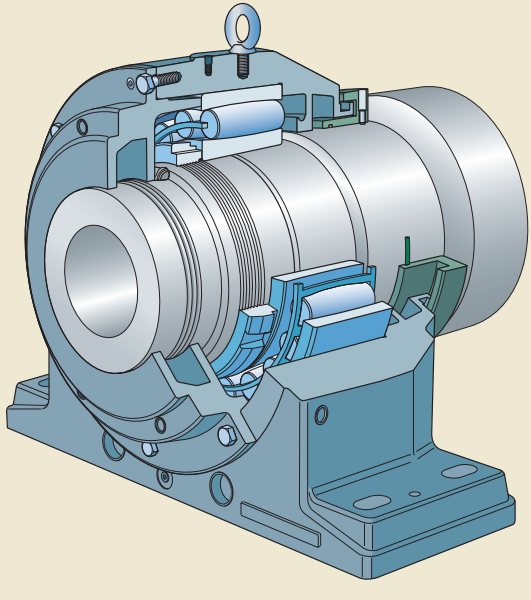
This housing variant is identified by the designation suffix B, followed by a number (from 1 to 99) indicating the cover design, e.g. SDM 30/670 B2RA.

## Housings for the wet section

SBFN housings for the wet section are available on request. For additional information,

**Fig. 5**

**Housing for steam joint connection, SBPN series**



contact the SKF application engineering service.

### Housings for rope sheaves

For rope sheave applications, SBPN drying cylinder housings can be supplied with one side machined to fit the rope sheave. For additional information, contact the SKF application engineering service.

### Housings for four-bolt mounting

SBFN housings can be supplied with four holes cast into the base for attachment bolts. For additional information, contact the SKF application engineering service.

# Sealing solutions

**Table 1** provides an overview of the characteristics and suitability of the sealing solutions for SKF housings for paper machines. This information should be used as a guideline, which cannot substitute for testing a seal in its application.

SBFN (→ **fig. 6**) and SBPN (→ **fig. 7**) housings are equipped with labyrinth seals integrated in each cover. A labyrinth ring, bolted to the shaft, forms an axial labyrinth with the housing cover. Shafts used with SBFN housings require machined grooves that act as oil flingers. End covers are available for housings mounted at the end of a shaft.

SDM housings are equipped with gap-type seals and split oil flinger rings (→ **fig. 8**). The seals are integrated in the covers. The flinger ring is split and mounted directly onto the shaft. The ring is positioned axially by tightening the ring screw into a tapped hole on the shaft.

Fig. 6

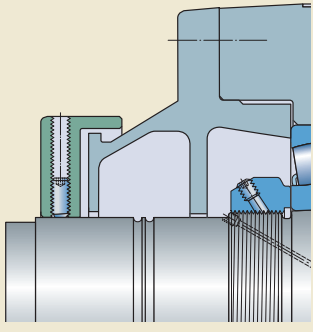


Fig. 7

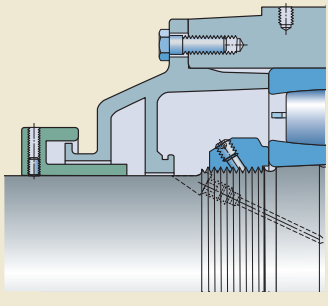


Fig. 8

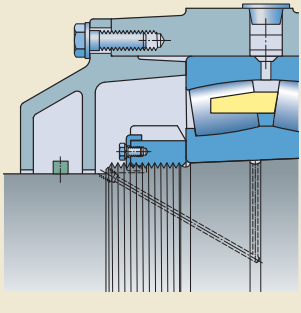
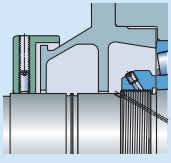
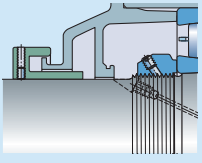
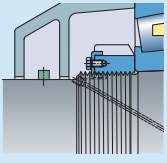


Table 1

**Seals for SKF housings for paper machines**







| | SBFN | SBPN | SDM |
|---|---|---|---|
| **Seal** | | | |
| Type | Labyrinth | Labyrinth | Gap seal with oil flinger |
| Material | grey cast iron | grey cast iron | grey cast iron, steel |
| **Application conditions and requirements** | | | |
| Temperature [°C] | –40 to +200 | –40 to +200 | –40 to +200 |
| Temperature [°F] | –40 to +390 | –40 to +390 | –40 to +390 |
| Max. circumferential speed [m/s] | bearing dependent | bearing dependent | bearing dependent |
| Max. misalignment [°] | 0,5 | 0,5 | 0,3 |
| Low friction | ++ | ++ | ++ |
| Shaft tolerance class | h9Ⓔ | h9Ⓔ | h9Ⓔ |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 | ≤ 3,2 | ≤ 3,2 |
| **Sealing suitability** | | | |
| Dust | – | – | – |
| Fine particles | + | + | + |
| Coarse particles | + | + | + |
| Pressure-wash | + | + | – |
| Running water | ++ | ++ | – |

Symbols: ++ very suitable + suitable – limited suitability –– unsuitable

13

# Design considerations

For general information about design considerations, refer to the following sections:

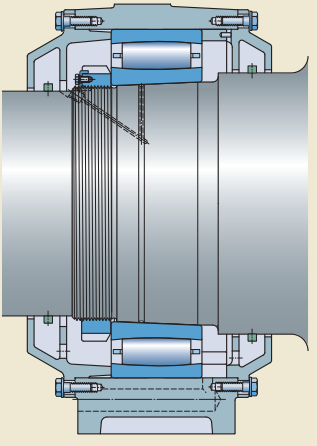
- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Housing support surface* (→ **page 45**)

For additional information about rolling bearings, refer to the product information available online at skf.com/bearings. For information about paper machine applications, refer to the SKF handbook *Rolling bearings in paper machines*.

## Typical shaft-bearing combinations

Housings for paper machines can accommodate stepped shafts with a bearing on a tapered seat (→ **fig. 9**):

Fig. 9



## Locating and non-locating bearing positions

Housings for paper machines are available for both the locating and non-locating bearing positions:

- Housings with the designation suffix F are designed to accommodate spherical roller bearings in the locating bearing position on the drive side.
- Housings with the designation suffix RA are designed for CARB toroidal roller bearings in the non-locating bearing position on the front side.

SKF recommends using a spherical roller bearing on the drive side and a CARB toroidal roller bearing on the front side (→ *The SKF self-aligning bearing system*, **page 41**). However, other housing/bearing combinations are also available (→ **table 2**).

The extent to which a CARB toroidal roller bearing can accommodate axial displacement due to interference with the seal can be calculated. For assistance, contact the SKF application engineering service

## Load carrying capacity

For information about breaking loads for SBFN housings, contact SKF for more information. SBPN and SDM housings are intended for loads acting perpendicular toward the support surface.

Guideline values for the permissible loads for SDM housings, based on cap bolt strength, are provided in **table 3**. Housings for paper machines should always be supported over the entire base. Perpendicular loads toward the support surface are limited only by the bearing.

**Table 2**

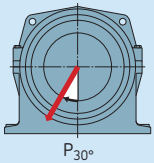
**Housing/bearing combinations**

| Housing series | Locating bearing position (Drive side) | Non-locating bearing position (Front side) | | |
|---|---|---|---|---|
| | spherical roller bearing with located outer ring | CARB bearing with located outer ring | spherical roller bearing with non-located outer ring | spherical roller bearing with located outer ring in housing on rockers |
| **Felt roll housings** | | | | |
| – SBFN | ✓ | ✓ | – | – |
| – SBF | ✓ | – | ✓[1] | – |
| **Drying cylinder housings** | | | | |
| – SBPN | ✓ | ✓ | – | – |
| – SBP | ✓ | ✓ | ✓[1] | ✓[1] |
| **Yankee cylinder housings** | | | | |
| – SDM | ✓ | ✓ | ✓[1] | ✓[1] [2] |

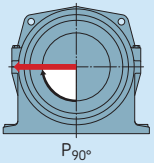
[1] This housing/bearing combination is still available on request. However, SKF strongly recommends using a CARB toroidal roller bearing at the front side (→ *The SKF self-aligning bearing system*, **page 41**).
[2] Also available additionally with two support rockers.

**Table 3**

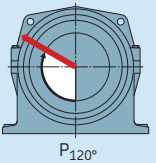
**Permissible loads for SDM housings**



$P_{30°}$



$P_{90°}$



$P_{120°}$

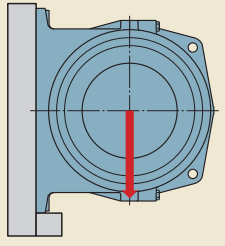
| Housing | Permissible loads | | |
|---|---|---|---|
| Size | $P_{30°}$ | $P_{90°}$ | $P_{120°}$ |
| – | kN | | |
| **3068** | 490 | 325 | 275 |
| **3168** | 590 | 295 | 245 |
| **3076** | 560 | 310 | 260 |
| **3084** | 650 | 305 | 255 |
| **3184** | –[1] | –[1] | –[1] |
| **3092** | 770 | 320 | 270 |
| **30/530** | 900 | 500 | 425 |
| **31/530** | 1 000 | 525 | 450 |
| **30/600** | 1 000 | 525 | 450 |
| **31/600** | –[1] | –[1] | –[1] |
| **30/670** | 1 090 | 475 | 400 |

[1] Contact SKF.

**Additional housing support**

When radial loads act at angles between 30° and 120° on SDM and SBPN housings or between 90° and 270° on SBFN housings, a stop should be provided to counter the load. The stop should be sufficiently strong to accommodate the loads acting parallel to the support surface (→ **fig. 10**).

Fig. 10



## Operating temperature

The housing material does not set any temperature limits, except for very low temperature applications where impact strength could be a factor. For additional information, contact the application engineering service.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature. Alternative paints that can accommodate higher temperatures are available on request (→ *Housing variants*, **page 594**).

## Operating speed

The permissible operating speed of the incorporated bearing is not limited by the housing or the seal.

## Shaft specifications

The bearing seat on the shaft should comply with the tolerances required by the bearing (→ SKF handbook *Rolling bearings in paper machines*), which is typically to IT9 tolerance grade. A cylindricity tolerance of IT5/2 and a conicity tolerance of IT7/2 are recommended.

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts, in accordance with ISO 4014, can be used together with washers.

For SBPN housings, M 24 or 1 UNC attachment bolts with a recommended tightening torque of 665 Nm are suitable. For SDM housings, refer to **table 4**.

**Table 4**

**Torque values for cap bolts and attachment bolts for SDM housings**

| **Housing** Size | **Cap bolts** Designation to ISO 262 grade 8.8 | Tightening torque | **Attachment bolts** Size | Tightening torque |
|---|---|---|---|---|
| – | – | Nm | – | Nm |
| **3068** | M 24 or 1 UNC | 350 | M 24 or 1 UNC | 665 |
| **3168** | M 24 or 1 UNC | 350 | M 24 or 1 UNC | 665 |
| **3076** | M 24 or 1 UNC | 350 | M 24 or 1 UNC | 665 |
| **3084** | M 30 or 1.1/4 UNC | 400 | M 24 or 1 UNC | 665 |
| **3184** | M 30 or 1.1/4 UNC | 400 | M 24 or 1 UNC | 665 |
| **3092** | M 30 or 1.1/4 UNC | 400 | M 24 or 1 UNC | 665 |
| **30/530** | M 30 or 1.1/4 UNC | 400 | M 30 or 1.1/4 UNC | 1 310 |
| **31/530** | M 30 or 1.1/4 UNC | 400 | M 30 or 1.1/4 UNC | 1 310 |
| **30/600** | M 30 or 1.1/4 UNC | 400 | M 30 or 1.1/4 UNC | 1 310 |
| **31/630** | M 36 or 1.1/2 UNC | 600 | M 30 or 1.1/4 UNC | 1 310 |
| **30/670** | M 36 or 1.1/2 UNC | 600 | M 30 or 1.1/4 UNC | 1 310 |

# Lubrication

SBFN, SBPN and SDM housings are designed for high-flow circulating oil systems. The oil should be selected based on the operating conditions of the bearing. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

A circulating oil lubrication system typically has supply lines and drain lines. Circulation is normally produced with the aid of a pump. After the oil has passed through the bearing, it drains from the housing and flows into a tank where it is filtered and allowed to cool before being returned to the housing. Proper filtering and cooling of the oil are important factors for bearing and oil service life, and can improve machine performance as well as cost savings.

SBFN housings have two oil inlets and one oil outlet (→ **fig. 11**). One of the inlets as well as the outlet are plugged with plastic plugs. The other inlet, not in use, is plugged with a steel plug.

SBPN and SDM housings have two oil inlets, and two oil outlets on each side (→ **figs. 12** and **13**). SKF recommends using both outlets on the relevant side to sufficiently drain the large quantity of circulating oil. The tapped outlets have two plastic and two steel plugs. The steel plugs should remain on the side opposite the return pipes.

Fig. 11

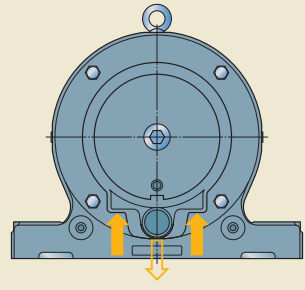


Fig. 12

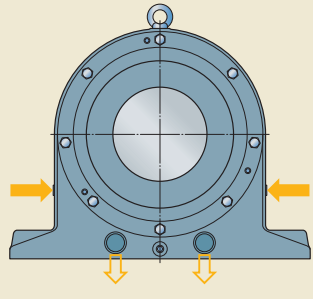
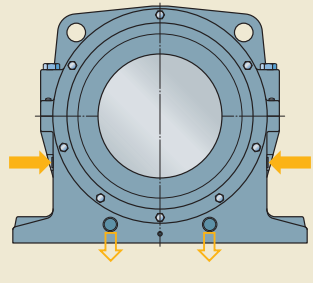


Fig. 13



# Mounting

SKF housings for paper machines must be mounted properly by experienced, knowledgeable people using the correct tools.

SBFN housings can be mounted at angles of 0°, 90°, 180° and 270°. To prevent oil leakage, the arrow on the cover should always point upward.

For SBFN and SBPN housings, the interface between the housing and covers should be coated with an oil-resistant sealant.

SBPN and SDM housings should be mounted so that the oil outlets with the plastic plugs are facing outward.

For additional information, contact the SKF application engineering service. SKF can also assist during mounting or provide a complete installation service

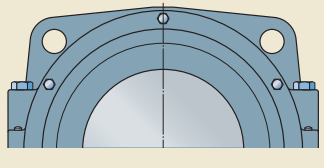
## Eye bolts and lifting holes

SBFN and SBPN housings are supplied with an eye bolt on top. SDM housings have two flanges on the cap with a cast hole in each (→ **fig. 14**).

## Cap bolt torque specifications

Cap bolts should be tightened to the recommended torque values listed in **table 4** on **page 601**).

**Fig. 14**



# Condition monitoring

SBFN (→ **fig. 15**), SBPN (→ **fig. 16**) and SDM housings (→ **fig. 17**) have tapped holes (M8) for attaching condition monitoring sensors.

Housings with inch thread connections, designation suffix N9, have holes for attaching condition monitoring sensors with 5/16-18 UNC threads.

Fig. 15

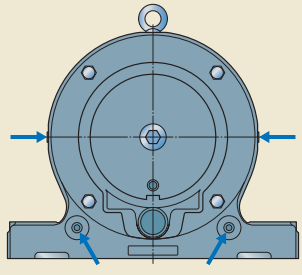


Fig. 16

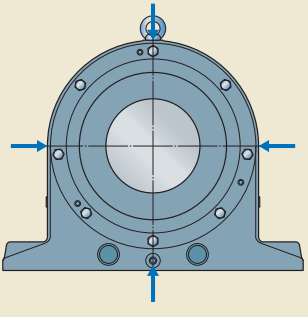
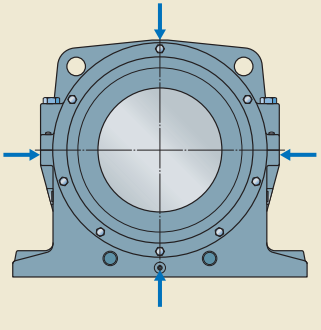


Fig. 17



## Accessories

The following accessories are available for housings for paper machines:

- central lubrication systems, e.g. SKF Flowline
- condition monitoring sensors

For additional information, contact SKF.

## Ordering information

SKF housings for paper machines are supplied complete with covers, seals and plugs. The bearings must be ordered separately.

**Order example**

Two housings with inch thread dimensions are required for a felt roll assembly – one for a 22218 EK/C3 spherical roller bearing in the locating bearing position, and one for a C 22218 K/C3 CARB toroidal roller bearing in the non-locating bearing position at the end of a shaft. The following items should be ordered (in addition to the bearings):

- 1 SBFN 2218 BFN9
- 1 SBFN 2218 ARAN9

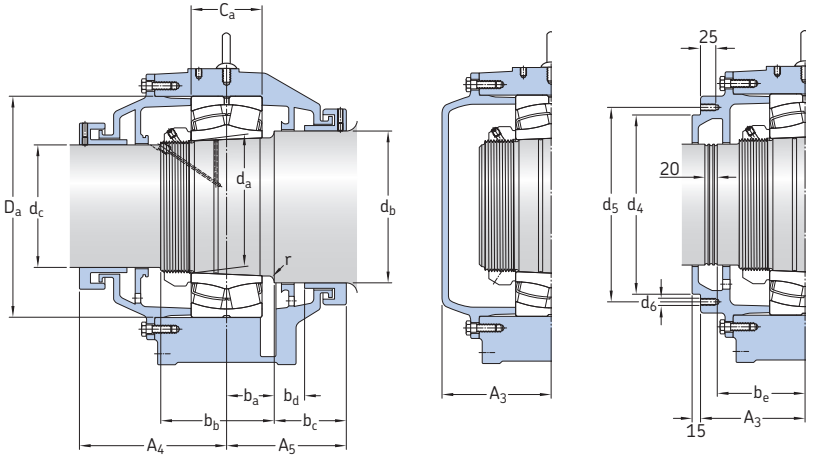
Two housings are required for a drying cylinder assembly – one for a 23144 CCK/C4W33 spherical roller bearing in the locating bearing position, and one for a C 3144 K/C4 CARB toroidal roller bearing in the non-locating bearing position at the end of a shaft. The housings require a special paint that can accommodate special customer requirements. The following items should be ordered (in addition to the bearings):

- 1 SBPN 3144 BF/P..
- 1 SBPN 3144 ARA/P..

Two housings are required for a Yankee cylinder – one for a 230/670 CAK/C084W33 spherical roller bearing in the locating bearing position, and one for a C 30/670 KM/C084 CARB toroidal roller bearing in the non-locating bearing position. The following items should be ordered (in addition to the bearings):

- 1 SDM 30/670 F
- 1 SDM 30/670 RA

# 13.1 SBPN drying cylinder housings
## $d_a$ 180 – 320 mm



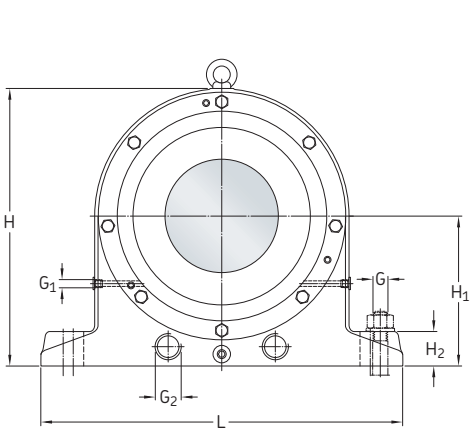

Housing for through shaft (designation suffix B)

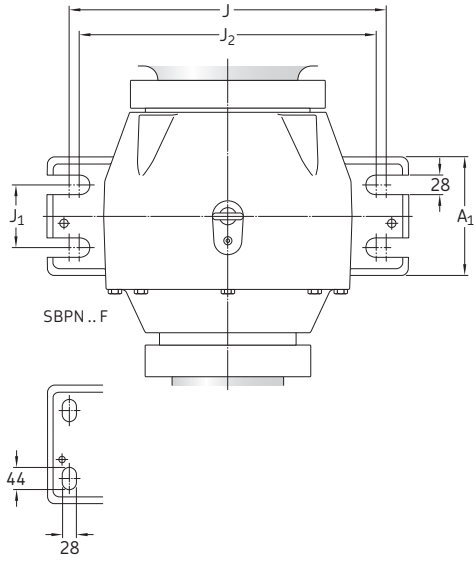
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut[2] | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $A_5$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | $J_2$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | mm | | | | | | | | | | | | |
| **180** | **SBPN 3136 F**<br>**SBPN 3136 RA** | 23136 CCK/W33<br>C 3136 K | KMT 36 | 170 | 155 | 230 | 195 | 96 | 300 | 400 | 220 | 50 | 440 | 90 | 424 | 520 |
| **200** | **SBPN 3140 F**<br>**SBPN 3140 RA** | 23140 CCK/W33<br>C 3140 K | KMT 40 | 200 | 165 | 240 | 200 | 112 | 340 | 440 | 240 | 55 | 485 | 115 | 469 | 570 |
| **220** | **SBPN 3144 F**<br>**SBPN 3144 RA** | 23144 CCK/W33<br>C 3144 K | KMT 44 | 235 | 175 | 255 | 200 | 120 | 370 | 490 | 265 | 60 | 550 | 135 | 534 | 640 |
| **240** | **SBPN 3148 F**<br>**SBPN 3148 RA** | 23148 CCK/W33<br>C 3148 K | KMT 48 | 250 | 190 | 265 | 215 | 128 | 400 | 535 | 285 | 65 | 580 | 150 | 564 | 680 |
| **260** | **SBPN 3152 F**<br>**SBPN 3152 RA** | 23152 CCK/W33<br>C 3152 K | KMT 52 | 265 | 200 | 280 | 225 | 144 | 440 | 570 | 310 | 75 | 620 | 160 | 604 | 720 |
| **300** | **SBPN 3160 F**<br>**SBPN 3160 RA** | 23160 CCK/W33<br>C 3160 K | KMT 60 | 300 | 215 | 290 | 235 | 160 | 500 | 630 | 335 | 85 | 720 | 180 | 704 | 820 |
| **320** | **SBPN 3164 F**<br>**SBPN 3164 RA** | 23164 CCK/W33<br>C 3164 KM | KMT 64 | 320 | 225 | 300 | 255 | 176 | 540 | 680 | 360 | 85 | 760 | 200 | 744 | 880 |

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] As an alternative to KMT lock nuts, it is also possible to use KML or HM lock nuts with a locking device.



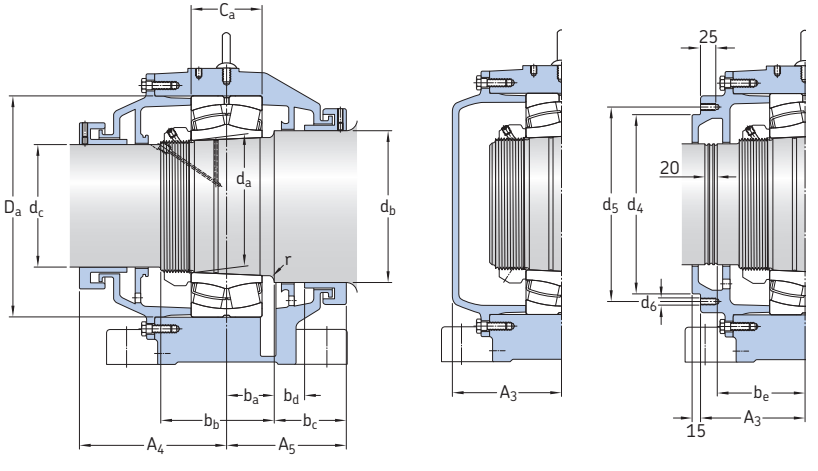

SBPN .. F




SBPN .. RA

| Shaft diameter | Dimensions Housing | | | Shaft | | | | | | | | | | | | Mass Housing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | $d_4$ | $d_5$ | $d_6$ | r | A | B |
| mm | – | | | mm | | | | | | | – | mm | | – | | kg | |
| **180** | M 24 | G 1/2 | G 1.1/4 | 65 | 150 | 130 | 55 | 128 | 200 | 160 | M 180x3 | 225 | 250 | M 12 | 5 | 118 | 115 |
| **200** | M 24 | G 1/2 | G 1.1/4 | 75 | 170 | 125 | 50 | 138 | 230 | 180 | M 200x3 | 265 | 290 | M 12 | 8 | 133 | 147 |
| **220** | M 24 | G 1/2 | G 1.1/4 | 75 | 190 | 125 | 50 | 148 | 250 | 200 | Tr 220x4 | 305 | 330 | M 12 | 8 | 189 | 205 |
| **240** | M 24 | G 1/2 | G 1.1/4 | 85 | 205 | 130 | 55 | 163 | 275 | 220 | Tr 240x4 | 335 | 360 | M 12 | 8 | 244 | 256 |
| **260** | M 24 | G 1/2 | G 1.1/2 | 95 | 225 | 130 | 55 | 173 | 300 | 240 | Tr 260x4 | 355 | 380 | M 12 | 8 | 259 | 273 |
| **300** | M 24 | G 1/2 | G 1.1/2 | 105 | 250 | 130 | 55 | 188 | 340 | 280 | Tr 300x4 | 435 | 460 | M 12 | 8 | 342 | 358 |
| **320** | M 24 | G 1/2 | G 1.1/2 | 115 | 270 | 140 | 65 | 198 | 360 | 300 | Tr 320x5 | 455 | 480 | M 12 | 8 | 445 | 465 |

# 13.2 SBPN drying cylinder housings – short, wide base
## $d_a$ 180 – 320 mm



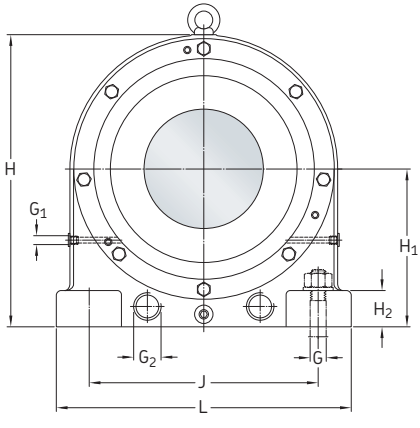

Housing for through shaft (designation suffix B)

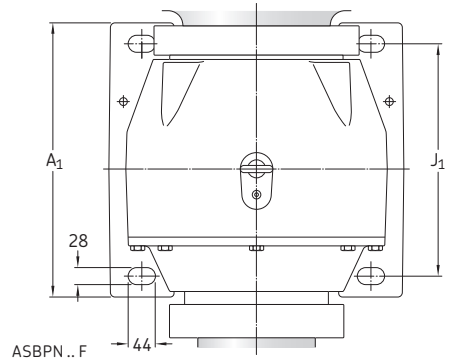
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

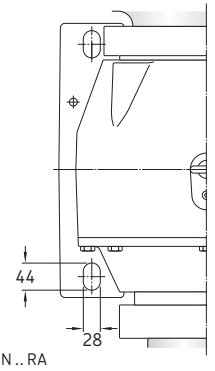
| Shaft diameter | Housing Designation | Appropriate parts Bearing[1] | Lock nut[2] | Dimensions Housing | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | $A_1$ | $A_3$ | $A_4$ | $A_5$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | L |
| mm | – | – | | mm | | | | | | | | | | |
| **180** | **ASBPN 3136 F**<br>**ASBPN 3136 RA** | 23136 CCK/W33<br>C 3136 K | KMT 36 | 350 | 155 | 230 | 195 | 96 | 300 | 400 | 220 | 50 | 320 | 400 |
| **220** | **ASBPN 3144 F**<br>**ASBPN 3144 RA** | 23144 CCK/W33<br>C 3144 K | KMT 44 | 410 | 175 | 255 | 200 | 120 | 370 | 490 | 265 | 60 | 380 | 490 |
| **260** | **ASBPN 3152 F**<br>**ASBPN 3152 RA** | 23152 CCK/W33<br>C 3152 K | KMT 52 | 445 | 200 | 280 | 225 | 144 | 440 | 570 | 310 | 75 | 470 | 580 |
| **300** | **ASBPN 3160 F**<br>**ASBPN 3160 RA** | 23160 CCK/W33<br>C 3160 K | KMT 60 | 480 | 215 | 290 | 235 | 160 | 500 | 630 | 335 | 85 | 560 | 670 |
| **320** | **ASBPN 3164 F**<br>**ASBPN 3164 RA** | 23164 CCK/W33<br>C 3164 KM | KMT 64 | 500 | 225 | 300 | 255 | 176 | 540 | 680 | 360 | 85 | 580 | 710 |

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] As an alternative to KMT lock nuts, it is also possible to use KML or HM lock nuts with a locking device.




ASBPN .. F



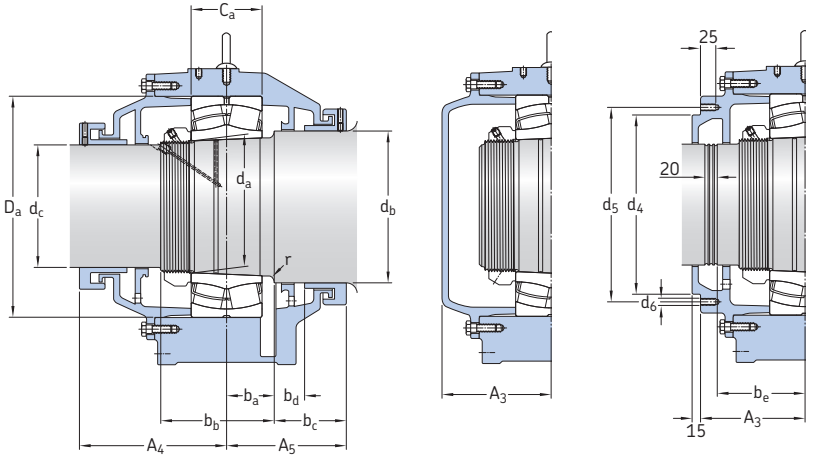

ASBPN .. RA

| Shaft diameter | Dimensions Housing | | | Shaft | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | $d_4$ | $d_5$ | $d_6$ | r | |
| mm | – | | | mm | | | | | | | – | mm | | – | mm | kg |
| **180** | M 24 | G 1/2 | G 1.1/4 | 65 | 150 | 130 | 55 | 128 | 200 | 160 | M 180x3 | 225 | 250 | M 12 | 5 | 1) |
| **220** | M 24 | G 1/2 | G 1.1/4 | 75 | 190 | 125 | 50 | 148 | 250 | 200 | Tr 220x4 | 305 | 330 | M 12 | 8 | 203 |
| **260** | M 24 | G 1/2 | G 1.1/2 | 95 | 225 | 130 | 55 | 173 | 300 | 240 | Tr 260x4 | 355 | 380 | M 12 | 8 | 1) |
| **300** | M 24 | G 1/2 | G 1.1/2 | 105 | 250 | 130 | 55 | 188 | 340 | 280 | Tr 300x4 | 435 | 460 | M 12 | 8 | 1) |
| **320** | M 24 | G 1/2 | G 1.1/2 | 115 | 270 | 140 | 65 | 198 | 360 | 300 | Tr 320x5 | 455 | 480 | M 12 | 8 | 1) |

1) Contact SKF for missing values.

## 13.3 SBPN drying cylinder housings, with inch connection threads

$d_2$ **180 – 320** mm
*7.087 – 12.598 in.*



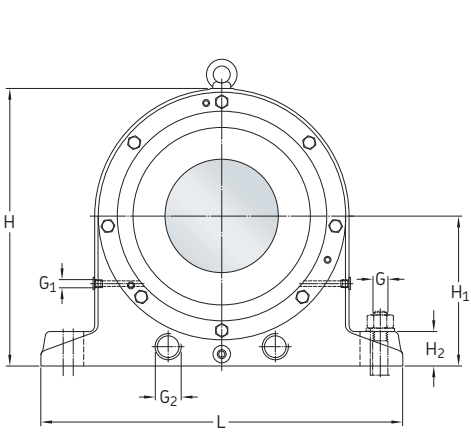

Housing for through shaft (designation suffix B)

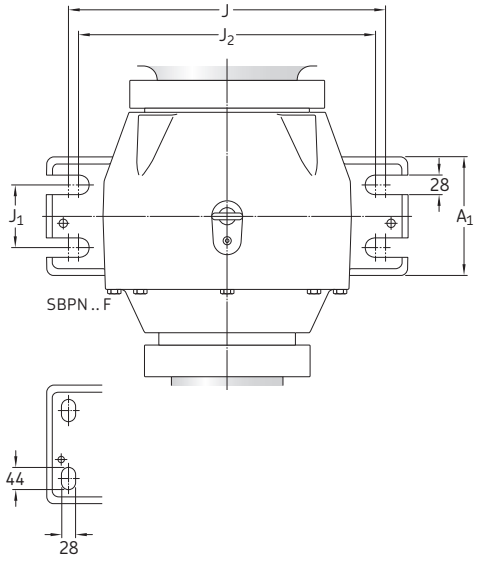
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $A_5$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | $J_2$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm/*in.* | – | – | | | mm | | | | | | | | | | | | |
| **180**<br>*7.087* | **SBPN 3136 FN9**<br>**SBPN 3136 RAN9** | 23136 CCK/W33<br>C 3136 K | N 036 | W 036 | 170 | 155 | 230 | 195 | 96 | 300 | 400 | 220 | 50 | 440 | 90 | 424 | 520 |
| **200**<br>*7.874* | **SBPN 3140 FN9**<br>**SBPN 3140 RAN9** | 23140 CCK/W33<br>C 3140 K | N 040 | W 040 | 200 | 165 | 240 | 200 | 112 | 340 | 440 | 240 | 55 | 485 | 115 | 469 | 570 |
| **220**<br>*8.661* | **SBPN 3144 FN9**<br>**SBPN 3144 RAN9** | 23144 CCK/W33<br>C 3144 K | N 044 | W 044 | 235 | 175 | 255 | 200 | 120 | 370 | 490 | 265 | 60 | 550 | 135 | 534 | 640 |
| **240**<br>*9.449* | **SBPN 3148 FN9**<br>**SBPN 3148 RAN9** | 23148 CCK/W33<br>C 3148 K | N 048 | PL 48 | 250 | 190 | 265 | 215 | 128 | 400 | 535 | 285 | 65 | 580 | 150 | 564 | 680 |
| **260**<br>*10.236* | **SBPN 3152 FN9**<br>**SBPN 3152 RAN9** | 23152 CCK/W33<br>C 3152 K | N 052 | PL 52 | 265 | 200 | 280 | 225 | 144 | 440 | 570 | 310 | 75 | 620 | 160 | 604 | 720 |
| **300**<br>*11.811* | **SBPN 3160 FN9**<br>**SBPN 3160 RAN9** | 23160 CCK/W33<br>C 3160 K | N 060 | PL 60 | 300 | 215 | 290 | 235 | 160 | 500 | 630 | 335 | 85 | 720 | 180 | 704 | 820 |
| **320**<br>*12.598* | **SBPN 3164 FN9**<br>**SBPN 3164 RAN9** | 23164 CCK/W33<br>C 3164 KM | N 064 | PL 64 | 320 | 225 | 300 | 255 | 176 | 540 | 680 | 360 | 85 | 760 | 200 | 744 | 880 |

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.

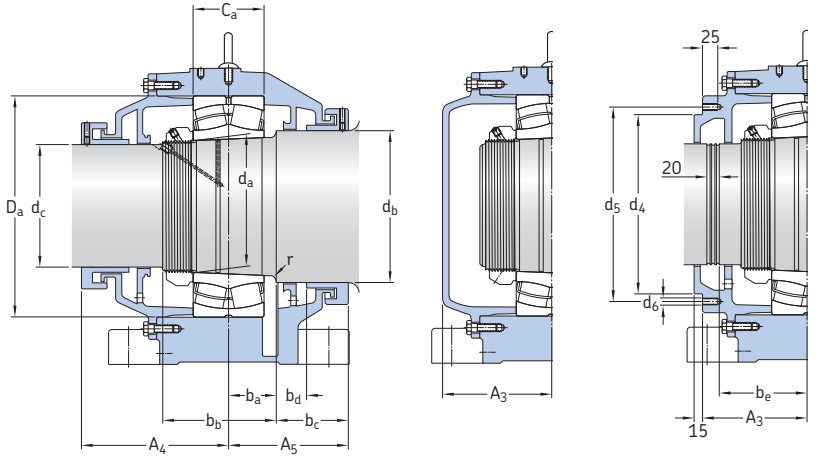



| **Shaft diameter** | **Dimensions** Housing | | | Shaft | | | | | | | | | | | | | **Mass** Housing | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | Threads/ inch | $d_4$ | $d_5$ | $d_6$ | r | A | B |
| mm/*in.* | – | | | mm | | | | | | | in. | – | mm | | – | mm | kg | |
| **180** *7.087* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 65 | 150 | 130 | 55 | 128 | 200 | 160 | 7.063 | 8 | 225 | 250 | M12 | 5 | 118 | 115 |
| **200** *7.874* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 75 | 170 | 125 | 50 | 138 | 230 | 180 | 7.844 | 8 | 265 | 290 | M12 | 8 | 133 | 147 |
| **220** *8.661* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 75 | 190 | 125 | 50 | 148 | 250 | 200 | 8.625 | 8 | 305 | 330 | M12 | 8 | 189 | 205 |
| **240** *9.449* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 85 | 205 | 130 | 55 | 163 | 275 | 220 | 9.439 | 6 | 335 | 360 | M12 | 8 | 244 | 256 |
| **260** *10.236* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 95 | 225 | 130 | 55 | 173 | 300 | 240 | 10.189 | 6 | 355 | 380 | M12 | 8 | 259 | 273 |
| **300** *11.811* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 105 | 250 | 130 | 55 | 188 | 340 | 280 | 11.781 | 6 | 435 | 460 | M12 | 8 | 342 | 358 |
| **320** *12.598* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 115 | 270 | 140 | 65 | 198 | 360 | 300 | 12.559 | 6 | 455 | 480 | M12 | 8 | 445 | 465 |

# 13.4 SBPN drying cylinder housings, with inch connection threads – short, wide base

d **180 – 320** mm
*7.087 – 12.598 in.*



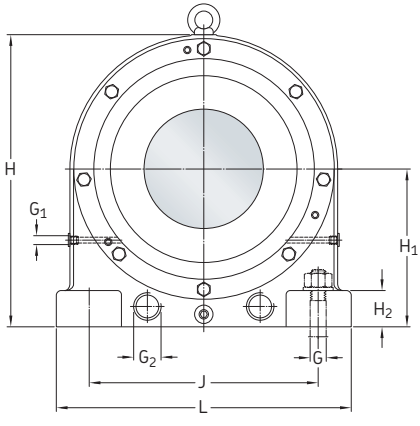

Housing for through shaft (designation suffix B)

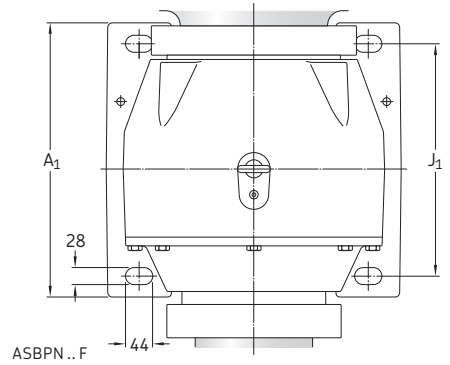
Housing for shaft end (designation suffix A)

Housing for steam joint connection (designation suffix B42)

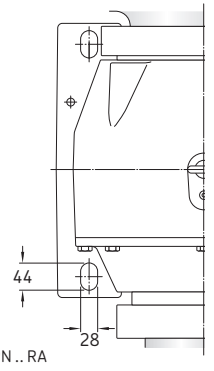
| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $A_5$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm/*in.* | – | – | | | mm | | | | | | | | | | | |
| **180**<br>*7.087* | **ASBPN 3136 FN9**<br>**ASBPN 3136 RAN9** | 23136 CCK/W33<br>C 3136 K | N 036 | W 036 | 350 | 155 | 230 | 195 | 96 | 300 | 400 | 220 | 50 | 320 | 280 | 400 |
| **220**<br>*8.661* | **ASBPN 3144 FN9**<br>**ASBPN 3144 RAN9** | 23144 CCK/W33<br>C 3144 K | N 044 | W 044 | 410 | 175 | 255 | 200 | 120 | 370 | 490 | 265 | 60 | 380 | 340 | 490 |
| **260**<br>*10.236* | **ASBPN 3152 FN9**<br>**ASBPN 3152 RAN9** | 23152 CCK/W33<br>C 3152 K | N 052 | PL 52 | 445 | 200 | 280 | 225 | 144 | 440 | 570 | 310 | 75 | 470 | 375 | 580 |
| **300**<br>*11.811* | **ASBPN 3160 FN9**<br>**ASBPN 3160 RAN9** | 23160 CCK/W33<br>C 3160 K | N 060 | PL 60 | 480 | 215 | 290 | 235 | 160 | 500 | 630 | 335 | 85 | 560 | 410 | 670 |
| **320**<br>*12.598* | **ASBPN 3164 FN9**<br>**ASBPN 3164 RAN9** | 23164 CCK/W33<br>C 3164 KM | N 064 | PL 64 | 500 | 225 | 300 | 255 | 176 | 540 | 680 | 360 | 85 | 580 | 430 | 710 |

[1] 231(00) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.




ASBPN .. F



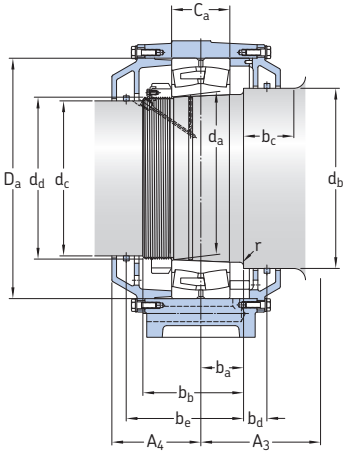

ASBPN .. RA

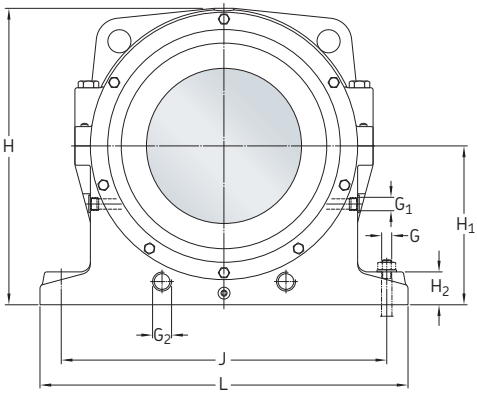
| Shaft diameter | Dimensions Housing | | | Shaft | | | | | | | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | Threads/ inch | $d_4$ | $d_5$ | $d_6$ | r | |
| mm/*in.* | – | | | mm | | | | | | | in. | – | mm | | | | kg |
| **180** *7.087* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 65 | 150 | 130 | 55 | 128 | 200 | 160 | 7.063 | 8 | 225 | 250 | M 12 | 5 | [1] |
| **220** *8.661* | 1 UNC | NPTF 1/2 | NPTF 1.1/4 | 75 | 190 | 125 | 50 | 148 | 250 | 200 | 8.625 | 8 | 305 | 330 | M 12 | 8 | 203 |
| **260** *10.236* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 95 | 225 | 130 | 55 | 173 | 300 | 240 | 10.189 | 6 | 355 | 380 | M 12 | 8 | [1] |
| **300** *11.811* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 105 | 250 | 130 | 55 | 188 | 340 | 280 | 11.781 | 6 | 435 | 460 | M 12 | 8 | [1] |
| **320** *12.598* | 1 UNC | NPTF 1/2 | NPTF 1.1/2 | 115 | 270 | 140 | 65 | 198 | 360 | 300 | 12.559 | 6 | 455 | 480 | M 12 | 8 | [1] |

[1] Contact SKF for missing values.

# 13.5 SDM Yankee cylinder housings

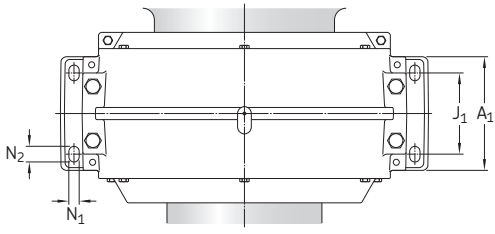
d **340 – 600** mm



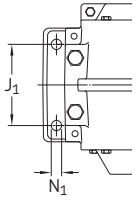




| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | mm | | | | | | | | | | |
| **340** | **SDM 3068 F**<br>**SDM 3068 RA** | 23068 CCK/W33<br>C 3068 K | HM 3068 | MS 3068-64 | 260 | 195 | 210 | 133 | 520 | 650 | 345 | 75 | 760 | 170 | 860 |
| | **SDM 3168 F**<br>**SDM 3168 RA** | 23168 CCK/W33<br>C 3168 KM | HM 3068 | MS 3068-64 | 320 | 210 | 255 | 190 | 580 | 740 | 400 | 80 | 800 | 180 | 900 |
| **380** | **SDM 3076 F**<br>**SDM 3076 RA** | 23076 CCK/W33<br>C 3076 K | HM 3076 | MS 3080-76 | 260 | 200 | 220 | 135 | 560 | 710 | 380 | 80 | 790 | 170 | 890 |
| **420** | **SDM 3084 F**<br>**SDM 3084 RA** | 23084 CAK/W33<br>C 3084 KM | HM 3084 | MS 3084 | 280 | 205 | 230 | 150 | 620 | 765 | 410 | 85 | 840 | 180 | 950 |
| | **SDM 3184 F**<br>**SDM 3184 RA** | 23184 CKJ/W33<br>C 3184 KM | HM 3084 | MS 3084 | 400 | 290 | 310 | 224 | 700 | 910 | 480 | 85 | 1045 | 280 | 1165 |
| **460** | **SDM 3092 F**<br>**SDM 3092 RA** | 23092 CAK/W33<br>C 3092 KM/C3 | HM 3092 | MS 3092-88 | 310 | 220 | 250 | 163 | 680 | 850 | 450 | 85 | 970 | 200 | 1090 |
| **530** | **SDM 30/530 F**<br>**SDM 30/530 RA** | 230/530 CAK/W33<br>C 30/530 KM | HM 30/530 | MS 30/600-530 | 360 | 240 | 270 | 185 | 780 | 960 | 510 | 85 | 1090 | 240 | 1200 |
| | **SDM 31/530 F**<br>**SDM 31/530 RA** | 231/530 CAK/W33<br>C 31/530 KM | HM 30/530 | MS 30/600-530 | 410 | 325 | 355 | 272 | 870 | 1065 | 550 | 85 | 1220 | 240 | 1360 |
| **600** | **SDM 30/600 F**<br>**SDM 30/600 RA** | 230/600 CAK/W33<br>C 30/600 KM/C3 | HM 30/600 | MS 30/600-530 | 410 | 325 | 355 | 200 | 870 | 1065 | 550 | 85 | 1220 | 240 | 1360 |

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.



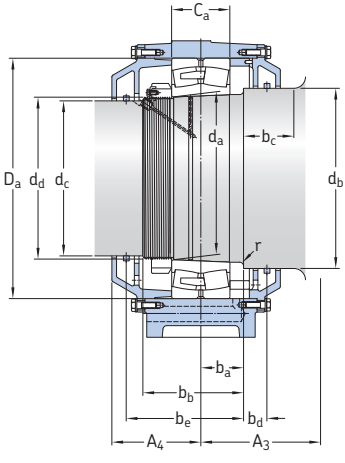

SDM .. RA

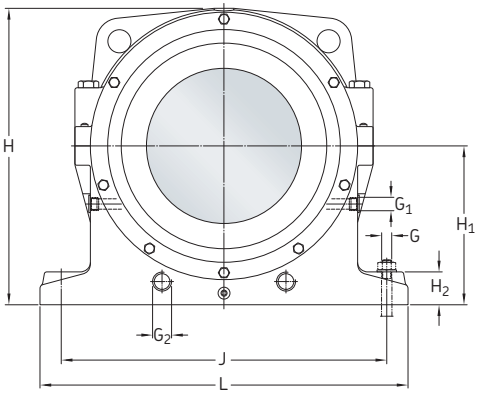



SDM .. F

| **Shaft diameter** | **Dimensions** Housing | | | | | Shaft | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | $N_2$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | r | |
| mm | mm | | – | | | mm | | | | | | | – | mm | kg |
| **340** | 30 | 50 | M 24 | G 1 | G 1.1/4 | 95 | 225 | 130 | 65 | 270 | 380 | 320 | Tr 340x5 | 10 | 386 |
| | 30 | 50 | M 24 | G 1 | G 2 | 130 | 295 | 110 | 48 | 353 | 390 | 320 | Tr 340x5 | 10 | 572 |
| **380** | 30 | 50 | M 24 | G 1 | G 1.1/4 | 95 | 230 | 135 | 70 | 280 | 420 | 360 | Tr 380x5 | 10 | 475 |
| **420** | 30 | 50 | M 24 | G 1 | G 1.1/2 | 110 | 260 | 130 | 60 | 305 | 465 | 400 | Tr 420x5 | 10 | 494 |
| | 30 | 50 | M 24 | G 1 | G 1.1/2 | 180 | 375 | 150 | 70 | 450 | 465 | 400 | Tr 420x5 | 10 | 882 |
| **460** | 30 | 50 | M 24 | G 1 | G 1.1/2 | 110 | 270 | 140 | 70 | 320 | 510 | 430 | Tr 460x5 | 10 | 750 |
| **530** | 38 | 58 | M 30 | G 1 | G 2 | 135 | 300 | 140 | 65 | 365 | 580 | 500 | Tr 530x6 | 10 | 914 |
| | 38 | 58 | M 30 | G 1 | G 2 | 195 | 425 | 160 | 85 | 505 | 590 | 500 | Tr 530x6 | 10 | 1 530 |
| **600** | 38 | 58 | M 30 | G 1 | G 2 | 160 | 345 | 195 | 120 | 470 | 660 | 560 | Tr 600x6 | 15 | 1 550 |

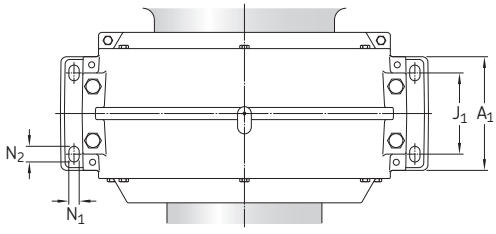
# 13.5 SDM Yankee cylinder housings
d **630 – 670** mm



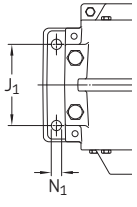




| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | mm | | | | | | | | | | |
| **630** | **SDM 31/630 F**<br>**SDM 31/630 RA** | 231/630 CAK/C3W33<br>C 31/630 KMB/HA3C4 | HM 31/630 | MS 31/630 | 510 [2] | [2] | [2] | 315 | 1 030 [2] | | 700 [2] | | 1 330 | 350 | 1 500 |
| **670** | **SDM 30/670 F**<br>**SDM 30/670 RA** | 230/670 CAK/W33<br>C 30/670 KM/HA3C4 | HM 30/670 | MS 30/670 | 420 | 300 | 330 | 230 | 980 | 1 180 | 620 | 85 | 1 260 | 300 | 1 380 |

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Contact SKF for missing values.




SDM .. RA



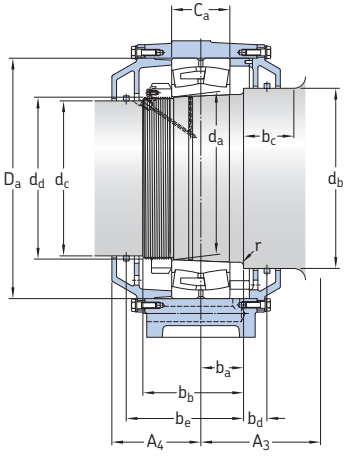

SDM .. F

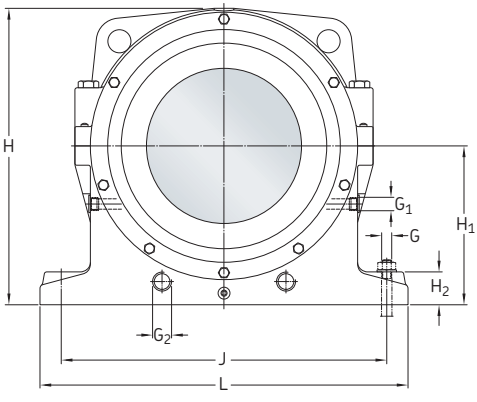
| **Shaft diameter** | **Dimensions** Housing | | | | | Shaft | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | $N_2$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | r | |
| mm | mm | | – | | | mm | | | | | | | – | mm | kg |
| **630** | 38 | 58 | M 30 | G 1 | G 2 | 1) | 1) | 1) | 1) | 1) | 710 | 590 | Tr 630x6 | 1) | 2 420 |
| **670** | 38 | 58 | M 30 | G 1 | G 2 | 190 | 395 | 150 | 65 | 475 | 750 | 630 | Tr 670x6 | 15 | 1 420 |

1) Contact SKF for missing values.

# 13.6 SDM Yankee cylinder housings, with inch connection threads

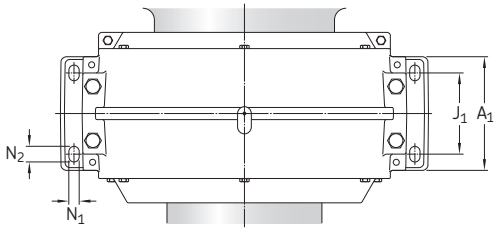
d **340 – 600** mm
*13.368 – 23.622 in.*



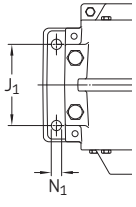




| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm/*in.* | – | – | | | mm | | | | | | | | | | |
| **340**<br>*13.368* | **SDM 3068 FN9**<br>**SDM 3068 RAN9** | 23068 CCK/W33<br>C 3068 K | N 068 | PL 68 | 260 | 195 | 210 | 133 | 520 | 650 | 345 | 75 | 760 | 170 | 860 |
| | **SDM 3168 FN9**<br>**SDM 3168 RAN9** | 23168 CCK/W33<br>C 3168 KM | N 068 | PL 68 | 320 | 210 | 255 | 190 | 580 | 740 | 400 | 80 | 800 | 180 | 900 |
| **380**<br>*14.961* | **SDM 3076 FN9**<br>**SDM 3076 RAN9** | 23076 CCK/W33<br>C 3076 K | N 076 | PL 76 | 260 | 200 | 220 | 135 | 560 | 710 | 380 | 80 | 790 | 170 | 890 |
| **420**<br>*16.535* | **SDM 3084 FN9**<br>**SDM 3084 RAN9** | 23084 CAK/W33<br>C 3084 KM | N 084 | PL 84 | 280 | 205 | 230 | 150 | 620 | 765 | 410 | 85 | 840 | 180 | 950 |
| | **SDM 3184 FN9**<br>**SDM 3184 RAN9** | 23184 CKJ/W33<br>C 3184 KM | N 084 | PL 84 | 400 | 290 | 310 | 224 | 700 | 910 | 480 | 85 | 1 045 | 280 | 1 165 |
| **460**<br>*18.110* | **SDM 3092 FN9**<br>**SDM 3092 RAN9** | 23092 CAK/W33<br>C 3092 KM/C3 | N 092 | PL 92 | 310 | 220 | 250 | 163 | 680 | 850 | 450 | 85 | 970 | 200 | 1 090 |
| **530**<br>*20.866* | **SDM 30/530 FN9**<br>**SDM 30/530 RAN9** | 230/530 CAK/W33<br>C 30/530 KM | N 530 | PL 530 | 360 | 240 | 270 | 185 | 780 | 960 | 510 | 85 | 1 090 | 240 | 1 200 |
| | **SDM 31/530 FN9**<br>**SDM 31/530 RAN9** | 231/530 CAK/W33<br>C 31/530 KM | N 530 | PL 530 | 410 | 325 | 355 | 272 | 870 | 1 065 | 550 | 85 | 1 220 | 240 | 1 360 |
| **600**<br>*23.622* | **SDM 30/600 FN9**<br>**SDM 30/600 RAN9** | 230/600 CAK/W33<br>C 30/600 KM/C3 | N 600 | PL 600 | 410 | 325 | 355 | 200 | 870 | 1 065 | 550 | 85 | 1 220 | 240 | 1 360 |

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.




SDM .. RA



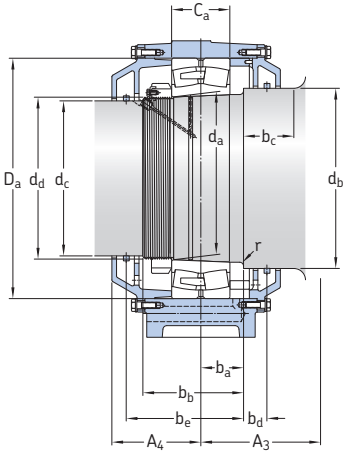

SDM .. F

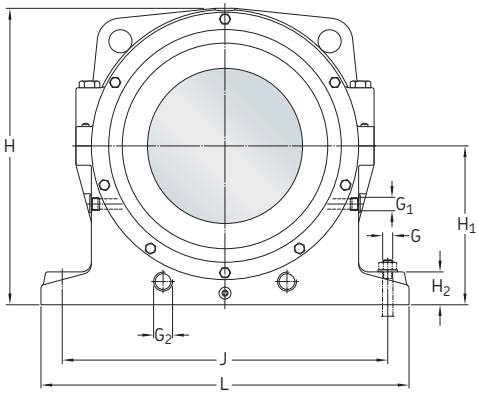
| **Shaft diameter** | **Dimensions** Housing | | | | | Shaft | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | $N_2$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | threads/ inch | r | |
| mm/*in.* | mm | | in. | | | mm | | | | | | | in. | – | mm | kg |
| **340** *13.368* | 30 | 50 | 1 UNC | NPTF 1 | NPTF 1.1/4 | 95 | 225 | 130 | 65 | 270 | 380 | 320 | 13.303 | 5 | 10 | 386 |
| | 30 | 50 | 1 UNC | NPTF 1 | NPTF 2 | 130 | 295 | 110 | 48 | 353 | 390 | 320 | 13.303 | 5 | 10 | 572 |
| **380** *14.961* | 30 | 50 | 1 UNC | NPTF 1 | NPTF 1.1/4 | 95 | 230 | 135 | 70 | 280 | 420 | 360 | 14.921 | 5 | 10 | 475 |
| **420** *16.535* | 30 | 50 | 1 UNC | NPTF 1 | NPTF 1.1/2 | 110 | 260 | 130 | 60 | 305 | 465 | 400 | 16.496 | 5 | 10 | 494 |
| | 30 | 50 | 1 UNC | NPTF 1 | NPTF 1.1/2 | 180 | 375 | 150 | 70 | 450 | 465 | 400 | 16.496 | 5 | 10 | 882 |
| **460** *18.110* | 30 | 50 | 1 UNC | NPTF 1 | NPTF 1.1/2 | 110 | 270 | 140 | 70 | 320 | 510 | 430 | 18.071 | 5 | 10 | 750 |
| **530** *20.866* | 38 | 58 | 1.1/4 UNC | NPTF 1 | NPTF 2 | 135 | 300 | 140 | 65 | 365 | 580 | 500 | 20.827 | 4 | 10 | 914 |
| | 38 | 58 | 1.1/4 UNC | NPTF 1 | NPTF 2 | 195 | 425 | 160 | 85 | 505 | 590 | 500 | 20.827 | 4 | 10 | 1 530 |
| **600** *23.622* | 38 | 58 | 1.1/4 UNC | NPTF 1 | NPTF 2 | 160 | 345 | 195 | 120 | 470 | 660 | 560 | 23.583 | 4 | 15 | 1 550 |

## 13.6 SDM Yankee cylinder housings, with inch connection threads

d **630–670** mm

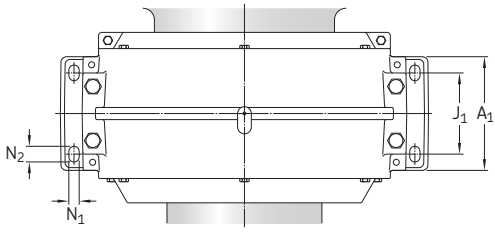
*24.803 – 26.378 in.*



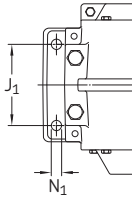




| Shaft diameter $d_a$ | Housing Designation | Appropriate parts Bearing[1] | Lock nut | Locking clip | Dimensions Housing $A_1$ | $A_3$ | $A_4$ | $C_a$ | $D_a$ | H | $H_1$ | $H_2$ | J | $J_1$ | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| mm/*in.* | – | – | | | mm | | | | | | | | | | |
| **630**<br>*24.803* | **SDM 31/630 FN9**<br>**SDM 31/630 RAN9** | 231/630 CAK/C3W33<br>C 31/630 KMB/HA3C4 | N 630 | PL 630 | 510 | [2] | [2] | 315 | 1 030 | [2] | 700 | [2] | 1 330 | 350 | 1 500 |
| **670**<br>*26.378* | **SDM 30/670 FN9**<br>**SDM 30/670 RAN9** | 230/670 CAK/W33<br>C 30/670 KM/HA3C4 | N 670 | PL 670 | 420 | 300 | 330 | 230 | 980 | 1 180 | 620 | 85 | 1 260 | 300 | 1 380 |

[1] 23(000) and 23(0)/(000) – spherical roller bearing, C... – CARB toroidal roller bearing. Only typical bearings are listed. Other bearing variants can also fit the housing.
[2] Contact SKF for missing values.



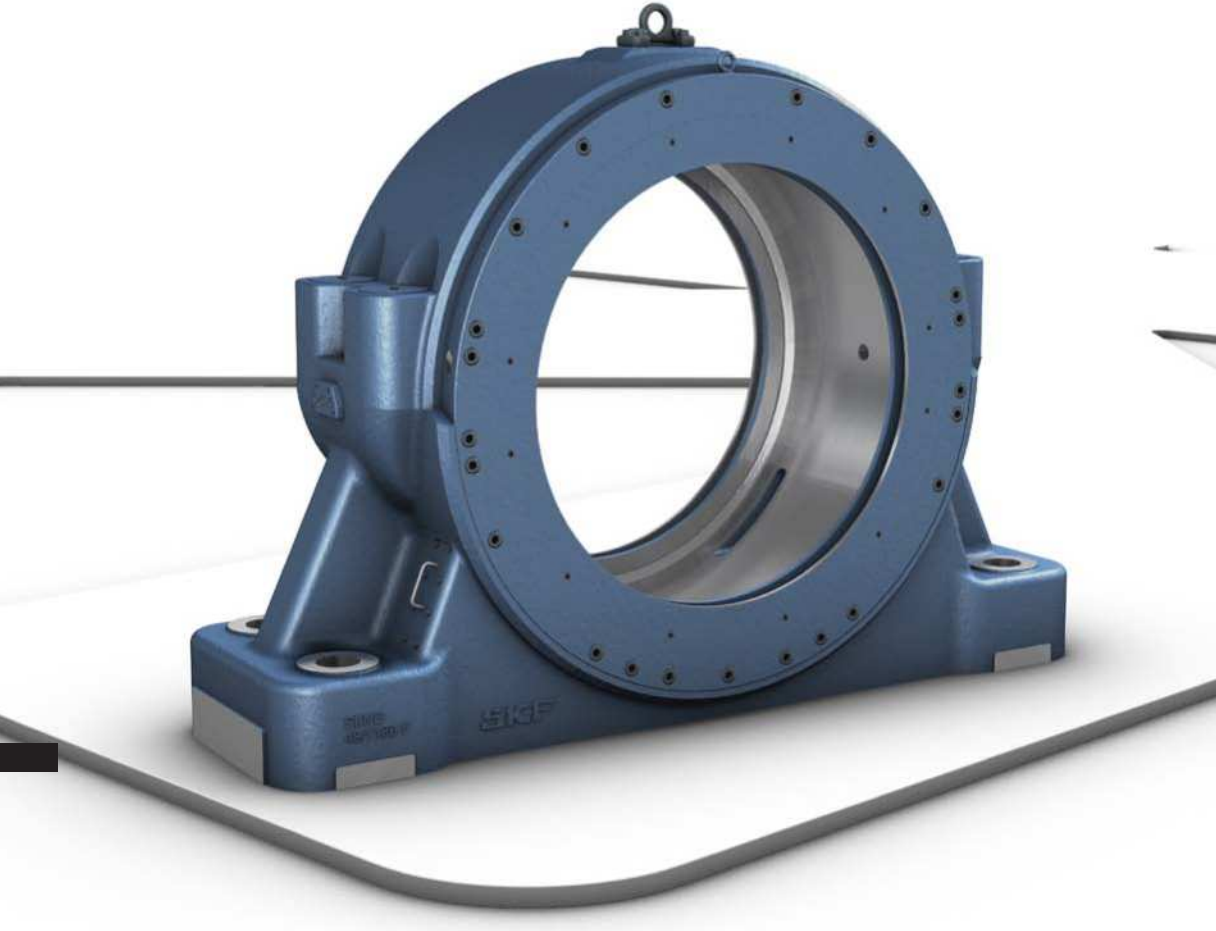

SDM .. RA




SDM .. F

| **Shaft diameter** | **Dimensions** Housing | | | | | Shaft | | | | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $N_1$ | $N_2$ | G | $G_1$ | $G_2$ | $b_a$ | $b_b$ | $b_c$ min. | $b_d$ | $b_e$ | $d_b$ | $d_c$ | $d_d$ | threads/ inch | r | |
| mm/*in.* | mm | | in. | | | mm | | | | | | | in. | – | mm | kg |
| **630** *24.803* | 38 | 58 | 1.1/4 UNC | NPTF 1 | NPTF 2 | 1) | 1) | 1) | 1) | 1) | 710 | 590 | 24.760 | 4 | 1) | 1) |
| **670** *26.378* | 38 | 58 | 1.1/4 UNC | NPTF 1 | NPTF 2 | 190 | 395 | 150 | 65 | 475 | 750 | 630 | 26.339 | 4 | 15 | 1 420 |

1) Contact SKF for missing values.


SKF

# Split plummer block housings for converters in steel making SKND series

**Bearing types**
- Spherical roller bearings
- Split spherical roller bearings
- CARB toroidal roller bearings

**Shaft diameter range**
530 to 1 180 mm

**Typical shaft-bearing combinations**
Stepped trunnion with bearing on cylindrical seat

**Seal**
Lip seal with metal protecting ring

**Lubrication**
Grease

**Material**
Spheroidal graphite cast iron

**Supersedes**
SDKD

SKND plummer (pillow) block housings are robust housings, specially designed to withstand the harsh operating conditions surrounding LD and AOD converters. Whether manufacturing LD or AOD converters, the design of each component used to support the trunnion ring is driven by the challenges of contamination, heavy radial loads, misalignment and the induced axial loads that result from expansion and contraction of the trunnion ring. There is a simple solution to the challenge of induced axial loads. It's the total trunnion solution from SKF, which consists of the unique SKF self-aligning bearing system, combined with a re-designed housing and seals. The total trunnion solution avoids induced axial loads, eliminating the need for additional components.

# Split plummer block housings for converters in steel making SKND series


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# Designations

**Designation system for SKND converter housings**

**SKND 49/950 F**

**Housing series**

| | |
|---|---|
| **SKND** | Converter housing |

**Size identification**

| | |
|---|---|
| **30** | Housing for bearings in the 230 and C30 series |
| **49** | Housing for bearings in the 249 and C49 series |
| **/530** | Bearing bore diameter [mm] |

**Suffixes**

| | |
|---|---|
| **F** | Housing for the locating bearing |
| **L** | Housing with sliding bushing |
| **VC** | Housing for CARB bearing |

**Designation system for seals**

**CS 1 000**

**Series**

| | |
|---|---|
| **CS** | Lip seal for SKND converter housings |

**Size identification**

| | |
|---|---|
| **1 000** | Sealing position shaft diameter ("$d_b$") [mm] |

# Housing design

SKND converter housings are split housings consisting of a cap and base (→ **fig. 1**) and split housing covers and seal covers on each side. The base has four bosses that have been drilled and spotfaced to provide a flat surface for washers and attachment bolts.

There are three basic housing variants:

- Housings for locating (fixed) bearings (designation suffix F)
- Housings for non-locating (free or loose) spherical roller bearings (designation suffix L)
- Housings for non-locating CARB toroidal roller bearings (designation suffix VC)

Housings for the locating bearing position are initially mounted with non-split spherical roller bearings but due to downtime costs, the original bearings are replaced by split spherical roller bearings. For this reason, SKND... F converter housings are equipped with spacers that are initially mounted on each side of the bearing inner ring (→ **fig. 2**). Then, when the bearing needs to be replaced, a split spherical roller bearing, which has a wider inner ring than the original, can be mounted without any modifications to the housing.

Housings for non-locating bearings are available for spherical roller bearings and CARB toroidal bearings(→ **fig. 3**). Housings for spherical roller bearings contain a cast iron bushing that serves as the bearing seat in the housing. The outer ring of the spherical roller bearing slides in the bushing to accommodate thermal elongation of the shaft. Housings for CARB bearings do not contain a bushing because the bearing accommodates thermal elongation of the shaft internally, as well as misalignment of the inner ring relative to the outer ring.

Fig. 1

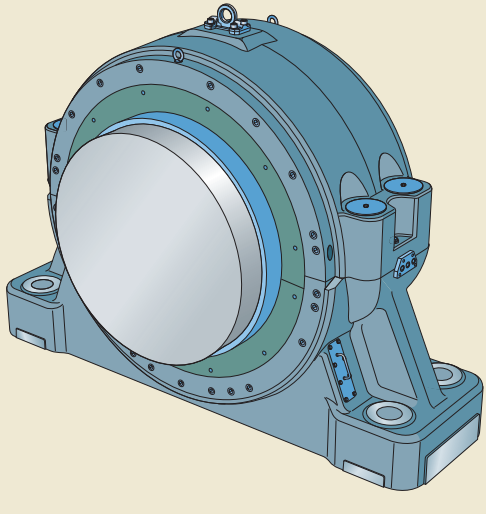
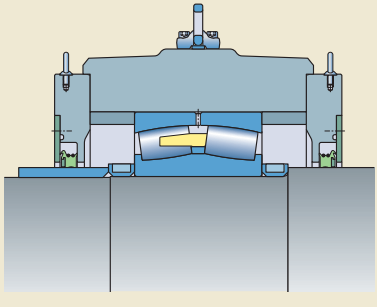
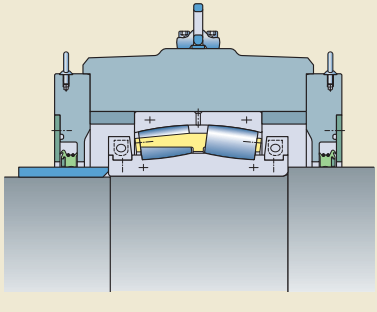


Fig. 2

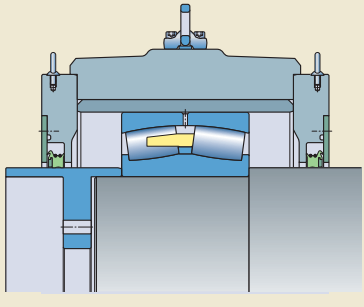


Spherical roller bearing in the locating bearing position

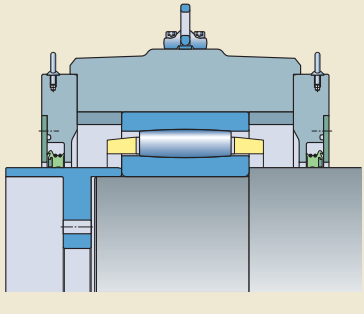


Split spherical roller bearing in the locating bearing position

Fig. 3



Spherical roller bearing in the non-locating bearing position



CARB bearing in the non-locating bearing position

## Features and benefits

SKND converter housings have the following features:

**Optimal design concerning strength and weight**

SKND housings are designed to accommodate operational converter loads. Finite element analysis and advanced modeling programs helped to maximize stiffness and reduce total weight when compared to earlier designs (→ **fig. 4**).

**Superbolt tensioners to join cap and base**

Superbolt® multi-jack tensioners provide a simple, safe and accurate way to tighten cap bolts (→ **fig. 5**). The tensioner consists of a nut with jackbolts and a separate hardened steel washer. Once the bolt, washer and Superbolt have been assembled manually, the jackbolts can be tightened with a torque wrench. A disk-shaped cover protects the Superbolt from contaminants.

**Machined pads simplify installation**

Pads on the base ends and sides (→ **fig. 4**) are machined relative to the housing bore to simplify installation and alignment.

**Designed to facilitate maintenance**

SKND converter housings have built-in features to make installation and maintenance safer and easier. This includes reducing the number of components, which is particularly important during routine maintenance operations. On request, SKF can provide detailed mounting and maintenance instructions or on-site installation.

Fig. 4

**Strengthened load zones**

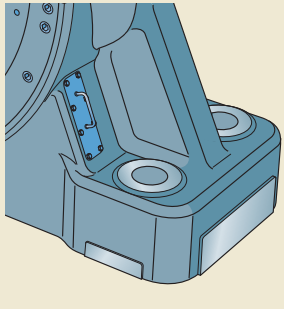
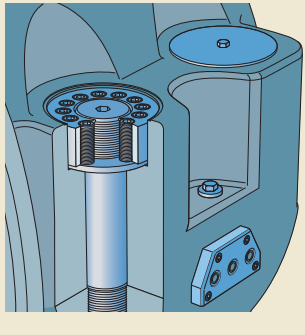


Fig. 5



### Housing material

SKND housings are made of spheroidal graphite cast iron. Cast steel is available on request.

### Paint, corrosion protection

SKND converter housings are painted blue (RAL 5007) using a solvent based acrylic paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur) (→ *Environmental conditions*, **page 36**). The paint is not affected by most lubricating and engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are treated with a solventless rust inhibitor.

### Dimension standards

The boundary dimensions of SKND housings are not standardized either nationally or internationally.

## Housing variants

In addition to the three basic housing variants (see housing design) SKND converter housings can be tailored with special features to meet the needs of a particular application. For additional information contact the SKF application engineering service.

## Sealing solutions

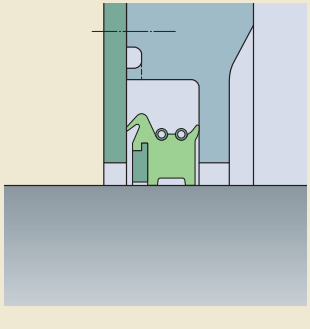
SKND housings are equipped with a heavy-duty NBR double-lip contact seal. The seal incorporates a separate metal ring to protect against hot dust and slag (→ **fig. 6**).

Two springs provide tension on the seal so that it makes positive contact with the trunnion shaft. Grease in the chamber above the seal enhances the effectiveness of the seal. When relubricating the seal, the outer lip allows excess grease and any contaminants to be purged from the seal cavity. The inner seal lip prevents contaminated grease from entering the housing.

The NBR seal is cut to the proper length to provide a tight fit on the trunnion.

The designation for lip seals is CS followed by a size code, e.g. CS 570. The size code is the shaft diameter at the seal position (attribute "$d_b$" listed in the product tables).

**Fig. 6**



# Design considerations

SKND housings for converters are application specific products. For designing converter bearing solutions, contact the SKF application engineering service. For additional information about rolling bearings, refer to the product information available online at skf.com/bearings.

## Load carrying capacity

SKND housings are designed to accommodate the same loads as the incorporated bearing. For additional information, contact the SKF application engineering service.

## Operating temperature

SKND housings and their seals are designed to withstand operating temperatures typical for converter environments. For additional information, contact the SKF application engineering service.

## Axial displacement

The values for the maximal axial displacement of the non-locating bearing are listed in the product tables. Larger axial displacement in one direction can be accommodated by offset mounting the inner and outer rings of CARB bearings.

# Lubrication

SKND converter housings are intended for grease lubrication. SKF recommends using SKF LGEV 2, which is a proven grease for converter applications. For additional information, contact the SKF application engineering service.

## Initial grease fill

If no other requirements exist, the free space in the bearing should be completely filled with grease and the free space in the housing should be filled to 60% of its volume. SKF can provide values for the grease quantities for the relevant housing size. For additional information contact the SKF application engineering service.

## Relubrication

SKND converter housings have central grease piping connectors on both sides of the housings to relubricate the bearing and seals (→ **fig. 7**). As the trunnion does not fully rotate, lubricant is provided from both sides. Lubricating the seals provides better contaminant exclusion to extend the service life of both the bearing and seal.

Housings with the suffix L, the variant with sliding bushings, have two additional relubrication holes positioned at the bottom of the housing to relubricate the sliding bushing (→ **fig. 8**).

## Grease sampling slots

SKND converter housings have two grease sampling slots on each side (→ **fig. 9**) so that samples are taken directly from the bearing load zone. The slots can also be used to purge grease from the housing without removing the housing covers and seals.

Fig. 8

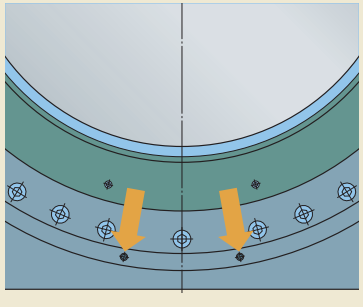


Fig. 7

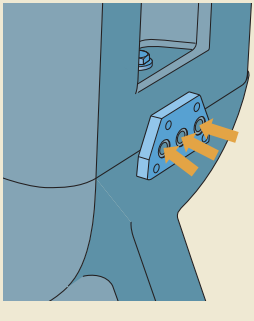
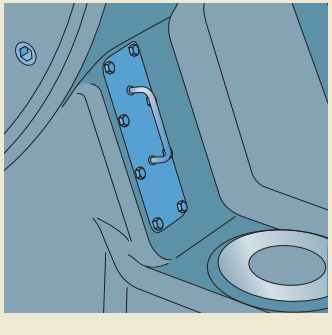


Fig. 9



# Mounting

SKND housings must be mounted and aligned properly, applying special knowledge and using the correct tools. SKF can provide detailed mounting instructions, assist during mounting or provide a complete installation service. For additional information, contact the SKF application engineering service.

## Axial support for the housing

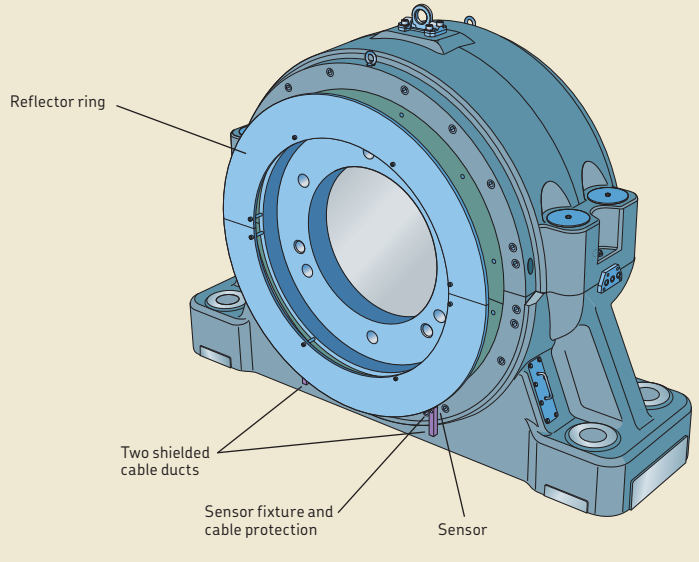
Stops should be placed against the pads on the ends and sides of the base. These stops should be sufficiently strong to accommodate operating loads acting parallel to the support surface.

# Accessories

**Axial position measuring system**

For SKND converter housings an axial position measuring system is available. The system measures and reports the position of the trunnion end at the non-locating bearing position. It consists of a radially split reflector ring mounted on the trunnion end, two ultrasonic sensors for redundant measurements, a sensor fixture and protected and shielded cabling (→ **fig. 10**).

Fig. 10



**Temperature sensor**

Temperature sensors for SKND housings can be supplied on request. For more information contact the SKF application engineering service.

**Grease pumps and lubrication systems**

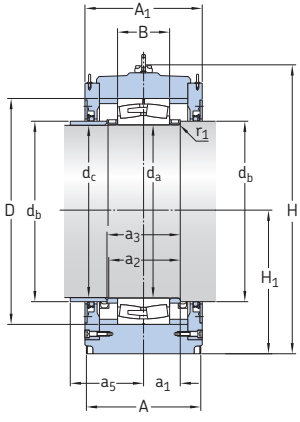
Grease pumps and automatic lubrication systems for SKND housings are available from SKF. For additional information contact the SKF application engineering service or visit skf.com/lubrication.

## Ordering information

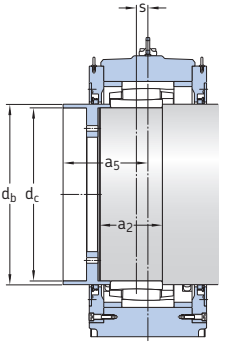
For detailed information about ordering contact the SKF application engineering service.

# 14.1 SKND plummer block housings for converters

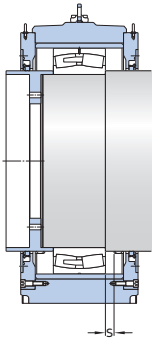
$d_a$ **530 – 1 000** mm




SKND .. F



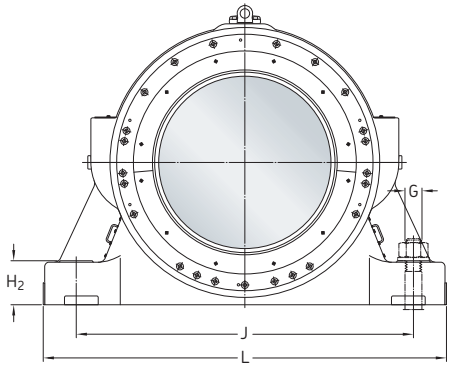

SKND .. VC

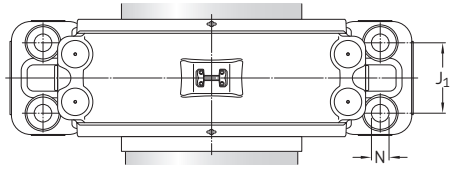



SKND .. L

| Shaft diameter | Housing designation | Appropriate parts Bearing | Replacement bearing | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | | | A | B | D | $A_1$ | H | $H_1$ | $H_2$ |
| mm | – | – | | mm | | | | | | |
| **530** | **SKND 30/530 F** | 230/530 CA/C3W33 | BSR-8024 | 400 | 185 | 780 | 475 | 935 | 450 | 140 |
| | **SKND 30/530 VC** | C 30/530 M/VB569 | – | 400 | 185 | 780 | 475 | 935 | 450 | 140 |
| **600** | **SKND 30/600 F** | 230/600 CA/C3W33 | BSR-8025 | 440 | 200 | 870 | 500 | 1 030 | 500 | 155 |
| | **SKND 30/600 VC** | C 30/600 M/VB569 | – | 440 | 200 | 870 | 500 | 1 030 | 500 | 155 |
| **670** | **SKND 30/670 F** | 230/670 CA/C3W33 | BSR-8035 | 500 | 230 | 980 | 540 | 1 170 | 570 | 175 |
| | **SKND 30/670 VC** | C 30/670 M/VB569 | – | 500 | 230 | 980 | 540 | 1 170 | 570 | 175 |
| **710** | **SKND 49/710 F** | 249/710 CA/C3W33 | BS2B 247249 | 600 | 243 | 950 | 640 | 1 250 | 600 | 185 |
| | **SKND 49/710 VC** | C 49/710 MB1/VB569 | – | 600 | 243 | 950 | 640 | 1 250 | 600 | 185 |
| | **SKND 49/710 L** | 249/710 CA/C3W33VL017 | – | 600 | 243 | 950 | 640 | 1 250 | 600 | 185 |
| **750** | **SKND 49/750 F** | 249/750 CA/C3W33 | BSR-8027 | 600 | 250 | 1 000 | 640 | 1 295 | 630 | 195 |
| | **SKND 49/750 VC** | C 49/750 MB1/VB569 | – | 600 | 250 | 1 000 | 640 | 1 295 | 630 | 195 |
| | **SKND 49/750 L** | 249/750 CA/C3W33VL017 | – | 600 | 250 | 1 000 | 640 | 1 295 | 630 | 195 |
| **800** | **SKND 49/800 F** | 249/800 CA/C3W33 | BS2B 243262 | 600 | 258 | 1 060 | 640 | [1] | 670 | 205 |
| | **SKND 49/800 VC** | C 49/800 MB1/VB569 | – | 600 | 258 | 1 060 | 640 | [1] | 670 | 205 |
| | **SKND 49/800 L** | 249/800 CA/C3W33VL017 | – | 600 | 258 | 1 060 | 640 | [1] | 670 | 205 |
| **850** | **SKND 49/850 F** | 249/850 CA/C3W33 | BSR-8028 | 600 | 272 | 1 120 | 640 | 1 430 | 700 | 220 |
| | **SKND 49/850 VC** | C 49/850 MB1/VB569 | – | 600 | 272 | 1 120 | 640 | 1 430 | 700 | 220 |
| | **SKND 49/850 L** | 249/850 CA/C3W33VL017 | – | 600 | 272 | 1 120 | 640 | 1 430 | 700 | 220 |
| **900** | **SKND 49/900 F** | 249/900 CA/C3W33 | BSR-8044 | [1] | 280 | 1 180 | [1] | [1] | 740 | [1] |
| | **SKND 49/900 VC** | C 49/900 MB1/VB569 | – | [1] | 280 | 1 180 | [1] | [1] | 741 | [1] |
| | **SKND 49/900 L** | 249/900 CA/C3W33VL017 | – | [1] | 280 | 1 180 | [1] | [1] | 742 | [1] |
| **950** | **SKND 49/950 F** | 249/950 CA/C3W33 | BSR-8029 | 690 | 300 | 1 250 | 710 | 1 630 | 780 | 250 |
| | **SKND 49/950 VC** | C 49/950 MB1/VB569 | – | 690 | 300 | 1 250 | 710 | 1 630 | 780 | 250 |
| | **SKND 49/950 L** | 249/950 CA/C3W33VL017 | – | 690 | 300 | 1 250 | 710 | 1 630 | 780 | 250 |
| **1 000** | **SKND 49/1000 F** | 249/1000 CAF/C3W33 | BSR-8045 | [1] | 315 | 1 320 | [1] | [1] | 830 | 255 |
| | **SKND 49/1000 VC** | C 49/1000 MB1/VB569 | – | [1] | 315 | 1 320 | [1] | [1] | 830 | 255 |
| | **SKND 49/1000 L** | 249/1000 CAF/C3W33VL017 | – | [1] | 315 | 1 320 | [1] | [1] | 830 | 255 |

[1] Contact SKF for missing values.



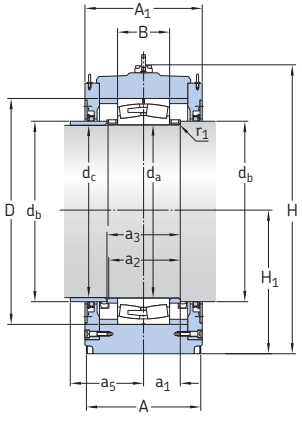




| **Shaft diameter** | **Dimensions** Housing | | | | | **Axial displacement** | **Dimensions** Shaft abutment and fillet | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | J | $J_1$ | L | G | N | s | $d_b$ | $d_c$ | $a_1$ | $a_2$ | $a_3$ | $a_5$ | $r_1$ | |
| mm | mm | | | | | mm | mm | | | | | | | kg |
| **530** | 1 050 | 240 | 1 280 | M 42 | 48 | – | 570 | 525 | 142,5 | 280 | 285 | 340 | 10 | 1) |
| | 1 050 | 240 | 1 280 | M 42 | 48 | ±35 | 570 | 530 | 92,5 | 225 | – | 340 | 5 | 1) |
| **600** | 1 150 | 270 | 1 400 | M 52 | 58 | – | 645 | 595 | 155 | 305 | 310 | 350 | 12 | 1) |
| | 1 150 | 270 | 1 400 | M 52 | 58 | ±35 | 645 | 600 | 100 | 245 | – | 350 | 5 | 1) |
| **670** | 1 300 | 310 | 1 570 | M 56 | 62 | – | 720 | 665 | 175 | 345 | 350 | 370 | 15 | 1) |
| | 1 300 | 310 | 1 570 | M 56 | 62 | ±40 | 720 | 670 | 115 | 275 | – | 370 | 6 | 1) |
| **710** | 1 375 | 325 | 1 660 | M 64 | 70 | – | 760 | 705 | 175 | 345 | 350 | 420 | 15 | 1) |
| | 1 375 | 325 | 1 660 | M 64 | 70 | ±50 | 760 | 710 | 121,5 | 330 | – | 420 | 5 | 1) |
| | 1 375 | 325 | 1 660 | M 64 | 70 | ±50 | 760 | 710 | 121,5 | 330 | – | 420 | 5 | 1) |
| **750** | 1 450 | 335 | 1 750 | M 64 | 70 | – | 800 | 745 | 177,5 | 350 | 355 | 420 | 15 | 1) |
| | 1 450 | 335 | 1 750 | M 64 | 70 | ±55 | 800 | 750 | 125 | 340 | – | 420 | 5 | 1) |
| | 1 450 | 335 | 1 750 | M 64 | 70 | ±55 | 800 | 750 | 125 | 340 | – | 420 | 5 | 1) |
| **800** | 1 550 | 345 | 1 850 | M 72 | 80 | – | 860 | 795 | 185 | 365 | 370 | 420 | 15 | 1) |
| | 1 550 | 345 | 1 850 | M 72 | 80 | ±55 | 860 | 800 | 129 | 350 | – | 420 | 5 | 1) |
| | 1 550 | 345 | 1 850 | M 72 | 80 | ±55 | 860 | 800 | 129 | 350 | – | 420 | 5 | 1) |
| **850** | 1 600 | 360 | 1 940 | M 72 | 80 | – | 900 | 845 | 192,5 | 380 | 385 | 420 | 15 | 1) |
| | 1 600 | 360 | 1 940 | M 72 | 80 | ±60 | 900 | 850 | 136 | 365 | – | 420 | 5 | 1) |
| | 1 600 | 360 | 1 940 | M 72 | 80 | ±60 | 900 | 850 | 136 | 365 | – | 420 | 5 | 1) |
| **900** | 1) | 1) | 1) | 1) | 1) | – | 960 | 895 | 195 | 385 | 390 | 1) | 15 | 1) |
| | 1) | 1) | 1) | 1) | 1) | ±60 | 960 | 900 | 1) | 1) | – | 1) | 1) | 1) |
| | 1) | 1) | 1) | 1) | 1) | ±60 | 960 | 900 | 1) | 1) | – | 1) | 1) | 1) |
| **950** | 1 820 | 390 | 2 180 | M 90 | 100 | – | 1 000 | 945 | 205 | 405 | 410 | 455 | 15 | 5 200 |
| | 1 820 | 390 | 2 180 | M 90 | 100 | ±65 | 1 000 | 950 | 150 | 355 | – | 455 | 6 | 5 100 |
| | 1 820 | 390 | 2 180 | M 90 | 100 | ±65 | 1 000 | 950 | 150 | 355 | – | 455 | 6 | 4 900 |
| **1 000** | 1 980 | 360 | 2 330 | M 90 | 100 | – | 1 065 | 995 | 225 | 445 | 450 | 1) | 15 | 1) |
| | 1 980 | 360 | 2 330 | M 90 | 100 | ±65 | 1 065 | 1 000 | 157,5 | 405 | – | 1) | 6 | 1) |
| | 1 980 | 360 | 2 330 | M 90 | 100 | ±65 | 1 065 | 1 000 | 157,5 | 405 | – | 1) | 6 | 1) |

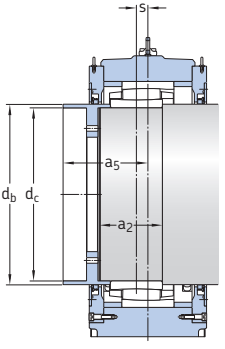
1) Contact SKF for missing values.

# 14.1 SKND plummer block housings for converters

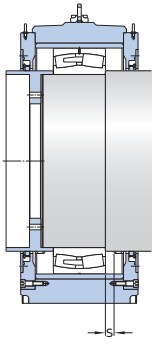
$d_a$ **1 060 – 1 180** mm




SKND .. F



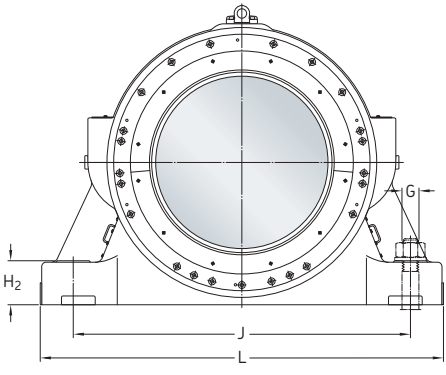

SKND .. VC

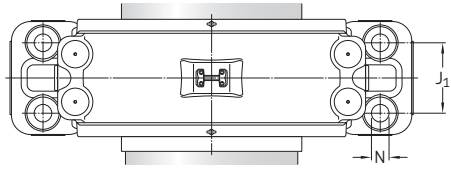



SKND .. L

| Shaft diameter | Housing designation | Appropriate parts Bearing | Replacement bearing | Dimensions Housing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A | B | D | $A_1$ | H | $H_1$ | $H_2$ |
| $d_a$ | – | – | | mm | | | | | | |
| **1 060** | **SKND 49/1060 F** | 249/1060 CAF/C3W33 | BSR-8039 | 740 | 335 | 1 400 | [1] | [1] | 880 | 275 |
| | **SKND 49/1060 VC** | C 49/1060 MB1/VB569 | – | 740 | 335 | 1 400 | [1] | [1] | 880 | 275 |
| | **SKND 49/1060 L** | 249/1060 CAF/C3W33VL017 | – | 740 | 335 | 1 400 | [1] | [1] | 880 | 275 |
| **1 120** | **SKND 49/1120 F** | 249/1120 CAF/C3W33 | BSR-8040 | 780 | 335 | 1 460 | 760 | 1 900 | 920 | 285 |
| | **SKND 49/1120 VC** | C 49/1120 MB1/VB569 | – | 780 | 335 | 1 460 | 760 | 1 900 | 920 | 285 |
| | **SKND 49/1120 L** | 249/1120 CAF/C3W33VL017 | – | 780 | 335 | 1 460 | 760 | 1 900 | 920 | 285 |
| **1 180** | **SKND 49/1180 F** | 249/1180 CAF/C3W33 | BSR-8031 | 780 | 355 | 1 540 | 800 | 1 970 | 970 | 300 |
| | **SKND 49/1180 VC** | C 49/1180 MB1/VB569 | – | 780 | 355 | 1 540 | 800 | 1 970 | 970 | 300 |
| | **SKND 49/1180 L** | 249/1180 CAF/C3W33VL017 | – | 780 | 355 | 1 540 | 800 | 1 970 | 970 | 300 |

[1] Contact SKF for missing values.




| **Shaft diameter** | **Dimensions** Housing | | | | | **Axial displace-ment** | **Dimensions** Shaft abutment and fillet | | | | | | | **Mass** Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | J | $J_1$ | L | G | N | s | $d_b$ | $d_c$ | $a_1$ | $a_2$ | $a_3$ | $a_5$ | $r_1$ | |
| mm | mm | | | | | mm | mm | | | | | | | kg |
| **1 060** | 2 000 | 460 | 2 450 | M 100 | 110 | – | 1 110 | 1 055 | 237,5 | 470 | 475 | [1] | 15 | [1] |
| | 2 000 | 460 | 2 450 | M 100 | 110 | ±75 | 1 110 | 1 060 | 167,5 | 420 | – | [1] | 6 | [1] |
| | 2 000 | 460 | 2 450 | M 100 | 110 | ±75 | 1 110 | 1 060 | 167,5 | 420 | – | [1] | 6 | [1] |
| **1 120** | 2 150 | 460 | 2 560 | M 100 | 110 | – | 1 195 | 1 115 | 237,5 | 470 | 475 | 480 | 15 | 7 500 |
| | 2 150 | 460 | 2 560 | M 100 | 110 | ±75 | 1 195 | 1 120 | 167,5 | 420 | – | 480 | 6 | 7 400 |
| | 2 150 | 460 | 2 560 | M 100 | 110 | ±70 | 1 195 | 1 120 | 167,5 | 420 | – | 480 | 6 | 7 100 |
| **1 180** | 2 300 | 480 | 2 750 | M 110 | 120 | – | 1 230 | 1 175 | 250 | 495 | 500 | 500 | 15 | 8 700 |
| | 2 300 | 480 | 2 750 | M 110 | 120 | ±80 | 1 230 | 1 180 | 177,5 | 430 | – | 500 | 6 | 8 500 |
| | 2 300 | 480 | 2 750 | M 110 | 120 | ±70 | 1 230 | 1 180 | 177,5 | 430 | – | 500 | 6 | 8 200 |

[1] Contact SKF for missing values.


SKF

# Trunnion bearing housings for grinding mills FSDR .. K series

**Bearing types**
- Spherical roller bearings

**Bearing dimension series**
- 39, 48 and 49

**Shaft diameter range**
- 825 to 1 460 mm

**Typical bearing-shaft combinations**
- Stepped shaft with bearing on an unthreaded sleeve

**Seals**
- Labyrinth, V-ring, PTFE strip

**Lubrication**
- Grease

**Materials**
- Grey cast iron
- Spheroidal graphite cast iron

**Mounting**
- Four-bolt mounting

**Compliance to standards**
- Not standardized

FSDR .. K housings are large low-weight plummer (pillow) block housings designed specifically for grinding mills. They operate under arduous conditions in highly contaminated environments. With their highly effective sealing solution, they enable the incorporated bearing to achieve maximum service life by preventing the ingress of contaminants and enabling easy access for inspection and maintenance when necessary.

# Trunnion bearing housings for grinding mills FSDR .. K series


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# Designations

**Designation system for FSDR .. K trunnion bearing housings**

FSDR_ 39/1060 K/P45

**Series**

**FSDR** Trunnion bearing housing for grinding mills

**Material**

**–** Grey cast iron
**D** Spheroidal graphite cast iron

**Size identification**

**../..** Bearing dimension series / bearing bore diameter [mm]

**Suffixes**[1)]

**–** Housing with metric threads and G threads for grease fittings
**K** Housing for bearings with a tapered bore on a split unthreaded sleeve and a stepped shaft
**N9** Housing with inch threads and NPTF threads for grease fittings
**/P...** Painting variant according to customer specification (P01 to P999)

1) When multiple suffixes are used, they are listed in the same order as shown here.

**Designation system for V-ring seals**

1280 VRME R

**Size identification**

**...** Diameter of the V-ring seal

**Design**

**VRME** V-ring seal with longer lip to allow larger axial movements

**Material**

**R** Acrylonitrile-butadiene rubber (NBR)

# Standard housing design

FSDR .. K plummer (pillow) block housings are split housings consisting of a cap and base, and two covers (→ **fig. 1**). The cap has two integral flanges, with a hole cast into each one. The base has four cast holes for attachment bolts. The split covers, which contain an eye bolt in each half, are attached to the housing body with eight bolts. The labyrinth rings are supplied with eye bolts that can be removed after mounting.

## Features and benefits

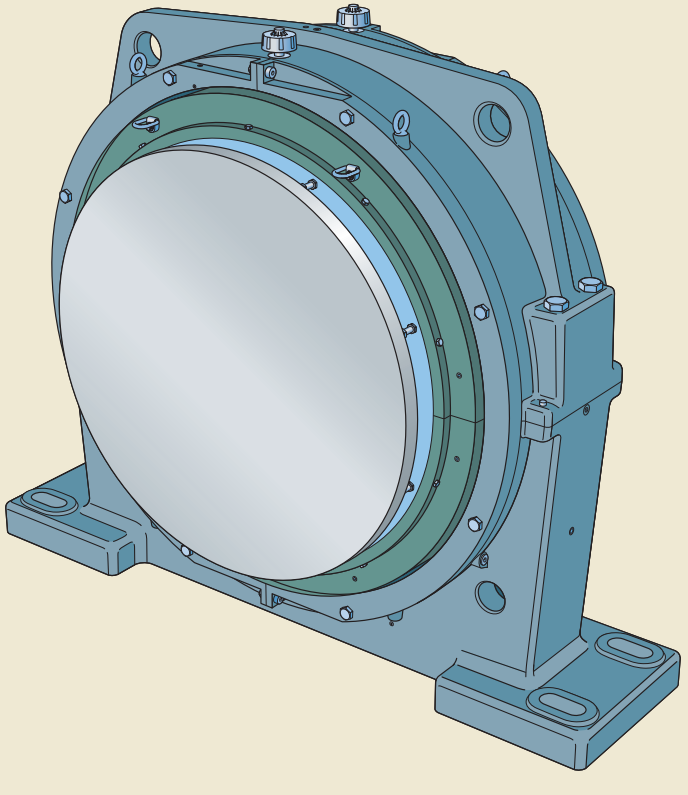
FSDR .. K housings have the following features and benefits:

### Superior sealing solution

The SKF multi-stage labyrinth seal, which is standard for all trunnion bearing housings, is a highly effective sealing solution that can prevent the ingress of contaminants even during high-pressure wash downs.

The inclined outside face of the labyrinth ring helps to prevent water and contaminants from entering the labyrinth (→ **fig. 2**).

Fig. 1



**Reduced grease consumption**

Trunnion bearing housings typically require large amounts of grease at frequent intervals, to purge contaminants from the bearing and housing. With SKF grinding mill housings however, the highly effective multi-stage labyrinth seal makes it possible to extend relubrication intervals, helps to eliminate overgreasing and reduce grease consumption.

**Easy access for inspection and maintenance**

The covers and labyrinth rings are split for easy removal. This enables the housing, bearing and seals to be inspected, or replaced, and used grease to be removed, without dismounting the housing.

**Machined base ends**

The base ends of FSDR .. K housings are machined to make alignment easier and to provide a flat surface for stops (→ **fig. 3**).

**Ventilating valves**

Ventilating valves are supplied with the housing (→ **fig. 4**). They help to prevent high pressures, which can be caused by heat, from building up in the housing. The valves have a 2 µm dirt filter.

**Fig. 2**

**Sealing solution with one V-ring seal**

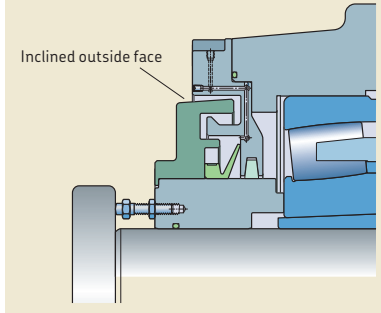



**Fig. 3**

**Machined base ends**

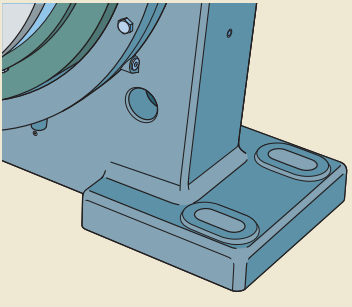
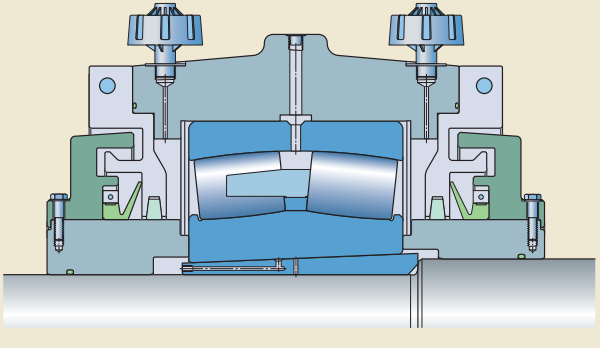


**Fig. 4**



## Housing material

FSDR .. K housings are made of grey cast iron.

### Paint, corrosion protection

FSDR .. K housings are painted black (RAL 9005) using a solvent based acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected with a solventless rust inhibitor.

## Dimension standards

The boundary dimensions of FSDR .. K housings are not standardized either nationally or internationally.

# Housing variants

In addition to standard design FSDR .. K housings, a number of variants are also available.

### Housing material

For applications where extra strength is needed, the housings are available in spheroidal graphite cast iron, designation FSDRD .. K.

### Inch thread connections

FSDR .. K housings can be supplied with UNC or NPTF threads for grease fittings. The housings are identified by the designation suffix N9, e.g. FSDR 39/1060 KN9. For additional information, contact the SKF application engineering service.

### Special paint

FSDR .. K housings can be supplied painted according to customer specification. The housings are identified by the designation suffix P, followed by a two or three-digit number, e.g. FSDR 39/1060 K/P45.

# Sealing solutions

FSDR .. K housings are designed for two sealing solutions (→ **fig. 5**):

- a labyrinth seal in combination with one V-ring seal and a PTFE strip, for all housings except size 49/1320
- a labyrinth seal in combination with two V-ring seals, for housings size 49/1320

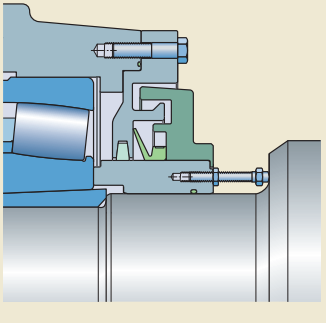
**Table 1**, **page 646**, provides an overview of the characteristics and suitability of both sealing solutions. Additional information is provided in the following text. This information should be used as a guideline, which cannot substitute for testing a seal in its application.

The labyrinth seal consists of two parts: the housing cover and a labyrinth ring. Both are split. The cover is bolted to the housing body and does not rotate. The labyrinth ring is bolted onto a shaft sleeve and rotates with the shaft. The V-ring seals have a long seal lip that seals axially against the cover. They are located radially by steel clamping bands and axially by the labyrinth ring. For housings with one V-ring seal, a PTFE strip, mounted in a groove in the cover, provides additional protection.

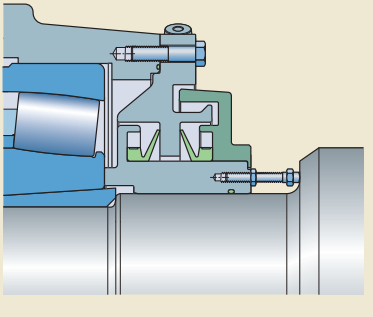
Labyrinth seals are supplied together with the housing, but can also be ordered separately. Contact SKF for additional information. Shaft sleeves are also supplied with the housing.

**NOTE:** V-ring seals and band clamps must be ordered separately. Appropriate V-ring seals and band clamps are listed in **table 2**, **page 647**.

**Fig. 5**



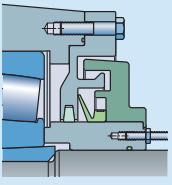
Labyrinth seal with one V-ring seal

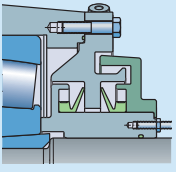


Labyrinth seal with two V-ring seals

Table 1

**Seals for FSDR .. K trunnion bearing housings for grinding mills**





| Seal | | |
|---|---|---|
| Type | labyrinth seal with 1 V-ring seal | labyrinth seal with 2 V-ring seals |
| Housing size range | 39/850, 39/1060, 39/1180 and 48/1500 | 49/1320 |
| Material | | |
| labyrinth seal | grey cast iron | grey cast iron |
| V-ring seals | rubber (NBR) | rubber (NBR) |
| PTFE strip | PTFE impregnated fibres (ramie) | n/a |
| **Application conditions and requirements** | | |
| Temperature [°C] | –40 to +100 | –40 to +100 |
| Temperature [°F] | –40 to +210 | –40 to +210 |
| Max. circumferential speed [m/s] | 2 | 10 |
| Max. misalignment [°] | 0,5 | 0,5 |
| Low friction | + | ++ |
| Axial shaft displacement [mm] | ± 10 | ± 10 |
| Replacement | ++ | ++ |
| Shaft tolerance class | h9Ⓔ | h9Ⓔ |
| Shaft roughness $R_a$ [µm] | ≤ 3,2 | ≤ 3,2 |
| **Sealing suitability** | | |
| Dust | ++ | ++ |
| Fine particles | ++ | ++ |
| Coarse particles | ++ | ++ |
| Chips | ++ | ++ |
| Liquids when sprayed | ++ | ++ |
| Direct sunlight | ++ | ++ |

Symbol:
- n/a not applicable
- ++ very suitable
- + suitable
- – limited suitability
- –– unsuitable

**Table 2**

**Clamping bands for V-ring seals**

| **Housing**<br>Size | **V-ring seal**<br>Designation | **Clamping bands**<br>Qty. | <br>Designation |
|---|---|---|---|
| **FSDR 39/850 K** | 960 VRME R | 2<br>2<br>2 | RM 15 Art. No. 25538099 Length 1500<br>RM 10 Art. No. 25537099 Length 1000<br>RM ADJUST Art. No. 25539099 Length 600 |
| **FSDR 39/1060 K** | 1180 VRME R | 4<br>2 | RM 15 Art. No. 25538099 Length 1500<br>RM ADJUST Art. No. 25539099 Length 700 |
| **FSDR 39/1180 K** | 1280 VRME R | 4<br>2 | RM 15 Art. No. 25538099 Length 1500<br>RM 10 Art. No. 25537099 Length 1000 |
| **FSDR 49/1320 K** | 1425 VRME R | 12 | RM 15 Art. No. 25538099 Length 1500 |
| **FSDR 48/1500 K** | 1575 VRME R | 6<br>2 | RM 15 Art. No. 25538099 Length 1500<br>RM ADJUST Art. No. 25539099 Length 600 |

# Design considerations

For general information about design considerations, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)
- *Axial load carrying capacity for bearings on a sleeve* (→ **page 44**)

For additional information about rolling bearings, refer to the product information available online at skf.com/bearings.

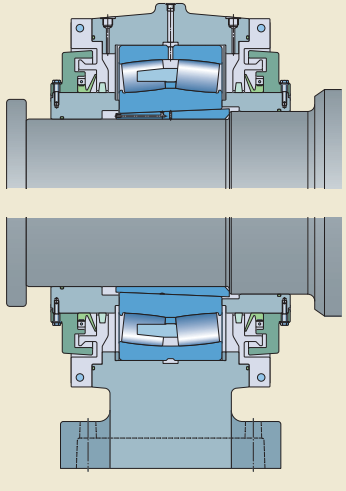
## Typical shaft-bearing combinations

FSDR .. K housings accommodate bearings with a tapered bore on an unthreaded sleeve on stepped shafts (→ **fig. 6**).

## Locating and non-locating bearing positions

FSDR .. K housings can be used for both the locating and non-locating bearing positions.

Fig. 6



The housings are machined standard for bearings in the non-locating position. The bearing seat is sufficiently wide to allow axial displacement of the bearing. The seat tolerance provides a loose fit for the bearing even if there is a temperature difference between the bearing outer ring and housing.

Bearings in the locating position must be secured in the housing on both sides with locating rings. These are supplied with the housings.

## Load carrying capacity

FSDR .. K housings are intended for loads acting perpendicularly toward the support surface as well as the forces created in the process. In cases like this, the housing can withstand the same loads as the bearing. If loads acting in other directions occur, contact the SKF application engineering service.

### Additional housing support

As the housings are subjected to loads acting parallel to the support surface, a stop must be provided to counter the load. The housings can be secured to the support with keys or welded stops.

The stop should be sufficiently strong to accommodate the loads acting parallel to the support surface.

## Operating temperature

The permissible operating temperature is limited by the seals (→ **table 1**, **page 646**). For temperature limits of SKF bearings and lubricants, refer to the product information available online at skf.com/bearings.

The housing material does not have any additional temperature limits, except for very low temperatures where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C (*175 °F*) material temperature or 100 °C (*210 °F*) ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

The seals limit the permissible operating speed. Speed limits for the seals are provided in **table 1** on **page 646**.

## Shaft specifications

The bearing seat should be machined according to the requirements for bearings mounted on an adapter sleeve (→ *Specifications for shafts and housing support surfaces*, **page 45**), i.e. with a shaft tolerance class h9 Ⓔ and a cylindricity tolerance of IT5/2. The seal counterface should also comply with these specifications.

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers in accordance with ISO 7089 or 7090. If the load does not act perpendicularly toward the base, it may be necessary to use stronger 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 3**). They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value provides sufficient anchoring. Make sure that attachment bolts, stops, and a sufficiently strong support can accommodate all occurring loads.

**Table 3**

**Torques values for cap bolts and attachment bolts**

| Housing | Cap bolts | | Attachment bolts | |
|---|---|---|---|---|
| Size | Size | Tightening torque | Size | Tightening torque[1] |
| – | – | Nm | – | Nm |
| **FSDR 39/850 K** | M 36 | 600 | M 48 | 5 450 |
| **FSDR 39/1060 K** | M 36 | 600 | M 52 | 6 990 |
| **FSDR 39/1180 K** | M 36 | 600 | M 52 | 6 990 |
| **FSDR 49/1320 K** | M 42 | 850 | M 52 | 6 990 |
| **FSDR 48/1500 K** | M 42 | 850 | M 52 | 6 990 |

[1] Recommended by bolt manufacturers.

# Lubrication

FSDR .. K housings are intended for grease lubrication. The lubricant should be selected based on the operating conditions of the bearings. For additional information about lubricant selection, refer to the product information available online at skf.com/bearings.

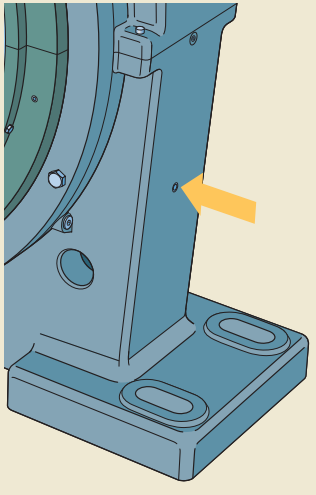
## Initial grease fill

If no other requirements exist, the free space in the bearing as well as the gaps of the labyrinth seals should be completely filled with grease. The seal counterfaces should be thoroughly greased. No extra grease is required for the housing.

During start up, additional grease (typically 20 to 60 kg, depending on bearing size) should be added to the bearing over a 30-minute period via the annular groove and relubrication holes in the bearing outer ring.

Detailed information about the initial grease fill is provided in the mounting instructions, which are available on request.

Fig. 7



## Relubrication

The spherical roller bearings used in FSDR .. K housings can be relubricated via two drilled and tapped G 3/8 holes in the housing base (→ **fig. 7**). SKF recommends using an automatic lubrication system like the SKF MultiLube pumping unit (→ *Centralized lubrication systems*, **page 48**).

Relubrication instructions (which form part of the mounting instructions for the housings) are available on request.

### Relubricating the seals

FSDR .. K housings with one V-ring per side have two drilled and tapped G 1/8 holes in the cover on each side of the housing. Grease introduced in either of the holes will relubricate both the V-ring and the labyrinth seal. Choose the hole that is most convenient (→ **fig. 8**).

FSDR .. K housings size 49/1320 with two V-rings per side have three drilled and tapped holes in the cover on each side of the housing. The hole that supplies grease to the space between the two V-rings has two alternative grease inlets (both G 3/8). Choose the one that is most convenient (→ **fig. 9**). The single hole (G 1/8) supplies lubricant to the labyrinth seal (→ **fig. 10**).

### Renewal

Used grease should be replaced with fresh grease on a regular basis, typically every two to three years. Grease samples should be drawn and analyzed, and the interval adjusted accordiningly. To simplify the renewal process, the covers and labyrinth rings are split and can be removed without removing the cap.

**Fig. 8**

**Relubricating the labyrinth between the outer seal and cover (one V-ring)**

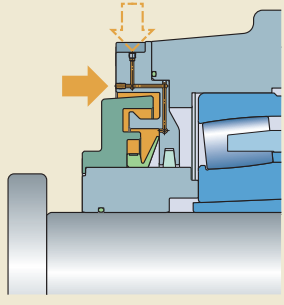


**Fig. 9**

**Relubricating the space between two V-rings**

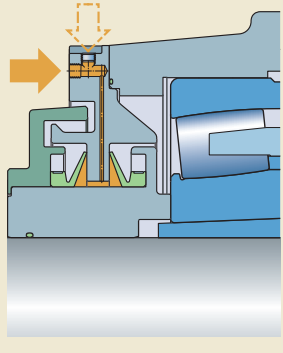
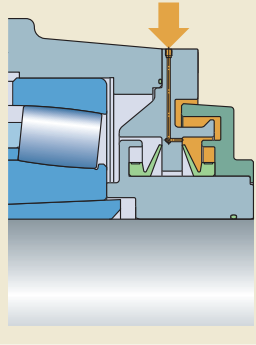


**Fig. 10**

**Relubricating the labyrinth between the outer seal and cover (two V-rings)**



# Mounting

FSDR .. K housings must be mounted properly using the appropriate tools and state of the art mechanical mounting methods.

Mounting instructions for the housings are available on request.

## Torque specifications

The M 24 cover bolts supplied with all housings should be tightened to 665 Nm. The cover bolts are in accordance with ISO 4014.

The M 12 labyrinth ring bolts (in accordance with ISO 4017) supplied with the labyrinth seals should be tightened to 80 Nm.

Cap bolts should be tightened to the torque values listed in **table 3** on **page 649**.

For information about attachment bolts, refer to *Attachment bolt recommendations* on **page 649**.

## Ventilating valves

The ventilating valves should be installed on top of the housing cap for use when the housing is in operation. The holes for the valves are plugged on delivery.

## Eye bolts and lifting holes

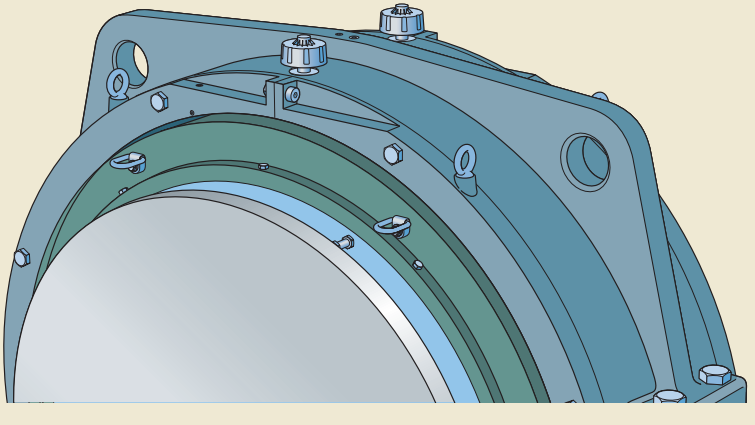
FSDR .. K housings have a cast hole in each integral flange on the cap and one M 16 eye bolt in each cover half (→ **fig. 11**) for safe, easy handling. The labyrinth rings are equipped with adjustable eye bolts (VLBG 0.63t M 10 with bolt, except for size 49/1320, which has M 10 eye bolts) that can be removed after mounting.

## Supporting the housing

FSDR housings require two stops, one on each side of the housing, to accommodate loads acting parallel to the housing support surface.

**Fig. 11**

**Eye bolts**



## Condition monitoring

FSDR .. K grinding mill housings have seven drilled and tapped M8 holes for condition monitoring sensors (→ **fig. 12**).

**Position 1** and **position 2** (on both sides of the housing) are perpendicular to the shaft.

**Positions 3** and **4** (both positions available on both sides of the housing) are parallel to the shaft.

All positions are in accordance with ISO 10816-1.

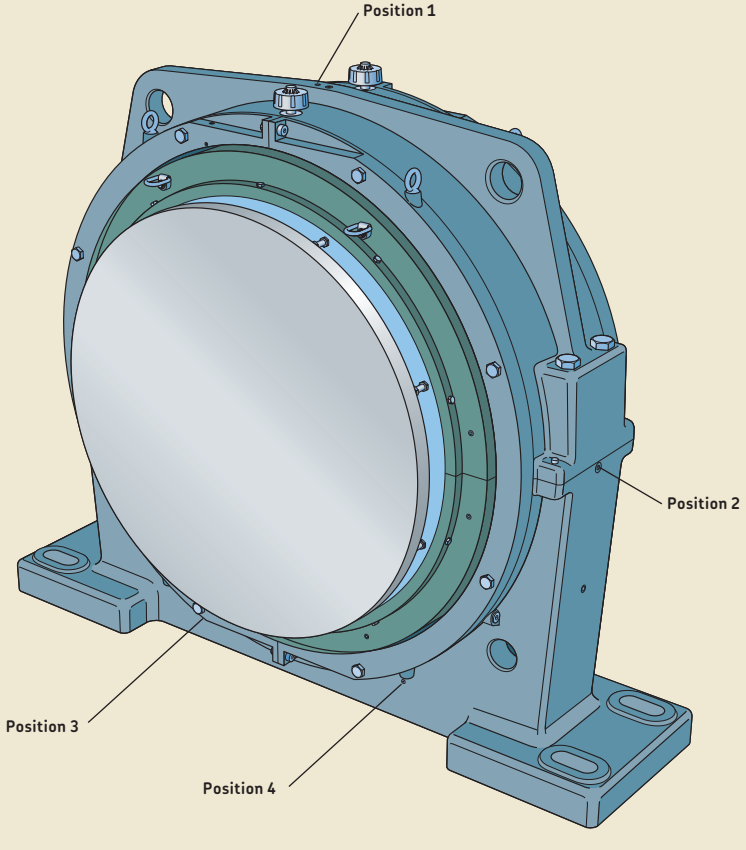
## Accessories

The following accessories are available for FSDR .. K housings:

- Automatic lubricator: SKF MultiLube pumping unit
- Condition monitoring sensors

For additional information, refer to the section *SKF tools and products* (→ **page 47**).

Fig. 12



# Ordering information

FSDR .. K housings are supplied with the following components:

- housing
- 2 covers, including O-rings and 8 hexagon head bolts per cover (16 in total)
- 2 labyrinth rings, including 10 hexagon head bolts per labyrinth ring (20 in total)
- 2 shaft sleeves, including O-rings
- 2 locating rings
- 2 ventilating valves
- 2 PTFE strips (for all housings except size 49/1320)

The bearings, bearing sleeves, V-ring seals, and clamping bands must be ordered separately.

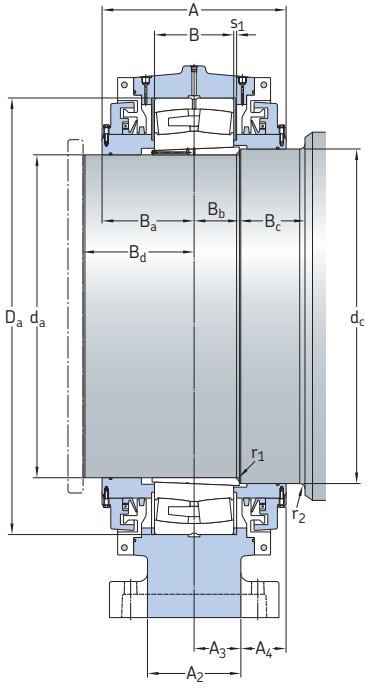
**Order example**

A trunnion bearing housing (with metric thread connections) is required for a 239/1060 CAK/W33 spherical roller bearing. The following items should be ordered:

- 1 housing FSDR 39/1060 K
- 1 bearing 239/1060 CAK/W33
- 1 bearing sleeve KOH 39/1060
- 2 V-ring seals 1180 VRME R
- 4 clamping bands
  RM 15 Art. No. 25538099 Length 1500
- 2 clamping bands
  RM ADJUST Art. No. 25539099 Length 700

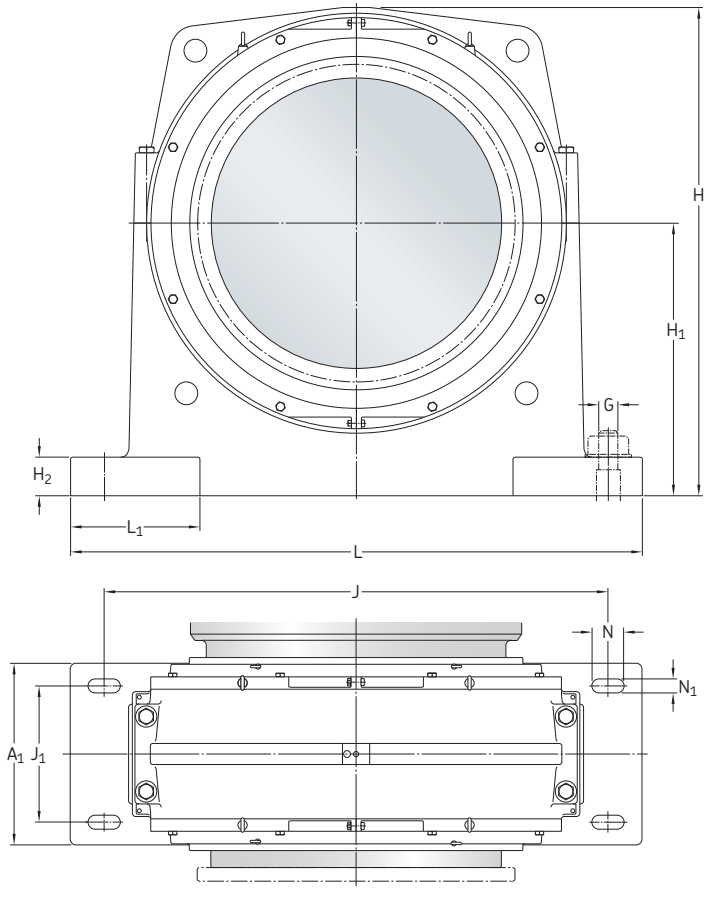
15

# 15.1 FSDR .. K grinding mill housings
$d_a$ **825 – 1 460** mm




| **Shaft diameter** $d_a$ | **Housing** Designation | **Appropriate parts** Bearing | Unthreaded sleeve | V-ring seal | **Dimensions** Housing A | $A_1$ | $A_2$ | $A_3$ | $A_4$ |
|---|---|---|---|---|---|---|---|---|---|
| mm | – | – | | | mm | | | | |
| **825** | **FSDR 39/850 K** | 239/850 CAK/W33 | KOH 39/850 | 960 VRME R[1] | 510 | 450 | 235 | 117,5 | 137,5 |
| **1 030** | **FSDR 39/1060 K** | 239/1060 CAKF/W33 | KOH 39/1060 | 1180 VRME R[1] | 545 | 560 | 265 | 132,5 | 140 |
| **1 150** | **FSDR 39/1180 K** | 239/1180 CAKF/W33 | KOH 39/1180 | 1280 VRME R[1] | 632 | 560 | 285 | 142,5 | 173,5 |
| **1 280** | **FSDR 49/1320 K** | 249/1320 CAK30F/W33 | 236696-1 | 1425 VRME R[2] | 810 | 800 | 440 | 220 | 185 |
| **1 460** | **FSDR 48/1500 K** | 248/1500 CAK30FA/W20 | 236558 | 1575 VRME R[1] | 585 | 800 | 360 | 180 | 112,5 |

[1] Two seals are required for each housing.
[2] Four seals are required for each housing.




| Shaft diameter | Dimensions Housing | | | | | | | | | | | | | Dimensions Shaft abutment and fillet | | | | | | | Mass Housing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $D_a$ | B | H | $H_1$ | $H_2$ | J | $J_1$ | L | $L_1$ | N | $N_1$ | $s_1$ | G | $d_c$ | $B_a$ [1] | $B_b$ [1] | $B_c$ | $B_d$ [1] | $r_1$ | $r_2$ | |
| mm | | | | | | | | | | | | | | mm | | | | | | | kg |
| **825** | 1 120 | 200 | 1 420 | 700 | 100 | 1 500 | 290 | 1 715 | 430 | 125 | 55 | 10 | 48 | 860 | 255 | 118 | 252 | 310 | 10 | 20 | 2 300 |
| **1 030** | 1 400 | 250 | 1 700 | 870 | 120 | 1 850 | 370 | 2 105 | 520 | 132 | 62 | 10 | 52 | 1 070 | 272,5 | 147 | 233 | 360 | 12 | 15 | 3 400 |
| **1 150** | 1 540 | 272 | 1 830 | 950 | 110 | 2 000 | 370 | 2 250 | 500 | 142 | 62 | 10 | 52 | 1 190 | 316 | 155 | 245 | 380 | 12 | 20 | 3 500 |
| **1 280** | 1 720 | 400 | 2 150 | 1 200 | 170 | 2 220 | 600 | 2 520 | 570 | 142 | 62 | 10 | 52 | 1 320 | 405 | 217 | 283 | 500 | 12 | 20 | 6 590 |
| **1 460** | 1 820 | 315 | 2 225 | 1 200 | 170 | 2 320 | 600 | 2 620 | 620 | 142 | 62 | 10 | 52 | 1 500 | 292,5 | 173 | 182 | 355 | 8 | 25 | 6 650 |

[1] Dimension varies depending on the drive-up of the bearing onto the sleeve.



# Metric roller bearing units SYNT and FYNT series (SKF ConCentra)

**Bearing types**
- Spherical roller bearings

**Bearing dimension series**
- 222

**Shaft diameter range**
- 35 to 100 mm

**Typical shaft-bearing combinations**
- Plain shaft with SKF ConCentra sleeve

**Seals**
- Double-lip
- Labyrinth
- Heavy-duty

**Lubrication**
- Grease

**Mounting**
- Two-bolt mounting (plummer block housings)
- Three- or four-bolt mounting (flanged housings)

**Materials**
- Grey cast iron

**Compliance to standards**
- ISO 113 (two-bolt plummer block housings)

**Supersedes**
- SYT series

SKF ConCentra roller bearing units are robust, ready-to-mount units that are assembled, lubricated and sealed at the factory for maximum service life. With their simple and safe installation, easy alignment and reliable locking technology, they are an excellent alternative to sleeve-mounted bearings in split housings.

# Metric roller bearing units SYNT and FYNT series (SKF ConCentra)


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# Designations

**Designation system for metric SKF ConCentra roller bearing units**

SYNT 45 L W

**Series**

| | |
|---|---|
| **SYNT** | Bearing unit with a plummer block housing |
| **FYNT** | Bearing unit with a flanged housing [1] |

**Size identification**

| | |
|---|---|
| **...** | Shaft diameter [mm] |

**Type of arrangement**

| | |
|---|---|
| **F** | Bearing unit for the locating bearing position |
| **L** | Bearing unit for the non-locating bearing position |

**Variant**

| | |
|---|---|
| **–** | General (with double-lip seals) |
| **TS** | High-speed (with labyrinth seals) |
| **TF** | Extreme environment (with heavy-duty radial shaft seals) |
| **W** | Relubrication-free (with double-lip seals) |

[1] Only available in the general variant.

**Designation system for end covers**

ECY 211

**Series**

| | |
|---|---|
| **ECY** | End cover for SKF ConCentra roller bearing units |

**Size identification**

| | |
|---|---|
| **...** | Last three digits of the designation of the incorporated bearing |

# Standard bearing unit design

SKF ConCentra roller bearing units consist of a non-split housing, an SKF spherical roller bearing on an SKF ConCentra stepped sleeve, seals and grease. Bearing units for metric shafts are available in two series, depending on the housing design. Bearing units in the SYNT series have a non-split plummer (pillow) block housing with two holes cast into the base for attachment bolts (→ **fig. 1**). Bearing units in the FYNT series have a flanged housing and are produced in two designs (→ **fig. 2**):

- For shaft diameters from 35 to 60 mm, the housings have a triangular flange and three drilled holes for attachment bolts.
- For shaft diameters from 65 to 100 mm, the housings have a square flange and four drilled holes for attachment bolts.

The bearings used in SKF ConCentra roller bearing units are upgraded SKF Explorer spherical roller bearings in the 222 series. The stepped sleeve has inclined serrations that match the profile of the bearing bore. The bearing unit also contains a mounting collar, washer, back-up collar and wave spring. The mounting collar is equipped with grub (set) screws that are positioned at an angle (not horizontal) to facilitate mounting and dismounting (→ **fig. 3**).

**Fig. 1**

**SYNT series**

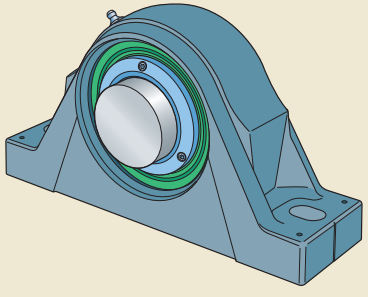
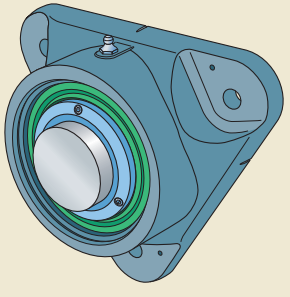
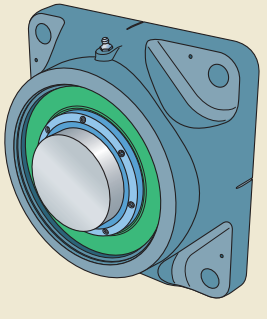


**Fig. 2**

**FYNT series**



Shaft diameters from 35 to 60 mm



Shaft diameters from 65 to 100 mm

### Concentric locking technology

The locking concept is based on two sets of inclined planes (serrations): one set in the bearing bore, the other on the stepped sleeve. When the grub (set) screws in the mounting collar are tightened, the bearing is displaced axially, forcing the inner ring to expand. This does two things: it sets the correct internal clearance within the bearing and it exerts pressure on the stepped sleeve, forcing it to contract around the circumference of the shaft for a true concentric, tight fit (→ **fig. 4**). When the bearing is displaced axially during mounting, it also pushes against a wave spring. The wave spring, which remains preloaded, facilitates removal of the unit.

**Fig. 3**

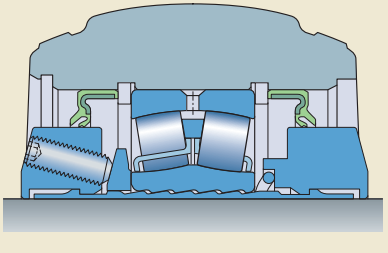
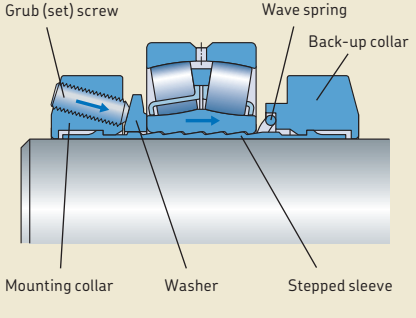


**Fig. 4**

**SKF ConCentra locking mechanism**



## Features and benefits

SKF ConCentra roller bearing units have the following features and benefits:

**Ready-to-mount**

SKF ConCentra roller bearing units are assembled, greased and ready-to-mount, saving time and reducing the risk of contaminating or damaging the bearing during installation.

**Simple mounting**

The bearing units can be used with commercial grade shafts and are located easily on the shaft by tightening the grub (set) screws in the mounting collar. To simplify mounting and make alignment more accurate, lines indicating the centre of the bearing seat or the housing bore axis are cast into the housing base or flange. Dimples indicate the position for dowel pins (→ **fig. 5**).

**Concentric locking**

Torquing the grub (set) screws to the recommended value sets the internal clearance within the bearing and tightens the sleeve against the shaft. The near perfect 360° grip on the shaft virtually eliminates shaft damage and the possibility of fretting corrosion.

**Easy replacement**

With SKF ConCentra roller bearing units, logistics costs are reduced as there is only one part to order, store and mount.

**Stiff housing**

The housing base is reinforced with ribs and the area around the attachment bolt holes is strengthened to minimize the risk of cracking caused by over-tightening the attachment bolts (→ **fig. 6**).

**Optimized for endurance**

The upgraded SKF Explorer spherical roller bearings mounted in SKF ConCentra roller bearing units provide a very high load carrying capacity. The special roller profile prevents edge stresses from occurring and the rollers, together with the floating guide ring, keep friction and heat generation to a minimum.

**Fig. 5**

**Cast indications mark the centre of the housing bore or bearing seat**

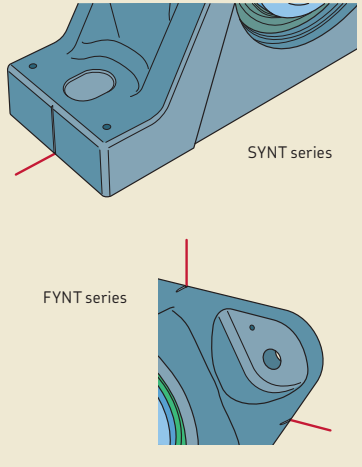
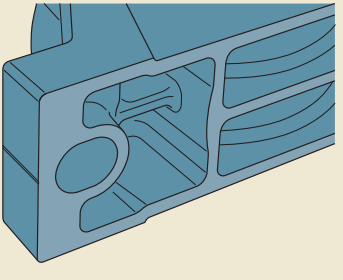



**Fig. 6**

**Reinforcement rib in the base**



## Housing material

The housings used in SKF ConCentra roller bearing units are made of grey cast iron.

### Paint, corrosion protection

The housings are painted black (RAL 9005) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

## Dimension standards

Boundary dimensions of SKF ConCentra roller bearing units in the SYNT series are in accordance with ISO 113. Boundary dimensions for bearing units in the FYNT series are not standardized either nationally or internationally.

### Interchangeability

SKF ConCentra roller bearing units in the SYNT series are dimensionally interchangeable with SNL plummer (pillow) block housings in the 5(00) series (→ *Split plummer block housings SNL 2, 3, 5 and 6 series*, starting on **page 55**).

Bearing units in the FYNT series are dimensionally interchangeable with FNL flanged housings (→ *Flanged housings FNL series*, starting on **page 531**).

# Bearing unit variants

SKF ConCentra roller bearing units are available in four variants, each optimized to accommodate certain application conditions. Bearing units in the SYNT series are available in all four variants. Bearing units in the FYNT series are only available in the general variant.

With the exception of the relubrication-free variant, SKF ConCentra roller bearing units are filled with a premium lithium grease that contains EP additives. Relubrication-free bearing units are filled with a premium semi-synthetic long-life grease.

For additional information about the sealing solution and grease used in the different variants, refer to the sections *Sealing solutions* (→ **page 667**) and *Lubrication* (→ **page 675**) respectively.

#### General variant

These bearing units are equipped with a double-lip seal on each side. They are suitable for normal to heavy loads ($0{,}05\ C < P \leq 0{,}15\ C$[1]) in contaminated environments, e.g. textile machines.

#### High-speed variant

These bearing units are equipped with a labyrinth seal on each side. They are suitable for normal to heavy loads ($0{,}05\ C < P \leq 0{,}15\ C$[1]) in relatively clean to normal environments, e.g. industrial fans and blowers.

Bearing units in the high-speed variant are identified by the designation suffix TS.

#### Extreme environment variant

These bearing units are equipped with a heavy-duty radial shaft seal on each side. They are suitable for normal to heavy loads ($0{,}05\ C < P \leq 0{,}15\ C$[1]) in extremely contaminated environments, e.g. outdoor conveyors.

Bearing units in the extreme environment variant are identified by the designation suffix TF.

#### Relubrication-free variant

These bearing units are equipped with a double-lip seal on each side. They are suitable for light loads ($P \leq 0{,}05\ C$[1]) in relatively clean environments, e.g. industrial air handling units.

Bearing units in the relubrication-free variant are identified by the designation suffix W.

[1] The basic dynamic load rating C is provided in the product tables. To calculate the equivalent dynamic bearing load P, refer to **page 678**.

# Sealing solutions

SKF ConCentra roller bearing units in the SYNT series are available with different sealing solutions (→ **fig. 7**):

- double-lip seals
- labyrinth seals
- heavy-duty radial shaft seals
- end covers

Bearing units in the FYNT series are produced standard with double-lip seals. End covers are also available, but must be ordered separately.

**Table 1**, **page 668** provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline, and does not substitute for testing a seal in its application.

## Double-lip seals

Double-lip seals are made of acrylonitrile-butadiene rubber (NBR) that is vulcanized onto a stamped steel insert. The steel insert enables the outside surface of the seal to sit firmly in the housing bore, providing a static seal. The seal has an auxiliary lip to protect against coarse contaminants.

## Labyrinth seals

As labyrinth seals do not generate friction, bearing units fitted with these seals are capable of relatively high speed operation. The labyrinth is created with three sheet steel rings. Two rings are fixed to the mounting collar / back-up collar. Both rotate with the shaft to act as flingers. The third ring is secured in the housing bore.

## Heavy-duty radial shaft seals

Heavy-duty radial shaft seals with an auxiliary lip provide superior protection against contaminants. These rugged and robust seals have a steel insert that is encased in acrylonitrile-butadiene rubber (NBR). The primary seal lip can maintain its sealing ability even if there is excessive wear. An auxiliary dust lip provides added protection against coarse contaminants.

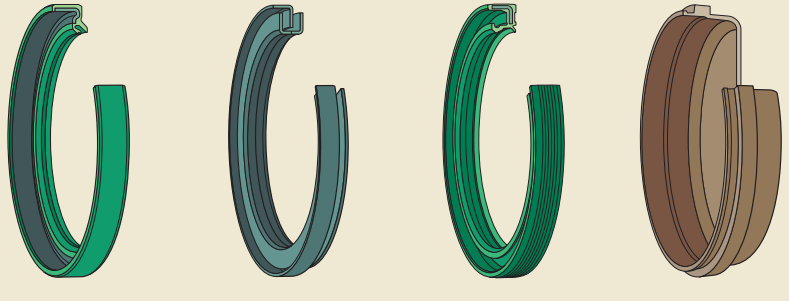
## End covers

Bearing units mounted at the end of a shaft should have an end cover. These are made of plastic and can be snapped easily into the recess of the housing bore.

Details of the permissible length of the shaft end are provided in **table 2** on **page 669**.

**Fig. 7**

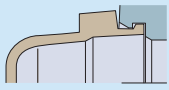
**Seals for SKF ConCentra roller bearing units**



Double-lip seal | Labyrinth seal | Heavy-duty radial shaft seal | End cover

Table 1

**Seals for SKF ConCentra roller bearing units**

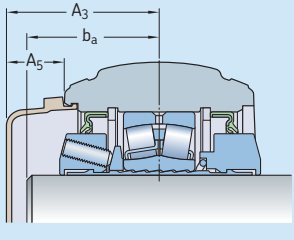
| Seal |  |  |  |  |
|---|---|---|---|---|
| Type | double-lip | labyrinth | heavy-duty radial shaft seal | end cover |
| Variant | general and relubrication-free | high-speed | extreme environment | all |
| Housing series | SYNT<br>FYNT – general variant only | SYNT | SYNT | SYNT and FYNT |
| Material | nitrile rubber, steel | steel | nitrile rubber, steel | polypropylene |
| **Application conditions and requirements** | | | | |
| Temperature [°C] | –20 to 110[1] | –20 to 110[1] | –20 to 110[1] | –20 to 110[1] |
| Temperature [°F] | –5 to 230[1] | –5 to 230[1] | –5 to 230[1] | –5 to 230[1] |
| Max. circumferential speed[2] [m/s] | 13 | not limited | 6 | n/a |
| Max. misalignment [°] | 1,5 | 1,5 | 1,5 | n/a |
| Low friction | + | ++ | + | n/a |
| Axial shaft displacement | ++ | – | + | n/a |
| Vertical shaft arrangement | + | + | + | + |
| **Sealing suitability** | | | | |
| Dust | ++ | – | ++ | ++ |
| Fine particles | ++ | – | ++ | ++ |
| Coarse particles | ++ | + | ++ | ++ |
| Chips | + | ++ | ++ | ++ |
| Liquids when sprayed | + | –– | ++ | ++ |
| Direct sunlight | + | ++ | + | ++ |

Symbol:
- n/a not applicable
- ++ very suitable
- + suitable
- – limited suitability
- –– unsuitable

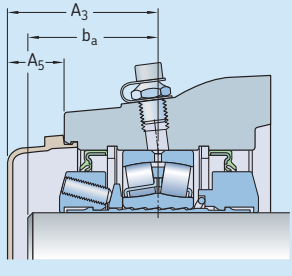
[1] Imposed by the grease.
[2] To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.

**Table 2**

**Permissible length of the shaft end**




SYNT series




FYNT series

| Bearing unit Size | | Dimensions $b_a$ min. | max. | $A_3$ | $A_5$ |
|---|---|---|---|---|---|
| – | | mm | | | |
| **SYNT 35** | **FYNT 35** | 34 | 43 | 50 | 22 |
| **SYNT 40** | **FYNT 40** | 34 | 43 | 51 | 23,5 |
| **SYNT 45** | **FYNT 45** | 34 | 43 | 52 | 23 |
| **SYNT 50** | **FYNT 50** | 34 | 55 | 62 | 29,5 |
| **SYNT 55** | **FYNT 55** | 34 | 55 | 66 | 34 |
| **SYNT 60** | **FYNT 60** | 38 | 65 | 73 | 35,5 |
| **SYNT 65** | **FYNT 65** | 38 | 65 | 73 | 35,5 |
| **SYNT 70** | **FYNT 70** | 38 | 70 | 80 | 38,5 |
| **SYNT 75** | **FYNT 75** | 38 | 70 | 80 | 38,5 |

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

## Bearing life

For information about the SKF rating life, minimum load and static safety for bearings in SKF ConCentra roller bearing units, refer to the product information available online at skf.com/bearings. The bearing designations and load carrying capacities are provided in the product tables, starting on **page 686**.

## Typical shaft-bearing combinations

SKF ConCentra roller bearing units accommodate bearings on an SKF ConCentra stepped sleeve (with inclined serrations) on plain shafts.

## Locating and non-locating bearing positions

SKF ConCentra roller bearing units can be used for both the locating and non-locating bearing positions. Bearing units for the non-locating bearing position have a wide bearing seat to accommodate 2,5 mm of axial displacement, in either direction, from the central position (→ **fig. 8**). Units for the non-locating bearing position are identified by the designation suffix L.

Bearing units for the locating bearing position are identified by the designation suffix F.

## Load carrying capacity

SKF ConCentra roller bearing units are intended for loads acting perpendicularly toward the support surface. If the bearing unit is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing. If loads acting in other directions occur, or if the bearing unit is not supported over its entire base, be sure that the magnitude of the load is permissible for the housing and the attachment bolts. If heavy loads, not acting perpendicularly toward the support surface, are expected, additional supports are recommended to relieve the attachment bolts of the load.

### Breaking loads and safety factors

Guideline values for the breaking loads of housings in the SYNT series are listed in **table 3**. Guideline values for the breaking loads of housings in the FYNT series are listed in **table 4**, **page 672**. To obtain the permissible load for a housing, the appropriate breaking load should be divided by a factor based on the safety requirements. In general engineering, a safety factor of 6 is typical (→ *Load carrying capacity*, **page 44**).

**Fig. 8**

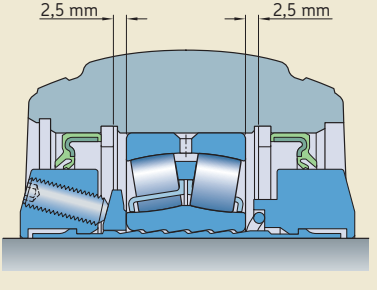
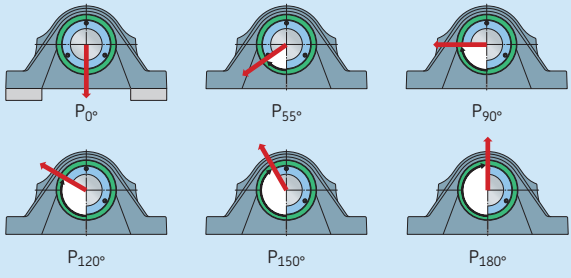


**Table 3**

**Breaking loads for housings of SKF ConCentra roller bearing units in the SYNT series**




| Bearing unit Size | Breaking load in the direction of $P_{0°}$[1] | $P_{55°}$ | $P_{90°}$ | $P_{120°}$ | $P_{150°}$ | $P_{180°}$ |
|---|---|---|---|---|---|---|
| – | kN | | | | | |
| **SYNT 35** | 150 | 250 | 150 | 95 | 85 | 105 |
| **SYNT 40** | 160 | 265 | 160 | 100 | 90 | 110 |
| **SYNT 45** | 170 | 280 | 170 | 110 | 100 | 115 |
| **SYNT 50** | 190 | 330 | 200 | 130 | 115 | 140 |
| **SYNT 55** | 210 | 350 | 210 | 140 | 120 | 150 |
| **SYNT 60** | 270 | 365 | 220 | 150 | 130 | 170 |
| **SYNT 65** | 290 | 380 | 230 | 155 | 140 | 210 |
| **SYNT 70** | 350 | 400 | 240 | 160 | 145 | 215 |
| **SYNT 75** | 370 | 415 | 250 | 165 | 150 | 220 |
| **SYNT 80** | 430 | 480 | 290 | 205 | 190 | 240 |
| **SYNT 90** | 470 | 620 | 370 | 280 | 250 | 310 |
| **SYNT 100** | 600 | 680 | 410 | 310 | 275 | 340 |

[1] The values for $P_{0°}$ are valid when the housing is not fully supported across its base.

### Axial holding power

The axial holding power of an SKF ConCentra roller bearing unit depends on the friction between the shaft and stepped sleeve. It is therefore also dependent on the number of grub (set) screws in the mounting collar (→ **table 5**).

When mounted correctly, the bearing units can withstand typical shock loads equivalent to the requisite axial holding force. However, the maximum operating axial load is limited by the rated bearing life through the equivalent bearing load P (→ **page 678**).

**Table 5**

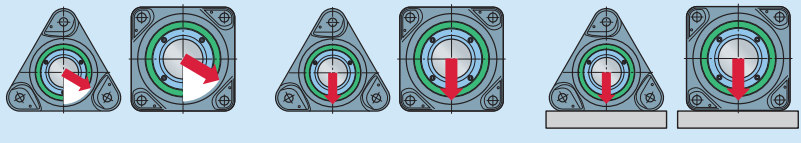
**Axial holding power of SKF ConCentra roller bearing units**

| Bearing unit Size | | No. of grub (set) screws | Axial holding power [1] |
|---|---|---|---|
| – | | – | kN |
| **SYNT 35** | **FYNT 35** | 3 | 15 |
| **SYNT 40** | **FYNT 40** | 3 | 15 |
| **SYNT 45** | **FYNT 45** | 3 | 15 |
| **SYNT 50** | **FYNT 50** | 3 | 15 |
| **SYNT 55** | **FYNT 55** | 3 | 15 |
| **SYNT 60** | **FYNT 60** | 3 | 15 |
| **SYNT 65** | **FYNT 65** | 4 | 20 |
| **SYNT 70** | **FYNT 70** | 4 | 20 |
| **SYNT 75** | **FYNT 75** | 5 | 25 |
| **SYNT 80** | **FYNT 80** | 5 | 25 |
| **SYNT 90** | **FYNT 90** | 7 | 35 |
| **SYNT 100** | **FYNT 100** | 7 | 35 |

[1] Not eqivalent to the axial load carrying capacity of the bearing unit

**Table 4**

**Breaking loads for housings of SKF ConCentra roller bearing units in the FYNT series**



$P_1$ $P_2$ $P_3$

| Bearing unit Size | Breaking load in the direction of $P_1$ | $P_2$ | $P_3$ |
|---|---|---|---|
| – | kN | | |
| **FYNT 35** | 80 | 55 | 95 |
| **FYNT 40** | 90 | 60 | 100 |
| **FYNT 45** | 100 | 65 | 105 |
| **FYNT 50** | 110 | 80 | 110 |
| **FYNT 55** | 120 | 95 | 115 |
| **FYNT 60** | 130 | 110 | 190 |
| **FYNT 65** | 140 | 125 | 265 |
| **FYNT 70** | 150 | 140 | 340 |
| **FYNT 75** | 160 | 155 | 415 |
| **FYNT 80** | 170 | 170 | 490 |
| **FYNT 90** | 180 | 185 | 565 |
| **FYNT 100** | 190 | 200 | 640 |

#### Additional housing support for bearing units in the SYNT series

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

In cases where the resultant radial load is between 55° and 120° or when the axial load is greater than 5% of $P_{180°}$ (→ **table 3**, **page 671**), the bearing unit should be pinned to its support surface. The dowel pins should be sufficiently strong to accommodate the loads acting parallel to the support surface.

Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 12** on **page 683**.

## Radial internal clearance

The upgraded SKF Explorer spherical roller bearings in SKF ConCentra roller bearing units are manufactured standard with C3 radial internal clearance. The clearance values, in accordance with ISO 5753-1, are provided in **table 6** and are valid for unmounted bearings under zero measuring load.

## Operating temperature

The permissible operating temperature of SKF ConCentra roller bearing units is limited by the lubricant (→ **table 8**, **page 675**). For relubrication-free units, refer to the section *Grease life for the relubrication-free variant* on **page 680**.

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 80 °C *(175 °F)* material temperature or 100 °C *(210 °F)* ambient temperature.

## Operating speed

The speeds at which SKF ConCentra roller bearing units can be operated depend on the sealing solution in the bearing unit. For bearing units fitted with double-lip or heavy-duty radial shaft seals, the limiting speeds are based on the permissible circumferential speed at the seal lips. For those fitted with labyrinth seals, the limiting speeds are imposed by the bearing size and the grease.

Guideline values for the limiting speeds are listed in the product tables.

## Shaft specifications

SKF ConCentra roller bearing units can be used with commercial grade shafts that meet the h9Ⓔ tolerance class for dimensional accuracy and an IT5/2 tolerance for cylindricity, in accordance with ISO 1101.

**Table 6**

**Radial internal clearance of bearings in SKF ConCentra roller bearing unit.**

| Bore diameter d | | Radial internal clearance | |
|---|---|---|---|
| over | incl. | min. | max. |
| mm | | µm | |
| **30** | **40** | 50 | 65 |
| **40** | **50** | 60 | 80 |
| **50** | **65** | 75 | 95 |
| **65** | **80** | 95 | 120 |
| **80** | **100** | 110 | 140 |

## Attachment bolt recommendations

In typical applications, 8.8 class hexagon head bolts in accordance with ISO 4014 can be used together with washers. If the load does not act perpendicularly toward the base or is particularly heavy, it may be necessary to use stronger, 10.9 class bolts.

SKF housings can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers (→ **table 7**). They are valid for oiled, but otherwise untreated, thread surfaces.

SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

**Table 7**

**Torque values for attachment bolts**

| **Bearing unit** Size | **Attachment bolts** Size | Tightening torque[1] |
|---|---|---|
| – | – | Nm |
| **SYNT 35** | M 12 | 80 |
| **SYNT 40** | M 12 | 80 |
| **SYNT 45** | M 12 | 80 |
| **SYNT 50** | M 16 | 200 |
| **SYNT 55** | M 16 | 200 |
| **SYNT 60** | M 16 | 200 |
| **SYNT 65** | M 16 | 200 |
| **SYNT 70** | M 20 | 385 |
| **SYNT 75** | M 20 | 385 |
| **SYNT 80** | M 20 | 385 |
| **SYNT 90** | M 24 | 665 |
| **SYNT 100** | M 24 | 665 |
| **FYNT 35** | M 12 | 80 |
| **FYNT 40** | M 12 | 80 |
| **FYNT 45** | M 12 | 80 |
| **FYNT 50** | M 12 | 80 |
| **FYNT 55** | M 12 | 80 |
| **FYNT 60** | M 12 | 80 |
| **FYNT 65** | M 16 | 200 |
| **FYNT 70** | M 16 | 200 |
| **FYNT 75** | M 16 | 200 |
| **FYNT 80** | M 16 | 200 |
| **FYNT 90** | M 20 | 385 |
| **FYNT 100** | M 20 | 385 |

[1] Recommended by bolt manufacturers.

# Lubrication

SKF ConCentra roller bearing units are intended for grease lubrication.

## Initial grease fill

SKF ConCentra roller bearing units in the general, high-speed and extreme environment variants are filled with a mineral oil based lithium grease. The initial grease fill at the factory fills the bearing completely, and 30 to 50% of the free space in the housing.

Relubrication-free bearing units are filled with a semi-synthetic oil based lithium grease. The initial grease fill at the factory fills the bearing completely, and 60 to 80% of the free space in the housing.

The technical specifications of both greases are provided in **table 8**.

For general, high-speed and extreme variants, the grease provides reliable performance when operating between 35 and 110 °C. During start-up, temperatures down to –20 °C are permissible. For short periods, temperatures above 110 °C can be tolerated.

For the relubrication-free variant, the grease provides reliable performance when operating between 35 and 130 °C. During start-up, temperatures down to –30 °C are permissible. For short periods, temperatures above 130 °C can be tolerated.

For additional information about permissible temperatures of rolling bearing greases (the SKF traffic light concept), refer to the information available online at skf.com/bearings.

## Relubrication

SKF ConCentra roller bearing units are typically relubricated in order to realize maximum service life. All bearing units have a lubrication hole with a 1/8-27 NPSF thread. They are provided standard with a grease fitting AH 1/8-27 PTF, except for the relubrication-free variant, which has the lubrication hole plugged.

**Table 8**

**Technical specifications for the greases in SKF ConCentra roller bearing units**

| Housing variant | Temperature range | Thickener | Base oil type | NLGI consistency class | Base oil viscosity [mm²/s] at 40 °C *(105 °F)* | at 100 °C *(210 °F)* |
|---|---|---|---|---|---|---|
| **General, high-speed and extreme temperature** | –20 to 110 °C *(–5 to 230 °F)* | Lithium soap | Mineral | 2 | 200 | 13 |
| **Relubrication-free** | –30 to 130 °C *(–20 to 250 °F)* | Lithium soap | Semi-synthetic | 2–3 | 41,9 | 7,5 |

## Relubrication intervals

The relubrication interval $t_f$ for SKF ConCentra roller bearing units excluding the relubrication-free variant can be obtained from **diagrams 1** to **3** as a function of:

- the operating temperature
- the rotational speed n [r/min]
- the bearing mean diameter $d_m$ [mm] (→ **table 9**, **page 678**)
- the bearing factor $b_f$ (→ **table 9**, **page 678**, for values of e)
  - $b_f = 2$ when $F_a/F_r \leq e$
  - $b_f = 6$ when $F_a/F_r > e$
- the load ratio
  - $P \leq 0{,}05\ C$ (→ **diagram 1**)
  - $P = 0{,}1\ C$ (→ **diagram 2**)
  - $P = 0{,}15\ C$ (→ **diagram 3**)

**Diagram 1**

**Relubrication interval $t_f$ for roller bearing units, for $P \leq 0{,}05\ C$**

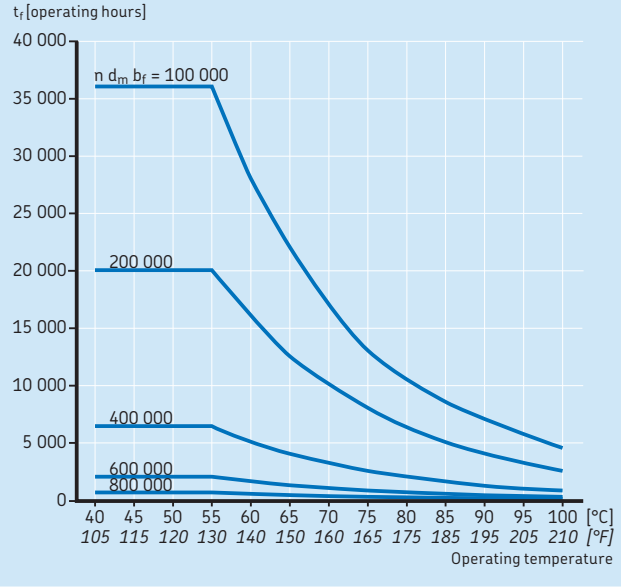


**Diagram 2**

**Relubrication interval $t_f$ for roller bearing units, for P = 0,1 C**

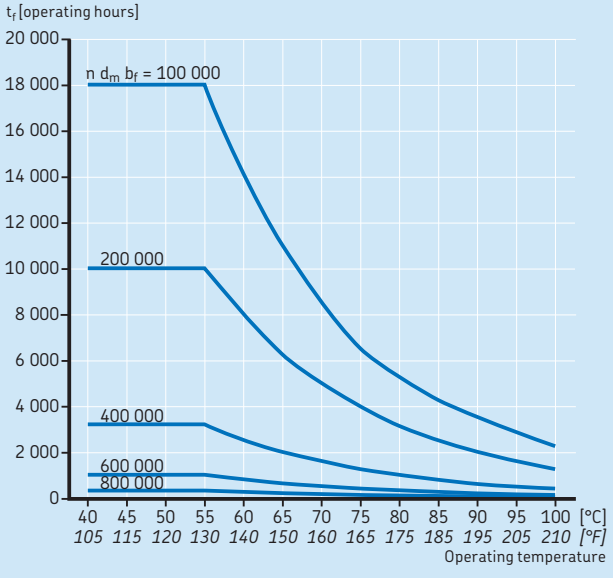
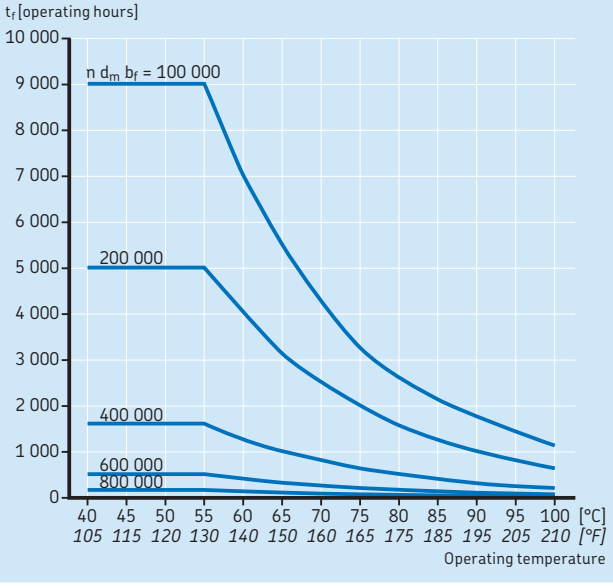



**Diagram 3**

**Relubrication interval $t_f$ for roller bearing units, for P = 0,15 C**



The basic dynamic load rating C is provided in the product tables. The equivalent dynamic bearing load P can be obtained from

$P = F_r + Y_1 F_a$ when $F_a/F_r \leq e$
$P = 0{,}67F_r + Y_2 F$ when $F_a/F_r > e$

where
P = equivalent dynamic bearing load [kN]
$F_r$ = radial component of the bearing load [kN]
$F_a$ = axial component of the bearing load [kN]
$Y_1$,$Y_2$ = axial load calculation factors for the bearing (→ **table 9**)
e = limiting value for $F_a/F_r$ (→ **table 9**)

The calculated relubrication intervals represent the grease life $L_1$, which relates to the time period at the end of which 99% of the bearing units are still reliably lubricated. The intervals are estimated values, applicable for bearing units mounted on horizontal shafts in a relatively clean environment. When operating conditions differ, the relubrication intervals should be adjusted as follows:

- For a vertical shaft, the interval should be halved.
- For outer ring rotation or rotating load, the interval should be halved.
- For contaminated environments, the following reduction factors should be used:
  – 0,5 for moderate contamination
  – 0,3 for severe contamination
  – 0,1 for very severe contamination

### Relubrication procedure

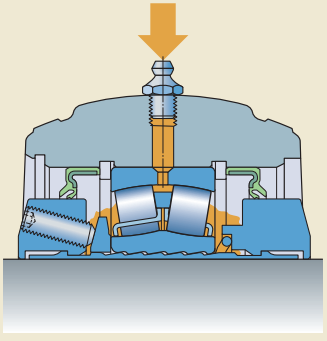
Before relubricating, the grease fitting and the area surrounding it should be cleaned. High-pressure cleaning equipment should be avoided. During relubrication, grease should be introduced via the grease fitting (→ **fig. 9**) while the shaft is rotating slowly. Excessive pressure and over-greasing should be avoided, otherwise the seals may be damaged.

**Table 9**

**Bearing mean diameter and calculation factors for SKF ConCentra roller bearing units**

| Bearing unit | | Bearing mean diameter | Calculation factors | | |
|---|---|---|---|---|---|
| Size | | $d_m$ | e | $Y_1$ | $Y_2$ |
| – | | mm | – | | |
| **SYNT 35** | **FYNT 35** | 53,5 | 0,31 | 2,2 | 3,3 |
| **SYNT 40** | **FYNT 40** | 60 | 0,28 | 2,4 | 3,6 |
| **SYNT 45** | **FYNT 45** | 65 | 0,26 | 2,6 | 3,9 |
| **SYNT 50** | **FYNT 50** | 70 | 0,24 | 2,8 | 4,2 |
| **SYNT 55** | **FYNT 55** | 77,5 | 0,24 | 2,8 | 4,2 |
| **SYNT 60** | **FYNT 60** | 85 | 0,24 | 2,8 | 4,2 |
| **SYNT 65** | **FYNT 65** | 92,5 | 0,24 | 2,8 | 4,2 |
| **SYNT 70** | **FYNT 70** | 97,5 | 0,22 | 3,0 | 4,6 |
| **SYNT 75** | **FYNT 75** | 102,5 | 0,22 | 3,0 | 4,6 |
| **SYNT 80** | **FYNT 80** | 110 | 0,22 | 3,0 | 4,6 |
| **SYNT 90** | **FYNT 90** | 125 | 0,24 | 2,8 | 4,2 |
| **SYNT 100** | **FYNT 100** | 140 | 0,24 | 2,8 | 4,2 |

Fig. 9



### Relubrication quantity

The appropriate quantity of grease for relubrication of SKF ConCentra roller bearing units is provided in **table 10**.

### Greases for relubrication

To relubricate SKF ConCentra roller bearing units, SKF recommends using SKF LGEP 2 grease, which is fully compatible with the original grease introduced at the factory. Other compatible greases such as SKF's multipurpose LGMT 2 and LGMT 3 greases can also be used.

Table 10

**Grease quantities for relubrication of SKF ConCentra roller bearing units**

| Bearing unit Size | | Grease quantity |
|---|---|---|
| – | | g |
| **SYNT 35** | **FYNT 35** | 3 |
| **SYNT 40** | **FYNT 40** | 4 |
| **SYNT 45** | **FYNT 45** | 4 |
| **SYNT 50** | **FYNT 50** | 4 |
| **SYNT 55** | **FYNT 55** | 5 |
| **SYNT 60** | **FYNT 60** | 6 |
| **SYNT 65** | **FYNT 65** | 7 |
| **SYNT 70** | **FYNT 70** | 8 |
| **SYNT 75** | **FYNT 75** | 8 |
| **SYNT 80** | **FYNT 80** | 9 |
| **SYNT 90** | **FYNT 90** | 13 |
| **SYNT 100** | **FYNT 100** | 17 |

## Grease life for the relubrication-free variant

The grease used in relubrication-free bearing units can adequately lubricate the bearing throughout its service life provided the bearing unit is suitable for the operating conditions. The relationship between operating conditions and grease service life is shown in **diagram 4** and is a function of:

- the operating temperature [°C]
- the speed factor $A = n\ d_m$

where
$A$ = speed factor [mm/min]
$n$ = rotational speed [r/min]
$d_m$ = bearing mean diameter [mm]
(→ **table 9**, **page 678**)

Provided the operating range of the bearing unit falls within the shaded area of **diagram 4**, the bearing unit can attain a grease life of $L_{50h}$ = 100 000 hours or more. $L_{50h}$ is the time period at the end of which 50% of the units are still reliably lubricated.

#### Calculation example

An SKF ConCentra roller bearing unit with a plummer block housing is required for an industrial air handling unit. The following application information is known:

- required grease life $L_{50h}$ = 100 000 hours
- equivalent dynamic bearing load P = 7 kN
- rotational speed n = 1 800 r/min
- shaft diameter $d_a$ = 60 mm
- environmental conditions: relatively clean
- expected operating temperature: 55 °C

Based on the shaft diameter provided and the plummer block housing requirement, the SYNT 60 bearing unit is selected. As the application is an industrial air handling unit in a relatively clean environment, the relubrication-free variant would be a suitable choice.

From the product table, the basic dynamic load rating C = 156 kN and

when C/P = 156/7 = 22,3

then P = 0,045 C

Therefore, the bearing unit meets the conditions of use for relubrication-free variants, where P ≤ 0,05 C.

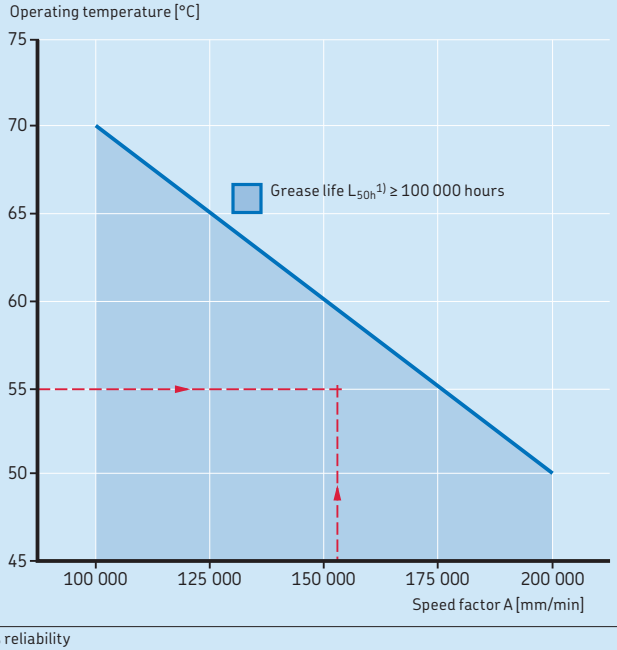
For $d_m$ = 85 mm (→ **table 9**, **page 678**)
$A = n\ d_m = 1\ 800 \times 85 = 153\ 000$ mm/min

Using **diagram 4**, the intersection point of the calculated speed factor and expected operating temperature of 55 °C is located in the shaded area.

The SYNT 60 FW (or SYNT 60 LW) bearing unit meets the grease life requirement and is therefore suitable for the application.

**Diagram 4**

**Temperature-speed relationship for relubrication-free SKF ConCentra roller bearing units**




1) Grease life at 50% reliability

# Mounting

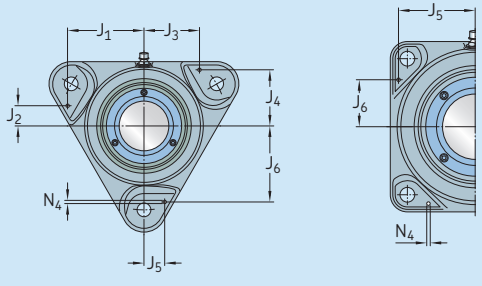
SKF ConCentra roller bearing units must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**).

The mounting collar of bearing units in the SYNT and FYNT series is equipped with M6 grub (set) screws, the number of which depends on the size of the bearing unit. SKF recommends using a torque wrench to tighten these grub (set) screws. The tightening torque is 8 Nm.

**CAUTION:** Do not tighten the grub (set) screws until the bearing unit is positioned on the shaft. If the screws are tightened prematurely, the stepped sleeve may deform.

**Table 11**

**Position and size of dowel pin holes for SKF ConCentra roller bearing units in the FYNT series**




| Bearing unit Size | Dimensions $J_1$ | $J_2$ | $J_3$ | $J_4$ | $J_5$ | $J_6$ | $N_4$ max. |
|---|---|---|---|---|---|---|---|
| – | mm | | | | | | |
| **FYNT 35** | 65 | 17 | 48 | 38,5 | 16 | 66 | 6 |
| **FYNT 40** | 71 | 20 | 53 | 43 | 18 | 72 | 6 |
| **FYNT 45** | 71 | 20 | 53 | 45,5 | 18 | 72 | 6 |
| **FYNT 50** | 77 | 21 | 57 | 49 | 21 | 77 | 6 |
| **FYNT 55** | 84 | 22 | 62 | 54,5 | 22 | 84 | 8 |
| **FYNT 60** | 90 | 24 | 66 | 59,5 | 24 | 90 | 8 |
| **FYNT 65** | – | – | – | – | 85 | 55 | 8 |
| **FYNT 70** | – | – | – | – | 87 | 54 | 8 |
| **FYNT 75** | – | – | – | – | 93 | 63 | 8 |
| **FYNT 80** | – | – | – | – | 95 | 60 | 8 |
| **FYNT 90** | – | – | – | – | 112 | 72 | 8 |
| **FYNT 100** | – | – | – | – | 122 | 78 | 8 |

### Attaching bearing units in the FYNT series to a machine wall

Bearing units in the FYNT series are produced standard with a machined recess, which can be used to centre the housing on a shoulder. With this arrangement, the attachment bolts are not subjected to shear forces. The shoulder can be provided either by machining the wall or by attaching a guide ring to the wall. The dimensions of the recess $D_a$, are provided in **product table 16.2** on **page 688**.

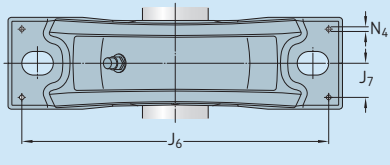
Dowel pins can also be used where necessary. Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 11**.

### Pinning or supporting bearing units in the SYNT series

Some load conditions may require the housing to be pinned to its support surface or to provide a stop to accommodate loads acting parallel to the support surface (→ *Additional housing support for bearing units in the SYNT series* on **page 673**). Recommendations for the position and size of the holes to accommodate dowel pins are provided in **table 12**.

**Table 12**

**Position and size of dowel pin holes for SKF ConCentra roller bearing units in the SYNT series**




| Bearing unit Size | Dimensions $J_6$ | $J_7$ | $N_4$ max. |
|---|---|---|---|
| – | mm | | |
| **SYNT 35** | 185 | 21 | 6 |
| **SYNT 40** | 185 | 21 | 6 |
| **SYNT 45** | 185 | 21 | 6 |
| **SYNT 50** | 234 | 26 | 8 |
| **SYNT 55** | 234 | 26 | 8 |
| **SYNT 60** | 254 | 29 | 8 |
| **SYNT 65** | 254 | 29 | 8 |
| **SYNT 70** | 290 | 32,5 | 8 |
| **SYNT 75** | 292 | 32,5 | 8 |
| **SYNT 80** | 320 | 37,5 | 8 |
| **SYNT 90** | 355 | 40 | 8 |
| **SYNT 100** | 385 | 45 | 8 |

## Condition monitoring

### SYNT series

SKF ConCentra roller bearing units in the SYNT series are prepared for condition monitoring as they have three flat surfaces cast into the housing (→ **fig. 10**).

**Positions 1** and **3** are perpendicular to the shaft, and should be used when the unit is hung from its support or when the load acts away from or toward the support surface.

**Position 2** is a measurement point parallel to the shaft and should be used when axial loads occur.

### FYNT series

Accelerometers with magnets that can accommodate rounded surfaces can be attached to bearing units in the FYNT series (→ **fig. 11**).

**Position 1** (360° surface area) is perpendicular to the shaft, and should be used when the load acts away from or toward the support surface.

**Position 2** (360° surface area) is parallel to the shaft and should be used when axial loads occur.

## Accessories

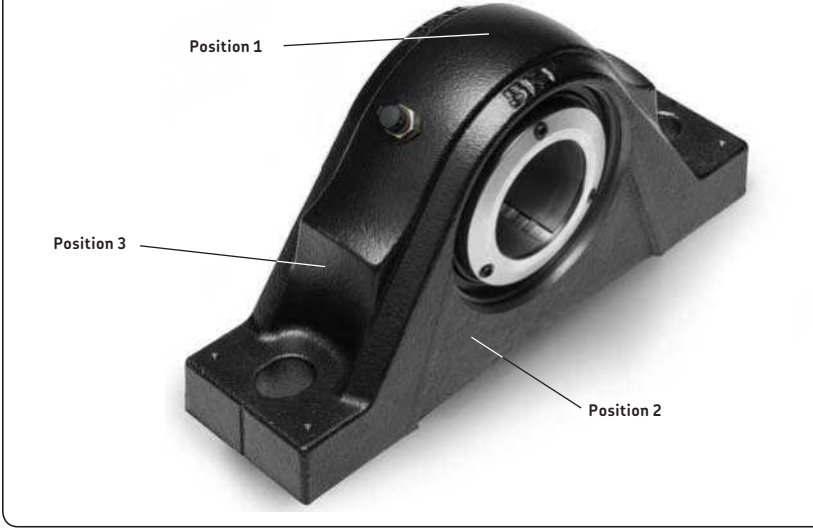
The following accessories are available for SKF ConCentra roller bearing units:

- Adapter for G 1/4 connections: LAPN 1/8
- Automatic lubricator: SKF SYSTEM 24
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).

**Fig. 10**

**Measurement points for condition monitoring**



# Ordering information

SKF ConCentra roller bearing units are supplied assembled, greased and ready-to-mount. End covers must be ordered separately.

**Order example**

Two SKF ConCentra roller bearing units with a plummer block housing are required for a 50 mm shaft diameter. One bearing unit will accommodate the bearing in the non-locating position at the end of the shaft. The other bearing unit will accommodate the bearing in the locating position and a through shaft. The bearing units should be relubrication-free.

The following items should be ordered:

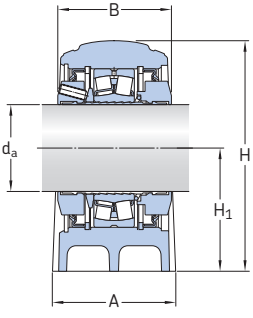
- 1 bearing unit SYNT 50 FW
- 1 bearing unit SYNT 50 LW
- 1 end cover ECY 210

**Fig. 11**

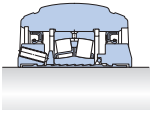
**Measurement points for condition monitoring**



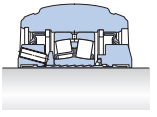
# 16.1 SKF ConCentra roller bearing units with a plummer block housing, metric shafts
$d_a$ **35 – 100** mm



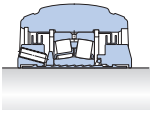

General variant



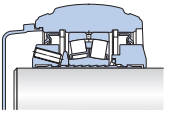
Extreme environment variant
Designation suffix TF



Relubrication-free variant
Designation suffix W



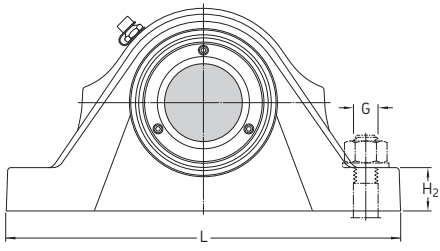
High-speed variant
Designation suffix TS

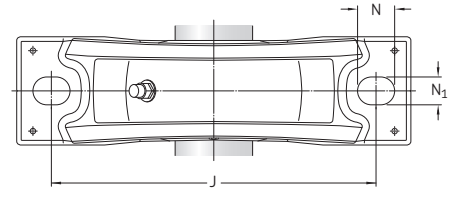


End cover

| **Shaft diameter** $d_a$ | **Bearing unit** Designation[1] Locating | Non-locating | **Bearing** Designation | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **End cover** Designation |
|---|---|---|---|---|---|---|---|
| mm | – | | – | kN | | kN | – |
| **35** | **SYNT 35 F** | **SYNT 35 L** | 22207 E | 86,5 | 85 | 9,3 | ECY 207 |
| **40** | **SYNT 40 F** | **SYNT 40 L** | 22208 E | 96,5 | 90 | 9,8 | ECY 208 |
| **45** | **SYNT 45 F** | **SYNT 45 L** | 22209 E | 102 | 98 | 10,8 | ECY 209 |
| **50** | **SYNT 50 F** | **SYNT 50 L** | 22210 E | 104 | 108 | 11,8 | ECY 210 |
| **55** | **SYNT 55 F** | **SYNT 55 L** | 22211 E | 125 | 137 | 13,7 | ECY 211 |
| **60** | **SYNT 60 F** | **SYNT 60 L** | 22212 E | 156 | 166 | 18,6 | ECY 212 |
| **65** | **SYNT 65 F** | **SYNT 65 L** | 22213 E | 193 | 216 | 24 | ECY 213 |
| **70** | **SYNT 70 F** | **SYNT 70 L** | 22214 E | 208 | 228 | 25,5 | ECY 214 |
| **75** | **SYNT 75 F** | **SYNT 75 L** | 22215 E | 212 | 240 | 26,5 | ECY 215 |
| **80** | **SYNT 80 F** | **SYNT 80 L** | 22216 E | 236 | 270 | 29 | – |
| **90** | **SYNT 90 F** | **SYNT 90 L** | 22218 E | 325 | 375 | 39 | – |
| **100** | **SYNT 100 F** | **SYNT 100 L** | 22220 E | 425 | 490 | 49 | – |

[1] General variant. (For other variants, the appropriate designation suffix should be added.)
[2] Also refer to **diagram 4** on **page 681**.

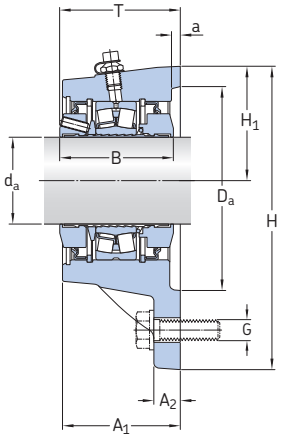


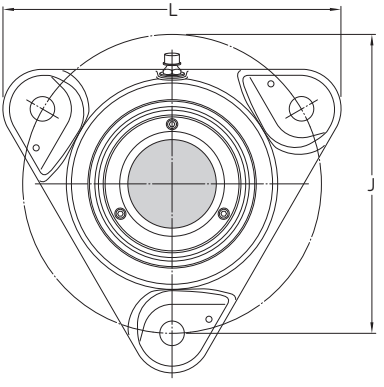

| **Shaft diameter** | **Limiting speeds of unit variants** | | | | **Dimensions** Bearing unit | | | | | | | | | | **Mass** Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | General | High-speed | Extreme environment | Relubrication-free[2] | | | | | | | | | | | |
| $d_a$ | | | | | A | B | H | $H_1$ | $H_2$ | J | L | N | $N_1$ | G | |
| mm | r/min | | | | mm | | | | | | | | | | kg |
| **35** | 4 100 | 6 500 | 2 050 | 4 100 | 60 | 65 | 111 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,8 |
| **40** | 3 800 | 5 900 | 1 900 | 3 800 | 60 | 65 | 114 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 3,8 |
| **45** | 3 500 | 5 400 | 1 750 | 3 500 | 60 | 65 | 118 | 60 | 25 | 170 | 205 | 20 | 15 | 12 | 4 |
| **50** | 3 300 | 4 900 | 1 650 | 3 300 | 70 | 65 | 131 | 70 | 28 | 210 | 255 | 24 | 18 | 16 | 5,8 |
| **55** | 3 100 | 4 500 | 1 550 | 3 100 | 70 | 66 | 137 | 70 | 30 | 210 | 255 | 24 | 18 | 16 | 6 |
| **60** | 2 900 | 4 100 | 1 450 | 2 900 | 80 | 71 | 151 | 80 | 30 | 230 | 275 | 24 | 18 | 16 | 7,7 |
| **65** | 2 700 | 3 800 | 1 350 | 2 700 | 80 | 72 | 158 | 80 | 30 | 230 | 280 | 24 | 18 | 16 | 8,7 |
| **70** | 2 600 | 3 600 | 1 300 | 2 600 | 90 | 72 | 176 | 95 | 32 | 260 | 315 | 28 | 22 | 20 | 11 |
| **75** | 2 500 | 3 300 | 1 250 | 2 500 | 90 | 72 | 180 | 95 | 32 | 260 | 320 | 28 | 22 | 20 | 12 |
| **80** | 2 300 | 3 100 | 1 150 | 2 300 | 100 | 72 | 191 | 100 | 35 | 290 | 345 | 28 | 22 | 20 | 20 |
| **90** | 2 100 | 2 800 | 1 050 | 2 100 | 110 | 86 | 216 | 112 | 40 | 320 | 380 | 32 | 26 | 24 | 21 |
| **100** | 2 000 | 2 500 | 1 000 | 2 000 | 120 | 86 | 238 | 125 | 45 | 350 | 410 | 32 | 26 | 24 | 26 |

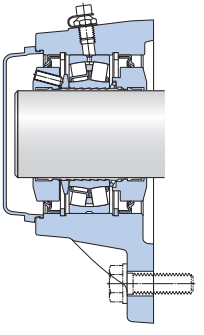
# 16.2 SKF ConCentra roller bearing units with a flanged housing, metric shafts

$d_a$ **35 – 100** mm



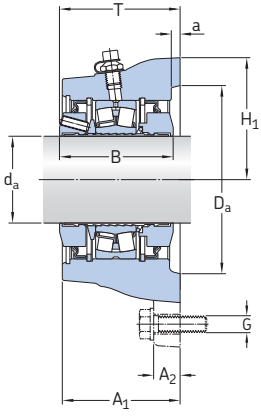

Housing design for shaft diameters 35 to 60 mm

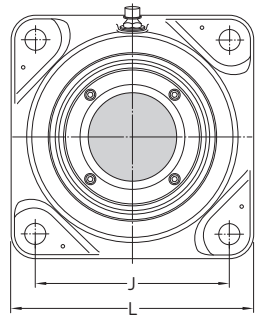


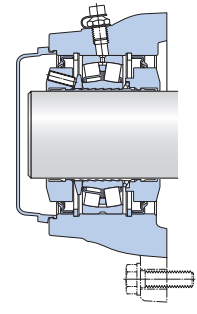



End cover

| **Shaft diameter** $d_a$ | **Bearing unit** Designation Locating | Non-locating | **Bearing** Designation | **Basic load ratings** dynamic C | static $C_0$ | **Fatigue load limit** $P_u$ | **Limiting speed** | **End cover** Designation |
|---|---|---|---|---|---|---|---|---|
| mm | – | | – | kN | | kN | r/min | – |
| **35** | **FYNT 35 F** | **FYNT 35 L** | 22207 E | 86,5 | 85 | 9,3 | 4 100 | ECY 207 |
| **40** | **FYNT 40 F** | **FYNT 40 L** | 22208 E | 96,5 | 90 | 9,8 | 3 800 | ECY 208 |
| **45** | **FYNT 45 F** | **FYNT 45 L** | 22209 E | 102 | 98 | 10,8 | 3 500 | ECY 209 |
| **50** | **FYNT 50 F** | **FYNT 50 L** | 22210 E | 104 | 108 | 11,8 | 3 300 | ECY 210 |
| **55** | **FYNT 55 F** | **FYNT 55 L** | 22211 E | 125 | 137 | 13,7 | 3 100 | ECY 211 |
| **60** | **FYNT 60 F** | **FYNT 60 L** | 22212 E | 156 | 166 | 18,6 | 2 900 | ECY 212 |
| **65** | **FYNT 65 F** | **FYNT 65 L** | 22213 E | 193 | 216 | 24 | 2 700 | ECY 213 |
| **70** | **FYNT 70 F** | **FYNT 70 L** | 22214 E | 208 | 228 | 25,5 | 2 600 | ECY 214 |
| **75** | **FYNT 75 F** | **FYNT 75 L** | 22215 E | 212 | 240 | 26,5 | 2 500 | ECY 215 |
| **80** | **FYNT 80 F** | **FYNT 80 L** | 22216 E | 236 | 270 | 29 | 2 300 | – |
| **90** | **FYNT 90 F** | **FYNT 90 L** | 22218 E | 325 | 375 | 39 | 2 100 | – |
| **100** | **FYNT 100 F** | **FYNT 100 L** | 22220 E | 425 | 490 | 49 | 2 000 | – |



Housing design for shaft diameters 65 to 100 mm

End cover

| **Shaft diameter** | **Dimensions** Bearing unit | | | | | | | | | | | **Mass** Unit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | $A_1$ | $A_2$ | T max. | B | H | $H_1$ | J | L | G | $D_a$ | a | |
| mm | mm | | | | | | | | | | | kg |
| **35** | 66 | 12 | 72,5 | 65 | 143 | 54 | 140 | 159 | 12 | 90 | 4 | 3 |
| **40** | 66 | 12 | 72,5 | 65 | 160 | 60 | 160 | 179 | 12 | 100 | 4 | 3,6 |
| **45** | 66 | 15 | 72,5 | 65 | 160 | 60 | 160 | 179 | 12 | 100 | 5 | 3,9 |
| **50** | 70 | 15 | 72,7 | 65 | 172,5 | 65 | 170 | 192 | 12 | 105 | 5 | 4,5 |
| **55** | 70 | 15 | 73,6 | 66 | 189 | 72 | 180 | 210 | 12 | 120 | 5 | 5,9 |
| **60** | 78 | 15 | 78,7 | 71 | 202,5 | 77,5 | 190 | 225 | 12 | 130 | 5 | 6,7 |
| **65** | 78 | 25 | 80,3 | 72 | – | 95 | 152 | 190 | 16 | 150 | 6 | 9,3 |
| **70** | 82 | 25 | 81,3 | 72 | – | 98 | 152 | 196 | 16 | 150 | 6 | 11 |
| **75** | 82 | 25 | 81,3 | 72 | – | 105 | 170 | 210 | 16 | 170 | 6 | 12 |
| **80** | 82,5 | 25 | 83 | 72 | – | 105 | 170 | 210 | 16 | 170 | 7 | 13 |
| **90** | 92 | 30 | 93,5 | 86 | – | 125 | 198 | 250 | 20 | 200 | 6 | 18 |
| **100** | 98 | 30 | 98,9 | 86 | – | 135 | 219 | 270 | 20 | 220 | 6 | 23 |


SKF

# Inch roller bearing units SYE, SYR, FYE and FYR series

**Bearing type**
- Spherical roller bearings, 222 series

**Shaft diameter range**
- 1 7/16 to 4 15/16 in.

**Typical shaft-bearing combinations**
- Plain shaft, bearing fixed using either the locking collar method or the SKF ConCentra locking method

**Seals**
- Triple-lip
- Labyrinth
- Radial shaft seal

**Lubrication**
- Grease

**Mounting**
- Two-bolt mounting
- Four-bolt mounting

**Material**
- Grey cast iron

**Compliance to standards**
- Not standardized

SKF inch roller bearings units are robust, ready-to-mount units that are assembled, lubricated and sealed at the factory for maximum service life. With their simple and safe installation and easy alignment, they are an excellent alternative to sleeve-mounted bearings in split housings. The assortment for inch shafts includes SKF ConCentra units and collar-mount units.

**Units of measurement**
In this chapter only imperial units are used. To convert imperial units to metric units, refer to the conversion table on **page 10**.

# Inch roller bearing units SYE, SYR, FYE and FYR series


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# Designations

**Designation system for inch roller bearing units**

**F SYE 2 7/16 NH -118**

**Prefix**

| | |
|---|---|
| **–** | For pillow block units: two-bolt base |
| **F** | For pillow block units: four-bolt base |

**Series**

| | |
|---|---|
| **SYE** | Pillow block unit |
| **SYR** | Pillow block unit |
| **FYE** | Square flange unit |
| **FYR** | Round flange unit |
| **FYRP** | Piloted flange unit |

**Size identification**

| | |
|---|---|
| **...** | Shaft diameter [in.] |

**Suffixes**[1)]

| | |
|---|---|
| **N** | SKF ConCentra |
| **H** | Locating bearing unit |
| **Y** | Closed end (end plug supplied) |
| **-3** | Radial shaft seal (for collar-mount units) |
| **-18** | Labyrinth seal (for collar-mount units) |
| **-118** | Labyrinth seal (for SKF ConCentra units) |

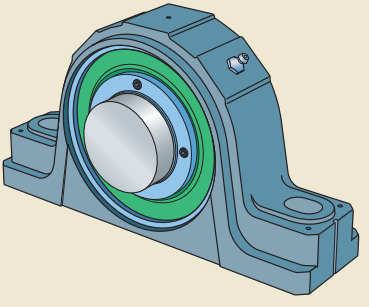
[1)] When multiple suffixes are used, they are listed in the same order as shown here.

# Standard bearing unit design

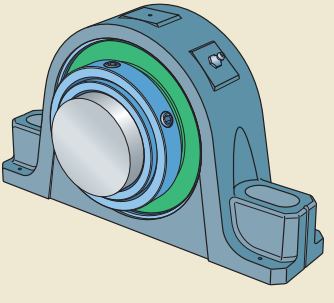
SKF inch roller bearing units consist of a non-split housing, an SKF spherical roller bearing in the 222 series, seals and grease. The bearings are fixed to the shaft using either the locking collar method or the SKF ConCentra locking method (designation suffix N). Inch roller bearing units are available in different series and designs:

- Pillow (plummer) block units with two bolt holes in the base are available in two series. Units in the SYE and SYE .. N series are available for shafts ranging from 1 7/16 to 3 1/2 inches (→ **fig. 1**). Bearing units in the SYR and SYR .. N series are available for shafts ranging from 1 7/16 to 4 inches (→ **fig. 1**).
- Four-bolt base pillow (plummer) block units in the SYE series, designation FSYE and FSYE .. N, are available for shafts ranging from 2 7/16 to 4 15/16 inches (→ **fig. 1**).
- Square flange units (FYE series) are available for shafts ranging from 1 7/16 to 4 inches (→ **fig. 2**).
- Round flange units (FYR series) are available for shafts ranging from 1 7/16 to 4 inches (→ **fig. 2**).
- Piloted flange units (FYRP series) are available for shafts ranging from 1 7/16 to 4 inches (→ **fig. 2**).

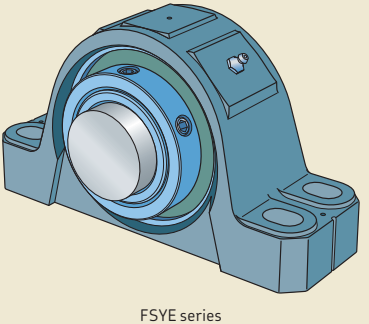
**Fig. 1**



SYE .. N series

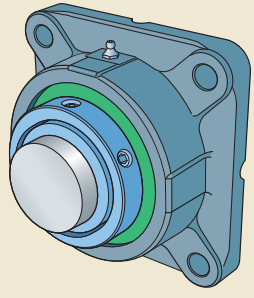


SYR series

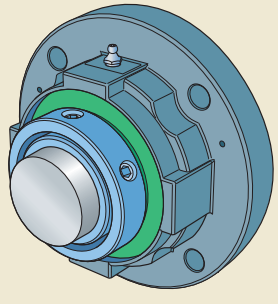


FSYE series

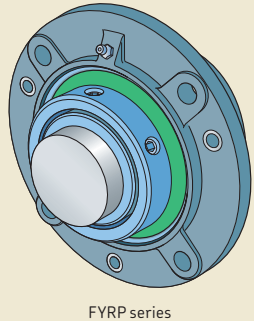
**Fig. 2**



FYE series



FYR series

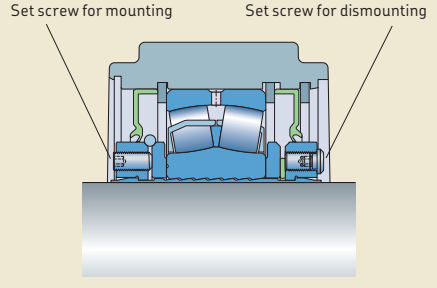


FYRP series

### SKF ConCentra locking method

The SKF ConCentra locking concept is based on two sets of inclined planes (serrations): one set in the bearing bore, the other on the stepped sleeve. When the set (grub) screws in the mounting collar are tightened, the bearing is displaced axially, forcing the inner ring to expand. This does two things: it sets the correct internal clearance within the bearing and it exerts pressure on the stepped sleeve, forcing it to contract around the circumference of the shaft for a true concentric, tight fit (→ **fig. 3**). On the opposite side are set (grub) screws for dismounting. An engraving marked "MOUNT.SIDE/DISMOUNT.SIDE" shows the mounting and dismounting sides of the unit.

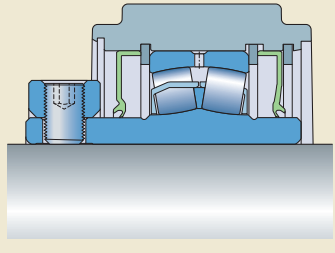
Fig. 3




### Locking collar method

The locking collar method uses a collar mounted on the extended inner ring of the bearing (→ **fig. 4**). The extended inner ring has two holes, 62° apart. The collar has two matching tapped holes, each containing a set (grub) screw. When the set (grub) screws are fully tightened, the shaft is held firmly against the inner ring of the bearing.

Fig. 4



## Features and benefits

SKF roller bearing units share some of the following features and benefits:

### Ready-to-mount

SKF roller bearing units are assembled, greased and ready-to-mount, saving time and reducing the risk of contaminating or damaging the bearing during installation.

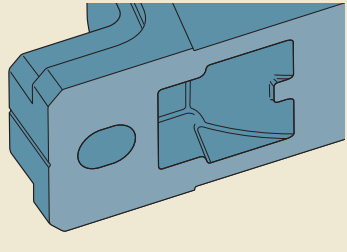
### Simple mounting

The bearing units can be used with commercial grade shafts and are located easily on the shaft by tightening the set (grub) screws in the mounting collar or locking collar.

### Stiff housing

The housing base is reinforced with ribs and the area around the attachment bolt holes is strengthened to minimize the risk of cracking caused by over-tightening the attachment bolts (→ **fig.5**).

Fig. 5



**Easy replacement**

With SKF inch roller bearing units, logistics costs are reduced as there is only one part to order, store and mount.

## Housing material

All housings used for SKF inch roller bearing units are made of grey cast iron.

**Paint, corrosion protection**

The housings are painted blue (RAL 5007) using a water based alkyd/acryl paint. The paint protects the housing in accordance with ISO 12944-2, corrosivity category C2 (i.e. exterior atmospheres with low level of pollution, interior atmospheres where condensation may occur). The paint is not affected by most lubricating or engine oils, cutting fluids or alkalescent washing chemicals. Housings can be repainted with most water or solvent based 1- or 2-component paints.

Unpainted surfaces are protected by a solventless rust inhibitor.

# Sealing solutions

SKF roller bearing units are available with different sealing solutions (→ **fig. 6**):

- triple-lip seals (TriGard)
- labyrinth seals
- radial shaft seals (garter spring seals)
- end plugs

**Fig. 6**

**Sealing solutions for inch roller bearing units**

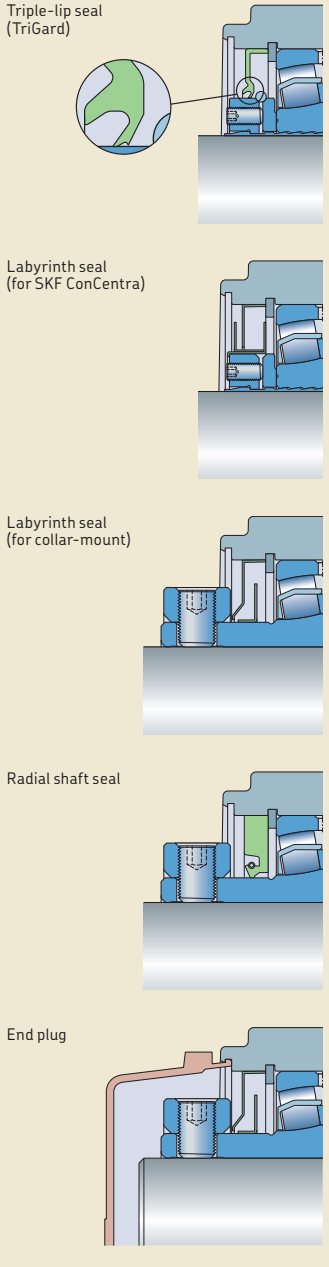


**Table 1** provides an overview of the characteristics and suitability of each sealing solution. Details are provided in the following text. This information should be used as a guideline and does not substitute for testing a seal in its application.

## TriGard seals

TriGard seals are standard with inch roller bearing units. These acrylonitrile-butadiene rubber (NBR) seals have the outside surface and seal lips vulcanized to a sheet steel insert. The seal consists of two lips that make contact with the mounting collar or bearing inner ring, and a third, non-contact lip, to protect the seal lips from coarse contaminants. The rubber coated outside circumference secures the seal in the housing and enhances the sealing effect.

## Labyrinth seals

As labyrinth seals do not generate friction, bearing units fitted with these seals are capable of relatively high speed operation.

For SKF ConCentra units, the labyrinth is created with three sheet steel rings. Two rings are fixed to the mounting collar or back-up collar and rotate with the shaft to act as flingers. The third ring is secured in the housing bore.

For collar-mount units, the labyrinth is created with two sheet steel rings. One ring is pressed onto the extended inner ring and rotates with the shaft, acting as a flinger. The other ring is secured in the housing bore.

## Radial shaft seals (garter spring seals)

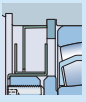
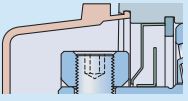
Collar-mount units can be supplied with radial shaft seals on both sides, on request. The seals are made of acrylonitrile-butadiene rubber (NBR) and have no metal reinforcement. They sit firmly in the housing bore providing a static seal. The spring-loaded seal lip provides a dynamic seal against the inner ring shoulder.

## End plugs

Bearing units mounted at the end of a shaft should have an end plug (end cover). End plugs for units up to 2 15/16 inches are plastic, while larger sizes are steel. Bearing units with end plugs are identified by the designation suffix Y. For information about the permissible length of the shaft end, contact the SKF application engineering service.

**Table 1**

**Seals for inch roller bearing units**

| Seal |  |  |  |  |  |
|---|---|---|---|---|---|
| Type | triple-lip (TriGard) | labyrinth | | radial shaft seal[1] | end plug |
| Material | nitrile rubber, steel | metal | | nitrile rubber | $d_a$ < 3 in.: plastic<br>$d_a$ ≥ 3 in.: steel |
| **Application conditions and requirements** | | | | | |
| Temperature [°F] | –5 to 230[2] | –5 to 230[2] | | –5 to 230[2] | $d_a$ < 3 in.: –5 to 230[2]<br>$d_a$ ≥ 3 in.: –5 to 230[2] |
| Max. circumferential speed[3] [m/s] | 13 | not limited | | 6 | n/a |
| Max. misalignment [°] | 1,5 | 1,5 | | 1,5 | n/a |
| Low friction | + | ++ | | – | n/a |
| Axial shaft displacement | ++ | – | | + | n/a |
| Vertical shaft arrangement | + | + | | + | + |
| **Sealing suitability** | | | | | |
| Dust | ++ | + | | ++ | ++ |
| Fine particles | ++ | + | | ++ | ++ |
| Coarse particles | + | + | | ++ | ++ |
| Chips | + | ++ | | ++ | ++ |
| Liquids when sprayed | + | – – | | ++ | ++ |
| Direct sunlight | + | ++ | | + | ++ |

Symbols: n/a not applicable ++ very suitable + suitable – limited suitability – – unsuitable

1) Option only for collar-mount units.
2) Imposed by the grease.
3) To convert circumferential speeds to rotational speeds, refer to **table 7** on **page 37**.

# Design considerations

For general information about system design, refer to the following sections:

- *Typical shaft-bearing combinations* (→ **page 41**)
- *Locating/non-locating bearing arrangements* (→ **page 40**)
- *Load carrying capacity* (→ **page 44**)
- *Specifications for shafts and housing support surfaces* (→ **page 45**)

## Bearing life

For information about the SKF rating life, minimum load and static safety for bearings in SKF inch roller bearing units, refer to the product information available online at skf.com/bearings. The bearing data are listed in **tables 2** and **3**.

## Typical shaft-bearing combinations

SKF inch roller bearing units are designed for plain shafts.

## Locating and non-locating bearing positions

SKF inch roller bearing units can be used for both the locating and non-locating bearing positions. Bearing units for the non-locating bearing position have a wide bearing seat to accommodate 1/32 in. of axial displacement, in either direction from the central position (1/16 in. maximum) (→ **fig. 7**).

Bearing units for the locating bearing position are identified by the designation suffix H. Units for the non-locating bearing position have no suffix.

**Fig. 7**

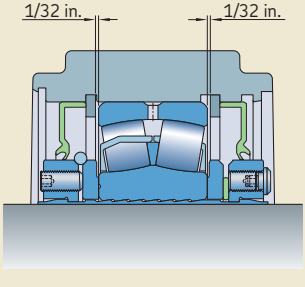


Table 2

**Bearing data for inch SKF ConCentra roller bearing units**

| Shaft diameter | | Load ratings | | Fatigue load limit | Calculation factors | | | | Bearing mean diameter |
|---|---|---|---|---|---|---|---|---|---|
| from | to | dynamic C | static $C_0$ | $P_u$ | e | $Y_1$ | $Y_2$ | $Y_0$ | $d_m$ |
| in. | | lbf. | | lbf. | – | | | | in. |
| 1 7/16 | 1 1/2 | 21 700 | 20 300 | 2 200 | 0.28 | 2.4 | 3.6 | 2.5 | 2.36 |
| 1 11/16 | 1 3/4 | 23 000 | 22 100 | 2 430 | 0.26 | 2.6 | 3.9 | 2.5 | 2.56 |
| 1 15/16 | 2 | 23 400 | 24 100 | 2 650 | 0.24 | 2.8 | 4.2 | 2.8 | 2.76 |
| 2 3/16 | | 28 100 | 28 600 | 3 080 | 0.24 | 2,8 | 4.2 | 2.8 | 3.05 |
| 2 7/16 | 2 1/2 | 43 400 | 41 100 | 5 400 | 0.24 | 2.8 | 4.2 | 2.8 | 3.64 |
| 2 11/16 | 3 | 47 700 | 54 000 | 5 960 | 0.22 | 3 | 4.6 | 2.8 | 4.04 |
| 3 7/16 | 3 1/2 | 73 100 | 84 400 | 8 770 | 0.24 | 2.8 | 4.2 | 2.8 | 4,92 |
| 3 11/16 | 4 | 95 700 | 110 000 | 11 020 | 0.24 | 2.8 | 4.2 | 2.8 | 5.51 |

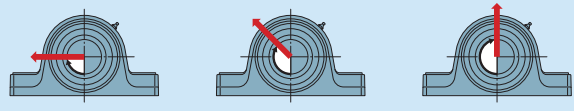
Table 3

**Bearing data for collar-mount roller bearing units**

| Shaft diameter | | Load ratings | | Fatigue load limit | Calculation factors | | | | Bearing mean diameter |
|---|---|---|---|---|---|---|---|---|---|
| from | to | dynamic C | static $C_0$ | $P_u$ | e | $Y_1$ | $Y_2$ | $Y_0$ | $d_m$ |
| in. | | lbf. | | lbf. | – | | | | in. |
| 1 7/16 | 1 1/2 | 16 600 | 18 300 | 2 050 | 0.28 | 2.4 | 3.6 | 2.5 | 2.36 |
| 1 11/16 | 1 3/4 | 17 300 | 19 800 | 2 130 | 0.26 | 2.6 | 3.9 | 2.5 | 2.56 |
| 1 15/16 | 2 | 19 000 | 22 500 | 2 470 | 0.24 | 2.8 | 4.2 | 2.8 | 2.76 |
| 2 3/16 | | 22 400 | 26 500 | 2 900 | 0.24 | 2.8 | 4.2 | 2.8 | 3.05 |
| 2 7/16 | 2 1/2 | 33 300 | 41 100 | 4 770 | 0.24 | 2.8 | 4.2 | 2.8 | 3.64 |
| 2 11/16 | 3 | 35 500 | 46 800 | 5 310 | 0.22 | 3 | 4.6 | 2.8 | 4.04 |
| 3 7/16 | 3 1/2 | 56 900 | 76 400 | 8 430 | 0.31 | 2.2 | 3.3 | 2.2 | 4.92 |
| 3 11/16 | 4 | 69 900 | 93 300 | 11 900 | 0.24 | 2.8 | 4.2 | 2.8 | 5.51 |
| 4 7/16 | 4 1/2 | 91 700 | 126 000 | 12 800 | 0.25 | 2.7 | 4 | 2.5 | 6.10 |
| 4 15/16 | | 123 000 | 180 000 | 17 500 | 0.26 | 2.6 | 3.9 | 2.5 | 7.09 |

Table 4

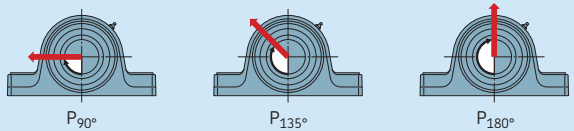
## Safe loads for SYE series roller bearing units




| Shaft diameter from | to | Safe loads in the direction of $P_{90°}$ | $P_{135°}$ | $P_{180°}$ |
|---|---|---|---|---|
| in. | | lbf. | | |
| 1 7/16 | 1 7/16 | 4 000 | 1 800 | 1 800 |
| 1 1/2 | 1 1/2 | 7 200 | 4 200 | 4 800 |
| 1 11/16 | 1 11/16 | 7 200 | 4 200 | 4 800 |
| 1 3/4 | 1 3/4 | 9 200 | 5 000 | 5 600 |
| 1 15/16 | 2 | 9 200 | 5 000 | 5 600 |
| 2 3/16 | 2 3/16 | 10 200 | 6 200 | 6 900 |
| 2 7/16 | 2 1/2 | 10 400 | 6 400 | 7 000 |
| 3 11/16 | 3 | 16 000 | 9 600 | 10 800 |
| 3 7/16 | 3 1/2 | 18 000 | 10 400 | 11 800 |

Table 5

## Safe loads for SYR series roller bearing units




| Shaft diameter from | to | Safe loads in the direction of $P_{90°}$ | $P_{135°}$ | $P_{180°}$ |
|---|---|---|---|---|
| in. | | lbf. | | |
| 1 7/16 | 1 1/2 | 6 200 | 3 200 | 3 900 |
| 1 11/16 | 1 3/4 | 7 800 | 4 400 | 5 200 |
| 1 15/16 | 2 | 9 000 | 5 200 | 6 400 |
| 2 3/16 | 2 3/16 | 10 400 | 6 200 | 7 400 |
| 2 7/16 | 2 1/2 | 11 600 | 7 000 | 8 300 |
| 2 11/16 | 3 | 13 000 | 8 200 | 10 000 |
| 3 7/16 | 3 1/2 | 14 600 | 9 200 | 11 300 |
| 3 11/16 | 4 | 16 000 | 10 000 | 12 400 |

## Load carrying capacity

### Pillow (plummer) blocks

SKF pillow block roller bearing units are intended for loads acting perpendicularly toward the support surface. If the bearing unit is supported over its entire base and the loads are purely perpendicular, loads are limited only by the bearing.

If loads acting in other directions occur, be sure that the magnitude of the load is permissible for the housing and the attachment bolts. Guideline values for the safe loads of the housings are provided in **tables 4** to **6**. The safe loads have been calculated using a safety factor of 5 against fracture.

If the bearing unit is not supported over its entire base, the load carrying capacity for perpendicular loads may be affected. For additional information, contact the SKF application engineering service.

For a purely axial force, static or dynamic, the permissible load on the housing should not exceed 65% of $P_{180°}$.

#### Additional housing support

When the housing is subjected to loads acting parallel to the support surface, it may be necessary to pin the housing to the support surface or to provide a stop to counter the load.

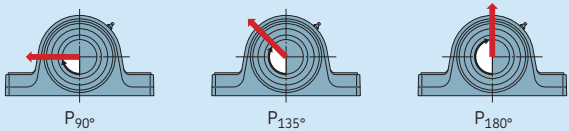
When loads act at angles between 55° and 120°, or when the axial loads are greater than 5% of $P_{180°}$ (→ **tables 4** to **6**), the bearing unit should be pinned to the support surface. The dowel pins should be sufficiently strong to accommodate the loads acting parallel to the support surface.

### Flanged units

For the safe loads of flanged units, contact the SKF application engineering service.

**Table 6**

**Safe loads for FSYE series roller bearing units**




| Shaft diameter from | to | Safe loads in the direction of $P_{90°}$ | $P_{135°}$ | $P_{180°}$ |
|---|---|---|---|---|
| in. | | lbf. | | |
| 2 7/16 | 3 1/2 | 17 200 | 8 800 | 9 500 |
| 2 11/16 | 3 | 20 800 | 11 000 | 12 000 |
| 3 7/16 | 3 1/2 | 23 600 | 13 600 | 14 400 |
| 3 11/16 | 4 | 26 800 | 16 200 | 16 600 |
| 4 7/16 | 4 1/2 | 29 600 | 18 600 | 19 200 |
| 4 15/16 | 4 15/16 | 32 800 | 20 600 | 21 200 |

### Axial holding power

The axial holding power of SKF ConCentra roller bearing units depends on the friction between the shaft and locking device. It is therefore also dependent on the number of set (grub) screws in the mounting collar (→ **table 7**).

For collar-mount units, the axial holding power is determined by the size of the set (grub) screws (→ **table 8**). The values are valid for unhardened shafts after the set screws have been tightened to the recommended torque value.

When mounted correctly, the bearing units can withstand typical shock loads equivalent to the requisite axial holding force. However, the axial load carrying capacity of the bearing unit can be limited by the bearing.

## Radial internal clearance

The clearance values for bearings in SKF inch roller bearing units are provided in **tables 9** and **10**. The values are valid for unmounted units under zero measuring load.

**Table 8**

**Axial holding power of collar-mount roller bearing units**

| Shaft diameter | | Set screws | | | Axial holding power[1] |
|---|---|---|---|---|---|
| from | to | Number | Size | Tightening torque | |
| in. | | – | | in-lbf. | lbf. |
| 1 7/16 | 2 3/16 | 2 | 3/8" – 24 | 250 | 515 |
| 2 7/16 | 3 1/2 | 2 | 1/2" – 20 | 620 | 900 |
| 3 11/16 | 4 | 2 | 5/8" – 18 | 1 325 | 1 200 |
| 4 7/16 | 4 15/16 | 4 | 5/8" – 18 | 1 325 | 2 400 |

[1] Not equivalent to the axial load carrying capacity of the bearing unit.

**Table 9**

**Radial internal clearance of bearings in SKF ConCentra roller bearing units**

| Shaft diameter | | Radial internal clearance | |
|---|---|---|---|
| from | to | min. | max. |
| in. | | in. | |
| 1 7/16 | 1 1/2 | 0.0020 | 0.0026 |
| 1 11/16 | 2 | 0.0024 | 0.0031 |
| 2 3/16 | 2 1/2 | 0.0030 | 0.0037 |
| 2 11/16 | 3 | 0.0037 | 0.0047 |
| 3 7/16 | 4 | 0.0043 | 0.0055 |

**Table 7**

**Axial holding power of SKF ConCentra roller bearing units**

| Shaft diameter | | Set screws | | Axial holding power[1] |
|---|---|---|---|---|
| from | to | Number | Tightening torque | |
| in. | | – | in-lbf. | lbf. |
| 1 7/16 | 2 3/16 | 3 | 66 | 3 350 |
| 2 7/16 | 2 3/4 | 4 | 66 | 4 500 |
| 2 15/16 | 3 15/16 | 5 | 66 | 5 600 |
| 3 | 3 1/2 | 4 | 66 | 4 500 |
| 3 7/16 | 4 | 7 | 66 | 7 850 |

[1] Not equivalent to the axial load carrying capacity of the bearing unit.

**Table 10**

**Radial internal clearance of bearings in collar-mount roller bearing units**

| Shaft diameter | | Radial internal clearance | |
|---|---|---|---|
| from | to | min. | max. |
| in. | | in. | |
| 1 7/16 | 1 1/2 | 0.001 | 0.002 |
| 1 11/16 | 2 | 0.0012 | 0.0022 |
| 2 3/16 | 2 1/2 | 0.0014 | 0.0026 |
| 2 11/16 | 3 | 0.0018 | 0.0031 |
| 3 7/16 | 4 | 0.0024 | 0.0039 |
| 4 7/16 | 4 1/2 | 0.0028 | 0.0047 |
| 4 15/16 | 5 | 0.0035 | 0.0057 |

## Operating temperature

The permissible operating temperature is limited by the seals (→ **table 1**, **page 699**) and the lubricant (→ **table 13**, **page 706**).

The housing material does not have any additional temperature limits, except for very low temperature applications where impact strength could be a factor.

The housing paint is heat resistant up to 175 °F material temperature or 210 °F ambient temperature.

When temperatures outside the permissible range are expected, contact the SKF application engineering service.

## Operating speed

The speeds at which SKF inch roller bearing units can be operated depend on the sealing solution in the bearing unit. For bearing units fitted with TriGard or radial shaft seals, the limiting speeds are based on the permissible circumferential speed at the seal lips (→ **table 1**, **page 699**). For bearing units fitted with labyrinth seals, the limiting speeds are imposed by the bearing size and grease.

Guideline values for the limiting speeds are listed in the product tables.

## Shaft specifications

For SKF ConCentra units, SKF recommends using the shaft tolerances listed in **table 11** for the bearing seat. For collar-mount units, use the values listed in **table 12**.

A small lead-in chamfer should be machined at the shaft end to facilitate mounting.

## Attachment bolt recommendations

In typical applications, 8.8 class (SAE J429, Grade 5) hexagon head bolts can be used together with washers. If the load does not act perpendicularly toward the base, it may be necessary to use stronger, 10.9 class (SAE J429, Grade 8) bolts.

SKF inch roller bearing units can withstand loads resulting from tightening the attachment bolts to the torque values recommended by bolt manufacturers. They are valid for oiled, but otherwise untreated, thread surfaces. SKF cannot guarantee that tightening to the recommended value will provide sufficient anchoring. Make sure that attachment bolts, dowels or stops, and a sufficiently strong support can accommodate all occurring loads.

**Table 11**

**Shaft tolerances for SKF ConCentra units**

| Shaft diameter | | Tolerance | |
|---|---|---|---|
| from | to | high | low |
| in. | | in. | |
| 1 7/16 | 1 1/2 | 0 | – 0.003 |
| 1 11/16 | 2 1/2 | 0 | – 0.004 |
| 2 11/16 | 4 | 0 | – 0.005 |

**Table 12**

**Shaft tolerances for collar-mount units**

| Shaft diameter | | Tolerance | |
|---|---|---|---|
| from | to | high | low |
| in. | | in. | |
| 1 7/16 | 1 15/16 | 0 | – 0.0005 |
| 2 | 4 15/16 | 0 | – 0.001 |

# Lubrication

SKF inch roller bearing units are intended for grease lubrication.

## Initial grease fill

SKF inch roller bearing units are filled with a mineral oil based lithium grease that contains EP additives. The initial grease fill at the factory fills the bearing completely and 40 to 50% of the free space in the housing. The technical specifications of the grease are provided in **table 13**. The grease provides reliable performance when operating between 95 and 230 °F. During start-up, temperatures down to –5 °F are permissible. For short periods, temperatures above 230 °F can be tolerated.

For additional information about permissible temperatures of rolling bearing greases (the SKF traffic light concept), refer to the information available online at skf.com/bearings.

## Relubrication

SKF inch roller bearing units are typically relubricated in order to realize maximum service life. All bearing units except those in the FYRP series have a lubrication hole with a 1/8-27 NPSF thread. They are provided standard with a grease fitting AH 1/8-27 PTF. Units in the FYRP series have a 1/4-28 UNF straight thread, and are provided with a grease fitting 1/4-28 UNF.

### Relubrication intervals

To calculate the relubrication intervals refer to *Relubrication intervals* under *Metric roller bearing units* (→ **page 676**). The relevant calculation factors for SKF inch roller bearing units are provided in **tables 2** and **3** (→ **page 701**).

### Relubrication procedure

Before relubricating, the grease fitting and the area surrounding it should be cleaned. High-pressure cleaning equipment should be avoided. During relubrication, grease should be introduced via the grease fitting while the shaft is rotating slowly. Excessive pressure and over-greasing should be avoided, otherwise the seals may be damaged.

**Table 13**

**Technical specifications for the grease in SKF inch roller bearing units**

| Property | Specification |
|---|---|
| **Thickener** | Lithium soap |
| **Base oil type** | Mineral |
| **NLGI consitency class** | 2 |
| **Temperature range [°F]** | –5 to +230 |
| **Base oil viscosity [SUS]** | |
| • at 105 °F | 900 |
| • at 210 °F | 82 |

**Table 14**

**Grease quantities for relubricating inch roller bearing units**

| Shaft diameter | | Grease quantity |
|---|---|---|
| from | to | |
| in. | | g |
| 1 7/16 | 1 1/2 | 4 |
| 1 11/16 | 1 3/4 | 4 |
| 1 15/16 | 2 | 4 |
| 2 3/16 | 2 3/17 | 5 |
| 2 7/16 | 2 1/2 | 7 |
| 2 11/16 | 3 | 8 |
| 3 7/16 | 3 1/2 | 13 |
| 3 11/16 | 4 | 17 |
| 4 7/16 | – | 21 |
| 4 15/16 | – | 28 |

### Relubrication quantity

The appropriate quantity of grease for relubrication of SKF inch roller bearing units is provided in **table 14**.

### Greases for relubrication

To relubricate SKF inch roller bearing units, SKF recommends using SKF LGEP 2 grease, which is fully compatible with the original grease introduced at the factory. Other compatible greases such as SKF's multipurpose LGMT 2 and LGMT 3 greases can also be used.

## Mounting

SKF inch roller bearing units must be mounted properly using the appropriate tools and state of the art mechanical mounting methods. All the associated components must also meet certain basic requirements (→ *Specifications for shafts and housing support surfaces* on **page 45**). Mounting instructions are provided with each unit.

The mounting collar on SKF ConCentra roller bearing units is equipped with M6 set (grub) screws, the number of which depends on the size of the bearing unit. SKF recommends using a torque wrench to tighten these set (grub) screws. The tightening torque is 66 in-lbf. A specially designed hexagonal key 3L, in accordance with ISO 2936, with a torque indicator is supplied with each bearing unit.

**CAUTION:** Do not tighten the set (grub) screws until the bearing unit is positioned on the shaft. If the screws are tightened prematurely, the stepped sleeve may deform.

The locking collar of collar-mount units is equipped with two set (grub) screws, the size of which depends on the bearing unit size. SKF recommends using a torque wrench to tighten these set (grub) screws. Recommended tightening torque values are provided in **table 8** (→ **page 704**).

## Condition monitoring

SKF inch roller bearing units support condition monitoring during operation. For additional information about condition monitoring and the measurement tools and systems available from SKF, contact the SKF application engineering service.

## Accessories

The following accessories are available for SKF inch roller bearing units:

- Grease fitting M1 1/8 NPTF
- Automatic lubricators
- Grease meter: LAGM 1000E
- Condition monitoring sensors

For additional information, refer to *SKF tools and products* (→ **page 47**).

## Ordering information

SKF inch roller bearing units are supplied assembled, greased and ready-to-mount.

### Order example

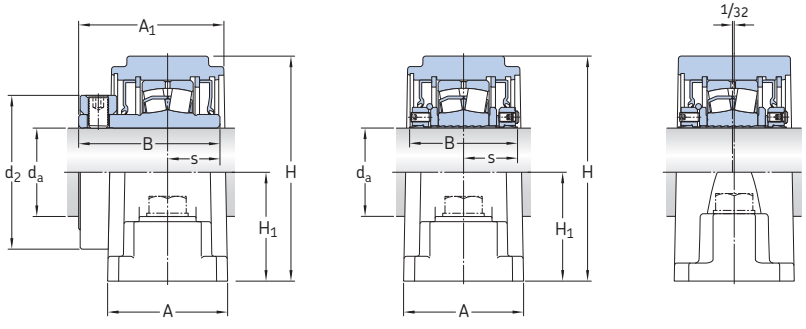
Two SKF ConCentra roller bearing units with a pillow (plummer) block housing in the SYE series are required for a 2 in. shaft diameter. The units should be fitted with labyrinth seals. One bearing unit will accommodate the bearing in the non-locating position at the end of the shaft. The other bearing unit will accommodate the bearing in the locating position on a through shaft.

The following items should be ordered:

- 1 bearing unit SYE 2 NY –118
- 1 bearing unit SYE 2 NH –118

# 17.1 SKF inch roller bearing units with a two-bolt pillow (plummer) block housing SYE, SYE .. N, SYR and SYR .. N series

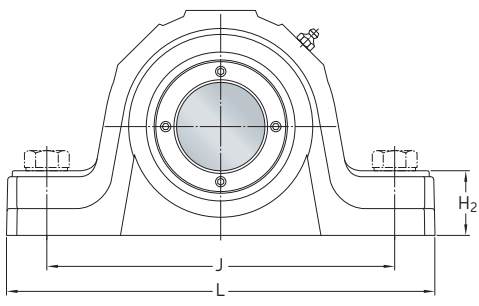
$d_a$ **1 7/16 – 2 7/16** in.



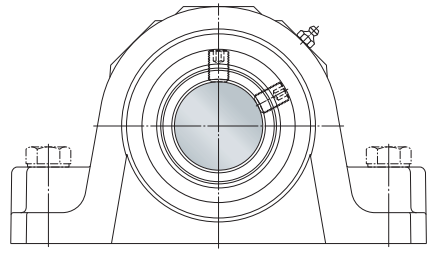

SYE SYE .. N SYR .. NH

| Shaft diameter $d_a$ | Bearing unit Designation[1] | Basic load rating dynamic C | Limiting speeds TriGard seal | Labyrinth seal | Radial shaft seal | Mass | Appropriate attachment bolt size |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **1 7/16** | **SYE 1 7/16** | 16 600 | 5 100 | 5 300 | 1 700 | 8 | 1/2 |
| | **SYE 1 7/16 N** | 21 700 | 4 000 | 5 600 | – | 8 | 1/2 |
| | **SYR 1 7/16** | 16 600 | 5 100 | 5 300 | 1 700 | 7 | 1/2 |
| | **SYR 1 7/16 N** | 21 700 | 4 000 | 5 600 | – | 7 | 1/2 |
| **1 1/2** | **SYE 1 1/2** | 16 600 | 5 100 | 5 300 | 1 700 | 8 | 1/2 |
| | **SYE 1 1/2 N** | 21 700 | 4 000 | 5 600 | – | 8 | 1/2 |
| | **SYR 1 1/2** | 16 600 | 5 100 | 5 300 | 1 700 | 7 | 1/2 |
| | **SYR 1 1/2 N** | 21 700 | 4 000 | 5 600 | – | 7 | 1/2 |
| **1 11/16** | **SYE 1 11/16** | 17 300 | 4 500 | 4 700 | 1 600 | 9.3 | 1/2 |
| | **SYE 1 11/16 N** | 23 000 | 3 700 | 5 300 | – | 9.3 | 1/2 |
| | **SYR 1 11/16** | 17 300 | 4 500 | 4 700 | 1 600 | 8.1 | 1/2 |
| | **SYR 1 11/16 N** | 23 000 | 3 700 | 5 300 | – | 8.1 | 1/2 |
| **1 3/4** | **SYE 1 3/4** | 17 300 | 4 500 | 4 700 | 1 600 | 9.3 | 5/8 |
| | **SYE 1 3/4 N** | 23 000 | 3 700 | 5 300 | – | 9.3 | 5/8 |
| | **SYR 1 3/4** | 17 300 | 4 500 | 4 700 | 1 600 | 8.1 | 1/2 |
| | **SYR 1 3/4 N** | 23 000 | 3 700 | 5 300 | – | 8.1 | 1/2 |
| **1 15/16** | **SYE 1 15/16** | 19 000 | 4 100 | 4 250 | 1 450 | 10.5 | 5/8 |
| | **SYE 1 15/16 N** | 23 400 | 3 500 | 5 000 | – | 10.5 | 5/8 |
| | **SYR 1 15/16** | 19 000 | 4 100 | 4 250 | 1 450 | 9.2 | 5/8 |
| | **SYR 1 15/16 N** | 23 400 | 3 500 | 5 000 | – | 9.2 | 5/8 |
| **2** | **SYE 2** | 19 000 | 4 100 | 4 250 | 1 450 | 10.5 | 5/8 |
| | **SYE 2 N** | 23 400 | 3 500 | 5 000 | – | 10.5 | 5/8 |
| | **SYR 2** | 19 000 | 4 100 | 4 250 | 1 450 | 9.2 | 5/8 |
| | **SYR 2 N** | 23 400 | 3 500 | 5 000 | – | 9.2 | 5/8 |
| **2 3/16** | **SYE 2 3/16** | 22 400 | 3 700 | 3 800 | 1 300 | 13.5 | 5/8 |
| | **SYE 2 3/16 N** | 28 100 | 3 250 | 4 500 | – | 13.5 | 5/8 |
| | **SYR 2 3/16** | 22 400 | 3 700 | 3 800 | 1 300 | 12 | 5/8 |
| | **SYR 2 3/16 N** | 28 100 | 3 250 | 4 500 | – | 12 | 5/8 |
| **2 7/16** | **SYE 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 18.5 | 5/8 |
| | **SYE 2 7/16 N** | 43 400 | 2 900 | 3 800 | – | 18.5 | 5/8 |
| | **SYR 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 16 | 5/8 |
| | **SYR 2 7/16 N** | 43 400 | 2 900 | 3 800 | – | 16 | 5/8 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




SYE ..N



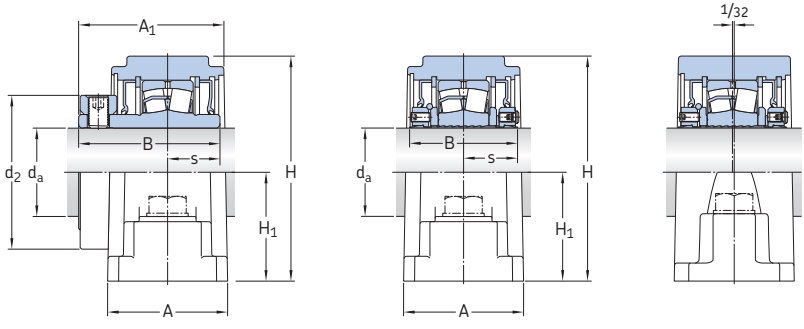
SYR

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_1$ | B | $d_2$ | H | $H_1$ | $H_2$ | J max. | J min. | L | s |
| in. | – | in. | | | | | | | | | | |
| **1 7/16** | **SYE 1 7/16** | 2 1/8 | 2 27/32 | 2 3/4 | 2 3/8 | 3 7/8 | 1 7/8 | 1 1/8 | 6 | 5 1/2 | 7 3/8 | 1 |
| | **SYE 1 7/16 N** | 2 1/8 | – | 2 11/32 | – | 3 7/8 | 1 7/8 | 1 1/8 | 6 | 5 1/2 | 7 3/8 | 1.17 |
| | **SYR 1 7/16** | 2 1/8 | 2 13/16 | 2 3/4 | 2 3/8 | 3 7/8 | 1 7/8 | 1 3/16 | 5 5/16 | 4 11/16 | 6 7/8 | 1 |
| | **SYR 1 7/16 N** | 2 1/16 | – | 2 11/32 | – | 3 7/8 | 1 7/8 | 1 3/16 | 5 5/16 | 4 11/16 | 6 7/8 | 1.17 |
| **1 1/2** | **SYE 1 1/2** | 2 3/8 | 2 31/32 | 2 3/4 | 2 3/8 | 4 1/4 | 2 1/8 | 1 1/4 | 6 1/2 | 6 | 7 7/8 | 1 |
| | **SYE 1 1/2 N** | 2 3/8 | – | 2 11/32 | – | 4 1/4 | 2 1/8 | 1 1/4 | 6 1/2 | 6 | 7 7/8 | 1.17 |
| | **SYR 1 1/2** | 2 1/8 | 2 13/16 | 2 3/4 | 2 3/8 | 3 7/8 | 1 7/8 | 1 3/16 | 5 5/16 | 4 11/16 | 6 7/8 | 1 |
| | **SYR 1 1/2 N** | 2 1/16 | – | 2 11/32 | – | 3 7/8 | 1 7/8 | 1 3/16 | 5 5/16 | 4 11/16 | 6 7/8 | 1.17 |
| **1 11/16** | **SYE 1 11/16** | 2 3/8 | 2 31/32 | 2 7/8 | 2 5/8 | 4 1/4 | 2 1/8 | 1 1/4 | 6 1/2 | 6 | 7 7/8 | 1 |
| | **SYE 1 11/16 N** | 2 3/8 | – | 2 11/32 | – | 4 1/4 | 2 1/8 | 1 1/4 | 6 1/2 | 6 | 7 7/8 | 1.17 |
| | **SYR 1 11/16** | 2 3/8 | 2 15/16 | 2 7/8 | 2 5/8 | 4 1/4 | 2 1/8 | 1 5/16 | 5 13/16 | 5 3/16 | 7 3/8 | 1 |
| | **SYR 1 11/16 N** | 2 1/8 | – | 2 11/32 | – | 4 1/4 | 2 1/8 | 1 5/16 | 5 13/16 | 5 3/16 | 7 3/8 | 1.17 |
| **1 3/4** | **SYE 1 3/4** | 2 1/2 | 3 5/32 | 2 7/8 | 2 5/8 | 4 1/2 | 2 1/4 | 1 5/16 | 7 1/4 | 6 3/4 | 8 7/8 | 1 |
| | **SYE 1 3/4 N** | 2 1/2 | – | 2 11/32 | – | 4 1/2 | 2 1/4 | 1 5/16 | 7 1/4 | 6 3/4 | 8 7/8 | 1.17 |
| | **SYR 1 3/4** | 2 3/8 | 2 15/16 | 2 7/8 | 2 5/8 | 4 1/4 | 2 1/8 | 1 5/16 | 5 13/16 | 5 3/16 | 7 3/8 | 1 |
| | **SYR 1 3/4 N** | 2 1/8 | – | 2 11/32 | – | 4 1/4 | 2 1/8 | 1 5/16 | 5 13/16 | 5 3/16 | 7 3/8 | 1.17 |
| **1 15/16** | **SYE 1 15/16** | 2 1/2 | 3 5/32 | 2 7/8 | 2 7/8 | 4 1/2 | 2 1/4 | 1 5/16 | 7 1/4 | 6 3/4 | 8 7/8 | 1 |
| | **SYE 1 15/16 N** | 2 1/2 | – | 2 11/32 | – | 4 1/2 | 2 1/4 | 1 5/16 | 7 1/4 | 6 3/4 | 8 7/8 | 1.17 |
| | **SYR 1 15/16** | 2 3/8 | 2 15/16 | 2 7/8 | 2 7/8 | 4 9/16 | 2 1/4 | 1 3/8 | 6 9/16 | 5 15/16 | 8 3/8 | 1 |
| | **SYR 1 15/16 N** | 2 5/16 | – | 2 11/32 | – | 4 9/16 | 2 1/4 | 1 3/8 | 6 9/16 | 5 15/16 | 8 3/8 | 1.17 |
| **2** | **SYE 2** | 2 5/8 | 3 11/32 | 2 7/8 | 2 7/8 | 5 | 2 1/2 | 1 1/2 | 8 | 7 1/2 | 9 5/8 | 1 |
| | **SYE 2 N** | 2 5/8 | – | 2 11/32 | – | 5 | 2 1/2 | 1 1/2 | 8 | 7 1/2 | 9 5/8 | 1.17 |
| | **SYR 2** | 2 3/8 | 2 15/16 | 2 7/8 | 2 7/8 | 4 9/16 | 2 1/4 | 1 3/8 | 6 9/16 | 5 15/16 | 8 3/8 | 1 |
| | **SYR 2 N** | 2 5/16 | – | 2 11/32 | – | 4 9/16 | 2 1/4 | 1 3/8 | 6 9/16 | 5 15/16 | 8 3/8 | 1.17 |
| **2 3/16** | **SYE 2 3/16** | 2 5/8 | 3 11/32 | 3 1/8 | 3 1/4 | 5 | 2 1/2 | 1 1/2 | 8 | 7 1/2 | 9 5/8 | 1 1/8 |
| | **SYE 2 3/16 N** | 2 5/8 | – | 2 11/32 | – | 5 | 2 1/2 | 1 1/2 | 8 | 7 1/2 | 9 5/8 | 1.1 |
| | **SYR 2 3/16** | 2 3/8 | 3 7/16 | 3 1/8 | 3 1/4 | 5 11/16 | 2 1/2 | 1 5/8 | 7 1/16 | 6 13/16 | 8 7/8 | 1 1/8 |
| | **SYR 2 3/16 N** | 2 3/8 | – | 2 11/32 | – | 5 | 2 1/2 | 1 5/8 | 7 1/16 | 6 7/16 | 8 7/8 | 1.1 |
| **2 7/16** | **SYE 2 7/16** | 2 7/8 | 3 19/32 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 10 1/2 | 1 1/4 |
| | **SYE 2 7/16 N** | 2 7/8 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 10 1/2 | 1.29 |
| | **SYR 2 7/16** | 2 11/16 | 3 7/16 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 3/4 | 7 7/16 | 6 13/16 | 9 1/4 | 1 1/4 |
| | **SYR 2 7/16 N** | 2 11/16 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 3/4 | 7 7/16 | 6 13/16 | 9 1/4 | 1.29 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

# 17.1 SKF inch roller bearing units with a two-bolt pillow (plummer) block housing SYE, SYE .. N, SYR and SYR .. N series

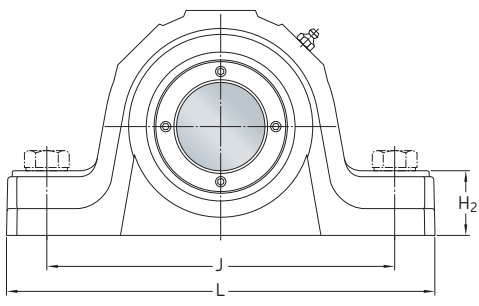
$d_a$ **2 1/2 – 3 11/16** in.



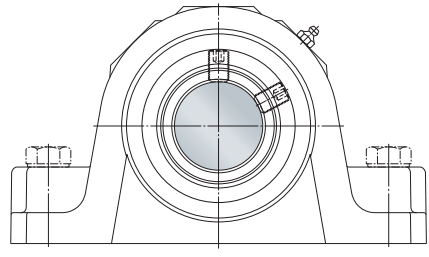

SYE SYE .. N SYR .. NH

| Shaft diameter $d_a$ | Bearing unit Designation[1] | Basic load rating dynamic C | Limiting speeds TriGard seal | Labyrinth seal | Radial shaft seal | Mass | Appropriate attachment bolt size |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **2 1/2** | **SYE 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 18.5 | 5/8 |
| | **SYE 2 1/2 N** | 43 400 | 2 900 | 3 800 | – | 18.5 | 5/8 |
| | **SYR 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 16 | 5/8 |
| | **SYR 2 1/2 N** | 43 400 | 2 900 | 3 800 | – | 16 | 5/8 |
| **2 11/16** | **SYE 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 25.5 | 3/4 |
| | **SYE 2 11/16 N** | 47 700 | 2 600 | 3 400 | – | 25.5 | 3/4 |
| | **SYR 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 22 | 3/4 |
| | **SYR 2 11/16 N** | 47 700 | 2 600 | 3 400 | – | 22 | 3/4 |
| **2 3/4** | **SYE 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 25 | 3/4 |
| | **SYE 2 3/4 N** | 47 700 | 2 600 | 3 400 | – | 25 | 3/4 |
| | **SYR 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 22 | 3/4 |
| | **SYR 2 3/4 N** | 47 700 | 2 600 | 3 400 | – | 22 | 3/4 |
| **2 15/16** | **SYE 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 24 | 3/4 |
| | **SYE 2 15/16 N** | 47 700 | 2 600 | 3 400 | – | 24 | 3/4 |
| | **SYR 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 21 | 3/4 |
| | **SYR 2 15/16 N** | 47 700 | 2 600 | 3 400 | – | 21 | 3/4 |
| **3** | **SYE 3** | 35 500 | 2 800 | 2 800 | 950 | 23.5 | 3/4 |
| | **SYE 3 N** | 47 700 | 2 600 | 3 400 | – | 23.5 | 3/4 |
| | **SYR 3** | 35 500 | 2 800 | 2 800 | 950 | 21 | 3/4 |
| | **SYR 3 N** | 47 700 | 2 600 | 3 400 | – | 21 | 3/4 |
| **3 7/16** | **SYE 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 35.5 | 7/8 |
| | **SYE 3 7/16 N** | 73 100 | 2 200 | 2 600 | – | 35.5 | 7/8 |
| | **SYR 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 31.5 | 7/8 |
| | **SYR 3 7/16 N** | 73 100 | 2 200 | 2 600 | – | 31.5 | 7/8 |
| **3 1/2** | **SYE 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 35.5 | 7/8 |
| | **SYE 3 1/2 N** | 73 100 | 2 200 | 2 600 | – | 35.5 | 7/8 |
| | **SYR 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 31.5 | 7/8 |
| | **SYR 3 1/2 N** | 73 100 | 2 200 | 2 600 | – | 31.5 | 7/8 |
| **3 11/16** | **SYR 3 11/16** | 69 900 | 2 100 | 2 000 | 700 | 44.5 | 1 |
| | **SYR 3 11/16 N** | 95 700 | 2 000 | 2 200 | – | 44.5 | 1 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




SYE ..N



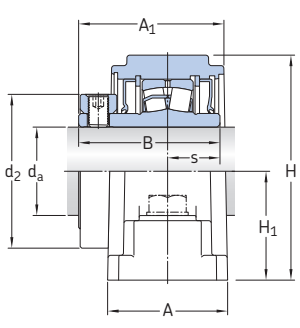
SYR

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_1$ | B | $d_2$ | H | $H_1$ | $H_2$ | J max. | J min. | L | s |
| in. | – | in. | | | | | | | | | | |
| **2 1/2** | **SYE 2 1/2** | 2 7/8 | 3 19/32 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 10 1/2 | 1 1/4 |
| | **SYE 2 1/2 N** | 2 7/8 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 10 1/2 | 1.29 |
| | **SYR 2 1/2** | 2 11/16 | 3 7/16 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 3/4 | 7 7/16 | 6 13/16 | 9 1/4 | 1 1/4 |
| | **SYR 2 1/2 N** | 2 11/16 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 3/4 | 7 7/16 | 6 13/16 | 9 1/4 | 1.29 |
| **2 11/16** | **SYE 2 11/16** | 3 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1 1/4 |
| | **SYE 2 11/16 N** | 3 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1.29 |
| | **SYR 2 11/16** | 2 11/16 | 3 11/16 | 3 5/8 | 4 1/2 | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1 1/4 |
| | **SYR 2 11/16 N** | 2 11/16 | – | 2 37/64 | – | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1.29 |
| **2 3/4** | **SYE 2 3/4** | 3 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1 1/4 |
| | **SYE 2 3/4 N** | 3 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1.29 |
| | **SYR 2 3/4** | 2 11/16 | 3 11/16 | 3 5/8 | 4 1/2 | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1 1/4 |
| | **SYR 2 3/4 N** | 2 11/16 | – | 2 37/64 | – | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1.29 |
| **2 15/16** | **SYE 2 15/16** | 3 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1 1/4 |
| | **SYE 2 15/16 N** | 3 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1.29 |
| | **SYR 2 15/16** | 2 11/16 | 3 11/16 | 3 5/8 | 4 1/2 | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1 1/4 |
| | **SYR 2 15/16 N** | 2 11/16 | – | 2 37/64 | – | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1.29 |
| **3** | **SYE 3** | 3 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1 1/4 |
| | **SYE 3 N** | 3 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 3/4 | 9 1/4 | 12 | 1.29 |
| | **SYR 3** | 2 11/16 | 3 11/16 | 3 5/8 | 4 1/2 | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1 1/4 |
| | **SYR 3 N** | 2 11/16 | – | 2 37/64 | – | 6 7/16 | 3 1/4 | 2 1/4 | 8 7/16 | 7 13/16 | 10 7/16 | 1.29 |
| **3 7/16** | **SYE 3 7/16** | 3 5/8 | 4 7/16 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 11 5/16 | 10 11/16 | 14 | 1 7/16 |
| | **SYE 3 7/16 N** | 3 5/8 | – | 3 5/32 | – | 7 1/2 | 3 3/4 | 2 1/4 | 11 5/16 | 10 11/16 | 14 | 1.57 |
| | **SYR 3 7/16** | 3 3/16 | 4 3/32 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 10 3/4 | 9 1/4 | 13 | 1 7/16 |
| | **SYR 3 7/16 N** | 3 3/16 | – | 3 5/32 | – | 7 1/2 | 3 3/4 | 2 1/4 | 10 3/4 | 9 1/4 | 13 | 1.57 |
| **3 1/2** | **SYE 3 1/2** | 3 5/8 | 4 7/16 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 11 5/16 | 10 11/16 | 14 | 1 7/16 |
| | **SYE 3 1/2 N** | 3 5/8 | – | 3 5/32 | – | 7 1/2 | 3 3/4 | 2 1/4 | 11 5/16 | 10 11/16 | 14 | 1.57 |
| | **SYR 3 1/2** | 3 3/16 | 4 3/32 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 10 3/4 | 9 1/4 | 13 | 1 7/16 |
| | **SYR 3 1/2 N** | 3 3/16 | – | 3 5/32 | – | 7 1/2 | 3 3/4 | 2 1/4 | 10 3/4 | 9 1/4 | 13 | 1.57 |
| **3 11/16** | **SYR 3 11/16** | 3 17/32 | 4 21/32 | 4 19/32 | 6 | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1 5/8 |
| | **SYR 3 11/16 N** | 3 17/32 | – | 3 3/8 | – | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1.61 |

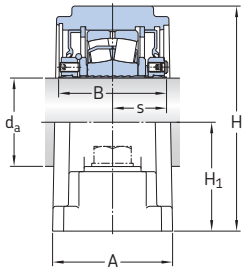
[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

# 17.1 SKF inch roller bearing units with a two-bolt pillow (plummer) block housing SYE, SYE .. N, SYR and SYR .. N series

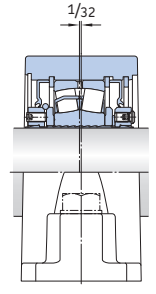
$d_a$ **3 15/16 – 4** in.




SYE



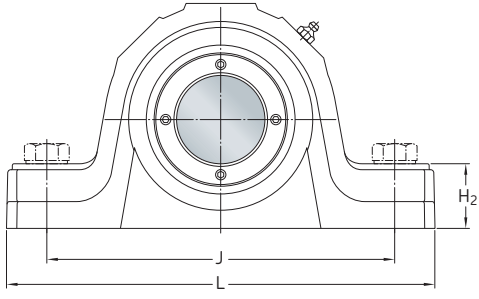

SYE .. N



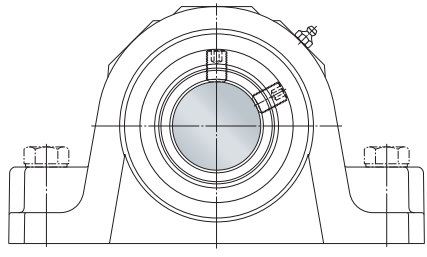

SYR .. NH

| **Shaft diameter** $d_a$ | **Bearing unit** Designation[1] | **Basic load rating** dynamic C | **Limiting speeds** TriGard seal | Labyrinth seal | Radial shaft seal | **Mass** | **Appropriate attachment bolt size** |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **3 15/16** | SYR 3 15/16 | 69 900 | 2 100 | 2 000 | 700 | 43.5 | 1 |
| | **SYR 3 15/16 N** | 95 700 | 2 000 | 2 200 | – | 43.5 | 1 |
| **4** | **SYR 4** | 69 900 | 2 100 | 2 000 | 700 | 43.5 | 1 |
| | **SYR 4 N** | 95 700 | 2 000 | 2 200 | – | 43.5 | 1 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




SYE ..N



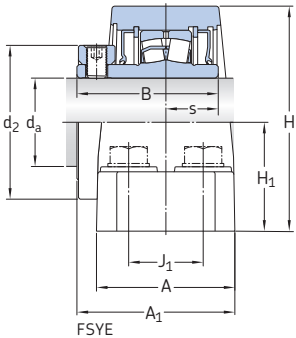
SYR

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_1$ | B | $d_2$ | H | $H_1$ | $H_2$ | J max. | min. | L | s |
| in. | – | in. | | | | | | | | | | |
| **3 15/16** | **SYR 3 15/16** | 3 17/32 | 4 21/32 | 4 19/32 | 6 | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1 5/8 |
| | **SYR 3 15/16 N** | 3 17/32 | – | 3 3/8 | – | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1.61 |
| **4** | **SYR 4** | 3 17/32 | 4 21/32 | 4 19/32 | 6 | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1 5/8 |
| | **SYR 4 N** | 3 17/32 | – | 3 3/8 | – | 8 7/16 | 4 1/8 | 2 1/2 | 11 3/4 | 10 | 14 1/4 | 1.61 |

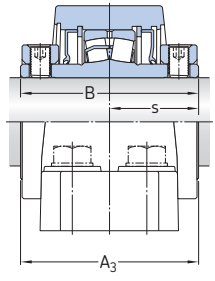
[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

## 17.2 SKF inch roller bearing units with a four-bolt pillow (plummer) block housing FSYE and FSYE .. N series

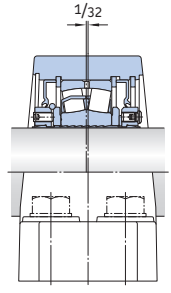
$d_a$ **2 7/16 – 4 15/16** in.




FSYE
($d_a \leq 4$ in.)



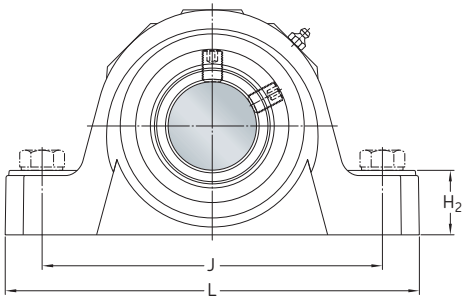

FSYE
($d_a \geq 4\ 7/16$ in.)



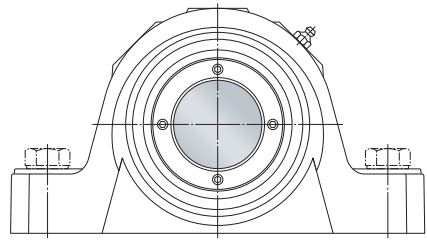

FSYE .. NH

| Shaft diameter $d_a$ | Bearing unit Designation[1] | Basic load rating dynamic C | Limiting speeds TriGard seal | Labyrinth seal | Radial shaft seal | Mass | Appropriate attachment bolt size |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **2 7/16** | **FSYE 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 19 | 5/8 |
| | **FSYE 2 7/16 N** | 43 400 | 2 900 | 3 800 | – | 19 | 5/8 |
| **2 1/2** | **FSYE 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 18.5 | 5/8 |
| | **FSYE 2 1/2 N** | 43 400 | 2 900 | 3 800 | – | 18.5 | 5/8 |
| **2 11/16** | **FSYE 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 25.5 | 5/8 |
| | **FSYE 2 11/16 N** | 47 700 | 2 600 | 3 400 | – | 25.5 | 5/8 |
| **2 3/4** | **FSYE 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 25.5 | 5/8 |
| | **FSYE 2 3/4 N** | 47 700 | 2 600 | 3 400 | – | 25.5 | 5/8 |
| **2 15/16** | **FSYE 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 24 | 5/8 |
| | **FSYE 2 15/16 N** | 47 700 | 2 600 | 3 400 | – | 24 | 5/8 |
| **3** | **FSYE 3** | 35 500 | 2 800 | 2 800 | 950 | 24 | 5/8 |
| | **FSYE 3 N** | 47 700 | 2 600 | 3 400 | – | 24 | 5/8 |
| **3 7/16** | **FSYE 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 36.5 | 3/4 |
| | **FSYE 3 7/16 N** | 73 100 | 2 200 | 2 600 | – | 36.5 | 3/4 |
| **3 1/2** | **FSYE 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 36.5 | 3/4 |
| | **FSYE 3 1/2 N** | 73 100 | 2 200 | 2 600 | – | 36.5 | 3/4 |
| **3 11/16** | **FSYE 3 11/16** | 69 900 | 2 100 | 2 000 | 700 | 50.5 | 3/4 |
| | **FSYE 3 11/16 N** | 95 700 | 2 000 | 2 200 | – | 50.5 | 3/4 |
| **3 15/16** | **FSYE 3 15/16** | 69 900 | 2 100 | 2 000 | 700 | 49.5 | 3/4 |
| | **FSYE 3 15/16 N** | 95 700 | 2 000 | 2 200 | – | 49.5 | 3/4 |
| **4** | **FSYE 4** | 69 900 | 2 100 | 2 000 | 700 | 49.5 | 3/4 |
| | **FSYE 4 N** | 95 700 | 2 000 | 2 200 | – | 49.5 | 3/4 |
| **4 7/16** | **FSYE 4 7/16** | 91 700 | 1 900 | – | – | 71 | 3/4 |
| **4 1/2** | **FSYE 4 1/2** | 91 700 | 1 900 | – | – | 71 | 3/4 |
| **4 15/16** | **FSYE 4 15/16** | 123 000 | 1 650 | – | – | 100 | 7/8 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




FSYE



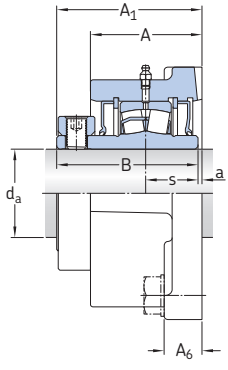
FSYE .. N

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_1$ | B | $d_2$ | H | $H_1$ | $H_2$ | J max. | J min. | $J_1$ | L | s |
| in. | – | in. | | | | | | | | | | | |
| **2 7/16** | **FSYE 2 7/16** | 3 1/2 | 3 19/32 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 1 7/8 | 10 1/2 | 1 1/4 |
| | **FSYE 2 7/16 N** | 3 1/2 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 1 7/8 | 10 1/2 | 1.29 |
| **2 1/2** | **FSYE 2 1/2** | 3 1/2 | 3 19/32 | 3 3/8 | 4 | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 1 7/8 | 10 1/2 | 1 1/4 |
| | **FSYE 2 1/2 N** | 3 1/2 | – | 2 37/64 | – | 5 11/16 | 2 3/4 | 1 5/8 | 8 3/4 | 8 1/4 | 1 7/8 | 10 1/2 | 1.29 |
| **2 11/16** | **FSYE 2 11/16** | 4 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1 1/4 |
| | **FSYE 2 11/16 N** | 4 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1.29 |
| **2 3/4** | **FSYE 2 3/4** | 4 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1 1/4 |
| | **FSYE 2 3/4 N** | 4 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1.29 |
| **2 15/16** | **FSYE 2 15/16** | 4 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1 1/4 |
| | **FSYE 2 15/16 N** | 4 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1.29 |
| **3** | **FSYE 3** | 4 | 3 29/32 | 3 5/8 | 4 1/2 | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1 1/4 |
| | **FSYE 3 N** | 4 | – | 2 37/64 | – | 6 5/16 | 3 1/8 | 1 7/8 | 9 7/8 | 9 1/8 | 2 1/8 | 12 | 1.29 |
| **3 7/16** | **FSYE 3 7/16** | 4 1/2 | 4 7/16 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 11 7/16 | 10 9/16 | 2 3/8 | 14 | 1 7/16 |
| | **FSYE 3 7/16 N** | 4 1/2 | – | 3 9/64 | – | 7 1/2 | 3 3/4 | 2 1/4 | 11 7/16 | 10 9/16 | 2 3/8 | 14 | 1.57 |
| **3 1/2** | **FSYE 3 1/2** | 4 1/2 | 4 7/16 | 4 1/32 | 5 1/8 | 7 1/2 | 3 3/4 | 2 1/4 | 11 7/16 | 10 9/16 | 2 3/8 | 14 | 1 7/16 |
| | **FSYE 3 1/2 N** | 4 1/2 | – | 3 9/64 | – | 7 1/2 | 3 3/4 | 2 1/4 | 11 7/16 | 10 9/16 | 2 3/8 | 14 | 1.57 |
| **3 11/16** | **FSYE 3 11/16** | 4 1/2 | 4 7/8 | 4 19/32 | 6 | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1 5/8 |
| | **FSYE 3 11/16 N** | 4 1/2 | – | 3 25/34 | – | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1.61 |
| **3 15/16** | **FSYE 3 15/16** | 4 1/2 | 4 7/8 | 4 19/32 | 6 | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1 5/8 |
| | **FSYE 3 15/16 N** | 4 1/2 | – | 3 25/34 | – | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1.61 |
| **4** | **FSYE 4** | 4 1/2 | 4 7/8 | 4 19/32 | 6 | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1 5/8 |
| | **FSYE 4 N** | 4 1/2 | – | 3 25/34 | – | 8 9/16 | 4 1/4 | 2 7/16 | 13 | 12 | 2 1/4 | 15 1/4 | 1.61 |
| **4 7/16** | **FSYE 4 7/16** | 4 5/8 | 6 1/8 | 6 1/8 | 6 1/8 | 9 3/8 | 4 3/4 | 2 3/4 | 13 7/8 | 13 1/8 | 2 1/2 | 16 5/8 | 3 1/16 |
| **4 1/2** | **FSYE 4 1/2** | 4 5/8 | 6 1/8 | 6 1/8 | 6 1/8 | 9 3/8 | 4 3/4 | 2 3/4 | 13 7/8 | 13 1/8 | 2 1/2 | 16 5/8 | 3 1/16 |
| **4 15/16** | **FSYE 4 15/16** | 5 1/8 | 6 5/8 | 6 5/8 | 6 7/8 | 10 7/8 | 5 1/2 | 3 | 15 7/8 | 15 1/8 | 2 3/4 | 18 1/2 | 3 5/16 |

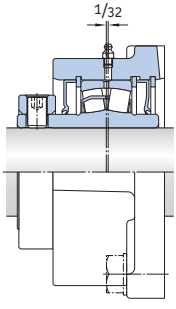
[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

## 17.3 20.3 SKF inch roller bearing units with a square flanged housing FYE series

$d_a$ **1 7/16 – 4** in.



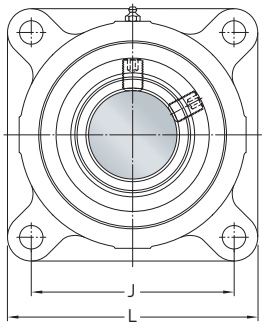

FYE




FYE .. H

| **Shaft diameter** $d_a$ | **Bearing unit** Designation[1] | **Basic load rating** dynamic C | **Limiting speeds** TriGard seal | Labyrinth seal | Radial shaft seal | **Mass** | **Appropriate attachment bolt size** |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **1 7/16** | **FYE 1 7/16** | 16 600 | 5 100 | 5 300 | 1 700 | 7.2 | 1/2 |
| **1 1/2** | **FYE 1 1/2** | 16 600 | 5 100 | 5 300 | 1 600 | 10 | 1/2 |
| **1 11/16** | **FYE 1 11/16** | 17 300 | 4 500 | 4 700 | 1 600 | 10 | 1/2 |
| **1 3/4** | **FYE 1 3/4** | 17 300 | 4 500 | 4 700 | 1 450 | 11 | 1/2 |
| **1 15/16** | **FYE 1 15/16** | 19 000 | 4 100 | 4 250 | 1 450 | 11 | 1/2 |
| **2** | **FYE 2** | 19 000 | 4 100 | 4 250 | 1 450 | 11 | 1/2 |
| **2 3/16** | **FYE 2 3/16** | 22 400 | 3 700 | 3 800 | 1 300 | 13.5 | 5/8 |
| **2 7/16** | **FYE 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 17.5 | 5/8 |
| **2 1/2** | **FYE 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 17 | 5/8 |
| **2 11/16** | **FYE 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 28.5 | 3/4 |
| **2 3/4** | **FYE 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 28.5 | 3/4 |
| **2 15/16** | **FYE 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 27 | 3/4 |
| **3** | **FYE 3** | 35 500 | 2 800 | 2 800 | 950 | 27 | 3/4 |
| **3 7/16** | **FYE 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 40.5 | 3/4 |
| **3 1/2** | **FYE 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 40 | 3/4 |
| **3 11/16** | **FYE 3 11/16** | 69 900 | 2 100 | 2 000 | 700 | 64 | 7/8 |
| **3 15/16** | **FYE 3 15/16** | 69 900 | 2 100 | 2 000 | 700 | 69 | 7/8 |
| **4** | **FYE 4** | 69 900 | 2 100 | 2 000 | 700 | 68 | 7/8 |

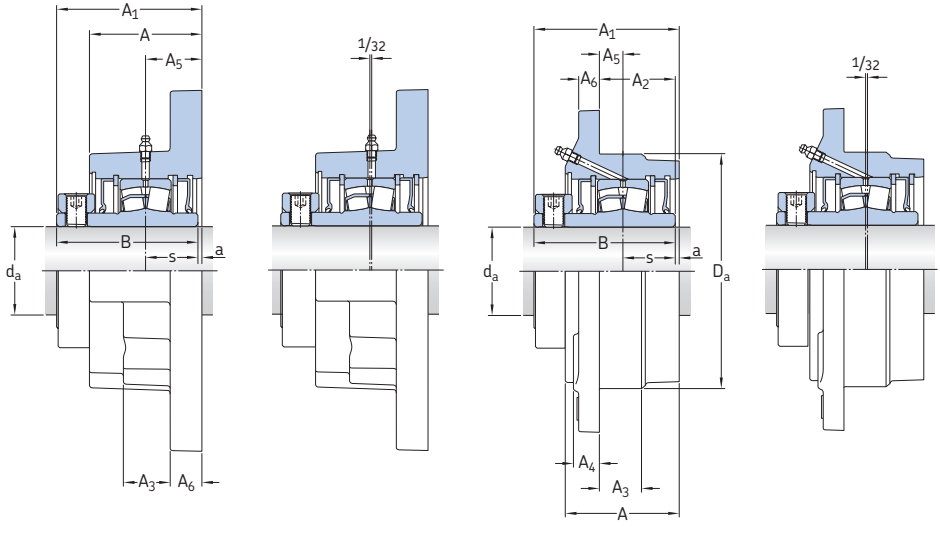
[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | $A_1$ | $A_6$ | T | B | J | L | a | s |
| in. | – | in. | | | | | | | |
| **1 7/16** | **FYE 1 7/16** | 2 1/4 | 3/4 | 2 27/32 | 2 3/4 | 3 1/2 | 4 5/8 | 3/32 | 1 |
| **1 1/2** | **FYE 1 1/2** | 2 5/16 | 3/4 | 2 9/32 | 3 3/4 | 4 1/8 | 5 3/8 | 5/32 | 1 |
| **1 11/16** | **FYE 1 11/16** | 2 5/16 | 3/4 | 3 1/32 | 2 7/8 | 4 1/8 | 5 3/8 | 5/32 | 1 |
| **1 3/4** | **FYE 1 3/4** | 2 1/4 | 3/4 | 2 31/32 | 2 7/8 | 4 1/4 | 5 1/2 | 3/32 | 1 |
| **1 15/16** | **FYE 1 15/16** | 2 1/4 | 3/4 | 2 31/32 | 2 7/8 | 4 1/4 | 5 1/2 | 3/32 | 1 |
| **2** | **FYE 2** | 2 1/4 | 3/4 | 2 31/32 | 2 7/8 | 4 1/4 | 5 1/2 | 3/32 | 1 |
| **2 3/16** | **FYE 2 3/16** | 2 3/8 | 3/4 | 3 7/32 | 3 1/8 | 4 3/4 | 6 1/4 | 3/32 | 1 1/8 |
| **2 7/16** | **FYE 2 7/16** | 2 3/4 | 1 | 3 15/32 | 3 3/8 | 5 3/8 | 6 7/8 | 3/32 | 1 1/4 |
| **2 1/2** | **FYE 2 1/2** | 2 3/4 | 1 | 3 15/32 | 3 3/8 | 5 3/8 | 6 7/8 | 3/32 | 1 1/4 |
| **2 11/16** | **FYE 2 11/16** | 2 3/4 | 1 1/16 | 3 7/8 | 3 5/8 | 6 | 7 5/8 | 1/4 | 1 1/4 |
| **2 3/4** | **FYE 2 3/4** | 2 3/4 | 1 1/16 | 3 7/8 | 3 5/8 | 6 | 7 5/8 | 1/4 | 1 1/4 |
| **2 15/16** | **FYE 2 15/16** | 2 3/4 | 1 1/16 | 3 7/8 | 3 5/8 | 6 | 7 5/8 | 1/4 | 1 1/4 |
| **3** | **FYE 3** | 2 3/4 | 1 1/16 | 3 7/8 | 3 5/8 | 6 | 7 5/8 | 1/4 | 1 1/4 |
| **3 7/16** | **FYE 3 7/16** | 3 5/16 | 1 1/8 | 4 1/4 | 4 1/32 | 7 | 8 3/4 | 7/32 | 1 7/16 |
| **3 1/2** | **FYE 3 1/2** | 3 5/16 | 1 1/8 | 4 1/4 | 4 1/32 | 7 | 8 3/4 | 7/32 | 1 7/16 |
| **3 11/16** | **FYE 3 11/16** | 3 1/2 | 1 1/4 | 4 13/16 | 4 13/16 | 7 3/4 | 9 3/4 | 7/32 | 1 5/8 |
| **3 15/16** | **FYE 3 15/16** | 3 1/2 | 1 1/4 | 4 13/16 | 4 13/16 | 7 3/4 | 9 3/4 | 7/32 | 1 5/8 |
| **4** | **FYE 4** | 3 1/2 | 1 1/4 | 4 13/16 | 4 13/16 | 7 3/4 | 9 3/4 | 7/32 | 1 5/8 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

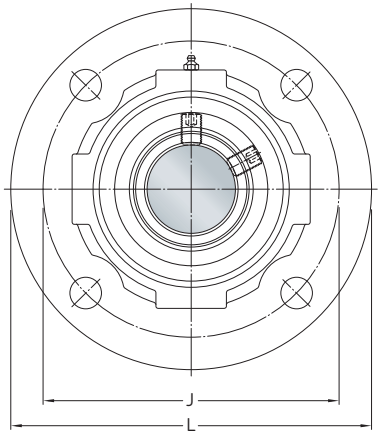
# 17.4 SKF inch roller bearing units with a round or piloted flanged housing
## FYR and FYRP series
$d_a$ **1 7/16 – 2 11/16** in.



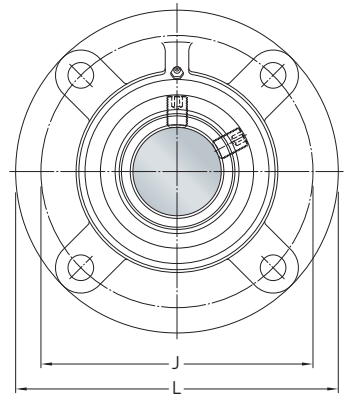

FYR FYR .. H FYRP FYRP .. H

| Shaft diameter $d_a$ | Bearing unit Designation[1] | Basic load rating dynamic C | Limiting speeds TriGard seal | Labyrinth seal | Radial shaft seal | Mass | Appropriate attachment bolt size |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **1 7/16** | **FYR 1 7/16** | 16 600 | 5 100 | 5 300 | 1 700 | 8.5 | 1/2 [2] |
| | **FYRP 1 7/16** | 16 600 | 5 100 | 5 300 | 1 700 | 6.3 | 3/8 |
| **1 1/2** | **FYR 1 1/2** | 16 600 | 5 100 | 5 300 | 1 700 | 8.4 | 1/2 [2] |
| | **FYRP 1 1/2** | 16 600 | 5 100 | 5 300 | 1 700 | 6.3 | 3/8 |
| **1 11/16** | **FYR 1 11/16** | 17 300 | 4 500 | 4 700 | 1 600 | 10.5 | 1/2 |
| | **FYRP 1 11/16** | 17 300 | 4 500 | 4 700 | 1 600 | 7.8 | 7/16 |
| **1 3/4** | **FYR 1 3/4** | 17 300 | 4 500 | 4 700 | 1 600 | 11 | 1/2 |
| | **FYRP 1 3/4** | 17 300 | 4 500 | 4 700 | 1 600 | 7.7 | 7/16 |
| **1 15/16** | **FYR 1 15/16** | 19 000 | 4 100 | 4 250 | 1 450 | 11 | 1/2 |
| | **FYRP 1 15/16** | 19 000 | 4 100 | 4 250 | 1 450 | 8.2 | 1/2 |
| **2** | **FYR 2** | 19 000 | 4 100 | 4 250 | 1 450 | 10.5 | 1/2 |
| | **FYRP 2** | 19 000 | 4 100 | 4 250 | 1 450 | 8.2 | 1/2 |
| **2 3/16** | **FYR 2 3/16** | 22 400 | 3 700 | 3 800 | 1 300 | 13.5 | 5/8 |
| | **FYRP 2 3/16** | 22 400 | 3 700 | 3 800 | 1 300 | 9.9 | 1/2 |
| **2 7/16** | **FYR 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 17.5 | 5/8 |
| | **FYRP 2 7/16** | 33 300 | 3 100 | 3 250 | 1 100 | 14 | 1/2 |
| **2 1/2** | **FYR 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 17.5 | 5/8 |
| | **FYRP 2 1/2** | 33 300 | 3 100 | 3 250 | 1 100 | 13.5 | 1/2 |
| **2 11/16** | **FYR 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 27 | 3/4 |
| | **FYRP 2 11/16** | 35 500 | 2 800 | 2 800 | 950 | 20.5 | 5/8 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).
[2] The units are supplied with three attachment bolt holes, which are placed in an angle of 120°.




FYR

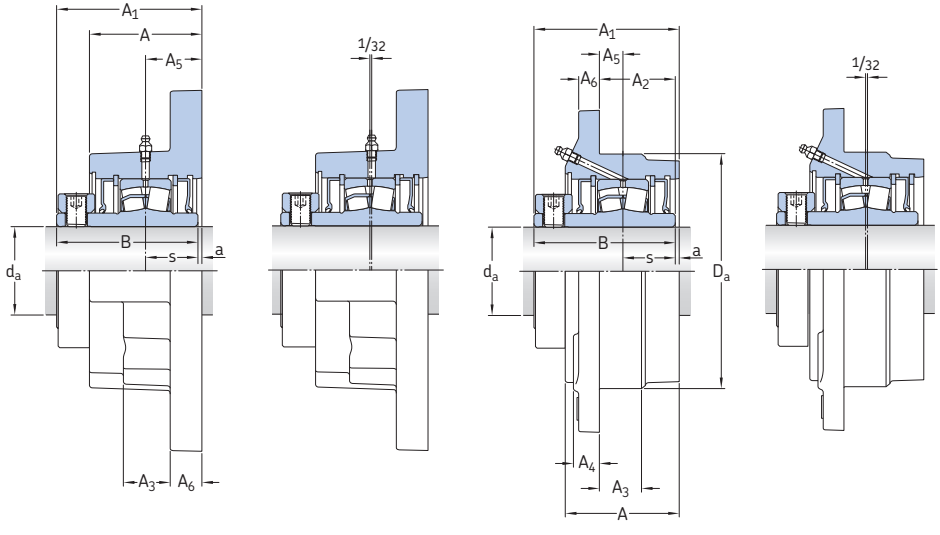



FYRP

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_6$ | $A_3$ | $A_4$ | $A_1$ | B | $A_5$ | a | $D_a$ | J | L | s | $A_2$ |
| in. | – | in. | | | | | | | | | | | | |
| **1 7/16** | **FYR 1 7/16** | 2 1/16 | 3/4 | 3/4 | – | 2 7/8 | 2 3/4 | 1 3/32 | 1/8 | 3 7/8 | 5 | 6 1/4 | 31/32 | – |
| | **FYRP 1 7/16** | 2 1/4 | 1/2 | 3/4 | 23/32 | 2 57/64 | 2 3/4 | 27/64 | 9/64 | 3 5/8 | 4 3/8 | 5 1/4 | 31/32 | 1 25/64 |
| **1 1/2** | **FYR 1 1/2** | 2 1/16 | 3/4 | 3/4 | – | 2 7/8 | 2 3/4 | 1 3/32 | 1/8 | 3 7/8 | 5 | 6 1/4 | 31/32 | – |
| | **FYRP 1 1/2** | 2 1/4 | 1/2 | 3/4 | 23/32 | 2 57/64 | 2 3/4 | 27/64 | 9/64 | 3 5/8 | 4 3/8 | 5 1/4 | 31/32 | 1 25/64 |
| **1 11/16** | **FYR 1 11/16** | 2 1/4 | 3/4 | 1 3/16 | – | 3 | 2 7/8 | 1 3/32 | 1/8 | 4 1/2 | 5 1/2 | 6 3/4 | 31/32 | – |
| | **FYRP 1 11/16** | 2 1/2 | 1/2 | 7/8 | 5/8 | 3 5/32 | 2 7/8 | 5/8 | 9/32 | 4 1/4 | 5 1/8 | 6 1/8 | 31/32 | 1 19/32 |
| **1 3/4** | **FYR 1 3/4** | 2 1/4 | 3/4 | 1 3/16 | – | 3 | 2 7/8 | 1 3/32 | 1/8 | 4 1/2 | 5 1/2 | 6 3/4 | 31/32 | – |
| | **FYRP 1 3/4** | 2 1/2 | 1/2 | 7/8 | 5/8 | 3 5/32 | 2 7/8 | 5/8 | 9/32 | 4 1/4 | 5 1/8 | 6 1/8 | 31/32 | 1 19/32 |
| **1 15/16** | **FYR 1 15/16** | 2 1/4 | 3/4 | 1 3/16 | – | 3 | 2 7/8 | 1 3/32 | 1/8 | 4 3/4 | 5 3/4 | 7 | 31/32 | – |
| | **FYRP 1 15/16** | 2 1/2 | 9/16 | 7/8 | 5/8 | 3 5/32 | 2 7/8 | 5/8 | 9/32 | 4 1/2 | 5 3/8 | 6 3/8 | 31/32 | 1 19/32 |
| **2** | **FYR 2** | 2 1/4 | 3/4 | 1 3/16 | – | 3 | 2 7/8 | 1 3/32 | 1/8 | 4 3/4 | 5 3/4 | 7 | 31/32 | – |
| | **FYRP 2** | 2 1/2 | 9/16 | 7/8 | 5/8 | 3 5/32 | 2 7/8 | 5/8 | 9/32 | 4 1/2 | 5 3/8 | 6 3/8 | 31/32 | 1 19/32 |
| **2 3/16** | **FYR 2 3/16** | 2 3/8 | 3/4 | 1 5/16 | – | 3 1/4 | 3 1/8 | 1 7/32 | 1/8 | 5 1/8 | 6 3/8 | 7 3/4 | 1 3/32 | – |
| | **FYRP 2 3/16** | 2 9/16 | 9/16 | 1 | 23/32 | 3 5/16 | 3 1/8 | 9/16 | 3/16 | 5 | 6 | 7 1/8 | 1 3/32 | 1 21/32 |
| **2 7/16** | **FYR 2 7/16** | 2 9/16 | 1 5/16 | 1 5/16 | – | 3 1/2 | 3 3/8 | 1 11/32 | 1/8 | 5 3/4 | 6 3/4 | 8 1/8 | 1 7/32 | – |
| | **FYRP 2 7/16** | 2 5/8 | 5/8 | 1 | 13/16 | 3 1/2 | 3 3/8 | 15/32 | 1/8 | 5 1/2 | 6 1/2 | 7 5/8 | 1 7/32 | 1 11/16 |
| **2 1/2** | **FYR 2 1/2** | 2 9/16 | 1 5/16 | 1 5/16 | – | 3 1/2 | 3 3/8 | 1 11/32 | 1/8 | 5 3/4 | 6 3/4 | 8 1/8 | 1 7/32 | – |
| | **FYRP 2 1/2** | 2 5/8 | 5/8 | 1 | 13/16 | 3 1/2 | 3 3/8 | 15/32 | 1/8 | 5 1/2 | 6 1/2 | 7 5/8 | 1 7/32 | 1 11/16 |
| **2 11/16** | **FYR 2 11/16** | 2 7/8 | 1 5/16 | 1 3/16 | – | 3 7/8 | 3 5/8 | 1 15/32 | 1/4 | 6 5/8 | 7 7/8 | 9 1/2 | 1 7/32 | – |
| | **FYRP 2 11/16** | 3 1/8 | 1 1/16 | 1 1/4 | 13/16 | 3 29/32 | 3 5/8 | 13/16 | 9/32 | 6 3/8 | 7 1/2 | 8 3/4 | 1 7/32 | 2 1/32 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).

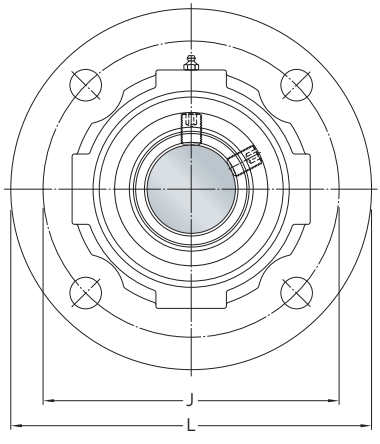
## 17.4 SKF inch roller bearing units with a round or piloted flanged housing
## FYR and FYRP series
$d_a$ **2 3/4 – 4** in.



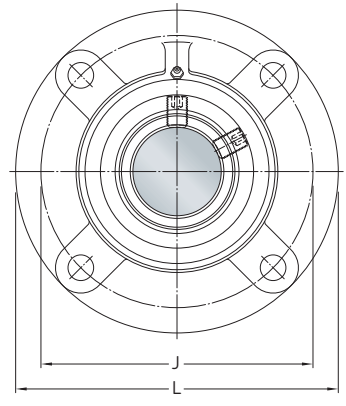

FYR FYR .. H FYRP FYRP .. H

| **Shaft diameter** $d_a$ | **Bearing unit** Designation[1] | **Basic load rating** dynamic C | **Limiting speeds** TriGard seal | Labyrinth seal | Radial shaft seal | **Mass** | **Appropriate attachment bolt size** |
|---|---|---|---|---|---|---|---|
| in. | | lbf. | r/min | | | lb. | – |
| **2 3/4** | **FYR 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 27 | 3/4 |
| | **FYRP 2 3/4** | 35 500 | 2 800 | 2 800 | 950 | 20.5 | 5/8 |
| **2 15/16** | **FYR 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 26 | 3/4 |
| | **FYRP 2 15/16** | 35 500 | 2 800 | 2 800 | 950 | 19.5 | 5/8 |
| **3** | **FYR 3** | 35 500 | 2 800 | 2 800 | 950 | 26 | 3/4 |
| | **FYRP 3** | 35 500 | 2 800 | 2 800 | 950 | 19.5 | 5/8 |
| **3 7/16** | **FYR 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 38.0 | 3/4 |
| | **FYRP 3 7/16** | 56 900 | 2 300 | 2 200 | 800 | 30 | 3/4 |
| **3 1/2** | **FYR 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 38 | 3/4 |
| | **FYRP 3 1/2** | 56 900 | 2 300 | 2 200 | 800 | 29.0 | 3/4 |
| **3 11/16** | **FYR 3 11/16** | 69 900 | 2 100 | 2 000 | 700 | 53.0 | 7/8 |
| | **FYRP 3 11/16** | 69 900 | 2 100 | 2 000 | 700 | 41 | 3/4 |
| **3 15/16** | **FYR 3 15/16** | 69 900 | 2 100 | 2 000 | 700 | 52 | 7/8 |
| | **FYRP 3 15/16** | 69 900 | 2 100 | 2 000 | 700 | 40.0 | 3/4 |
| **4** | **FYR 4** | 69 900 | 2 100 | 2 000 | 700 | 52.0 | 7/8 |
| | **FYRP 4** | 69 900 | 2 100 | 2 000 | 700 | 40 | 3/4 |

[1] The listed designation is for a non-locating unit with TriGard seals. Other variants must be specified by suffixes (→ **page 693**).




FYR




FYRP

| Shaft diameter | Bearing unit Designation[1] | Dimensions | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $d_a$ | | A | $A_6$ | $A_3$ | $A_4$ | $A_1$ | B | $A_5$ | a | $D_a$ | J | L | s | $A_2$ |
| in. | – | in. | | | | | | | | | | | | |
| **2 3/4** | **FYR 2 3/4** | 2 7/8 | 1 5/16 | 1 3/16 | – | 3 7/8 | 3 5/8 | 1 15/32 | 1/4 | 6 5/8 | 7 7/8 | 9 1/2 | 1 7/32 | – |
| | **FYRP 2 3/4** | 3 1/8 | 1 1/16 | 1 1/4 | 13/16 | 3 29/32 | 3 5/8 | 13/16 | 9/32 | 6 3/8 | 7 1/2 | 8 3/4 | 1 7/32 | 2 1/32 |
| **2 15/16** | **FYR 2 15/16** | 2 7/8 | 1 5/16 | 1 3/16 | – | 3 7/8 | 3 5/8 | 1 15/32 | 1/4 | 6 5/8 | 7 7/8 | 9 1/2 | 1 7/32 | – |
| | **FYRP 2 15/16** | 3 1/8 | 1 1/16 | 1 1/4 | 13/16 | 3 29/32 | 3 5/8 | 13/16 | 9/32 | 6 3/8 | 7 1/2 | 8 3/4 | 1 7/32 | 2 1/32 |
| **3** | **FYR 3** | 2 7/8 | 1 5/16 | 1 3/16 | – | 3 7/8 | 3 5/8 | 1 15/32 | 1/4 | 6 5/8 | 7 7/8 | 9 1/2 | 1 7/32 | – |
| | **FYRP 3** | 3 1/8 | 1 1/16 | 1 1/4 | 13/16 | 3 29/32 | 3 5/8 | 13/16 | 9/32 | 6 3/8 | 7 1/2 | 8 3/4 | 1 7/32 | 2 1/32 |
| **3 7/16** | **FYR 3 7/16** | 3 1/16 | 1 1/8 | 1 3/16 | – | 4 9/32 | 4 1/32 | 1 21/32 | 1/4 | 7 5/8 | 9 1/2 | 11 1/8 | 1 15/32 | – |
| | **FYRP 3 7/16** | 3 3/16 | 7/8 | 1 1/4 | 1 1/16 | 4 7/32 | 4 1/32 | 17/32 | 3/16 | 7 3/8 | 8 5/8 | 10 1/4 | 1 15/32 | 1 15/16 |
| **3 1/2** | **FYR 3 1/2** | 3 1/16 | 1 1/8 | 1 3/16 | – | 4 9/32 | 4 1/32 | 1 21/32 | 1/4 | 7 5/8 | 9 1/2 | 11 1/8 | 1 15/32 | – |
| | **FYRP 3 1/2** | 3 3/16 | 7/8 | 1 1/4 | 1 1/16 | 4 7/32 | 4 1/32 | 17/32 | 3/16 | 7 3/8 | 8 5/8 | 10 1/4 | 1 15/32 | 1 15/16 |
| **3 11/16** | **FYR 3 11/16** | 3 1/2 | 1 1/8 | 1 7/16 | – | 4 27/32 | 4 19/32 | 1 27/32 | 1/4 | 8 3/8 | 10 3/4 | 12 5/8 | 1 19/32 | – |
| | **FYRP 3 11/16** | 3 5/8 | 7/8 | 2 | 1 | 4 13/16 | 4 19/32 | 13/16 | 7/32 | 8 1/8 | 9 3/8 | 10 7/8 | 1 19/32 | 2 13/32 |
| **3 15/16** | **FYR 3 15/16** | 3 1/2 | 1 1/8 | 1 7/16 | – | 4 27/32 | 4 19/32 | 1 27/32 | 1/4 | 8 3/8 | 10 3/4 | 12 5/8 | 1 19/32 | – |
| | **FYRP 3 15/16** | 3 5/8 | 7/8 | 2 | 1 | 4 13/16 | 4 19/32 | 13/16 | 7/32 | 8 1/8 | 9 3/8 | 10 7/8 | 1 19/32 | 2 13/32 |
| **4** | **FYR 4** | 3 1/2 | 1 1/8 | 1 7/16 | – | 4 27/32 | 4 19/32 | 1 27/32 | 1/4 | 8 3/8 | 10 3/4 | 12 5/8 | 1 19/32 | – |
| | **FYRP 4** | 3 5/8 | 7/8 | 2 | 1 | 4 13/16 | 4 19/32 | 13/16 | 7/32 | 8 1/8 | 9 3/8 | 10 7/8 | 1 19/32 | 2 13/32 |

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| **1311 ETN9** | SE 513-611 | 2.3 | 126 |
| | SAF 1311 | 8.4 | 434 |
| **1311 EKTN9 + H 311** | SE 513-611 | 2.1 | 90 |
| **1311 EKTN9 + HA 311** | SE 513-611 | 2.2 | 106 |
| **1311 EKTN9 + HE 311** | SE 513-611 | 2.2 | 106 |
| **1311 EKTN9 + SNW 11x1.15/16** | SAF 1611 | 8.1 | 418 |
| **1312 ETN9** | SE 515-612 | 2.3 | 126 |
| | SAF 1312 | 8.4 | 434 |
| **1312 EKTN9 + H 312** | SE 515-612 | 2.1 | 90 |
| **1313 ETN9** | SNL 516-613 | 2.3 | 128 |
| | SAF 1313 | 8.4 | 434 |
| **1313 EKTN9 + H 313** | SNL 516-613 | 2.1 | 90 |
| **1313 EKTN9 + HA 313** | SNL 516-613 | 2.2 | 106 |
| **1313 EKTN9 + HE 313** | SNL 516-613 | 2.2 | 108 |
| **1313 EKTN9 + SNW 13x2.3/16** | SAF 1613 | 8.1 | 418 |
| **1314** | SNL 517 | 2.3 | 128 |
| | SAF 1314 | 8.4 | 434 |
| **1315** | SNL 518-615 | 2.3 | 130 |
| | SAF 1315 | 8.4 | 434 |
| **1315 K + H 315** | SNL 518-615 | 2.1 | 92 |
| **1315 K + HA 315** | SNL 518-615 | 2.2 | 108 |
| **1315 K + HE 315** | SNL 518-615 | 2.2 | 108 |
| **1315 K + SNW 15x2.7/16** | SAF 1615 | 8.1 | 418 |
| **1316** | SNL 519-616 | 2.3 | 130 |
| | SAF 1316 | 8.4 | 434 |
| **1316 K + H 316** | SNL 519-616 | 2.1 | 92 |
| **1316 K + HA 316** | SNL 519-616 | 2.2 | 110 |
| **1316 K + HE 316** | SNL 519-616 | 2.2 | 110 |
| **1316 K + SNW 16x2.11/16** | SAF 1616 | 8.1 | 418 |
| **1317** | SNL 520-617 | 2.3 | 132 |
| | SAF 1317 | 8.4 | 434 |
| **1317 K + H 317** | SNL 520-617 | 2.1 | 92 |
| | SNL 520-617 | 2.2 | 112 |
| **1317 K + HA 317** | SNL 520-617 | 2.2 | 110 |
| **1317 K + SNW 17x2.15/16** | SAF 1617 | 8.1 | 420 |
| **1318** | SAF 1318 | 8.4 | 434 |
| **1318 K + SNW 18x3.3/16** | SAF 1618 | 8.1 | 420 |
| **1319** | SNL 522-619 | 2.3 | 134 |
| **1319 K + H 319** | SNL 522-619 | 2.1 | 94 |
| **1319 K + HE 319** | SNL 522-619 | 2.2 | 112 |
| **1320** | SNL 524-620 | 2.3 | 134 |
| | SAF 1320 | 8.4 | 434 |
| **1320 K + H 320** | SNL 524-620 | 2.1 | 94 |
| **1320 K + HA 320** | SNL 524-620 | 2.2 | 114 |
| **1320 K + HE 320** | SNL 524-620 | 2.2 | 114 |
| **1320 K + SNW 20x3.7/16** | SAF 1620 | 8.1 | 420 |
| **1322** | SAF 1322 | 8.4 | 434 |
| **1322 KM + SNW 22x3.15/16** | SAF 1622 | 8.1 | 420 |
| **2205 ETN9** | SNL 205 | 2.3 | 120 |
| | SNL 505 | 2.3 | 120 |
| **2205 EKTN9 + H 305** | SNL 505 | 2.1 | 86 |
| | FNL 505 | 11.1 | 546 |
| **2205 EKTN9 + HE 305** | SNL 505 | 2.2 | 100 |
| **2206 ETN9** | SNL 206-305 | 2.3 | 120 |
| | SNL 506-605 | 2.3 | 120 |
| **2206 EKTN9 + H 306** | SNL 506-605 | 2.1 | 86 |
| | FNL 506 | 11.1 | 546 |
| **2206 EKTN9 + HA 306** | SNL 506-605 | 2.2 | 100 |
| **2206 EKTN9 + HE 306** | SNL 506-605 | 2.2 | 100 |
| **2207 ETN9** | SE 207 | 2.3 | 122 |
| | SE 507-606 | 2.3 | 122 |
| **2207 EKTN9 + H 307** | SE 507-606 | 2.1 | 86 |
| | FNL 507 | 11.1 | 546 |
| **2207 EKTN9 + HA 307** | SE 507-606 | 2.2 | 102 |
| **2208 ETN9** | SE 208-307 | 2.3 | 122 |
| | SE 508-607 | 2.3 | 122 |
| **2208 EKTN9 + H 308** | SE 508-607 | 2.1 | 88 |
| | FNL 508 | 11.1 | 546 |
| **2208 EKTN9 + HE 308** | SE 508-607 | 2.2 | 102 |
| **2209 ETN9** | SE 209 | 2.3 | 124 |
| | SE 509 | 2.3 | 124 |
| **2209 EKTN9 + H 309** | SE 509 | 2.1 | 88 |
| | FNL 509 | 11.1 | 546 |

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| **2209 EKTN9 + HA 309** | SE 509 | 2.2 | 102 |
| **2209 EKTN9 + HE 309** | SE 509 | 2.2 | 104 |
| **2210 ETN9** | SE 210 | 2.3 | 124 |
| | SE 510-608 | 2.3 | 124 |
| **2210 EKTN9 + H 310** | SE 510-608 | 2.1 | 88 |
| | FNL 510 | 11.1 | 548 |
| **2210 EKTN9 + HA 310** | SE 510-608 | 2.2 | 104 |
| **2210 EKTN9 + HE 310** | SE 510-608 | 2.2 | 104 |
| **2211 ETN9** | SE 211 | 2.3 | 126 |
| | SE 511-609 | 2.3 | 126 |
| **2211 EKTN9 + H 311** | SE 511-609 | 2.1 | 90 |
| | FNL 511 | 11.1 | 548 |
| **2211 EKTN9 + HA 311** | SE 511-609 | 2.2 | 106 |
| **2211 EKTN9 + HE 311 B** | SE 511-609 | 2.2 | 106 |
| **2212 ETN9** | SE 212 | 2.3 | 126 |
| | SE 512-610 | 2.3 | 126 |
| **2212 EKTN9 + H 312** | SE 512-610 | 2.1 | 90 |
| | FNL 512 | 11.1 | 548 |
| **2213 ETN9** | SE 213 | 2.3 | 128 |
| | SE 513-611 | 2.3 | 128 |
| **2213 EKTN9 + H 313** | SE 513-611 | 2.1 | 90 |
| | FNL 513 | 11.1 | 548 |
| **2213 EKTN9 + HA 313** | SE 513-611 | 2.2 | 106 |
| **2213 EKTN9 + HE 313** | SE 513-611 | 2.2 | 108 |
| **2215 ETN9** | SE 215 | 2.3 | 130 |
| | SE 515-612 | 2.3 | 130 |
| **2215 EKTN9 + H 315** | SE 515-612 | 2.1 | 92 |
| | FNL 515 | 11.1 | 550 |
| **2215 EKTN9 + HA 315** | SE 515-612 | 2.2 | 108 |
| **2215 EKTN9 + HE 315** | SE 515-612 | 2.2 | 108 |
| **2216 ETN9** | SNL 216 | 2.3 | 130 |
| | SNL 516-613 | 2.3 | 130 |
| **2216 EKTN9 + H 316** | SNL 516-613 | 2.1 | 92 |
| | FNL 516 | 11.1 | 550 |
| **2216 EKTN9 + HA 316** | SNL 516-613 | 2.2 | 110 |
| **2216 EKTN9 + HE 316** | SNL 516-613 | 2.2 | 110 |
| **2217** | SNL 217 | 2.3 | 132 |
| | SNL 517 | 2.3 | 132 |
| | SONL 217-517 | 7.3 | 378 |
| **2217 K + H 317** | SNL 517 | 2.1 | 92 |
| | SONL 217-517 | 7.1 | 370 |
| | FNL 517 | 11.1 | 550 |
| **2217 K + HA 317** | SNL 517 | 2.2 | 110 |
| | SONL 217-517 | 7.2 | 374 |
| **2217 K + HE 317** | SNL 517 | 2.2 | 112 |
| **2218** | SNL 218 | 2.3 | 132 |
| | SNL 518-615 | 2.3 | 132 |
| | SONL 218-518 | 7.3 | 378 |
| **2218 K + H 318** | SNL 518-615 | 2.1 | 94 |
| | SONL 218-518 | 7.1 | 370 |
| | FNL 518 | 11.1 | 550 |
| **2218 K + HA 318** | SNL 518-615 | 2.2 | 112 |
| | SONL 218-518 | 7.2 | 374 |
| **2218 K + HE 318** | SNL 518-615 | 2.2 | 112 |
| **2219 KM + H 319** | SNL 519-616 | 2.1 | 94 |
| **2220 M** | SNL 520-617 | 2.3 | 134 |
| | SONL 220-520 | 7.3 | 378 |
| **2220 KM + H 320** | SNL 520-617 | 2.1 | 94 |
| | SONL 220-520 | 7.1 | 370 |
| | FNL 520 | 11.1 | 550 |
| **2220 KM + HA 320** | SNL 520-617 | 2.2 | 114 |
| | SONL 220-520 | 7.2 | 374 |
| **2220 KM + HE 320** | SNL 520-617 | 2.2 | 114 |
| **2222 M** | SNL 522-619 | 2.3 | 134 |
| | SONL 222-522 | 7.3 | 378 |
| **2222 KM + H 322** | SNL 522-619 | 2.1 | 96 |
| | SNL 522-619 | 2.2 | 114 |
| | SONL 222-522 | 7.1 | 370 |
| | SONL 222-522 | 7.2 | 374 |
| | FNL 522 | 11.1 | 550 |
| **2222 KM + HE 322** | SNL 522-619 | 2.2 | 116 |
| **2305 ETN9** | SNL 206-305 | 2.3 | 120 |
| **2306** | SE 507-606 | 2.3 | 120 |

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| **2306 K + HA 2306** | SE 507-606 | 2.2 | 100 |
| **2306 K + HE 2306** | SE 507-606 | 2.2 | 100 |
| **2307 ETN9** | SE 208-307 | 2.3 | 122 |
| **2307 EKTN9 + H 2307** | SE 508-607 | 2.1 | 86 |
| **2307 EKTN9 + HA 2307** | SE 508-607 | 2.2 | 102 |
| **2308 ETN9** | SE 510-608 | 2.3 | 122 |
| **2308 EKTN9 + H 2308** | SE 510-608 | 2.1 | 88 |
| **2308 EKTN9 + HE 2308** | SE 510-608 | 2.2 | 102 |
| **2309 ETN9** | SE 511-609 | 2.3 | 124 |
| **2309 EKTN9 + H 2309** | SE 511-609 | 2.1 | 88 |
| **2309 EKTN9 + HA 2309** | SE 511-609 | 2.2 | 102 |
| **2309 EKTN9 + HE 2309** | SE 511-609 | 2.2 | 104 |
| **2310** | SE 512-610 | 2.3 | 124 |
| **2310 K + H 2310** | SE 512-610 | 2.1 | 88 |
| **2310 K + HA 2310** | SE 512-610 | 2.2 | 104 |
| **2310 K + HE 2310** | SE 512-610 | 2.2 | 104 |
| **2311** | SE 513-611 | 2.3 | 126 |
| **2311 K + H 2311** | SE 513-611 | 2.1 | 90 |
| **2311 K + HA 2311** | SE 513-611 | 2.2 | 106 |
| **2311 K + HE 2311 B** | SE 513-611 | 2.2 | 106 |
| **2312** | SE 515-612 | 2.3 | 126 |
| **2312 K + H 2312** | SE 515-612 | 2.1 | 90 |
| **2313** | SNL 516-613 | 2.3 | 128 |
| **2313 K + H 2313** | SNL 516-613 | 2.1 | 90 |
| **2313 K + HA 2313** | SNL 516-613 | 2.2 | 106 |
| **2313 K + HE 2313** | SNL 516-613 | 2.2 | 108 |
| **2314** | SNL 517 | 2.3 | 128 |
| **2315** | SNL 518-615 | 2.3 | 130 |
| **2315 K + H 2315** | SNL 518-615 | 2.1 | 92 |
| **2315 K + HA 2315** | SNL 518-615 | 2.2 | 108 |
| **2315 K + HE 2315** | SNL 518-615 | 2.2 | 108 |
| **2316** | SNL 519-616 | 2.3 | 130 |
| **2316 K + H 2316** | SNL 519-616 | 2.1 | 92 |
| **2316 K + HA 2316** | SNL 519-616 | 2.2 | 110 |
| **2316 K + HE 2316** | SNL 519-616 | 2.2 | 110 |
| **2317** | SNL 520-617 | 2.3 | 132 |
| **2317 K + H 2317** | SNL 520-617 | 2.1 | 92 |
| **2317 K + HA 2317** | SNL 520-617 | 2.2 | 110 |
| **2317 K + HE 2317** | SNL 520-617 | 2.2 | 112 |
| **2319 M** | SNL 522-619 | 2.3 | 134 |
| **2319 KM + H 2319** | SNL 522-619 | 2.1 | 94 |
| **2319 KM + HE 2319** | SNL 522-619 | 2.2 | 112 |
| **2320 M** | SNL 524-620 | 2.3 | 134 |
| **2320 KM + H 2320** | SNL 524-620 | 2.1 | 94 |
| **2320 KM + HA 2320** | SNL 524-620 | 2.2 | 114 |
| **2320 KM + HE 2320** | SNL 524-620 | 2.2 | 114 |

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| **21306 CC** | SE 507-606 | 2.3 | 120 |
| **21306 CCK + H 306** | SE 507-606 | 2.1 | 86 |
| **21306 CCK + HA 306** | SE 507-606 | 2.2 | 100 |
| **21306 CCK + HE 2306** | SE 507-606 | 2.2 | 100 |
| **21307 CC** | SE 208-307 | 2.3 | 122 |
| **21307 CCK + H 307** | SE 508-607 | 2.1 | 86 |
| **21307 CCK + HA 307** | SE 508-607 | 2.2 | 102 |
| **21308 E** | SE 510-608 | 2.3 | 122 |
| **21308 EK + H 308** | SE 510-608 | 2.1 | 88 |
| **21308 EK + HE 308** | SE 510-608 | 2.2 | 102 |
| **21309 E** | SE 511-609 | 2.3 | 124 |
| **21309 EK + H 309** | SE 511-609 | 2.1 | 88 |
| **21309 EK + HA 309** | SE 511-609 | 2.2 | 102 |
| **21309 EK + HE 309** | SE 511-609 | 2.2 | 104 |
| **21310 E** | SE 512-610 | 2.3 | 124 |
| **21310 EK + H 310** | SE 512-610 | 2.1 | 88 |
| **21310 EK + HA 310** | SE 512-610 | 2.2 | 104 |
| **21310 EK + HE 310** | SE 512-610 | 2.2 | 104 |
| **21311 E** | SE 513-611 | 2.3 | 126 |
| **21311 EK + H 311** | SE 513-611 | 2.1 | 90 |
| **21311 EK + HA 311** | SE 513-611 | 2.2 | 106 |
| **21311 EK + HE 311** | SE 513-611 | 2.2 | 106 |
| **21312 E** | SE 515-612 | 2.3 | 126 |
| **21312 EK + H 312** | SE 515-612 | 2.1 | 90 |
| **21313 E** | SNL 516-613 | 2.3 | 128 |
| **21313 EK + H 313** | SNL 516-613 | 2.1 | 90 |
| **21313 EK + HA 313** | SNL 516-613 | 2.2 | 106 |
| **21313 EK + HE 313** | SNL 516-613 | 2.2 | 108 |
| **21314 E** | SNL 517 | 2.3 | 128 |
| **21315 E** | SNL 518-615 | 2.3 | 130 |
| **21315 EK + H 315** | SNL 518-615 | 2.1 | 92 |
| **21315 EK + HA 315** | SNL 518-615 | 2.2 | 108 |
| **21315 EK + HE 315** | SNL 518-615 | 2.2 | 108 |
| **21316 E** | SNL 519-616 | 2.3 | 130 |
| **21316 EK + H 316** | SNL 519-616 | 2.1 | 92 |
| **21316 EK + HA 316** | SNL 519-616 | 2.2 | 110 |
| **21316 EK + HE 316** | SNL 519-616 | 2.2 | 110 |
| **21317 E** | SNL 520-617 | 2.3 | 132 |
| **21317 EK + H 317** | SNL 520-617 | 2.1 | 92 |
| | SNL 520-617 | 2.2 | 112 |
| **21317 EK + HA 317** | SNL 520-617 | 2.2 | 110 |
| **21319 E** | SNL 522-619 | 2.3 | 134 |
| **21319 EK + H 319** | SNL 522-619 | 2.1 | 94 |
| **21319 EK + HE 319** | SNL 522-619 | 2.2 | 112 |
| **21320 E** | SNL 524-620 | 2.3 | 134 |
| **21320 EK + H 320** | SNL 524-620 | 2.1 | 94 |
| **21320 EK + HA 320** | SNL 524-620 | 2.2 | 114 |
| **21320 EK + HE 320** | SNL 524-620 | 2.2 | 114 |
| **22205 E** | SNL 205 | 2.3 | 120 |
| | SNL 505 | 2.3 | 120 |
| **22205 EK + H 305** | SNL 505 | 2.1 | 86 |
| | FNL 505 | 11.1 | 546 |
| **22205 EK + HE 305** | SNL 505 | 2.2 | 100 |
| **22206 E** | SNL 206-305 | 2.3 | 120 |
| | SNL 506-605 | 2.3 | 120 |
| **22206 EK + H 306** | SNL 506-605 | 2.1 | 86 |
| | FNL 506 | 11.1 | 546 |
| **22206 EK + HA 306** | SNL 506-605 | 2.2 | 100 |
| **22206 EK + HE 306** | SNL 506-605 | 2.2 | 100 |
| **22207 E** | SE 207 | 2.3 | 122 |
| | SE 507-606 | 2.3 | 122 |
| | SYNT 35 | 16.1 | 686 |
| | FYNT 35 | 16.2 | 688 |
| **22207 EK + H 307** | SE 507-606 | 2.1 | 86 |
| | FNL 507 | 11.1 | 546 |
| **22207 EK + HA 307** | SE 507-606 | 2.2 | 102 |
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| | SE 508-607 | 2.3 | 122 |
| | SYNT 40 | 16.1 | 686 |
| | FYNT 40 | 16.2 | 688 |
| **22208 EK + H 308** | SE 508-607 | 2.1 | 88 |
| | FNL 508 | 11.1 | 546 |
| **22208 EK + HE 308** | SE 508-607 | 2.2 | 102 |
| **22209 E** | SE 209 | 2.3 | 124 |
| | SE 509 | 2.3 | 124 |
| | SYNT 45 | 16.1 | 686 |
| | FYNT 45 | 16.2 | 688 |
| **22209 EK + H 309** | SE 509 | 2.1 | 88 |
| | FNL 509 | 11.1 | 546 |
| **22209 EK + HA 309** | SE 509 | 2.2 | 102 |
| **22209 EK + HE 309** | SE 509 | 2.2 | 104 |
| **22209 EK + SNW 9x1.7/16** | SAF 22509 | 8.2 | 422 |
| **22210 E** | SE 210 | 2.3 | 124 |
| | SE 510-608 | 2.3 | 124 |
| | SYNT 50 | 16.1 | 686 |
| | FYNT 50 | 16.2 | 688 |
| **22210 EK + H 310** | SE 510-608 | 2.1 | 88 |
| | FNL 510 | 11.1 | 548 |
| **22210 EK + HA 310** | SE 510-608 | 2.2 | 104 |
| **22210 EK + HE 310** | SE 510-608 | 2.2 | 104 |
| **22210 EK + SNW 10x1.11/16** | SAF 22510 | 8.2 | 422 |
| **22211 E** | SE 211 | 2.3 | 126 |
| | SE 511-609 | 2.3 | 126 |
| | SYNT 55 | 16.1 | 686 |
| | FYNT 55 | 16.2 | 688 |
| **22211 EK + H 311** | SE 511-609 | 2.1 | 90 |
| | THDD 2211 | 10.5 | 526 |
| | FNL 511 | 11.1 | 548 |
| **22211 EK + HA 311** | SE 511-609 | 2.2 | 106 |
| **22211 EK + HE 311 B** | SE 511-609 | 2.2 | 106 |
| **22211 EK + SNW 11x1.15/16** | SAF 22511 | 8.2 | 422 |
| **22212 E** | SE 212 | 2.3 | 126 |
| | SE 512-610 | 2.3 | 126 |
| | SYNT 60 | 16.1 | 686 |
| | FYNT 60 | 16.2 | 688 |
| **22212 EK + H 312** | SE 512-610 | 2.1 | 90 |
| | THDD 2212 | 10.5 | 526 |
| | FNL 512 | 11.1 | 548 |
| **22213 E** | SE 213 | 2.3 | 128 |
| | SE 513-611 | 2.3 | 128 |
| | SAF 22213 | 8.5 | 436 |
| | SYNT 65 | 16.1 | 686 |
| | FYNT 65 | 16.2 | 688 |
| **22213 EK + H 313** | SE 513-611 | 2.1 | 90 |
| | SBDD 2213 | 10.1 | 502 |
| | THDD 2213 | 10.5 | 526 |
| | FNL 513 | 11.1 | 548 |
| **22213 EK + HA 313** | SE 513-611 | 2.2 | 106 |
| **22213 EK + HE 313** | SE 513-611 | 2.2 | 108 |
| **22213 EK + SNW 13x2.3/16** | SAF 22513 | 8.2 | 422 |
| **22214 E** | SYNT 70 | 16.1 | 686 |
| | FYNT 70 | 16.2 | 688 |
| **22215 E** | SE 215 | 2.3 | 130 |
| | SE 515-612 | 2.3 | 130 |
| | SAF 22215 | 8.5 | 436 |
| | SYNT 75 | 16.1 | 686 |
| | FYNT 75 | 16.2 | 688 |
| **22215 EK + H 315** | SE 515-612 | 2.1 | 92 |
| | FNL 515 | 11.1 | 550 |
| **22215 EK + HA 315** | SE 515-612 | 2.2 | 108 |
| **22215 EK + HE 315** | SE 515-612 | 2.2 | 108 |
| **22215 EK + SNW 15x2.7/16** | SAF 22515 | 8.2 | 422 |
| **22216 E** | SNL 216 | 2.3 | 130 |
| | SNL 516-613 | 2.3 | 130 |
| | SAF 22216 | 8.5 | 438 |
| | SYNT 80 | 16.1 | 686 |
| | FYNT 80 | 16.2 | 688 |

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| | THDD 2216 | 10.5 | 526 |
| | FNL 516 | 11.1 | 550 |
| **22216 EK + HA 316** | SNL 516-613 | 2.2 | 110 |
| **22216 EK + HE 316** | SNL 516-613 | 2.2 | 110 |
| **22216 EK + SNW 16x2.11/16** | SAF 22516 | 8.2 | 422 |
| **22217 E** | SNL 217 | 2.3 | 132 |
| | SNL 517 | 2.3 | 132 |
| | SONL 217-517 | 7.3 | 378 |
| | SAF 22217 | 8.5 | 438 |
| **22217 EK + H 317** | SNL 517 | 2.1 | 92 |
| | SONL 217-517 | 7.1 | 370 |
| | FNL 517 | 11.1 | 550 |
| **22217 EK + HA 317** | SNL 517 | 2.2 | 110 |
| | SONL 217-517 | 7.2 | 374 |
| **22217 EK + HE 317** | SNL 517 | 2.2 | 112 |
| **22217 EK + SNW 17x2.15/16** | SAF 22517 | 8.2 | 424 |
| **22218 E** | SNL 218 | 2.3 | 132 |
| | SNL 518-615 | 2.3 | 132 |
| | SONL 218-518 | 7.3 | 378 |
| | SAF 22218 | 8.5 | 438 |
| | SYNT 90 | 16.1 | 686 |
| | FYNT 90 | 16.2 | 688 |
| **22218 EK + H 318** | SNL 518-615 | 2.1 | 94 |
| | SONL 218-518 | 7.1 | 370 |
| | SBDD 2218 | 10.1 | 502 |
| | THDD 2218 | 10.5 | 526 |
| | FNL 518 | 11.1 | 550 |
| **22218 EK + HA 318** | SNL 518-615 | 2.2 | 112 |
| | SONL 218-518 | 7.2 | 374 |
| **22218 EK + HE 318** | SNL 518-615 | 2.2 | 112 |
| **22218 EK + SNW 18x3.3/16** | SAF 22518 | 8.2 | 424 |
| **22219 EK + H 319** | SNL 519-616 | 2.1 | 94 |
| **22220 E** | SNL 520-617 | 2.3 | 134 |
| | SONL 220-520 | 7.3 | 378 |
| | SAF 22220 | 8.5 | 438 |
| | SDAF 22220 | 9.2 | 474 |
| | SBDD 2220 | 10.3 | 514 |
| | SBDD 2220 | 10.4 | 520 |
| | SYNT 100 | 16.1 | 686 |
| | FYNT 100 | 16.2 | 688 |
| **22220 EK + H 320** | SNL 520-617 | 2.1 | 94 |
| | SONL 220-520 | 7.1 | 370 |
| | SBDD 2220 | 10.1 | 502 |
| | SBDD 2220 | 10.2 | 508 |
| | THDD 2220 | 10.5 | 526 |
| | FNL 520 | 11.1 | 550 |
| **22220 EK + HA 320** | SNL 520-617 | 2.2 | 114 |
| | SONL 220-520 | 7.2 | 374 |
| **22220 EK + HE 320** | SNL 520-617 | 2.2 | 114 |
| **22220 EK + SNW 20** | SDAF 22520 | 9.1 | 472 |
| **22220 EK + SNW 20x3.7/16** | SAF 22520 | 8.2 | 424 |
| **22222 E** | SNL 522-619 | 2.3 | 134 |
| | SONL 222-522 | 7.3 | 378 |
| | SAF 22222 | 8.5 | 438 |
| | SDAFS 22222 | 9.2 | 474 |
| | SBDD 2222 | 10.3 | 514 |
| | SBDD 2222 | 10.4 | 520 |
| **22222 EK + H 322** | SNL 522-619 | 2.1 | 96 |
| | SNL 522-619 | 2.2 | 114 |
| | SONL 222-522 | 7.1 | 370 |
| | SONL 222-522 | 7.2 | 374 |
| | SBDD 2222 | 10.1 | 502 |
| | SBDD 2222 | 10.2 | 508 |
| | THDD 2222 | 10.5 | 526 |
| | FNL 522 | 11.1 | 550 |
| **22222 EK + HE 322** | SNL 522-619 | 2.2 | 116 |
| **22222 EK + SNW 22** | SDAFS 22522 | 9.1 | 472 |
| **22222 EK + SNW 22x3.15/16** | SAF 22522 | 8.2 | 424 |

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| **22224 E** | SNL 524-620 | 2.3 | 134 |
| | SONL 224-524 | 7.3 | 378 |
| | SAF 22224 | 8.5 | 440 |
| | SDAF 22224 | 9.2 | 474 |
| | SBDD 2224 | 10.3 | 514 |
| | SBDD 2224 | 10.4 | 520 |
| **22224 EK + H 3124** | SNL 524-620 | 2.1 | 96 |
| | SONL 224-524 | 7.1 | 370 |
| | SBDD 2224 | 10.1 | 502 |
| | SBDD 2224 | 10.2 | 508 |
| | THDD 2224 | 10.5 | 526 |
| **22224 EK + HA 3124** | SNL 524-620 | 2.2 | 116 |
| | SONL 224-524 | 7.2 | 374 |
| **22224 EK + HE 3124** | SNL 524-620 | 2.2 | 116 |
| **22224 EK + SNW 24** | SDAF 22524 | 9.1 | 472 |
| **22224 EK + SNW 24x4.3/16** | SAF 22524 | 8.2 | 424 |
| **22226 E** | SNL 526 | 2.3 | 136 |
| | SONL 226-526 | 7.3 | 378 |
| | SAF 22226 | 8.5 | 440 |
| | SDAF 22226 | 9.2 | 474 |
| | SBDD 2226 | 10.3 | 514 |
| | SBDD 2226 | 10.4 | 520 |
| **22226 EK + H 3126** | SNL 526 | 2.1 | 96 |
| | SONL 226-526 | 7.1 | 370 |
| | SBDD 2226 | 10.1 | 502 |
| | SBDD 2226 | 10.2 | 508 |
| **22226 EK + HA 3126** | SNL 526 | 2.2 | 116 |
| | SONL 226-526 | 7.2 | 374 |
| **22226 EK + HE 3126** | SNL 526 | 2.2 | 116 |
| **22226 EK + SNW 26** | SDAF 22526 | 9.1 | 472 |
| **22226 EK + SNW 26x4.7/16** | SAF 22526 | 8.2 | 426 |
| **22228 CC** | SONL 228-528 | 7.3 | 378 |
| **22228 CC/W33** | SNL 528 | 2.3 | 136 |
| | SAF 22228 | 8.5 | 440 |
| | SDAFS 22228 | 9.2 | 474 |
| | SBDD 2228 | 10.3 | 514 |
| | SBDD 2228 | 10.4 | 520 |
| **22228 CCK/W33 + H 3128** | SNL 528 | 2.1 | 96 |
| | SONL 228-528 | 7.1 | 370 |
| | SBDD 2228 | 10.1 | 502 |
| | SBDD 2228 | 10.2 | 508 |
| | THDD 2228 | 10.5 | 526 |
| **22228 CCK/W33 + HA 3128** | SNL 528 | 2.2 | 118 |
| | SONL 228-528 | 7.2 | 374 |
| **22228 CCK/W33 + HE 3128** | SNL 528 | 2.2 | 118 |
| **22228 CCK/W33 + SNW 28** | SDAFS 22528 | 9.1 | 472 |
| **22228 CCK/W33 + SNW 28x4.15/16** | SAF 22528 | 8.2 | 426 |
| **22228-2CS5** | SNL 528 | 2.3 | 136 |
| **22228-2CS5K + H 3128 L** | SNL 528 | 2.1 | 96 |
| **22228-2CS5K + HA 3128 L** | SNL 528 | 2.2 | 118 |
| **22228-2CS5K + HE 3128 L** | SNL 528 | 2.2 | 118 |
| **22230 CC** | SONL 230-530 | 7.3 | 378 |
| **22230 CC/W33** | SNL 530 | 2.3 | 136 |
| | SAF 22230 | 8.5 | 440 |
| | SDAF 22230 | 9.2 | 474 |
| | SBDD 2230 | 10.3 | 514 |
| | SBDD 2230 | 10.4 | 520 |
| **22230 CCK/W33 + H 3130** | SNL 530 | 2.1 | 96 |
| | SONL 230-530 | 7.1 | 370 |
| | SBDD 2230 | 10.1 | 502 |
| | SBDD 2230 | 10.2 | 508 |
| **22230 CCK/W33 + HA 3130** | SNL 530 | 2.2 | 118 |
| | SONL 230-530 | 7.2 | 374 |
| **22230 CCK/W33 + HE 3130** | SNL 530 | 2.2 | 118 |
| **22230 CCK/W33 + SNW 30** | SDAF 22530 | 9.1 | 472 |
| **22230 CCK/W33 + SNW 30x5.3/16** | SAF 22530 | 8.2 | 426 |
| **22230-2CS5** | SNL 530 | 2.3 | 136 |
| **22230-2CS5K + H 3130** | SNL 530 | 2.1 | 96 |
| **22230-2CS5K + HA 3130** | SNL 530 | 2.2 | 118 |
| **22230-2CS5K + HE 3130** | SNL 530 | 2.2 | 118 |
| **22232 CC** | SONL 232-532 | 7.3 | 378 |

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| **22232 CC/W33** | SNL 532 | 2.3 | 136 |
| | SNL 3038 | 5.3 | 302 |
| | SAF 22232 | 8.5 | 440 |
| | SDAF 22232 | 9.2 | 474 |
| | SBDD 2232 | 10.3 | 514 |
| | SBDD 2232 | 10.4 | 520 |
| **22232 CCK/W33 + H 3132** | SNL 532 | 2.1 | 98 |
| | SNL 3038 | 5.1 | 222 |
| | SONL 232-532 | 7.1 | 370 |
| | SBDD 2232 | 10.1 | 502 |
| | SBDD 2232 | 10.2 | 508 |
| **22232 CCK/W33 + HA 3132** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| | SONL 232-532 | 7.2 | 376 |
| **22232 CCK/W33 + HE 3132** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| **22232 CCK/W33 + SNW 32** | SDAF 22532 | 9.1 | 472 |
| **22232 CCK/W33 + SNW 32x5.7/16** | SAF 22532 | 8.2 | 426 |
| **22232-2CS5** | SNL 532 | 2.3 | 136 |
| | SNL 3038 | 5.3 | 302 |
| **22232-2CS5K + H 3132** | SNL 3038 | 5.1 | 222 |
| | SNL 532 | 2.1 | 98 |
| **22232-2CS5K + HA 3132** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| **22232-2CS5K + HE 3132** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| **22234 CC/W33** | SNL 3040 | 5.3 | 302 |
| | SONL 234-534 | 7.3 | 380 |
| | SAF 22234 | 8.5 | 440 |
| | SBDD 2234 | 10.3 | 514 |
| | SBDD 2234 | 10.4 | 520 |
| **22234 CCK/W33 + H 3134** | SNL 3040 | 5.1 | 222 |
| | SONL 234-534 | 7.1 | 370 |
| | SBDD 2234 | 10.1 | 504 |
| | SBDD 2234 | 10.2 | 508 |
| **22234 CCK/W33 + H 3134/5.13/16** | SNL 3040 | 5.2 | 262 |
| **22234 CCK/W33 + H 3134/5.7/8** | SNL 3040 | 5.2 | 262 |
| **22234 CCK/W33 + HA 3134** | SNL 3040 | 5.2 | 262 |
| | SONL 234-534 | 7.2 | 376 |
| **22234 CCK/W33 + HE 3134** | SNL 3040 | 5.2 | 264 |
| **22234 CCK/W33 + SNW 34x5.15/16** | SAF 22534 | 8.2 | 426 |
| **22234-2CS5** | SNL 3040 | 5.3 | 302 |
| **22234-2CS5K + H 3134** | SNL 3040 | 5.1 | 222 |
| **22234-2CS5K + H 3134/5.13/16** | SNL 3040 | 5.2 | 262 |
| **22234-2CS5K + H 3134/5.7/8** | SNL 3040 | 5.2 | 262 |
| **22234-2CS5K + HA 3134** | SNL 3040 | 5.2 | 262 |
| **22234-2CS5K + HE 3134** | SNL 3040 | 5.2 | 264 |
| **22236 CC/W33** | SNL 3138 | 5.3 | 304 |
| | SONL 236-536 | 7.3 | 380 |
| | SAF 22236 | 8.5 | 440 |
| | SDAF 22236 | 9.2 | 474 |
| | SBDD 2236 | 10.3 | 516 |
| | SBDD 2236 | 10.4 | 522 |
| **22236 CCK/W33 + H 3136** | SNL 3138 | 5.1 | 224 |
| | SONL 236-536 | 7.1 | 372 |
| | SBDD 2236 | 10.1 | 504 |
| | SBDD 2236 | 10.2 | 510 |
| **22236 CCK/W33 + H 3136/6.3/8** | SNL 3138 | 5.2 | 264 |
| **22236 CCK/W33 + H 3136/6.5/16** | SNL 3138 | 5.2 | 264 |
| **22236 CCK/W33 + HA 3136** | SNL 3138 | 5.2 | 266 |
| | SONL 236-536 | 7.2 | 376 |
| **22236 CCK/W33 + HE 3136** | SNL 3138 | 5.2 | 266 |
| **22236 CCK/W33 + SNW 36** | SDAF 22536 | 9.1 | 472 |
| **22236 CCK/W33 + SNW 36x6.7/16** | SAF 22536 | 8.2 | 428 |
| **22236-2CS5** | SNL 3138 | 5.3 | 304 |
| **22236-2CS5K + H 3136** | SNL 3138 | 5.1 | 224 |
| **22236-2CS5K + H 3136/6.3/8** | SNL 3138 | 5.2 | 264 |
| **22236-2CS5K + H 3136/6.5/16** | SNL 3138 | 5.2 | 264 |
| **22236-2CS5K + HA 3136** | SNL 3138 | 5.2 | 266 |
| **22236-2CS5K + HE 3136** | SNL 3138 | 5.2 | 266 |

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| **22238 CC/W33** | SNL 3140 | 5.3 | 304 |
| | SONL 238-538 | 7.3 | 380 |
| | SAF 22238 | 8.5 | 442 |
| | SDAF 22238 | 9.2 | 474 |
| | SBDD 2238 | 10.3 | 516 |
| | SBDD 2238 | 10.4 | 522 |
| **22238 CCK/W33 + H 3138** | SNL 3140 | 5.1 | 226 |
| | SONL 238-538 | 7.1 | 372 |
| | SBDD 2238 | 10.1 | 504 |
| | SBDD 2238 | 10.2 | 510 |
| **22238 CCK/W33 + H 3138/6.13/16** | SNL 3140 | 5.2 | 268 |
| **22238 CCK/W33 + H 3138/6.7/8** | SNL 3140 | 5.2 | 270 |
| **22238 CCK/W33 + H 3138/7** | SNL 3140 | 5.2 | 272 |
| **22238 CCK/W33 + HA 3138** | SNL 3140 | 5.2 | 270 |
| | SONL 238-538 | 7.2 | 376 |
| **22238 CCK/W33 + HE 3138** | SNL 3140 | 5.2 | 268 |
| **22238 CCK/W33 + SNW 38** | SDAF 22538 | 9.1 | 472 |
| **22238 CCK/W33 + SNW 38x6.15/16** | SAF 22538 | 8.2 | 428 |
| **22238-2CS5** | SNL 3140 | 5.3 | 304 |
| **22238-2CS5K + H 3138** | SNL 3140 | 5.1 | 226 |
| **22238-2CS5K + H 3138/6.13/16** | SNL 3140 | 5.2 | 268 |
| **22238-2CS5K + H 3138/6.7/8** | SNL 3140 | 5.2 | 270 |
| **22238-2CS5K + H 3138/7** | SNL 3140 | 5.2 | 272 |
| **22238-2CS5K + HA 3138** | SNL 3140 | 5.2 | 270 |
| **22238-2CS5K + HE 3138** | SNL 3140 | 5.2 | 268 |
| **22240 CC/W33** | SNL 3048 | 5.3 | 306 |
| | SONL 240-540 | 7.3 | 380 |
| | SAF 22240 | 8.5 | 442 |
| | SDAF 22240 | 9.2 | 474 |
| | SBDD 2240 | 10.3 | 516 |
| | SBDD 2240 | 10.4 | 522 |
| **22240 CCK/W33 + H 3140** | SNL 3048 | 5.1 | 228 |
| | SONL 240-540 | 7.1 | 372 |
| | SBDD 2240 | 10.1 | 504 |
| | SBDD 2240 | 10.2 | 510 |
| **22240 CCK/W33 + H 3140/7.1/4** | SNL 3048 | 5.2 | 276 |
| **22240 CCK/W33 + H 3140/7.1/8** | SNL 3048 | 5.2 | 274 |
| **22240 CCK/W33 + HA 3140** | SNL 3048 | 5.2 | 274 |
| | SONL 240-540 | 7.2 | 376 |
| **22240 CCK/W33 + HE 3140** | SNL 3048 | 5.2 | 272 |
| **22240 CCK/W33 + SNW 40** | SDAF 22540 | 9.1 | 472 |
| **22240 CCK/W33 + SNW 40x7.3/16** | SAF 22540 | 8.2 | 428 |
| **22240-2CS5** | SNL 3048 | 5.3 | 306 |
| **22240-2CS5K + H 3140** | SNL 3048 | 5.1 | 228 |
| **22240-2CS5K + H 3140/7.1/4** | SNL 3048 | 5.2 | 276 |
| **22240-2CS5K + H 3140/7.1/8** | SNL 3048 | 5.2 | 274 |
| **22240-2CS5K + HA 3140** | SNL 3048 | 5.2 | 274 |
| **22240-2CS5K + HE 3140** | SNL 3048 | 5.2 | 272 |
| **22244 CC/W33** | SNL 3148 | 5.3 | 308 |
| | SONL 244-544 | 7.3 | 380 |
| | SAF 22244 | 8.5 | 442 |
| | SDAF 22244 | 9.2 | 474 |
| | SBDD 2244 | 10.3 | 516 |
| | SBDD 2244 | 10.4 | 522 |
| **22244 CCK/W33 + H 3044/7.15/16** | SONL 244-544 | 7.2 | 376 |
| **22244 CCK/W33 + H 3144/7.15/16** | SNL 3148 | 5.2 | 278 |
| **22244 CCK/W33 + H 3144/8** | SNL 3148 | 5.2 | 278 |
| **22244 CCK/W33 + OH 3144 H** | SNL 3148 | 5.1 | 230 |
| | SONL 244-544 | 7.1 | 372 |
| | SBDD 2244 | 10.1 | 504 |
| **22244 CCK/W33 + OH 3144 HB** | SBDD 2244 | 10.2 | 510 |
| **22244 CCK/W33 + OH 3144/7.13/16 H** | SNL 3148 | 5.2 | 276 |
| **22244 CCK/W33 + OH 3144/7.7/8 H** | SNL 3148 | 5.2 | 276 |
| **22244 CCK/W33 + SNW 44** | SDAF 22544 | 9.1 | 472 |
| **22244 CCK/W33 + SNW 44x7.15/16** | SAF 22544 | 8.2 | 428 |
| **22244-2CS5** | SNL 3148 | 5.3 | 308 |
| **22244-2CS5K + H 3144/7.15/16** | SNL 3148 | 5.2 | 278 |
| **22244-2CS5K + H 3144/8** | SNL 3148 | 5.2 | 278 |
| **22244-2CS5K + OH 3144 H** | SNL 3148 | 5.1 | 230 |
| **22248 CC/W33** | SNL 3152 | 5.3 | 310 |
| | SONL 248-548 | 7.3 | 380 |
| | SBDD 2248 | 10.3 | 516 |
| | SBDD 2248 | 10.4 | 522 |

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| **22248 CCK/W33 + H 3148/8.15/16** | SNL 3152 | 5.2 | 280 |
| | SONL 248-548 | 7.2 | 376 |
| **22248 CCK/W33 + OH 3148 H** | SNL 3152 | 5.1 | 232 |
| | SONL 248-548 | 7.1 | 372 |
| | SBDD 2248 | 10.1 | 504 |
| **22248 CCK/W33 + OH 3148 HB** | SBDD 2248 | 10.2 | 510 |
| **22248 CCK/W33 + OH 3148/8.1/2 H** | SNL 3152 | 5.2 | 280 |
| **22248 CCK/W33 + OH 3148/8.7/16** | SNL 3152 | 5.2 | 278 |
| **22252 CC/W33** | SNL 3064 | 5.3 | 310 |
| | SBDD 2252 | 10.3 | 516 |
| | SBDD 2252 | 10.4 | 522 |
| **22252 CCK/W33 + H 3152/9.1/2** | SNL 3064 | 5.2 | 282 |
| **22252 CCK/W33 + OH 3152 H** | SNL 3064 | 5.1 | 234 |
| | SBDD 2252 | 10.1 | 504 |
| **22252 CCK/W33 + OH 3152 HB** | SBDD 2252 | 10.2 | 510 |
| **22256 CC/W33** | SNL 3160 | 5.3 | 312 |
| | SBDD 2256 | 10.3 | 516 |
| | SBDD 2256 | 10.4 | 522 |
| **22256 CCK/W33 + H 3156/10.1/2** | SNL 3160 | 5.2 | 284 |
| **22256 CCK/W33 + H 3156/10.7/16** | SNL 3160 | 5.2 | 284 |
| **22256 CCK/W33 + OH 3156 H** | SNL 3160 | 5.1 | 236 |
| | SBDD 2256 | 10.1 | 506 |
| **22256 CCK/W33 + OH 3156 HB** | SBDD 2256 | 10.2 | 510 |
| **22256 CCK/W33 + OH 3156/10 H** | SNL 3160 | 5.2 | 282 |
| **22260 CC/W33** | SNL 3164 | 5.3 | 312 |
| | SBDD 2260 | 10.3 | 518 |
| | SBDD 2260 | 10.4 | 524 |
| **22260 CCK/W33 + OH 3160 H** | SNL 3164 | 5.1 | 238 |
| | SBDD 2260 | 10.1 | 506 |
| **22260 CCK/W33 + OH 3160 HB** | SBDD 2260 | 10.2 | 512 |
| **22260 CCK/W33 + OH 3160/10.15/16 H** | SNL 3164 | 5.2 | 286 |
| **22260 CCK/W33 + OH 3160/11 H** | SNL 3164 | 5.2 | 286 |
| **22264 CC/W33** | SNL 3168 | 5.3 | 314 |
| | SBDD 2264 | 10.3 | 518 |
| | SBDD 2264 | 10.4 | 524 |
| **22264 CCK/W33 + H 3164/12** | SNL 3168 | 5.2 | 288 |
| **22264 CCK/W33 + OH 3164 H** | SNL 3168 | 5.1 | 240 |
| | SBDD 2264 | 10.1 | 506 |
| **22264 CCK/W33 + OH 3164 HB** | SBDD 2264 | 10.2 | 512 |
| **22264 CCK/W33 + OH 3164/11.1/2 H** | SNL 3168 | 5.2 | 286 |
| **22272 CA/W33** | SNL 3180 | 5.3 | 316 |
| **22272 CAK/W33 + H 3172/13.1/2** | SNL 3180 | 5.2 | 294 |
| **22272 CAK/W33 + OH 3172 H** | SNL 3180 | 5.1 | 244 |
| **22272 CAK/W33 + OH 3172/13 H** | SNL 3180 | 5.2 | 292 |
| **22308 E** | SE 510-608 | 2.3 | 122 |
| | SAF 22308 | 8.5 | 436 |
| **22308 EK + H 2308** | SE 510-608 | 2.1 | 88 |
| **22308 EK + HE 2308** | SE 510-608 | 2.2 | 102 |
| **22309 E** | SE 511-609 | 2.3 | 124 |
| | SAF 22309 | 8.5 | 436 |
| **22309 EK + H 2309** | SE 511-609 | 2.1 | 88 |
| **22309 EK + HA 2309** | SE 511-609 | 2.2 | 102 |
| **22309 EK + HE 2309** | SE 511-609 | 2.2 | 104 |
| **22309 EK + SNW 109x1.7/16** | SAF 22609 | 8.2 | 422 |
| **22310 E** | SE 512-610 | 2.3 | 124 |
| | SAF 22310 | 8.5 | 436 |
| **22310 EK + H 2310** | SE 512-610 | 2.1 | 88 |
| **22310 EK + HA 2310** | SE 512-610 | 2.2 | 104 |
| **22310 EK + HE 2310** | SE 512-610 | 2.2 | 104 |
| **22310 EK + SNW 110x1.11/16** | SAF 22610 | 8.2 | 422 |
| **22311 E** | SE 513-611 | 2.3 | 126 |
| | SAF 22311 | 8.5 | 436 |
| **22311 EK + H 2311** | SE 513-611 | 2.1 | 90 |
| **22311 EK + HA 2311** | SE 513-611 | 2.2 | 106 |
| **22311 EK + HE 2311 B** | SE 513-611 | 2.2 | 106 |
| **22311 EK + SNW 111x1.15/16** | SAF 22611 | 8.2 | 422 |
| **22312 E** | SE 515-612 | 2.3 | 126 |
| | SAF 22312 | 8.5 | 436 |
| **22312 EK + H 2312** | SE 515-612 | 2.1 | 90 |
| **22313 E** | SNL 516-613 | 2.3 | 128 |
| | SAF 22313 | 8.5 | 436 |
| **22313 EK + H 2313** | SNL 516-613 | 2.1 | 90 |
| **22313 EK + HA 2313** | SNL 516-613 | 2.2 | 106 |

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| **22313 EK + HE 2313** | SNL 516-613 | 2.2 | 108 |
| **22313 EK + SNW 113x2.3/16** | SAF 22613 | 8.2 | 422 |
| **22314 CC/W33** | SAF 22314 | 8.5 | 436 |
| **22314 E** | SNL 517 | 2.3 | 128 |
| **22315 CC/W33** | SAF 22315 | 8.5 | 436 |
| **22315 CCK/W33 + SNW 115x2.7/16** | SAF 22615 | 8.2 | 422 |
| **22315 E** | SNL 518-615 | 2.3 | 130 |
| **22315 EK + H 2315** | SNL 518-615 | 2.1 | 92 |
| **22315 EK + HA 2315** | SNL 518-615 | 2.2 | 108 |
| **22315 EK + HE 2315** | SNL 518-615 | 2.2 | 108 |
| **22316 CC/W33** | SAF 22316 | 8.5 | 438 |
| **22316 CCK/W33 + SNW 116x2.11/16** | SAF 22616 | 8.2 | 422 |
| **22316 E** | SNL 519-616 | 2.3 | 130 |
| **22316 EK + H 2316** | SNL 519-616 | 2.1 | 92 |
| **22316 EK + HA 2316** | SNL 519-616 | 2.2 | 110 |
| **22316 EK + HE 2316** | SNL 519-616 | 2.2 | 110 |
| **22317 CC/W33** | SAF 22317 | 8.5 | 438 |
| **22317 CCK/W33 + SNW 117x2.15/16** | SAF 22617 | 8.2 | 424 |
| **22317 E** | SNL 520-617 | 2.3 | 132 |
| | SDAF 22317 | 9.2 | 474 |
| **22317 EK + H 2317** | SNL 520-617 | 2.1 | 92 |
| **22317 EK + HA 2317** | SNL 520-617 | 2.2 | 110 |
| **22317 EK + HE 2317** | SNL 520-617 | 2.2 | 112 |
| **22317 EK + SNW 117** | SDAF 22617 | 9.1 | 472 |
| **22318 CC/W33** | SAF 22318 | 8.5 | 438 |
| **22318 CCK/W33 + SNW 118x3.3/36** | SAF 22618 | 8.2 | 424 |
| **22319 E** | SNL 522-619 | 2.3 | 134 |
| **22319 EK + H 2319** | SNL 522-619 | 2.1 | 94 |
| **22319 EK + HE 2319** | SNL 522-619 | 2.2 | 112 |
| **22320 CC/W33** | SAF 22320 | 8.5 | 438 |
| **22320 CCK/W33 + SNW 120x3.7/16** | SAF 22620 | 8.2 | 424 |
| **22320 E** | SDAF 22320 | 9.2 | 474 |
| **22320 EK + H 2320** | SNL 524-620 | 2.1 | 94 |
| **22320 EK + HA 2320** | SNL 524-620 | 2.2 | 114 |
| **22320 EK + HE 2320** | SNL 524-620 | 2.2 | 114 |
| **22320 EK + SNW 120** | SDAF 22620 | 9.1 | 472 |
| **22322 CC/W33** | SAF 22322 | 8.5 | 438 |
| **22322 CCK/W33 + SNW 122x3.15/16** | SAF 22622 | 8.2 | 424 |
| **22322 E** | SDAF 22322 | 9.2 | 474 |
| **22322 EK + SNW 122** | SDAF 22622 | 9.1 | 472 |
| **22324 CC/W33** | SAF 22324 | 8.5 | 440 |
| | SDAF 22324 | 9.2 | 474 |
| **22324 CCK/W33 + SNW 124** | SDAF 22624 | 9.1 | 472 |
| **22324 CCK/W33 + SNW 124x4.3/16** | SAF 22624 | 8.2 | 424 |
| **22326 CC/W33** | SNL 3134 | 5.3 | 302 |
| | SAF 22326 | 8.5 | 440 |
| | SDAF 22326 | 9.2 | 474 |
| **22326 CCK/W33 + H 2326** | SNL 3134 | 5.1 | 222 |
| **22326 CCK/W33 + HA 2326** | SNL 3134 | 5.2 | 260 |
| **22326 CCK/W33 + HE 2326** | SNL 3134 | 5.2 | 260 |
| **22326 CCK/W33 + SNW 126** | SDAF 22626 | 9.1 | 472 |
| **22326 CCK/W33 + SNW 126x4.7/16** | SAF 22626 | 8.2 | 426 |
| **22326-2CS5** | SNL 3134 | 5.3 | 302 |
| **22326-2CS5K + H 2326** | SNL 3134 | 5.1 | 222 |
| **22326-2CS5K + HA 2326** | SNL 3134 | 5.2 | 260 |
| **22326-2CS5K + HE 2326** | SNL 3134 | 5.2 | 260 |
| **22328 CC/W33** | SNL 3136 | 5.3 | 302 |
| | SAF 22328 | 8.5 | 440 |
| | SDAF 22328 | 9.2 | 474 |
| **22328 CCK/W33 + H 2328** | SNL 3136 | 5.1 | 222 |
| **22328 CCK/W33 + HA 2328** | SNL 3136 | 5.2 | 260 |
| **22328 CCK/W33 + HE 2328** | SNL 3136 | 5.2 | 260 |
| **22328 CCK/W33 + SNW 128x4.15/16** | SAF 22628 | 8.2 | 426 |
| **22328-2CS5** | SNL 3136 | 5.3 | 302 |
| **22328-2CS5K + H 2328** | SNL 3136 | 5.1 | 222 |
| **22328-2CS5K + HA 2328** | SNL 3136 | 5.2 | 260 |
| **22328-2CS5K + HE 2328** | SNL 3136 | 5.2 | 260 |
| **22330 CC/W33** | SNL 3138 | 5.3 | 302 |
| | SAF 22330 | 8.5 | 440 |
| | SDAF 22330 | 9.2 | 474 |
| **22330 CCK/W33 + H 2330** | SNL 3138 | 5.1 | 222 |
| **22330 CCK/W33 + HA 2330** | SNL 3138 | 5.2 | 260 |
| **22330 CCK/W33 + HE 2330** | SNL 3138 | 5.2 | 260 |

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| **22330 CCK/W33 + SNW 130x5.3/16** | SAF 22630 | 8.2 | 426 |
| **22330-2CS5** | SNL 3138 | 5.3 | 302 |
| **22330-2CS5K + H 2330** | SNL 3138 | 5.1 | 222 |
| **22330-2CS5K + HA 2330** | SNL 3138 | 5.2 | 260 |
| **22330-2CS5K + HE 2330** | SNL 3138 | 5.2 | 260 |
| **22332 CC/W33** | SNL 3140 | 5.3 | 302 |
| | SAF 22332 | 8.5 | 440 |
| | SDAF 22332 | 9.2 | 474 |
| **22332 CCK/W33 + H 2332** | SNL 3140 | 5.1 | 222 |
| **22332 CCK/W33 + HA 2332** | SNL 3140 | 5.2 | 260 |
| **22332 CCK/W33 + HE 2332** | SNL 3140 | 5.2 | 260 |
| **22332 CCK/W33 + SNW 132** | SDAF 22632 | 9.1 | 472 |
| **22332 CCK/W33 + SNW 132x5.7/16** | SAF 22632 | 8.2 | 426 |
| **22332-2CS5** | SNL 3140 | 5.3 | 302 |
| **22332-2CS5K + H 2332** | SNL 3140 | 5.1 | 222 |
| **22332-2CS5K + HA 2332** | SNL 3140 | 5.2 | 260 |
| **22332-2CS5K + HE 2332** | SNL 3140 | 5.2 | 260 |
| **22334 CC/W33** | SNL 3048 | 5.3 | 302 |
| | SAF 22334 | 8.5 | 440 |
| | SDAF 22334 | 9.2 | 474 |
| **22334 CCK/W33 + H 2334** | SNL 3048 | 5.1 | 222 |
| **22334 CCK/W33 + H 2334/5.13/16** | SNL 3048 | 5.2 | 262 |
| **22334 CCK/W33 + H 2334/5.7/8** | SNL 3048 | 5.2 | 262 |
| **22334 CCK/W33 + HA 2334** | SNL 3048 | 5.2 | 262 |
| **22334 CCK/W33 + HE 2334** | SNL 3048 | 5.2 | 264 |
| **22334 CCK/W33 + SNW 134** | SDAF 22634 | 9.1 | 472 |
| **22334 CCK/W33 + SNW 134x5.15/16** | SAF 22634 | 8.2 | 426 |
| **22336 CC/W33** | SDAF 22336 | 9.2 | 474 |
| **22336 CCK/W33 + SNW 136** | SDAF 22636 | 9.1 | 472 |
| **22338 CC/W33** | SNL 3148 | 5.3 | 304 |
| | SAF 22338 | 8.5 | 442 |
| | SDAF 22338 | 9.2 | 474 |
| **22338 CCK/W33 + H 2338** | SNL 3148 | 5.1 | 226 |
| **22338 CCK/W33 + H 2338/6.13/16** | SNL 3148 | 5.2 | 268 |
| **22338 CCK/W33 + H 2338/6.7/8** | SNL 3148 | 5.2 | 270 |
| **22338 CCK/W33 + H 2338/7** | SNL 3148 | 5.2 | 272 |
| **22338 CCK/W33 + HA 2338** | SNL 3148 | 5.2 | 270 |
| **22338 CCK/W33 + HE 2338** | SNL 3148 | 5.2 | 268 |
| **22338 CCK/W33 + SNW 138** | SDAF 22638 | 9.1 | 472 |
| **22338 CCK/W33 + SNW 138x6.15/16** | SAF 22638 | 8.2 | 428 |
| **22340 CC/W33** | SNL 3056 | 5.3 | 306 |
| | SAF 22340 | 8.5 | 442 |
| **22340 CCK/W33 + H 2340** | SNL 3056 | 5.1 | 228 |
| **22340 CCK/W33 + H 2340/7.1/4** | SNL 3056 | 5.2 | 276 |
| **22340 CCK/W33 + H 2340/7.1/8** | SNL 3056 | 5.2 | 274 |
| **22340 CCK/W33 + HA 2340** | SNL 3056 | 5.2 | 274 |
| **22340 CCK/W33 + HE 2340** | SNL 3056 | 5.2 | 272 |
| **22340 CCK/W33 + SNW 140x7.3/16** | SAF 22640 | 8.2 | 428 |
| **22344 CC/W33** | SNL 3156 | 5.3 | 308 |
| **22344 CCK/W33 + H 2344/7.15/16** | SNL 3156 | 5.2 | 278 |
| **22344 CCK/W33 + OH 2344 H** | SNL 3156 | 5.1 | 230 |
| **22348 CC/W33** | SNL 3160 | 5.3 | 310 |
| **22348 CCK/W33 + H 2348/8.15/16** | SNL 3160 | 5.2 | 280 |
| **22348 CCK/W33 + OH 2348 H** | SNL 3160 | 5.1 | 232 |
| **22352 CC/W33** | SNL 3164 | 5.3 | 310 |
| **22352 CCK/W33 + H 2352/9.1/2** | SNL 3164 | 5.2 | 282 |
| **22352 CCK/W33 + OH 2352 H** | SNL 3164 | 5.1 | 234 |
| **22356 CC/W33** | SNL 3168 | 5.3 | 312 |
| **22356 CCK/W33 + H 2356/10.1/2** | SNL 3168 | 5.2 | 284 |
| **22356 CCK/W33 + H 2356/10.7/16** | SNL 3168 | 5.2 | 284 |
| **22356 CCK/W33 + OH 2356 H** | SNL 3168 | 5.1 | 236 |
| **230/500 CA/W33** | SNL 30/500 | 5.3 | 328 |
| | SDAF 230/500 | 9.4 | 482 |
| **230/500 CAK/W33 + OH 30/500 H** | SNL 30/500 | 5.1 | 258 |
| **230/500 CAK/W33 + OH 30/500/18.1/2 H** | SNL 30/500 | 5.2 | 300 |
| **230/500 CAK/W33 + SNP 30/500 x 181/2** | SDAF 230/500 KA x 181/2 | 9.3 | 478 |
| **230/530 CA/W33** | SNL 30/530 | 5.3 | 328 |
| | SDAF 230/530 | 9.4 | 482 |
| | SKND 30/530 | 14.1 | 634 |
| **230/530 CAK/W33** | SDM 30/530 | 13.5 | 614 |
| | SDM 30/530 | 13.6 | 618 |
| **230/530 CAK/W33 + OH 30/530 H** | SNL 30/530 | 5.1 | 258 |
| **230/530 CAK/W33 + OH 30/530/19.1/2 H** | SNL 30/530 | 5.2 | 300 |

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| **230/530 CAK/W33 + SNP 30/530 x 191/2** | SDAF 230/530 KA x 191/2 | 9.3 | 478 |
| **230/560 CAK/W33 + OH 30/560 H** | SED 30/560 | 6.1 | 332 |
| **230/600 CA/W33** | SKND 30/600 | 14.1 | 634 |
| **230/600 CAK/W33** | SDM 30/600 | 13.5 | 614 |
| | SDM 30/600 | 13.6 | 618 |
| **230/600 CAK/W33 + OH 30/600 H** | SED 30/600 | 6.1 | 332 |
| **230/630 CAK/W33 + OH 30/630 H** | SED 30/630 | 6.1 | 332 |
| **230/670 CA/W33** | SKND 30/670 | 14.1 | 634 |
| **230/670 CAK/W33** | SDM 30/670 | 13.5 | 616 |
| | SDM 30/670 | 13.6 | 620 |
| **230/670 CAK/W33 + OH 30/670 H** | SED 30/670 | 6.1 | 332 |
| **230/710 CAK/W33 + OH 30/710 H** | SED 30/710 | 6.1 | 332 |
| **230/750 CAK/W33 + OH 30/750 H** | SED 30/750 | 6.1 | 332 |
| **230/800 CAK/W33 + OH 30/800 H** | SED 30/800 | 6.1 | 332 |
| **230/850 CAK/W33 + OH 30/850 H** | SED 30/850 | 6.1 | 334 |
| **230/900 CAK/W33 + OH 30/900 H** | SED 30/900 | 6.1 | 334 |
| **230/950 CAK/W33 + OH 30/950 H** | SED 30/950 | 6.1 | 334 |
| **23024 CC/W33** | SNLN 3024 | 4.2 | 180 |
| | SBDD 3024 | 10.3 | 514 |
| | SBDD 3024 | 10.4 | 520 |
| **23024 CCK/W33 + H 3024** | SNLN 3024 | 4.1 | 176 |
| | SBDD 3024 | 10.1 | 502 |
| | SBDD 3024 | 10.2 | 508 |
| **23024 CCK/W33 + SNW 3024x4.3/16** | SAF 23024 KA x 4.3/16 | 8.2 | 424 |
| **23024-2CS5** | SNLN 3024 | 4.2 | 180 |
| **23026 CC/W33** | SNLN 3026 | 4.2 | 180 |
| | SBDD 3026 | 10.3 | 514 |
| | SBDD 3026 | 10.4 | 520 |
| **23026 CCK/W33 + H 3026** | SNLN 3026 | 4.1 | 176 |
| | SBDD 3026 | 10.1 | 502 |
| | SBDD 3026 | 10.2 | 508 |
| **23026 CCK/W33 + SNW 3026x4.7/16** | SAF 23026 KA x 4.7/16 | 8.2 | 426 |
| **23026-2CS5** | SNLN 3026 | 4.2 | 180 |
| **23026-2CS5K + H 3026 E** | SNLN 3026 | 4.1 | 176 |
| **23028 CC/W33** | SNLN 3028 | 4.2 | 180 |
| | SBDD 3028 | 10.3 | 514 |
| | SBDD 3028 | 10.4 | 520 |
| **23028 CCK/W33 + H 3028** | SNLN 3028 | 4.1 | 176 |
| | SBDD 3028 | 10.1 | 502 |
| | SBDD 3028 | 10.2 | 508 |
| **23028 CCK/W33 + SNW 3028x4.15/16** | SAF 23028 KA x 4.15/16 | 8.2 | 426 |
| **23028-2CS5** | SNLN 3028 | 4.2 | 180 |
| **23028-2CS5K + H 3028 E** | SNLN 3028 | 4.1 | 176 |
| **23030 CC/W33** | SNLN 3030 | 4.2 | 180 |
| | SBDD 3030 | 10.3 | 514 |
| | SBDD 3030 | 10.4 | 520 |
| **23030 CCK/W33 + H 3030** | SNLN 3030 | 4.1 | 176 |
| | SBDD 3030 | 10.1 | 502 |
| | SBDD 3030 | 10.2 | 508 |
| | THDD 3030 | 10.5 | 526 |
| **23030 CCK/W33 + SNW 3030x5.3/16** | SAF 23030 KA x 5.3/16 | 8.2 | 426 |
| **23030-2CS5** | SNLN 3030 | 4.2 | 180 |
| **23030-2CS5K + H 3030 E** | SNLN 3030 | 4.1 | 176 |
| **23032 CC/W33** | SNLN 3032 | 4.2 | 182 |
| | SBDD 3032 | 10.3 | 514 |
| | SBDD 3032 | 10.4 | 520 |
| **23032 CCK/W33 + H 3032** | SNLN 3032 | 4.1 | 176 |
| | SBDD 3032 | 10.1 | 502 |
| | SBDD 3032 | 10.2 | 508 |
| **23032 CCK/W33 + SNW 3032x5.7/16** | SAF 23032 KA x 5.7/16 | 8.2 | 426 |
| **23032-2CS5** | SNLN 3032 | 4.2 | 182 |
| **23032-2CS5K + H 3032 E** | SNLN 3032 | 4.1 | 176 |
| **23034 CC/W33** | SNLN 3034 | 4.2 | 182 |
| | SBDD 3034 | 10.3 | 514 |
| | SBDD 3034 | 10.4 | 520 |
| **23034 CCK/W33 + H 3034** | SNLN 3034 | 4.1 | 178 |
| | SBDD 3034 | 10.1 | 504 |
| | SBDD 3034 | 10.2 | 508 |
| | THDD 3034 | 10.5 | 526 |
| **23034 CCK/W33 + SNW 3034x5.15/16** | SAF 23034 KA x 5.15/16 | 8.2 | 426 |
| **23034-2CS5** | SNLN 3034 | 4.2 | 182 |
| **23034-2CS5K + H 3034 E** | SNLN 3034 | 4.1 | 178 |

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| **23036 CC/W33** | SNLN 3036 | 4.2 | 182 |
| | SNL 3036 | 5.3 | 304 |
| | SBDD 3036 | 10.3 | 516 |
| | SBDD 3036 | 10.4 | 522 |
| **23036 CCK/W33 + H 3036** | SNLN 3036 | 4.1 | 178 |
| | SNL 3036 | 5.1 | 224 |
| | SBDD 3036 | 10.1 | 504 |
| | SBDD 3036 | 10.2 | 510 |
| **23036 CCK/W33 + H 3036/6.3/8** | SNL 3036 | 5.2 | 264 |
| **23036 CCK/W33 + H 3036/6.5/16** | SNL 3036 | 5.2 | 264 |
| **23036 CCK/W33 + HA 3036** | SNL 3036 | 5.2 | 266 |
| **23036 CCK/W33 + HE 3036** | SNL 3036 | 5.2 | 266 |
| **23036 CCK/W33 + SNW 3036x6.7/16** | SAF 23036 KA x 6.7/16 | 8.2 | 428 |
| **23036-2CS5** | SNLN 3036 | 4.2 | 182 |
| | SNL 3036 | 5.3 | 304 |
| **23036-2CS5K + H 3036 E** | SNLN 3036 | 4.1 | 178 |
| | SNL 3036 | 5.1 | 224 |
| **23036-2CS5K + H 3036/6.3/8 E** | SNL 3036 | 5.2 | 264 |
| **23036-2CS5K + H 3036/6.5/16 E** | SNL 3036 | 5.2 | 264 |
| **23036-2CS5K + HA 3036 E** | SNL 3036 | 5.2 | 266 |
| **23036-2CS5K + HE 3036 E** | SNL 3036 | 5.2 | 266 |
| **23038 CC/W33** | SNLN 3038 | 4.2 | 182 |
| | SNL 3038 | 5.3 | 304 |
| | SBDD 3038 | 10.3 | 516 |
| | SBDD 3038 | 10.4 | 522 |
| **23038 CCK/W33 + H 3038** | SNLN 3038 | 4.1 | 178 |
| | SNL 3038 | 5.1 | 226 |
| | SBDD 3038 | 10.1 | 504 |
| | SBDD 3038 | 10.2 | 510 |
| | THDD 3038 | 10.5 | 526 |
| **23038 CCK/W33 + H 3038/6.13/16** | SNL 3038 | 5.2 | 268 |
| **23038 CCK/W33 + H 3038/6.7/8** | SNL 3038 | 5.2 | 270 |
| **23038 CCK/W33 + H 3038/7** | SNL 3038 | 5.2 | 272 |
| **23038 CCK/W33 + HA 3038** | SNL 3038 | 5.2 | 270 |
| **23038 CCK/W33 + HE 3038** | SNL 3038 | 5.2 | 268 |
| **23038 CCK/W33 + SNW 3038x6.15/16** | SAF 23038 KA x 6.15/16 | 8.2 | 428 |
| **23040 CC/W33** | SNLN 3040 | 4.2 | 182 |
| | SNL 3040 | 5.3 | 306 |
| | SBDD 3040 | 10.3 | 516 |
| | SBDD 3040 | 10.4 | 522 |
| **23040 CCK/W33 + H 3040** | SNLN 3040 | 4.1 | 178 |
| | SNL 3040 | 5.1 | 228 |
| | SBDD 3040 | 10.1 | 504 |
| | SBDD 3040 | 10.2 | 510 |
| | THDD 3040 | 10.5 | 528 |
| **23040 CCK/W33 + H 3040/7.1/4** | SNL 3040 | 5.2 | 276 |
| **23040 CCK/W33 + H 3040/7.1/8** | SNL 3040 | 5.2 | 274 |
| **23040 CCK/W33 + HA 3040** | SNL 3040 | 5.2 | 274 |
| **23040 CCK/W33 + HE 3040** | SNL 3040 | 5.2 | 272 |
| **23040 CCK/W33 + SNW 3040x7.3/16** | SAF 23040 KA x 7.3/16 | 8.2 | 428 |
| **23040-2CS5** | SNLN 3040 | 4.2 | 182 |
| | SNL 3040 | 5.3 | 306 |
| **23040-2CS5K + H 3040** | SNLN 3040 | 4.1 | 178 |
| | SNL 3040 | 5.1 | 228 |
| **23040-2CS5K + H 3040/7.1/4** | SNL 3040 | 5.2 | 276 |
| **23040-2CS5K + H 3040/7.1/8** | SNL 3040 | 5.2 | 274 |
| **23040-2CS5K + HA 3040** | SNL 3040 | 5.2 | 274 |
| **23040-2CS5K + HE 3040** | SNL 3040 | 5.2 | 272 |
| **23044 CC/W33** | SNLN 3044 | 4.2 | 182 |
| | SNL 3044 | 5.3 | 308 |
| | SBDD 3044 | 10.3 | 516 |
| | SBDD 3044 | 10.4 | 522 |
| **23044 CCK/W33 + H 3044/7.15/16** | SNL 3044 | 5.2 | 278 |
| **23044 CCK/W33 + H 3044/8** | SNL 3044 | 5.2 | 278 |
| **23044 CCK/W33 + OH 3044 H** | SNLN 3044 | 4.1 | 178 |
| | SNL 3044 | 5.1 | 230 |
| | SBDD 3044 | 10.1 | 504 |
| | THDD 3044 | 10.5 | 528 |
| **23044 CCK/W33 + OH 3044 HB** | SBDD 3044 | 10.2 | 510 |
| **23044 CCK/W33 + OH 3044/7.13/16 H** | SNL 3044 | 5.2 | 276 |
| **23044 CCK/W33 + OH 3044/7.7/8 H** | SNL 3044 | 5.2 | 276 |
| **23044 CCK/W33 + SNW 3044x7.15/16** | SAF 23044 KA x 7.15/16 | 8.2 | 428 |

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| **23044-2CS5** | SNLN 3044 | 4.2 | 182 |
| | SNL 3044 | 5.3 | 308 |
| **23044-2CS5K + H 3044/7.15/16** | SNL 3044 | 5.2 | 278 |
| **23044-2CS5K + H 3044/8** | SNL 3044 | 5.2 | 278 |
| **23044-2CS5K + OH 3044 H** | SNLN 3044 | 4.1 | 178 |
| | SNL 3044 | 5.1 | 230 |
| **23044-2CS5K + OH 3044/7.13/16 H** | SNL 3044 | 5.2 | 276 |
| **23044-2CS5K + OH 3044/7.7/8 H** | SNL 3044 | 5.2 | 276 |
| **23048 CC/W33** | SNLN 3048 | 4.2 | 182 |
| | SNL 3048 | 5.3 | 310 |
| | SBDD 3048 | 10.3 | 516 |
| | SBDD 3048 | 10.4 | 522 |
| **23048 CCK/W33 + H 3048/8.15/16** | SNL 3048 | 5.2 | 280 |
| **23048 CCK/W33 + OH 3048 H** | SNLN 3048 | 4.1 | 178 |
| | SNL 3048 | 5.1 | 232 |
| | SBDD 3048 | 10.1 | 504 |
| **23048 CCK/W33 + OH 3048 HB** | SBDD 3048 | 10.2 | 510 |
| **23048 CCK/W33 + OH 3048/8.1/2 H** | SNL 3048 | 5.2 | 280 |
| **23048 CCK/W33 + OH 3048/8.7/16 H** | SNL 3048 | 5.2 | 278 |
| **23048 CCK/W33 + SNP 3048x8.15/16** | SAF 23048 KA x 8.15/16 | 8.2 | 428 |
| **23048-2CS5** | SNLN 3048 | 4.2 | 182 |
| | SNL 3048 | 5.3 | 310 |
| **23048-2CS5K + H 3048/8.15/16 E** | SNL 3048 | 5.2 | 280 |
| **23048-2CS5K + OH 3048 HE** | SNLN 3048 | 4.1 | 178 |
| | SNL 3048 | 5.1 | 232 |
| **23048-2CS5K + OH 3048/8.1/2 HE** | SNL 3048 | 5.2 | 280 |
| **23048-2CS5K + OH 3048/8.7/16 HE** | SNL 3048 | 5.2 | 278 |
| **23052 CC/W33** | SNLN 3052 | 4.2 | 182 |
| | SNL 3052 | 5.3 | 310 |
| | SBDD 3052 | 10.3 | 516 |
| | SBDD 3052 | 10.4 | 522 |
| **23052 CCK/W33 + H 3052/9.1/2** | SNL 3052 | 5.2 | 282 |
| **23052 CCK/W33 + OH 3052 H** | SNLN 3052 | 4.1 | 178 |
| | SNL 3052 | 5.1 | 234 |
| | SBDD 3052 | 10.1 | 504 |
| | THDD 3052 | 10.5 | 528 |
| **23052 CCK/W33 + OH 3052 HB** | SBDD 3052 | 10.2 | 510 |
| **23052 CCK/W33 + OH 3052/9.7/16 H** | SNL 3052 | 5.2 | 280 |
| **23052 CCK/W33 + SNP 3052x9.7/16** | SAF 23052 KA x 9.7/16 | 8.2 | 428 |
| **23052-2CS5** | SNLN 3052 | 4.2 | 182 |
| | SNL 3052 | 5.3 | 310 |
| **23052-2CS5K + H 3052/9.1/2 E** | SNL 3052 | 5.2 | 282 |
| **23052-2CS5K + OH 3052 HE** | SNLN 3052 | 4.1 | 178 |
| | SNL 3052 | 5.1 | 234 |
| **23052-2CS5K + OH 3052/9.7/16 HE** | SNL 3052 | 5.2 | 280 |
| **23056 CACK/W33 + SNP 3056x10.7/16** | SAF 23056 KA x 10.7/16 | 8.2 | 428 |
| **23056 CACK/W33 + SNP 3056x9.15/16** | SAF 23056 KA x 9.15/16 | 8.2 | 428 |
| **23056 CC/W33** | SNLN 3056 | 4.2 | 182 |
| | SNL 3056 | 5.3 | 312 |
| | SBDD 3056 | 10.3 | 516 |
| | SBDD 3056 | 10.4 | 522 |
| **23056 CCK/W33 + H 3056/10.1/2** | SNL 3056 | 5.2 | 284 |
| **23056 CCK/W33 + H 3056/10.7/16** | SNL 3056 | 5.2 | 284 |
| **23056 CCK/W33 + OH 3056 H** | SNLN 3056 | 4.1 | 178 |
| | SNL 3056 | 5.1 | 236 |
| | SBDD 3056 | 10.1 | 506 |
| **23056 CCK/W33 + OH 3056 HB** | SBDD 3056 | 10.2 | 510 |
| **23056 CCK/W33 + OH 3056/10 H** | SNL 3056 | 5.2 | 282 |
| **23056 CCK/W33 + OH 3056/9.15/16 H** | SNL 3056 | 5.2 | 282 |
| **23060 CAC/W33** | SDAF 23060 | 9.4 | 480 |
| **23060 CACK/W33 + SNP 3060 x 1015/16** | SDAF 23060 KA x 1015/16 | 9.3 | 476 |
| **23060 CC/W33** | SNL 3060 | 5.3 | 312 |
| | SBDD 3060 | 10.3 | 518 |
| | SBDD 3060 | 10.4 | 524 |
| **23060 CCK/W33 + OH 3060 H** | SNL 3060 | 5.1 | 238 |
| | SBDD 3060 | 10.1 | 506 |
| **23060 CCK/W33 + OH 3060 HB** | SBDD 3060 | 10.2 | 512 |
| **23060 CCK/W33 + OH 3060/10.15/16 H** | SNL 3060 | 5.2 | 286 |
| **23060 CCK/W33 + OH 3060/11 H** | SNL 3060 | 5.2 | 286 |
| **23064 CC/W33** | SNL 3064 | 5.3 | 314 |
| | SDAF 23064 | 9.4 | 480 |
| | SBDD 3064 | 10.3 | 518 |
| | SBDD 3064 | 10.4 | 524 |

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| **23064 CCK/W33 + H 3064/11.15/16** | SNL 3064 | 5.2 | 288 |
| **23064 CCK/W33 + H 3064/12** | SNL 3064 | 5.2 | 288 |
| **23064 CCK/W33 + OH 3064 H** | SNL 3064 | 5.1 | 240 |
| | SBDD 3064 | 10.1 | 506 |
| **23064 CCK/W33 + OH 3064 HB** | SBDD 3064 | 10.2 | 512 |
| **23064 CCK/W33 + OH 3064/11.1/2 H** | SNL 3064 | 5.2 | 286 |
| **23064 CCK/W33 + OH 3064/11.7/16 H** | SNL 3064 | 5.2 | 286 |
| **23064 CCK/W33 + SNP 3064 x 1115/16** | SDAF 23064 KA x 1115/16 | 9.3 | 476 |
| **23064 CCK/W33 + SNP 3064 x 117/16** | SDAF 23064 KA x 117/16 | 9.3 | 476 |
| **23068 CAC/W33** | SDAF 23068 | 9.4 | 480 |
| **23068 CACK/W33 + SNP 3068 x 127/16** | SDAF 23068 KA x 127/16 | 9.3 | 476 |
| **23068 CC/W33** | SNL 3068 | 5.3 | 314 |
| | SBDD 3068 | 10.3 | 518 |
| | SBDD 3068 | 10.4 | 524 |
| **23068 CCK/W33** | SDM 3068 | 13.5 | 614 |
| | SDM 3068 | 13.6 | 618 |
| **23068 CCK/W33 + OH 3068 H** | SNL 3068 | 5.1 | 242 |
| | SBDD 3068 | 10.1 | 506 |
| **23068 CCK/W33 + OH 3068 HB** | SBDD 3068 | 10.2 | 512 |
| **23068 CCK/W33 + OH 3068/12.1/2 H** | SNL 3068 | 5.2 | 290 |
| **23068 CCK/W33 + OH 3068/12.7/16 H** | SNL 3068 | 5.2 | 290 |
| **23072 CAC/W33** | SDAF 23072 | 9.4 | 480 |
| **23072 CACK/W33 + SNP 3072 x 1215/16** | SDAF 23072 KA x 1215/16 | 9.3 | 476 |
| **23072 CACK/W33 + SNP 3072 x 137/16** | SDAF 23072 KA x 137/16 | 9.3 | 476 |
| **23072 CC/W33** | SNL 3072 | 5.3 | 316 |
| | SBDD 3072 | 10.3 | 518 |
| | SBDD 3072 | 10.4 | 524 |
| **23072 CCK/W33 + H 3072/13.1/2** | SNL 3072 | 5.2 | 294 |
| **23072 CCK/W33 + H 3072/13.7/16** | SNL 3072 | 5.2 | 292 |
| **23072 CCK/W33 + OH 3072 H** | SNL 3072 | 5.1 | 244 |
| | SBDD 3072 | 10.1 | 506 |
| **23072 CCK/W33 + OH 3072 HB** | SBDD 3072 | 10.2 | 512 |
| **23072 CCK/W33 + OH 3072/12.15/16 H** | SNL 3072 | 5.2 | 292 |
| **23072 CCK/W33 + OH 3072/13 H** | SNL 3072 | 5.2 | 292 |
| **23076 CAC/W33** | SDAF 23076 | 9.4 | 480 |
| **23076 CACK/W33 + SNP 3076 x 1315/16** | SDAF 23076 KA x 1315/16 | 9.3 | 476 |
| **23076 CC/W33** | SNL 3076 | 5.3 | 318 |
| | SBDD 3076 | 10.3 | 518 |
| | SBDD 3076 | 10.4 | 524 |
| **23076 CCK/W33** | SDM 3076 | 13.5 | 614 |
| | SDM 3076 | 13.6 | 618 |
| **23076 CCK/W33 + OH 3076 H** | SNL 3076 | 5.1 | 246 |
| | SBDD 3076 | 10.1 | 506 |
| **23076 CCK/W33 + OH 3076 HB** | SBDD 3076 | 10.2 | 512 |
| **23076 CCK/W33 + OH 3076/13.15/16 H** | SNL 3076 | 5.2 | 294 |
| **23076 CCK/W33 + OH 3076/14 H** | SNL 3076 | 5.2 | 296 |
| **23080 CAC/W33** | SDAF 23080 | 9.4 | 480 |
| **23080 CACK/W33 + SNP 3080 x 15** | SDAF 23080 KA x 15 | 9.3 | 478 |
| **23080 CC/W33** | SNL 3080 | 5.3 | 320 |
| | SBDD 3080 | 10.3 | 518 |
| | SBDD 3080 | 10.4 | 524 |
| **23080 CCK/W33 + H 3080/15** | SNL 3080 | 5.2 | 296 |
| **23080 CCK/W33 + OH 3080 H** | SNL 3080 | 5.1 | 248 |
| | SBDD 3080 | 10.1 | 506 |
| **23080 CCK/W33 + OH 3080 HB** | SBDD 3080 | 10.2 | 512 |
| **23084 CA/W33** | SNL 3084 | 5.3 | 322 |
| | SDAF 23084 | 9.4 | 480 |
| | SBDD 3084 | 10.3 | 518 |
| | SBDD 3084 | 10.4 | 524 |
| **23084 CAK/W33** | SDM 3084 | 13.5 | 614 |
| | SDM 3084 | 13.6 | 618 |
| **23084 CAK/W33 + H 3084/15.3/4** | SNL 3084 | 5.2 | 298 |
| **23084 CAK/W33 + OH 3084 H** | SNL 3084 | 5.1 | 250 |
| | SBDD 3084 | 10.1 | 506 |
| **23084 CAK/W33 + OH 3084 HB** | SBDD 3084 | 10.2 | 512 |
| **23084 CAK/W33 + SNP 3084 x 153/4** | SDAF 23084 KA x 153/4 | 9.3 | 478 |
| **23088 CA/W33** | SNL 3088 | 5.3 | 324 |
| | SDAF 23088 | 9.4 | 482 |
| **23088 CAK/W33 + OH 3088 H** | SNL 3088 | 5.1 | 252 |
| **23088 CAK/W33 + OH 3088/16.1/2 H** | SNL 3088 | 5.2 | 298 |
| **23088 CAK/W33 + SNP 3088 x 161/2** | SDAF 23088 KA x 161/2 | 9.3 | 478 |
| **23092 CA/W33** | SNL 3092 | 5.3 | 326 |
| | SDAF 23092 | 9.4 | 482 |

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| **23092 CAK/W33** | SDM 3092 | 13.5 | 614 |
| | SDM 3092 | 13.6 | 618 |
| **23092 CAK/W33 + OH 3092 H** | SNL 3092 | 5.1 | 254 |
| **23092 CAK/W33 + OH 3092/17 H** | SNL 3092 | 5.2 | 300 |
| **23092 CAK/W33 + SNP 3092 x 17** | SDAF 23092 KA x 17 | 9.3 | 478 |
| **23096 CA/W33** | SNL 3096 | 5.3 | 326 |
| | SDAF 23096 | 9.4 | 482 |
| **23096 CAK/W33 + OH 3096 H** | SNL 3096 | 5.1 | 256 |
| **23096 CAK/W33 + OH 3096/18 H** | SNL 3096 | 5.2 | 300 |
| **23096 CAK/W33 + SNP 3096 x 18** | SDAF 23096 KA x 18 | 9.3 | 478 |
| **231/500 CAK/W33 + OH 31/500 H** | SED 31/500 | 6.1 | 332 |
| **231/530 CAK/W33** | SDM 31/530 | 13.5 | 614 |
| | SDM 31/530 | 13.6 | 618 |
| **231/530 CAK/W33 + OH 31/530 H** | SED 31/530 | 6.1 | 332 |
| **231/560 CAK/W33 + OH 31/560 H** | SED 31/560 | 6.1 | 332 |
| **231/600 CAK/W33 + OH 31/600 H** | SED 31/600 | 6.1 | 332 |
| **231/630 CAK/W33** | SDM 31/630 | 13.5 | 616 |
| | SDM 31/630 | 13.6 | 620 |
| **231/630 CAK/W33 + OH 31/630 H** | SED 31/630 | 6.1 | 332 |
| **231/670 CAK/W33 + OH 31/670 H** | SED 31/670 | 6.1 | 332 |
| **231/710 CAK/W33 + OH 31/710 H** | SED 31/710 | 6.1 | 332 |
| **231/750 CAK/W33 + OH 31/750 H** | SED 31/750 | 6.1 | 332 |
| **231/800 CAK/W33 + OH 31/800 H** | SED 31/800 | 6.1 | 332 |
| **231/850 CAK/W33 + OH 31/850 H** | SED 31/850 | 6.1 | 334 |
| **23122 CC/W33** | SBDD 3122 | 10.3 | 514 |
| | SBDD 3122 | 10.4 | 520 |
| **23122 CCK/W33 + H 3122** | SBDD 3122 | 10.1 | 502 |
| | SBDD 3122 | 10.2 | 508 |
| **23124 CC/W33** | SBDD 3124 | 10.3 | 514 |
| | SBDD 3124 | 10.4 | 520 |
| **23124 CCK/W33 + H 3124** | SBDD 3124 | 10.1 | 502 |
| | SBDD 3124 | 10.2 | 508 |
| **23126 CC/W33** | SBDD 3126 | 10.3 | 514 |
| | SBDD 3126 | 10.4 | 520 |
| **23126 CCK/W33 + H 3126** | SBDD 3126 | 10.1 | 502 |
| | SBDD 3126 | 10.2 | 508 |
| **23128 CC/W33** | SBDD 3128 | 10.3 | 514 |
| | SBDD 3128 | 10.4 | 520 |
| **23128 CCK/W33 + H 3128** | SBDD 3128 | 10.1 | 502 |
| | SBDD 3128 | 10.2 | 508 |
| **23130 CC/W33** | SBDD 3130 | 10.3 | 514 |
| | SBDD 3130 | 10.4 | 520 |
| **23130 CCK/W33 + H 3130** | SBDD 3130 | 10.1 | 502 |
| | SBDD 3130 | 10.2 | 508 |
| **23132 CC/W33** | SBDD 3132 | 10.3 | 514 |
| | SBDD 3132 | 10.4 | 520 |
| **23132 CCK/W33 + H 3132** | SBDD 3132 | 10.1 | 502 |
| | SBDD 3132 | 10.2 | 508 |
| | THDD 3132 | 10.5 | 526 |
| **23134 CC/W33** | SNL 3134 | 5.3 | 302 |
| | SBDD 3134 | 10.3 | 514 |
| | SBDD 3134 | 10.4 | 520 |
| **23134 CCK/W33 + H 3134** | SNL 3134 | 5.1 | 222 |
| | SBDD 3134 | 10.1 | 504 |
| | SBDD 3134 | 10.2 | 508 |
| | THDD 3134 | 10.5 | 526 |
| **23134 CCK/W33 + HA 3134** | SNL 3134 | 5.2 | 262 |
| **23134 CCK/W33 + HE 3134** | SNL 3134 | 5.2 | 264 |
| **23134-2CS5** | SNL 3134 | 5.3 | 302 |
| **23134-2CS5K + H 3134 E** | SNL 3134 | 5.1 | 222 |
| **23134-2CS5K + HA 3134** | SNL 3134 | 5.2 | 262 |
| **23134-2CS5K + HE 3134** | SNL 3134 | 5.2 | 264 |
| **23136 CC/W33** | SNL 3136 | 5.3 | 304 |
| | SBDD 3136 | 10.3 | 516 |
| | SBDD 3136 | 10.4 | 522 |
| **23136 CCK/W33** | SBPN 3136 | 13.1 | 606 |
| | ASBPN 3136 | 13.2 | 608 |
| | SBPN 3136 | 13.3 | 610 |
| | ASBPN 3136 | 13.4 | 612 |
| **23136 CCK/W33 + H 3136** | SNL 3136 | 5.1 | 224 |
| | SBDD 3136 | 10.1 | 504 |
| | SBDD 3136 | 10.2 | 510 |
| | THDD 3136 | 10.5 | 526 |

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| **23136 CCK/W33 + HA 3136** | SNL 3136 | 5.2 | 266 |
| **23136 CCK/W33 + HE 3136** | SNL 3136 | 5.2 | 266 |
| **23136-2CS5** | SNL 3136 | 5.3 | 304 |
| **23136-2CS5K + H 3136 L** | SNL 3136 | 5.1 | 224 |
| **23136-2CS5K + HA 3136 L** | SNL 3136 | 5.2 | 266 |
| **23136-2CS5K + HE 3136 L** | SNL 3136 | 5.2 | 266 |
| **23138 CC/W33** | SNL 3138 | 5.3 | 304 |
| | SBDD 3138 | 10.3 | 516 |
| | SBDD 3138 | 10.4 | 522 |
| **23138 CCK/W33 + H 3138** | SNL 3138 | 5.1 | 226 |
| | SBDD 3138 | 10.1 | 504 |
| | SBDD 3138 | 10.2 | 510 |
| | THDD 3138 | 10.5 | 526 |
| **23138 CCK/W33 + HA 3138** | SNL 3138 | 5.2 | 270 |
| **23138 CCK/W33 + HE 3138** | SNL 3138 | 5.2 | 268 |
| **23138-2CS5** | SNL 3138 | 5.3 | 304 |
| **23138-2CS5K + H 3138** | SNL 3138 | 5.1 | 226 |
| **23138-2CS5K + HA 3138 L** | SNL 3138 | 5.2 | 270 |
| **23138-2CS5K + HE 3138 L** | SNL 3138 | 5.2 | 268 |
| **23140 CC/W33** | SNL 3140 | 5.3 | 306 |
| | SBDD 3140 | 10.3 | 516 |
| | SBDD 3140 | 10.4 | 522 |
| **23140 CCK/W33** | SBPN 3140 | 13.1 | 606 |
| | SBPN 3140 | 13.3 | 610 |
| **23140 CCK/W33 + H 3140** | SNL 3140 | 5.1 | 228 |
| | SBDD 3140 | 10.1 | 504 |
| | SBDD 3140 | 10.2 | 510 |
| | THDD 3140 | 10.5 | 528 |
| **23140 CCK/W33 + HA 3140** | SNL 3140 | 5.2 | 274 |
| **23140 CCK/W33 + HE 3140** | SNL 3140 | 5.2 | 272 |
| **23140-2CS5** | SNL 3140 | 5.3 | 306 |
| **23140-2CS5K + H 3140** | SNL 3140 | 5.1 | 228 |
| **23140-2CS5K + HA 3140** | SNL 3140 | 5.2 | 274 |
| **23140-2CS5K + HE 3140** | SNL 3140 | 5.2 | 272 |
| **23144 CC/W33** | SNL 3144 | 5.3 | 308 |
| | SBDD 3144 | 10.3 | 516 |
| | SBDD 3144 | 10.4 | 522 |
| **23144 CCK/W33** | SBPN 3144 | 13.1 | 606 |
| | ASBPN 3144 | 13.2 | 608 |
| | SBPN 3144 | 13.3 | 610 |
| | ASBPN 3144 | 13.4 | 612 |
| **23144 CCK/W33 + H 3144/7.15/16** | SNL 3144 | 5.2 | 278 |
| **23144 CCK/W33 + OH 3144 H** | SNL 3144 | 5.1 | 230 |
| | SBDD 3144 | 10.1 | 504 |
| | THDD 3144 | 10.5 | 528 |
| **23144 CCK/W33 + OH 3144 HB** | SBDD 3144 | 10.2 | 510 |
| **23144-2CS5** | SNL 3144 | 5.3 | 308 |
| **23144-2CS5K + H 3144/7.15/16 TL** | SNL 3144 | 5.2 | 278 |
| **23144-2CS5K + OH 3144 HTL** | SNL 3144 | 5.1 | 230 |
| **23148 CC/W33** | SNL 3148 | 5.3 | 310 |
| | SBDD 3148 | 10.3 | 516 |
| | SBDD 3148 | 10.4 | 522 |
| **23148 CCK/W33** | SBPN 3148 | 13.1 | 606 |
| | SBPN 3148 | 13.3 | 610 |
| **23148 CCK/W33 + H 3148/8.15/16** | SNL 3148 | 5.2 | 280 |
| **23148 CCK/W33 + OH 3148 H** | SNL 3148 | 5.1 | 232 |
| | SBDD 3148 | 10.1 | 504 |
| | THDD 3148 | 10.5 | 528 |
| **23148 CCK/W33 + OH 3148 HB** | SBDD 3148 | 10.2 | 510 |
| **23148-2CS5** | SNL 3148 | 5.3 | 310 |
| **23148-2CS5K + H 3148/8.15/16 TL** | SNL 3148 | 5.2 | 280 |
| **23148-2CS5K + OH 3148 HTL** | SNL 3148 | 5.1 | 232 |
| **23152 CAC/W33** | SDAF 23152 | 9.4 | 480 |
| **23152 CACK/W33 + SNP 3152 x 97/16** | SDAF 23152 KA x 97/16 | 9.3 | 476 |
| **23152 CC/W33** | SNL 3152 | 5.3 | 310 |
| | SBDD 3152 | 10.3 | 516 |
| | SBDD 3152 | 10.4 | 522 |
| **23152 CCK/W33** | SBPN 3152 | 13.1 | 606 |
| | ASBPN 3152 | 13.2 | 608 |
| | SBPN 3152 | 13.3 | 610 |
| | ASBPN 3152 | 13.4 | 612 |
| **23152 CCK/W33 + H 3152/9.1/2** | SNL 3152 | 5.2 | 282 |

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| **23152 CCK/W33 + OH 3152 H** | SNL 3152 | 5.1 | 234 |
| | SBDD 3152 | 10.1 | 504 |
| | THDD 3152 | 10.5 | 528 |
| **23152 CCK/W33 + OH 3152 HB** | SBDD 3152 | 10.2 | 510 |
| **23152 CCK/W33 + OH 3152/9.7/16 H** | SNL 3152 | 5.2 | 280 |
| **23152-2CS5** | SNL 3152 | 5.3 | 310 |
| **23152-2CS5K + H 3152/9.1/2 TL** | SNL 3152 | 5.2 | 282 |
| **23152-2CS5K + OH 3152 HTL** | SNL 3152 | 5.1 | 234 |
| **23152-2CS5K + OH 3152/9.7/16 HTL** | SNL 3152 | 5.2 | 280 |
| **23156 CAC/W33** | SDAF 23156 | 9.4 | 480 |
| **23156 CACK/W33 + SNP 3156 x 107/16** | SDAF 23156 KA x 107/16 | 9.3 | 476 |
| **23156 CC/W33** | SNL 3156 | 5.3 | 312 |
| | SBDD 3156 | 10.3 | 516 |
| | SBDD 3156 | 10.4 | 522 |
| **23156 CCK/W33 + H 3156/10.1/2** | SNL 3156 | 5.2 | 284 |
| **23156 CCK/W33 + H 3156/10.7/16** | SNL 3156 | 5.2 | 284 |
| **23156 CCK/W33 + OH 3156 H** | SNL 3156 | 5.1 | 236 |
| | SBDD 3156 | 10.1 | 506 |
| **23156 CCK/W33 + OH 3156 HB** | SBDD 3156 | 10.2 | 510 |
| **23156 CCK/W33 + OH 3156/10 H** | SNL 3156 | 5.2 | 282 |
| **23156-2CS5** | SNL 3156 | 5.3 | 312 |
| **23156-2CS5K + H 3156/10.1/2 TL** | SNL 3156 | 5.2 | 284 |
| **23156-2CS5K + H 3156/10.7/16 TL** | SNL 3156 | 5.2 | 284 |
| **23156-2CS5K + OH 3156 HTL** | SNL 3156 | 5.1 | 236 |
| **23156-2CS5K + OH 3156/10 HTL** | SNL 3156 | 5.2 | 282 |
| **23160 CAC/W33** | SDAF 23160 | 9.4 | 480 |
| **23160 CACK/W33 + SNP 3160 x 1015/16** | SDAF 23160 KA x 1015/16 | 9.3 | 476 |
| **23160 CC/W33** | SNL 3160 | 5.3 | 312 |
| | SBDD 3160 | 10.3 | 518 |
| | SBDD 3160 | 10.4 | 524 |
| **23160 CCK/W33** | SBPN 3160 | 13.1 | 606 |
| | ASBPN 3160 | 13.2 | 608 |
| | SBPN 3160 | 13.3 | 610 |
| | ASBPN 3160 | 13.4 | 612 |
| **23160 CCK/W33 + OH 3160 H** | SNL 3160 | 5.1 | 238 |
| | SBDD 3160 | 10.1 | 506 |
| | THDD 3160 | 10.5 | 528 |
| **23160 CCK/W33 + OH 3160 HB** | SBDD 3160 | 10.2 | 512 |
| **23160 CCK/W33 + OH 3160/10.15/16 H** | SNL 3160 | 5.2 | 286 |
| **23160 CCK/W33 + OH 3160/11 H** | SNL 3160 | 5.2 | 286 |
| **23160-2CS5** | SNL 3160 | 5.3 | 312 |
| **23160-2CS5K + OH 3160 HE** | SNL 3160 | 5.1 | 238 |
| **23160-2CS5K + OH 3160/10.15/16 HE** | SNL 3160 | 5.2 | 286 |
| **23160-2CS5K + OH 3160/11 HE** | SNL 3160 | 5.2 | 286 |
| **23164 CAC/W33** | SDAF 23164 | 9.4 | 480 |
| **23164 CACK/W33 + SNP 3164 x 1115/16** | SDAF 23164 KA x 1115/16 | 9.3 | 476 |
| **23164 CC/W33** | SNL 3164 | 5.3 | 314 |
| | SBDD 3164 | 10.3 | 518 |
| | SBDD 3164 | 10.4 | 524 |
| **23164 CCK/W33** | SBPN 3164 | 13.1 | 606 |
| | ASBPN 3164 | 13.2 | 608 |
| | SBPN 3164 | 13.3 | 610 |
| | ASBPN 3164 | 13.4 | 612 |
| **23164 CCK/W33 + H 3164/11.15/16** | SNL 3164 | 5.2 | 288 |
| **23164 CCK/W33 + H 3164/12** | SNL 3164 | 5.2 | 288 |
| **23164 CCK/W33 + OH 3164 H** | SNL 3164 | 5.1 | 240 |
| | SBDD 3164 | 10.1 | 506 |
| | THDD 3164 | 10.5 | 528 |
| **23164 CCK/W33 + OH 3164 HB** | SBDD 3164 | 10.2 | 512 |
| **23164-2CS5** | SNL 3164 | 5.3 | 314 |
| **23164-2CS5K + H 3164/11.15/16** | SNL 3164 | 5.2 | 288 |
| **23164-2CS5K + H 3164/12** | SNL 3164 | 5.2 | 288 |
| **23164-2CS5K + OH 3164 H** | SNL 3164 | 5.1 | 240 |
| **23168 CAC/W33** | SDAF 23168 | 9.4 | 480 |
| **23168 CACK/W33 + SNP 3168 x 127/16** | SDAF 23168 KA x 127/16 | 9.3 | 476 |
| **23168 CC/W33** | SNL 3168 | 5.3 | 314 |
| | SBDD 3168 | 10.3 | 518 |
| | SBDD 3168 | 10.4 | 524 |
| **23168 CCK/W33** | SDM 3168 | 13.5 | 614 |
| | SDM 3168 | 13.6 | 618 |
| **23168 CCK/W33 + OH 3168 H** | SNL 3168 | 5.1 | 242 |
| | SBDD 3168 | 10.1 | 506 |
| | THDD 3168 | 10.5 | 528 |

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| **23168 CCK/W33 + OH 3168 HB** | SBDD 3168 | 10.2 | 512 |
| **23168 CCK/W33 + OH 3168/12.1/2 H** | SNL 3168 | 5.2 | 290 |
| **23168 CCK/W33 + OH 3168/12.7/16 H** | SNL 3168 | 5.2 | 290 |
| **23168-2CS5** | SNL 3168 | 5.3 | 314 |
| **23168-2CS5K + OH 3168 HE** | SNL 3168 | 5.1 | 242 |
| **23168-2CS5K + OH 3168/12.1/2 HE** | SNL 3168 | 5.2 | 290 |
| **23168-2CS5K + OH 3168/12.7/16 HE** | SNL 3168 | 5.2 | 290 |
| **23172 CC/W33** | SNL 3172 | 5.3 | 316 |
| | SDAF 23172 | 9.4 | 480 |
| | SBDD 3172 | 10.3 | 518 |
| | SBDD 3172 | 10.4 | 524 |
| **23172 CCK/W33 + H 3172/13.1/2** | SNL 3172 | 5.2 | 294 |
| **23172 CCK/W33 + H 3172/13.7/16** | SNL 3172 | 5.2 | 292 |
| **23172 CCK/W33 + OH 3172 H** | SNL 3172 | 5.1 | 244 |
| | SBDD 3172 | 10.1 | 506 |
| **23172 CCK/W33 + OH 3172 HB** | SBDD 3172 | 10.2 | 512 |
| **23172 CCK/W33 + SNP 3172 x 137/16** | SDAF 23172 KA x 137/16 | 9.3 | 476 |
| **23172-2CS5** | SNL 3172 | 5.3 | 316 |
| **23172-2CS5K + OH 3172 HE** | SNL 3172 | 5.1 | 244 |
| **23176 CA/W33** | SNL 3176 | 5.3 | 318 |
| | SDAF 23176 | 9.4 | 480 |
| | SBDD 3176 | 10.3 | 518 |
| | SBDD 3176 | 10.4 | 524 |
| **23176 CAK/W33 + OH 3176 H** | SNL 3176 | 5.1 | 246 |
| | SBDD 3176 | 10.1 | 506 |
| | THDD 3176 | 10.5 | 528 |
| **23176 CAK/W33 + OH 3176 HB** | SBDD 3176 | 10.2 | 512 |
| **23176 CAK/W33 + OH 3176/13.15/16 H** | SNL 3176 | 5.2 | 294 |
| **23176 CAK/W33 + OH 3176/14 H** | SNL 3176 | 5.2 | 296 |
| **23176 CAK/W33 + SNP 3176 x 1315/16** | SDAF 23176 KA x 1315/16 | 9.3 | 476 |
| **23180 CA/W33** | SNL 3180 | 5.3 | 320 |
| | SDAF 23180 | 9.4 | 480 |
| | SBDD 3180 | 10.3 | 518 |
| | SBDD 3180 | 10.4 | 524 |
| **23180 CAK/W33 + H 3180/15** | SNL 3180 | 5.2 | 296 |
| **23180 CAK/W33 + OH 3180 H** | SNL 3180 | 5.1 | 248 |
| | SBDD 3180 | 10.1 | 506 |
| **23180 CAK/W33 + OH 3180 HB** | SBDD 3180 | 10.2 | 512 |
| **23180 CAK/W33 + SNP 3180 x 1415/16** | SDAF 23180 KA x 1415/16 | 9.3 | 476 |
| **23180-2CS5** | SNL 3180 | 5.3 | 320 |
| **23180-2CS5K + OH 3180 HE** | SNL 3180 | 5.1 | 248 |
| **23184 CA/W33** | SDAF 23184 | 9.4 | 480 |
| **23184 CAK/W33 + SNP 3184 x 153/4** | SDAF 23184 KA x 153/4 | 9.3 | 478 |
| **23184 CJ/W33** | SNL 3184 | 5.3 | 322 |
| | SBDD 3184 | 10.3 | 518 |
| | SBDD 3184 | 10.4 | 524 |
| **23184 CKJ/W33** | SDM 3184 | 13.5 | 614 |
| | SDM 3184 | 13.6 | 618 |
| **23184 CKJ/W33 + H 3184/15.3/4** | SNL 3184 | 5.2 | 298 |
| **23184 CKJ/W33 + OH 3184 H** | SNL 3184 | 5.1 | 250 |
| | SBDD 3184 | 10.1 | 506 |
| **23184 CKJ/W33 + OH 3184 HB** | SBDD 3184 | 10.2 | 512 |
| **23188 CA/W33** | SNL 3188 | 5.3 | 324 |
| | SDAF 23188 | 9.4 | 482 |
| **23188 CAK/W33 + OH 3188 H** | SNL 3188 | 5.1 | 252 |
| **23188 CAK/W33 + OH 3188/16.1/2 H** | SNL 3188 | 5.2 | 298 |
| **23188 CAK/W33 + SNP 3188 x 161/2** | SDAF 23188 KA x 161/2 | 9.3 | 478 |
| **23192 CA/W33** | SNL 3192 | 5.3 | 326 |
| | SDAF 23192 | 9.4 | 482 |
| **23192 CAK/W33 + OH 3192 H** | SNL 3192 | 5.1 | 254 |
| **23192 CAK/W33 + OH 3192/17 H** | SNL 3192 | 5.2 | 300 |
| **23192 CAK/W33 + SNP 3192 x 17** | SDAF 23192 KA x 17 | 9.3 | 478 |
| **23196 CA/W33** | SNL 3196 | 5.3 | 326 |
| | SDAF 23196 | 9.4 | 482 |
| **23196 CAK/W33 + OH 3196 H** | SNL 3196 | 5.1 | 256 |
| **23196 CAK/W33 + OH 3196/18 H** | SNL 3196 | 5.2 | 300 |
| **23196 CAK/W33 + SNP 3196 x 18** | SDAF 23196 KA x 18 | 9.3 | 478 |
| **232/500 CAK/W33 + OH 32/500 H** | SED 32/500 | 6.1 | 332 |
| **232/530 CAK/W33 + OH 32/530 H** | SED 32/530 | 6.1 | 332 |
| **232/560 CAK/W33 + OH 32/560 H** | SED 32/560 | 6.1 | 332 |
| **232/600 CAK/W33 + OH 32/600 H** | SED 32/600 | 6.1 | 332 |
| **232/670 CAK/W33 + OH 32/670 H** | SED 32/670 | 6.1 | 332 |
| **232/710 CAK/W33 + OH 32/710 H** | SED 32/710 | 6.1 | 332 |

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| **232/750 CAK/W33 + OH 32/750 H** | SED 32/750 | 6.1 | 332 |
| **23218 CC/W33** | SNL 218 | 2.3 | 132 |
| | SNL 518-615 | 2.3 | 132 |
| | SAW 22218 | 8.5 | 438 |
| **23218 CCK/W33 + H 2318** | SNL 518-615 | 2.1 | 94 |
| **23218 CCK/W33 + HA 2318** | SNL 518-615 | 2.2 | 112 |
| **23218 CCK/W33 + HE 2318** | SNL 518-615 | 2.2 | 112 |
| **23218 CCK/W33 + SNW 118x3.3/16** | SAW 23518 | 8.2 | 424 |
| **23220 CC/W33** | SNL 520-617 | 2.3 | 134 |
| | SNL 524-620 | 2.3 | 134 |
| | SAW 23220 | 8.5 | 438 |
| **23220 CCK/W33 + H 2320** | SNL 520-617 | 2.1 | 94 |
| **23220 CCK/W33 + HA 2320** | SNL 520-617 | 2.2 | 114 |
| **23220 CCK/W33 + HE 2320** | SNL 520-617 | 2.2 | 114 |
| **23220 CCK/W33 + SNW 120x3.7/16** | SAW 23520 | 8.2 | 424 |
| **23220-2CS** | SNL 520-617 | 2.3 | 134 |
| **23222 CC/W33** | SNL 522-619 | 2.3 | 134 |
| | SAWS 23222 | 8.5 | 438 |
| | SBDD 3222 | 10.3 | 514 |
| | SBDD 3222 | 10.4 | 520 |
| **23222 CCK/W33 + H 2322** | SNL 522-619 | 2.1 | 96 |
| | SNL 522-619 | 2.2 | 114 |
| | SBDD 3222 | 10.1 | 502 |
| | SBDD 3222 | 10.2 | 508 |
| | THDD 3222 | 10.5 | 526 |
| **23222 CCK/W33 + HE 2322** | SNL 522-619 | 2.2 | 116 |
| **23222 CCK/W33 + SNW 122x3.15/16** | SAWS 23522 | 8.2 | 424 |
| **23224 CC/W33** | SNL 524-620 | 2.3 | 134 |
| | SAW 23224 | 8.5 | 440 |
| | SBDD 3224 | 10.3 | 514 |
| | SBDD 3224 | 10.4 | 520 |
| **23224 CCK/W33 + H 2324** | SNL 524-620 | 2.1 | 96 |
| | SBDD 3224 | 10.2 | 508 |
| | THDD 3224 | 10.5 | 526 |
| **23224 CCK/W33 + H 2334** | SBDD 3224 | 10.1 | 502 |
| **23224 CCK/W33 + HA 2324** | SNL 524-620 | 2.2 | 116 |
| **23224 CCK/W33 + HE 2324** | SNL 524-620 | 2.2 | 116 |
| **23224 CCK/W33 + SNW 124x4.3/16** | SAW 22524 | 8.2 | 424 |
| **23226 CC/W33** | SNL 526 | 2.3 | 136 |
| | SAW 23226 | 8.5 | 440 |
| | SBDD 3226 | 10.3 | 514 |
| | SBDD 3226 | 10.4 | 520 |
| **23226 CCK/W33 + H 2326** | SNL 526 | 2.1 | 96 |
| | SBDD 3226 | 10.2 | 508 |
| | THDD 3226 | 10.5 | 526 |
| **23226 CCK/W33 + H 2336** | SBDD 3226 | 10.1 | 502 |
| **23226 CCK/W33 + HA 2326** | SNL 526 | 2.2 | 116 |
| **23226 CCK/W33 + HE 2326** | SNL 526 | 2.2 | 116 |
| **23226 CCK/W33 + SNW 126x4.7/16** | SAW 23526 | 8.2 | 426 |
| **23226-2CS5** | SNL 526 | 2.3 | 136 |
| **23226-2CS5K + H 2326 L** | SNL 526 | 2.1 | 96 |
| **23226-2CS5K + HA 2326** | SNL 526 | 2.2 | 116 |
| **23226-2CS5K + HE 2326** | SNL 526 | 2.2 | 116 |
| **23228 CC/W33** | SNL 528 | 2.3 | 136 |
| | SAW 23228 | 8.5 | 440 |
| | SBDD 3228 | 10.3 | 514 |
| | SBDD 3228 | 10.4 | 520 |
| **23228 CCK/W33 + H 2328** | SNL 528 | 2.1 | 96 |
| | SBDD 3228 | 10.2 | 508 |
| | THDD 3228 | 10.5 | 526 |
| **23228 CCK/W33 + H 2338** | SBDD 3228 | 10.1 | 502 |
| **23228 CCK/W33 + HA 2328** | SNL 528 | 2.2 | 118 |
| **23228 CCK/W33 + HE 2328** | SNL 528 | 2.2 | 118 |
| **23228 CCK/W33 + SNW 128x4.15/16** | SAW 23528 | 8.2 | 426 |
| **23228-2CS5** | SNL 528 | 2.3 | 136 |
| **23228-2CS5K + H 2328** | SNL 528 | 2.1 | 96 |
| **23228-2CS5K + HA 2328** | SNL 528 | 2.2 | 118 |
| **23228-2CS5K + HE 2328** | SNL 528 | 2.2 | 118 |
| **23230 CC/W33** | SNL 530 | 2.3 | 136 |
| | SAW 23230 | 8.5 | 440 |
| | SBDD 3230 | 10.3 | 514 |
| | SBDD 3230 | 10.4 | 520 |




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| **23230 CCK/W33 + H 2330** | SNL 530 | 2.1 | 96 |
| | SBDD 3230 | 10.1 | 502 |
| | SBDD 3230 | 10.2 | 508 |
| **23230 CCK/W33 + HA 2330** | SNL 530 | 2.2 | 118 |
| **23230 CCK/W33 + HE 2330** | SNL 530 | 2.2 | 118 |
| **23230 CCK/W33 + SNW 130x5.3/16** | SAW 23530 | 8.2 | 426 |
| **23230-2CS5** | SNL 530 | 2.3 | 136 |
| **23230-2CS5K + HA 2330** | SNL 530 | 2.2 | 118 |
| **23230-2CS5K + HE 2330** | SNL 530 | 2.2 | 118 |
| **23232 CC/W33** | SNL 532 | 2.3 | 136 |
| | SNL 3038 | 5.3 | 302 |
| | SAW 23232 | 8.5 | 440 |
| | SBDD 3232 | 10.3 | 514 |
| | SBDD 3232 | 10.4 | 520 |
| **23232 CCK/W33 + H 2330** | THDD 3230 | 10.5 | 526 |
| **23232 CCK/W33 + H 2332** | SNL 532 | 2.1 | 98 |
| | SNL 3038 | 5.1 | 222 |
| | SBDD 3232 | 10.1 | 502 |
| | SBDD 3232 | 10.2 | 508 |
| | THDD 3232 | 10.5 | 526 |
| **23232 CCK/W33 + HA 2332** | SNL 532 | 2.2 | 118 |
| **23232 CCK/W33 + HE 2332** | SNL 532 | 2.2 | 118 |
| **23232 CCK/W33 + SNW 132x5.7/16** | SAW 23532 | 8.2 | 426 |
| **23234 CC/W33** | SNL 3234 | 5.3 | 302 |
| | SAW 23234 | 8.5 | 440 |
| | SBDD 3234 | 10.3 | 514 |
| | SBDD 3234 | 10.4 | 520 |
| **23234 CCK/W33 + H 2334** | SNL 3234 | 5.1 | 222 |
| | SBDD 3234 | 10.1 | 504 |
| | SBDD 3234 | 10.2 | 508 |
| **23234 CCK/W33 + H 2334/5.13/16** | SNL 3234 | 5.2 | 262 |
| **23234 CCK/W33 + H 2334/5.7/8** | SNL 3234 | 5.2 | 262 |
| **23234 CCK/W33 + HA 2334** | SNL 3234 | 5.2 | 262 |
| **23234 CCK/W33 + HE 2334** | SNL 3234 | 5.2 | 264 |
| **23234 CCK/W33 + SNW 134x5.15/16** | SAW 23534 | 8.2 | 426 |
| **23236 CC/W33** | SNL 3236 | 5.3 | 304 |
| | SAW 23236 | 8.5 | 440 |
| | SBDD 3236 | 10.3 | 516 |
| | SBDD 3236 | 10.4 | 522 |
| **23236 CCK/W33 + H 2336** | SNL 3236 | 5.1 | 224 |
| | SBDD 3236 | 10.1 | 504 |
| | SBDD 3236 | 10.2 | 510 |
| | THDD 3236 | 10.5 | 526 |
| **23236 CCK/W33 + HA 2336** | SNL 3236 | 5.2 | 266 |
| **23236 CCK/W33 + HE 2336** | SNL 3236 | 5.2 | 266 |
| **23236 CCK/W33 + SNW 136x6.7/16** | SAW 23536 | 8.2 | 428 |
| **23238 CC/W33** | SNL 3238 | 5.3 | 304 |
| | SAW 23238 | 8.5 | 442 |
| | SBDD 3238 | 10.3 | 516 |
| | SBDD 3238 | 10.4 | 522 |
| **23238 CCK/W33 + H 2338** | SNL 3238 | 5.1 | 226 |
| | SBDD 3238 | 10.1 | 504 |
| | SBDD 3238 | 10.2 | 510 |
| **23238 CCK/W33 + H 2338/6.13/16** | SNL 3238 | 5.2 | 268 |
| **23238 CCK/W33 + H 2338/6.7/8** | SNL 3238 | 5.2 | 270 |
| **23238 CCK/W33 + H 2338/7** | SNL 3238 | 5.2 | 272 |
| **23238 CCK/W33 + HA 2338** | SNL 3238 | 5.2 | 270 |
| **23238 CCK/W33 + HE 2338** | SNL 3238 | 5.2 | 268 |
| **23238 CCK/W33 + SNW 138x6.15/16** | SAW 23538 | 8.2 | 428 |
| **23240 CC/W33** | SNL 3240 | 5.3 | 306 |
| | SAW 23240 | 8.5 | 442 |
| | SBDD 3240 | 10.3 | 516 |
| | SBDD 3240 | 10.4 | 522 |
| **23240 CCK/W33 + H 2340** | SNL 3240 | 5.1 | 228 |
| | SBDD 3240 | 10.1 | 504 |
| | SBDD 3240 | 10.2 | 510 |
| | THDD 3240 | 10.5 | 528 |
| **23240 CCK/W33 + H 2340/7.1/4** | SNL 3240 | 5.2 | 276 |
| **23240 CCK/W33 + H 2340/7.1/8** | SNL 3240 | 5.2 | 274 |
| **23240 CCK/W33 + HA 2340** | SNL 3240 | 5.2 | 274 |
| **23240 CCK/W33 + HE 2340** | SNL 3240 | 5.2 | 272 |
| **23240 CCK/W33 + SNW 140x7.3/16** | SAW 23540 | 8.2 | 428 |
| **23240-2CS5** | SNL 3240 | 5.3 | 306 |

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| **23244 CC/W33** | SNL 3244 | 5.3 | 308 |
| | SAW 23244 | 8.5 | 442 |
| | SBDD 3244 | 10.3 | 516 |
| | SBDD 3244 | 10.4 | 522 |
| **23244 CCK/W33 + H 2344/7.15/16** | SNL 3244 | 5.2 | 278 |
| **23244 CCK/W33 + OH 2344 H** | SNL 3244 | 5.1 | 230 |
| | SBDD 3244 | 10.1 | 504 |
| | THDD 3244 | 10.5 | 528 |
| **23244 CCK/W33 + OH 2344 HB** | SBDD 3244 | 10.2 | 510 |
| **23244 CCK/W33 + SNW 144x7.15/16** | SAW 23544 | 8.2 | 428 |
| **23248 CAC/W33** | SDAF 23248 | 9.4 | 480 |
| **23248 CACK/W33 + SNP 148 x 815/16** | SDAF 23248 KA x 815/16 | 9.3 | 476 |
| **23248 CC/W33** | SNL 3248 | 5.3 | 310 |
| | SBDD 3248 | 10.3 | 516 |
| | SBDD 3248 | 10.4 | 522 |
| **23248 CCK/W33 + H 2348/8.15/16** | SNL 3248 | 5.2 | 280 |
| **23248 CCK/W33 + OH 2348 H** | SNL 3248 | 5.1 | 232 |
| | SBDD 3248 | 10.1 | 504 |
| | THDD 3248 | 10.5 | 528 |
| **23248 CCK/W33 + OH 2348 HB** | SBDD 3248 | 10.2 | 510 |
| **23252 CAC/W33** | SDAF 23252 | 9.4 | 480 |
| **23252 CACK/W33 + SNP 152 x 97/16** | SDAF 23252 KA x 97/16 | 9.3 | 476 |
| **23252 CC/W33** | SNL 3252 | 5.3 | 310 |
| | SBDD 3252 | 10.3 | 516 |
| | SBDD 3252 | 10.4 | 522 |
| **23252 CCK/W33 + H 2352/9.1/2** | SNL 3252 | 5.2 | 282 |
| **23252 CCK/W33 + OH 2352 H** | SNL 3252 | 5.1 | 234 |
| | SBDD 3252 | 10.1 | 504 |
| | THDD 3252 | 10.5 | 528 |
| **23252 CCK/W33 + OH 2352 HB** | SBDD 3252 | 10.2 | 510 |
| **23252 CCK/W33 + OH 2352/9.7/16 H** | SNL 3252 | 5.2 | 280 |
| **23256 CAC/W33** | SDAF 23256 | 9.4 | 480 |
| **23256 CACK/W33 + SNP 3256 x 107/16** | SDAF 23256 KA x 107/16 | 9.3 | 476 |
| **23256 CC/W33** | SNL 3256 | 5.3 | 312 |
| | SBDD 3256 | 10.3 | 516 |
| | SBDD 3256 | 10.4 | 522 |
| **23256 CCK/W33 + H 2356/10.1/2** | SNL 3256 | 5.2 | 284 |
| **23256 CCK/W33 + H 2356/10.7/16** | SNL 3256 | 5.2 | 284 |
| **23256 CCK/W33 + OH 2356 H** | SNL 3256 | 5.1 | 236 |
| | SBDD 3256 | 10.1 | 506 |
| | THDD 3256 | 10.5 | 528 |
| **23256 CCK/W33 + OH 2356 HB** | SBDD 3256 | 10.2 | 510 |
| **23260 CAC/W33** | SDAF 23260 | 9.4 | 480 |
| **23260 CACK/W33 + SNP 3260 x 1015/16** | SDAF 23260 KA x 1015/16 | 9.3 | 476 |
| **23260 CC/W33** | SNL 3260 | 5.3 | 312 |
| | SBDD 3260 | 10.3 | 518 |
| | SBDD 3260 | 10.4 | 524 |
| **23260 CCK/W33 + OH 2360 HB** | SBDD 3260 | 10.2 | 512 |
| **23260 CCK/W33 + OH 3260 H** | SNL 3260 | 5.1 | 238 |
| | SBDD 3260 | 10.1 | 506 |
| | THDD 3260 | 10.5 | 528 |
| **23260 CCK/W33 + OH 3260/10.15/16 H** | SNL 3260 | 5.2 | 286 |
| **23260 CCK/W33 + OH 3260/11 H** | SNL 3260 | 5.2 | 286 |
| **23264 CAC/W33** | SDAF 23264 | 9.4 | 480 |
| **23264 CACK/W33 + SNP 3264 x 1115/16** | SDAF 23264 KA x 1115/16 | 9.3 | 476 |
| **23264 CC/W33** | SNL 3264 | 5.3 | 314 |
| | SBDD 3264 | 10.3 | 518 |
| | SBDD 3264 | 10.4 | 524 |
| **23264 CCK/W33 + H 3264/11.15/16** | SNL 3264 | 5.2 | 288 |
| **23264 CCK/W33 + H 3264/12** | SNL 3264 | 5.2 | 288 |
| **23264 CCK/W33 + OH 2364 HB** | SBDD 3264 | 10.2 | 512 |
| **23264 CCK/W33 + OH 3264 H** | SNL 3264 | 5.1 | 240 |
| | SBDD 3264 | 10.1 | 506 |
| | THDD 3264 | 10.5 | 528 |
| **23268 CA/W33** | SNL 3268 | 5.3 | 314 |
| | SDAF 23268 | 9.4 | 480 |
| | SBDD 3268 | 10.3 | 518 |
| | SBDD 3268 | 10.4 | 524 |
| **23268 CAK/W33 + OH 3268 H** | SNL 3268 | 5.1 | 242 |
| | SBDD 3268 | 10.1 | 506 |
| | THDD 3268 | 10.5 | 528 |
| **23268 CAK/W33 + OH 3268 HB** | SBDD 3268 | 10.2 | 512 |
| **23268 CAK/W33 + OH 3268/12.1/2 H** | SNL 3268 | 5.2 | 290 |

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| **23268 CAK/W33 + OH 3268/12.7/16 H** | SNL 3268 | 5.2 | 290 |
| **23268 CAK/W33 + SNP 3268 x 127/16** | SDAF 23268 KA x 127/16 | 9.3 | 476 |
| **23272 CA/W33** | SNL 3272 | 5.3 | 316 |
| | SDAF 23272 | 9.4 | 480 |
| | SBDD 3272 | 10.3 | 518 |
| | SBDD 3272 | 10.4 | 524 |
| **23272 CAK/W33 + H 3272/13.1/2** | SNL 3272 | 5.2 | 294 |
| **23272 CAK/W33 + H 3272/13.7/16** | SNL 3272 | 5.2 | 292 |
| **23272 CAK/W33 + OH 3272 H** | SNL 3272 | 5.1 | 244 |
| | SBDD 3272 | 10.1 | 506 |
| | THDD 3272 | 10.5 | 528 |
| **23272 CAK/W33 + OH 3272 HB** | SBDD 3272 | 10.2 | 512 |
| **23272 CAK/W33 + SNP 3272 x 137/16** | SDAF 23272 KA x 137/16 | 9.3 | 476 |
| **23276 CA/W33** | SNL 3276 | 5.3 | 318 |
| | SDAF 23276 | 9.4 | 480 |
| | SBDD 3276 | 10.3 | 518 |
| | SBDD 3276 | 10.4 | 524 |
| **23276 CAK/W33 + OH 3276 H** | SNL 3276 | 5.1 | 246 |
| | SBDD 3276 | 10.1 | 506 |
| | THDD 3276 | 10.5 | 528 |
| **23276 CAK/W33 + OH 3276 HB** | SBDD 3276 | 10.2 | 512 |
| **23276 CAK/W33 + OH 3276/13.15/16 H** | SNL 3276 | 5.2 | 294 |
| **23276 CAK/W33 + OH 3276/14 H** | SNL 3276 | 5.2 | 296 |
| **23276 CAK/W33 + SNP 3276 x 1315/16** | SDAF 23276 KA x 1315/16 | 9.3 | 476 |
| **23280 CA/W33** | SNL 3280 | 5.3 | 320 |
| | SDAF 23280 | 9.4 | 480 |
| | SBDD 3280 | 10.3 | 518 |
| | SBDD 3280 | 10.4 | 524 |
| **23280 CAK/W33 + H 3280/15** | SNL 3280 | 5.2 | 296 |
| **23280 CAK/W33 + OH 3280 H** | SNL 3280 | 5.1 | 248 |
| | SBDD 3280 | 10.1 | 506 |
| | THDD 3280 | 10.5 | 528 |
| **23280 CAK/W33 + OH 3280 HB** | SBDD 3280 | 10.2 | 512 |
| **23280 CAK/W33 + SNP 3280 x 15** | SDAF 23280 KA x 15 | 9.3 | 476 |
| **23284 CA/W33** | SNL 3284 | 5.3 | 322 |
| | SDAF 23284 | 9.4 | 480 |
| | SBDD 3284 | 10.3 | 518 |
| | SBDD 3284 | 10.4 | 524 |
| **23284 CAK/W33 + H 3284/15.3/4** | SNL 3284 | 5.2 | 298 |
| **23284 CAK/W33 + OH 3284 H** | SNL 3284 | 5.1 | 250 |
| | SBDD 3284 | 10.1 | 506 |
| | THDD 3284 | 10.5 | 528 |
| **23284 CAK/W33 + OH 3284 HB** | SBDD 3284 | 10.2 | 512 |
| **23284 CAK/W33 + SNP 3284 x 153/4** | SDAF 23284 KA x 153/4 | 9.3 | 478 |
| **23288 CA/W33** | SNL 3288 | 5.3 | 324 |
| | SDAF 23288 | 9.4 | 482 |
| **23288 CAK/W33 + OH 3288 H** | SNL 3288 | 5.1 | 252 |
| **23288 CAK/W33 + OH 3288/16.1/2 H** | SNL 3288 | 5.2 | 298 |
| **23288 CAK/W33 + SNP 3288 x 161/2** | SDAF 23288 KA x 161/2 | 9.3 | 478 |
| **23292 CAK/W33 + OH 3292 H** | SED 3292 | 6.1 | 332 |
| **23296 CAK/W33 + OH 3296 H** | SED 3296 | 6.1 | 332 |
| **239/1060 CAKF/W33 + KOH 39/1060** | FSDR 39/1060 K | 15.1 | 656 |
| **239/1180 CAKF/W33 + KOH 39/1180** | FSDR 39/1180 K | 15.1 | 656 |
| **239/600 CAK/W33 + OH 39/600 H** | SED 39/600 | 6.1 | 332 |
| **239/630 CAK/W33 + OH 39/630 H** | SED 39/630 | 6.1 | 332 |
| **239/670 CAK/W33 + OH 39/670 H** | SED 39/670 | 6.1 | 332 |
| **239/710 CAK/W33 + OH 39/710 H** | SED 39/710 | 6.1 | 332 |
| **239/750 CAK/W33 + OH 39/750 H** | SED 39/750 | 6.1 | 332 |
| **239/800 CAK/W33 + OH 39/800 H** | SED 39/800 | 6.1 | 332 |
| **239/850 CAK/W33 + KOH 39/850** | FSDR 39/850 K | 15.1 | 656 |
| **239/850 CAK/W33 + OH 39/850 H** | SED 39/850 | 6.1 | 334 |
| **239/900 CAK/W33 + OH 39/900 H** | SED 39/900 | 6.1 | 334 |
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| **24026-2CS5** | SNLN 3026 | 4.2 | 180 |
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| **249/1000 CAF/W33** | SKND 49/1000 | 14.1 | 634 |
| **249/1060 CAF/W33** | SKND 49/1060 | 14.1 | 636 |
| **249/1120 CAF/W33** | SKND 49/1120 | 14.1 | 636 |
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| **249/1320 CAK30F/W33 + 236696-1** | FSDR 49/1320 K | 15.1 | 656 |
| **249/710 CA/W33** | SKND 49/710 | 14.1 | 634 |
| **249/750 CA/W33** | SKND 49/750 | 14.1 | 634 |
| **249/800 CA/W33** | SKND 49/800 | 14.1 | 634 |
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| **BS2-2211-2CSK + HA 311 E** | SE 511-609 | 2.2 | 106 |
| **BS2-2211-2CSK + HE 311 BE** | SE 511-609 | 2.2 | 106 |
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| **BS2-2212-2CSK + H 312 E** | SE 512-610 | 2.1 | 90 |
| **BS2-2213-2CS** | SE 213 | 2.3 | 128 |
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| **BS2-2213-2CSK + H 2313 E** | SE 513-611 | 2.1 | 90 |
| **BS2-2213-2CSK + HA 2313 E** | SE 513-611 | 2.2 | 106 |
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| **BS2-2215-2CSK + H 315 E** | SE 515-612 | 2.1 | 92 |
| **BS2-2215-2CSK + HA 315 E** | SE 515-612 | 2.2 | 108 |
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| **BS2-2216-2CS** | SNL 216 | 2.3 | 130 |
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| **BS2-2217-2CSK + HA 317 E** | SNL 517 | 2.2 | 110 |
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| **BS2-2218-2CSK + HA 2318 E/L73** | SNL 518-615 | 2.2 | 112 |
| **BS2-2218-2CSK + HE 2318 E/L73** | SNL 518-615 | 2.2 | 112 |
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| **BS2-2220-2CS5K + H 2320 E** | SNL 520-617 | 2.1 | 94 |
| **BS2-2220-2CS5K + HA 2320 E** | SNL 520-617 | 2.2 | 114 |
| **BS2-2220-2CS5K + HE 2320 E** | SNL 520-617 | 2.2 | 114 |
| **BS2-2222-2CS5** | SNL 522-619 | 2.3 | 134 |
| **BS2-2222-2CS5K + H 2322 E** | SNL 522-619 | 2.1 | 96 |
| | SNL 522-619 | 2.2 | 114 |
| **BS2-2222-2CS5K + HE 2322 E** | SNL 522-619 | 2.2 | 116 |
| **BS2-2224-2CS5** | SNL 524-620 | 2.3 | 134 |
| **BS2-2224-2CS5K + H 2324 EH** | SNL 524-620 | 2.1 | 96 |
| **BS2-2224-2CS5K + HA 2324 EH** | SNL 524-620 | 2.2 | 116 |
| **BS2-2224-2CS5K + HE 2324 EH** | SNL 524-620 | 2.2 | 116 |
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| **BS2-2226-2CS5K + H 2326 L** | SNL 526 | 2.1 | 96 |
| **BS2-2226-2CS5K + HA 2326 L** | SNL 526 | 2.2 | 116 |
| **BS2-2226-2CS5K + HE 2326 L** | SNL 526 | 2.2 | 116 |
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| **C 2205 KTN9 + H 305 E** | SNL 505 | 2.1 | 86 |
| | FNL 505 | 11.1 | 546 |
| **C 2205 KTN9 + HE 305 E** | SNL 505 | 2.2 | 100 |
| **C 2206 TN9** | SNL 206-305 | 2.3 | 120 |
| | SNL 506-605 | 2.3 | 120 |
| **C 2206 KTN9 + H 306 E** | SNL 506-605 | 2.1 | 86 |
| | FNL 506 | 11.1 | 546 |
| **C 2206 KTN9 + HA 306 E** | SNL 506-605 | 2.2 | 100 |
| **C 2206 KTN9 + HE 306 E** | SNL 506-605 | 2.2 | 100 |
| **C 2207 TN9** | SE 207 | 2.3 | 122 |
| | SE 507-606 | 2.3 | 122 |
| **C 2207 KTN9 + H 307 E** | SE 507-606 | 2.1 | 86 |
| | FNL 507 | 11.1 | 546 |
| **C 2207 KTN9 + HA 307 E** | SE 507-606 | 2.2 | 102 |
| | SAF C2507 | 8.3 | 430 |
| **C 2208 TN9** | SE 208-307 | 2.3 | 122 |
| | SE 508-607 | 2.3 | 122 |
| **C 2208 KTN9 + H 308 E** | SE 508-607 | 2.1 | 88 |
| | FNL 508 | 11.1 | 546 |
| **C 2208 KTN9 + HE 308 E** | SE 508-607 | 2.2 | 102 |
| **C 2209 TN9** | SE 209 | 2.3 | 124 |
| | SE 509 | 2.3 | 124 |
| **C 2209 KTN9 + H 309 E** | SE 509 | 2.1 | 88 |
| | FNL 509 | 11.1 | 546 |
| **C 2209 KTN9 + HA 309 E** | SE 509 | 2.2 | 102 |
| | SAF C2509 | 8.3 | 430 |
| **C 2209 KTN9 + HE 309 E** | SE 509 | 2.2 | 104 |
| **C 2210 TN9** | SE 210 | 2.3 | 124 |
| | SE 510-608 | 2.3 | 124 |
| **C 2210 KTN9 + H 310 E** | SE 510-608 | 2.1 | 88 |
| | FNL 510 | 11.1 | 548 |
| **C 2210 KTN9 + HA 310 E** | SE 510-608 | 2.2 | 104 |
| | SAF C2510 | 8.3 | 430 |
| **C 2210 KTN9 + HE 310 E** | SE 510-608 | 2.2 | 104 |
| **C 2211 TN9** | SE 211 | 2.3 | 126 |
| | SE 511-609 | 2.3 | 126 |
| **C 2211 KTN9 + H 311 E** | SE 511-609 | 2.1 | 90 |
| | FNL 511 | 11.1 | 548 |
| **C 2211 KTN9 + HA 311 E** | SE 511-609 | 2.2 | 106 |
| | SAF C2511 | 8.3 | 430 |
| **C 2211 KTN9 + HE 311 BE** | SE 511-609 | 2.2 | 106 |
| **C 2212 TN9** | SE 212 | 2.3 | 126 |
| | SE 512-610 | 2.3 | 126 |
| **C 2212 KTN9 + H 312 E** | SE 512-610 | 2.1 | 90 |
| | FNL 512 | 11.1 | 548 |
| **C 2213 TN9** | SE 213 | 2.3 | 128 |
| | SE 513-611 | 2.3 | 128 |
| | SAF C2213 | 8.6 | 444 |
| **C 2213 KTN9 + H 313 E** | SE 513-611 | 2.1 | 90 |
| | FNL 513 | 11.1 | 548 |
| **C 2213 KTN9 + HA 313 E** | SE 513-611 | 2.2 | 106 |
| | SAF C2513 | 8.3 | 430 |
| **C 2213 KTN9 + HE 313 E** | SE 513-611 | 2.2 | 108 |
| **C 2215** | SE 215 | 2.3 | 130 |
| | SE 515-612 | 2.3 | 130 |
| | SAF C2215 | 8.6 | 444 |
| **C 2215 K + H 315 E** | SE 515-612 | 2.1 | 92 |
| | FNL 515 | 11.1 | 550 |
| **C 2215 K + HA 315 E** | SE 515-612 | 2.2 | 108 |
| | SAF C2515 | 8.3 | 430 |
| **C 2215 K + HE 315 E** | SE 515-612 | 2.2 | 108 |
| **C 2216** | SNL 216 | 2.3 | 130 |
| | SNL 516-613 | 2.3 | 130 |
| | SAF C2216 | 8.6 | 444 |
| **C 2216 K + H 316 E** | SNL 516-613 | 2.1 | 92 |
| | FNL 516 | 11.1 | 550 |
| **C 2216 K + HA 316 E** | SNL 516-613 | 2.2 | 110 |
| | SAF C2516 | 8.3 | 430 |
| **C 2216 K + HE 316 E** | SNL 516-613 | 2.2 | 110 |

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| | SAF C2217 | 8.6 | 444 |
| **C 2217 K + H 317 E** | SNL 517 | 2.1 | 92 |
| | SONL 217-517 | 7.1 | 370 |
| | FNL 517 | 11.1 | 550 |
| **C 2217 K + HA 317 E** | SNL 517 | 2.2 | 110 |
| | SONL 217-517 | 7.2 | 374 |
| | SAF C2517 | 8.3 | 430 |
| **C 2217 K + HE 317 E** | SNL 517 | 2.2 | 112 |
| **C 2218** | SNL 218 | 2.3 | 132 |
| | SNL 518-615 | 2.3 | 132 |
| | SONL 218-518 | 7.3 | 378 |
| | SAF C2218 | 8.6 | 444 |
| **C 2218 K + H 318 E** | SNL 518-615 | 2.1 | 94 |
| | SONL 218-518 | 7.1 | 370 |
| | FNL 518 | 11.1 | 550 |
| **C 2218 K + HA 318 E** | SNL 518-615 | 2.2 | 112 |
| | SONL 218-518 | 7.2 | 374 |
| | SAF C2518 | 8.3 | 430 |
| **C 2218 K + HE 318 E** | SNL 518-615 | 2.2 | 112 |
| **C 2219 K + H 319 E** | SNL 519-616 | 2.1 | 94 |
| **C 2220** | SNL 520-617 | 2.3 | 134 |
| | SONL 220-520 | 7.3 | 378 |
| | SAF C2220 | 8.6 | 446 |
| **C 2220 K + H 320 E** | SNL 520-617 | 2.1 | 94 |
| | SONL 220-520 | 7.1 | 370 |
| | FNL 520 | 11.1 | 550 |
| **C 2220 K + HA 320 E** | SNL 520-617 | 2.2 | 114 |
| | SONL 220-520 | 7.2 | 374 |
| | SAF C2520 | 8.3 | 432 |
| **C 2220 K + HE 320 E** | SNL 520-617 | 2.2 | 114 |
| **C 2222** | SNL 522-619 | 2.3 | 134 |
| | SONL 222-522 | 7.3 | 378 |
| | SAF C2222 | 8.6 | 446 |
| **C 2222 K + H 322 E** | SNL 522-619 | 2.1 | 96 |
| | SNL 522-619 | 2.2 | 114 |
| | SONL 222-522 | 7.1 | 370 |
| | SONL 222-522 | 7.2 | 374 |
| | SAF C2522 | 8.3 | 432 |
| | FNL 522 | 11.1 | 550 |
| **C 2222 K + HE 322 E** | SNL 522-619 | 2.2 | 116 |
| **C 2224** | SONL 224-524 | 7.3 | 378 |
| **C 2224 K + H 3124 L** | SNL 524-620 | 2.1 | 96 |
| | SONL 224-524 | 7.1 | 370 |
| **C 2224 K + HA 3124 L** | SONL 224-524 | 7.2 | 374 |
| **C 2224 K + HE 3124 L** | SNL 524-620 | 2.2 | 116 |
| **C 2226** | SNL 526 | 2.3 | 136 |
| | SONL 226-526 | 7.3 | 378 |
| | SAF C2226 | 8.6 | 446 |
| **C 2226 K + H 3126 L** | SNL 526 | 2.1 | 96 |
| | SONL 226-526 | 7.1 | 370 |
| **C 2226 K + HA 3126 E** | SAF C2526 | 8.3 | 432 |
| **C 2226 K + HA 3126 L** | SNL 526 | 2.2 | 116 |
| | SONL 226-526 | 7.2 | 374 |
| **C 2226 K + HE 3126 L** | SNL 526 | 2.2 | 116 |
| **C 2228** | SNL 528 | 2.3 | 136 |
| | SONL 228-528 | 7.3 | 378 |
| | SAF C2228 | 8.6 | 446 |
| **C 2228 K + H 3128 L** | SNL 528 | 2.1 | 96 |
| | SONL 228-528 | 7.1 | 370 |
| **C 2228 K + HA 3128 E** | SAF C2528 | 8.3 | 432 |
| **C 2228 K + HA 3128 L** | SNL 528 | 2.2 | 118 |
| | SONL 228-528 | 7.2 | 374 |
| **C 2228 K + HE 3128 L** | SNL 528 | 2.2 | 118 |
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| | SONL 230-530 | 7.3 | 378 |
| | SAF C2230 | 8.6 | 446 |
| **C 2230 K + H 3130 L** | SNL 530 | 2.1 | 96 |
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| | SAF C2530 | 8.3 | 432 |
| **C 2230 K + HE 3130 L** | SNL 530 | 2.2 | 118 |
| **C 2234** | SNL 3040 | 5.3 | 302 |
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| | SAF C2234 | 8.6 | 446 |
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| | SONL 234-534 | 7.1 | 370 |
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| **C 2234 K + HA 3134 L** | SONL 234-534 | 7.2 | 376 |
| | SAF C2534 | 8.3 | 432 |
| **C 2238** | SNL 3140 | 5.3 | 304 |
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| | SAF C2238 | 8.6 | 446 |
| **C 2238 K + H 3138** | SNL 3140 | 5.1 | 226 |
| | SONL 238-538 | 7.1 | 372 |
| **C 2238 K + H 3138/6.13/16** | SNL 3140 | 5.2 | 268 |
| **C 2238 K + H 3138/6.7/8** | SNL 3140 | 5.2 | 270 |
| **C 2238 K + H 3138/7** | SNL 3140 | 5.2 | 272 |
| **C 2238 K + HA 3138** | SNL 3140 | 5.2 | 270 |
| | SONL 238-538 | 7.2 | 376 |
| | SAF C2538 | 8.3 | 432 |
| **C 2238 K + HE 3138** | SNL 3140 | 5.2 | 268 |
| **C 2244** | SNL 3148 | 5.3 | 308 |
| | SONL 244-544 | 7.3 | 380 |
| | SAF C2244 | 8.6 | 446 |
| **C 2244 K + H 3044/7.15/16** | SONL 244-544 | 7.2 | 376 |
| **C 2244 K + H 3144/201.612** | SAF C2544 | 8.3 | 432 |
| **C 2244 K + H 3144/7.15/16** | SNL 3148 | 5.2 | 278 |
| **C 2244 K + H 3144/8** | SNL 3148 | 5.2 | 278 |
| **C 2244 K + OH 3144 H** | SNL 3148 | 5.1 | 230 |
| | SONL 244-544 | 7.1 | 372 |
| **C 2314** | SAF C2314 | 8.6 | 444 |
| **C 2315** | SNL 518-615 | 2.3 | 130 |
| | SAF C2315 | 8.6 | 444 |
| **C 2315 K + H 2315** | SNL 518-615 | 2.1 | 92 |
| **C 2315 K + HA 2315** | SNL 518-615 | 2.2 | 108 |
| | SAF C2615 | 8.3 | 430 |
| **C 2315 K + HE 2315** | SNL 518-615 | 2.2 | 108 |
| **C 2316** | SNL 519-616 | 2.3 | 130 |
| | SAF C2316 | 8.6 | 444 |
| **C 2316 K + H 2316** | SNL 519-616 | 2.1 | 92 |
| **C 2316 K + HA 2316** | SNL 519-616 | 2.2 | 110 |
| | SAF C2616 | 8.3 | 430 |
| **C 2316 K + HE 2316** | SNL 519-616 | 2.2 | 110 |
| **C 2317** | SNL 520-617 | 2.3 | 132 |
| | SAF C2317 | 8.6 | 444 |
| **C 2317 K + H 2317** | SNL 520-617 | 2.1 | 92 |
| **C 2317 K + HA 2317** | SNL 520-617 | 2.2 | 110 |
| | SAF C2617 | 8.3 | 430 |
| **C 2317 K + HE 2317** | SNL 520-617 | 2.2 | 112 |
| **C 2318** | SAF C2318 | 8.6 | 444 |
| **C 2318 K + HA 2318** | SAF C2618 | 8.3 | 430 |
| **C 2319** | SNL 522-619 | 2.3 | 134 |
| **C 2319 K + H 2319** | SNL 522-619 | 2.1 | 94 |
| **C 2319 K + HE 2319** | SNL 522-619 | 2.2 | 112 |
| **C 2320** | SNL 524-620 | 2.3 | 134 |
| | SAF C2320 | 8.6 | 446 |
| **C 2320 K + H 2320** | SNL 524-620 | 2.1 | 94 |
| **C 2320 K + HA 2320** | SNL 524-620 | 2.2 | 114 |
| | SAF C2620 | 8.3 | 432 |
| **C 2320 K + HE 2320** | SNL 524-620 | 2.2 | 114 |
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| **C 30/500 KM + OH 30/500 H** | SNL 30/500 | 5.1 | 258 |
| **C 30/500 KM + OH 30/500/18.1/2 H** | SNL 30/500 | 5.2 | 300 |
| **C 30/530 M** | SNL 30/530 | 5.3 | 328 |
| **C 30/530 KM** | SDM 30/530 | 13.5 | 614 |
| | SDM 30/530 | 13.6 | 618 |
| **C 30/530 KM + OH 30/530 H** | SNL 30/530 | 5.1 | 258 |
| **C 30/530 KM + OH 30/530/19.1/2 H** | SNL 30/530 | 5.2 | 300 |
| **C 30/530 M/VB569** | SKND 30/530 | 14.1 | 634 |

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| **C 30/670 M/VB569** | SKND 30/670 | 14.1 | 634 |
| **C 30/670 KM/HA3C4** | SDM 30/670 | 13.5 | 616 |
| | SDM 30/670 | 13.6 | 620 |
| **C 3024** | SNLN 3024 | 4.2 | 180 |
| **C 3024 K + H 3024 E** | SNLN 3024 | 4.1 | 176 |
| **C 3026** | SNLN 3026 | 4.2 | 180 |
| **C 3026 K + H 3026** | SNLN 3026 | 4.1 | 176 |
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| **C 3028 K + H 3028 E** | SNLN 3028 | 4.1 | 176 |
| **C 3030 V** | SNLN 3030 | 4.2 | 180 |
| **C 3030 KV + H 3030** | SNLN 3030 | 4.1 | 176 |
| **C 3032** | SNLN 3032 | 4.2 | 182 |
| **C 3032 K + H 3032 E** | SNLN 3032 | 4.1 | 176 |
| **C 3034** | SNLN 3034 | 4.2 | 182 |
| **C 3034 K + H 3034 E** | SNLN 3034 | 4.1 | 178 |
| **C 3036** | SNLN 3036 | 4.2 | 182 |
| | SNL 3036 | 5.3 | 304 |
| **C 3036 K + H 3036** | SNLN 3036 | 4.1 | 178 |
| | SNL 3036 | 5.1 | 224 |
| **C 3036 K + H 3036/6.3/8** | SNL 3036 | 5.2 | 264 |
| **C 3036 K + H 3036/6.5/16** | SNL 3036 | 5.2 | 264 |
| **C 3036 K + HA 3036** | SNL 3036 | 5.2 | 266 |
| | SAF C3036 KA x 6.7/16 | 8.3 | 432 |
| **C 3036 K + HE 3036** | SNL 3036 | 5.2 | 266 |
| **C 3038** | SNLN 3038 | 4.2 | 182 |
| | SNL 3038 | 5.3 | 304 |
| **C 3038 K + H 3038** | SNLN 3038 | 4.1 | 178 |
| | SNL 3038 | 5.1 | 226 |
| **C 3038 K + H 3038/6.13/16** | SNL 3038 | 5.2 | 268 |
| **C 3038 K + H 3038/6.7/8** | SNL 3038 | 5.2 | 270 |
| **C 3038 K + H 3038/7** | SNL 3038 | 5.2 | 272 |
| **C 3038 K + HA 3038** | SNL 3038 | 5.2 | 270 |
| | SAF C3038 KA x 6.15/16 | 8.3 | 432 |
| **C 3038 K + HE 3038** | SNL 3038 | 5.2 | 268 |
| **C 3040** | SNLN 3040 | 4.2 | 182 |
| | SNL 3040 | 5.3 | 306 |
| **C 3040 K + H 3040** | SNLN 3040 | 4.1 | 178 |
| | SNL 3040 | 5.1 | 228 |
| **C 3040 K + H 3040/7.1/4** | SNL 3040 | 5.2 | 276 |
| **C 3040 K + H 3040/7.1/8** | SNL 3040 | 5.2 | 274 |
| **C 3040 K + HA 3040** | SNL 3040 | 5.2 | 274 |
| | SAF C3040 KA x 7.3/16 | 8.3 | 432 |
| **C 3040 K + HE 3040** | SNL 3040 | 5.2 | 272 |
| **C 3044** | SNLN 3044 | 4.2 | 182 |
| | SNL 3044 | 5.3 | 308 |
| **C 3044 K + H 3044/201.6** | SAF C3044 KA x 7.15/16 | 8.3 | 432 |
| **C 3044 K + H 3044/7.15/16** | SNL 3044 | 5.2 | 278 |
| **C 3044 K + H 3044/8** | SNL 3044 | 5.2 | 278 |
| **C 3044 K + OH 3044 H** | SNLN 3044 | 4.1 | 178 |
| | SNL 3044 | 5.1 | 230 |
| **C 3044 K + OH 3044/7.13/16 H** | SNL 3044 | 5.2 | 276 |
| **C 3044 K + OH 3044/7.7/8 H** | SNL 3044 | 5.2 | 276 |
| **C 3048** | SNLN 3048 | 4.2 | 182 |
| | SNL 3048 | 5.3 | 310 |
| **C 3048 K + H 3048/227** | SAF C3048 KA x 8.15/16 | 8.3 | 432 |
| **C 3048 K + H 3048/8.15/16** | SNL 3048 | 5.2 | 280 |
| **C 3048 K + OH 3048 H** | SNLN 3048 | 4.1 | 178 |
| | SNL 3048 | 5.1 | 232 |
| **C 3048 K + OH 3048/8.1/2 H** | SNL 3048 | 5.2 | 280 |
| **C 3048 K + OH 3048/8.7/16 H** | SNL 3048 | 5.2 | 278 |
| **C 3052** | SNLN 3052 | 4.2 | 182 |
| | SNL 3052 | 5.3 | 310 |
| **C 3052 K + H 3052/239.7** | SAF C3052 KA x 9.7/16 | 8.3 | 432 |
| **C 3052 K + H 3052/9.1/2** | SNL 3052 | 5.2 | 282 |
| **C 3052 K + OH 3052 H** | SNLN 3052 | 4.1 | 178 |
| | SNL 3052 | 5.1 | 234 |
| **C 3052 K + OH 3052/9.7/16 H** | SNL 3052 | 5.2 | 280 |
| **C 3056** | SNLN 3056 | 4.2 | 182 |
| | SNL 3056 | 5.3 | 312 |
| **C 3056 K + H 3056/10.1/2** | SNL 3056 | 5.2 | 284 |

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| **C 3056 K + H 3056/10.7/16** | SNL 3056 | 5.2 | 284 |
| **C 3056 K + H 3056/252.4** | SAF C3056 KA x 10.7/16 | 8.3 | 432 |
| **C 3056 K + H 3056/265.1** | SAF C3056 KA x 9.15/16 | 8.3 | 432 |
| **C 3056 K + OH 3056 H** | SNLN 3056 | 4.1 | 178 |
| | SNL 3056 | 5.1 | 236 |
| **C 3056 K + OH 3056/10 H** | SNL 3056 | 5.2 | 282 |
| **C 3056 K + OH 3056/9.15/16 H** | SNL 3056 | 5.2 | 282 |
| **C 3060 M** | SNL 3060 | 5.3 | 312 |
| **C 3060 KM + OH 3060 H** | SNL 3060 | 5.1 | 238 |
| **C 3060 KM + OH 3060/10.15/16 H** | SNL 3060 | 5.2 | 286 |
| **C 3060 KM + OH 3060/11 H** | SNL 3060 | 5.2 | 286 |
| **C 3064 M** | SNL 3064 | 5.3 | 314 |
| **C 3064 KM + H 3064/11.15/16** | SNL 3064 | 5.2 | 288 |
| **C 3064 KM + H 3064/12** | SNL 3064 | 5.2 | 288 |
| **C 3064 KM + OH 3064 H** | SNL 3064 | 5.1 | 240 |
| **C 3064 KM + OH 3064/11.1/2 H** | SNL 3064 | 5.2 | 286 |
| **C 3064 KM + OH 3064/11.7/16 H** | SNL 3064 | 5.2 | 286 |
| **C 3068 M** | SNL 3068 | 5.3 | 314 |
| **C 3068 K** | SDM 3068 | 13.5 | 614 |
| | SDM 3068 | 13.6 | 618 |
| **C 3068 KM + OH 3068 H** | SNL 3068 | 5.1 | 242 |
| **C 3068 KM + OH 3068/12.1/2 H** | SNL 3068 | 5.2 | 290 |
| **C 3068 KM + OH 3068/12.7/16 H** | SNL 3068 | 5.2 | 290 |
| **C 3072 M** | SNL 3072 | 5.3 | 316 |
| **C 3072 KM + H 3072/13.1/2** | SNL 3072 | 5.2 | 294 |
| **C 3072 KM + H 3072/13.7/16** | SNL 3072 | 5.2 | 292 |
| **C 3072 KM + OH 3072 H** | SNL 3072 | 5.1 | 244 |
| **C 3072 KM + OH 3072/12.15/16 H** | SNL 3072 | 5.2 | 292 |
| **C 3072 KM + OH 3072/13 H** | SNL 3072 | 5.2 | 292 |
| **C 3076 M** | SNL 3076 | 5.3 | 318 |
| **C 3076 K** | SDM 3076 | 13.5 | 614 |
| | SDM 3076 | 13.6 | 618 |
| **C 3076 KM + OH 3076 H** | SNL 3076 | 5.1 | 246 |
| **C 3076 KM + OH 3076/13.15/16 H** | SNL 3076 | 5.2 | 294 |
| **C 3076 KM + OH 3076/14 H** | SNL 3076 | 5.2 | 296 |
| **C 3080 M** | SNL 3080 | 5.3 | 320 |
| **C 3080 KM + H 3080/15** | SNL 3080 | 5.2 | 296 |
| **C 3080 KM + OH 3080 H** | SNL 3080 | 5.1 | 248 |
| **C 3084 M** | SNL 3084 | 5.3 | 322 |
| **C 3084 KM** | SDM 3084 | 13.5 | 614 |
| | SDM 3084 | 13.6 | 618 |
| **C 3084 KM + H 3084/15.3/4** | SNL 3084 | 5.2 | 298 |
| **C 3084 KM + OH 3084 H** | SNL 3084 | 5.1 | 250 |
| **C 3088 MB** | SNL 3088 | 5.3 | 324 |
| **C 3088 KMB + OH 3088 HE** | SNL 3088 | 5.1 | 252 |
| **C 3088 KMB + OH 3088/16.1/2 HE** | SNL 3088 | 5.2 | 298 |
| **C 3092 M** | SNL 3092 | 5.3 | 326 |
| **C 3092 KM** | SDM 3092 | 13.5 | 614 |
| | SDM 3092 | 13.6 | 618 |
| **C 3092 KM + OH 3092 H** | SNL 3092 | 5.1 | 254 |
| **C 3092 KM + OH 3092/17 H** | SNL 3092 | 5.2 | 300 |
| **C 3096 M** | SNL 3096 | 5.3 | 326 |
| **C 3096 KM + OH 3096 H** | SNL 3096 | 5.1 | 256 |
| **C 3096 KM + OH 3096/18 H** | SNL 3096 | 5.2 | 300 |
| **C 31/530 KM** | SDM 31/530 | 13.5 | 614 |
| | SDM 31/530 | 13.6 | 618 |
| **C 31/630 KMB/HA3C4** | SDM 31/630 | 13.5 | 616 |
| | SDM 31/630 | 13.6 | 620 |
| **C 3134 K + H 3134 E** | SNL 3134 | 5.1 | 222 |
| **C 3134 K + HA 3134 L** | SNL 3134 | 5.2 | 262 |
| **C 3136** | SNL 3136 | 5.3 | 304 |
| **C 3136 K** | SBPN 3136 | 13.1 | 606 |
| | ASBPN 3136 | 13.2 | 608 |
| | SBPN 3136 | 13.3 | 610 |
| | ASBPN 3136 | 13.4 | 612 |
| **C 3136 K + H 3136 L** | SNL 3136 | 5.1 | 224 |
| **C 3136 K + HA 3136 L** | SNL 3136 | 5.2 | 266 |
| **C 3136 K + HE 3136 L** | SNL 3136 | 5.2 | 266 |
| **C 3138** | SNL 3138 | 5.3 | 304 |
| **C 3138 KV + H 3138** | SNL 3138 | 5.1 | 226 |
| **C 3138 KV + HA 3138** | SNL 3138 | 5.2 | 270 |
| **C 3138 KV + HE 3138** | SNL 3138 | 5.2 | 268 |
| **C 3140** | SNL 3140 | 5.3 | 306 |

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|---|---|---|---|
| **C 3140 K** | SBPN 3140 | 13.1 | 606 |
| | SBPN 3140 | 13.3 | 610 |
| **C 3140 K + H 3140** | SNL 3140 | 5.1 | 228 |
| **C 3140 K + HA 3140** | SNL 3140 | 5.2 | 274 |
| **C 3140 K + HE 3140** | SNL 3140 | 5.2 | 272 |
| **C 3144** | SNL 3144 | 5.3 | 308 |
| **C 3144 K** | SBPN 3144 | 13.1 | 606 |
| | ASBPN 3144 | 13.2 | 608 |
| | SBPN 3144 | 13.3 | 610 |
| | ASBPN 3144 | 13.4 | 612 |
| **C 3144 K + H 3144/7.15/16 TL** | SNL 3144 | 5.2 | 278 |
| **C 3144 K + OH 3144 HTL** | SNL 3144 | 5.1 | 230 |
| **C 3148** | SNL 3148 | 5.3 | 310 |
| **C 3148 K** | SBPN 3148 | 13.1 | 606 |
| | SBPN 3148 | 13.3 | 610 |
| **C 3148 K + H 3148/8.15/16 TL** | SNL 3148 | 5.2 | 280 |
| **C 3148 K + OH 3148 HTL** | SNL 3148 | 5.1 | 232 |
| **C 3152** | SNL 3152 | 5.3 | 310 |
| **C 3152 K** | SBPN 3152 | 13.1 | 606 |
| | ASBPN 3152 | 13.2 | 608 |
| | SBPN 3152 | 13.3 | 610 |
| | ASBPN 3152 | 13.4 | 612 |
| **C 3152 K + H 3152/9.1/2 TL** | SNL 3152 | 5.2 | 282 |
| **C 3152 K + OH 3152 HTL** | SNL 3152 | 5.1 | 234 |
| **C 3152 K + OH 3152/9.7/16 HTL** | SNL 3152 | 5.2 | 280 |
| **C 3156** | SNL 3156 | 5.3 | 312 |
| **C 3156 K + H 3156/10.1/2 TL** | SNL 3156 | 5.2 | 284 |
| **C 3156 K + H 3156/10.7/16 TL** | SNL 3156 | 5.2 | 284 |
| **C 3156 K + OH 3156 HTL** | SNL 3156 | 5.1 | 236 |
| **C 3156 K + OH 3156/10 HTL** | SNL 3156 | 5.2 | 282 |
| **C 3160** | SNL 3160 | 5.3 | 312 |
| **C 3160 K** | SBPN 3160 | 13.1 | 606 |
| | ASBPN 3160 | 13.2 | 608 |
| | SBPN 3160 | 13.3 | 610 |
| | ASBPN 3160 | 13.4 | 612 |
| **C 3160 K + OH 3160 H** | SNL 3160 | 5.1 | 238 |
| **C 3160 K + OH 3160/10.15/16 H** | SNL 3160 | 5.2 | 286 |
| **C 3160 K + OH 3160/11 H** | SNL 3160 | 5.2 | 286 |
| **C 3164 M** | SNL 3164 | 5.3 | 314 |
| **C 3164 KM** | SBPN 3164 | 13.1 | 606 |
| | ASBPN 3164 | 13.2 | 608 |
| | SBPN 3164 | 13.3 | 610 |
| | ASBPN 3164 | 13.4 | 612 |
| **C 3164 KM + H 3164/12** | SNL 3164 | 5.2 | 288 |
| **C 3164 KM + H 3164/11.15/16** | SNL 3164 | 5.2 | 288 |
| **C 3164 KM + OH 3164 H** | SNL 3164 | 5.1 | 240 |
| **C 3168 M** | SNL 3168 | 5.3 | 314 |
| **C 3168 KM** | SDM 3168 | 13.5 | 614 |
| | SDM 3168 | 13.6 | 618 |
| **C 3168 KM + OH 3168 H** | SNL 3168 | 5.1 | 242 |
| **C 3168 KM + OH 3168/12.1/2 H** | SNL 3168 | 5.2 | 290 |
| **C 3168 KM + OH 3168/12.7/16 H** | SNL 3168 | 5.2 | 290 |
| **C 3172 M** | SNL 3172 | 5.3 | 316 |
| **C 3172 KM + H 3172/13.1/2** | SNL 3172 | 5.2 | 294 |
| **C 3172 KM + H 3172/13.7/16** | SNL 3172 | 5.2 | 292 |
| **C 3172 KM + OH 3172 H** | SNL 3172 | 5.1 | 244 |
| **C 3176 KMB + OH 3176 HE** | SNL 3176 | 5.1 | 246 |
| **C 3176 KMB + OH 3176/13.15/16 HE** | SNL 3176 | 5.2 | 294 |
| **C 3176 KMB + OH 3176/14 HE** | SNL 3176 | 5.2 | 296 |
| **C 3180 M** | SNL 3180 | 5.3 | 320 |
| **C 3180 KM + H 3180/15** | SNL 3180 | 5.2 | 296 |
| **C 3180 KM + OH 3180 H** | SNL 3180 | 5.1 | 248 |
| **C 3184 M** | SNL 3184 | 5.3 | 322 |
| **C 3184 KM** | SDM 3184 | 13.5 | 614 |
| | SDM 3184 | 13.6 | 618 |
| **C 3184 KM + H 3184/15.3/4** | SNL 3184 | 5.2 | 298 |
| **C 3184 KM + OH 3184 H** | SNL 3184 | 5.1 | 250 |
| **C 3188 KMB + OH 3188 HE** | SNL 3188 | 5.1 | 252 |
| **C 3188 KMB + OH 3188/16.1/2 HE** | SNL 3188 | 5.2 | 298 |
| **C 3192 M** | SNL 3192 | 5.3 | 326 |
| **C 3192 KM + OH 3192 H** | SNL 3192 | 5.1 | 254 |
| **C 3192 KM + OH 3192/17 H** | SNL 3192 | 5.2 | 300 |
| **C 3196 KMB + OH 3196 HE** | SNL 3196 | 5.1 | 256 |

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| **C 3196 KMB + OH 3196/18 HE** | SNL 3196 | 5.2 | 300 |
| **C 3224** | SNL 524-620 | 2.3 | 134 |
| **C 3224 K + H 2324 L** | SNL 524-620 | 2.1 | 96 |
| **C 3224 K + HA 2324 L** | SNL 524-620 | 2.2 | 116 |
| **C 3224 K + HE 2324 L** | SNL 524-620 | 2.2 | 116 |
| **C 3232** | SNL 532 | 2.3 | 136 |
| | SNL 3038 | 5.3 | 302 |
| **C 3232 K + H 2332 L** | SNL 532 | 2.1 | 98 |
| | SNL 3038 | 5.1 | 222 |
| **C 3232 K + HA 2332 L** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| **C 3232 K + HE 2332 L** | SNL 532 | 2.2 | 118 |
| | SNL 3038 | 5.2 | 260 |
| **C 3236** | SNL 3236 | 5.3 | 304 |
| **C 3236 K + H 2336** | SNL 3236 | 5.1 | 224 |
| **C 3236 K + HA 2336** | SNL 3236 | 5.2 | 266 |
| **C 3236 K + HE 2336** | SNL 3236 | 5.2 | 266 |
| **C 4024 V** | SNLN 3024 | 4.2 | 180 |
| **C 4024-2CS5V** | SNLN 3024 | 4.2 | 180 |
| **C 4026** | SNLN 3026 | 4.2 | 180 |
| **C 4026-2CS5V** | SNLN 3026 | 4.2 | 180 |
| **C 4028 V** | SNLN 3028 | 4.2 | 180 |
| **C 4028-2CS5V** | SNLN 3028 | 4.2 | 180 |
| **C 4030 V** | SNLN 3030 | 4.2 | 180 |
| **C 4030-2CS5V** | SNLN 3030 | 4.2 | 180 |
| **C 4032** | SNLN 3032 | 4.2 | 182 |
| **C 4032-2CS5V** | SNLN 3032 | 4.2 | 182 |
| **C 4036 V** | SNL 3036 | 5.3 | 304 |
| **C 4036-2CS5V** | SNL 3036 | 5.3 | 304 |
| **C 4038** | SNL 3038 | 5.3 | 304 |
| **C 4038-2CS5V** | SNL 3038 | 5.3 | 304 |
| **C 4040 V** | SNL 3040 | 5.3 | 306 |
| **C 4040-2CS5V** | SNL 3040 | 5.3 | 306 |
| **C 4044 V** | SNL 3044 | 5.3 | 308 |
| **C 4060 M** | SNL 3060 | 5.3 | 312 |
| **C 49/1000 MB1/VB569** | SKND 49/1000 | 14.1 | 634 |
| **C 49/1060 MB1/VB569** | SKND 49/1060 | 14.1 | 636 |
| **C 49/1120 MB1/VB569** | SKND 49/1120 | 14.1 | 636 |
| **C 49/1180 MB1/VB569** | SKND 49/1180 | 14.1 | 636 |
| **C 49/710 MB1/VB569** | SKND 49/710 | 14.1 | 634 |
| **C 49/750 MB1/VB569** | SKND 49/750 | 14.1 | 634 |
| **C 49/800 MB1/VB569** | SKND 49/800 | 14.1 | 634 |
| **C 49/850 MB1/VB569** | SKND 49/850 | 14.1 | 634 |
| **C 49/900 MB1/VB569** | SKND 49/900 | 14.1 | 634 |
| **C 49/950 MB1/VB569** | SKND 49/950 | 14.1 | 634 |

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| **Angular contact ball bearings** | | | |
| **7214 BECBP** | PDP 214 | 12.2 | 576 |
| **7216 BECBP** | PDP 216 | 12.2 | 576 |
| **7218 BECBP** | PDP 218 | 12.2 | 576 |
| **7220 BECBP** | PDP 220 | 12.2 | 576 |
| **7222 BECBP** | PDP 222 | 12.2 | 576 |
| **7224 BCBM** | PDP 224 | 12.2 | 576 |
| **Deep groove ball bearings** | | | |
| **6206** | PDN 206 | 12.1 | 572 |
| **6207** | PDN 207 | 12.1 | 572 |
| **6208** | PDN 208 | 12.1 | 572 |
| **6210** | PDN 210 | 12.1 | 572 |
| **6211** | PDN 211 | 12.1 | 572 |
| **6212** | PDN 212 | 12.1 | 572 |
| **6214** | PDN 214 | 12.1 | 572 |
| **6215** | PDN 215 | 12.1 | 572 |
| **6216** | PDN 216 | 12.1 | 572 |
| **6218** | PDN 218 | 12.1 | 574 |
| **6220** | PDN 220 | 12.1 | 574 |
| **6222** | PDN 222 | 12.1 | 574 |
| **6224** | PDN 224 | 12.1 | 574 |
| **6305** | PDN 305 | 12.1 | 572 |
| **6306** | PDN 306 | 12.1 | 572 |
| **6307** | PDN 307 | 12.1 | 572 |
| **6308** | PDN 308 | 12.1 | 572 |
| **6309** | PDN 309 | 12.1 | 572 |
| **6310** | PDN 310 | 12.1 | 572 |
| **6311** | PDN 311 | 12.1 | 572 |
| **6312** | PDN 312 | 12.1 | 572 |
| **6313** | PDN 313 | 12.1 | 572 |
| **6314** | PDN 314 | 12.1 | 572 |
| **6315** | PDN 315 | 12.1 | 572 |
| | PDR 315 | 12.3 | 578 |
| **6316** | PDN 316 | 12.1 | 572 |
| | PDR 316 | 12.3 | 578 |
| **6317** | PDN 317 | 12.1 | 574 |
| | PDR 317 | 12.3 | 578 |
| **6318** | PDN 318 | 12.1 | 574 |
| | PDR 318 | 12.3 | 578 |
| **6319** | PDN 319 | 12.1 | 574 |
| | PDR 319 | 12.3 | 578 |
| **6320** | PDN 320 | 12.1 | 574 |
| | PDR 320 | 12.3 | 578 |
| **6322** | PDN 322 | 12.1 | 574 |
| | PDR 322 | 12.3 | 578 |
| **6324** | PDN 324 | 12.1 | 574 |
| | PDR 324 | 12.3 | 578 |
| **Cylindrical roller bearings** | | | |
| **NU 2214 ECP** | PDP 214 | 12.2 | 576 |
| **NU 2216 ECP** | PDP 216 | 12.2 | 576 |
| **NU 2218 ECP** | PDP 218 | 12.2 | 576 |
| **NU 2220 ECP** | PDP 220 | 12.2 | 576 |
| **NU 2222 ECP** | PDP 222 | 12.2 | 576 |
| **NU 2224 ECP** | PDP 224 | 12.2 | 576 |
| **NU 315 ECP** | PDR 315 | 12.3 | 578 |
| **NU 316 ECP** | PDR 316 | 12.3 | 578 |
| **NU 317 ECP** | PDR 317 | 12.3 | 578 |
| **NU 318 ECP** | PDR 318 | 12.3 | 578 |
| **NU 319 ECP** | PDR 319 | 12.3 | 578 |
| **NU 320 ECP** | PDR 320 | 12.3 | 578 |
| **NU 322 ECP** | PDR 322 | 12.3 | 578 |
| **NU 324 ECP** | PDR 324 | 12.3 | 578 |