SKF technologies for heavy industry conveyor pulleys

Preface

Operators of heavy industrial plants are constantly striving to increase uptime and productivity while safely extending maintenance intervals and decreasing costs.

For operators in the mining, mineral processing, bulk handling and cement-production sectors, the focus of much of this optimisation work centres on conveyor systems, with efficient pulleys crucial to production flows and profitability. High quality pulley bearings, housings, connectors, and support systems that are matched to the application at hand are crucial to optimisation. They can make the difference between a conveyor that breaks down regularly and one that consistently delivers high uptime and productivity.

SKF has long been the trusted name in pulley bearings with the company developing the first spherical roller bearing in 1919. It now delivers a range of sophisticated bearing, housing and lubrication solutions that allow for highly reliable pulley operation in the most challenging of operating environments.

This catalogue contains information on the challenges faced by conveyor operators and the various SKF solutions available.

You will find a selection of the most commonly used SKF housings and roller bearing assemblies used in industrial conveyor applications. The catalogue is intended to assist designers and other customers in specifying and ordering products suitable for use in their standardised conveyor pulleys within the quarrying, mining, minerals processing and bulk materials handling sectors.

You will find detailed information on standard SKF metric bearing housings and related products specifically intended for conventional live-shaft conveyor pulleys and similar applications. However, the catalogue is not an exhaustive list of products and product combinations, nor does it address specialised pulley applications such as take-up and dead-shaft pulleys.

This catalogue is not a guide to bearing size selection and application. It is intended to simplify the final selection and specification from available product variants assuming the basic bearing size has already determined by the designer, based on pulley shaft diameter, application loads and industry standardisation guidelines.

For information about lead times and deliveries, contact your local SKF Authorised Distributor.

How to use this catalogue

This catalogue is divided into an introduction and three clearly defined sections to allow readers to easily find and access the area of product knowledge they are seeking.

The introduction details some of the common challenges facing conveyor pulley bearings in heavy industrial settings, such as the impacts of dust, poor lubrication and misalignment. It introduces the SKF Three-barrier Solution for conveyor bearings.

Section 1 introduces the concept of the SKF-Equipped Conveyor through which bearing maintenance and lubrication are fully optimised. It provides an in-depth look at the different components of the approach and how each one contributes to increasing uptime and extending maintenance intervals. You will learn more about: Sealed SKF Explorer spherical roller bearings; SKF adapter sleeves; SKF Cooper split sealed spherical roller bearings; SKF housings; SKF lubrication solutions and monitoring systems; and SKF Rotating Equipment Performance (REP) Centres.

Section 2 contains general technical information, designed to help you select the most appropriate and cost-effective standard products for your conveyor pulley application. An overview of various housing/bearing combinations and sealing solutions is provided, giving you the ability to differentiate between two or more variants for each standard size range.

Section 3 contains product tables, designations (part numbers) and assembly dimensions for the recommended standard options.

More detailed information on the products in this catalogue, other SKF products, plus bearing selection and application advice can be found in other SKF publications, including the complete on-line catalogue available at www.skf.com.

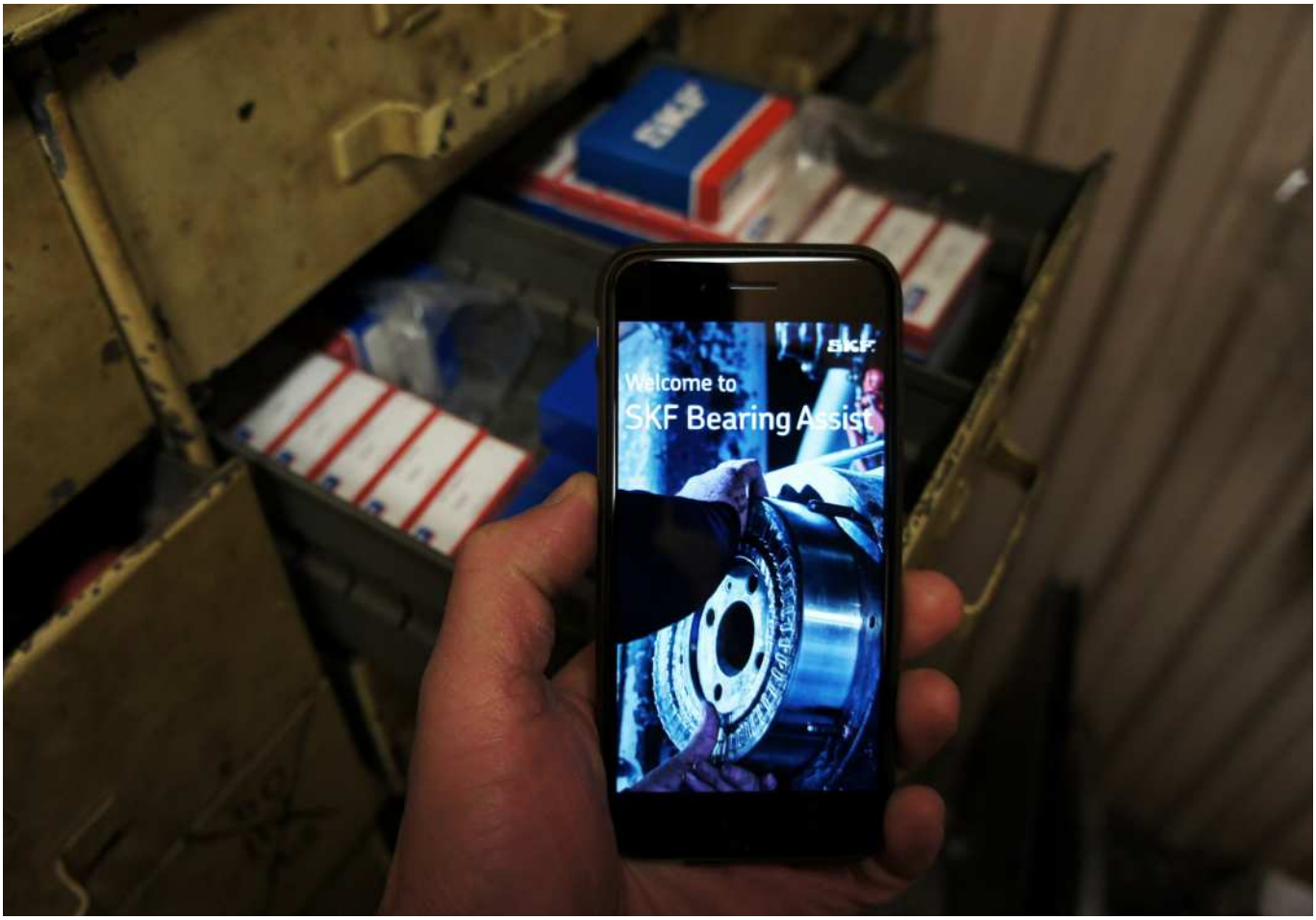
For bearing and other related products please see the following catalogues:

- SKF Rolling bearings catalogue RBC 17000;
- SKF Maintenance Lubrication Products Catalogue 03000;
- SKF Lubrication Products and Systems catalogue MP3510E.

Information on installation and maintenance is not included in this catalogue.

Detailed guidance for mounting and maintenance of bearing assemblies referenced in this catalogue is provided in specific technical brochures for each range. More general information about mounting and maintenance can be found in the SKF Bearing Maintenance Handbook, www.skf.com/mount and the various online and mobile apps.

The items in this catalogue reflect SKF's state-of-the-art technology and the product ranges as of 2021. The data contained within may differ from that shown in earlier catalogues because of redesign or technological developments. SKF reserves the right to continually improve its products with respect to materials, design and manufacturing methods.



Harsh Operating Conditions

Conveyor pulleys used in mining, mineral-processing and cement-production facilities must contend with some of the harshest operating conditions on the planet.

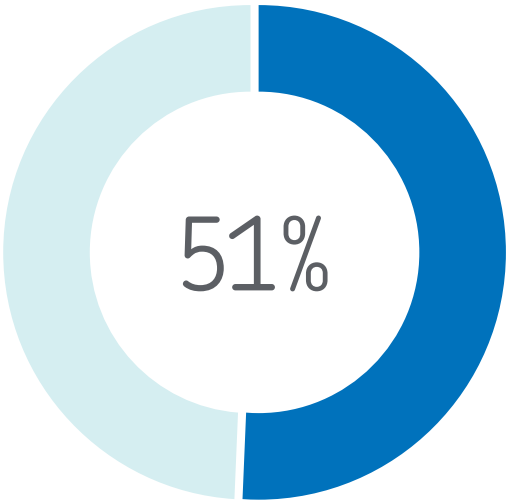
Often located outside, they are subjected to extreme weather conditions, including large fluctuations in temperature, driving rain and powerful winds. The nature of the work they undertake and the materials they convey present other significant challenges. Rocks may fly off the belt and damage conveyor components while abrasive dust and small rock particles can penetrate moving parts, causing premature wear. If unaddressed, these conditions can cause catastrophic failures, putting staff and production at risk.

The bearings in conveyor pulleys are at particular risk from factors including:

Contamination

Heavy industrial applications such as ore processing typically create large amounts of dust which can be very abrasive to pulley components. Bearings, couplings, chains and other machine parts may fail due to particle contamination. Small particles of grit that penetrate a bearing can turn the lubricant into a grinding medium that wears down components, causing them to rapidly deteriorate. Larger particles can create indentations on bearing rolling surfaces, causing failure.

Finally, water can corrode metallic parts and modify and degrade the properties of lubricants.



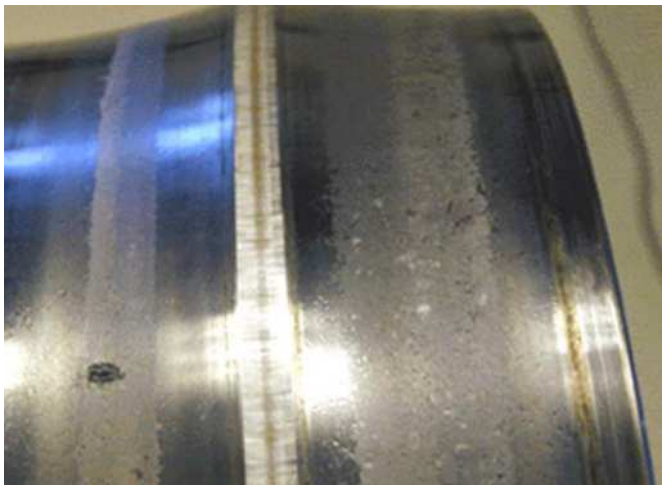
51% of bearing failures are due to contamination and ineffective lubrication

Poor lubrication

Pulley bearings for conveyors in mining, quarrying and cement applications are generally run at low speeds and under high loads, while operating temperatures can be extreme. The nature of the site and positioning of the conveyor can result in the bearings being extremely difficult to access, making relubrication difficult or impossible. Under such conditions, effective and reliable bearing lubrication right from the start is critical to the smooth running of the conveyor.

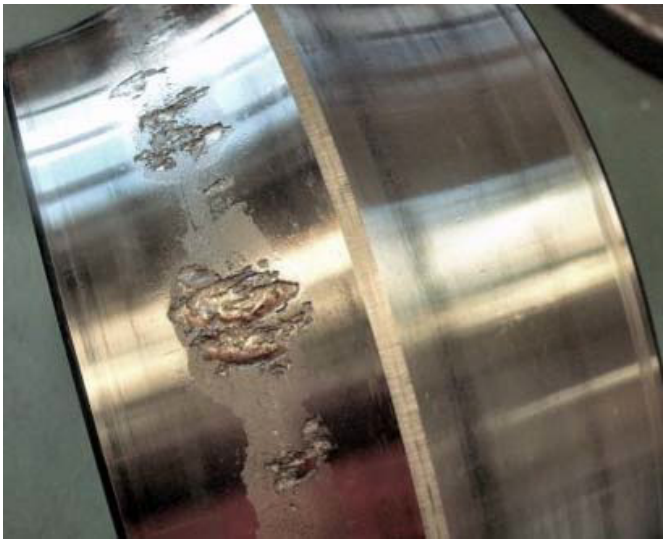
Misalignment

Conveyor pulley arrangements are susceptible to misalignment due to factors including load, deflection, and initial set-up and belt-tracking issues. Misalignment beyond design limits will subject pulley bearings to additional stresses and contamination risks, potentially resulting in reduced service life.

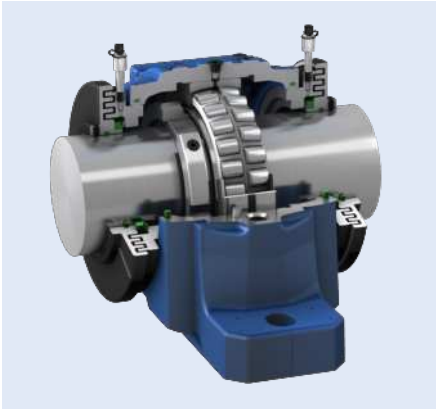


Heavy Load

Conveyor pulleys are often subjected to continuously high loads, with peak start-up loads also a part of day-to-day operation. Such heavily loaded applications typically result in high levels of stress occurring within both pulley bearings and the housings supporting the rotating components.



The SKF Three-barrier Solution

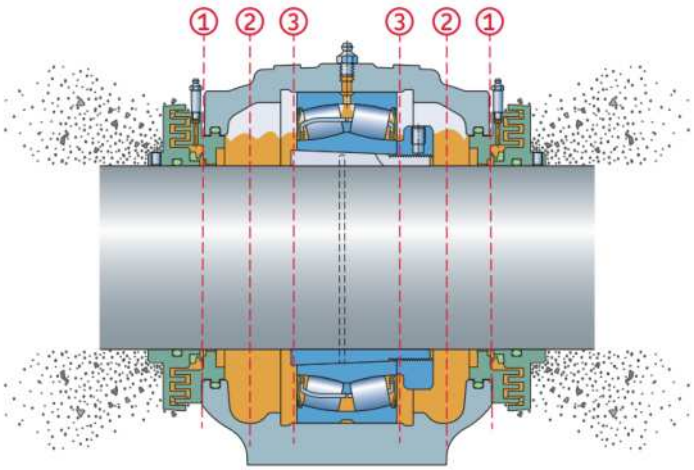


SKF understands the challenges that operators face and has worked hard to develop solutions that extend conveyor service life, improve performance and reduce the total cost of ownership.

One of these is the SKF Three-barrier Solution, an approach to maintaining and protecting pulley bearings that addresses potential threats on three fronts.

The first barrier is an SKF industry-specific bearing housing with SKF Taconite sealing. This primary barrier prevents the ingress of solid and liquid contaminants, even during high pressure washdowns. Barrier two is a high-quality housing cavity grease. The third barrier is a Sealed SKF Explorer spherical roller bearing.
Pre-lubricated with a specially formulated grease and sealed with high performance contact seals, this system can protect the bearing and lubricant from contaminants that might otherwise cause premature bearing failure

In combination, the elements of the SKF Three-barrier solution provide an average life-time three times longer than a conventional assembly with generic taconite seals and without integral bearing seals. The result is fewer conveyor pulley bearing breakdowns and longer maintenance intervals – enabling best-in-class asset availability. This, in turn, allows for planned maintenance of conveyor pulleys to be timed with the pulley lagging replacement. The SKF Three-barrier solution also means a dramatic reduction in re-greasing is possible – typically a few times a year instead of weekly or daily. This can save in the order of 90 percent of the time and cost of greasing (up to 99.9 percent if no regreasing is necessary). It also delivers increased safety for maintenance workers.



Barrier 1

SMS (SKF Mining Specification) housing with SKF Taconite sealing

Barrier 2

Housing grease fill

Barrier 3

Sealed SKF Explorer spherical roller bearing

Typical experience around the world

3x service life

Up to 92% conveyor uptime

Up to 90% less grease

Up to 99.9% if not purged

Case Study: Fewer costly stoppages for ship loader conveyor

Severely contaminated environment in which the bearing housing assembly operates in.

Customer problem

SKF was approached by the operators of an iron-ore ship loading facility in Western Australia who were concerned about the short mean-time-between-failure (MTBF) being experienced by their conveyor pulley bearings.

The facility had been using industry-standard housing assemblies, which consisted of open bearings and old-style Taconite seals. Inspection of the insides of housings revealed the iron content in the grease was between 5,000 and 14,000 parts per million. The MTBF for conveyor pulleys was 12 months on average, significantly below the MTBF of the pulley lagging. As a result, additional changeouts and unplanned downtime between scheduled shutdowns were necessary. With repair time per failure between 12 and 36 hours and the average downtime cost per failure at AUD 1 million per hour, the issue represented a major expense.

Solution

SKF implemented its 3-Barrier Solution (Sealed SKF Explorer spherical roller bearing and heavy duty SKF Taconite Seal) on the conveyor drive pulley. Three assessments were conducted over a period of 40 months to evaluate the performance of the system, consisting of visual inspections and the collection of grease samples for analysis. These assessments confirmed that significantly less iron content was present in the housing and that there had been no iron ore ingress into the sealed bearing. The bearings are therefore expected to reach their design life.

Customer benefits

Prior to fitting the SKF solution, the MTBF for the pulleys ranged between 6 and 24 months, depending on the location of the pulley and the severity of contamination. The SKF solution has improved the MTBF to at least 48 months, with the bearings involved still operating without signs of deterioration. The customer was able to significantly extend the pulley bearing replacement interval to match the lagging life. The combination of direct cost savings from eliminating on-site maintenance work and off-site equipment rebuilds, plus the additional income generated by avoiding associated production down-time, was estimated at $120 million* over the life of the pulley lagging.

*$24 million production loss per shut down with on average 1 breakdown per year over 5 year lagging expected life.

After 40 months operation the housing cavity grease was substantially free from iron ore contamination

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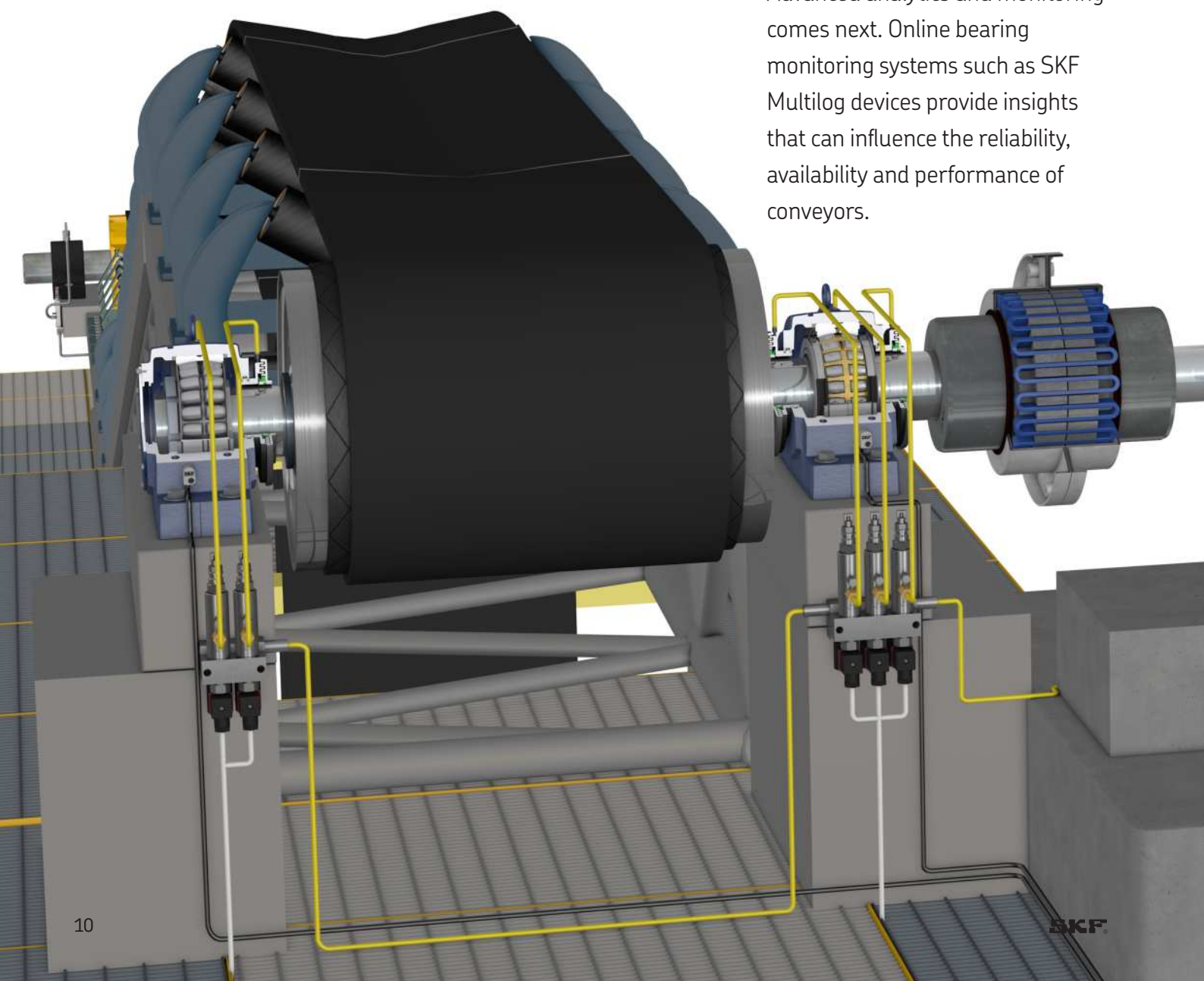
Section 1:
The SKF Equipped Conveyor

A single piece of advanced technology can bring significant benefits to an industrial plant. But the largest benefits are often achieved by strategically combining several solutions. It's under these circumstances that the whole truly can be greater than the sum of the individual parts.

With this in mind, the 'SKF-Equipped Conveyor' approach brings together a range of advanced technologies and services to enable plant operators to enhance uptime, reliability and productivity while reducing downtime, maintenance requirements and unplanned stoppages.

The first key aspect of the approach is the choice of bearing. Sealed SKF Explorer spherical roller bearings are used to extend bearing life, reduce maintenance and support very heavy radial and heavy axial loads. An optional choice to be considered in cases where bearings are positioned in difficult-to-access,'trapped' positions is SKF Cooper split sealed spherical roller bearings. This revolutionary bearing solution allows for simple, in-situ bearing replacement.

Advanced analytics and monitoring comes next. Online bearing monitoring systems such as SKF Multilog devices provide insights that can influence the reliability, availability and performance of conveyors.



SKF's network of Rotating Equipment Performance Centres is able to efficiently analyse vibration and operational data collected, diagnose issues and recommend appropriate steps to improve the operational reliability of production equipment.

Finally, comes appropriate lubrication. Lubrication can be delivered on-demand in concert with IMx conditioning monitoring systems, and via single-point and dual-line automatic lubrication systems.

The following components and services are all part of the SKF-Equipped Conveyor. They may be used individually or in concert to extend bearing life, reduce maintenance and increase conveyor uptime.

1.1 SKF Explorer Spherical Roller Bearing

SKF Explorer spherical roller bearing features

- High quality steel with optimised heat treatment for performance in harsh conditions.
- Self-guiding rollers
- Accommodates heavy loads and misalignment

Benefits

- Lower operating temperature and longer lubricant life
- Reduced noise and vibration levels
- Improved bearing service life
- Increased wear and contamination resistance
- Excellent high speed performance

Typical applications

- Gearboxes
- Wind turbines
- Pumps
- Fans and blowers
- Mining and construction equipment
- Pulp and paper processing equipment
- Marine and offshore machinery
- Metal industry equipment
- Railway axle boxes

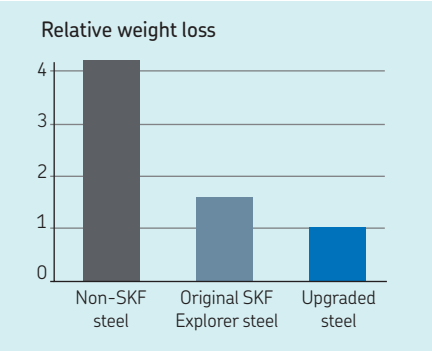
SKF spherical roller bearings are designed to accommodate very heavy radial and heavy axial loads in applications prone to misalignment or shaft deflections. Spherical roller bearings were introduced by SKF in 1919 and have been continuously improved to increase reliability and decrease friction.

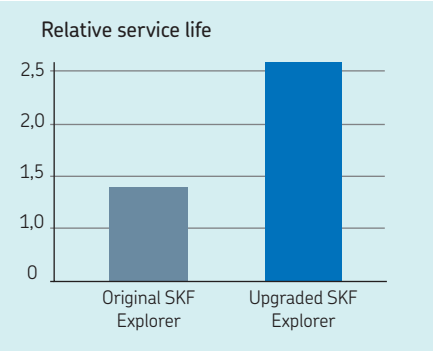
All spherical roller bearings are now available as upgraded SKF Explorer bearings, including open bearings, sealed bearings and bearings for vibratory applications. SKF Explorer spherical roller bearings have proven to be so robust that they can last several times longer than other spherical roller bearings.

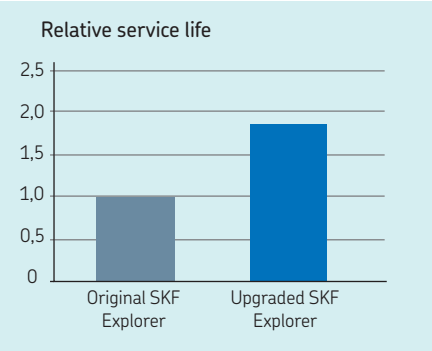
Superior wear resistance of SKF Explorer bearing

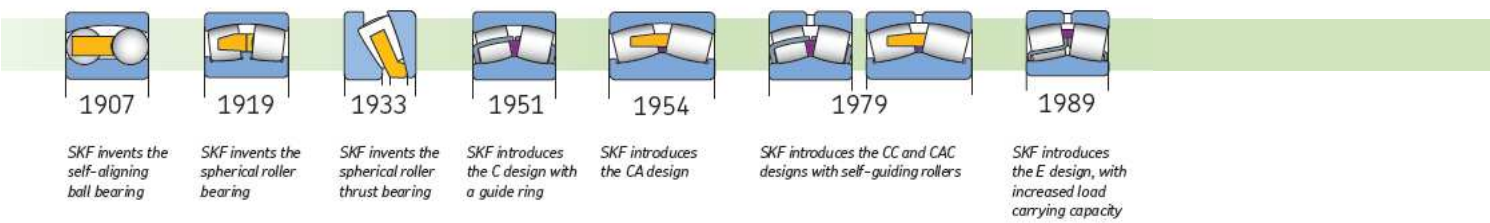
SKF Explorer bearing steel is processed using advanced bainitic through hardening heat treatment.

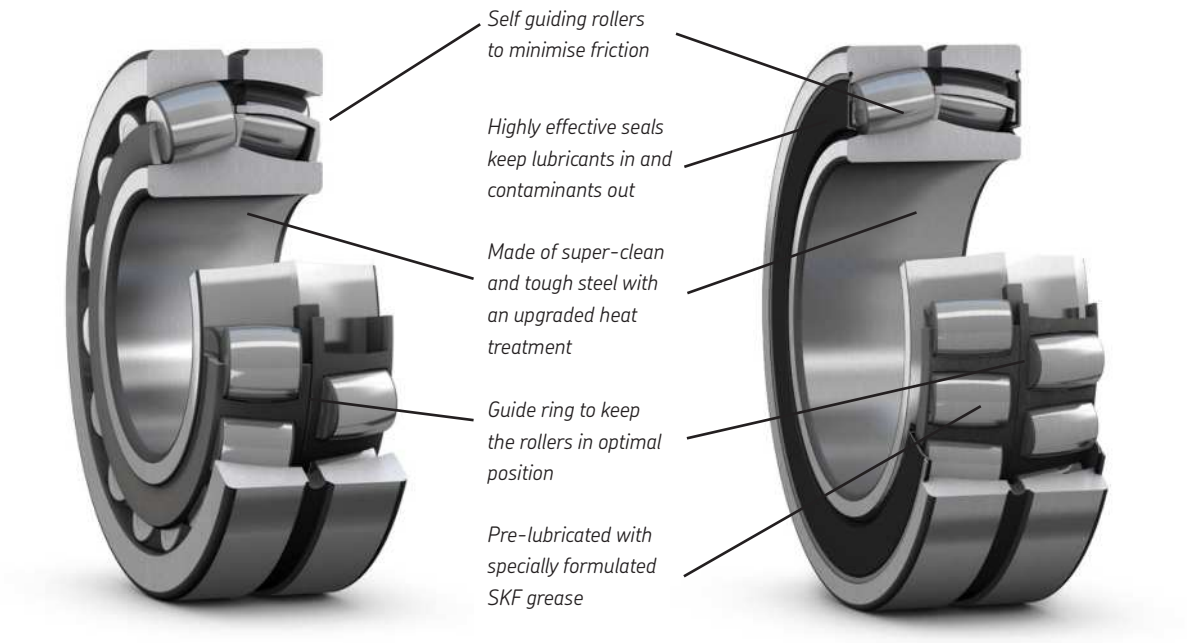
This provides a superior balance between hardness and toughness, enabling up to twice the service life of the original SKF Explorer. This process enables longer bearing survival in contaminated environments and in situations where a bearing has sustained initial damage. This, in turn, provides time for action to be taken to avoid catastrophic failures in cases of deterioration.











Less maintenance, longer life

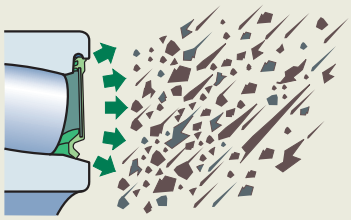
Sealed SKF Explorer spherical roller bearings can significantly increase bearing service life in contaminated environments. These bearings are pre-lubricated with a specially formulated grease and sealed with highly effective contact seals. The seals protect the bearing and lubricant from contaminants that might otherwise cause premature bearing failure.

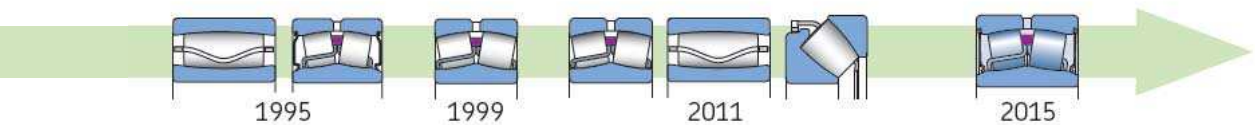
In many applications, these bearings can be considered lubricated for the life of the bearing. By eliminating or extending relubrication intervals, Sealed SKF Explorer spherical roller bearings can significantly reduce the cost to purchase, apply and dispose of grease. Reduced maintenance costs will, in many cases, substantially reduce the total cost of ownership of an application.

Benefits include:

- Significantly reduced need for maintenance
- Minimised grease consumption and environmental impact
- Substantially increased uptime
- Longer bearing life

Switching from an open bearing to a sealed SKF roller bearing can increase bearing rating life by up to four times in the contaminated environments of typical heavy industrial applications.





SKF introduces the CARB toroidal roller bearing and a standard range of sealed spherical roller bearings

SKF introduces SKF Explorer spherical roller bearings

SKF introduces upgraded SKF Explorer bearings featuring a new heat treatment to extend service life

SKF introduces sealed spherical roller bearings with improved performance

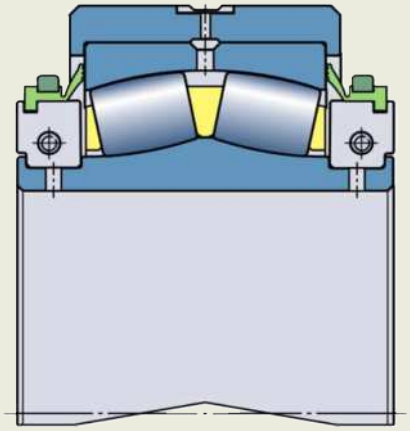
1.2 SKF Cooper Split Spherical Roller Bearings

Not all bearing locations can be easily accessed for maintenance purposes. Depending on the location and configuration of your conveyor, crucial bearings may be inaccessible or 'trapped', greatly increasing maintenance down time if replacement is necessary. SKF Cooper split sealed spherical roller bearings are an ideal choice for bearings in trapped positions and are designed to be easily replaced in-situ. They provide a direct replacement for standard 231 and 230 series spherical roller bearings with adapter sleeves.

SKF Cooper split sealed spherical roller bearings are available for:

- Standard range for metric shafts from 220 mm to 450 mm;
- Other metric sizes and series available on request;
- Imperial shafts. Comparable sizes on request.

SKF Cooper split sealed spherical roller bearings are made with compatibility in mind. The range of sizes fit readily into the standard range of SKF housings, including SNLD and SDJD.



Tough enough for heavy-duty industries

- Mining
- Mineral processing
- Cement

And a wide range of applications

- Conveyor pulleys
- Rope sheaves
- Bucket elevators
- Stackers/reclaimers
- Hoists and winches
- Horizontal grinding mill pinions
- Mixers and agitators
- Jack shafts
- Fans

Ideal for bearings "trapped" between gearbox and pulley

Cut down time to a minimum

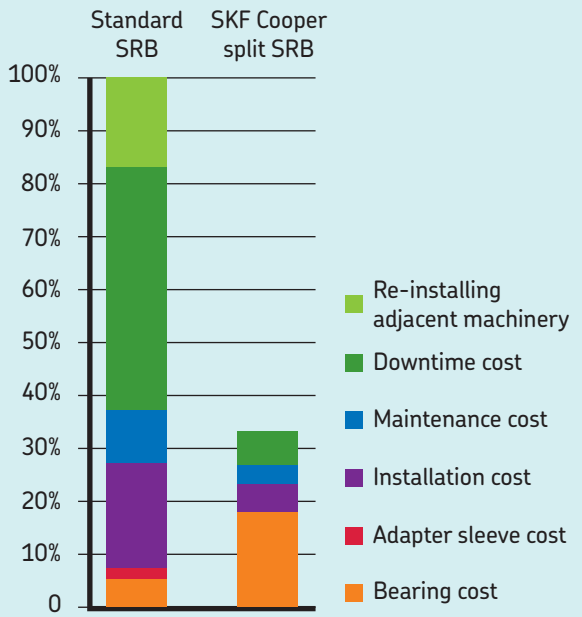
Replacing 'trapped' bearings can greatly increase conveyor downtime. SKF Cooper split sealed spherical roller bearings can be easily replaced in-situ with little disturbance to the shaft alignment or driveline. This can reduce mean time to repair (MTTR) by up to 70 percent. The solution allows for safe, time-saving replacements on conveyor pulleys, stacker reclaimers and other machinery.

- The sealed variant is standard for increased protection against contamination and reduced maintenance.
- Delivers longer service life (MTBF) compared to other split bearings, thanks to the manufacturing technique (wire cut inner and outer ring) and seals.
- Seals reduce grease consumption and cut environmental impacts.

Boost worker safety

Some 43 percent of accidents in the mining and cement industry occur while workers are performing maintenance or checks on conveyors. SKF Cooper split sealed spherical roller bearings eliminate the need for dismounting the drive coupling or the cantilevered drive in order to replace the bearing. This, in turn, eliminates the need for realignment, greatly reducing the risk to workers.

Cost savings

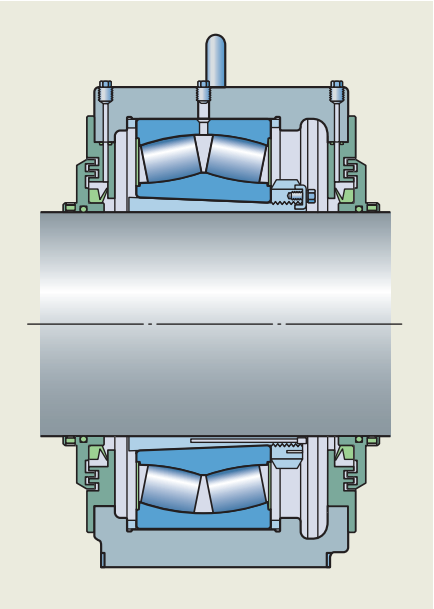


MTTR: from 24 hours to 8 hours*

*In-field reports of bearing changes for mining customers

1.3 SKF Split Plummer Block Housings

SKF housings are designed to accommodate heavy loads and shaft misalignment and withstand shock loads. SKF housing solutions for bulk conveyors also help increase the performance of SKF bearings. Your conveyor performance can be optimised by combining SKF bearings with SKF housings.



Stiff design for longer service life

SKF housing bases are reinforced with ribs and extra material around the attachment holes to add strength and prevent deformation. The ductile iron castings provide excellent resistance to shock loads. Cast from robust ductile iron, SKF housings provide OEMs the ability to downsize conveyor designs while maintaining performance. SKF SNL housings are designed on a modular 'building block' principle that enables use with a wide range of bearings, seals, mountings and lubrication methods. And with a service life even longer than SKF bearings, SKF housings can be reused cost-effectively.

Compact housings

SKF SDVD housings are universally adaptable due to minimised assembly width. SDVD housings can be retrofitted to all existing pulleys which use the same basic bearing housing size series.

The non-symmetrical design with the minimised width on the inboard (pulley drum) side allows for close fitment to pulley drum. This reduction in housing assembly width allows the pulley designer to increase the stiffness and reduce the cost of the pulley shaft when compared with industry standard bearing housings.

SDVD housings can readily replace most industry standard existing housings.

Less maintenance, friction and energy consumption

SKF housings have a number of built-in features that help end-users reduce maintenance time and cost. SKF housings have pre-drilled holes in the cap for re-lubrication, plus prepared locations where condition monitoring sensors can be mounted for maximum effectiveness.

Low-friction housing seals, in arrangement with sealed bearings, as well as heat-flow improving ribs on the housing base, keep bearings in SKF housings running cooler than the bearings in conventional housings. The lower operating temperatures extend re-lubrication intervals.

TK5 Series Taconite Seal

Split LSTK Taconite Seal

Range of sealing options.

SKF offers a wide range of suitable seals ready to accommodate the different application conditions. These include low-friction four-lip housing seals, labyrinth seals and heavy duty Taconite seals for maximum contamination exclusion.

Compact and customisable arrangements

Split versions of SKF Taconite seals can be supplied on request, for use with SKF Cooper split spherical roller bearings in case of emergency (in-situ) bearing changes. Split LSTK seals are compatible with SKF housing ranges SNLD 3152/VZ2N7—SNLD 3164 VZ/2N7 (clamp-in seal carrier) and SDJD 3168/VZ2N9—SDJD 3196/VZ2N9 (bolt-on seal carrier).

High levels of protection

SKF Taconite Seals ensure usability in a wider range of conditions without compromising robustness and performance.

- Pronounced visual indicator to assist positioning and alignment of the rotating element;
- Large section V-ring tolerates larger range of axial adjustment;
- Large grub screws ensure positive fixation of the rotating seal on the shaft;
- Robust adaptors (included) allow connection of grease lines, single-point lubricators or grease nipples.

SKF publication BU 13186 En (SKF Bearing Housings and Roller Bearing Units) is a comprehensive source of information; it contains further details and options for the products in this catalogue, as well as other standard SKF housings.

1.4 SKF Adapter Sleeves

SKF adapter sleeves are used to position bearings with tapered bores onto cylindrical shafts (fig. 1.1). They are easy to install and require no additional location features on the shaft.

SKF adapter sleeves are suitable for use on both plain and stepped shafts. When used on a plain shaft, the bearing can be located at any position on the shaft. When used on a stepped shaft, an L-shaped spacer ring is used to accurately position the bearing axially, thereby facilitating bearing mounting and dismounting.

SKF supplies both metric and imperial adapter sleeves. The sleeves are split and are supplied complete with a lock nut and locking device.

Features

- Smaller sizes have a nut and a lock washer (Fig 1.1 a);
- Larger sizes have a nut and a locking clip or locking plate (Fig 1.1 b)

Adapter sleeves for sealed bearings

SKF adapter sleeves for sealed bearings are specially designed to prevent the locking device from interfering with the seals of sealed spherical roller bearings and sealed self-aligning ball bearings. They have the have the designation suffixes E, EL, EH, L, TL and V21.

Adapter sleeve assemblies with the designation suffix EL or EH are supplied with one of the following, respectively:

- a KMFE ... L lock nut, which has a lower abutment diameter than the standard KMFE lock nut;
- a KMFE ... H lock nut, which has a higher abutment diameter than the standard KMFE lock nut.

Adapter sleeve assemblies for sealed bearings (with a KMFE lock nut)

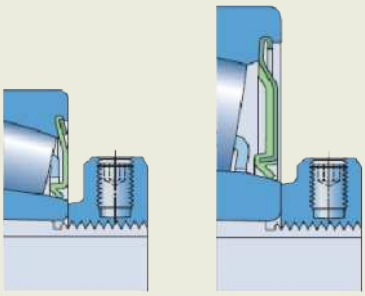
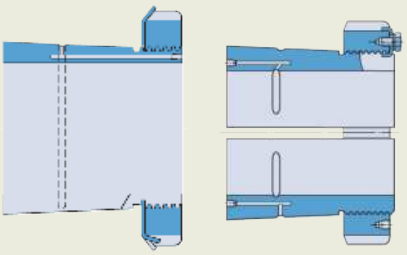


Fig. 1.1



a) Adapter sleeve with lock nut and lock washer
b) Adapter sleeve with lock nut and locking clip

Sleeves for oil injection

SKF sleeves for oil injection come with oil supply ducts and distribution grooves to enable the use of the SKF Oil Injection Method for mounting and dismounting bearings. This quick, safe and easy method helps prevent shaft damage. A thin film of oil is injected under high pressure between the mating surfaces, virtually eliminating the friction between the surfaces. The amount of force required to mount or remove the bearing from its seat is reduced by up to 90 percent.

Oil injection facility is available:
- as a standard option for metric sleeves with a bore diameter ≥ 200 mm (size ≥ 44)
- on special request for metric sleeves with a bore diameter ≥ 140 mm to < 200 mm

1.5 SKF Couplings

Machine designers are under constant pressure to raise the performance of power transmission systems in the face of diminishing time and resources. Having access to a wide range of standard and customisable coupling products helps designers produce systems that work effectively and efficiently.

SKF provides all standard coupling variants including grid, gear, flex and jaw couplings. We also provide OK couplings, which use oil injection for mounting and dismounting, and flexible shaft couplings. Flexible shaft couplings compensate for three types of shaft misalignment: angular; offset; and a combination of the two along with axial movement.

Grid couplings are aimed at high-output, high-torque gear applications, while gear couplings are heavy duty products with large bore capacities. Most products are made from cast iron, although some, such as chain couplings, use carbon steel. Surface treatment techniques include phosphate coating and help to protect against corrosion.

SKF's wide range of couplings can be searched and specified through SKF online resources

1.6 SKF smart analytics for conveyors

REP Centres

SKF's network of Rotating Equipment Performance Centres (REP Centres) bring together experts on application engineering and diagnostics of machine conditions. The centres are positioned to provide equipment operators with diagnostics, prognostics and engineering solutions and designs. The overall objective is to maximise reliability and the throughput of the conveyors with a view to maximising production and driving down the total cost of ownership.

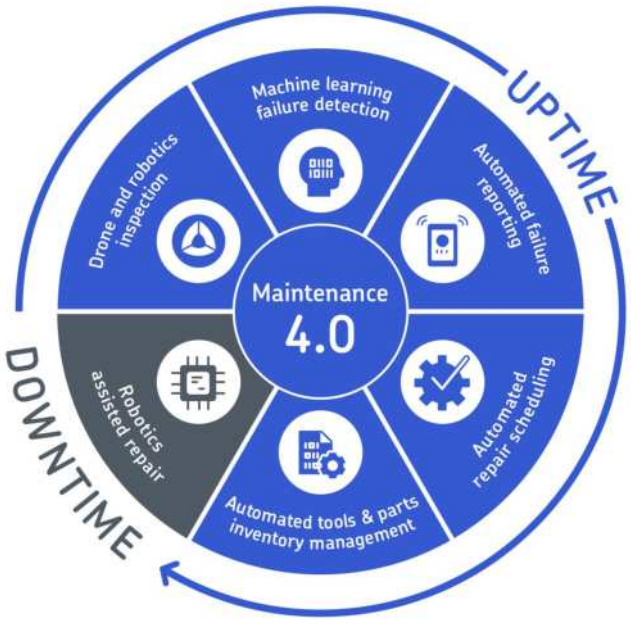
Performance dashboards are used to bring together statistics related to the health of the conveyor, including the state of the drive assembly. These statistics are based on data obtained via multiple streams, including condition monitoring, process, lubrication profile (on-demand), maintenance regimes and production requirements blended with SKF domain knowledge.

Screenshot from a REP Centre dashboard.

Case Study

A customer approached SKF seeking a continuous monitoring solution after experiencing a major pulley drum failure. The SKF team suggested the installation of the IMx-16 Plus monitoring system to allow for early fault detection. Some months later, rotational harmonics detected by the system indicated vibration once per revolution of the conveyor snub pulley. This was reported to the customer and immediate action recommended. The system has proved to be a valuable investment for the customer, delivering improved reliability, availability and performance of conveyor pulleys.

Digital Eco System



Digitalisation Solutions for Conveyors

SKF provides a wide range of digital condition monitoring systems to gain insights into critical assets such as conveyors. The data collected helps operators to avoid unplanned machine downtime and schedule maintenance proactively, prolonging machine availability and minimising maintenance and repair costs.

On-line monitoring: Multilog on-line systems IMx-8 and IMx-16Plus

SKF Multilog devices are complete systems for early fault detection that can help improve the reliability, availability and performance of conveyors. The machine intelligence gathered by Multilog systems can be used to help avoid unplanned downtime and schedule maintenance proactively, prolonging conveyor availability and minimising maintenance and repair costs. IMx devices can record simultaneous measurements on multiple channels and are configurable for true synchronous measurements. Process parameters and gating conditions can be set to make data collection process efficient and allow for appropriate segregation.

Synchronous data collection enables Multilog systems to collect vibration data from the conveyor's pulleys as well as drive assemblies. The IMx-8 and IMx-16Plus systems can be easily integrated with the SKF cloud to allow for the storing and sharing of data and the enabling of SKF Remote Diagnostic Services.

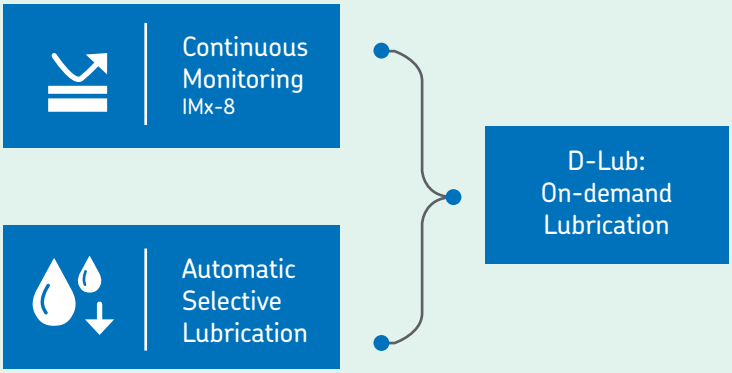
Wireless systems: SKF Enlight Collect IMx-1

SKF Enlight Collect IMx-1 is a state-of-the art wireless monitoring system which utilises a mesh sensor network. The system is comprised of an autonomous, battery-powered wireless vibration and temperature sensor; a line-powered communication and network manager gateway; and host software for data trending visualisation and analysis. It is an easy-to-deploy vibration sensor that measures and processes vibration and temperature to detect common conveyor issues, such as bearing faults. It does this by performing prescriptive analytics on the data. SKF Enlight Collect IMx-1 sensors allow you to build an automated machine monitoring system powered by cloud based IoT solutions and AI-driven analytics.

1.7 D-Lub: On-demand Lubrication System

The SKF D-Lub on-demand lubrication system uses vibration levels captured through the IMx condition monitoring system to supply additional lubrication to bearings as required.

How does this system work?



The bearings serviced by the system are connected to an automatic lubrication system that delivers lubrication according to a regular, pre-programmed cycle. The bearings are monitored remotely and, in the event that certain conditions are experienced, the system automatically increases the amount of lubricant being supplied, independent of the regular lubrication cycle. In this way, failures can be avoided and appropriate interventions arranged.

Data captured by the system is sent to an SKF REP Centre, allowing for the development of a clear understanding of each bearing's condition over time. The technology used has been designed for bearings used in critical applications, helping to avoid unplanned downtime.

- Lubricates each point on demand according its condition
- Allows an immediate reaction preventing potential faillures
- Increases effectiveness in lubrication managment, reducing consumption
- Eliminates unnecessary risks for plant personnel
- Increases equipment operational reliability

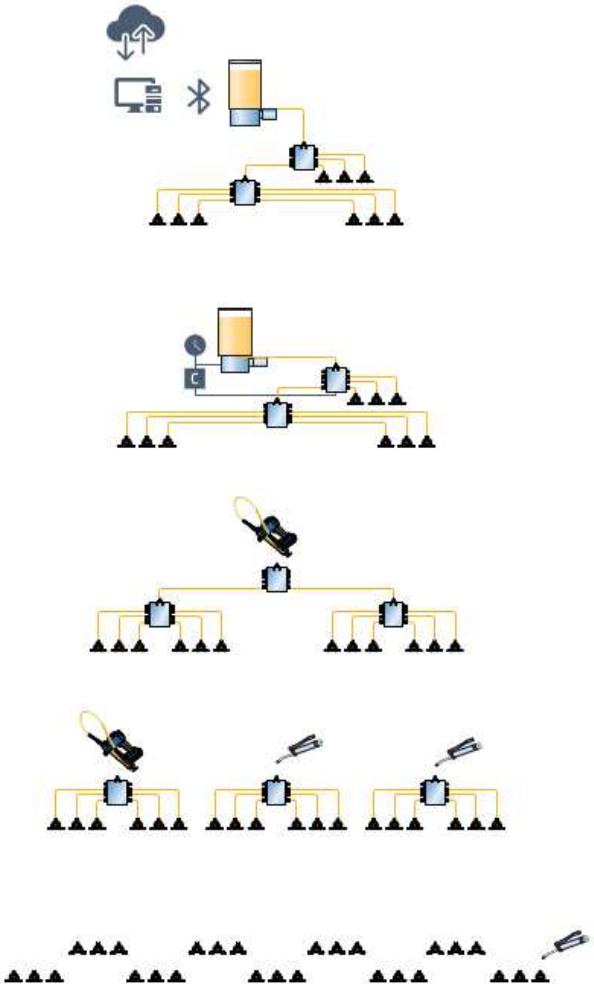
All the information is registered in the SKF REP Center, which allows a detailed historical control of each of the bearings

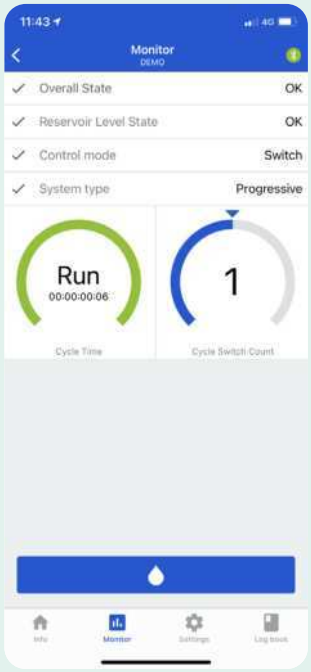
Technology specifically designed for bearings used in critical applications, avoiding unplanned downtime.

1.8 SKF Lubrication solutions

Plant operators looking to lower the total cost of ownership of their equipment tend to overlook the importance of lubrication. Yet correct lubrication can have a major impact, greatly increasing machine reliability and working life. As the leading supplier of bearings worldwide, SKF has conducted extensive research and determined that approximately half of premature bearing failures are due to improper lubrication practices and/or contamination.

Connected lubrication systems can capture data on machine health, process, maintenance, and lubrication, to drive decision-making and help achieve reliability, safety, downtime and environmental footprint targets. SKF lubrication technologies range from single point lubricators to large, distributed automatic lubrication systems (ALS). They can be connected to digital platforms to provide feedback for efficient, data-driven maintenance activities.





SKF eLube – next generation lubrication systems

eLube is a new-generation, connected automatic lubrication solution from SKF. A range of smart and user-friendly components can be tailored to operator needs. eLube can help you identify lubrication and machine health issues at a glance, track machine health data, get early warning of potential failures and take preventive action. Connected to the SKF Enlight wireless surveillance system, it delivers machine performance insights based on data from both your lubrication system and your bearings. eLube products are compact, fit-for-purpose and easy to integrate into your equipment.

Single Point Automatic Lubricators

Single-point lubricators provide operators with the opportunity for significant improvements in terms of machine reliability, maintenance efficiency and employee safety. Such lubricators are easy to use and offer many advantages. However, traditionally they have needed to be inspected regularly as unexpected situations can disturb lubrication. The replacement of each lubricator also needed to be planned manually. These challenges are solved by the SKF TLDD series SYSTEM 24 single-point lubricator.

The SKF SYSTEM 24 TLDD series is a wirelessly connected, single-point lubrication system that allows remote monitoring and provides assurance that your equipment is properly lubricated. The pre-configured, standalone TLDD system is easy to install and does not require IT knowledge for setup or connection. Simply create your account on the SKF Lubricator Control Panel, and you can view your registered lubricators immediately on a dashboard from which lubrication status can be monitored, settings adjusted, and where automatic alarms about issues with the lubricators can be viewed.

Featuring a convenient and scalable principle, the TLDD system can monitor up to 2 000 lubricators with one gateway. Multiple gateways can be used simultaneously for different factory areas and to improve communication. The flexible, plug-and-play system allows various lubricators with different lubricants and dispense settings to be monitored with the same system.

Dual Line Automatic Lubrication

This SKF lubrication solution automatically delivers the right lubrication, in the right amount, at the right time, and at the right location. Regardless of the type of conveyor or the severity of its operating conditions, manual conveyor lubrication is a costly, labour intensive process. Worse yet, improper lubrication practices can limit conveyor service life considerably and eventually result in unplanned shutdowns and lost productivity.

Appropriate for large conveyor installations, SKF dual-line automatic lubrication systems deliver programmed grease supply to multiple locations. Component selection and system configurations are tailored to suit specific application and site needs.

SKF dual-line lubrication systems are developed for use with oil, semi-fluid grease and hard grease up to NLGI grade 2. Harder greases of NLGI grade 3 can also be used if so determined after consultation. SKF dual-line lubrication systems are suitable for a variety of applications including mining and mineral processing. These reliable systems operate effectively in the harsh conditions associated with these industries including potentially high lubrication-point back pressure, dirty, wet or humid environments and low temperatures.

They are also ideally suited for long lubrication lines where large numbers of lubrication points are present.

1.9 Case study: Increased conveyor-shuttle availability

Customer need

SKF's customer had a plant where conveyor shuttles were in use. The conveyors had traditionally been lubricated using a mix of manual and single-point lubricators and were required to stop for maintenance every eight weeks. SKF was engaged to find a solution to improve machine availability and increase reliability.

Solution

SKF Australia proposed a solution incorporating the use of the SKF Multilube dual line lubrication systems. Four Multilube systems were fitted to each shuttle, servicing 32 lubrication points each, including head and tail pulleys and bogey wheels.

Customer benefits

The Multilube system has increased service intervals up to and beyond 20 weeks, delivering a significant increase in productivity and reliability. The lubrication system features an on board system monitoring for low grease level and system faults, something that was not provided by the previous mix of lubrication practices. There is no longer the potential for lubrication points to be missed during manual lubrication.

Section 2: SKF bearing housings for conveyor pulleys. An overview by product range and selection by application

2.1 Overview of SKF conveyor pulley bearing housings

No matter to which series they belong, all the SKF plummer block housings shown in this catalogue are designed and manufactured to comply with standardised mounting dimensions. All housing bodies suitable for use with a particular bearing series are therefore interchangeable from a structural-interface perspective, in terms of shaft centre height, mounting bolt sizes and positioning. All housings are specified, engineered and manufactured to provide excellent support for the bearings they contain, and have manufacturing tolerances appropriate for ensuring optimum bearing function, including load carrying and service life, within their intended applications.

The housing series option that a customer chooses for a specific bearing size will depend on their particular needs and application. For simplicity, SKF has defined three different industry categories for conveyor pulleys and provided corresponding product ranges to meet the general needs of each.

The overview of split plummer block housing assembly ranges is summarized on pages 32-33.

In addition to plummer block housings mentioned in this catalogue, a number of variants are also available, either as standard or on special request. Potential variants include alternative attachment bolt hole configurations and modifications for special applications.

2.2 Housings for quarrying and general industries

Application duties are moderate in terms of load and speed. Split plummer block housings are primarily within the smaller (5 series) size range, with shaft diameters below 150 mm.

SKF's goal is to provide readily available, cost-effective products that deliver consistent and reliable performance, while being simple to install and maintain. SKF SNH 5 series housings with standard (unsealed) spherical roller bearings are a typical choice for this industry segment.

Bearings with integral seals (SSRB) can also be used in the same housings for a higher degree of protection, or potentially to eliminate the requirement for regreasing.

SNH housings can accommodate any of the standard range of SKF housing seals. The most typical seal options for quarries (as presented in the ordering tables) are (split) 4-lip contact seal (TSN 5 L series) for simple, compact arrangements, or radial Taconite seal with V-ring (TST 5 series) for harsher environments.

For larger pulleys in this sector (shaft diameters 150 mm and above), SKF SDVD 31 series housings would be the most appropriate choice.

SNH 5 series with TST seals

2.3 Standard housing range for general mining and mineral processing industries

Split plummer block housings in the small (5 series) and medium (31 series range), with shaft diameters up to 300 mm are commonly used in the general mining and mineral processing industries.

Application duties can vary from moderate to severe, with a high focus on contamination exclusion and greasing effectiveness. End users typically require a high level of standardisation and interchangeability. High performance and reliable operation are also standard prerequisites. Spherical Roller Bearings with integral seals (SSRB) are commonly specified. Taconite housing seals are mandated almost exclusively.

For pulley designers and manufacturers, the objective is to have readily available, cost effective products with minimised overall width. This allows for pulley design optimisation and cost benefits, along with ease of installation.

SKF SDVD 5 series and SDVD 31 series housings, with Sealed SKF Explorer spherical roller bearings are a perfect choice for this industry segment. All housing sizes are 4 bolt mount, in spheroidal graphite (ductile) cast iron material, with bolt-on closed end covers.

SDVD housings are designed specifically for the demands of the coal sector and similar industries. The width of the housings and seals has been minimised, allowing them to be fitted or existing pulleys designed for the same bearing series. Housing seals are bolt-on (unsplit) TKV Taconite style with axial labyrinth and V-ring.

For larger pulleys (shaft diameters above 300 mm), SDJD 31 series housings with TK_B Taconite seals (bolt on style) are the appropriate choice.

SDVD 31 series housing with TKV seals

2.4 Premium heavy-duty housing range for iron-ore mining and transportation

Split plummer block housings in the full range from small (5 series), medium (31 series) and large (31 series), with shaft diameters up to 470 mm are commonly required for iron ore mining and transportation applications.

Application duties typically range from severe to extreme. Robustness in terms of load carrying capacity and tolerance to imperfect structural support is required. The highest level of contamination exclusion, including protection against high-pressure washdown is required, as is greasing effectiveness. End users demand a high level of standardisation and interchangeability. High performance and reliable operation is paramount. Sealed spherical roller bearings with integral seals (SSRB) are specified as standard. Highly effective Taconite housing seals are mandated.

SKF supplies the SMS premium range of bearing assemblies to meet the arduous duty conditions in the iron ore sector. All housing sizes are SKF global premium quality, 4 bolt mount, spheroidal graphite (ductile) cast iron material for highest durability, with bolt-on closed end covers. Sealed SKF Explorer spherical roller bearings and TK heavy duty SKF Taconite seals are standard.

In the smaller range (up to 140 mm shaft diameter), FSNLD 5 SMS series housings, with standard TK Taconite seals (clamp in style) are recommended.

In the medium range (150 - 300 mm shaft diameter), SNLD 31 /VZ2N7 housings with TK_N Taconite seals (clamp in) for optimised assembly width are recommended.

For larger pulleys in this sector (shaft diameters above 300 mm and up to 470 mm): SDJD 31/VZ2N9 compact series housings with TK_B Taconite seals (bolt-on) are the most common and preferred choice. For legacy pulleys,
SDD 31 SMS series housings can be provided as an option on request for shaft diameters 320 - 380 mm. The same bearings and seals are used for both these large housing ranges.

SNLD 31 VZ/2N7series housing with TK seals

Table 2.4.1

Typical housing assembly product ranges by industry sector

			Standard recommended solution by industry sector		
Housing	Shaft size	Housing Series	Quarry	Standard	Premium Heavy Duty
	<150mm	5 series	SNH + TSN_L seal SNH + TST seal	SDVD + TKV seal	TSNLD SMS + TK seal FSNLD SMS + TK seal
	150 - 300 mm	31 series	SDVD + TKV seal	SDVD + TKV seal	SNLD/VZ2N7 + TK_N seal
	320 - 380 mm	31 series		SDD SMS + TKV _B seal SDJD /VZ2N9 + TK_B seal	SDD SMS + TK_B seal SDJD /VZ2N9 + TK_B seal
	400 - 470 mm	31 series		SDJD /VZ2N9 + TK_B seal	SDJD /VZ2N9 + TK_B seal
Bearing			Open SRB	Sealed SRB	Sealed SRB

Table 2.4.2

Comparison of housing assembly product range features & performance

Solution Features	**Small range <150 mm**				**Medium range 150-300 mm**		**Large range >320 mm**	
Housing	SNH 5	SNH 5	SDVD 5	FSNLD 5 SMS	SDVD 31	SNLD 31/VZ2N7	SDJD 31/VZ2N9	SDD 31 SMS
Housing seal	TSN_L	TST	TKV	TK	TKV	TK_N	TK_B	TK_B
SRB variant assumed	Open	Open	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed
Load carrying	0	0	++	+++	++	+++	++	++
Low vibration	+	+	++	++	++	++	++	++
Service life	0	+	+++	++++	+++	++++	++++	++++
Ease of installation	+++	0	++	+	++	+	+	+
In-situ maintenance	+++	0	+++	+	+++	+	++	++
Robust seal design	0	+	+++	++	+++	++	+++	+++
Contaminant exclusion	0	+	++	+++	++	+++	+++	+++
Minimise grease supply	0	+	++	+++	++	+++	+++	+++
Compact base design	0	0	0	0	0	0	++	0
Minimised width	++	0	++	0	++	0	0	0
Purchase price	(+++)	(++)	(++)	0	(+)	0	0	(+)

KEY
0 reference
+ superior

2.5 Housing seals

The different housing series have various seal ranges available. In this catalogue, only the most commonly used seal variants used (appropriate for pulley application duty) are shown.

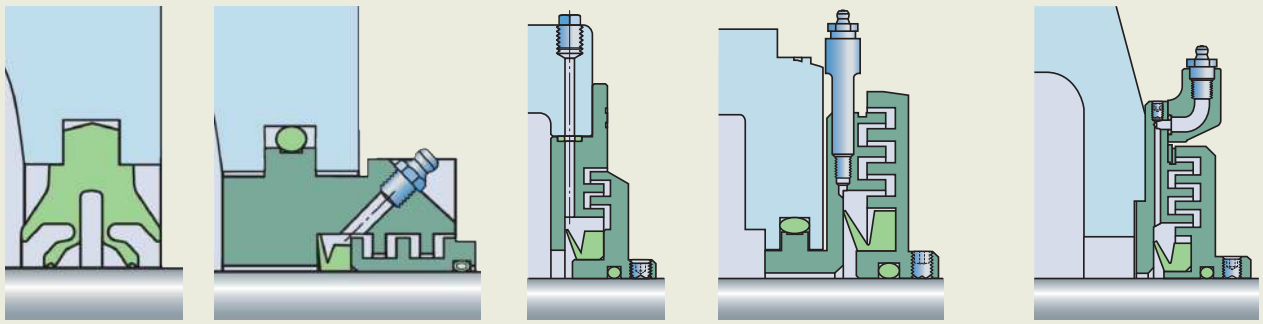
With the exception of small 5 series (SNH), only one seal concept is shown for each range. These are all variants of the heavy duty "TK" style taconite seal concept, with axial labyrinth, one-piece stationary carrier, and V-ring axial lip seal.

Table 2.5.1

Housing Seal configurations

	Small range				Medium range		Large range	
Housing series	SNH 5	SNH 5	SDVD 5xx	FSNLD 5 SMS	SDVD® 31	SNLD 31 /VZ2N7	SDJD 31 /VZ2N9	SDD 31 SMS
Housing seal	TSN 5 L	TST 5	TKV®	TK	TKV®	TK_N	TK_B	TK_B

Figure 2.5



TSN_L | TST | TKV® | TK_N | TK_B

Seal Designs

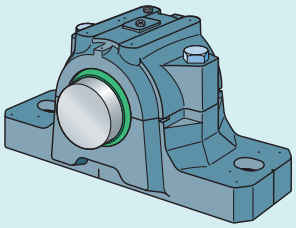
Ordering Seals

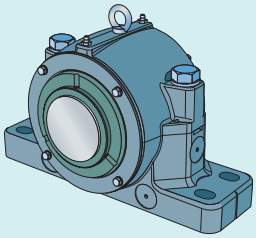
The SKF Taconite Seals shown in this catalogue are sold only as complete assemblies (seal kits), with one seal assembly per designation. TSN_L (4-lip contact seals used with SNH 5 housings) are supplied in packs of two seals per designation.

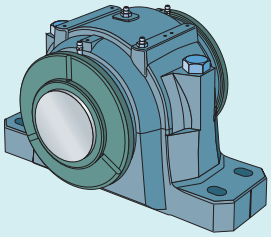
One bearing housing requires either one or two sealing assemblies depending on whether it is an open or closed version.

Replacement components for Taconite seals (V-rings, O-rings, set screws) are industry-standard items which can be easily sourced if required. Details of consumables for each seal range are given for the individual housing series in the relevant technical catalogues.

Conveyor pulley housings

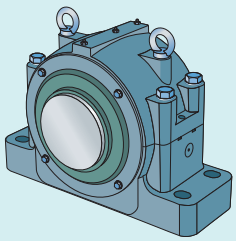
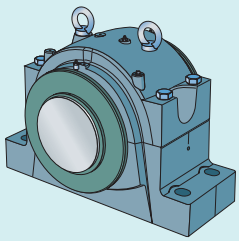
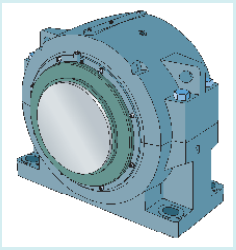
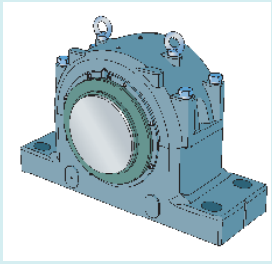






Series	SNH 5	SDVD® 5	(T, F)SNLD 5 / SMS
Bearing types			
Spherical Roller Bearing	Standard	✓	✓
Sealed Spherical Roller Bearing	✓	Standard	Standard
Shaft diameter range			
from [mm]	30	60	50
to [mm]	140	140	140
Shaft-bearing combination			
Bearing on an adapter sleeve	✓	✓	✓
Sealing solutions			
Lip seal	Standard for pulleys	-	Option
Radial shaft seal	-	-	-
V-ring seal	Option	-	Option
Felt seal	Option	-	Option
Labyrinth seal	Option	-	Option
Taconite heavy-duty seal	Standard for pulleys	Standard	Standard for pulleys
Lubrication			
Grease	✓	✓	✓
Materials			
Grey cast iron	Standard	-	standard (2 bolt mounting)
Spheroidal graphite cast iron	-	Standard	standard (4 bolt mount) Option (2 bolt)
Mounting			
No attachment bolts	-	-	Option (SG Iron only) *
Two-bolt mounting	✓	-	Standard (Grey cast iron) *
Four-bolt mounting	-	✓	Standard (SG iron)
Supersedes (SKF)	-	FSSND	-
Replacement for (non-SKF) series:	ISO 113 standard housing SN, SSN	ISO 113 standard housing FSSN, FSSND	ISO 113 standard housing SN, SSN, SSND, FSSN, FSSND

[1] Note * Might not be stocked. Available by special order.

			
SDVD® 31	**SNLD 31 / VZ2N7**	**SDJD 31 /VZ2N9**	**SDD 31 SMS**
Standard ✓	Standard ✓	Standard ✓	Standard ✓
150 300	150 300	320 470	320 380
✓	✓	✓	✓
- - - - - Standard	- - - - Option Standard for pulleys	- - - - - Standard	- - - - - Standard
✓	✓	✓	✓
- standard	- standard	standard	standard
- - ✓	- - ✓	- - ✓	- - ✓
SD, SDD TAC	SDD_SMS	CSDD SMS	SD, SDD_TAC
SD, SDD TAC	SD, SDD TAC	CSD, CSDD TAC	SD, SDD TAC

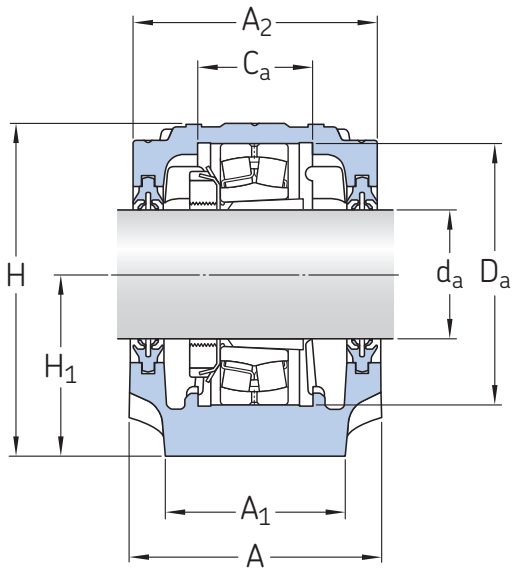
Section 3

Product Tables
Housing Assembly dimensions and product designations

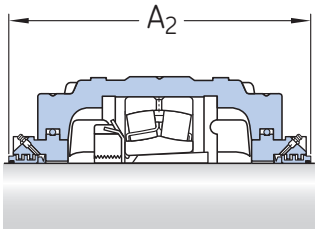
Quarry range
30 - 140 mm shaft
SNH 5 Series

3.1.1 SNH 5 series plummer block housings for bearings on an adapter sleeve

d_a **30-60** mm

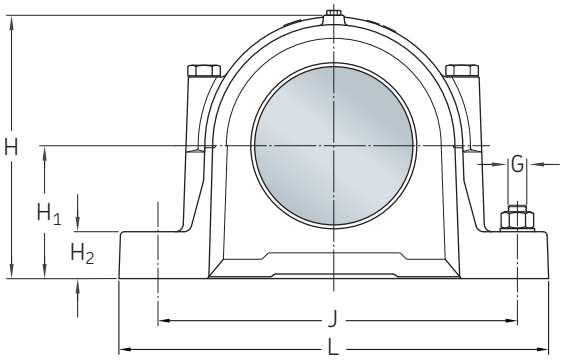


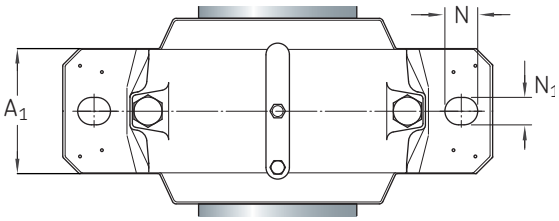
with TSN .. L



with TST ..

Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
30	**SNH 507-606/VZ2P3**	22207 EK	H 307/PC	FRB 5.5/72	TSN 507 L TST 507	ASNH 507-606	83 145
35	**SNH 508-607/VZ2P3**	22208 EK	H 308/PC	FRB 8/80	TSN 508 L TST 508	ASNH 508-607	85 145
40	**SNH 509/VZ2P3**	22209 EK	H 309/PC	FRB 3.5/85	TSN 509 L TST 509	ASNH 509	85 150
45	**SNH 510-608/VZ2P3**	22210 EK	H 310/PC	FRB 9/90	TSN 510 L TST 510	ASNH 510-608	90 150
50	**SNH 511-609/VZ2P3**	22211 EK	H 311/PC	FRB 9.5/100	TSN 511 L TST 511	ASNH 511-609	85 155
55	**SNH 512-610/VZ2P3**	22212 EK	H 312/PC	FRB 10/110	TSN 512 L TST 512	ASNH 511-609	105 165
60	**SNH 513-611/VZ2P3**	22213 EK	H 313/PC	FRB 10/120	TSN 513 L TST 513	ASNH 513-611	110 180



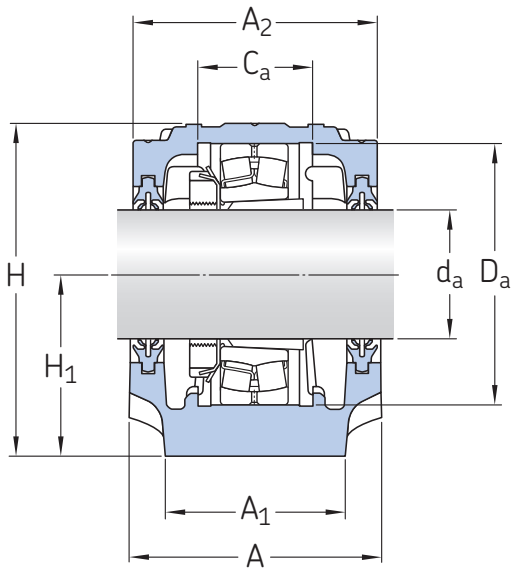


Shaft diameter	Dimensions												Mass	
													Housing [1]	Assembly [2]
d_a	A	A_1	D_a	H	H_1	H_2	J	L	N	N_1	G	X [3]		
mm			mm										kg	
30	83	52	72	94	50	22	150	185	20	15	M12	23	2.2	4.2
35	85	60	80	108	60	25	170	205	20	15	M12	26	2.9	5.1
40	85	60	85	109	60	25	170	205	20	15	M12	25	2.9	5.4
45	90	60	90	114	60	25	170	205	20	15	M12	28	3.2	6.2
50	95	70	100	129	70	28	210	255	24	18	M16	30	4.4	7.1
55	105	70	110	134	70	30	210	255	24	18	M16	33	5.1	9
60	110	80	120	150	80	30	230	275	24	18	M16	35	6.5	11.6

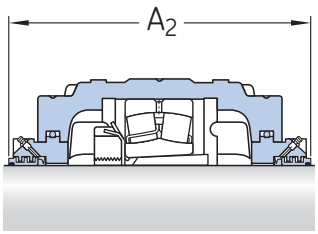
[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.
[3] Recommended distance from centre of bearing to the end of shaft when an end cover is used.

3.1.1 SNH 5 series plummer block housings for bearings on an adapter sleeve

d_a **65-100** mm

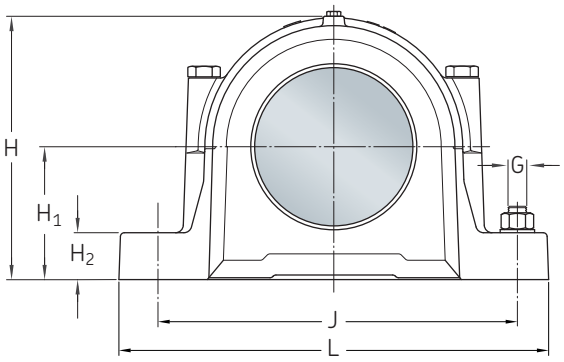


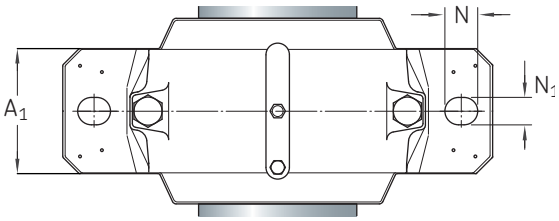
with TSN .. L



with TST ..

Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
65	**SNH 515-612/VZ2P3**	22215 EK	H 315/PC	FRB 12.5/130	TSN 515 L TST 515	ASNH 515-612	115 175
70	**SNH 516-613/VZ2P3**	22216 EK	H 316/PC	FRB 12.5/140	TSN 516 L TST 516	ASNH 516-613	120 205
75	**SNH 517/VZ2P3**	22217 EK	H 317/PC	FRB 12.5/150	TSN 517 L TST 517	ASNH 517	125 210
80	**SNH 518-615/VZ2P3**	22218 EK	H 318/PC	FRB 12.5/160	TSN 518 L TST 518	ASNH 518-615	140 225
85	**SNH 519-616/VZ2P3**	22219 EK	H 319/PC	FRB 12.5/170	TSN 519 L TST 519	ASNH 519-616	145 220
90	**SNH 520-617/VZ2P3**	22220 EK	H 320/PC	FRB 12/180	TSN 520 L TST 520	ASNH 520-617	160 230
100	**SNH 522-619/VZ2P3**	22222 EK	H 322/PC	FRB 13.5/200	TSN 522 L TST 522	ASNH 522-619	175 250



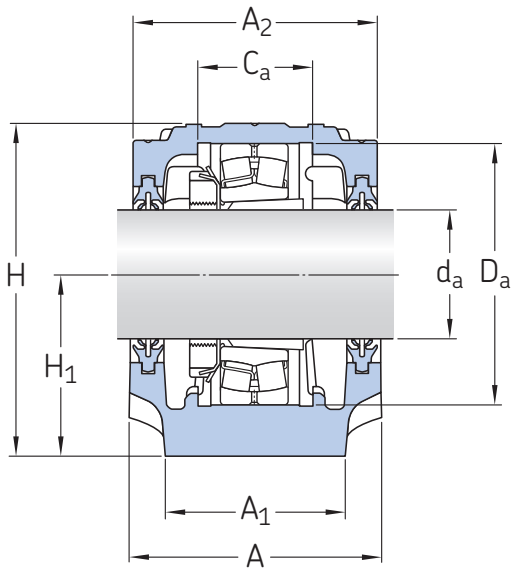


Shaft diameter	Dimensions												Mass	
													Housing [1]	Assembly [2]
d_a	A	A_1	D_a	H	H_1	H_2	J	L	N	N_1	G	X [3]		
mm			mm										kg	
65	115	80	130	156	80	30	230	280	24	18	M16	37	7	12.8
70	120	90	140	177	95	32	260	315	28	22	M20	39	9.5	15.2
75	125	90	150	183	95	32	260	320	28	22	M20	40	10	16.7
80	140	100	160	194	100	35	290	345	28	22	M20	45	12.5	20.1
85	145	100	170	212	112	35	290	345	28	22	M20	47	13.7	24
90	160	110	180	218	112	40	320	380	32	26	M24	51	17.6	29
100	175	120	200	242	125	45	350	410	32	26	M24	61	22	36.3

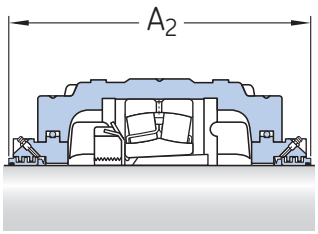
[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.
[3] Recommended distance from centre of bearing to the end of shaft when an end cover is used.

3.1.1 SNH 5 series plummer block housings for bearings on an adapter sleeve

d_a **110-140** mm

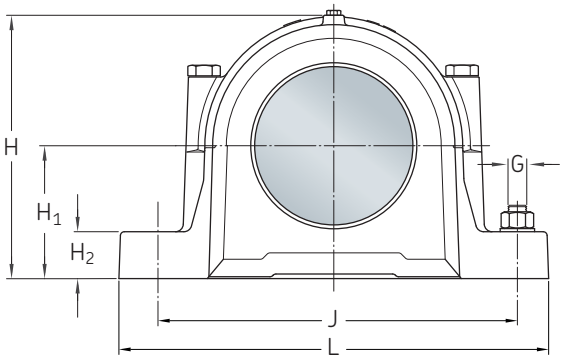


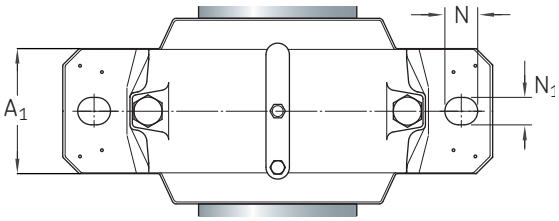
with TSN .. L



with TST ..

Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
110	**SNH 524-620/VZ2P3**	22224 EK	H 3124/PC	FRB 14/215	TSN 524 L TST 524	ASNH 524-620	185 260
115	**SNH 526/VZ2P3**	22226 EK	H 3126/PC	FRB 13/230	TSN 526 L TST 526	ASNH 526	190 265
125	**SNH 528/VZ2P3**	22228 CCK/W33	H 3128/PC	FRB 15/250	TSN 528 L TST 528	ASNH 528	205 285
135	**SNH 530/VZ2P3**	22230 CCK/W33	HE 3130/PC	FRB 16.5/270	TSN 530 L TST 530	ASNH 530	220 295
140	**SNH 532/VZ2P3**	22232 CCK/W33	H 3132/PC	FRB 17/290	TSN 532 L TST 532	ASNH 532	235 315





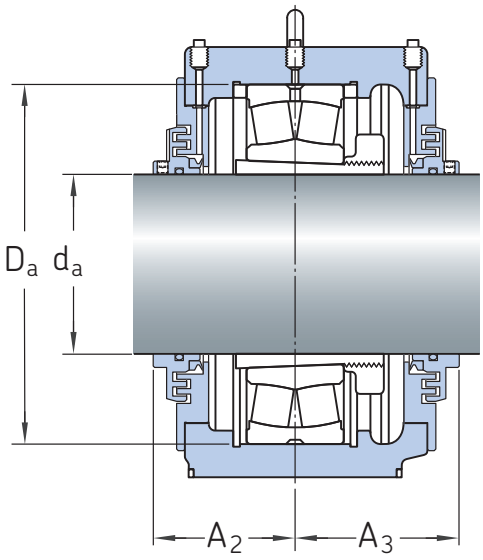
Shaft diameter	Dimensions												Mass	Mass
													Housing [1]	Assembly [2]
d_a	A	A_1	D_a	H	H_1	H_2	J	L	N	N_1	G	X [3]		
mm			mm										kg	
110	185	120	215	271	140	45	350	410	32	26	M24	65	26.2	42.6
115	190	130	230	290	150	50	380	445	35	28	M24	65	33	52.6
125	205	150	250	302	150	50	420	500	42	35	M30	70	40	63.9
135	220	160	270	323	160	60	450	530	42	35	M30	80	49	78.4
140	235	160	290	344	170	60	470	550	42	35	M30	85	55	93.7

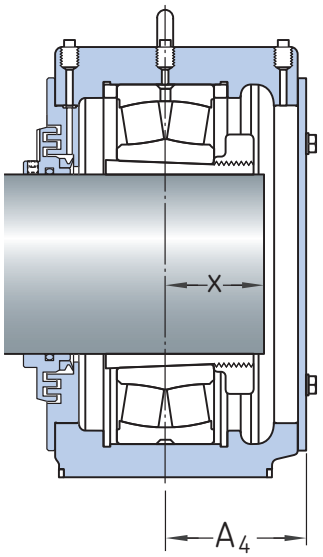
[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.
[3] Recommended distance from centre of bearing to the end of shaft when an end cover is used.

General Mining Range
60 - 140 mm shaft
SDVD 5 series

3.2.1 Small SDVD 5 series plummer block housings for bearings on an adapter sleeve

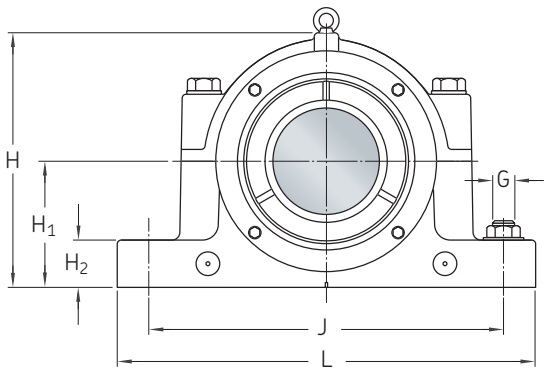
d_a **60-140** mm

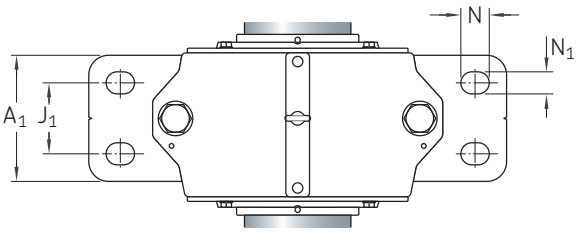




Shaft diameter	Housing [1]	Appropriate parts						
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals	
d_a							A_2	A_3
mm	–	–					mm	
60	**SDVD 513**	BS2-2213-2RSK/VT143 22213 EK	H 2313 E/V21 H 313/PC	FRB 6.5/120 FRB 10/120	TKV 513	ETV 132/118/4	75	84.5
65	**SDVD 515**	BS2-2215-2RSK/VT143 22215 EK	H 315 E H 315/PC	FRB 9/130 FRB 12.5/130	TKV 515	ETV 140/125/4	75	84.5
70	**SDVD 516**	BS2-2216-2RSK/VT143 22216 EK	H 316 E H 316/PC	FRB 9/140 FRB 12.5/140	TKV 516	ETV 146/134/4	77	90
75	**SDVD 517**	BS2-2217-2RSK/VT143 22217 EK	H 317 E H 317/PC	FRB 8.5/150 FRB 12.5/150	TKV 517	ETV 160/144/4	77	90
80	**SDVD 518**	BS2-2218-2RSK/VT143 22218 EK	H 2318 E/L73 H 318/PC	FRB 8.5/160 FRB 12.5/160	TKV 518	ETV 168/152/4	79	92
90	**SDVD 520**	BS2-2220-2RS5K/VT143 22220 EK	H 2320 E/V21 H 320/PC	FRB 7.5/180 FRB 12/180	TKV 520	ETV 194/176/4	78	97
100	**SDVD 522**	BS2-2222-2RS5K/VT143 22222 EK	H 2322 E/V21 H 322/PC	FRB 8.5/200 FRB 13.5/200	TKV 522	ETV 208/188/4	88.5	108
110	**SDVD 524**	BS2-2224-2RS5K/VT143 22224 EK	H 2324 E/V21 H 3124/PC	FRB 8.5/215 FRB 14/215	TKV 524	ETV 226/206/4	94	115
115	**SDVD 526**	BS2-2226-2CS5K/VT143 22226 EK	H 2326 L/V21 H 3126/PC	FRB 7.5/230 FRB 13/230	TKV 526	ETV 236/216/4	99.5	114.5
125	**SDVD 528**	22228-2CS5K/VT143 22228 CCK/W33	H 3128 L H 3128/PC	FRB 10/250 FRB 10/250	TKV 528	ETV 260/240/4	101.5	114.5
135	**SDVD 530**	22230-2CS5K/VT143 22230 CCK/W33	H 3130 H 3130/PC	FRB 10/270 FRB 10/270	TKV 530	ETV 280/256/4	106.5	120.5
140	**SDVD 532**	22232-2CS5K/VT143 22232 CCK/W33	0H 3132 H H 3132/PC	FRB 10/290 FRB 10/290	TKV 532	ETV 300/280/4	108	124

[1] Check Availability prior to inclusion in design
[2] Housing mass includes housing body only
[3] Assembly mass includes housing body, seals, bearing and sleeve.



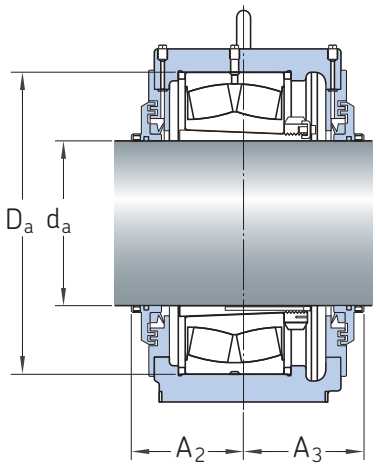


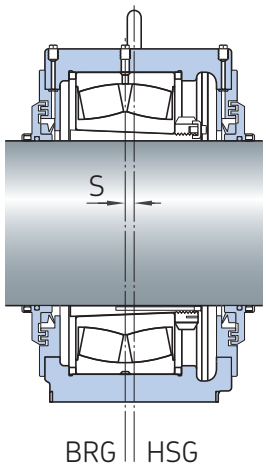
Shaft diameter	Dimensions													Eye bolt	Mass	
														acc. To DIN 580	Housing [2]	Assembly [3]
d_a	A_4	A_1	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	X			
mm	mm													–	kg	
60	76	80	120	157	80	30	230	40	280	24	16	M12	36	-	11	13
65	76	80	130	157	80	30	230	40	280	24	16	M12	38	-	10	12.5
70	82	90	140	185	95	32	260	50	320	28	20	M16	41	-	15	18
75	82	90	150	185	95	32	260	50	320	28	20	M16	44	-	14	18
80	84	100	160	195	100	35	290	50	345	28	20	M16	49	-	16	20.5
90	90	110	180	218	112	40	320	60	380	28	20	M16	56	M8	22	28.5
100	100	120	200	240	125	45	350	70	410	28	20	M16	61	M8	27	36
110	105	120	215	270	140	45	350	70	410	28	20	M16	66	M8	31	42
115	105	130	230	290	150	50	380	70	445	32	24	M20	69	M8	39	53
125	105	150	250	302	150	50	420	80	500	36	28	M24	70	M8	48	65.5
135	110	160	270	323	160	60	450	90	530	36	28	M24	74	M8	54	77
140	115	160	290	344	170	60	470	90	550	36	28	M24	85	M8	59	88.5

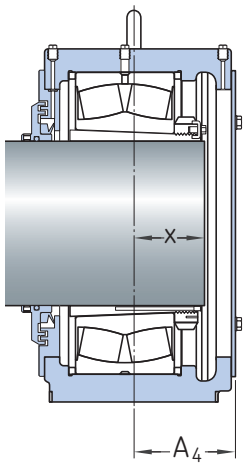
General Mining Range
150 - 300 mm shaft
SDVD 31 series

3.2.2 Large SDVD 31 series plummer block housings for bearings on an adapter sleeve

d_a **150-300** mm



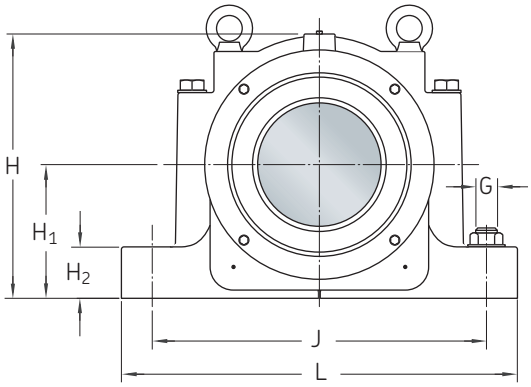


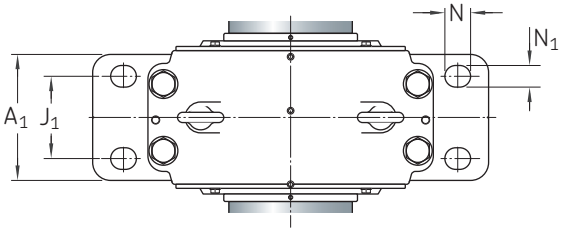


Shaft diameter	Housing	Appropriate parts						
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals	
d_a							A_2	A_3
mm	–	–					mm	
150	**SDVD® 3134**	23134-2CS5K/VT143 23134 CCK/W33	OH 3134 HE OH 3134 H/PC	FRB 10/280	TKV 34	ETV 290/265/4	133	133
160	**SDVD® 3136**	23136-2CS5K/VT143 23136 CCK/W33	OH 3136 HL OH 3136 H/PC	FRB 10/300	TKV 36	ETV 310/285/4	138	138
170	**SDVD® 3138**	23138-2CS5K/VT143 23138 CCK/W33	OH 3138 H OH 3138 H/PC	FRB 10/320	TKV 38	ETV 330/305/4	138	146
180	**SDVD® 3140**	23140-2CS5K/VT143 23140 CCK/W33	OH 3140 H OH 3140 H/PC	FRB 10/340	TKV 40	ETV 346/315/4	142	152
200	**SDVD® 3144**	23144-2CS5K/VT143 23144 CCK/W33	OH 3144 HTL OH 3144 H/PC	FRB 10/370	TKV 44	ETV 376/345/4	151	161
220	**SDVD® 3148**	23148-2CS5K/VT143 23148 CCK/W33	OH 3148 HTL OH 3148 H/PC	FRB 10/400	TKV 48	ETV 406/375/4	155	170
240	**SDVD® 3152**	23152-2CS5K/VT143 23152 CCK/W33	OH 3152 HTL OH 3152 H/PC	FRB 10/440	TKV 52	ETV 446/415/4	165	176
260	**SDVD® 3156**	23156-2CS5K/VT143 23156 CCK/W33	OH 3156 HTL OH 3156 H/PC	FRB 10/460	TKV 56	ETV 466/435/4	173	185
280	**SDVD® 3160**	23160-2CS5K/VT143 23160 CCK/W33	OH 3160 HE OH 3160 H/PC	FRB 10/500	TKV 60	ETV 506/475/4	183	189
300	**SDVD® 3164**	23164-2CS5K/VT143 23164 CCK/W33	OH 3164 H OH 3164 H/PC	FRB 10/540	TKV 64	ETV 546/515/4	191	201

[1] Housing mass includes housing body only

[2] Assembly mass includes housing body, seals, bearing and sleeve.



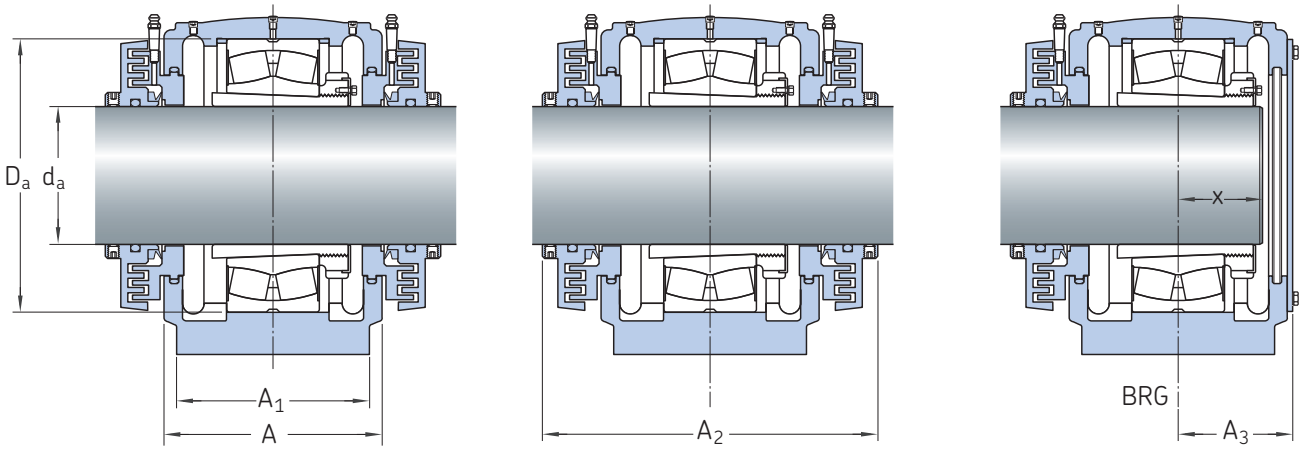


Shaft diameter	Dimensions															Eye bolt	Mass	
																acc. To DIN 580	Housing [1]	Assembly [2]
d_a	A4	A_1	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	s	Xmin	Xmax			
mm			mm														kg	
150	115	174	280	335	170	70	430	100	510	34	28	M24	14	64	85	M16	72	102
160	120	184	300	352	180	75	450	110	530	34	28	M24	15	68	91	M16	81	116
170	130	200	320	375	190	80	480	120	560	34	28	M24	10	78	99	M20	99	144
180	135	206	340	410	210	85	510	130	610	42	35	M30	10	83	105	M20	121	175
200	140	220	370	435	220	90	540	140	640	42	35	M30	12	88	111	M20	136	203
220	150	230	400	475	240	95	600	150	700	42	35	M30	12	94	121	M24	169	249
240	160	245	440	514	260	100	650	160	770	50	42	M36	13	103	127	M24	205	310
260	165	250	460	550	280	105	670	160	790	50	42	M36	16	103	133	M24	234	348
280	170	288	500	590	300	110	710	190	830	50	42	M36	22	116	138	M30	284	434
300	180	300	540	625	320	115	750	200	880	50	42	M36	23	126	150	M30	322	507

Premium Heavy Duty Range
50 - 140 mm shaft
FSNLD 5 SMS series

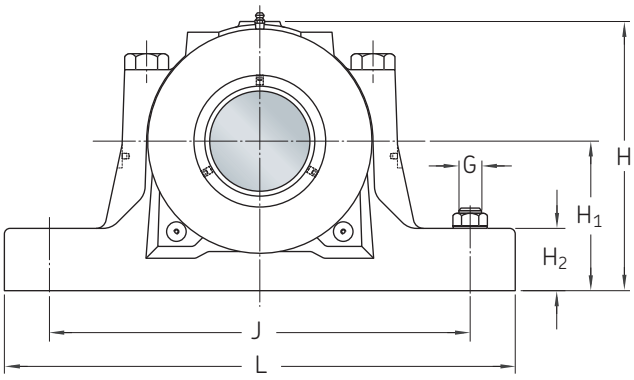
3.3.1 FSNLD 5 SMS series plummer block housings for bearings on an adapter sleeve

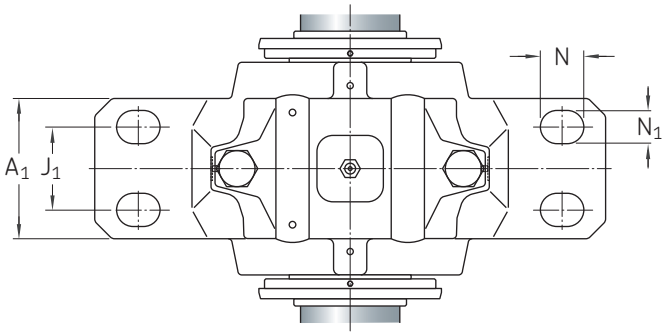
d_a **50-100** mm



Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
50	**FSNLD 511/1943405**	BS2-2211-2RSK/VT143	H 311 E	FRB 6.5/100	TK 511	ETV 95/85.5/4	165
55	**FSNLD 512/1943405**	BS2-2212-2RSK/VT143	H 312 E	FRB 7/110	TK 512	ETV 100/90.5/4	175
60	**FSNLD 513/1943405**	BS2-2213-2RSK/VT143	H 2313 E/V21	FRB 6.5/120	TK 513	ETV 110/95.5/4	180
65	**FSNLD 515/1943405**	BS2-2215-2RSK/VT143	H 315 E	FRB 9/130	TK 515	ETV 117/105.5/4	187
70	**FSNLD 516/1943405**	BS2-2216-2RSK/VT143	H 316 E	FRB 9/140	TK 516	ETV 127/113/4	205
75	**FSNLD 517/1943405**	BS2-2217-2RSK/VT143	H 317 E	FRB 8.5/150	TK 517	ETV 135/118/4	210
80	**FSNLD 518/1943405**	BS2-2218-2RSK/VT143	H 2318 E/L73	FRB 8.5/160	TK 518	ETV 140/123/4	225
90	**FSNLD 520/1943405**	BS2-2220-2RS5K/VT143	H 2320 E/V21	FRB 7.5/180	TK 520	ETV 175/159/4	243
100	**FSNLD 522/1943405**	BS2-2222-2RS5K/VT143	H 2322 E/V21	FRB 8.5/200	TK 522	ETV 200/172/4	258

1) Housing mass includes housing body only
2) Assembly mass includes housing body, seals, bearing and sleeve.

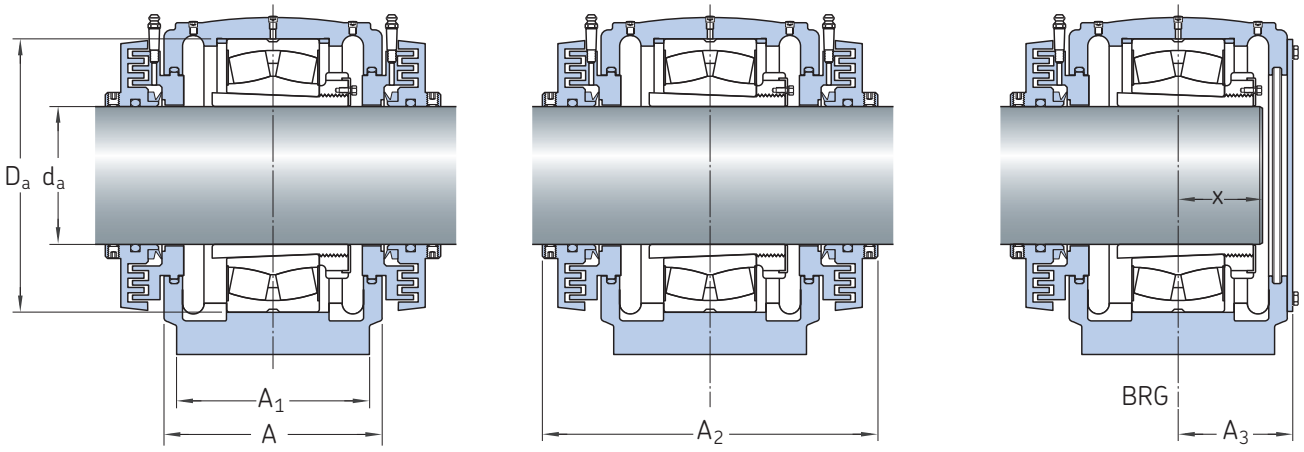




Shaft diameter	Dimensions														Eye bolt	Mass	
															acc. To DIN 580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	X			
mm				mm												kg	
50	95	70	60	100	129	70	28	210	35	255	20	15	M12	32	-	5,45	8.5
55	105	70	65	110	134	70	30	210	35	255	20	15	M12	33	-	6,15	10
60	110	80	67	120	150	80	30	230	40	275	20	15	M12	36	-	7,90	13.5
65	115	80	70	130	156	80	30	230	40	280	20	15	M12	38	-	8,55	14.5
70	120	90	74	140	177	95	32	260	50	315	24	18	M16	41	-	9,50	17.5
75	125	90	77	150	183	95	32	260	50	320	24	18	M16	44	-	10,0	19
80	140	100	84	160	194	100	35	290	50	345	24	18	M16	49	-	12,5	23
90	160	110	94	180	218	112	40	320	60	380	24	18	M16	56	-	17,6	29
100	175	120	102	200	242	125	45	350	70	410	24	18	M16	61	-	22,0	39

3.3.1 FSNLD 5 SMS series plummer block housings for bearings on an adapter sleeve

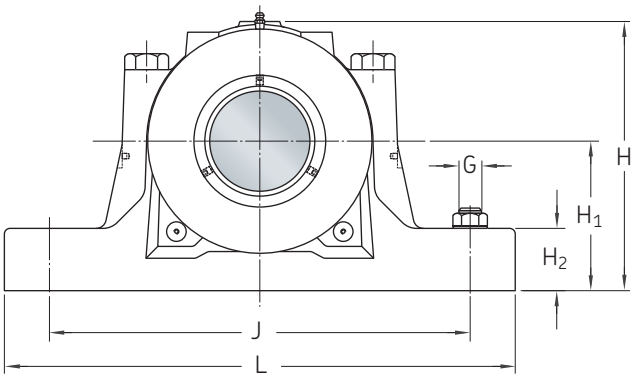
d_a **110-140** mm

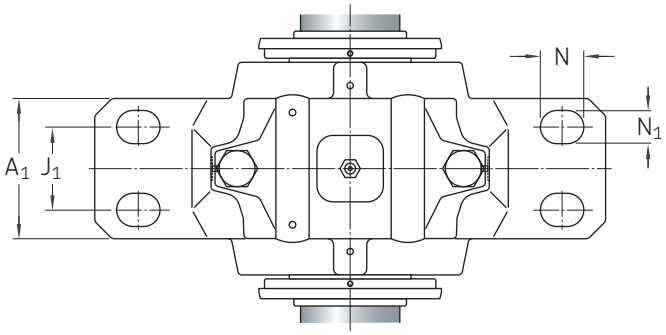


Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
110	**FSNLD 524/1943405**	BS2-2224-2RS5K/VT143	H 2324 E/V21	FRB 8.5/215	TK 524	ETV 205/184/4	266
115	**FSNLD 526/1943405**	BS2-2226-2CS5K/VT143	H 2326 L/V21	FRB 7.5/230	TK 526	ETV 215/193/4	272
125	**FSNLD 528/1943405**	22228-2CS5K/VT143	H 3128 L	FRB 15/250	TK 528	ETV 230/209/4	289
135	**FSNLD 530/1943405**	22230-2CS5K/VT143	H 3130	FRB 16.5/270	TK 530	ETV 240/222/4	304
140	**FSNLD 532/1943405**	22232-2CS5K/VT143	OH 3132 H	FRB 17/290	TK 532	ETV 250/228/4	318

[1] Housing mass includes housing body only

[2] Assembly mass includes housing body, seals, bearing and sleeve.



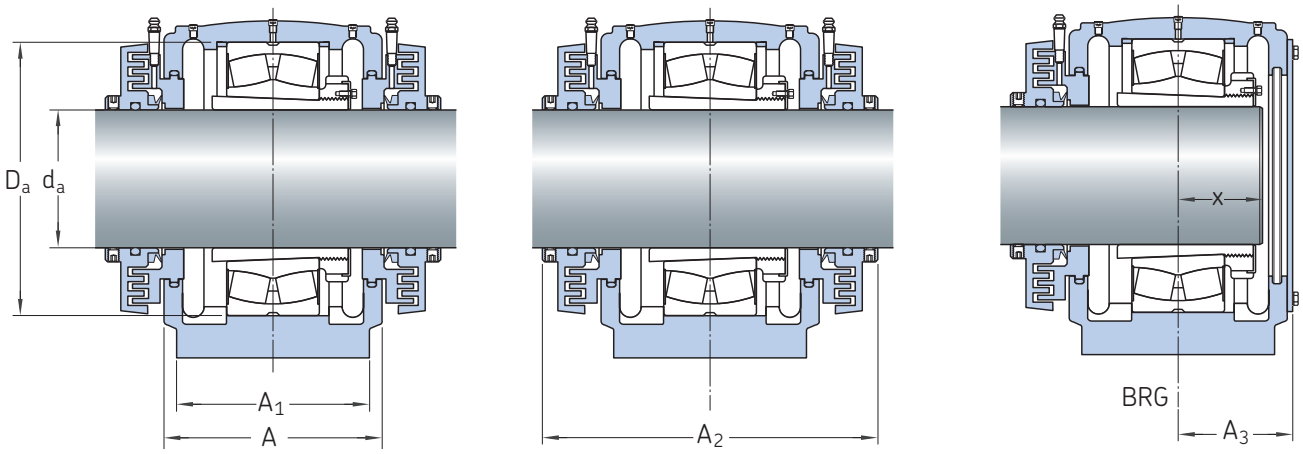


Shaft diameter	Dimensions														Eye bolt	Mass	
															acc. To DIN 580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	X			
mm				mm												kg	
110	185	120	108	215	271	140	45	350	70	410	24	18	M16	66	M10	26,2	46
115	190	130	110	230	290	150	50	380	70	445	28	22	M20	69	M10	33,0	57
125	205	150	117	250	302	150	50	420	80	500	32	26	M24	70	M12	40,0	67
135	220	160	125	270	323	160	60	450	90	530	32	26	M24	74	M12	49,0	85
140	235	160	132	290	344	170	60	470	90	550	32	26	M24	85	M12	55,0	98

Premium Heavy Duty Range
50 - 140 mm shaft
TSNLD 5 SMS series

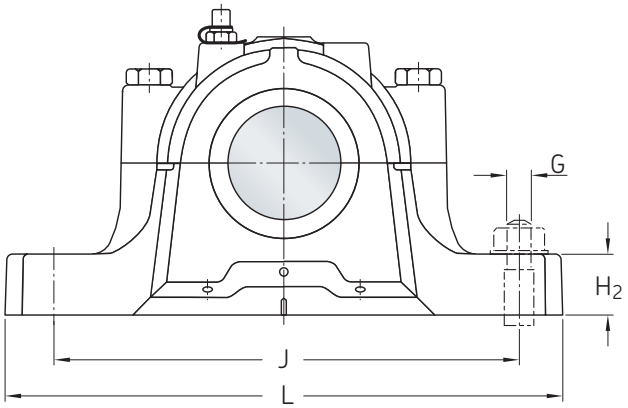
3.3.2 TSNLD 5 SMS series plummer block housings for bearings on an adapter sleeve

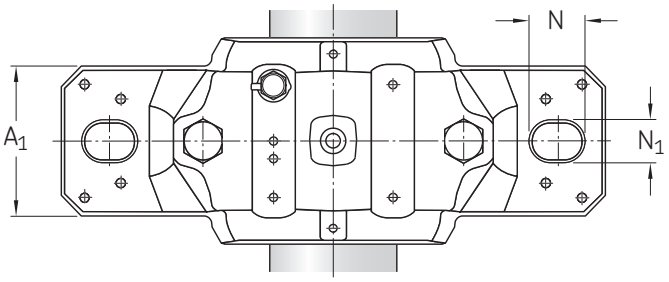
d_a **50-100** mm



Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
50	**TSNLD 511/1943610**	BS2-2211-2RSK/VT143	H 311 E	FRB 6.5/100	TK 511	ETV 95/85.5/4	165
55	**TSNLD 512/1943610**	BS2-2212-2RSK/VT143	H 312 E	FRB 7/110	TK 512	ETV 100/90.5/4	175
60	**TSNLD 513/1943610**	BS2-2213-2RSK/VT143	H 2313 E/V21	FRB 6.5/120	TK 513	ETV 110/95.5/4	180
65	**TSNLD 515/1943610**	BS2-2215-2RSK/VT143	H 315 E	FRB 9/130	TK 515	ETV 117/105.5/4	187
70	**TSNLD 516/1943610**	BS2-2216-2RSK/VT143	H 316 E	FRB 9/140	TK 516	ETV 127/113/4	205
75	**TSNLD 517/1943610**	BS2-2217-2RSK/VT143	H 317 E	FRB 8.5/150	TK 517	ETV 135/118/4	210
80	**TSNLD 518/1943610**	BS2-2218-2RSK/VT143	H 2318 E/L73	FRB 8.5/160	TK 518	ETV 140/123/4	225
90	**TSNLD 520/1943610**	BS2-2220-2RS5K/VT143	H 2320 E/V21	FRB 7.5/180	TK 520	ETV 175/159/4	243
100	**TSNLD 522/1943610**	BS2-2222-2RS5K/VT143	H 2322 E/V21	FRB 8.5/200	TK 522	ETV 200/172/4	258

[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.

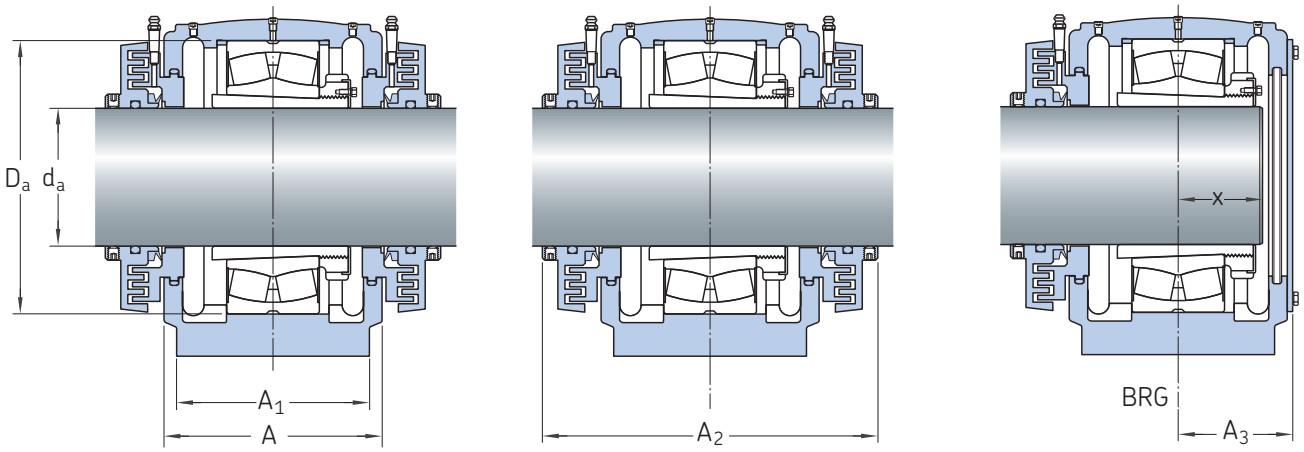




Shaft diameter	Dimensions													Eye bolt	Mass	
														according to DIN580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	L	N	N_1	G	X			
mm				mm											kg	
50	95	70	60	100	129	70	28	210	255	24	18	M16	32	-	5,45	8.5
55	105	70	65	110	134	70	30	210	255	24	18	M16	33	-	6,15	10
60	110	80	67	120	150	80	30	230	275	24	18	M16	36	-	7,90	13.5
65	115	80	70	130	156	80	30	230	280	24	18	M16	38	-	8,55	14.5
70	120	90	74	140	177	95	32	260	315	28	22	M20	41	-	9,50	17.5
75	125	90	77	150	183	95	32	260	320	28	22	M20	44	-	10,0	19
80	140	100	84	160	194	100	35	290	345	28	22	M20	49	-	12,5	23
90	160	110	94	180	218	112	40	320	380	32	26	M24	56	-	17,6	29
100	175	120	102	200	242	125	45	350	410	32	26	M24	61	-	22,0	39

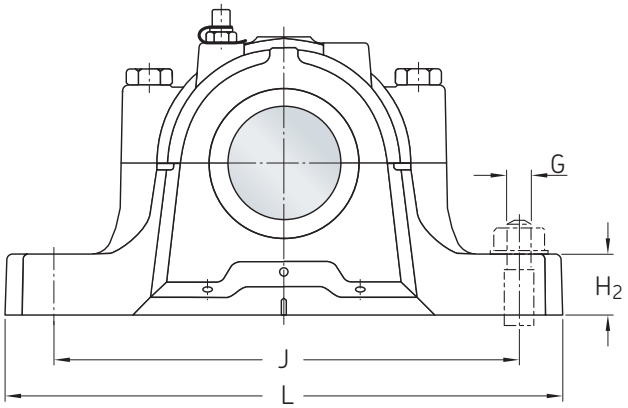
3.3.2 TSNLD 5 SMS series plummer block housings for bearings on an adapter sleeve

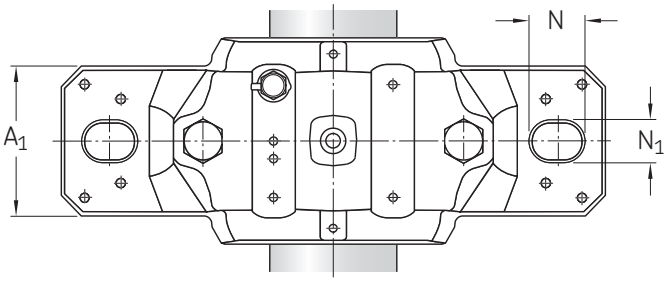
d_a **110-140** mm



Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
110	**TSNLD 524/1943610**	BS2-2224-2RS5K/VT143	H 2324 E/V21	FRB 8.5/215	TK 524	ETV 205/184/4	266
115	**TSNLD 526/1943610**	BS2-2226-2CS5K/VT143	H 2326 L/V21	FRB 13/230	TK 526	ETV 215/193/4	272
125	**TSNLD 528/1943610**	22228-2CS5K/VT143	H 3128 L	FRB 15/250	TK 528	ETV 230/209/4	289
135	**TSNLD 530/1943610**	22230-2CS5K/VT143	H 3130	FRB 16.5/270	TK 530	ETV 240/222/4	304
140	**TSNLD 532/1943610**	22232-2CS5K/VT143	OH 3132 H	FRB 17/290	TK 532	ETV 250/228/4	318

[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.



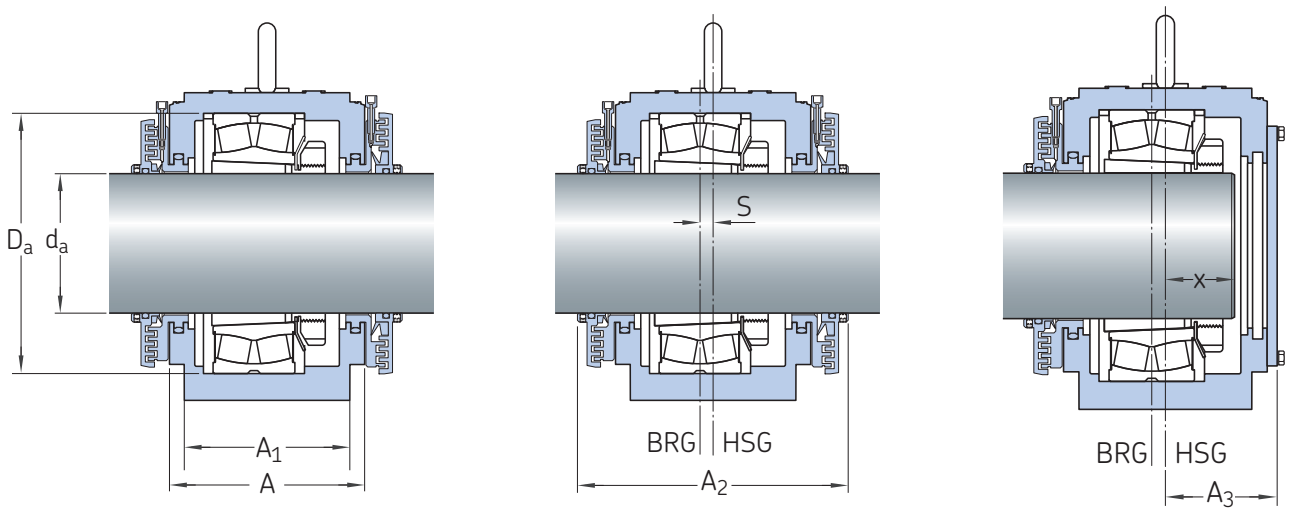


Shaft diameter	Dimensions													Eye bolt	Mass	
														according to DIN580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	L	N	N_1	G	X			
mm				mm											kg	
110	185	120	108	215	271	140	45	350	410	32	26	M24	66	M10	26,2	46
115	190	130	110	230	290	150	50	380	445	35	28	M24	69	M10	33,0	57
125	205	150	117	250	302	150	50	420	500	42	35	M30	70	M12	40,0	67
135	220	160	125	270	323	160	60	450	530	42	35	M30	74	M12	49,0	85
140	235	160	132	290	344	170	60	470	550	42	35	M30	85	M12	55,0	98

Premium Heavy Duty Range
150 - 300 mm shaft
SNLD 31 /VZ2N7 (SMS) series

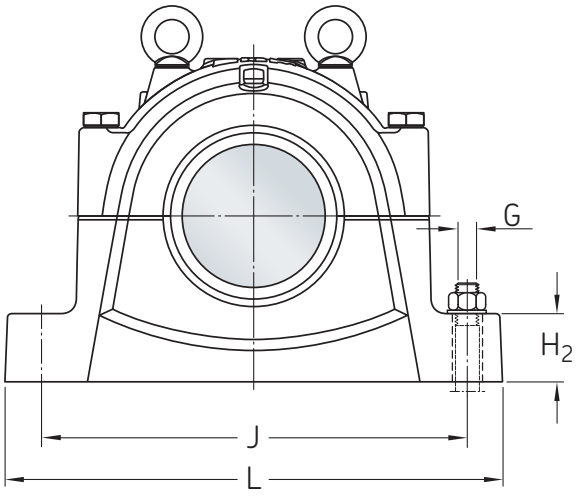
3.3.3 SNLD 31 SMS series plummer block housings for bearings on an adapter sleeve

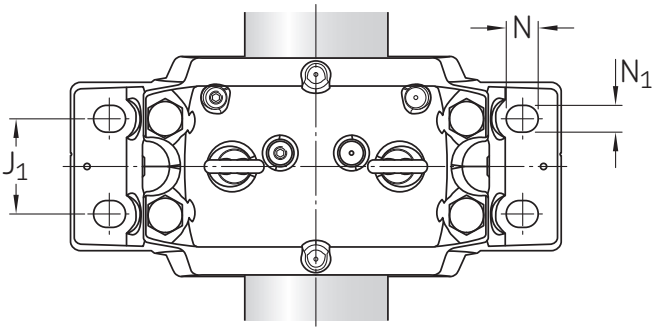
d_a **150-300** mm



Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
150	**SNLD 3134/VZ2N7**	23134-2CS5K/VT143	OH 3134 HE	FRB 10/280	TK 34 N	ETV 230/210/6	300
160	**SNLD 3136/VZ2N7**	23136-2CS5K/VT143	OH 3136 HL	FRB 10/300	TK 36 N	ETV 240/220/6	310
170	**SNLD 3138/VZ2N7**	23138-2CS5K/VT143	OH 3138 H	FRB 10/320	TK 38 N	ETV 250/230/6	340
180	**SNLD 3140/VZ2N7**	23140-2CS5K/VT143	OH 3140 H	FRB 10/340	TK 40 N	ETV 260/240/6	360
200	**SNLD 3144/VZ2N7**	23144-2CS5K/VT143	OH 3144 HTL	FRB 10/370	TK 44 N	ETV 280/260/6	370
220	**SNLD 3148/VZ2N7**	23148-2CS5K/VT143	OH 3148 HTL	FRB 10/400	TK 48 N	ETV 300/280/6	390
240	**SNLD 3152/VZ2N7**	23152-2CS5K/VT143	OH 3152 HTL	FRB 10/440	TK 52 N	ETV 320/300/6	400
260	**SNLD 3156/VZ2N7**	23156-2CS5K/VT143	OH 3156 HTL	FRB 10/460	TK 56 N	ETV 340/320/6	400
280	**SNLD 3160/VZ2N7**	23160-2CS5K/VT143	OH 3160 HE	FRB 10/500	TK 60 N	ETV 360/340/6	430
300	**SNLD 3164/VZ2N7**	23164-2CS5K/VT143	OH 3164 H	FRB 10/540	TK 64 N	ETV 380/360/6	450

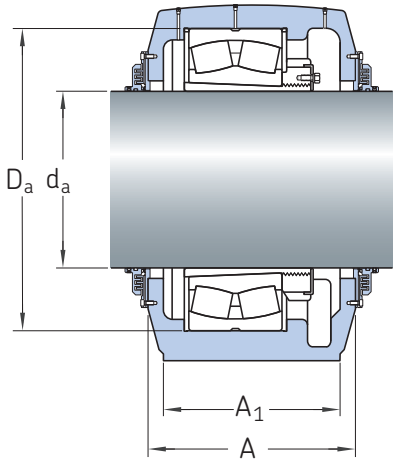
[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.

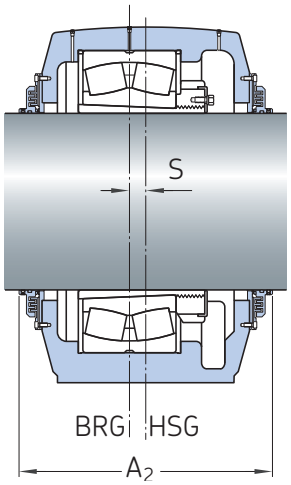


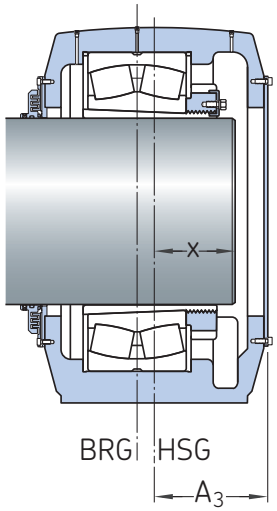


Shaft diameter	Dimensions																	Eye bolt	Mass	
																		according to Din 580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	C_a	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	s	Xmin	Xmax			
mm					mm														kg	
150	214	180	125	108	280	333	170	70	430	100	510	34	28	M24	14	64	88	M16	69,5	117
160	224	190	130	116	300	353	180	75	450	110	530	34	28	M24	15	68	93	M16	77,5	131
170	244	210	140	124	320	375	190	80	480	120	560	34	28	M24	10	78	102	M20	97,5	161
180	264	230	150	132	340	411	210	85	510	130	610	42	35	M30	10	83	112	M20	123	197
200	274	240	155	140	370	434	220	90	540	140	640	42	35	M30	12	88	116	M20	138	226
220	294	260	165	148	400	474	240	95	600	150	700	42	35	M30	12	94	124	M24	187	290
240	304	280	170	164	440	516	260	100	650	160	770	50	42	M36	13	103	133	M24	221	352
260	304	280	170	166	460	550	280	105	670	160	790	50	42	M36	16	103	133	M24	252	394
280	334	310	190	180	500	591	300	110	710	190	830	50	42	M36	22	116	148	M30	301	480
300	354	330	200	196	540	631	320	115	750	200	880	50	42	M36	23	126	158	M30	339	555

Premium Heavy Duty Range
320 - 470 mm shaft
SDJD 31/VZ2N9 (SMS) series

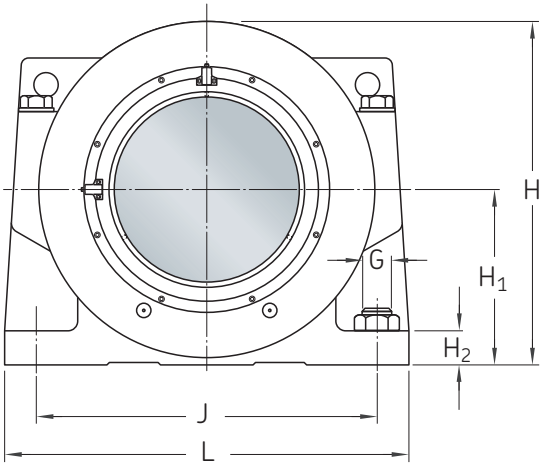


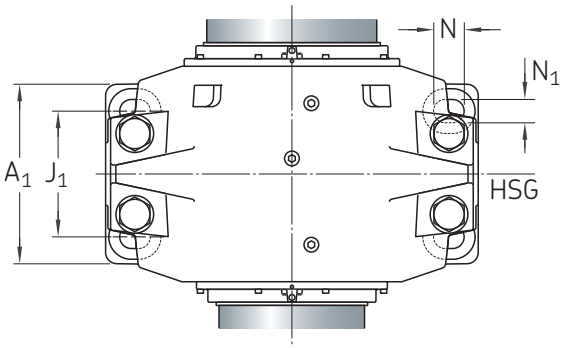




Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
320	**SDJD 3168/VZ2N9**	23168-2CS5K/VT143	OH 3168 HE	FRB 10/580	TK 68 B	ETV 505/485/8	530
340	**SDJD 3172/VZ2N9**	23172-2CS5K/VT143	OH 3172 HE	FRB 10/600	TK 72 B	ETV 525/505/8	532
360	**SDJD 3176/VZ2N9**	23176-2CS5K/VT143	OH 3176 HE	FRB 10/620	TK 76 B	ETV 545/525/8	560
380	**SDJD 3180/VZ2N9**	23180-2CS5K/VT143	OH 3180 HE	FRB 10/650	TK 80 B	ETV 565/545/8	562
400	**SDJD 3184/VZ2N9**	23184-2CS5K/VT143	OH 3184 H/V21	FRB 10/700	TK 84 B	ETV 600/580/8	590
410	**SDJD 3188/VZ2N9**	23188-2CS5K/VT143	OH 3188 H	FRB 10/720	TK 88 B	ETV 610/590/8	590
430	**SDJD 3192/VZ2N9**	23192-2CS5K/VT143	OH 3192 HE	FRB 10/760	TK 92 B	ETV 620/600/8	630
450	**SDJD 3196/VZ2N9**	23196-2CS5K/VT143	OH 3196 H/V21	FRB 10/790	TK 96 B	ETV 650/630/8	630
470	**SDJD 41/500/VZ2P0**	241/500-2CS5K30/VT143	OH 241/500 H	FRB 10/830	TK 500 B	ETV 670/640/8	650

[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.



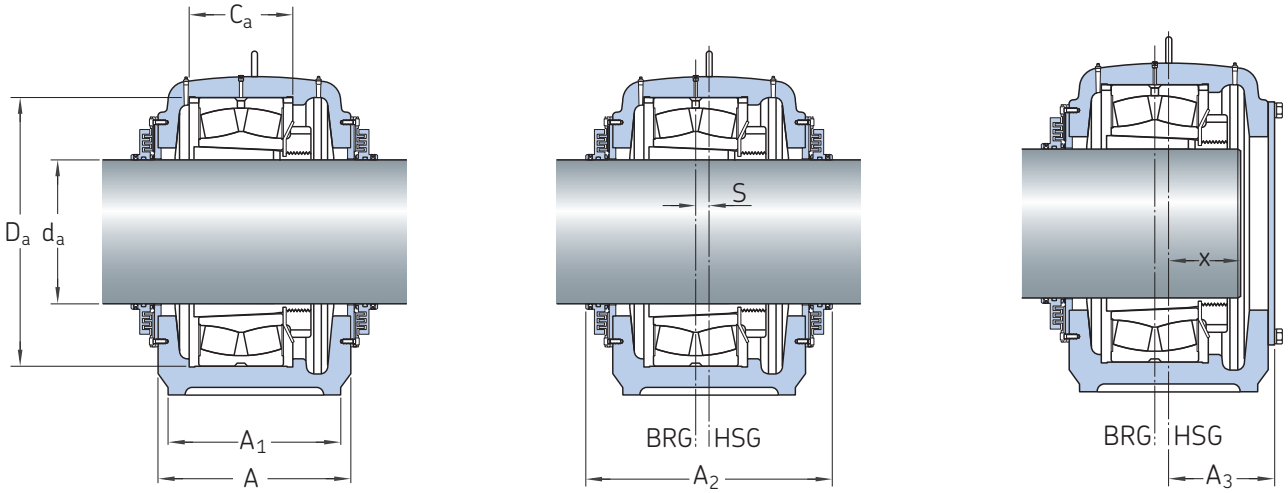


Shaft diameter	Dimensions																Mass	
																	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	s	Xmin	Xmax		
mm				mm													kg	
320	400	350	220	580	705	360	70	700	240	830	68	52	M42	30	142	167	550	860
340	400	350	220	600	705	360	70	700	190	830	68	52	M42	30	146	173	500	830
360	446	380	240	620	765	390	75	760	280	880	68	52	M42	35	144	168	775	1130
380	435	380	240	650	765	390	75	760	280	880	68	52	M42	35	153	183	700	1080
400	470	400	255	700	850	440	80	810	280	940	68	52	M42	35	172	203	895	1380
410	470	400	255	700	850	440	80	810	280	940	68	52	M42	35	172	203	800	1340
430	510	440	275	760	920	470	85	880	310	1040	80	60	M48	35	185	208	1125	1840
450	510	440	275	760	920	470	85	880	310	1040	80	60	M48	35	189	208	1125	1800
470	540	470	313	830	990	500	95	925	325	1040	92	68	M56	35	219	242	1156	2200

Premium Heavy-Duty Range 320 - 380 mm shaft SDD 31 SMS series (Alternative XL range)

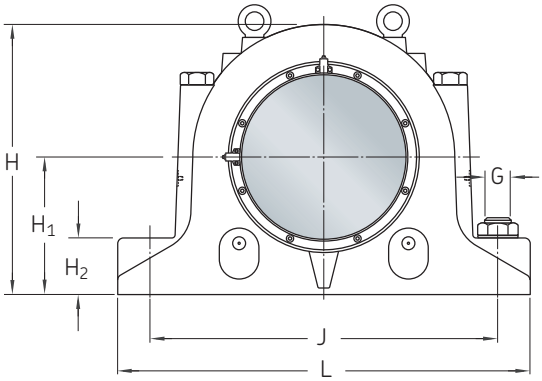
3.3.5 Large SDD 31 series plummer block housings for bearings on an adapter sleeve

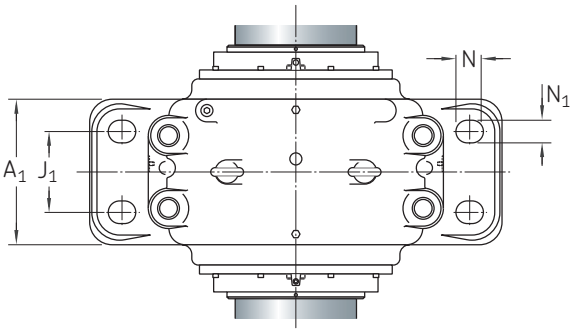
d_a **320-380** mm



Shaft diameter	Housing	Appropriate parts					
		Bearing	Adapter sleeve	Locating ring	Seals	End cover	Width incl. seals
d_a							A_2
mm	–	–					mm
320	**SDD 3168 SMS.AU**	23168-2CS5K/VT143	OH 3168 HE	FRB 10/580	TK 68 B	ETV 505/485/8	490
340	**SDD 3172 SMS.AU**	23172-2CS5K/VT143	OH 3172 HE	FRB 10/600	TK 72 B	ETV 525/505/8	500
360	**SDD 3176 SMS.AU**	23176-2CS5K/VT143	OH 3176 HE	FRB 10/620	TK 76 B	ETV 545/525/8	512
380	**SDD 3180 SMS.AU**	23180-2CS5K/VT143	OH 3180 HE	FRB 10/650	TK 80 B	ETV 565/545/8	535

[1] Housing mass includes housing body only
[2] Assembly mass includes housing body, seals, bearing and sleeve.



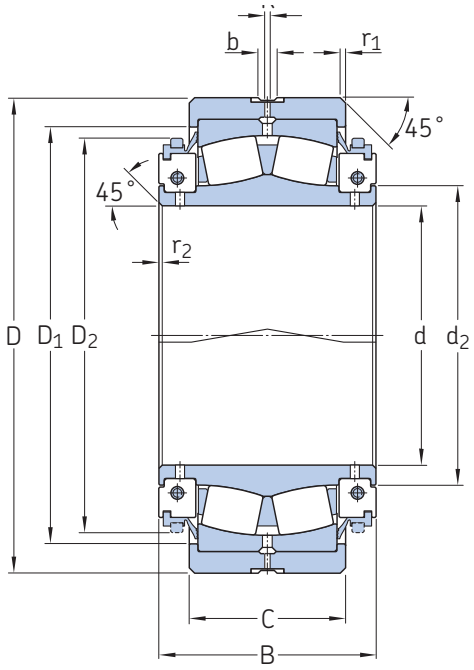


Shaft diameter	Dimensions																Eye bolt	Mass	
																	acc. To DIN 580	Housing [1]	Assembly [2]
d_a	A	A_1	A_3	D_a	H	H_1	H_2	J	J_1	L	N	N_1	G	S	Xmin	Xmax			
mm				mm														kg	
320	380	380	220	580	670	340	120	840	240	965	70	52	M42	25	147	172	M30	420	715
340	390	390	220	600	720	360	130	890	255	1040	77	60	M48	22	154	181	M36	584	895
360	402	400	240	620	750	380	135	980	255	1120	85	67	M56	22	157	181	M36	644	967
380	424	420	240	650	790	400	140	1050	270	1245	95	75	M64	22	165	196	M42	700	1075

SKF Cooper Split Spherical Roller Bearings

3.4.1. SKF Cooper Split Spherical Roller Bearings

d_a **240-450** mm



Shaft diameter

d_a	D	B	C	d_2	D^1	D^2	b	K
mm	–	–					mm	
240	**440**	144	200	277	386	365	16	9
260	**460**	146	200	300	421	396	16	9
280	**500**	160	220	321	446	422	16	9
300	**540**	176	230	346	482	452	22	9
320	**580**	190	254	370	522	482	22	12
340	**600**	192	262	394	553	508	22	12
360	**620**	194	262	415	576	534	22	12
380	**650**	200	274	435	592	552	22	12
400	**700**	224	292	455	632	575	22	12
410	**720**	226	292	455	632	575	22	12
430	**760**	240	306	484	682	628	22	12
450	**790**	248	310	508	700	643	22	12

Shaft diameter	Designations		Housing		Speed Rating		Basic load ratings		Fatigue load limit
	open	sealed	SNL/SDD	SDJD	Limiting speed sealed	unsealed	dynamic	static	
d Shaft diameter							C_r	C_o	C_u
mm									
240	231S240M	231S240M-2SRS	SNLD 3152/VZ2N7	-	170	510	1675	2885	246
260	231S260M	231S260M-2SRS	SNLD 3156/VZ2N7	-	155	455	2120	3705	307
280	231S280M	231S280M-2SRS	SNLD 3160/VZ2N7	-	145	455	2140	3805	311
300	231S300M	231S300M-2SRS	SNLD 3164/VZ2N7	-	135	410	2604	4670	372
320	231S320M	231S320M-2SRS	SDD 3168 SMS.AU	SDJD 3168/VZ2N9	125	385	3041	5530	432
340	231S340M	231S340M-2SRS	SDD 3172 SMS.AU	SDJD 3172/VZ2N9	120	340	3582	6560	502
360	231S360M	231S360M-2SRS	SDD 3176 SMS.AU	SDJD 3176/VZ2N9	115	340	3638	6710	506
380	231S380M	231S380M-2SRS	SDD 3180 SMS.AU	SDJD 3180/VZ2N9	105	340	3546	6555	489
400	231S400M	231S400M-2SRS	-	SDJD 3184/VZ2N9	105	320	3790	7075	521
410	231S410M	231S410M-2SRS	-	SDJD 3188/VZ2N9	105	320	3790	7075	521
430	231S430M	231S430M-2SRS	-	SDJD 3192/VZ2N9	95	295	4791	8990	648
450	231S450M	231S450M-2SRS	-	SDJD 3196/VZ2N9	90	290	4853	9260	659

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