

SKF



SKF Explorer
sealed spherical roller bearings



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SKF Explorer sealed spherical roller bearings

- environmentally friendly units for longer life

Sealed spherical roller bearings are characterised by several valuable properties. They are:

- Sealed at both sides with rubbing seals, which retain grease in the bearing
- Protected against contamination and moisture
- Ready-to-mount and normally maintenance-free
- Not affected by normal angular misalignment and shaft alignment errors

- Capable of carrying heavy loads
- Due to the integral seals and the incorporated grease fill, they are able to:
 - Allow simpler and space saving bearing arrangements, thus saving total costs
 - Provide long service life and high reliability with minimal maintenance requirements

Of particular and ever-increasing importance is that sealed spherical roller bearings are environmentally friendly and conserve resources.

Sealed spherical roller bearings are especially ideal for bearing positions where, because of limited space or for cost reasons, sufficiently effective external seals cannot be provided.

Why sealed spherical roller bearings from SKF?




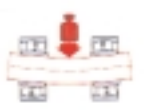
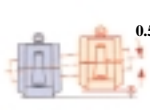

Quite simply because of the expertise behind the efficient seals.

In 1919, SKF invented the spherical roller bearing. SKF has continued to further develop and refine the design, including the way it is sealed. The best proof of the total quality of SKF spherical roller bearings is their success. Twice as many SKF spherical roller bearings

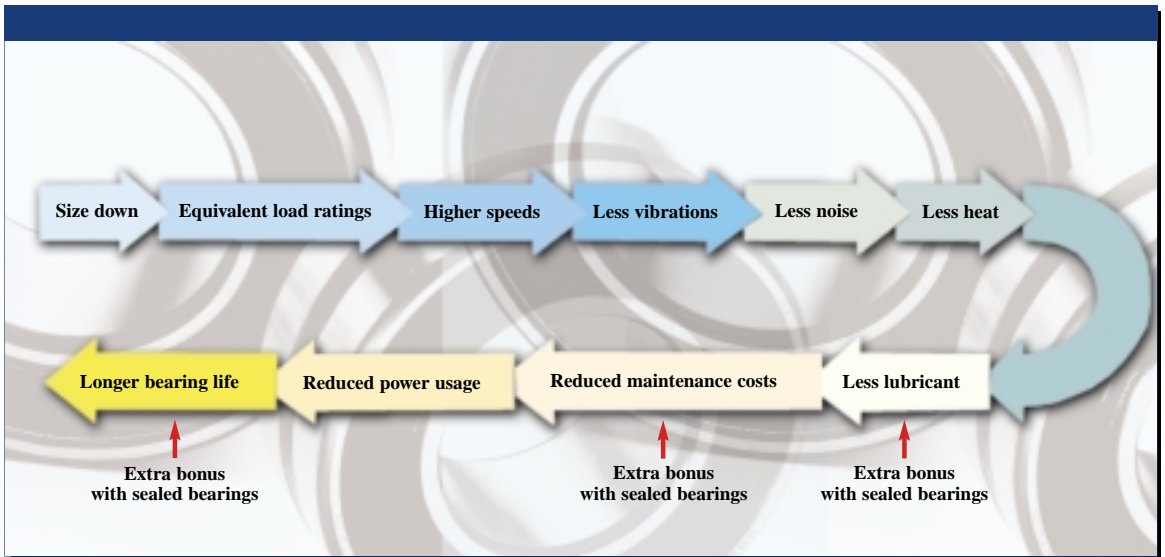
are used today as those of any other bearing manufacturer.

SKF spherical roller bearings are state-of-the-art products. They are the subject of a continuous improvement process designed to further enhance performance and reliability, with the aim of conquering new and even more demanding applications.

The development of the sealed spherical roller bearing has followed the SKF tradition. High demands on sealing efficiency and operational reliability has been fulfilled. The seals have been extensively tested both in the laboratory and in the field, and have proven their reliable performance and efficiency.

| Benefits | Benefits | Durable | Forgiving |
|---|--|--|---|
| <p>The use of SKF Explorer sealed spherical roller bearings will provide the following benefits:</p> <ul style="list-style-type: none"> ● Very high combined load carrying capacity Both radial and axial, as the internal geometry of the bearings corresponds to that of the open (unsealed) bearings. ● Wide range of applications Two different seal variants and two different greases can be supplied - for normal and for high operating temperatures. | <ul style="list-style-type: none"> ● Long service life Proven design. Appropriate greases and efficient sealing make this possible. ● Minimum maintenance requirements Highly efficient seals keep contaminants and moisture out, and the grease in. ● Better for the environment The bearings are normally maintenance-free. This reduces grease consumption and conserves resources. |  <p>Solid contaminants excluded</p>  <p>Moisture cannot enter</p>  <p>Always operationally reliable</p> |  <p>Rugged</p>  <p>Tolerant to alignment errors</p>  <p>Resistant to elevated temperatures</p> |

SKF Explorer benefit chain



Environmentally friendly

SKF features

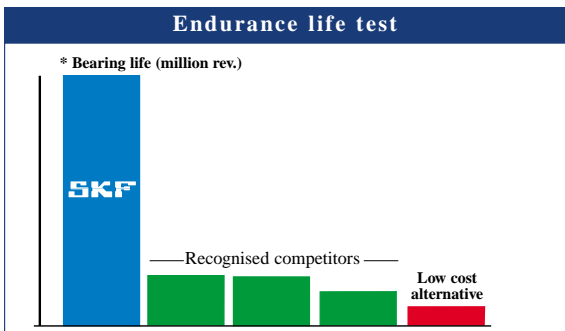
Brand Designation

Country of origin Year of manufacture

The diagram shows a circular bearing with the text 'SKF EXPLORER' at the top, 'BS2-2215-2CS' on the right, 'GT.BRITAIN' at the bottom, and 'Z' on the left. Below the circle, 'Country of origin' and 'Year of manufacture' are indicated.

- Easier to handle, maintaining alignment during assembly.
- Ensures bearings are assembled uncontaminated.
- Reduced lubricant consumption.

The illustration shows a worker in purple overalls standing next to a large barrel and a smaller barrel. A green arrow labeled 'Sealed' points left, and a red arrow labeled 'Open' points right. The worker is holding a bearing, and there is a pile of dark material (possibly dirt or oil) on the floor.



*Refer to pages 18-19 in brochure 5100 E

A wide assortment

The range of SKF Explorer sealed spherical roller bearings comprises bearings with cylindrical bore for shaft diameters of 25 to 220mm, from seven different bearing series. Bearings with tapered bore can be produced to special order.

Sealed spherical roller bearings, depending on series and size, are produced in the E or the CC design. Sealed bearings of the CC design generally have the same boundary dimensions as the corresponding open bearings. Most E designated bearings have extended widths.

The seals have been specially developed for spherical

roller bearings and effectively prevent contaminants from penetrating to the rolling contact area. This is not only true in operation, but also during bearing installation, resulting in a long service life.

Two particularly suitable greases have been chosen for the bearings. One is an SKF grease recommended for normal operating temperatures with nitrile seals. The other, a special high-temperature grease, is used in combination with fluoro rubber seals for high-temperature operation.

Unique design features

The design of SKF Explorer sealed spherical roller bearings corresponds to that of the open (unsealed) standard bearings, and incorporates the same unique design features. These include:

- Self-guiding rollers - an SKF patent
- Floating guide ring between the two rows of rollers
- Bearing components dimensionally stabilised for high temperatures
- Window-type steel cages

Additional features of the SKF Explorer sealed spherical roller bearings include:

- Double-lip, sheet steel reinforced seals and
- A grease appropriate to the operating conditions

The result is a ready-to-mount, lubricated-for-life bearing unit.

The advantages include a simplification of the bearing arrangement design, and the option to downsize the arrangement. Relubrication equipment is not required. There is no waste grease in cooling water systems, and there are no disposal costs for used grease.

Rule of thumb

Sealed bearings do not need relubrication when the temperatures do not exceed 70°C (158°F) and speeds are not more than 50% of the speed rating in the bearing catalogue.

Benefits of sealed spherical roller bearings

Design



E design

- Two window type steel cages centred on the inner ring and a floating guide ring between the two roller rows.



CC design

- Two window type steel cages, a flangeless inner ring and a floating guide ring between the two roller rows. The guide ring, which is centred on the inner ring, also guides the cages.

Capacity



• **Very high load capacity**
The rollers position themselves automatically so that the load is evenly distributed over the whole length. This results in very high load carrying capacity



- **No edge stresses**
Because of the special roller profile there is virtually no danger of stresses

Lubrication



- Bearings with nitrile rubber seals for normal operating temperatures and reasonable speeds are lubricated with an SKF lithium base grease with good rust inhibiting properties. The bearings for high temperature use have fluoro rubber seals and are lubricated with a high temperature polyurea base grease.



- **Low friction and low heat generation**
The patented self guidance of the rollers and the floating guide ring, which guides the rollers axially through the load zone, keep friction and heat generation down.

Protection



- **Well protected**
The bearings have a sheet steel reinforced double-lip seal at each side. The seals are made of nitrile rubber or fluoro rubber. The nitrile rubber seals are for normal operating conditions and can operate at high speeds. The fluoro rubber seals are for high temperatures and primarily intended for low speed operation.



- **Lightweight, high strength cages**
The window type steel cages are light but very stable and wear-resistant. They take up very little space so that an ample supply of grease can be contained in the bearing.

Typical sealed spherical roller bearing applications

If you're replacing a conventional bearing with an SKF Explorer sealed spherical roller bearing, the SKF Explorer bearing will run quieter and longer - much longer than the bearing you just replaced.

If you buy new machinery that has been downsized, with an SKF Explorer bearing you'll see the benefits immediately. Your new machine will run quieter and cooler with less vibration. It will consume less power, require less maintenance and run longer.

So, the next time you're replacing a bearing, or specifying the bearings for a new piece of equipment, ask for SKF Explorer sealed spherical roller bearings.



Conveyor belt stacker equipment

Increased load carrying capacity, higher speed and longer bearing life in upgraded corrugating machines, with sealed spherical roller bearings.



Screw pumps

The use of sealed spherical roller bearings led to considerable cost savings - e.g. reduced maintenance costs and eliminated grease and grease pump costs.



Cable car assembly

Safe, strong and reliable bearings that require a minimum of maintenance are especially appreciated in applications where maintenance is difficult and where the security regulations are strict.



Material handling

The possibility to standardise a more compact bearing arrangement with a longer service life was the most important advantage for this slimmed storage system.



Industrial robots

SKF Explorer sealed spherical roller bearings made the use of extra seals and grease in stock unnecessary.



Cranes

The distance between the bearings in the wire drum of this process crane was reduced by 40% and the shaft diameter by 20%. All thanks to the use of sealed spherical roller bearings.



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INVESTOR IN PEOPLE



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Product range

- UK (open and sealed)
- UK (open)
- Range of sealed spherical roller bearings - Sweden
- + Total range of small/medium size bearings (open + sealed) Sweden

| Series Size | 213 | 222 ① | 223 | 230 | 231 | 232 | 239 | 240 | 241 |
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① Wider series (Not ISO Std.)

② Also available with tapered bore