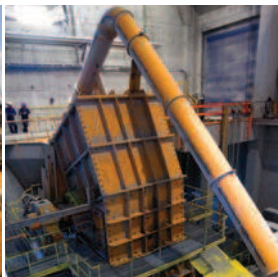


Mining, mineral processing and cement industries

Solutions for mills and crushers



Mining and cement plant operators face a major challenge: keeping up a high-quality production flow while safeguarding equipment that operates in some of the harshest conditions in industry such as when encountering dust, shock loads and vibration. Whether it involves bearings, sealing solutions, lubrication systems, or specific services, SKF designs and develops innovative solutions for the mining, mineral processing and cement sector, to boost operational performance and reduce environmental impact.

Wear and impact loads

Upgraded SKF Explorer spherical roller bearings

A new heat treatment process for steel enables the bearing to achieve a service life **up to twice of that experienced with standard SKF Explorer bearings**. For severely contaminated applications, upgraded SKF Explorer spherical roller bearings are lubricated with high-quality grease and fitted with contact seals for greater protection.

- Both bearing and packaging are identified with WR designation
- Wear-resistant
- Cuts down maintenance
- Reduces grease consumption and disposal costs
- Extends operating time

Grid and gear couplings

In response to impact loads, SKF grid couplings deliver high torque and withstand all kinds of forces by **reducing vibration levels by up to 30%**.

With their high load capacity and wide range of bore sizes, SKF gear couplings offer great design flexibility.

- Up to 555 000 Nm torque and maximum 495 mm bore
- Reduced peeling and radial play
- Extremely reliable, high-quality components

SKF Xtra Power belts

Designed to deliver **up to 40% extra torque/power**. Their high-strength casing withstands high dynamic loads without loss of flexibility.

Combined with a balanced, phosphated SKF pulley, SKF's Xtra Power belts provide **excellent resistance to wear and abrasion**.

- Up to 97% drive efficiency
- High-performance coating reduces pulley groove wear
- Excellent impact load resistance

Upgraded SKF Explorer spherical roller bearings

Grid and gear couplings



Temperature variation and inadequate lubrication

CARB toroidal roller bearings

The CARB bearing is **self-aligning and is used as a non-locating bearing. It accommodates both shaft misalignment and axial displacement.** The CARB bearing also withstands thermal shaft expansion caused by temperature changes, without giving rise to internal axial loading and increased friction.

- Interchangeable with spherical roller bearings in the non-locating position
- Lowers bearing operating temperature
- Longer lubrication intervals

Metal-framed moulded seals, machined to large diameters

The **HDS metal-clad seal** delivers outstanding performance in humid, abrasive and contaminated conditions. Suited to lubrication with grease, it can be used as secondary sealing or for excluding dust. Available in solid or split format, the rubber-reinforced **HSS seal** offers an alternative to fabric or synthetic fibre seals. The **large-diameter radial seals** (over 203 mm) accommodate a wide range of speeds and temperatures.

- Comprehensive range
- Materials for extreme conditions: fluorinated rubber, polyurethane
- Adaptable to application constraints
- On-site solution analysis
- 'Just-in-time' availability for machined seals up to 600 mm

KFG series piston pump unit

Designed to carry grease or fluid grease, KFG series pump units ensure **accurate, dependable metering and rate of lubricant delivery to all points, while machinery is running.**

- Durable component design
- Safe, reliable, and versatile
- Reduces lubricant consumption

SKF LGEP 2 bearing lubricant

This is a high performance grease especially for **severe operating conditions** such as extreme pressure, high loads, and heavy vibration.

- -20 to +110 °C
- High mechanical stability
- Exceptional anti-corrosion properties
- Outstanding performance under extreme pressure (EP)

CARB toroidal roller bearing seal
G-ECOPUR double-lip seal



Piston pump unit – SKF KFG series SKF
LGEP 2 grease



Optimising equipment availability

SNL housings

SNL housings help get the best out of bearing service life while reducing maintenance. They are designed to **facilitate mounting in a variety of application configurations**. Made from cast iron for greater strength, SNL housings can accommodate spherical roller bearings, self-aligning ball bearings, and CARB toroidal roller bearings.

- High load capacity
- Quick to mount and dismount
- Long service life
- Lower maintenance costs
- Longer relubrication intervals

Visual analysis of the causes of bearing failure

Replacing a damaged bearing may get equipment running again, but it does not resolve the cause of the problem. **Analysing the causes of failure helps determine how damage arises**.

These processes correspond to failure modes recognizable from characteristic changes in the surface features of the bearing components. Determining the causes of failure helps put in place corrective actions that are appropriate and effective. Specific services, such as metrology checks, lubricant analysis and microscopic studies, can support and complement visual analysis.

- Diagnostics feasible from early symptom stage (vibration, noise, heating, endoscopy, etc.)
- Measurable assessment criteria
- Preparation of diagnostics and support for implementation

TKBA 40 belt alignment tool

Pulley alignment faults are the most common cause of unscheduled downtime for belt-driven equipment. SKF's high-precision TKBA 40 tool **aligns V-belt pulleys right into the grooves** using its V-guides and powerful magnets.

- Longer service life for bearings and belts
- Reduced friction and wear
- Lower energy consumption

Hydraulic nuts

Use of SKF HMV series hydraulic nuts make it possible to apply **uniformly high forces to simplify the installation of tapered bore bearings**. When dismounting adapter sleeves, for instance when oil is pumped into the nut, the piston is pushed out, releasing the sleeve **effortlessly**.

- Shafts from 50 to 1 000 mm in diameter
- Piston seals and lubricants provided



Enhancing operational performance and reliability

Condition monitoring

The more critical the equipment, the greater the potential production losses. To keep your plant running with high reliability and performance, SKF provides condition monitoring tools and technology for carrying out “health checks” on equipment as it is running.

To this end, SKF experts conduct vibration diagnostic checks, power and lubricant analyses, and apply thermography and endoscopy techniques; all intended to keep your equipment in good working order.

- Planning maintenance downtime
- Identifying equipment that needs attention
- Avoiding unnecessary downtime and systematic maintenance costs
- Reducing energy consumption

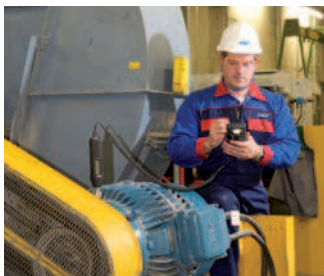


SKF Copperhead fault detection system

Created exclusively for the mining, mineral processing and cement industries, SKF's Copperhead detection system monitors critical equipment by pinpointing latent faults at an early stage. Easy to use, SKF Copperhead consists of a vibration sensor and a transmitter that emits a signal proportional to the vibrations of the machinery.

The system thus helps to identify failures before they occur and before they cause unscheduled downtime. Hence, it facilitates planning for maintenance and repair work.

- Enhances safety for the maintenance staff
- Reduces maintenance and repair costs
- Optimizes scheduled downtime
- Reduces maintenance costs



SKF Copperhead system



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