

# SKF



SKF Explorer  
spherical roller bearings



# SKF Explorer spherical roller bearings

## - often copied, never bettered

The spherical roller bearing was invented by SKF and we remain the worldwide technological leader, with the introduction of SKF Explorer.

The best confirmation of the total quality of SKF spherical roller bearings is their dominating market position. Demand for SKF is twice as large as any other bearing manufacturer.

Available in sizes from 20 to 1,800mm bore diameter; together with a sealed version available from 35 to 220mm bore diameter.





### Standard features

- Symmetrical rollers
- Floating guide ring
- Metallic cages
- Self-guiding rollers - an SKF patent
- Special roller profile
- Tough and dimensionally stable components

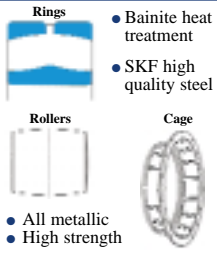

### Application benefits

- Up to three times longer life
- Higher load ratings
- Reduced noise
- Lower maintenance costs
- Increased machine uptime
- Option to power-up or size-down









## Robust design

SKF features	Your benefits	Low cost alternative	The real cost to you
 <p>CC design      E design</p> <ul style="list-style-type: none"> <li>• Roller self-adjustment always gives symmetric load distribution along the rollers under all load and application conditions.</li> <li>• SKF patented roller self guidance, the CC principle, greatly improves roller control and gives lower friction.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Tolerant design gives maximum bearing life under any service condition</b></li> <li>• <b>Lower operating temperature gives longer lubricant life</b></li> <li>• <b>Higher speeds</b></li> </ul>	 <p>1919 - B</p> <ul style="list-style-type: none"> <li>• Asymmetrical rollers cause additional load and friction at the central flange contact.</li> </ul>  <p>c1930 - MB</p> <ul style="list-style-type: none"> <li>• Integral central flange makes roller self adjustment impossible even with symmetrical rollers.</li> </ul>  <p>c1951 - C</p> <ul style="list-style-type: none"> <li>• Mimic designs which lack the understanding and accuracy to function correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Frequent bearing failures</b></li> <li>• <b>Unpredictable performance</b></li> <li>• <b>Poor reliability</b></li> <li>• <b>Higher maintenance costs</b></li> <li>• <b>Lost production</b></li> <li>• <b>Lost customers</b></li> </ul>

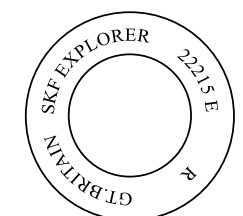
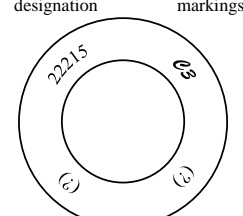
## Tough materials

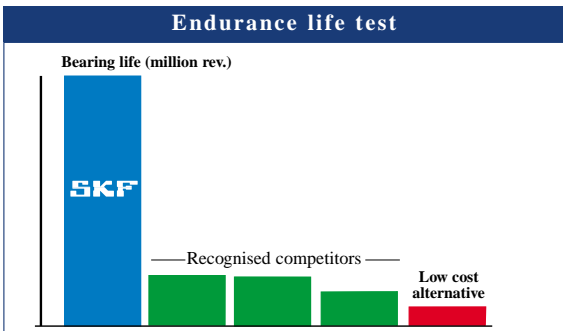
SKF features	Your benefits	Low cost alternative	The real cost to you
 <p>Rings      Rollers      Cage</p> <ul style="list-style-type: none"> <li>• Bainite heat treatment</li> <li>• SKF high quality steel</li> <li>• All metallic</li> <li>• High strength</li> </ul>	<ul style="list-style-type: none"> <li>• <b>High temperature stability</b></li> <li>• <b>High loads</b></li> <li>• <b>Durability</b></li> <li>• <b>Crack resistant</b></li> <li>• <b>Reliable</b></li> </ul>	 <p>Rings      Rollers</p> <ul style="list-style-type: none"> <li>• Poor steel quality</li> <li>• Martensitic heat treatment</li> <li>• Poor manufacturing tolerances</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Unsuitable for heavy duty conditions</b></li> <li>• <b>Increased bearing failure</b></li> <li>• <b>Increased cracking and catastrophic failure</b></li> <li>• <b>Higher replacement costs</b></li> </ul>

# High quality

SKF features	Your benefits	Low cost alternative	The real cost to you
<b>Rings</b> <ul style="list-style-type: none"> <li>High accuracy</li> <li>High stability</li> </ul> 	<ul style="list-style-type: none"> <li><b>Durable</b></li> <li><b>High load</b></li> <li><b>Precision tolerances</b></li> </ul>	<b>Rings</b> <ul style="list-style-type: none"> <li>Poor form</li> <li>Poor finish</li> <li>High ovality/waviness</li> <li>Martensitic steel</li> </ul> 	<ul style="list-style-type: none"> <li><b>Poor load distribution</b></li> <li><b>Low bearing life</b></li> <li><b>Ring cracking</b></li> </ul>
<b>Rollers</b> <ul style="list-style-type: none"> <li>Accurate form/finish</li> <li>Fine grading</li> </ul> 	<ul style="list-style-type: none"> <li><b>Low noise</b></li> <li><b>Low friction</b></li> <li><b>Low wear</b></li> </ul>	<b>Rollers</b> <ul style="list-style-type: none"> <li>Poor grading (&gt;10µm)</li> <li>Poor finish</li> </ul> 	<ul style="list-style-type: none"> <li><b>Poor lubrication</b></li> <li><b>High wear</b></li> <li><b>High friction</b></li> <li><b>Reduced speeds</b></li> </ul>
<b>Guide ring</b> <ul style="list-style-type: none"> <li>Optimum contact shape</li> </ul> 	<ul style="list-style-type: none"> <li><b>Low friction</b></li> <li><b>Low wear</b></li> <li><b>Long relubrication intervals</b></li> </ul>	<b>No guide ring</b> <ul style="list-style-type: none"> <li>No guide/ring</li> <li>Fixed flanges</li> <li>Poor roller contact</li> </ul> 	<ul style="list-style-type: none"> <li><b>Poor load distribution</b></li> <li><b>High friction</b></li> <li><b>High wear</b></li> </ul>
<b>Cages</b> <ul style="list-style-type: none"> <li>High strength</li> <li>Window design</li> <li>Hardened (E design)</li> <li>Smooth</li> <li>Phosphated</li> </ul> 	<ul style="list-style-type: none"> <li><b>Durable</b></li> <li><b>Wear resistant</b></li> <li><b>Fatigue resistant</b></li> </ul>	<b>Cages</b> <ul style="list-style-type: none"> <li>Brass finger cage</li> <li>Poor finish</li> <li>Poor tolerances</li> </ul> 	<ul style="list-style-type: none"> <li><b>High friction/wear</b></li> <li><b>Frequent bearing failures</b></li> <li><b>Increased replacement cost</b></li> </ul>

# Make the difference

SKF features	Your benefits	Low cost alternative	The real cost to you
<b>Brand</b> <b>Designation</b>  <b>Country of origin</b> <b>Year of manufacture</b>	<ul style="list-style-type: none"> <li><b>Traceability</b></li> <li><b>Known source</b></li> <li><b>Guaranteed quality</b></li> <li><b>Guaranteed after-sales support</b></li> </ul>	<b>ISO designation</b> <b>Spurious hand markings</b>  <b>Unknown/variable source</b> <b>Unknown date of manuf.</b>	<ul style="list-style-type: none"> <li><b>Commodity supplier</b></li> <li><b>Poor quality product</b></li> <li><b>Second class product</b></li> <li><b>Variable source (eg East European)</b></li> </ul>



# Benefits, performance and endurance



Over the years, manufacturing and materials research, together with process improvements have enabled machine components to get smaller without decreasing power output. At each milestone in the development, engineers were given a choice: either downsize the application or increase power output.

SKF Explorer bearings represent the next significant improvement in performance. But this is not just a short hop to the next level. This is a quantum leap in bearing performance.

The higher load carrying capacity of SKF Explorer spherical roller bearings opens up a new world of possibilities.

If you size down with an SKF Explorer bearing not only will you be able to reduce noise, vibration and warranty costs, but you'll also be able to build value into each component by increasing speed, improving service life, reducing heat and power consumption, together with controlling your customers' maintenance costs.

Power up or size down - the option you choose will depend on whether you're developing a new design or making improvements within existing parameters.

## Increase service life of existing machines

Don't need to increase power output? Use an SKF Explorer bearing of equal size to:

- Increase life
- Increase machine uptime
- Reduce warranty costs
- Reduce noise

## Sizing down of new machines

Use a smaller SKF Explorer bearing to:

- Reduce overall dimensions to save on material costs and weight
- Achieve higher speeds without external cooling
- Reduce friction and energy consumption
- Reduce lubricant usage

## Increase power output of existing machines

Avoid costly redesign by using an SKF Explorer bearing of equal size to:

- Increase power density (output)
- Attain higher load rating

## Powering up of new machines

Use a lower profile SKF Explorer bearing with the same outside diameter to:

- Increase shaft size with the same housing bore
- Achieve a stiffer design

# Typical applications for SKF Explorer bearings

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If you're replacing a conventional bearing with an SKF Explorer 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 down-sized, 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 spherical roller bearings.



## **Mining and construction equipment**

*Advanced bearing design and superior sealing technology make SKF Explorer bearings ideal for tough environments.*



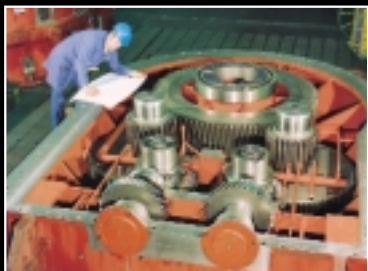
## **Papermaking equipment**

*For papermaking equipment, replacing existing bearings with SKF Explorer bearings will increase uptime and reduce overall maintenance costs.*



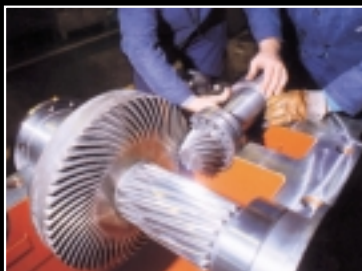
## **Pumps**

*Replacing traditional bearings in water and hydraulic pumps with SKF Explorer bearings will reduce maintenance costs and extend service intervals.*



## **Gearboxes**

*Existing gearbox designs can be upgraded with SKF Explorer bearings, providing a 15 to 25% higher power rating.*



## **Pinion gears**

*SKF Explorer bearings allow the size of the bearing on the input shaft to be down-sized. The new bearing runs cooler and reliability is enhanced.*



## **Fans**

*When traditional bearings are replaced with SKF Explorer bearings, fan applications run quieter and achieve a longer service life.*



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INVESTOR IN PEOPLE



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## Related products, systems and solutions



### Asset Efficiency Optimisation

*AEO recognises the importance of treating machinery and equipment as plant assets. SKF takes a system approach to optimising these customer assets.*



### Total Shaft Solutions

*Decades of troubleshooting experience in virtually every industrial sector, enables SKF to provide solutions that improve machine performance and productivity.*



### Technical consultancy

*SKF provides sophisticated calculation, design and product development services to industry.*



### Sealed bearings

*SKF Explorer sealed spherical roller bearings are designed to fulfil high demands on sealing efficiency and operational reliability under difficult environmental conditions.*



### ConCentra roller bearing units

*Plummer block type mounted bearing units with an SKF Explorer spherical roller bearing on a special adapter sleeve are greased, sealed and ready to install as delivered.*



### Bearing housings

*SKF offers a comprehensive range of high quality standard and custom housings designed to accommodate the various demands placed on the bearings which they house.*



### Lubricants

*SKF greases have been specially developed for rolling bearings. The range includes fifteen environmentally friendly greases and covers practically all application requirements.*



### Mechanical tools

*A range of specialist bearing mounting and dismantling tools designed to help reduce bearing failures, thereby increasing plant performance and profitability.*



### Condition monitoring

*A comprehensive range of solutions to measure all the important parameters, including temperature, speed, noise, oil condition, shaft alignment, vibration and bearing condition.*