SKF Explorer bearings

The world standard for endurance and performance

The Power of Knowledge Engineering


SKF EXPLORER
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SKF

Performance redefined

Imagine a bearing so advanced that SKF had to adapt the factors in the ISO formula to accurately calculate bearing life. A bearing so durable it has changed the way industrial facilities schedule maintenance. A design so advanced it has opened a new world of options for engineers creating the next generation of industrial machinery.

SKF engineers did.

And the result is SKF Explorer bearings: a performance class of bearings that has redefined the performance limit for rolling bearings.

These bearings, which run cooler, smoother and longer, can contribute to a healthier bottom line by reducing the need for maintenance and increasing productivity. They also can contribute to reducing environmental impact by enabling downsizing and reducing both lubricant and energy consumption.

Re-engineered for optimum performance

Customers wanted a new level of bearing performance that would meet the needs of the most demanding applications. As a result, an international team of scientists and engineers at the SKF Engineering & Research Centre in the Netherlands spent years searching for answers. Team members, representing bearing design, tribology, metallurgy, lubrication and manufacturing pooled their research and expertise in every critical area to maximize the service life of the bearing.

The result: a standard of excellence in both bearing performance and precision manufacturing that is still unmatched in the marketplace.

Optimized internal geometry

Using proprietary software, SKF engineers analyzed the interrelationship of the rolling elements, raceways and cage, and devised methods to optimize the internal geometry of the bearing to reduce friction, wear and heat generation, and to enable SKF Explorer bearings to withstand heavier axial and/or radial loads.

Optimized rolling elements

SKF Explorer rolling elements are manufactured to such close tolerances that they optimize load distribution and provide a smoother running bearing with reduced vibration levels.

Enhanced cages

SKF Explorer cages have been enhanced to improve guidance of the rolling elements and optimize the effects of the lubricant. These improvements contribute to reduced operating temperatures and improved lubrication to extend grease life and bearing service life.

Advanced surface finish

The surface topography of SKF Explorer rolling elements and raceways has been optimized, through advanced processes, to create an outstanding combination of properties that reduce friction and enhance the formation of a hydrodynamic film. This maximizes the effects of the lubricant, while reducing heat generation and wear.

Extremely clean steel

With SKF Explorer bearings, quality starts at the most basic level, with steel that is extremely clean and has the lowest possible number of impurities. By using only steel that is highly homogeneous, SKF bearings have the same material strength throughout, without weak spots. It is this high-purity material that gives SKF Explorer bearings their exceptional strength and durability.

Unique heat treatment process

SKF has developed a unique heat treatment process to better control the hardness, toughness and dimensional stability of SKF Explorer bearings; all critical factors in applications where operating temperatures are high. The SKF process creates the optimal combination of hardness and dimensional stability. The combination improves wear resistance and provides better control of clearance or preload during operation.

The SKF Explorer advantage:

Performance that creates new possibilities.

Increase service life of existing designs

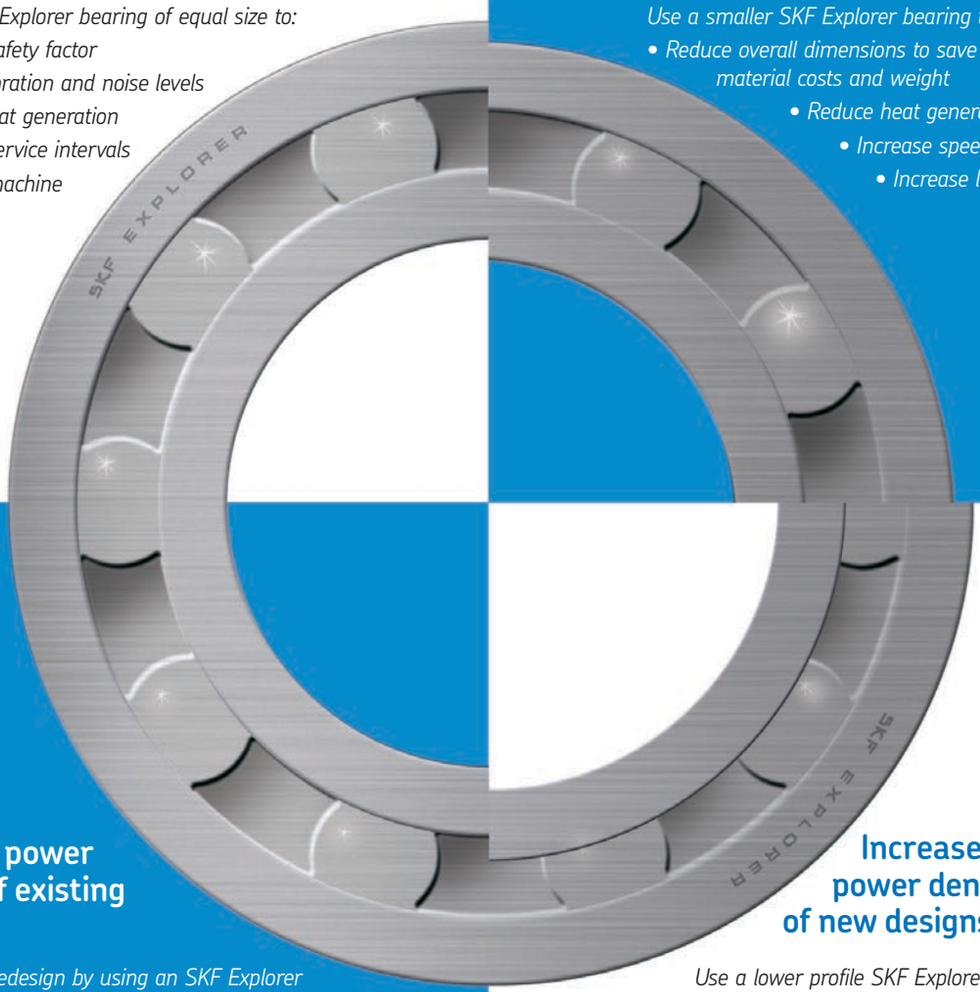
Use an SKF Explorer bearing of equal size to:

- *Increase safety factor*
- *Reduce vibration and noise levels*
- *Reduce heat generation*
- *Increase service intervals*
- *Increase machine uptime*

Maintain power output of new designs

Use a smaller SKF Explorer bearing to:

- *Reduce overall dimensions to save material costs and weight*
- *Reduce heat generation*
- *Increase speeds*
- *Increase loads*



Increase power output of existing designs

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

- *Increase power density (output)*
- *Increase speeds*
- *Increase loads*

Increase power density of new designs

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

- *Increase shaft size*
- *Achieve a stiffer design*
- *Operate at the same or higher speeds*

Building a stronger bottom line

By redefining the expectations for performance, SKF Explorer bearings also help industry redefine the potential for a stronger bottom line. That's because by reducing wear and friction, enhancing service life and increasing load carrying capability, SKF Explorer bearings contribute to operating savings, as well as profit potential, through:

- Enhanced productivity
- Reduced maintenance
- Decreased lubricant usage
- Reduced energy consumption

SKF and the environment

Preserving the world's resources is everybody's job, and SKF is committed to doing its part, from saving energy in its own factories, to developing energy saving products and solutions. Our BeyondZero initiative is a company-wide commitment to reducing negative and increasing positive environmental impacts. The ultimate goal is to use SKF Knowledge Engineering to create products so much more efficient that over their operating lives they will save more energy than it took to manufacture them. By significantly reducing friction as well as energy and lubricant consumption, SKF Explorer bearings meet this challenge.

Another example of the SKF commitment to sustainability is SKF Energy Efficient (E2) bearings, a new performance class of bearings that have been specially engineered and manufactured to reduce frictional moment by 30% or more beyond already efficient SKF standard bearings (with even greater reductions compared to other manufacturers' bearings). With potential application in many millions of machines – electric motors, pumps, conveyors and other low-to-normal load applications – SKF E2 bearings have the potential to make a significant contribution to global sustainability. In most cases, SKF E2 bearings run cooler compared to SKF standard bearings at equivalent loads and speeds, reducing lubricant use and potentially extending the life of components and the machine itself, resulting in reduced negative environmental impact.

See inserts for more details about SKF Explorer bearings.

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For more information,
contact your SKF representative
or Authorized Distributor.

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