



Bringing friction and CO₂ emissions down

Sealed SKF Explorer spherical roller bearings with optimized seals cut friction and elevator energy consumption



Environmental benefits

- Reduced CO₂ emissions
- Longer relubrication intervals
- Reduced grease consumption

In one gearless elevator traction motor, replacing two sealed SKF Explorer spherical roller bearings with the newly optimized design could cut up to 100 kg of CO₂ emissions every year.

SKF BeyondZero solutions can help reduce CO₂ emissions, preserve limited resources and protect the environment from the use and spread of toxic substances. For more details, including documentation of reduced environmental impact, visit [beyondzero.com](https://www.skf.com/beyondzero).

At work in some of the world's latest gearless traction machines, sealed SKF Explorer spherical roller bearings already support the space- and energy-saving aspects of these elevator motors.

New sealed SKF Explorer spherical roller bearings feature an optimized seal design that can help high-rise buildings cut energy consumption even further. Compared to the previous generation bearings, new sealed SKF Explorer spherical roller bearings reduce bearing friction by up to 20%.

Less friction, more savings

In terms of energy savings, friction reduction translates to significantly lower CO₂ emissions. For a typical gearless traction motor in a heavy-duty elevator, replacing two sealed SKF Explorer bearings with the newly optimized design could cut CO₂ emissions by up to 100 kg annually. Over the motor's 20-year lifecycle, that adds up to a two-ton reduction in CO₂ emissions.

The sealing friction reduction also reduces electricity bills. For a typical gearless traction elevator operating 1 300 hours per year, the new bearings with optimized seal design cut electricity use by 145 kWh, saving 20 € annually.

The sealed SKF Explorer spherical roller bearings can also extend relubrication intervals by up to two times, reducing grease consumption or even enabling relubrication-free solutions, further reducing the motor's environmental impact.



Sealed spherical roller bearings with improved performance

Cutting maintenance and energy use in gearless elevator traction motors

In high-rise building construction, space is at a premium and energy savings is always a goal. So manufacturers of elevators are moving to direct drive, gearless motor designs that enable higher speeds and greater energy efficiency in a more compact solution.

But new gearless designs also create a new challenge: with no gearbox and no gear oil, the bearings supporting the gear shaft have to be regularly lubricated – a difficult, costly and potentially hazardous proposition. As a result, many manufacturers are switching to sealed SKF Explorer spherical roller bearings, reducing or removing the need for relubrication.

Designed for heavy loads

Designed to accommodate very heavy radial and heavy axial loads in applications where misalignment or shaft deflection can occur, these sealed bearings could have a service life as long as the elevator's drive system itself – 20 years, depending on operating conditions. New sealed SKF Explorer spherical roller bearings meet application requirements for heavy loads, low noise levels, effective lubrication and protection against solid contaminants.

More environmentally friendly

Switching to sealed SKF bearings also yields other important benefits. In addition to the downsizing of the total system, reductions in friction and energy consumption make the application more environmentally friendly. Sealed-for-life bearings also cut maintenance costs and improve worker safety by eliminating the need to relubricate bearings in hard-to-reach places.

In addition to the features and benefits of all sealed SKF Explorer spherical roller bearings – from compact design, low noise and high load carrying capacity to misalignment accommodation and contamination protection – new sealed SKF spherical roller bearings have the following attributes:

Operational features

- Low friction seal design – up to 50% less seal friction
- Highly effective contacting seal
- Limiting speed up to twice as high as the previous design

Operational benefits

- Lower operating temperature
- Relubrication intervals up to twice as long compared to previous generation bearings
- Significant reductions in grease use
- Further reduction of maintenance needs
- Reduced risk of unplanned downtime



Sealed SKF Explorer spherical roller bearings with improved performance are identified by the designation suffix RS.

Example: BS2-2216-2RS/VT143

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