

SKF



SKF's new standard for
self-aligning bearing systems



We're ready
for the future



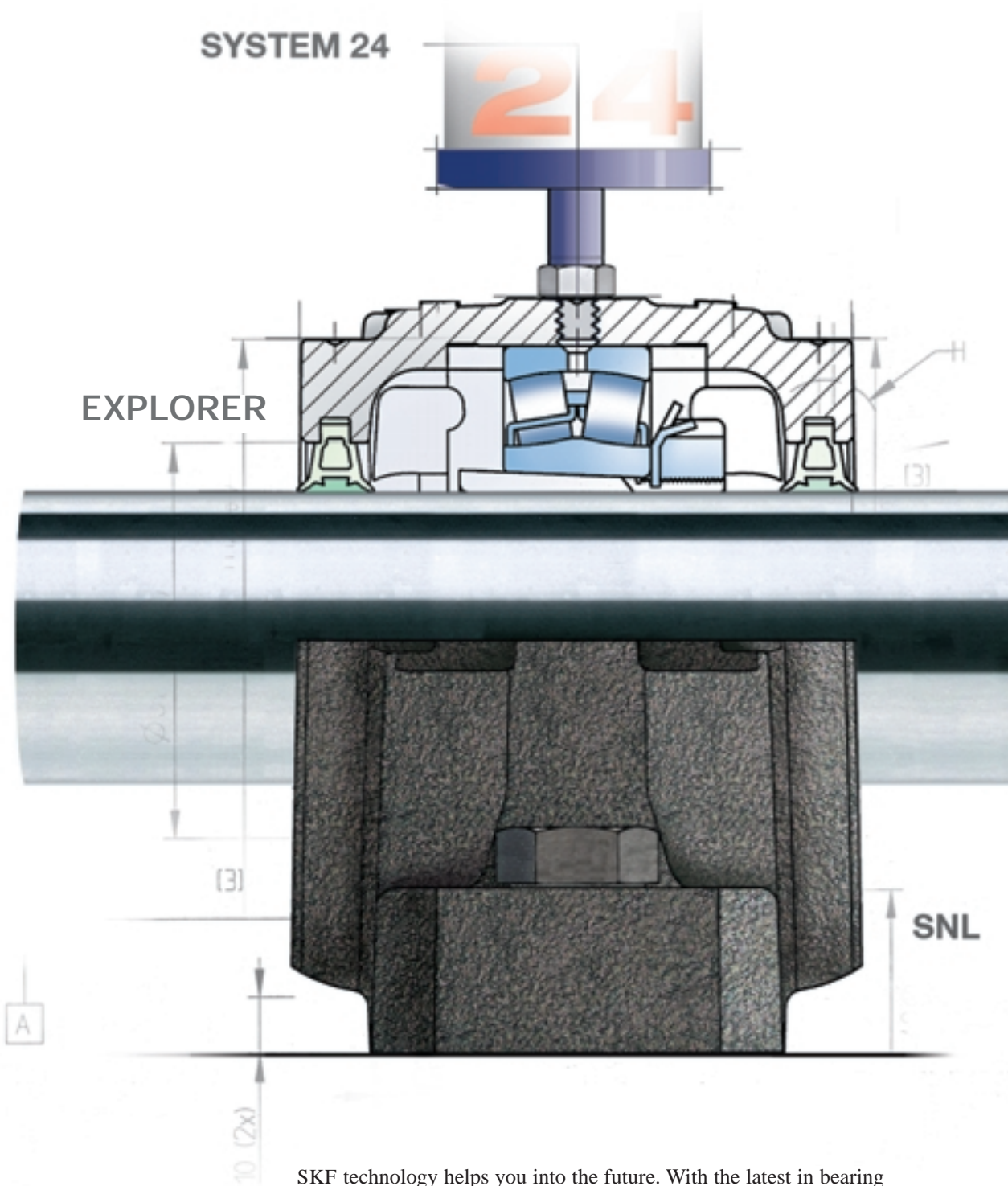
SKF Explorer
spherical roller bearing

Are you ?

If this was a traditional locating and a non-locating bearing arrangement, you would not think twice about what to use in the non-locating position. Most likely a spherical roller bearing.

Using two self-aligning bearings has obvious advantages if the shaft deflects. The only problem is axial freedom. To guarantee axial freedom, the non-locating bearing has to be able to move along with the shaft without creating unwanted internal axial forces. An almost impossible task.

The answer is here, and with it a superior technical solution that ensures reliable operation and increased competitiveness.



SKF technology helps you into the future. With the latest in bearing technology, modern bearing housings, accessories, lubrication systems and equipment for effective monitoring. Complete systems that improve purchase and operating economy.

Less vibration. Less noise.

With SKF's new standard for locating and non-locating bearings, you continue to use a spherical roller bearing on the locating side. On the non-locating side, you use CARB®.

CARB is a toroidal roller bearing. Self-aligning like a spherical roller bearing. Axially free like a cylindrical roller bearing or needle roller bearing.

Whether you install them in standard housings or directly in the machine, you lock CARB axially just as you have always done with the locating spherical roller bearing. If you want to ensure that the rings cannot rotate, mount the bearing outer rings with tight fits as well.

Axial force equals zero

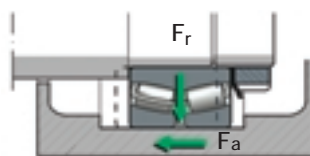
You know the radial load (F_r) on your bearings. Multiplying it by the coefficient of friction (μ) between the bearings and the housing yields the internal axial force (F_a) required to move the non-locating bearing.

With the new standard, the result is always zero. There is no axial friction in a toroidal bearing. When the shaft expands, the inner ring follows along with it. The outer rings stay in place, in the housing.

Compare this with an ideally functioning non-locating bearing in the traditional arrangement. There, you can expect a co-efficient of

friction of about 0.15 when a steel ring slides across a cast-iron housing. This small axial force affects the distribution of the load and thus the performance of the bearings.

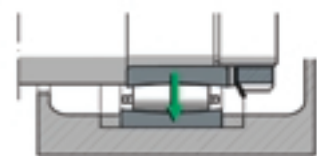
And it doesn't take much to make the figures climb much higher.



$$F_a = \mu \times F_r$$



Internal axial forces alter load distribution.



$$F_a = 0$$



Load is always evenly distributed with the new standard.

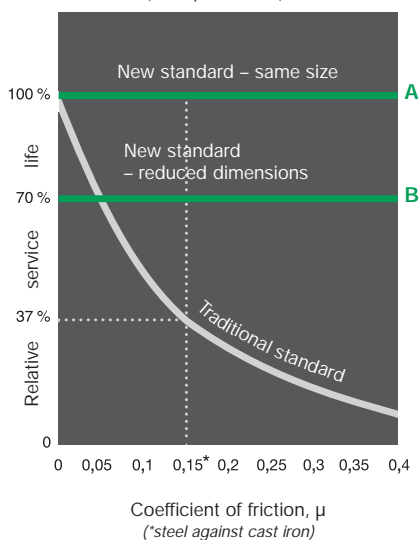
Less heat. Less lubricant.

With CARB® as the non-locating bearing, total axial freedom is ensured. The internal axial forces that used to affect load distribution across both bearings disappear. Vibrations and temperature are reduced.

Other factors that previously threatened axial freedom become insignificant:-

- Poorly supported bearing housings
 - Mismatch of the housing halves
 - Or the shape of the bearing seating in the housing deformed by loading or heat.
- All the conditions that previously hindered the axial movement of the non-locating bearing are eliminated. A CARB® bearing retains its inner freedom even with both rings locked in place.

Comparison of bearing system life
(One specific case)



Work out the opportunities

When internal axial force is eliminated, your theoretical calculations will agree with actual bearing life.

This is the result:

A. You can keep your current bearing dimensions and radically increase the service life.

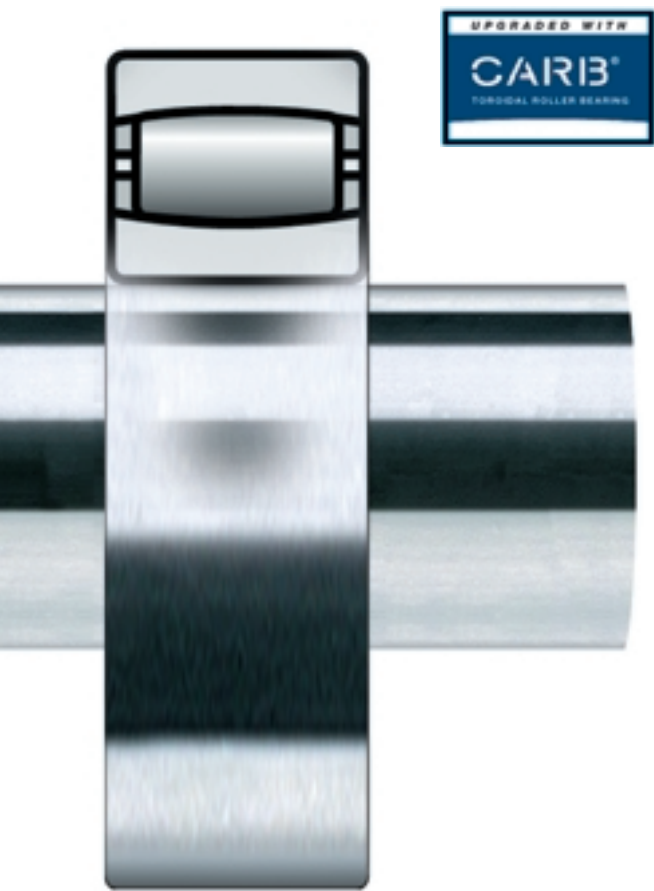
B. In new machines, you can downsize dimensions, still achieving the same or better operational reliability.

Add up the benefits

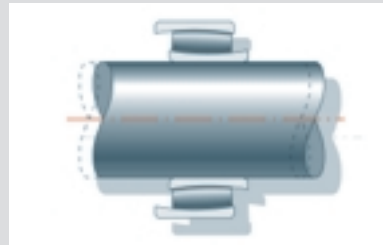
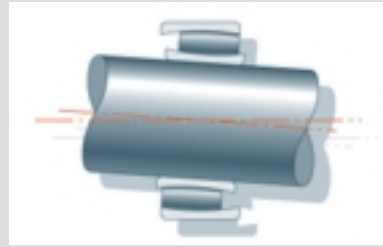
What you end up with is a bearing system with radically improved function. Less vibrations, reduced internal forces and lower temperatures.

Benefits you enjoy regardless of whether you choose to increase service life or reduce the dimensions of the bearings, housings, shafts and accessories.

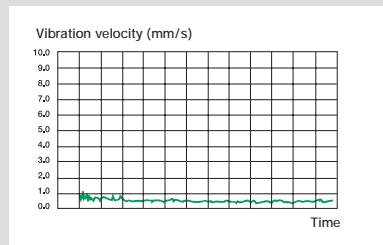
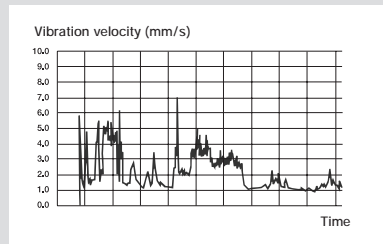
No matter how you put it together, the end result is lower costs, more reliable operations and improved competitiveness.



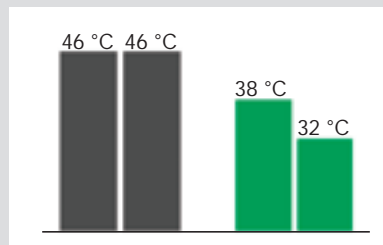
CARB[®] toroidal roller bearing



The rollers in a toroidal roller bearing always find the best position to carry the load, no matter how the shaft moves.

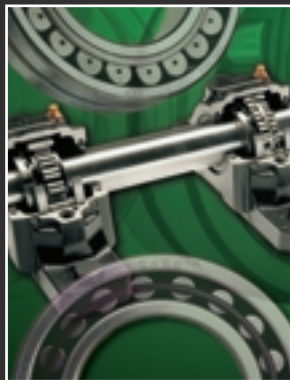


The vibrations in a fan were reduced radically with SKF's new standard.



Traditional bearing arrangement New SKF-standard with CARB

Lower operating temperatures nearly doubled the lubrication interval.



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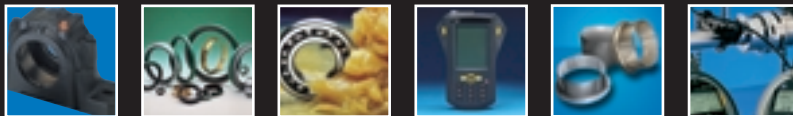


INVESTOR IN PEOPLE



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Related products for optimum performance

- SNL split plummer block bearing housings
- CR seals
- Lubricating greases
- Automatic lubricators
- CR SPEEDI-SLEEVE
- ShaftAlign tool
- MARLIN Data Manager (MDM)
- Mechanical Condition Monitor (MCM)
- OilCheck monitor
- Microlog family of data collectors/analysers
- Wireless Sensor System