

# Open or closed

SKF Explorer four-row tapered roller bearings for work rolls:  
Choice without compromise



# One bearing – two options

A new design for open and sealed SKF Explorer four-row tapered roller bearings for work rolls lets you choose either variant, at any time, without compromise.



## Complete interchangeability

In the past, specifying bearings for work rolls has sometimes meant compromise. Like reduced load carrying capacity on sealed bearings or reduced protection from contamination for open bearings. Either will have a negative influence on bearing service life.

Not any longer. Thanks to an upgraded design, both open and sealed variants of SKF Explorer four-row tapered roller bearings are identical in terms of external dimensions and load carrying capacity, setting a new standard for exchangeability.

### Both benefits lead to:

- A new level of design freedom
- Improved reliability
- Increased service life
- Reduced maintenance costs



# Total interchangeability. Longer bearing service life.

## Identical basic dynamic load rating C for sealed and open bearings

The compact design of the new seal enables rollers to be larger, thereby increasing basic dynamic load rating C for sealed bearings. Open and sealed variants are now completely interchangeable, both dimensionally and in terms of load carrying capacity, providing the freedom to match bearings to application demands.\* (→ **figure 1**)

- Replace current open bearings with the new open design
- Replace new open bearings with the optimised sealed design without any trade off
- Convert new open bearings to sealed versions at a later stage using an easy-to-assemble sealing kit

\* Some modifications may be required. Please contact SKF Applications Engineering for more details.

## Sealed variant provides greater protection for longer service life

Sealed SKF Explorer four-row tapered roller bearings help protect the bearing's running surfaces by reducing contaminant ingress. As a result, lubrication effectiveness is optimised, running conditions inside the bearing are improved, and bearing life is extended (→ **diagram 1**). The new optimised seals in SKF Explorer four-row tapered roller bearings for work rolls are suitable for both grease and oil-air lubrication applications.

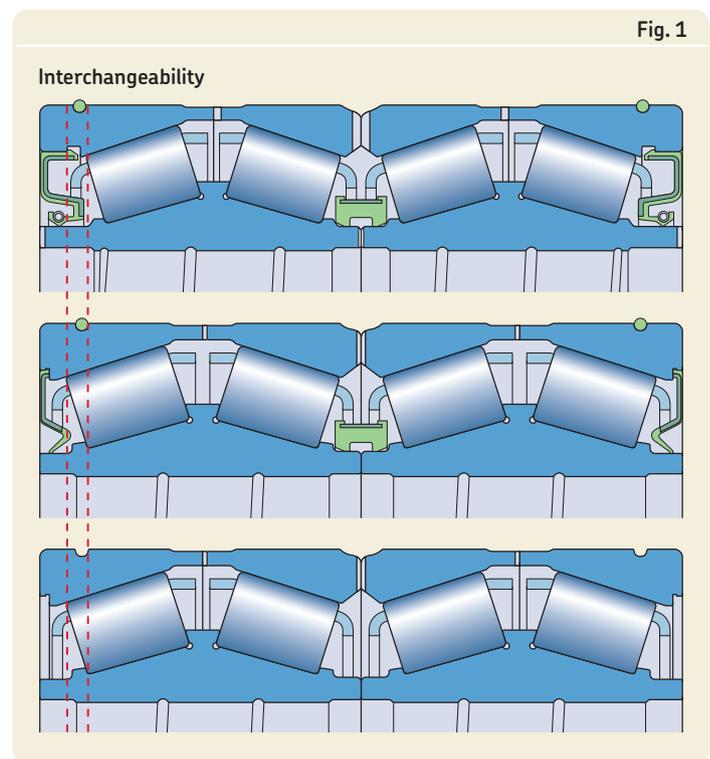
### Benefits:

- Increased bearing service life
- Improved reliability
- Reduced need for maintenance
- Reduced lubricant consumption
- Seals are easily replaceable

Previous sealed design

New sealed design

New open design



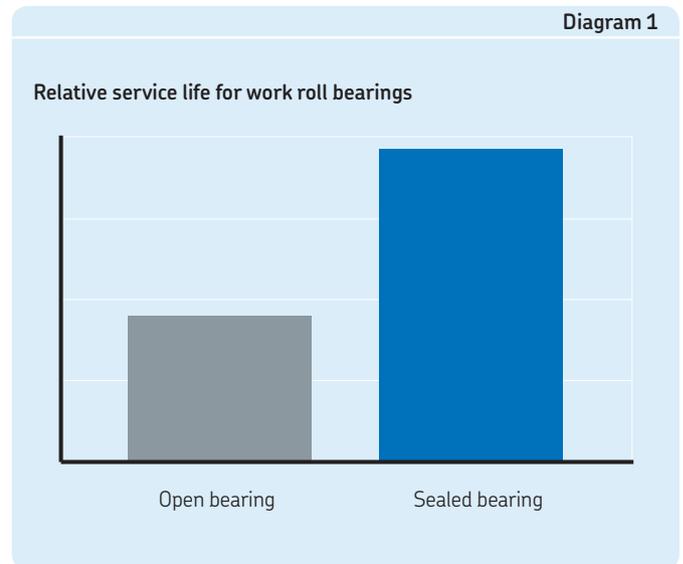
As the above diagrams illustrate, the new optimised seal design enables both open and sealed variants of SKF Explorer four-row tapered roller bearings to be dimensionally identical, providing the freedom to use either variant in a given application without compromising performance.

# New optimized seal design

## Improved seal performance

An optimised seal design provides improved performance compared to the previous design. Made with heat- and wear-resistant material, the new seal provides:

- Improved sealing performance with less leakage
- Reduced friction and operating temperature of the seal lip, resulting in longer seal service life
- Thermal and chemical stability to withstand high sliding velocities
- High deflection and misalignment capability
- No garter spring – eliminates risk of spring loss and other associated failure modes



# Engineered for superior performance in

## Enhanced material properties and benefits

### Advanced heat treatment

The rings of SKF Explorer four-row tapered roller bearings for work rolls are case carburized using tightly controlled processes that provide a consistent case hardening depth. This results in an optimized balance between high surface hardness and core toughness.

#### Benefits:

- Improved resistance to wear and surface damage
- Toughness to withstand shock loads

### High surface hardness

Robustness is enhanced by using high quality, very clean, homogenous steels, expertly heat treated to high hardness values.

#### Benefits:

- High resistance to surface damages caused by contamination
- Longer service life
- Improved wear resistance

### Optimized surface finish

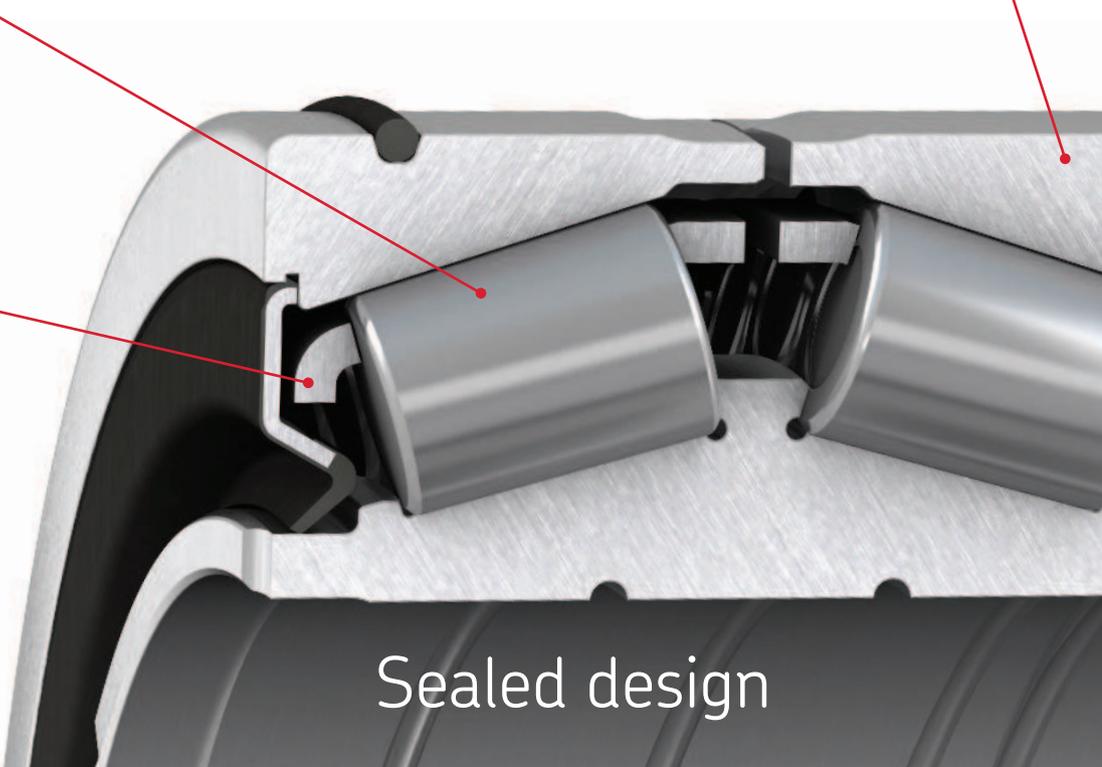
The improved surface finish of rolling elements and raceways reduces surface roughness, virtually eliminating micro contact stress peaks and promoting formation of a lubricant film to minimize friction.

### Four-cup design

Compared to three cup designs, the four separate outer rings of SKF Explorer four-row tapered roller bearings provide improved, even load distribution and, consequently, longer service life.

### No cage stand-out

With no moving parts outside the boundaries of the outer ring, there is reduced risk of cage damage during handling. Clearance in adjacent parts is no longer necessary.

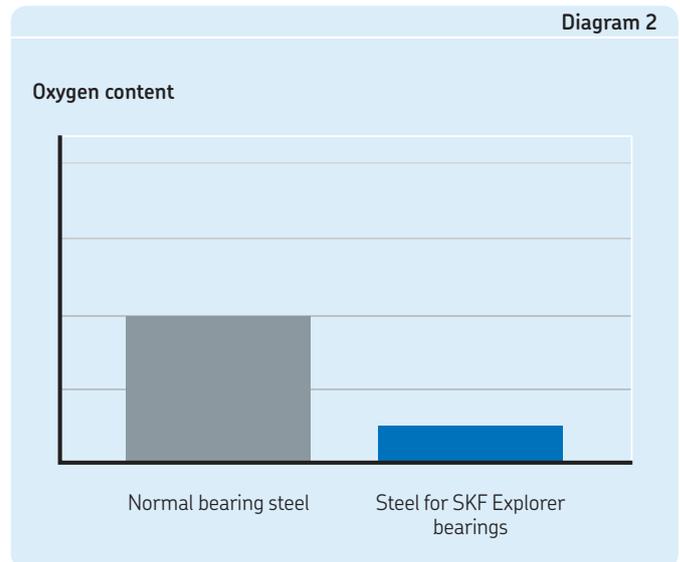


Sealed design

# the most demanding applications

## High quality steel

Highly homogenous steel with improved chemical composition, such a very low oxygen content, results in improved strength and durability which leads to higher service life (→ diagram 2).

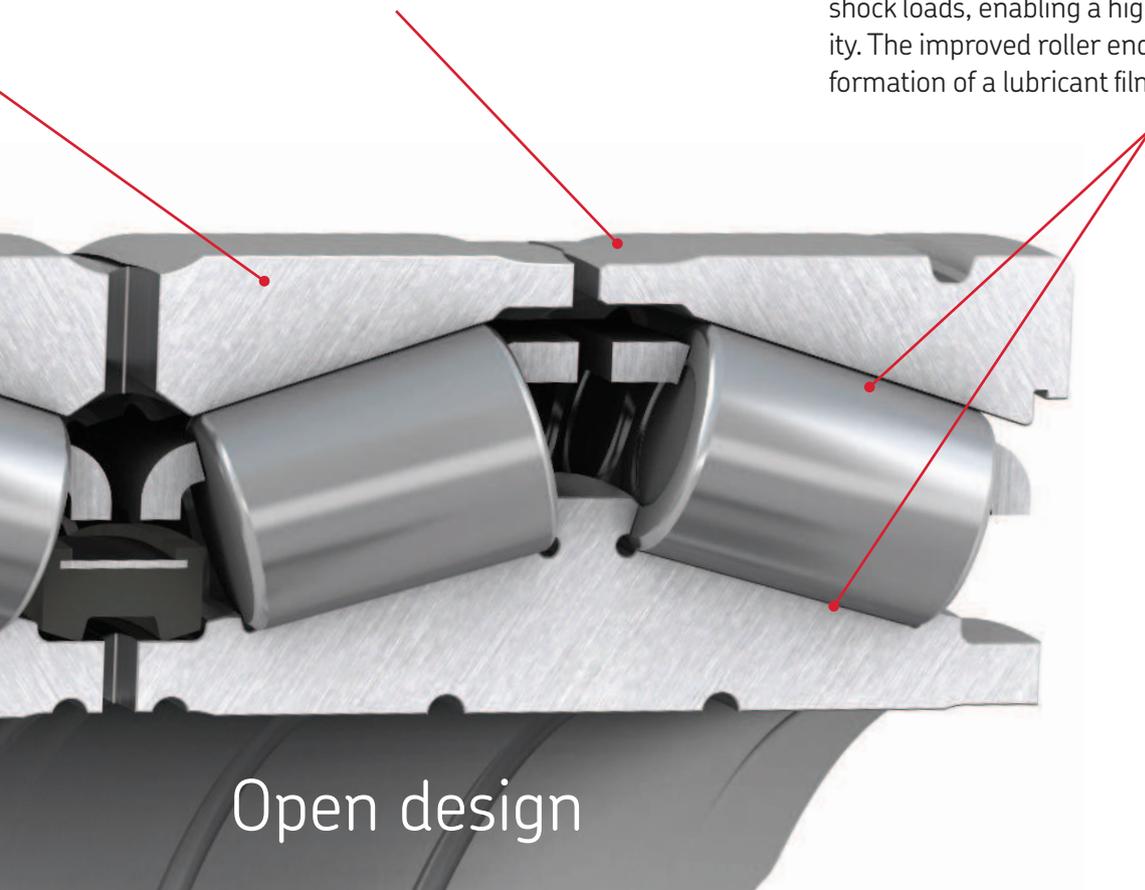


## Spacerless design

Due to fewer components, bearings without spacer rings are easier to mount.

## Improved working contact surface

The logarithmic raceway profile is less sensitive to extreme load variations, misalignment, moment and shock loads, enabling a higher effective carrying capacity. The improved roller end/flange contact promotes formation of a lubricant film to minimize friction.



Open design

## The Power of Knowledge Engineering

Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3-D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.

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PUB BU/S9 15835 EN · June 2015

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