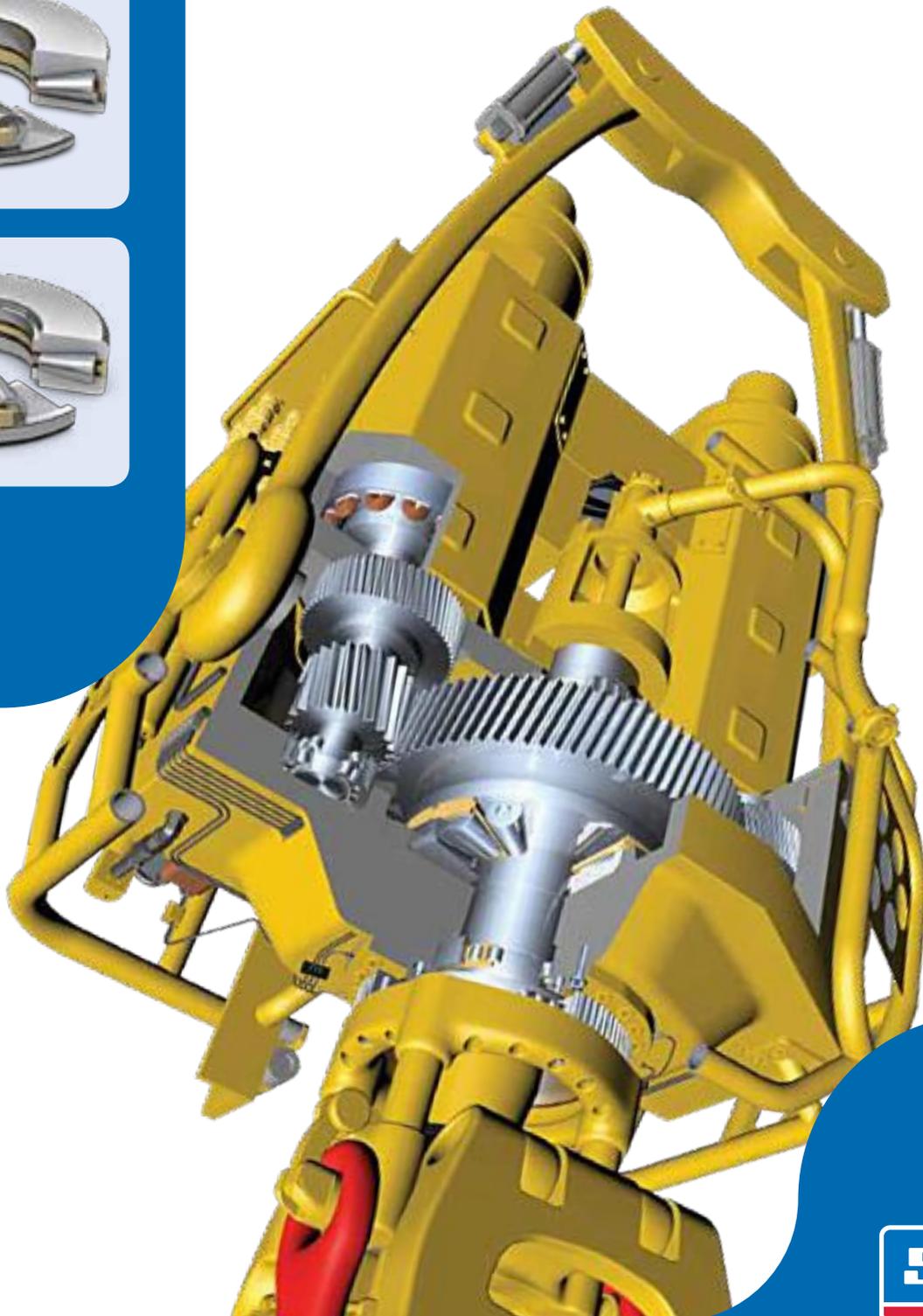




Optimized SKF tapered roller thrust bearings

Boost top drive reliability with longer bearing service life and higher load carrying capacity



Designed and manufactured to improve top drive performance

Main thrust bearings in a top drive need to accommodate extreme operating conditions such as very heavy axial loads, shock loads and shaft deflections. In addition, the combination of low speeds and heavy loads, as well as temperature extremes, limit the lubricant's ability to form an effective lubricant film, which results in metal-to-metal contact and accelerates wear. To meet these demanding conditions, SKF has optimized both the design and the manufacturing process of tapered roller thrust bearings. These bearings are characterized by their:

- high load carrying capacity
- high wear-resistance under an ineffective lubricant film condition
- ability to accommodate shock loads

Optimized for longer bearing service life

SKF has further extended the service life of symmetrical and asymmetrical tapered roller thrust bearings, when compared with traditional tapered roller thrust bearings, by combining the following elements and measures:

High quality steel

Because only highly homogeneous and high-alloyed steel is used to manufacture them, SKF bearings have the same material strength throughout, without weak spots. It is this high-purity material that gives SKF bearings their exceptional strength and durability.

State-of-the-art heat treatment

As a standard, SKF case carburizes tapered roller thrust bearings using state-of-the-art processes and equipment. The tightly controlled processes provide a consistent case hardness depth. This results in an optimized balance between high surface hardness to resist wear and damage, and toughness to withstand shock loads.

Advanced surface finish

The surface topography of the rolling elements and raceways has been optimized to reduce friction and enhance the formation of a lubricant film. This maximizes the effectiveness of the lubricant, enabling it to prevent metal-to-metal contact, while reducing friction, frictional heat and wear.

Optimized internal design

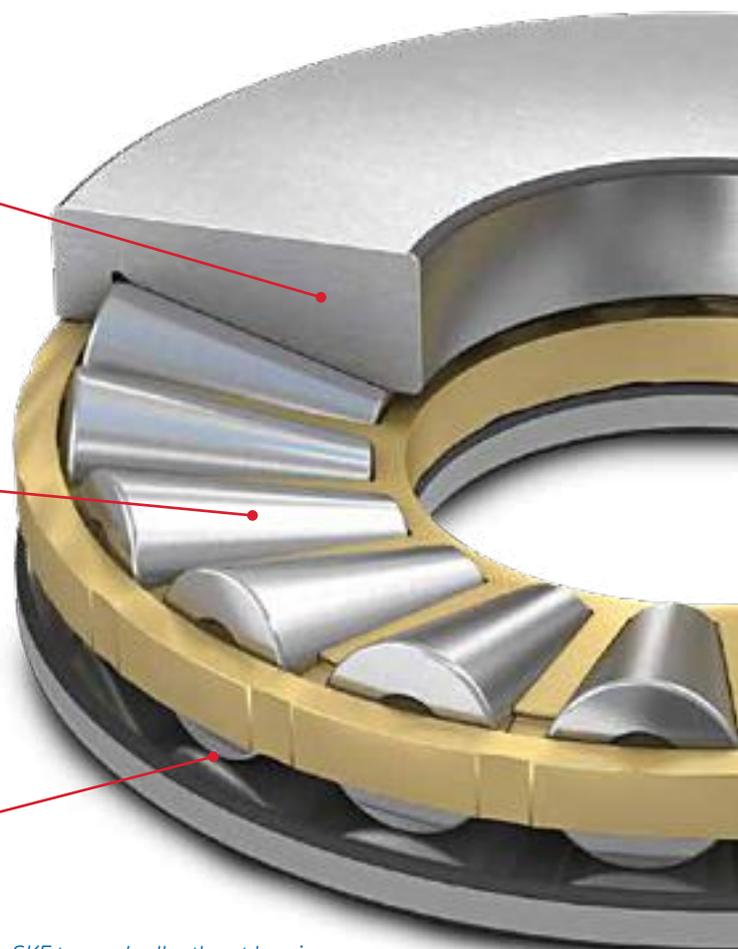
Increases load carrying capacity and API rating.

Best-in-class rollers

Each roller is virtually identical to the next, which avoids stress peaks on single rollers, while reducing vibration and noise levels.

Optimized roller end/flange contact profile and surfaces

Promotes the formation of a lubricant film; reduces friction, frictional heat and flange wear, especially under heavy load conditions.

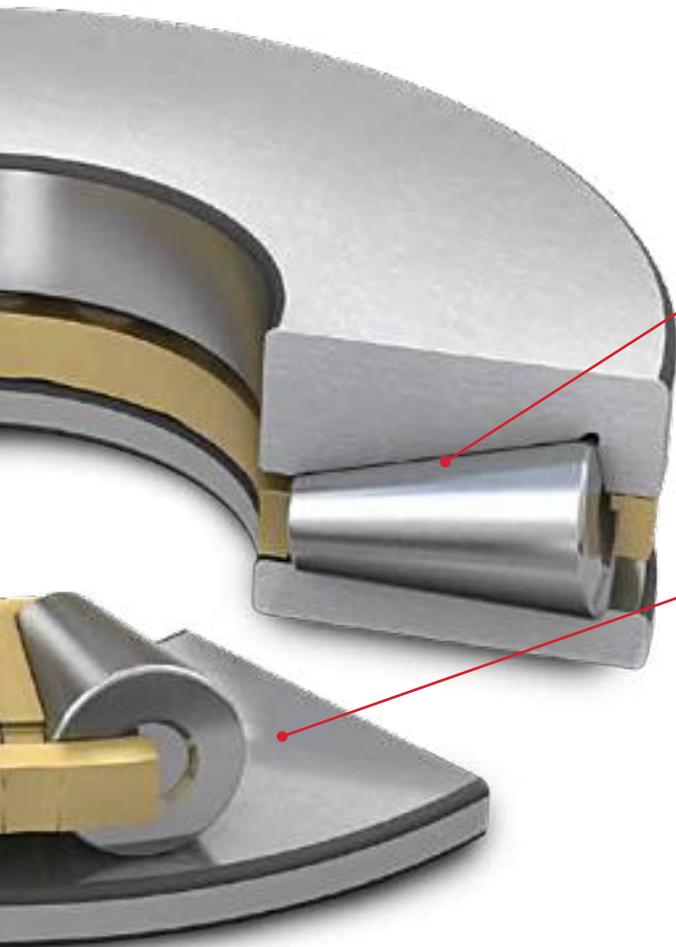


SKF tapered roller thrust bearing – asymmetrical design

Customization

SKF engineers can work with you to optimize the performance of your top drive by customizing bearing features to meet the specific needs of your application:

- Simulate the interaction of top drive components from a system perspective with proprietary simulation tools
- Customized, non-standard dimensions
- Special coatings and surface treatments
- For easy mounting – lifting holes, steps, grooves, slots on the outside surface of the bearing washers



Optimized logarithmic profile

Designed to optimize load distribution along the rollers and reduce stress peaks at the roller ends.

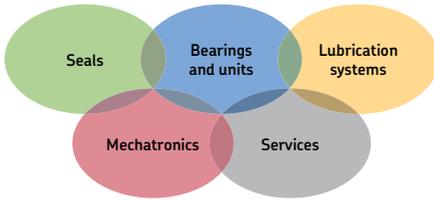
Case carburized

Improves wear resistance; minimizes crack propagation and damage from shock loads.

Symmetrical design

SKF also offers tapered roller thrust bearings in a symmetrical design for your top drive application needs.





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.

© SKF is a registered trademark of the SKF Group.

© SKF Group 2014

The contents of this publication are the copyright of the publisher and may not be reproduced (even extracts) unless prior written permission is granted. Every care has been taken to ensure the accuracy of the information contained in this publication but no liability can be accepted for any loss or damage whether direct, indirect or consequential arising out of the use of the information contained herein.

PUB BU/S2 14615 EN · April 2014

Certain image(s) used under license from Shutterstock.com

