

# Maximize performance

Improve moineau motor performance with mud motor bearings from SKF



**SKF**

# Increase drill motor performance with SKF mud motor bearings

Whether you're drilling for oil or gas, the bearings in a mud motor at the end of a drill string have a direct impact on productivity and reliability. These mud motor bearings have to endure extreme operating conditions. In addition to severe axial and shock loads, these bearings are "lubricated" with highly abrasive mud, which for a bearing is the definition of an extreme operating condition.

## How the new bearing works

The typical mud motor bearing contains between 8 and 12 rows for design optimization. When the bearing is new, the majority of the load is accommodated by the first four or five rows (fig. 1). As each row starts to wear, the load is shifted to the next row (fig. 2) and the next (fig. 3) until all the rows are worn equally. Then, the load is shifted back to the first row and the process is repeated. This unique SKF® design enables the bearing to last significantly longer than previous bearing designs.

Fig. 1



Fig. 2

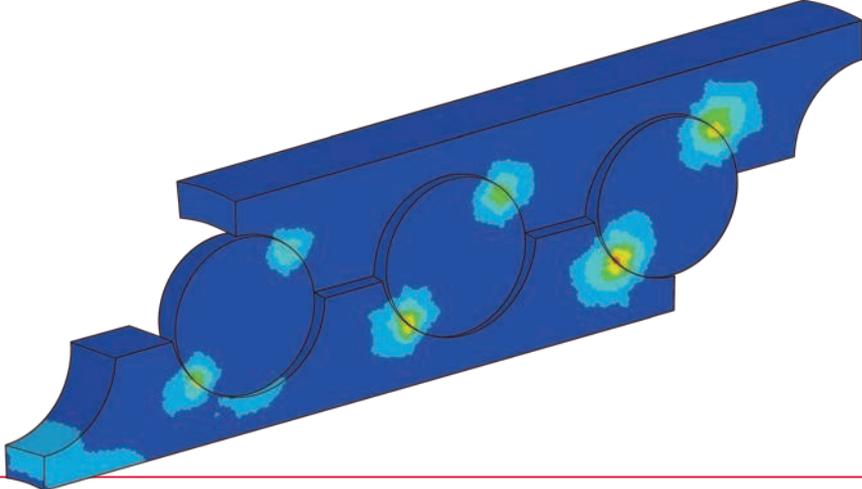


Fig. 3



*The number of loaded rows is for illustrative purposes only. The exact number will vary depending on the application and operating conditions.*

# and reliability



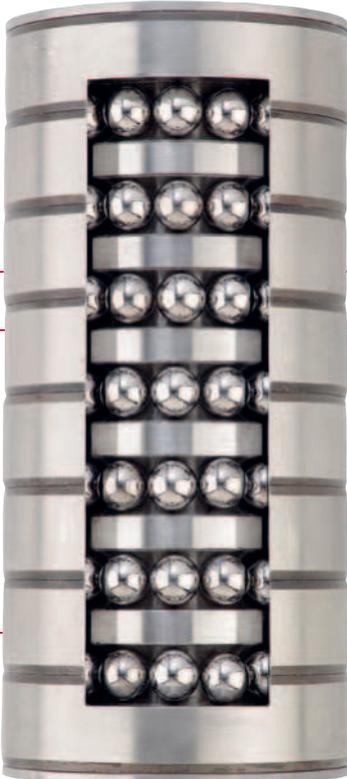
Using advanced modelling techniques SKF engineers are able to see the stress levels within the bearing.

### About the redesign process

To significantly improve bearing performance and reliability, SKF engineers used proprietary SKF design and simulation tools to

- accurately define the behaviour of a bearing stack
- redesign the bearing to minimize stresses and optimise load carrying capacity
- test new designs and materials.

With the SKF virtual test rig, engineers were able to identify and correct the problem of cracked rings and sheared balls – two common problems with these bearings.



### Product features

- Special steel for all bearing components
- Full complement bearing
- Precision matched rings
- Unique bearing design to support heavy axial drilling loads

### Customer benefits

- Improved wear-resistance
- Increased load carrying capacity
- Optimized load distribution
- Increased robustness
- Improved reliability
- Customized design



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