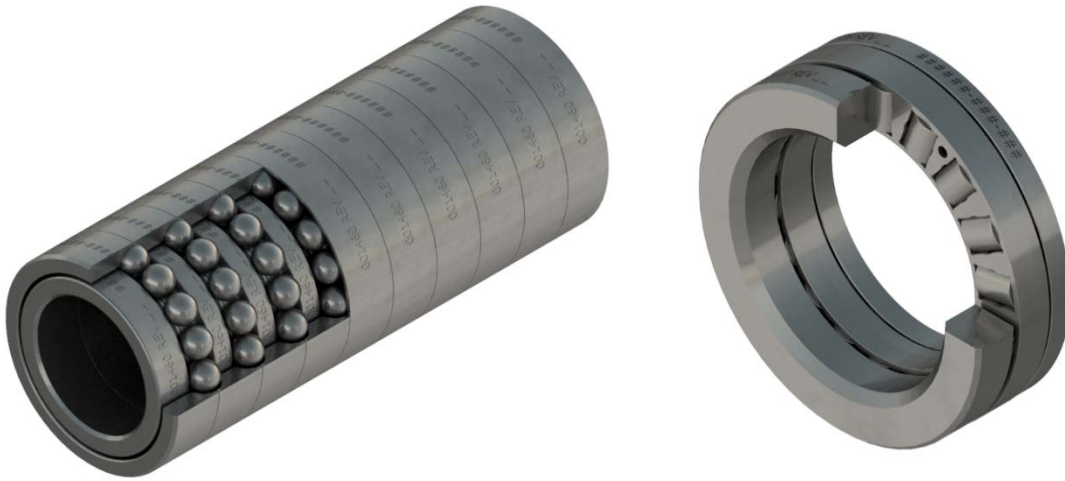


Bearings

Custom Designed, Precision Manufactured



Q: Do your customers expect durability and fail-free runs out of your downhole mud motors, especially when the drilling occurs in harsh environments with high shock loads?

A: Stag Energy Solution's selection of custom designed mud and oil lubricated bearings use materials selected to withstand wear, abrasion, and shocking loading ensuring long bearing life when used in touch conditions.

The bearings we manufacture are used in downhole mud motor assemblies and are engineered to maximize load carrying capacity which allows equipment operators to reliably drill in harsher environments with longer bit runs. Bearing grade steel is used for the manufacture of the ball races (mud lube bearing) or thrust washers (oil lube bearing), and is hardened and ground or machined and polished to obtain the necessary surfaces required to ensure long bearing life. The materials and hardening processes are also selected to provide excellent shock and impact resistance.

Mud Lube Bearing Features and Benefits

- Materials selected to withstand wear, abrasion, and shock loading.
- Serialization of each of the races.
- Engineered to maximize static and dynamic loads.
- Multiple rows of balls and races with a specifically designed bi-directional angular contact raceway contour which optimizes ball contact ensuring superb bearing life and load distribution.



Oil Lube Bearing Features and Benefits

- Cages are designed and manufactured to be robust; corner radii are used to minimize stress risers and potential failure points.
- Rollers are configured in a compact arrangement to provide high static and dynamic load capacities.
- Serialization of each of the thrust washers.
- Tandem and multiple race sets can be designed and manufactured.



S-2 Tool Steel, Rockbit Balls

- Specifically designed for drilling applications.
- The material used is through hardened alloy steel which resists shock loading and features high wear resistance and high toughness.
- Balls are available in various diameters.



Chemical Composition						
%C	%Si	%Mn	%P	%S	%Mo	%V
0.40-0.55	0.90-1.20	0.30-0.50	0.030 max.	0.030 max.	0.30-0.60	0.50 max.

Mechanical Properties	
Hardness	54 to 63 HRC
Ultimate Tensile Strength	305 to 320 ksi (2100 to 2200 MPa)

For information about our bearings, please contact Rob Boyne at (780) 983-4514.

For general information about Stag Energy Solutions, please contact Chris Konschuh at (403) 992-7824.

We worry about the downhole environment so you don't have to. Contact us to discuss current bearing designs for your downhole mud motors, or let us customize a solution for you.