

## Full complement thrust bearings for rotating liner hangers

The thrust bearing used in a typical rotating liner hanger application is subject to extremely high loading at relatively low speeds. It has an expected operational life of only 6 to 12 hours before being cemented permanently downhole. The demand for a thin cross section and a high static capacity with inherent roller guidance is complicated by the need for an economical price. QA Bearing Technologies manufactures a variety of full complement cylindrical and tapered roller thrust bearings to meet these and other specific customer requirements to reduce internal friction in the tool.



The outside diameter of a rotating liner hanger thrust bearing is often exposed to cement and water, so an external debris barrier is also required as part of the design. This barrier can be a simple labyrinth formed by an outer sleeve, or incorporate O-ring sealing elements.



Full complement cylindrical roller bearing designs offer an economical solution but extreme care must be taken to prevent the rollers from falling out of the assembly during shipping, handling, and installation. An inner flange or some form of shipping retention sleeve is often required. Special crowned rollers with large corner radii help to reduce the high contact stress on the roller guidance surfaces. Races can be manufactured from either through hardened or carburized material and additional features and components can be added to traditional designs.

The true rolling geometry of a full complement tapered roller bearing enables much higher thrust loading with reduced heat and internal friction. The assembly can be unitized by using two running O-ring snaps in the bore of the outer sleeve. This restricts the separation of the races within the tapered diameter of the roller (Patent pending).



For more detailed information our various designs please contact us.