

## OIL & GAS

### Rolling Bearing Solutions for Mud Motors

In deep-hole drilling mud motor bearings are directly exposed to the drilling fluid, which is a mix of water, chemicals and debris from the drilling process. In fact the drilling mud acts as the only lubricant to the mud motor bearings when passing directly through them. This leads to accelerated wear in conventional steel bearings and consequently premature bearing failures.

CEROBEAR hybrid and all-ceramic rolling bearing solutions provide significantly longer service life by using superior bearing materials and an application dedicated, custom engineered bearing design.

CEROBEAR bearings are available as ball, cylindrical roller, tapered roller or spherical roller bearings, as single units, bearing pairs or even bearing stacks, whatever is beneficial to achieve the targeted bearing service life.



*CEROBEAR Hybrid Ball and cylindrical Roller Bearing*

One key to the superior performance are extreme hard and wear resistant materials for rolling elements, bearing races and cages. The other key is the customized bearing design which considers the acting loads and speed as well as the operating temperature and the material and dimensions of the mating components.

Silicon nitride ceramic ( $\text{Si}_3\text{N}_4$ ), featuring a hardness of twice that of hardened bearing steel in combination with aerospace grade steels like M50 or Cronidur® 30 enables

CEROBEAR bearings to operate seamlessly up to 100 times longer than conventional steel bearings.

The result is a substantial reduction of equipment down-time, hence an increase in yield, productivity and safety.



*CEROBEAR Hybrid Bearings for harsh environments*

*CEROBEAR bearings operate seamlessly up to 100 times longer than conventional steel bearings.*

CEROBEAR advanced rolling bearing solutions have proven their outstanding reliability in the fuel turbo pumps of the US Space Shuttle main engines as well as in Formula 1 race car transmissions, helicopter gearboxes or state-of-the-art compressors, pumps and electrical motors in the oil & gas or chemical industry .

The bearings are designed and manufactured to 100% fulfill our customer's requirements.

If you are ready to bring your equipment to a new level of performance and reliability, seek the consultancy of a CEROBEAR bearing specialist.