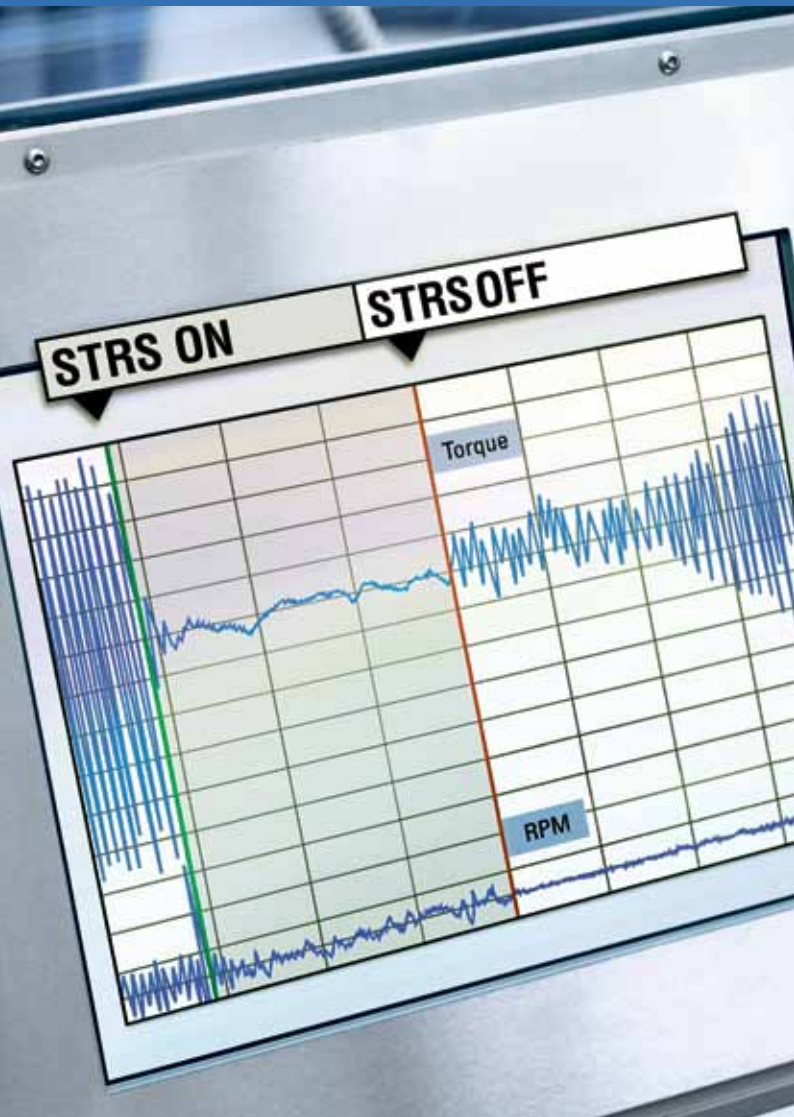


SOFT TORQUE ROTARY SYSTEM

Saves costs by eliminating drill string
stick-slip effects.

AVAILABLE SYSTEMS:

MK III for DC systems
MK VFD for AC systems



UNIQUE FEATURES

- Eliminates the stick-slip effect
- Extends the top-drive performance due to optimized torque use
- Significantly increases the rate of penetration
- Reduces drill bit wear
- Reduces the number of round trips
- Improves well quality
- Protects the bottom-hole assembly
- Approved by SHELL
- Field proven equipment
- Available for all rigs with DC or AC driven Top Drive or Rotary Table
- Available for onshore and offshore rigs
- Easy to retrofit

TECHNICAL DATA

SOFT TORQUE ROTARY SYSTEM

The Bentec SOFT TORQUE ROTARY SYSTEM is designed to significantly enhance drilling performance by preventing the stick-slip effect. The stick-slip effect refers to torque fluctuation depending on the weight on bit and the drive speed. This effect causes extremely high operating cost due to higher bit wear, decreased rate of penetration, increased wear of the bottom hole assembly, and more round trips.

The SOFT TORQUE ROTARY SYSTEM is based on the worldwide accepted Shell algorithm which was developed to counteract drill string fluctuation. The algorithm precisely calculates set parameters for the drive controller by taking into account the behavior and conditions of drill string and drive system dynamics. The combinations of the SOFT TORQUE ROTARY SYSTEM and top drive act as a damper for torsional vibrations. This results in a significant reduction of torque fluctuations and stick-slip behavior, which in turn increases the rate of penetration,

protects the drilling equipment, and results in significant cost savings. Furthermore, if the SOFT TORQUE ROTARY SYSTEM is active, the drill torque can be increased.

The system is also available as a retrofit package which can be easily installed in existing drilling rigs. The SOFT TORQUE ROTARY SYSTEM can either be delivered with an additional Human Machine Interface or integrated into the Bentec infoDRILL system.

SHELL confirms that the Bentec SOFT TORQUE ROTARY SYSTEM complies with SHELL requirements.

Bentec combines all of the experience it has gained from more than 20 years of developing and enhancing soft torque rotary systems to offer a highly reliable and field proven SOFT TORQUE ROTARY SYSTEM.

