

# MH Soft Torque-Z

## Delivering smoother and faster drilling

**MH Soft Torque-Z system mitigates oscillations on the drill bit and torsional vibrations, with ease. The Soft Torque-Z effortlessly incorporates Shell's proven Z-torque technology with an user-friendly automated interface, designed to reduce well cost and optimize rig efficiency.**

### Product description

During drilling operations, the top drive provides continuous torque and revolutions per minute (RPM) to the drill string unit. Due to varying geological conditions and drill bit frictions, the constant input from the top drive does not give a constant output on the drillbit, resulting in large fluctuations of torque and RPM down at the bottom hole assembly (BHA). This leads to torsional vibrations, also known as stick slip effect, negatively impacting drilling performance and equipment deterioration.

Our controller is based on Shell's Z-torque technology, which continuously measures torsional vibrations in the drill hole and dynamically regulates around the torque and speed set points accordingly. This mitigates the torque vibrations in the drill string and reduces or even eliminates the stick-slip effect

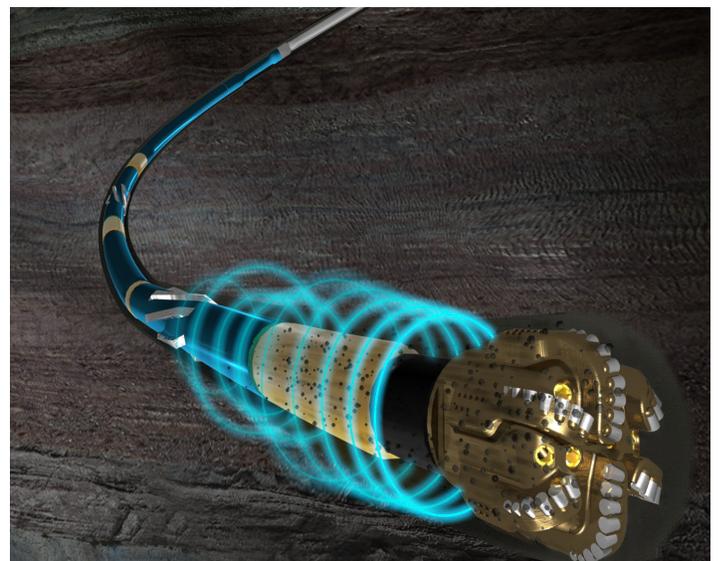
Soft Torque-Z is fully operational immediately after installation. Basic delivery is an operator screen. Optionally, it can be integrated into your existing top drive system. The simple user interface allows the operator to continue drilling operation in a familiar matter.

### Benefits

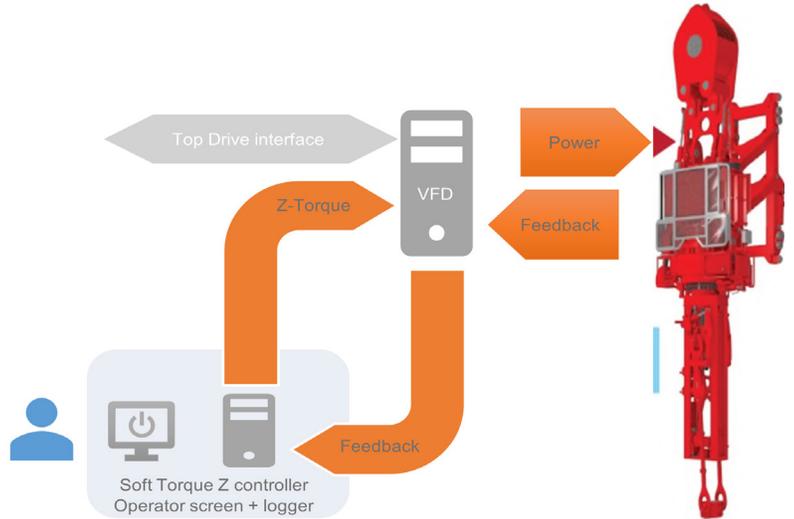
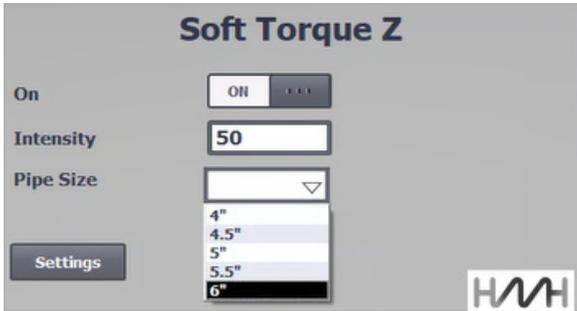
- Return of investment already after drilling one well
- Up to 70 % improved rate of penetration (ROP)
- Less unscheduled trips
- HSSE improvement due to less manual handling of over torqued connections
- Simple user interface without changes in the operator environment improves operational performance
- Improved borehole quality with smooth walls and exactly positioned boreholes

### Key features

- Our Soft Torque-Z system significantly reduces well cost and improves your drilling efficiency by:
  - Increasing the operational window for weight on bit (WOB) and speed during drilling, boosting effective drilling time and rate of penetration (ROP)
  - Minimizing the stops in circulation due to significantly reduced wear and premature failure of drill bits or tools for measurement while drilling (MWD) tools, etc.
  - Diminishing the number of over-torqued connections, thereby reducing the need for manual tong operation; additionally, it eliminates the HSSE risk associated with utilizing manual tongs
  - Improving the overall borehole quality, minimizing the risk for further
  - Reducing the number of side steps required in a well drilled with Soft Torque-Z activated



Simple setup: the operator initially enters 2 parameters, and the system is operational instantly.  
 Daily use: Soft Torque-Z is simply activated or deactivated as required.



**Logging data from MH Drillers Assist, Soft Torque-Z transition from Off to On**

Examples shows actual Top Drive torque during drilling. In the beginning, Soft Torque Z is off and torsional vibrations lead to fluctuating torque. When Soft Torque-Z is on, the torsional vibrations are effectively damped.

