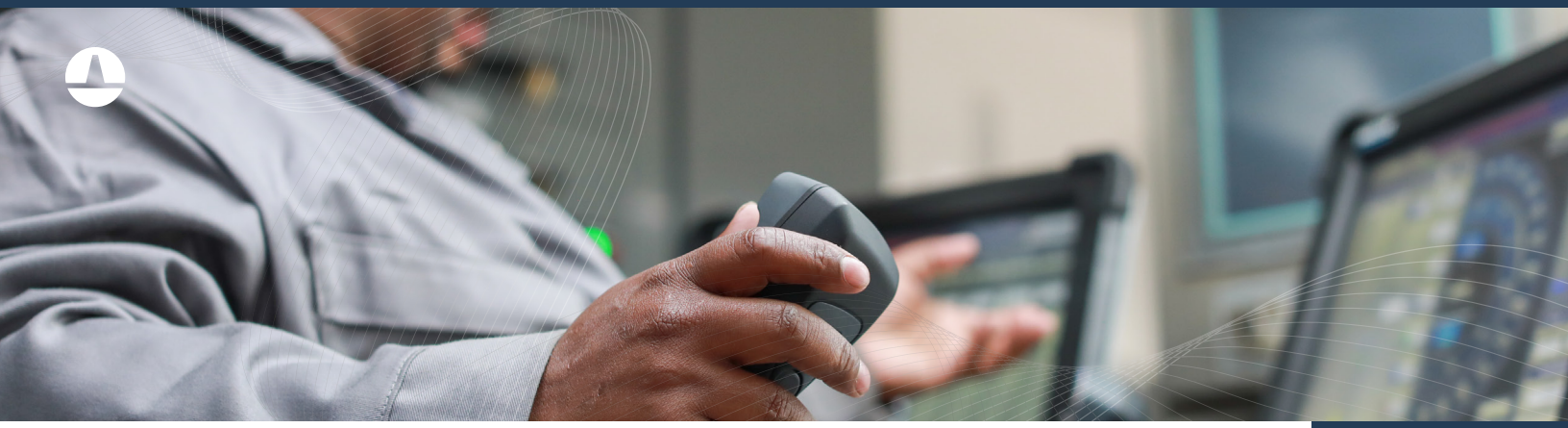

OVERVIEW

CORTEX® DRILLER

Eliminate Dysfunction. Automate Tuning. Reduce Workload.

FEATURING ADAPTIVE GAIN TUNING

Auto Driller performance depends on how well the control system is tuned to the current drilling conditions. As formation, bit response, hydraulics or operating setpoints change, the system may need to respond faster, slower or more aggressively to maintain stable control.

CORTEX® Driller uses dynamic modeling to continuously evaluate how the drilling system is responding and automatically adjust the control gains for WOB, differential pressure and torque. The driller selects the operating setpoints. CORTEX Driller automatically determines the optimal tuning needed to control to those targets.

Why it Matters

Traditional Auto Drillers may require the driller to manually adjust tuning as drilling conditions change. If the tuning is no longer appropriate, the system can become sluggish, overly aggressive, unstable or begin chasing the target.

Adaptive Gain Tuning removes that responsibility from the driller. When the formation changes or the driller changes a setpoint, CORTEX Driller evaluates the new system response and automatically retunes the Auto Driller to maintain stable, responsive control.

Key Benefits

Dynamic System Modeling

Continuously evaluates how the drilling system responds to changes in formation, drilling conditions and operating setpoints.

Automatic Gain Tuning

Automatically adjusts WOB, differential-pressure and torque control gains to find the optimal response for current conditions.

Setpoints Stay with the Driller

CORTEX Driller does not change the driller's operating targets. It automatically tunes how the Auto Driller responds to those targets.

Automatic Retuning as Conditions Change

When drilling conditions or setpoints change, the system reassesses the response and automatically determines the appropriate tuning.

Operators Gain Measurable Benefits

Auto Driller Dysfunction Prevention
Helps eliminate oscillation, chasing, overcorrection and sluggish response caused by improper tuning.

Reduce Driller Workload
The driller sets the desired operating targets while CORTEX Driller automatically manages the tuning required to reach and maintain them.

Consistent Auto Driller Control
Automatically adapts control response as drilling conditions and operating targets change.

Bottom Line

CORTEX Driller featuring Adaptive Gain Tuning lets the driller focus on where they want to operate while the Auto Driller automatically determines how best to get there. Using dynamic modeling, the system continuously optimizes control gains as conditions change, helping eliminate dysfunction, maintain consistent control and remove routine tuning from the driller's workload.