



OVERVIEW

CORTEX[®] KEY

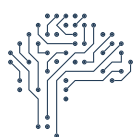
Powerful Edge Computing and Application Host

Our **CORTEX[®] KEY** unlocks potential through custom performance applications, with direct, high-speed data access. This server-grade machine allows us to tap directly into our proprietary CORTEX[®] Control System to securely deploy advanced algorithms in real-time. This product can connect to all systems at the rig site, streaming large data sets and providing a single data aggregation source.

Features

Power Server	Virtual Integration	Connected Control	Code-Ready
Powerful rack mount server with failover and redundant server specs	VMWare virtual infrastructure Provision exclusive Windows or Linux machines to customers on demand	Remoting capabilities, powerful application host, secure application deployment	Multiple Programming languages (Python, .NET, Java, and more)

Benefits



- Efficient** data aggregation and **reliable** Cloud streaming
- Automation enabler, with **bidirectional communication**
- Remote Operations enhancement** with remote to local control commands
- Real-Time Applications:** Monitoring and Alerting, Downhole Modeling, Procedural Compliance, Automation & Control, Equipment Condition Monitoring



OVERVIEW

CORTEX[®] OSCILLATOR

Intuitive Pipe Oscillation for Smoother Sliding

Why it Matters

Static friction during sliding can reduce weight transfer to the bit and lower sliding rate of penetration (ROP). Managing this manually takes time and attention away from higher-value decisions.

CORTEX[®] Oscillator automates oscillation through controlled rotational and rocking actions from the top drive. Integrated directly into the driller's HMI, the system breaks static friction consistently, improving sliding performance while reducing drag. The result is smoother directional drilling with greater consistency, efficiency and ease.

Key Benefits

Improved Sliding Efficiency

Automated oscillation enhances weight transfer, leading to faster and more effective sliding.

Seamless Control

Fully integrated with the driller's HMI for intuitive operation, monitoring and configuration.

Customizable Logic

Independent clockwise and counterclockwise settings for both wrap counts and torque limits provide full control and adaptability.

Unified Display

Auto Driller control, rosebud display and oscillation/orientation settings are all accessible on one screen.



Operators Gain
Measurable Benefits

Higher Sliding ROP with improved weight transfer

Reduced ILT by minimizing friction-related interruptions

Bottom Line

CORTEX Oscillator delivers intuitive, automated pipe oscillation that enhances sliding performance and helps slide with greater efficiency and consistency.



OVERVIEW

CORTEX[®] CONNECT

Consistency That Enhances Safety and Performance

Why it Matters

CORTEX[®] Connect automates the slips-to-weight and weight-to-slips process with AI-driven precision. By standardizing critical connection steps, it delivers safer, more consistent outcomes—protecting crews, preserving tools and reducing invisible lost time.

Key Benefits

Consistent Reliability

Automated engagement and return-to-bottom minimizes risks of tool failures, wellbore issues and unplanned downtime.

Optimized Performance

Connection recipes align with customer drilling programs and best practices, supporting faster and more predictable operations.

Adaptability Across Wells

Configurable parameters adjust to diverse drilling requirements, ensuring efficiency without compromising compliance.

AI-Driven Precision

CORTEX Tare ensures consistent and accurate weight and pressure values across the wellbore. By maintaining proper weight-on-bit (WOB) and differential pressure, it provides further protection to the BHA and bit—reducing the risk of premature wear, tool failures and costly downtime.

Supporting the Driller

By managing repetitive steps, CORTEX Connect allows drillers to focus on crew safety, downhole conditions and performance oversight.



Operators Gain Measurable Benefits

Lower Costs through fewer tool failures and reduced non-productive time (NPT)

Higher Efficiency with faster, predictable connection cycles

Improved Safety by reducing exposure to manual repetition in critical moments

Bottom Line

With **CORTEX Connect**, crews gain a reliable partner in automation—helping them drill safer, more efficient and lower-cost wells.



OVERVIEW

CORTEX[®] DOWNLINK

Automated Precision, Real-Time Control

Why it Matters

Fast, reliable communication with downhole tools is essential for maintaining drilling efficiency and reducing invisible lost time (ILT). Manual downlinking methods can be slow, inefficient and distract drillers from higher-value tasks.

CORTEX[®] Downlink streamlines the process by automating both RPM- and flow-based downlinks using programmed high/low signal sequences. The system reduces the risk of missed transitions, enables faster execution and integrates seamlessly with the CORTEX Automation platform.

The result: quicker downlinking, greater precision and more time for drillers to focus on operational priorities.

Key Benefits

Flexibility

Downlink through RPM or flow, depending on operational needs.

Faster Execution

Pre-loaded command sets and adjustable bit periods allow quicker, more consistent downlinks.

Troubleshooting Made Simple

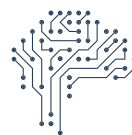
Easily adjust high/low thresholds to resolve communication issues without halting operations.

Fully Integrated

Works seamlessly within the CORTEX Automation platform for end-to-end efficiency.

Supporting the Driller

By automating repetitive downlinking tasks, CORTEX Downlink frees drillers to focus on performance oversight and crew safety.



Operators Gain Measurable Benefits

Reduced ILT from faster, more reliable downlink execution

Improved Efficiency by minimizing manual steps

Bottom Line

CORTEX Downlink delivers automated, reliable downhole communication that saves time, improves accuracy and reduces the operational burden on drillers—helping crews drill safer, faster and smarter.



OVERVIEW

CORTEX[®] MPD

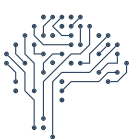
Managed Pressure Drilling

The **CORTEX[®] MPD** is our automated Managed Pressure Drilling system. This single choke system is integrated into the rig and operated by the driller to efficiently manage bottom hole pressure during drilling operations. It is a fit-for-purpose solution aimed to lower operating costs while efficiently drilling wells. Among many of the unique features are the safety redundancies with the rig control system to prevent overpressure events and its Auto Ramp Mode with an adjustable pressure control table to enable more precise ECD management during flow rate changes. CORTEX Regulator is designed with ease-of-use in mind for the driller and can be used to compensate for downhole pressure loss during connections, wellbore instability, surge/swab during tripping, water influx zones, tight windows, and depleted formations.

Features

Safety Controls	Fully Integrated	Integrated Control	Precision Choke
Safety redundancies with rig control system	Full communication with CORTEX platform	Single choke manifold integrated to rig	5,000 PSI rating, electrically actuated choke

Benefits

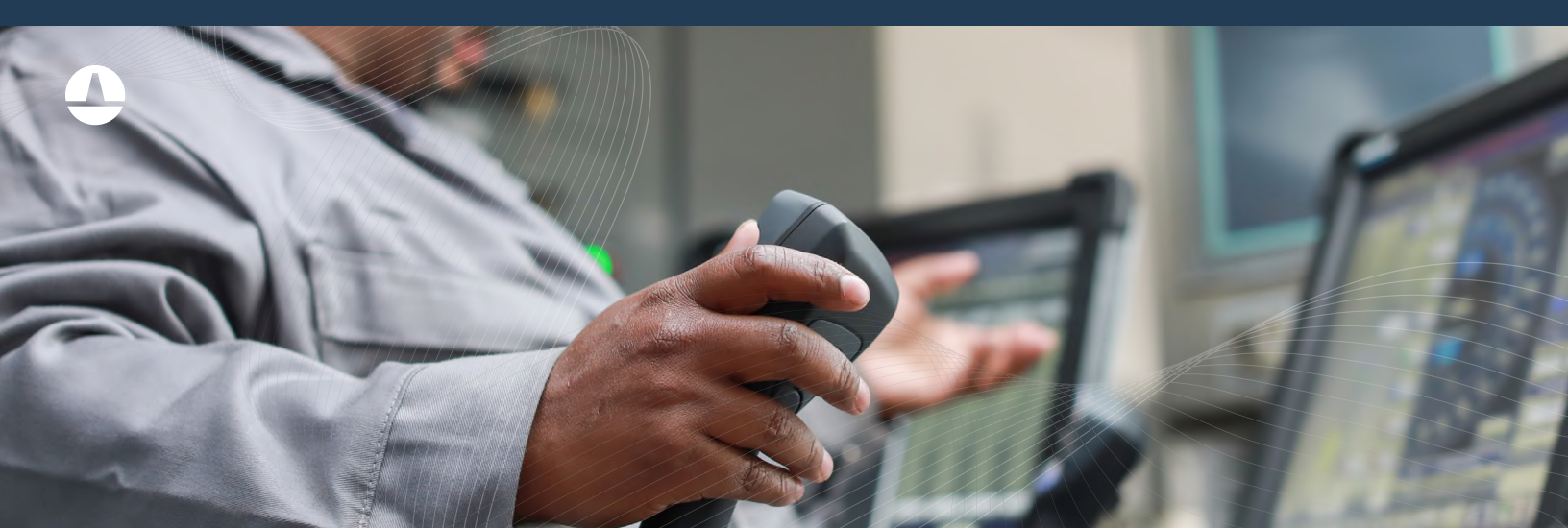


Eliminates rig-up/rig-down time between wells

Intuitive interface for drillers with advanced controls/features with **remote support available**

Added protection against overpressure events

Fit-for-purpose for the majority of US MPD operations



OVERVIEW

CORTEX[®] DRILLER

Less Dysfunction. Greater ROP. Parameter Optimization.

Why it Matters

Manually controlling drilling parameters creates variability, inefficiency and higher risk of dysfunction. Auto drillers stabilize weight, pressure and torque to maximize ROP, extend tool life and deliver safer, more efficient wells.

CORTEX[®] Driller automates parameter optimization with adaptive gain settings tied to rate of penetration (ROP). This approach stabilizes drilling control, reduces dysfunction and enables smoother, more efficient operations. Integrated with the full CORTEX Automation Suite, it provides consistent performance that scales across rigs and drilling environments.

Key Benefits

Scaled Settings

Adaptive gain schedule adjusts automatically with ROP for consistent, optimized performance.

Precision Control

Maintains stable parameters that reliably achieve performance set points.

Fully Integrated

Seamless integration with CORTEX Automation Suite for rig-wide optimization.



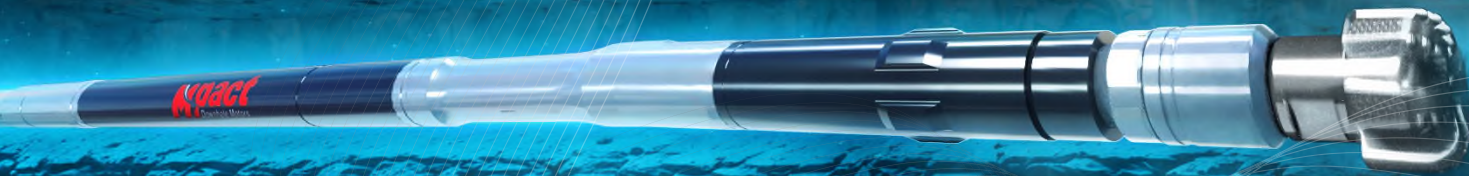
Operators Gain
Measurable Benefits

Reduced Dysfunction through smooth transitions and consistent control

Extended Tool Life by minimizing erratic or damaging drilling behaviors

Bottom Line

CORTEX Driller delivers stable, automated parameter control that reduces dysfunction, improves ROP and extends tool life—helping operations run with greater efficiency and consistency.



OVERVIEW

CORTEX[®] REAM

Automate Reaming. Enhance Precision. Optimize Drilling Performance.

Why it Matters

Manual reaming is repetitive, time-consuming and can introduce variability that affects hole quality and drilling performance. Continuous manual input also diverts the driller's attention from higher-value operational oversight and safety-critical tasks.

CORTEX[®] Ream automates the reaming process by integrating directly with the rig's control system. With a single command, drillers can initiate automated reaming operations that efficiently condition the wellbore—reducing the risks of tight spots, ledges and stuck pipe. The system lowers fatigue and improves overall operational consistency.

Key Benefits

Automated Control

Initiate reaming with precision-controlled automation at the push of a button.

Steady Conditioning

Maintains a properly gauged hole while reducing risks such as tight spots, ledges and key seats.

Integrated Control

Connects seamlessly with existing rig systems for enhanced operational efficiency.



**Operators Gain
Measurable Benefits**

Improved Consistency by removing variability from manual reaming

Reduced Fatigue by eliminating repetitive button-holding and joystick manipulation

Bottom Line

CORTEX Ream delivers automated, consistent wellbore conditioning that reduces variability in the reaming process.



OVERVIEW

CORTEX[®] STICK SLIP MITIGATION

Stick-Slip Mitigation That Protects Tools and Boosts Efficiency

Why it Matters

Stick-slip is a damaging drilling dysfunction that causes the bit to stall and surge, reducing rate of penetration (ROP), accelerating bit wear, and increasing non-productive time (NPT). If not controlled, it can shorten tool life, destabilize the wellbore, and lead to costly operational challenges.

CORTEX Stick-Slip Mitigation actively mitigates stick-slip by damping torsional vibrations through top-drive speed control. Unlike older “soft torque” systems that require frequent tuning, Stick-Slip Mitigation uses impedance-matching control to absorb torque waves at the surface, preventing them from reflecting back downhole.

The result: smoother drilling, better tool life, and a significant reduction in downtime.

Key Benefits

Optimized Performance

By maintaining smoother rotary motion, Stick-Slip Mitigation improves drilling efficiency, borehole quality, and overall operational stability.

Adaptability Across Wells

Unlike systems that require re-tuning for different string lengths, Stick-Slip Mitigation adapts automatically and operates effectively in a variety of formations.

Protecting the BHA and Bit

By absorbing torque perturbations at the surface, Stick-Slip Mitigation reduces wear and premature failure of critical downhole tools.

Automatic Engagement

Stick-Slip Mitigation is designed for simplicity: drillers can turn it on and focus on the job. Once enabled, Stick-Slip Mitigation automatically engages and disengages based on predefined operating criteria.

Supporting the Driller

By automating torsional control, Stick-Slip Mitigation allows drillers to focus on optimizing parameters, monitoring well conditions, and ensuring crew safety.



Operators Gain Measurable Benefits

Reduced NPT from fewer bit trips and tool failures

Higher Efficiency with faster, steadier ROP

Lower Costs by extending bit and BHA service life

Bottom Line

CORTEX Stick-Slip Mitigation provides operators with a reliable way to drill smoother, faster and safer. By helping maintain stable drilling conditions within established operating limits, it protects tools and the wellbore while delivering improvements in drilling efficiency.