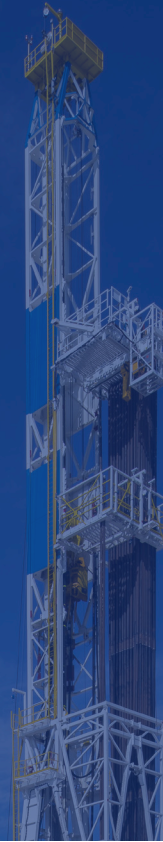


Performance drilling solutions made simple

Optimize your operations with our best-in-class equipment, industry-leading software and extensive drilling expertise. Only Nabors offers around-the-clock support from our RigLine 24/7™ Remote Operations Center.

nabors.com



01

Tubular Running

With an extensive history in the engineering and manufacturing of tools combined with meticulous maintenance standards, our casing running business has delivered outstanding value for more than 30 years.

02

MWD/LWD

Nabors Acculine MWD and FracView® LWD systems provide advanced drilling measurements and wellbore imaging at a fraction of the cost. All tools are 30' or less collar-based systems that arrive to location pre-assembled and pre-programmed for consistent, simple execution, every time.

03

Instrumentation & Analytics

The RigCLOUD® system is the industry's most comprehensive open technology platform which provides real-time analytics, visualizations, and alerts to deliver digital operations, drilling optimization and automation solutions.

04

Directional Drilling

Our proprietary fleet of high-performance positive displacement mud motors, ranging from 4 3/4" to 9 5/8", undergo the strictest quality control, resulting in exceptional reliability and delivering an average of 99% good runs.

05

Drilling Automation

Our user-friendly ROCKit® software enables precise control over toolface while slide drilling. The REVit® software preserves your bit cutting structure and increases ROP by reducing stick slip.

06

Directional Guidance

The SmartNAV™ system is a collaborative guidance and advisory platform that generates automated directional drilling instructions to drive consistent decision making and performance.

Changing the way wells are drilled



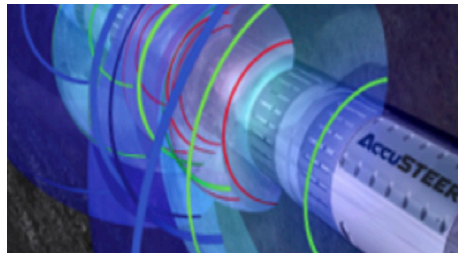
Tubular Running

Casing Running Service: capable of offering either a Casing Drive System or conventional tongs casing running service.

Multi-Plug Launching System: remotely launch cementing darts or plugs for cementing jobs. The modular and stackable design can accommodate even the most complex plug arrangements.

Multi-Lobe Torque™ (MLT) Rings: positive torque shoulder increases torque capacity of API threads in drilling and API EUE tubing used in work strings, without thread damage.

Casing Running and Reaming Tool™: gets your casing to total depth despite compromising hole conditions such as bridges, ledges, doglegs, sloughing formations, and/or deviated holes.



MWD / LWD

AccuSteer®: tool that provides downhole drilling dynamics measurements, annular and bore pressure, near bit continuous inclination and the best azimuthal gamma image in the industry.

AccuWave®: system that transmits data continuously via electromagnetic wave propagation from the downhole tool to the surface, enabling drillers to achieve considerable time savings during each connection, regardless of the drilling fluid in use.

AccuMP®: patented mud-pulsing system which differentiates itself from the competition by offering a variety of measurements to support single-station and multi-station analysis.

FracView®: high-resolution LWD borehole imager in 4.75" and 6.5" collar sizes, covering borehole diameter ranges from 5.875" (Spectre-View) to 9.5" (DrillView) and capable of both water-based and oil-based mud operations.



Instrumentation & Analytics

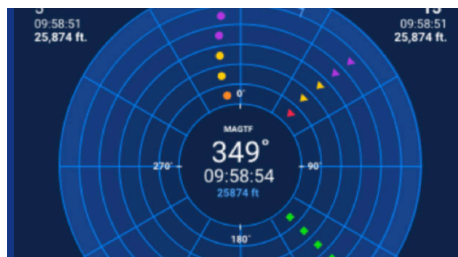
RigCLOUD® Instrumentation: allows users to easily make informed drilling decisions based on quality data. Unlike basic EDR/PVT systems, RigCLOUD Instrumentation integrates performance analytics in real-time at the rig, on the web and mobile devices.

RigCLOUD® Analytics: make knowledgeable, timely drilling decisions with RigCLOUD LiveOps® streaming analytics. The right information at the right time eliminates the need to search through different sources of data for the best path forward. Optimize execution and reduce the well learning curve with RigCLOUD Metrics® by comparing performance across multiple rigs and wells.



Directional Drilling

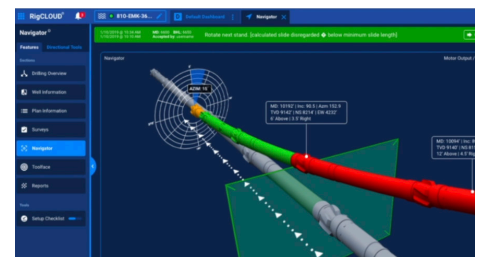
Blue Force® Motors: positive displacement mud motors ranging in size between 4.75" and 9.625". Have mud lubricated bearings wells and feet drilled available in fixed bend or adjustable bend housings.



Drilling Automation

ROCKit®: industry leading user friendly directional steering control system that increases the performance of slide drilling, through drill string oscillation and precise toolface control.

REvit® ST/ZT: automated real time stick-slip mitigation software that preserves bit cutting structure, increases rates of penetration, and reduces unplanned trips.



Directional Guidance

SmartNAV™: market leading automated directional guidance and advisory platform that drives consistent decision making, transparency, and improved wellbore trajectory.

Rigline 24/7™: digital operations center providing centralized decision making with collaborative workflows to scale your performance through digital technology.



NABORS DRILLING SOLUTIONS

Performance Drilling Technologies

Digital & Automated Solutions. Proven Performance.

● Drilling Automation

Industry leading automation proven to consistently and safely produce superior results.

- **Smart Suite** (*SmartNAV™, SmartSLIDE™ & SmartDRILL™*): Complementary suite of drilling automation and directional solutions. Consistent execution of best drilling practices results in fewer days on well while maintaining safe operations.
- **ROCKit®**: Proprietary, automated pipe oscillation software to increase rate of penetration (ROP) and deliver ideal weight on bit (WOB).
- **REVit®**: Advanced stick-slip mitigation to improve drilling performance.

● Directional Services

Scalable directional solutions to ensure precise wellbore placement and drilling efficiency.

- **SmartNAV™** : Directional guidance system, for motors and automated RSS downlinking, complete with robust instructions, 3D visualizations and anti-collision capabilities.
- **SmartSLIDE™** : Steering control system integrated with critical directional drilling information to automate slide drilling.
- **Directional Drilling**: Packages available across all major basins. Expert well planners and your choice of motor to meet the specific needs of your program. Download our, "Blue Force" app to explore our motors and request more information.

● Surface Services

Equipment, software and industry experience to optimize critical surface drilling operations.

- **Casing Running Services**: Integrated with the Casing Drive System™, our services are executed with fewer people on location and greater connection integrity.
- **Managed Pressure Drilling**: Adaptive process to precisely control the annular pressure profile throughout the wellbore to optimize mud weight and ROP.
- **RigCLOUD®**: Rig instrumentation uniquely designed to host drilling data and analytics in the cloud making performance insights available from anywhere.



RigCLOUD® is an open platform for digital operations, analytics, optimization and automation applications.

Deploy apps at the rig and on the cloud to create workflows connecting field personnel with remote users on web and mobile devices.

RigCLOUD® Apps:

- **RigCLOUD® Analytics Suite** Real-time decision support and offset well analysis through LiveOps and Metrics
- **RigCLOUD® MWD Suite** Comprehensive solution to manage MWD operations in the field and office
- **SmartNAV™** Automated directional guidance system
- **Partner Apps** Deploy and host custom solutions on the platform.

Features:

- Real-time streaming of high frequency data
- Customizable dashboards
- Daily drilling reports, daily performance reports, and operation summaries
- Custom alarms and user-defined formulas
- 24/7 expert remote and local field support teams
- Collaborative tools to enhance user to user communications
- High frequency data exports

Benefits:

- Standardized platform for drilling data and digital workflows
- High-speed data delivery
- Collaborative tools increase productivity and communications
- Flexible solutions independent of electronic drilling recorder (EDR) provider
- Integration with other Nabors Drilling Solutions products and services
- Enable automated and remote operations





RigCLOUD[®]

Digital Solutions at the Edge to Transform
Drilling Data into Drilling Performance

Built for a driller, by a driller



- **SmartROS™ + RigCLOUD®**

Maximize efficiency through deployment of advanced drilling automation, drilling analytics and emissions reduction technologies.

- **RigCLOUD® Edge**

Advanced rig instrumentation complete with a comprehensive suite of real-time drilling analytics, directional guidance, emissions reporting and advisory engine management.

- **RigCLOUD® Edge Lite**

Edge solution without the hardware footprint. This solution provides customers with the solution they need most at the edge, without limiting datacenter services or data access for remote users.

ADVANCED FEATURES

Features	SmartROS™ + RigCLOUD®	RigCLOUD® Edge	RigCLOUD® Edge Lite
Rig Controls System	✓		
Rig Instrumentation	✓	✓	
EDR Apps (Toursheet / Pipe Tally / PVT / Trip Sheet)	✓	✓	✓
Multi-Channel Scrollgraph	✓	✓	✓
Performance Reports (Daily / End of Well / Emissions)	✓	✓	✓
Customizable Dashboards	✓	✓	✓
RigCLOUD® LiveOps™	✓	✓	✓
SmartNAV™	✓	✓	✓
SmartPOWER™	✓	ADVISORY ONLY	ADVISORY ONLY
SmartSLIDE™	✓		
SmartDRILL™	✓		

CHOOSE ONE

RigCLOUD® LiveOps

Streaming analytics and drilling interpretation



Make informed and timely decisions to optimize drilling operations with streaming analytics based on real-time activity identification and KPIs.

Get the right information at the right time through:

- Operation-driven workflows enabled by LiveOps Tiles and Dashboards
- Rich visualization, purpose built for drilling analysis and interpretation
- Real-time automated KPIs to drive continuous improvements

LiveOps Tiles

Multi-rig dashboard providing fleet-wide operational awareness

LiveOps Dashboards

Operations-specific dashboards provide maximum resolution and detailed view of rig activities

Widget Apps

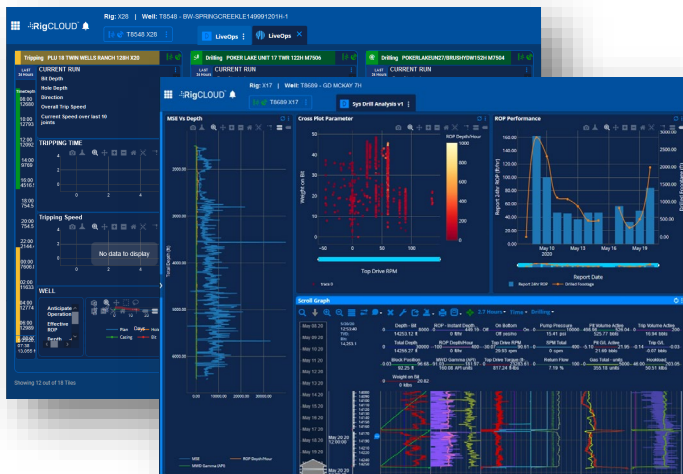
Suite of analytics and visualization tools to create custom dashboards for greater drilling insights

Features:

- Automated identification of rig operations
- Advanced drilling interpretation visualizations
- Drilling engineering calculations to analyze hazard and dysfunction indicators
- Contextual information streamed from the rig
- Field-driven, intuitive design

Benefits:

- Critical operational awareness at-a-glance
- Improve drilling and avoid hazards with live operational insights and visualizations
- Share observations directly between office and drill site through collaboration tools
- Customizable dashboards that can be shared with other users
- Improved performance derived from actionable insights



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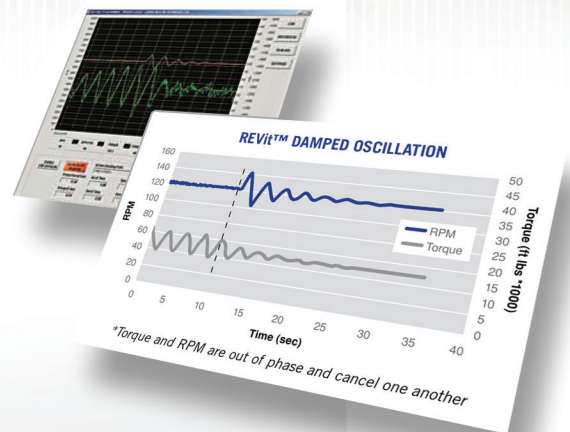
support@rigcloud.com

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REViT[®] System

Reduce stick slip to extend bit life, eliminate tool failures and increase rate of penetration



Nabors REVit[®] technology features advanced top drive automation that eliminates stick slip, a common mode of vibration that limits drilling performance.

▶ ABOUT REVIT[®] SYSTEM

REVit[®] System mitigates torsional oscillation in the drill string and prevents excessive bottom hole assembly (BHA) and bit acceleration. By precisely adjusting the top drive, rpm torque waves are absorbed and the stick slip cycle is eliminated. As a result, drillers can extend bit runs, avoid unplanned trips due to bit damage or other downhole tool failures, increase the rate of penetration and avoid erratic torque and over-torqued connections for significant savings in drilling time and costs. REVit[®] System lets the top drive manage stick slip, enabling the driller to focus on drilling as fast as possible.

▶ REVIT[®] SYSTEM FEATURES:

- Advanced top drive automation that provides real-time stick slip mitigation
- A monitored service to ensure the correct use of the system
- An upgrade to the top drive for effectiveness that does not diminish throughout the run
- A proven, reliable, simple and safe surface-based system which is not prone to down-hole failure experienced by other systems
- High service quality with minimal driller input

▶ 24/7 SUPPORT

To ensure optimal performance, the REVit[®] System service includes monitoring, training and reporting through RIGLINE 24/7[™]. Certified REVit[®] System analysts provide the parameters to tune the system, ensure that it is being used properly and send reports with detailed metrics and usage scores to the well construction team.

▶ REDUCED DRILLING TIMES

Depending on the severity of stick slip and the well type, a customer drilling with REVit[®] technology could save anywhere from one-half to six days in drilling time (and in extreme cases, even greater time savings).

For example, a customer drilling a 12.25-inch hole section to 10,800 feet in a section notorious for stick slip, trips three times on a four-well pad at around 8,000 feet and needs a new bit or mud motor to complete the section, adding an additional 12 hours of non-productive time. The REVit[®] System eliminates this lost time, while offering the potential to increase rate of penetration, decreasing rotary time by four to five hours. As a result of eliminating the three trips and saving four hours per well in drilling time, the client saves a total 48 hours on a four-well pad.

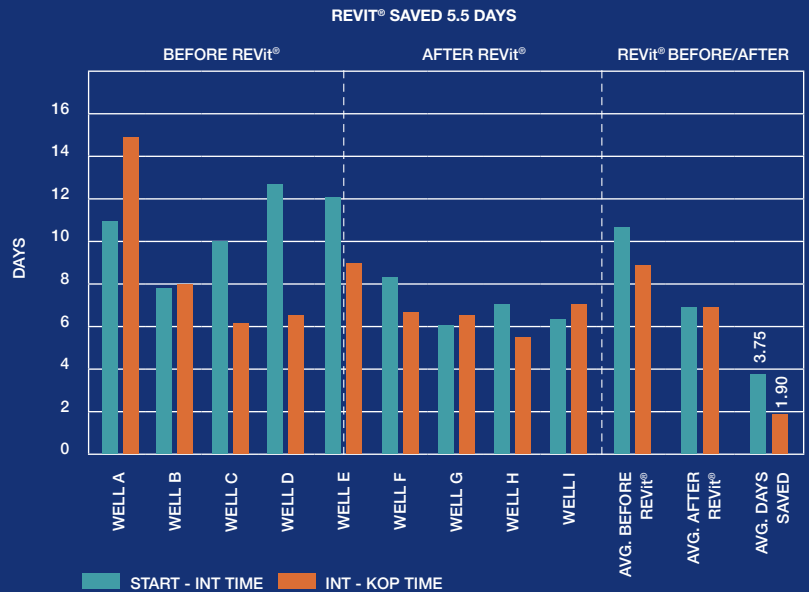
Enhance Your Operations

Nabors offers an integrated suite of performance products and services that work with REVit[®] technology to improve drilling performance. They include:

- **Total Control NonStop Driller:** A sub-based constant circulation system designed to improve drilling efficiency, operational safety, hold condition and equipment integration.
- **DrillSmart[™] Technology:** A best-in-class automatic driller based on proprietary technology that allows the system to adapt to operating parameters and drilling conditions while optimizing performance.

▶ CASE STUDY

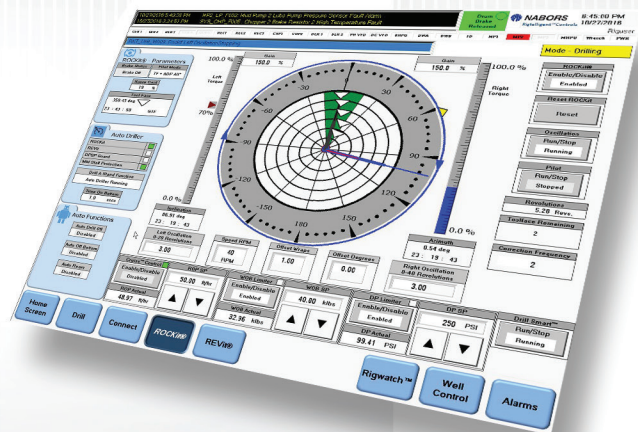
An operator drilling in the Granite Wash experienced severe stick slip in the 12 ¼-inch and 8 ¾-inch sections, leading to multiple bit runs per section and a significant amount of nonproductive time. After REVit[®] technology system was installed, the operator saved an average of two bits and 5.5 days per well.





ROCKit[®] System

Reduce drill pipe friction,
increase rate of penetration



Nabors' ROCKit® System is a patented directional steering control system that oscillates drill pipe to reduce friction and increase penetration rate, reducing drilling time and resulting in huge savings in rig time costs.

▶ ABOUT THE ROCKIT® SYSTEM

The ROCKit® Suite significantly increases rate of penetration (ROP) by rocking pipe and delivering ideal weight to bit. It promotes improved toolface control by allowing fine adjustments while still drilling ahead, reducing the need for lubricants and other friction-reducing additives. Drillers save time by quickly setting toolface orientation.

▶ THE ROCKIT® SYSTEM HELPS DRILLERS:

- **Overcome low ROP when sliding** by allowing the directional driller to oscillate the drill pipe left and right while slide drilling. The amount of oscillation can be adjusted to avoid rotating the mud motor and bit while maximizing friction reduction.
- **Slow toolface setting time** through a patented quill position that enables the driller to quickly orient the toolface prior to sliding from a human-interface control panel in the driller's cabin.
- **Steer corrections while slide drilling** from the control panel, eliminating the need to come off bottom to make steering corrections.

▶ THE ROCKIT® SUITE FEATURES THREE MAIN COMPONENTS:

Nabors ROCKit® Base System – Directional Steering Control features:

- Patented technology that oscillates drill pipe to reduce drag and increase rate of penetration (ROP)

▶ CASE STUDY

Directional Drilling Time, with ROCKit® technology and without ROCKit®

Data from case study in Barnett Shale show typical result using ROCKit® technology

- Precise angle offset control that simplifies toolface orientation
- Add-on technology for AC top drives from other vendors

ROCKit® HUD™ Integrated MWD Heads Up Display features:

- Integrated measurement while drilling (MWD) toolface and survey data to help drillers slide more effectively
- Unambiguous, real-time toolface advisory
- A system that “scores” the driller’s ability to maintain the toolface and slide effectively
- Torque and delta pressure displayed on screen to provide leading indicators of toolface steering problems

ROCKit® PILOT™ Automated Directional Steering Control System features:

- Extends ROCKit® HUD™ System functionality to include automated slide control
- Automatic toolface steering through top drive quill position control
- Allows tuning of frequency and aggressiveness of steering interventions
- Ability to combine manual control with ROCKit® Pilot™ automated steering technology

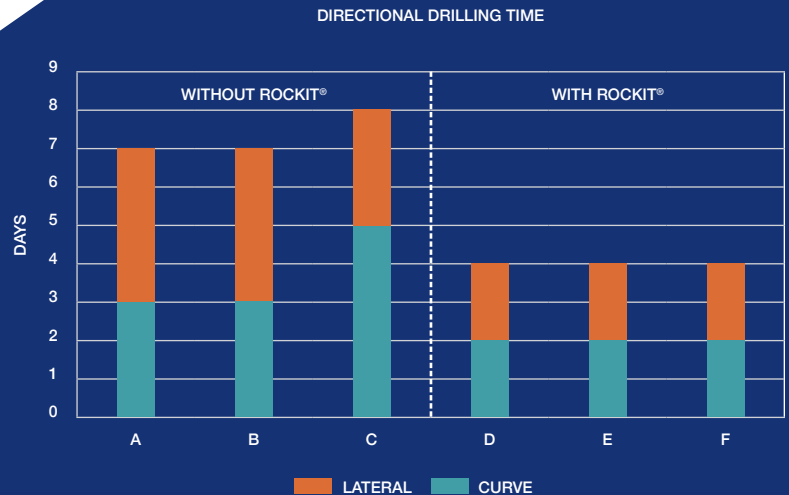
Why choose Nabors' ROCKit® System?

- Reduce friction and increase rate of penetration
- Reduce drilling time
- Save in rig costs

Enhance Your Operations

Nabors offers an integrated suite of performance products and services that work with ROCKit® System to improve drilling performance. They include:

- **Total Control NonStop Driller:** A sub-based constant circulation system designed to improve drilling efficiency, operational safety, hold condition and equipment integration.
- **DrillSmart™ Technology:** A best-in-class automatic driller based on proprietary technology that allows the system to adapt to operating parameters and drilling conditions while optimizing performance.



High-Resolution Drilling Dynamics

Industry leading LWD measurement performance when you need data on forces at bit, broadband 4-axis acceleration and downhole pressures.

Highlights

Leverage best-in-class resolution, accuracy and sample rates with this proprietary tool robust enough for the most demanding applications. DrillView's high-performance design aggregates wideband four-axis acceleration, tool face, RPM, forces at bit (WOB, TOB, BOB) and pressures in borehole annulus and the mud flow channel.

Deploy multiple tools to collect and verify calibrated along-string measurements and monitor conditions at numerous points in the drill string.

Service agnostic, the tool can be deployed on any BHA. Built-in field-replaceable batteries, deep memory storage, and speedy data readout enable long recording times and simplified service delivery.

Explore the logs using PetroMar's DeepView[®] DLIS viewer, optimized to navigate extreme sized and detailed datasets.

Applications

- Single-point/multi-point assessment and optimization
- Platform for Mechanical Specific Energy (MSE), rock properties, geo-mechanic analytics
- Analysis of high frequency torsional vibrations
- Drilling dysfunction analysis and mitigation
- Evaluation of new tools or BHA configurations
- Optimization of BHA design and drilling methods
- Bit vibration and condition-based maintenance



Deliverables

- Weight on Bit (WOB)
- Torque on Bit (TOB)
- Bending on Bit (BOB) moment and azimuth
- Wideband acceleration (3-axis and torsional)
- Continuous inclination and azimuth
- Acceleration statistics and spectral distribution
- BHA Motion Trajectory, stick-slip, and whirl
- Temperature

Complementary Companion Services

- **FracView[®]**
LWD Borehole Imager and Caliper
- **SpectraView[®]**
LWD Spectral and Azimuthal Gamma Ray Tool
- **DeepView[®]**
Extreme size DLIS Log Viewer
- **Interpretation Services**

High-Resolution Drilling Dynamics

Measurement and Performance Specifications

PARAMETER	SPECIFICATION	
Radial and Axial Acceleration (X, Y, Z, θ)	Range	$\pm 500g$, up to 5,000 Hz (-3dB BW)
Torsional Acceleration	Range	87,000 rad/s ² , 5,000 Hz (-3dB BW)
RPM	Range	$\pm 5,000$ RPM
Temperature Measurement	Range	-40 to 190°C
	Accuracy	$\pm 1.5^\circ\text{C}$ rms
	Precision	0.02°C rms
Weight-on-Bit	Sensor Range	$\pm 75,000$ lbf
	Accuracy	$\pm 4\%$
	Precision	7 lbf rms (1 sec averaging)
Torque-on-Bit	Sensor Range	$\pm 30,000$ lbf*ft
	Accuracy	$\pm 3\%$
	Precision	1 lbf*ft rms (1 sec averaging)
Bending Moment	Sensor Range	$\pm 60,000$ lbf*ft
	Accuracy	$\pm 5\%$
	Precision	1 lbf*ft rms (1 sec averaging)
Annulus and Borehole Pressure	Sensor Range	0-25,000 PSI
	Accuracy	$\pm 0.04\%$
Data Recording	Acceleration	Up to 20,000 sps
	Bit forces	Up to 200 sps
	Pressures	Up to 200 sps
	Memory	Up to 500 hours of continuous high frequency data
Power Source	Internal Batteries	

Mechanical and Environmental Specifications

PARAMETER	675	
Nominal Collar OD, in. (mm)	6.75 (171.5)	
Maximum Collar OD, in. (mm)	7.05 (179.1)	
Mud Flow Channel ID, in. (mm)	2.25 (57.2)	
Tool Length, in. (mm)	73.20 (1860)	
Tool Weight, lbs	680	
Connections	NC50 Box-Pin	
Make-up Torque, ft-lb	30,000	
Maximum WOB, lbf	400,000	
Maximum Torque, ft-lb	70,000	
Overpull non-rotating, Operational, lbf	1,500,000	
Max DLS rotating, deg / 100 ft	10	
Max DLS sliding, deg / 100 ft	21	
Max Mud Flow Rate, GPM (< 2% sand)	750	
Max Operating Temperature, °F (°C), standard	302 (150)	
	high	329 (165)
	extreme	347 (175)
Max Operating Pressure, PSI,	standard	20,000
	high	25,000

Industry leading LWD acoustic imager provides high quality borehole images, caliper, and dynamics data while-drilling with oil-based or water-based muds.

Highlights

Our proprietary dynamically-focused ultrasonic transducers enable electronically controlled changes to focal depth. Using two independent transducers, FracView[®] provides 360 degrees of coverage while rotating.

The tool captures wide-band vibration, acceleration, shock, and orientation via an integrated Drilling Dynamics monitor package, allowing for identification and flagging of drilling issues such as stick-slip and whirl.

The FracView system is memory based, runs on its own battery power, with standard API mechanical connections, allowing it to be included in any BHA.

Explore the logs using PetroMar's DeepView[®] DLIS viewer, optimized to navigate extreme sized and detailed datasets.

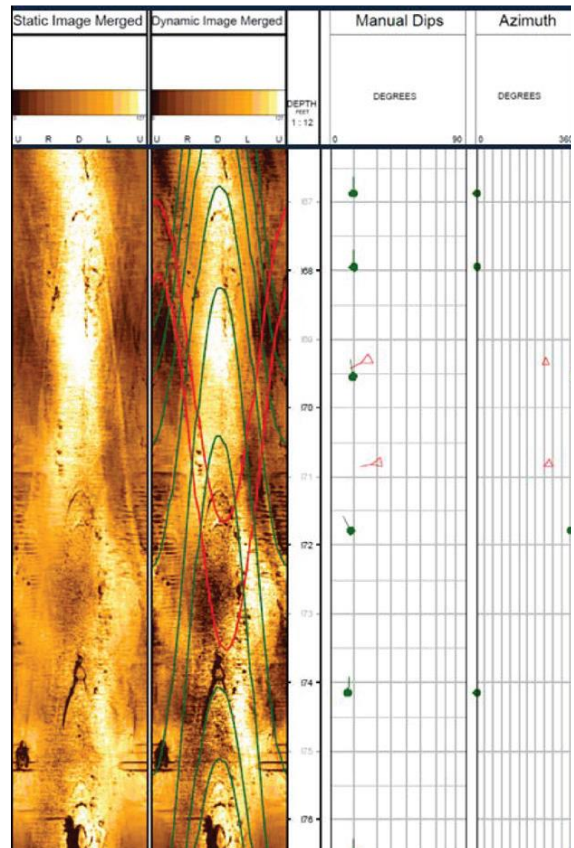
Applications

- Natural fracture/fault characterization
- Induced fracture detection
- Thin bed and vug detection
- Formation stress and stress rotation
- Borehole stability
- Lithology and facies identification
- Frac optimization
- Dip measurement

Deliverables

- High-resolution amplitude image
- High-resolution transit time image
- Precision borehole size and shape data
- Instantaneous RPM and tool face
- 3-axis vibration, stick-slip and whirl
- Temperature

High-Resolution Borehole Imager



Complementary Companion Services

- **SpectraView[®]**
LWD Spectral and Azimuthal Gamma Ray Tool
- **DrillView[®]**
Drilling Conditions Monitor
- **DeepView[®]**
Extreme size DLIS Log Viewer
- **Interpretation Services**

Measurement and Performance Specifications

PARAMETER	SPECIFICATION	
Imaging Resolution	Features spaced 0.25 in. (6.35 mm) apart or greater are fully resolved	
Feature Detection	Features as small as 0.04 in. (1 mm) are detectable	
Binning Capability	64 to 512 bins	
Orientation	High-side, Magnetic	
Radial and Axial Acceleration	Range	±40g, 240 Hz (-3dB BW) ±200g, 125 Hz (-3dB BW)
Torsional Acceleration	Range	±2,500 rad/s ² , 240 Hz (-3dB BW)
RPM	Range	±5,000 RPM
Temperature Measurement	Sensor Range	-40 to 190°C
	Accuracy	±1.5°C
	Precision	0.02°C rms
Data Recording	Accelerations & RPM	1,000 sps
	Memory	Nominal 200 hours
Power Source	Internal Batteries	Nominal 200 hours

Mechanical and Environmental Specifications

PARAMETER	475	650	675, 675HP
Nominal Collar OD, in. (mm)	5.00 (127)	6.50 (165)	6.75 (171)
Maximum Collar OD, in. (mm)	5.25 (133)	7.00 (178)	7.25 (184)
Borehole Size Coverage, in. (mm)	5.88 - 7.75 (149 - 197)	7.88 - 9.88 (200 - 251)	8.13 - 10.50 (206 - 267)
Mud Flow Channel ID, in. (mm)	1.25 (32)	2.25 (57)	2.25 (57) 2.00 (51) for 675HP
Tool Length, in. (mm)	71.50 (1816)	62.00 (1575)	64.85 (1647)
Tool Weight, lbs	295	480	600
Connections	NC38, Box-Box	NC50, Box-Box	NC50, Box-Box
Make-up Torque, ft-lb	10,000	28,000	30,000
Maximum Compression, lbf	200,000	400,000	400,000
Maximum Torque, ft-lb	20,000	75,000	75,000
Overpull non-rotating, Operational, lbf	400,000	750,000	750,000
Max DLS rotating, deg / 100 ft	15	10	10
Max DLS sliding, deg / 100 ft	30	21	21
Max Mud Flow Rate, GPM (< 2% sand)	350	750	750
Max Operating Temperature, °F (°C) standard	302 (150)	302 (150)	302 (150)
	high	329 (165)	329 (165)
	extreme	347 (175)	347 (175)
Max Operating Pressure, PSI	20,000	20,000 25,000 for 675HP	20,000 25,000 for 675HP

LWD Spectral and Azimuthal Gamma Ray

Utilizing PetroMar's advanced technology, unlock the full value of natural Gamma Ray measurement by extracting information encoded in its spectrum and azimuthal distribution.

Highlights

Elemental concentration of potassium (K), uranium (U) and thorium (Th) in the formation around borehole as well as azimuthally-binned images derived from SpectraView measurements bring value to numerous workflows and applications.

SpectraView tool is memory based, runs on its own battery power, with standard API mechanical connections, allowing it to be included in any BHA.

Proprietary acquisition scheme allows for extreme flexibility of post-processing parameters and optimization of the output for specific application.

Proprietary gain stabilization methodology does not use radioactive sources

Applications

- Lithology determination
- Sedimentology
- Unconformity detection
- Pay zone identification
- Completion optimization
- Cross-well communication



Deliverables

- Standard API calibrated Total Gamma Ray
- Azimuthally binned Gamma Ray images
- K, U, and Th elemental concentrations
- Azimuthally binned elemental concentration images
- RPM statistics and tool face
- 3-axis vibration, stick-slip and whirl
- Temperature

Complementary Companion Services

- **FracView[®]**
LWD Borehole Imager and Caliper
- **DrillView[®]**
Drilling Conditions Monitor
- **DeepView[®]**
Extreme size DLIS Log Viewer
- **Interpretation Services**

LWD Spectral and Azimuthal Gamma Ray

PARAMETER	SPECIFICATION			
	Potassium	Thorium	Uranium	GR Counts
Measurement Range (*)	0 – 20%	0 – 300 ppm	0 – 300 ppm	0 – 1200 gAPI
Measurement Accuracy (**)	Larger of 0.2% weight – fraction or 5% reading	Larger of 0.5 ppm or 5% of reading	Larger of 0.5 ppm or 5% of reading	Larger of 2 gAPI or 5% of reading
Repeatability/ Precision (**)	0.25% weight-fraction rms	2.2 ppm rms	1.3 ppm rms	1.7% rms
Azimuthal GR	Binning GR counts into 2, 4, 8, or 16 bins			
Gain Stabilization	Source-less, using a proprietary gain compensation methodology			
Orientation	High-side, Magnetic			
Radial and Axial Acceleration	Range	±40g, 240 Hz (-3dB BW)		
Torsional Acceleration	Range	±2,500 rad/s ² , 240 Hz (-3dB BW)		
RPM	Range	±5,000 RPM		
Temperature Measurement	Sensor Range	-40 to 190°C		
	Accuracy	±1.5°C		
	Precision	0.02°C rms		
Data Recording	Nominal 200 hours			
Power Source	Internal batteries			

Mechanical and Environmental Specifications

PARAMETER	475	675
Nominal Collar OD, in. (mm)	4.75 (120.7)	6.75 (171.5)
Maximum Collar OD, in. (mm)	5.25 (133.4)	7.25 (184.2)
	5.59 (142.0) with spiral fins	
Mud Flow Channel ID, in. (mm)	1.25 (31.8)	2.00 (50.8)
Tool Length, in. (mm)	112 (2844.8)	81.1 (2059.9)
Tool Weight, lbs	490	715
Connections	NC40, Box-Box	NC50, Box-Pin
Make-up Torque, ft-lb	12,000	30,000
Maximum Compression, lbf	200,000	400,000
Maximum Torque, ft-lb	20,000	50,000
Overpull w/o rotation, operational, lbf	400,000	750,000
Max DLS rotating, deg / 100 ft	15	10
Max DLS sliding, deg / 100 ft	30	21
Max Mud Flow Rate, GPM (< 2% sand)	350	750
Max Operating Temperature, °F (°C), standard	302 (150)	302 (150)
	high	329 (165)
	extreme	347 (175)
Maximum Operating Pressure, PSI	20,000	20,000

(*) based on typical concentrations observed

(**) standard 100 gAPI shale (2% K, 12 ppm Th, 6 ppm U) using 20 second averaging window, homogeneous formation, centralized within borehole

SmartNAV®

Advisory automation to streamline and automate the vital decision-making process that drives directional drilling success. By combining an intelligent directional guidance system with rich visualizations and advanced anticollision software, this system improves wellbore placement accuracy and directional drilling outcomes.

nabors.com

Precise.
Consistent.
Collaborative.



Precise Directional Guidance

Customizable best practices and rules ensure automated instructions are fit-for-purpose and compliant with standard operating procedures. Stand-by-stand slide or rotate instructions minimize total slide footage while following steering rules for a faster, more precise wellbore.

Consistent Decision Making

Build consistency with tools that aggregate and disseminate best practices across rigs, crews and wells. Oversee multiple operations from a centralized remote operating center that concentrates directional expertise for application of best practices.

Collaborative Interface

From the rig site to the remote operations center, operators gain greater visibility into the directional operation. The fully accessible cloud interface augments interaction with steering instructions, target change decisions and track adherence to plan.

SmartSLIDE®

Directional steering control system to automate slide drilling. This automated solution consistently delivers differentiated performance through consistent execution of best practices and fewer slides. Results can be scaled from one rig across an entire fleet. Compatible with traditional directional drilling or fully-remote operations.

nabors.com

Proven.
Precise.
Adaptive.

Demonstrated Success

With hundreds of automated wells drilled in every major U.S. land basin, SmartSLIDE automaton has delivered value on projects ranging from complex multi-well programs to single well applications. Seasoned operations experts customize the service with training, remote support and KPIs to ensure operational performance.

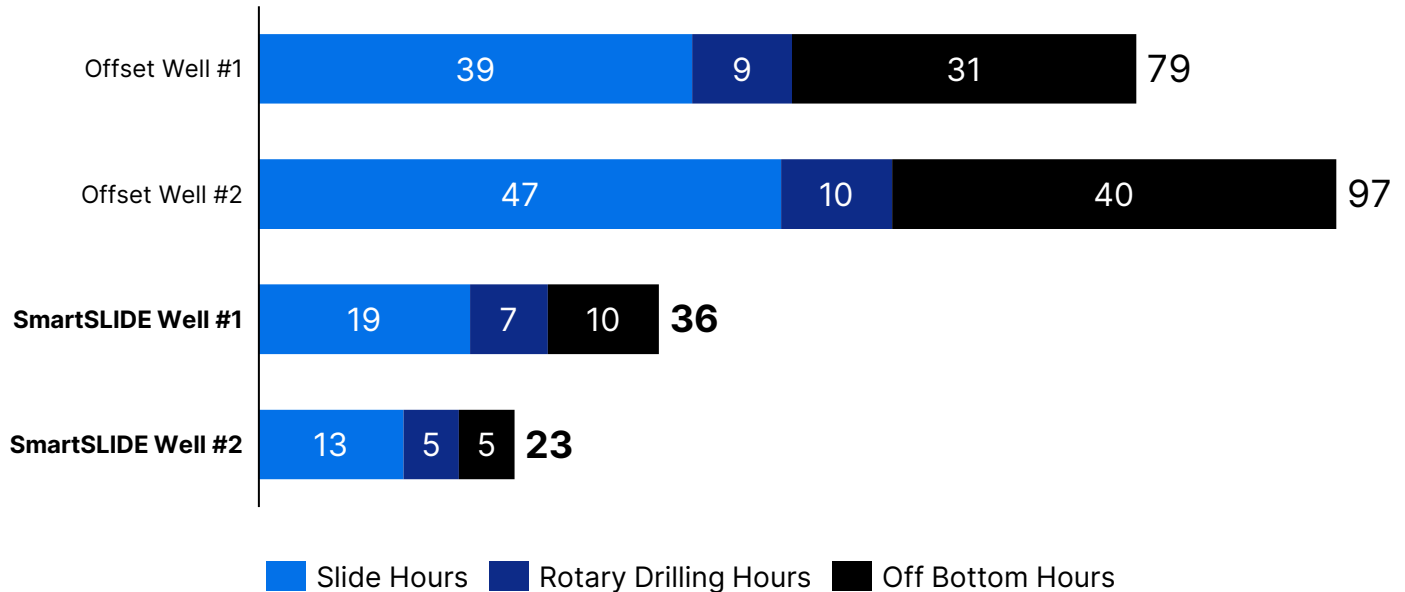
Consistent Execution

The software performs the off-bottom steps required to initiate a slide, then executes on-bottom steering corrections for optimal slide performance. The result is predictable slide executions regardless of driller experience or experts on location.

Corrective Controls

By aggregating massive amounts of downhole information and surface instrumentation data, this method employs a robust and adaptive algorithm to drive precise steering corrections and optimize slide drilling execution.

Curve Cycle Time Reduction (hours)



71% reduction in curve cycle time and **67% reduction** in slide hours from the first offset well to the second automated well.

Integrated Offerings to Enhance Drilling Performance



RigCLOUD® Instrumentation: Rig instrumentation that integrates performance analytics in real-time at the rig, on the web and via mobile devices.



RigCLOUD® Analytics: With RigCLOUD Analytics, customers have access to automated KPI's for SmartSLIDE automation. With the click of a button, easily compare manual versus automated slides.



SmartNAV®: An intelligent directional guidance system combines instructions with rich visualizations and robust analytics for predictable decision making and improved wellbore placement accuracy.



Fuel Enhancer



INCREASED FUEL EFFICIENCY



CO EMISSION REDUCTION



PARTICULATE MATTER REDUCTION



NO_x REDUCTION

nanO₂[®] fuel enhancer is a patented and proprietary catalyst that enhances the combustion process of diesel engines. This proven technology has resulted in improved fuel efficiency, reduction of emissions, and increases in power without the requirement of costly engine modifications.



Increases lubrication to injectors and combustion chamber reducing engine wear



Improved fuel efficiency by increasing the quality of the fuel through cetane improvers



Reduces GHG emissions providing additional oxygen for a more complete burn



Cleans fuel injectors and removes carbon deposits by burning off existing carbon deposits



Improves engine life by reducing peak combustion temperature and pressure



Automated fluid dosing with digital KPI's deployed at the edge track real time savings and engine performance

Canrig® as sole provider under an exclusive license with Purify Fuels. For more information regarding certain exclusions for submarkets in North America, please contact your Canrig representative.



Canrig PowerTAP reduces cost and emission by connecting the highline power grid to the drilling rig, powering all electrical components without the need of diesel generated power drilling rig. Manufactured to meet IEEE standards and as many utility provider requirements as possible*, which includes transfer switch for easy switching between utility power and generator power.

KEY FEATURES

- Option to reduce loads or have on-site gen-sets for backup power
- Eliminates the use of diesel power generation on the well site reducing the on-site GHG emissions from gen-sets to zero.
- Reduces noise pollution by eliminating the need for diesel or natural gas-powered gen-sets.
- Skid Mounted for easy transport
- Conductor cable stored on a reel with standalone pay in/out capabilities from utility pole to rig.

Up to
60%

**CO₂ Emissions
Reduction**

Up to
50%

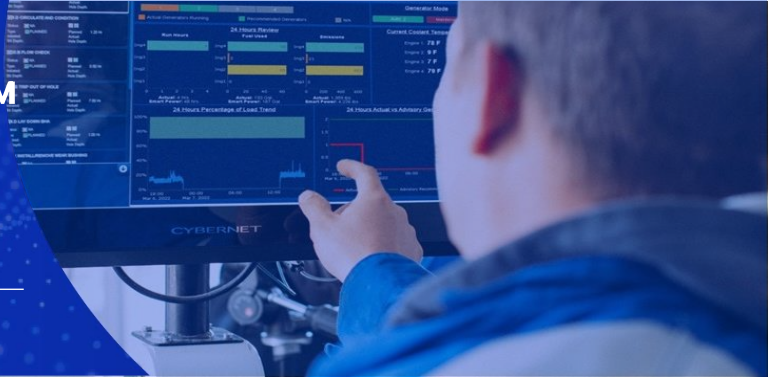
Fuel Savings





SmartPOWER™

Engine and Power Management



SmartPOWER advisory solution applies artificial intelligence (AI) to analyze live data from the electronic drilling recorder (EDR) and a proprietary engine de-rating module to learn the rigs power needs.

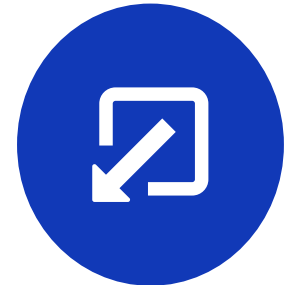
The system advises driller on the optimum number of engines to be run in real-time reducing fuel consumption, fuel emissions and ensuring optimum load on engines.

KEY FEATURES

- 10-minute look predicting power requirements
- De-rating module assesses service life, altitude, coolant temperature, oil and filter conditions, and other factors of each engine to rate the available power capacity based on its specific conditions
- HMI dashboards include real-time engine, generator and SmartPOWER advisory along with past 24-hour engine and generator usage
- Fully automated option available by connecting to rig generator control system



Decreased Fuel Consumption



Reduced Emissions



Improved Engine Maintenance

nanO₂[®] Third Party Argentina Case Study



Objective

Reduce the emissions impact of the drilling rig operations, by improving the fuel efficiency of the power generation systems in Argentina.

Solution and Testing Procedure

The nanO₂ fuel enhancer was deployed on a drilling rig in Argentina to validate its effectiveness.

The accurate ratio of nanO₂ was added to the fuel each time the rig received a delivery using the manual dosing procedure. The manual dosing procedure was implemented as a fast, low-cost solution.

Using kilowatt per gallon (kWh/gal) as the standard key performance indicator (KPI) to evaluate the rig's efficiency, fuel usage and engine load were monitored. Engine energy and fuel consumption were recorded and reported on an hourly basis and captured via rig controls. The recorded data was analyzed to complete the kWh/Gal efficiency computation.

Results

Testing resulted in a 6.4% increase in fuel efficiency over the baseline, saving 1,284 gallons of diesel over the 36 days that used nanO₂. With individual engines being monitored, changes in efficiency due to changes in engine management are negated when comparing the two data sets.

The 1,284-gallon fuel savings equates to an estimated reduction of 13.15 metric tons of CO₂e*. This does not take into consideration the additional reduction in emissions resulting from nanO₂ that have been observed.

Conclusion

The nanO₂ fuel enhancer was effective in reducing emissions of the Argentina operations and increasing its fuel efficiencies. The rig successfully implemented the manual dosing procedure into daily operations to ensure continued savings and safe operations.

*Source: *Based on 2021 EPA GHG emission Factors. CO₂e (equivalent) is calculated by including the GWP of CH₄ and N₂O of diesel to standard CO₂ Diesel Fuel Emissions*

Case Study Details

Location: Argentina

Timeframe:

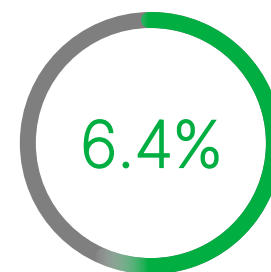
- Baseline: 20 Days
- nanO₂: 36 Days

Test KPI: kWh/gal

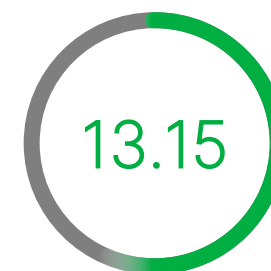
Rig Spec: Land Rig

Power Generation: CAT 3512

Results Overview



Increase in Fuel Efficiency



Metric Ton's of CO₂e* Saved

nanO₂[®] Nabors Colombia Case Study



Objective

Reduce the emissions impact from drilling operations on multiple rigs in Colombia by decreasing fuel use from rig power generation.

Solution and Testing Procedure

The nanO₂ fuel enhancer was deployed on five drilling rigs in Colombia to validate its effectiveness.

The accurate ratio of nanO₂ was added to the fuel each time the rig received a delivery using the manual dosing procedure. The manual dosing procedure was implemented as a fast, low-cost solution.

To establish a baseline for each well, data was collected for the five rigs at varying drilling phases. Daily fuel usage was recorded from the tank level readings. The fuel consumed per day for each well section was used as the key performance indicator (KPI) for this study due to the large sample size of data collected. The time period using nanO₂ was also broken down by well section. To compare each day's fuel use, a relevant baseline section was calculated from two or more wells.

Results

Testing of the five rigs resulted in a 5.3% increase (weighted by fuel use) in fuel efficiency over the baseline, saving 24,486 gallons of diesel over 25 wells.

The 24,486-gallon fuel savings equates to an estimated reduction of 250 metric tons of CO₂e*. This does not take into consideration the additional reduction in emissions resulting from nanO₂ that have been observed.

Rig	Overall Savings
Rig 1	4.4%
Rig 2	3.6%
Rig 3	3.5%
Rig 4	7.8%
Rig 5	6.9%

Conclusion

The nanO₂ fuel enhancer was effective in reducing emissions of Colombia's operations and increasing its fuel efficiencies. The rigs successfully implemented the manual dosing procedure into daily operations to ensure continued savings and safe operations.

*Source: *Based on 2021 EPA GHG emission Factors. CO₂e (equivalent) is calculated by including the GWP of CH₄ and N₂O of diesel to standard CO₂ Diesel Fuel Emissions*

Case Study Details

Location: Colombia

Timeframe: February 2022 - August 2022

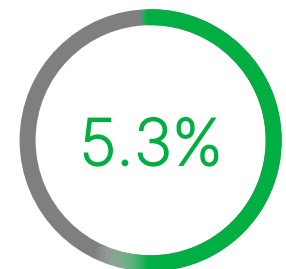
Scope: 5 Rig Deployment

Test KPI: Fuel Used Per Well Section

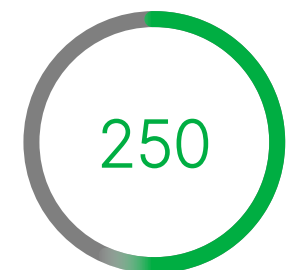
Rig Spec: Land Rig

Power Generation: CAT 3512

Results Overview (Across 5 Rigs)



Average Increase in
Fuel Efficiency



Total Metric Ton's of
CO₂e* Saved

Solutions

All solutions supported
by RIGLINE 24/7

24/7 technical support, training and remote troubleshooting. Expertly trained professionals that provide efficient logistics support, preventative maintenance and remotely operate rigs utilizing our directional services and drilling automation.

Platforms

SmartROS™

The only rig operating system built by a drilling contractor. This proprietary system enables us to easily deploy drilling process automation and implement best-in-class cybersecurity measures.

RigCLOUD®

Rig instrumentation incorporating high-end edge computing technology and advance, cloud-based drilling analytics to optimize performance.

Automation

SmartNAV®

Directional guidance system with robust instructions, 3D visualizations and anti-collision mechanisms. Compatible with RSS and traditional mud motors.

SmartDRILL®

Advanced drilling process automation proven to decrease connection times and unplanned trips.

SmartSLIDE®

Steering control system integrated with critical directional drilling information to automate slide drilling.

SmartPLAN®

Manages operator's and driller's workflows to continuously improve well delivery and execution through flat time identification and step-by-step guidance to adhere to best practices.

ROCKit®

Patented, automated pipe oscillation software to increase rate of penetration (ROP) and deliver ideal weight on bit.

REVit®

Fully automated stick-slip mitigation to improve rotary drilling.

Services

Remote Operations Center

State of the art remote operations center to manage and execute drilling automation, directional drilling logistics and monitor equipment in real-time.

Managed Pressure Drilling

Adaptive process to precisely control the annular pressure profile throughout the wellbore to optimize mud weight and rate of penetration (ROP).

Tubular Running Services

Integrated model that reduces on-site personnel in the red zone and delivers casing with accuracy, consistency and connection integrity through automation.

This presentation only showcases only a part of our extensive suite of products and services. Please ask a representative if you are interested in services not listed.

Description

Canrig PowerFLOW combines supercapacitor energy storage with the SmartPOWER™ power management system to provide a true Peak Shaving® solution, reducing the required number of online generators.

The patented DC bus technology combined with the use of super capacitors allows PowerFLOW to provide immediate power for load spikes during tripping and other operations, maximizing energy capture during drawworks braking. PowerFLOW improves the drawworks motor acceleration curve and reduces the need for diesel generated power above base load.

Specifications

POWER RATING	3 MW
ENERGY STORAGE	91 kWh
CHARGE/DISCHARGE C-RATE (TYPICAL)	25 C
CHARGE/DISCHARGE C-RATE (PEAK)	50 C
AMPS (CONTINUOUS)	3,000 amps
AMPS (PEAK)	4,500 amps
TEMPERATURE (OPERATING)	-25°C to +55°C
TEMPERATURE (STORAGE/OFFLINE)	-40°C to +70°C
CHARGE/DISCHARGE CYCLES	500,000+ Cycles
LIFE EXPECTANCY	30+ Years
DISCHARGE TIME	9.5 Minutes @ 1,000 amps

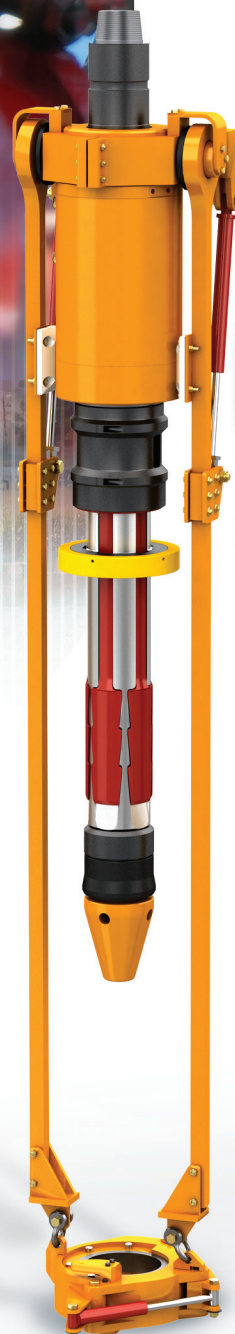


Tubular Running Services

Nabors' technology improves safety, reliability and efficiency while running casing



NABORS





Nabors Technology Packages Get Casing to Bottom Safely and Efficiently

There's a better way to run casing. Nabors provides a wide range of casing running services that significantly improves safety, connection integrity, and operating efficiency compared to traditional methods.

The traditional method for running casing crowds the rig floor with equipment and requires crews of up to eight people. The crowded workspace and manual pipe handling expose personnel to safety hazards. Conventional power tongs struggle to make up consistent, verifiable connections to assure string integrity. Traditional methods are subject to delays during labor intensive rig-up and rig-down activities, and while transitioning between casing and cementing tasks. During cementing operations, conventional equipment lacks the ability to rotate casing, resulting in a less than optimal cement bond.

Full Range of Tubular Running Services

Nabors offers a full range of tubular running services to match operators' requirements and preferences.

While operators can benefit from using the Casing Drive System™ (CDS) along with conventional casing running equipment, greater safety and efficiency advantages can be gained by employing a larger scope of Nabors technologies to automate operations and reduce manual pipe handling. In addition to a lower total cost of ownership, the greatest improvements in safety, reliability, efficiency and well integrity can be realized when casing running technologies are fully integrated with the Nabors drilling rig and its Rigtelligent™ controls.

Nabors tubular running services are available in four tiered packages:

▶ LEVEL 1: COMBINATION PACKAGE

For operators who prefer to supplement conventional casing running with new technology, the Combination Package includes a CDS as part of a full suite of tubular running services equipment. The package includes power tongs, bails, hand slips, conventional elevators and ancillary equipment. In this configuration, the CDS tool is used for pipe handling, and the power tongs are used to make up connections. Because of the large amount of included equipment, this option requires more rig-up time than other packages. It also calls for a crew of up to eight people.

▶ LEVEL 2: SILVER PACKAGE

The Silver Package eliminates the power tongs and relies on the CDS and top drive to make up connections. The TesTORK® system is included to monitor and record connection specifications. This package improves safety by removing the power tongs and reducing crew size to six personnel. It also improves filling, circulation and reaming capabilities.

▶ LEVEL 3: PLATINUM PACKAGE

The Platinum Package further improves safety by replacing hand slips (used on the Combination and Silver Packages) with automated, flush mount slips. Automated slips reduce personnel exposure on the rig floor and save time. The Platinum Package requires a crew of four personnel.

▶ LEVEL 4: CRT-READY™ PACKAGE

The CRT-Ready™ Package fully integrates the casing running tools with the Nabors drilling rig. Equipment supplied with this package is the same as for the Platinum Package. However at this level, CDS hydraulics are integrated with the rig's operating control system, allowing the top drive and other rig components to be operated from the driller's chair using Rigtelligent™ controls. All equipment is operated by two trained Nabors personnel assigned to the rig. This approach reduces third parties on location and contributes to more efficient operations.

	LEVEL 1: COMBINATION	LEVEL 2: SILVER	LEVEL 3: PLATINUM	LEVEL 4: CRT-READY™
Major Equipment	CDS tool with HPU	CDS tool with HPU	CDS tool with HPU	CDS tool complete with Hardware / Software Integration
	Power Tongs and Units	Handling Equipment w/Bails	Handling Equipment w/Bails	Handling Equipment w/Bails
	Handling Equipment w/Bails	TesTORK® (Current Configuration)	TesTORK® (Auto-start Software)	TesTORK® (Software Integration)
	Contech Conventional TT			
Crew Size	8 Personnel	6 Personnel	4 Personnel	2 Personnel
Rig-up and down (hours)	3	2	2	1
Risk/Hazard Reduction	-	Yes	Yes	Yes
Simplicity/Versatility	-	Yes	Yes	Yes
Consistency/Repeatability	-	Yes	Yes	Yes
Rotate/Ream	Limited	Yes	Yes	Yes
Rotate + Cement	Yes	Yes	Yes	Yes
Automatic Torque Turn	No	No	Yes	Yes
Performance Metrics & Analytics	Manual	Manual	Manual	Automated
Auto-Start Feature	Manual	Manual	Automated	Automated

CDS workflows will not impair tubular running speeds.

CRT-Ready™ Package will optimize running speeds due to the automated performance features where learning trends can be instantly adopted.

Nabors Technology

Casing Drive System™

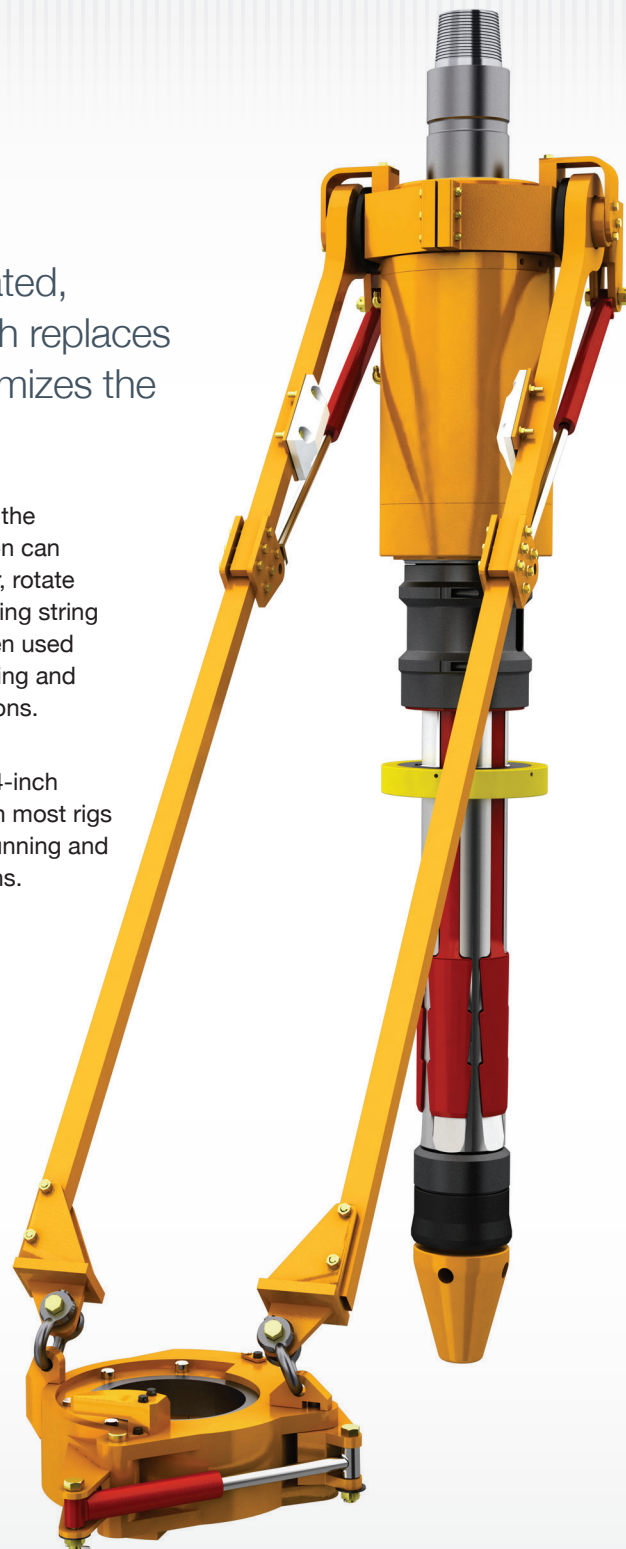
The Casing Drive System™ (CDS) is an automated, versatile and powerful casing running tool, which replaces conventional pipe handling equipment and minimizes the need for manual operations on the rig floor.

The CDS incorporates link tilts and a hydraulic single joint elevator, so the system can pick up casing directly at the V-door. The CDS includes an innovative link-tilt system that positions the casing joint over the hole, reducing manual pipe handling before the connection is made.

When used in conjunction with the top drive, the CDS replaces the power tongs and can make up connections to precise torque specifications, as controlled from the driller's console. The Nabors Zero Weight Interlock™ system prevents the string from dropping into the wellbore

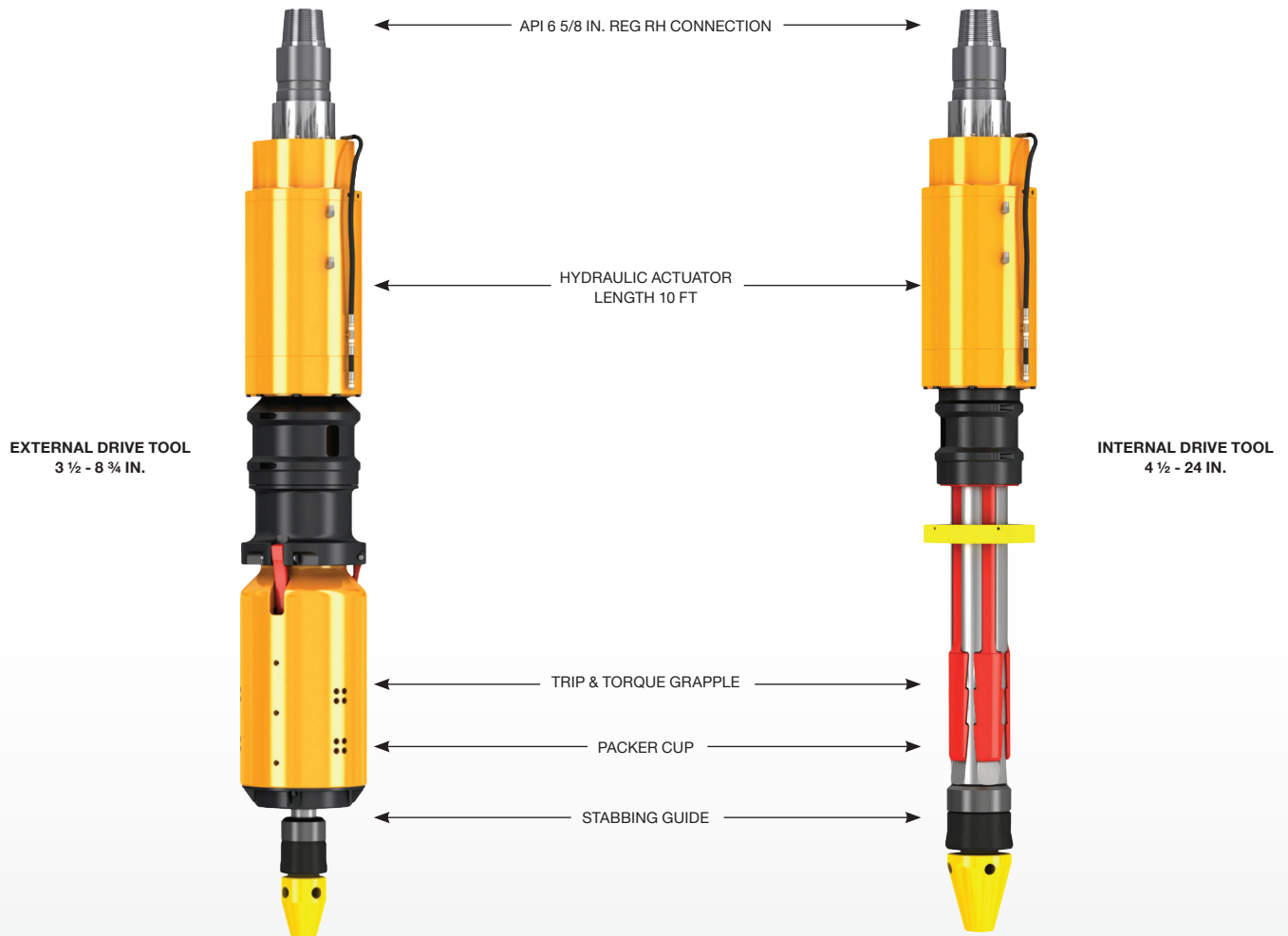
before the slips are set. Once the connection is made, circulation can begin, and the CDS can lower, rotate and reciprocate the entire casing string as required. The CDS has been used extensively in ream-while-casing and casing-while-drilling applications.

The CDS is available in many configurations to run 3½ to 24-inch casing, and is compatible with most rigs and a wide range of tubular running and casing-while-drilling operations.



CASING DRIVE SYSTEM™ SPECIFICATIONS

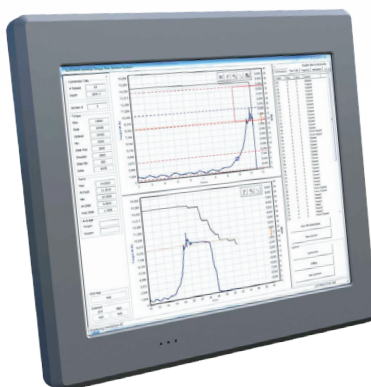
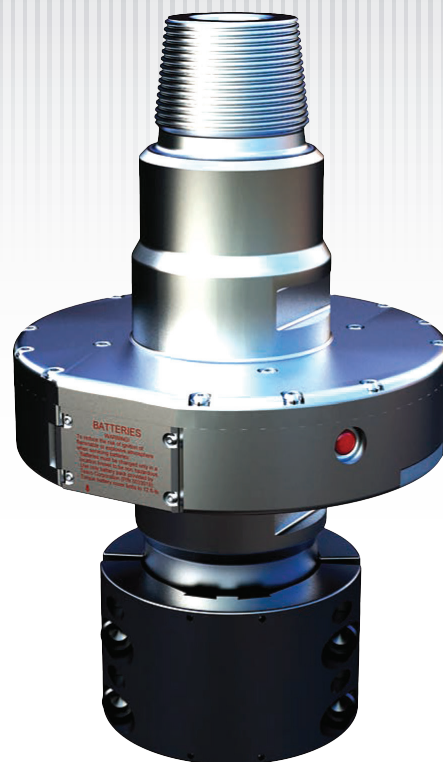
Hoisting Capacity	350 Ton External	500 Ton Internal	750 Ton Internal
Casing Sizes	3 ½ - 8 5/8 in.	4 ½ - 24 in.	9 5/8 - 20 in.
Length	10 ft	10 ft	19 ft
Maximum Torque	40,000 ft-lbs	40,000 ft-lbs	80,000 ft-lbs
Maximum Drilling Fluid Pressure	5,000 PSI	5,000 PSI	5,000 PSI
Maximum Operating Speed	200 RPM	200 RPM </td <td>100 RPM</td>	100 RPM
Maximum Push Down Capacity	25,000 lbs	25,000 lbs	25,000 lbs



TesTORK® System

The wireless TesTORK® system accurately monitors connection torque, tension and the number of turns during connection makeup.

The TesTORK® sub includes high precision instrumentation. During connections, TesTORK® wirelessly transmits torque and rotational data in real time to a computer that logs and displays data on each connection. Precise measurement of connections enables accurate and consistent makeup and assures the integrity of connections.



Multi-Plug Launching System

The Multi-Plug Launching System (MPLS) can be used with the CDS to simplify, accelerate and increase the automation of the transition from casing running to cementing.

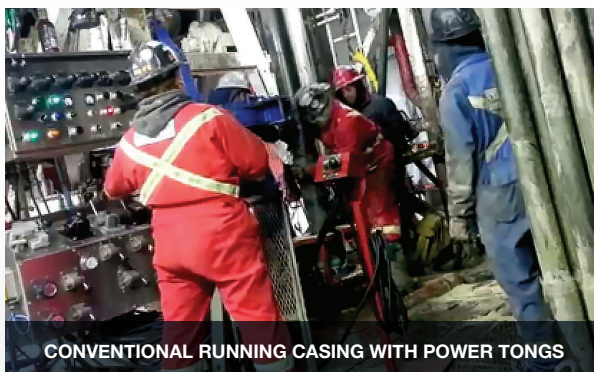
The MPLS is attached to the CDS with a pup joint and is used to remotely launch plugs or darts for single or multiple stage cementing. The MPLS launches plugs wirelessly without manual operation for improved safety and efficiency.

Casing Drive System™ Brings Advantages by Eliminating Power Tongs

CASING DRIVE SYSTEM™	VS.	POWER TONGS
<ul style="list-style-type: none"> - Controlled pipe handling - Clean and efficient rig floor - Personnel removed from Red Zone 	HSE	<ul style="list-style-type: none"> - Pinch points - Crush points - Heavy to maneuver - Personnel in the red zone
<ul style="list-style-type: none"> - Connection consistency, repeatability - Robust equipment - Fewer mechanical failures 	Quality	<ul style="list-style-type: none"> - Inconsistent make-up - Lack of control and repeatability - Mechanically intensive
<ul style="list-style-type: none"> - Smaller footprint and less equipment for faster rig-up with personnel outside of the Red Zone 	Rig-up	<ul style="list-style-type: none"> - Additional equipment, heavy hoses, increased risks due to housekeeping associated with additional equipment - Snubbing angles create torque variances
<ul style="list-style-type: none"> - Less equipment - Lower risk - Decreased overlap with other service providers 	Rig-down	<ul style="list-style-type: none"> - More equipment , more risk, interference with other service providers
<ul style="list-style-type: none"> - Accommodates 3.5 - 24 in. tubulars - Modular design - Ability to rotate and reciprocate 	Versatility	<ul style="list-style-type: none"> - Non-modular - Large equipment footprint - Multiple fail points - Cannot rotate casing and reciprocate
<ul style="list-style-type: none"> - Cementing capabilities - Efficient transition to cementing operations 	Cementing	<ul style="list-style-type: none"> - Cumbersome rig-down to transition of conventional cementing head
<ul style="list-style-type: none"> - Designed for casing-while-drilling operations - Robust with rare failures 	Reliability	<ul style="list-style-type: none"> - 65% of TRS downtime is Power Tong related
<ul style="list-style-type: none"> - Fewer people - Less injury exposure 	Personnel	<ul style="list-style-type: none"> - More labor-intensive - Personnel in Red Zone are subject to injury exposure
<ul style="list-style-type: none"> - Fewer pieces, tidy Red Zone - Fewer moving parts 	Footprint	<ul style="list-style-type: none"> - Red Zone clutter - Many moving parts - Tugger reliance increases risk for dropped hazards - Numerous pieces of equipment
<ul style="list-style-type: none"> - Controlled RPM, thread compensation, and torque parameters - Consistent push/pull forces 	Connection Integrity	<ul style="list-style-type: none"> - RPM variance - Spring compensation - Inconsistent hydraulic "dump" of connection make-up - Potential for human error



AT A GLANCE



Nabors Tubular Running Service Highlights

- ▶ Reduces equipment footprint, personnel and safety hazard exposure
- ▶ Eliminates power tongs and safety “pinch points”
- ▶ Configurations to match operator preferences and work scope
- ▶ Handles most casing sizes and torque requirements
- ▶ Adaptable for triple, double and most super-single rigs
- ▶ Rigs up easily compared to conventional equipment suite
- ▶ Casing Drive System™ replaces all casing running equipment
- ▶ Unique link tilt design provides most efficient pipe handling available
- ▶ Patented Zero Weight Interlock™ safety lock system prevents dropped casing
- ▶ Eliminates flat time during fill and circulation activities
- ▶ Enables casing rotation while cementing to assure good cement job and predictable top of cement
- ▶ CRT-Ready™ Package maximizes use of Nabors rig during casing running
- ▶ TesTORK® monitoring system provides industry’s most accurate and repeatable connections
- ▶ Proven over a decade of field success in tortuous well applications and harsh casing-while-drilling environments

Decades of Tubular Running Service Experience

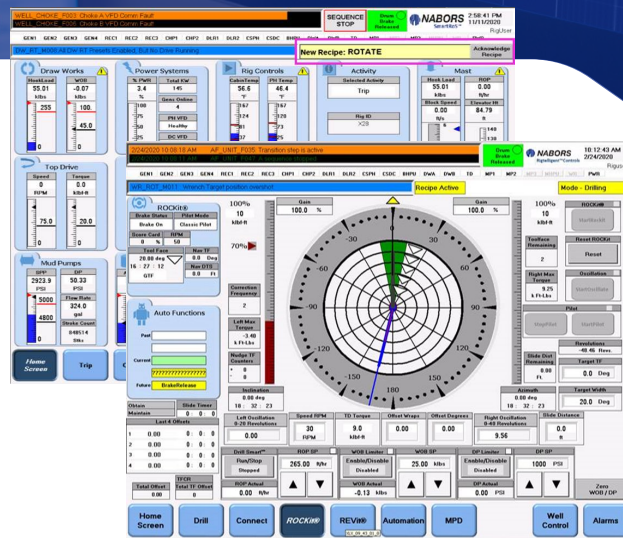
Nabors has decades of tubular running service experience and has leveraged this successful track record to design and deploy reliable and efficient casing running equipment. The Casing Drive System™ has been used on more than 100,000 wells worldwide to successfully run casing in deviated, horizontal and complex well and casing-while-drilling applications. All levels of our casing running are available wherever Nabors operates.

For more information, contact your Nabors Tubular Running Services representative.

SmartSLIDE™

Through automation of slide drilling, the advanced SmartSLIDE directional steering control system consistently delivers differentiated performance whether it's on one rig or an entire fleet. Leverage the full potential of this system by integrating it with the SmartNAV™ directional guidance software and a suite of complementary automated solutions to deliver exceptional automated directional drilling performance.

nabors.com



**Proven.
Precise.
Adaptive.**

Demonstrated Success

With hundreds of automated wells drilled in every major U.S. land basin, the SmartSLIDE system has delivered value on projects ranging from complex multi-well programs to single well applications. Seasoned operations experts customize the service with training, remote support and KPIs to ensure operational performance.

Consistent Execution

The software performs the off-bottom steps required to initiate a slide, then executes on-bottom steering corrections for optimal slide performance. The result is predictable slide executions regardless of driller experience or experts on location.

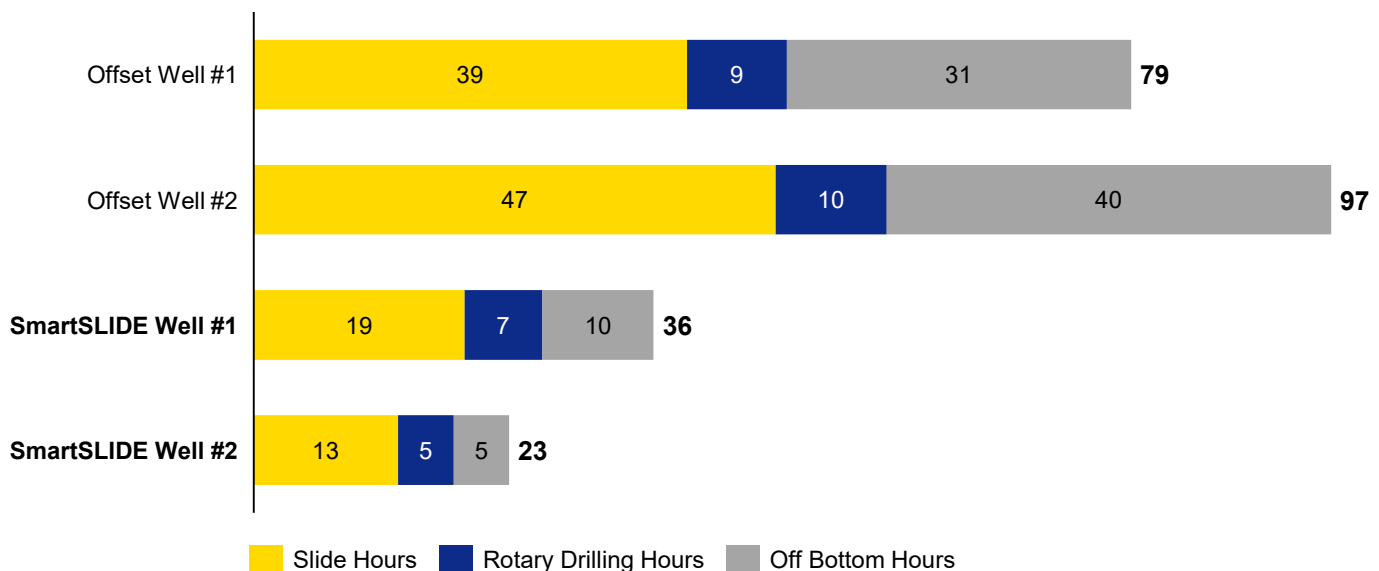
Corrective Controls

By aggregating massive amounts of downhole information and surface instrumentation data, this method employs a robust and adaptive algorithm to drive precise steering corrections and optimize slide drilling execution.

SmartSLIDE™

Curve Cycle Time Reduction (hours)

71% reduction in curve cycle time and **67% reduction** in slide hours from the first offset well to the second well drilled with the SmartSLIDE system.



Integrated Offerings to Enhance Drilling Performance



RigCLOUD® Instrumentation: This proprietary innovation integrates performance analytics in real-time at the rig, on the web and via mobile devices.



RigCLOUD® Analytics: Make knowledgeable, timely drilling decisions with RigCLOUD LiveOps streaming analytics. The right information at the right time eliminates the need to search through different sources of data for the best path forward.



SmartNAV™: An intelligent directional guidance system combines instructions with rich visualizations and robust analytics for predictable decision making and improved wellbore placement accuracy.

SmartNAV™

This system streamlines and automates the vital decision-making process that drives directional drilling success. By combining an intelligent directional guidance system with rich visualizations and advanced anticollision software, this system improves wellbore placement accuracy and directional drilling outcomes. Onsite, or in a remote operating center, users can track performance and collaborate on plan changes for timely, efficient choices.

nabors.com

Precise. Consistent. Collaborative.



Accurate Directional Decisions

Customizable best practices and rules ensure automated instructions are fit-for-purpose and compliant with standard operating procedures. Stand-by-stand slide or rotate instructions minimize total slide footage while following steering rules for a faster, more precise wellbore.

Consistent Decision Making

Build consistency with tools that aggregate and disseminate best practices across rigs, crews and wells. Oversee multiple operations from a centralized remote operating center that concentrates directional expertise for application of best practices.

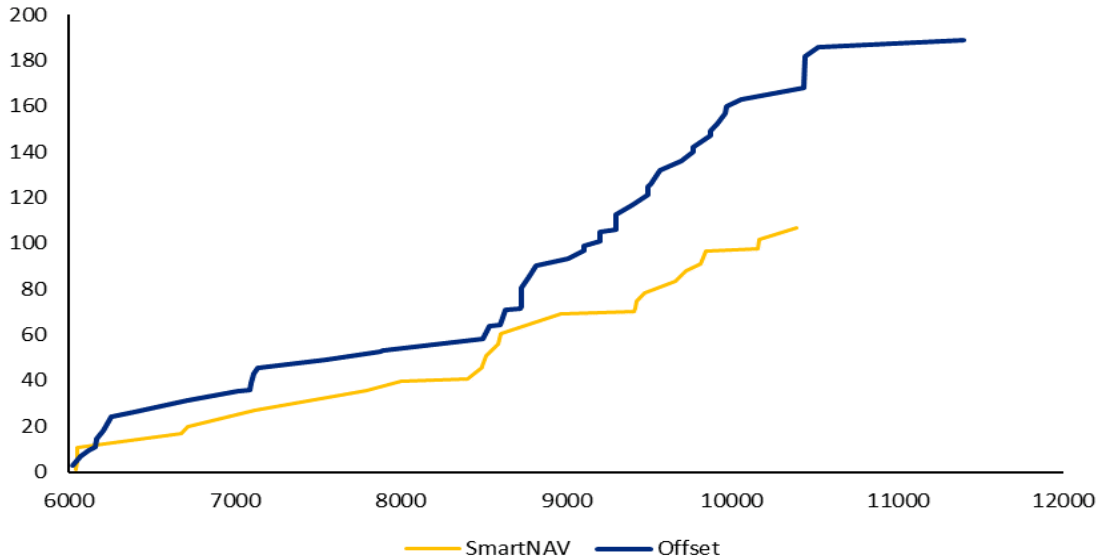
Collaborative Interface

From the rig site to the remote operations center, operators gain greater visibility into the directional operation. The fully accessible cloud interface augments interaction with steering instructions, target change decisions and track adherence to plan.

SmartNAV™

Proven Reduction in Slide Hours

Average Cumulative Slide Footage Past 6000 ft.



12.36 hours spent sliding in the vertical while drilling the offset well versus 6.70 hours sliding while utilizing the SmartNAV system resulting in **5.66 hours saved**.

Integrated Offerings to Enhance Drilling Performance



RigCLOUD® Instrumentation: Integrate performance analytics in real-time at the rig, on the web and via mobile devices.



RigCLOUD® Analytics: Make knowledgeable, timely decisions with RigCLOUD LiveOps streaming analytics. Leverage consistency and efficiency through optimized results and benchmark well performance.



SmartSLIDE™: An advanced directional steering control system that automates slide drilling to consistently deliver high performance.

SmartDRILL™

The SmartDRILL automated drilling activity sequencer optimizes rig processes to produce repeatable results to drive cost reduction and improve performance. Drilling workflows are configured to follow best practices and improve procedural adherence. Best practices are digitalized through the SmartDRILL system making it possible to scale savings from one well across your drilling program or your fleet.

nabors.com

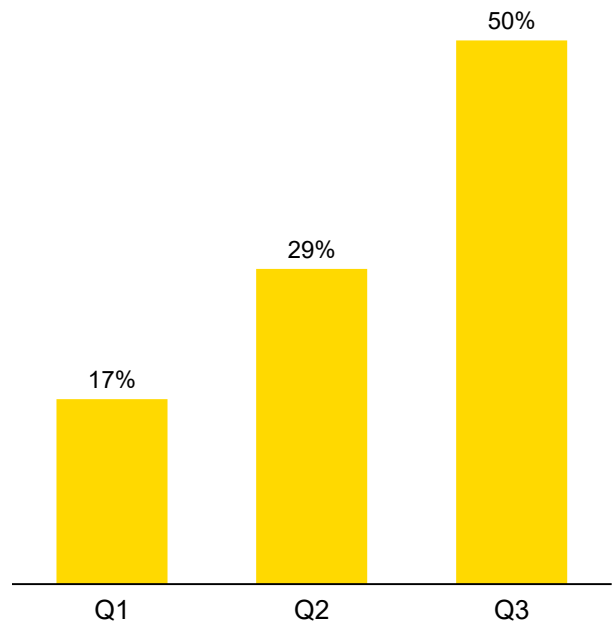
Configurable. Consistent. Repeatable.

Customizable Activity Sequences

Engineered sequences continuously automate drilling practices to safely and efficiently travel to and from bottom during a connection and around a slide. Customized and automated workflows meet the specific needs of even the most complex drilling programs and limit the impact of crew changes. The SmartDRILL system delivers full-stand automation that is configured to implement the best practices of your best driller.

BHA Reliability & Connections

Optimized rig processes reduce downhole equipment damage and unplanned trips. The automation of drilling workflows eliminates inconsistencies during manual connections. This consistent performance results in improved cost management and well delivery.



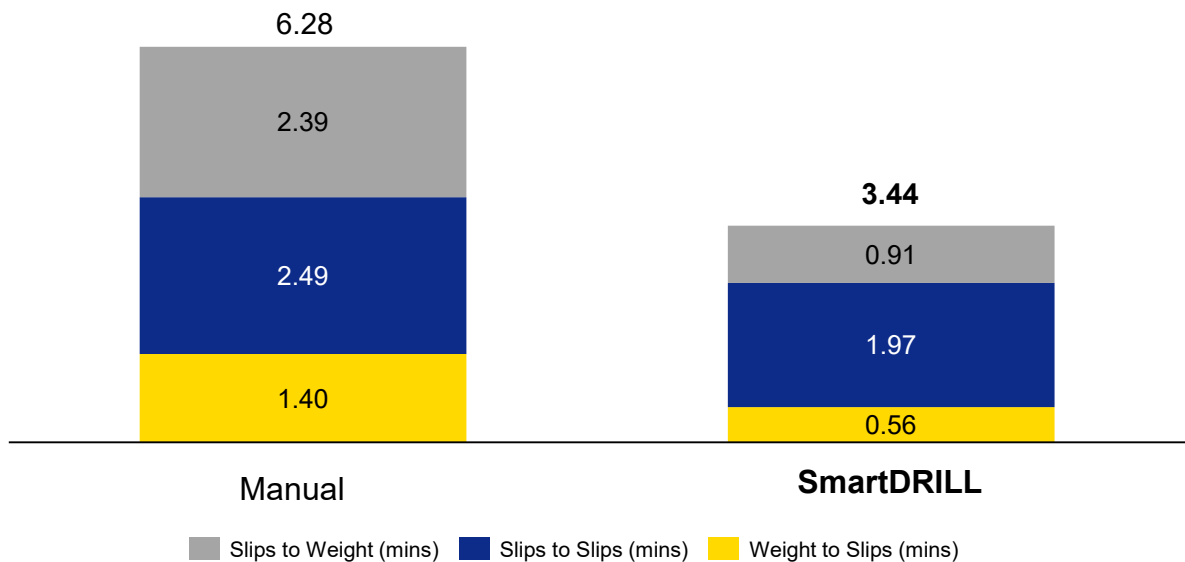
1 Run Laterals - Field Trial

Data from an initial field deployment showed that one run laterals tripled over three quarters.

SmartDRILL™

Connection Performance Improvement

Connection times **improved by 45%** over the first pad drilled with the SmartDRILL automation system.



Integrated Offerings to Enhance Drilling Performance



SmartROS™: This modular rig controls system enables the deployment of automation. Standard on Nabors Smart rigs, this proprietary system can be installed on any rig to realize the benefits of digitalization and automation.



RigCLOUD® Analytics: Make knowledgeable, timely drilling decisions with RigCLOUD LiveOps streaming analytics. Use data to understand the benefits of consistency delivered by automation and benchmark well performance.



SmartSLIDE™: An advanced directional steering control system that automates slide drilling to consistently deliver high performance.