



Wolverine
Oilfield Technologies

R-NAV TOOL

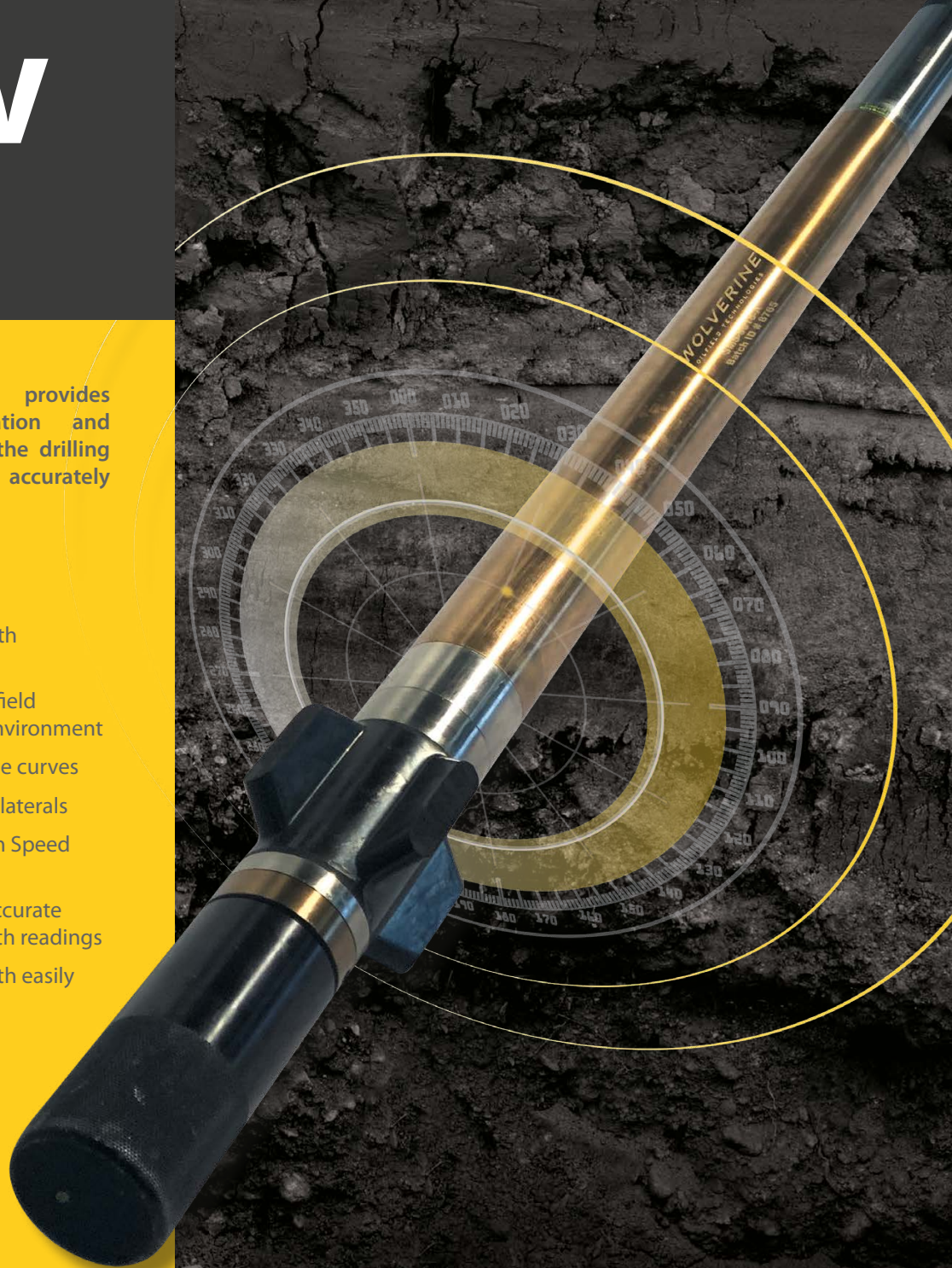
The Wolverine R-Nav tool provides continuous real-time inclination and azimuth while drilling to give the drilling crew the information needed to accurately position the well.

FEATURES

- Real Time Inclination and Azimuth measurements while drilling
- Frequency of data transmission field programmable for the drilling environment
- Increased drilling efficiency in the curves
- Increased positional accuracy in laterals
- Compatible with Neutrino™ High Speed Telemetry and Pulsers
- Proprietary algorithms ensure accurate rotational inclination and azimuth readings
- Real-time Inclination and Azimuth easily ported to EDR



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ROTARY NAVIGATION

Continuous Real-Time Inclination & Azimuth While Drilling

MEASUREMENTS

FLOW-ON SURVEYS

- Inclination / Azimuth while drilling
- Data Logging – Every Minute
 - Battery Bus Voltage
 - Temperature
 - Flow Vibration
 - Stick-Slip Severity
- Data Logging – Every Second
 - Inclination
 - Azimuth
 - RPM

FLOW-OFF SURVEYS

- Inclination
- Azimuth
- Gravity/Magnetic Toolfaces
- Magnetic Dip
- Total Gravity Field
- Total Magnetic Field
- G_{xyz}
- B_{xyz}
- Full Parity Directional Surveys on Connection (6-Axis)

MECHANICAL SPECIFICATIONS

- Tool Size: 1 7/8" diameter x 39" length [25.4 mm x 991mm]
- Collar Size: 4.75" to 8" [101 mm to 203 mm]

ENVIRONMENTAL CONDITIONS

- Operating Temperature: 32 °F / 347 °F [0 °C / 175 °C]
- Survival Temperature: -40 °F / 347 °F [-40 °C / 175 °C]
- Vibration Qualification: 20g RMS 15-500 Hz

Imperial UOM [Metric UOM]

Wolverine Oilfield Technologies is a subsidiary of NewTech Services Holding Limited, an international oilfield services company founded in 2009.

NewTech Services Holding Limited develops technology and expertise within 4 Business Divisions: Drilling Services, Completion Systems, Integrated Project Management, and Capital Equipment.

NewTech Services Holding Limited supplies technology products and services to the oil and gas exploration and production industry in Russia and CIS, Europe, Middle East, North and South America.

Wolverine Oilfield Technologies is a subsidiary of NewTech Services Holding Limited specializing in drilling technology products such as MWD/LWD/RSS.



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