

VectorEXAKT Vertical Rotary Steerable System

Our **VectorEXAKT™** vertical rotary drilling system is designed for high-performance vertical drilling. The **VectorEXAKT** system is set apart by its high rate of penetration, precise verticality control, and robust design. The RSS tool stays on course through continuous steering—when there is a deviation from vertical, the **VectorEXAKT** tool will autonomously steer back on course. The **VectorEXAKT** system can also be run below a motor for performance drilling applications.

Operational Specifications

	475	675
Hole size	6 to 6¾ in.	8½ to 9⅞ in.
Max. operating torque	8,115 ft-lbf (11 kNm)	11,070 ft-lbf (15 kNm)
Max. WOB	15,750 lbf (70 kN)	44,962 lbf (200 kN)
Max. RPM	250 min ⁻¹	250 min ⁻¹
Max. flow rate	291 GPM (1,100 l/min)	529 GPM (2,000 l/min)
Max. temperature	257/302°F (125/150°C)	257/302°F (125/150°C)
Max. hydrostatic pressure	8,700 psi (600 bar)	8,700/20,000 psi (600/1,400 bar)
Mud compatibility	Oil-based mud/water-based mud	Oil-based mud/water-based mud
Max. mud sand content (by volume)	1%	1%
Rotary Connections		
Top connection (End Sub)	NC 38 box	NC 46 box
Bit box	3½ reg.	4½ reg.

Operational Specifications

	800	900
Hole size	12¼" to 13⅞"	14¾" to 17½"
Max. operating torque	22,140 ft-lbf (30 kNm)	22,140 ft-lbf (30 kNm)
Max. WOB	56,250 lbf (250 kN)	90,000 lbf (400 kN)
Max. RPM	250 min ⁻¹	250 min ⁻¹
Max. flow rate	1,058 GPM (4,000 l/min)	1,481 GPM (5,600 l/min)
Max. temperature	257/302°F (125/150°C)	257/302°F (125/150°C)
Max. hydrostatic pressure	8,700/20,000 psi (600/1,400 bar)	8,700/20,000 psi (600/1,400 bar)
Mud compatibility	Oil based Mud/ Water based Mud	Oil based Mud/ Water based Mud
Max. mud sand content (by volume)	1 %	1 %
Rotary Connections		
Top connection (End Sub)	NC 56 box	NC 56 box
Bit box	6⅝ reg.	7⅝ reg.

Components at Surface

Data Receiving Unit

Environmental Specifications

Vibration Test of PCB

Axes	X, Y, and Z (orthogonal)
Duration	4 hours per axis (continuous)

High-frequency test

Level	4.0-6.0g
Frequency	15 dB (1,000–10,000 Hz) 30 dB (10,000–100,000 Hz)

Low-frequency test

Level	20g RMS (random)
Frequency	10-500 Hz

Temperature Test of PCB

Thermal Soak

Temperature	125°C/150°C
Duration	120 hours (continuous)

Thermal cycling

Temperature profile	120 minutes @ -20°C 120 minutes @ 125°C
Temperature ramp	60 minutes (minimum)
Number of cycles	25

Shock Test of RSS-Tool

Drop test

Axes	X, Y, and Z (orthogonal)
Height of drop	18in. (0.4572 m)
Number	10 drops per axis

Air hammer test

Axes	X, Y, and Z (simultaneous)
Frequency	50–100 Hz
Duration	12 hours (continuous)

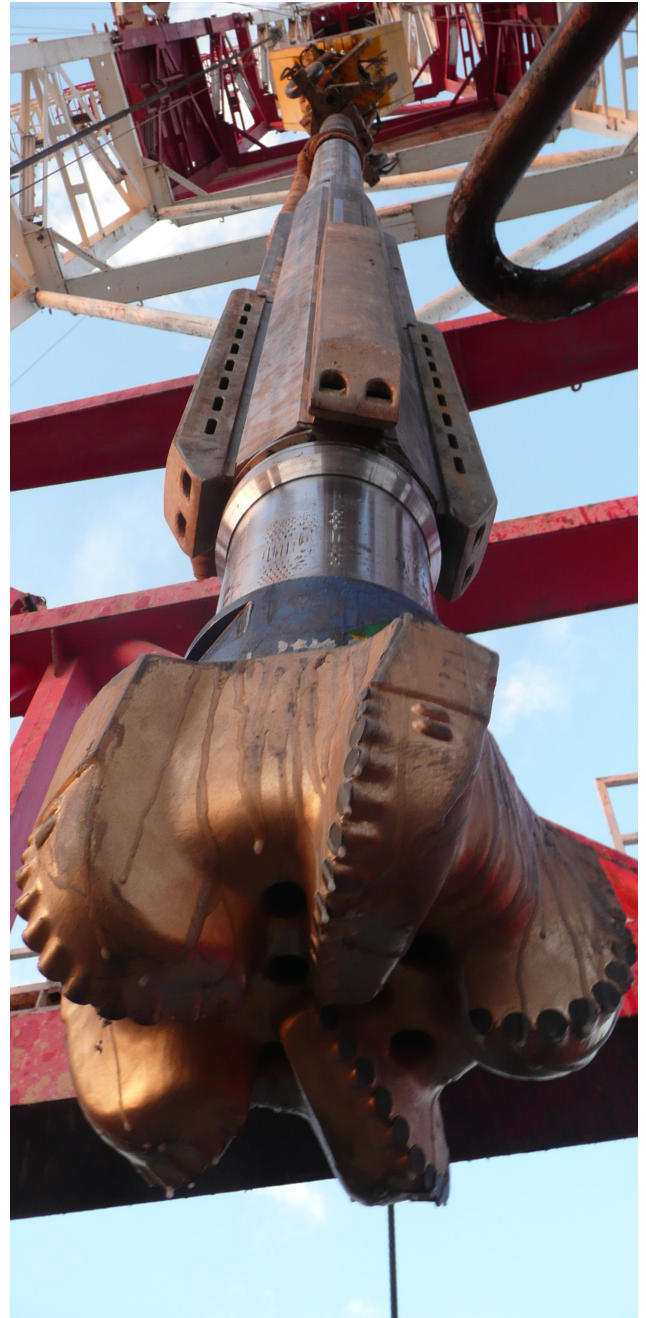
Pressure Test of RSS-Tool

Pressure soak

Temperature of water	99°C (not boiling)
Pressure	600 bar / 1,400 bar
Duration	72 hours (continuous)

Pressure cycling

Temperature of water	70°C
Pressure profile	1 bar for 5 minutes 14 bar for 30 minutes 600 bar for 30 minutes
Number of cycles	10



Specifications of MWD System

Inclination

Sensor	X-, Y-, and Z-axis accelerometers
Accuracy	± 0.1°
Raw data to surface	Gx, Gy, Gz
G _{tot} Quality check tolerance	± 0.005 g