

# AutoTrak Curve Pro

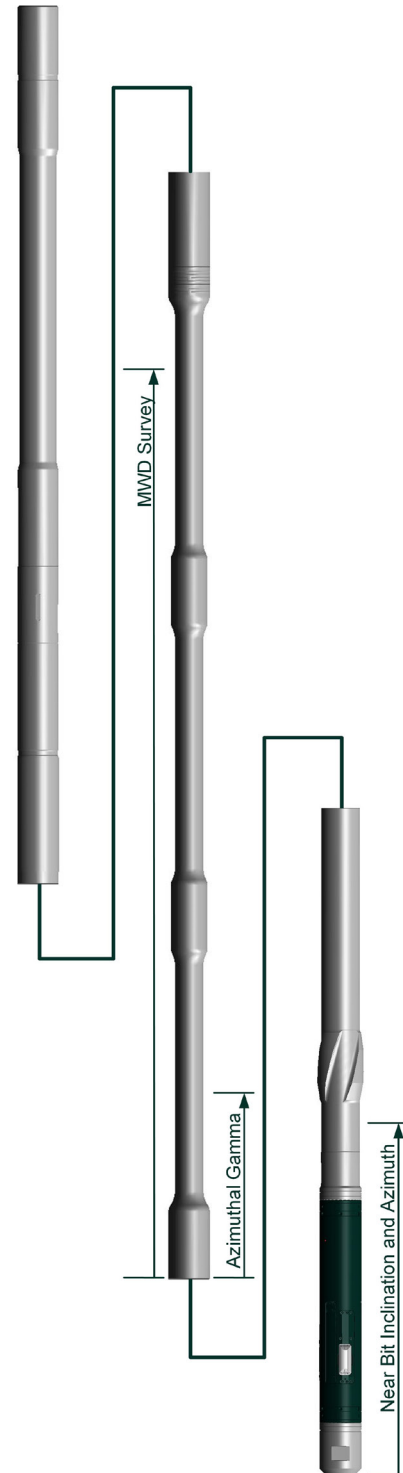
## High build up rate rotary steerable system

### Tool Specifications

Tool size	6 $\frac{1}{2}$ in.	171.45 mm
Borehole size	8 $\frac{3}{8}$ to 9 $\frac{1}{2}$ in.	212.8 to 250.8 mm
Max. build rate	15°/100 ft	15°/30 m
Max. collar OD	7 in.	178.00 mm
Steerable stabilizer	79/16 in.	192.09 mm
BHA length – typically	37.8 ft	11.5 m
BHA weight – typically	3,090 lb	1,400 kg
Length of steering sleeve	3.35 ft	1.02 m
Primary power source	Drilling fluid driven alternator	
Top connection	NC50 Box	
<b>Bottom connection</b>		
8 $\frac{3}{8}$ -in. to 8 $\frac{1}{2}$ -in. hole size	4 $\frac{1}{2}$ -in. API Reg. Box	
9 $\frac{1}{2}$ -in. to 9 $\frac{3}{4}$ -in. hole size	6 $\frac{3}{8}$ -in. API Reg. Box	

### Operating Specifications and Limits

Transmission rate	up to 4 bps	
Flow range <sup>23</sup>	300–750 gpm	1,135–2,840 lpm
Max. drilling torque (at Bit)	15,500 ft-lb	21 kNm
Max. WOB	As per HFTO job modeling and bit design.	
Max. torque to failure (at Bit)	23,500 ft-lb	32 kNm
Max. overpull to failure	764,000 lb	3,400 kN
<b>Maximum pass-through dogleg</b>		
Rotating	15°/100 ft	15°/30 m
Sliding	30°/100 ft	30°/30 m
Max. tool rotation	400 rpm	
Max. RPM variation	±50 max. deviation from mean rpm (e.g. 100 rpm: rpm range=50-150), limited by maximum tool rotation specification	
Max. operating temperature	150°C	302°F
Max. hydrostatic pressure	1,380 bar	20,000 psi
Pressure drop across bit	No limitation	
Max. sand content	1% max. volume, according to API 13B (<0.5% recommended)	
Max. LCM	50 ppb (143 kg/m <sup>3</sup> ) medium nut plug, cedar fiber (Any pumping of LCM must be carried out according to AutoTrak Curve operations manual)	
Max. axial, lateral, and tangential vibration	Refer to Supplemental Technical Specification TDS-20-60-0000-00	



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## Sensor Specifications

### Trajectory Control System

#### Near bit inclination

Sensor type	Tri-axial accelerometer
Range	0°–180°
Accuracy	0°–30° ±1.0° 30°–90° ±0.3°

Distance to bit	5.9 ft	1.8 m
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#### Near bit azimuth

Sensor type	Tri-axial accelerometer and biaxial magnetometer
Range	280°–80° 100°–260°

Distance to bit	5.9 ft	1.8 m
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### Azimuthal gamma ray

Sensor type	NaI scintillation
Range	0–500 API
Accuracy	±5 API @ 100 API and 60 ft/hr
Azimuthal measurement	4 sectors

Vertical resolution	6 in.	15.3 cm
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### Directional survey

Sensor type	Triaxial accelerometer and magnetometer
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#### Range

Inclination	0°–180°
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Azimuth	0°–360°
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#### Accuracy<sup>1</sup>

Inclination	±0.1°
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Azimuth	±1.0°
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### Dynamics – Steering Unit

Steering Unit measurements	Axial, lateral, and tangential vibration, RPM, stick-slip severity
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#### Range

Vibration	0–50 g-rms, DC 0–460 Hz
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RPM	-200 to +1,000 rpm ±1.0% accuracy
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Realtime options	vibrations in g-rms, downhole RPM, stick-slip severity
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Memory options	min., max., average vibrations in g-rms and as severity levels; min., max., average RPM, stick-slip, and backward rotation severity levels
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## Sensor Specifications

### Dynamics – MWD

MWD measurements	Axial and lateral vibration
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#### Range

Vibration	0–25 g-rms, DC 0–120 Hz
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RPM	-200 to +1,000 rpm ±1.0% accuracy
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Memory options	min., max., average vibrations in g-rms and as severity levels
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<sup>1</sup> Sensor accuracy is only one contributor to all-up directional survey accuracy. The Baker Hughes position uncertainty model provides the definitive quantification of system accuracy in all applications and operating environment.

<sup>2</sup> Only one drilling fluid turbine configuration is used for the whole flow range.

<sup>3</sup> Minimum tool flow rate for downlink operation is 350 gpm (1,325 lpm).