

Drilling Solutions

iCruise® Force

Intelligent high-performance rotary steerable system

BENEFITS

- Delivers faster penetration rates
- Maximizes rig capacity
- Enhances wellbore placement with precise trajectory control
- Reduces tortuosity
- Extends wellbore life and increases production rates

FEATURES

- High mechanical specifications
- Customized motor configurations
- Precise tool face control
- Advanced rotary steerable technology
- Modular design and robust drivetrain
- High-strength materials and connections
- High RPM capability up to 400 rpm
- Compatible with the LOGIX® automation and remote operations platform

Unmatched power for extended wells

The iCruise® Force high-performance rotary steerable system is a motorized intelligent rotary steerable system, powered by a high-performance mud motor to deliver superior drilling performance and maximize the value of wellbore assets. The iCruise® Force system enhances drilling efficiency without compromising data quality. It enables achieving faster penetration rates, lower drilling costs, and pinpoint wellbore placement.

Power and intelligence combined

The addition of a high-performance mud motor above the rotary steerable system (RSS) extends the system's operational range. The iCruise® Force features a high-transmission electro-magnetic (EM) signal hop that enables efficient communication between the RSS and the rest of the BHA, and supports prolonged operation in complex environments.

Maximized drilling performance

The iCruise® Force system achieves faster penetration rates through efficient energy transfer, increased bit speed, circulation, and rotation. It reduces drilling time in complex formations, and delivers quicker, more cost-effective well construction.

Precision drilling

The system excels in precise wellbore placement, and provides exceptional directional control through customized motor configurations and automated CruiseControl® technology. This reduces trips, enhances operational efficiency, and minimizes wellbore tortuosity. This facilitates smoother casing and completion runs.



iCruise® Force technical specifications

NOMINAL TOOL OD	4.75-IN. (121 MM)	6.75-IN. (171 MM)	8-IN. (203 MM)	9.50-IN. (241 MM)
Nominal hole size	5.875 in. to 6.75 in. (149 mm to 171 mm)	8.375 in. to 9.5 in. (213 mm to 241 mm)	12 in. to 12.25 in. (304 mm to 311 mm)	16 in. to 17.5 in. (406 mm to 445 mm)
Maximum housing OD	Dependent on the motor configuration used in the BHA			
Length				
Minimum inside diameter				
Nominal tool weight				
Top collar connection	NC-38 Box	NC-50 Box	API 6.625 in. REG Box	API 7.625 in. REG Box
Bottom collar connection	NC-38 Pin	NC-50 Pin	API 6.625 in. REG Pin	API 7.625 in. REG Pin
Minimum steering inclination	0°	0°	0°	0°
Maximum dogleg severity (non-rotating)	30°/100 ft	21°/100 ft	14°/100 ft	14°/100 ft
Maximum dogleg severity capability	10°/100 ft	10°/100 ft	6°/100 ft	4°/100 ft
Maximum drilling or operating rotary torque	10,000 ft-lbf (1356 daN-m)	18,500 ft-lbf (2508 daN-m)	45,000 ft-lbf (6100 daN-m)	80,000 ft-lbf (10 846 daN-m)
Bit makeup torque	8,000 ft-lbf (1085 daN-m)	16,000 ft-lbf (2169 daN-m)	43,000 ft-lbf (5830 daN-m)	68,000 ft-lbf (9220 daN-m)
Maximum overpull	Dependent on mud motor selection			
RPM range	30 - 400 RPM			
Maximum weight on bit	35,000 lbf (15 569 daN)	65,000 lbf (28 913 daN)	100,000 lbf (44 482 daN)	100,000 lbf (44 482 daN)
Vibration	As per Sperry Drilling Logging-While-Drilling Vibration Limits (available upon request)			
Mud type	Compatible with all Fluid Systems including: WBM, OBM, SBM and Silicates			
Maximum sand content	2%			
Pressure loss through tool in water	145 psi (275 gpm)	150 psi (575 gpm)	87 psi (900 gpm)	88 psi (1500 gpm)
Maximum LCM limit*	50 lb/bbl WALNUTT® Medium			
Maximum operating temperature	150°C (302°F)			
Maximum pressure	20,000 psi (137.9 MPa)			
Power supply	Turbine			
Flow range**	150 gpm to 350 gpm	250 gpm to 750 gpm	585 gpm to 1300 gpm	1200 gpm to 1800 gpm
Makeup torque range***	11 to 12 kft-lb (1491 - 1627 daN)	30 to 33 kft-lb (4067 - 4474 daN)	48.5 to 51.5 kft-lb (6576 - 6982 daN)	77 to 80 kft-lb (10440 - 10847 daN)
Downlink method	Geo-Span® pressure downlinks to external PWD, rotational and flow downlinks			
Uplink	Mud pulse, EM telemetry, wired pipe			

* Higher LCM limits available upon request

** Lower flow rate limits available upon request

*** With 1.15 x pipe dope

Short Hop technical specifications

FEATURE	4.75-IN. TOOLS	6.75-IN. TOOLS	8-IN. TOOLS	9-IN. TOOLS
Transmitter length	8.5 ft		~9 ft	
Receiver length	9.25 ft	9.61 ft	~10 ft	
Gap sub material	Class 2 or Class 2++		Class 2	
Temperature	150°C (347°F)			
Pressure	20,000 PSI			
Maximum RPM	400			
Max. Flow rate	350 GPM	750 GPM	1300 GPM	1450 GPM
Mud weight	7.0 to 18.0 [ppg]			
Mud type	All			
LCM capability	50 lb/bbl WAL-NUTT® Medium			
Maximum dogleg severity - rotating	14°/100 ft	10°/100 ft	8°/100 ft	4°/100 ft
Operational efficiency	97%			
Transmitter collar connections	NC-38 Box	NC-50 Box	6.625 Reg. Box	7.625 Reg. Box
	NC-44 Pin	NC-50 Pin	6.625 Reg. Pin	6.625 IF Pin
Receiver collar connections	HAL-40 Box	HAL-50 Box	HAL-56 Box	HAL-70 Box
	NC-38 Pin	NC-50 Pin	6.625 Reg. Pin	7.625 Reg. Pin
Maximum weight on bit	25,000 lbf	65,000 lbf	85,000 lbf	100,000 lbf
Makeup torque range	Refer to Operations manual			
RX battery life	350 circulating hours			
Max. Hop distance	70 ft			
Hop frequency	1000 Hz			
RX probe – current draw	18 mA			
Max output voltage	22 V			
Max output current	0.291666667			
Max output power	8 W			

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