

# iCruise® CX Intelligent Rotary Steerable System

Black Diamond are proud to offer the iCruise® CX Intelligent Rotary Steerable System (RSS) from Halliburton Sperry Drilling. The compact automation-enabled platform connects with any measurement-while-drilling (MWD) system to precisely place wellbores. Built around the proven robust mechanical design of the iCruise X™ Intelligent RSS is designed to excel in challenging environments while enhancing reliability and reducing well time. By deploying the automation-enabled system, well times are reduced through faster drilling, more reliable performance, and more predictable and consistent results. Enhanced reliability, and robustness allow market leading drilling parameters to be unleashed, maximizing ROP while ensuring precise directional control.

## Features and Benefits

- **Compact Design:** Shorter design optimizes stabilizer placement for predictable dogleg output.
- **Unrivaled Intelligence:** Five high-speed on-board processors applying advanced algorithms continually assess and tune operation
- **Automated Steering:** Instantaneous decisions create smoother vertical-curve-lateral (VCL) wells and overall reduced well time.
- **Robust Short-Hop Communication:** High speed (500 bps), high strength EM connection maintains reliable communication with MWD system for RSS uplinks across an effective range of 20 to 80 ft.
- **Precise System Control:** 1,000 near bit inclination and azimuth measurements per second ensure precise system control and minimized wellbore tortuosity.
- **Market Leading Drilling Parameters:** Highest comparable specifications for WOB, RPM, and torque enable maximized ROP.
- **CruiseControl® Technology:** Drill smoother laterals with less human intervention with automation enabled by the proprietary technology.
- **Advanced metal-to-metal seals:** Advanced seals deliver long lasting durability in normal or abrasive formations and in normal, extended reach, and multilateral wells.
- **Industry Defining Mechanical Specifications:** Simple, rugged design, engineered for reliability reduces risks and non-productive time (NPT) while providing predictable results.
- **Enhanced Pad Force:** Advanced seals withstand higher internal pressures and deliver more pad force at the same pressure enabling vertical-curve-lateral (VCL) sections to be drilled with stiffer bottom hole assemblies (BHAs).
- **Unique Steering Head:** Incorporates a collar designed to withstand high-frequency torsional oscillations and high make up torque connections.
- **Automated Vibration Management:** Advisory commands on optimal RPM ranges to manage downhole vibration giving better directional control.
- **Proprietary Self-Diagnosis Electronics:** Sophisticated algorithms and proprietary digital control electronics for self-diagnostics/ monitor the health of the equipment in real time ensuring longer runs in tougher conditions.
- **Universal MWD Compatibility:** Connects to any MWD system by way of EM short-hop for reliable RSS uplinks.
- **Unaffected by Drilling Fluid Type:** RSS and short-hop communication work flawlessly in any mud or drilling fluid system.



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iCruise® CX Specifications		
Nominal Tool O.D.	4 ¾ in.	6 ¾ in.
Nominal Hole Size	5.875 - 6.75 in.	8.37 - 9.5 in.
Maximum Housing OD	5.25 in.	7.5 in.
RSS Length	17.3 ft	217.0 ft
Total Length	25.6 ft	26.5 ft
Minimum ID	1.40 in.	1.88 in.
Nominal Weight	1,290	2,333 lbs
Upper Collar Connection	XT40 Box	NC50 Box
Lower Collar Connection	3½ in. REG Box	4 ½ in. REG Box
Minimum Steering Inclination	0°	
Maximum Dogleg Non-Rotating	30°/100 ft	21°/ 100 ft
Maximum Dogleg	12°/100 ft	10°/ 100 ft
Maximum Drilling Torque	12,000 lbf-ft	18,500 lbf-ft
Bit Makeup Torque	8,000 lbf-ft	16,000 lbf-ft
Makeup Torque Range	23,000 - 25,000 lbf-ft	30,000 - 33,000 lbf-ft
Maximum Overpull	340,000 lbf	822,684 lbf
Maximum Weight on Bit	30,000 lbf	65,000 lbf
RPM Range	30 - 400 RPM	
Flow Range	150 - 350 gpm	250 - 750 gpm
Maximum Sand Content	2%	
Pressure Loss (in water)	145 psi @ 275 gpm	150 psi @ 275 gpm
Maximum LCM Limit	50 lb/ bll medium nut plug or equivalent	
Mud Type	Compatible with all fluid systems including WBM, OBM, SBM and Silicates	
Maximum Operating Temp.	302 °F/ 150 °C	
Survival Temp.	329 °F/ 165 °C	
Maximum Pressure	20,000 psi	
Power Supply	Turbine	
Downlink Method	Rotational and flow	
Uplink Method	Short-hop EM communications from RSS to third-party MWD	
Surface System	Tablet and application based	