

Top Hole MWD System

Drawing on its reputation of providing superior quality and unmatched dependability Black Diamond is proud to present its Top Hole MWD system - the low cost, high reliability solution for simple, manless directional control of top hole sections. Shipped as a pre-built, collar-loaded assembly the system requires minimal user setup at the rig site. Employing the market leading Eclipse Touch surface system ensures the most reliable signal decode in the industry. The downhole tool has been designed to provide unmatched reliability and ease of use while maintaining low cost of operation.

Features and Benefits

Minimal Rig Handling and Setup

The assembly is built in the workshop and shipped with the toolstring loaded in the collar. At the rig site the tool is powered up, made to the BHA and scribed to the motor. Rig site tool handling can be performed by roving Black Diamond field specialists, or by rig crew following minimal training.

Intuitive Power Control

The assembly is shipped in an unpowered state. At the rig site, installation of the Spearpoint powers up the tool ready for downhole operation. After drilling, removal of the Spearpoint powers down the system while waiting on the next drilling operation. The ultra low power usage of the system allows over 800 circulating hours under standard operating conditions.

Assured Mechanical Integrity

- Proven workhorse Pulsar with millions of circulating hours across the globe ensures reliable and consistent performance
- Industry leading intermodule connections for mechanical and electrical integrity
- Axial Isolator protecting entire string from damaging shocks and vibrations
- Lower End configured to meet harshest environments

Remote Monitoring

Black Diamond is proud of its Solutions Center which offers realtime remote monitoring and control of MWD operations. When the Top Hole MWD system is deployed in manless operations the Solutions Center is the obvious choice to ensure data integrity and measurement accuracy.



Market Leading Decoder

Eclipse Touch is North America's #1 system due to the unmatched reliability of its decode, and its ease of use and intuitive user interface. The system dynamically and automatically applies over 100 filters to ensure detection in even the harshest of operations. Using machine learning to improve its filter algorithms the system continually improves detection performance.

High Accuracy Directional Measurements

Survey and toolface data is measured by one of the most trusted, accurate and stable sensors on the market. The sensor is deployed in tens of thousands of systems globally and trusted in the highest profile operations.



Top Hole MWD System - Specifications

Standard Collar Specifications*			
Collar O.D.	6.75 in.	8.25 in.	9.5 in.
Tool Connections	NC 50	6 5/8 in. REG	7 5/8 in. REG
Equivalent Collar Stiffness (OD x ID)	6.71 in. x 3.25 in.	7.93 in. x 4.00 in.	9.42 in. x 4.00 in.
Make-up Torque	30,000 lbf-ft	54,000 lbf-ft	62,000 lbf-ft
Flow Rate Range	150-800 usgpm	400-1,200 usgpm	400-1,200 usgpm
Max. Dogleg Rotation	10°/ 100 ft	8°/ 100 ft	4°/ 100 ft
Max. Dogleg Sliding	21°/ 100 ft	14°/ 100 ft	7°/ 100 ft

*Other collar sizes available on request

Sensor Specifications		
Directional	Tri-axial fluxgate magnetometers and Q-flex accelerometers	
Measurement	Range	Accuracy
Inclination	0 - 180°	+/- 0.1°
Azimuth	0 - 360°	+/- 0.25°
Toolface - Magnetic	0 - 360°	+/- 0.5°
Toolface - Gravity	0 - 360°	+/- 0.5°
TMF	0 - 100 µT	+/- 0.075 µT
Dip	-90 - 90°	+/- 0.15°
GT	0 - 2,000 g	+/- 0.001 g
Temperature	-32 - 392 °F	+/- 1 °F
Peak Shock	0 - 250 g	+/- 1 g

Environmental Specifications	
Measurement	Specification
Probe OD	1.875 in.
Max. Temp. Operating	347 °F / 365 °F
Max. Pressure	20,000 psi
Max. Sand	1.0 % at maximum fluid velocity
Max. Mud Weight	18 ppg
Max. LCM Tolerance	40 ppb any type, thoroughly and evenly mixed, with use of surface drill pipe screens

Surface System Specifications	
Surface System	Eclipse Touch
Pressure Transducer	4 - 20 mA, 0-10,000 psi, Zone 1, intrinsically safe
Rig Floor Display	Zone 1, intrinsically safe,
Dimensions	15.6" x 12.2" x 2.32"
Weight	15.6 lbs.
Screen	15" Touch Screen

