

FEATURES

- Full retrievability minimizes LIH liability
- High efficient gear-lead screw configuration provides battery life of in excess of 400 hrs
- The servo motor assembly exerts up to 100 lbs-force to minimize plugging and increase tolerance to LCM
- Single tool configurable 3½ in to 12 in O.D. collars and a range of flow rates

SURFACE RIG DISPLAY

- The easy to use touch screen interface unit is robust and compact for optimum drill floor placement
- Wireless two-way communication between the rig display and the laptop computer allow efficient survey data monitoring and optimal data handling plus regular tool health check and remaining battery life
- The windows-based, full colour graphics LCD screen of the Rig Floor Display can be viewed under all normal rig operating conditions

The Pacesetter Redline MWD is a Positive Pulse Measurement-While-Drilling tool. Its modular design and configuration provides optimum performance in a wide range of collar diameters and flow rates. Fully retrievable which reduces UH liability in difficult drilling environments.

DESCRIPTION

The Pacesetter Redline MWD system uses a bottom mounted, retrievable pulser to transmit survey data to surface by actuating a Pacesetter Redline valve which momentarily restricts mud flow through the drill string interior creating a positive pressure pulse. The Pacesetter Redline valve exerts 100 lbs seating force providing exceptional tolerance to LCM. The Pacesetter Redline Orientation Module combines tri-axial Flux Gate Magnetometers with Q-Flex type accelerometers to offer high accuracy and reliability.

RIG FLOOR DISPLAY SPECIFICATIONS

Pressure Transducer	Digital RS485 or 4-20 mA Loop
Touch Screen Colour Display	10.4" (265mm) screen size, sunlight readable, backlit, 20 GB on board memory
Interface Depth Tracking	Pason / Cheemo / Totco / Depth Wheel / Truvu / manual depth input
Physical Dimensions	14" x 9" x 5" (356 mm x 229 mm x 127mm), 12 lbs (5.4 kg)
Operating Temperature	5 to 104 °F (-15 to 40 °C)

DIRECTION MODULE

- Q-Flex accelerometers
- Flux gate magnetometers
- High quality, components and construction
- Data transmission is configurable for job specific requirements

INTERNAL CONNECTIONS

- All internal connections in the Pacesetter Redline MWD tool are made using the rotary connectors
- The reliability of the rotary connector significantly improves the integrity of the down hole connection

SENSITIVITY	RANGE	ACCURACY
Azimuth	0 - 360°	± 0.5°
Inclination	0 - 180°	± 0.1°
Toolface	0 - 360°	± 0.5°

DATA RATES		
Toolface Update	0.6 pulse width:	8.4 seconds
	0.8 pulse width:	12 seconds
	1.2 pulse width:	17 seconds
Toolface and Gamma Update	0.6 pulse width:	20.4 seconds
	0.8 pulse width:	27 seconds
	1.2 pulse width:	41 seconds
Full Survey with all Qualifiers	0.6 pulse width:	145 seconds
	0.8 pulse width:	170 seconds
Dynamic Survey (Inc/Azi)	0.6 pulse width:	100 seconds
	0.8 pulse width:	110 seconds

TOOL DIMENSIONS	IMPERIAL UNITS	METRIC UNITS
UBHO Sub O.D.	3.5 - 12 in.	89 - 305 mm
UBHO Sub Length	36 in. (longer on request)	914 mm
Probe OD	1 7/8	47.625 mm
Tool Length (no GR)	23in. ft	7010 mm
Tool Length (incl.)	26 ft	7937 mm

TOOL CARRIER		
Min ID for 89mm Collar	2.28 in.	58 mm
Min ID for 121mm Collar	2.68 in.	68 mm
Min ID for 165mm Collar	2.68 in.	68 mm
Min ID for 203mm Collar	2.95 in.	75 mm

OPERATING LIMITS		
Min Flow Rate (in water)	130 GPM	0.5 m³/min
Max Flow Rate (in water)	1060 GPM	4.0 m³/min
Max Temperature	302 °F	150 °C
Max Operating Pressure	20,000 psi	137.9 MPa
Shock	1000 g / 0.5 ms	
Vibration	25 g RMS 30 - 500 Hz Random, 30 g 50 - 300 Hz	
Mud Sand Content	Recommended: Less than 1%	
Lost Circulation Material	Up to 50 lb/bbl premixed Nut Plug or Cedar Fiber	

RETRIEVABILITY	TOOL SIZE	MINIMUM ID OF DRILL STRING TO ALLOW MWD RETRIEVAL
	89 mm	>= 51 mm
	121 mm or greater	>= 54 mm
	Pull to cut centralization fins	2200 - 2900 lbs (1.0 - 1.3 kDaN)