

Newsco Smart Collar (MWD-GR)

About Newsco

Newsco's diverse directional drilling experience is a key driver for its success. Established in 1994, Newsco's technology has been proven in extreme drilling conditions on five continents and is trusted to exceed expectations in high temperature, LCM and high shock/vibration environments.

Newsco's core capabilities are born out of its internal R&D teams who are continually innovating to exceed the expectations of today's Exploration and Production companies.

About the Smart Collar

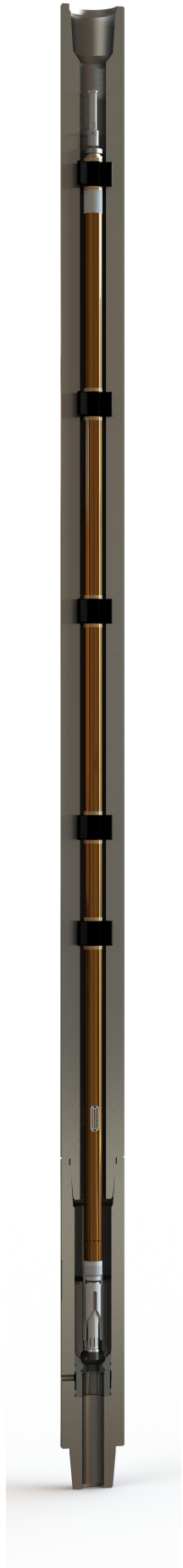
Newsco's Smart Collar has been designed to eliminate the expense of an on-site MWD operator and/or directional driller. The equipment is easy to operate from the rig floor through the any electronic drilling recorder. Connectivity allows for remote support and remote steering as well as gamma logging 24/7.

The Smart Collar system is Shipped from our operation centers pre-built and ready to run in your BHA. Simply pick it up and start drilling.

This system has been field tested, proven and implemented on thousands of well's drilled to date. The Smart Collar is great way to reduce costs and your footprint on location.

Newsco Smart Collar Applications

- All directional well profiles
- Remote directional drilling
- Onshore & Offshore wells
- Gamma ray logging
- Performance drilling
- Deep, high shock and vibration wells
- Well temperatures up to 350°F (177°C)
- Pad and surface hole drilling
- Extreme LCM tolerance



Features

Benefits

Industry leading precision	Ensures confident wellbore placement
Self-cleaning high LCM tolerance	Maximize on bottom drilling time
Pre-loaded ready to use	Reduces BHA handling time and risk
Downlink capability improves telemetry rates while in hole	Adds flexibility and avoid unnecessary trips
Wireline retrievable and re-seatable	Lower insurance rates and increases operational savings

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Technical Data Reference

Tool Specifications		Imperial Units	SI Units
MWD Telemetry Type		Positive Pulse	
Wireline Retrievable / Re-Seatable		Yes / Yes	
Downlink Capable		Yes, Mud Flow Time Sequencing	
Programmable Modes of Operation		4 Static, 2 Dynamic	
Continuous INC Capable		Yes	
Survey Capability While Sliding, Rotating		Yes, No	
Tool Outside Diameter		1.88"	47.8 mm
Overall Length of Tool ⁱ	D&I Only	25'	7.62 m
	D&I + Gamma Ray	32'	9.75 m
Measurement Depths ⁱⁱ	D&I Only Electronics Sensor	8.75'	2.67 m
	D&I + GR Gamma Sensor	8.1'	2.47 m
	D&I + GR Electronics Sensor	12.1'	3.68 m
Flow Ranges	3 1/2 in.	75-165 gpm	0.28 - 0.625 m ³
	4 3/4 in.	100-300 gpm	0.37 - 1.1 m ³
	6 3/4 in.	150-600 gpm	0.55 - 2.2 m ³
	8 in.	400-1,200 gpm	1.5 - 4.5 m ³
	9 5/8 in.	450-1,500 gpm	1.7 - 5.6 m ³
Pressure Drop	@ 250 gpm (0.9 m ³)	80 psi	550 kPa
	@ 500 gpm (1.9 m ³)	110 psi	750 kPa
	@ 1000 gpm (3.8 m ³)	220 psi	1,500 kPa

Gamma Ray Sensor Specifications	
Gamma Ray Detector Type	Telemetrix™ Ruggedized Chassis Mounted NaI Scintillation
Gamma Measurement Range	0 to 500 cps

Power Specifications	
Power Source	Lithium Thionyl Chloride Batteries
Operating Time Per Battery Probe ⁱⁱⁱ	> 400 Hours

Vibration Sensor Specifications		Imperial Units	SI Units
Measurement Range (lateral)		± 50 g	500 m/s ²
Frequency Response		20 to 500 Hz	

Temperature Sensor Specifications		Imperial Units	SI Units
Measurement Range		32 to 302, [32 to 350] degF ^{iv}	0 to 150, [0 to 177] degC [#]
Sensor Accuracy		± 5.0 degF	± 2.5 degC
Resolution		± 4.0 degF	± 2.0 degC

Transmission Time Specifications			
Pulse Length, s	0.2	0.4	0.6
Static Survey, s	45	90	135
Toolface, s	11	22	33
Gamma Ray, s	3	6	9
Toolface and Gamma Ray, s	8	16	24

Environmental Specifications		Imperial Units	SI Units
Maximum Vibration		20 g	200 m/s ²
Maximum Shock		500 g, 0.5ms 1/2 Sine	5,000 m/s ² 0.5ms 1/2 Sine
Operating Temperature Range		32 to 302, [32 to 350] degF ^{iv}	0 to 150, [0 to 177] degC [#]
Maximum Operating Pressure		25,000 psi	172,000 kPa
Mud Sand Content		2%	
Maximum Bit Pressure Drop		No Limit	
Lost Circulation Material Size		Fine to medium nut plug pre-mix	
Lost Circulation Material Weight		60 ppb	170 kg/m ³

Surface Network Specifications	
Surface System Platform	Telemetrix DRILLWELL™ v2.60
Remote Terminal Operating Temperature Range	-40 to 122 °F / -40 to 50 °C



ⁱ Toolstring will fit into one standard length (30') NMDC provided by Newsco.

ⁱⁱ Sensor depths measured from the UBHO set screw ports to the sensor point.

ⁱⁱⁱ Battery Life is directly proportional to Pulse Timing used.

^{iv} Indicates time with all checks and counts confirmed, data rate dependant.

[#] Standard tool configuration 32 to 302 degF [0 to 150 degC], Optional Newsco350HT rating 32 to 350 degF [0 to 177 degC].

