

MULTIPLY II

Radial Bond Tool

DIMENSIONS & SPECIFICATIONS

Maximum Temperature: 375 °F
Maximum Pressure: 20,000 PSI
Maximum External Diameter: 3.125 In.
Maximum Casing Size: 13.38 In.
Minimum Casing Size: 3.75 In.
Weight: 215 Lb

Total Length*: 13.833 Pies (165.996 Pulgadas)
Measuring Section: 6.933 Ft (83.196 In.)
Electronics Section: 6.9 Ft (82.8 In.)

* The total length does not include the three centralizers required. Two of them are placed at the top and bottom ends of the tool and the third should be placed in the center, at the field joint between the electronics and Measuring Section.

BOREHOLE & LOGGING DETAILS

Wellbore Fluids:
 Brine Oil
 Fresh Water Emulsions

Maximum Logging Speed: 30 Ft/Min
Sampling Rate: 0.2 Pies (5 Samples/Ft)
Tool Positioning in the Borehole: Centralized

LOGGING TOOL FEATURES

Transmitter Type: Piezoelectric Crystal fired at msec intervals.

Receiver Spacing to Transmitter:
Radial: 2 Ft.
Omnidirectionals: 3 & y 5 Ft

Receivers:
Radial: 8 Segments Piezoelectric @ 23 KHz
Omnidirectional: Two piezoelectric receivers @ 23 KHz

Firing Rate: 19.5/sec
Waveforms: Analog: 3 Ft, 5 Ft, Radial 1 to 8 Calibration Signal
Sampling Time: 1.75 msec
Combinability: Single and Double Detector Neutron Tools

Temperature Sensor: Platinum RTD

Collar Locator: Magnetic, Active

Gamma Ray: Scintillation Crystal

Telemetry: AMI

MEASUREMENTS

Principle:	Sonic wavetrain attenuation		
	8 Radial	Variable Density	Primary
Waveforms	8 Radial	Variable Density	Primary
TX - RX Distance	2 Ft.	5 Ft.	3 Ft.
Range:	100 to 1500 µsec	100 to 1400 µsec	100 to 1400 µsec
Vertical Resolution:	2 Ft.	5 Ft.	3 Ft.
Accuracy:	< 1 mV	N/A	< 1 mV
Resolution:	±2%	N/A	±2%
Primary Curves:	AMP & TT (3 Ft., Radial & 5 Ft.), VDL (5 Ft.), Cement Map		
Secondary Curves:	CCL, Gamma Ray, Temperature		

CALIBRATION

Primary: Presurized Calibration Tank, 5.5 In. x 17 Lb/Ft.

Wellsite Verification: Free Pipe Log

MEASURING POINTS

CCL: 74.4 Inches above the bottom of the electronic section (Field Joint)

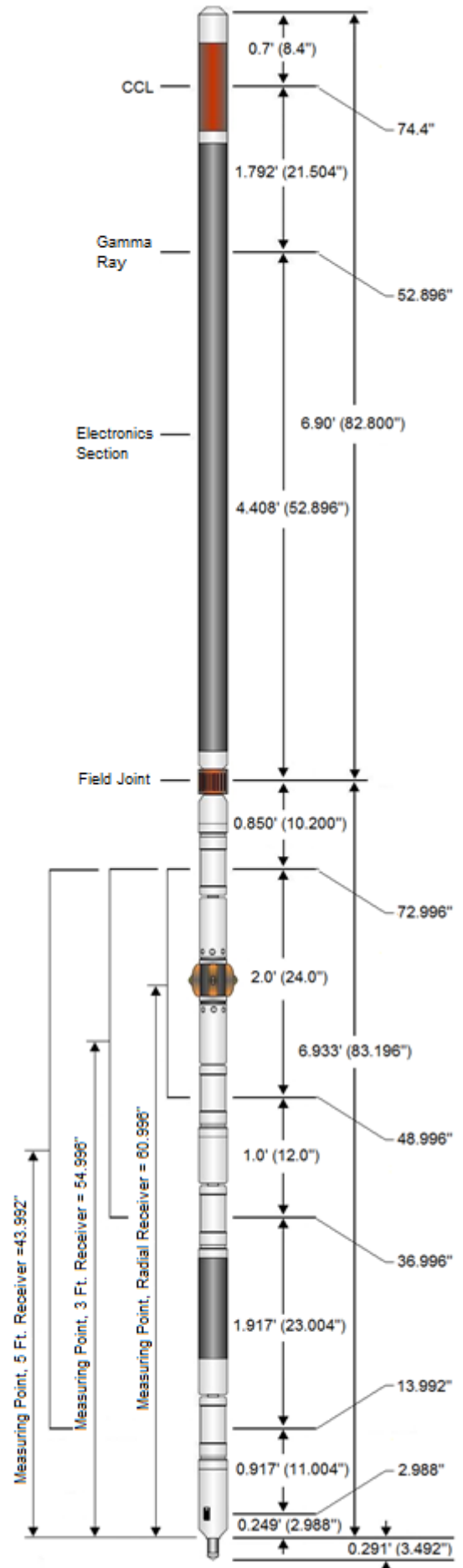
Gamma Ray: 52.896 Inches above the bottom of the electronic section (Field Joint)

Radial Amplitudes, Amplitude Map: 60.996 Inches above the bottom of the Measuring Section

Amplitude, TT (3 Feet): 54.996 Inches above the bottom of the Measuring Section

VDL, 5 Feet Waveform: 43.992 Inches above the bottom of the Measuring Section

Temperature: 2.988 Inches above the bottom of the Measuring Section



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