

CAST-M™ / CBL-M / MFC

Monoconductor Conveyed Simultaneous Ultrasonic / Sonic / Caliper Casing and Cement Evaluation

The Halliburton CAST-M™ / CBL-M / MFC tool string was designed to augment well-integrity data acquisition, particularly when suspected poor casing conditions are likely to impact data acquisition from acoustic tools.

The combination of the MFC high-resolution caliper and the CAST-M™ / CBL-M casing-inspection and cement-evaluation capabilities enables enhanced well evaluation with three independent data-acquisition technologies. With the added flexibility of monoconductor wireline conveyance, the CAST-M / CBL-M / MFC service focuses on delivering increased operational efficiency and improved well-integrity evaluation even in live well conditions.

When combined, the CAST-M / CBL-M / MFC tool string acquires multiple data sets between 4-1/2-in. through 14-in. casing, including cement impedance, 5-ft. acoustic waveform, and 2D imaging logs, as well as interactive 3D maps of casing inner wall and statistical reports on casing wear.

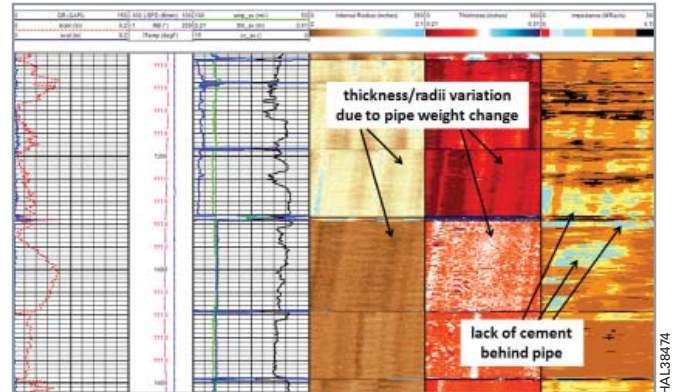
This comprehensive solutions package permits the customer to fully understand the condition of both the casing and the cement when well conditions demand service innovation.

Benefits

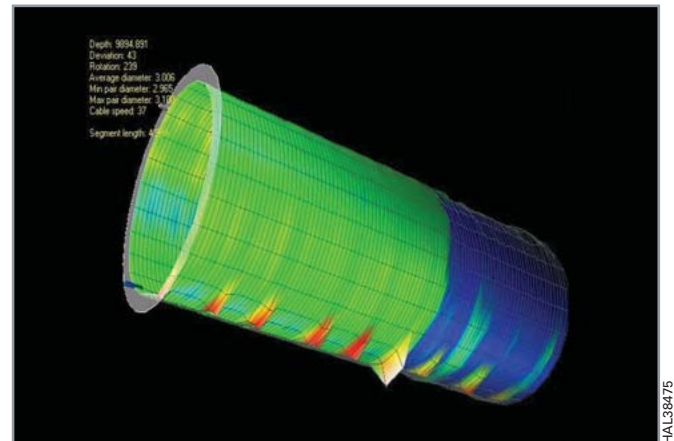
- Delivers the same high-quality cement evaluation and casing inspection results available with the CAST-M™ / CBL-M service
- Ensures high-resolution (0.002 in.) characterization of the casing inner wall, with the MFC tool's direct-contact caliper technology
- Improves understanding of casing conditions, with additional provision of interactive 3D mapping and statistical reports
- Reduces NPT with tool string integration, providing the most information in a single logging run
- Tractor- or e-coil tubing conveyance for deviated and horizontal well applications

Features

- Data cross-referencing between CAST-M ultrasonic “flagged” shots and MFC radii measurements ensure log validation in troublesome casing intervals
- Independent CAST-M and MFC pre-job planning software provide operational simulation capabilities, reducing job uncertainty and maximizing quality data recovery



Sample CAST-M / CBL-M / MFC Casing Inspection and Cement Evaluation Log in 4-1/2-in. tubing, depicting a change in pipe weight



Sample 3D interactive mapping of an orifice detected in a tubular. The MFC's high acquisition rate can provide detailed imaging to help discern minute changes in casing.

CAST-M/CBL-M/MFC Tool Specifications

Feature	CAST-M	CBL-M
Length	168.6 in. / 428.2 cm	112.5 in. / 285.8 cm
Tool OD	2.75 in. / 6.98 cm tool body 3.125 in. / 7.94 cm at transducer	2.75 in. / 6.98 cm
Minimum Casing ID	3.9 in. / 9.91 cm	3.2 in. / 8.12 cm
Maximum Casing ID	12.9 in. / 32.77 cm	10.5 in. / 26.67 cm
Maximum Pressure*	20,000 psi / 138 MPa	20,000 psi / 138 MPa
Maximum Temperature	350°F / 177°C	350°F / 177°C
Weight	182 lb / 82.6 kg	116 lb / 52.6 kg
Borehole Fluid	WBM/OBM/brine/water	WBM/OBM/brine/water
Recommended Logging Speed	33 ft/min to 75 ft/min 10 m/min to 23 m/min 1,980 ft/hr to 4,500 ft/hr 604 m/hr to 1,372 m/hr	30 ft/min to 60 ft/min 9 m/min to 18 m/min 1,800 ft/min to 3,600 ft/hr 549 m/min to 1,097 m/hr

CAST-M/CBL-M/MFC Tool Specifications

Feature	MFC	
	40-finger	60-finger
Length	66.0 in. / 167.64 cm	61.2 in. / 155.45 cm
Tool OD	2.75 in. / 6.98 cm standard MFC 2.75 in. / 6.98 cm extended MFC	3.9 in. / 9.9 cm standard MFC 4.4 in. / 11.2 cm extended MFC
Minimum Casing ID	2.75 in. / 6.98 cm standard MFC 2.75 in. / 6.98 cm extended MFC	4.0 in. / 10.2 cm standard MFC 4.5 in. / 11.4 cm extended MFC
Maximum Casing ID	7 in. / 17.8 cm standard MFC 10 in. / 25.4 cm extended MFC	10 in. / 25.4 cm standard MFC 14 in. / 35.6 cm extended MFC
Maximum Pressure*	20,000 psi / 138 MPa	20,000 psi / 138 MPa
Maximum Temperature	350°F / 177°C	350°F / 177°C
Weight	70 lb / 31.8 kg	96 lb / 43.6 kg
Borehole Fluid	WBM/OBM/brine/water/gas	WBM/OBM/brine/water/gas
Recommended Logging Speed	30 ft/min to 60 ft/min 9 m/min to 18 m/min 1,800 ft/min to 3,600 ft/hr 549 m/min to 1,097 m/hr	30 ft/min to 60 ft/min 9 m/min to 18 m/min 1,800 ft/min to 3,600 ft/hr 549 m/min to 1,097 m/hr

* Limited to TTTCU-002 telemetry pressure rating: 15,000 psi (103 MPa)

