



CASED HOLE LOGGING

Multi-Finger Caliper

Spartek Systems specializes in providing the oil and gas industry with high quality data to monitor well performance and diagnose potential problems. Founded in 1994, Spartek Systems leads the industry in providing cost effective solutions for acquiring reliable well integrity data.

Product Overview

The Multi-Finger Caliper (MFC) has 24 to 56 high resolution calipers which measures the internal radii of the wellbore tubing and casing. Accurate measurements can be made in tubular sizes from 1.75 inches to 13.8 inches in diameter (with extended fingers kit). The MFC uses a series of “contactless” displacement sensors and a corresponding number of measurement fingers. When moving along the inner casing wall, the radial displacement will be changed into an axial displacement of the sensor, which is then processed, coded, and transferred to surface system where the image of the casing will be obtained.

The MFC can be used to detect casing deformation, bending, fractures, holes, scale deposition, paraffin



build-up, and inner wall corrosion with high accuracy.

- ▶ 24/40/56 Arms
- ▶ Max, Min, and Average borehole diameter curves
- ▶ Temperature Curve
- ▶ Tool Deviation
- ▶ Relative azimuth
- ▶ Real-time chamber temperature
- ▶ Real time spot interpretations

Features and Applications

- ▶ Internal tubing and casing inspection
- ▶ 3D visualization tools aids interpretation of the data:
 - ◆ Verifying well construction
 - ◆ Mapping perforations
 - ◆ Identifying casing drilling damage
- ▶ Easy assembly and disassembly for preventive maintenance and repair
- ▶ Hardened finger tip for long service life
- ▶ Combinable with Casing Inspection Tool for internal and external corrosion analysis
- ▶ Compatible with the “Warrior” logging system

SPARTEK SYSTEMS

Providing Our Customers With “Best In Class” Technology

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Specifications:

	MFC24C	MFC40C	MFC56C
Pressure (maximum)	14,503 psi (100 MPa)	14,503 psi (100 MPa)	14,503 psi (100 MPa)
Temperature (maximum for 2 hrs)	347° F (175° C)	347° F (175° C)	347° F (175° C)
Diameter	1.688 in (43 mm)	2.875 in (73 mm)	3.54 in (90 mm) * 7.09 in (180 mm)
Length	6.02 ft (1.836 m)	6.83 ft (2.084 m)	7.13 ft (2.172 m)
Make Up Length	5.67 ft (1.728 m)	6.48 ft (1.975 m)	6.81 ft (2.077m)
Measure Point Caliper (from bottom)	2.45 ft (0.746 m)	2.54 ft (0.775 m)	2.57 ft (0.785 m)
Weight	28.7 lbs (13 kg)	81.6 lbs (37 kg)	135.6 (61.5 kg)
Caliper Measurement Number of arms Measurement Range Minimum Maximum (* with extension fingers) Accuracy Resolution	24 1.77 in (45 mm) 7.09 in (180 mm) ±0.02 in (0.5 mm) ±0.004 in (0.1 mm)	40 3.14 in (80 mm) 8.26 in (210 mm) ±0.02 in (0.5 mm) ±0.004 in (0.1 mm)	56 3.94 in (100 mm) 9.65 in (245 mm) *13.8 in (350 mm) ±0.02 in (0.5 mm) ±0.004 in (0.1 mm)
Temperature Measurement Minimum Maximum Accuracy Resolution Response time	External Temperature Not Available (Internal tool chamber only)	-13° F (-25° C) 347° F (175° C) ± 2° C 0.05° C < 2 sec	-13° F (-25° C) 347° F (175° C) ± 2° C 0.05° C < 2 sec
Deviation Measurement Measurement Range Accuracy Resolution	Not Available till Q4 2011	0° to 180° ±5.0° ±0.1°	0° to 180° ±5.0° ±0.1°
Azimuth Measurement Measurement Range Accuracy Resolution	Not Available till Q4 2011	0° to 360° ±5.0° ±0.1°	0° to 360° ±5.0° ±0.1°
Data Acquisition Logging Speed Vertical Resolution	50 ft/min (15 m/min) 0.31 in (8 mm)	34 ft/min (10 m/min) 0.31 in (8 mm)	24 ft/min (7 m/min) 0.31 in (8 mm)
Power Requirements Input Voltage (DC) Input Current Required	90 Volts (±10%) 30 mA (± 5 mA)	90 Volts (±10%) 35 mA (± 5 mA)	90 Volts (±10%) 35 mA (± 5 mA)

Specifications subject to change without notice

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