CASED HOLE LOGGING
Casing Inspection Tool

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.

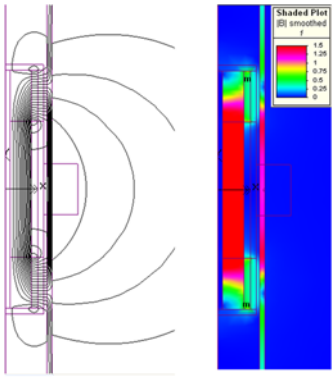
Product Overview

Preventing failure of any wellbore integrity is critical. A failure can result in lost production, environmental pollution, and costly repairs. The first step to prevention is to monitor wells to determine if corrosion, erosion, or geological deformation has compromised the integrity of the well. If defects in the well's integrity are known before they become catastrophic, an inexpensive corrective action may be implemented to extend the life and net profit for the well.

The Casing Inspection Tool utilizes Magnetic Flux Leakage technology to determine changes in the pipe wall thickness. This is the same technology that is used in monitoring most pipelines. The technology can measure metal loss both internally and externally.

- High Resolution Full Radial Coverage
  - 80 to 160 circumferential sensors
  - 0.25 in (6.4 mm) for an isolated pit
  - 20% wall thinning
- High Vertical Sampling
  - 200 samples/sec
  - 0.125 inch (3.2 mm) sampling at 120 feet per minute.
- Repeatability +/- 10%

The magnetic circuit of the CIT was extensively modeled to ensure the design would provide the magnetic field strength necessary to saturate the casing.



High Flux Density
B = 1.1 Tesla

Depending on casing size, the MFL sensor section has 8 to 16 pads. Each pad has 8 magnetic field sensors for measuring the magnetic flux leakage independent of logging speed, and two shallow discriminator measurements to determine if the measured flux leakage is internal or external. Together with a high speed memory section, the CIT provides the highest resolution 3D image of the integrity of the casing.

Primary Features

- Tubular inspection for both internal and external corrosion (metal loss).
- Optimized MFL Sections for larger casing sizes.
- Surface Read Out quick look interpretation with high resolution memory data or memory only operation.
- Combinable with a Multi-Finger Caliper tool for internal diameter information.
- Compatible with the "Warrior" logging system built by Scientific Data Systems
- Compatible with Microsoft Windows 10

SPARTEK SYSTEMS

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SPARTEK SYSTEMS
GEOPHYSICAL INSTRUMENTATION

Rev: 5/25/2021

Specifications:

Casing Inspection Tool			
Operating Specifications:		**Electrical Specifications**	
Pressure (max)	15,000 psi (103.4 MPa)	Input Voltage	125 – 200 VDC
Temperature (max)	300° F (150° C)	Input Current Required	0.06 A
Housing Material	Inconel 718 (sour rated)		
Measurement Specifications		**Data Acquisition**	
Casing penetration range	20 – 100 %	Memory Capacity	4 GBytes
Defect Sensitivity	.25 in (6.4 mm)	Memory Recording Time	12.1 to 22.9 hours
Accuracy (%)	± 15 % (isolated pit)	Number of Pads	8 to 16 Pads
Repeatability (%)	± 10 %	Sensors per Pad	
Magnet Strength (MGOe)	30	MFL	8
Radial Coverage	100 %	EC	2
		Temperature	1
Memory Section			
Overall Length	1.65 ft (0.48 m)	Sample Rate	200 samples /sec
Make-up Length	1.27 ft (0.39 m)	Logging Speed	120 ft/min (36.6 m/min)
Diameter	3.75 in (95.2 mm)	Vertical Resolution	0.01 ft (.003 m)
Weight	34.0 lbs (15.4 kg)	Communication to PC	USB

MFL	MFL-375	MFL-450	MFL-575	MFL-800
Diameter				
Collapsed	3.75 in (95.2 mm)	4.50 in (114.3 mm)	5.75 in (146.0 mm)	8.00 in (203.2mm)
Maximum	4.3 in (109.2 mm)	5.10 in (129.5 mm)	6.60 in (167.6 mm)	9.20 in (233.7 mm)
Extension Kit (Collapse)		5.50 in (139.7 mm)	7.40 in (188.0 mm)	12.25 in (311.1 mm)
Extension Kit (Max)		5.96 in (151.4 mm)	7.76 in (197.1 mm)	12.75 in (323.8 mm)
Length				
Overall Length	3.66 ft (1.12 m)	3.91 ft (1.19 m)	4.35 ft (1.32 m)	4.67 ft (1.42 m)
Make Up Length	3.48 ft (1.06m)	3.73 ft (1.14 m)	4.17 ft (1.27 m)	4.44 ft (1.35 m)
Weight	103 lb (46.7 kg)	133 lb (60.3 kg)	193 lb (87.5 kg)	353 lb (160.1 kg)
Sensors Configuration				
Number of Pads	8	10	12	16
Pad Curvature	4.0 in (101.6 mm)	5.0 in (127 mm)	7.0 in (178 mm)	9.0 in (229 mm)
Pad Arc Length	1.9 in (48.3 mm)	1.9 in (48.3 mm)	1.9 in (48.3 mm)	1.9 in (48.3 mm)
MFL Sensors	64	80	96	128
EC Sensors	16	20	24	32
Temperature Sensors	8	10	12	16
Total Sensors	88	110	132	176

Centralizer			
Operating Specifications			
Type	Roller Centralizer	Operating Range ID	3.75 in to 6.50 in
Overall Length	1.12 ft (0.34 m)		95.2 mm to 165.1 mm
Make Up Length	1.00 ft (0.30 m)	Collapsed Diameter	3.75 in (95.2 mm)
Weight	23 lbs (10.4 kg)	Material	4140

Specifications subject to change without notice

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