

Electronic Multi Finger Caliper

The Multi Finger Caliper is used to detect changes to the internal surface condition of tubing or casing. The caliper fingers have a high degree of accuracy and respond to very small changes.

When being run in hole, the fingers are closed to prevent damage. Once at logging depth, a motor is activated at surface by the logging engineer or by the memory tool and the fingers open. A continuous measurement of surface condition is made as the tool is logged. The tool also has an inclinometer to indicate the finger positions relative to the high or low side of the pipe, so that features can be orientated correctly during data processing.

Applications

- Time-lapse monitoring of corrosion and erosion
- Identify scale build-up
- Identify mechanical damage to the completion and tubulars
- Accurate location of holes or anomalies in the casing
- Wear profiles due to wireline / coiled tubing intervention
- Corrosion monitoring
- Deposition analysis
- Perforation mapping

Features and benefits

- Available in a range of diameters to suit varying casing/tubing sizes and coverage
- Run in combination with other instruments from the Well Integrity Platform and UltraWire™ Production Logging tools
- Precision measurement of tubular ID
- Data can be used to generate 3D images of pipe condition using visualisation Multi-Finger Imager Processing Software (MIPS)
- MIPS software can also be used to statistically calculate the degree of change to a pipe ID



Technical specifications			
Number of fingers	24	40	60
Temperature rating	350°F (177°C)		
Pressure rating	15000psi (103MPa)	20,000psi (138MPa)	20,000psi (138MPa)
Tool diameter	1-11/16in (43mm)	2.75in (70mm)	4.4in (111.76mm)
Tool length	64.6in (1.64m)	66in (1.68m)	61in (1.55m)
Tool weight	20.7lbs (9.38kg)	70lbs (31.75kg)	95.7lb (43.5kg)
Toolbus	UltraWire™		
Current consumption	<30mA (logging) / <400mA (motor operating)	<30 mA (logging) / <500mA (motor operating)	
Measurement range	1.75-7in (45-178 mm)	2.75-10.0in (70-254 mm)	4.5-14in (114.3-356.6 mm)
Accuracy, radial	±0.02in (0.508 mm)	±0.025in (0.64 mm)	±0.030in (0.762 mm)
Resolution, radial	0.003in (0.076 mm)	0.0022in (0.06 mm)	0.005in (0.127 mm)
Finger tip width	0.063in (1.60 mm)	0.064in (1.63mm)	0.064in (1.63 mm)
Finger contact force	0.75-1.25lbf (3.4-5.7 N)		
Logging speed	30 ft/min (10 m/min) recommended, 60 ft/min (20 m/min) maximum		
Materials	Corrosion resistant throughout		