1.75 inch Memory Tubing Caliper

The Scientific Drilling Memory 24-finger Multi-Finger Caliper is a high-accuracy, high-resolution tool providing detailed inspection of the inside of the completion string and components. The high quality measurement allows the use of three-dimension imaging and calculation of metal wear or corrosion and mineral deposition.

Applications

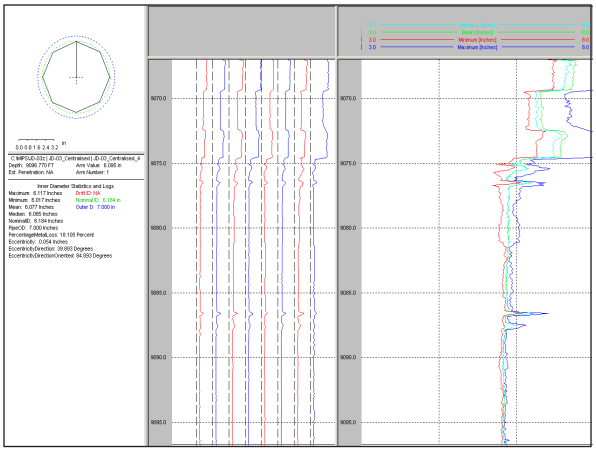
- Quantification of scale or corrosion build up
- Accurate location of holes or anomalies in the tubing or casing
- Identification of downhole hardware and damage

Operating Principle

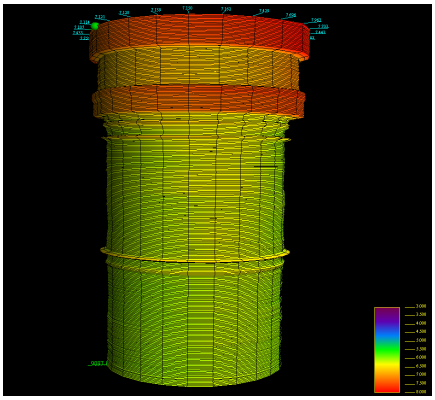
The tool comes in two configurations: Standard model 350°F (175°C) and High-Temperature model 428°F (220°C). A lithium battery powers the tool. It can be run on slickline for simple well control. The tool is programmed at surface. Once on bottom, the program stored in memory motors open the fingers. These spring loaded, carbide-tipped fingers push against the ID of the casing or tubing with a low force as the tool is logged up through the hole. Movement of each finger is transmitted to a minimum and maximum measurement system and individual (Profiling Fingers) every 45 degrees. The combination of minimum/maximum and individual measurement fingers will provide all the information necessary to evaluate the condition of the tubing. The movement of each finger is transferred to a sensor. The sensor data is stored into memory and is retrieved once the tool is at surface. At the end of the run, the fingers will automatically motor in. Repeats can be made with this tool. It can be opened again by using the talk-down system. The tool can be reopened as many times as desired. The tool includes an inclinometer to determine deviation and tool highside. Internal temperature is also recorded.

Technical Specifications	
Diameter	Standard 1.75 in (4.45 cm) Flasked 1.82 in (4.6 cm)
Length	Caliper: 83.5 in (212.1 cm) Centralizers: 24 in (60.96 cm) x 2 Total Length: 131.5 in (334 cm)
Weight	23 lbs (10.43 kg)
Measurement Range	1.85– 4.5 in (4.7 – 11.43 cm)
Sensor Sample Rate	Minimum 0.1 second
Radial Resolution	0.005 in (0.127 mm)
Radial Accuracy	±0.03 in (0.762 mm)
Inclinometer Accuracy	5° rotation and deviation
Finger Contact Force	1.5 – 3 lbs (0.68 – 1.36 kg)
Maximum Pressure	15,000 psi (103,421 kPa)
Maximum Temperature	Standard version 350°F (177°C) High-Temp version 428°F (220°C)
Materials	Corrosion Resistant Throughout
Logging Speeds	Between 15 ft/min (900 ft/hr) and 60 ft/min (3,600 ft/hr)
Centralizers	24 in (60.96 cm) Roller or Bow Spring Centralizers on top and bottom

Specifications are subject to change without notice.



Actual Caliper Data



3-D View of Caliper Data

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