

Multifinger Calipers

High resolution measurements



Multifinger calipers provide high resolution measurements of the internal surface of tubings and casings used to evaluate well performance or evaluate well integrity. Spring loaded caliper fingers make contact with the inner surface of the wellbore and move independently to track any variation in downhole geometry. The radial position of each finger and its relative orientation in the well are digitised and recorded in order to create a complete 360° map of the wellbore profile that is sent to surface for playback or analysis.

While running in hole the fingers of the caliper are stowed within the body of the tool and are motored open to make contact with the wellbore upon receiving a command from the user. Tools come in a range of sizes with an increasing number of fingers in order to provide optimal coverage and resolution across a range of tubular diameters. Calipers can be deployed in surface read out or memory configurations and can be combined with other well integrity or production log services in order to meet customer specific requirements.

Multifinger Calipers

24 finger caliper

Number of Fingers	24 Standard	24 Extended
Temperature Rating, degF [degC]	350 [177°C]	350 [177°C]
Pressure Rating, psi [MPa]	15,000 [103.4]	15,000 [103.4]
Tool Diameter, in [mm]	1 11/16 [43]	1 11/16 [43]
Tool Length, in [m]	64.6 [1.64]	64.6 [1.64]
Tool Weight, lb [kg]	20.7 [9.38]	20.7 [9.38]
Toolbus	Ultrawire	Ultrawire
Measurement Range, in [mm]	1.75 - 4.5 [45 - 114]	1.75 - 7 [45 - 178]
Accuracy, radial, in [mm]	± 0.02 [0.508]	± 0.02 [0.508]
Resolution, radial, in [mm]	0.002 [0.051]	0.003 [0.076]
Finger tip width, in [mm]	0.063 [1.60]	0.063 [1.60]
Finger contact force lbf [N]	0.75 - 1.25 [3.4 - 5.7]	0.75 - 1.25 [3.4 - 5.7]
Logging speed ft/min [m/min]	Recommended 30 [10] Maximum 60 [20]	Recommended 30 [10] Maximum 60 [20]
Materials	Corrosion resistant throughout	Corrosion resistant throughout

Features

- High resolution measurements
- Wide measurement range
- Combination with other tools/services
- Memory or surface read-out configurations
- Corrosion resistant materials

Key benefits

- Precision measurements of tubular ID
- Each tool covers several pipe sizes
- Easy to operate and use
- Operates in wide range of well conditions

Typical applications

- Corrosion monitoring
- Drilling wear evaluation
- Deposition analysis
- Deformation monitoring
- Perforation mapping

40 finger caliper

Number of Fingers	40 Standard	40 Extended
Temperature Rating, degF [degC]	350 [177°C]	350 [177°C]
Pressure Rating, psi [MPa]	20,000 [138]	20,000 [138]
Tool Diameter, in [mm]	2.75 [70]	2.75 [70]
Tool Length, in [m]	66 [1.68]	66 [1.68]
Tool Weight, lb [kg]	70 [31.75]	70 [31.75]
Toolbus	Ultrawire	Ultrawire
Measurement Range, in [mm]	2.75 - 70 [70 - 178]	2.75 - 100 [70 - 254]
Accuracy, radial, in [mm]	± 0.02 [0.51]	± 0.025 [0.64]
Resolution, radial, in [mm]	0.0015 [0.04]	0.0022 [0.06]
Finger tip width, in [mm]	0.064 [1.63]	0.064 [1.63]
Finger contact force lbf [N]	0.75 - 1.25 [3.4 - 5.7]	0.75 - 1.25 [3.4 - 5.7]
Logging speed ft/min [m/min]	Recommended 30 [10] Maximum 60 [20]	Recommended 30 [10] Maximum 60 [20]
Materials	Corrosion resistant throughout	Corrosion resistant throughout



Photos courtesy of GE Oil & Gas

Archer is a global oilfield service company with more than 40 years' experience, over 8,000 employees, and operations in more than 100 locations worldwide. From drilling services, production optimization, well integrity and intervention, to decommissioning, Archer is focused on safely delivering the highest quality services and products to the drilling and well service markets. **We are Archer.**