

Quicksilver Probe

APPLICATIONS

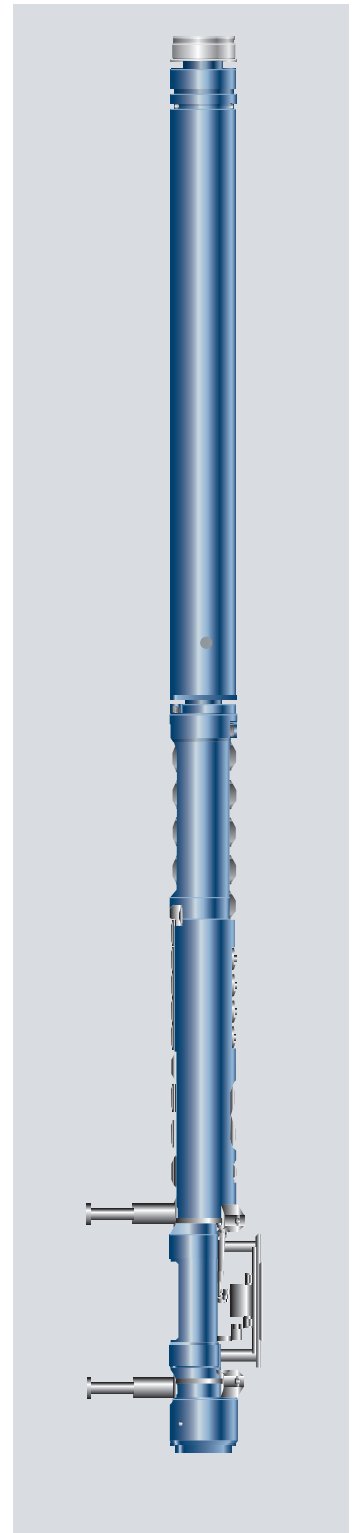
- Formation pressure measurement and fluid gradient estimation
- Formation fluid sampling
- Downhole fluid analysis
- Flow Profiling

Wireline Sampling-Tool Probe

Quicksilver Probe* wireline sampling technology collects reservoir fluid samples that, in many cases, have levels of filtrate contamination below measurable limits. In addition, the time required on station is significantly reduced compared with conventional openhole sampling operations. Other enhancements over single-probe methods are a reduced risk of differential sticking and more reliable laboratory results for PVT analysis.

The innovative focused probe features concentric packers with “guard” and “sample” flowlines to efficiently separate mud filtrate contamination from virgin reservoir fluid during the sampling process.

Beyond setting new standards in purity and sampling speed, Quicksilver Probe focused sampling makes downhole fluid analysis possible even in miscible oil-base mud. Fluid properties can be accurately measured at reservoir conditions without contamination effects. Comparison between reservoir layers yields information concerning zonal connectivity and fluid compartmentalization that cannot be measured by other logs.



Quicksilver Probe Wireline Sampling Tool Probe

Measurement Specifications

	Quicksilver Probe Tool
Output	Low-contamination samples of formation fluids; flowline pressure, resistivity, and temperature
Logging speed	Stationary
Range of measurement	CQG* gauge: 750 to 15,000 psi [5 to 103 MPa] High-pressure Quartzdyne® gauge: 0 to 25,000 psi [0 to 172 MPa] Resistivity: 0.01 to 20 ohm.m Temperature: -67 to 350 degF [-55 to 177 degC]
Resolution†	CQG gauge: 0.008 psi [55 Pa] at 1.3-s gate time High-pressure Quartzdyne gauge: 0.01 psi/s [69 Pa/s] Resistivity: 0.001 ohm.m Temperature: 0.1 degF [0.05 degC]
Accuracy	CQG gauge: ±(2 psi [13,789 Pa] + 0.01% of reading)† High-pressure Quartzdyne gauge: ±0.025 psi [±172 Pa] Resistivity: ±5% of reading Temperature: ±1.0 degF [±0.5 degC]
Mud type or weight limitations	None
Combinability	Fully integrates with MDT* Modular Formation Dynamics Tester system
Special applications	Downhole fluid analysis at reservoir conditions

†Includes fitting error, hysteresis, repeatability, and some allowance for sensor gain; the corresponding percentages of the pressure reading account for the uncertainty of the calibration equipment.

Mechanical Specifications

	Quicksilver Probe Tool
Temperature rating	350 degF [177 degC]
Pressure rating	20,000 psi [138 MPa] High-pressure version: 30,000 psi [207 MPa]
Borehole size—min.	6 in [15.24 cm]
Borehole size—max.	14 in [12.07 cm]
Outside diameter	4.75 in [12.07 cm] While sampling: 5 in [12.70 cm]
Length	Probe module: 8.48 ft [2.58 m]
Weight	308 lbm [140 kg] High-pressure version: 351 lbm [159 kg]
Tension	160,000 lbf [711,710 N]
Compression†	85,000 lbf [378,100 N]

† At 15,000 psi [103 MPa] and 320 degF [160 degC]. The compressive load is a function of temperature and pressure.

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