Caged Fullbore Flowmeter (6 arm CFBM)

The spinner blades and cage assembly collapse down to pass through tubing restrictions without damage

Application

- Detect production loss due to crossflow or thief zones
- Locate packer and plug leaks
- Identify lost-circulation zones in open holes
- Locate points of increased production due to well treatment
- Injection and production flow profiling

Features

- High deviation and horizontal well logging
- Measurement of low flow rates
- Interchangeable mechanical sections to match casing sizes from $4^{1}/_{2}$ to $9^{5}/_{8}$ in.
- Combinable with other Baker Hughes **Ultrawire™ production logging tools**
- Connects to either a **Spinner Electronics (CFBE)** or a **Capacitance/Temperature/Flow tool (CTF)**
- Modification kit available for connection to $1^{3}/_{8}$ in. CTF
- Lockable spinner for high rate injection wells (standard feature for $9^{5}/_{8}$ in. tools)
- Solid impeller shafts for very high rate wells. Baskets for casing sizes 3 in. to $9^{5}/_{8}$ in.

The Baker Hughes **Caged Fullbore Flowmeter** is run at the bottom of a production logging tool string. The spinner blades and cage assembly collapse down to tool diameter, enabling it to pass through tubing restrictions without damage.

The tool has a six arm, spring-loaded cage that centres the spinner in the middle of the flow and supports tool weight in deviated wells. A large diameter impeller measures flow rates with coverage over a large cross-section of the casing. The spinner runs on precision bearings and its rotation is sensed by zero drag Hall-effect detectors, and the signal from the sensors is converted into a flow rate measurement. The low mechanical threshold of the tool enables it to be used in low flow rates; normal output is 10 pulses per revolution with directional indication.

Specifications

Temperature rating	350°F (177°C)
Pressure rating	15,000 psi (103.4 MPa)
Tool diameter	$1^{11}/_{16}$ in. (43 mm)
Tool length	2.91 ft (0.889 m)
Tool weight (dependant on spinner and cage sizes)	10 lb (4.5 kg) for $1^{11}/_{16}$ in. tool with 7 in. cage
Sensor measure point (from bottom of the tool)	13.5 in. (349 mm)
Output	10 pulses/rev (directional)
Spinner threshold	1.7 ft/min (0.01 m/s) (approx), 100 bpd in 7 in. casing
Maximum fluid velocity	500 ft/min (2.54 m/s), 28,250 bpd in 7 in. casing
Casing range	$4^{1}/_{2}$ in. to $9^{5}/_{8}$ in.
Materials	Corrosion resistant throughout