



CHANDLER
ENGINEERING®

Model 7170

Lost Circulation Material Apparatus

A Critical Tool for Characterizing the Performance of Well Fluids

The Chandler Engineering Model 7170 Lost Circulation Material Apparatus is an addition to Chandler Engineering's world leading line of equipment. The Model 7170 provides a means to dynamically evaluate the performance of lost circulation materials under high pressure and high temperature conditions.

The apparatus is supplied with four slots with varying widths for use in determining bridging characteristics under pre-defined differential pressures. The slurry is stirred at 150 rpm using an impeller during heating and pressurization. Once steady-state conditions are achieved, differential pressure is created across the slot. A piston accumulator equipped with an LVDT is used to measure the liquid volume that passes through the slot. Data acquisition is provided via an Ethernet interface to Chandler Engineering Model 5270 software.

The Model 7170 Lost Circulation Material Apparatus provides safe, versatile, and adaptable technology with operating temperatures up to 400°F (204°C) and operating pressures up to 2000 psi (13.8 MPa).



FEATURES

- ✓ Evaluates performance of lost circulation materials under HPHT conditions
- ✓ Various width slots for use in determining bridging characteristics under pre-defined differential pressures
- ✓ Slurry is stirred at 150 rpm using an impeller during heating and pressurization
- ✓ Operating temperature up to 400°F (204°C)
- ✓ Operating Pressure up to 2,000 psi (13.8 MPa)

Model 7170

Specifications

Regulatory:

Designed to meet ASME, CE/PED and NRTL Certifications

Sample Environment:

Maximum Pressure: 2000 psi / 13.8 MPa

Maximum Temperature: 400°F / 204°C

Pressure Vessel:

Elastomer seals with backup rings (FKM)

Vessel material: 316SS

Vessel rotation with latching features

LVDT-based filtrate volume measurement

Slot widths: 3.00, 2.00, 1.50, 1.00, 0.50mm

(other widths available)

Vessel volume: 860 mL

Dual pressure relief valves

Safety pressure ports

Sample Characteristics:

Slurries containing lost circulation materials

Motor System:

Magnetic coupling to impeller shaft

Paddle speed: 150 RPM (adjustable)

Temperature Control:

PID controller for sample temperature

Wall temperature measurement

Vessel cooling jacket

Redundant latching over-temperature circuit

Temperature control accuracy: $\pm 2^\circ\text{F}$ / $\pm 1^\circ\text{C}$

Pressure Control:

PID controller and regulator for automatic sample pressure

Manual regulator for filtrate back-pressure control

Pressure control accuracy: ± 10 psi of F.S.

Pressurizing Media:

Nitrogen

Data Acquisition and Control System:

Chandler Engineering 5270 software, calibration features

Ethernet interface

Instrument Utilities:

Power: 208-230 VAC, $\pm 10\%$, 50 or 60Hz

System Documentation:

System Operation Manual

Wiring Diagram

Plumbing Diagram

Assembly Drawings

Accessories

Spare Parts Lists



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