

DYNAMIC HPHT® Filtration System Model 90

Description

Fann® DYNAMIC HPHT® filtration system is the industry's only true dynamic filtration system for measuring filtration properties of drilling fluids and breakers at elevated temperatures and pressures.

The DYNAMIC HPHT® filtration system consists of an external yoke cell, thick-walled cylinder with rock-like characteristics to simulate filter cake buildup on the formation, a built-in computer controller, and an LCD display. It uses ceramic filter cores with porosities ranging from 5 to 190 microns and various permeabilities to simulate downhole formations.

Built-in safety features protect the user and help ensure reliable test results.



Safety Features

- Rupture disk on high pressure gas supply
- Safety pressure relief valve on the heated, pressurized cell
- Independent over-temperature shutdown
- Heater and motor cutoff interlock door when door is opened
- Automatic cool down when test ends
- System pressurizes when cell and collector properly positioned
- Cell design free of stressed threaded closures, set screws or caps, which require tightening
- Cell made with MONEL® alloy K-500 with stainless steel end caps
- No welded joints on stressed parts
- Pressure fittings made of stainless steel

Application

Users test drilling fluids on the DYNAMIC HPHT® filtration system to determine filtration properties at user defined temperatures, pressures, differential pressures, and shear rates.

Advantages

- Fully automatic, complete with built-in computer controller and menu-driven software
- Programmable up to 20 sequence steps, providing various test parameters
- Options to view data on LCD display, print it, or download to computer
- Automatic collecting of filtrate volume in 1/3 ml increments
- Comprehensive data points, each with filtrate volume, pressure, differential pressure, sample temperature, and shear rate
- Magnetically-driven motors and pumps for easier maintenance and power savings
- Cells designed for easier and safer loading and unloading
- Quick-connect fittings on filtrate hoses for simple assembly or disassembly
- Various safety features including rupture disk, pressure relief valve, over-temperature shutdown

Model 90 Specifications	
Maximum Temperature	500°F (260°C)
Working Pressure	2500 psig (17,237 kPa)
Maximum Differential Pressure*	500+ psig (3447 kPa)
Maximum Power Requirements	1500 watts
Heater Power	1200 watts
Power Supply	120/240 V, 50/60 Hz
Sample Volume	250 ml
Filtrate Volume	50 ml
Shear Bob Drive	1/4 hp motor with belted magnetic drive
Shear Rate Constant	2693 1/s per rpm (no filter cake)
Initial Shear Rate Range (with standard bob)	9 to 269 1/s

* Actual maximum differential pressure is limited by core strength.

Ceramic Filter Core Specifications

Part Number	API Designation (micron)	New Hg Data (micron)	Old Air Data* (micron)
210545	12	12	5
210546	20	20	10
210547	40	40	20
213483	50	50	35
210548	55	55	60
210549	120	120	90
210550	None	—	150
210551	None	—	190

* Previous designation.

Nominal Core Dimensions

Inside Diameter = 1.014 +/- 0.005 inches

Outside Diameter = 1.510 +/- 0.020 inches

Length = 1.114 +/- 0.005 inches

Maximum Recommended Filtration Rate and Cake Desposition Index (CDI)

Mud Weight lb/gal (sg)	Rate ml/min	CDI
9-12 (1.09-1.44)	0.22	25
12-15 (1.44-1.80)	0.18	20
15 or more (1.80+)	0.14	16
9-12 (1.08-1.44)	0.22	25

Ordering Information

Part No. 209113— DYNAMIC HPHT® Filtration System, Model 90