

## Permeability Plugging Apparatus (PPA)

### Description

The Permeability Plugging Apparatus (PPA) is designed to provide accurate simulation and measurement of downhole static filtration.

These components make up the PPA: an HTHP heating jacket to simulate reservoir temperature; an inverted fluid cell with pressure applied from the bottom and filtrate collected from the top; and a ceramic filter disc to better represent the formation. Filter discs are available in several pore sizes. With a small hydraulic hand pump, pressure is transferred to the mud through a small floating piston inside the cell.

### Application

This 5,000 psig-rated PPA is useful for predicting a drilling fluid's ability to form a semipermeable filter cake that seals off depleted or underpressure intervals and helps prevent differential sticking.



Full PPA Assembly



PPA Cell Assembly

### Advantages

- Realistic and accurate downhole simulation
- Pressure applied from bottom, preventing solids from settling and adding to filter cake
- Designed for HPHT testing
- Filter media in various pore sizes to closely simulate structure of formation
- Rupture discs to help ensure safe pressurization
- Versatile use in the field or laboratory

### Specifications

- 5000 psig (34,473 kPa)
- 500°F (260°C)

### Ordering Information

Part No. 206845— PPA, 115 Volts/800 Watts

Part No. 206846— PPA, 230 Volts/400 Watts

## Additional Equipment

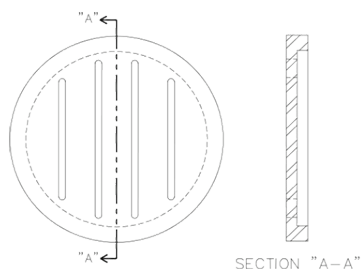
### Ceramic Filter Discs

Ceramic filter discs simulate the porosity of the natural formation. Ceramic filter discs are stronger and more durable than natural materials, allowing for testing with greater pressures and back pressures. A wide assortment of disc of varying porosities enables the user to select a filter porosity that closely matches the actual formation being drilled. This provides a more realistic simulation of filtration properties than using the conventional filter paper.

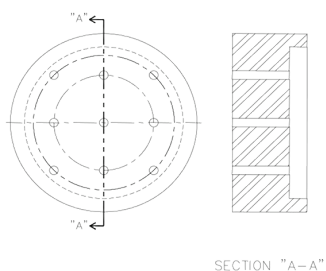
Fann Part No.	API Designation	New Hg micron	Old Air Data Previous Designation micron
210536	10	10	3
210537	12	12	5
210538	20	20	10
210539	40	40	20
210540	50	50	35
210541	55	55	60
210542	120	120	90
210543	none	n/a	150
210544	none	n/a	190

### Stainless Steel Filter Discs

Stainless steel filter discs are available for conducting Loss Circulation Test utilizing the PPA. Discs are constructed of 303 Stainless Steel and are available in both slotted configuration and with holes. All discs are 2-1/2-in. diameter for use with the Fann PPA and HPHT Filter Press. With proper care and maintenance these stainless steel discs can be reused.



1/4-in. Thick Discs	
Fann Part No.	Description
209461	1 mm SLOT, 9 Slots, each 0.0394 in. wide
386828	2 mm SLOT, 4 Slots, each 0.0787 in. wide
386830	3 mm SLOT, 3 Slots, each 0.1181 in. wide
386827	2 mm HOLE, 13 Holes, each 0.0787 in. diameter
386829	3 mm HOLE, 9 Holes, each 0.1181 in. diameter



1-in. Thick Discs	
Fann Part No.	Description
209455	2 mm SLOT, 4 Slots, each 0.0787 in. wide
209456	3 mm SLOT, 3 Slots, each 0.1181 in. wide
209457	5 mm SLOT, 1 Slot, 0.1968 in. wide
209452	2 mm HOLE, 13 Holes, each 0.0787 in. diameter
209453	3 mm HOLE, 9 Holes, each 0.1181 in. diameter
209454	5 mm HOLE, 5 Holes, each 0.1968 in. diameter

*Fann Instrument Company offers a complete line of equipment, materials, and supplies for analyzing various drilling fluids and oil well cements in accordance with API Specifications and API Recommended Practices.*