OFITE®

DRILLING FLUIDS EQUIPMENT

For over 30 years OFI Testing Equipment (OFITE) has provided instruments and reagents for testing drilling fluids, well cements, completion fluids, and wastewater. In addition to these product lines we also offer a range of instruments for core analysis. From our manufacturing facility in Houston, TX we provide customers all over the world with quality products and exceptional service.

Our drilling fluids product line includes innovative designs such as the Model 900 Viscometer, which showcases our ability to develop new technology to meet customer and industry demands. We also offer Retorts, Aging Cells, Roller Ovens, Mud Balances, Filter Presses, and all other instruments required to evaluate drilling fluid properties according to API Recommended Practice 13B-1 and 13B-2.

As an independent manufacturer and supplier, OFITE has one priority, our customers.

Dynamic Linear Swell Meter

The Dynamic Linear Swell Meter is designed to simultaneously test up to four drilling fluids (expandable to eight) on a representative shale sample for extended periods of time at temperatures up to 180°F. The Linear Swell Meter is the only swell meter on the market capable of dynamically testing your fluids, so you obtain the most accurate data possible.

Features

- Dynamic - Drilling fluid constantly circulates around the sample.
- Efficient - Can measure up to four drilling fluids (expandable to eight) simultaneously.
- Durable - Manufactured from 316 Stainless Steel.
- Electronic Data - LVDT measures expansion of sample.
- Complete - Includes dies and hydraulic press for making shale sample wafers.
- Realistic - Fluid is in contact with the wafer from all sides.

Technical Specifications and Requirements

- #150-80 Dynamic Linear Swell Meter, 115 Volt
- #150-80-1 Dynamic Linear Swell Meter, 230 Volt

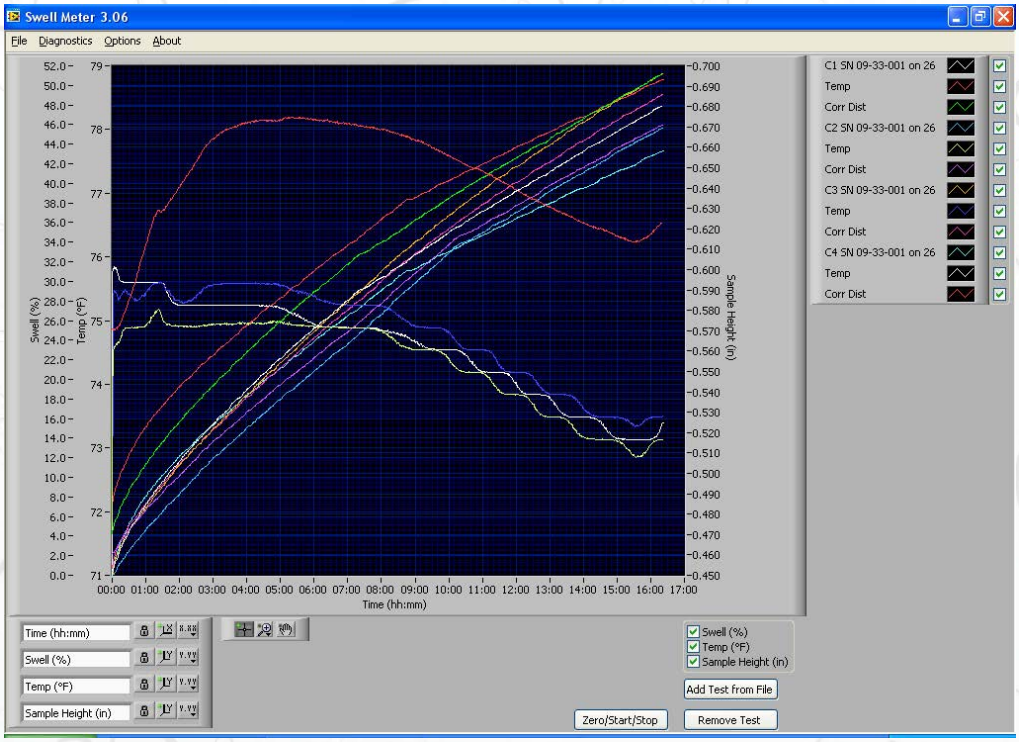
Weights and Dimensions
Size: 20.5" × 14.5" × 25" (52 × 37 × 64 cm)
Weight: 220 lb (100 kg)

Swell Meter and Compactor
Crated Size: 27" × 21" × 47" (65 × 53 × 120 cm)
Crated Weight: 312 lb (142 kg)

Instrument Control
Crated Size: 37" × 20" × 32" (94 × 51 × 81 cm)
Crated Weight: 235 lb (107 kg)

Software

- Computer-Controlled - Logs, analyzes, and updates data **real-time** so you don't have to!



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Intro

The OFITE Dynamic Linear Swellmeter is a highly effective method of examining the interaction between water based fluids and mineral samples containing reactive clays under simulated conditions while fluid is in motion. The observed swelling characteristics are utilized to anticipate and/or correct the oftentimes unpredictable problems that are frequently encountered while drilling in shale formations. It is a very useful tool when designing drilling fluids or when testing the behavior of existing muds because it shows the changes in the clay/fluid interaction for short periods of time (0 - 5 minutes) as well as longer periods (>350 minutes). Bit balling, pipe drag, hole sloughing and other “Gumbo” related shale problems may be predicted in advance, enabling the operator to select the proper drilling fluid and therefore achieve a stable wellbore environment.

The OFITE multiple channel Dynamic Linear Swellmeter features multiple measuring heads for simultaneously testing up to eight (8) cores or drilling fluids. A mineral (shale, core sample, cuttings, crude bentonite, etc.) wafer is exposed to a drilling fluid which is circulated around the wafer. A Linear Variable Differential Transducer (LVDT) measures the expansion of the wafer in the vertical direction (accuracy to 0.1%) and this information is then stored as a function of time via the data acquisition system. A hydraulic compactor unit prepares the mineral wafers for placement inside the transfer stand and subsequent testing.

Safety

1. All electrical power cables should be three wire grounding cables and should be plugged only into a grounded receptacle. The power switch on the instrument should be in the OFF position when connecting the power cable.

2. Always unplug the instrument from the electrical power source before performing any disassembly or repair. With the cover off, it is possible to touch exposed electrical terminals resulting in electrical shock if the power cable is plugged in.

3. Ensure that all pressure has been released on the compactor before removing core chambers. Both pressure gauges should read zero before any work or maintenance is performed on the compactor.

4. Clean up any spilled hydraulic oil to prevent injury or fire hazards.

5. The maximum temperature of the hot plate is 1,022°F (550°C), which is well above the boiling point of water. Because the sample cup is not pressurized, we recommend a maximum test temperature of 200°F (93.3°C). Testing above the boiling point could result in the fluid boiling out of the cup and splattering people and equipment. If this happens, immediately decrease the temperature to a safe level.

Components

Computer:

#130-75-71	Monitor
#130-75-74	Desktop Computer

Swellmeter:

#130-76-03	Thermocouple
#150-80-101	Calibration Block, Multi Point
#150-80-03	Flat Screen; 1 1⁄16" Diameter
#150-80-031	Teflon Washer
#150-80-032	Transfer Stand
#150-80-033	Wafer Tube
#150-80-034	Bottom Plate
#150-80-035	Cup
#150-80-036	Cap for Wafer Tube
#150-80-064	LVDT
#150-80-094	Cable, LVDT to Swellmeter
#150-83	Stirring Hot Plate; 120 Volt Only
#150-84	Stirring Hot Plate; 230 Volt Only
#152-37	AC Power Cord; 3-Conductor
#153-53-1	Magnetic Stir Bar, 1"
#153-67	60 cc Disposable Syringe

Compactor:

#150-80-072	Pump
#150-80-085	½" Spacer
#150-80-086	¾" Spacer
#150-80-087	Body for Wafer Mold
#150-80-088	Plunger for Wafer Mold
#150-80-089	Drop Tube for Wafer Mold
#150-85	Relief Valve; 2,900 PSI (20 MPa)

Optional:

#150-80-009	Brass Weight
#150-81-1	Swell Meter Control Assembly (115 V)
#150-81-2	Swell Meter Control Assembly (230 V)