



## 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.

## Retort Kit, 20 mL

The Retort provides a method for measuring the percentage (%) of oil and water, and for estimating both suspended and dissolved solids contained in a sample of water-based or oil-based muds. Knowledge of oil, water, and solid content is fundamental to proper control of mud properties when considering oil/water ratios, rheology, density, filtration, and salinity. Knowledge of solids in drilling fluids is essential to evaluation of viscosity control and solids control equipment.

Electronic temperature control (available on 50 mL and 20 mL sizes) provides more accurate, reliable, and reproducible testing. The digital display shows the current working temperature, so you always know your test conditions.



Standard 20 mL Retort Kit



20 mL Retort Kit with Electronic Temperature Control

## Features

- Rugged, stainless steel carrying case
- Ultimate in portability
- Small footprint if used in laboratory
- Includes all accessories necessary to run a test

### Standard Retort Kit

- Accurate, tamper proof temperature controller

### Retort Kit with Electronic Temperature Control

- Improves accuracy and readability
- Digital display
- Provides better reproducibility





## Technical Specifications and Requirements

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- #165-80 20 mL Retort Kit with Thermostat (115V)
- #165-80-1 20 mL Retort Kit with Thermostat (230V)
- #165-80-2 20 mL Retort Kit, with Electronic Temperature Controller (115V)
- #165-80-3 20 mL Retort Kit, with Electronic Temperature Controller (230V)

### Specifications

- Maximum Temperature: 1000°F (537° C)
- Cell Capacity: 20 mL
- Heating Capacity: 500 Watts
- Power Requirement: 115 Volt at 3 Amp or 230 Volt at 1.5 Amp, 50/60 Hz
- Size: 9" × 7" × 12" (23 × 18 × 30 cm)
- Weight: 20 lb (9.07 kg)

### Optional

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- #165-06 20 mL Receiver Tube for Retort, 2 Scales: 0 - 100% × 0.1, 0-20 mL × 0.1 mL, with certificate

## Intro

The retort provides a means for separating and measuring the volumes of water, oil, and solids contained in a sample of drilling fluid. A known volume of sample is heated to vaporize the liquid components which are then condensed and collected in a graduated receiver tube. Liquid volumes are determined from reading the oil and water phases on the graduated cylinder. The total volume of solids, both suspended and dissolved, is obtained by noting the difference of the total sample volume versus the final liquid volume collected. Calculations are necessary to determine the volume of suspended solids since any dissolved solids will be retained in the retort. Relative volumes of low-gravity solids and weight materials may also be calculated.

## Specifications

Size: 8.25" × 7" × 12.5" (31 × 18 × 32 cm)

Weight: 18 lb 6 Oz. (8.3 kg)

Maximum Temperature: 1000°F (537°C)

Temperature Control: Standard - Electronic Fixed Temperature Control

Cell Capacity: 20 mL

Heating Capacity: 500 Watts

Power Requirement: 115 Volt at 3 Amp or 230 Volt at 1.5 Amp 50/60 Hz

## Equipment

**Sample Cup:** 20 mL capacity

**Condenser:** Cools the water and oil vapors below their vaporization temperature prior to leaving the condenser chamber. 464 grams.

**Heating Element:** Raises the temperature of the sample above its vaporization point within API Specifications, without causing the solids to boil over. 350 watts.

**Thermostat:** Limits the temperature of the retort to  $930^{\circ} \pm 70^{\circ}\text{F}$ .

**Liquid Receiver:** Graduated cylinder or tube, transparent and inert to oil, water, or salt solutions and temperatures of up to  $90^{\circ}\text{F}$  ( $32^{\circ}\text{C}$ ).

**Fine Steel Wool:** No. 000 Steel Wool.

**Do not use liquid steel wool or coated steel wool substitutes.**

**Grease:** Never-Seez<sup>®</sup>. Used for a thread seal and lubricant at high temperatures.

**T-handle Drill:** Used for cleaning the retort chamber and condenser passage.

**Pipe Cleaner:** Used for cleaning the retort chamber and condenser passage.

**Spatula:** Shaped to fit the inside dimensions of the sample cup.



# Components

## Included:

|            |  |
|------------|--|
| #131-15    | Graduated Cylinder, 20 mL                            |
| #152-37    | AC Power Cord (115 Volt)                             |
| #152-38    | AC Power Cord (230 Volt)                             |
| #153-03    | Graduate Brush, ½" × 8"                              |
| #165-06    | Receiver Tube, 20 mL                                 |
| #165-14-13 | T-handle Drill                                       |
| #165-41    | Corkscrew  |
| #165-42    | Steel Wool; Grade 000. Extra Fine; Package of 4 Pads |
| #165-43    | Pipe Cleaner   |
| #165-44-1  | High-Temperature Thread Lubricant; 4-oz. Tube        |
| #165-46    | Clip for Condenser                                   |
| #165-82-1  | Condenser, 20 mL, with Ultra-Torr Fitting            |
| #165-83    | Retort Chamber, 20 mL                                |
| #165-88    | Spatula  |
| #280-00    | Wetting Agent; 1 oz.                                 |

## Replacement Parts:

|             |                                      |
|-------------|--------------------------------------|
| #122-074-1  | Fuse, 5 Amp, 5 mm × 20 mm (115 Volt) |
| #122-073-1  | Fuse, 3 Amp, 5 mm × 20 mm (230 Volt) |
| #165-15-4   | O-ring for Ultra-Torr Fitting        |
| #165-84     | Insulator Block, Top                 |
| #165-85     | Insulator Block, Bottom              |
| #165-86     | Insulator Block, Cover               |
| #165-00-10  | Thermocouple, Type J                 |
| #165-14-005 | Insulation Material                  |
| #165-35-1   | Heating Element (115 Volt)           |
| #165-36-1   | Heating Element (230 Volt)           |
| #165-45     | Neon Lamp, Red                       |
| #165-81     | Retort Adapter                       |

For Retorts without Electronic Temperature Control (#165-80, #165-80-1):

|                 |                       |
|-----------------|-----------------------|
| #130-79-53-0990 | Thermostat (115 Volt) |
| #130-79-54-0990 | Thermostat (230 Volt) |

For Retorts with Electronic Temperature Control (#165-80-2, #165-80-3):

|           |                                   |
|-----------|-----------------------------------|
| #165-80-4 | Electronic Temperature Controller |
|-----------|-----------------------------------|

**Optional:****#165-80-SP Spare Parts Kit; 115V Retort Kit**

| Part Number | Description                                    | Quantity |
|-------------|--|----------|
| #122-074-1  | Fuse, 5 Amp, 5 mm × 20 mm                      | 5        |
| #131-15     | Graduated Cylinder; 20 mL                      | 1        |
| #153-03     | Brush, Graduate, ½" × ⅛"                       | 1        |
| #153-07     | Brush, 20 mL Receiver Tube                     | 1        |
| #165-06     | Receiver Tube, 20-mL, 0-100%, with Certificate | 2        |
| #165-15-2   | Ultra Torr Fitting                             | 1        |
| #165-15-4   | O-ring for Ultra Torr Fitting                  | 8        |
| #165-41     | Corkscrew                                      | 1        |
| #165-42     | Steel Wool; Grade 000. Fine; Package of 4 Pads | 20       |
| #165-43     | Pipe Cleaner                                   | 6        |
| #165-44-1   | High-Temperature Thread Lubricant; 4-oz. Tube  | 1        |
| #165-83-1   | Lid, for 20 mL Sample Cup                      | 1        |
| #165-88     | Spatula, for 20 mL Retort                      | 1        |
| #280-00     | Wetting Agent                                  | 1        |

**#165-80-1-SP Spare Parts Kit; 230V Retorts**

| Part Number | Description                                    | Quantity |
|-------------|--|----------|
| #122-073-1  | Fuse, 3 Amp, 5 mm × 20 mm                      | 5        |
| #131-15     | Graduated Cylinder; 20 mL                      | 1        |
| #153-03     | Brush, Graduate, ½" × ⅛"                       | 1        |
| #153-07     | Brush, 20 mL Receiver Tube                     | 1        |
| #165-06     | Receiver Tube, 20-mL, 0-100%, with Certificate | 2        |
| #165-15-2   | Ultra Torr Fitting                             | 1        |
| #165-15-4   | O-ring for Ultra Torr Fitting                  | 8        |
| #165-41     | Corkscrew                                      | 1        |
| #165-42     | Steel Wool; Grade 000. Fine; Package of 4 Pads | 20       |
| #165-43     | Pipe Cleaner                                   | 6        |
| #165-44-1   | High-Temperature Thread Lubricant; 4-oz. Tube  | 1        |
| #165-83-1   | Lid, for 20 mL Sample Cup                      | 1        |
| #165-88     | Spatula, for 20 mL Retort                      | 1        |
| #280-00     | Wetting Agent                                  | 1        |

**Note**

Spare parts listings are intended to be used as a guide only as individual usage will vary. Running a retort test twice a day will require more parts than running a test once a week.