

INSTRUCTIONS:
OFI ROLLER OVEN
(115 VOLTS, 60 HERTZ)

Sometimes the effect of temperature on mud circulating through the wellbore is very important. With the OFI Roller Oven, not only can thermal effects on viscosity be seen, but also effects that various mud additives such as thinners or organic colloids have on the mud at circulating temperatures can be studied. The OFI Roller Oven is also a valuable aid in the investigation of muds on which a base exchange reaction occurs such as lime treated mud, and in determining the stability of muds such as oil or polymer based muds. Mud samples are first tested, then placed in sealed containers (No. 175-00 series of pressurized or nonpressurized aging cells, or the cell of the OFI No. 170-00 High Pressure, High Temperature Filter Press) in the roller oven where they are subjected to moderate heat (thermostatically controlled) and gentle agitation on power driven rollers, then tested again. OFI Roller Ovens are available in several configurations:

<u>PART NO.</u>	<u>DESCRIPTION</u>
172-00	OFI Laboratory Roller Oven, 4 rolls, 9 cells, timed heaters, 115 volt, 60 HZ
173-00	OFI Laboratory Roller Oven, 5 rolls, 16 cells, timed heaters, 115 volt, 60 HZ
174-0	OFI Portable Roller Oven, 3 rolls, 4 cells, (timer optional), 115 volt, 60 HZ

I. GENERAL APPLICATION

OFI Roller Ovens are designed to provide the dual function of heating and rolling samples simultaneously or either to heat or roll samples independently. The OFI roller oven can therefore be put to many practical uses, such as:

Heating Only

1. a drying oven
2. an aging oven
3. a baking oven

Rolling Oven

4. a ball mill roller
5. to make homogeneous mixtures of liquids
6. to make homogeneous mixtures of powders
7. to agitate chemicals into solution
8. to deaerate liquids

TO OPERATE**Laboratory Oven Models 172-00 and 173-00**

1. Move the switches on the control panel to the “OFF” or down position.
2. With the power cord provided connect the oven to a 110 – 115 volt, 60 HZ, power source. This will energize the timer.
3. Prepare the samples to be run with the necessary tests and mixing. Then pour the sample into the No. 175-00 series of aging cells for rolling in the oven. The pressure cells used in the No. 170-00 and No. 171-00 High Pressure, High Temperature Filter Presses can also be used. Glass jars are not recommended because they can be broken too easily and they can only be used below 212 deg. F (100 deg. C).
CAUTION: In filling the test cells, do not fill them to greater than ¾capacity since room for the expansion of the fluids must be provided to prevent excess internal pressure. The cells need to have “O” Rings installed on the outside perimeter, top and bottom. Teflon (175-46) or Buna-N (175-54) “O” Rings may be used on the 175-00 series Aging Cells, but do not use the Buna-N above 300 deg. F (150 deg. C). These reduce the noise and wear from rolling on the oven rollers. If “O” Rings for the 170-00 & 171-00 Cells are needed, check with OFI.
4. After placing the cells on the rollers, the oven can be operated manually immediately by turning the MODE SELECTOR switch on the timer to “MAN”. Then press the “ON” button. Pressing the “OFF” button will turn the oven off. For timed operation, see the directions on pages 5, 6, 7 and 8.
5. To start heating, move the switch marked “HEAT” to the “ON” (up) position. This will supply power to the temperature controller. See “SETTING TEMPERATURE CONTROLLER” on page 11. When the temperature controller set point is higher than the temperature in the oven, power will be supplied to the heaters. The red pilot light above the “HEAT” switch and the “OUT 1” light on the Temperature Controller will come on when power is being supplied to the heaters. NOTE: All standard OFI roller ovens with the 7-day timers are wired for the “ON” and “OFF” to control the heating only; however, the customer can request that the timer be connected to turn the rollers on and off at the same time as the heaters.
6. To start the rollers, move the switch marked “MOTOR” to the “ON” (up) position. The clear pilot light will come on when the rollers are turning.
7. Fuse holders are located above the “MOTOR” and “HEAT” switches. These have pilot lights which come on if the fuse burns out. See photo on page 9.
 - a. The one on the left, above the “MOTOR” switch, is for the motor. Use 10 amp, 3AG fuse.
 - b. The one in the middle, the lower of the three fuses, is for the heaters. Use 10 amp, 3AG fuse only.
 - c. The third fuse on the right above the “HEAT” switch is for the Temperature Controller. Use ½ amp, 3AG fuses only.

- B. Portable Model 174-00 – OFI Portable Roller Ovens, are factory equipped with the digital indicating ON/OFF electronic controller only. Models with the 7-day timer can be provided upon customers request. OFI Portable Roller Ovens operate in the same manner as the larger and more expensive laboratory models.

II. REMARKS

- A. On all OFI Laboratory Model Roller Ovens, after 90 days of operation, the speed reducer box should be checked for oil. The oil should just cover the lower shaft.
- B. When adding oil, use speed reducer oil or S.A.E. 90 trasmission oil.
- C. CAUTION: Too much oil will cause leakage.
- D. A small amount of hard grease should be put on the chain and sprockets each 90 days.
- E. Do not lubricate the bearings for the rollers. These are self-lubricating bearings.
- F. Motors which have oil cups should receive a few drops of oil every 6 months.
- G. For ovens having electronic temperature controllers, see the separate instructions, pages 10 and 11.
- H. The oven is provided with an Upper Limit Temperature Control Thermostat for safety. This is an adjustable bimetal thermostat in the heater circuit for controlling the maximum temperature at which the oven can operate. This is located inside the oven in the upper back left hand corner. Turning the stem clockwise raises the temperature. The maximum setting is approximately 500 deg. F. It can be turned counterclockwise to set the maximum temperature to a lower value. All the way counterclockwise turns it “OFF”.
- I. For ovens having electonic time switches, see separate instructions, pages 5, 6, 7 and 8.
- J. To replace the pilot light bulb, unscrew the jewel and replace the bulb with a NE51 neon bulb.
- K. To replace bearings in the OFI Laboratory Model Roller Ovens for a front bearing, loosen the cap screws holding the top member of the roller frame. Pull the bearing off the end of the shaft and

replace. To replace a rear bearing, loosen the set screws on the sprockets in back of the oven and remove the sprocket. Loosen the set screw in the roll that holds the roll to the shaft, pull the shaft out, remove the roll. Remove the rear top bar of the roll supports frame, then the bearing.

Replace the bearing and reassemble.

- L. To replace bearings in the OFI Portable Model Roller Ovens, on the motor end of the ovens, remove the end cover of the case, the motor and the belts. Remove pulleys from shaft having the bad bearing. Loosen the screws holding the bearing housing clamped together. Remove and replace the bearing with a new one. Re-assemble. To replace the bearing on the left end of the oven, remove the case and cover. Remove the keeper ring from the end of the shaft and loosen the screws holding the bearing housing clamped together. Replace the bearing and re-assemble.

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