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OPERATING INSTRUCTIONS

ROLLING THIN FILM OVEN

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ROLLING THIN FILM OVEN (RTFO)

EFFECT OF HEAT AND AIR ON A MOVING FILM OF ASPHALT

Rolling Thin Film Oven

ASTM D2872

This test method covers the determination of the effect of heat and air on a film of semi solid asphaltic materials. The effects of this treatment are determined from measurements of selected asphalt properties before and after the test.

1 MAINS SUPPLY

Check the voltage shown on the serial plate adjacent to the cable entry. Connect the BROWN wire of the mains lead to the 'L' live pin, the BLUE wire to the 'N' neutral pin and the GREEN-YELLOW wire to the 'E' earth pin.

1.1 **240 volt units.** Each unit comes supplied with a mains connection lead already fitted with a correctly rated fuse. The fuse rating and other details for each unit are shown on the voltage plate at the back of the unit. It is important that, if the fuse needs to be replaced, it must **ONLY** be replaced with one of the correct rating.

1.2 **110 volt units** are supplied with a cable but without a plug or fuse. These units should be wired in by a suitably qualified electrician to the following:-

BROWN	'L' Live pin	Refer to voltage plate
BLUE	'N' Neutral pin	for fuse requirement
GREEN/YELLOW	'E' Earth pin	

WARNING

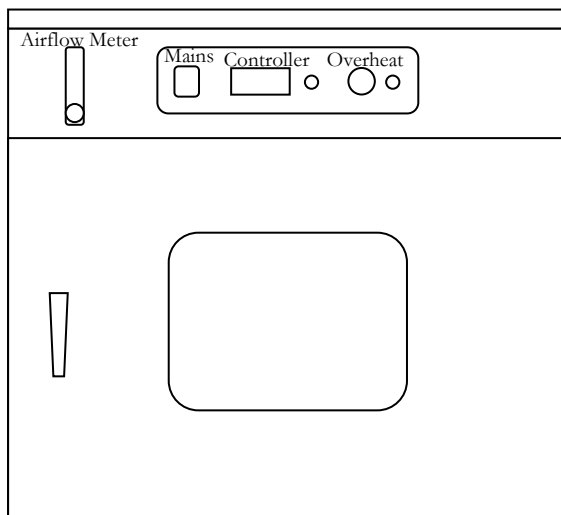
DO NOT CONNECT THE OVEN TO A D.C. MAINS SUPPLY OR SERIOUS DAMAGE WILL OCCUR

THE FOLLOWING PRECAUTIONS SHOULD BE OBSERVED

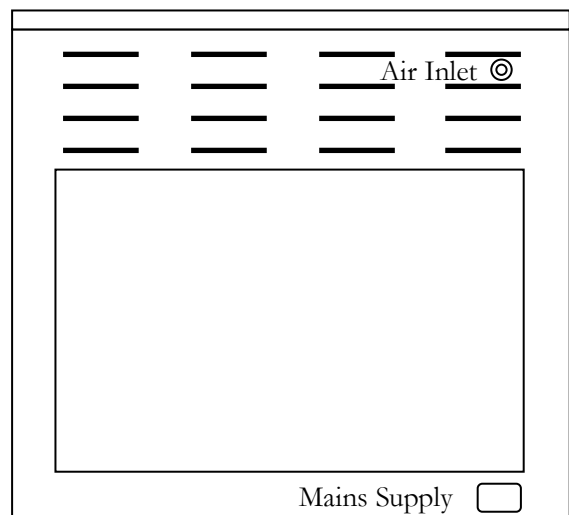
- 1.3 Mop up any spilled liquid from the chamber floor or damage to the element may result.
- 1.4 Position away from direct sunlight or radiant heat sources.
- 1.5 Sample trays should not be placed on the floor of the unit.
- 1.6 Do not cover the exhaust vents on top or the inlet vents underneath.

2. OPERATION

- 2.1 Connect a suitable air supply to the rear of the unit via the 8mm push in fitting. Set the airflow meter to read 4L / min which is the same as (4000ml/min as described by ASTM D2872)
- 2.2 Using the correct ASTM Loss on Heat 13°C thermometer as prescribed in the standard specifications for ASTM thermometers (ASTM E1). Attach to the clip on the side wall, so that the bulb is centre to the carriage.
- 2.3 Close the door.
- 2.4 Switch the mains oven on via the mains switch on the control panel. Recirculation fan and heating elements will come on, whilst the carriage rotates at 15 RPM.
- 2.5 The oven is pre-set to 163°C. The overheat thermostat has been set 5°C above the main digital controller set point.
- 2.6 DIGITAL CONTROLLER K39. The operational parameters of the controller have been factory set to control the heating performance requirements as per ASTM D2872. To change the set point press the P button once to display the current set point. Press the up / down buttons to change the value to the required set point. Press the P button to accept this change.
- 2.7 Please allow the oven to preheat for 2 hours prior to testing.
- 2.8 After preheating of the oven, the door can be opened so that you may place the glass containers on the carriage. The fan, heating and carriage will all be switched off via a door micro switch when the door is opened.
- 2.9 When placing the glass containers on the carriage it may be necessary to close the door so that the carriage rotates to an accessible position.
- 2.10 Once all the glass containers have been inserted, close the door.



FRONT VIEW



REAR VIEW

3. PREVENTATIVE MAINTENANCE

Ensure that the unit is maintained in a clean, dry condition and when not in use stored in a normal warm atmosphere.

Minimum recommendation, every six months:-

3.1 Check operation of the overheat protection by:

Allow the temperature to stabilise. Once the desired temperature has been reached and stabilised with the CONTROL thermostat, adjust the OVERHEAT dial (RED CENTRE CAP).

Turn ANTICLOCKWISE UNTIL THE RED LAMP JUST COMES ON. Now slowly turn the spindle clockwise until the red lamp just extinguishes. Increase the digital control set point to a temperature 5-10 degrees higher than the overheat setting. Within a few minutes the red overheat lamp will come on indicating that the system is working correctly. After this check, reset the digital control to 163°C.

3.2 Carry out an electrical safety check (Portable Appliances) using an appropriate appliance tester operated by a competent person.

3.3 Check that the control temperature is maintained within limits.

3.4 Check the condition of the mains lead and the fuse rating is correct. Refer to serial plate on the back of the oven.

3.5 Check that the air nozzle is 6mm away from the centre line of the glass container.

The manufacturer can offer the above service on request.

4. MAINTENANCE

4.1 BEFORE STARTING WORK, DISCONNECT THE UNIT FROM THE MAINS SUPPLY.

4.2 To check or replace any electrical components remove the rear panel for the Fan Element or Sensor.

4.3 All other electrical components are in the top of the unit.

Refer to Service Instructions to replace any parts.