

# STANDARD OPERATING PROCEDURE

## HOT AIR OVEN



**Objective:** To lay down the procedure for operation, calibration, cleaning and maintenance of Hot Air Oven.

**Procedure:**

- 1) Ensure that the instrument and its surroundings are clean.
- 2) Load the material to be sterilized or depyrogenated or dried, on the trays provided within the oven, close the door and tighten it with the clamps provided.
- 3) Connect the plug to the power source and switch on the power.
- 4) Switch on the mains of oven.
- 5) LED lamp for the power indicator will glow.
- 6) Switch on the fan of the oven.

- 7) Press and hold the red button given in the temperature control box which will display the pre-set temperature.
- 8) Set required temperature (250° C for depyrogenation and 100 °C for drying) using COURSE and FINE temperature adjustment knobs.
- 9) Rotate the arrow mark of energy regulator knob from OFF position to LOW, MEDIUM or HIGH position according to the temperature requirement and urgency, to reach the required temperature.
- 10) Heater will start, the LED for heating will start glowing and the temperature rises steadily to the set temperature.
- 11) Note the time at which the set temperature is reached
- 12) Consider the Hold time from the reach of set temperature for depyrogenation cycle.
- 13) After completion of sterilization and depyrogenation or drying, switch off the MAINS and the power source.

### **Cleaning**

- 1) Switch OFF the Hot Air Oven.
- 2) Switch off the mains to which the equipment is plugged.
- 3) Disconnect the plug of the equipment.
- 4) Allow the equipment to cool if the temperature is high.
- 5) Take out the materials available in the equipment and place it in tray disinfected with 0.2 micro meter filtered 70% IPA.
- 6) Take out the trays from the equipment and place it in a safe place.
- 7) Take a lint free cloth and dip it in disinfected solution.
- 8) Squeeze the cloth and use.
- 9) Clean the internal surface of the equipment.
- 10) Clean the trays as per the above procedure.
- 11) Mop the surface with a dry lint free cloth.
- 12) Place the trays in their original position and place the material within the equipment as per the requirement.
- 13) Connect the plug of the equipment.
- 14) Switch on the mains and operate if required.

### **Calibration**

- 1) For the calibration of Hot Air Oven use a standard thermometer ranging upto 200°.
- 2) Set the oven at desired temperature.
- 3) Start the calibration procedure after the oven reaching the set temperature through the passage providing in the right and left side.
- 4) Put the standard thermometer for 15min. in upper shelf of oven and close the door of oven.
- 5) After 15min. read the temperature of standard thermometer randomly and match the observed temperature of thermometer.
- 6) Take three readings at each set temperature i.e 60° C, 80° C, 105° C, 120° C, 160° C and 180° C respectively.
- 7) The observed temperature of thermometer should be  $\pm 2.0^{\circ}$  C tolerance limit to the set temperature value.

**Safety measures:**

- 1) Ensure that the fan is in working condition during the operation.
- 2) Do not spill any chemical or water on the tray of oven.
- 3) Tong should be use to place/remove the glassware or any material from the oven.
- 4) Ensure that the Exhaust blower is ON before starting the oven.
- 5) Avoid touching the exhaust of the system
- 6) Maximum Temp.: 350°C.
- 7) Ensure that temperature does not shoot higher than the set temperature.