

# HOT AIR OVEN



## STANDARD OPERATING PROCEDURES (SOPs) 2020 (v.1)



**NCPRE FABRICATION LAB**

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**Equipment Configuration:**

Instrument Provider: Gayatri Scientific, Mumbai.

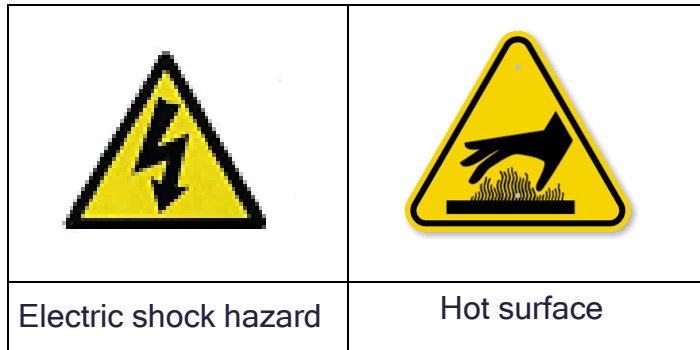
Technical Details: 4KW, 230V (Single Phase)

**Training Procedure:**

- 1) Get approval from Guide.
- 2) Contact the System Owner.
- 3) Two training sessions and one hands-on session for authorization on the tool.

# SAFETY PRECAUTIONS

Safety Symbols:



**! CAUTION: Before removing a side cover always make sure that the equipment is switched off**

Other safety measures:

- Maximum Temp. : 350°C.
- Ensure that the Exhaust blower is ON before starting the oven.
- Ensure that temperature does not shoot higher than the set temperature.
- Always wear the gloves while handling the hot trays. (Figure 1)
- Avoid touching the exhaust of the system. (Figure 2)



Figure 1



Figure 2

## CLEANING METHOD

- Cleaning procedures should be done only with iso-propyl alcohol using lint-free cloth.
- The SS trays should be cleaned with iso-propyl alcohol using lint-free cloth.



Figure 3.

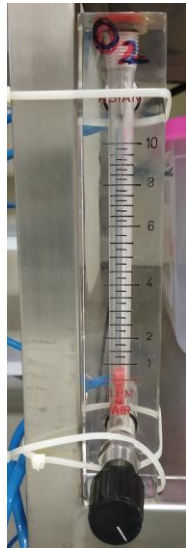
# STANDARD OPERATIONAL PROCEDURE

## Section 1.1: Switching On

### Procedure for starting the tool:

- 1) Ensure that  $\text{PN}_2$  &  $\text{O}_2$  cylinders are ON from facility side.
- 2) Turn ON the Rota meter for  $\text{PN}_2$  &  $\text{O}_2$  flow in the oven. Keep the flow around 4 slpm & 1 slpm respectively.

Figure. 4



a)  $\text{O}_2$



b)  $\text{PN}_2$

- 3) Switch ON the Mains of the Oven (On the wall).
- 4) Turn ON the mains (On the oven). The Red LED will glow means oven is ON.
- 5) Switch ON the fan.



Figure. 5

- 6) Once the system is on you can set the required temperature on the Digital Temperature controller as follows:



Figure. 6

- Press 'SET' once.
  - Press UP arrow ↑ to set the required temperature. The maximum temperature is 350°C.
  - Press 'ENT' to start the HEATING UP program.
  - The YELLOW LED will glow indicating the heater is ON.
- 7) Wait till the required temperature is reached.

## Section 1.2: Switching Off

### Procedure for SHUTTING down the tool:

- 1) Once the process is over set the required shut down temperature on the Digital Temperature controller as follows:
  - Press 'SET' once
  - Use DOWN arrow ↓ to reduce the oven temperature to 25°C.
  - Press 'ENT' to start ramp down program.
  - The YELLOW LED will stop glowing indicating heater is OFF.
- 2) Make a log book entry.