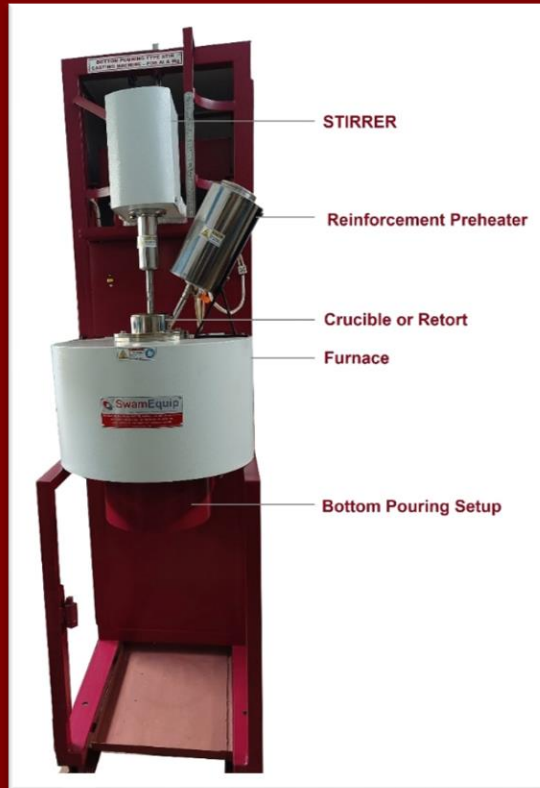


Technical Details of the Machine:

1) Parts of the Machine



- 1) **Furnace:** Ingots are melted using this furnace. It contains 3 layers
 - a. Inner layer is formed by Alumina tube which houses the heating chamber
 - b. Middle layer is formed with high temperature withstanding insulation (ceramic fiber)
 - c. Outer layer is formed with thick gauge mild steel sheet which acts as the shell.
- 2) **Crucible or Retort:** Made of Stainless steel and fixed at the center of the FURNACE.

3) **Reinforcement Preheater:** This heater preheats the reinforcements (in powder form) before mixing it in the melt.



a) **Layers of preheating furnace:**

- i. **Inner Chamber:** Made of S.S 310 which is cylindrical in the top portion and conical in the bottom portion.
 - ii. **Middle layer:** Made of Alumina tube which holds the heating coil and wound with ceramic fiber mats which acts as insulation.
 - iii. **Outer Chamber:** Made of polished S.S 304 grade metal, cylindrical in shape.
- b) **LID:** The lid is made of S.S 304 grade metal with fasteners to lock it along with the inner chamber. The lid has a hole in the center which is used to house the powder chipping rod.
- c) **Gate Valve** is provided to control the flow of reinforcements into the crucible.

4) **Bottom Pouring Setup:** This setup consists of a gate valve which is activated by motor. This gate valve controls the flow of melt from the crucible to the retort.

5) **Mold Preheater:** this allows the user to preheat the mold before taking the casting in it.

6) Control Panel



- **Mains ON/OFF** Switches with Key (Black), without the key this machine cannot be switched ON.
- **Power Meter:** this meter indicates input voltage in R, Y & B phases, current and power drawn by this equipment
- **LED Lights:**
 - o **LOAD (RED):** this light will glow when the machine turned ON from the HMI SOFTWARE.
 - o **POUR CLOSE (BLUE):** this light will glow when the POUR CLOSE signal is sent from the laptop. The POUR valve is completely closed only when it is shown in the HMI Software.
 - o **POUR OPEN (RED):** this light will glow when the POUR OPEN signal is sent from the laptop. The POUR valve is completely open only when it is shown in the HMI Software.

- FURNACE (AMBER): this light will glow when the current is being fed to the furnace heating coil. This furnace is equipped with PID control and hence, this light will be turned ON/OFF regularly which indicates the impulse heating applied to this heater base on the temperature set value.
- POWDER (AMBER): this light will glow when the current is being fed to the reinforcement preheater heating coil. This preheater is equipped with PID control and hence, this light will be turned ON/OFF regularly which indicates the impulse heating applied to this heater base on the temperature set value.
- MOLD (AMBER): this light will glow when the current is being fed to the strip heater which is supplied to preheat the mold. This preheater is equipped with PID control and hence, this light will be turned ON/OFF regularly which indicates the impulse heating applied to this heater base on the temperature set value.
- SPARE (AMBER): This spare LED light is provided to accommodate the indication for optional attachments and is not used in basic model machine.

Technical Specification

Operating Voltage	400 / 440 VAC
Frequency	50 / 60 Hz
Power	9.5 KW with Earth and Neutral Connection
Capacity	700 gms to 2 Kg of Aluminium or Magnesium
Retort or Crucible	<ul style="list-style-type: none">▪ Type: Fixed with bottom pouring▪ Material: SS 310 grade▪ Protective Sleeve: Mild Sleeve
Max. Temperatures for Heaters	<ul style="list-style-type: none">▪ Bottom Pouring Furnace: 1000 °C▪ Preheating Furnace (Reinforcement): 800 °C▪ Die Preheater: 450 °C▪ All the temperatures of the heaters are controlled by PID logical heating to get the highest accuracy of heating.
Stirrer	<ul style="list-style-type: none">▪ Lift with Auto cut off at max. top & bottom▪ Speed: 300 to 1200 RPM variable▪ Blade & rod material: S.S 310 grade▪ Provision to interchange the stirrer blades

Heat Insulation	Ceramic Fiber for both furnace and preheater
Control Panel	Human machine interface (HMI) is customized software installed in the laptop / tablet provided along with the machine. HMI and the machine is connected by wireless interface