ELECTRICALLY OPERATED ALUMINUM STIR CASTING FURNACE (1000° C)  
(Fully Automatic Type) With Squeeze Casting & Vacuum Casting  
Arrangement

The equipment comprises of high temperature electric furnace, stirrer arrangement, stainless steel pot for melting with bottom pouring, squeeze casting and vacuum casting arrangements.

GENERAL SPECIFICATIONS:

Furnace Type: The furnace is rectangular in shape, with cylindrical stainless steel pot, stirrer arrangement, bottom pouring arrangement and provision for mixing and pouring of added agent from the top.

Outer Chamber: The outer chamber is fabricated out of thick gauge mild steel sheet with suitable reinforcement.

Inner Chamber: The inner chamber is formed by high alumina ceramic muffle capable of withstanding temperature up to 1200° C.

Insulation: The space in between the outer and inner chamber is tightly packed with high density ceramic fiber to reduce the heat losses to the barest minimum.

Heating elements: The furnace heated by Kanthal A-1 heating element wound in spiral form and placed in the refractory chamber outside the inner muffle.

Stainless Steel Pot: The stainless steel pot is manufactured out of AISI310 grade heat resistant and corrosive resistant material with lid and suitable holes are provided for stirrer and for adding any other chemicals or powdered substances. At the bottom of the pot suitable stainless steel tube is provided with opening for pouring the melt into the die.

Electrical control gear: A ON/OFF type digital temperature indicator cum controller n with a temperature accuracy of +/- 2 Deg. C. is provided in the control panel supplied separately along with the furnace. The temperature is sensed through a K type sensor and connected the temperature controlling unit through compensating cable. The control panel also accommodates HRC fuse units, digital ammeter, voltmeter, pilot indicating lights ON/OFF switch, Variable speed switch for
Stirrer etc. Up/Down Switch, Press to on switch and limit switches to control the movement of stirrer assembly is mounted on the stirrer assembly for easy operation. **Stirrer:** Stirrer is driven by suitable variable speed D.C. motor fitted on the top of the furnace with suitable D.C. motorized arrangement for moving UP and DOWN. The stirrer rod is fitted with stainless steel blade. The speed can be varied from (0 – 2000) RPM. Non contact type digital tachometer is supplied to read the RPM. **Squeeze Casting Arrangement:** Hydraulic press to squeeze the casting at desired pressure with 3 H.P motor, hydraulic system, digital indication and control is added to the above system. The pathway tube is also heated and the die is also heated to the required temperature with separate digital indication and control. **Vacuum Casting Arrangement:** A vacuum chamber with vacuum pump will be incorporated to the above system to cast the aluminium in vacuum condition in the place of squeeze casting. **Die Setup:** The die for 75mm dia and 135mm height of aluminium casting is made of die steel. Alternate Mild Steel die is also supplied to read the variation in the output. **Finish:** The furnace and control panel is finished with powder coating to give a streamlined look.

**IMPORTANT TECHNICAL SPECIFICATIONS:**

- Capacity of the melting pot : 2 kg of aluminium (max)
- Maximum continuous operating temperature : 1000° C.
- Temperature indication : Digital Display by electronic Indicator
- Temperature Control : by electronic ON/OFF type temperature controller.
- Operating Voltage : 440 V. AC three Phase 50 c/s.
- App. Power consumption : 7.5 KW. Furnace + 5 KW for motors
Squeezing Pressure capacity : 0-100 Ton

Variations in Stirrer speed : 0-2000RPM

Die setup : 2 Nos.

Vacuum Chamber : 1No.

Sensors(K-type thermocouples) : 20 Nos.