

ALD Vacuum Technologies

High Tech is our Business

Vacuum Induction Melting & Casting Furnace

VIM-1i to VIM-100i

ALD Vacuum Technologies India Pvt. Ltd. (ALD India) delivers competitive advantages and business values of vacuum metallurgy and vacuum heat treatment products for customer-oriented solutions in automotive, aerospace, defence and several other industries.

Vacuum induction melting (VIM) process is suitable to produce high-purity metals within vacuum/inert environment which makes possible effective degassing of the molten melt that expels dissolved gases, and to adjust the alloy composition since temperature, vacuum, gas atmosphere, and pressure can be altered independently.

ALD-India-engineered VIM furnaces are 'Made-In-India' with a wide range of accessories to tailor them to customers' individual production requirements.

VIM-i Furnace Features

- Alloy addition
- Bulk charger
- Custom build
- Efficient power supply
- Modular/ scalable
- Operator-friendly PLC-based controls with SCADA
- Sampling

VIM-i Metallurgy Advantages

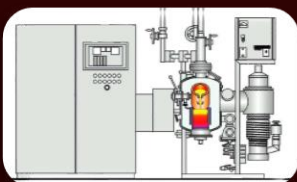
- Adjustment of precise and homogeneous alloy-composition and melt temperature
- Choice of vacuum, controlled atmosphere
- Choice of different pumping systems
- High level of operational safety
- High reliability and productivity
- Removal of undesired dissolved gases with high vapor pressures

VIM-i Applications

- Automotive, Aerospace
- Defense, Medical, etc.
- Ferrous/non-ferrous alloys
- Precious metal
- Research & development
- Super alloys

VIM-i Materials

- Reactive metals
 - Ni, Cu, Mg, Zn
- Shape memory alloys
 - alloys of Cu, Zn, Al, Fe, Mn
- Super alloys
 - alloys of Ni, Cr, Co, Fe



Sample Images. Actual build shall vary depend on customization meeting customer's requirement.

Technical Specifications

VIM Furnace Model	VIM-1i	VIM-5i	VIM-10i	VIM-25i	VIM-50i	VIM-100i
Molten Material Weight (Kg)	1	5	10	25	50	100
Chamber Configuration	Customized cold-walled Cylindrical or Rectangular configuration					
Furnace Type	Horizontal or Vertical/ Single or Dual Chamber construction					
	Customization of melt, mould, and charging chambers, and tundishes					
Melting / Casting (Pouring)	By Induction power source and coil / By tilt pouring or bottom pouring					
Tilting Angle/ Method	Forward 100° & - Reverse 10 deg. / By manual or motorized					
Induction Heating Power Supply; MF Power (kW) (approx. estimation; shall vary depends on melt materials, melt rates, super heating, etc.)	6	20	40	60	120	180
Ultimate Vacuum (Rough-vacuum, mbar)	~10 ⁻³ (working vacuum shall depend on the melt/materials degassing)					
Ultimate Vacuum (High-vacuum, mbar)	~10 ⁻⁵ (working vacuum shall depend on the melt/materials degassing)					
Melting Environment	Melting under Vacuum / Inert					
Melting Temperature	up to 2000-degree Celsius					
Measurement System	Two-Color Pyrometer; Dip Thermocouple; Camera					
Automation	PLC, SCADA, HMI					
Optional Features (or) Add-ons (upon Customer's requirements)	Alloy Addition (without breaking working environment) / 3-4 cups					
	Sampling Molten Metal (Lollipop)					
	Bulk Charger					
	Bridge Breaker					
	Viewports, Stroboscope, Camera recording					
Mould Handling	Gas Analyzer					
	Customizing of Mould arrangements like Indexing, Lifting, Pre-heating, Cooling, etc., to receive the molten melt					
Customer's Scope	All type of consumables like Crucibles, Moulds, Ramming, etc.					