

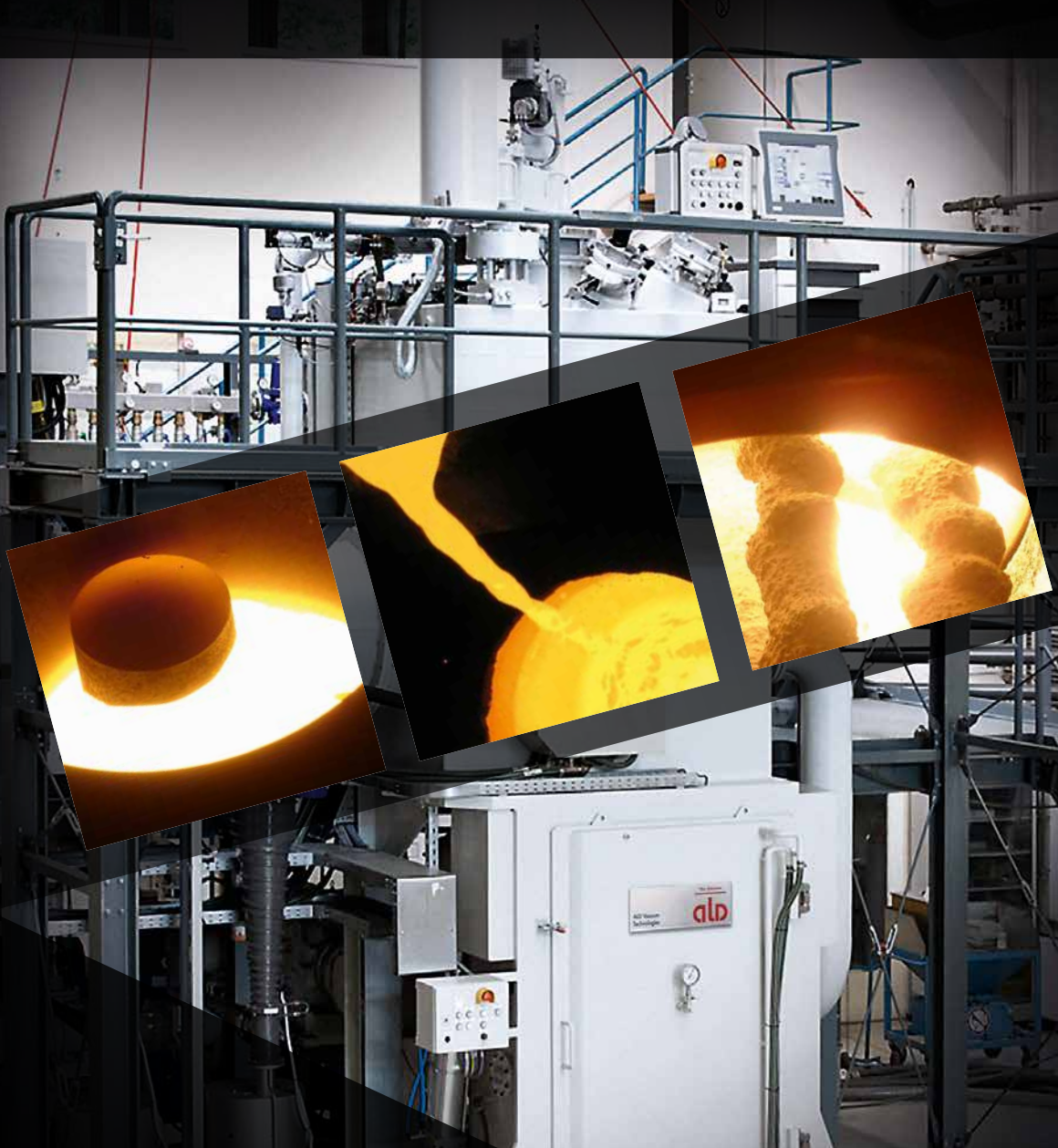


ALD Vacuum Technologies

High Tech is our Business

VIM-IC

Vacuum Induction Melting – Investment Casting



VIM-IC

High Volume Production Systems

for turbine blades, vanes, impellers and structural parts to meet the highest specifications from the

- Aircraft industry
- Power generators
- Automotive industry
- Medical/chemical/electronic industries



Equiaxed (E)

Directionally Solidified (DS)

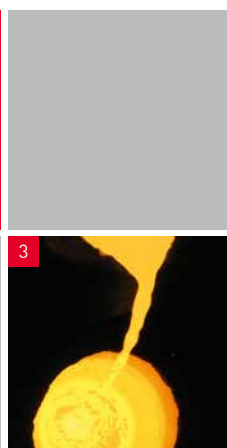
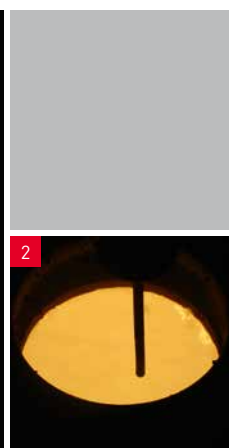
Single Crystal (SC)



ALD are world leaders in Vacuum Investment Casting Technology. Our equipment design is based on detailed process know how and extensive long term experience.

Our tailor-made solutions offer

- Optimum mold heating devices, with either resistance or induction heating.
- Broad range of cooling technologies from radiation cooling to complex liquid metal cooling.



1. Melting
2. Temperature Measuring
3. Pouring
4. Withdrawal

VIM-IC

Furnace Design
for Easy Operation
and Comfortable
Maintenance

VIM-IC 10 E/DS/SC with
induction mold heater and
large service platform

ALD furnaces are industrial systems – designed for easy operation, comfortable maintenance, high casting qualities and production volumes. Details have been improved through decades of experience in the field. The result: market leading production technology.

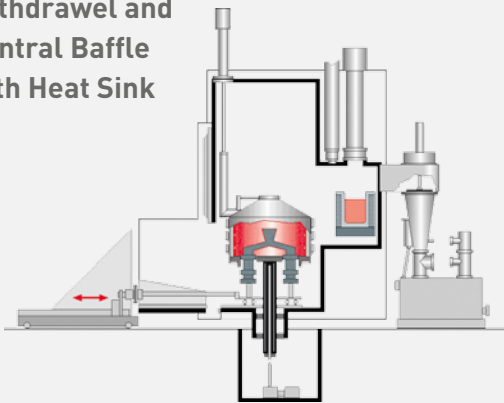


- 1 Resistance mold heater
- 2 Main control station – visualization monitor with touch screen
- 3 Tilting device and power lead for induction coil

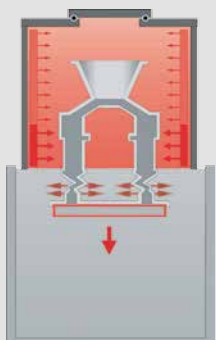


Special Casting Furnaces

Horizontal Furnaces for the Production of Large E and DS/SC Components with Vibration-free Withdrawal and Central Baffle with Heat Sink



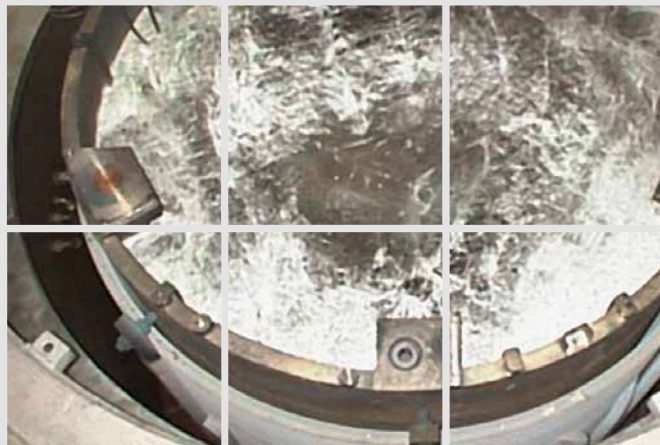
Liquid Metal Cooling (LMC) – with Advanced Cooling Technology



The LMC Technology is of particular interest for the production of large DS/SC components where specific thermal gradients are required to enhance quality and productivity.

ALD has built several LMC furnaces to cast weights up to 150 kg and mold dimensions of 800 mm dia. and 1000 mm height.

LMC R&D furnace

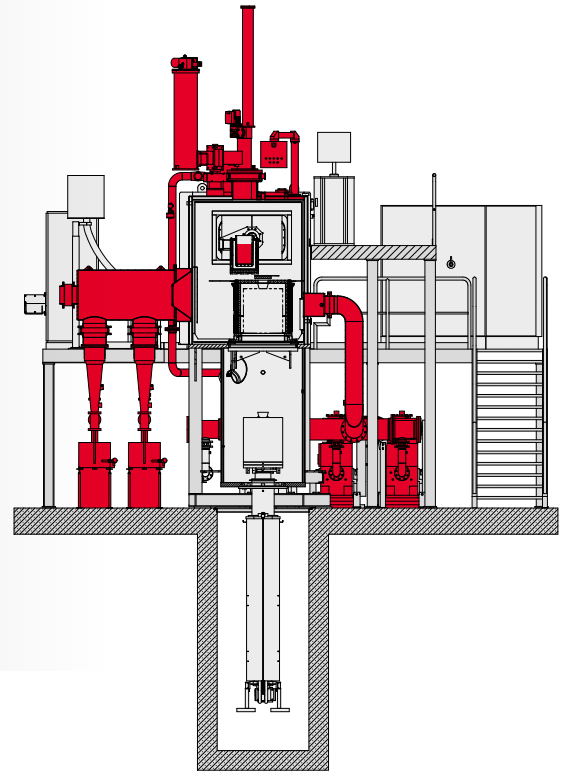


Tin bath container with stirring devices for molds dia. 800 mm x height 1000 mm

VIM-IC

ALD Solution Provider with
Market Leading Casting
Technology based on

- 50 years experience
- Hundreds of installations
- Customized systems for a large variety of products and processes



Customized Systems

ALD cover a melt weight range from 1 kg to 750 kg for all kind of processes:

- Small single chamber furnaces for turbo charger wheels
- Vertical multiple chamber furnaces for turbine blades
- Horizontal multiple chamber furnaces for large structural parts

We are able to customize our systems to your individual requirements.



Vertical furnace for the production of blades, vanes and structural parts for aircraft engines and industrial gas turbines



Mass production of turbo charger impellers





Technical Data **Standard Furnace Types Solidification Mode**

		VIM-IC 5 E/DS/SC	VIM-IC 10 E/DS/SC	VIM-IC 20 E/DS/SC
Nominal Furnace Capacity	[liters]	5	10	20
Max. Cast Weight (Ni-Base-Alloy)	[kg]	50	100	200
Max. E-Mold Diameter x Height	[mm]	500 x 600	900 x 1000	1000 x 1300
Max. DS/SC-Mold Diameter	[mm]	400 x 500	600 x 760	800 x 900
Standard Melt Power Supply	[kW]	150/175	200/250	250/350
Typical Operation Vacuum	[Pa]	0.05 - 0.5	0.05 - 0.5	0.5
Cooling Water Consumption				
for E-Furnace	[l/min]	330	380	430
for DS/SC-Furnace	[l/min]	450	540	650
Connected Load (with Melt Power Supply)				
for E-Furnace	[kVA]	300	450	600
for DS/SC-Furnace	[kVA]	400	580	700
System Dimensions				
Length x Width x Height	[m]	6 x 7 x 6	7 x 8 x 7.6	8 x 8 x 8.6
Pit Depth	[m]	3	3.6	4

Technical Data **Special Furnace Types Solidification Mode**

		VIM-IC 40 E/DS/SC	VIM-IC 1 DS/SC/LMC	VIM-IC 1 E
Nominal Furnace Capacity	[liters]	40	1	1,5
Max. Cast Weight (Ni-Base-Alloy)	[kg]	500	5	12
Max. E-Mold Diameter x Height	[mm]	1500 x 1800	-	400 x 500
Max. DS/SC-Mold Diameter	[mm]	1000 x 1500	150 x 300	-
Standard Melt Power Supply	[kW]	350/450	60	150
Typical Operation Vacuum	[Pa]	0.5	0.05	5
Cooling Water Consumption				
for E-Furnace	[l/min]	950	-	230
for DS/SC-Furnace	[l/min]	1250	220	-
Connected Load (with Melt Power Supply)				
for E-Furnace	[kVA]	900	-	200
for DS/SC-Furnace	[kVA]	1300	180	-
System Dimensions				
Length x Width x Height	[m]	15 x 10 x 7.5	8 x 7 x 4	5 x 4 x 3.5
Pit Depth	[m]	no pit	no pit	no pit

Additional Versions on Request

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