

## Online Degassing Unit

AdTech is an enterprise specialized in new material development and high precision online degassing unit production since 2012, got positive feedback from domestic and overseas market. Online degassing unit adopts advanced high silicon melting technology to get a long service time, degassing rotor, heater protection thimble and thermocouple protection thimble adopt ceramic manufacturing technology which can meet producing high-precision aluminum requirements. Online degassing unit shall be installed between furnace and casting equipment. It is used for hydrogen (H) and slags removal from molten aluminum. The online degassing unit has dual functions: processing and heating. It serves high precision molten aluminum purification industry.



Degas-AOE

### Assembling of Online Degassing unit:

- Mechanical Drive
- Degassing Box & Cover
- Rotor & Heater
- Electric Control



**Parameters of Online Degassing unit:**

Max Degassing flow MT/H	15 MT/H	35 MT/H	65 MT/H
Degassing Box Standard	1 room 1 rotor (1B1R)	2 rooms 2 rotors (2B2R)	3 rooms 3 rotors (3B3R)
Degassing box structure	1 draining outlet & 1 deslagging outlet	2 draining outlet & 1 deslagging outlet	3 draining outlet 1 deslagging outlet
Lifting System	Hoisting type	Rotor mechanical lifting	cover hydraulic lifting

**Online degassing unit performance:**

It is mainly used for the hydrogen (H) and slags removal from molten aluminum.

It takes gas flotation principle. The rotor takes inert gas or mixture of chlorine and inert gas into molten aluminum and smash the gas into dispersed tiny bubbles, the bubbles rise to molten aluminum surface and finish the below stated procedures at the same time:

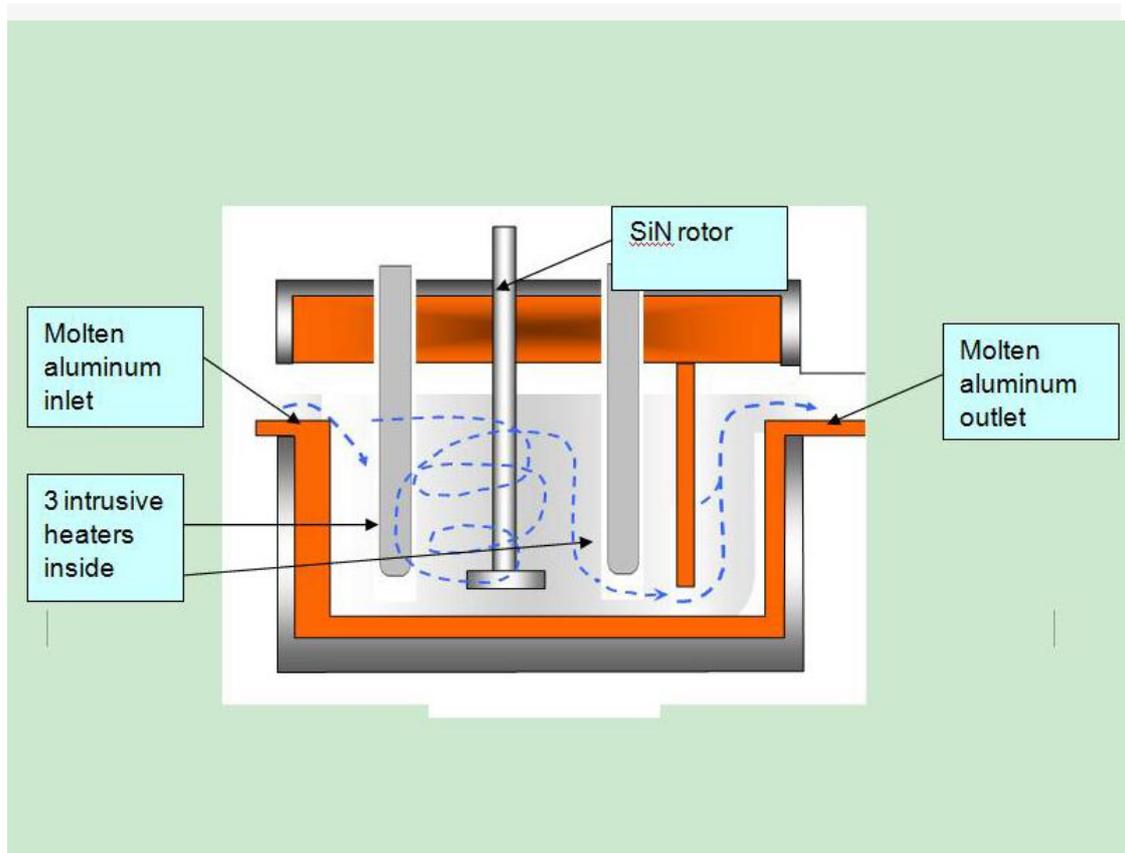
- H is being absorbed in bubbles and is being removed.
- The chloride is removed (formed by chemical action with alkali metal and chlorine gas).
- Remove slags.

**Operation Schematic Diagrams:**

<b>The design standards of degassing efficiency</b>	Average Degassing efficiency is 60%. If use Ar and Mg content $\leq 1\%$ , thr efficiency can reach 0.09cc/100g.
<b>The design standards of lining structure</b>	Lining is made of high silicon molten material, average working life is 2-3 years. It is featured non stick aluminum, no contamination. There is a float stopper inside to prevent oxides being drawn into molten aluminum and the bubbles or slags running out.
<b>The design standards of rotor</b>	It is made of SiN. Working life is 2-5 years. It performances well in corrosion resistance, heat shock resistance, oxidative resistance, abrasive resistance, mechanical strength. Shaft diameter 60mm, head diameter 200mm, which shall reduce resistance in stirring. Speed design 450-550 R/M will crush bubbles and disperse evenly into aluminum. It is cost effective during long time usage.
<b>Intrusive heater protection thimble</b>	It is made from SiN, Average service life is 1-2years, featured high heating efficiency, oxidation and slagging prevention, no contaminations.
<b>The gas protection design</b>	Ar mix of N2 and chlorine is available, protection method is also designed.
<b>Sealing structure design</b>	The sealing structure include cover, lining, inlet and outlet to prevent slag and improve degassing efficiency.



(Working Schematic)  
Degassing Devices Diagrams



**Instruction:**

- Switch off the heating unit after degassing box heating completed. Guide inert gas into rotor and release molten aluminum into the box when the heater temperature is closed to molten aluminum temperature.
- Check the sealing between inlet/outlet and launder.
- Check the cone located in heat protection draining in the bottom.
- Check the molten aluminum temperature (min 720°C). Make the height of molten aluminum which be away from launder bottom at 3cm for observing the molten aluminum going into the box.
- Operator shall wear protection clothes to close the cover. The slag on surface can be skimmed through the deslagging outlet when the molten aluminum flows into the box.
- Start production when temperature up to 780°C. Close deslagging outlet for heating preservation.
- Molten aluminum can be retained in the box with setting temperature during the heat preservation phase but with no molten aluminum handling.
- Guide inert gases into the rotor to prevent air outlet blocking by molten aluminum.
- Switch on the heater as soon as molten aluminum flow into the box completed and set heat preservation parameters.
- Starting the heating system, control the temperature of the molten aluminum, monitor the gas flow rate, the speed of the rotor is changed from the heat preservation stage to the processing stage. At the same time, the inert gas flow into the rotor increases and the gas flow rate is changed from the preservation stage to the processing stage.

- Operator sets molten aluminum heating temperature, maintain a stable degassing working condition.

**Online degassing unit service life:**

Lining $\geq$ 2years;

The whole unit except wearing parts $\geq$ 5 years.