

Gas Heating Plate-type Filter Equipment

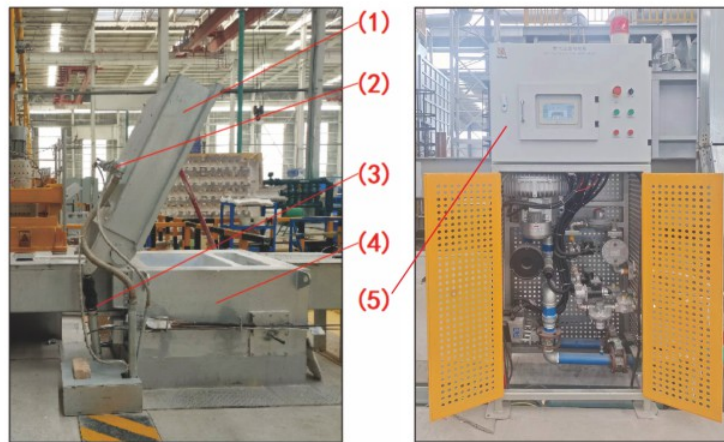
I. Application Scope

The plate-type filter equipment has a lining body with an ultra-long service life and adopts the new-type high fused silicon melting manufacture technology. It is mainly used for the melt purification of aluminum alloy products with high added value and high technical performance requirements.

It carries the filter plate to filter inclusions and tiny particles in the aluminum liquid. Selecting the European-standard filter plate can replace the high-cost Cartridge filter equipment and deep-bed filter equipment in the industry.



II. Equipment Structure



- 1 Box Cover
- 2 Burner
- 3 Flip cover devise
- 4 Box Body
- 5 Burning Control System

III. Equipment Model and Parameters

Standard model	Operating flow Q (t/h)	CFF size (in) Empirical value		Filtration efficiency		Remarks
		Single-stage filtration	Double-stage filtration	Single-stage filtration	Double-stage filtration	
EG-R-25	25	23'	23'*2	30%-50%	60%-85%	1. High precision, relatively reduced filtration capacity. 2. For alloys with Mg≥1%, the filtration capacity is relatively reduced.
EG-R-35	35	26'	26'*2			
EG-R-45	45	26'	26'*2			
		23'*2	23'*4			
EG-R-55	55	23'*2	23'*4			
EG-R-65	65	26'*2	26'*4			

IV. Working Principle

CFF is placed inside the box. When the aluminum liquid passes through the filter box, the impurities in the aluminum liquid are captured by the CFF, thereby improving the purity of the aluminum liquid.

To bake the CFF and the inner lining of the box, this equipment uses gas heating. The burner on the box cover ejects a rotating short flame to provide heat to the filter box.



V. Design Concept

1. Structural Design

The company improved the structure of the filter basin through simulation tests and designed a certain inclination angle, which solved the air bulging phenomenon often occurring in the industry, avoided the floating of the filter plate and ensured the smooth flow of aluminum.



2. Lining Material

The lining uses the non-stick aluminum high-fused silica developed by Adtech. The material has advantages such as good non-stick aluminum performance, high erosion resistance, small expansion coefficient, and no delamination.

3. Energy Consumption Design

To achieve the purpose of energy conservation and consumption reduction, the combustion system adopts imported burners, with rotating blue short flames for heating. The gas consumption is ≤9m³/hour1 burner, and the electricity consumption is ≤1.5 kWh, the gas consumption is 1/3 of that of ordinary gas filter equipment, which greatly saves energy.



4. Safety Design

In view of the high-temperature on-site environment, Adtech designed a special gas valve rack. The gas valve rack is controlled by PLC and has a gas leakage alarm device, which greatly reduces the accident risk.

5. Intelligent Control Design

To control risks, the Adtech gas control system can ensure ignition with a small gas volume, and automatically control the gas flow after ignition, when there is an abnormality in gas flow, the system can automatically shut off the gas.