

RFI

Rotary Flux Injector®

How it works

Aluminium production requires furnace fluxing or treatment to remove impurities. In order to meet quality requirements, dissolved alkalis like sodium and calcium, non-metallic inclusions and hydrogen need to be removed. Furnace fluxing is still used either by spreading solid flux on the metal surface or using fluxing lances (chlorine). These methods can be replaced by the RFI / Rotary Flux Injector®, which uses salt mixtures to significantly improve the efficiency of the fluxing process.

The main element of the STAS RFI is the rotor through which a carrier gas (nitrogen) delivers the fluxing agent (solid salts) underneath the metal surface. The liquefied fluxing agent is dispersed through the combined actions of the rotor and the injection of the carrier gas.

Since every plant and even every furnace are of different sizes and shapes, several models have been developed and adapted to meet any type of layout constraints.



Key features

METAL QUALITY IMPROVEMENT

- > Optimum efficiency of alkali removal (sodium, calcium).
- > Improves metal cleanliness (inclusion reduction).
- > For RGI and RFGI, agitation phase made with argon after fluxing helps reduce hydrogen.

PRODUCTIVITY IMPROVEMENT

- > High stirring efficiency for metal homogenization (alloying and temperature).
- > Reduces dross generation.
- > Increases furnace productivity.

SAFE OPERATING ENVIRONMENT

- > Elimination of chlorine.
- > Reduction in fugitive and atmospheric emissions.
- > Safe operation for employees.

OTHER VERSION/OPTION AVAILABLE

- > The RGI / Rotary Gas Injector® uses the same technique as the RFI but with chlorine fluxing instead of salt fluxing. However, less chlorine is used than with the lance technique.
- > The RFGI / Rotary Flux and Gas Injector allows flexibility to use flux or gas process depending on production constraints.

« The most efficient alkali and inclusion removal technology in aluminium casthouse furnaces »

Models available

RFI units are offered as “fixed” or “mobile” for insertion through either furnace doors or dedicated openings. Many other models are available upon request.



RFI - Mobile self propelled
One to four furnaces



RFI - Rotating tilting
One or two furnaces



RFI - Rotating rotating
One or two furnaces



RFI - Fixed tilting
Single furnace



Typical specifications

Models	Main unit Overall dimensions*				Carrier gas			Recommended fluxing agent	
	Length (mm)	Width (mm)	Height (mm)	Weight (kg)	Gas	Pressure (kPa) max	Treatment Flow rate(l/min)	Type	Flow rate (kg/min)
RFI FIXED	4000	1650	4125	2500	nitrogen or argon	700	180-220	fused salt MgCl ₂ + KCl	0.3 to 2
RFI MOBILE	5560	1750	2000	2500					

*Dimensions may changes depending on configurations