BoostAL™ for Cast Iron Melting in Rotary Furnaces

Looking to:

- Bring down atmospheric emissions?
- Reduce your carbon footprint?
- Increase your production rate?

Rotary furnaces are used to produce all grades of grey iron and ductile iron. Historically, oxygen in combustion air was used to melt the metal. However, being a thermal ballast, nitrogen in the air limits the combustion temperature to 900°C.

During melting in a rotary furnace, all the heat radiation accumulated in the refractory lining is transmitted to the metal load with the furnace rotation.

Using pure oxygen increases the flame temperature to 1500°C, allowing more energy transfer for metal melting.

We offer an oxy-fuel technology that combines oxy-fuel burners and oxygen injection directed to the melt in which a solid fuel (anthracite) is added.

BoostAL™ for Cast Iron Melting in Rotary Furnaces reduces atmospheric emissions, highly accelerates the melting time, increases productivity, lowers investment costs (smaller filter unit) and improves the metal yield.

Applicable Industries

Foundry and casting industries

Environmental Benefits

Up to 90% NOx saving

Up to 60% CO_2 saving

Up to 60% fuel saving

Operational Benefits

Production rate increase
Cycle time reduction of up to 30%

CapEx reduction
Flue gas volume to filter divided by 4

Higher metal yield

Cast Iron Case Studies #1
3t Rotary Furnace

Customer requirement
Fuel saving

Solution
Air Liquide proprietary oxy-fuel technology (*1MW burner)* and adding a lance and anthracite

Benefits

27% natural gas
52 Nm^3/t -> 38 Nm^3/t

36% propane
22 Nm^3/t -> 16 Nm^3/t

4% O_2 consumption
135 Nm^3/t -> 130 Nm^3/t
The oxygen addition lance reduces O_2 consumption

Cast Iron Case Study #1
3t vs. 12t Rotary Furnaces

Customer requirement
Melting time reduction

Solution

Replacing conventional oxyfuel technology by Air Liquide proprietary 100% oxy-fuel technology (burner+oxygen lance+anthracite)

Benefits

Furnace size: 3t*	Furnace size: 12t**
20 minutes melting time reduction (25%)	40 minutes melting time reduction (29%)
80 min -> 60 min	140 min -> 100 min

*3t furnace size: Burner power -> 1.5 MW
**12t furnace size: Burner power -> 3 MW

What We Offer:

• Low-Carbon Oxygen Supply in liquid storage.

• Combustion Equipment

FLAMOXAL-B is an automated valve train to control the oxy-fuel burners mounted with built-in lances and their supply systems.

OXYGEN INJECTION TECHNOLOGY

- Patented burners

The **ALJET** burners are water-cooled oxy-fuel systems especially designed for batch melting furnaces in metallurgy.

The **ALJET** burner range consists of six standard models named by their power in kW

- ALJET 1500
- ALJET 2000
- ALJET 2500
- ALJET 3000
- ALJET 5000
- ALJET 6000

- Made-to-order oxygen lances

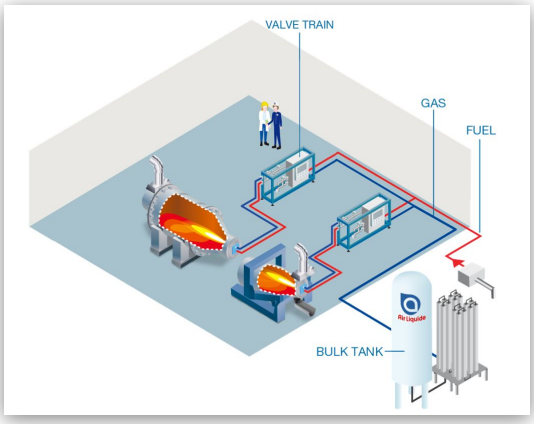
• Expertise

Based on your specifications, our experts design the best **BoostAL™ for Cast Iron Melting in Rotary Furnaces** technology.

They provide you with full support all along your project:

- from the preliminary and detailed design of the suitable oxy-fuel solution to your project;
- the installation, start-up and commissioning of combustion equipment;
- and for the optimization of operating process parameters.

Our experts are also available to help you with your risk analysis if necessary.



Process Diagram of BoostAL™ for Cast Iron Melting in Rotary Furnaces

Related Offers

- BoostAL™ for Cast Iron in Cupolas
- BoostAL™ for Ladle Heating