



# Rotary Control System RCN

Innovation in the control of molten metal

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# RCN Highlights

**This gate system requires very little maintenance and requires only a hammer to install and remove the plates.**

The plates are securely fitted into the inner and outer without metal bands and are firmly put into place using refractory cement

Below photos left to right:

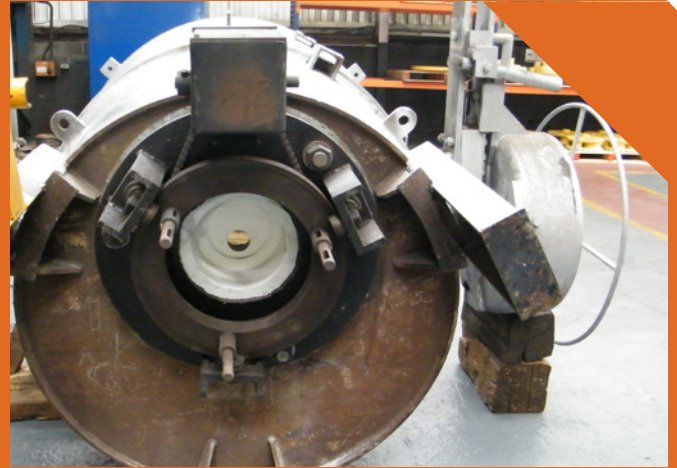
PIC ONE: A new outer in situ

PIC TWO: Consumable plate

PIC THREE: Showing the consumable plate in situ

PIC FOUR LEFT: Graphite safety ring

Encompasses the plate joint ensuring there are no leaks if the plate cracks.

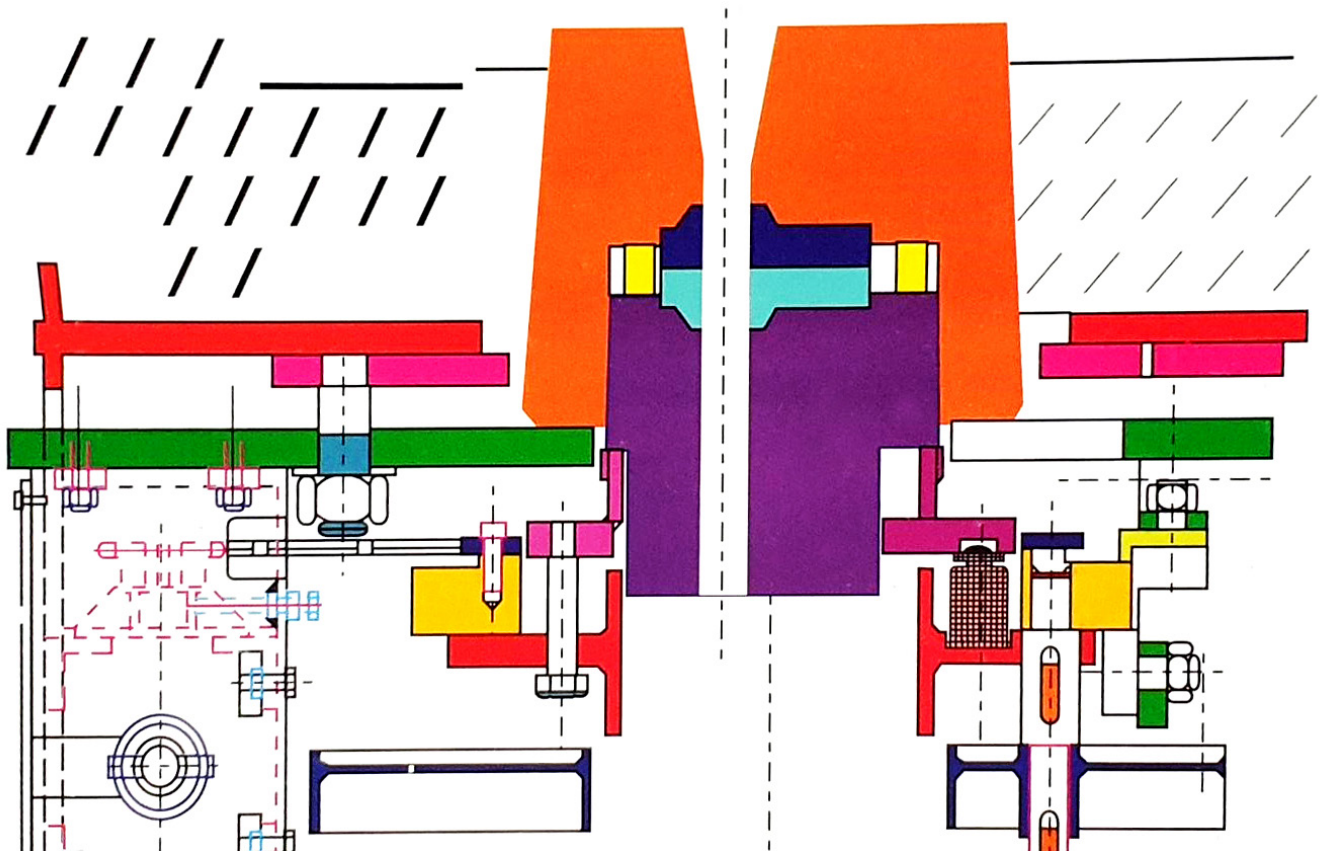


PIC FIVE BELOW LEFT: This one shows that the upper refractory plate in situ into the outer nozzle and the graphite ring surrounds the plate to ensure that the joint is protected from plate leaks.

PIC SIX BELOW: Shows where the plate is cracked. The operator has finished the casting process without aborting cast. The safety ring shows it has protected from a plate leak ensuring that the plate is removed and the ring removed fitting a new plate and ring and the system is ready to go again.



## Pictorial Graphic explains the patented RCN system



Our unique rotating nozzle system has an upper extent nozzle system

### Key colour code to above graphic:

- Red:** Outer nozzle
- Dark blue/light blue:** Consumable plates
- Yellow:** Unique safety
- Purple:** Inner Rotary Nozzle

**This manually operated system is quite different from the standard sliding gate systems that are on the market today.**

What is quite unique is that the rotating faces are on the upper extent of the inner rotating nozzle.

This helps mitigate freezing problems.

There are also many other advantages of using this system. It can incorporate a bandless set of plates, that are a consumable, while in use. It also includes a safety ring that protects from plate leaks.

The process is also very robust and has been rigorously tested by more than 3,000 heats without a gate failure. This means without the total destruction of the gate, and therefore no requirement for a new gate to be installed.

Whatever your requirements, our rotating nozzle system is available to apply to ladles with a capacity of 80 tonnes down to the smallest gate system of 150kg.

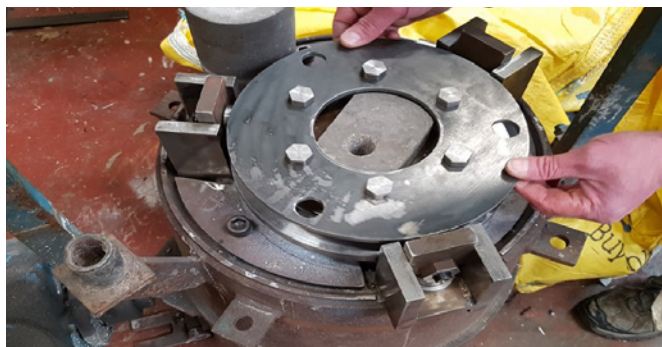
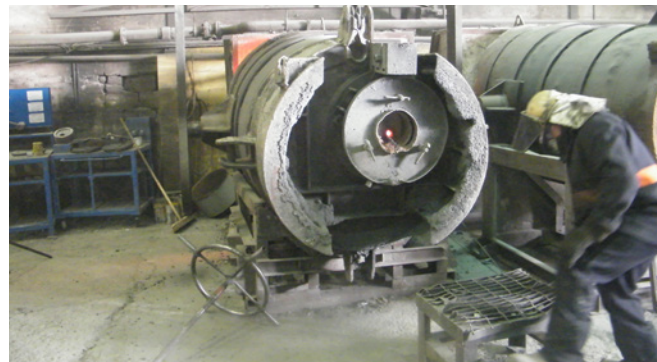


## Potential Markets

Our robust rotating nozzle system works on the principle of a sliding gate but without compromising the potential of using it in foundries.

Sliding gates are mainly used in steel mill scenarios, ie: continuous casting, mini-mills and traditional foundries which concentrate mainly on sleeve and stopper tip with nozzle configuration. These are usually only used once on large ladles.

This system works on the principle of an upper extent rotating nozzle that is protected by a unique safety ring. The constant pressure ensures metal doesn't



surpass the plates and is provided by a unique gas cassette application. A big advantage is that it is s very easy to maintain without a tool kit.

Looking ahead, developments are progressing to make the system usable on very small applications.

### Markets

Steel or iron foundries that use static or automated casting lines. The system can be used on a variety of ladle sizes from 80 tonnes down to 150kg. There is also potential usage in aerospace applications.

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