Press Release

Industry 4.0: RHI Magnesita introduces innovative INTERSTOP® Flow Control Technology to Indian Steel makers

Gurugram, Oct 1: RHI Magnesita, the Global leader in refractory products and solutions, has introduced its World class innovative INTERSTOP® Flow Control Technology to Indian steel makers as part of its Refractory 4.0 initiative. The company hosted a series of webinars this week to present to the Indian customers the new age flow control solutions that includes high end automation and robotics. More than 100 Technical experts from Tata Steel, AMNS, JSW, JSPL, SAIL, RINL and other steel making companies actively participated in the webinars. Under INTERSTOP®, RHI Magnesita is offering its Indian customers solutions such as ladle to mold, gas purging systems and robotics & automation.

Speaking on the occasion **Reinhard Ehrengruber, Global Vice President, RHI Magnesita Interstop,** said, "INTERSTOP® flow control solutions are highly innovative offerings which helps steel makers improve operating cost efficacy, achieve better metallurgical results with enhanced process performance and improve operational safety standards. Customers worldwide have benefited from these immensely and we are now ready to offer those benefits to our customers in India with greater efficiency and thrust".

Adding further to this, **Parmod Sagar, President – India, West Asia & Africa**, **RHI Magnesita** said, "We have already been working closely with some of our Indian customers to deploy Refractory 4.0 solutions in their plants in India. The INTERSTOP® offering is one further addition to this. With a dedicated regional Technical Excellence and Solutions team, under the new restructured organization of us, we are well prepared to service our Indian customers in their automation efforts with these modern and innovative flow control technology solutions."

It may be noted that the company has of late taken various steps to support Indian steel makers prepare for a post-COVID19 business environment by way of offering more new age automation and robotic solutions, multiple product sourcing options to reduce Chinese import dependence, setting up of a new regional R&D centre in India for faster and more efficient product and solution development support, expansion of production capacity at its Indian plants etc.

About RHI Magnesita

RHI Magnesita is the leading global supplier of high-grade refractory products, systems and solutions which are indispensable for industrial high-temperature processes exceeding 1,200°C in a wide range of industries, including steel, cement, non-ferrous metals and glass. With a vertically integrated value chain, from raw materials to refractory products and full performance-based solutions, RHI Magnesita
serves customers in nearly all countries around the world. The Company has a high level of geographic diversification with more than 13,650 employees in 32 main production sites and more than 70 sales offices around the world. RHI Magnesita intends to leverage its global leadership in terms of revenue,scale, product portfolio and diversified geographic presence to target strategically those countries and regions benefitting from more dynamic economic growth prospects. Its shares have a premium listing on the London Stock Exchange (symbol: RHIM) and are a constituent of the FTSE 250 index. For more information please visit: www.rhimagnesita.com

RHI Magnesita in India

RHI Magnesita operates in India through three of its subsidiaries – Orient Refractories Ltd., RHI Clasil Pvt. Ltd. and RHI India Pvt. Ltd.. Combined together, RHI Magnesita's Indian operations are the largest single refractory solutions platform in India offering the industry's most comprehensive product and solutions portfolio. This includes Magnesia and Alumina based bricks and mixes for large industrial customers as well as specialty refractory products like Isostatic products and Slide Gates. With 2000+ strong skilled workforce in 4 state-of-the-art manufacturing plants located at Bhiwadi, Cuttack, Vizag and Mumbai, 4 main offices, 2 R&D centres and 26 site offices across the country, RHI Magnesita's Indian operations serve customers in across sectors like Steel, Cement, Glass, Foundry and Non-ferrous metal, in India and more than 75 countries.

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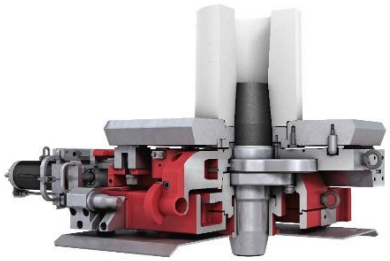
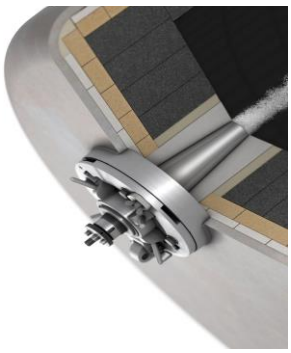
Details of INTERSTOP® solutions:

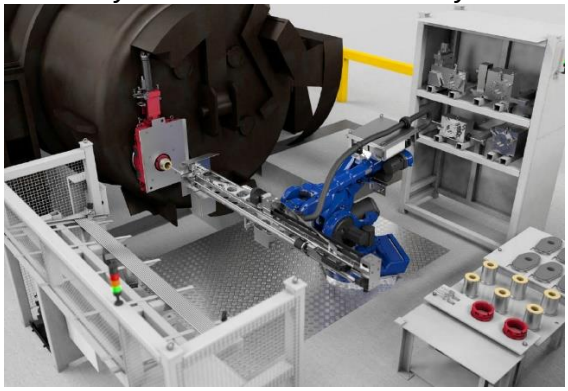


Ladle to Mold Solutions:
Among advanced tundish systems like stopper control, monotube changer and tundish slide gates, the topic INTERSTOP® ladle gate S was introduced in detail.
The INTERSTOP® ladle gate is a high-performance ladle gate system focused on optimizing total cost of ownership as well as safe and easy operation. The advanced refractory concept is leading to higher efficiency. The smart handling characteristics enable easy and safe operation and are incorporated within a maintenance friendly design. The S gate has a positive impact on the overall operating costs and an increased safety standard during handling and operation. Moreover, the S type gate provides the possibility to perform an “open check”, a feature allowing the personnel in the ladle preparation area to assess the refractory plates more reliably.

Gas Purging Systems:
The RHI Magnesita Interstop experts presented the topic inertgas purging. INTERSTOP® inertgas purging systems have a positive impact on metallurgical results. Improved distribution of the temperature as well as alloying elements in the molten metal is the result of the sophisticated gas control box concept. Here, number, type and arrangement of plugs, flow rate patterns and the kind and quality of purging gases and their regulation have a significant influence on the metallurgical results and customer process.



Automation Related to Ladle Slide Gate:
The mission of RHI Magnesita is to best support our customers in making steel production safe and economic while complying with the highest quality standards. In order to achieve this goal RHI Magnesita is following a modular scope of supply, centred around our core business of systems engineering. For ladle gate systems, INTERSTOP® offers solutions at the ladle preparation area and on the CCM floor that allow for manual and robotic operation. The full package contains the latest slide gate technology, fully equipped with casting cylinder and media coupling, all being operated by our customized robotic system.



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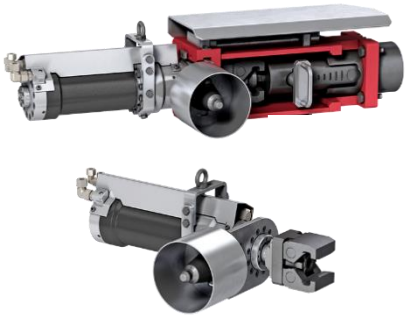
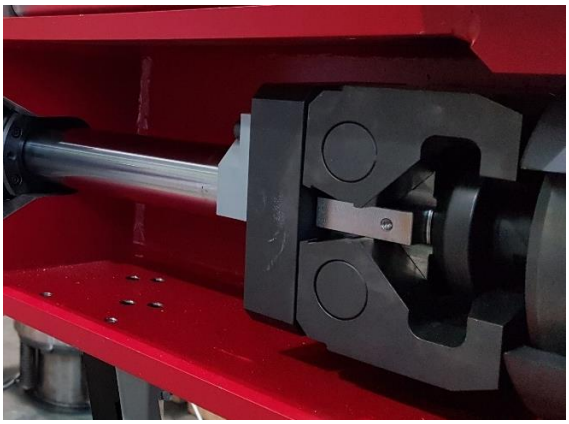
In order to automate processes, the systems or subsystems are required to permit an automated operation as well. Currently, an important contributor considered in the developments of new slide gate systems for the steel industry, is the swift and easy manual operation and handling. However, an easy manual operation does not necessarily result in an easy to automate operation. For that reason, in new developments specific emphasis is being placed on defining concepts and interfaces that can be adequately operated in automatic mode whilst still allowing manual operation in e.g., an emergency situation. Among the new systems recently developed which enable robotic operation, two are presented in the following sections in more detail.

Automated Casting Cylinder Handling on Continuous Casting Floor:
The casting floor is one of the areas in a steel plant with a high safety concern for operators. Removing people from dangerous areas is the goal. For this reason, a special automated casting cylinder has been developed that is designed to be handled by a robot. The operator is only required to monitor the process from the operating room. The automated casting cylinder can be installed on INTERSTOP® slide gates by simply replacing the drive unit. A special built-in safety anti-opening device locks the slide gate during the transfer process without external intervention.

The drive unit has been specifically designed, to allow in the event of an emergency, a manual mounting of the casting cylinder instead of the automated cylinder. An integrated locking/unlocking mechanism prevents the cylinder from disengaging during casting operation. The system also offers the incorporation of an automated slag detection connector and a gate air cooling. With this development, in a single movement, the cylinder and all the utilities are connected and ready to use, reducing the handling time.





Automation at Ladle Preparation Area
The ladle preparation area is a place in steel plants, where critical tasks are carried out by operators under very harsh conditions. Heat, dust, and time pressure can influence the performance quality, in addition to, a constant issue with safety. INTERSTOP® is working towards the development of a fully automated ladle preparation area.

The basic approach is that the human intelligence is used in combination with sensors for diagnostics and robots carry out the dangerous and heavy tasks. To fulfil this, a re-examination of current practices is necessary in several process steps.