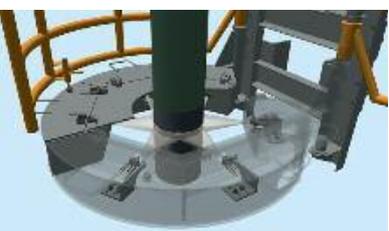


Clean Lance System

More safety –
for your processes and employees



Clean Lance System

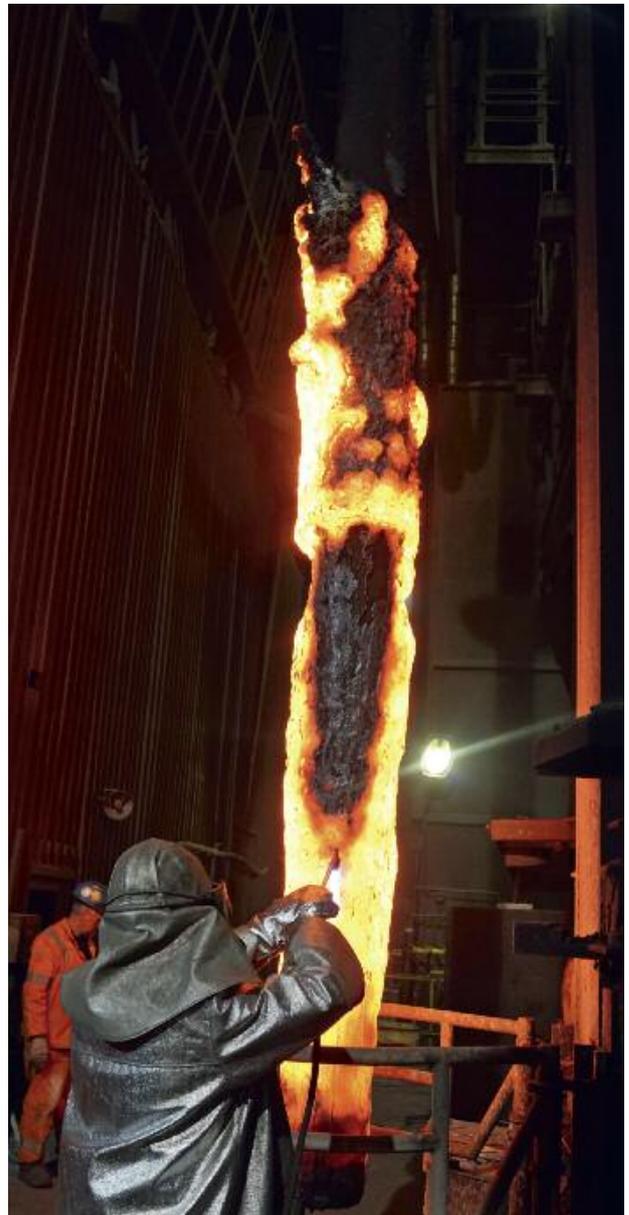
New coating system for oxygen injection lances

Our innovative clean lance system solves a common problem: skull formation on water-cooled oxygen lances. This happens because process reactions during O₂ injection create steel and slag deposits inside the converter. Now available from SMS group is a complete system that drastically pares back these deposits.

There are even more downsides to time-consuming skull removal by flame cutting, chiseling, or hammering off because it also causes surface wear, damage, and even failure. You can avoid all this with our clean lance system (CLS) that protects your employees as well as your existing processes.



Steel and slag deposits (skull formation) on the lance surface.



Conventional flame cutting of skull on non-coated lance.

How to boost sustainability and productivity

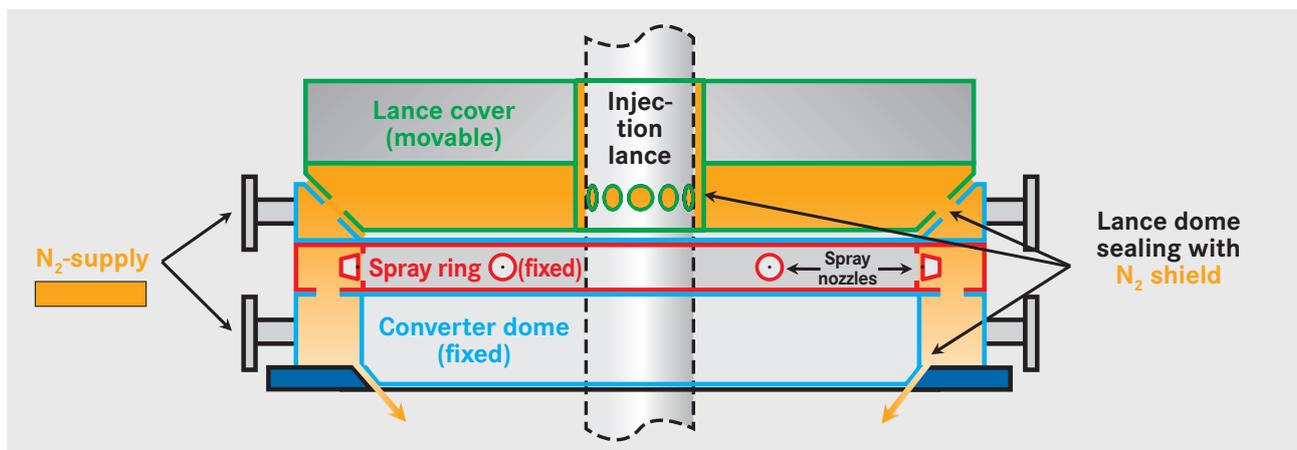
Better sustainability with integrated coating spray ring

To cut dust emissions, you have the option of using our innovative converter dome with integrated CLS spray ring. This specially engineered design combines our clean lance system with an N₂ shield. That prevents dust escaping from the area of the converter dome, lance cover, and injection lance. Simultaneously, it protects the nozzles from dust.

What you gain is: much lower dust emissions during production. This not only improves workplace environments, but also drastically reduces cleaning and maintenance stoppages.

Here's how you benefit:

- Ideal coating by six spray nozzles integrated in the lance dome seal
- Requires little space
- Cleaner because the nozzle zone is flushed with N₂
- Easy maintenance: three nozzles installed on each lateral slide-in unit
- Better work safety



Successful trials on various European converters

Proving hugely successful were even the very first coating trials under production conditions using hand-held spray guns – an event where our pilot customers could see for themselves how to benefit from our O₂ lance coating system.

Next, semi-automatic operation transformed the prototype into an industrial solution.

We named our coating ThixoGuard. It acts as a revolutionary separating agent. What that means for you is that the skull is much easier to remove or even falls off by itself. You'll be impressed by its high effectiveness and easy handling – proven by use with European converters as well as a series of workshop tests.

These results also promise application options in other areas of production.

The solution: ThixoGuard

- Longer lance service life
- Lasting prevention of skull formation
- Eco-friendly, water-based substances
- Universal application due to high heat resistance



ThixoGuard – the non-stick coating from SMS group.

System components

Geared to your process, the spray rings feature several nozzles plus supply lines for coating material, compressed air, and rinsing water.

There is a casing around the spray ring that fully protects the nozzles from the extreme conditions in the converter zone. It's an extra benefit that the modular structure ensures easy maintenance. The nozzles close after every coating operation. That prevents blockages so the coating material always flows smoothly.

Here's how you benefit:

- Lower investment and operating costs
- Better occupational safety
- Higher production due to longer lance service life
- Less or even no skull formation
- Stable overall system
- Maintenance-friendly spray system

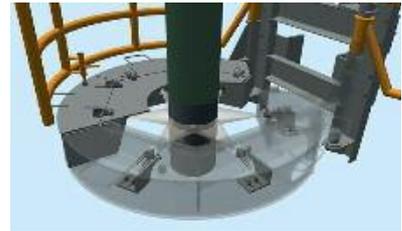
The main assemblies such as control unit, valve cabinet, and pneumatic diaphragm pump, are installed in a protective, mobile cabinet. You can easily move it, together with the stirrer, to any location near the O₂ lance. While the spray ring is custom-designed for you, all other components are suitable for any converter.

The system consists of five simple, logically combined components. The main element is the control unit with the control and valve cabinet.

It is operated manually, using either the integrated screen or a remote, cable-bound terminal. You also have the option of automatic or remote control via the control desk.

The control unit operates the electric stirrer, the diaphragm pump, and the valves.

These components make up the clean lance system. That ensures more safety – for your processes and employees.



Spray ring with six nozzles, hose lines, and guard rail.



Universal components of the lance coating system.

Nothing protects your oxygen injection lances better than ThixoGuard, SMS group's innovative non-stick coating. Equally effective, a special spray system applies the coating after every heat. Once it dries, the protective layer reduces skull thickness as well as adherence to the lance surface.

Now much thinner, the skull layer either falls off or is easy to remove. That means hardly any more labor-intensive flame cutting. The lance surface remains smooth – with vastly less effort required for skull removal. You clearly benefit from more work safety plus higher process reliability!



Newly coated oxygen injection lance immediately before the heat.



Coated lance after the heat: thin, easily removable skull.

SMS group GmbH

Technical Service

Ohlerkirchweg 66

41069 Mönchengladbach, Germany

Phone: +49 2161 350-3508

Fax: +49 2161 350-1980

service@sms-group.com

www.sms-group.com

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