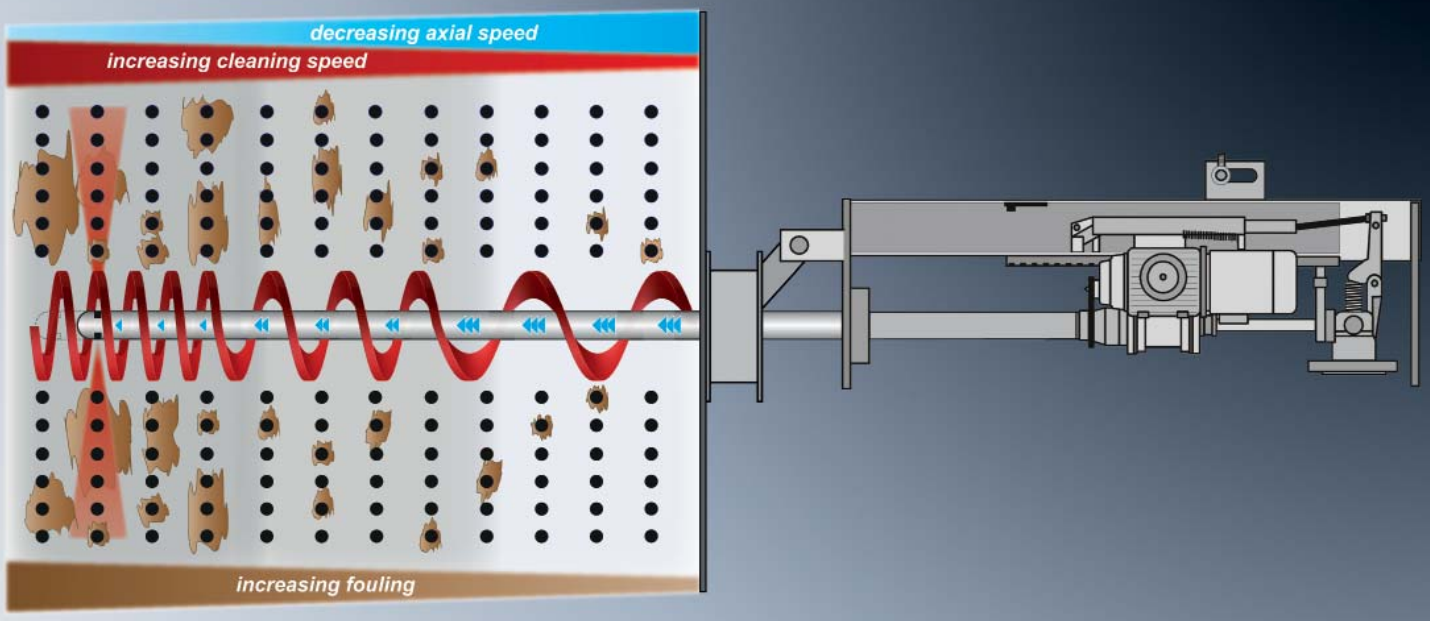


RX-SMART HELIX

Maximum flexibility for on-load cleaning of the convection area

CLYDE BERGEMANN

RX-SMART Helix
Flexibility for highly effective cleaning

CLYDE BERGEMANN

The situation

Deposits in the convective heating areas tend to have an uneven distribution.

The use of conventional cleaning technologies can lead to the following issues: Insufficient cleaning of badly affected areas due to cleaning parameters set to less deposited areas; tube wear in zones with less or no deposits due to intensified cleaning of heavily deposited areas.

The non-uniform fouling distribution requires a corresponding flexibility from the on-load boiler cleaning system to achieve the best and most economic cleaning results.

Our solution

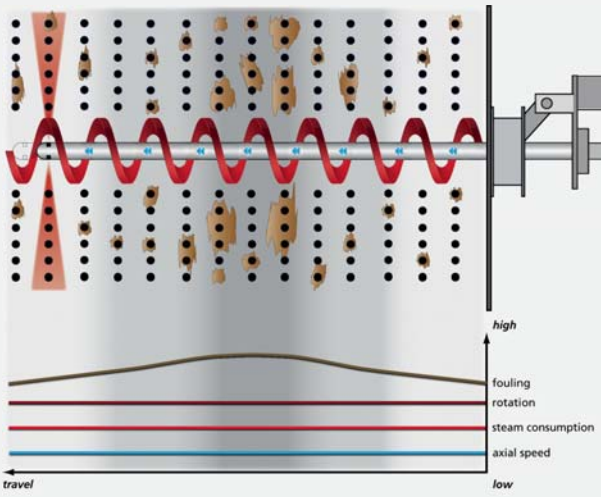
The RX-SMART Helix is a long retractable sootblower with a unique dual-motor design which allows independent and variable traversing and rotational speeds. The speeds can be varied at any time.

All parameters required for cleaning – traversing speed, rotational speed, blowing pressure, blowing angle – can be set as required with a flexible combination.
This leads to different cleaning intensities that best match the actual deposit situation.

Your benefits:

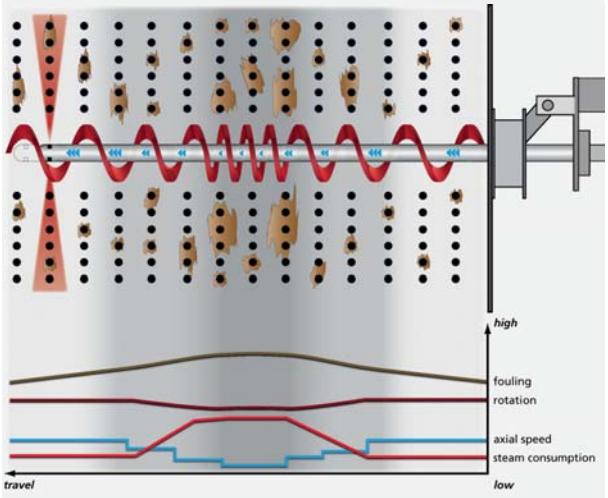
- Cleaning parameters can be adjusted to the actual deposit situation
- RX-SMART Helix minimises erosion
- RX-SMART Helix economically uses steam or air – cleaning media savings of up to 60 %
- Extended boiler availability
- Improved heat transfer
- Increased boiler efficiency
- When combined with diagnostics/analysis modules of the SMART CLEAN ISB platform, it is turned into a fully automated on-load cleaning system that can be seamlessly integrated into your control system

Conventional sootblower



Cleaning parameters aligned with the requirements of badly deposited zones

RX-SMART Helix



Cleaning parameters adjusted to the requirements of the actual deposit situation

Lower steam consumption, lower erosion – while still achieving an enhanced cleaning effect

Technical highlights

- **Precise nozzle head positioning**

  Decisive for execution of the different cleaning parameters is a high precision in performance. The RX-SMART Helix maintains this performance capability with specifically developed hard- and software components. For instance, the accurate positioning of the lance tube is carried out by means of gear motors with high-resolution rotary position sensors.

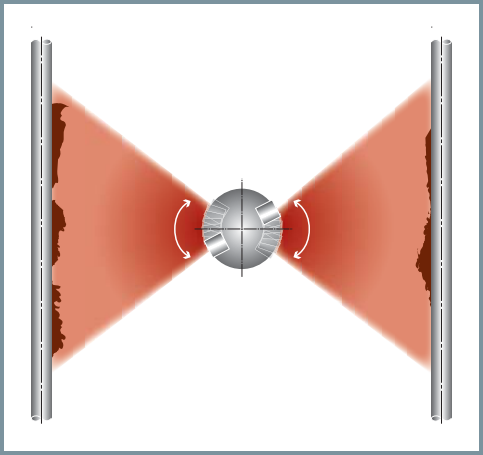
- **Intensive cleaning at the accurate position**

  The traversing speed of the long retractable sootblower RX-SMART Helix can be set to "zero" for any point within the travel. During this so-called "Go-Stop-Go" mode, intensive cleaning is performed reliably by continued rotation in places with severe deposits.

- **Precisely adjustable oscillating area & steam savings**

  On-load cleaning is carried out only within the determined oscillating area. Oscillating operation without axial movement achieves a higher cleaning effect without increasing steam consumption at the same time.

  Outside of the oscillating area, e. g. to protect the supporting tubes, steam consumption reduces to the minimum cooling amount.



- **Planned non-cleaning of specific zones**

  On-load cleaning only where required – that protects sensitive areas like the wall opening and supporting tubes.

RX-SMART Helix
High cleaning performance

Freely adjustable cleaning parameters of RX-SMART HELIX	
traversing speed	✓ free adjustable
rotational speed	✓ free adjustable
blowing pressure	✓ free adjustable
intensive cleaning	✓ free adjustable
repeat cleaning	✓ free adjustable
oscillation yes / no	✓ free adjustable

Procedural option

Single nozzle design: Recommended for systems with short travels and insufficient steam quality (wet steam). In this kind of configuration, the lance tube quickly moves in with the minimum amount of steam required for cooling, therefore preheating the steam. On-load cleaning is performed with dry steam while the lance tube moves out of the boiler. This procedure clearly reduces the risk of erosion, which may have occurred had wet steam been used.

Technical Data	
Drive	Axial: 1 gear motor 1.1 kW with driving pinion Rotation: 1 gear motor 0.25 kW for multi grade voltage 230/400 V, 50 Hz
Travel	0.5 - 12 m
Control	Modular, intelligent control concept – suited for central and decentral installation; supply voltage 690 V/400 V; Siemens Simatic hardware; WinCC visualisation; control system integration by means of communication bus
Position feedback	1 limit switch controlling rotation reference point 2 rotary encoders controlling the advance and retraction
Lance tube	Ø 101.6 mm standard configuration; with feed tube and lance tube support in case of travels > 8 m; creep resistant steel
Feed tube	Ø 60 mm; feed tube support in case of travels > 6.5 m; stainless steel, welded and cold drawn primary material
Blower valve	DN80, PN63 – valve body taking up the valve set; molybdenum cast steel G20M05 with corresponding counter flange and adapter set; adjustable throttle disk for varying of blowing pressure – force pilot operated
Options	
Wallbox	- for flue gas-side negative pressure - with sealing elements for flue gas-side positive pressure - with sound protection rings to reduce sound emissions
Sealing and scavenging air	Sealing and scavenging air piping with fan

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