SMART RETRACTABLE SOOTBLOWERS

SMART Sootblowing Technology

SMART retractable sootblowers are the most advanced boiler cleaning solution available in the recovery and utility industries, giving users the ultimate advantage over the toughest fouling conditions. Targeted sootblowing offers the most efficient and cost-effective answer to address today’s boiler cleaning demands. The result is increased boiler efficiency and reduced cleaning media usage.

Unlike conventional cleaning technology, which is based on static conditions, SMART cleaning is based on dynamic conditions, applying real-time feedback of fouling conditions from our SMART Convection module. It is this real-time feedback that continuously creates and updates the cleaning strategy of the SMART sootblowers, optimizing boiler heat transfer by targeting only the areas with deposit accumulation, and then only with precisely the steam intensity needed to remove it.

Depending on the severity of the slag, different locations in the boiler have different cleaning needs, therefore Clyde Industries built our SMART sootblowers to specifically address these highly variable conditions with on-demand, targeted cleaning. The result is increased boiler runtimes and a higher heat transfer rate. Additionally, customized cleaning modes reduce blowing media consumption and minimize tube erosion, extending boiler lifespan.

A key feature of the targeted sootblowing system is its zone-based cleaning. By defining zones along the path of a single sootblower lance, different cleaning methods can be used to specify where and how intensely the SMART sootblower cleans, with the ability to change multiple times during the same cleaning event. This is accomplished using our patented dual VFD motor design which allows for independent and variable traveling and rotational speeds, providing the dynamic ability to clean based on the severity of fouling in a given area.
SMART RETRACTABLE SOOTBLOWERS
THE ULTIMATE IN SMART CLEANING PERFORMANCE

Cleaning Modes
Only Clyde Industries can offer variable cleaning intensities which include the following:

Variable Helix
Traveling speed and rotational speed can be customized to define an infinite number of helix sizes that provide targeted cleaning for the fouling conditions in that zone. For zones with heavy slag, a tight helix can be set. For zones with little slag, a large helix can be set.

Variable Oscillation
Blowing media can be concentrated on only the area that needs cleaning by adjusting the rotational arc.

Variable Intensity Cleaning
Variable helix and variable oscillation can be combined with a variable pressure module to create the ultimate SMART Clean system. The SMART sootblower can stop at tube bundles with tenacious slag and clean with a high pressure. For tube bundles with little slag, the SMART sootblower can increase speed and reduce blowing pressure to save cleaning media use and prevent tube erosion.

SMART Controls
SMART retractable sootblowers are paired with a stand alone module- the SMART Controls suite; the industry’s only open architecture system that uses industry standard PLC and HMI. The module integrates into the main control system for basic functionality, with a user friendly operator interface. For optimum performance, SMART sootblowers can run in closed-loop control mode. Cleaning occurs when and where needed, using real-time data from Clyde Bergemann’s market leading SMART Gauge and SMART Convection System.

Benefits
- Targeted sootblowing
- Increased boiler efficiency
- Cleaning media savings
- Eliminate slag/tube erosion related shutdowns or derates

Variable Cleaning Intensities

<table>
<thead>
<tr>
<th>FOULING CONDITION</th>
<th>SOLUTION</th>
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<tbody>
<tr>
<td>1. Typical slag</td>
<td>Standard helix</td>
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<tr>
<td>2. Difficult slag</td>
<td>Tight helix, standard intensity</td>
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<tr>
<td>3. Difficult, widespread slag</td>
<td>Tight helix, high intensity</td>
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<tr>
<td>4. Extremely difficult slag</td>
<td>Stop and go cleaning</td>
</tr>
<tr>
<td>5. Slag on one tube bank</td>
<td>Variable oscillation</td>
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<tr>
<td>6. Light slag</td>
<td>Reduced pressure, large helix</td>
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