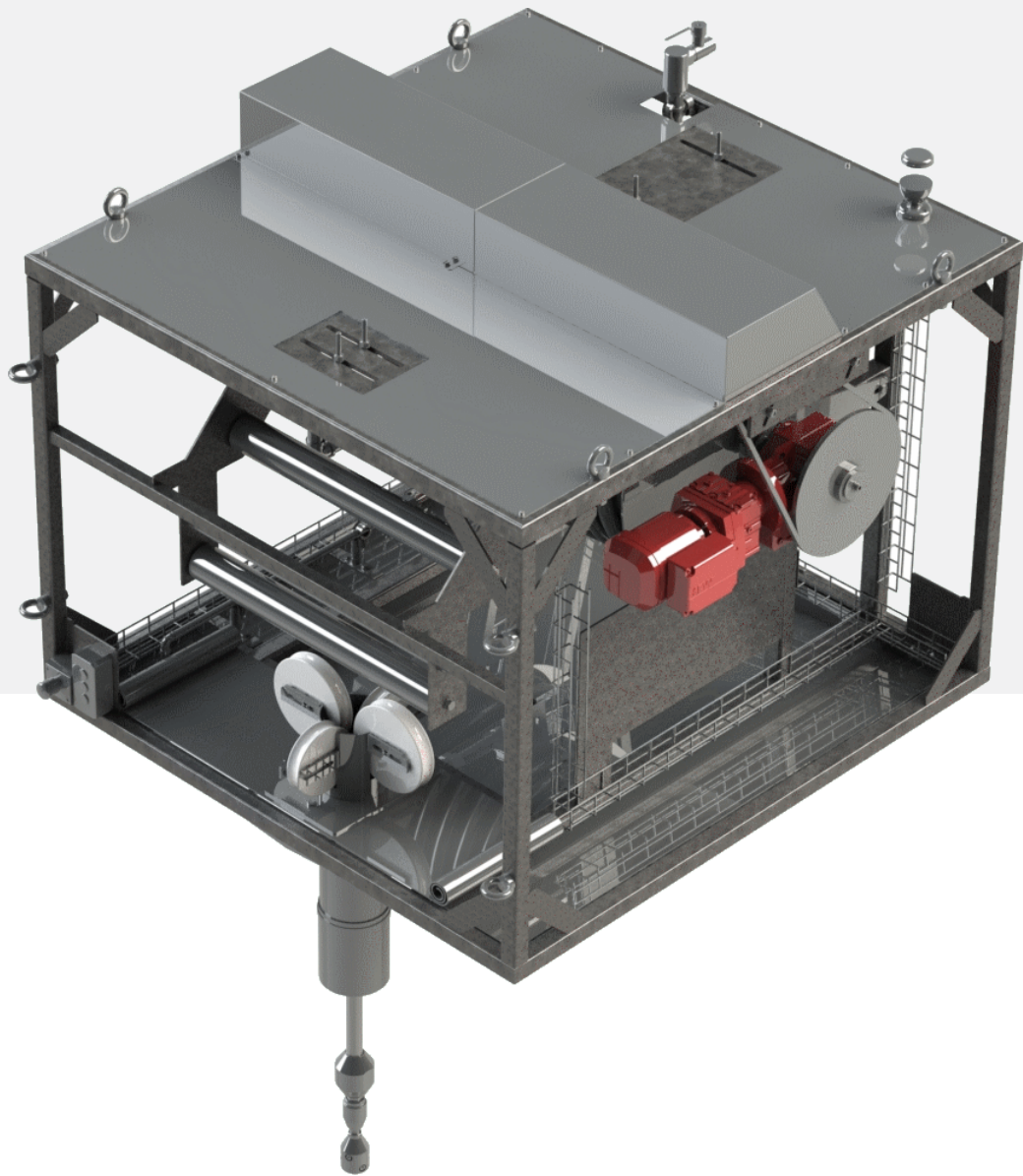


Hydro Shower™ Cleaning System

A fully automatic Diamond Power® cleaning technology
for waste-to-energy and biomass-fired boilers



RENEWABLE | ENVIRONMENTAL | THERMAL

Hydro Shower™ Cleaning System

The Hydro Shower™ cleaning system, provided by Babcock & Wilcox (B&W), is a robust fully automated solution for cleaning boiler walls of waste-to-energy (mass burn and refuse derived fuel) and biomass-fueled boilers. The Hydro Shower system builds upon B&W's Diamond Power® technology to streamline daily plant operations, improve operating personnel safety, and optimize operating time, service lifetime and energy production.

The Hydro Shower system sootblower performs fully automatic cleaning of boiler walls in the radiant section of the boiler. This helps to control the inlet temperature to the convection pass of the boiler and thereby help avoid fouling and corrosion.

It is designed to streamline daily operations, improve operating personnel safety, and optimize operating time, service lifetime, and energy production.

The fully automatic Hydro Shower system requires no intervention from operating personnel. This results in a significant improvement in safety.

It can be used in stand-alone mode, in single row or multiple row configurations.



What could a Hydro Shower™ cleaning system do for you?

- Optimize heat transfer
- Maintain efficiency
- Reduce corrosion
- Increase boiler service life
- Improve safety
- Reduce operating costs
- Reduce maintenance costs
- Help prevent unplanned outages

System components

The Hydro Shower system consists of an overhead conveyor assembly that transports the hose cart to the various feed pipes at the top of the boiler. The system is fully automatic and has its own built-in PLC-based control panel. The hose cart consists of a 30 m stainless steel hose with a rotating nozzle head, and a frequency-regulated motor and gearbox to control the speed of the cleaning cycle.

A booster pump maintains system water supply pressure.

In addition to its fully automatic feature, the system's hose and rotating head are flushed after every cleaning cycle to remove accumulated ash and prolong the service life of the hose.

Cleaning principles

The water sootblower is designed to remove ash deposits from the boiler walls in the second and third passes. A flexible, temperature-resistant stainless-steel hose with a rotating nozzle head is fed down into the boiler opening through an electro-pneumatic valve. Water at a minimum pressure of 3 bar(g) is supplied to the rotating nozzle head and is then sprayed against the boiler wall via a number of jets.

On thick ash deposit layers, the cooler water will enter the porous structure of the slag and flash to steam, thus rapidly expanding and breaking the slag from the tube surface.

On thinner deposit layers, the water will cause a short, rapid cooling of the slag thus shocking the slag and breaking its hold on the tube surface.

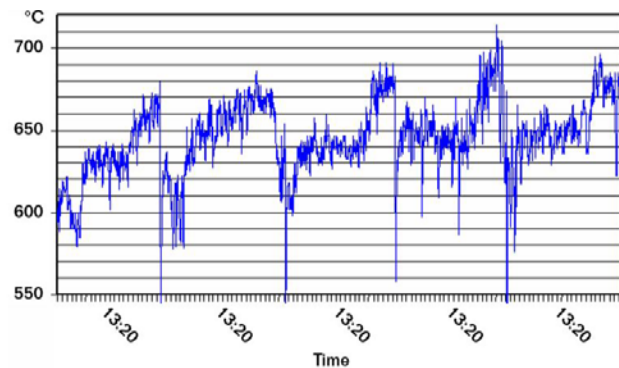
In addition to helping prevent unplanned stoppages, the cleaning system enables better control of the flue gas temperature after the second pass in the boiler, significantly reducing the risk of corrosion in the boiler. A more constant temperature level in the convection pass is maintained throughout the entire operating period, which benefits the service life of the superheaters.



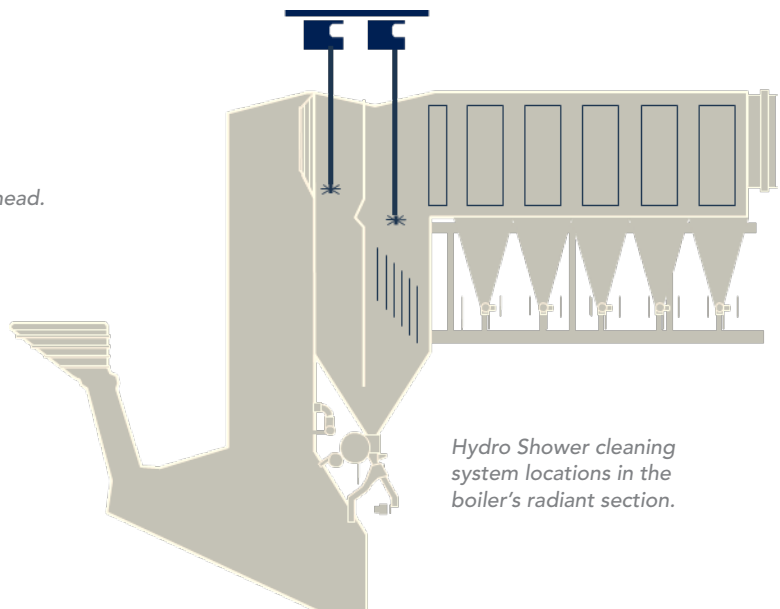
The local control panel consists of a PLC with touchscreen operator interface to control the hose cart and water supply pump.



Stainless steel nozzle head.



Flue gas temperature over five days of cleaning with Diamond Power technology.



Hydro Shower cleaning system locations in the boiler's radiant section.

Specifications

Cleaning Media	Water
Water Consumption	3.0 m ³ /hr (normal)
Operation Cycle (speed)	1.5 to 9.0 m/min (variable speed drive)
Motor Power Ratings	Hose Cart: 0.18 kW Conveyor: 0.25 kW Pump: 2.20 kW variable frequency drive
Drive System	Overhead conveyor system
Location / Installation	Boiler roof mounted
Boiler access / entry	Sliding gate valve, Electro-pneumatic DN100 / DN125
Controls	Dedicated PLC control system
Dimensions of Hose Cart	1,400 x 1,330 x 1,050 mm
Weight of Hose Cart	640 kg

For more information contact us at one of our worldwide locations:

	Asia	Americas	Europe, Middle East, Africa (EMEA)
Phone	+66 (0) 34.870.978.81	+1 740.687.6500	+44 1389.727.900
Fax	+66 (0) 34.870.982	—	—
Web	www.babcock.com	www.babcock.com	www.babcock.com
Mail	Diamond Power Services S.E.A. Ltd. 51/1 Moo 4, Tambol Nadee Amphur Muang, Samutsakhon Thailand	Babcock & Wilcox 2600 E Main Street PO Box 415 Lancaster, Ohio 43130 USA	Diamond Power Specialty Limited Block 10 Vale of Leven Industrial Estate Dumbarton, Scotland G82 3AD

The Babcock & Wilcox Company

1200 E Market Street, Suite 650
Akron, Ohio, U.S.A. 44305
Phone: +1 330.753.4511

www.babcock.com     

The information contained herein is provided for general information purposes only and is not intended nor to be construed as a warranty, an offer, or any representation of contractual or other legal responsibility.

Diamond Power and *Hydro Shower* are trademarks of The Babcock & Wilcox Company.



RENEWABLE | ENVIRONMENTAL | THERMAL

Established in 1867, Babcock & Wilcox is a global leader in renewable, environmental and thermal technologies and services for power and industrial applications.

For more information or to contact us, visit our website at www.babcock.com.