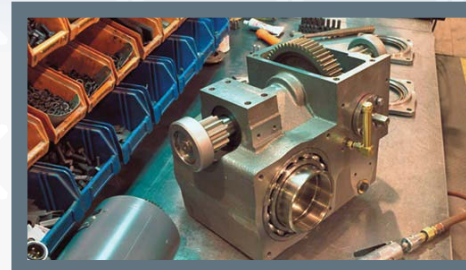


Diamond Power[®] Boiler Cleaning Solutions



BABCOCK
& WILCOX

RENEWABLE | ENVIRONMENTAL | THERMAL

*Seven out of ten
utility power
plants feature
Diamond Power
sootblowers.*





Owners and operators worldwide have come to rely on the Diamond Power® line of boiler cleaning technologies from Babcock & Wilcox (B&W). In fact, seven out of ten utility power plants feature Diamond Power sootblowers.


We lead the industry in providing advanced sootblower and intelligent control designs. Our extensive experience gives us a unique perspective on the optimal, most efficient and cost-effective way to clean boilers that burn a variety of fuels, in any operating condition.


Using steam, compressed air or water, Diamond Power boiler cleaning systems are trusted to remove deposits, prevent boiler pluggage, and maintain boiler efficiency. For more than 100 years, our specialized designs and configurations have met customer needs for precision, reliability and efficiency.

Additionally, we fully support your aftermarket requirements and provide services such as equipment upgrades and rebuilds, quality replacement parts and field engineering services. Our wide range of monitoring tools and intelligent control systems can help you operate your equipment more effectively and efficiently.

Diamond Power Boiler Cleaning Solutions

Boiler Cleaning Devices

Product	Applications	Cleaning Coverage	Features/Benefits
<p>IK-700® Retractable Sootblower</p> 	<p>Pendant superheater, reheater, and convection sections</p>	<p>Up to 45 ft 6 in. (13.9 m)</p> <p>Full Travel or Part Travel / Extended Lance</p>	<p>Low maintenance, reliability, versatility and maximum cleaning performance.</p>
<p>IK-555 Retractable Sootblower</p> 	<p>Pendant superheater, reheater, and convection sections</p>	<p>45 ft 7 in. up to 56 ft (14 m up to 17 m)</p>	<p>Low maintenance, reliability, versatility and maximum cleaning performance.</p>
<p>IK-700-SL for SCR Catalyst and Tubular Air Heater Cleaning</p> 	<p>SCR catalyst and tubular air heaters. This application of the IK-700 uses a non-rotating carriage and a "rake" with nozzles specially designed for uniform coverage.</p>	<p>Provides full, effective cleaning on SCRs and tubular air heaters.</p> <p>Travel of 6 to 12 ft (1.8 to 3.7 m) is common.</p>	<p>Superior cleaning as compared to sonic horns especially on PRB-fired units.</p>
<p>IK-700-AH Air Heater Sootblower</p> 	<p>Short-travel version of the IK-700 sootblower</p> <p>Modified for cleaning regenerative air heaters</p>	<p>3 to 5 ft (0.9 to 1.5 m) travel is common.</p> <p>Applications for all sizes of regenerative air heaters.</p>	<p>Slow travel rate provides complete coverage which is timed with the rotation of the air heater. Optional Step-and-Dwell feature for more aggressive cleaning requirements.</p>

Product	Applications	Cleaning Coverage	Features/Benefits
<p>IR-3Z™ Furnace Wall Sootblower</p> 	<p>Furnace walls</p> <p>Well suited for high temperature locations</p>	<p>360 degree or partial arc</p>	<p>Lightweight compact design for ease of operation and maintenance. Positive confirmation the blower is at rest. Flexible, simple timing adjustments.</p>
<p>HydroJet® Retractable Furnace Water Cleaning Device</p> 	<p>Furnace, division and wing walls</p>	<p>180 degrees of rotation Horiz./Vert.</p> <p>Water path lengths of up to 70 ft (21.3 m) are common</p>	<p>Retractable nozzle allows it to reach where other devices cannot while reducing water flow rate. Isolation from the furnace allows online maintenance and eliminates the need for cooling air.</p>
<p>HydroJet Furnace Water Cleaning Device</p> 	<p>Furnace, division and wing walls</p>	<p>90 degrees of rotation Horiz./Vert.</p> <p>Water path lengths of up to 80 ft (24.4 m) are common</p>	<p>Exceptional long-term reliability with minimal maintenance. Excellent cleaning of difficult deposits.</p>
<p>G9B™ Sootblower</p> 	<p>Smaller boilers, waste heat boilers and direct-fired oil-heaters where gas temperatures inside the boiler permit a fixed cleaning element.</p>	<p>Up to 20 ft (6.1 m) is common</p> <p>335 degree or partial arc rotation</p>	<p>Built-in adjustable pressure control for flexibility. Three primary materials are used for temperatures up to 2000F (1093C); additional materials are available for highly corrosive environments.</p>

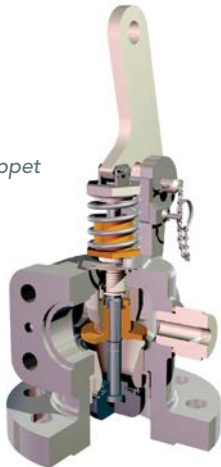


Diamonized® Feed Tubes

Diamonized® Feed Tubes

The Diamonized feed tube provides a highly scratch- and wear-resistant surface for maximum availability. This is a true, surface hardening of the base 304 SST material which greatly increases packing and feed tube life.

EAPC™ Poppet Valve



Powertrain® Carriage

The PowerTrain carriage offers high-temperature service without periodic maintenance. This unique, maintenance-free carriage is designed to operate reliably and without leakage up to a period of three years or 30,000 cycles.

EAPC™ Externally Adjustable Poppet Valve

This advanced poppet valve design for long retractable sootblowers allows the pressure setting to be easily adjusted while the sootblower is operating.

Progressive Helix Mechanism

The progressive helix mechanism substantially reduces sootblower-induced boiler tube erosion by indexing a precise 47 degrees with each blower cycle so the nozzle cleaning path is different with each successive cycle.

Replacement Parts and Performance Upgrades

We can also provide high performance tubular products for most other brands. Our Assured Stock Program® inventory management system is available to plan your specific material requirements and minimize inventory levels.

An experienced product support staff with access to detailed component lists is dedicated to providing the correct OEM parts for your specific application, vintage and model of boiler cleaning equipment.

Our engineered upgrades are evaluated for potential savings in cleaning media usage.



Gemini® Nozzles

The Gemini nozzle provides a significant cleaning energy improvement compared to other available nozzles by providing high impact pressures on the deposits. In many cases, cleaning can be improved while actually reducing steam flow.



Gemini Nozzle

Sootblower Tubular Products

Replacement lance and feed tubes are available which meet or exceed original equipment manufacturer's design standards.

Heat Transfer Sensors

B&W's heat transfer sensors are designed and manufactured for long life and reliability and are available for special applications such as small diameter furnace tubing or rifled tube applications. Heat transfer sensors are an integral part of both intelligent sootblowing and furnace water cleaning systems.



Heat Transfer Sensor

Aftermarket Services

B&W's component rebuild and upgrade services can help extend the life of your existing Diamond Power or other suppliers' equipment. Our service centers are fully equipped for a wide range of services, from simple poppet valve rebuilds to complete sootblower refurbishment.

Equipment Rebuilds and Upgrades/Exchanges

IK-555 carriage

IK-545 carriage

IK-525 carriage (both pre-series one and series one)

IK-4M carriage

IK-600 carriage

IK-700 carriage

IK-AH carriage

Powertrain carriage conversions and equipment exchanges

Full grease carriage conversions and equipment exchanges

Full oil bath carriage conversions

A2E rotary puff sootblower

G9B rotary sootblower

IR rotary wall sootblower

Poppet valve (both standard and EAPC)

Poppet valve EAPC exchange

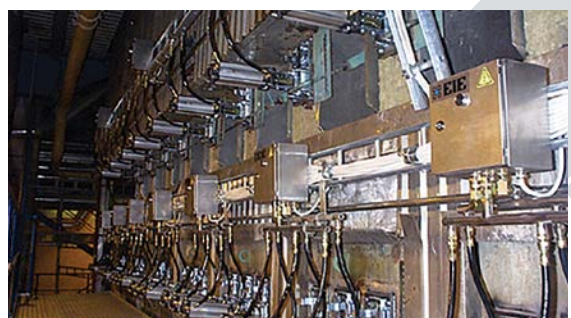
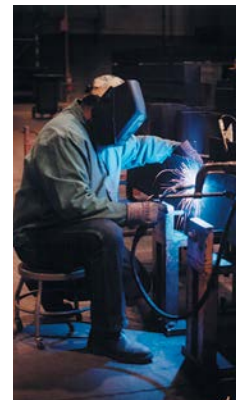
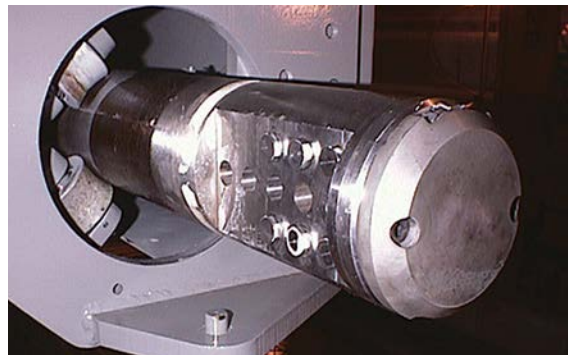
IR-3Z sootblower upgrade or exchange

Complete sootblower refurbishment

Auxiliary support refurbishment

AH diaphragm-operated poppet valve conversion to an air cylinder operator

Water level gauge rebuild



Titanium™ Sootblowing Controls and Intelligent Sootblowing

TITANIUM™

The Titanium™ sootblowing control systems from B&W upgrade the proven performance and reliability of the Diamond Power® SentrySeries® sootblowing control systems into a modern platform.

The Titanium intelligent sootblowing (ISB) system combines the legacy Powerclean® and goal-based ISB systems into a powerful performance-driven system which is flexible and easy to use.

No matter which option you choose, all our Titanium controls and ISB systems can easily upgrade or replace your existing sootblowing system and can be installed on B&W and non-B&W boilers, regardless of the original sootblower manufacturer.



Titanium Product	Applications	Features/Benefits
Titanium Sootblower Controls	Controls up to 300 sootblowers, including water cleaning devices	Includes historian for baseline data and trending Customizable configurations and operator displays Programmable for up to 70 sequences
Titanium Intelligent Sootblowing	For optimum control and boiler performance Monitoring of heat transfer sensors for estimation of thermal transient-induced furnace wall tube crack growth	Cleaning based on real-time, unit-specific boiler performance model and/or operational parameters Dynamic queueing of individual blowers based on calculated effectiveness Custom calculations available for control or data gathering Potential for heat rate and unit efficiency improvements Reduced tube erosion Improved temperature and spray control Integrates with B&W's combustion optimizer
Sootblower Controls for Recovery Boilers	Specialized option for pulp and paper recovery boilers	Same as sootblower controls (above) Includes variable header control for manual or intelligent modification of sootblowing flow and/or pressure

Diamond Electronics Cameras, Sensors, Temperature Monitoring and Gauges

B&W supplies state-of-the-art technology that allows plant operators to accurately view and monitor internal furnaces and processes in a variety of applications. Our Diamond Electronics line of boiler monitoring systems includes optical pyrometers for gas temperature measurement, camera systems, drum level gauges for low and high pressure boilers, and more.

Cameras, Sensors, and Monitoring Systems

SmeltCam® infrared camera for recovery boilers

UtiliCam® infrared camera for utility boilers

TemPro® II infrared temperature measurement system

Wall-Eye® high-definition viewing system

KilnCam® temperature measurement camera for cement and lime kilns

SteelCam® temperature measurement camera for steel furnaces

GlassCam™ temperature measurement camera for glass furnaces

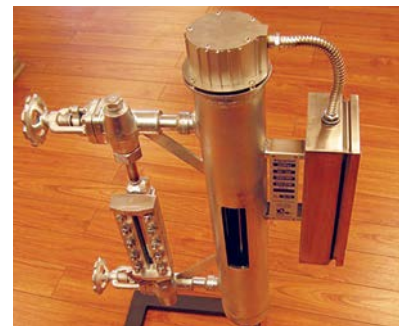
GASTEMP® XT extended range optical pyrometer for utility boilers

GASTEMP RB optical pyrometer for recovery boilers

Carryover monitor

Camera housings

Camera rodders



Gauges and Level Indicators

Series II

Single detection circuit (SDC) alarm module

Reflex gauge

1000FG transparent gauge

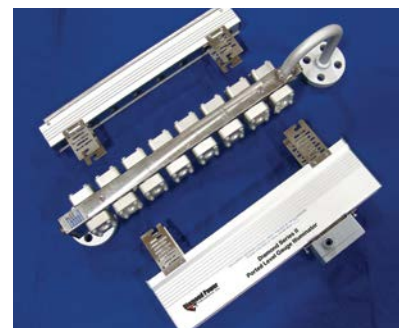
1 to 4 probe electronic level indicator

Ported level gauge (bi-color)

Multi-probe electronic level indicator

Vertical probe column gauge

Aftermarket parts





Specialized Products for Pulp & Paper Applications

Products and upgrades have been developed by B&W for the unique recovery boiler applications in the pulp & paper industry.

SprayRod™ -R Dual Rail Retractable Auto Liquor Gun Cleaner

Fully retractable and automatic, designed to optimize black liquor delivery to recovery boilers.



SprayRod™ -R Dual Rail Retractable Auto Liquor Gun Cleaner

FlexRod® Port Rodder

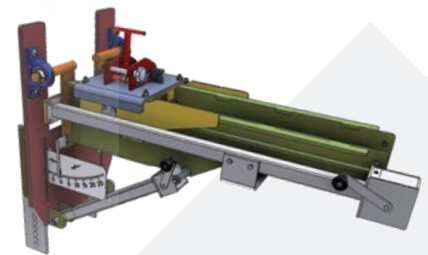
This port rodder is safe, easy to use, low-maintenance and suitable for all manufacturer's recovery boilers. Cleans the entire port in a single stroke.



FlexRod® Port Rodder

Dual Rail Liquor Gun Station

Engineered to provide optimum liquor gun positioning, providing safe adjustments of gun depth and inclination while the unit is operating.



Dual Rail Liquor Gun Station



For more than 100 years, Diamond Power® boiler cleaning products and services have met customer needs for precision, reliability and efficiency.



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Established in 1867, Babcock & Wilcox is a global leader in advanced energy and environmental technologies and services for the power, industrial and renewable markets.

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

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