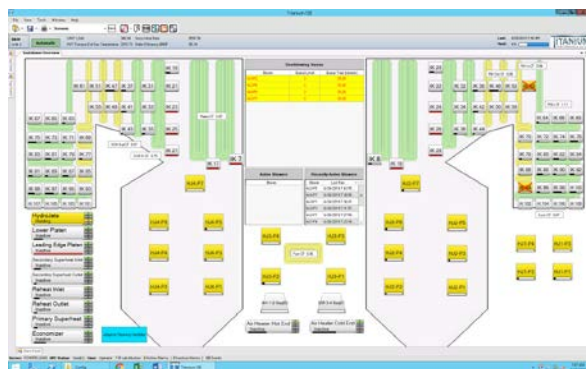


Titanium™ Intelligent Sootblowing

Intelligent sootblowing (ISB) systems are recognized as proven tools for increasing efficiency and maximizing unit output. Performance-based ISB systems, in particular, provide power plants with a cost-effective method of achieving unit cleanliness and performance by optimizing boiler heating surfaces while helping to reduce costs related to fuel usage, maintenance, sootblowing medium management, and tube failures due to sootblower erosion. The Babcock & Wilcox (B&W) Titanium™ performance-based ISB system is powerful, yet easy-to-use and is built upon B&W's extensive boiler design experience and the Diamond Power boiler cleaning experience.

Performance-driven sootblowing

The Titanium ISB system from B&W enables intelligent cleaning of your boiler based on calculated heating surface cleanliness. The system provides real-time analysis of slagging and fouling effects on local heat transfer and how that impacts overall boiler performance. This analysis produces effective cleaning strategies that are automated through the ISB expert system. The result is an industry-proven solution to boiler cleaning that optimizes system performance and provides quick returns on your investment.



The Titanium ISB interface displays information in a simple and easy-to-use format which can be customized to the user's preference.

TITANIUM™

ACE Approved

EPA's Affordable Clean Energy Rule

Intelligent sootblowing is one of the Best System of Emissions Reduction (BSER) technologies the EPA identified in its Affordable Clean Energy (ACE) Rule

Key Features

- Boiler-performance model configured specifically to your boiler for accurate modeling of boiler performance and heating surface cleanliness
- Expert system with flexible decision logic based on boiler performance and/or operational values
- Automatically adapts sootblowing thresholds based on historical performance
- Dynamic queueing of individual sootblowers based on calculated effectiveness
- Multi-unit sootblowing coordination capability
- Data historian for trending and analysis
- Can operate without boiler model if needed

Potential Benefits

- Improvements in heat rate and unit efficiency (see table on next page)
- Reduction in overall sootblower usage while maintaining boiler performance
- Reduction in tube erosion and thermal fatigue cracking
- Reduced sootblowing-related O&M costs
- Reduced temperature and spray swings
- More consistent operation across load range and operating shifts
- Reduced operator focus on sootblowing

continued ▶

Dynamic blower sequencing

The Titanium ISB system tracks the impact of every sootblower operation on the values which drive sootblowing. The system uses this information to calculate an effectiveness for each sootblower. When a heat transfer section needs cleaning, the Titanium ISB system uses the individual blower effectiveness and the last blower operation time to dynamically create a blower sequence. In doing this, the Titanium ISB system operates the sootblowers which have the highest cleaning impact more often while still making sure all areas of the boiler are cleaned at a minimum frequency.

Operation without model (optional)

The Titanium ISB with boiler performance model is a robust and powerful ISB system which is proven to optimize boiler cleaning performance. However, there may be situations when the boiler model cannot be applied or is not desired. For these applications, the Titanium ISB system can be supplied without the boiler model. In this configuration, the expert system utilizes measured operational values such as temperatures and spray flows to make blowing decisions. All other Titanium ISB advanced features such as blower effectiveness tracking and dynamic blower sequencing are still used.

Plant Location	Thermal Efficiency Improvement	Other Key Results
Nebraska, USA	0.70%	Estimated reduction in fuel usage of over 3600 tons of coal per year; reduced economizer gas outlet temperatures below 900F
Texas, USA (4 units)	up to 0.96%	Plant experienced an 80% reduction in sootblowing-induced forced outages
Minnesota, USA	1.8%	Estimated payback less than 6 months; 2000 lb/h reduction in steam usage
Texas, USA (3 units)	0.70%	Reduced sootblower operation and erosion; economizer exit gas temperature reduced by 43F
Gujarat, India (5 units)	0.35%	Reduced furnace exit gas temperature by nearly 50C
Michigan, USA	0.21%	Improved maintenance of furnace exit gas temperature, economizer gas outlet temperature, superheat and reheat steam temperatures, and reduced sootblower operations

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ENERGY | ENVIRONMENTAL

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