

The DRB-XCL[®] Burner: Key Component for Low NO_x Emissions Compliance

Since 1971, B&W has successfully installed more than 82,000 MW of low NO_x combustion systems in both new and retrofit boiler applications. B&W's DRB-XCL[®] low NO_x burner technology has been successfully applied to a broad range of units with varying fuel characteristics and boiler arrangements.

The DRB-XCL burner has proven to be the workhorse in achieving past low NO_x emissions requirements. In today's more stringent environment, this burner remains an integral part of achieving optimized NO_x reduction solutions.

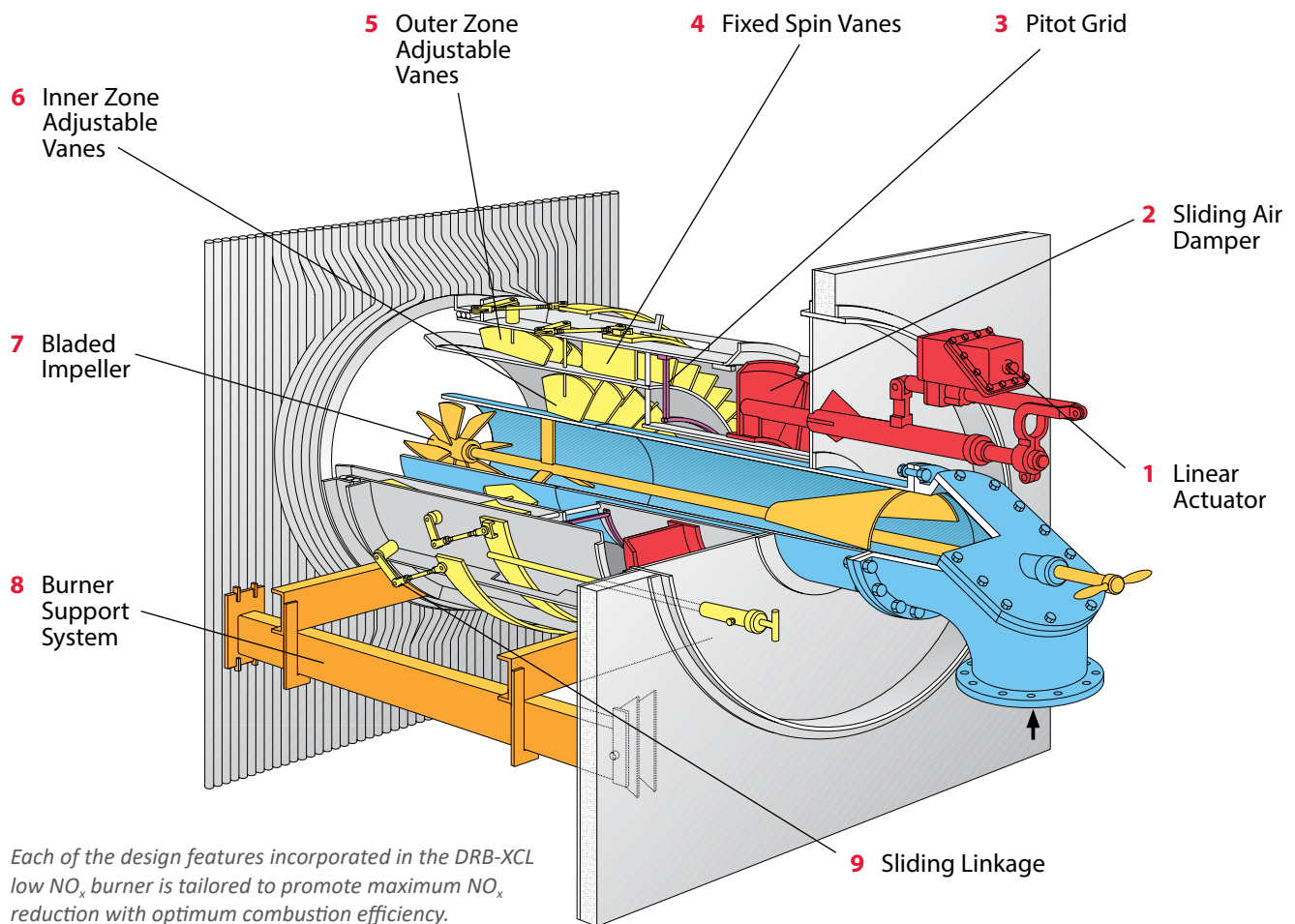
B&W's DRB-XCL low NO_x burner offers you:

- Proven performance
- Superior mechanical reliability and operation
- Rugged construction, integrated design
- Complete shop assembly — ready for installation
- New or retrofit applications
- Plug-in design

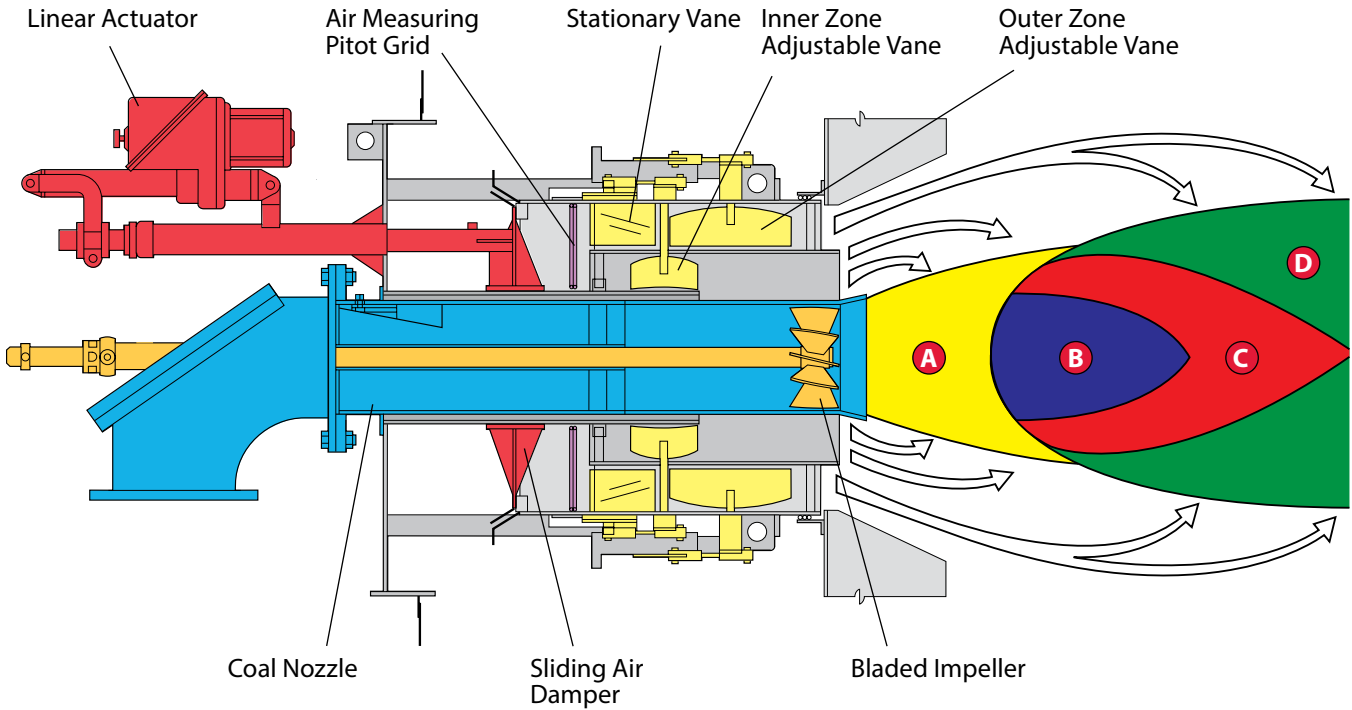


DRB-XCL Burner Mechanical Design Features

Components	Features/Functions
1 Linear actuator	Easily adjusts the secondary air sliding damper position for light-off, full-load and idle/cooling
2 Sliding air damper	Controls secondary air flow rate to the inner and outer air zones of the burner, independent of swirl
3 Pitot grid	Provides a relative indication of air flow with a 30 point impact/suction device to balance air flow among burners during commissioning
4 Fixed spin vanes for outer air zone	Improves peripheral air distribution within the burner and reduces pressure drop
5 Adjustable spin vanes for outer air zone	Provides proper mixing of the secondary air to the end of the flame
6 Adjustable spin vanes for inner air zone	Stabilizes ignition at the tip of the coal nozzle
7 Blade impeller	Beneficial for reducing unburned carbon loss while still promoting low NO _x emissions
8 Burner support system	Allows for differential expansion
9 Sliding linkage	Heavy-duty, non-binding, lever arm movement to control inner and outer spin vanes settings — position is optimized and fixed during commissioning



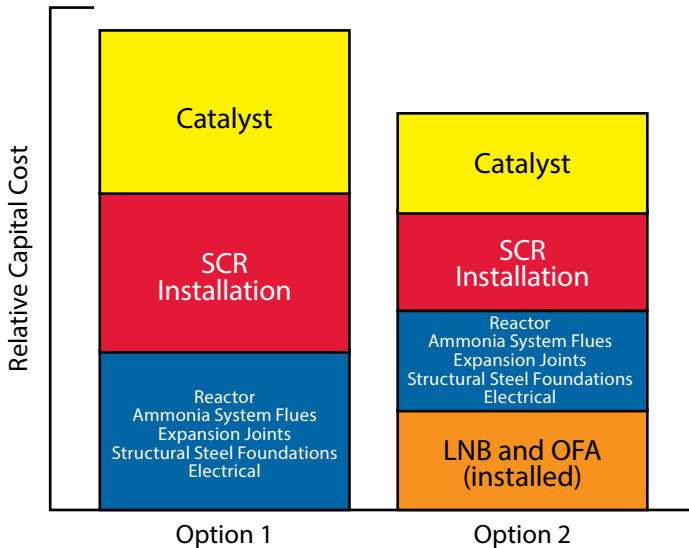
DRB-XCL Burner for Pulverized Coal-Fired Applications



- A** High temperature — fuel rich devolatilization zone
- B** Production of reducing species zone
- C** NO_x decomposition zone
- D** Char oxidizing zone

The DRB-XCL burner uses internal staging to promote rapid devolatilization in a sub-stoichiometric environment to reduce NO_x formation. As fuel particles move through the four reaction zones, both NO_x reduction and combustion performance are optimized.

B&W has all the building blocks for your complete integrated low NO_x compliance solution

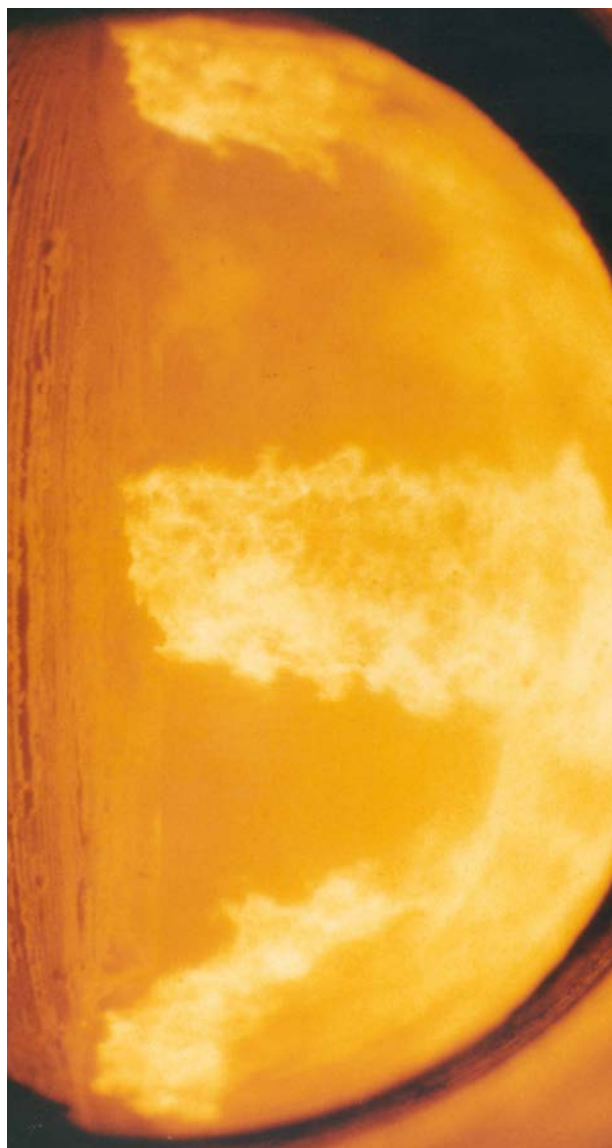


Combinations of low NO_x burners (LNB), overfire air ports (OFA) and selective catalytic reduction (SCR) equipment provide a very flexible system of NO_x control alternatives. As the graph shows, optimizing the entire combustion system will dramatically reduce the size and capital cost of the SCR system. SCR operating costs are also significantly reduced via this total design approach.

The Value of Proven Experience

The DRB-XCL internally staged, low NO_x burner offers significant NO_x reduction capabilities across the full range of wall-fired boiler configurations and combustion firing patterns.

B&W's leadership in the field of low NO_x reduction technology began in 1962 with the first patented overfire air port system design. That leadership continues with unparalleled experience, proven equipment and innovative technology. Our complete low NO_x systems are designed to be cost effective, dependable and adaptable to the full range of fuels and boiler arrangements in new or retrofit applications. B&W has the experience and technology to meet the most stringent NO_x reduction requirements.



The optimal NO_x solution may involve the use of one or a combination of combustion and post-combustion systems. Through extensive research and development, B&W continues to develop innovative improvements in ultra-low NO_x combustion technology.

The Babcock & Wilcox Company

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

www.babcock.com    

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