

Diamond Power® G9B™

Fixed Position Rotating Sootblower

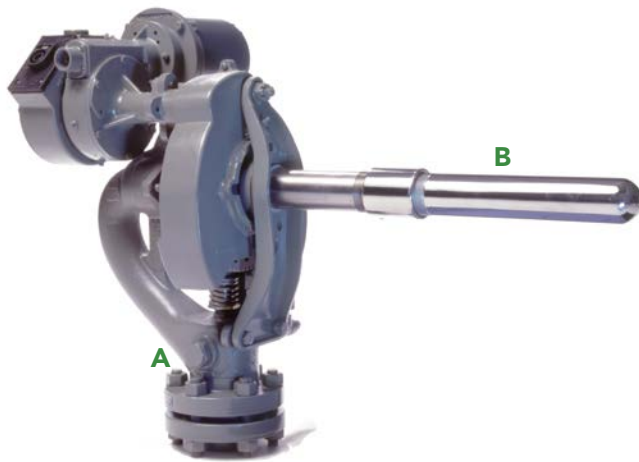


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G9B™ Fixed Position Rotating Sootblower

The Diamond Power® G9B™ sootblower, provided by Babcock & Wilcox (B&W), is designed to remove ash deposits from tube surfaces in stationary boilers, marine boilers, waste heat boilers and direct-fired oil-heaters where gas temperature zones inside the boiler permit a fixed cleaning element. The G9B may also be used for cleaning low-temperature gas zones in large boilers, including reheaters, economizers and gas recirculation and precipitator ducts.

With built in adjustable pressure control for individual blowing pressure settings, the G9B sootblower effectively and efficiently removes ash deposits from tube surfaces using a multi-nozzled, fixed rotating cleaning element.



A multi-nozzled element is used in a lane blowing or mass blowing configuration for complete cleaning of the boiler tube surface area. Three element materials are available for different temperature requirements.

The G9B sootblower requires only one operation to rotate the blowing element and simultaneously open and close the supply valve. It can be configured to operate with an electric motor, chain (manual), crank or handwheel.

Where differential expansion between the tube bank and boiler wall exceeds 16 mm, a self-adjusting flexible element connection prevents the element from being stressed, thus decreasing element breakage and warpage. The head is rigidly bolted to the wallbox, with the element moving freely.

A floater mounted head is used when less than 16 mm differential expansion takes place between the boiler wall and boiler. The floater provides for piping expansion and eliminates element binding from piping strain.

All arrangements provide for longitudinal adjustment of the blowing element — for nozzle/tube spacing alignment.

When manually operated heads are located within reach of the floor or gallery, the sheave wheel and operating chain can be replaced by a forged steel crank or handwheel.

Features

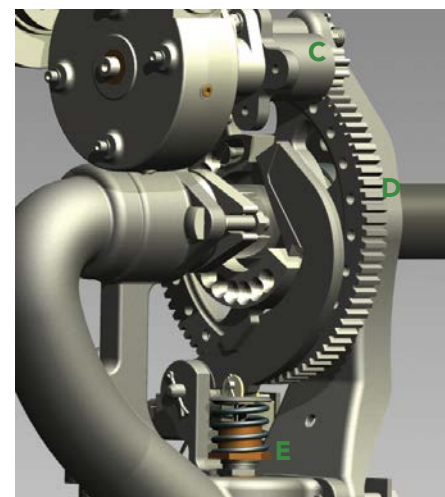
A. Built-In Adjustable Pressure Control permits individual blowing pressure settings that meet optimum installation requirements. Pressure regulation is achieved by simple adjustment of a variable orifice downstream of the valve seat. This eliminates surface cutting and unstable pressure which occur when throttling is attempted by varying the stroke of the valve. The flexible seat and self-aligning disc minimize leakage from thermal distortion. A self-centering disc extends sealing life.

B. Element Material and Nozzles are customized to meet boiler design specifications for gas stream temperature and ash deposition characteristics.

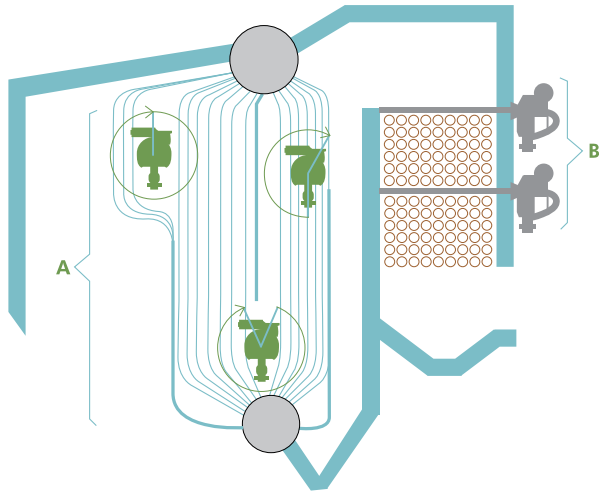
C. Positive Gear Drive Direct from motor, chain wheel, or hand crank.

D. Cam-and-Trigger Operation provides flexibility of blowing control, allowing the blowing arc to be changed at any time by altering the cam length.

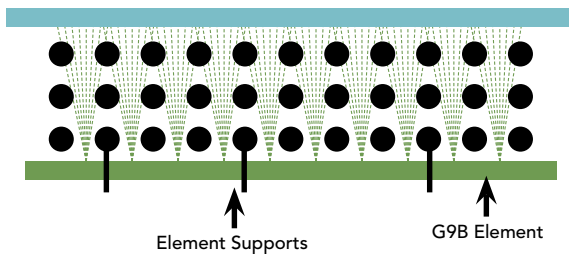
E. Positive Action Poppet Valve, with direct mechanical actuation, provides reliable, full stroke opening and closing.



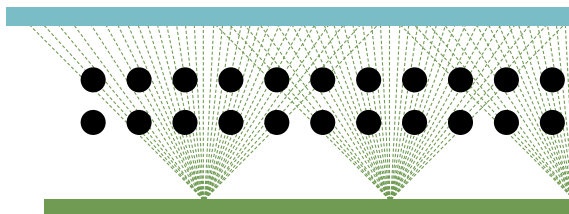
Effective cleaning using a typical G9B sootblower system



The elevation at left shows a typical Diamond Power G9B sootblower system. The arrangement shows (A) three convection-section G9B blowers and (B) two of the four G9B installed in the economizer at the rear of the boiler.

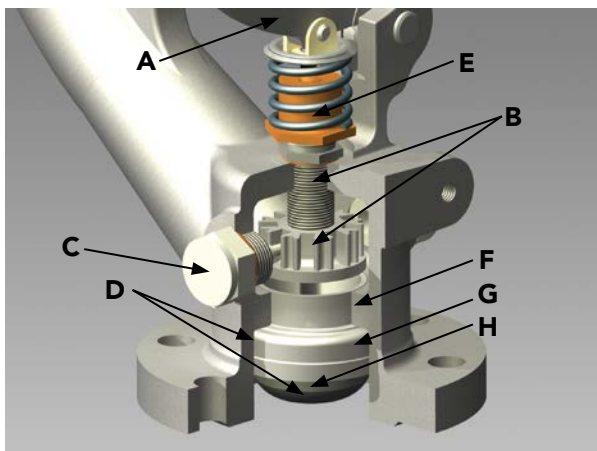


Lane blowing: Nozzles are registered with tube lanes so the element can be located immediately next to the tube bank. This arrangement is generally used in boiler convection sections or where there is not enough cavity space for mass blowing. Elements for lane blowing will have proportionately more nozzles of smaller diameter than elements used for mass blowing.



Mass blowing: For larger cavity areas and staggered tube arrangements, the element has fewer nozzles of larger diameter to create a "mass" blowing effect across the entire tube surface — a "shotgun" instead of "rifle" effect.

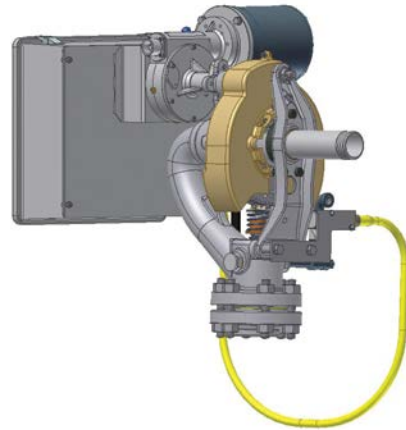
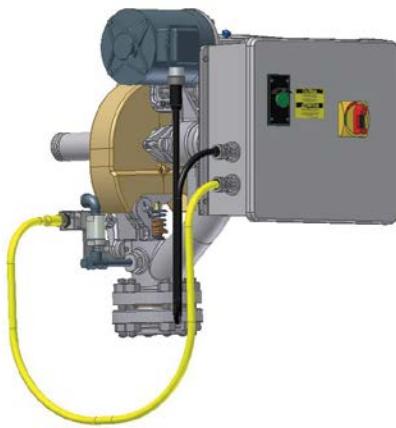
Cutaway of G9B poppet valve adjustable pressure control



- A. Direct mechanical valve action without pilot actuation
- B. Micrometer-like adjustment for very close regulation at low flow rates
- C. Quick and simple adjustment of pressure control
- D. Flexible seat and disc to prevent leakage
- E. Rugged stem, proper guiding, and generous packing surface result in minimum maintenance
- F. Valve seat is welded in head
- G. Stellite valve seat
- H. Poppet construction assures tight seating

Specifications

Cleaning Coverage (element length)	Normally to 15 feet (4.6 m) for field-erected boilers and to 20 feet (6.1 m) for package boilers	
Element Rotation Speed	Approximately 3 rpm	
Element Materials	<ul style="list-style-type: none"> Steel: 0 to 900F (-18 to 482C) 310 stainless steel: 900 to 1600F (482 to 871C) 	<ul style="list-style-type: none"> Dialoy (ferritic stainless steel): 1600 to 1900F (871 to 1038C) RA330: 1900 to 2100F (1038 to 1149C)
Blowing Medium Valve	Diamond Power® poppet valve	
Electric Motor Data	1/6 hp, TENV, frame 56, 1750 rpm, Class B insulation, 230/460 volts, 3-phase, 60 Hertz. Single-phase motor and other voltages and frequencies available	
Motor Starter	May be blower-mounted or located remotely in a separate or common cabinet	
Blower Mounting Arrangements	With blowing medium inlet horizontal to right or left, vertically down or 45° either side of vertical	
Pressure Control	Internal	
Blowing Arc	Shop cut and set cam. 105° through 335° (increments of 10°)	
Drive Type	Electric, air or manual (chain, crank or handwheel)	
Miscellaneous Information	Blower can be operated from local push button in addition to automatic operation from a control panel. Blower suitable for horizontal or vertical installation.	



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