

# Sootblowing

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The logo for Diamond Power (Australia) Pty. Ltd. features a stylized diamond shape with a red and white color scheme, positioned to the left of the company name.

**Diamond Power**

# **G9B Sootblower**

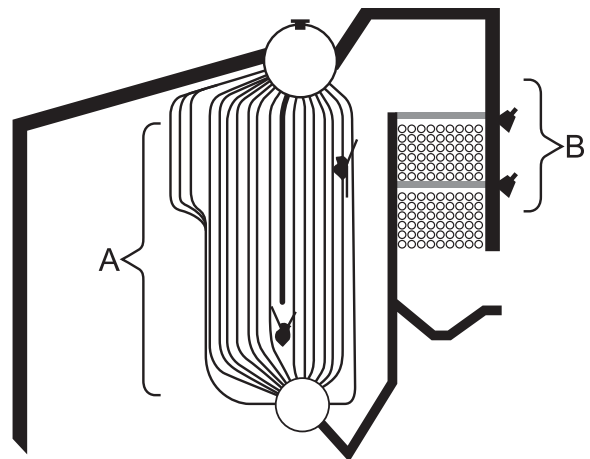
**Boiler Cleaning Technology**

## **Applications**

The G9B is a compact and versatile unit suitable for a wide range of boiler cleaning applications where ambient temperatures are such that a fixed element sootblower is feasible. The element type sootblower is widely used for land and marine applications. The most common useage is on generating banks and economisers, but are also widely used on oil heaters and air heaters.

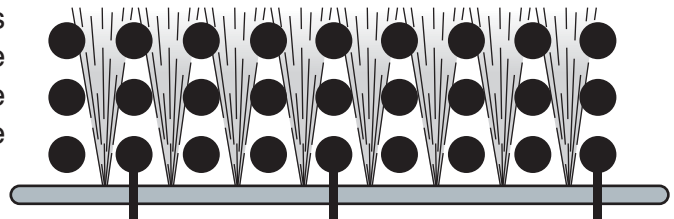
## **Effective cleaning using a typical G9B sootblower system**

The application above shows a typical Diamond G9B sootblower system. The arrangement (A) shows two convection - section G9B blowers and (B) two of the four G9B blowers installed in the economiser at the rear of the boiler.



## **Lane blowing**

For, "lane", blowing applications Diamond's supersonic nozzles are located in the element to blow along the gas path to give maximum cleaning between the lanes of the boiler tube.

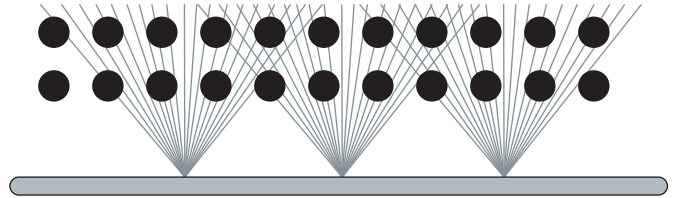


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### **Mass blowing**

For, “mass”, blowing applications, the nozzles are positioned in the element to provide a general cleaning effect over the tube bank instead of blowing through the tube lanes. The, “mass”, type blowing element has fewer nozzles of larger diameter than the lane element.



### **Multi Nozzle Element**

The Diamond-designed elements and element bearings are supplied in various specially-treated steels and alloys suitable for gas temperatures up to 110°C and up to a maximum length of 6m.

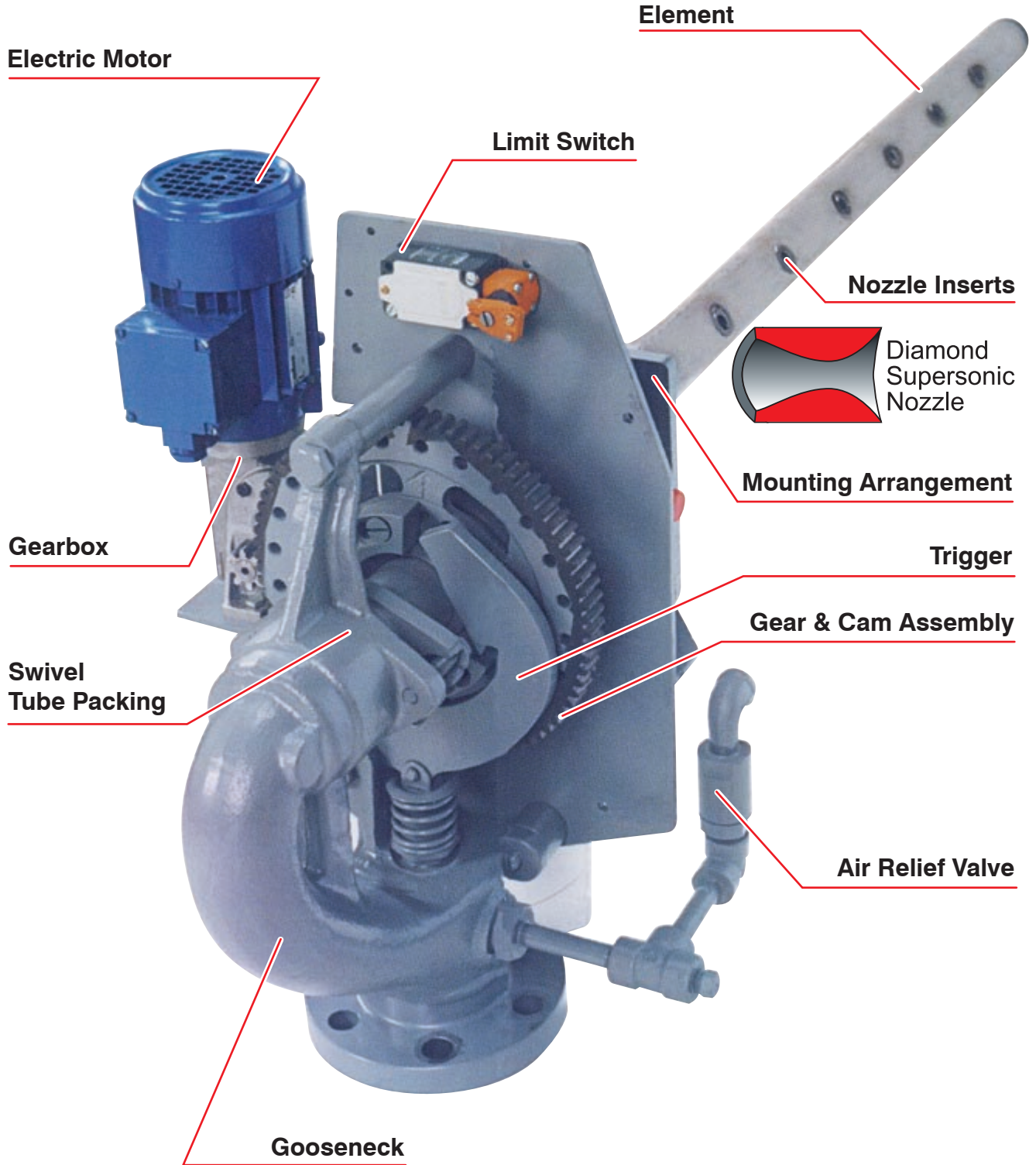
The element nozzle spacing is designed to provide lane blowing between lanes of boiler tubes or provide an overall cleaning by mass blowing. In both cases, the Diamond supersonic nozzle design achieves high cleaning efficiency with low consumption. The supersonic nozzle gives a 20% increased efficiency over conventional type nozzles, which results in greater penetration and higher jet energies for the same consumption.

Where the differential expansion between the boiler and the sootblower head exceeds 16mm, a flexible element connection is supplied. This feature consists of a double ball and socket joint, and permits normal operation without the need for expensive flexible mounting arrangements.

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## **Electric Control**

The sootblower is driven by an electric motor and controlled by a single limit switch. Alternative motors and limit switches to suit various operational environments, (including hazardous areas), are also available.

## **Sootblower mounting**

The sootblower may be mounted either horizontally or vertically onto the boiler via a wallsleeve and mounting flange. The mounting flange is normally supplied with the sootblower ready for welding to the boiler wallsleeve at site. The mounting flange is bolted to the sootblower mounting arrangement. This arrangement supports the rotating swivel tube, which feeds the blowing medium to the element. The sootblower head can be rotated at any angle through 90° on either side from the normal upright position to accommodate installation interference.

## **Control Options**

The sootblower may be operated from a local push-button station mounted near the sootblower, or when fitted from a manually operated start level on the limit switch. On larger applications the G9B sootblowers are integrated into a sootblower sequential control system operated from a control panel in the boiler control room.

## **Flexible Poppet Valve**

The poppet valve integral with the gooseneck is supplied in either Series 40, 60 or 120 bar assemblies, depending upon the blowing medium supply pressure. Valve bodies are either chrome molybdenum or carbon steel, depending upon the blowing medium temperature.

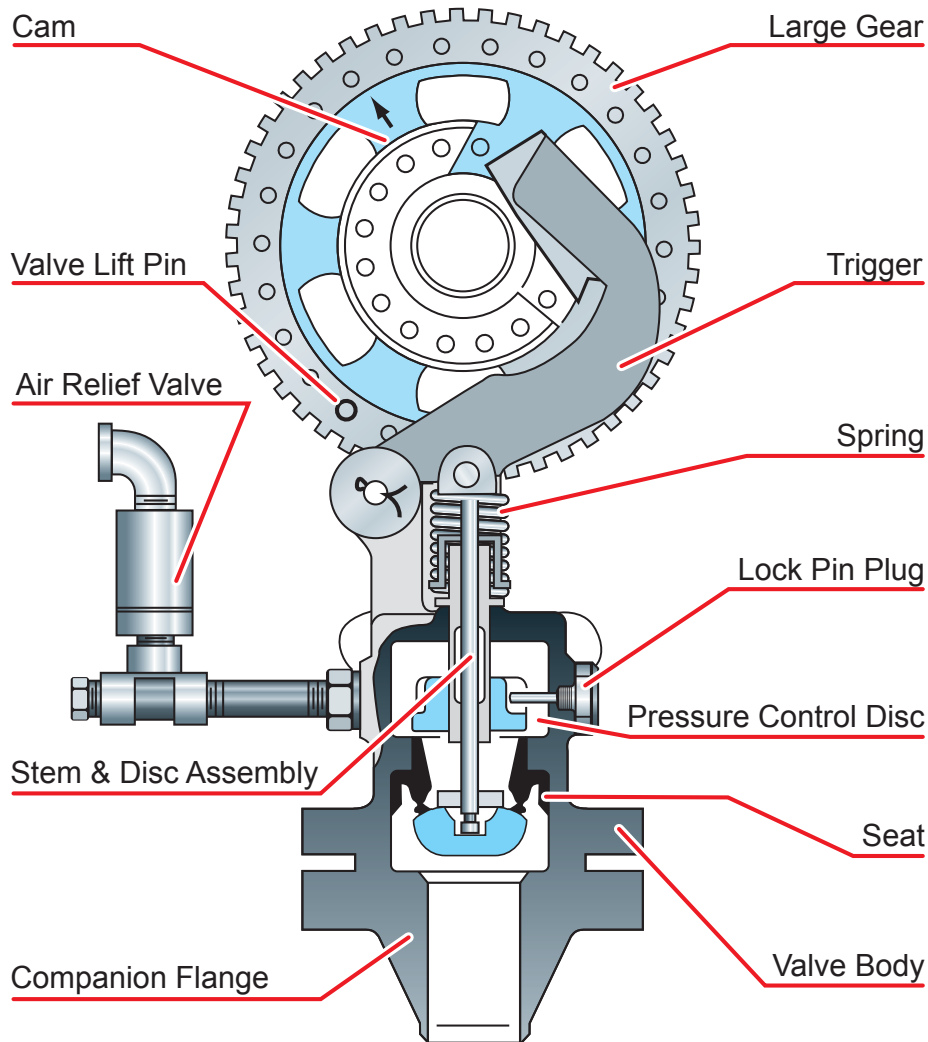
The poppet valve seat and disc are both of flexible construction, to ensure positive sealing. The action of the trigger depresses the valve stem to open the valve. On completion of the blowing arc, the trigger drops off the cam and the valve spring returns the valve to the closed position. A positive closing pin is provided, which acts on the trigger to ensure that the valve closes at the end of each cycle.

The valve seat surface is stellite-finished to minimise wear and thus reduce maintenance to the valve.

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## **Adjustable Blowing Arc**

The blowing arc is determined by a pre-cut cam which actuates the trigger to automatically control the action of the blowing medium valve. The position in which the cam is mounted on the large gear wheel determines the position of the blowing arc. Each sootblower is supplied with the cam pre-cut and pre-set on the gear wheel, to achieve the designed blowing duration and coverage for each application.

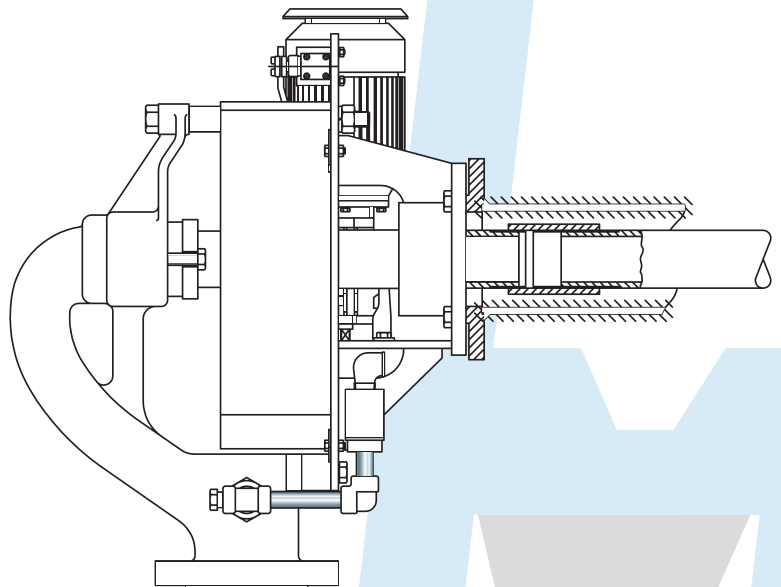
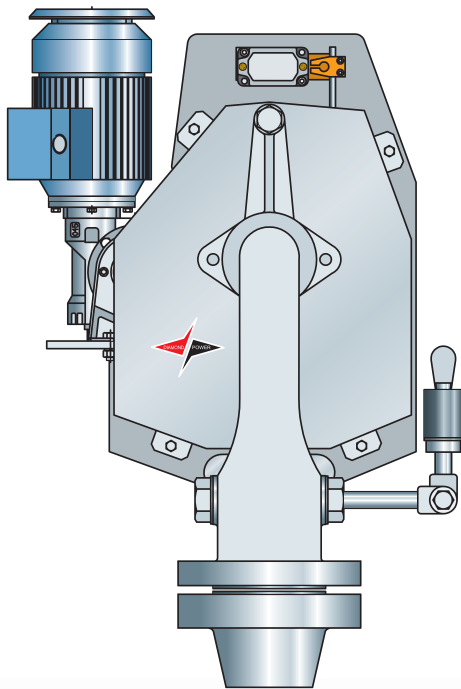
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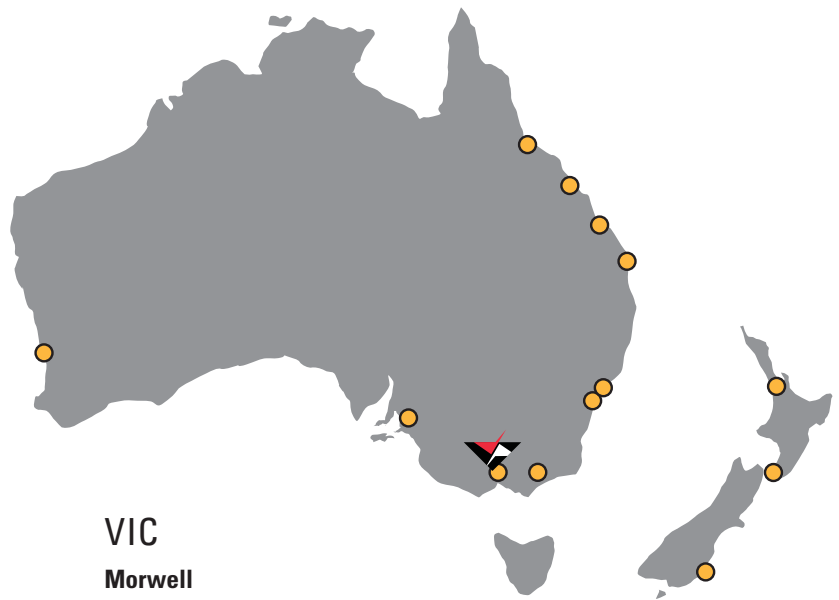
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## **Specifications**

Blowing coverage		105° to 335°
Maximum element length		6 metres
Element and element bearing materials	Gas temperatures up to 1100°C	Steel/Alloy (per application)
Head Series	Pressures up to 131 bar at 510°C	Series 40, 60 and 120 bar as per application
Approximate weights	59kg + 5kg per metre length of element	
Power supply	Electric Motor	380/415V, 50Hz
Plus pressure	Sealing and purge Air	0.5Nm <sup>3</sup> /m 10-15 mbar



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