IK-4M Retractable Sootblower

Diamond Power (Australia) Pty. Ltd.
Diamond Power

IK-4M Sootblower
Boiler Cleaning Technology

Our clients are the experts

The real authorities on sootblowers are the people who operate industrial boilers – oil heaters, waste heat and package boilers and heat exchangers. They know that only a highly efficient retractable sootblower that conserves blowing medium while delivering powerful cleaning energy can cut it in their boiler environment. That’s why, after 12 years on the market, a large percentage of this industrial market segment has come to depend on Diamond Power Specialty Company’s IK-4M for economical, reliable, effective cleaning.

Proven cleaning performance

Like all the sootblowers in the Diamond Power Specialty line, the IK-4M features the optional Progressive Helix Mechanism (PHM). The PHM creates a 47.4-degree shift in the nozzle pattern every cleaning cycle with its patented reverse rotation and indexing action. As the lance enters the unit, the blowing medium cuts a path through the deposits until the lance is fully extended. The lance tube then reverses rotation and index, so on the retraction path the IK-4M cleans surfaces not covered on insertion. In other words, cleaning is accomplished on a different path and in a different direction with closely spaced helixes. This reverse rotation and indexing enables the sootblower to peel and strip more deposits, better, and with decreased chance of tube erosion.

Cutting costs through controlled cleaning

As with all Diamond Power Specialty sootblowers, the IK-4M is designed to deliver its blowing medium in a highly efficient manner to help keep your operating costs and cleaning time down.

In addition to the effective double helix cleaning pattern, the IK-4M conserves expensive blowing medium in a number of other ways. First the IK-4M gets in and out of the area to be cleaned quicker. With a maximum travel length of 20 feet, the IK-4M posts a travel speed of 120 inches per minute. At 30 RPM, the fast rotation of the carbon steel lance tube significantly reduces dwell time and potential erosion on the tube surface. Flexibility in available blowing pressure further reduces blowing medium consumption, so the IK-4M packs up to 250 PSIG for effective cleaning.
Pressure control precision

Our externally adjustable poppet valve allows pressure control adjustment while the blower is operating. An operator simply turns an adjustment disc external to the valve. This design innovation gives you more precise pressure control adjustment during initial start up, as well as desired pressure setting with the first operation of the blower. Valve access is easier so that adjustments can be made based on cleaning performance.

Long on work, short on maintenance

Because operators shouldn’t have to think about the availability of their cleaning devices, our sootblowers are designed to work long and hard with a minimum of maintenance downtime. Rugged construction and attention to design to details make the IK-4M virtually worry free.
An enclosed, all gear driven carriage design reduces equipment stress and maintenance with low friction movement and evenly distributed loads. In addition, all shafts run on anti friction ball bearings and worm gear reduction for smoother operation to further lessen wear and maintenance.
A one horsepower motor delivers power through a square shaft to the carriage. The all gear driven carriage rotates the lance and drives the blower through a dual rack and pinion to provide consistent operation, unlike chain driven models, which are subject to chain stretch and inconsistent performance. Two important optional features for the IK-4M are protective covers for safety requirements, and the electrical controls necessary under the industry’s hazardous environment specifications.

Responsive service comes standard with every sootblower

By choosing Diamond Power Specialty Company’s IK-4M, you tap into the most comprehensive service network available for sootblower repairs and maintenance. We view service as an integral, “value added” feature that comes standard with every piece of equipment we sell. Our five point service strategy is designed to keep your boiler cleaning systems operating efficiently and cost effectively.
Strategically located service people can be quickly dispatched to dispense skilled operations, maintenance and boiler cleaning assistance.
On-site repairs bring the manufacturer to you, reducing expensive downtime.
Rebuild exchange program enhances our complete rebuilding capabilities by providing and inventory of ready to use components for immediate exchange for a customer’s worn out equipment. This program, in conjunction with our factory-trained personnel located in service centres worldwide, enables us to stand ready for comprehensive sootblower maintenance.
Field maintenance agreements are an option for additional service protection. At regular intervals, we will inspect and service all Diamond Power Specialty cleaning equipment and control systems.
PartnerShip Stocking Program is another option for additional service protection. By analyzing your past parts usage, inventory levels and forecasts needs, we carry an inventory specifically for you. We get improved parts stocking, planning and scheduling while you realise a real inventory reduction. You get the parts you need when you want them with our guarantee next day delivery of parts in the program. We both decrease our cost of doing business.

visit our website: www.halmel.com.au
Here is the retractable sootblower that offers dual economies while assuring maximum boiler cleaning efficiency.

The IK-4M is competitively priced for use in industrial applications, such as oil-fired heaters, waste heat and package boilers which demand are tractable rather than a fixed-position blower. It’s also an ideal substitute for some rotary blowers, since it offers improved cleaning efficiency at an economical cost.

Because of operating innovations built in by Diamond’s experienced design engineers, the IK-4M conserves on expensive blowing media and reduces cleaning cycle time.

From the standpoint of initial investment, on-going operating expenses, and improved cleaning efficiency, the IK-4M offers substantial cost savings. With a travel up to 6.5 metres the IK-4M also features many metric parts that are completely compatible with standard metric tools. The simplified design of this sootblower has limited the total number of parts needed, cutting replacement costs and maintenance downtime. Parts, whether metric or conventional, are readily available through the international network of Diamond Service Centres. The IK-4M’s venturi nozzles, combined with a controlled double helix nozzle pattern, deliver maximum blowing medium impact. Also, the cleaning pattern is predetermined, with a consistent cleaning path in both directions. The drive reverses rotation and “indexes”, so that the retraction path completes the cleaning of the surfaces not covered on insertion. Cleaning is accomplished on a different path and in a different direction with closely spaced helixes. This proven approach to low-cost cleaning provides for efficient use of the blowing medium while decreasing the chance of tube erosion.

The IK-4M has also been designed so that two important optional features can be added. Protective covers for “full enclosure” requirements, and the electrical controls necessary to meet industry specifications for a hazardous environment are available.

**General specifications for the IK-4M**

*The following is a suggested statement for specifying this sootblower:*

“The automatic retractable type sootblower(s) shall be Diamond Model IK-4M (or approved equal) designed for coverages up to and including 6.5 metres. The sootblower(s) shall be equipped with a single-motor driven, totally enclosed main drive carriage and dual rack and pinion drive. Main support shall be 4.5mm steel box-beam construction of sufficient depth to support lance tube in extended position. Pinion gears on the drive carriage assembly shall engage rack-gears on both sides of box beam. Blower travel shall be 2500mm per mintue, with 100mm helix. Blowing medium flow shall be controlled by a positive mechanically actuated Diamond poppet valve which has a replaceable flexible seat and self-aligning disc and is regulated by an internal micrometer type adjustment. Blowing medium flow shall not be controlled by restricting valve opening. Feed tube and lance tube shall be removable without disturbing piping to the sootblower valve. Front lance tube support rollers shall provide true-rolling contact. Lance tube material and number, size and angle of venturi nozzles shall be selected to meet the application.”
<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial blower with hazardous environment and full enclosure options.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blower Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to and including 6.5 metres</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motor Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single 0.75 kW TEFC IP55 415 volt 3 ph 50 Hz 4 Pole motor with Class F insulation (special electric motor or air motor optional)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable for indoor or outdoor service (hazardous environment optional)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blowing medium valve (steam or air)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diamond Power poppet valve with removable, flexible seat and disc and integral adjustment pressure control. Valve internals have Stellite trim</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feed tube material</th>
</tr>
</thead>
<tbody>
<tr>
<td>304 Stainless Steel, ground and polished OD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lance tube material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon steel standard (low alloy chromium molybdenum steel and high alloy stainless steel available)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blowing medium valve actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive direct mechanical actuation providing full opening and closing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rack and pinion translation, using chrome plated square shaft</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nozzles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balanced venturi type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carriage and reducer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally enclosed, all-gear design, lubricated for life</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Travel speed and helix</th>
</tr>
</thead>
<tbody>
<tr>
<td>2500mm per minute travel speed with 100mm helix</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Front support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanently lubricated ball bearing dual rollers, with true-rolling contact with lance tube</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emergency retract mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationary at rear of blower</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Handling of blower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearly symmetrical design with only 40mm offset from centre eliminates need for right and left hand designs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mounting arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigid mounting (swivel mounting optional), negative pressure wallbox (positive pressure optional)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Push buttons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blower mounted push buttons. Optional except on hazardous environment blowers</td>
</tr>
</tbody>
</table>
Leak resistant, externally adjustable poppet valve has a flexible seat and disc design that prevents thermal distortion during header warm-up; makes blowing pressure control adjustment easier and more stable.

Stainless steel feed tube resists corrosion, while polished surface extends packing life.

Totally enclosed single drive motor assures reliable lance tube translation and rotation every operation.

Worm-type gear reducer contributes to smoother operation to help lessen wear and maintenance.
Sturdy, box-type steel beam encloses drive mechanism, motor and other moving parts for protection.

Carbon steel lance tube is standard. Alloy lance tube available for larger sizes. Size and material are selected to meet blower applications.

Front support assembly for rolling contact of lance tube, as well as proper support and alignment.

High efficiency venturi nozzles are arranged to eliminate lance whip, and develop maximum nozzle horsepower for optimum use of cleaning energy.

Optional Progressive Helix Mechanism greatly boosts level of cleaning by changing the nozzle pattern with cleaning cycle.

Heavy-duty square shaft designed to assure high reliability.

Dual rack and pinion drive equalize driving torques and provide optimum lance stability throughout forward and reverse travel.

Totally enclosed, all-gear driven carriage eliminates chains and is lubricated for life under normal service conditions.

High efficiency venturi nozzles are arranged to eliminate lance whip, and develop maximum nozzle horsepower for optimum use of cleaning energy.

Visit our website: www.halmel.com.au
NSW
Wyong - Head Office
10 Hereford Street, Berkeley Vale NSW 2261
PO Box 5010 Chittaway NSW 2261
Tel: +61 (0)2 4389 6191
Fax: +61 (0)2 4389 6199
Email: info@hmagroup.com.au

Sydney
13 Sirius Road, Lane Cove NSW 2066
Tel: +61 (0)2 9428 7300
Fax: +61 (0)2 9428 7399
Email: sydney@hmagroup.com.au

QLD
Brisbane
3rd Floor, 49 Sherwood Road, Toowong QLD 4066
PO Box 106, Toowong QLD 4066
Tel: +61 (0)7 3859 6800
Fax: +61 (0)7 3859 6869
Email: brisbane@hmagroup.com.au

Mackay
22-30 Southgate Drive,
Southgate Industrial Park, Paget QLD 4740
PO Box 6221, Mackay Mail Centre QLD 4741
Tel: +61 (0)7 4998 6900
Fax: +61 (0)7 4998 6999
Email: mackay@hmagroup.com.au

Gladstone
9 Neil Street, Gladstone QLD 4680
PO Box 1731, Gladstone QLD 4680
Tel: +61 (0)7 4978 3128
Fax: +61 (0)7 4978 3127
Email: gladstone@hmagroup.com.au

Townsville
PO Box 347, Aitkenvale QLD 4814
Tel: +61 (0)7 4728 6300
Fax: +61 (0)7 4728 6388
Mobile: +61 (0)417 996 694
Email: townsville@hmagroup.com.au

WA
Perth
119 Dowd Street, Welshpool WA 6106
Tel: +61 (0)8 6254 9500
Fax: +61 (0)8 6254 9599
Email: perth@hmagroup.com.au

VIC
Morwell
8 Jones Road, Morwell VIC 3840
PO Box 647, Morwell VIC 3840
Tel: +61 (0)3 5136 8400
Fax: +61 (0)3 5136 8499
Email: morwell@hmagroup.com.au

Melbourne
PO Box 204, Narre Warren VIC 3805
Mobile: +61 (0)429 176 688
Email: melbourne@hmagroup.com.au

SA
Adelaide
PO Box 1280, North Haven SA 5018
Tel: +61 (0)8 8341 8067
Fax: +61 (0)8 8341 8067
Mobile: +61 (0)437 460 032
Email: adelaide@hmagroup.com.au

NEW ZEALAND
Hamilton
Unit 14, 9 Karewa Place, Pukete, Hamilton NZ 3200
PO Box 10102, Te Rapa, Hamilton NZ 3241
Tel: +64 (0)7 847 1880
Fax: +64 (0)7 847 1883
Email: hamilton@hmagroup.co.nz

Wellington
Tel: +64 (0)7 847 1880
Fax: +64 (0)7 847 1883
Mobile: +64 272 612 744
Email: wellington@hmagroup.co.nz

Dunedin
Mobile: +64 (0)21 511 6694
Fax: +64 (0)7 847 1883
Email: dunedin@hmagroup.co.nz

Committed People 创新型解决方案
Halley & Mellowes Australasia Group of Companies