Multistage Centrifugal Blowers/Exhausters

CAST SERIES
For more than 100 years, two names were synonymous with multistage centrifugal blowers: Hoffman and Lamson. Today, those legacies are joined under the Gardner Denver name, creating the most comprehensive multistage centrifugal blower offering in the world – the Gardner Denver Multistage Centrifugal brand.

Anchored in tradition, this new Gardner Denver Multistage Centrifugal line-up continues a century long commitment to providing customers with innovative blower design, a comprehensive product line, quality manufacturing and unparalleled responsiveness to customer requirements and service.

Today, as the largest manufacturer of blowers/exhausters in the world, our number one priority continues to be developing long-term relationships with our customers. We are continually improving delivery and response times, while setting the highest performance standards in the industry.

Never in the history of multistage centrifugals has there been a company as capable of delivering great value, exceptional quality and quick turnaround on orders. So the next time you’re evaluating options for multistage centrifugal blowers, call a Gardner Denver professional sales representative to assist you with your application challenges and requirements. Our factory trained representatives are conveniently located throughout the United States and around the world.
Blowers and Exhausters That Serve A Wide Range Of Applications

The range of applications for Gardner Denver® Centrifugal products is ever-expanding and is firmly illustrated with over 200,000 machines in operation. In the water treatment market, air is provided to water and wastewater aeration systems and air scouring/filter backwashing. Gardner Denver blowers can be specified for coarse/fine bubble diffuser systems, reactor batch supplemental air, digester gas boosters, grit channels and sludge digestion applications. In the industrial market, our blowers provide air or gas for sulfur recovery, combustion air, process gas boosting, coal mine venting, fluidized bed combustion systems, vapor and gas extraction, composting, sludge incineration and printing systems, to name a few. Gardner Denver Engineered Vacuum Systems are used to pick up, convey and capture a myriad of materials ranging from aluminum granules to corn flakes. The experienced Gardner Denver team, backed by years of research and development, provides effective, affordable solutions for a variety of application needs.
Superior Quality in Design,

Durable, reliable and efficient, Gardner Denver® centrifugal blowers/exhausters represent the highest quality workmanship in the industry using the finest materials and state-of-the-art machining tools available today. Our dedication to design and quality assures you that the Gardner Denver blower you select is the best in the industry.
Materials and Workmanship

Gardner Denver blowers and exhausters are tested in our state-of-the-art test facility in Peachtree City, Georgia. Using the most sophisticated testing equipment available in the industry, we test units up to 3,000 horsepower in accordance with the latest edition of the ASME test code PTC-10, ISO and all other applicable international standards. Units are brought into this two-story laboratory and connected to a specialized power unit and precision monitoring equipment. The blower/exhauster is then tested and evaluated for performance characteristics, noise level and vibration. Overall performance data is captured in real time for performance curve evaluation and documentation. We frequently host performance testing for customers and inspectors from all over the world.

Gardner Denver Performance Testing Lab

**MULTIPLE BAFFLE RINGS**
Many models feature our patented Multiple Baffle Rings (MBR™) which help turn airflow smoothly into the eye of the impeller, dramatically reducing inlet passage losses. MBR combined with the two-dimensional impeller design increases blower efficiency and pressure/vacuum capability.

**BALANCE PISTON**
A balance piston is located at the outlet end of the rotating impeller assembly to compensate for the axial force of the impellers on the inlet bearing. This greatly increases bearing life for longer, trouble-free operation.

**MULTISTAGE SHROUDED IMPELLERS**
Two-dimensional shrouded cast aluminum impellers are balanced individually and keyed onto the shaft. The complete assembly is then balanced to achieve smooth operation with lowest vibration levels in the industry. Rotor assemblies are designed to operate well below first critical speeds for added reliability.

**FLEXIBLE COUPLING**
Blowers/exhausters connect directly to the power source with a precision aligned flexible coupling. This optimizes power transfer and minimizes bearing loads for longer life.

**CAST HOUSING**
Blower housings are precision machined from high-grade cast iron. Smaller models are cast aluminum. The intermediate blower sections are assembled together using high strength steel tie rods. The blower and its driver are mounted together on a single steel baseplate. This assures long lasting performance and durability.

**LABYRINTH SEAL**
Non-contact, non-wearing labyrinth air seals are standard. This no-maintenance seal is used in most air and some gas applications (purge option available).

**CARBON RING SEAL**
For special air and gas applications requiring superior sealing, optional carbon ring seals are available with purge option.
Models to 41,000 cfm
Gardner Denver offers the most complete range of multistage centrifugal blower/exhauster models to meet your needs. Each base model presents its own unique performance characteristics and design features that are illustrated in the chart below and the air maps to the right.

**CF Select™ Precision Sizing Service**
To help customers select the optimal blower or exhauster for their operation, Gardner Denver engineers use CF Select, a computerized sizing service. CF Select software can create an infinite number of performance curves for pressure, efficiency, temperature and power consumption. Based on the specific gas mixture, inlet conditions, flow and pressure/vacuum requirements, CF Select selects the most appropriate model, impeller design, operating speeds or throttling options.

### Gardner Denver Performance Specifications

<table>
<thead>
<tr>
<th>BLOWER/EXHAUSTER CAPACITY</th>
<th>Minimum Flow (cfm)</th>
<th>Maximum Flow (cfm)</th>
<th>Minimum Flow (m³/h)</th>
<th>Maximum Flow (m³/h)</th>
<th>Maximum Pressure (psig)</th>
<th>Maximum Pressure (bar)</th>
<th>Maximum Vacuum (&quot;Hg)</th>
<th>Maximum Vacuum (mm Hg)</th>
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**DESIGN BENEFITS**
- Single Baffle Ring
- Multiple Baffle Rings (MBR)
- Balance Piston
- Labyrinth Seal
- Carbon Ring Seal

**CONNECTIONS**
- Outlet (125# ANSI): 2 1/2", 3", 5", 5", 5", 6", 6", 6", 8", 8", 8"

### Gardner Denver Performance Specifications (continued)

<table>
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<tr>
<th>BLOWER/EXHAUSTER CAPACITY</th>
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**DESIGN BENEFITS**
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- Carbon Ring Seal

**CONNECTIONS**

Air map data is representative of maximum RPM design for each model with standard conditions at 60 Hz. Contact your Gardner Denver Representative for job specific blower sizing. *Maximum stages at 50 Hz. ** 2 7/8" as cast O.D. (standard), 2 1/2" male N.P.T. or 2 1/2" threaded ANSI flange. Standard ○ Optional
With 22 models to choose from and the ability to specify a variety of manufacturing options, you can be assured that the blower or exhauster you order will deliver the performance you expect. In addition to the base models available, customers can choose from a variety of design options such as special coatings, alternative component materials, oil or grease lubrication, special seals, drive couplings and power sources. The Gardner Denver® blower/exhauster you specify is then manufactured according to your unique application and requirements.

Choose From Multiple Drive Options
Gardner Denver blowers and exhausters may be direct driven, V-belt driven or gearbox driven with an electric motor. Alternative drivers include steam turbines, diesel engines, gasoline engines and liquid petroleum or methane gas engines. Also available is the Gardner Denver ESP™ (Energy Saving Performance) variable frequency drive system. The ESP system automatically adjusts airflow output to match the actual airflow demand. The blower/exhauster power requirement adjusts automatically resulting in energy savings. Your Gardner Denver representative can work with you to determine the best drive option and configuration to match your application.
Gardner Denver® Monitoring and Control Systems

Whether you’re responsible for a wastewater treatment plant, the smelting operation at a foundry or the precise material handling needs of a manufacturing facility, Gardner Denver offers control systems to properly operate your blowers and exhausters and protect them from conditions that may lead to catastrophic mechanical failure, costly downtime or voiding your manufacturer’s warranty. At Gardner Denver we engineer a variety of control systems and monitors capable of providing you with the protection and information you need to keep your operation running at peak efficiency. Our control systems can monitor a variety of conditions that include motor current, motor temperature, blower vibration, bearing temperature, bearing oil level, discharge air temperature, inlet vacuum and outlet pressure.

Genuine Gardner Denver Factory Service and Parts

- Factory Trained Service Professionals
- On-site, On-Demand Service
- System Optimization
- Blower Remanufacturing
- Training, Troubleshooting and Consulting
- Warranty Renewal Programs
- Genuine GD Quality Replacement Parts
- Highest Quality Lubricants
  - AEON® Centrifugal Lubricating Grease
  - AEON CF-46 Centrifugal Blower Oil

Accessories

- Engines
- Motors
- Turbines
- Variable Frequency Drives
- Butterfly Valves
- Check Valves
- Filters
- Silencers
- Expansion Joints
- Gauges
- SmartMeter
- Blower Control Panels

For additional information, contact your local representative or

Gardner Denver Blower Division
100 Gardner Park, Peachtree City, GA 30269
Toll Free 800-543-7736
Phone 770-632-5000 • Fax 770-486-5530
E-mail: blowersmktg@gardnerdenver.com
Visit our web site: www.gardnerdenver.com

For Parts Information, Contact:
Toll Free 800-982-3009
Gardner Denver Blower Division Customer Service
Phone 770-632-5000 • Fax 770-486-5530