



Rotary Blowers and Packages

BB - HB Series

CBS - HBS Series

Flow Capacities to: 5650 cfm

Pressures up to 15 psig, vacuum to 15" Hg

kaeser.com

Built-for-a-lifetime™ Products

A family tradition of quality

KAESER has been designing and manufacturing superior industrial machinery since 1919. With a century of manufacturing experience, we pride ourselves on upholding our traditions of quality and craftsmanship. Our reputation for reliability, energy efficiency, and excellent service has helped us grow into a global leader in blower and compressed air technology.

Integrated engineering

KAESER blower packages offer the best possible combination of quality construction, reliable performance, and ease of ownership. Our standard package design features a full scope of supply that is unmatched in the industry. A complete package design reduces time spent specifying and purchasing blower system components, and after the sale there is only one supplier to call for technical or other support on any part of the blower package.

Low life cycle costs

In addition to reducing engineering and installation costs, our blowers are very energy efficient. They are also designed for easy maintenance, and the few maintenance points are all accessible through one cabinet panel. Of course, the rugged reliability of KAESER blowers means fewer lifetime repairs. In fact, KAESER is so confident in the benefits of our design that we offer an unbeatable warranty on our blower blocks sold as part of our standard packages.

Easy installation

Our complete packages are designed with a unique component layout to minimize floor space and allow side-by-side placement. KAESER's design combined with a full six-sided enclosure (standard), results in a blower package with the least noise and vibration. No additional soundproofing is needed. Further, all integrated models arrive pre-assembled, offering major time and labor savings during installation.

Superior connectivity

KAESER blowers feature the integrated SIGMA CONTROL® 2 to monitor and control the blower package. Versatile communication modules enable easy connection with master controllers, like SIGMA AIR MANAGER® 4.0 (SAM) or other centralized control systems for enhanced reliability, energy optimization, and plant automation.

Today, KAESER employs nearly 7000 people and our growing distribution network provides reliable and sustainable compressed air system solutions in 100 nations throughout the world.



State-of-the-art manufacturing

KAESER blowers are manufactured in our extensive facility in Gera, Germany. State-of-the-art CNC lathes, milling machines, and grinding machines produce our high quality timing gears, proprietary rotors, housings, and other components to precise tolerances.

Continuous research and development keep KAESER products at the forefront of technology and give our blowers a reputation for efficient operation, easy maintenance, and unparalleled reliability. Highly skilled technicians assemble each unit according to our ISO 9001/14001 procedures. The finished products must meet strict quality standards and pass through a rigorous inspection and testing program before shipping to our customers and stocking centers around the world.

Gera Plant

Covering an area of almost 15 acres, our blower plant in Gera, Germany produces KAESER's wide range of rotary blowers. This location features state-of-the-art technology for KAESER's engineering, R&D, production, and testing facilities.



Precision milling and grinding

Rotor profiles and critical components are precision machined and then finished on a CNC grinder.



Continuous quality control

All critical components such as rotors and casings are measured and verified using the latest in 3D computer technology and coordinate measuring machines.



Advanced machining centers

State-of-the-art machining centers in climate controlled rooms produce the blower components.



Environmentally friendly powder coating system

Sound attenuating enclosure panels are given their super-fine finish by a powder coating process where epoxy finish is baked on at 350°F. The corrosion and scratch resistant finish meets the highest quality standards.



Meticulous blower assembly

Highly trained specialists assemble each blower and complete package according to our strict ISO 9001 standards.



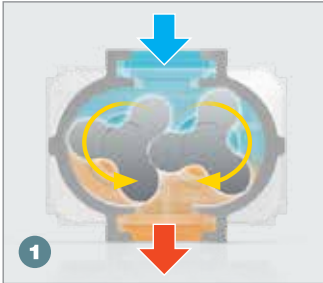
Comprehensive unit testing

Each and every blower undergoes a run-test under maximum load conditions to verify mechanical integrity as well as a slip-test to verify performance. The test data is recorded in the machine documentation. Every package is shipped in set-up condition, fluid-filled, and ready for operation.

How it works

KAESER rotary lobe blowers

The images depict cross sections of the flow chamber in KAESER's rotary lobe blower block during the pressure build-up process.



Intake



Pressure build-up



Air expelled



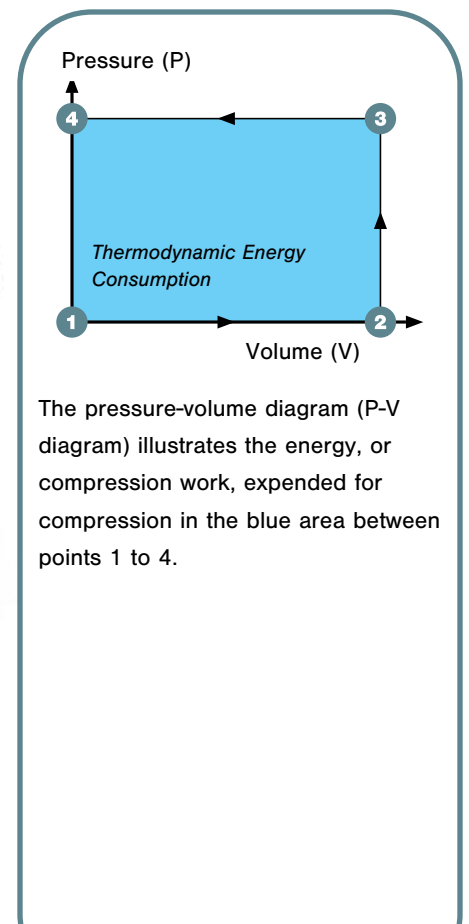
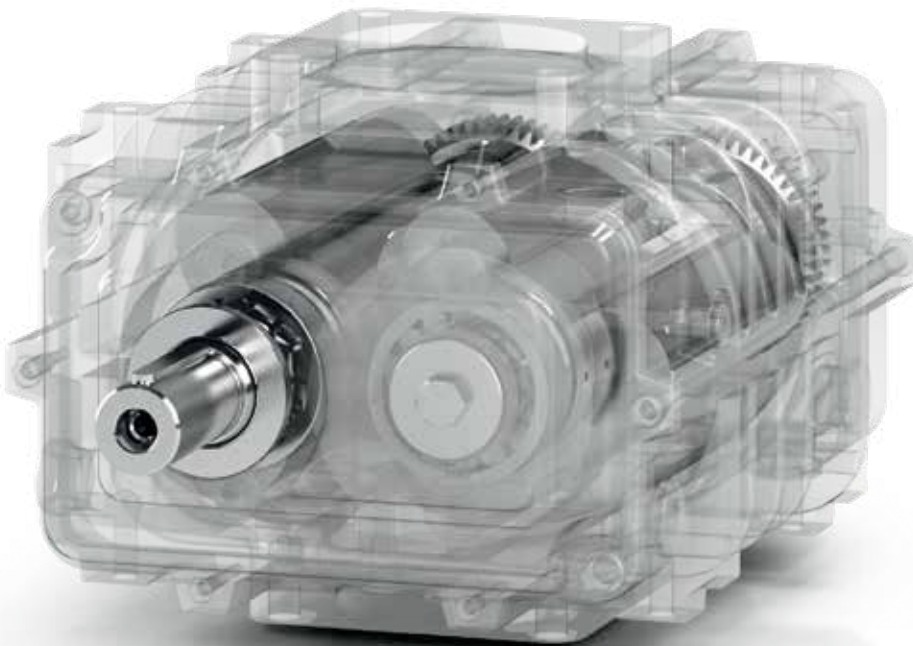
Flow chamber completely evacuated

Oil-free, isochoric compression process

As the intake air passes through the rotary blower's flow chamber, its volume remains constant (isochoric). Actual compression takes place outside the blower block with the accumulation of the air mass taking place in the subsequent process. This "adaptive" compression always produces only the amount of pressure needed. This makes rotary blowers particularly suitable for applications with a relatively high proportion of idling (e.g. pneumatic conveying) and/or heavily fluctuating pressure.

The numbers correspond to the points in the below pressure-volume diagram.

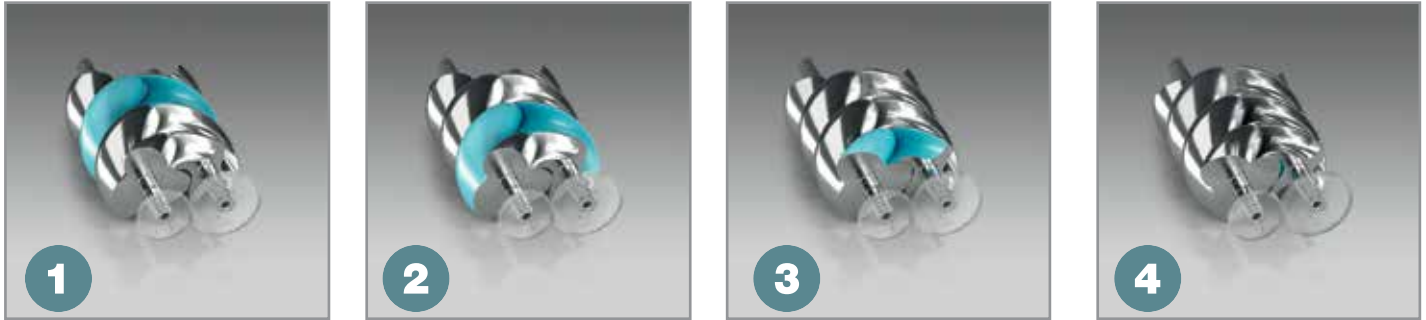
1. Intake of atmospheric air (left rotor).
2. Air is conveyed towards the pressure side; compression begins at the 120° rotation angle due to prior influx of already compressed air.
3. Compression in the flow chamber ceases; discharge begins.
4. Conveyed air mass is discharged into the process.



The pressure-volume diagram (P-V diagram) illustrates the energy, or compression work, expended for compression in the blue area between points 1 to 4.

KAESER screw blowers

Shown here is the pressure build-up process for KAESER's screw blower block. The air volume is enclosed in the screw chamber.

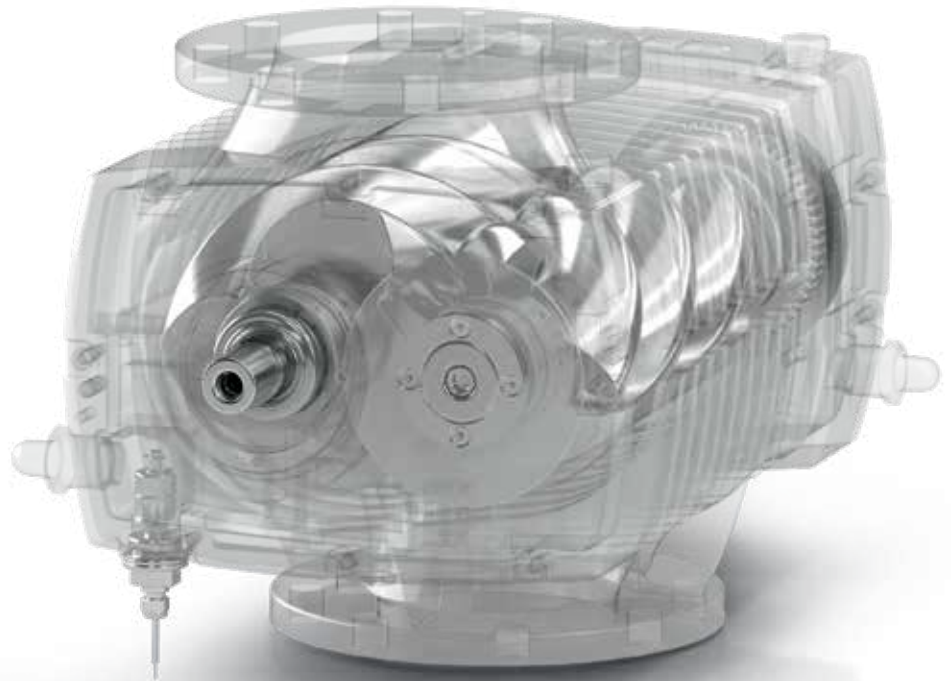
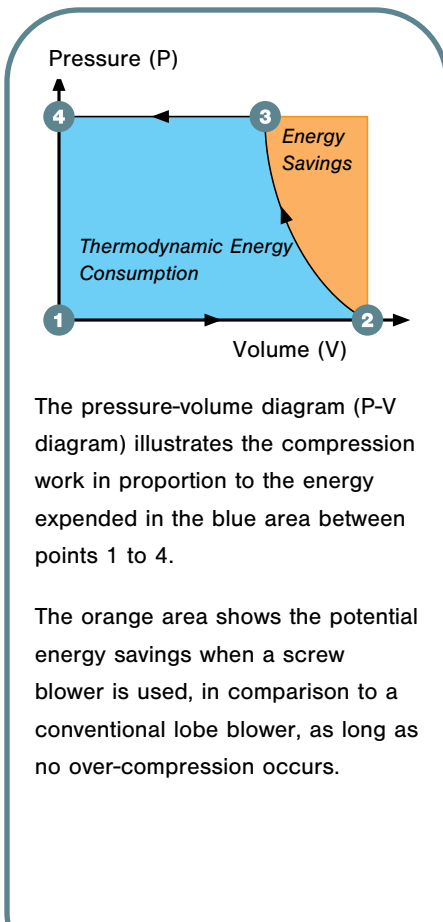


Oil-free isentropic compression process

As it is being conveyed through the screw compression block, the entropy of the intake air pressure remains virtually constant (isentropic). Compression takes place in the block, where the air volume is continually reduced until it reaches the discharge and is pushed out against the pressure. The lower compression effort required to achieve the same air volume results in lower energy consumption. Screw blowers are ideally suited for applications with a near constant pressure demand and which require long running periods, such as in filter bed aeration, flotation, etc.

The numbers correspond to the points in the below pressure-volume diagram.

1. Intake and capture of atmospheric air.
2. Conveying toward pressure side to outlet.
3. Pressure increase through volume reduction.
4. Compressed air discharged.



Advanced blower design



Rugged reliability

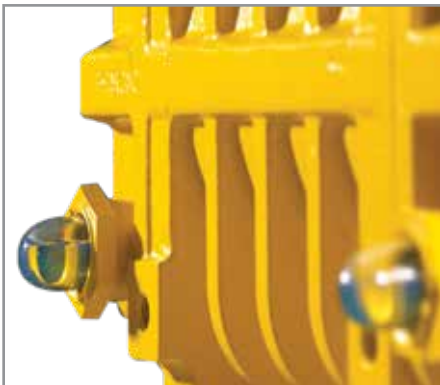
All KAESER OMEGA lobe blowers share a durable design that includes rigid casings, cast bearing supports, and one-piece rotors. The substantial casing construction and proprietary port design ensure smooth, quiet operation at all speeds. The precision machined, case-hardened, spur-type timing gears and oversized cylindrical roller bearings provide years of reliable service. Piston-ring seals ensure optimum internal sealing and oil-free air.



One-piece rotors and sealing strips

One-piece, ductile iron rotors are balanced to the closest tolerances for smooth, efficient operation at all speeds and pressures. Our over-sized shaft diameters and rigid construction minimize shaft deflection. Specially designed rotor sealing strips reduce sensitivity to contamination and intermittent thermal overloading.

OMEGA lobe blowers can be mounted horizontally or vertically to suit the specific application. They are also available as complete blower packages.



Durable block

The distinctive ribbed housing ensures strength, rigidity, and aids in proper cooling. Integral bearing supports and head plates are machined into the castings to provide better strength and to maintain alignment in the most demanding applications. Our unique port design ensures smooth, quiet operation at all speeds.



Straight-cut gears

Spur-type, case-hardened, precision ground timing gears minimize vibration and mechanical noise and ensure optimal rotor timing for improved efficiency. The straight cut gears do not subject the rotors to axial loads, making it possible to use longer lasting roller bearings.



Generously sized bearings

Heavy duty cylindrical bearings absorb the continuously changing radial gas-forces exerted onto the cylinders and last up to ten times longer than axial thrust bearings under the same load conditions.

Oil slingers on both gear and drive ends of the blower provide lubrication to the bearings, gears, and input shaft seal to ensure long service life.

Complete OMEGA[®] lobe blower packages

BBC, CBC, DBC, EBC, FBC, and HBC series



BBC - HBC Series

OMEGA lobe blowers are also available as fully packaged units, designed to minimize space requirements and reduce installation costs. They are complete with a premium efficiency TEFC motor, silencers, and a gauge cluster. The package arrives ready for installation.

All routine maintenance points are accessible from the front while all utility connections are located in the back. All pipe connections and cooling air apertures are located at the rear of the unit, which makes side-by-side installation possible.



Innovative cabinet design

KAESER OMEGA blower packages are available fully enclosed in powder coated and insulated steel cabinets. They all feature positive ventilation with dedicated fans to remove latent heat even when the main motor is off – making KAESER blower packages more reliable in a wide range of climates and uses. The process air circuit is separate from the ventilating air for improved efficiency.



High efficiency motors

Premium efficiency TEFC/IP-55 motors are conservatively sized to ensure reliable operation and overcome changes in system pressure.



V-belt drive with guard

V-belt drive provides flexible pressure/flow combinations and dependable performance. KAESER packages are standard with our automatic v-belt tensioner. Our fully-enclosed belt guard offers complete protection and is easily removed for convenient maintenance access.



Inlet silencer with integral filter

Our silencers are designed for our blower noise frequencies. Absorptive material reduces pulsation noise and the reusable polyester filter protects the blower from harmful particulates and minimizes pressure drop.



Instrumentation

Standard instrumentation includes pressure/vacuum gauges, discharge temperature gauge with shut-down switch, and inlet filter differential monitoring or vacuum filter switch.



Pre-mounted valves

Check plate and relief valves are standard. Unloaded start valve is optional. All come pre-mounted to save on installation costs.

Complete SIGMA[®] screw blower packages

CBS, DBS, EBS, FBS, GBS, and HBS series



Blower block

KAESER's advanced blower design offers the best combination of low vibration, energy efficiency, and low noise operation. The ribbed design of the single-piece casing body ensures optimal heat dissipation and torsional rigidity.



SIGMA PROFILE[®]

Our high-efficiency screw blower air ends feature the power-saving SIGMA PROFILE design. They are precision machined and optimized in size and profile to ensure maximum air delivery while keeping power consumption to an absolute minimum. Superior specific power is maintained across a wide control range.



Durable bearings

Four heavy-duty cylindrical roller bearings absorb the continuously changing radial forces and are rated to ensure long air end service life. The rollers are encased in oil resistant cages for optimum lubrication at all speeds.



Dependable seals

The proven sliding ring seal on the blower airoend's drive shaft is maintenance-free and provides dependable sealing, even in hot, dusty environments.



High efficiency motors

Fixed speed units feature IE 4 Super premium efficiency TEFC/IP-55 motors. These are conservatively sized to ensure reliable operation and overcome changes in system operation.



Synchronous reluctance motors

Most KAESER screw blowers with SFC control feature synchronous reluctance motors. These deliver superior efficiency at lower speeds without compromising cooling. Constructed from electrical steel, they have no copper, aluminum or rare earth metals.



Continuous system monitoring

Oil level and temperature sensors are integrated into the blower airoend. The oil chamber is designed to ensure accurate readings even during machine operation when the oil is circulating.



Comprehensive sensor options

Options include a wide range of sensors and switches for monitoring pressure, temperature, speed, oil level, and filters to ensure dependable operation and enable remote monitoring of critical operating parameters.



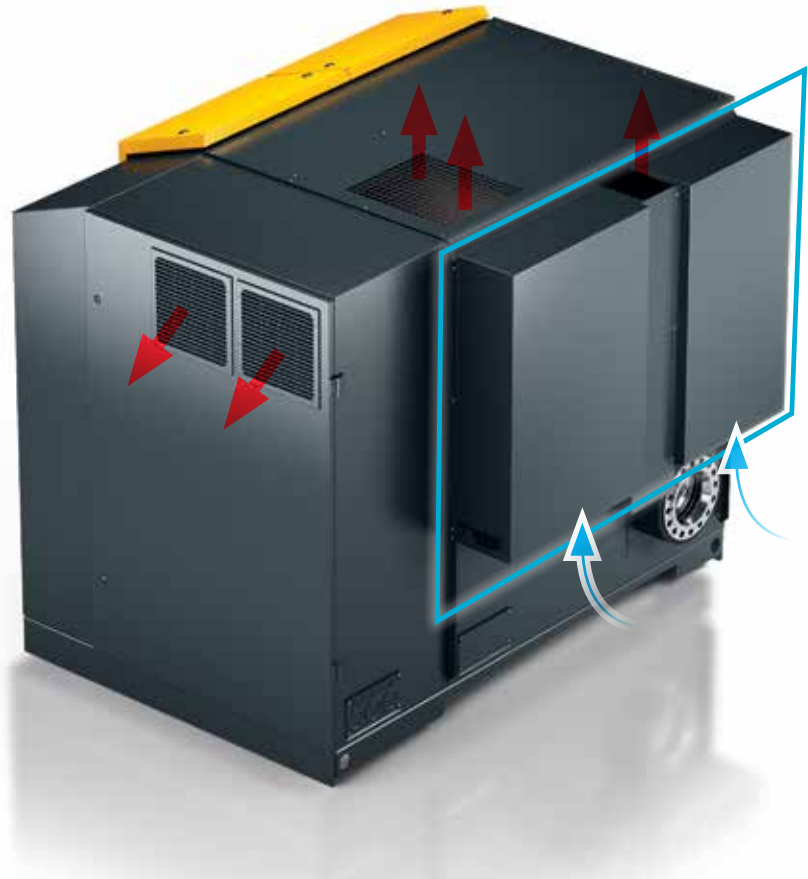
Inlet/Outlet silencers

Inlet and outlet silencers come standard. Washable and reusable polyester inlet filter protects the blower from damaging particulates. Filter media has low flow resistance to minimize pressure drop and the filter differential pressure is displayed on the SIGMA CONTROL 2.

Package cooling and enclosure design

Parallel cooling concept

KAESER's enclosed package design separates airflows for the blower, motor, and electrical cabinet. This ensures air is not preheated before entering the blower, which keeps the overall efficiency higher. It also ensures the coolest possible air is being channeled across the drive motor. A dedicated fan ensures that regardless of the operating speed of the package, cooling air is flowing through the enclosure.



Extremely low sound and vibration

All enclosed packages feature a standard enclosure that is built for exceptional noise reduction and easy access to maintenance points. Heavy gauge construction and powder coat finish make it suitable for both indoor and outdoor installation. Heavy duty dampers absorb vibrations before they reach the base of the unit or sound enclosure. They also reduce stress on plumbing and wiring.



Shown here is KAESER's HBPi large frame blower package

Service-friendly design

KAESER has been a leader in creating fully packaged blowers that are reliable, durable, energy efficient, and simple to maintain. Our blower packages set the standard in the blower industry. In addition to a full scope of supply, these models feature an open package design to simplify routine maintenance. When you consider all the benefits of owning a Built for a lifetime™ machine, it's clear that a KAESER integrated blower package will save you money, year after year.



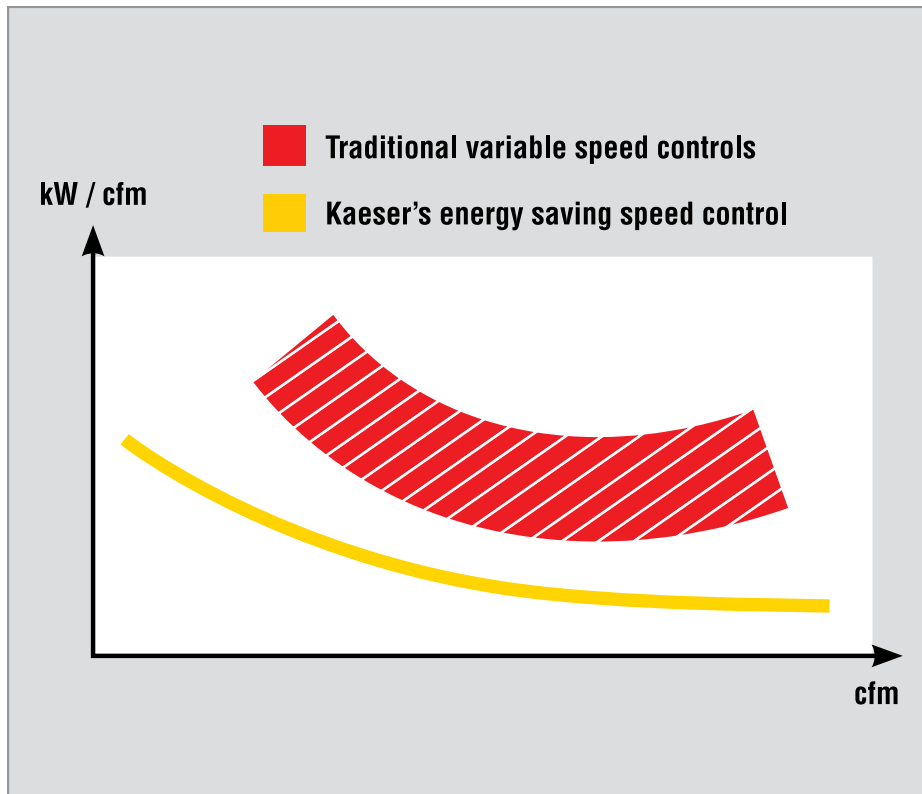
Easy service features:

- A single front panel easily removes for complete access to all major components
- Inlet filter requires no tools for servicing
- Drain valves with gasketed caps simplify fluid changes
- High visibility sight glasses allow the fluid levels to be checked at a glance from the front of the package
- V-belt guard is easily removed, but provides full protection
- Automatic belt tensioner maintains drive efficiency and eliminates frequent adjustments. Tension status is easy to see at a glance and adjustments only take a few minutes.
- Easy-to-read instrumentation
- Easily accessible motor grease fitting



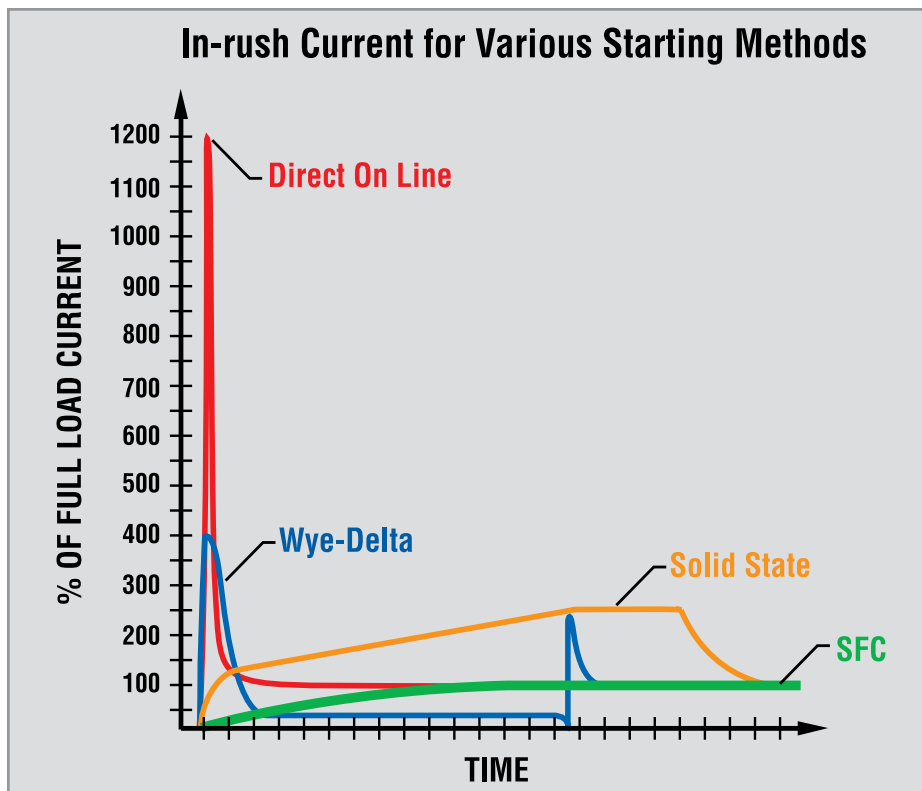
Integrated packages: STC, OFC, and SFC

Superior efficiency options



Wide control range

KAESER matches the blower, drive motor, and variable speed controller for optimal performance, which provides better specific performance over a wider range of flows. This ensures maximum efficiency in multi-unit operation while always meeting fluctuating demand.



KAESER Start Control

SIGMA START CONTROL (STC) provides reduced current starting (wye-delta) for fixed speed units. The package is also equipped with premium contactors, overload protection, and phase loss monitoring.

Communications capabilities

Intelligent control and protection with SIGMA CONTROL[®] 2



To protect your investment and ensure the most efficient operation possible, we control all SIGMA screw blowers and fully integrated OMEGA tri-lobe blower packages with our SIGMA CONTROL[®] 2. This intelligent controller comes standard with multiple pre-programmed control profiles so you can select the one that best fits your application.

SIGMA CONTROL 2 monitors a wide range of operating parameters, shuts the unit down to prevent damage, and signals if immediate service is required. It also tracks preventive maintenance intervals and provides notice when PMs are due. An RFID sensor provides secure access and simplifies managing

maintenance intervals.

An SD card slot with included SD card enables fast, easy software updates and offers long-term data storage for analyzing energy consumption and blower operation.

SIGMA CONTROL 2 has superior communications capabilities. An Ethernet port and built-in web-server enable remote viewing. ModBus, Ethernet/IP, Profinet[®], Profibus[®], DeviceNet[™], and other industrial communications interfaces are also available as plug in options for seamless integration into plant control/monitoring systems.

Advanced energy management with SIGMA AIR MANAGER® 4.0



KAESER's SIGMA AIR MANAGER 4.0 (SAM) can control up to 16 OMEGA and SIGMA blowers and only turns them on when needed to meet air demand. This improves system stability, reduces energy use, and equalizes blower run time.

SAM 4.0's advanced communications capabilities makes connecting with plant SCADA systems easier than ever. Using the desired system flow rate calculated by the SCADA, SAM 4.0 selects the most efficient combination of units to produce the required flow, keeping energy costs as low as possible.

SAM 4.0 also provides blower status messages and alarms to help minimize downtime. Using SAM 4.0's built-in KAESER Connect capabilities, you can remotely monitor operating status, maintenance schedules, and energy usage—on any networked device.

With SAM 4.0's robust data storage hardware and analysis software you can record and review your system's function and energy usage in easy-to-read charts. This continuous system data acquisition helps you analyze plant operations and optimize energy efficiency.



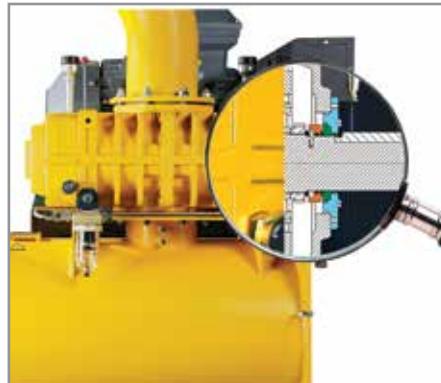
Lobe blowers for special applications

KAESER offers a variety of blower designs for your special application. Consult factory for sizing and availability.



Rotary vacuum pump (WVC Series) Flows to 2800 cfm and Ultimate vacuum (0.002 Torr)

For producing deep vacuum in combination with a backing pump, the WVC significantly increases pump suction capacity. The use of a frequency converter enables simultaneous activation of rotary vacuum and backing pumps at atmospheric pressure, thereby significantly reducing pumping time.



Gas tight blowers (N Series) Flows to 5500 cfm Pressures up to 15 psig

For nitrogen and other gas conveying applications, KAESER's OMEGA[®] N series blower is available up to 5500 cfm. Our single-envelope design can be configured into special packages with an input shaft sliding-ring seal.



Steam blowers (B Series) Flows to 3780 lbs./hr.

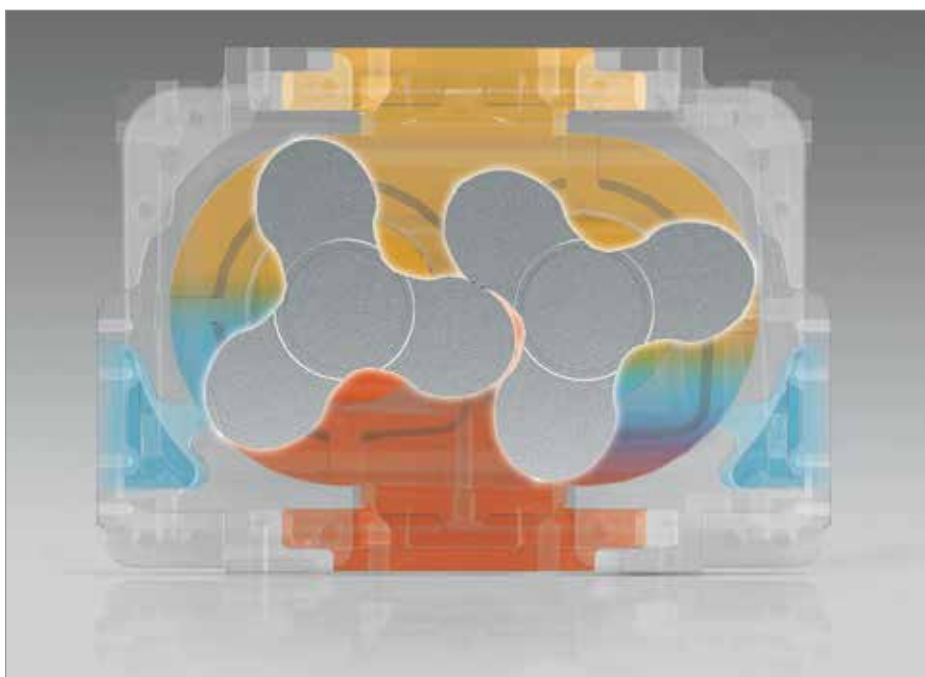
KAESER's OMEGA B series blowers are specifically designed for compression of water vapor with vacuum operation in combination with water injection cooling. They feature Ni-Resist 3 casings, G-X8 CrNi stainless steel rotors, and Teflon[®] shaft seals with stainless steel shaft sleeves.

Vacuum blowers (PV Series) Flows to 4300 cfm at 27" Hg-V

For use in vacuum ranges up to 27" Hg vacuum. KAESER's PV blowers have a unique design with pre-inlet injection cooling that is resistant to contamination in the air stream.

How it works

Low pressure air is trapped between the rotors and the casing at the inlet of the blower (yellow). As the rotors turn toward the discharge (red), ambient air enters through the pre-inlet cooling ports (blue). This air provides the cooling needed for continuous process vacuums to 27" Hg in a single stage with no need for contacting seals or liquid injection.



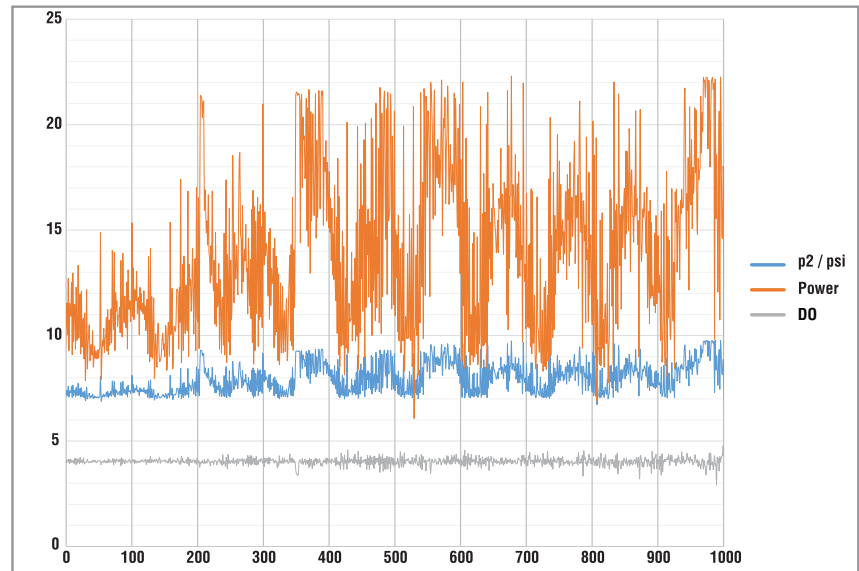
Optimize System Design with Air Demand Analysis

Industrial and municipal operators can significantly benefit from a data-based approach to selecting and sizing blowers. Our Air Demand Analysis (ADA) technique has been successfully used for many years in thousands of compressed air systems to greatly reduce power consumption while ensuring consistent flows and stable pressure. The same process applies to blowers.

To accurately evaluate a blower system's performance, ADA measures the actual flow, pressure, and power consumption over a set period. This provides a baseline that shows which units are running, when they are running, and how efficient the entire system is in terms of specific performance (kW/100 cfm). Using our Kaeser Energy Saving System (KESS) software, we simulate

different scenarios with different mixes of blowers to determine the ideal system considering performance, reliability, and costs. With aeration representing 60% of the power consumed at a wastewater

treatment plant, for example, the potential operating benefits of an ADA are too big to ignore.



Example of ADA showing pressure, power, and dissolved oxygen during an operating cycle.

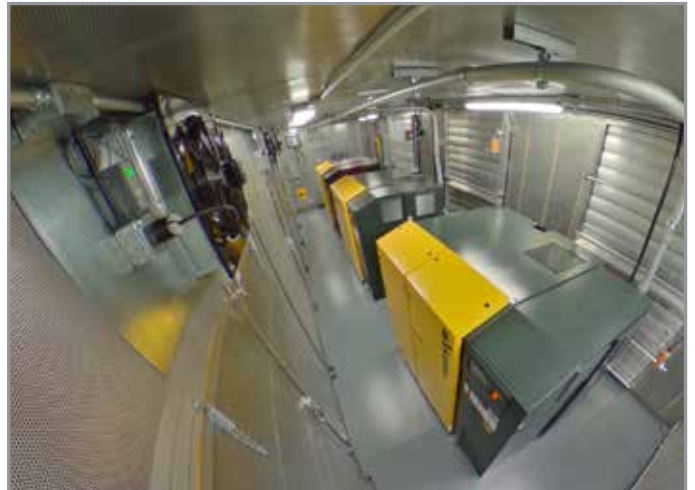


Custom engineered solutions



Space, environmental, or time constraints may require a different installation approach. Renovating or building new buildings for blowers can be time consuming and expensive. KAESER's Custom Engineered Solutions offer a cost effective alternative. We design a reliable and energy efficient blower station in a pre-assembled structure that only needs one electrical and one process connection.

KAESER's custom engineered blower solutions are built to specification for the most demanding and challenging installations. These turnkey systems are designed for exceptional reliability, simple maintenance, and superior energy efficiency no matter what the installation limitations may be. They eliminate space, weather, and accessibility constraints and can significantly reduce construction, installation, and operating costs.



The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, KAESER COMPRESSORS is represented throughout the world by a comprehensive network of branches, subsidiary companies and factory trained partners.

With innovative products and services, KAESER COMPRESSORS' experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Every KAESER customer benefits from the decades of knowledge and experience gained from hundreds of thousands of installations worldwide and over ten thousand formal compressed air system audits.

These advantages, coupled with KAESER's worldwide service organization, ensure that our compressed air products and systems deliver superior performance with maximum uptime.



KAESER
COMPRESSORS®

Built for a lifetime.

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