KAESER COMPRESSORS®

Rotary lobe blowers

COMPACT BB, CB, DB, EB, FB, HB Series
With the world-renowned **OMEGA PROFILE**
Delivery volume 1.5 to 93 m³/min – Pressure up to 1000 mbar
Vacuum to 500 mbar

www.kaeser.com

COMPACT Series

Easy to install, COMPACT blowers from KAESER are not only designed with minimal operating and maintenance costs in mind, but also to provide maximum reliability. Furthermore, blowers equipped with an integrated controller and star-delta starter, or frequency converter (for flexible speed control), significantly reduce the amount of work required for planning, installation, certification, documentation and commissioning.

Integrated engineering

COMPACT rotary lobe blower packages are delivered complete with sound enclosure and an optionally integrated frequency converter, or star-delta starter, as power switching equipment. All electrical equipment is dimensioned according to required performance data and is wired and programmed for EMC compatibility in accordance with applicable regulations.

Connectivity and safety

Using various sensors, the optional internal SIGMA CONTROL 2 blower controller monitors and controls all relevant parameters to provide reliable and efficient operation at all times. Available remote monitoring and control further contributes to optimised blower availability.
A variety of communications modules ensures seamless connectivity of SIGMA CONTROL 2-equipped blower systems to master controllers such as the SIGMA AIR MANAGER 4.0 and/or other centralised control systems.

Durability and efficiency

As with all KAESER products, COMPACT series blowers are designed and constructed to deliver maximum efficiency, reliability and durability. Together with their minimal maintenance and service requirement, these versatile blowers assure lowest possible life cycle costs.

OMEGA

Image, left to right: BB 52 C, BB 69 C, CB 131 C, DB 166 C Vacuum, DB 166 C, FB 791 C, EB 421 C, HB 950 C

Components for blower stations

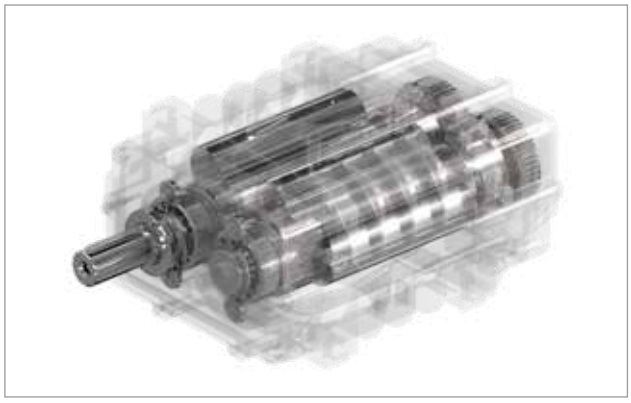
No matter whether for blower air or compressed air, the same rule applies: the air system should be considered as a whole. No one understands this better than KAESER KOMPRESSOREN, which is why we offer specifically tailored air supply solutions for every need. Systems and equipment include blower stations, master control systems, air treatment and piping that work seamlessly together to ensure maximum efficiency and reliability.

Industrial PC technology

The SIGMA CONTROL 2 enables efficient blower monitoring and control. The large display and RFID reader provide straightforward communication and maximum security. Multiple interfaces offer exceptional flexibility, whilst the SD card slot makes updates quick and easy.

International Organization for Standardization
ISO
1217:2009

COMPACT Series – Meticulous design and construction

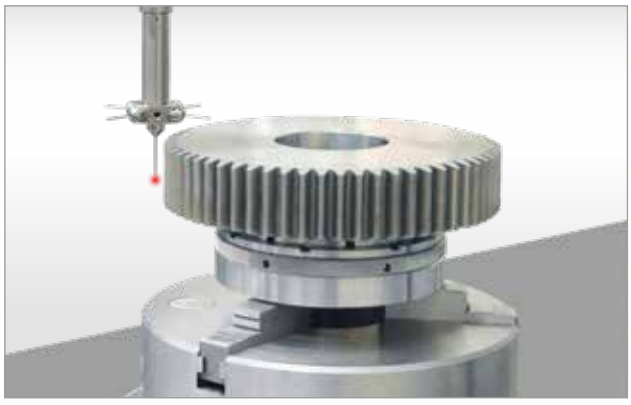


Robust OMEGA blower block

For pressures up to 1000 mbar(g), block discharge temperatures up to 160 °C, wide control range with frequency-controlled operation, Q 2.5 rotor balancing for quieter operation, extended service life and minimal maintenance requirement.

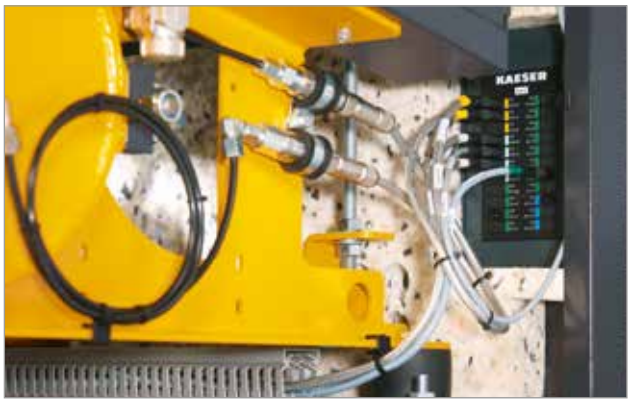
Generously-dimensioned bearings

Heavy-duty cylinder roller bearings absorb 100% of the continuously changing radial gas forces. As a result, they avoid the springing effect of self-aligning bearings and last up to ten times longer with the same load.



Precision manufacture

Featuring precision straight-toothed timing gears (quality 5f 21, minimal backlash), KAESER blower blocks achieve high specific delivery rates thanks to smaller flank clearances. Since the straight-cut gearing is not subject to continuously changing radial gas-forces, heavy-duty cylinder roller bearings can be used.



Comprehensive sensors

A wide range of optional sensors and switches for monitoring pressure, temperature, speed, oil level and filters ensures dependable blower operation and enables remote monitoring and visualisation of operational status.

COMPACT Series
Exceptional versatility

COMPACT rotary lobe blowers are impressively versatile. If a robust machine without sound enclosure is required, the unit with block, intake and discharge silencer is the best choice. If additional sound insulation is required however, then the highly-effective sound enclosure has your needs covered, whilst the “high-end” version is available as a complete system with electrical control cabinet (star-delta or FC operation) and an internal controller. This not only saves unnecessary installation costs, but also enhances reliability.

Image: CB131C

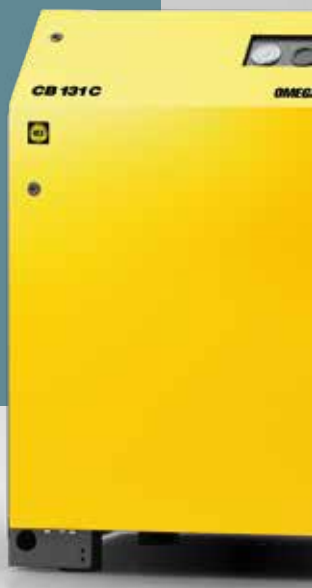


Image: CB131C

Clear display instrumentation

Blowers equipped with a sound enclosure, but without integrated power switching equipment, feature a pressure display and a filter maintenance indicator (pressure operation), or filter differential pressure switch (vacuum operation), as well as an optional remote thermometer for block discharge temperature with an adjustable limit switch.

SIGMA CONTROL 2

The SIGMA CONTROL 2 ensures efficient blower control and system monitoring. The large display and RFID reader enable simple communication and maximum security. Multiple interfaces provide additional flexibility for data bus connection. The SD card slot makes updates quick and easy.

Image: FB791C

Side-by-side installation

The package layout of rotary lobe blowers has been designed to allow all maintenance work to be performed from the front of the unit. This means that these compact blowers can easily be installed side-by-side for maximum space savings.

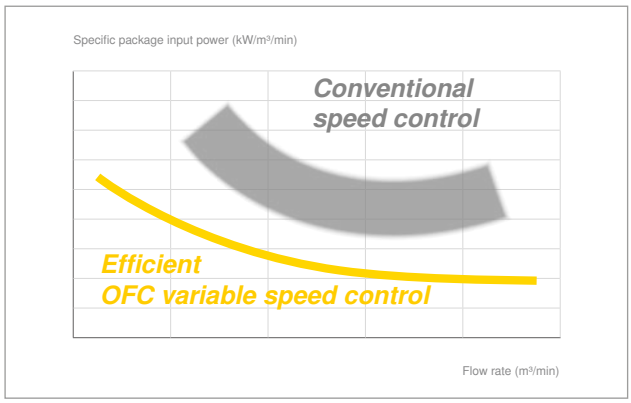
Even quieter

Highly-effective sound damping not only minimises machine noise via the sound enclosure; special absorption silencers also help significantly to reduce fluid-borne noise transmitted through the piping – a characteristic commonly associated with speed-controlled blowers.

COMPACT Series
Variable speed control at its best

KAESER's COMPACT series turnkey rotary lobe blowers are equipped with OMEGA PROFILE rotors to provide unbeatable reliability and energy efficiency. Delivered ready for connection, complete with all sensors, star-delta starter (or frequency converter) and CE/EMC labelling, they significantly reduce the work and costs required for planning, installation, certification, documentation and commissioning.

To ensure that the projected savings are actually achieved during operation, KAESER quotes effective overall power consumption figures, as well as the usable flow rate, in accordance with the stringent tolerances of ISO 1217, Annexe C or E (as applicable).



Wide control range

Optimised matching of the blower block, drive motor and frequency converter allows a wide control range to ensure maximum efficiency in multi-unit operation without undershooting air demand or delivering cost-intensive excess air supply.

Always in control

No matter whether the blower system is equipped with star-delta starter or variable speed control, users can choose from various operating modes. This is particularly relevant if multiple units are to be incorporated into a blower station.

Image: FB791C

High-quality control cabinet

The control cabinet houses only precisely matched electrical and electronic components from renowned German manufacturers. When it comes to electromagnetic compatibility (EMC), all cables are safely shielded where required (for machines with FC or star-delta starter).

Complete system EMC certified

The electromagnetic compatibility (EMC) of components and of the complete machine has been tested and certified in accordance with all applicable regulations.

COMPACT Series

The versatile vacuum generation solution

In their vacuum operation version, COMPACT series blowers feature an elastic connection on the integrated intake filter silencer for connection to the vacuum line, where a non-return flap can also be installed. The safety valve layout between the filter and blower block offers protection against short-term overloading, for example in the event of a blocked intake line.

Image, left to right: DB 166 C with optional sound enclosure, DB 166 C

Connection options

With good ventilation, the compressed air can be exhausted diffusely into the room to atmosphere, or via an elastic connection into a discharge line in order to feed the warm air out of the room.

Auxiliary exhaust silencer

If exceptionally low noise levels are required, an additional exhaust silencer can be integrated in which the air is repeatedly deflected past the insulating material.

Milking with oil-free compressor technology

Image: DB 166 C Vacuum

OILFREE.AIR

Speed control

Using variable speed control, the OFC frequency converter adjusts flow rate to match the actual air demand of the process application. Everything is delivered ready for immediate operation, since all programming and parametrisation is carried out at the factory.

Separator tank

Specifically developed for use with milking technology vacuum pumps, the separator tank provides outstanding cleaning performance due to its centrifugal separation action and combination of fluid and particulate filters. A manual drain and automatic protection features, fitted as standard, are available should the fluid level become too high.

COMPACT Series
Special versions

Efficient, quiet, durable and versatile – whether as a gas-tight blower for a recirculation system with nitrogen, or as a blower with ATEX certification for potentially explosive ambient conditions, KAESER blower packages are renowned worldwide for their dependable performance, no matter what the application may be. It is no wonder that they are so highly regarded by operators everywhere.

Image: DB 236 C

ATEX

What is ATEX?

ATEX is derived from the French abbreviation for “ATmosphere EXplosible”. The ATEX directive applies to all equipment and protective systems intended for use in potentially hazardous and explosive atmospheres.

OMEGA PN: Nitrogen conveying

For pneumatic conveying of bulk materials in a nitrogen atmosphere, leakages of any kind – including from the rotary lobe blower – must be kept to an absolute minimum. PN series blocks are therefore available with a wear-free sliding ring seal on the drive shaft rotary transmission lead-through.

Image: DB 236 C

Aquaculture – OEM versions

Blowers are required in aquaculture for various applications, be it for pneumatic conveying of fish feed in offshore fish farms, or for biofilter aeration in land-based fish farms. Consequently, COMPACT blowers are available in versions that can be precisely tailored to meet the needs of the specific application and equipment manufacturer. Private labelling is also possible.

Outdoor installation

COMPACT blowers are often installed outdoors at wastewater treatment facilities. Stainless steel rainproof covers and premium-quality, powder-coated enclosures ensure effective protection against the elements.

Equipment

Blower block

Robust and durable, energy-efficient OMEGA PROFILE rotary lobe rotors, wide control range.

Drive motor

Proprietary brand, high-efficiency IE3 motor, three PTC thermistors as standard; variable speed drive models co-ordinated with OFC frequency converter. Service is made quick and reliable thanks to easy access central lubrication points for motors with regreasable motor bearings.

Sound insulation

The system's blower and motor cooling air is drawn in from the cooler ambient surroundings outside of the sound enclosure. Effective sound-proofing provided by thick-walled lining with dense foam and damping louvres over intake and exhaust openings. Wide-band absorption silencer minimises process air pulsation downstream from the blower block. This results in low residual pulsation and therefore minimal sound transfer to downstream piping.

Power transmission

Highly effective automatic belt-tensioning system for consistent transmission performance, V-belt safety grille, belt-tensioning mechanism also acts as a motor lifting device when changing the belt.

Controller (optional)

SIGMA CONTROL 2 with blower-specific software, large display and RFID reader ensure effective communication and enhanced security. Outstanding flexibility and easy connectivity to centralised control systems via multiple interfaces; SD card reader for quick and easy updates, as well as for storing of operational data.

ACA aftercooler as accessory

High-efficiency ACA aftercoolers developed by KAESER specifically for operation with rotary lobe blowers. They reduce blower air temperature to a maximum of 10 °C above ambient with minimal pressure loss and require no cooling water. Electrical connection can be implemented directly in the blower control cabinet.

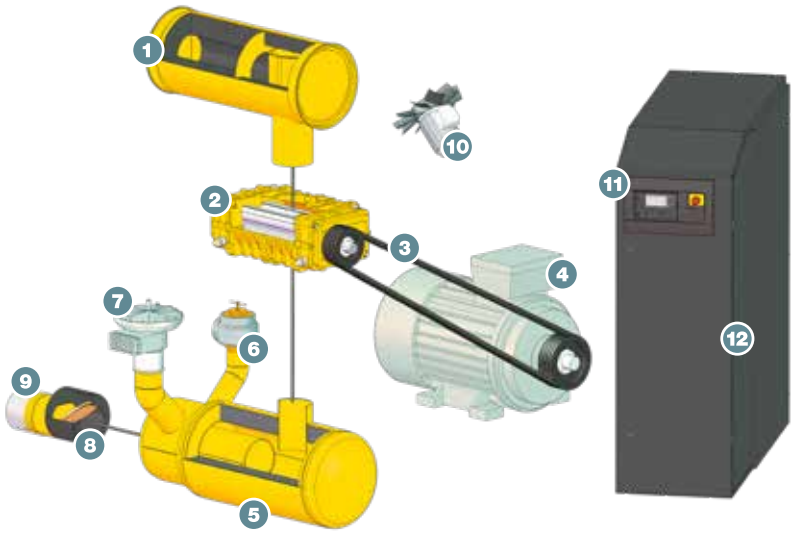
Technical specifications

Model	Pressure		Vacuum		Max. rated motor power	Pipe connection	Dimensions with sound enclosure, without control cabinet **) W x D x H	Max. weight
	Max. pressure differential	Max. delivery volume *)	Max. pressure differential	Max. intake capacity *)				
	mbar (g)	m³/min	mbar (vac)	m³/min	kW	DN	mm	kg
BB 52 C	1000	4.7	500	4.7	7.5	50	800 x 890 x 1120	210
BB 69 C	1000	5.9	500	5.9	11	65	780 x 960 x 1200	325
BB 89 C	1000	8.2	500	8.3	15			331
CB 111 C	800	8.8	400	8.9	18.5	80	990 x 1150 x 1290	443
CB 131 C	1000	12.3	500	12.4	30			428
DB 166 C	1000	15.6	500	15.7	37	100	1110 x 1160 x 1300	632
DB 236 C	1000	21.1	500	22.3	45			682
EB 291 C	1000	28.1	500	28.8	75	150	1420 x 1600 x 1700	1261
EB 421 C	1000	40.1	500	40.4	75			1306
FB 441 C	1000	41.3	500	41.6	90	200	1620 x 1920 x 1920	1960
FB 621 C	1000	58.5	500	58.9	132			2375
FB 791 C	800	71.3	450	71.8	110	250	1620 x 1980 x 2100	2247
HB 950 C	1000	93.1	500	91.7	200	250	1830 x 2200 x 2130	4285

*) Performance specifications as per ISO 1217 Annexe C for STC version, Annexe E for OFC version
**) BB 52 C and HB 950 C available only without control cabinet

Design

(1) Intake silencer with filter
(2) Blower block
(3) V-belt
(4) IE3 – Premium Efficiency Motor
(5) Discharge silencer
(6) Blow-off valve
(7) Unloaded-start valve (optional)
(8) Non-return flap (optional)
(9) Compensator
(10) Fan sound enclosure (optional)
(11) Controller system (optional)
(12) Control cabinet (optional)



The world is our home

As one of the world's largest manufacturers of compressors, blowers and compressed air systems, KAESER KOMPRESSOREN is represented throughout the world by a comprehensive network of branches, subsidiaries and authorised distribution partners in over 140 countries.

By offering innovative, efficient and reliable products and services, KAESER KOMPRESSOREN's experienced consultants and engineers work in close partnership with customers to enhance their competitive edge and to develop progressive system concepts that continuously push the boundaries of performance and technology. Moreover, decades of knowledge and expertise from this industry-leading systems provider are made available to each and every customer via the KAESER group's advanced global IT network.

These advantages, coupled with KAESER's worldwide service organisation, ensure that every product operates at peak performance at all times, whilst providing maximum availability.

LGA InterCert
Certified
QM/EM System
DIN EN ISO 9001:2015/
14001:2015

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