



# Screw Blowers

## CBS, DBS, EBS, FBS, and HBS Series

With the world-renowned Sigma Profile™

Capacities from: 190 to 5650 cfm

Pressures from: 4.4 to 15 psig

**[kaeser.com](http://kaeser.com)**

# CBS, DBS, EBS, FBS, and HBS Series

## Blower efficiency, redefined.

*The rotors in Kaeser's CBS, DBS, EBS, FBS, and HBS series screw blowers are descended from the world-renowned Sigma Profile™ and have been designed to meet the specialized needs associated with blower applications. Just like their compressor counterparts, Kaeser's screw blowers deliver more air and more savings. Together, the blower airoend and the premium quality mechanical and electrical components create a powerful, energy-efficient turnkey blower system with a cutting edge design.*

## Efficient operation

Kaeser screw blowers use up to 35 percent less energy than conventional rotary blowers and also achieve significant energy savings compared to low pressure compressors. The combination of a blower airoend with highly efficient Sigma Profile rotors, flow-optimized components, efficient power transmission, and premium efficiency drive motors ensures exceptional performance, guaranteed by Kaeser in accordance with the stringent tolerances of ISO 1217.

## Long-term dependability

Renowned throughout the world for their quality design, components, and manufacturing, Kaeser products provide long-term machine and process availability you can count on. Quality features include durable rotor bearings, dependable power transmission, conservatively sized drive motors, vibration-free sound enclosures with effective cooling air flow, Sigma Control 2™ integrated controller for efficient and dependable operation, and much more.



## Cool and quiet

Reducing fluid-borne noise (i.e. pulsations caused by the compressed process air conveyed in the connected pipework) is a critical feature. Kaeser screw blowers balance the best possible dampening of structure and fluid-borne noise with optimized cooling of the blower airend, drive motor, and intake air.

## Air at the press of a button

Delivered as user-friendly, turnkey systems, Kaeser screw blowers simply need to be placed in position, connected to the air distribution network and the electrical supply, and you're ready to go. The time consuming processes of oil filling, drive belt installation, motor adjustment, frequency converter procurement, programming, cabling in accordance to UL regulations, drawing circuit diagrams, and obtaining certifications are a thing of the past.

There's no doubt about it: complete, certified machines from a single source save time and money while delivering many years of dependable operation.

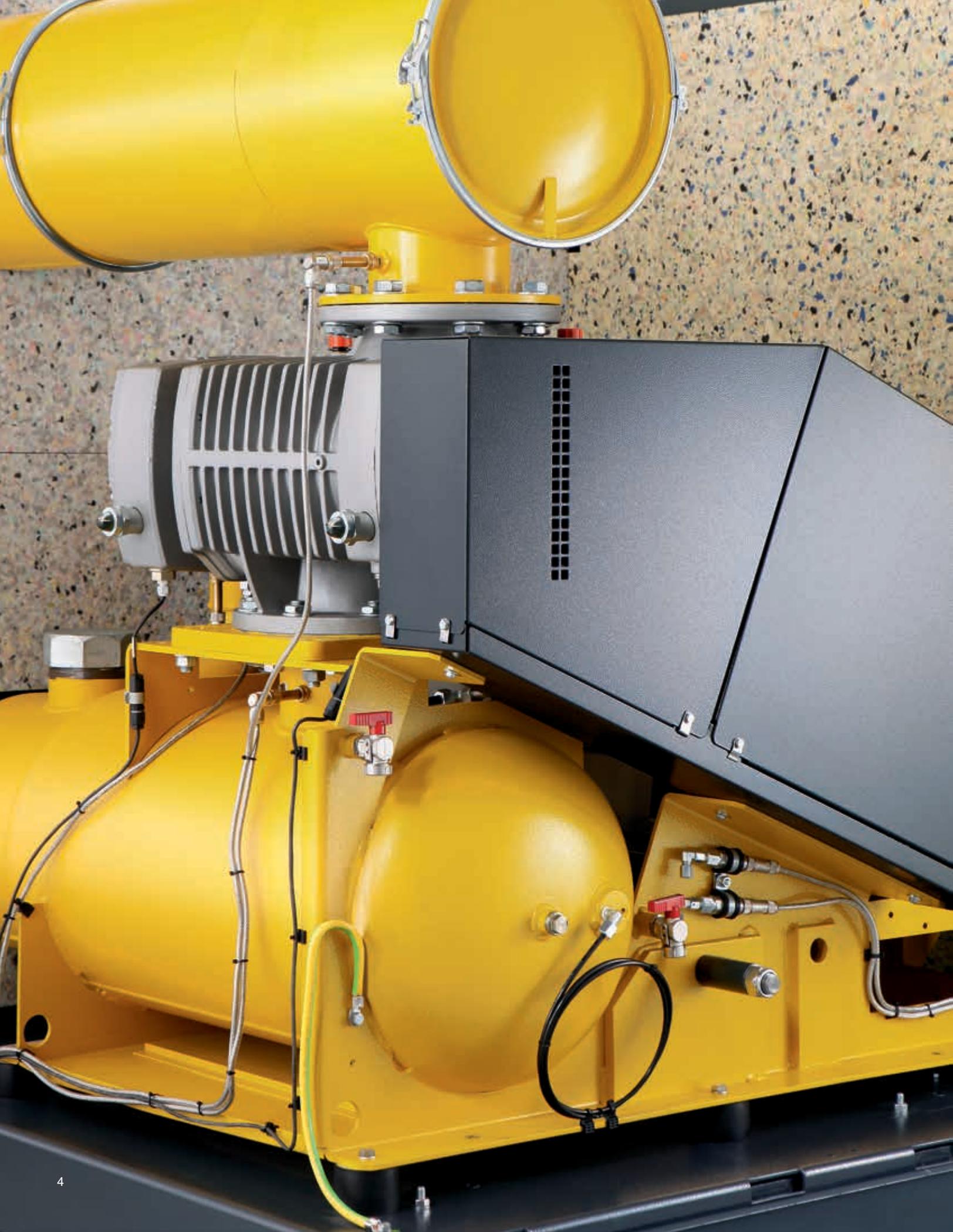
## Maximum efficiency: IE3 motors

Users can enjoy the benefits that these premium efficiency motors have to offer by choosing Kaeser screw blowers.

## Guaranteed performance specifications

To ensure the projected savings during actual operation, Kaeser provides you with the effective overall power consumption data, as well as the usable flow rate, in accordance with ISO 1217, Appendix C or E, as applicable.





# Pure efficiency with the Sigma Profile™

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

Developed by Kaeser in the early 1970's, the company's proprietary Sigma Profile rotor technology revolutionized energy efficiency for the rotary screw compressor user. Further refined in the Kaeser Research and Development Centers in Germany, this high-efficiency compressor technology is now also available for the blower user.



### Blower airend with Sigma Profile

Kaeser's high efficiency blower airends combine a wide control range with near constant specific power. Equipped with energy-efficient Sigma Profile rotors, they ensure maximum air delivery and keep power consumption to an absolute minimum.



### Dependable seals

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



### Durable bearings

Four robust cylindrical roller bearings absorb the continuously changing radial forces and are rated to ensure long screw blower airend service life. The rollers are encased in high-tech cages for optimum lubrication at all speeds.



### Continuous system monitoring

Sensors for oil level and temperature monitoring are integrated into the blower airend. The oil chamber is designed to ensure this functionality even during machine operation when the oil level is fluctuating.

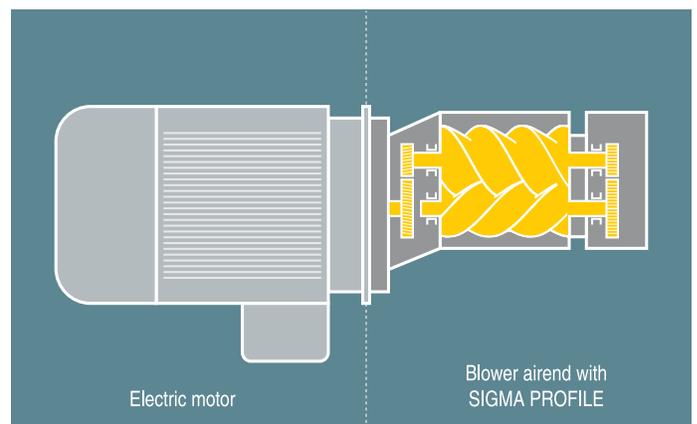
# Direct drive

## CBS and DBS Series



In CBS and DBS series blowers, power is transferred from the motor to the blower airend via an integrated gear drive. Following detailed testing in Kaeser's Research and Development Centers, this was found to be the most effective transmission solution for the speeds in this power size and machine class with regards to efficiency, dependability, and durability.

The transmission ratio can be changed using various gear sets so that the motor remains within the optimum frequency range of the SFC frequency control at all times, or with fixed speed operation the flow rate can be matched to suit actual demand. Highly durable and wear-free, this power transmission system operates at near 100 percent transmission efficiency and enables using standard electrical drive motors.

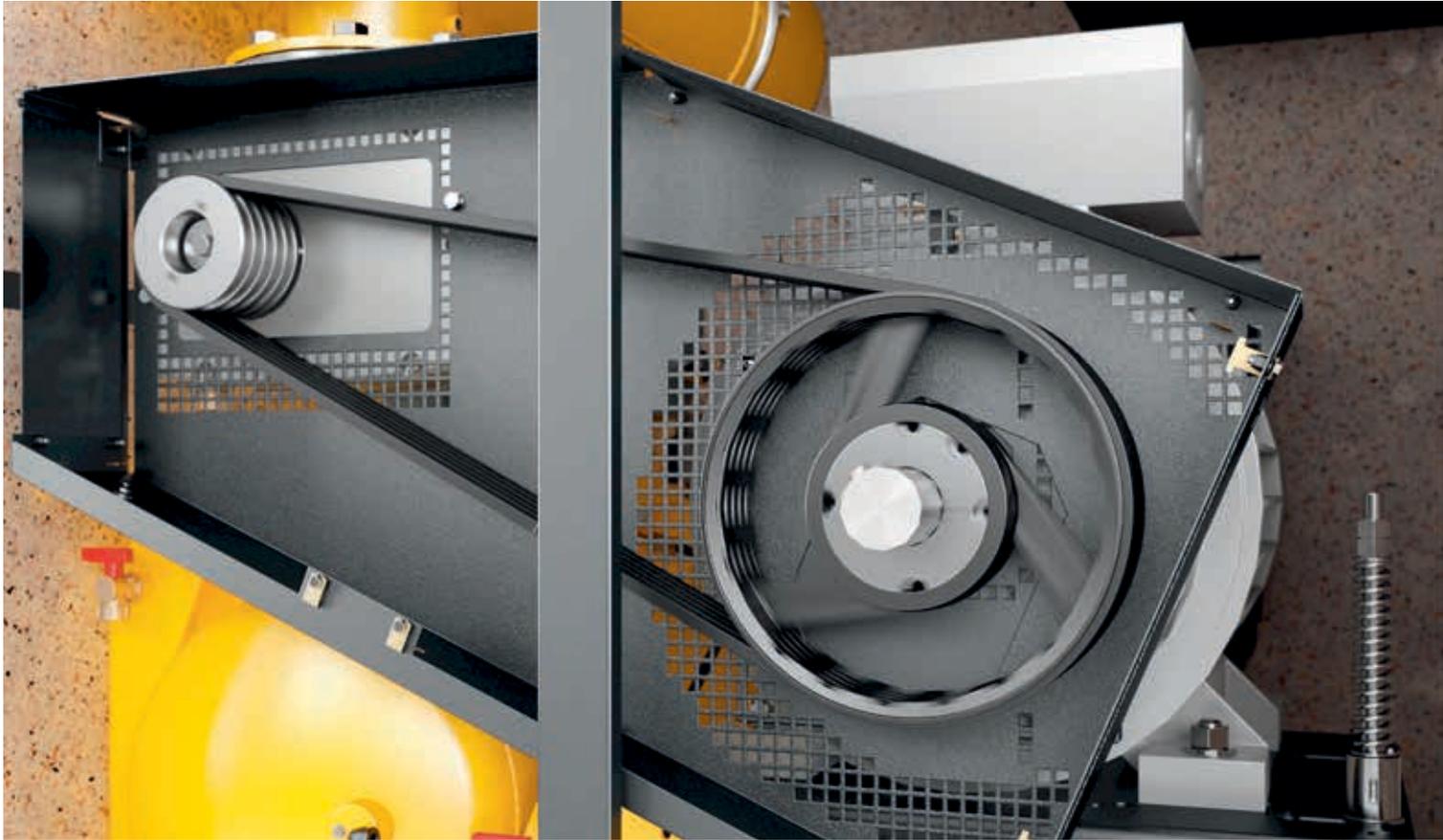


### Sigma B blower airend

With its high degree of efficiency and reliability, this airend does not require auxiliary equipment such as an oil cooler.

# Belt drive

## EBS and FBS Series



### Automatic tensioning and tension indicator

The pivoting motor base and tensioning spring ensure precision belt tensioning regardless of motor weight to provide optimum transmission efficiency.

Kaeser screw blowers with V-belt drive provide outstanding efficiency and reliability. This power transmission has been refined and proven reliable over decades of experience in compressor design and engineering.

The automatic tensioning device ensures that the V-belt drive provides the best possible degree of transmission efficiency at all times throughout the screw blower's service life, keeping maintenance costs low.

The solid V-belt guard protects operating personnel and allows effective re-lubrication with even grease distribution in the motor bearings—which is possible only during operation.

The belt guard's clever "wind tunnel" design reduces temperature and consequently increases the service life on the belt and drive shaft seals on the airend and motor.

# Efficient and dependable

## CBS, DBS, EBS, FBS, HBS series

The blower airend plays a pivotal role in ensuring outstanding energy efficiency. It achieves this in combination with carefully matched components and the advanced Sigma Control 2 blower controller.



### The blower controller

Sigma Control 2 ensures efficient blower control and monitoring. The generously sized display, RFID reader for secure access, and numerous interfaces enable fast, reliable communication, while the SD card slot makes data storage and software updates a breeze.



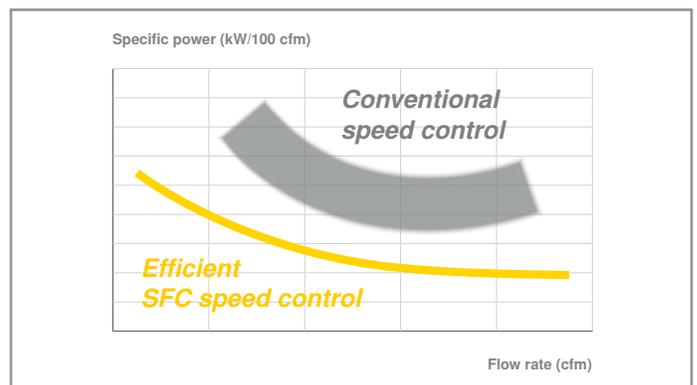
### Comprehensive sensors

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



### Cool inlet air

Cooling air for the motor and process air are drawn in separately from outside the sound enclosure. This boosts efficiency and leads to a higher usable mass flow rate for the same power consumption. The blowers can operate in ambient temperatures up to 113 °F.



### Optimized specific power

The moderate maximum speed and the near-constant specific power across the wide variable speed control range combined achieve significant energy savings throughout the entire operating curve.





# Plug and play

## CBS, DBS, EBS, FBS, HBS series

Kaeser screw blowers are complete turnkey machines that reduce installation costs. They arrive on site fully wired and assembled, reducing common installation errors that can delay commissioning. Additionally, the machines arrive ready for easy integration into SCADA and IoT control systems.



### Start control (STC)

STC versions with integrated wye-delta start for constant speed operation are equipped with a premium contactor, overload protection, and phase loss monitoring. Sigma Control 2 and a dependable emergency stop system complete the package.



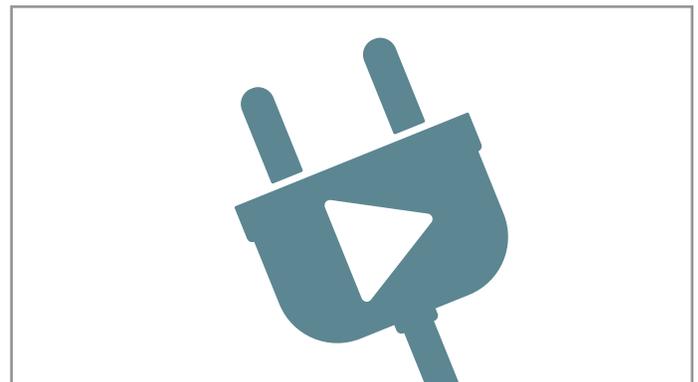
### Sigma Frequency Control (SFC)

Using variable speed control, the SFC frequency converter adjusts blower performance to match application air demand. Everything is ready for immediate operation, since all programming and parameterization is performed at the factory.



### EMC certified

The SFC control cabinet and Sigma Control 2 are tested and certified as individual components together with the complete blower system to EMC directive EN 55011 for Class A1 industrial power supplies.



### Plug and play

The turnkey blowers come complete with sensors, STC/SFC, Sigma Control 2 and an emergency stop switch, and are filled with oil and fully certified. This significantly reduces the work and costs associated with planning, installation, certification, documentation, and commissioning.





# Equipment

## IE3 motor

Premium efficiency IE3 motor from Siemens, with three PTC thermistors or PT 100 as standard; variable speed drive models matched to SFC frequency converter. Service is quick and cost-effective thanks to easy access, central lubrication points for motors with greasable motor bearings.

## Sigma Control 2™

“Traffic light” LED indicators show operational status at a glance, plain text display, 30 selectable languages, soft-touch keys with icons, fully automated monitoring and control. Interfaces—Ethernet: additional optional communication modules for: Profibus DP, Modbus, Profinet, EtherNet/IP, and Devicenet. RFID card reader, web server, Kaeser Connect user interface, visualization of signals at analog and digital inputs, warning and alarm messages, graphical display of pressure, temperature, and speed trends. SD card reader for storage of data relating to process data, operating hours, working hours, as well as warning and alarm messages on an SD card. Update will upload via SD card.

## Pulsation dampener

Efficient inlet and discharge side absorption silencers have a wide frequency range to mitigate unwanted process air pulsations; excellent dampening of fluid-borne noise transmitted by piping.

## Kaeser Connect

Create a LAN connection between a PC and the Sigma Control 2; launch internet browser; enter Sigma Control 2 IP address and password; access blower control via integrated web server. The user interface shows machine status in real-time, the signals at the analog and digital inputs, lists warning and alarm messages and graphically displays pressure, temperature, and speed trends.

# Additional optimization



## Sigma Air Manager 4.0

The Sigma Control 2 internal compressor/blower controller and Sigma Air Manager 4.0 provide more than just optimized blower air system efficiency. Thanks to their high level of data integration and multiple interface options, they can be easily integrated into advanced production, building management, and energy management systems, as well as Industry 4.0/IoT environments.

# Technical specifications

Model	Max. Operating Pressure (psig)	Capacity (cfm) <sup>(1)</sup>	Max. Rated Motor Power (hp)	Pipe Connection (in.)	Dimensions W x D x H (in.)	Weight (lb.)
CBS 120 L SFC	9	443	25	3	43-5/8 x 53-7/8 x 65-3/4	1624
CBS 120 M SFC	15	440	25			1624
CBS 120 L STC	6	446	30			1644
CBS 120 M STC	15	440	30			1644
DBS 220 L SFC	9.5	812	40	4	43-5/8 x 59-1/8 x 65-3/4	1962
DBS 220 M SFC	15	777	50			2006
DBS 220 L STC	9.5	671	30			1803
DBS 220 M STC	15	636	50			1969
EBS 380 L SFC	9.5	1342	60	6	76-1/4 x 63 x 66-3/4	3150
EBS 380 M SFC	15	1306	100			3567
EBS 380 L STC	9.5	1289	60			2952
EBS 380 M STC	15	1271	100			3314
FBS 660 L SFC	9.5	2366	100	8	87-5/8 x 76-7/16 x 75-11/16	5478
FBS 660 M SFC	15	2330	150			5919
FBS 660 L STC	9.5	2330	100			5302
FBS 660 M STC	15	2295	150			5721
HBS 1600 L SFC	9.4	5650	250	12	81-1/4 x 146-1/4 x 87-19/32	13,010
HBS 1600 M SFC	15.9	5650	335			13,230

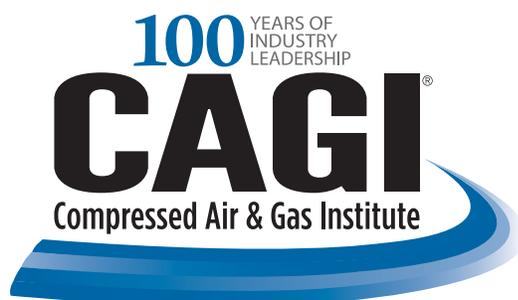
<sup>(1)</sup> Performance data to ISO 1217, Part 1, Annex C for STC version, Annex E for SFC Version.

*Specifications are subject to change without notice.*

## CAGI certified performance

Our blowers' energy efficiency is listed according to Blower Test Standard BL 300. Performance data is published as part of the Compressed Air and Gas Institute's (CAGI) Performance Verification Program. CAGI data sheets for our blower packages are available at [www.kaeser.com/cagi](http://www.kaeser.com/cagi).

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**Blower Test Standard BL 300**



# The world is our home

As one of the world's largest compressed air, vacuum, and blower systems providers, 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.



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**COMPRESSORS**®

*Built for a lifetime.*

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