KAESER COMPRESSORS®

Reciprocating Compressors

AIRBOX / AIRBOX CENTER Series
OIL.FREE
Flow rate up to 0.90 m³/min, Pressure 7.0 to 12.5 bar

www.kaeser.com

What do users expect from a reciprocating compressor?

Without doubt, the answer is maximum efficiency and reliability. This sounds simple, but these advantages are influenced by many different factors.

Energy costs, for example, taken over the lifetime of a compressor, add up to many times the original investment costs. This is why efficiency is vital in the production of compressed air.

The air system must also deliver the compressed air in the correct volume, at the required quality, and provide exceptional reliability. This is essential to ensure maximum availability of compressed air powered production systems. Last but not least, a truly efficient compressor is simple to maintain. This is achieved by using high-quality components and through a logical system design, which allows excellent accessibility to all maintenance points. KAESER reciprocating compressors fulfil all of these needs and provide the basis for highly efficient compressed air production.

Functional diagram

(AIRBOX CENTER with optional add-on KAESER Filter)

(1) Intake filter
(2) Compressor block
(3) Maintenance-free direct drive
(4) Energy-saving IE3 drive motor
(5) Fan
(6) Air receiver (internally-coated)
(7) Electronic ECO-DRAIN condensate drain
(8) Compressed air refrigeration dryer
(9) Microfine filter (optional)

AIRBOX / AIRBOX

Flexible and efficient

Image: AIRBOX CENTER 1500

The innovative AIRBOX and AIRBOX CENTER

The AIRBOX and all-in-one AIRBOX CENTER – which features an integrated compressed air receiver, refrigeration dryer and optional filter equipment – are delivered with a control cabinet and ready for immediate operation. Energy-saving compressed air production is further assured with the use of high-efficiency IE3 motors.

CENTER

SIGMA CONTROL 2 MCSIO: Optimum efficiency

The internal SIGMA CONTROL 2 MCSIO controller ensures efficient control and monitoring of compressor operation. The large display and RFID reader provide easy communication and maximum security. Variable interfaces enable seamless networking capability, whilst the SD card slot makes updates quick and easy.

Made in Germany

Using only premium-grade materials, KAESER manufactures all of its reciprocating compressor blocks in-house. All components are manufactured, inspected and assembled with meticulous care and precision to ensure outstanding performance and unrivalled energy efficiency.

100% duty cycles

Thanks to innovative compressor block and drive motor cooling design, AIRBOX and AIRBOX CENTER systems can be operated up to an ambient temperature of +30 °C and a maximum pressure of 10 bar with 100% duty cycles.

KAESER ingenuity for maximum flexibility

Whether simply a compressor, or a complete compressed air supply system with integrated compressed air treatment, the modular design of the AIRBOX and AIRBOX CENTER provides the flexibility to ensure that your exact compressed air needs are met. The AIRBOX can therefore be equipped with a second compressed air aftercooler and the AIRBOX CENTER is available with an optional KAESER Filter system.

All models are EMC-certified for domestic electrical supplies, which simplifies installation and reduces provisioning costs. For companies with growing compressed air demand, multiple systems can be controlled via a compressed air management system.

AIRBOX / AIRBOX CENTER – The perfect choice

AIRBOX – The compressor

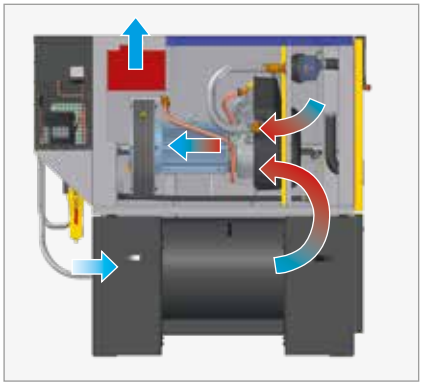
The AIRBOX epitomises the concept of 'plug and play'. Each model features a turnkey compressor with an advanced electronic SIGMA CONTROL 2 or MSCIO controller and a star-delta starter integrated within a single enclosure. The sound-proofed enclosure enables these versatile units to be installed directly within the working environment without the need for additional sound protection measures.

AIRBOX CENTER – The all-in-one compact solution

Featuring an integrated compressed air dryer and receiver, the AIRBOX CENTER is an all-in-one compressed air supply system. After compression, the air passes into an internally-coated air receiver, where it gives up much of its condensate and then enters the integrated, energy-saving refrigeration dryer, which dries the compressed air to a pressure dew point of +5 °C. Ensuring even greater reliability, a separate enclosure shields the dryer from compressor exhaust heat. Moreover, the dryer shutdown feature – activated via the compressor controller – is linked to compressor operation and significantly reduces energy consumption when the compressor is at rest.

AIRBOX CENTER – With KAESER FILTER

With an air intake filter, oil-free compression and an integrated refrigeration dryer, the AIRBOX CENTER is ready to deliver exceptional-quality compressed air as soon as it is delivered. For applications requiring maximum compressed air quality, all AIRBOX CENTER models can be additionally fitted with optional add-on filters (microfine filters).



Cool runners

With powerful independent cooling fans for both the drive motor and compressor block and precisely-tailored cooling air ducting, Kaeser's unique cooling system allows – unusually for reciprocating compressors – 100% duty cycles and dependable operation in ambient temperatures up to approximately +30 °C. The control cabinet also features its own ventilation and is connected to the overall cooling air flow to prevent overheating.

Image: AIRBOX CENTER 1500

Maintenance-friendly

The less maintenance required, the more cost-effective the system. This is where the AIRBOX and AIRBOX CENTER really shine: they are oil-free and feature a maintenance and loss-free 1:1 direct drive system. The air and intake filters are easily accessible once the generously-sized enclosure panels are removed.

Impressive soundproofing

With 40 mm thick soundproofing, multi-deflected cooling air flow, acoustically separate compressor block, application-specific intake air ducting and highly effective air intake sound damping, the AIRBOX and AIRBOX CENTER continue the KAESER tradition of super-quiet performance.

Energy-saving motor

Premium-quality IE3 motors ensure outstanding performance and efficiency: they reduce energy losses by an average of 40% compared to conventional motors. They also operate at significantly lower temperatures compared to conventional motors, yielding significant energy savings, as well as enhanced reliability and service life.

SIGMA AIR MANAGER 4.0

The SIGMA CONTROL 2 internal compressor controller and the SIGMA AIR MANAGER 4.0 master controller provide more than just optimised compressed air system efficiency. Thanks to their high level of data integration and multiple interface options, they can easily be integrated into advanced production, building management and energy management systems, as well as Industrie 4.0 environments.

Equipment

Complete system

Ready for operation, fully automatic, super-silenced, vibration damped, all panels powder coated.

Sound insulation

Lined with washable foam, anti-vibration mounts, double vibration damped.

Compressor block

Oil-free, 2-cylinder, single or two-stage.

Electric motor

Quality, German-made, high-efficiency (IE3) electric motor to IP 54, Iso F, for additional reserve.

Drive

Maintenance and loss-free 1:1 direct drive.

Cooling

Air-cooled, two fans, compressed air aftercooler.

Electrical components

IP 54 control cabinet containing automatic star-delta starter, motor overload protection, control transformer, EMC-certified for domestic electrical supply systems.

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. Selection of Dual, Quadro, Vario, Dynamic and Continuous control as standard. Ethernet interface; additional optional communications interfaces for: Profibus DP, Modbus, Profinet and Devicenet; SD card slot for data-logging and updates; RFID reader, web server. Furthermore, the system can be integrated into the Sigma Network or operated via Ethernet in Master/Slave communication with another system in the network; clear authorisation via RFID reader, operating data memory, integrated web server.

SIGMA AIR MANAGER 4.0

The further-refined, adaptive 3-D^{advanced} Control predictively calculates and compares the various operating options and selects the most efficient one to suit the specific needs of the application. The SIGMA AIR MANAGER 4.0 constantly adjusts flow rates and compressor energy consumption in response to current compressed air demand.

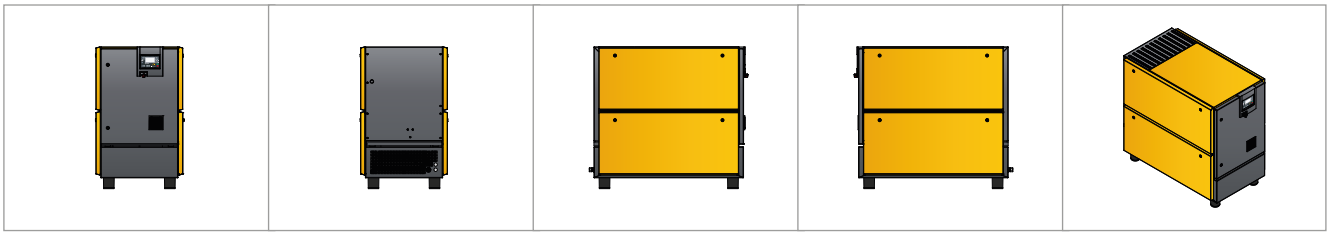
This powerful feature is made possible by the integrated industrial PC with multi-core processor, in combination with the adaptive 3-D^{advanced} Control. Furthermore, the SIGMA NETWORK bus converters (SBC) provide a host of possibilities to enable the system to be individually tailored to meet exact user requirements. The SBC can be equipped with digital and analogue input and output modules, as well as with SIGMA NETWORK ports, to enable seamless display of pressure, flow rate, pressure dew point, power or alarm message information.

Technical specifications

AIRBOX

Model	Max. pressure bar	Flow rate at 8 bar *) m³/min	Max. duty cycle **) %	Drive motor rated power kW	Sound pressure level ***) dB(A)	Compressed air connection	Dimensions W x D x H mm	Weight kg	Controller
AIRBOX 1500	7	0.90 ****)	100	7.5	67	G ¾	1430 x 820 x 1320	385	SIGMA CONTROL 2 MSCIO
AIRBOX 1000-2	12.5	0.77	75	7.5	67			385	

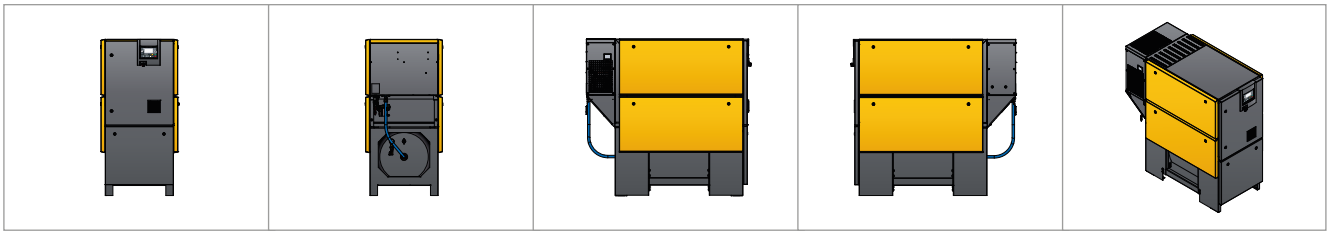
Example: AIRBOX 1500



AIRBOX CENTER

Model	Max. pressure bar	Flow rate at 8 bar *) m³/min	Max. duty cycle **) %	Drive motor rated power kW	Sound pressure level ***) dB(A)	Pressure dew point °C	Air receiver volume l	Compressed air connection	Dimensions W x D x H mm	Weight kg	Controller
AIRBOX CENTER 1500	7	0.90 ****)	100	7.5	67	+5	270	G ¾	1730 x 820 x 1640	550	SIGMA CONTROL 2 MSCIO
AIRBOX CENTER 1000-2	12.5	0.77	75	7.5	67					550	

Example: AIRBOX CENTER 1000-2



Technical specifications for add-on refrigeration dryer

Model	Refrigeration dryer power consumption kW	Pressure dew point °C	Refrigerant	Refrigerant volume kg	Global warming potential GWP	CO_2 equivalent t	Hermetic refrigeration circuit
ABT 12	0.27	5	R-513A	0.34	1430	0.5	Yes

The refrigeration dryer is filled with a refrigerant that is classified as a fluorinated greenhouse gas.

*) Flow rate measured as per ISO 1217
**) Duty cycle: The proportion of time under load over the total duration of a work cycle
***) Sound pressure level as per ISO 2151 and basic norm ISO 9614-2, operation at maximum working pressure; tolerance: ± 3 dB(A)
****) Flow rate at 7 bar

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.

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