



Reciprocating Compressors

AIRBOX / AIRBOX CENTER

OIL.FREE

Flow rate 0.25 to 0.90 m³/min, Pressure 7 to 12.5 bar

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 a multiple of 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 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.

Function diagram

(AIRBOX CENTER 400 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) Filtration (optional)

AIRBOX / AIRBOX CENTER

Flexible and efficient



Image: AIRBOX CENTER 1500

The innovative AIRBOX and AIRBOX CENTER

The new AIRBOX and AIRBOX CENTER ranges from KAESER are the first reciprocating compressors to feature the advanced SIGMA CONTROL BASIC and SIGMA CONTROL 2 compressor controllers.

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



Made in Germany

Using only premium-grade materials, KAESER produces 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.

(Exception: AIRBOX / AIRBOXCENTER 840 at 75% duty cycle)



SIGMA CONTROL 2: Optimum efficiency

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

(Applicable for AIRBOX / AIRBOX CENTER 1500 and 1000-2)



SIGMA CONTROL BASIC controller

Using efficient Quadro and Dual control, the SIGMA CONTROL BASIC controller guarantees best possible efficiency and reliability. Moreover, AIRBOX and AIRBOX CENTER models can be easily integrated with modern compressed air management systems.

(Applicable for AIRBOX / AIRBOX CENTER 400, 550 and 840)

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 as required 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 'compressed air to-go'. Each model features a turnkey compressor with an advanced electronic SIGMA CONTROL BASIC or SIGMA CONTROL 2 controller and a star-delta starter integrated within a single enclosure. The soundproofed enclosure enables these versatile units to be installed directly within the working environment without the need for additional sound protection measures.



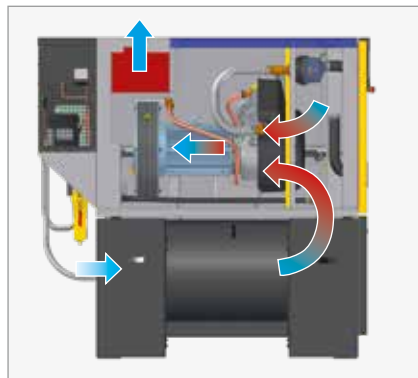
AIRBOX CENTER – The all-in-one compact solution

Featuring an integrated compressed air dryer and air receiver, the AIRBOX CENTER is 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 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 able to deliver exceptional quality compressed air as soon as it's delivered. For applications requiring maximum compressed air quality, all AIRBOX CENTER models can be additionally fitted with optional add-on filters.



Cool runners

With 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 filter 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, on average, by 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 be easily integrated into advanced production, building management and energy management systems, as well as Industrie 4.0 environments.



Options

Complete unit

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

Sound insulation

Lined with washable foam, antivibration mounts, double vibration damped.

Compressor block

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

Electric motor

Quality Germany-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 BASIC

Electronic control and monitoring system. Intuitive icons, large display. Start-Stop control. Monitoring of: direction of rotation, system pressure, block discharge temperature, refrigeration dryer. Measured data displayed: network pressure, shut-off pressure, block discharge temperature. Status data displayed: system status, error alert, maintenance due. Also displayed: hours counter for service, on-load and compressor run time, adjustable service interval, pressure and temperature unit selection (bar/ psi/ MPa, °C/°F). System nominal pressure can be reduced separately. Emergency-off switch, floating contact for motor running. Electronic pressure transducer.

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 recording and updates; RFID reader, web server.

SIGMA AIR MANAGER 4.0

The further-refined adaptive 3-D^{advanced} Control predictively calculates and compares various operating scenarios and selects the most efficient to suit the compressed air application's specific needs. The SIGMA AIR MANAGER 4.0 therefore optimally adjusts flow rates and compressor energy consumption automatically in response to actual compressed air demand.

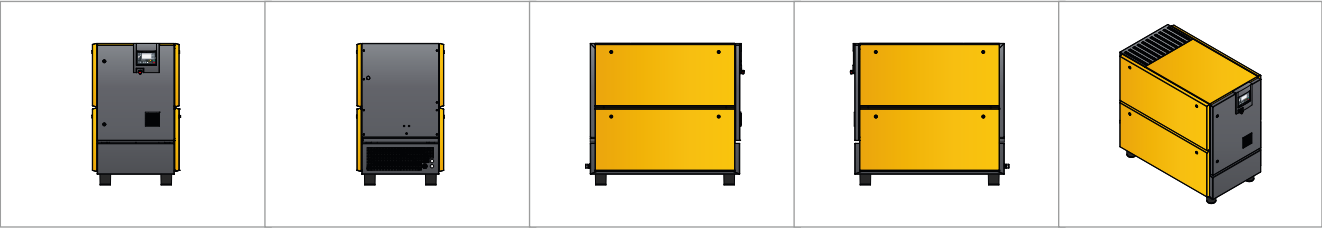
This powerful feature is made possible by the integrated industrial PC with multi-core processor in combination with the adaptive 3-D^{advanced} Control. Furthermore, the SIGMA NETWORK bus converters (SBC) provide a host of possibilities to enable the system to be individually tailored to meet exact user requirements. The SBCs 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	Flow rate at 8 bar ^{*)}	Max. duty cycle ^{**)}	Drive motor rated power	Sound pressure level ^{***)}	Compressed air connection	Dimensions W x D x H	Mass	Controller
	bar	m³/min	bar	kW	dB(A)		mm	kg	
AIRBOX 400	10	0.25	100	2.2	59	G ½	1200 x 730 x 1160	240	SIGMA CONTROL BASIC
AIRBOX 550	10	0.32	100	3.0	62			255	
AIRBOX 840	10	0.50	75	4.0	67	G ¾	1430 x 820 x 1320	325	SIGMA CONTROL 2
AIRBOX 1500	7	0.90	100	7.5	67			385	
AIRBOX 1000-2	12.2	0.77	75	7.5	67			385	

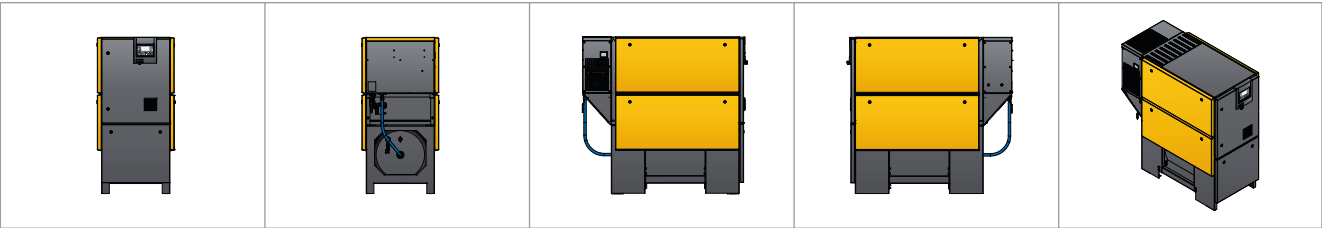
Example: AIRBOX 1500



AIRBOX CENTER

Model	Max. pressure	Flow rate at 8 bar ^{*)}	Max. duty cycle ^{**)}	Drive motor rated power	Sound pressure level ^{***)}	Pressure dew point	Air receiver volume	Compressed air connection	Dimensions W x D x H	Mass	Controller	
	bar	m³/min	bar	kW	dB(A)	°C	l		mm	kg		
AIRBOX CENTER 400	10	0.25	100	2.2	59	+5	200	G ½	1490 x 730 x 1500	360	SIGMA CONTROL BASIC	
AIRBOX CENTER 550	10	0.32	100	3.0	62					370		
AIRBOX CENTER 840	10	0.50	75	4.0	67		490	270	G ¾	1730 x 820 x 1640		550
AIRBOX CENTER 1500	7	0.90	100	7.5	67		550					
AIRBOX CENTER 1000-2	12.2	0.77	75	7.5	67		550					

Example: AIRBOX CENTER 1000-2



*) 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)

The world is our home

As one of the world's largest compressed air system providers and compressor manufacturers, KAESER KOMPRESSOREN is represented throughout the world by a comprehensive network of branches, subsidiary companies and authorised partners in over 100 countries.

With innovative products and services, KAESER KOMPRESSOREN's 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.

Moreover, the decades of knowledge and expertise from this industry-leading system provider are made available to each and every customer via the KAESER group's global computer network.

These advantages, coupled with KAESER's worldwide service organisation, ensure that every product operates at the peak of its performance at all times and provides maximum availability.



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