

## Reciprocating Compressors AIRBOX / AIRBOX CENTER

OIL.FREE

Air delivery 0.25 to 0.90 m<sup>3</sup>/min, Pressure 7 – 10 – 12.5 bar



**What do users expect from a reciprocating compressor?**

Answer: They expect 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.

Efficient energy consumption therefore plays a vital role 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.

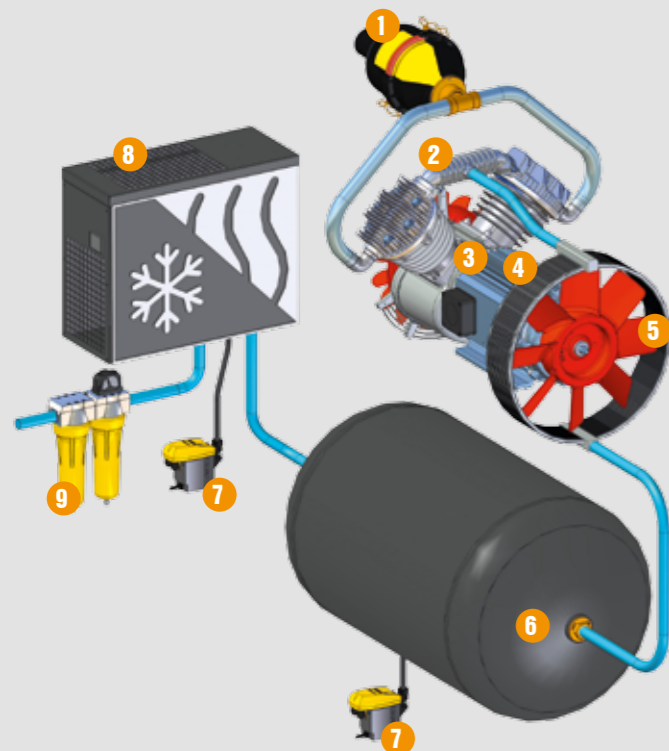
Last but not least, a truly efficient compressor is simple to maintain. This is achieved by using high quality components and through logical system design which allows excellent accessibility to all maintenance points.

KAESER reciprocating compressors fulfil all of these needs and provide the basis for highly efficient compressed air production.

**OIL.FREE**

**Function diagram**

(AIRBOX CENTER 400 with optional microfilter combination)



**AIRBOX / AIRBOX CENTER**  
**Flexible and efficient**

**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 compressor controller.

The AIRBOX and all-in-one AIRBOX CENTER – which features an integrated compressed air receiver, refrigeration dryer and optional filters – are delivered ready for immediate operation and include a switch cabinet.

Energy saving motors ensure efficient compressed air production and outstanding performance.



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

**Made in Germany**

Using only premium grade materials, KAESER manufactures all of its compressor blocks. Every block is produced, tested and assembled in accordance with the strictest quality control standards to ensure outstanding performance and unrivalled energy efficiency.



**100% duty cycles**

Clever air flow design ensures optimal system cooling which, unusually for a reciprocating compressor, allows 100 % duty cycles and dependable operation in ambient temperatures as high as 45 °C (AIRBOX 1500 and AIRBOX CENTER 1500 up to 35 °C).



**SIGMA CONTROL basic**

Using efficient Quadro and Dual control, the electronic 'Sigma Control basic' control system guarantees best possible efficiency and reliability. Moreover, AIRBOX and AIRBOX CENTER models can be easily integrated into modern compressed air management systems.



**Super-quiet operation**

The innovative cooling system provides impressive cooling performance and enables optimum sound-proofing. In fact, AIRBOX and AIRBOX CENTER systems are so quiet that you hardly notice they're there.



**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. For example, the AIRBOX can be equipped with a second compressed air aftercooler and the AIRBOX CENTER, when equipped with optional filters (microfilter combination), is able to deliver compressed air of any quality class. All models are EMC certified for domestic electrical supplies, which simplifies installation and reduces provisioning costs. Furthermore, should compressed air demand increase in the future, for example, the SIGMA CONTROL basic can be connected to a compressed air management system to enable control of multiple units.



# AIRBOX / AIRBOX CENTER — The perfect choice



## AIRBOX – The compressor

The AIRBOX epitomises the concept of 'ready-to-go' compressed air. Each model features a turnkey compressor with advanced SIGMA CONTROL basic controller and star-delta starter integrated within a single enclosure. Furthermore, 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 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.



## AIRBOX CENTER – With 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 its delivered. For applications requiring maximum compressed air quality, all AIRBOX CENTER models can be equipped with optional mounted filters. This enables efficient compressed air delivery at precisely the required quality.



Standard version  
AIRBOX 550

## 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.



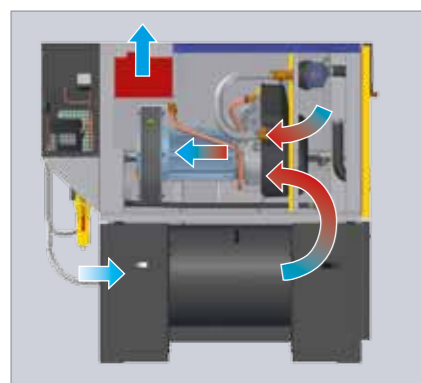
## Impressive soundproofing

With 40mm 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.



## Tailored control

Best possible efficiency and reliability are guaranteed by the electronic "SIGMA CONTROL basic" control system. This advanced controller also optionally allows connection to compressed air management systems such as Kaeser's SIGMA AIR MANAGER.



## 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 as high as 45 °C (AIRBOX/AIRBOX CENTER 1500 up to +35 °C). The switch cabinet also features its own ventilation and is connected to the overall cooling air flow to prevent overheating.

## Premium efficiency motor

Premium quality motors ensure both outstanding performance and efficiency. They also operate with significantly lower temperatures compared to conventional motors, consequently providing enhanced reliability and service life.



## Equipment

### Complete unit

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

Dry-running, 2 cylinder, single or two stage.

### Electric motor

German made premium efficiency (EFF1) electric motor, IP 54 and insulation class 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.

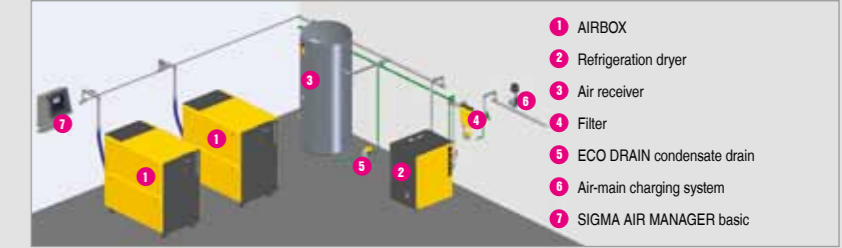
### SIGMA CONTROL



- Quick and simple operation with clear icons and large display
- Fully automatic Quadro or Dual compressor control
- Monitoring of network pressure, block discharge temperature, drive motor and, if applicable, refrigeration compressor
- Remote on/off

## Professional planning

Compressed air supply system with separate components



Compressed air system with AIRBOX CENTER



- Display of dryer inlet temperature
  - Hours counter for service, on-load hours and compressor operation
  - Adjustable service intervals, selectable pressure and temperature units (bar/ psi/ MPa, °C/°F)
  - Nominal system pressure can be adjusted separately
  - Adjustable switching range
  - "Group alarm" floating contact
  - Electronic pressure transducer
- Optional:  
Connection to compressed air management systems e.g. SIGMA AIR MANAGER (basic)

Only properly designed air systems can meet the demands for air quality, availability and efficiency that are placed on a modern compressed air supply.

Therefore, benefit from decades of compressed air engineering experience and let KAESER design your compressed air supply system.

## Technical specifications – AIRBOX/AIRBOX CENTER

### AIRBOX

| Model         | Maximum pressure bar | Air delivery at 8 bar * m³/min | Maximum duty cycle ** % | Rated motor power kW | Sound pressure level *** dB (A) | Air connection | Dimensions W x D x H mm | Weight kg |
|---------------|----------------------|--------------------------------|-------------------------|----------------------|---------------------------------|----------------|-------------------------|-----------|
| AIRBOX 400    | 10                   | 0.25                           | 100                     | 2.2                  | 58                              | G 1/2          | 1220 x 730 x 1160       | 240       |
| AIRBOX 550    | 10                   | 0.32                           | 100                     | 3.0                  | 61                              |                |                         | 255       |
| AIRBOX 840    | 10                   | 0.50                           | 100                     | 4.0                  | 65                              | G 3/4          | 1430 x 820 x 1320       | 325       |
| AIRBOX 1500   | 7                    | 0.90                           | 100                     | 7.5                  | 66                              |                |                         | 385       |
| AIRBOX 1000-2 | 12.5                 | 0.71                           | 100                     | 7.5                  | 66                              |                |                         | 385       |

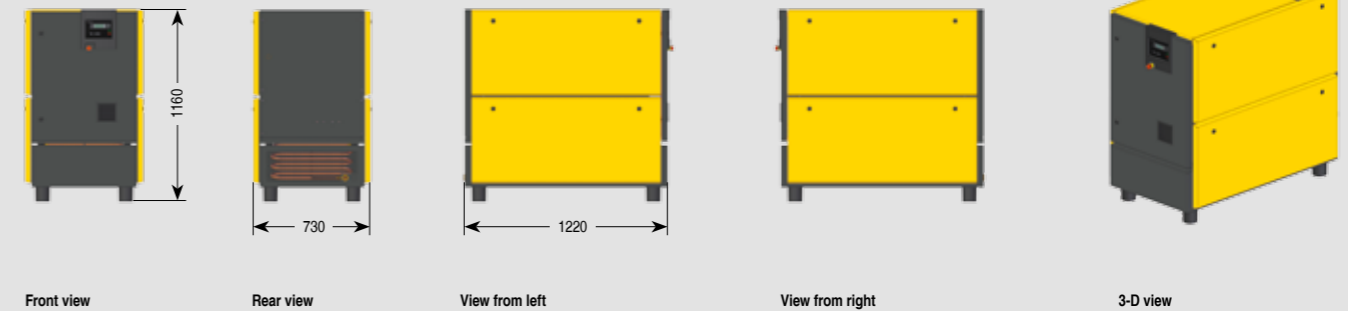
### AIRBOX CENTER

| Model                | Maximum pressure bar | Air delivery at 8 bar * m³/min | Maximum duty cycle ** % | Rated motor power kW | Sound pressure level *** dB (A) | Pressure dew point °C | Receiver volume l | Air connection | Dimensions W x D x H mm | Weight kg |
|----------------------|----------------------|--------------------------------|-------------------------|----------------------|---------------------------------|-----------------------|-------------------|----------------|-------------------------|-----------|
| AIRBOX CENTER 400    | 10                   | 0.25                           | 100                     | 2.2                  | 59                              | +5                    | 200               | G 1/2          | 1490 x 730 x 1500       | 360       |
| AIRBOX CENTER 550    | 10                   | 0.32                           | 100                     | 3.0                  | 61                              | +5                    |                   |                |                         | 370       |
| AIRBOX CENTER 840    | 10                   | 0.50                           | 100                     | 4.0                  | 65                              | +5                    | 270               | G 3/4          | 1730 x 820 x 1640       | 490       |
| AIRBOX CENTER 1500   | 7                    | 0.90                           | 100                     | 7.5                  | 66                              | +5                    |                   |                |                         | 550       |
| AIRBOX CENTER 1000-2 | 12.5                 | 0.71                           | 100                     | 7.5                  | 66                              | +5                    |                   |                |                         | 550       |

## Dimensions

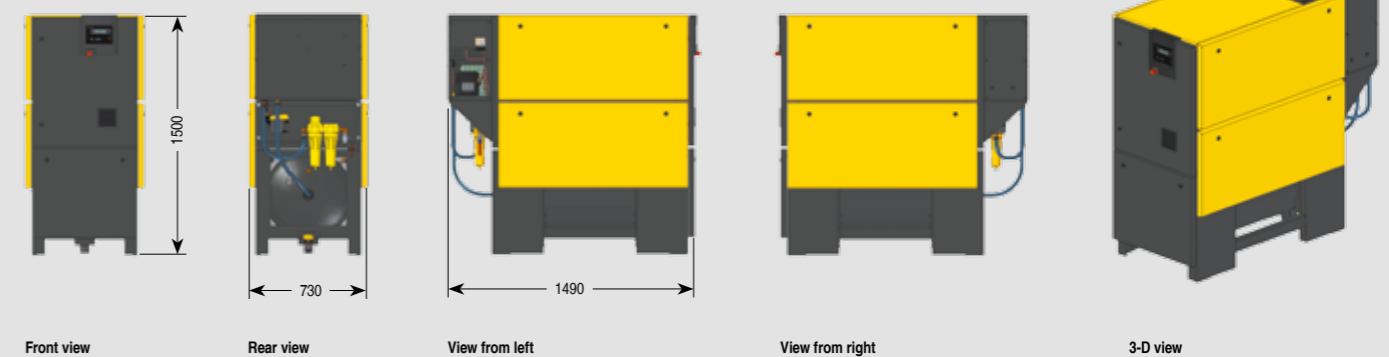
### AIRBOX systems

Example: AIRBOX 550



### AIRBOX CENTER

Example: AIRBOX CENTER 400



\*) Effective air delivery, measured as per VDMA standard sheet 4362

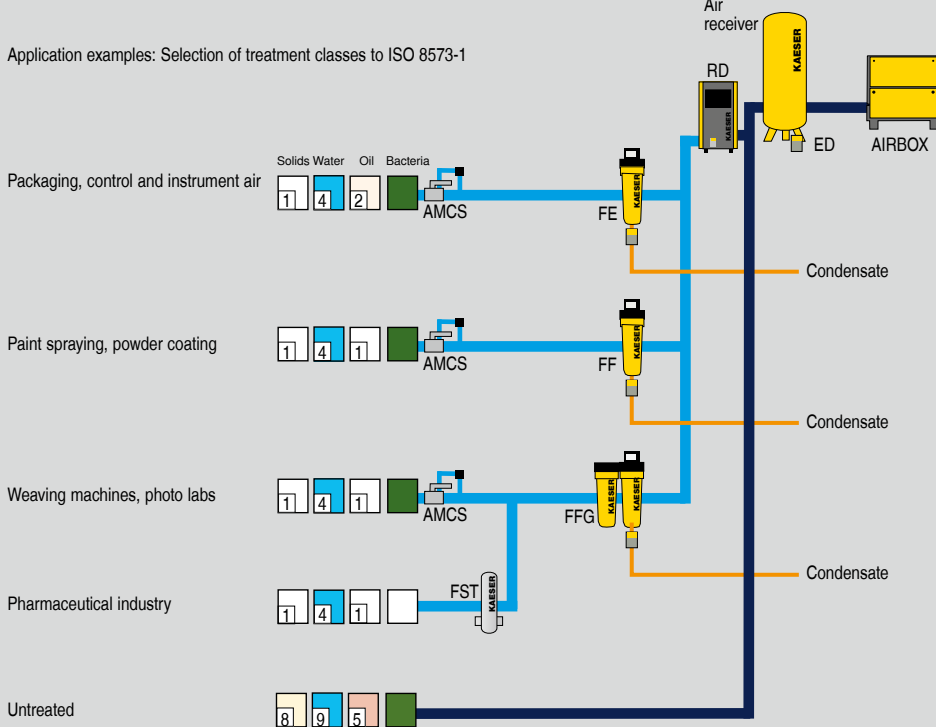
\*\*) Duty cycle: The proportion of time under load over the total duration of a work cycle

\*\*\*) Sound pressure level as per ISO 2151 and basic norm ISO 9614-2, tolerance: ± 3 dB(A)

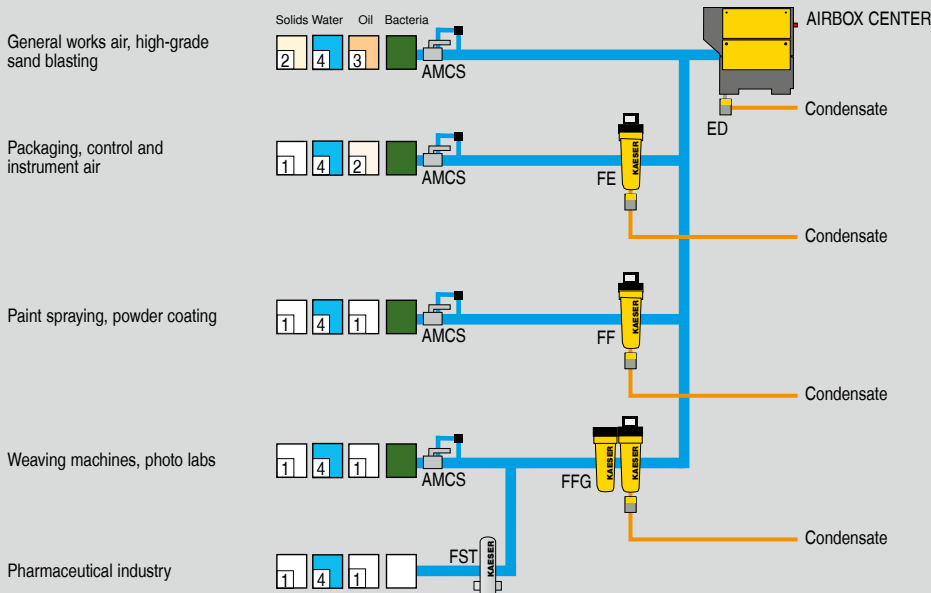
Choose the required grade of treatment according to your field of application:

Air treatment using a refrigeration dryer (pressure dew point +3 °C)

Application examples: Selection of treatment classes to ISO 8573-1



Air treatment using a refrigeration dryer (pressure dew point +5 °C)



| Explanation |  |
|-------------|--|
| ED          | ECO DRAIN                                    |
| FE / FF     | Microfilter                                  |
| FG          | Activated carbon filter                      |
| FFG         | Activated carbon and microfilter combination |
| FST         | Sterile filters                              |
| RD          | Refrigeration dryer                          |
| Aquamat     | Aquamat                                      |
| AMCS        | Air-main charging system                     |

Compressed air quality classes to ISO 8573-1(2010):

| Solid particles/dust |  |               |               |
|----------------------|--|---------------|---------------|
| Class                | max. particle count per m <sup>3</sup> of a particle size with d [µm]* |               |               |
|                      | 0.1 ≤ d ≤ 0.5  | 0.5 ≤ d ≤ 1.0 | 1.0 ≤ d ≤ 5.0 |
| 0                    | e.g. Consult KAESER regarding pure air and cleanroom technology        |               |               |
| 1                    | ≤ 20.000   | ≤ 400         | ≤ 10          |
| 2                    | ≤ 400.000  | ≤ 6.000       | ≤ 100         |
| 3                    | Not defined  | ≤ 90.000      | ≤ 1.000       |
| 4                    | Not defined  | Not defined   | ≤ 10.000      |
| 5                    | Not defined  | Not defined   | ≤ 100.000     |
| Class                | Particle concentration C <sub>p</sub> [mg/m <sup>3</sup> ]*            |               |               |
| 6                    | 0 < C <sub>p</sub> ≤ 5   |               |               |
| 7                    | 5 < C <sub>p</sub> ≤ 10  |               |               |
| X                    | C <sub>p</sub> > 10  |               |               |

| Water |  |
|-------|--|
| Class | Pressure dew point [°C]  |
| 0     | e.g. Consult KAESER regarding pure air and cleanroom technology    |
| 1     | ≤ -70 °C   |
| 2     | ≤ -40 °C   |
| 3     | ≤ -20 °C   |
| 4     | ≤ +3 °C  |
| 5     | ≤ +7 °C  |
| 6     | ≤ +10 °C   |
| Class | Concentration of liquid water C <sub>w</sub> [mg/m <sup>3</sup> ]* |
| 7     | C <sub>w</sub> ≤ 0.5   |
| 8     | 0.5 < C <sub>w</sub> ≤ 5   |
| 9     | 5 < C <sub>w</sub> ≤ 10  |
| X     | C <sub>w</sub> ≤ 10  |

| Oil   |  |
|-------|--|
| Class | Total oil concentration (fluid, aerosol + gaseous) [mg/m <sup>3</sup> ]* |
| 0     | e.g. Consult KAESER regarding pure air and cleanroom technology          |
| 1     | ≤ 0.01   |
| 2     | ≤ 0.1  |
| 3     | ≤ 1.0  |
| 4     | ≤ 5.0  |
| X     | > 5.0  |

\* ) At reference conditions 20 °C, 1 bar(a), 0% humidity