KAESER COMPRESSORS

Complete Systems

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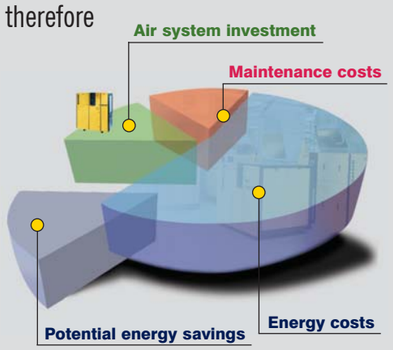
SIGMA PET AIR

FAD up to 2777 m³/h
Working pressure up to 45 bar

KAESER COMPRESSORS

What do you expect from a compressed air system?

As a PET container producer, you expect reliability, efficiency and air of the highest quality. That may sound simple, but many different factors play an important part.
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, as does reliability. Continuous operation and desired container production targets can only be achieved with a dependable source of quality oil-free compressed air. Pre-assembled modules, with all components fully piped and wired, ensure maximum reliability and convenience. No complicated installation work is necessary - simply connect the system to the power source & air distribution network and your air supply is ready to run.



Control and high-pressure air

Blow moulding systems require air at two pressures: 35 to 45 bar for the blow moulding process and 7 to 10 bar for control use. SIGMA PET AIR systems supply air at both pressures without the need for additional investment. The control air supply from the rotary screw compressor keeps energy consumption and investment costs to a minimum. Pre-assembly on a common base frame saves floor space, simplifies transportation and significantly reduces the need for installation work.

PET AIR –
The new standard for efficiency and convenience

Innovative, modular design

SIGMA PET AIR combines the production of high-pressure and control air into a single, turnkey system.

- The air-cooled rotary screw compressor produces the control air and also serves as pre-compressor for the high-pressure blowing air.
- The booster providing the high-pressure blowing air, the system controller and all other air treatment components for both compressor systems are installed, ready for operation, on a base frame.

Components include:
- booster pre-filter with electronic condensate drain
- air-cooled, high-pressure booster
- high-pressure air receiver with electronic condensate drain
- refrigeration dryers for high and low pressure air
- microfilter combination for high and low pressure air
- machine control cabinet.

All components are fully piped and wired ready for use.

- The air receiver for the control air is supplied complete with electronic condensate drain and all connections.

Certified compressed air quality

The oil and solid particle content is reliably kept below Class 1 limits as per ISO 8573-1. After passing through the air treatment systems, the delivered compressed air is designated as technically oil-free. The quality of the air produced by the SIGMA PET AIR system is tested and certified by TÜV, the German Technical Inspection Authority.

Automatic control

The central control cabinet supplies power to all system components. The cabinet contains the booster controller (a star/delta combination starter), the fuses for all drive motors and the KAESER Control monitoring unit. It also signals group alarms with an indicator lamp and a volt-free relay contact.

Low running costs

All components are precisely matched to provide maximum energy-efficiency. SIGMA PET AIR systems with fluid-cooled rotary screw compressors and single-stage boosters are considerably more efficient than equivalent conventional compressor installations. The KAESER systems use air-cooled components, avoiding the need for expensive cooling water and cost-intensive water re-circulating equipment. The systems are supplied fully assembled and factory-tested.

Compression in two stages – more air, more savings...

Control air and pre-compression up to 14 bar

The most efficient method of producing air for PET blow moulding systems is to use a rotary screw compressor for initial compression and a reciprocating compressor for subsequent boosting to provide high-pressure air.

KAESER rotary screw compressors with 1:1 direct drive fulfil every customer requirement: they are highly energy efficient, quieter than quiet, require minimal maintenance, are extremely reliable and deliver the very best in air quality.

All of these advantages are aided through innovations in compressor design, drive systems, cooling and ventilation, silencing and maintenance methods.

The result is a meticulously engineered and reliable product range built to KAESER's renowned high quality standards.

High quality zylinder

Made in Germany!

Pressure boosting up to 45 bar

Exact matching of the rotary screw compressor and booster allows the compression ratio of the booster to be kept to a minimum – the lower the compression ratio, the greater the energy savings.

The three-cylinder reciprocating compressors operate at low speeds to ensure long operational life and maintain optimum efficiency.

Design features such as pressurised oil circulation and cylinder cooling airflow control enable continuous system operation.

Efficient 1:1 drive

Some people talk of direct drive, but really mean geared drive. Make sure you know the difference. In KAESER's direct drive compressors, the motor and the airend are designed to operate at the same low speed. This feature makes possible direct coupling of the drive and compression units via a maintenance-free coupling which in turn means that there are no transmission losses.
This serves to further reduce electricity consumption and cuts maintenance costs. Large, low speed airends are more efficient than small high speed versions because they supply more air for the same drive power.

The SIGMA PROFILE

The world renowned SIGMA PROFILE, developed by KAESER, is up to 15% more efficient than conventional rotary screw profiles. Superior machining of the screw profile on modern CNC machining centres and the use of precision-aligned roller bearings ensure long compressor life and durability.

SIGMA CONTROL

The SIGMA CONTROL automatically controls and monitors the compressor package. It is a robust PC-based industrial computer with real time operating system and update capability. A plain-text display and traffic-light style LEDs clearly show the operational state of the machine at a glance. A choice of four control modes are available to allow selection of the most appropriate for a specific application.

100 % duty cycle

KAESER boosters are designed for continuous operation. The pressurised oil circulating system ensures maximum reliability and safety, whilst newly developed cooling-air flow deflectors and ducting provide intensive cylinder cooling and reliable around-the-clock operation.

Continuous oil filtration

Continuous filtration extends the operational life of the oil in the booster to 2000 hours. If required, boosters in PET AIR Systems can also be filled with foodstuff compatible oil.

Ensured safety

KAESER is dedicated to ensuring that every one of its booster compressors operates with maximum safety.
Oil pressure, cylinder head temperature and air outlet temperature are continuously monitored. Users can be rest assured that any deviation from set parameters immediately initiates the shutdown sequence.

Certified compressed air quality

Air treatment for technically oil-free air to DIN/ISO 8573-1

A dependable source of quality compressed air is essential for a blow-moulding installation to operate reliably and efficiently. Air treatment equipment in SIGMA PET AIR systems comprises a refrigeration dryer, or a high-pressure refrigeration dryer, and a microfilter combination to guarantee that only compressed air of the highest quality reaches the product.

Reliability and efficiency are also key considerations for refrigeration dryers. For ease of maintenance and accessibility, components are clearly and logically laid out in a service-friendly tower arrangement.

The microfilter combination purifies the compressed air in four stages to a total oil content quality better than DIN / ISO 8573-1, class 1, for both aerosols and oil vapours. The compressed air has been tested by TÜV, the German Technical Inspection Authority, and is certified as being technically oil-free.

Reliable air treatment

The ambient air drawn in and compressed by the compressor contains water vapour and solid particles. The refrigeration dryer dries the compressed air down to a pressure dew point of +3 °C. The microfilter combinations for the control- and high-pressure blowing-air ensure a degree of air purity far higher than required by the applicable regulations.

Minimal pressure drop

The smooth surfaces of the bare pipe heat exchanger prevent the build-up of damaging deposits. Therefore the pressure drop remains the same, even after several years of operation, and achieves significant energy savings as a result.

KAESER refrigeration dryers are renowned for their reliability, outstanding durability and long-term value retention.

Options and equipment

Containerised SIGMA PET AIR version (with customer-specified external silencing louvers).

Pressure drop indicator for the high pressure microfilter combination with LED display and shutdown function, integrated in the control cabinet.

Compressor cooling system with exhaust ducting for the rotary screw compressor.

Exhaust cooling air extractor for the complete compressed air system.

SIGMA PET AIR - Technical Specifications

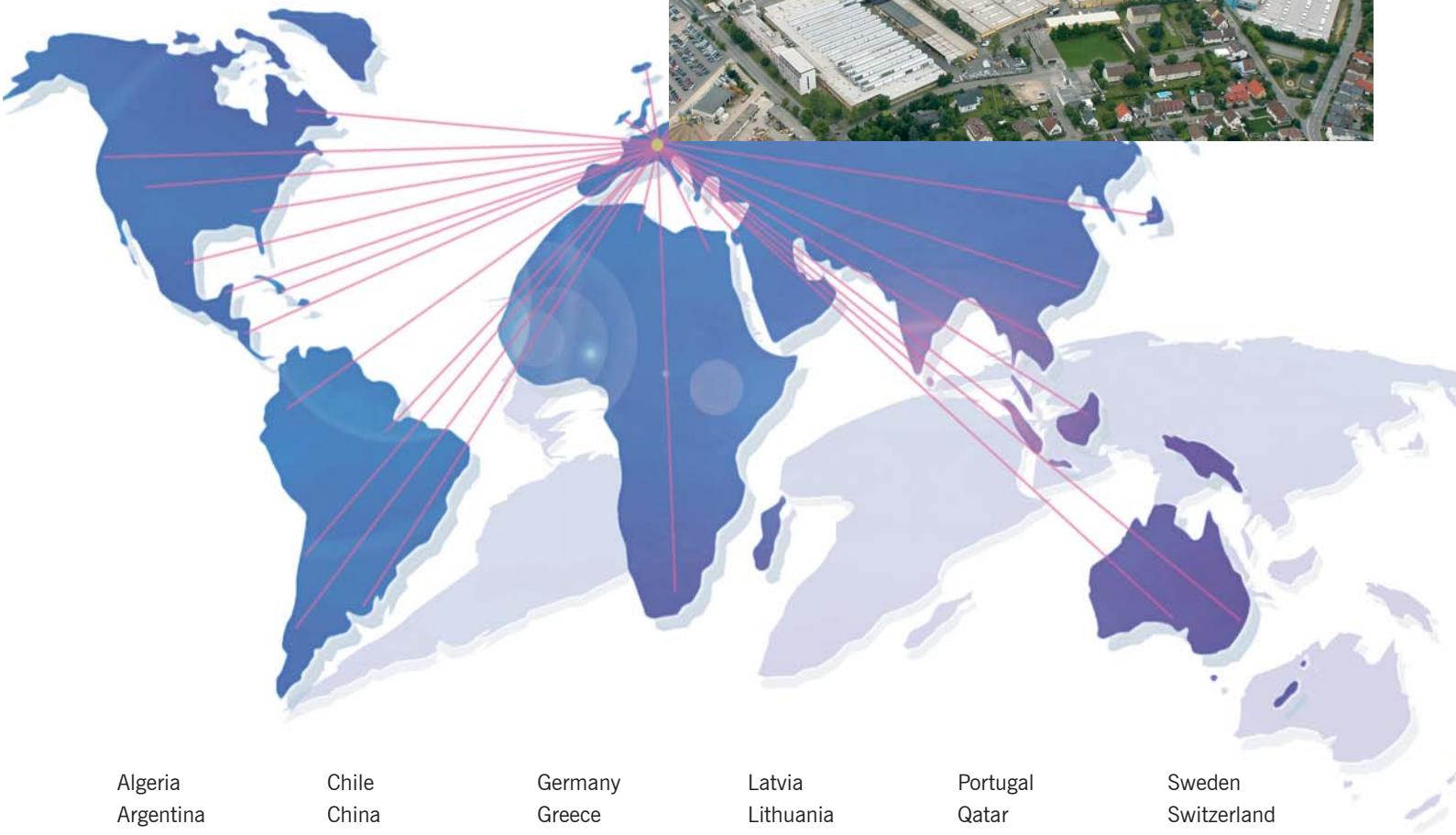
Model	Blow air at max. working pressure m^3/h	Control air at max. working pressure m^3/h	Rated motor power of all components kW	Max. working pressure	
				Blow air $bar_{(g)}$	Control air $bar_{(g)}$
336 HP	336	-	61	36	-
405 HP	360	45	78	36	8
416 HP	360	56	78	36	8
489 HP	489	-	88	36	-
492 HP	420	72	88	36	8
600 HP	500	100	107	36	8
642 HP	535	107	109	36	8
708 HP	505	203	109	36	8
744 HP	744	-	141	36	-
780 HP	660	120	132	36	8
784 HP	784	-	141	36	-
804 HP 1	630	174	132	36	8
804 HP 2	744	60	141	36	8
955 HP	784	171	162	36	8
1020 HP	1020	-	201	36	-
1176 HP	1020	156	202	36	8
1233 HP	1020	213	202	36	8
1284 HP	1284	-	231	36	-
1416 HP	1260	156	231	36	8
1572 HP	1350	222	264	36	8
1608 HP	1489	119	275	36	8
1893 HP	1893	-	371	36	-
1920 HP	1560	360	320	36	8
2448 HP	2160	288	451	36	8
2772 HP	2772	-	558	36	-

45 bar versions available on request.

KAESER COMPRESSORS

Worldwide sales and service network

KAESER - always there



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LGA InterCert Certified QM-System ISO 9001:2000

LGA InterCert Certified EM-System ISO 14001

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