HPC | Compressed Air Systems

KAESER COMPRESSORS®



Rotary Screw Compressors

SK Series

With the world-renowned SIGMA PROFILE

Flow rate up to 2.70 m³/min, Pressure up to 15 bar

www.kaeser.com

SK series

More power, maximum efficiency

SK series rotary screw compressors are built to impress, with enhanced performance for minimal energy consumption. The optimised airend with its energy-saving SIGMA PROFILE, coupled with an extremely user-oriented, space-saving design, makes this generation stand out more than ever before. From the base version to AIRCENTER systems, the modular design principle ensures maximum flexibility for any compressed air requirement.

More compressed air for less energy

The performance of SK series rotary screw compressors has been enhanced still further by optimising the airend and minimising internal pressure losses.

Energy-saving performance

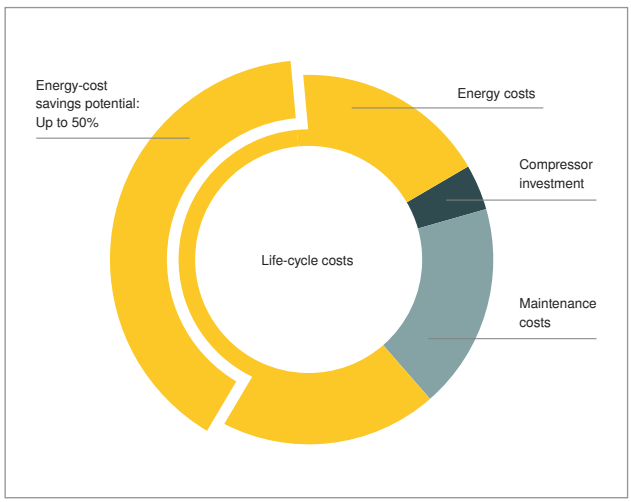
The efficiency of a machine depends on the total costs incurred throughout its entire service life. When it comes to compressors, energy accounts for the largest share of these costs. That's why KAESER has designed its SK models for maximum possible energy efficiency. The optimised rotary screw airend with its energy-saving SIGMA PROFILE provides the basis for this, whilst Premium Efficiency (IE3) motors, the SIGMA CONTROL controller, and a clever cooling system with dual-flow fan all contribute significantly to energy-saving operation.

Intelligent design

SK series models convince with their well thought-out and user-oriented design. For example, the left-hand enclosure panel can be removed in a few simple steps to allow excellent visibility of the system's intelligently arranged components. Needless to say, all maintenance points are easy to access. When closed, the housing ensures a pleasant and quiet working environment thanks to its sound-insulating cover panels. Moreover, with three intake openings, it also provides separate air flows for highly efficient cooling of the system, drive motor, and control cabinet. Thanks to their vertical configuration, SK series compressors are true space savers.

Modular system concept

SK series compressors are available in standard versions, as versions equipped with an add-on refrigeration dryer, and as AIRCENTER compressed air stations including refrigeration dryer and mounted atop an air receiver. This intelligent modular design concept results in a multitude of potential applications. Moreover, the 11 kW and 15 kW versions are optionally available with a frequency converter for infinitely variable speed control.



Energy efficiency is our highest priority

Procurement and servicing costs amount to only a small proportion of a compressor's total life-cycle costs. It is energy that accounts for the majority of your expenditure.

For more than 40 years, we have been committed to continually reducing your energy costs for compressed air generation. We also maintain a constant focus on your servicing and maintenance costs, not to mention continuous compressed air availability.

Quiet and powerful, durable and reliable



Image: SK 26


SIGMA CONTROL 3M
6.6 bar 57 °C 11:22
Operating state
LOAD
Next maintenance
966 h
Operating hours
1201 h
www.kaeser.com
KAESER
SIGMA

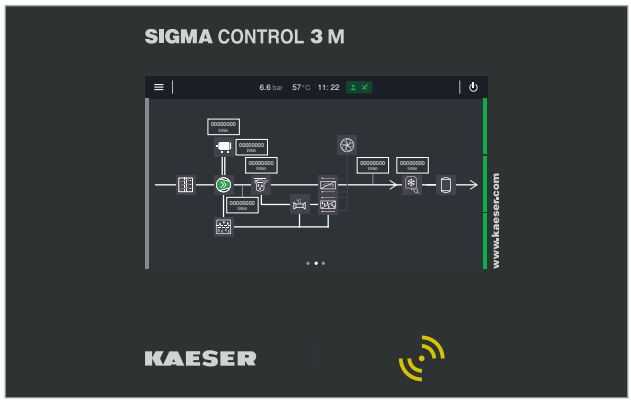
SK series

Design is in the details



Save energy with the SIGMA PROFILE

At the heart of every SK system lies a premium-quality airend featuring the energy-saving SIGMA PROFILE. KAESER airends are equipped with flow-optimised rotors, which contribute significantly to the complete system's class-leading specific package input power.



SIGMA CONTROL controller

Comprehensive overview of components and assemblies – including live values in real time. Intuitive icons show current system health status. Detailed views and settings options open at the click of a button.



IE3 – Energy-saving motors

Naturally, every KAESER SK series rotary screw compressor features a highly efficient, energy-saving IE3 Premium Efficiency drive motor.



Highly effective cooling

The cooling system operates using a highly effective dual-flow fan and separate airflow channels for cooling of the motor, fluid/compressed air cooler, and control cabinet. This not only achieves optimal cooling performance, low compressed air discharge temperatures and minimal sound levels, but also ensures more efficient compression.

SK T (SFC) series

Also with refrigeration dryer and variable speed control



SK with energy-saving dryer

The refrigeration dryer is installed in a separate housing, which protects it from heat radiated by the compressor and enhances operational reliability. This guarantees a stable pressure dew point and maximum compressed air quality at all times. Moreover, the refrigeration dryer's automatic cut-out function ensures energy-efficient operation.



Available with variable speed control

Variable speed control can provide distinct advantages in some applications, which is why many SK series models (11 kW and 15 kW) are available with this option. The frequency converter is installed directly in the control cabinet for maximum space saving.



Quieter than ever before

Progress treads quietly with SK systems: the innovative cooling air flow provides optimum sound insulation while delivering enhanced cooling performance. Normal conversation can take place right beside the running compressor.



Maintenance-friendly

All maintenance work can be easily carried out from one side of the machine. The left-hand housing cover is removable, allowing convenient access to all maintenance points.



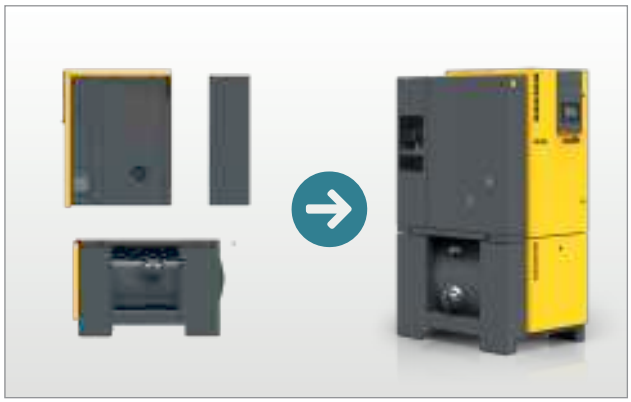
Image: SK 26 T SFC



Image: AIRCENTER 26

AIRCENTER

Compact and efficient compressed air station



Plug & Play

All that's needed to install this compact, complete compressed air station is to connect it to a power supply and the air distribution network – no further installation work is required.



Durable air receiver

The 350-litre air receiver is especially designed for installation in AIRCENTER systems. All surfaces are coated, both inside and outside.



Service-friendly design

The left-hand housing panel is easily removed and allows convenient access to all maintenance points. Sight glasses enable the fluid levels and drive belt tension to be inspected during operation.



Excellent service part access

All maintenance and service parts are easily accessible, which reduces the downtime and installation times associated with service work, increases compressed air availability, and minimises operating costs.


IE3
KAESER
SK 26
SIGMA



Drive systems

Fixed speed, fixed flow rate

Base load SK

KAESER compressors are optimally designed for a specific operating speed. They deliver a constant air volume at a fixed motor speed – achieving maximum efficiency. This makes them ideal for applications with constant or slightly fluctuating compressed air demand.

Your goals, our commitment:

SK base load compressors stand out for their functional, durable drive technology and supreme levels of efficiency.



IE3 PREMIUM EFFICIENCY

When it comes to base load compressors, IE3 Premium Efficiency asynchronous motors guarantee best possible efficiency thanks to their well-proven, durable technology and renowned service-friendliness.

Variable speed, variable flow rate

Peak load SK

Maximum flexibility and sustainability: thanks to their variable-speed drive motors, SK peak load compressors from KAESER always deliver the precise volume of compressed air that is actually required. This makes them particularly efficient in applications with variable compressed air demand.

Your goals, our commitment:

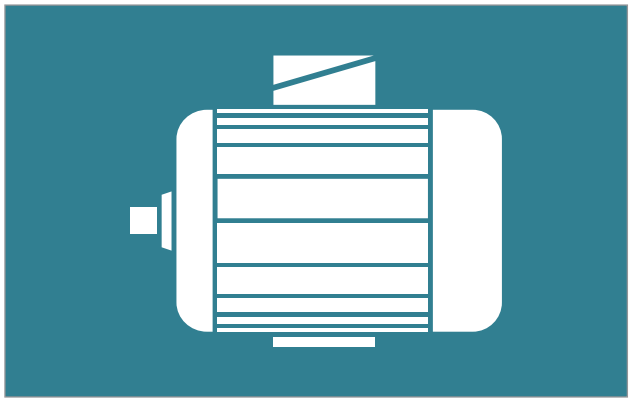
SK peak load compressors stand out with their exceptional flexibility when it comes to delivery volumes, while maintaining impressive efficiency across the entire delivery range.



Perfect teamwork

IE3 motors guarantee energy-efficient operation whilst at the same time fulfilling European efficiency requirements. When combined with SFC technology, speed is precisely adjusted according to compressed air requirement, thereby reducing idle times and energy costs.





Sustainable and service-friendly

The IE3 asynchronous motors fitted by KAESER are designed to conserve resources. High-quality electrical steel and optimised windings reduce material use and enhance efficiency. This makes the drive not only highly durable, but also easy to service.



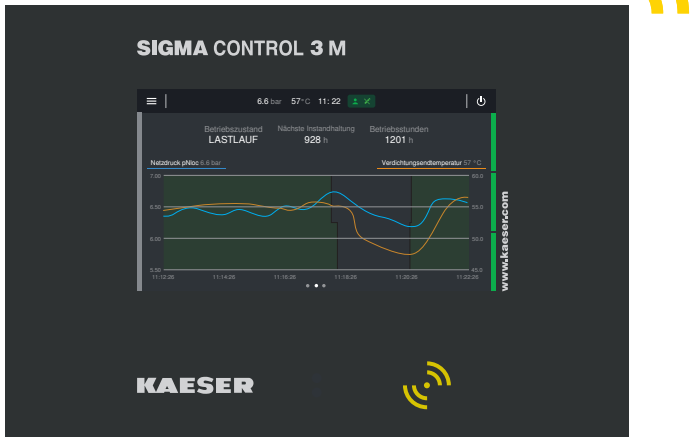
Efficient and economical

Premium Efficiency motors deliver high efficiency levels throughout their entire speed range. This helps to save energy and therefore costs, even during partial load operation.

SIGMA CONTROL internal compressor controller

SIGMA CONTROL

Intelligent, future-oriented, and efficient – the integrated SIGMA CONTROL compressor controller represents the future of cutting-edge compressed air systems. With its innovative platform concept for hardware and software, KAESER has set new standards in the control of stationary compressors. The SIGMA CONTROL not only boosts energy efficiency, but also enhances reliability and simplifies operation, whilst the touch display places intuitive control right at your fingertips. Clear visualisations provide an optimal overview of machine status, operating data, and maintenance information at all times. Fast navigation takes you directly to the key functions – no lengthy scrolling or searching required.





Maximum control with KAESER Connect

With our KAESER Connect app, you always have an eye on your compressor. All values are displayed in real time, allowing you to remain continuously informed about the current status of your compressed air system.
Push notifications keep you up to speed with developments: important updates, KPIs, maintenance counter information, and machine states are delivered directly to your mobile device. The machine report provides even more transparency and can be sent quickly and easily to your smartphone or E-mail. This way you can monitor your compressed air system efficiently, conveniently and with maximum security – wherever you are.

Future-proof

Modular system architecture with universal, configurable IoT interfaces enables flexible adaptation to new requirements and technologies.

Maximum dependability

Smart maintenance planning, early detection of deviations during operation, and detailed status messaging ensure reliable and interruption-free function.

Greater efficiency

Intelligent control significantly reduces the energy consumption of your compressed air system.

Comprehensive compatibility

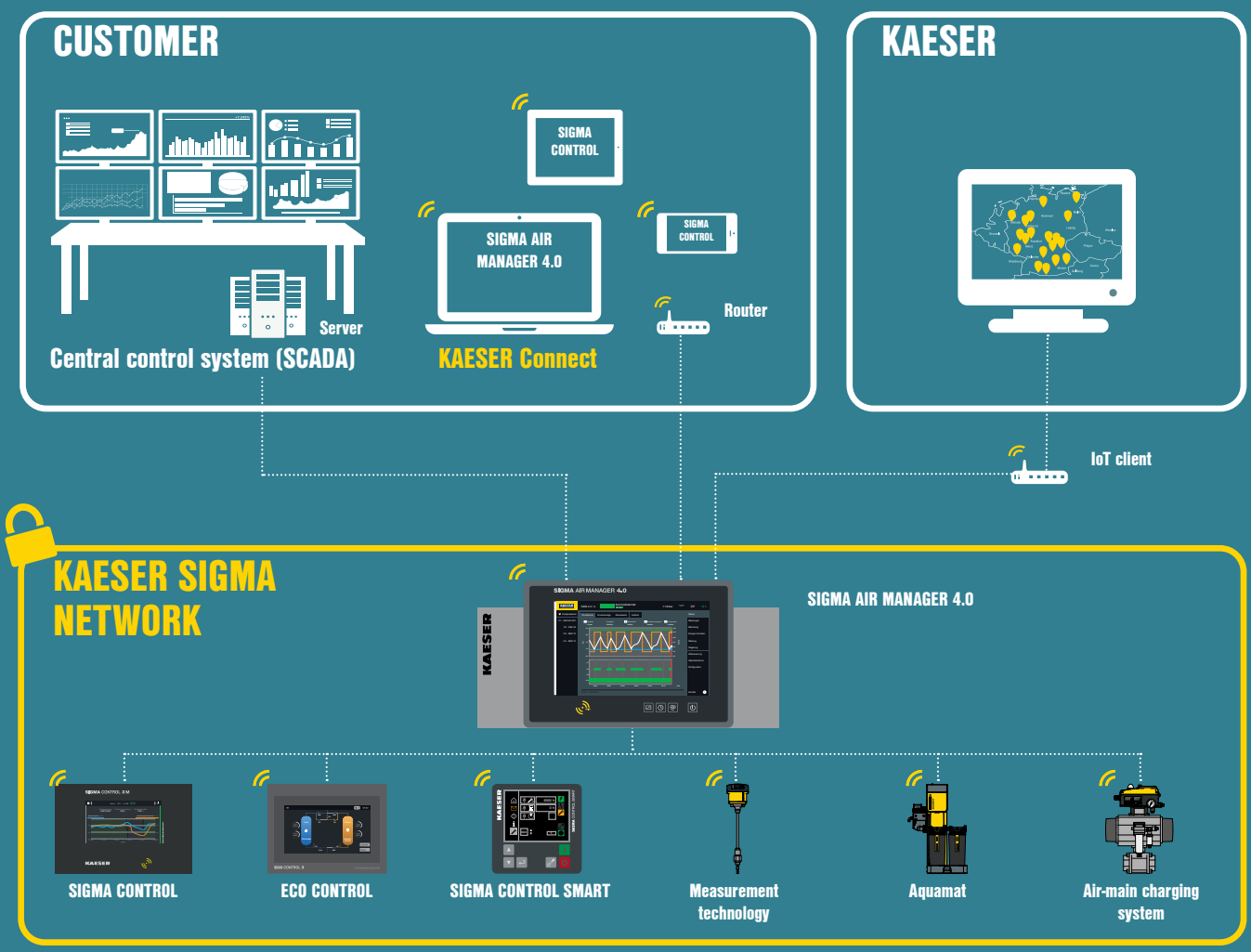
Compatible with all KAESER compressors, whether current or previous models.

SIGMA AIR MANAGER 4.0 compressed air management system

SIGMA AIR MANAGER 4.0

Adaptive, efficient and networked: demand-oriented compressed air management takes on a whole new meaning with the SIGMA AIR MANAGER 4.0. This advanced master controller coordinates operation of multiple compressors, as well as dryers or filters, with exceptional efficiency. A patented, simulation-based optimisation process determines future demand based on past compressed air consumption profiles. Thanks to networking of all components in the compressed air station via this intelligent master controller and the secure KAESER SIGMA NETWORK, comprehensive monitoring, energy management and predictive maintenance are all possible.





Equipment

Complete system

Ready to operate, fully automatic, super-silenced, vibration damped, all panels powder coated; suitable for use in ambient temperatures up to +45 °C

Rotary screw airend

Cooling fluid injection for optimal rotor cooling; genuine KAESER single-stage rotary screw airend with SIGMA PROFILE

Electrical components

IP54 control cabinet with ventilation, automatic star-delta protection combination, overload relay, control transformer

Cooling fluid and air circuit

Honeycomb-structure intake filter, pneumatic inlet and venting valve, cooling fluid separator tank with triple separation system; safety valve, minimum pressure check valve, thermostatic valve and fluid filter in cooling fluid circuit, fluid/compressed air combination cooler

Refrigeration dryer (on T version)

With electronically controlled condensate drain; refrigerant compressor with energy-saving, cycling cut-out function; linked to operating status of compressor motor when shut down. Alternatively, continuous operation can be selected by the user

Electric motor

IE3 Premium Efficiency electric motor, quality German manufacture, IP55

SIGMA CONTROL

Modular system with control unit and integrated inputs/outputs, designed for use with KAESER rotary screw compressors, traffic-light operating state display, fully automatic monitoring and control; Dual, Quadro, and Vario control modes, timer for compressor functions (On, Off) or external outputs, base load sequencing function for operation of two compressors, high-performance processor hardware; all components designed for industrial conditions, capacitive touchscreen with optical bonding, Time-of-Flight and other internal sensors, SD card slot for updates, USS bus communications module adapter for frequency converter, RFID reader, Ethernet interface for connection to KAESER SIGMA NETWORK

Connection to centralised control systems available via optional communications modules for: Profibus DP, Modbus TCP, Profinet, and DeviceNet

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.

On this basis, the SIGMA AIR MANAGER 4.0 constantly adjusts flow rates and compressor energy consumption in response to current compressed air demand. This optimisation is made possible by the integrated industrial PC with multicore processor, in combination with the adaptive 3-D^{advanced} Control. Furthermore, SIGMA NETWORK bus converters (SBUs) provide a host of possibilities for enabling the system to be individually tailored to meet specific customer requirements. The SBU can be equipped with digital and analogue input and output modules, as well as with SIGMA NETWORK ports, to enable seamless display of flow rate, pressure dew point, performance information or fault messages.

Amongst other key features, the SIGMA AIR MANAGER 4.0 provides long-term data storage capacity for reporting, controlling and audits, as well as for energy management in accordance with ISO 50001.

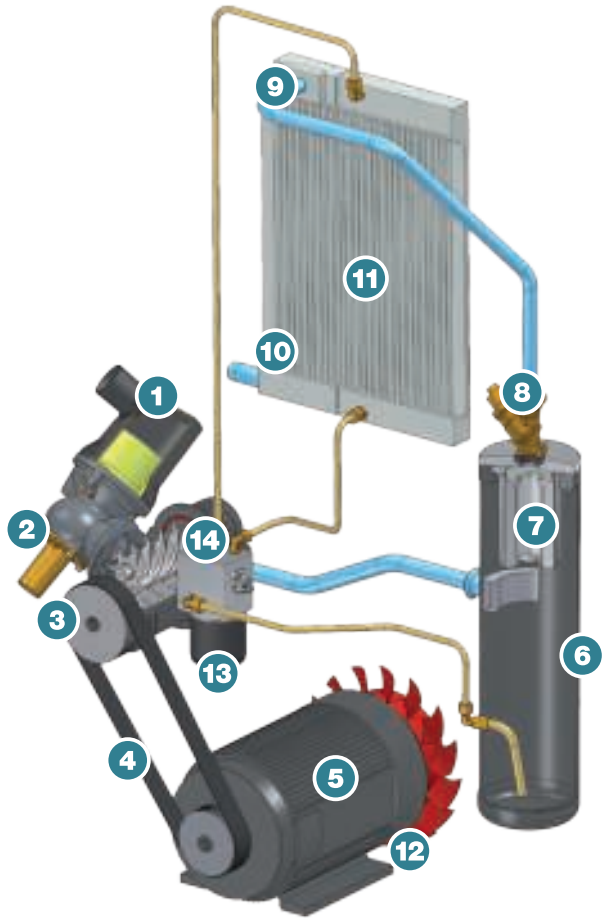
How it works

The air for compression passes through the intake air filter (1) and the inlet valve (2) into the airend (3). The airend (3) is driven by a high-efficiency electric motor (5) via a belt drive (4). The fluid injected for cooling during the compression process is separated from the air inside the fluid separator tank (6).

The compressed air flows through the fluid separator cartridge (7) and the minimum pressure check valve (8) into the compressed air aftercooler (9). The compressed air then exits the system through the compressed air connection (10).

The heat generated during compression is removed via the fluid by the fluid cooler (11) and dissipated into the surrounding environment by the fan (12). The fluid is then cleaned by the fluid filter (13). The thermostatic valve (14) ensures a constant operating temperature.

(1) Intake air filter
(2) Inlet valve
(3) Airend
(4) Belt drive
(5) IE3 drive motor
(6) Fluid separator tank
(7) Fluid separator cartridge
(8) Minimum pressure check valve
(9) Compressed air aftercooler
(10) Compressed air connection
(11) Fluid cooler
(12) Fan
(13) Fluid filter
(14) Thermostatic valve



Technical data

SK series

Model	Working pressure bar	Flow rate, *) complete system at working pressure m³/min	Max. gauge pressure bar	Drive motor nominal power kW	Refrigeration dryer model	Dimensions W x D x H mm	Compressed air connection	Sound pressure level **) dB(A)	Weight kg
SK 18	6 7.5 8.5 10 12 15	1.88 1.71 1.6 1.46 1.32 1.08	6 7.5 8.5 10 12 15	9	–	750 x 905 x 1245	G 1	66 65 65 65 65 65	312
SK 23	6 7.5 8.5 10 12 15	2.23 2.05 1.92 1.76 1.59 1.37	6 7.5 8.5 10 12 15	11	–	750 x 905 x 1245	G 1	67 66 66 66 66 66	312
SK 26	6 7.5 8.5 10 12 15	2.81 2.58 2.46 2.28 2.07 1.8	6 7.5 8.5 10 12 15	15	–	750 x 905 x 1245	G 1	68 67 67 67 67 67	320
SK 23 SFC	6 7.5 8.5 10 12 15	0.6 - 2.18 0.61 - 2.02 0.61 - 1.92 0.60 - 1.74 0.60 - 1.59 0.58 - 1.37	8.5 8.5 8.5 12 12 15	11	–	750 x 905 x 1245	G 1	67 67 67 67 67 67	329
SK 26 SFC	6 7.5 8.5 10 12 15	0.77 - 2.76 0.79 - 2.58 0.80 - 2.47 0.80 - 2.25 0.82 - 2.09 0.82 - 1.82	8.5 8.5 8.5 12 12 15	15	–	750 x 905 x 1245	G 1	68 68 68 68 68 68	337
SK 18 T	6 7.5 8.5 10 12 15	1.88 1.71 1.6 1.46 1.32 1.08	6 7.5 8.5 10 12 15	9	ABT 25	750 x 1230 x 1245	G 1	66 65 65 65 65 65	387
SK 23 T	6 7.5 8.5 10 12 15	2.23 2.05 1.92 1.76 1.59 1.37	6 7.5 8.5 10 12 15	11	ABT 25	750 x 1230 x 1245	G 1	67 66 66 66 66 66	387
SK 26 T	6 7.5 8.5 10 12 15	NA 2.58 2.46 2.28 2.07 1.8	6 7.5 8.5 10 12 15	15	ABT 25	750 x 1230 x 1245	G 1	NA 67 67 67 67 67	395
SK 22 T SFC	6 7.5 8.5 10 12 15	0.6 - 2.18 0.61 - 2.02 0.61 - 1.92 0.60 - 1.74 0.60 - 1.59 0.58 - 1.37	6 7.5 8.5 10 12 15	11	ABT 25	750 x 1230 x 1245	G 1	67 67 67 67 67 67	404
SK 25 T SFC	6 7.5 8.5 10 12 15	0.77 - 2.76 0.79 - 2.58 0.80 - 2.47 0.80 - 2.25 0.82 - 2.09 0.82 - 1.82	6 7.5 8.5 10 12 15	15	ABT 25	750 x 1230 x 1245	G 1	68 68 68 68 68 68	412

AIRCENTER

Model	Working pressure bar	Flow rate, *) complete system at working pressure m³/min	Max. gauge pressure bar	Drive motor nominal power kW	Refrigeration dryer model	Air receiver capacity l	Dimensions W x D x H mm	Compressed air connection	Sound pressure level **) dB(A)	Weight kg
AIRCENTER 18	6 7.5 8.5 10 12 15	1.88 1.71 1.6 1.46 1.32 1.08	6 7.5 8.5 10 12 15	9	ABT 25	350	750 x 1335 x 1880	G 1	66 65 65 65 65 65	579
AIRCENTER 23	6 7.5 8.5 10 12 15	2.23 2.05 1.92 1.76 1.59 1.37	6 7.5 8.5 10 12 15	11	ABT 25	350	750 x 1335 x 1880	G 1	67 66 66 66 66 66	579
AIRCENTER 26	6 7.5 8.5 10 12 15	2.81 2.58 2.46 2.28 2.07 1.8	6 7.5 8.5 10 12 15	15	ABT 25	350	750 x 1335 x 1880	G 1	68 67 67 67 67 67	587
AIRCENTER 23 SFC	6 7.5 8.5 10 12 15	0.6 - 2.18 0.61 - 2.02 0.61 - 1.92 0.60 - 1.74 0.60 - 1.59 0.58 - 1.37	8.5 8.5 8.5 12 12 15	11	ABT 25	350	750 x 1335 x 1880	G 1	67 66 66 66 66 66	596
AIRCENTER 26 SFC	6 7.5 8.5 10 12 15	0.77 - 2.76 0.79 - 2.58 0.80 - 2.47 0.80 - 2.25 0.82 - 2.09 0.82 - 1.82	8.5 8.5 8.5 12 12 15	15	ABT 25	350	750 x 1335 x 1880	G 1	68 67 67 67 67 67	604

*) Flow rate, complete system as per ISO 1217: 2009, Annexe C/E: Absolute inlet pressure 1 bar(a), cooling and air inlet temperature 20 °C
**) Sound pressure level as per ISO 2151 and basic standard ISO 9614-2, tolerance: ± 3 dB (A)

Technical data for add-on refrigeration dryer

Model	Refrigeration dryer power consumption kW	Pressure dew point °C	Refrigerant	Refrigerant charge kg	Global warming potential GWP	CO_2 equivalent t	Hermetic refrigeration circuit
ABT 25	0.49	+3	R-513A	0.52	629	0.33	Yes

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.



HPC Compressed Air Systems

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