

# HPC

Compressed  
Air Systems

# KAESER COMPRESSORS®



# Rotary Screw Compressors

## SK Series

With the world-renowned SIGMA PROFILE 

Flow rate 0.53 to 2.70 m<sup>3</sup>/min, Pressure 5.5 to 15 bar

[www.kaeser.com](http://www.kaeser.com)

# Efficient and reliable

Today's compressed air users expect maximum availability and efficiency, even from smaller compressors. It will therefore come as no surprise that KAESER's SK series rotary screw compressors go above and beyond meeting these key expectations. Not only do they deliver more compressed air for less energy, but they also combine ease of use and maintenance-friendliness with exceptional versatility and environmentally responsible design.

## More compressed air for less energy

The performance of SK series rotary screw compressors has been further enhanced. This has been achieved both through optimisation of the airend and minimisation of internal pressure losses.

## Energy-saving performance

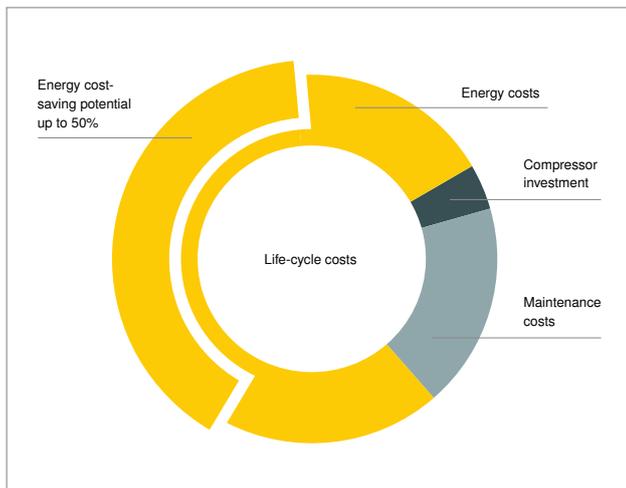
The efficiency of a machine depends on the total costs incurred throughout its entire service life. With compressors, energy costs account for the lion's share of total expenditure. KAESER therefore designed its SK series models with maximum energy efficiency in mind. Refinements to the energy-saving SIGMA PROFILE rotors inside the airend and the use of Premium Efficiency IE3 motors have significantly contributed to the increased performance of these versatile compressors. The addition of the SIGMA CONTROL 2 internal controller and KAESER's unique cooling system have helped enhance efficiency even further.

## Optimised design

All SK series models share logical and user-friendly design throughout. For example, the left-hand enclosure panel can be removed in a few simple steps to allow excellent visibility of the system's intelligently laid-out components. Needless to say, the SK series was designed to ensure best possible access to all service points. When closed, the sound-absorbing compressor housing keeps operating noise to a minimum, thereby ensuring a pleasant and quiet working environment. Moreover, with its three intake openings, the enclosure provides separate air flows for highly efficient cooling of the system, drive motor and control cabinet. Thanks to their vertical design, SK series compressors are exceptionally compact, making them the perfect choice for applications where space is at a premium.

## Modular system concept

SK series compressors are available as standard versions, as versions equipped with an integrated refrigeration dryer and as AIRCENTER versions featuring an air receiver installed beneath the compressor unit. KAESER's intelligent modular design concept therefore provides impressive flexibility. Moreover, all versions are available with an integrated frequency converter for infinitely variable speed control.



## Energy-efficiency: the essential requirement

Initial investment and servicing costs account for only a small part of a compressor's total life-cycle costs. It is energy that accounts for the lion's share of these costs.

For more than 40 years, KAESER has been committed to minimising your compressed air production energy costs. We also have the bigger picture in clear focus when it comes to servicing and maintenance costs, as well as maximum compressed air availability.

**Quiet and powerful,  
durable and secure.**



Image: SK 25



**KAESER**



**SIGMA CONTROL 2**

www.kaeser.com

7.8bar	09:26	75°C
ON LOAD	- on	ipA - Load
Key	18005h Load	17105h
Run		1995h
Maintenance inc		



**SIGMA**

SK series

# Design is in the details



## SIGMA PROFILE <sup>✪</sup> airend

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 significantly contribute to the overall system's class-leading specific package input power.



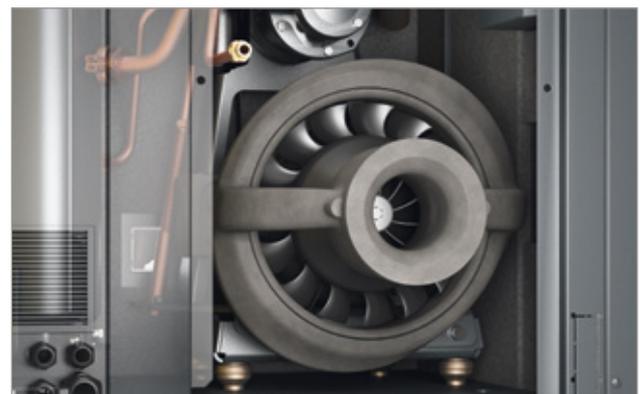
## SIGMA CONTROL 2 controller

The internal SIGMA CONTROL 2 controller ensures efficient compressor control and monitoring at all times. The large display and RFID reader provide effective communication and maximum security. Multiple interfaces offer exceptional flexibility, whilst the SD card slot makes updates quick and easy.



## Maximum efficiency: IE3 motors

Needless to say, every KAESER SK series rotary screw compressor features an energy-saving, Premium Efficiency IE3 drive motor.



## Efficient cooling

KAESER's innovative cooling system uses a high-efficiency dual flow fan and separate airflow channels for cooling of the motor, fluid/compressed air cooler and control cabinet. This not only achieves optimum 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 compressed air refrigeration dryer is installed within a separate housing, in order to shield it from the heat emitted by the compressor and to increase operational reliability. The refrigeration dryer's automatic shutdown function further enhances energy-efficient operation.



## Also with variable speed control

Variable speed control can offer distinct advantages for particular applications, which is why this option is also available on SK series models. The frequency converter is integrated into the compressor system's control cabinet.



## Quieter than ever before

The new cooling system provides improved cooling performance with optimum soundproofing. Normal conversation can take place right beside the running compressor.



## Maintenance-friendly

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



Image: SK 22 T



Image: AIRCENTER 22

# The compact and efficient compressed air station



## Connect and go

All that is needed to install this compact complete compressed air station is to connect it to a power supply and the compressed air network. No further installation work is necessary.



## Durable air receiver

The 350-litre air receiver is especially designed for installation in AIRCENTER systems. All inner and outer surfaces are coated to provide excellent corrosion protection and to ensure long service life.



## Service-friendly design

The left-hand housing panel is easily removed to allow excellent accessibility to all maintenance points. Viewing windows allow convenient inspection of fluid levels and drive belt tension whilst the unit is in operation.



## Excellent component access

All maintenance and service components are easily accessible, which significantly reduces the downtime associated with service and maintenance tasks. This helps to increase compressed air availability and minimises operating costs.



**KAESER**



**SK 25**





# Equipment

## Complete system

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

## Rotary screw airend

Genuine KAESER single-stage rotary screw airend with SIGMA PROFILE rotors and cooling fluid injection for optimised cooling

## Electrical components

Ventilated IP 54 control cabinet, automatic star-delta starter, overload relay, control transformer

## Cooling fluid and air flow

“Honeycomb” structure air intake filter, pneumatic inlet and venting valves, cooling fluid separator tank with triple separation system, safety valve, minimum pressure check valve, thermostatic valve and fluid filter within the cooling fluid circuit, fluid / compressed air combination cooler

## Refrigeration dryer (with T version)

With electronically controlled condensate drain; refrigerant compressor with energy-saving, cycling shutdown feature; linked to operational status of the compressor when inactive. Alternatively, continuous operation can be selected at the user-end

## Electric motor

Premium Efficiency IE3 electric motor, quality German manufacture, IP 55 protection

## SIGMA CONTROL 2

“Traffic light” LED indicators show operating 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 and Continuous control modes as standard. Standard interfaces: Ethernet for connection to the SIGMA NETWORK, Master/Slave operation or web server for KAESER Connect. SD card slot for updates and long-term storage of operating data. RFID reader.

Connection to centralised control systems available via optional communications modules for: Profibus DP-V0, Modbus RTU, DeviceNet, Modbus TCP, PROFINET IO, EtherNet/IP.

## SIGMA AIR MANAGER 4.0

The further-refined, adaptive 3-D<sup>advanced</sup> Control predictively calculates and compares the various operating options and selects the most efficient one to suit the specific needs of the application.

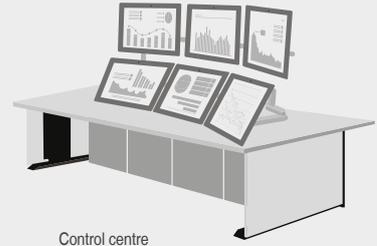
On this basis, the SIGMA AIR MANAGER 4.0 constantly adjusts flow rates and compressor energy consumption in response to current compressed air demand. This optimisation is made possible by the integrated industrial PC with multi-core processor, in combination with the adaptive 3-D<sup>advanced</sup> Control. Furthermore, the SIGMA NETWORK bus converter (SBC) provides a host of possibilities for enabling the system to be individually tailored to meet specific user requirements. The SBC can be equipped with digital and analogue input and output modules, as well as with SIGMA NETWORK ports, in order 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 tasks as per ISO 50001.

*(See image on right; extract from the SIGMA AIR MANAGER 4.0 brochure)*



Digital output device, e.g. laptop



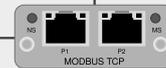
Control centre

KAESER CONNECT



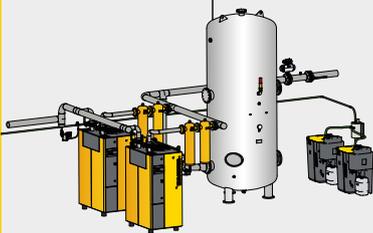
SIGMA AIR MANAGER 4.0

Communications module, e.g. Modbus TCP

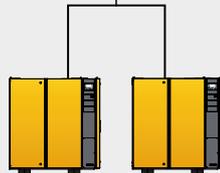


## KAESER SIGMA NETWORK

SIGMA NETWORK  
PROFIBUS master



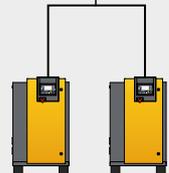
Various connection possibilities  
for treatment components



Connection of conventional  
compressors possible



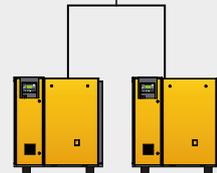
Controller:  
SIGMA CONTROL 2



Connection of compressors  
with SIGMA CONTROL 2



Controller:  
SIGMA CONTROL



Connection of compressors with  
SIGMA CONTROL; connection to stations  
with Profibus network (SAM 1 replacement)



# Secure data – secure business!

# Technical data

## Standard version / SFC – Version with frequency control

Model	Working pressure	Flow rate, *) complete system at working pressure	Max. gauge pressure	Drive motor rated power	Dimensions W x D x H	Compressed air connection	Sound pressure level **)	Weight
	bar							
SK 22	6	2.16	6	11	750 x 895 x 1260	G 1	66	312
	7.5	2.02	8					
	10	1.68	11					
	13	1.31	15					
SK 25	6	2.69	6	15	750 x 895 x 1260	G 1	67	320
	7.5	2.52	8					
	10	2.12	11					
	13	1.71	15					
SK 22 SFC	7.5	0.63 - 1.99	8	11	750 x 895 x 1260	G 1	67	329
	10	0.64 - 1.68	11					
	13	0.58 - 1.38	15					
SK 25 SFC	7.5	0.82 - 2.57	8	15	750 x 895 x 1260	G 1	68	337
	10	0.85 - 2.27	11					
	13	0.84 - 1.91	15					

## T – Version with refrigeration dryer / T SFC – Version with refrigeration dryer and frequency control

Model	Working pressure	Flow rate, *) complete system at working pressure	Max. gauge pressure	Drive motor rated power	Refrigeration dryer model	Dimensions W x D x H	Compressed air connection	Sound pressure level **)	Weight
	bar								
SK 22 T	6	2.16	6	11	ABT 25	750 x 1240 x 1260	G 1	66	387
	7.5	2.02	8						
	10	1.68	11						
	13	1.31	15						
SK 25 T	6	2.69	6	15	ABT 25	750 x 1240 x 1260	G 1	67	395
	7.5	2.52	8						
	10	2.12	11						
	13	1.71	15						
SK 22 T SFC	7.5	0.63 - 1.99	8	11	ABT 25	750 x 1240 x 1260	G 1	67	404
	10	0.64 - 1.68	11						
	13	0.58 - 1.38	15						
SK 25 T SFC	7.5	0.82 - 2.57	8	15	ABT 25	750 x 1240 x 1260	G 1	68	412
	10	0.85 - 2.27	11						
	13	0.84 - 1.91	15						

## Technical data for add-on refrigeration dryer

Model	Refrigeration dryer power consumption	Pressure dew point	Refrigerant	Refrigerant charge	Global warming potential	CO <sub>2</sub> equivalent	Hermetic refrigeration circuit
	kW	°C		kg	GWP	t	
ABT 25	0.49	+3	R-513A	0.52	631	0.33	Yes

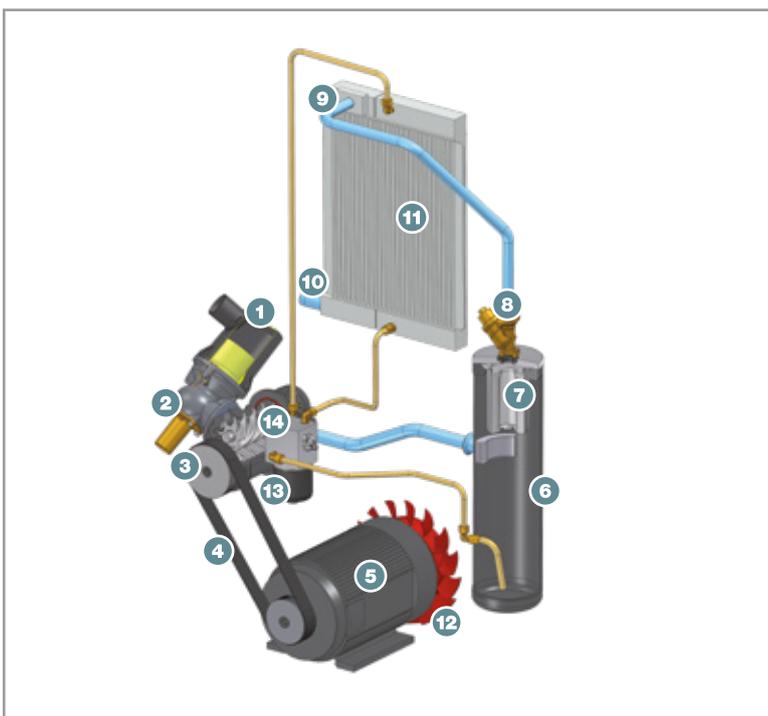
\*) Flow rate, complete system as per ISO 1217: 2009 Annexe C/E: absolute inlet pressure 1 bar (a), cooling and air inlet temperature +20 °C

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

## AIRCENTER – Standard version / AIRCENTER – SFC version

Model	Working pressure	Flow rate, <sup>*)</sup> complete system at working pressure	Max. gauge pressure	Drive motor rated power	Refrigeration dryer model	Air receiver capacity	Dimensions W x D x H	Compressed air connection	Sound pressure level <sup>**)</sup>	Weight
	bar		bar	kW					l	
AIRCENTER 22	6	2.16	6	11	ABT 25	350	750 x 1335 x 1880	G 1	66	579
	7.5	2.02	8							
	10	1.68	11							
	13	1.31	15							
AIRCENTER 25	6	2.69	6	15	ABT 25	350	750 x 1335 x 1880	G 1	67	587
	7.5	2.52	8							
	10	2.12	11							
	13	1.71	15							
AIRCENTER 22 SFC	7.5	0.63 - 1.99	8	11	ABT 25	350	750 x 1335 x 1880	G 1	67	596
	10	0.64 - 1.68	11							
	13	0.58 - 1.38	15							
AIRCENTER 25 SFC	7.5	0.82 - 2.57	8	15	ABT 25	350	750 x 1335 x 1880	G 1	68	604
	10	0.85 - 2.27	11							
	13	0.84 - 1.91	15							

## How it works



- (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

# 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

**HPC Compressed Air Systems**, Victoria Gardens, Burgess Hill, West Sussex RH15 9RQ  
Tel: 01444 241671 Fax: 01444 247304 E-Mail: [info@hpcplc.co.uk](mailto:info@hpcplc.co.uk) [www.hpccompressors.co.uk](http://www.hpccompressors.co.uk)