

## Rotary Screw Compressors SK Series

With the world-renowned SIGMA PROFILE 

Air delivery from 1.30 to 2.50 m<sup>3</sup>/min, Pressure 8 – 11 – 15 bar



# SK Series

## SK: Long-term savings

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

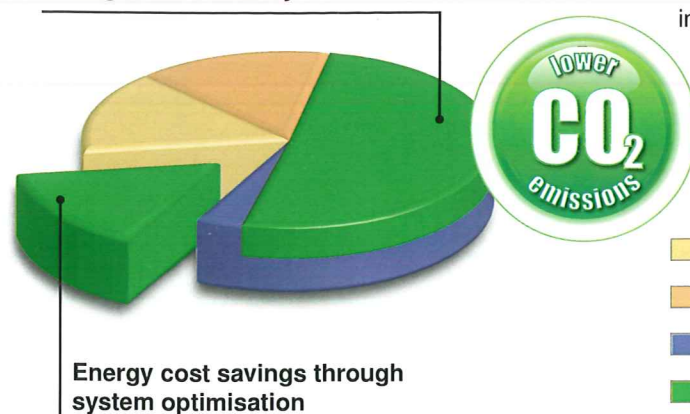
### More air for your money

Kaeser's engineers have significantly boosted the performance of the SK 22 and 25 compared to previous models. This impressive feat has been achieved both through airend optimisation and the minimisation of internal pressure losses. Therefore, depending on drive power, these enhancements have resulted in a free air delivery increase of up to 14 percent.

### Energy-saving performance

The efficiency of a machine depends on the total costs incurred throughout the equipment's entire service life. With compressors, energy costs account for the lion's share of total expenditure. Kaeser therefore designed its SK series compressors with optimum energy efficiency in mind. Refinements to the energy-saving **Sigma Profile** airend rotors and the use of premium efficiency IE3 electrical motors have significantly increased the performance of these versatile compressors. The addition of the **Sigma Control 2** internal controller and Kaeser's unique cooling system has helped to push the boundaries of efficiency even further.

### Potential energy cost savings through heat recovery



### Optimised design

The new SK models all share logical and user-friendly design throughout. For example, the left-hand enclosure panel can be removed in a few simple steps and allows excellent visibility of the system's intelligently laid out components. Needless to say, the new SK series was designed to ensure best possible access to all service points. When closed, the sound-absorbing compressor enclosure keeps operational sound levels to a minimum thereby ensuring a quiet work environment. In addition, the enclosure features four inlet openings for separate airflow cooling of the compressor, the motor, the switching cabinet and for compressor intake air. Last, but not least, SK series compressors are impressively compact, which makes them the perfect choice for applications where space is at a premium.

### Modular system concept

SK series compressors are available as standard versions, as so-called "T" models that are equipped with an integrated, thermally shielded refrigeration dryer and as "Aircenter" models that additionally include an underslung air receiver (see right). Kaeser's intelligent modular design therefore offers incredible flexibility. Moreover, all versions are available with an integrated frequency converter for infinite speed control.

## Quiet, dependable performance



Aircenter 22: Compact compressed air system comprising a SK 22 rotary screw compressor, a refrigeration dryer and compressed air receiver

# SK Series

**Design is in the details**



## Sigma Profile airend

At the heart of every SK system lies a premium quality airend featuring Kaeser's **Sigma Profile** rotors. Moreover, Kaeser's product engineers have managed to enhance performance and efficiency still further. The use of IE3 electrical drive motors has also contributed to additional energy savings.



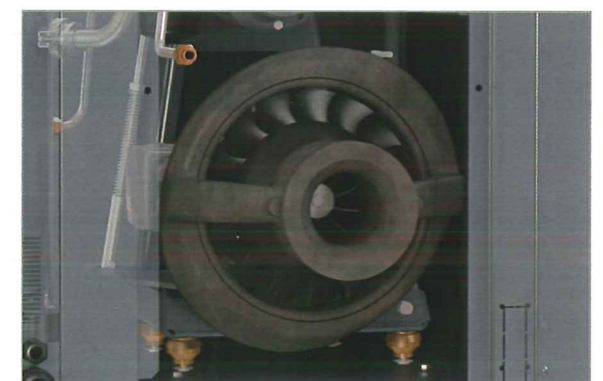
## Service-friendly design

The left-hand housing cover is easily removed to allow excellent accessibility to all service points. Moreover, standard models have a compact footprint of only 0.65 m<sup>2</sup>, making them ideal for smaller businesses and workshops where space is at a premium. Two inspection glasses allow convenient external inspection of fluid levels and drive belt tension whilst the unit is in operation.



## Sigma Control 2

The **Sigma Control 2** ensures efficient control and system monitoring. Communication is made simple thanks to the generously sized display and a RFID reader. Updates are quick and easy thanks to the addition of a SD card slot and multiple interfaces are available to ensure exceptional flexibility.



## Efficient cooling

Kaeser's innovative cooling system uses a high efficiency dual flow fan and separate air flow channels for cooling of the motor, the fluid/compressed air cooler and the control cabinet. This not only achieves optimum cooling performance, low compressed air discharge temperatures and minimal sound levels, but also promotes efficient air compression.

SK – Optionally available with Kaeser's Sigma Control Basic.

Equipment

Complete unit

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

Airend

Genuine KAESER rotary screw, single stage airend with Sigma Profile and cooling fluid injection for optimised rotor cooling.

Electric motor

Premium efficiency German electric motor to IP 55.

Fluid and air flow

'Honeycomb' air intake filter, pneumatic inlet and venting valves,

cooling fluid separator tank with triple separation system, pressure relief 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)

Equipped with electronic controlled condensate drain, shutdown function coupled to compressor operation, energy saving control selectable via Sigma Control.

Electrical components

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

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. Interfaces: Ethernet, optional connectivity: Profibus DP. From 2011: Modbus, Profinet, Devicenet, RFID reader. SK rotary screw compressors also optionally available with Sigma Control Basic.

SK Series – Technical Specifications

Model	Working pressure bar	FAD *) Complete package at working pressure m³/min	Max. operating pressure bar	Rated motor power kW	Dryer power consumption kW	Receiver volume [l]	Pressure dew point °C	Dimensions W x D x H mm	Air connection	Sound pressure level **) dB(A)	Weight kg
SK 22	7.5 10 13	2.00 1.68 1.32	8 11 15	11	-	-	-	750 x 895 x 1260	G 1	66	312
SK 25	7.5 10 13	2.50 2.11 1.72	8 11 15	15	-	-	-	750 x 895 x 1260	G 1	67	320
SK 22 T	7.5 10 13	2.00 1.68 1.32	8 11 15	11	0.52	-	+3	750 x 1240 x 1260	G 1	66	387
SK 25 T	7.5 10 13	2.50 2.11 1.72	8 11 15	15	0.52	-	+3	750 x 1240 x 1260	G 1	67	395
SK 22 SFC	7.5 10 13	0.62 - 1.98 0.63 - 1.67 0.57 - 1.37	8 11 15	11	-	-	-	750 x 895 x 1260	G 1	67	329
SK 25 SFC	7.5 10 13	0.81 - 2.55 0.84 - 2.25 0.83 - 1.90	8 11 15	15	-	-	-	750 x 895 x 1260	G 1	68	337
SK 22 T SFC	7.5 10 13	0.68 - 1.98 0.63 - 1.67 0.57 - 1.37	8 11 15	11	0.52	-	+3	750 x 1240 x 1260	G 1	67	404
SK 25 T SFC	7.5 10 13	0.81 - 2.55 0.84 - 2.25 0.83 - 1.90	8 11 15	15	0.52	-	+3	750 x 1240 x 1260	G 1	68	412
Aircenter 22	7.5 10 13	2.00 1.68 1.32	8 11 15	11	0.52	350	+3	750 x 1370 x 1880	G 1	66	579
Aircenter 25	7.5 10 13	2.50 2.11 1.72	8 11 15	15	0.52	350	+3	750 x 1370 x 1880	G 1	67	587
Aircenter 22 SFC	7.5 10 13	0.62 - 1.98 0.63 - 1.67 0.57 - 1.37	8 11 15	11	0.52	350	+3	750 x 1370 x 1880	G 1	67	596
Aircenter 25 SFC	7.5 10 13	0.81 - 2.55 0.84 - 2.25 0.83 - 1.90	8 11 15	15	0.52	350	+3	750 x 1370 x 1880	G 1	68	604

\*) FAD as per ISO 1217: 2009, Annex C. \*\*) Sound pressure level as per ISO 2151 and basic standard ISO 9614-2, Tolerance: ± 3 dB(A)

Component layout for SK systems

- 1

Intake filter
- 2

Inlet valve
- 3

Sigma Profile airend
- 4

Drive motor (IE3, premium efficiency)
- 5

Fluid separator tank

6

Compressed air aftercooler

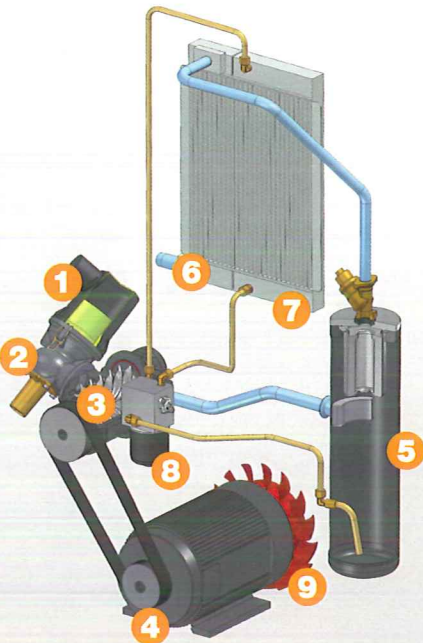
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Fluid cooler

8

Fluid filter

9

Fan

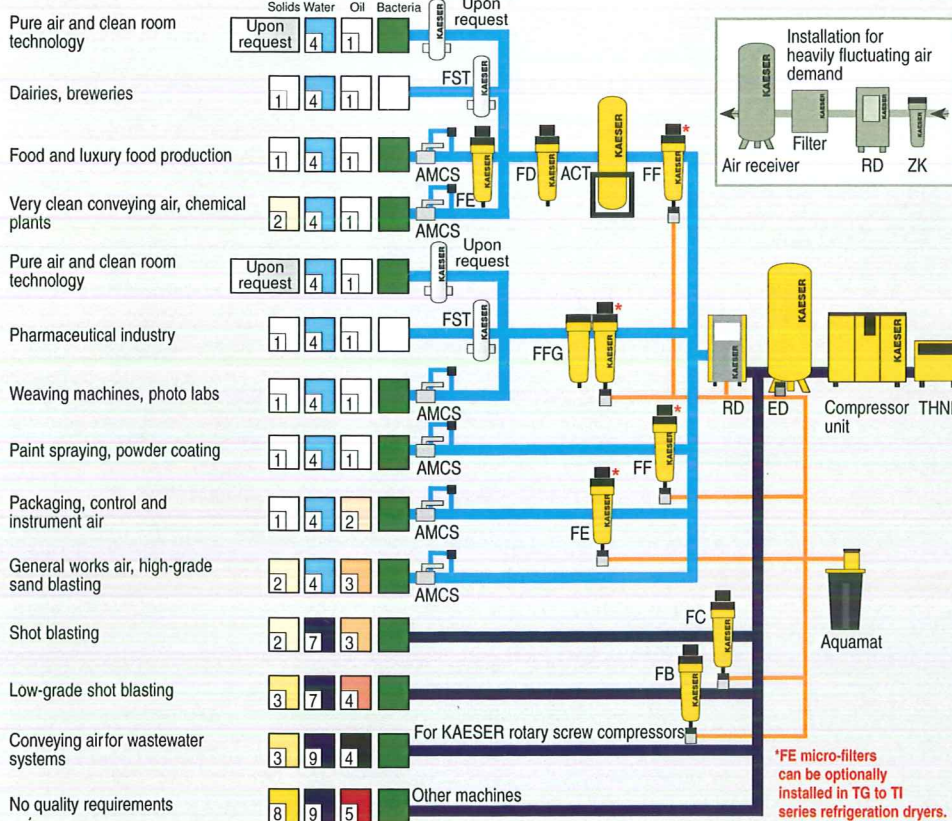
Views



## 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



### Explanation

THNF	Bag filter
ZK	Centrifugal separator
ED	ECO DRAIN
FB / FC	Pre-filter
FD	Particulate filter
FE / FF	Microfilter
FG	Activated carbon filter
FFG	Activated carbon and microfilter combination
RD	Refrigeration dryer
DD	Desiccant dryer
ACT	ACT activated carbon adsorber
FST	Sterile filters
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

### Particle concentration C<sub>p</sub> [mg/m<sup>3</sup>]\*

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

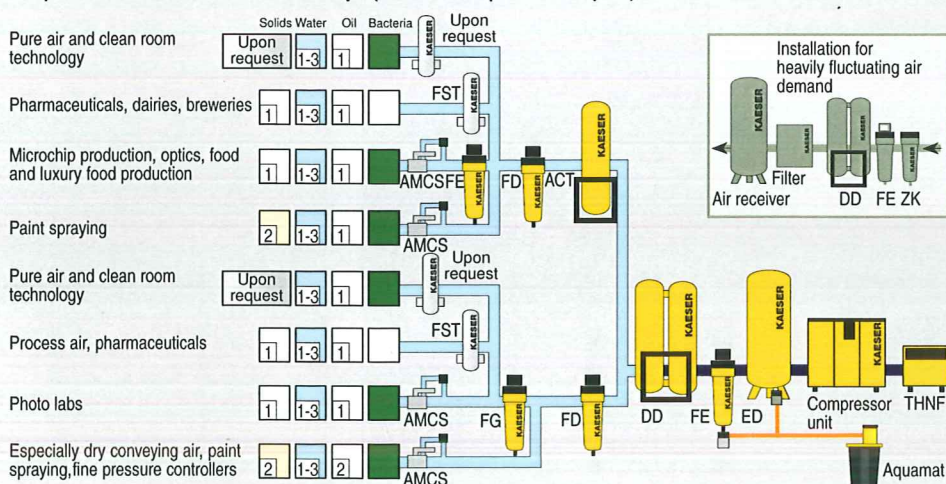
### Oil

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

For air mains subject to sub-zero temperatures:

Compressed air treatment with a desiccant dryer (down to -70 °C pressure dew point)



**KAESER**  
COMPRESSORS

*Built for a Lifetime!*

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