



# Rotary Screw Compressors

## ASK Series

With the world-renowned SIGMA PROFILE

Flow rate 0.79 to 4.65 m<sup>3</sup>/min, Pressure 5.5 to 15 bar

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

# ASK – Maximum performance

Today's users expect maximum availability and efficiency from their compressors, regardless of size. It will therefore come as no surprise that KAESER's ASK series rotary screw compressors go far beyond simply 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 air for your money

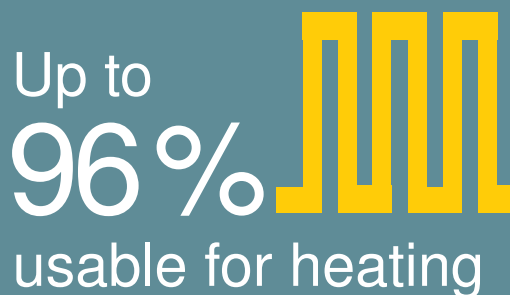
ASK series rotary screw compressors are true class leaders when it comes to performance. Thanks to a redeveloped airend featuring further-optimised SIGMA PROFILE rotors and low-speed operation, the latest ASK models deliver up to 16% higher flow rates compared to their predecessors.

## Energy-saving performance

The efficiency of a machine depends on the total costs incurred throughout its entire service life. KAESER therefore designed their ASK series compressors with optimum energy efficiency in mind. Refinements to the energy-saving SIGMA PROFILE rotors inside the airend and the use of Premium Efficiency IE3 motors have contributed significantly to the increased performance of these versatile compressors. The addition of a SIGMA CONTROL 2 controller and KAESER's unique cooling system has helped to push the boundaries of efficiency even further.

## Optimised design

All ASK models share logical and user-friendly design throughout. For example, the housing doors can be opened in a few simple steps to allow excellent visibility of the system's intelligently laid-out components. Needless to say, the ASK 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 pleasantly quiet working environment. Moreover, with its two intake openings, the enclosure provides separate air flows for highly efficient cooling of the compressor and drive motor. Last but not least, ASK series compressors are impressively compact, which makes them the perfect choice for applications where space is at a premium.



Up to  
**96%**  
usable for heating

## Why choose heat recovery?

In fact, the question should be: Why not? Amazingly, up to 100% of the electrical energy supplied to a rotary screw compressor is converted into heat. Up to 96% of this energy can be recovered and reused for heating purposes. This not only reduces primary energy consumption, but also improves the company's overall energy balance.

# Powerful and service-friendly



Image: ASK 28



ASK series

# Quality is in the details



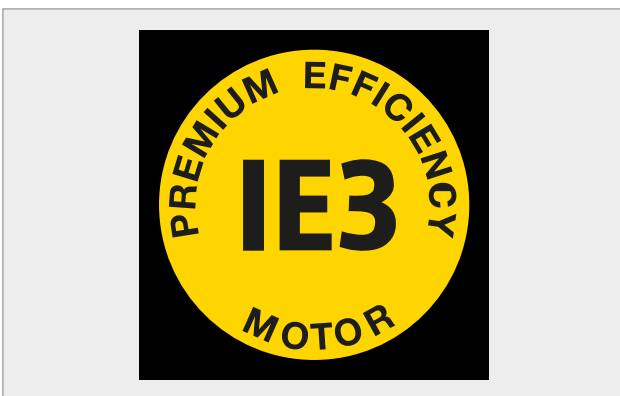
## Save energy with the SIGMA PROFILE

At the heart of every ASK system lies a premium-quality airend featuring energy-saving SIGMA PROFILE rotors. KAESER airends are equipped with flow-optimised rotors, which contribute significantly 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 easy communication and maximum security. Integration into the SIGMA NETWORK is also available.



## Energy-saving IE3 motors

Naturally, every KAESER ASK series rotary screw compressor features an energy-saving, Premium Efficiency IE3 drive motor.

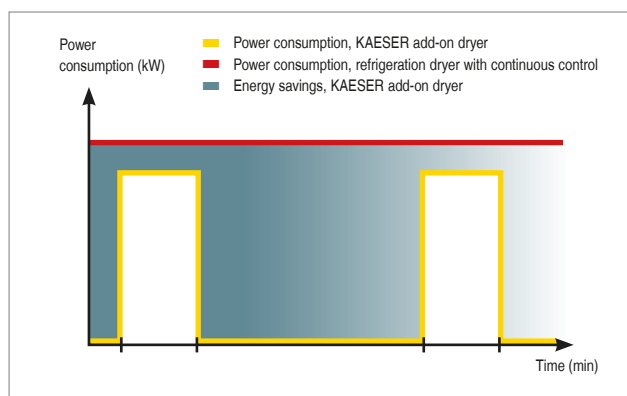


## Energy-saving radial fan

Driven by an independent motor, the radial fan assures low compressed air discharge temperatures and provides greater cooling performance for lower energy consumption. Needless to say, it also complies with the efficiency requirements of EU Directive 327/2011.



## With energy-efficient add-on dryer



### Energy-saving control

The integrated refrigeration dryer in ASK T units operates at a high level of efficiency thanks to its energy-saving control, whereby it is only activated when compressed air actually needs to be dried. As a result, the required compressed air quality is achieved with maximum energy efficiency.



### Efficient refrigeration dryer

With its efficient scroll compressor and corrosion-resistant aluminium heat exchanger, the add-on refrigeration dryer for ASK units was designed with absolute energy efficiency in mind.



### Refrigeration dryer with ECO-DRAIN

The refrigeration dryer is equipped with an ECO-DRAIN automatic condensate drain. Activated electronically, this advanced, level-controlled condensate drain eliminates the compressed air losses associated with solenoid valve control, thereby saving energy and considerably enhancing operational reliability.



### Exceptional compressed air quality

Because the compressor and dryer are thermally shielded from one another, the dryer remains unaffected by heat from the compressor, which means that it can operate at peak performance at all times to provide optimum-quality, dry compressed air.



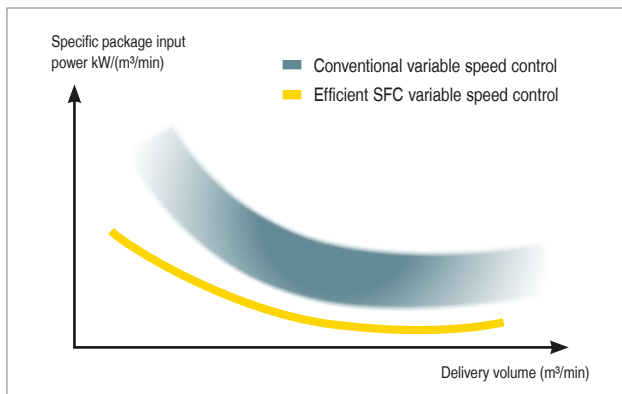
Image: ASK 28 T



Image: ASK 40 T SFC

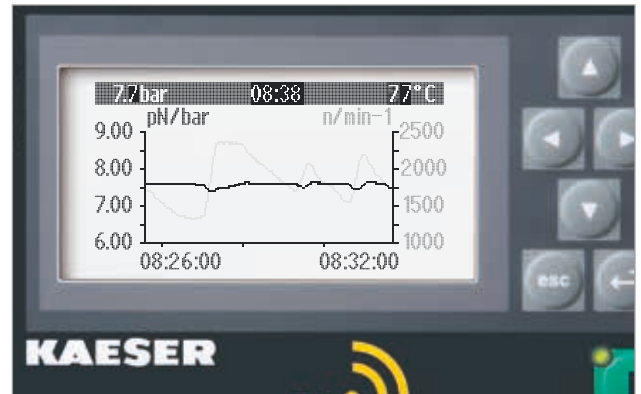


# Quality is in the details



## Optimised specific package input power

With any compressed air station, it is the speed-controlled compressor that operates for longer than any other unit in the system. ASK SFC models are therefore designed to provide maximum efficiency without running at extreme speeds. This saves energy, maximises service life and enhances reliability.



## Precision pressure control

The flow rate can be adjusted within the control range according to pressure, so as to match the actual compressed air demand. As a result, working pressure is precisely maintained to within  $\pm 0.1$  bar. This allows the maximum pressure to be reduced, thereby saving energy and therefore costs.



## Integrated SFC control cabinet

Housed in its own integrated yet insulated control cabinet, the SFC frequency converter is shielded from heat arising from the compressor. A separate fan keeps operating temperatures in the optimum range, so as to ensure maximum performance and service life.



## EMC-certified complete system

It goes without saying that, like all KAESER products, ASK SFC series units are tested and certified for electro-magnetic compatibility in accordance with the European EMC directive, as well as with the German EMC Act, as indicated by the VDE EMC mark.







# 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

## Sound insulation

Panels lined with laminated mineral wool

## Vibration damping

Double-insulated anti-vibration mounts with metal elements

## Airend

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

## Drive

V-belt drive with automatic belt tensioning

## Electric motor

Premium Efficiency IE3 electric motor, quality German manufacture, IP55 protection, ISO F for additional reserve

## Electrical components

IP 54 control cabinet, control transformer, Siemens frequency converter, floating contacts for ventilation systems

## Fluid and air flow

Dry air intake filter, pneumatic intake and venting valves, cooling fluid reservoir with three-stage separator system, safety valve, minimum pressure check valve, thermostatic valve and fluid microfilter, all fully piped with flexible couplings

## Cooling

Air-cooled; separate aluminium cooler for compressed air and cooling fluid; radial fan meets fan efficiency requirements as per EU Directive 327/2011

## Refrigeration dryer

CFC-free, R-513A refrigerant, fully insulated, hermetically sealed refrigerant circuit, scroll refrigerant compressor with energy-saving shut-off feature, hot gas bypass control, electronic level-controlled condensate drain

## Heat recovery (HR)

Optionally available with integrated HR system (plate-type heat exchanger)

## 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 automatic monitoring and control. Selection of Dual, Quadro, Vario and Continuous control as standard. Ethernet interface for connection to the SIGMA NETWORK; SD card slot for data-logging and updates; RFID reader

Connection to centralised control systems available via optional communications module for: Profibus DP, Modbus, Profinet and Devicenet, web server.

# How it works

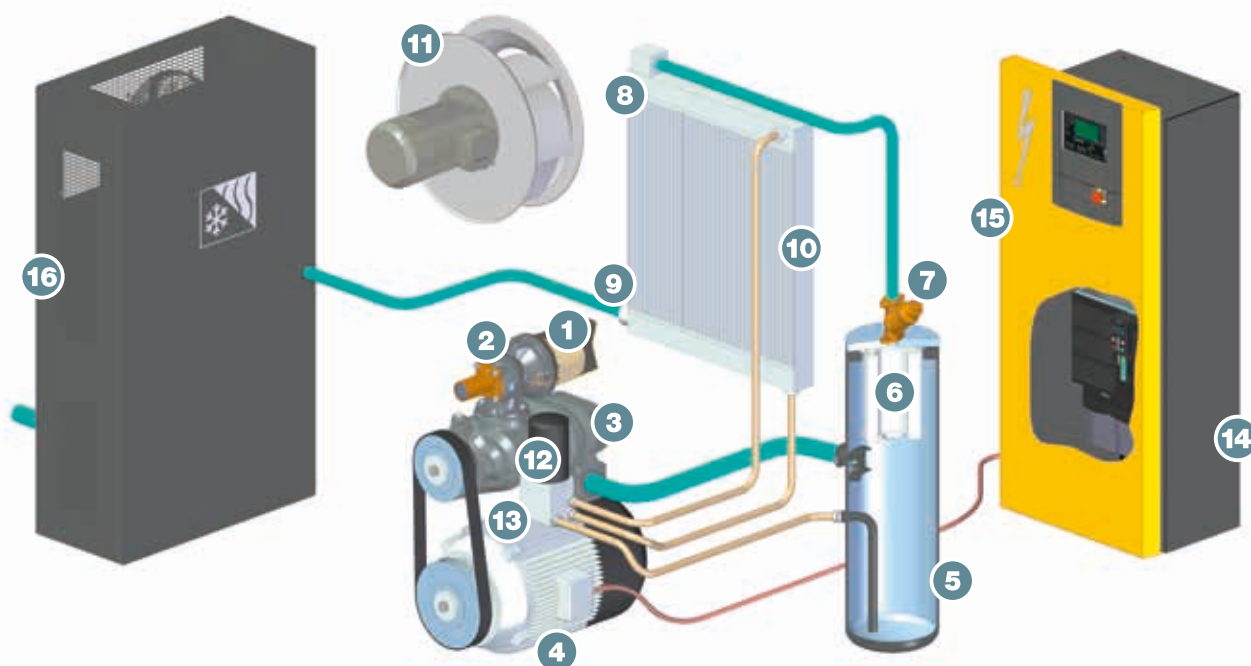
The air for compression passes through the intake filter (1) and the inlet valve (2) into the SIGMA PROFILE airend (3). The airend (3) is driven by a high-efficiency electric motor (4). The cooling oil injected for cooling purposes during the compression process is separated from the air inside the fluid separator tank (5). The compressed air flows through the 2-stage oil separator cartridge (6) and the minimum pressure check valve (7) into the compressed air aftercooler (8).

The compressed air then exits the system through the compressed air connection (9). The heat generated during the compression process is removed from the cooling oil via the fluid cooler (10) and dissipated into the environment by a separate fan with fan motor (11). The cooling oil is then cleaned by the fluid filter (12).

The thermostatic valve (13) ensures consistent operating temperatures. The control cabinet (14) houses the internal SIGMA CONTROL 2 compressor controller (15) and, depending on the machine version, the star-delta starter or the frequency converter (SFC).

Some systems also feature an optional add-on dryer (16) for drying the compressed air.

- (1) Intake filter
- (2) Inlet valve
- (3) Airend
- (4) Drive motor
- (5) Fluid separator tank
- (6) Oil separator cartridge
- (7) Minimum pressure check valve
- (8) Compressed air aftercooler
- (9) Compressed air connection
- (10) Fluid cooler
- (11) Fan with motor
- (12) Fluid filter
- (13) Thermostatic valve
- (14) Control cabinet
- (15) SIGMA CONTROL 2
- (16) Add-on dryer





# Technical specifications

## Standard versions

Model	Gauge working pressure	Flow rate, *) complete system at gauge working pressure	Max. gauge pressure	Drive motor rated power	Dimensions W x D x H	Compressed air connection	Sound pressure level **)	Mass
	bar	m³/min	bar	kW	mm		dB(A)	kg
<b>ASK 28</b>	6	3.17	6	15	800 x 1110 x 1530	G 1 ¼	65	485
	7.5	2.86	8					
	10	2.40	11					
	13	1.93	15					
<b>ASK 34</b>	6	3.87	6	18.5	800 x 1110 x 1530	G 1 ¼	67	505
	7.5	3.51	8					
	10	3.00	11					
	13	2.50	15					
<b>ASK 40</b>	6	4.45	6	22	800 x 1110 x 1530	G 1 ¼	69	525
	7.5	4.06	8					
	10	3.52	11					
	13	2.94	15					

## SFC versions with variable speed control

Model	Gauge working pressure	Flow rate, *) complete system at gauge working pressure	Max. gauge pressure	Drive motor rated power	Dimensions W x D x H	Compressed air connection	Sound pressure level **)	Mass
	bar	m³/min	bar	kW	mm		dB(A)	kg
<b>ASK 34 SFC</b>	7.5	0.94 - 3.60	8	18.5	800 x 1110 x 1530	G 1 ¼	68	530
	10	0.80 - 3.14	11					
	13	0.88 - 2.70	15					
<b>ASK 40 SFC</b>	7.5	0.94 - 4.19	8	22	800 x 1110 x 1530	G 1 ¼	70	550
	10	0.80 - 3.71	11					
	13	0.88 - 3.17	15					

\*) 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)

### T versions with integrated refrigeration dryer (refrigerant R-513A)

Model	Gauge working pressure bar	Flow rate, *) complete system at gauge working pressure m³/min	Max. gauge pressure bar	Drive motor rated power kW	Refrigeration dryer model	Dimensions W x D x H mm	Compressed air connection	Sound pressure level **) dB(A)	Mass kg
<b>ASK 28 T</b>	6	3.17	6	15	ABT 40	800 x 1460 x 1530	G 1 ¼	65	580
	7.5	2.86	8						
	10	2.40	11						
	13	1.93	15						
<b>ASK 34 T</b>	6	3.87	6	18.5	ABT 40	800 x 1460 x 1530	G 1 ¼	67	600
	7.5	3.51	8.0						
	10	3.00	11						
	13	2.50	15						
<b>ASK 40 T</b>	6	4.45	6	22	ABT 40	800 x 1460 x 1530	G 1 ¼	69	620
	7.5	4.06	8						
	10	3.52	11						
	13	2.94	15						

### T SFC versions with variable speed control and integrated refrigeration dryer

Model	Gauge working pressure bar	Flow rate, *) complete system at gauge working pressure m³/min	Max. gauge pressure bar	Drive motor rated power kW	Refrigeration dryer model	Dimensions W x D x H mm	Compressed air connection	Sound pressure level **) dB(A)	Mass kg
<b>ASK 34 T SFC</b>	7.5	0.94 - 3.60	8	18.5	ABT 40	800 x 1460 x 1530	G 1 ¼	68	625
	10	0.80 - 3.14	11						
	13	0.88 - 2.70	15						
<b>ASK 40 T SFC</b>	7.5	0.94 - 4.19	8	22	ABT 40	800 x 1460 x 1530	G 1 ¼	70	645
	10	0.80 - 3.71	11						
	13	0.88 - 3.17	15						

### Technical specifications for add-on refrigeration dryer

Model	Refrigeration dryer power consumption kW	Pressure dew point °C	Refrigerant	Refrigerant charge kg	Global warming potential GWP	CO <sub>2</sub> equivalent t	Hermetic refrigeration circuit
<b>ABT 40</b>	0.60	+3	R-513A	0.57	631	0.36	—

# The world is our home

As one of the world's largest manufacturers of compressors, blowers and compressed air systems, KAESER KOMPRESSOREN is represented throughout the world by a comprehensive network of branches, subsidiaries and authorised distribution partners in over 140 countries.

By offering innovative, efficient and reliable products and services, KAESER KOMPRESSOREN's experienced consultants and engineers work in close partnership with customers to enhance their competitive edge and to develop progressive system concepts that continuously push the boundaries of performance and technology. Moreover, decades of knowledge and expertise from this industry-leading systems provider are made available to each and every customer via the KAESER group's advanced global IT network.

These advantages, coupled with KAESER's worldwide service organisation, ensure that every product operates at peak performance at all times, whilst providing maximum availability.



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