

## Rotary Screw Compressors ASK series

With the world-renowned SIGMA PROFILE 

Air delivery 0.59 to 3.50 m<sup>3</sup>/min, Pressure 8/11/15 bar

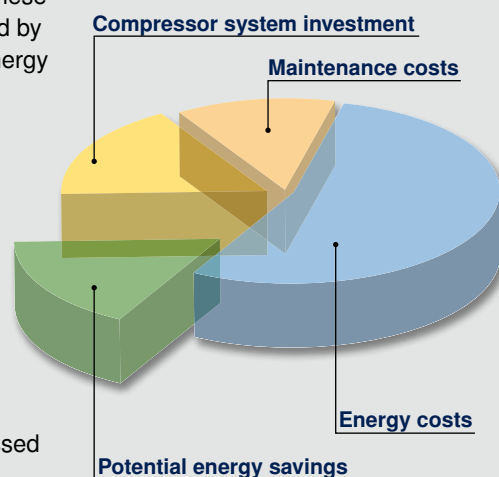


### What do you expect from a compressor?

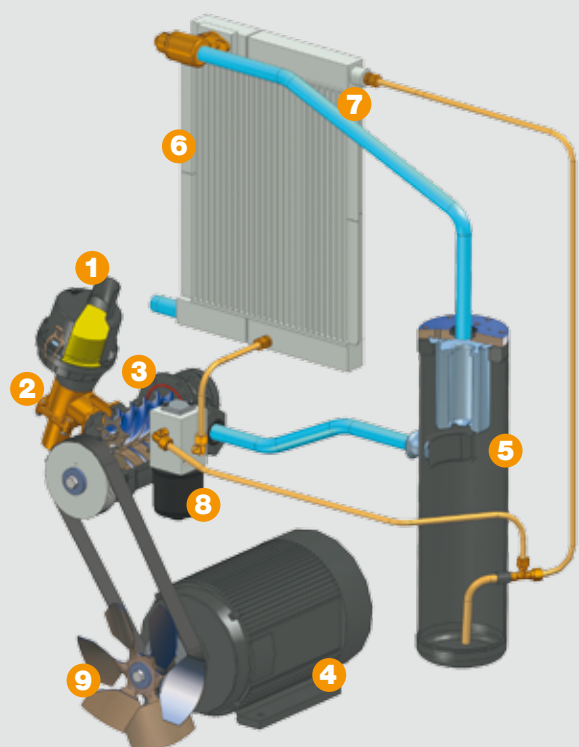
As a compressed air user, you expect maximum efficiency and reliability from your air system.

This sounds simple, but these advantages are influenced by many different factors: 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 of the compressor. In many cases, a reliable compressed air supply is essential to guarantee maximum

performance from valuable production systems. Reliability also ensures a supply of constant quality compressed air that optimises efficiency of the air treatment equipment downstream from the compressor. With regards to sound protection, it is always better to keep noise emissions to a minimum from the outset by using a quiet compressor rather than have to retro-fit sound protection measures later on. Last but not least, a truly efficient compressor is simple to maintain.



### Funktionsschema



- 1 Inlet filter
- 2 Inlet valve
- 3 Airend
- 4 Drive motor
- 5 Fluid separator tank
- 6 Compressed air aftercooler
- 7 Fluid cooler
- 8 Fluid filter
- 9 Fan

# ASK — The Dependable Powerhouse

### KAESER's Solution: The ASK Series

KAESER's new ASK rotary screw compressors 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 system technology, cooling and ventilation, silencing and maintenance methods.

As a result, the ASK series of rotary screw compressors is a meticulously engineered and reliable product range built to KAESER's renowned high quality standards.



EFF1  
motor



### SIGMA PROFILE

The SIGMA PROFILE, developed by Kaeser Kompressoren in 1975, saves up to 15 % in energy consumption compared with conventional rotor profile designs. The airends in ASK units use even further refined rotors.



### SIGMA CONTROL

The internal compressor controller is a robust PC-based industrial computer with a real-time operating system and update capability. 'Traffic light' style LEDs clearly indicate system operational status. The ASK is also available with the SIGMA CONTROL BASIC controller.



### Longer service intervals reduce costs

An example of how carefully considered design leads to improved economy is demonstrated by the easy to clean / change filter mats that prevent contamination from entering the compressor unit. They not only enable extended service intervals but also help to considerably increase the thermal reserve of ASK units.



### Quietly powerful

As the most efficient way to achieve a given drive power, KAESER use large, low speed rotary screw airends. This ensures that the specific power is always within the optimal range. ASK units use a flexible V-belt drive system to precisely determine airend speed dependent upon the airend being used. Further advantages of low airend speeds are that components are subjected to less wear and consequently last longer – the associated lower noise emissions are of particular importance for compressors installed directly in work environments.

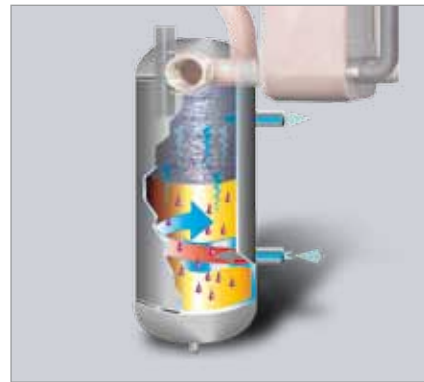


# ASK — Maximum Flexibility



### Available with refrigeration dryer Permanently dry compressed air

Space saving, energy efficient compressed air generation and treatment is possible by selecting the ASK T integrated refrigeration dryer module option. Easy to maintain, the dryer is contained in its own separate housing within the unit to prevent exposure to heat from the compressor package, considerably increasing operational reliability. The dryer also features an energy saving mode.



### Stainless steel condensate separator

The refrigeration dryer's compact stainless steel condensate separator ensures optimal condensate separation even with fluctuating flow volumes. The upstream contamination-proof heat exchanger also cools down the compressed air to make this possible.



### Electronic condensate drain

The refrigeration dryer's electronically controlled ECO DRAIN operates according to the condensate level. This eliminates the pressure losses associated with conventional condensate drain systems and considerably enhances the reliability of the compressed air supply.



### Variable speed option Integrated frequency converter

For applications with fluctuating compressed air demand, the ASK 32 compressor package is also available with a KAESER SIGMA Frequency Control (SFC) module. The SFC module is integrated within the compressor's control cabinet and, just like the SIGMA CONTROL, is manufactured to the very highest standards by Siemens.



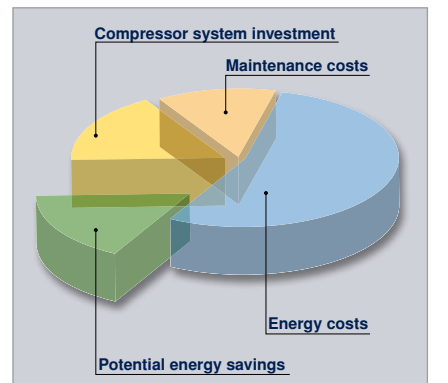
### EMC certified

Electromagnetic compatibility (EMC) is particularly important for variable speed compressors. All ASK 32 SFC components and systems are tested for electromagnetic compatibility to Class A1 (industrial) and Class B (domestic) in accordance with EN 55011.



### Energy savings

Energy costs account for over 70 percent of total compressed air costs. This can therefore amount to a significant sum even for smaller compressed air systems, which is why KAESER uses the very latest technology to ensure that every compressor provides best possible energy efficiency. These compressors form the basis for reliable and cost-effective compressed air production as part of a correctly planned and integrated compressed air supply system.

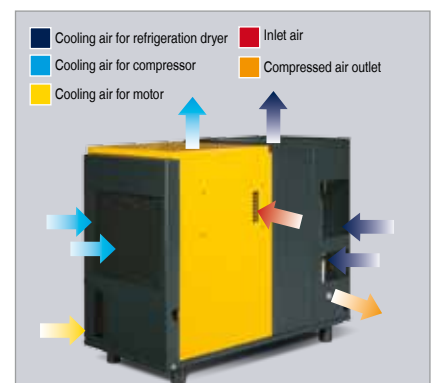


### Alternative controller: SIGMA CONTROL BASIC

Alternatively, if the comprehensive communication capability of the SIGMA CONTROL is not required, ASK models are also available with the SIGMA CONTROL BASIC compressor controller. This controller offers the possibility of "Dual" and "Quadro" control and operates via an electronic pressure sensor with low switching differential. With the addition of an optional plug-in memory module, the SIGMA CONTROL BASIC is also able to communicate with the SIGMA AIR MANAGER master controller. This feature enables the compressor to be easily integrated within a centrally controlled compressed air installation.

### Efficient cooling air flow system

Just like KAESER's larger units, ASK compressors also have separate air intakes for the air/fluid cooler, motor and compressed air, resulting in significant reserves even at high ambient temperatures. Taking in motor cooling air from the surroundings ensures reliable and effective motor cooling even under adverse conditions. The compression process is also enhanced by directly sucking in air for compression from the ambient surroundings. KAESER's modular design concept enables refrigeration dryers in 'T' units to be installed in their own separate housing and to have their own individual cooling system, significantly contributing to high efficiency and reliability.



## Equipment

### Complete unit

Ready for operation, fully automatic, super silenced, vibration damped, all panels powder coated.

### Sound insulation

Lined with washable foam, anti-vibration mounts – double vibration damped.

### Airend

Genuine KAESER single stage rotary screw airend with SIGMA PROFILE rotors and cooling fluid injection.

### Electric motor

German made premium efficiency (EFF1) electric motor to IP 55 and insulation class F for additional reserve.

### V-belt drive with automatic belt tensioning

Durable V-belt drive with automatic tensioning device for extended belt life.

### Fluid and air flow

Dry-air filter, pneumatic inlet and vent valves, AD2000-compliant cooling fluid reservoir with three-stage separator system, pressure release valve, minimum pressure/check valve, thermostatic valve and micro-filter in cooling fluid system.

### Cooling

Air cooled; separate aluminium coolers for compressed air and fluid, axial fan fitted to motor drive shaft.

### Electrical components

Ventilated control cabinet to IP 54, automatic star-delta starter; motor-overload protection; control transformer.

### SIGMA CONTROL

Interfaces for data communication comprising: RS 232 for modem, RS 485 for a slave compressor in base load sequencing mode and a Profibus DP interface for data networks. Prepared for Teleservice.



### Ergonomic control panel

Red, yellow and green LEDs show the operational state of the machine at a glance. Also features a four-line plain text display, 30 selectable languages, touch keys with icons and a duty cycle indicator.

### Prime functions

Fully automatic monitoring and regulation of airend discharge temperature; monitoring of motor current, direction of airend rotation, air filter, fluid filter and fluid separator cartridge; display of performance data, service intervals of primary components, operating hours, status data and event memory data. Selection of Dual, Quadro, Vario and Continuous control modes as required.

(For further information refer to SIGMA CONTROL/SIGMA CONTROL BASIC brochure 780)

## Professional planning

Compressed air supply system with separate components



- 1 SK series rotary screw compressor
- 2 TA refrigeration dryer
- 3 Air receiver
- 4 Aquamat
- 5 Filter
- 6 ECO DRAIN condensate drain
- 7 Air main charging system

Compressed air supply system with T-version compressor



- 1 Rotary screw compressor with integrated dryer
- 2 Air receiver
- 3 Filter
- 4 Air main charging system
- 5 Aquamat condensate treatment

Only properly designed air systems can meet the demands for air quality, availability and efficiency that are placed on a modern

compressed air supply. For outstanding efficiency and maximum savings, let KAESER design your air system.

## Technical Specifications

Standard version

Rated motor power kW	Model	Working pressure bar	FAD *) m³/min	Max. working pressure bar	Dimensions W x D x H mm	Air connection	Sound pressure level **) dB(A)	Weight kg
15	ASK 27	7.5	2.60	8	1130 x 780 x 1255	G 1 1/4	65	392
		10	2.18	11				
		13	1.70	15				
18.5	ASK 32	7.5	3.15	8	1130 x 780 x 1255	G 1 1/4	67	407
		10	2.66	11				
		13	2.05	15				
22	ASK 35	7.5	3.50	8	1130 x 780 x 1255	G 1 1/4	69	412
		10	2.95	11				
		13	2.37	15				

T-Version with integrated refrigeration dryer (refrigerant R 134a)

Modell	Rated motor power kW	FAD *) m³/min	Max. working pressure bar	Dryer power consumption kW	Dimensions W x D x H mm	Air connection	Sound pressure level **) dB(A)	Weight kg
ASK 27T	7.5	2.60	8	0.68	1480 x 780 x 1255	G 1	65	467
	10	2.18	11					
	13	1.70	15					
ASK 32T	7.5	3.15	8	0.68	1480 x 780 x 1255	G 1	67	482
	10	2.66	11					
	13	2.05	15					
ASK 35T	7.5	3.50	8	0.68	1480 x 780 x 1255	G 1	69	487
	10	2.95	11					
	13	2.37	15					

SFC – Version with variable speed drive

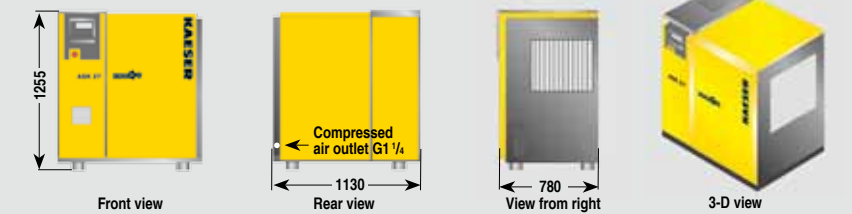
Rated motor power kW	Model	Working pressure bar	FAD *) m³/min	Max. working pressure bar	Dimensions W x D x H mm	Air connection	Sound pressure level **) dB(A)	Weight kg
18.5	ASK 32 SFC	7.5	0.78 - 2.91	8	1130 x 850 x 1255	G 1 1/4	68	422
		10	0.59 - 2.38	11				
		13	0.67 - 1.84	15				

T SFC – Version with variable speed drive and integrated refrigeration dryer

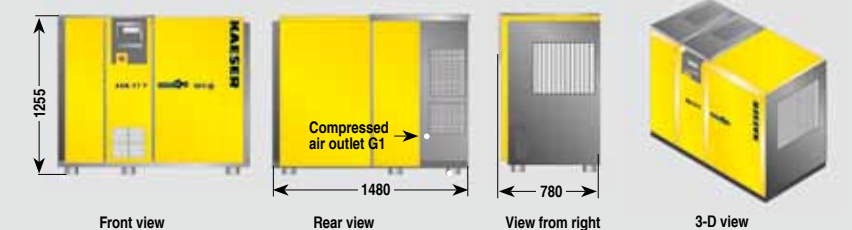
Modell	Rated motor power kW	FAD *) m³/min	Max. working pressure bar	Dryer power consumption kW	Dimensions W x D x H mm	Air connection	Sound pressure level **) dB(A)	Weight kg
ASK 32 T SFC	7.5	0.78 - 2.91	8	0.68	1480 x 850 x 1255	G 1	68	497
	10	0.59 - 2.38	11					
	13	0.67 - 1.84	15					

## Dimensions

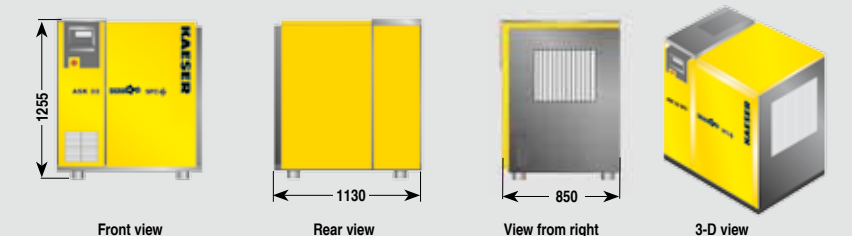
Standard version



T – Version with integrated refrigeration dryer



SFC – Version with variable speed drive



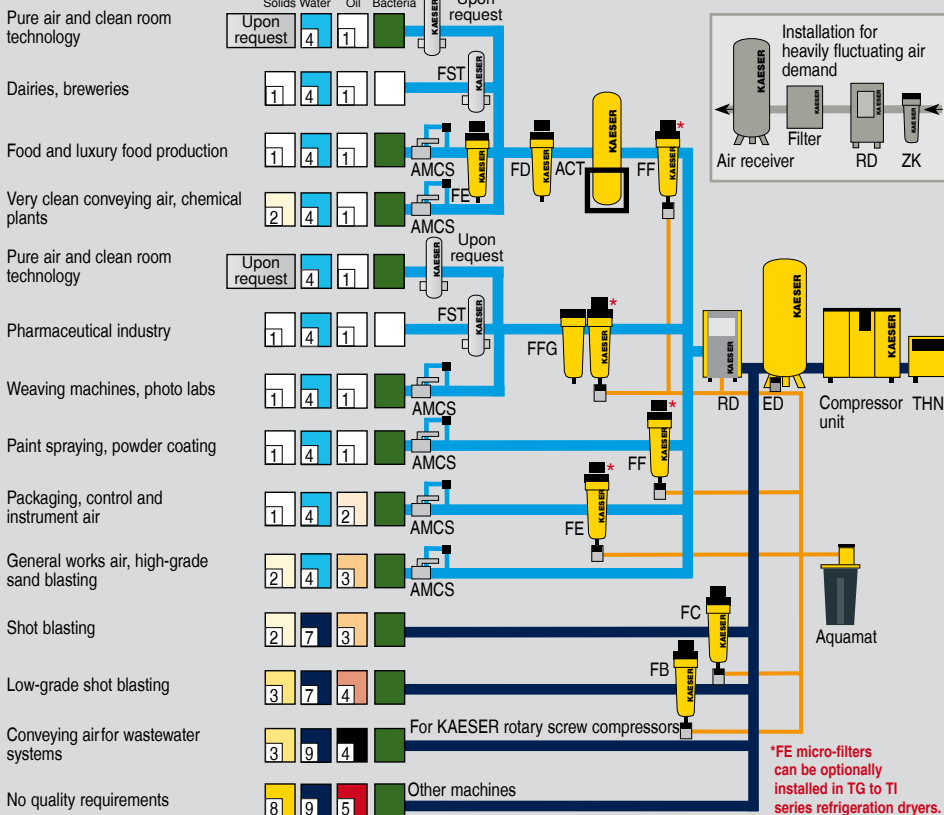
\*) FAD to ISO 1217: 2009, Annex C, \*\*) Sound pressure level to ISO 2151 and basic standard ISO 9614-2, tolerance: ± 3 dB(A)



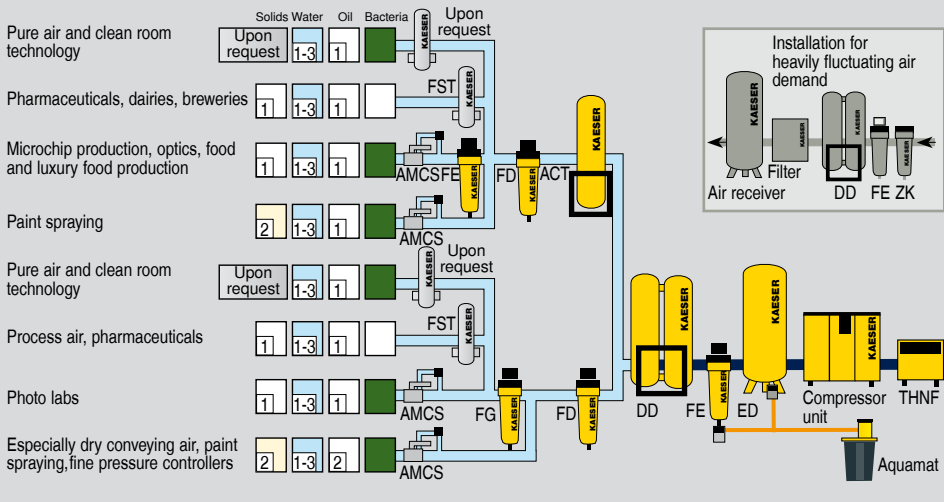
## Choose the required grade of treatment according to your field of application:

Air treatment using a refrigeration dryer (pressure dew point +3 °C)

Application examples: selection of treatment classes to ISO 8573-1



## For air mains subject to sub-zero temperatures: Compressed air treatment with a desiccant dryer (down to -70°C pressure dew point)



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
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> [g/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