KAESER COMPRESSORS

Rotary Screw Compressors

ASK/ASK T Series

Air deliveries from 1.70 to 3.15 m³/min
Pressure 8/11/15 bar

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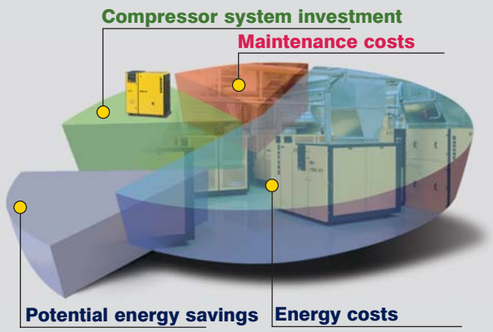
What do you expect from a compressor?

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

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 noise 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.

ASK – The Powerhouse

KAESER's Solution: the ASK Series

The 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 the compressor unit, controller and cooling system.

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

Eff1 motor

1. Inlet valve
2. Electric motor
3. V-belt drive with automatic belt tensioning
4. Airend
5. Separator with cartridge
6. Fluid cooler
7. Compressed-air aftercooler
8. SIGMA CONTROL or SIGMA CONTROL BASIC compressor controller
9. Refrigeration dryer (with ASK T)

Energy saving SIGMA PROFILE

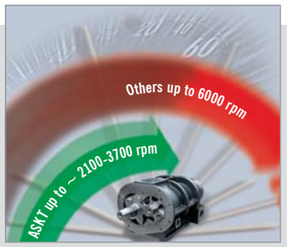
Each KAESER rotary screw compressor airend uses SIGMA PROFILE rotors, specially developed by KAESER, that require approximately 15 percent less energy than conventional rotors of the same air delivery capacity. The airends in ASK units use even further refined rotors.

SIGMA CONTROL compressor controller

The 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.

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.



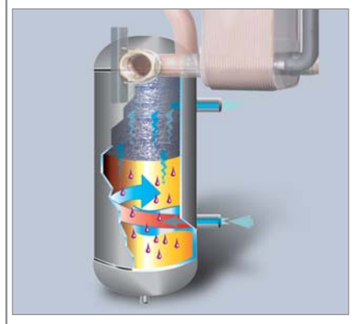
Quietly powerful

As the most efficient way to achieve a given drive power, KAESER uses 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, and the associated lower noise emissions are of particular importance for compressors installed directly in work environments.

ASK T – The Modular Refrigeration Dryer Option

Permanently dry 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 refrigeration dryer also features an energy saving mode that can be selected via the SIGMA CONTROL BASIC and greatly reduces energy costs.



Stainless steel condensate separator

The 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.

Available with SIGMA CONTROL BASIC

The user-friendly SIGMA CONTROL BASIC compressor controller offers Dual or Quadro control and monitors system pressure, compressed air temperature and direction of airend rotation. The operating hours counter can display both on-load and off-load hours. The maintenance interval indicator and system nominal pressure can be set according to operation.

Optional memory module

The optional memory module enables the SIGMA CONTROL BASIC to be connected to a master compressor controller: Simply plug in the module and the ASK compressor can be controlled, along with other compressors, via the KAESER SIGMA AIR MANAGER.

Cool air

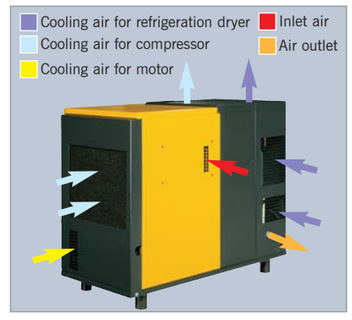
The generously sized high-quality aluminium cooler has enough reserve for operation in high ambient temperatures. Directly taking in the ambient air for cooling prevents pre-warming and ensures excellent cooling. The air discharge temperature is only 6 to 7 K higher than the ambient temperature, which makes air treatment exceptionally efficient.

ASK and ASK T with SIGMA CONTROL

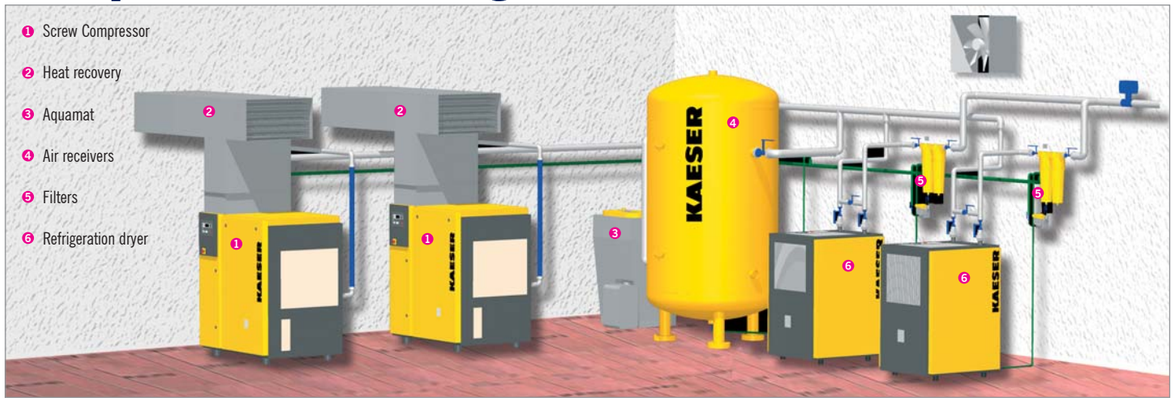
Based on robust PC architecture the SIGMA CONTROL offers the possibility of Dual, Quadro, Vario and continuous control. Clearly marked navigation and input keys on the user interface are used to move around within the menu options of the four-line alpha-numeric display. The SIGMA CONTROL automatically controls and monitors the compressor (and refrigeration dryer in 'T' versions).
The Profibus interface enables exchange of data and operational parameters and allows the SIGMA CONTROL to communicate with other air management systems such as the KAESER SIGMA AIR MANAGER . An optional modem can even send maintenance and alarm messages via SMS to relevant service locations.

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 in 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.



Comprehensive design know-how



Equipment

Complete unit

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

Sound insulation

Lined with washable foam, antivibration mounts, double vibration damped.

Airend

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

Electric motor

German made premium efficiency (EFF1) electric motor to IP55 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, cooling fluid reservoir with three-stage separator system, pressure release valve, minimum pressure/check valve, thermostatic valve and microfilter in cooling fluid system.

Cooling

Aluminium, air-cooled, combination cooler for compressed air and cooling 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 a modem or printer, RS 485 for a slave compressor in base load sequencing mode and a Profibus DP interface for data networks. Prepared for Teleservice.

Professional planning

Every KAESER compressed air system illustrates KAESER's commitment to producing application-specific quality compressed air at the lowest possible cost and with unrivalled reliability. This standard is achieved with products of the highest quality and through decades of experience in design and construction of compressed air systems.

Only properly designed air systems can meet all 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.

Ergonomic control panel

Traffic-light style LEDs (green, yellow, red) show compressor operational status, plain text display, soft-keys with icons and duty display feature.

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 brochure P-780)

ASK/ASK T Technical Specifications

Model	Rated motor power kW	Working pressure bar	FAD* at working pressure m³/min	Max. working pressure bar	Sound level**) dB(A)	Dimensions L x W x H	Weight kg
		7.5	2.60	8			
ASK 27	15	10	2.18	11	66	1130 x 780 x 1215	390
		13	1.70	15			
		7.5	3.15	8			
ASK 32	18.5	10	2.66	11	68	1130 x 780 x 1215	405
		13	2.05	15			
		7.5	3.50	8			
ASK 35	22	10	2.95	11	70	1130 x 780 x 1215	420
		13	2.35	15			

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

Model	Working pressure bar	FAD* at working pressure m³/min	Max. working pressure bar	Refrigeration dryer power consumption kW	Pressure dew point °C	Refrigerant	Sound level**) dB(A)	Dimensions L x W x H	Weight kg
	7.5	2.60	8						
ASK 27 T	10	2.18	11	0.68	3	R 134a	66	1480 x 780 x 1215	465
	13	1.70	15						
	7.5	3.15	8						
ASK 32 T	10	2.66	11	0.68	3	R 134a	68	1480 x 780 x 1215	480
	13	2.05	15						

* FAD to ISO 1217: 1996, Annex C; **)Sound level to PN8NTC 2.3 at 1m distance, free-field measurement

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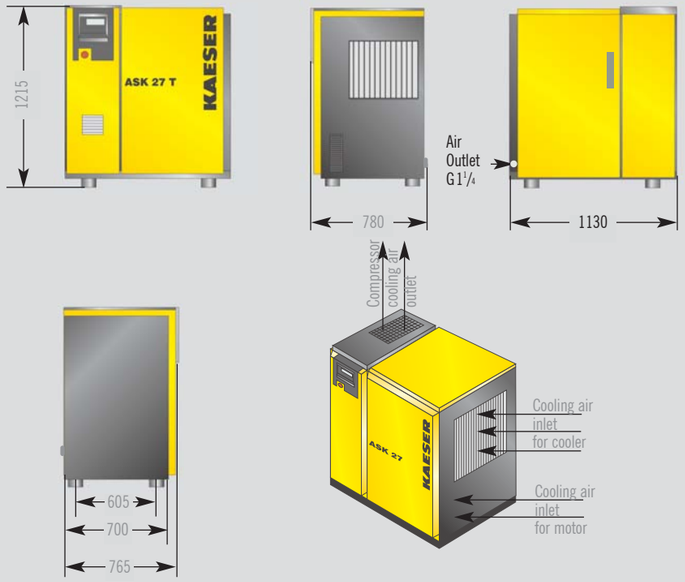
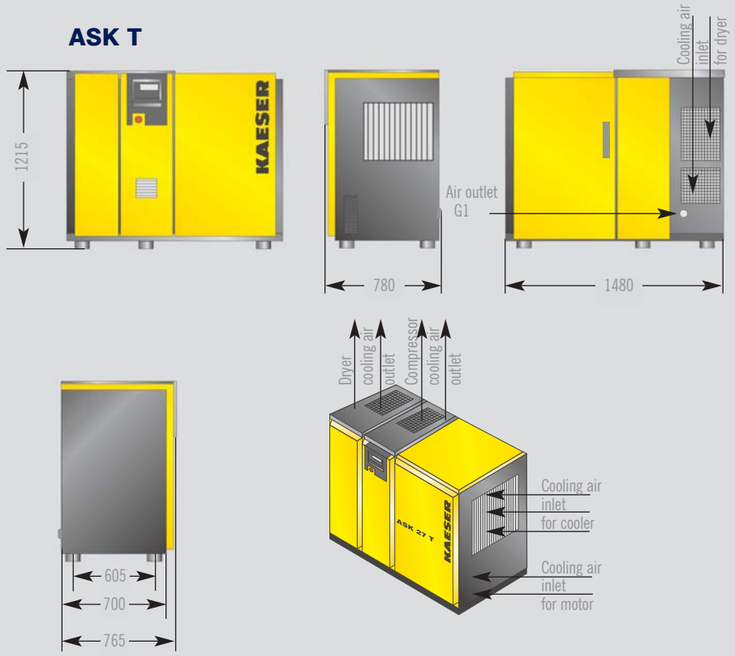
Dimensions:

ASK



ASK T



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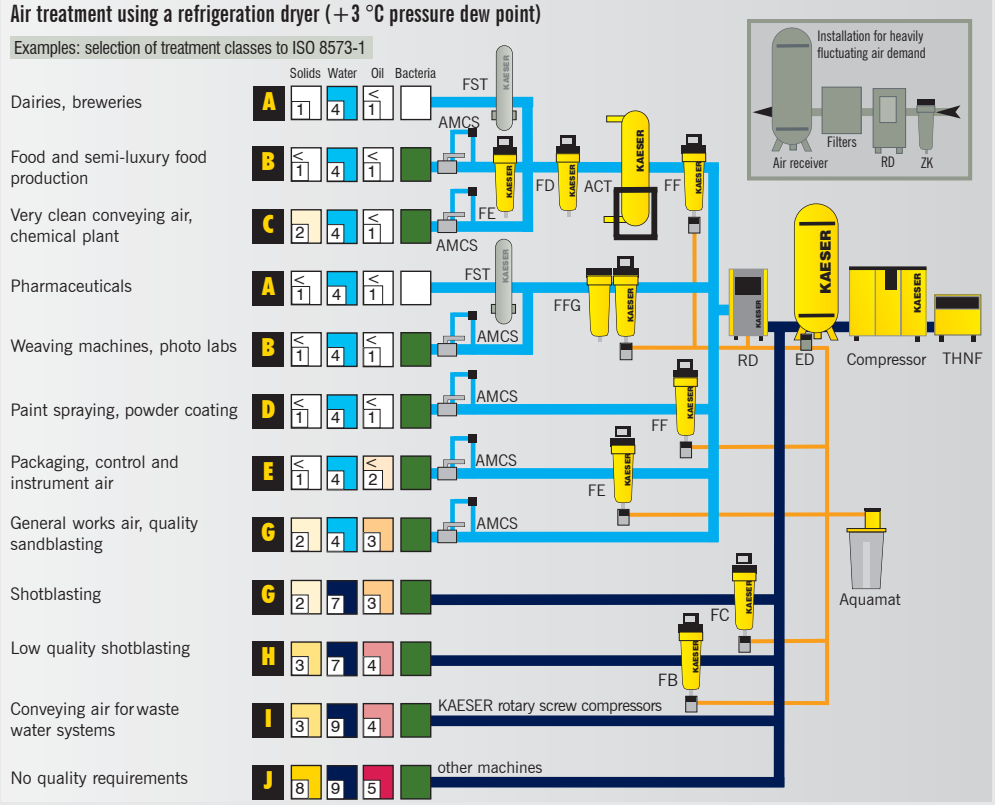
Different fields of application need different grades of air treatment

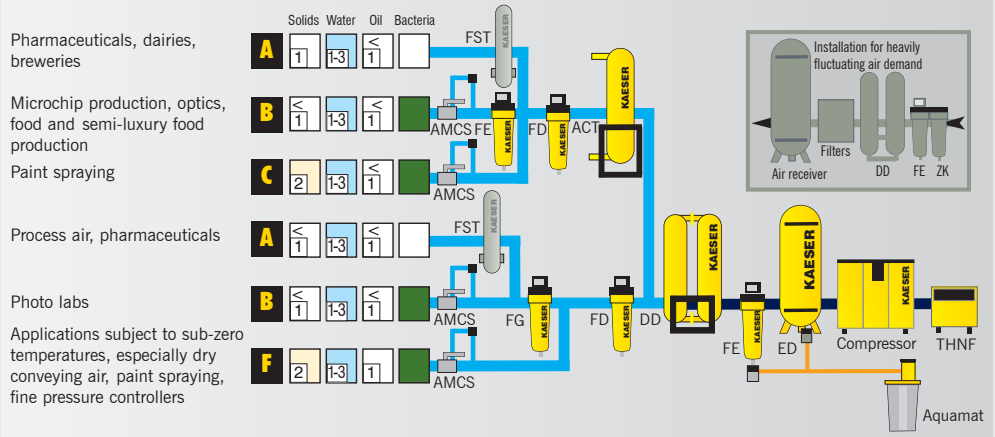
Choose the required grade of treatment according to your field of application:

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

Examples: selection of treatment classes to ISO 8573-1



For air mains subject to sub-zero temperatures: treatment systems with desiccant dryers (pressure dew point to -70 °C)



A Oil vapour content ≤ 0.003 mg/m³, particle retention > 0.01 µm sterile, odourless and taste-free

B Oil vapour content ≤ 0.003 mg/m³, particle retention > 0.01 µm

C Oil vapour content ≤ 0.003 mg/m³, particle retention > 1 µm

D Aerosol oil≤ 0.001 mg/m³, particle retention > 0.01 µm

E Aerosol oil≤ 0.01 mg/m³, particle retention > 0.01 µm

F Aerosol oil≤ 0.01 mg/m³, particle retention > 1 µm

G Aerosol oil ≤ 1 mg/m³, particle retention > 1 µm

H Aerosol oil≤ 5 mg/m³, particle retention > 3 µm

I Aerosol oil ≤ 5 mg/m³, particle retention > 1 µm

J Untreated

Explanation:

THNF = bag filter
cleans dusty and highly contaminated intake air

ZK = centrifugal separator
removes condensate

ED = ECO Drain
electronic level-controlled condensate drain

FB = prefilter 3 µm
separates liquid droplets and solid particles >3 µm, oil content ≤5 mg/m³

FC = prefilter 1 µm
separates oil droplets and solid particles >1 µm, oil content ≤1 mg/m³

FD = particulate filter 1 µm
separates dust particles (attrition) >1 µm

FE = microfilter 0.01 ppm
separates aerosol oils and solid particles >0.01 µm, aerosol content ≤0.01 mg/m³

FF = microfilter 0.001 ppm
separates aerosol oils and solid particles >0.01 µm, oil content ≤0.001 mg/m³

FG = activated carbon filter
for adsorption of oil vapours, oil vapour content ≤0.003 mg/m³

FFG = combination filter
comprising FF and FG

RD = refrigeration dryer
pressure dew point to +3 °C

DD = desiccant dryer
for compressed air drying; DC series - heatless regeneration, pressure dew point to -70 °C; DW, DN, DTL and DTW series - heat regeneration, pressure dew point to -40 °C

ACT = activated carbon adsorber
for adsorption of oil vapours, oil vapour content ≤0.003 mg/m³

FST = sterile filter
for bacteria-free air

Aquamat = condensate treatment system

AMCS = air-main charging system

Contaminants:

+ solids -
+ water -
+ oil -
+ bacteria -

Degree of filtration:

ISO 8573-1 Class	Solid particles: Max. no. of particles per m³ with size d (µm) 0.1<d≤0.5	0.5<d≤1.0	1.0<d≤5.0	Oil mist µm	Oil mist mg/m³	Humidity: Pressure dew point (x=liquid water in mg/m³)	Oil concentration mg/m³
0	as specified by user						
1	– 100	1	0	–	–	≤ -70 °C	≤ 0.01
2	– 100000	1000	10	–	–	≤ -40 °C	≤ 0.1
3	– –	10000	500	–	–	≤ -20 °C	≤ 1.0
4	– –	–	1000	–	–	≤ +3 °C	≤ 5.0
5	– –	–	20000	–	–	≤ +7 °C	–
6		–		≤ 5	≤ 5	≤ +10 °C	–
7		–		≤ 40	≤ 10	x ≤ 0.5	–
8		–		–	–	0.5 < x ≤ 5.0	–
9		–		–	–	5.0 < x ≤ 10.0	–

LGA InterCert Certified QM-System ISO 9001:2000
LGA InterCert Certified EM-System ISO 14001

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