

Rotary Screw Compressors ASD Series

With the world-renowned SIGMA PROFILE 

Free Air Delivery 2.09 to 5.51 m³/min, Pressure 5.5 to 15 bar



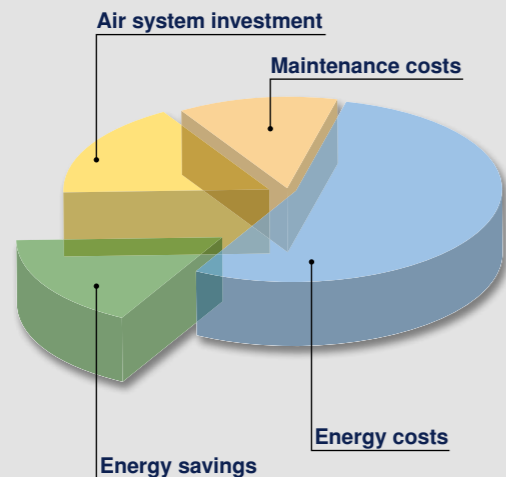
What do you expect from a compressor system?

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

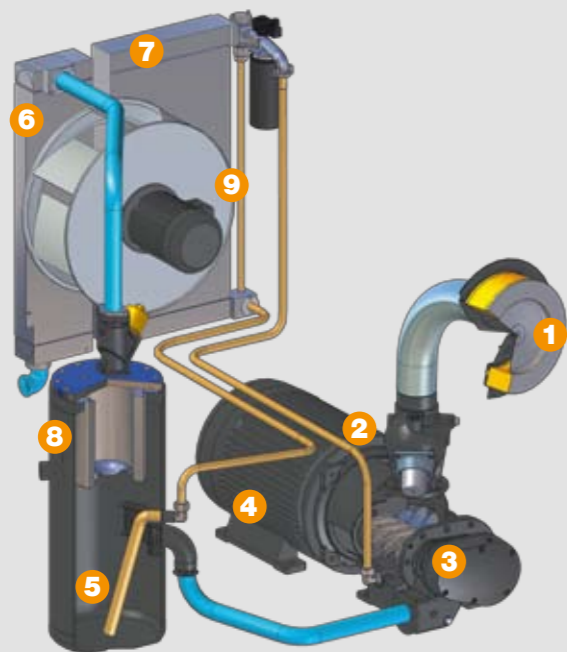
This sounds simple, but these advantages are influenced by many different factors: Energy costs, for example, taken over the lifetime of a compressor, add up to a multiple of investment costs.

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 of 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.



Function diagram:



ASD – Premium Performance and Efficiency

KAESER's Solution: The ASD Series

ASD 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 systems, cooling and ventilation, silencing and maintenance methods. As a result, the ASD 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 filter
- 2 Inlet valve
- 3 Airend
- 4 Drive motor
- 5 Fluid separator
- 6 Air aftercooler
- 7 Fluid cooler
- 8 Fluid filter
- 9 Radial fan



Energy-saving SIGMA PROFILE

KAESER's SIGMA PROFILE airends save up to 15 % energy compared with conventional screw compressor rotor profiles. The airends in ASD units use even further refined rotors.



One-to-one drive

Some people talk of direct drive, but really mean geared drive. Make sure you know the difference. Maintenance costs and transmission losses are virtually eliminated, as the motor and airend on ASD units are connected via a simple coupling.



Powerful radial fan

The quiet and powerful radial fan draws in cool ambient air through the cooler. Its high residual thrust means that the fan is not affected by contamination that is drawn in with the air and ensures sufficient power reserves to allow connection of long exhaust duct sections.



Quieter than quiet

The quiet radial fan and directly coupled motor reduce noise at source. Performance is further enhanced by a new cooling system that features separate cooling air flow paths to allow almost hermetic silencing without influencing cooling efficiency. Normal conversation can take place right next to the running compressor.

One-to-one drive – Ultimate efficiency

The ASD series is a range of compressors where the drive motor and the airend are designed to operate at the same low speed. The low speed operation is enabled with generously sized airends that are highly efficient and matched to the individual performances and pressures required. One-to-one drive reduces the number of components needed in comparison with gear drive, therefore significantly increasing reliability and service life. Sound levels are also considerably lower. The benefits speak for themselves: Efficient power transmission, optimal energy consumption and reduced servicing / downtime costs.

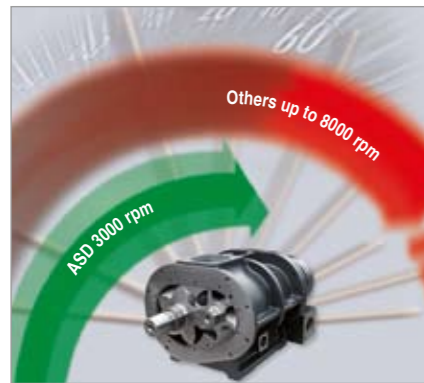


ASD – Eight Decisive Advantages



SIGMA PROFILE air end

A specific drive power can be used to turn a smaller air end at high speed or a larger air end at slow speed. Larger, low speed air ends are more efficient, delivering more compressed air for the same drive power. That is why KAESER developed air ends especially for the ASD series that are precisely matched to the individual drive power and motor speed of each machine in the range. The slightly higher cost of the larger air end is quickly recovered by the energy saved during operation.



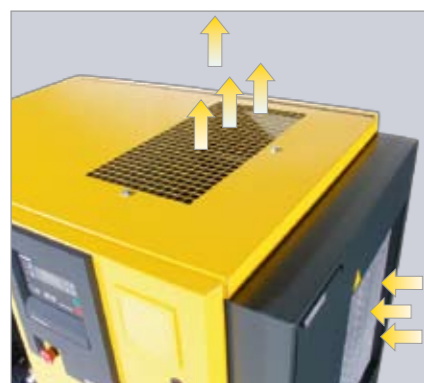
Energy-saving one-to-one drive

The advantage of KAESER's 1:1 drive doesn't just lie in the elimination of transmission losses. The motor and air end are joined by the coupling and its housing to form a compact and durable unit that, apart from greasing of the motor bearings, requires no regular maintenance. Should the coupling ever need to be replaced it takes just a few minutes without any disassembly of the unit; the opening in the coupling housing is more than large enough to replace the two coupling sections. The air ends in ASD units turn at only 3000 rpm; lower speed means increased efficiency and durability with reduced compressed air costs.



Innovative radial fan

Quiet and efficient – the most important features of a radial fan. Low peripheral speed means low sound levels, whilst power consumption is up to 50 % lower than comparable axial fans. A further advantage is the resulting high residual thrust that allows the use of exhaust ducting with a pressure drop of up to 60 Pa (ASD 57, 40 Pa) without the need for an additional extractor fan.



Efficient cooling system

The high performance cooling system not only enhances cooling efficiency, but, as surrounding air is drawn through the cooler into the cooler box and then exhausted directly upward out of the machine, also enables the inside of the cabinet to remain completely clean. Dirt particles in the cooling air collect mainly on the air intake side of the cooler, on ASD machines that means outside the cabinet. Any dust or particle build-up is therefore easily noticed and quickly cleaned off without the need for any dismantling work. Operational reliability is improved and maintenance work significantly reduced.



Optimised oil separation system

In ASD units the cooling fluid is initially separated from the compressed air by centrifugal force in the separator tank. Only minimum fluid remains to be removed by the high-capacity, deep-bed filter in the separator cartridge. These two factors double the operational life of the cartridge compared with conventional systems and ensure minimum aerosol content in the compressed air delivery ($< 1 \text{ mg/m}^3$). The improved air quality eases the burden on the downstream air treatment components. The optional filter pressure drop monitoring set further enhances efficient operation.



Specialised coolants and fluid filters

KAESER units are filled as standard with the well proven SIGMA FLUID MOL coolant. Upon request this can be substituted with synthetic SIGMA FLUID which is particularly suitable for intensively used equipment, as it allows an extended service interval of over 6000 operating hours. However, as a preventative protection measure for your equipment, we strongly recommend that a fluid analysis be carried out after 6000 operating hours due to the varied nature of environmental and intake conditions. The combination of SIGMA FLUID and a specially developed glass fibre fluid filter with enhanced contamination absorption capability not only reduces service costs but also increases reliability.



Easy maintenance

All models feature high quality, durable components that are positioned logically and contribute to the outstanding performance and reliability of these compressor packages. Component accessibility is made simple through wide opening doors, easy lift off panels and a sensible design that ensures unrivalled ease of maintenance. The rear and left-hand side of ASD units can be positioned close to a wall to save space. The illustration shows the air inlet filter element being changed.



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. This powerful compressor controller can also display information in any 1 of 30 selectable languages at just the press of a button. The SIGMA CONTROL automatically controls and monitors the compressor package. The Profibus interface enables exchange of data and operational parameters allowing the SIGMA Control to communicate with other air management systems such as the SIGMA Air Manager. Interfaces are provided as standard for connection of a modem, a second compressor in base-load sequencing mode and for connection to data networks (Profibus DP).



Equipment

Complete unit

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

Sound insulation

Lined with washable plastic foam; maximum 73dB (A) to PN8NTC 2.3 at 1 m distance, free-field measurement.

Vibration damping

Double insulated anti-vibration mountings using rubber bonded metal elements.



Airend

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

Drive

Direct, high-flex coupling, without gearing.

Electric motor

Premium efficiency electric motor of quality German manufacture to IP 55 and Insulation Class F for additional reserve. Also available with PTC thermistor sensor for full motor protection.

Connection from motor to airend

Airend with integral coupling flange.

Electrical components

Control cabinet to IP 54, containing automatic star-delta starter, motor overload protection, control transformer and volt-free contacts for ventilation control.

Fluid and air flow

Dry air intake filter with initial separation, inlet and venting valves, AD2000-compliant fluid reservoir with three-stage separator system, pressure relief valve, minimum pressure/check valve, thermostatic valve and fluid

micro-filter, all fully piped using newly developed elastic couplings.

Cooling

The standard version is air cooled; separate aluminium coolers for compressed air and fluid, radial fan driven by its own motor.

Control system 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.

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. Main 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 P-780)

Professional planning

Compressed air supply system with separate components



Compressed air supply system with T-version compressor (See brochure P-651/21)



KESS (KAESER's Energy Saving System) provides comprehensive analysis of your compressed air usage, enabling KAESER's experts to plan and design a system that is specially tailored to meet all of your compressed air requirements. The service combines tried and tested compressed air components, user advice and services with cutting edge technology to ensure

maximum efficiency - KAESER air systems typically operate at 95% load capacity or more. Designed for maximum reliability, KAESER compressed air systems provide exceptional efficiency and produce application-specific quality compressed air at lowest possible cost. Use this expertise to your advantage and let KAESER design your compressed air system.

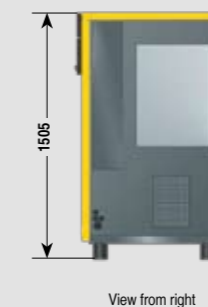
Technical Specifications – ASD Series

Model	Working pressure bar	FAD *) Complete package at working pressure m³/min	Rated motor power kW	Max. operating pressure bar	Dimensions W x D x H mm	Air connection	Sound level **) dB(A)	Weight kg
ASD 32	7.5	3.16	18.5	8	1350 x 921 x 1505	G 1 1/4	65	580
	10	2.72		11				
	13	2.09		15				
ASD 37	7.5	3.9	22	8	1350 x 921 x 1505	G 1 1/4	66	655
	10	3.12		11				
	13	2.65		15				
ASD 47	7.5	4.57	25	8	1350 x 921 x 1505	G 1 1/4	66	665
	10	3.84		11				
	13	2.99		15				
ASD 57	7.5	5.51	30	8	1350 x 921 x 1505	G 1 1/4	69	720
	10	4.44		11				
	13	3.67		15				

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

Dimensions

Standard version

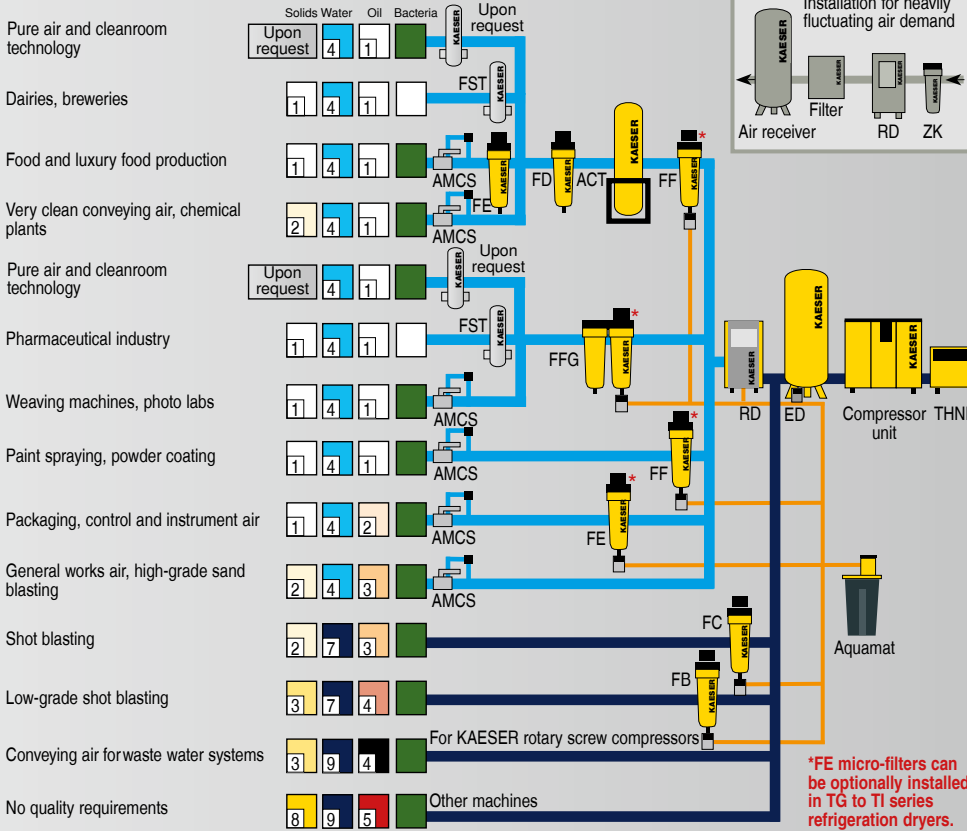


3D-View

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

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

Examples: Selection of treatment classes to ISO 8573-1¹⁾



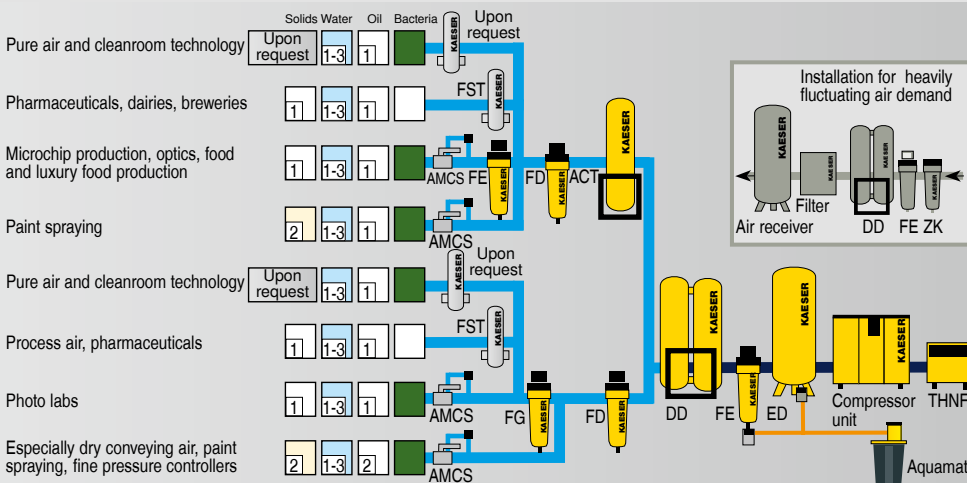
Explanation:

- THNF = Bag filter**
Cleans dusty and heavily contaminated intake air
- ZK = Centrifugal separator**
Separates accumulating condensate
- ED = Eco-drain**
Electronic level-controlled condensate drain
- FB = Pre-filter**
- FC = Pre-filter**
- FD = Particulate filter (attrition)**
- FE = Micro-filter**
Separates aerosol oil and solid particles
- FF = Micro-filter**
Separates aerosol oil and solid particles
- FG = Activated carbon filter**
For adsorption of oil vapours
- FFG = Activated carbon and micro-filter combination**
- RD = Refrigeration dryer**
For drying compressed air, pressure dew point to +3°C
- DD = Desiccant dryer**
For drying compressed air, pressure dew point to -70°C
- ACT = Activated carbon adsorber**
For adsorption of oil vapours
- FST = Sterile filter**
For sterile compressed air
- Aquamat = Condensate treatment system**
- AMCS = Air main charging system**

Contaminants:

+	Solids	-
+	Water/Condensate	-
+	Oil	-
+	Bacteria	-

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



Degree of filtration:

Class ISO 8573-1	Solid particles ¹⁾		Humidity ²⁾	Total oil content ²⁾
	Max. particle size µm	Max. particle concentration mg/m ³	Pressure dew point (x = Liquid water in g/m ³)	mg/m ³
0	e.g. Consult KAESER regarding pure air and cleanroom technology			
1	0.1	0.1	≤ -70	≤ 0.01
2	1	1	≤ -40	≤ 0.1
3	5	5	≤ -20	≤ 1
4	15	8	≤ +3	≤ 5
5	40	10	≤ +7	-
6	-	-	≤ +10	-
7	-	-	x ≤ 0.5	-
8	-	-	0.5 < x ≤ 5	-
9	-	-	5 < x ≤ 10	-

¹⁾ As per ISO 8573-1:1991 (The specification for particle content is not measured as per ISO 8573-1:2001, as the limits defined therein for Class 1 are to be applied to 'Cleanrooms').

²⁾ As per ISO 8573-1:2001

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