ASD Series

FAD from 2.09 to 5.51 m³/min
Pressures 5.5 to 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 of 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 retrofit sound protection measures later on.

Last but not least, a truly efficient compressor is simple to maintain.

KAESER’s Solution: The ASD Series

The new ASD rotary screw compressors fulfill 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 achieved through innovations in compressor design, drive systems, cooling and ventilation, sealing and maintenance methods.

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

1. Energy-saving SIGMA PROFILE

KAESER’s SIGMA PROFILE saves up to 15% energy compared with conventional screw compressor profiles. The airends in ASD units are even further refined.

2. One-to-one drive

Some people talk of direct drive, but really mean geared drive. Make sure you know the difference. Compared with compressors using small, high speed gear-driven airends, one-to-one provides optimum use of power.

3. Powerful energy-efficient radial fan

The quiet and powerful radial fan draws in cool ambient air through the cooler. Its high residual thrust can deal with partial clogging of the cooler and still have enough reserve to allow connection of a long exhaust duct. In addition, the radial fan consumes significantly less drive power than conventional axial fans, saving even more energy.

Quieter than quiet – max. 66/69 dB(A)

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 housing without influencing cooling efficiency. Normal conversation can take place right next to the running compressor.

Savings through logical design

Direct intake …

• … of ambient air for cooling avoids pre-warming and ensures excellent cooling. The difference between compressed air outlet and ambient temperature is only 6–8 K, which reduces energy requirement of downstream air drying equipment.

• … of drive motor cooling-air from the surroundings ensures reliable and effective motor cooling even under adverse conditions.

• … of air for compression from outside the compressor cabinet improves compression efficiency, the position of the inlet opening prevents pre-warming.

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 performance and pressures required. One-to-one drive reduces the number of components needed in comparison with gear driven, therefore significantly increasing reliability and service-life. Furthermore, not only are sound levels considerably lower than with conventional drive systems, but maintenance requirement is also reduced, which in turn leads to increased compressed air availability through minimised downtime.

ASD – Quiet efficiency

Three steps to greater efficiency:

1. Energy-saving SIGMA PROFILE

2. One-to-one drive

3. Powerful energy-efficient radial fan

Inlet valve

Electric motor

Airend

Fluid filter

Compressed air after-cooler

Control cabinet

Controller with industrial computer
More air, more savings...

The rated motor powers given in the technical specifications below are reference points for selection of a suitable ASD Series compressor system.

Please contact KAESER for specific FAD and motor output data relating to other working pressures.

### ASD Series - Technical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. working pressure bar</th>
<th>FAD at working pressure m³/min</th>
<th>Rated motor power kW</th>
<th>Sound level dB(A)</th>
<th>Dimensions W x D x H</th>
<th>Weight kg</th>
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*FAD to ISO 1217, Annex C; **Sound level to PNBNCTC 2.3 at 1m distance, free-field measurement
ASD – Eight Decisive Advantages

1. SIGMA PROFILE airend
   A specific drive power can be used to turn a smaller airend at high speed or a larger airend at slow speed. Larger, low speed airends are more efficient, delivering more compressed air for the same drive power. That is why KAESER developed airends 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 investment cost of the larger airend is quickly recovered by the energy saved during operation.

2. Energy-saving one-to-one drive
   As well as eliminating transmission losses, KAESER’s 1:1 drive system has many other advantages to offer. The motor and airend 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, as the opening in the housing is more than large enough to replace the two coupling sections. The airends in ASD units turn at only 3000 rpm - lower speed means increased efficiency and durability with reduced compressed air costs.

3. Innovative radial fan
   Quiet and efficient – the most important features of a radial fan. Low peripheral speed means low noise, whilst power consumption is up to 50 percent 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.

4. 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.

5. 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 mg/m³). The improved air quality eases the burden on the downstream air treatment components. The optional filter pressure drop monitoring set further enhances efficient operation.

6. Specialised coolants and fluid filters
   KAESER units are filled as standard with the well proven SIGMA FLUID MOL coolant. However, 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.

7. 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.

8. 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 of 30 selectable languages at just the press of a button. The SIGMA CONTROL automatically controls and monitors the compressor package. The ProFlux 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 modern or printer, a second compressor in base-load sequencing mode and for connection to data networks (ProFlux 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 73 dB(A) to PN8NTC 2.3 at 1m distance, free-field measurement.

Vibration damping
Dual 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, torsional-elastic coupling, without gearing.

Electric motor
High efficiency CEMEP EFF1 motors consume less power for greater output and are standard throughout the range of KAESER compressors. The motors are protected to IP55 and conform to insulation Class F for greater power reserve. Also available with PTC thermistor sensors 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 pre-filtration, pneumatic inlet and venting valves, fluid reservoir with three-stage separator system, pressure relief valve, minimum pressure/check valve, thermostatic valve and fluid micro-filter, all fully piped using flexible couplings.

Cooling
Separate aluminium coolers for compressed air and fluid, radial fan driven by its own motor.

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 Profinet 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.

Fluid and air flow
Dry air intake filter with pre-filtration, pneumatic inlet and venting valves, fluid reservoir with three-stage separator system, pressure relief valve, minimum pressure/check valve, thermostatic valve and fluid micro-filter, all fully piped using flexible couplings.

Comprehensive design know-how
Compressed air supply systems are often highly complex and can only be efficiently operated in the long term if careful planning is implemented during each stage of design, system expansion and modernisation. KESS (KAESER’s Energy Saving Service) 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. Every KAESER compressed air system illustrates KAESER’s commitment to producing application-specific quality compressed air at the lowest possible cost and with maximum reliability. This standard is achieved with products of the highest quality and through decades of experience in design and construction of compressed air systems. Use this expertise to your advantage and let KAESER design your compressed air system.

Valuable information and advice regarding KAESER services, planning and analysis can be found under ‘Services’ on the KAESER website – www.kaeser.com.