

DSD Series

Air deliveries from 8.6 to 26.4 m³/min
Pressure 5.5 to 15 bar



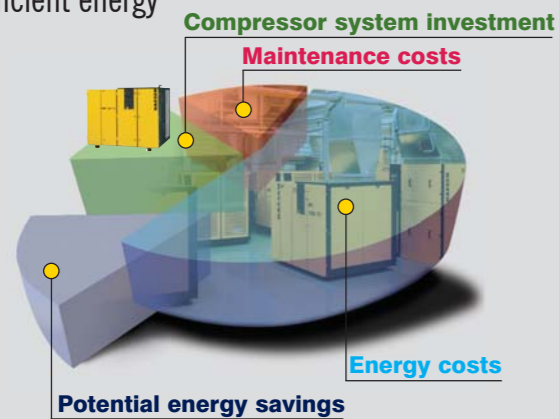
What do you expect from a compressor?

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 retro-fit sound protection measures later on. Last but not least, a truly efficient compressor is simple to maintain.



DSD – A revolution in efficiency

KAESER's Solution: The DSD Series

The new DSD 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.

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



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 4 - 9 K, which reduces the energy requirement of downstream air drying equipment.
- Direct intake of drive motor cooling air from the surroundings ensures reliable and effective motor cooling even under adverse conditions.
- Direct intake of air for compression from outside the compressor cabinet improves compression efficiency.

Three steps to greater efficiency:

1. Energy SAVING SIGMA PROFILE



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

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 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.

One-to-one drive – ultimate efficiency

The DSD 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 of 1000 rpm or 1500 rpm* is enabled with generously sized airends that are highly efficient and matched to the individual performances and pressures required. Significantly increasing reliability and service life, 1:1 drive reduces the number of components needed in comparison with gear drive and eliminates the associated transmission losses. Sound levels are also considerably lower. The benefits speak for themselves: Efficient power transmission, optimal energy consumption and reduced servicing / downtime costs.



*DSD 281/7.5 bar: 3000 rpm



Quieter than quiet

The silent radial fan and directly coupled motor reduce noise at source. The real technical advance is in the combination of these components with the new cooling system.

The separate air flow paths allow almost hermetic silencing without influencing cooling efficiency. With a sound power level of only 69 to 72 dB(A)*, the DSD series is approximately 10 dB(A) quieter than comparable compressors. This is equivalent to a 90 percent noise reduction. Normal conversation can even take place right next to the running compressor.

*DSD 281/79 dB (A)

More air, more savings...



The rated motor powers in the table below are reference points for selection of a suitable DSD compressor system.

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

DSD Series - Technical Specifications

Model	Max. working pressure	FAD*) overall package at working pressure	Max. working pressure	Sound level**) dB(A)	Rated motor power	Dimensions	Weight
	bar	m ³ /min	bar		kW	L x W x H mm	kg
DSD 141	7.5	13.3	9				
	10	10.8	12	69	75	2225 x 1922 x 1885	2900
	13	8.6	15				
DSD 171	7.5	16.4	8.5				
	10	13.2	12	70	90	2225 x 1962 x 1885	3150
	13	10.6	15				
DSD 201	7.5	20.9	8				
	10	16.1	12	71	110	2225 x 1962 x 1885	3300
	13	12.9	15				
DSD 241	7.5	24.0	8				
	10	20.7	11.5	72	132	2225 x 1962 x 1885	3400
	13	15.9	15				
DSD 281	7.5	26.4	7.5				
	10	23.5	10	79	160	2225 x 1962 x 1885	3460
	13	20.4	13				

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

DSD – Eight Decisive Advantages



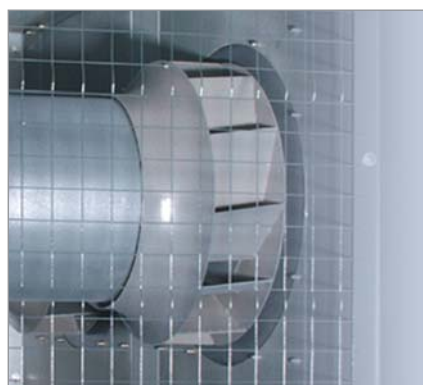
1 SIGMA PROFILE airend

A specific drive power can be used to turn a smaller airend at high speed or a larger airend at slow speed. Large, low speed airends are more efficient, delivering more compressed air for the same drive power. That is why KAESER developed airends especially for the DSD series (with operating speeds of 1000 / 1500 rpm*) that precisely match the individual drive power and motor speed of each machine in the range. The investment in a larger airend is quickly recovered by the energy saved during operation.



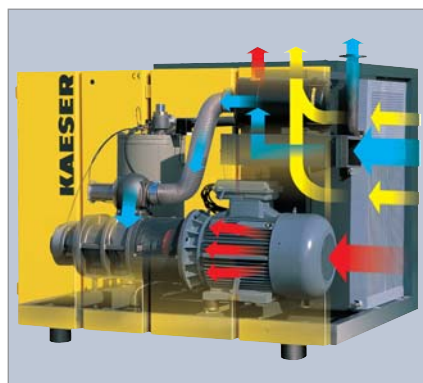
2 Energy-saving one-to-one drive

The advantage of this drive is not just the elimination of transmission losses. The motor and airend are joined by the coupling and its housing to form a compact and durable unit that, apart from greasing the motor bearings, needs 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.



3 Innovative radial fan

Quiet operation and efficiency – these are the most important features of a radial fan. Low peripheral speed means low noise. Power consumption is up to 50 percent lower than a comparable axial fan. Another advantage is the high residual thrust developed that allows the use of exhaust ducting with a pressure drop of up to 150 Pa** without the need for an additional extractor fan.



4 Efficient cooling system

In addition to improved cooling efficiency, the system has further benefits to offer: The inside of the cabinet remains clean because surrounding air is drawn through the cooler into the cooler box and then exhausted directly upward out of the machine. Dirt particles in the cooling air collect mainly on the air intake side of the cooler, on DSD units that means outside the cabinet. Clogging is easily noticed and quickly cleaned off without the need for any dismantling work. Operational reliability is improved and the need for maintenance work is significantly reduced.

5 Optimised oil separation system

DSD packages are fitted with a new, even more efficient separator system. The cooling fluid is initially separated from the compressed air by centrifugal force in the separator tank. Only a minimal amount of 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. The improved air quality eases the burden on the downstream air treatment components. The optional filter pressure drop monitoring set further enhances efficient operation. Cartridge changing is made easy by the tank lid which lifts and swings away.



6 Synthetic coolant

SIGMA FLUID, a synthetic coolant from KAESER, 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. Due to its lower vapour pressure, less SIGMA FLUID is consumed in comparison with mineral oils and makes condensate treatment and disposal easier and less expensive. SIGMA FLUID coolant therefore not only helps reduce service costs but also increases reliability.



7 Simple coolant change

Changing the coolant is clean, simple and fast using KAESER's proven system which has been specially designed for the new DSD packages. The coolant can be drained into a container via a hose (supplied as part of the package) which is connected to the quick disconnect coupling on the separator tank. The pressure built up in the tank before shutting down aids this process. Furthermore, this system significantly reduces downtime and servicing costs.



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. 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. Connection of a modem even allows maintenance and alarm messages to be sent via SMS to relevant service locations. Interfaces are provided as standard for connecting a modem or printer, a second compressor in base load sequencing mode and for connection to data networks (Profibus DP).



*DSD 281/7.5 bar: 3000 rpm

**DSD 281 : 80Pa

Equipment

Complete unit

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

Sound insulation

Lined with glass-fibre laminated mineral wool; 69-72 dB(A)* to PN8NTC 2.3 at one metre distance, free-field measurement.

Vibration damping

Base frame with dual anti-vibration mountings using rubber bonded metal elements.

Airend



Genuine Kaeser rotary screw single-stage-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. External lubrication of motor bearings.

Connection from motor to airend

Cast 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 microfilter, all fully piped using flexible couplings.

Cooling

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



Controller

SIGMA CONTROL industrial computer for monitoring and control with interfaces 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



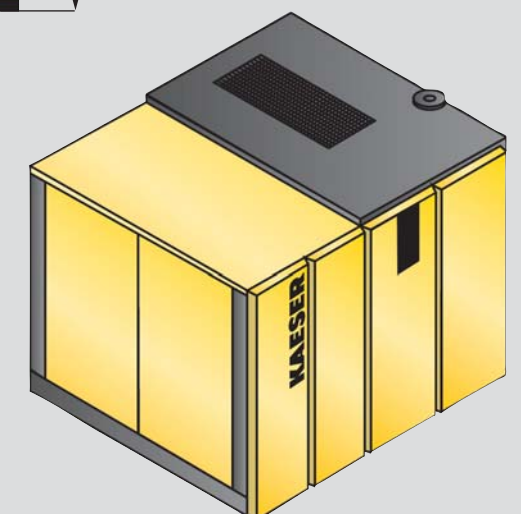
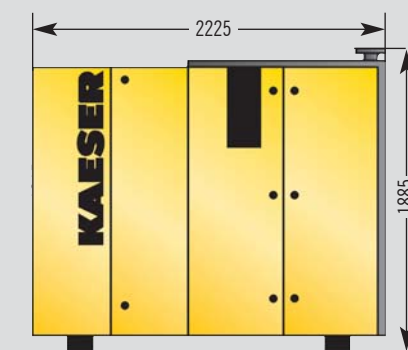
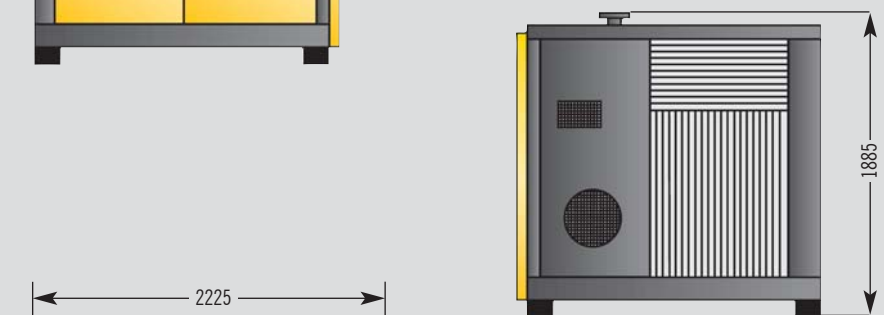
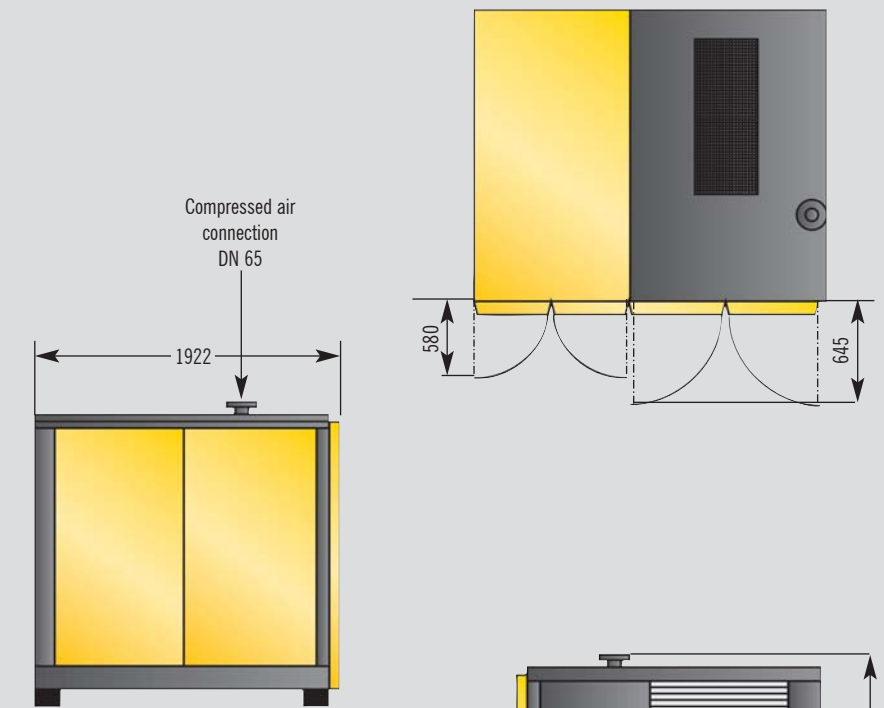
Red, yellow and green LEDs show the operational state of the machine at a glance. The panel also contains a four-line plain text display, touch keys

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.

(See SIGMA CONTROL brochure P-780)

Dimensions:



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 percent 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, combined with unsurpassed 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.

