

Rotary Screw Compressors With Fluid Cooling

With 1:1 Direct Drive

ESD SERIES

Flow rate 6.2 to 47.2 m³/min, Pressure 5.5 to 15 bar



ESD – Even more efficient

KAESER Compressors pushes the boundaries of compressed air efficiency and availability once again with its latest generation of ESD series rotary screw compressors. Intelligent design solutions have not only lead to enhanced ease of operation and serviceability, but also give this series of class-defining compressors their distinctive modern appearance.

ESD – The multi-saver

Delivering improved specific power, the flow-optimised and further refined SIGMA PROFILE rotors provide the foundation for exceptional energy efficiency. The use of high performance IE4 drive motors maximises energy efficiency, whilst KAESER's 1:1 drive design eliminates the transmission losses associated with gear or V-belt driven systems, as the motor directly drives the airend. Furthermore, the radial fan fulfils the efficiency requirements for fans as per EU directive 327/2011. Last, but not least, the advanced SIGMA CONTROL 2 compressor controller achieves additional energy savings and minimises cost-intensive idling periods through the use of a variety of specially developed control options, e.g. Dynamic Control.

Perfect partners

ESD series rotary screw compressors are the perfect partners for high-efficiency industrial compressed air stations. The internal SIGMA CONTROL 2 compressor controller offers numerous communications interfaces (e.g. Ethernet), which, when connected within the KAESER SIGMA NETWORK, allows seamless communication with advanced master controllers, such as KAESER's SIGMA AIR MANAGER 4.0, and in-house centralised control systems. This enables simple set-up and achieves unprecedented levels of efficiency.

Service-friendly = Efficient

The distinctive and eye-catching design of these systems from the outside is complemented by intelligent component layout on the inside for even greater energy efficiency: for example, all service and maintenance points are within easy reach and are directly accessible from the front of the unit. This not only saves time and money when performing service work, but also maximises compressed air system availability.

Electronic Thermo Management (ETM)

Powered via an electric motor, the sensor-controlled temperature control valve integrated into the cooling circuit is the heart of the innovative Electronic Thermo Management (ETM) system. The SIGMA CONTROL 2 compressor controller monitors intake and compressor temperature in order to prevent condensate formation, even under conditions with higher air humidity. ETM dynamically controls the fluid temperature and low fluid temperature enhances energy efficiency. ESD packages are equipped with additional ETM systems if heat recovery is used. This enables heat recovery to be better adapted to the customer's exact requirements.

Complete package

1. Ready for operation.
2. Fully automatic.
3. Super silenced.
4. Vibration-damped.
5. All panels powder-coated.
6. For ambient temperatures up to +45 °C.
7. Service-friendly design: Motor bearings can be lubricated externally (also applies to drive and fan motors).

Cooling fluid and air circuit

1. Dry air intake filter with pre-filtration.
2. Inlet silencer.
3. Inlet and vent valves, pneumatic.
4. Cooling fluid separation tank with three-stage separation system.
5. Safety valve.
6. Minimum pressure check valve.
7. Thermostatic valve and eco fluid filter in coolant circuit.
8. Fluid and compressed air cooler (air-cooled as standard).
9. Two fan motors, one variable-speed.
10. Kaeser centrifugal separator with electronically-controlled condensate drain for energy savings without pressure loss.
11. Piping and centrifugal separator made of stainless steel.
12. Optionally available water-cooled version: Fluid and compressed air aftercooler implemented as water-cooled plate or optionally available tube-type heat exchanger..

Heat recovery (Option)

1. Optionally available with integrated fluid/water plate-type heat exchanger and additional fluid thermostatic valve.
2. External connections.

Airend

1. Single stage with cooling fluid injection for optimal rotor cooling.
2. Genuine KAESER screw compressor airend with energy-saving SIGMA Profile.
3. 1:1 drive.

Electrical components

1. Super Premium-Efficiency IE4 drive motor with three Pt100 windings temperature sensors for motor monitoring.
2. Control cabinet to IP 54.
3. Control cabinet ventilation.
4. Automatic star-delta starter.
5. Overload relays.
6. Control transformer.
7. Frequency converter for fan motor.
8. SFC versions also with frequency converter for drive motor.