

Screw Compressors

ESD SERIES

Capacities from: 816 to 1522 cfm

Pressures from: 80 to 217 psig



کمپرسور اسکرو برقی - کمپرسور اسکرو دیزلی - بررسی شده ها



**KAESER
KOMPRESSOREN**

Atlas Copco

IR *Ingersoll Rand*

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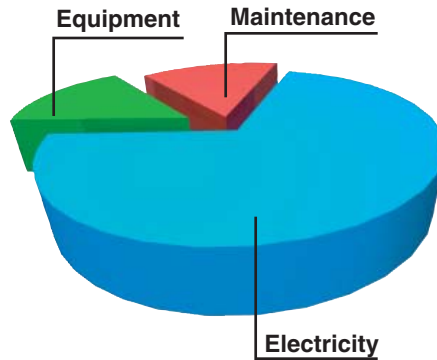
جهان کمپرسور - Jahan Compressor

Built for a lifetime™

Maximum efficiency and reliability have long been synonymous with Kaeser Compressors. Our commitment to excellence drives us to continually enhance and optimize our compressed air system solutions. With a cutting edge research and development team committed to producing industry leading products, Kaeser constantly strives to offer lasting solutions for our customers' compressed air needs. The ESD series rotary screw compressor delivers on all accounts.

Kaeser's unique Sigma Profile airend and intelligent Sigma Control 2™ system, combined with the latest one-to-one drive technology mean that our ESD compressors can guarantee exceptional energy savings, without compromising on durability or ease of maintenance. Our customers expect excellence and we make it happen.

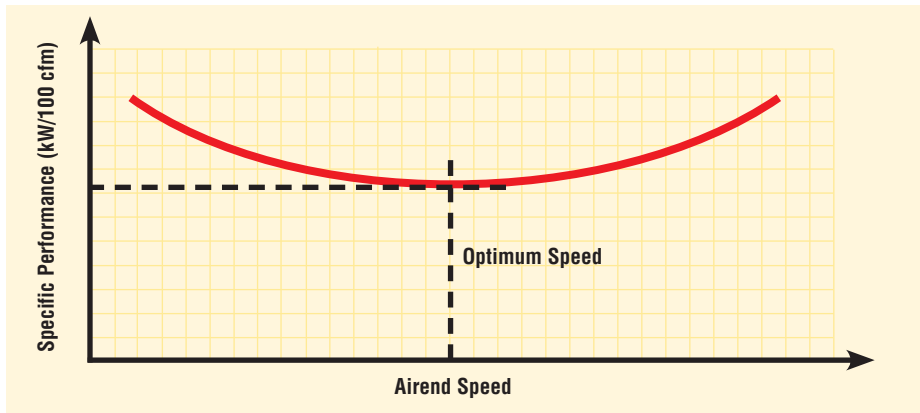
Built to perform. Built to last. Kaeser compressors are built for a lifetime.



70% of Your Long Term Compressor Cost is Electricity

Analyze the total cost of a compressed air system and you'll realize that power cost is significant. In just one year it could exceed the price of the compressor itself. Over a period of ten years, this could consume 70% of your overall air system costs. That's why it is important to investigate energy efficiency when considering a new compressor or designing an air system.

A Perfect Match



Unlike the competition, Kaeser Compressors makes many different airends so that we can apply them at their optimal speed and performance.

1 Sigma Profile Airend

Our single-stage, flooded rotary screw airend delivers pressures up to 217 psig, and features



our power saving Sigma Profile™ design. Our airends are precision machined and optimized in

size and profile to match the airend speeds with their best specific performance (see *A Perfect Match* curve).

2 True Direct Drive

In our design, the motor is directly connected



to the airend with a one-to-one coupling, providing maximum transmission efficiency. This true direct drive eliminates gear drive

components, heat and power losses. It is also maintenance free, increasing reliability and uptime. A cast housing is doweled and pinned to assure perfect alignment.

3 Premium Efficiency Drive Motor

Kaeser uses only premium efficiency Totally Enclosed Fan Cooled (TEFC) motors with class F



insulation for extra protection from heat and contaminants. Remote grease fittings make maintenance a breeze. 460 or 575 V, 3-phase, 60 Hz, 1800 rpm. Other voltages

are available.

4 Reduced Voltage Starting

Magnetic Wye-Delta reduced voltage starting is standard. This energy saving feature ensures low starting current and smooth acceleration.

ESD Series



5 Inlet Filter

We protect our compressors with a two-stage, 1 micron air intake filter. This extends air end life and fluid change intervals. The filter may be cleaned several times before replacement and is easily serviced with no tools required.



6 Fluid Separation System

Our separator tank has a 3-stage separation system that ensures very low pressure drop, fluid carry-over (1-3 ppm), and extended filter service life. Our no-leak design features rigid steel piping, flexible connections and vibration isolators. Each pressure vessel is ASME coded (CRN in Canada) and includes wet side/dry side fittings to check differential pressure, an easy to read fluid level indicator, and our unique quick drain system.



Integral Moisture Separator

The ESD features a moisture separator integrated into the stainless steel discharge piping. Our unique design maximizes separation with minimal pressure loss. An automatic Eco-Drain is standard.



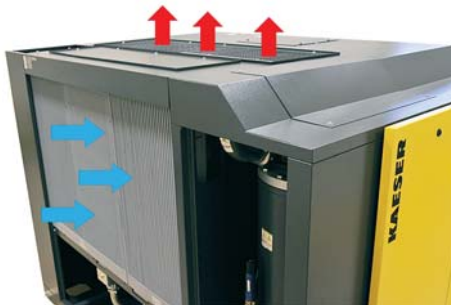
Unique Air Flow Design Optimizes Cooling

Kaeser's "split-cooling" design draws ambient air directly across the coolers and motor through separate zones to eliminate preheating for longer lubricant life and a cooler running motor. This also results in much lower approach temperatures, improving moisture separation and air quality.

To increase reliability and reduce maintenance costs, the coolers are conveniently located on the outside of the unit, where dust and dirt build-up



are easily seen and can be removed without dismantling the cooler. Powerful cooler fans create a vacuum within



the cabinet that cools the motor even under severe operating conditions. The fluid cooler has a variable speed fan that helps save energy by adjusting to cooling demands. Top exhaust allows for convenient ducting and reduces the system footprint.

Intelligent Control and Protection

To protect your investment and ensure the most efficient operation possible, we control this compressor with our Sigma Control 2™. This intelligent



controller comes standard with multiple pre-programmed control profiles so you can select the one that best fits your application. Sigma Control 2 monitors more than 20 critical operating parameters, shuts the unit down to prevent damage and signals if immedi-

ate service is required. It also tracks preventive maintenance intervals and provides notice when PMs are due. An RFID sensor provides secure access and simplifies maintenance.

Sigma Control 2 has superior communications capabilities. An Ethernet port and built-in web-server enable remote access. ModBus, Profibus, Devicenet, and other industrial communications interfaces are also available as plug in options for seamless integration into plant control/monitoring systems. See our Sigma Control 2 brochure for details.

Extremely Low Sound and Vibration

All ESD models come standard with Kaeser's superior cabinet that features complete metal enclosures with sound proofing liners and heavy-duty vibration isolation. Using one-to-one direct drive and our unique cooling airflow design with radial fans greatly reduces internal noise and vibration. As a result, the ESD series run much quieter than other compressors of equal performance.

Optimized Efficiency

In ESD packages, one-to-one drive reduces the number of components needed compared to a gear drive unit, increasing reliability and service life.

Kaeser has selected oversized airends specifically matched to produce the required output in flow and pressure. Compared to compressors using small, high-speed gear-driven airends, the ESD one-to-one drive provides triple savings: no-loss power transmission, improved power consumption, and reduced maintenance and related downtime costs.



One-to-One Direct Drive
Airend RPM = Motor RPM

Dimensions

Standard or SFC Version



Dimensions are for reference only — please contact Kaeser for dimensional drawings.

Options

Variable frequency control

ESD compressors are available with Sigma Frequency Control (SFC) to provide superior part load efficiency and steady pressure in applications with widely varying air demands. Standard features include EMI filters, line reactors, and galvanic separation contactors for extra electrical system protection. SFC units also feature drive cabinet cooling fans and the latest in Siemens drive technology for reliability and efficiency.



Unit with optional SFC. See SFC literature for more information.

Water-cooled

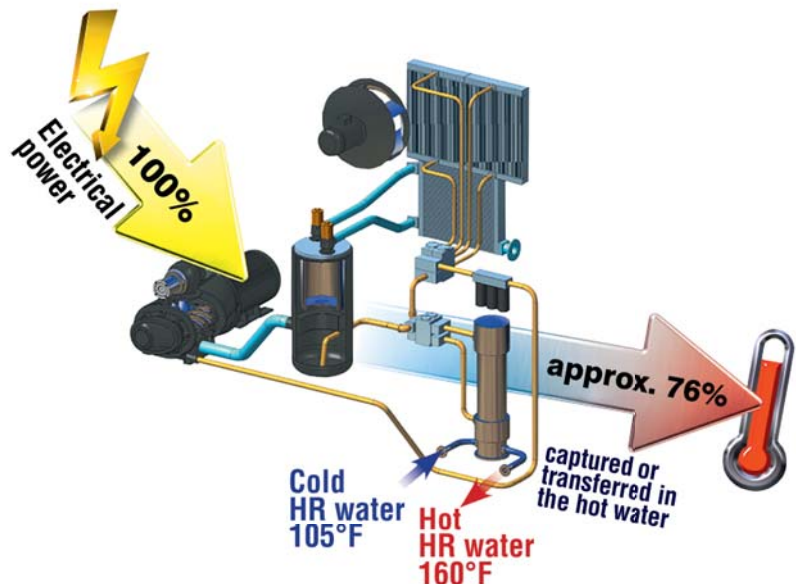
ESD compressors are available water-cooled with stainless steel, plate type heat exchangers as standard equipment. Shell and tube heat exchangers are available on request.

Heat Recovery

Compressing air converts the electrical energy you buy into heat. ESD compressors are available with a heat recovery option to recover up to 76% of this energy.

They can come ready to be connected to an external heat exchanger or with internal heat exchangers. Options include the plate type, shell and tube, or SWT heat exchangers. The SWT fail-safe heat exchangers provide extra protection from process contamination in sensitive applications such as food, chemical, or pharmaceutical processing.

When you consider that a 300 hp compressor running full time at 7 cents/kW uses over \$225,000 per year in energy, the potential savings and benefits are significant.



Technical Specifications for Standard Units*

Model	Pressure Range (psig)	Capacity (cfm) ¹	Rated Motor Power (hp)	Dimensions L x W x H (in.)	Weight (lb) ²	Sound Level (dB(A)) ³
ESD 250	125	1261	250	110¼ x 78¾ x 84¼	10,924	76
	145	992				
	175	978				
	217	816				
ESD 300	125	1501	300	110¼ x 78¾ x 84¼	10,968	77
	145	1250				
	175	1236				
	217	957				

(1) Performance rated in accordance with CAGI/ISO 1217 test code. (2) Weights may vary slightly depending on airen model. (3) Per ISO 2151 using ISO 9614-2.

NOTE: Other pressures available from 80 to 217 psig.

* For units with SFC, please contact your local authorized Kaeser distributor.

Specifications are subject to change without notice.

Compressed Air System Design

Kaeser's team of engineers are always at your service to help design or optimize your compressed air system.

Using our Air Demand Analysis (ADA) and Kaeser Energy Saving System (KESS) we can evaluate your existing installation and demonstrate how proposed changes will improve your system performance.

Kaeser can also produce two-dimensional and three-dimensional drawings of the proposed system. This is a huge benefit in project planning. It helps visualize new equipment and how it will fit into the building along with existing equipment, piping, walls, vents, etc. This facilitates installation planning.

From complex installations to challenging environments to limited space, Kaeser can design a system to meet your specific requirements for performance and reliability.

CAGI Data Sheets

The Compressed Air and Gas Institute (CAGI) and a consortium of compressor manufacturers developed compressor performance standards to enable consistent and accurate performance comparisons between competing compressor models. These CAGI data sheets are published by member companies to present their product performance data. Data sheets for Kaeser models are available on our website at www.kaeser.com/cagi. Or you can scan the QR code below to go straight to our data sheets on your Smartphone.



KAESER COMPRESSORS

Built for a lifetime.™

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