

Screw Compressors

CSD Series

Capacities from: 188 to 592 cfm

Pressures from: 80 to 217 psig

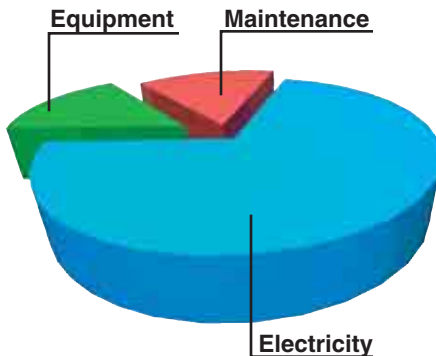


Direct Drive Rotary Screw Compressor

Maximum Efficiency and Reliability

For years, customers have relied on Kaeser for energy efficient equipment and complete compressed air system solutions. Our research and development team continues to produce industry leading compressor technology to meet virtually any compressed air application requirement. The new CSD series rotary screw compressor is no exception.

Kaeser's new CSD compressors combine our proprietary optimized Sigma Profile airend and Sigma Control system with the latest one-to-one drive technology. They also incorporate optimized designs for reducing maintenance, attenuating noise, and providing superior aftercooling. Manufactured according to strict ISO 9001 quality standards and designed for easy maintenance, our compressors provide exceptional energy savings and years of reliable service.

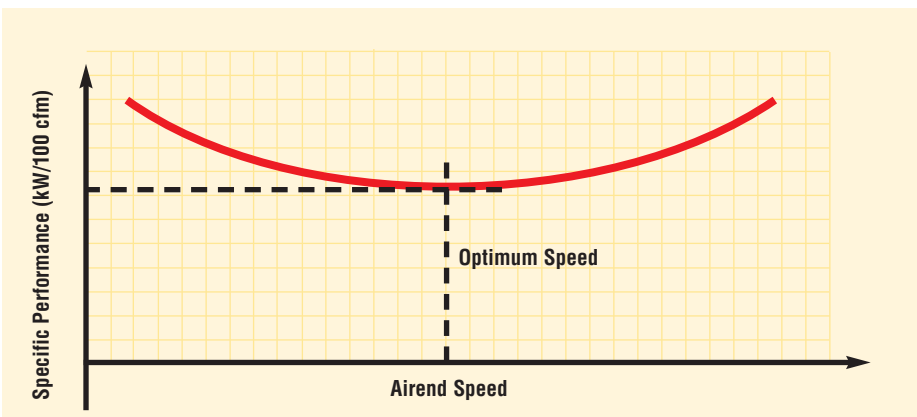


70% of Your Long Term Compressor Cost is Electricity

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.

Kaeser's proprietary Sigma Profile compresses air efficiently. It delivers up to 20% more cfm per horsepower than other airend designs.

A Perfect Match



1 Inlet Filter

Two-stage 4 micron air intake filter extends airend life and is easily serviced.



2 Efficient Separator System

CSD packages are fitted with an optimized, high-efficiency separation system. Most of the cooling fluid is initially separated from the air by centrifugal force in the separator tank. Any remaining fluid is separated by a 2-stage



filter in the separator cartridge. This triple action doubles the cartridge service life and reduces fluid carry over to 2 ppm or less. The fluid level is quickly verified by the easy-to-read level indicator.



3 Optimized Airend for Increased Efficiency

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 CSD one-to-one drive provides triple savings: no-loss power transmission, improved power consumption, and reduced maintenance and related downtime costs.



4 One-to-One Direct Drive

In CSD packages, one-to-one drive reduces the number of components needed compared to a gear drive unit thus increasing reliability and service life. Some compressors are called direct drive but are really gear driven units. In Kaeser's CSD package, the motor is directly connected to the airend with a maintenance-free coupling, providing maximum transmission efficiency. The airend and motor are connected by a casting which is doweled and pinned to assure perfect alignment.



5 Motor

EPAct compliant, high-efficiency, TEFC electric drive motor with class F insulation. Easily accessible grease fittings make maintenance a breeze.

$$\text{Airend RPM} = \text{Motor RPM}$$



One-to-One Direct Drive

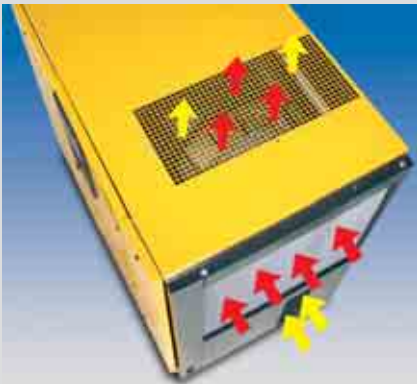
6 Improved Cooling and Air Flow Design

To increase operational reliability and reduce maintenance costs, the coolers are conveniently located on the outside of the unit. A powerful radial fan draws cool ambient air through the



cooler. This radial fan is extremely quiet and consumes less power than conventional axial fans, providing additional energy savings. It provides higher static pressure and is ideally suited for ducting and heat recovery applications.

Cooling air (shown by red arrows below) is drawn directly from ambient air through the coolers and exhausted upwards through the cooler box. The cooling air is not preheated which provides optimum cooling, thus significantly lowering air drying requirements. Also, any airborne dirt and debris will build up on the outside of the cooler where it is easily monitored and removed.



Cooling air for the motor and cabinet inside (shown by yellow arrows) is also drawn directly from ambient air and is exhausted through the same top exhaust opening. This allows easier ducting for heat recovery and energy management.

Inlet air for compression enters through two opposing slots on either side of the inlet air plenum. Each opening is large enough for all needed inlet airflow, greatly reducing the potential for pressure drop across the inlet.

Extremely Quiet

While the low noise radial fan and the one-to-one drive considerably reduce noise levels, the new “split cooling air flow” design provides superior sound proofing without cooling efficiency losses. With noise levels as low as 70 dB(A), the CSD is nearly 10 dB(A) quieter than comparable compressors.

7 Sigma Control

Developed by Kaeser in conjunction with Siemens AG, this patented compressor control features an industrial based PC with an Intel® microprocessor inside. Five different compressor control configurations are available to precisely match compressor performance to air demand and increase energy savings.



With Sigma Control and Kaeser's proprietary software, compressor systems can be monitored and adjusted from any location worldwide. Sigma Control also features extensive capabilities for maintenance trending and air demand tracking.

Available Options

All units are available with optional refrigerated dryer and/or SFC variable frequency drive.

SFC Option

- Superior part load efficiency
- Stable system pressure
- Siemens drive system technology for reliability and efficiency
- Drive includes EMI filter, contactor for galvanic separation and a line reactor
- Drive cabinet cooling fans



Optional SFC shown

Refrigerated Dryer Option

- Single point hook-up integrated dryer
- CFC-free R134a refrigerant
- 38°F pressure dew point
- Moisture separators and Eco-Drains
- Completely piped and ready for installation
- Stainless steel plate type heat exchangers

Equipment

Compressor

Single stage, flooded rotary screw airend with the power-saving, proprietary Sigma Profile delivers pressures up to 217 psig.

Electric Motor

TEFC, high efficiency, 460 or 575 V, 3-phase, 60 Hz, 3600 rpm, class F insulation, and EPA compliant. Other voltages are available.

Starter

Magnetic Wye-Delta reduced voltage starter ensures low starting current and smooth acceleration.

Drive

Direct drive with maintenance-free coupling provides maximum transmission efficiency.

Sigma Control System

Sigma Control is a modern, compact, PC-based control system with Intel™ processor and real-time operating system. Sigma Control monitors all critical compressor and control system functions and compressor maintenance items. History memory offers easy troubleshooting and record keeping. Integrated database offers plain text display in up to 30 languages. Sigma Control has three communication ports built-in (RS 232, RS 485, Profibus) with open architecture for integration into master control systems.

Cooling System

- Three separate cooling air inlet zones for the aftercooler, compressor, and drive motor ensure optimum cooling. Drawing ambient air across the coolers and motor through separate zones avoids preheating and results in lower approach temperatures, longer lubricant life, and cooler motor temperatures.

- Radial cooling fan reduces package noise and produces greater static pressure across the coolers.
- High-efficiency coolers are included.
- Combination valve incorporates a thermostatically controlled valve, cooler by-pass, and micro fluid filter. The thermostatically controlled valve ensures perfect fluid temperature regulation. The micro fluid filter utilizes a spin-on cartridge.
- All units are filled with Kaeser Premium Fluid to cool, clean, and lubricate airend.
- Combined reservoir and separator tank with 3-stage separation system ensures minimal fluid carry over of 2 ppm or less (by weight). Quick change devices on the separator and cooler allow complete, fast, and easy fluid changes.
- ASME or CRN separator tank is equipped with quick disconnect fittings for manual verification of separator element contamination.
- Main air lines are made of rigid pipe and incorporate flexible pipe connections.
- Standard units are air-cooled, optional water-cooling is available.

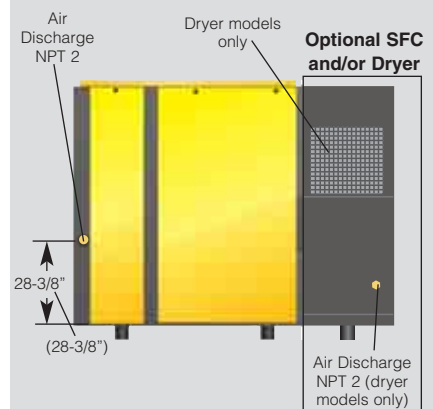
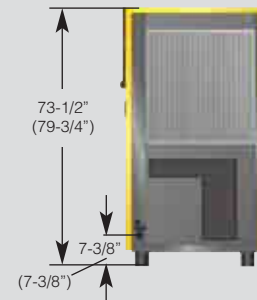
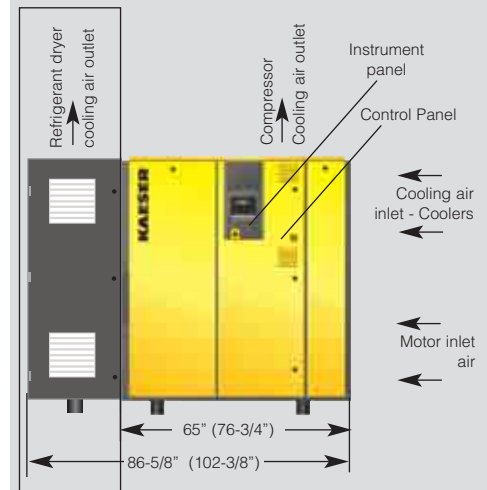
Enclosure

Compact unit is soundproofed by a sheet metal enclosure with mineral wool and plastic liners. Enclosure features a durable powder-coated finish. Compressor is mounted on base frame with a solid steel floor and vibration isolation mounts. Additional vibration isolation for airend, motor, and separator tank is standard.

Dimensions

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

Optional SFC and/or Dryer



Note: () represents CSD 100/125 measurements

Compressed Air System Design

Engineering expertise

With decades of combined experience in compressed air systems and design, our entire team of qualified engineers is always at your service. For specialized systems or unique requirements, Kaeser's highly trained engineers provide expert applications assistance. From complex installations and challenging environments to facilities with limited space, Kaeser can design and lay out a system to meet the specified requirements for performance and reliability.

Using specialized tools such as our Power Cost Analysis and Air Demand Analysis, we can provide an accurate assessment of the existing installation as well as a contrasting view of the proposed system's performance.

Kaeser uses state-of-the-art CAD systems to lay out the proposed system and produce traditional two-dimensional drawings for project execution. Plus, a three dimensional, virtual walk-through tour of the proposed system allows the end user to see the complete installation. The virtual modeling allows all options to be considered. Variables such as distance, diameters, equipment order, location, accessories and connections can be reviewed and modified, if necessary, prior to installation.

CSD Series - Technical Specifications for Standard Units*

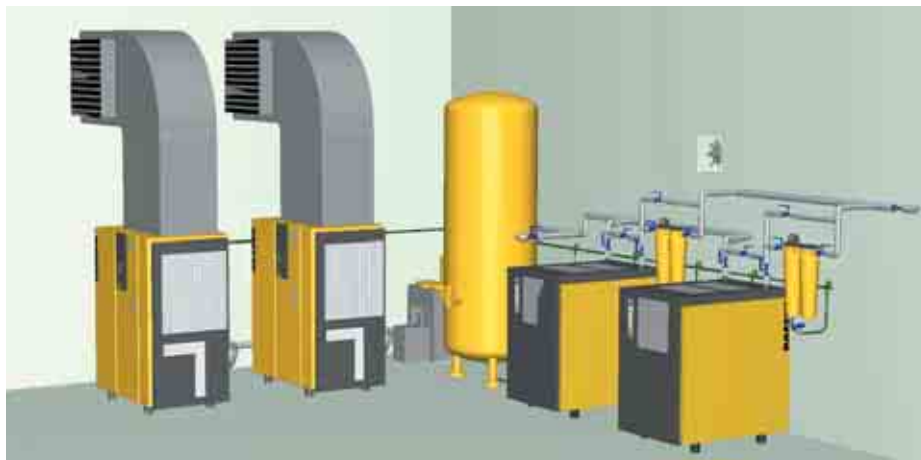
Model	Pressure Range (psig)	Capacity (cfm) ⁽¹⁾	Rated Motor Power (hp)	Dimensions (in.)	Noise Level dB(A) ⁽²⁾	Weight (lb.) ⁽³⁾
CSD 60	125	298	60	65 x 41 ³ / ₈ x 73 ¹ / ₂	70	2780
	175	234				
	217	188				
CSD 75	125	361	75	65 x 41 ³ / ₈ x 73 ¹ / ₂	70	2870
	175	292				
	217	229				
CSD 100S	125	425	100	65 x 41 ³ / ₈ x 73 ¹ / ₂	72	2930
	175	348				
	217	288				
CSD 100	125	503	100	76 ³ / ₄ x 51 ¹ / ₈ x 79 ³ / ₄	73	4190
	160	417				
	217	337				
CSD 125	125	581	125	76 ³ / ₄ x 51 ¹ / ₈ x 79 ³ / ₄	74	4410
	160	494				
	217	406				

(1) Performance rated in accordance with CAGI/PNEUROP PN2CPTC2 test code. (2) Measured at 3 feet according to CAGI. (3) Weights may vary slightly depending on airend model.

NOTE: Other pressures available from 80 to 217 psig.

* For units with SFC and/or dryer, please contact your local authorized Kaeser distributor.

Specifications are subject to change without notice.



KAESER COMPRESSORS

Built for a lifetime.™

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Certified Management Systems



The Air Systems Specialist

With over 85 years of experience, Kaeser is the air systems specialist. Our extensive 100,000 square foot facility allows us to provide unequalled product availability. With service centers nationwide and our 24-hour emergency parts guarantee, Kaeser customers can rely on the best after-sales support in the industry. Kaeser stands committed to providing the highest quality air system for your specific compressed air needs.