

Screw Compressors

HSD SERIES

Capacities from: 816 to 3002 cfm

Pressures from: 80 to 217 psig



What do you expect from a large compressor system?

All compressed air users need a reliable air system and want to save energy. As a larger air user, energy costs and lost production due to downtime are especially critical to you. To combat rising energy costs, you need superior full and part-load performance, and you want superior design and product quality for reliability and low cost of ownership. Further, smart air system design is vital to ensure availability of consistently high quality air, ease of installation and ease of maintenance. You need the optimum mix of equipment that will efficiently meet fluctuating demands and provide full back up capability, but floor space is often limited. Kaeser meets these needs with its new HSD series rotary screw compressors.

The HSD series from Kaeser

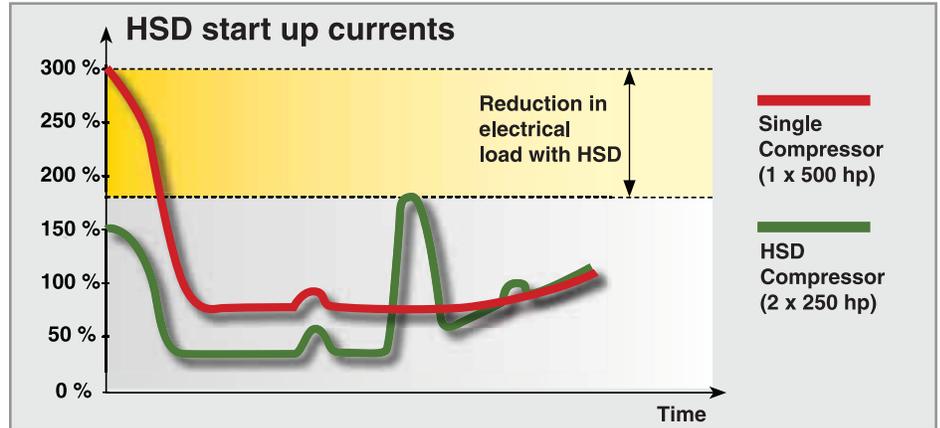
Each Kaeser HSD is actually two independently operating compressors in a single enclosure. These innovative compressor packages set a new standard for high performance air delivery, reliability, efficiency and compact design. They provide the energy efficiency of load splitting in a much smaller footprint than two separate compressors of equal capacity. And because each module is a complete compressor you have redundancy built in, with the additional benefit of much lower installation costs than two separate units.



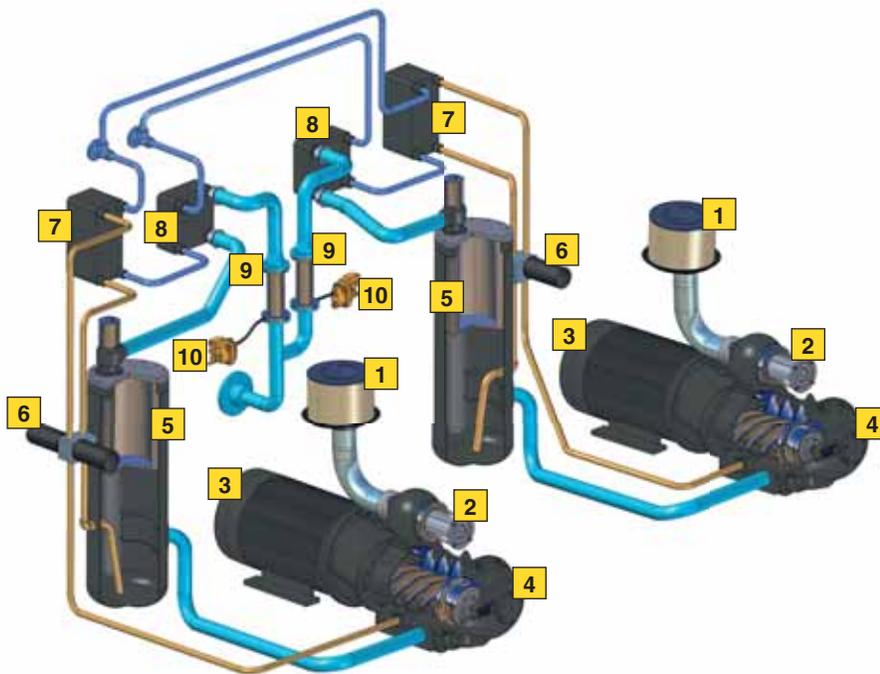
HSD

Double dependability and performance

The use of two completely independent compressor units in the HSD ensures maximum part-load efficiency and air availability. If one unit is shutdown for any reason, approximately 50% of total compressed air delivery is still available (depending on configuration - see specifications). An additional benefit is that the HSD will not start both compressor modules simultaneously. This approach greatly reduces inrush currents and the load on your plant's electrical infrastructure.



The two HSD compressor units are always started one after the other. This greatly reduces the load on your facility's electrical supply system and eliminates the risk of network overload.



- 1 Air filter
- 2 Inlet valve
- 3 Electric motor
- 4 Rotary screw airend
- 5 Separator with cartridge
- 6 Fluid filter
- 7 Fluid cooler
- 8 Compressed air aftercooler
- 9 Centrifugal separator
- 10 Eco-Drain condensate drain

Complete redundancy of all components ensures greater system reliability and minimal downtime.

Kaeser Quality and Excellence

Sigma Profile airends

HSD compressors are built around low-speed Sigma Profile single-stage rotary screw airends optimized for the lowest possible kW input per cfm output. Savings up to 15% are common compared to conventional rotor profiles. Further advantages include minimal sound levels, long service life and reduced service requirements.



Premium quality motors

HSD motors (460v/3ph/60Hz) are high efficiency (EPA compliant or better) with class F heat protection. External grease fittings for ease of service. Integrated PT100 thermistor sensors provide optimum overload protection.



Kaeser Quality and Excellence

Kaeser designs all its products to be energy efficient, reliable, and easy to service, and we build our products using only premium grade materials. Unlike other compressor manufacturers, Kaeser produces all its own airends which are tested and assembled in accordance with the strictest quality control standards to ensure outstanding performance and unrivalled energy efficiency. Kaeser also manufactures a much greater portion of other parts than our competition, including components such as valves, frames, and cabinet panels. Kaeser's exacting quality assures smooth, quiet operation. Then each compressor is fully tested to ensure that when it reaches our customer, we are proud to have the Kaeser name on it.



One-to-one drive — simple, reliable and ultimate efficiency

HSD airends and motors are joined by maintenance-free flexible couplings with cast flanges in a compact and durable unit. This eliminates both the complexity and energy losses associated with gear driven units. The benefits speak for themselves: efficient power transmission and reduced service costs and downtime.

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



One-to-One Direct Drive

Efficient water cooling

HSD is water-cooled with high efficiency soldered plate heat exchangers that achieve differential temperatures of only 1°K and condense much of the moisture for easy removal. This greatly enhances the effectiveness of downstream dryers and filters.





Sigma Controls

Both compressor units have dedicated Sigma Controls, ensuring energy efficient sequencing and providing fully automatic monitoring of the many critical operating and maintenance indicators.



Operational status can be determined at a glance at the plain text display (many language options). Standard communication interface and Profibus DP enable remote monitoring and integration with Sigma Air Manager and plant controls.

Solid cabinet and frame construction

HSD compressors are housed in Kaeser's sturdy enclosures. Built with heavy gauge steel frames and double doors to ensure easy accessibility for service. Side panels are powder coated steel and have thick sound insulation to ensure very low noise levels (see specifications chart). Dual layers of vibration isolators on the motor/airend chassis and the package base frame prevent loosening of wire connections and fluid fittings.

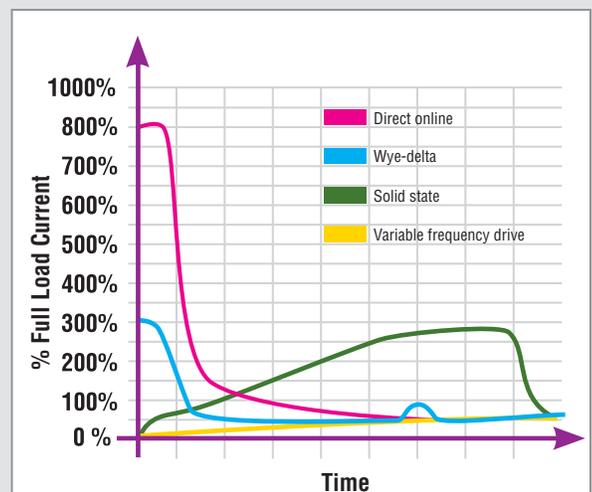
Centrifugal separator with Eco-Drain

Each compressor module has a centrifugal moisture separator and accumulated condensate from each unit is reliably drained off without air loss by an automatic Eco-Drain.



Wye-delta starters

We use soft start technology to reduce current spikes that can cause excessive heat load in the motors and power fluctuations in the plant without the need for additional expensive electronics. This allows more frequent starts to match air delivery to your demand while reducing dynamic loads in the system. Further, HSD controls prevent simultaneous starting of both compressor units.



HSD

Benefits At A Glance

Exceptional efficiency

Kaeser's Sigma Profile™ airend, high efficiency motors and direct drive make an extremely efficient system. Combine this with the precise control from our Sigma Control™ and the system benefits of load splitting in part-load conditions and you cannot beat the HSD for energy efficiency.

Built-in back up/redundancy

The use of two completely independent compressor units in HSD systems ensures maximum compressed air dependability. If one unit is shutdown, approximately 50% of total compressed air delivery is still available (varies by model).

Lower maintenance cost

Kaeser designed the HSD with the same maintenance friendly features as smaller machines:

- Easy access to service items and components
- Sigma Control provides service reminders and diagnostic information
- External motor grease fittings
- Pressurized fluid change system
- Swivelling separator cover for easier cartridge changes
- Longer service intervals

Lower installation costs

The packaging of two compressors into

one package greatly reduces installation costs. Only one unit to ship and maneuver into place. Only one piping connection. Only one wiring connection.

Small footprint

The HSD's small footprint frees up precious floor space and allows better access for service.

High quality air

The following HSD features minimize oil and moisture in your air;

- very fine internal filtration
- 3-stage fluid separation
- super-efficient coolers
- centrifugal moisture separators
- automatic condensate drains

Sigma Frequency Control Option

For even better efficiency in certain part-load applications, the HSD is available with one standard and one frequency drive module in the same HSD cabinet. In this way, the HSD provides both base and peak load capability. Seamless communication between the two modules ensures optimum performance. We build the HSD SFC modules to the same standards as our stand-alone SFC series compressors. Another major benefit of Kaeser frequency drive systems is that our SFCs use standard compressor components. No special motors, couplings or airends that can drive up the cost of ownership.



Model	kW	Min - Max cfm (at 100* psig)
SFC 410	410	410 - 2673
SFC 515	515	353 - 3058

**Other pressures are available*

See our SFC brochure (part number USSFC) for detailed specifications.

Optimize Your Air System

Air Manager

Our Sigma Air Manager is the ultimate in monitoring, controlling and analyzing compressed air system performance. SAM can



be adapted to almost any system and manage up to 16 compressors, blowers, or vacuum pumps. It also manages dryers, filters and drains. SAM balances service hours, prevents simultaneous motor starts and maintains tight pressure control – something standard sequencers cannot do!

SAM alerts operators to service requirements and provides trending data for plant operational analysis. The standard Sigma Air Control basic software displays real time operational status through an Internet browser on your PC, including system pressure trends as well as service and alarm messages. Our optional Sigma Air Control plus stores data for reporting, control optimization and long-term trend analysis of energy consumption. With either software, the entire compressed air system can be monitored from any location.

Air Demand Analysis (ADA)

Kaeser's unique Air Demand Analysis captures meaningful and accurate data that clearly show your air consumption profiles. We monitor and chart air flow, power consumption, and system pressures during normal operating hours over a period of 10 days. This exceptional service provides a complete picture of your air consumption. With this information,



Time-stamped data logging enables more thorough analysis.

Kaeser's Energy Saving System (KESS) can then help determine the best system configuration for your plant and easily identify areas for improvement. ADA is non-intrusive. The data collection devices can be quickly and easily installed without interrupting daily plant operations, and the information can provide lasting results for long-term planning, creating major energy savings and productivity improvements. ADA is also very helpful in qualifying for utility incentives for energy efficiency upgrades.

Heat Recovery

It's a simple fact: compressing air converts much of the electrical energy you buy into heat, and this energy is the largest component among your compressed air costs. But with the Kaeser design, you can recover over 90% of the heat energy and dramatically reduce your plant energy costs. For example, you can reclaim over 70% of the energy just from the fluid coolers. This huge reserve of energy can be used to heat water or other fluids in your plant processes. Kaeser offers products and solutions to implement heat recovery strategies that pay for themselves fast. In times of soaring energy prices and tough competition, you cannot afford to overlook this large savings potential.

Sigma Air Utility™

Do you produce your water, gas and electricity? Probably not. So why own and operate compressors if you don't

(continued on back)



Sigma Air Utility

have to? Let Kaeser — *The Air Systems Specialist* — plan, install and maintain a complete air system in your plant, so you can focus your attention on what you do best: run your business.

Sigma Air Utility is a proven solution. We design, build, own, operate, maintain and stand behind your compressed air system. We guarantee

you the air you need, at the pressure you need and at the quality you need — at all times. On top of that, it will be the most energy efficient air system you've ever had.



Specifications

Model	Rated Pressure (psig)	Total Capacity (cfm) ⁽¹⁾	Total Rated Motor Power (hp)	Dimensions	Noise Level (dB(A)) ⁽²⁾	Weight (lbs.) ⁽³⁾		
HSD 500	100	2285	500	136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)	73	17,857		
	125	2264						
	175	1815						
HDS 550	125	2521	550		136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)	74	18,739	
	175	1956						
	217	1632						
HSD 600	125	2762	600			136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)	74	18,960
	175	2214						
	217	1773						
HSD 650	125	3002	650	136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)			75	19,180
	175	2472						
	217	1914						

(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.

Specifications are subject to change without notice.



Built for a lifetime.™

Corporate Headquarters:

PO Box 946

Fredericksburg, Virginia 22404

Phone 540-898-5500

Fax 540-898-5520

www.kaeser.com

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.

Certified Management Systems



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USHSD