

Screw Compressors

HSD Series

Capacities from: 816 to 3044 cfm

Pressures from: 80 to 217 psig



HSD Series

Built for a lifetime.™

Kaeser's HSD compressors are engineered to be the cornerstone of any demanding industrial application. Each HSD is actually two independently operating compressors in a single enclosure. These innovative compressor packages provide the energy efficiency of load splitting in a much smaller footprint than two separate compressors of equal capacity. Because each module is a complete compressor, you have all the benefits of built-in redundancy coupled with lower installation costs.

Innovation you can trust

With a cutting edge research and development team committed to building industry-leading products, Kaeser continues to deliver better solutions to meet our customers' compressed air needs. Kaeser's expertise and world-wide reputation for superior reliability and efficiency offer great performance and peace of mind.

Rugged reliability

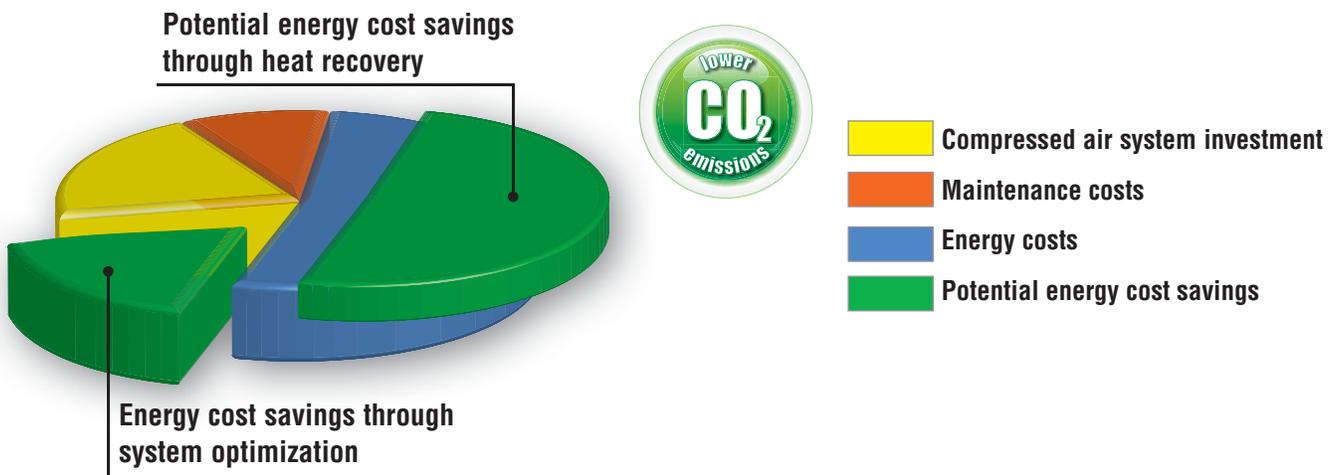
Kaeser's screw compressors meet our rigorous "built for a lifetime" standard. Designed and built with Kaeser's generations of compressed air experience, you can rest assured that these compressors will continue to deliver the air you need with the exceptional reliability you expect from a Kaeser compressor.

Service-friendly

From the ground up, these compressors have been designed with the user in mind. Fewer wearing parts and using premium quality materials ensure reduced maintenance requirements, longer service intervals, and extended service life. A smart component layout with generously sized maintenance doors simplify service and lower your operating costs.

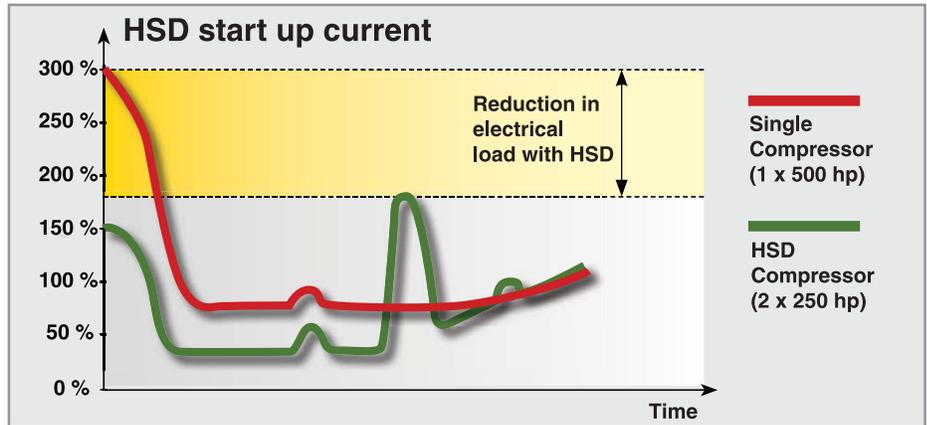
Guaranteed efficiency

In our comprehensive design approach, Kaeser chooses the components that work together in the most energy efficient way possible. Each and every component — from inlet filter to discharge flange — has been carefully selected with performance in mind. In fact, Kaeser compressors are up to 30% *more efficient* than the competition. With superior integrated controls, we guarantee an effective system with lower operating costs, however small or large your demand may be.



Double dependability and performance

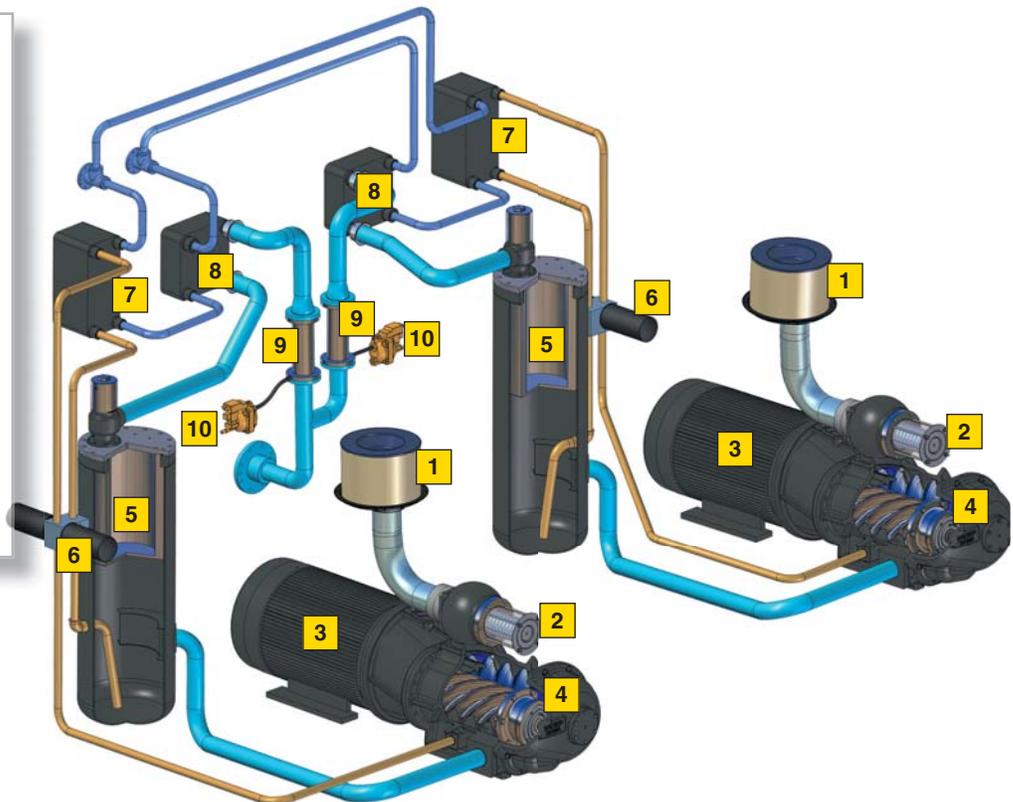
Using two completely independent compressor units in the HSD ensures maximum part-load efficiency and air availability. If one unit is shutdown for any reason, approximately 50% of total compressed air delivery is still available (depending on configuration - see specifications). Additionally, the HSD 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.

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

- 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



HSD Features



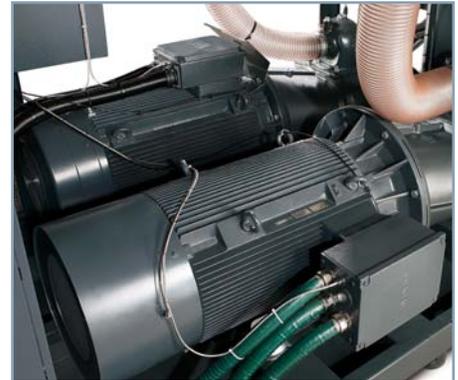
Sigma Profile™ airends

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.



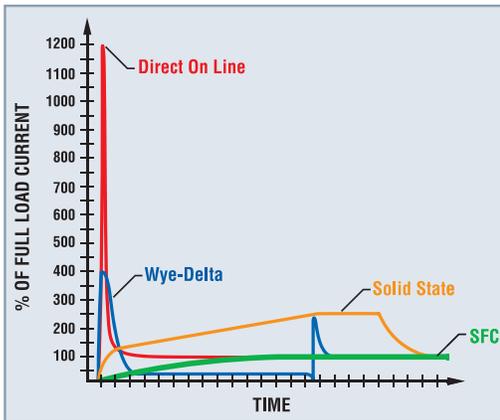
True 1:1 direct drive

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.



Premium efficiency drive motors

HSD motors (460V/3ph/60Hz) are premium efficiency (EISA compliant or better) with class F heat protection. Integrated PT100 thermistor sensors provide optimum overload protection. External fittings make motor greasing easy.



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.



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



Intelligent control and protection

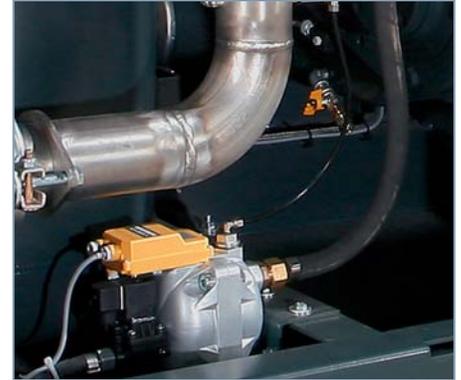
To protect your investment and ensure the most efficient operation possible, both compressor units have their own Sigma Control 2™. This intelligent controller comes standard with multiple pre-programmed control profiles so you can select the one that best fits your application. Sigma Control 2 monitors more than 20 critical operating parameters, shuts the unit down to prevent damage, and signals if immediate service is required. It also tracks preventive maintenance intervals and provides notice when PMs are due. An RFID sensor provides secure access and simplifies managing maintenance intervals. An SD card slot with included SD card enables fast, easy software updates, storing key operational parameters, and offers long-term data storage for analyzing energy consumption and compressor operation. Sigma Control 2 has superior communications capabilities. An Ethernet port and built-in web-server enable remote viewing. ModBus, Profinet, 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 more information.



Efficient water cooling

HSD is water-cooled with high efficiency plate heat exchangers that achieve approach temperatures of only 2°F and condense much of the moisture for easy removal. This greatly enhances the effectiveness of downstream dryers and filters.



Integral moisture separator

A moisture separator is integrated into the stainless steel discharge piping. Our unique design maximizes separation with minimal pressure loss. A zero loss Eco-Drain is standard to automatically remove the captured moisture.



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.

Benefits At A Glance



Exceptional efficiency

Kaeser's Sigma Profile airend, high efficiency motors, and direct drive make an extremely efficient system. Combined with the precise control from our Sigma Control 2 and the system benefits of load splitting in part-load conditions, and you can't beat the HSD for energy efficiency.

Built-in back up/redundancy

Using 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 2 provides service reminders and diagnostic information
- External motor grease fittings
- Pressurized fluid change system
- Swiveling separator cover for easier cartridge changes
- Longer service intervals

Lower installation costs

Packaging two compressors into one

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

Heat Recovery Ready

The next level of energy savings

The rise in energy prices is an unwelcome reality in today's manufacturing and business environment. While the rate of price increases for natural gas, heating oil, and other sources may vary from year to year, the upward trajectory is clear. Energy cost reduction strategies are vital to staying competitive.

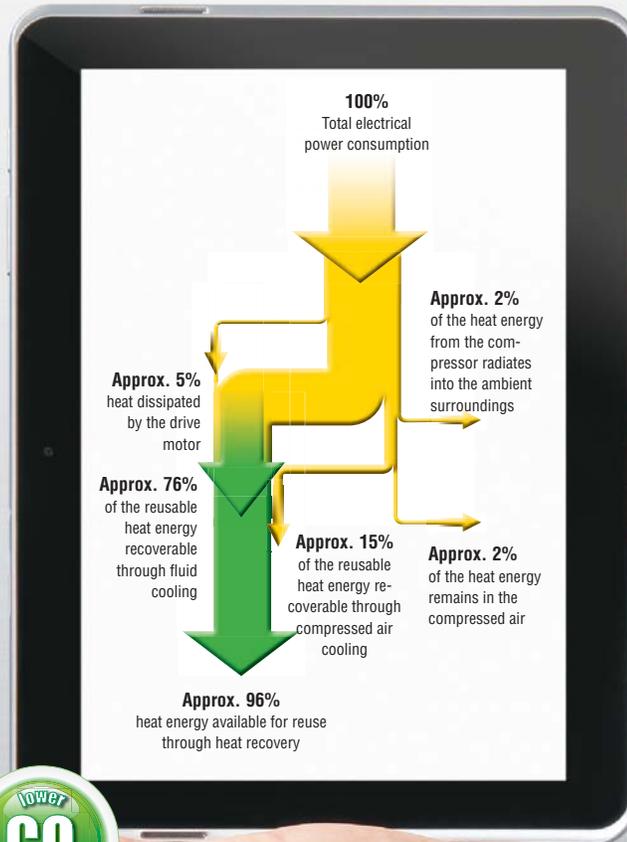
Compressing air converts the electrical energy you pay for into heat. Our compressors are available with a heat recovery option to easily recover up to 76% of this energy for hot water. You can harness additional heat recovery by ducting exhaust air. In all, 96% of input energy is recovered as heat.

Heat recovery can also be incorporated into water-cooled rotary screw compressor applications. The recovered heat can be used to warm process water, service water, and other fluids.

When you consider that a 500 hp compressor running full time at 10 cents/kW uses approximately \$360,000 per year in energy, the potential savings and benefits are significant.

The HSD series can be connected to an external heat exchanger.

For additional information on heat recovery, see our whitepaper "Turning Air Compressors into an Energy Source."



Technical Specifications

Model	Rated Pressure (psig)	Total Capacity (cfm) ⁽¹⁾	Total Rated Motor Power (hp)	Dimensions	Sound 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						
HSD 550	125	2521	500		136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)	74	18,739	
	175	1956						
	217	1632						
HSD 600	125	2762	550			136 ⁵ / ₈ x 84 ¹ / ₂ x 93 (Footprint: 80 ft ²)	74	18,960
	175	2214						
	217	1773						
HSD 650	125	3002	600	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/ISO 1217 test code. (2) Per ISO 2151 using ISO 9614-2.

(3) Weights may vary slightly depending on airend model.

Specifications are subject to change without notice.

Compressed Air System Design

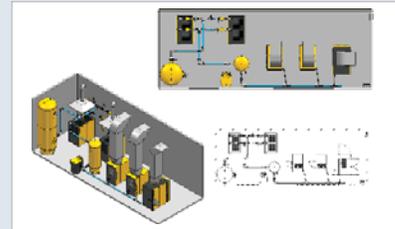
Kaeser's team of engineers are always at your service to help design or optimize your compressed air system.

Using our Air Demand Analysis (ADA) and Kaeser Energy Saving System (KESS) we can evaluate your existing installation and dem-

onstrate 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.



KAESER COMPRESSORS

Built for a lifetime.™

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