



# Industrial Rotary Screw Compressors

## SX - HSD Series

3 - 700 hp

Capacities from: 8.8 to 3044 cfm

Pressures from: 50 to 217 psig

**kaeser.com**

# A Philosophy Built-for-a-Lifetime™

## Tradition and Innovation

*Our compressed air heritage is built on a century of manufacturing experience. Generations of quality craftsmanship guide our engineering principles of efficiency, reliability, and serviceability. This tradition of excellence also drives new technology development. Advances in airend design, controls, and system design ensure our customers can meet the daily challenges of their manufacturing operations. Each KAESER product is designed with the future in mind, but we never lose sight of our roots. Technology may change, but the need for quality and reliability will always remain.*

## 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 excellent performance and peace of mind.

## Rugged reliability

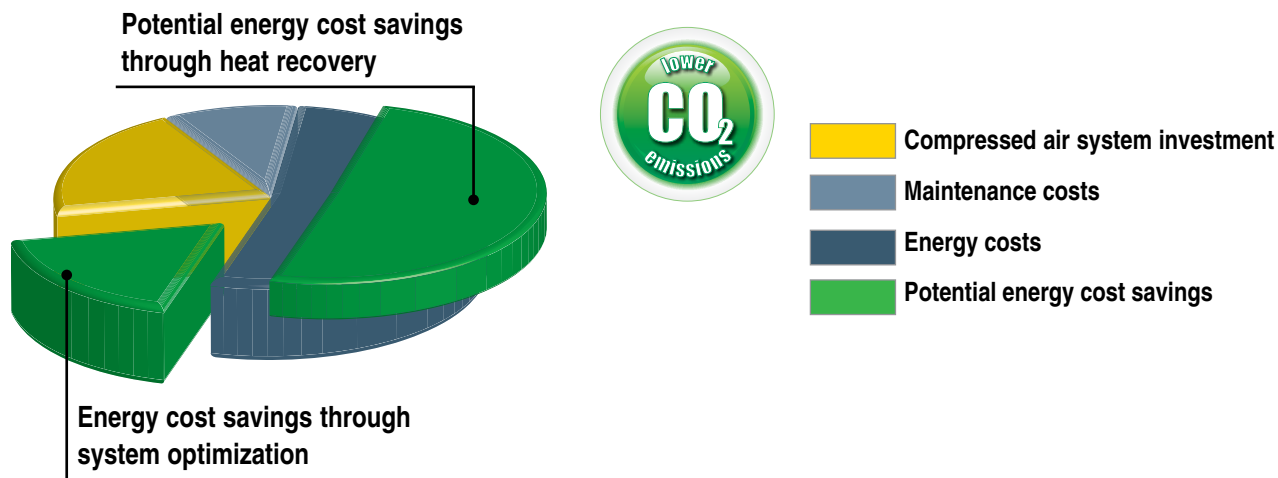
KAESER's screw compressors meet our rigorous "built for a lifetime" standard. Designed and built with KAESER's generations of manufacturing experience, you can rest assured that these compressors will continue to deliver the air you need with the exceptional reliability you expect from a KAESER compressor.

## 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. Smart component layouts with generously sized maintenance doors simplify service and reduce downtime.

## 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, our compressors are up to **30% more efficient** than the competition. With KAESER's superior integrated controls, we guarantee an efficient system with lower operating costs, however small or large your demand may be.





*Today, KAESER employs nearly 8000 people and our growing distribution network provides reliable and sustainable compressed air system solutions in over 100 nations throughout the world.*



### **Continuous quality control**

SIGMA PROFILE® rotors are precision-machined and finished to an accuracy of 1/1000 mm. The airend's finished dimensions are measured and verified using the latest in 3D computer technology. Highly trained specialists assemble each airend according to our strict ISO 9001:2015 standards.



### **Advanced machining centers**

State-of-the-art machining centers in climate-controlled rooms produce the SIGMA PROFILE rotors and casings. These machining centers operate 24 hours a day to keep up with the demand for KAESER premium quality compressors.



### **Environmentally friendly powder coating system**

All KAESER rotary screw compressors feature powder-coated enclosures. Our unique powder coating technique applies a super fine glaze to each individual enclosure panel. The panels are baked at 350°F for a corrosion-proof and scratch-resistant finish.



### **Comprehensive unit testing**

Once the manufacturing and assembly process is complete, each and every screw compressor undergoes a comprehensive testing procedure to verify its mechanical and electrical operation prior to shipment. These strict testing standards ensure the highest product quality available.



# SIGMA Product Line

## Premium quality comes standard

While others offer premium features as an option, at KAESER, we believe quality should never be just an option. Our approach to design is rooted in the German traditions of quality craftsmanship, exceptional reliability, and superior energy efficiency. From using fewer wearing parts, to smarter component layouts, to easy maintenance access, our complete line of rotary screw compressors is built for a lifetime™ of energy efficient operation.



### SIGMA PROFILE® airends

Our single-stage, flooded rotary screw airend delivers pressures up to 217 psig and features our power saving SIGMA PROFILE design. Our airends are optimized in size and profile to match the airend speeds with their best specific performance. Unlike the competition, KAESER makes many different airends so that we can apply them at their optimal speed and performance (see Graph 1).



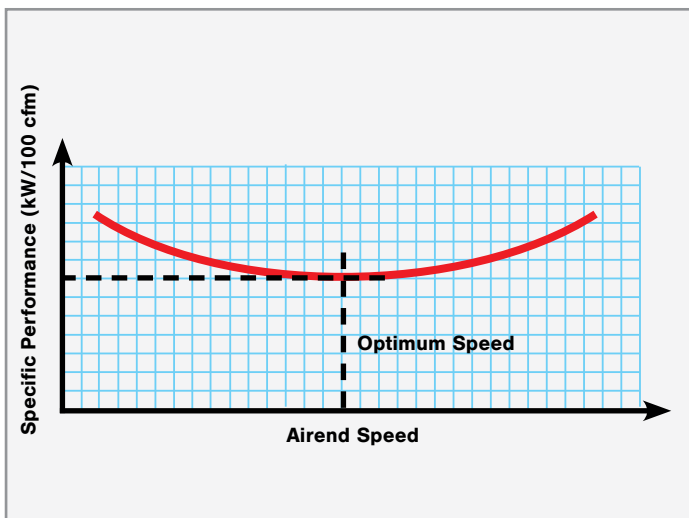
### Premium efficiency TEFC motors

KAESER uses only premium efficiency Totally Enclosed Fan Cooled (TEFC) motors with class F insulation for extra protection from heat and contaminants. Magnetic wye-delta reduced voltage starting or SIGMA FREQUENCY CONTROL is standard. These energy saving features ensure low starting current and smooth acceleration (see Graph 2).

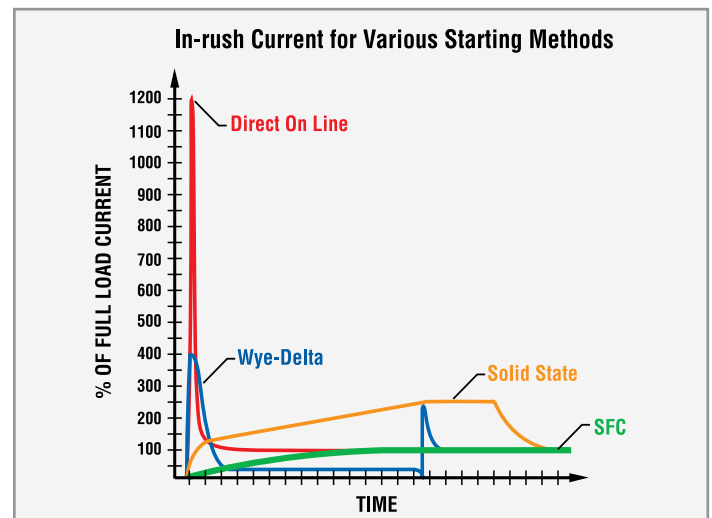


### Efficient separator system

Our 3-stage separation system ensures very low 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 fluid drain system.



Graph 1



Graph 2

# Package Design

## Extremely low sound and vibration

All models come standard with KAESER's superior cabinet that features complete metal enclosures with sound proofing liners and heavy-duty vibration isolation. As a result, our compressors are about 10 dB(A) quieter than conventional compressors of equal performance.

## Parallel cooling design

Separate air inlet zones for the compressor coolers and drive motor ensure optimum cooling and performance. Drawing ambient air directly across the coolers and motor through separate zones eliminates preheating and results in 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. A powerful fan pulls air through the coolers and creates a vacuum within the cabinet that effectively cools the motor even under severe operating conditions. Top exhaust allows for easy heat recovery and reduces the system footprint.

# Service-friendly Design



## Easy maintenance access

Our rotary screw compressors feature an open package layout. All of the major components are easily accessible, reducing preventive maintenance time by as much as 50% when compared to other similarly sized units.

Service doors open wide and like the panels, are easily removed. Our unique fluid separator design even allows pressurized oil changes, saving valuable time. BSD, DSD units and larger have remote grease fittings for the fan and drive motor.

When you consider the energy efficiency savings and the maintenance costs savings, it's clear that owning a *built for a lifetime™* KAESER compressor will save you money, year after year.

# SX - AS and SFC Belt Drive Compressors

On our 3 - 30 hp compressors, we use a space saving V-belt drive design. KAESER models include a unique automatic V-belt tensioner that maintains optimal efficiency and prolongs belt life. These models offer simple maintenance and the flexibility of changing working pressure with an easy field modification.



**SX Series**  
3 - 7.5 hp

**SK Series**  
15 - 20 hp

**SM Series**  
7.5 - 15 hp

**AS Series**  
20 - 30 hp



## CAGI

### Certified Performance

Our compressors' energy efficiency has been tested and confirmed by an independent laboratory as part of the Compressed Air and Gas Institute's *Rotary Screw Compressor Performance Verification Program*. CAGI data sheets are available for screw compressors from 5 to 200 hp at [us.kaeser.com/cagi](http://us.kaeser.com/cagi).





KAESER

SK 20

SIGMA

# ASD - HSD and SFC Direct Drive Compressors

On larger units from 25 to 700 hp, we use mostly direct coupled drive, providing maximum power transfer and efficiency from motor to airend. Since we make more sizes of airends, we can run them at lower speeds. This design has fewer components, eliminates heat and drive losses, and reduces maintenance and related downtime.

**ASD Series**  
25 - 40 hp

**DSD Series**  
125 - 250 hp

**BSD Series**  
40 - 60 hp

**ESD Series**  
250 - 350 hp

**CSD Series\***  
60 - 125 hp

**FSD Series**  
350 - 450 hp

**HSD Series**  
500 - 700 hp

\* Gear Driven







# SIGMA Frequency Control

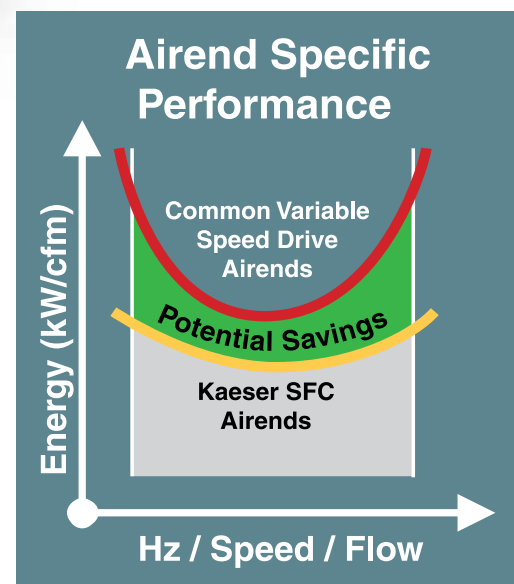
## Unmatched performance

KAESER SIGMA FREQUENCY CONTROL combines the latest in Siemens drive technology with our SIGMA PROFILE airend and SIGMA CONTROL<sup>®</sup> system. Our engineers have optimized the airend design to accommodate a wide flow range with unmatched efficiency. The drive motor and airend operate at low speeds, resulting in exceptional reliability and long life. KAESER's SFC units range from 8 to 515 kW and are incredibly quiet, with noise levels as low as 67 dB(A). SFC models from 8 to 132 kW are also available with integrated dryers. SFC models 18 to 90M feature synchronous reluctance drive motors to further improve part-load efficiency.



## Integrated System Design

Even though variable frequency drive compressors can have an effective flow range of 20% to 100%, the efficiency (kW/cfm) is not constant over the whole speed range. The best efficiency is normally between 40% and 85%. As the graph illustrates, the SIGMA PROFILE airend has a clear efficiency advantage over a wider flow range than the competition.



# Integrated Systems

## Premium compressed air quality

KAESER rotary screw compressors are also available in a variety of configurations. These package systems can be customized to suit your specific compressed air and air treatment needs.



50 hp compressor with integrated refrigerated air dryer.



AIRCENTERs come with an integrated refrigerated dryer and ASME coded receiver tank.

## T Series

Models from 3 to 175 hp are also available with air treatment equipment built in.

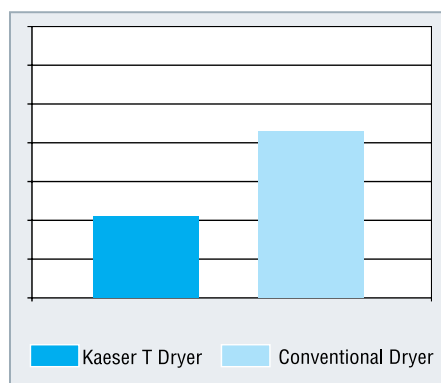
The T series compressors feature integrated refrigerated dryers to remove moisture and other contaminants from your air system to improve product quality and help reduce wear on production equipment.

The T models reduces overall footprint, provides easy access to service points, and prevents exposure to preheated air and contaminants from the compressor package. They also feature single point hook up to simplify your installation.

## AIRCENTER

To further reduce your installation time and space requirements, KAESER offers the AIRCENTER. These complete air systems include not only the dryer, but also the air receiver tank. Available with either one (simplex) or two (duplex) SIGMA rotary screw compressors, they come pre-assembled with a refrigerated air dryer mounted on a horizontal receiver tank.

Available in a wide range of models from 3 to 40 hp, these units are perfect for small shops or plants. All systems are completely piped and wired, and ready for installation. Air treatment packages with coalescing filters and condensate drains are available options.



## Climate friendly design

In addition to energy saving controls, our integrated dryers feature the new R-513A refrigerant with 56% lower global warming potential than common dryer refrigerants. Combined with our advanced heat exchanger design, we need only half the refrigerant — resulting in the most climate friendly dryer possible.



# Energy Efficient Operation

## Intelligent control and protection

To protect your investment and ensure the most efficient operation possible, we control our compressors 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.



### Data Storage and Analysis:

- SD card slot with included SD card for fast, easy software updates, storing key operational parameters
- Long-term data storage for analyzing energy consumption and compressor operation

### Monitoring and Maintenance:

- Monitors more than 20 critical operating parameters
- Shuts unit down to prevent damage
- Signals if immediate service is required
- Tracks preventive maintenance intervals and provides notice when PMs are due
- RFID sensor for secure access and managing maintenance intervals

### Communications Capabilities:

- Ethernet port and built-in web-server facilitate integration into the IIoT
- ModBus, Profinet®, Profibus®, DeviceNet™, EtherNet/IP, and other industrial communications interfaces are also available as plug in options for seamless integration into plant control/monitoring systems (optional for belt drive, standard for direct drive units)
- Sends e-mail alerts for maintenance notifications, alarms, warnings, and optional messages

## Superior system control

SIGMA AIR MANAGER® (SAM) 4.0 is a supervisory control system for all compressed air production and treatment components. The unique 3D<sup>advanced</sup> Control continuously analyzes the various parameters (e.g. switching and control efficiency) and calculates the ideal combination of compressors to achieve optimum efficiency.



SAM 4.0 enables predictive maintenance with its built-in maintenance reminders and messaging capabilities. These features not only boost operational reliability and efficiency, but also significantly reduce energy costs.

SAM 4.0 features KAESER CONNECT which displays your compressed air system information in real-time on your desktop or laptop computer via a standard internet browser. Simple HTML pages show the compressors' operational state, SAM's operating and system pressure data, as well as service and alarm messages.

# Custom Engineered Solutions

*KAESER's custom air systems are designed for even the most demanding installations and harshest of environments. Our broad range of engineering solutions include outdoor modifications, skid mounting, customized enclosures, and modified containers. The SIGMA AIR UTILITY® (SAU) option lets you pay for your compressed air as a utility with the amount, pressure, and quality of the air guaranteed at all times.*



*SIGMA AIR UTILITY can be delivered in pre-assembled modules or installed in your plant compressor room.*

# Technical Specifications

## Rotary Screw Compressors

### SX Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	160 psig	217 psig
SX 3	12.0	9.2	—
SX 4	15.9	12.7	8.8
SX 5	21.2	17.0	12.7
SX 7.5	28.3	23.7	18.7

### SM Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	160 psig	217 psig
SM 7.5	32.2	25.9	19.3
SM 10	45.1	36.9	28.2
SM 15	55.2	46.6	37.4

### SK Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	160 psig	217 psig
SK 15	69.7	58.6	47.6
SK 20	87.8	77.4	64.8

### AS Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	160 psig	217 psig
AS 20	97.3	83.4	67.1
AS 25	119.7	101.8	85.2
AS 30	140.7	121.8	101.6

### ASD Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
ASD 25	111	—	—
ASD 30	131	109	—
ASD 40S	163	126	105
ASD 40	192	159	122

### BSD Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
BSD 40	196	161	—
BSD 50	237	192	157
BSD 60	289	233	187

### CSD Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
CSD 90	304	257	—
CSD 110	382	307	261
CSD 130	469	374	312
CSD 145	548	449	—
CSD 175	604	515	450

### DSD Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
DSD 125	608	—	—
DSD 150	712	583	—
DSD 175	909	696	558
DSD 200	914	707	558
DSD 250	1075	878	689

### ESD Series



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
ESD 250	1278	1055	842
ESD 300	1572	1261	1020

NOTE: SX 3 through DSD 175 are also available with integral dryer



## FSD Series



## HSD Series



## Variable Frequency Drive



Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
FSD 350	1596	1264	—
FSD 450	2030	1567	1243

Model	Capacity at Operating Pressure (cfm)		
	125 psig	175 psig	217 psig
HSD 500	2311	1885	—
HSD 550	2520	2062	1653
HSD 600	2760	2266	1830
HSD 650	3000	2471	2007

Model	Capacity at 460V <sup>(1)</sup> at Operating Pressure (cfm)			
	Min / Max	110 psig	125 psig	145 psig <sup>(2)</sup>
SFC 8	MIN	13.1	12.7	13.1
	MAX	50.1	47.7	42.7
SFC 11	MIN	21.5	21.2	22.3
	MAX	74.5	71.0	64.6
SFC 15	MIN	27.2	27.2	30.0
	MAX	97.5	95.0	86.5
SFC 18S	MIN	32.8	32.5	27.2
	MAX	126.1	118.7	110.2
SFC 18	MIN	32	32	—
	MAX	140	132	—
SFC 22S	MIN	32.8	32.5	27.2
	MAX	148.0	140.6	131.0
SFC 22	MIN	36	36	—
	MAX	162	154	—
SFC 30S	MIN	37	37	36
	MAX	187	176	164
SFC 30	MIN	47	49	52
	MAX	219	208	193
SFC 37	MIN	54	54	43
	MAX	262	248	218
SFC 45S	MIN	69	69	53
	MAX	291	276	251
SFC 45	MIN	69	69	63 <sup>(4)</sup>
	MAX	336	316	287 <sup>(4)</sup>
SFC 55	MIN	82	81	67 <sup>(4)</sup>
	MAX	406	385	352 <sup>(4)</sup>
SFC 75S	MIN	104	102	82 <sup>(4)</sup>
	MAX	501	478	440 <sup>(4)</sup>
SFC 75M	MIN	131	129	—
	MAX	576	547	—
SFC 90M	MIN	139	136	121 <sup>(4)</sup>
	MAX	675	641	509 <sup>(4)</sup>
SFC 110M	MIN	111	119	133 <sup>(4)</sup>
	MAX	729	700	651 <sup>(4)</sup>
SFC 75	MIN	132	130	—
	MAX	604	564	—
SFC 90	MIN	131	129	125
	MAX	717	672	613
SFC 110	MIN	159	155	150
	MAX	798	751	688
SFC 132S	MIN	201	198	188
	MAX	945	885	786
SFC 132	MIN	200	198	189
	MAX	1016	951	846
SFC 160	MIN	243	242	189
	MAX	1177	1105	1037
SFC 200	MIN	303	300	290
	MAX	1322	1257	1156
SFC 250	MIN	374	370	295
	MAX	1519	1439	1343
SFC 315S	MIN	374	370	351
	MAX	1825	1742	1625
SFC 315	MIN	470	465	456
	MAX	2164	2057	1814
SFC 410 <sup>(3)</sup>	MIN	368	364	299
	MAX	2615	2537	2291
SFC 515	MIN	420	412	355
	MAX	3133	3116	2723

<sup>(1)</sup> Performance data values are only valid for 460V/3 ph/ 60 Hz.

Please consult KAESER for 575V data.

<sup>(2)</sup> Higher pressures are available.

<sup>(3)</sup> Not available for 460V/3ph/60Hz power.

<sup>(4)</sup> Values are for 150 psi.

For more information see our SFC brochures - USSFC-BELT, USSFC18-45S, USSFC45-110M, and USSFC75-515

NOTE: SFC 8 TO SFC 132S are available with integrated dryer.

Specifications are subject to change without notice.

# The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, KAESER COMPRESSORS is represented throughout the world by a comprehensive network of branches, subsidiary companies and factory trained partners.

With innovative products and services, KAESER COMPRESSORS' experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Every KAESER customer benefits from the decades of knowledge and experience gained from hundreds of thousands of installations worldwide and over ten thousand formal compressed air system audits.

These advantages, coupled with KAESER's worldwide service organization, ensure that our compressed air products and systems deliver superior performance with maximum uptime.



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