KAESER COMPRESSORS

Built for a lifetime.™

Compressed Air for Automotive Service

Collision Repair, Fleet Service, Tire Service, General Maintenance, Racing and Performance

Compressed Air in Automotive Service

Consider all the costs in compressed air

The purchase price of a compressor is an important consideration when comparing new equipment options, but it is only one of several cost components that affect the overall cost of owning and operating an air system. Low price options often have higher life cycle costs. Consider these other cost drivers in a compressed air system. In many cases, the benefits in one area outweigh the costs in another and vice versa.

Installation

1 The equipment you select directly impacts installation costs. It is common for buyers to build separate rooms or structures to isolate noisy, vibrating compressors from employees and customers for the sake of safety and comfort. Choices in piping material and size also impact installation time and labor.

Energy

2 Your energy costs depend on the compressor size (hp), how much you run it, and your local utility rates, but even small compressors are often the largest energy user in a shop. Compressor efficiency varies widely between types and brands of compressors, so there are opportunities for significant savings. Likewise, choices in dryers and other system components impact energy usage.

Maintenance and repair

3 Be sure you understand the preventive maintenance as well as periodic major maintenance requirements of equipment you are comparing. Also, system sizing and installation location impact the duty cycle and heat load on the compressor. These factors heavily influence longevity.

Lost time and materials

4 Often overlooked (because they are harder to calculate) are the costs of lost productivity due to downtime as well as wasted time/materials and reduced tool life due to poor air quality or fluctuating pressure. These may be among the highest costs associated with compressed air, and they can quickly erase the savings gained during the equipment purchase.


AIRTOWER 7.5C
KAESER

Reliability and Performance

Today's automotive facilities have high standards, and with the rising costs of labor, tools, paints, and other materials, re-work is expensive. Dry, clean compressed air at a stable system pressure is essential for getting work done with high-quality results. From providing air for rugged impact wrenches to high-end automotive finishes, Kaeser is the compressed air choice for automotive professionals.

Ease of Maintenance

Many features make our belt drive models easy to service, including:

- Easy single panel access for routine service
- Side panel windows to view fluid level and test the auto drain (on T versions and AirCenters)
- Cartridge style 1 micron inlet filter
- Spin-on 10 micron fluid filter
- Single piece, multi-ribbed belt
- Quick fluid change system with drain hose
- Maintenance reminders on controller
- Cleanable filter mat on coolers

Features and benefits of the Kaeser design

1 Sigma Profile™ Airend

Our power-saving, proprietary airend design delivers pressures up to 217 psig.

Kaeser airends are precision-machined to close tolerances and optimized in size and profile to match the low airend speeds with their best specific performance.

2 TEFC Motor with Reduced Voltage Starter

Premium-efficiency, totally enclosed, fan cooled (TEFC) motors with Class F insulation are standard for long life in harsh environments. Magnetic Wye-Delta reduced voltage starters ensure low starting current and smooth acceleration. Tri-voltage 208-230/460 or 575 V, 3-phase, 60 Hz is standard. Other voltages are available.

3 Automatic Belt Tensioning

A ribbed single belt drive efficiently transfers power from motor to airend. The SM through AS series feature our unique automatic tensioning device that maintains proper tension to maximize energy efficiency, prolong belt life, and simplify routine maintenance. The belt tension can easily be verified through a window in the service panel.

4 Separator System

A three-stage separator (ASME/CRN) reduces fluid carry over to 2 ppm or less. Quick release fittings, drain and fill ports are arranged for fast and easy fluid changes from sump and cooler without any pumping device. The easy-to-read fluid level can be easily checked through a window in the service panel.

5 Sigma Control™ Basic

A simple and reliable interface offers convenient pressure control and system monitoring with status display and

maintenance reminders. Displays include discharge pressure and temperature, load and service hours, as well as fault indicators.

Internal Cooling System

Kaeser units have robust closed-circuit cooling systems with approach temperatures as low as 11°F for longer compressor life, better moisture separation, and better air quality.Our unique double-flow fan design increases air flow through the package with minimal power and very low noise.

To simplify maintenance, our coolers have external filter mats that can be easily removed and cleaned. This extends cooler maintenance intervals and increases thermal reserve for harsh conditions.

Cabinet

Our superior cabinet design reduces noise and footprint while offering easy access for service. The steel enclosure panels are powder coated and sound proofed.

Heavy gauge frames with double vibration isolation eliminate stress on piping and wiring connections, further increasing reliability. Internal fluid and air lines are hard piped with flexible, no leak connections.

Complete Compressed Air Systems

Kaeser offers everything you need for a complete, high-quality air system

Rotary Screw Compressors

Rotary screw air compressors are ideal for today's modern automotive service and repair facilities. More efficient than commercial grade piston units, screw compressors run cooler, quieter, and deliver better quality air.

Kryosec refrigerated air dryer

Compressed Air Dryers

Compressed air must be dry in order to prevent condensation downstream. Air dryers are essential for producing air suitable for air tools, tire service, and paint spraying applications. Kaeser offers a variety of refrigerated, desiccant, and membrane dryers. Many compressors are available with integral refrigerated dryers.

HTRD High inlet temperature dryers

KADW Wall-mounted desiccant dryers

KMM Membrane dryers

Compressed Air Filtration

High quality filters are critical for removing contaminants such as dirt, rust, and oils common in compressed air. To reduce tool wear, promote quality paint finishes, and reduce maintenance costs, Kaeser offers a complete line of industrial filters to remove these contaminants before they reach your tools and vehicles.

Condensate Drains

All compressed air contains water, particles, and other contaminants. To keep these out of your tools and paints, Kaeser offers several energy-saving automatic condensate drains to remove these contaminants from your tank, dryer, and filters without wasting costly compressed air.

Electronic Demand Condensate Drain Traps

Air Receivers

Receiver tanks are important components in any compressed air system. They reduce compressor cycling and provide storage to meet peaks in demand without an excessive drop in system pressure. They also accumulate compressed air condensate and should always have high quality condensate drains in order to efficiently remove contaminants from your system. Kaeser offers tanks in many sizes.

Per ASME requirements, make sure the receiver tank is outfitted with the appropriately sized safety relief valve and pressure gauge.

Condensate Management

The Kaeser Condensate Filter automatically removes lubricant from compressor condensate. This allows for easy and economical disposal of compressed air condensate in an environmentally responsible way. The low-maintenance system requires no electricity for operation.

KCF Oil/Water Separators

Life Just Got Easier

Kaeser offers two series of all-in-one designs with our built for a lifetime quality, reliability, and efficiency. They combine compressor, dryer, tank, and drain into space-saving packages that make installation a snap.

The AirCenter™

The AirCenter is a factory-built package combining our standard SX, SM, and SK models with dryers and storage tanks. Available from 3 to 20 hp, these versatile units are perfect for a wide range of automotive services. Around the world, AirCenters are reliably and efficiently running thousands of body shops, dealerships, fleet service centers, race shops, specialty fabricators, and every other type of automotive center.

See our SX, SM, SK literature for more information.

The Airtower™

For those with slightly less stringent air quality needs, the Airtower gives you a reliable source of good quality air with a lower initial investment. These 100% duty cycle units are a great step up from piston compressors in tire service, general repair, and smaller painting and fabrication applications. Available in 3, 4, 5, and 7.5 hp with single or three phase electrics.

See our Airtower literature for more information.

Single compressor (Simplex) and dual compressor (Duplex) Systems

Model	Simplex		Duplex	
	Comp. hp	Capacity @ 125 psig[1] (cfm)	Comp. hp	Capacity @ 125 psig[1] (cfm)
Airtower 3C[2]	3	12	—	—
Airtower 4C[2]	4	16	—	—
Airtower 5C	5	21	—	—
Airtower 7.5C	7.5	28	—	—
SX 5 AirCenter	5	21	2 x 5	42
SX 7.5 AirCenter	7.5	28	2 x 7.5	56
SM 7.5 AirCenter	7.5	32	2 x 7.5	64
SM 10 AirCenter	10	42	2 x 10	84
SM 15 AirCenter	15	53	2 x 15	106
SK 15 AirCenter	15	71	2 x 15	142
SK 20 AirCenter	20	88	2 x 20	176

Specifications are subject to change without notice.

[1] Other pressures available.

[2] Available as special order

Airtower

SM AirCenter

Duplex AirCenter

SmartPipe™

Modular Aluminum Piping

Versatile compressed air piping that can be installed without threading, welding, or sweating.

Ease of Installation

Fast to install and easy to modify, Kaeser SmartPipe™ is the most versatile compressed air distribution system available. Our combination of lightweight materials and connectors dramatically reduce labor and installation time, especially in overhead installations. SmartPipe's aluminum construction and smooth interior will not rust or trap contaminants, unlike other common piping materials. Full-bore, push-to-connect fittings are leak-free and minimize pressure drop.

Other benefits include:

- Installs faster than common piping
- No specialized trades needed
- No threading, welding, or brazing
- Simple mounting and connecting hardware
- Can connect to existing systems with other pipe types
- Easy to add on to or disassemble for your changing needs
- Available in 1/2" to 6" size

Pipe Material Selection

Common compressed air piping materials with their advantages and disadvantages.

MATERIAL	ADVANTAGES	DISADVANTAGES
Black Iron	• Moderate material costs • Readily available in multiple sizes	• Labor intensive installation • May rust and leak • Rough inside promotes contaminant build up and creates pressure drop
Galvanized Iron	• Moderate material costs • Readily available in multiple sizes • Some rust protection	• Often only exterior is coated • Labor intensive installation • Rough inside promotes contaminant build up and creates pressure drop • May rust at joints and leak
Copper	• No rust, good air quality • Smooth interior - low pressure drop	• Requires quality brazing to prevent leaks • Susceptible to thermal cycling • Installation requires open flame
Stainless Steel	• No rust, good air quality • Smooth interior - low pressure drop	• Labor intensive installation • Expensive materials
PVC	• Lightweight • Inexpensive	• Lower safety • In certain areas, not compliant with code • Carries static charge • Subject to bursting • Adhesives not compatible with some compressor oils

Compressor Basics

Deciding between a rotary screw and a piston?

When comparing rotary screw compressors to pistons, it's important to keep in mind several key points. Rotaries offer 100% duty cycle and higher capacity, so they use less energy and don't need to be oversized to avoid damage. Rotary compressors have an oil separator and pass minimal oil, plus they operate at much lower temperatures. These features result in much cleaner, dry air. Finally, rotaries are notably quieter which often reduces installation costs.

For more information, see our whitepaper, Piston Versus Rotary Screw Compressors.

	Rotary Screw Compressor	Piston Compressor
Duty Cycle	100 %	Limited
Capacity	4 - 4.5 cfm/hp	3 - 3.5 cfm/hp
Oil Carry-over	1 - 7 ppm	10 ppm - no upper limit
Internal Operating Temp.	170°F - 200°F	300°F - 400°F
Discharge Temp.	15°F - 25°F above ambient	100°F and higher above ambient
Noise Levels	65 - 75 dB(A)	80+ dB(A)

Pressure versus flow

Compressor capacity is best compared using flow (cfm), and not pressure (psig). When users don't have enough pressure at the point of use, usually the problem is not enough flow to maintain the pressure. Adjusting the pressure setting higher won't make more air. Piston compressors are often set to run between 145 and 175 psig. Most rotaries can run as high or even higher but are often set at 100 or 125 psig. The difference is duty cycle. Pistons are set to run up to higher pressures so they can periodically shut off and cool down. Keep in mind that most shop tools are rated at 90 psig and won't do a better job at higher pressures, and that it takes more power to reach higher pressures.

System efficiency

Your compressor may be the biggest energy user in your shop. You can get a rough idea of your annual compressor energy costs using this formula:

Compressor power **(hp x .746 kW/hp)** x annual operating hours x $/kWh (electric utility rate).

Note that the nominal hp rating of the compressor is just an approximation, and there is a wide range in efficiency among compressors of a given size. Kaeser models are often much more efficient than other compressors. Even some of our small unit customers have seen significant financial payback from energy savings. You can make a more accurate comparison of energy efficiency using the Compressed Air & Gas Institute (CAGI) datasheets.

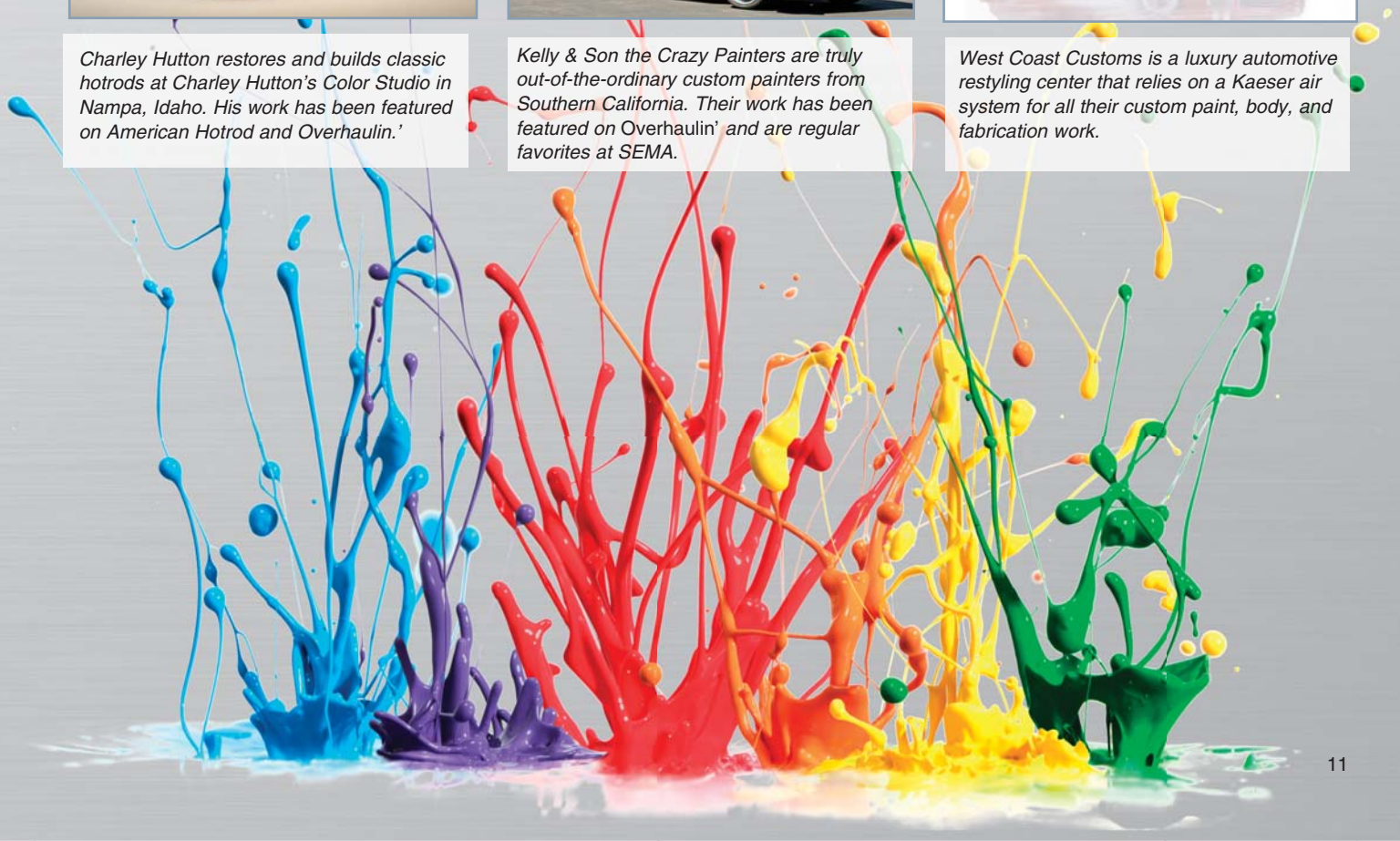
Paint and Compressed Air

The best collision and automotive finishing shops in America choose Kaeser Compressors for compressed air equipment. Our customers don't want to compromise finish quality or waste time and materials re-doing paint jobs. They understand the value of a well-designed and reliable compressed air system and know the benefits of clean, dry air.

Charley Hutton restores and builds classic hotrods at Charley Hutton's Color Studio in Nampa, Idaho. His work has been featured on American Hotrod and Overhaulin.'

Kelly & Son the Crazy Painters are truly out-of-the-ordinary custom painters from Southern California. Their work has been featured on Overhaulin' *and are regular favorites at SEMA.*

West Coast Customs is a luxury automotive restyling center that relies on a Kaeser air system for all their custom paint, body, and fabrication work.



KAESER COMPRESSORS

Built for a lifetime.™

The Air Systems Specialist

We earn our customers' business by supplying superior quality equipment and services. Our products are designed for reliable performance, easy maintenance, and energy efficiency. Prompt and dependable customer service, quality assurance, training, and engineering support contribute to the value our customers have come to expect from Kaeser. Our employees are committed to implementing and maintaining the highest standards of quality to merit customer satisfaction. We aim for excellence in everything we do.

Our engineers continue to refine manufacturing techniques and take full advantage of the newest machining innovations. Extensive commitment to research and development keeps our products on the leading edge of technology to benefit our customers. Our industry-leading controls continue to set the standard for efficient system operation. With over 90 years of experience, Kaeser is the air systems specialist.

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 for our screw compressor units can be found at www.kaeser.com/cagi

Kaeser Compressors, Inc.
511 Sigma Drive
Fredericksburg, Virginia 22408 USA
Phone: 540-898-5500
Toll Free: 800-777-7873
Email: info.usa@kaeser.com

Kaeser Compressors Canada Inc.
3760 La Verendrye Street
Boisbriand, QC J7H 1R5 CANADA
Telephone: (450) 971-1414
Toll free: (800) 477-1416
info.canada@kaeser.com

Kaeser Compresores de México S de RL de CV
Calle 2 #123
Parque Industrial Juríca
76100 Querétaro, Qro.
Telephone: 01 (442) 218 64 48
sales.mexico@kaeser.com

Kaeser Compresores de Guatemala y Cia. Ltda.
Calz. Atanasio Tzul 21-00, zona 12
El Cortijo II, Bodega 501
01012–Guatemala City
Telephone: +502 2412-6000
info.guatemala@kaeser.com

www.kaeser.com