S-energy®
Lubricated Rotary Screw Air Compressors
Constant Speed and Variable Speed Drives
18-75 kW  ■  25-100 Horsepower

- Reliable
- Quiet
- Energy Efficient
- Small Footprint
- Easy to Maintain
Sullair Capabilities

Sullair Leadership
Since 1965, Sullair has been recognized around the world as an innovator and a leader in rotary screw compression technology. For more than 40 years, Sullair has designed and manufactured its own rotors and air end assemblies at the corporate headquarters in Michigan City, Indiana.

The award-winning rotary screw design sets the industry standards and delivers the quality and reliability one expects from a leader.

Sullair Technology
Utilizing the most modern technologies, equipment and advanced manufacturing techniques. Sullair designs, manufactures, assembles, and tests the most advanced compressed air products in the industry. Sullair products are known around the world for their universally applicable design, outstanding craftsmanship and superior quality.

Sullair’s Statistical Process Control
Our Statistical Process Control (SPC) system monitors rotor quality standards to assure consistent compressor performance.

Sullair’s Commitment to Innovation
Underlying Sullair’s leadership is a dedication to excellence and a commitment to innovation. We are constantly exploring new ideas and seeking new ways to meet industry’s need for increasingly energy-efficient compressed air solutions.
Sullair offers AirMetrix® solutions—a total compressed air system—to help compressed air users reduce energy costs and improve productivity by analyzing, managing and controlling total compressed air systems.

Sullair’s AirMetrix® solutions include: plant air system audits, energy efficient products, compressed air system controls, monitoring and management systems, air distribution products, and after-purchase support.


The Sullair S-energy® compressors significantly reduce operating and energy costs over the entire compressed air system life cycle. Contributing to the energy savings are:

- Sullair’s proven air-end with the low restriction inlet valve
- High efficiency fan
- Low pressure drop air-fluid separation system to prevent energy loss

Sullair designs deliver cost savings for the life of the product. Improved air filtration translates into:

- Extended separator life
- Improved fluid filter life
- Less lubricant contamination

To reduce fluid disposal costs, we offer our biodegradable Sullube™ 8000-hour fluid, or 24KT™, a long-life fluid that never needs changing.
These Sullair compressors provide more performance and efficiency than any other compressors in this horsepower range and set new standards in virtually every category.

**Standard Features**
- Low restriction inlet valve for better CFM performance
- Low life cycle costs including long-life bearings, rotors, and consumable parts
- Less than 1 ppm fluid carryover
- Excellent motor cooling design characteristics for longer motor life
- Sequencing standard
- NEMA 4 standard
- WS microprocessor standard
- Smallest footprint in its class
- Quietest in its class, as low as 67 dba
- 12 unique serviceability features
- Environmental, health, and safety design features
- Sullube™—8000-hour, non-varnishing, biodegradable compressor fluid
- Optimal air filter provides 10 times better filtration than other filters

**Quiet Design**
This Sullair S-energy Series incorporates many design features to reduce the noise of the machine:
- Air-end, motor, and receiver tank are mounted on rubber isolators
- Insulated intake and exhaust louvers
- Low-noise fan
In fact, these compressors are so quiet they can be installed anywhere in your facility.

**The Smallest Footprint in Its Class**
These Sullair S-energy Series compressors meet the need for a smaller footprint.
- More compact than any similar compressor on the market
- All the maintenance is performed from one side, reducing the amount of clearance and floor space typically required

**Options**
- Choice of air- or water-cooled*
- 24KT™ 10-year air-end warranty
- Cold weather package
- Weather hood
- Total package filtration
- Other motors and starters
- Heat recovery

*Water-cooled available on 40-100 hp
Sullair VSD Compressors with Smart Technology

Sullair Smart Technology Gives You
• Simplicity
• Reliability
• Flexibility
• System protection

Compressors with Sullair Smart Technology Provide:
• Excellent energy savings
• Relief from potential peak demand charges
• Alleviation from electrical harmonics
• Stable system pressure
• Consistent product quality
• Reduced storage requirements
• Flexibility for future growth
• Lowest five-year life cycle cost
• Potential utility company rebate

Variable Speed Drive Avoids Potential Peak Demand Charges

The Sullair S-energy Series compressors provide the highest power factor over the entire frequency range, often avoiding utility company penalties.

Reliability
• Designed from the frame up as a complete package — not built with a variety of off-the-shelf components
• Serial communication between WS Controller and VSD eliminates the need for hard wired relays

Soft Start is Standard
• Eliminate the need for Wye Delta and other soft starter
• Avoid high electrical current at start-up

Energy Efficient
This compressor series is more energy efficient than similar compressors, thanks to:
• Sullair’s proven air-end with low restriction inlet valve
• Optimized fluid system that reduces fluid temperatures
• Premium efficient motors
• Low pressure drop air-fluid separation system
• High efficiency fan

Considering that energy costs represent 77% of the total cost of owning compressors, these savings significantly reduce total life cycle costs.

Total Compressor Flexibility
Sullair’s Variable Speed Drive provides the flexibility to vary both capacity and pressure. This flexibility makes it possible to “grow” your air system without adding another compressor.

It’s the compressor for today, tomorrow, and the future.

PART LOAD PERFORMANCE ASSESSMENT

Variable Speed Drive is the superior alternative to other compressor control systems. The chart above represents the nominal control systems for generic comparative purposes. A detailed and accurate comparison of specific compressor models is available from your Sullair representative or authorized distributor.
Before we designed these compressors, we reviewed every aspect of product development with the customer and the maintenance staff in mind. The result is Sullair reliability in the most compact, most robust, most maintenance-friendly and quietest compressor package available on the market.

Multiple features of the *S-energy®* Series revolutionize the compressor’s serviceability and provide for a cleaner, safer work environment and cost-effective compressor. Standard maintenance can all be performed from this side.

**Quick Thermostat Change**
To change the thermostat, simply thread the old thermostat out, and the new one in.

**Drive Coupling Element**
Easy access through a large opening and a wrap-flex element allows change without disturbing the hubs.

**Environmental Protection Pan**
This series features a fully sealed environmental protection pan to capture spills that may occur during servicing.

**WS Microprocessor Control System**
With the simplified WS microprocessor, there are no complicated menus to manage.

- The graphic display is clear and concise
- Get the critical operations information more easily, including status, temperature, pressure, and load/unload set points
- Use a Windows PC to remotely monitor, upgrade the software, and set up changes
- Built-in sequencing of up to 16 machines

**Sullair Motor Features:**
- Slow speed—1800 rpm
- Cast iron construction
- NEMA design
- Direct coupled/flange mounted
- Most comprehensive warranty in the industry
**Improved Separator Maintenance**
Simply unbolt the lid and lift it off using the handle. No tubing to disconnect, prevents leaking and saves service time.

**Quick Access to Cooler**
With the removal of just a few bolts, the cooler slides out on rails for easy routine cleaning.

**Sullair Optimizer™ Air/Fluid Separator**
- High efficiency molded media
- Lower pressure drop reduces power consumption
- Less than 1 ppm carryover reduces cost of makeup fluid

![Image of the separator](image1)

**Fiberglass Fluid Filter**
- Coreless, non-metallic design means easy disposal
- 20% more efficient than common cellulose media
- Better filtration lengthens the life of the compressor unit

![Image of the fluid filter](image2)

**Simplified Filter Change**
The fluid filter is in an inverted position to minimize lubricant loss during filter changes.

**Sullair Optimalair™ Air Filter**
- Provides the finest inlet filtration in the industry (.4 micron)
- Keeps fluid clean and extends life of internal components
- Reduces pressure drop during operating life, resulting in energy savings

![Image of the air filter](image3)
Sullair’s Variable Capacity Control Technology

**How the Spiral Valve Operation Works**

The compression volume varies to suit the air demand by progressively opening or closing internal bypass ports on the air-end.

Capacity is matched to system demand, reducing cycling time and extending component life.

Part load capacity and efficiency can produce energy savings up to 17%.

**Variable Displacement Air-End**

Sullair’s variable displacement air-end maintains system pressure to the plant to match air demand. Since the VCC compressors use large, efficient, slow running rotors, a lower power consumption is achieved at the top end of capacity. Oil foaming does not occur, air is not wasted to atmosphere, and bearings last longer.

The motor and air-end run at optimum speed and therefore maintain optimum efficiency throughout the full variable output range.

Sullair VCC compressors react quickly to rapid changes in demand. The effective rotor length is progressively reduced as the demand is reduced which provides the most efficient part load control system to 50% output. This system is extremely simple and provides a cost-effective, energy-efficient control alternative.

**Rotors withdrawn to show bypass ports in stator.**

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**Closed Bypass Ports**

**Partially Open Bypass Ports**

**Open Bypass Ports**

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**PART LOAD PERFORMANCE ASSESSMENT**

- Single Stage Lubricated Load/Unload
- Single Stage Lubricated Inlet Modulation with Blowdown
- Single Stage Lubricated Variable Speed
Clean, dry air is essential

Quality air treatment — the removal of condensate and particulate — is essential. When cooled, vapor in compressed air will condense. The removal of condensate and particulate is essential for quality air. First, the air must be dry. Vapor in compressed air will condense when cooled. Without removing the condensate, moisture in the air stream can damage your total compressed air system, product, or process. To protect your plant air system and air-using equipment, particulate must be removed by filtration. Sullair filters will provide this protection and improve the quality of your product or process. Proper filtration will also reduce your compressed air energy costs.

The Sullair Solution

The solution is the Performance Air System. The System includes a S-energy® Compressor and a SRS Dryer. We’ve taken the guesswork out of putting your System together. All components of the System have been perfectly matched and sized to provide maximum performance, without paying for more than you need. Plus, the Performance Air System is simple to install and, because of its small footprint, requires a minimum amount of floor space.

Sullair Air Quality Guarantee

Two Levels of Air Quality

Sullair recognizes that the requirements for air quality vary according to each compressed air application. For this reason, Sullair provides compressed air systems that achieve two distinct levels of air quality and a guarantee for each.

The Sullair System.

The Sullair System matches a Sullair compressor, a Sullair dryer and Sullair filters. Sullair assures that its System will meet specific performance levels throughout its operational life. We offer a one-year test/review period, backed by a purchase refund guarantee, to verify the performance of the Sullair System.

Select the System.

Select the air quality level to meet your plant air or process requirements. You can be assured that the quality of air from the Sullair System you specify will remain consistent for the life of the equipment. Sullair guarantees it... and that’s as good as gold.

The Sullair Oil-Free Air Quality Guarantee.

The System consists of a Sullair compressor, Sullair dryer, and Sullair SCF and SCH or PF/PH filters. The compressed air from this system contains particulates no larger than .01 micron, including coalesced liquid water and lubricants. Maximum remaining oil aerosol content is 0.01 parts per million by weight (ppm/w) @ 70°F, including oil vapor. The air from this Sullair System meets the most stringent ISO standard (ISO 8573.1, Class 1) for air quality.

The Sullair Critical Air Quality Guarantee.

The compressed air from this Sullair System exceeds the ISO standard (ISO 8573.1, Class 1) for air quality with the use of the SCC or PC filter. The System includes a Sullair compressor, Sullair dryer, and Sullair SCF, SCH, and SCC; or PF, PH, and PC filters. The odor-free compressed air from this system contains particulates no larger than 0.01 micron, including water and oil aerosol content of 0.01 parts per million by weight (ppm/w) @ 70°F. The remaining oil vapor content is less than 0.003 ppm/w. These Systems are not intended to remove carbon monoxide, methyl isocyanate or other noxious, corrosive or toxic gases, vapors or fumes. The system does not provide breathing air.
Mindful of our natural resources that are used to create and supply electrical energy, Sullair is focused on conservation and committed to providing air compressors that will use this energy most efficiently.

Other environmental features of the S-energy Series compressors include:

- Fully-sealed protection pan that will contain compressor fluid should any spill while servicing
- Coreless fluid filter of non-metallic design that can be either incinerated or crushed, virtually eliminating disposal concerns and expense
- Sullair’s environmentally compatible fluid, Sullube™, is biodegradable
- We’ve reduced the cost and environmental impact of fluid disposal by offering 24KT™, a life long fluid that never needs changing
- Low fluid capacity reduces overall fluid costs and disposal issues
- Health and safety issues are addressed by utilizing a low noise fan design, reducing the sound level to as low as 67 dba, for worker comfort. Additionally, Sullair mounts air-end, motor, and receiver on rubber isolators and insulates intake and exhaust louvers

The Industry’s Most Comprehensive Warranties

Confidence in our high quality workmanship, materials, and components allows Sullair to offer these unprecedented warranties:

Emerald Five-Year Compressor Health Assurance

The Emerald Five-Year Warranty is available on nearly every Sullair Industrial compressor when one of Sullair’s recommended compressor fluids is used. This unmatched warranty covers all major components: the air-end, motor, air/fluid receiver, fluid cooler, and aftercooler. Uniquely, this warranty includes all parts and labor.

Ultra Emerald Five-Year Compressor Warranty

With the Ultra Emerald Warranty, you get all the benefits of Sullair’s Emerald Five-Year Compressor Health Assurance, with the added benefit of our Variable Speed Drive (VSD). Sullair compressors with VSD keep working at maximum efficiency for longer life and lower energy costs.

24KT™ and the Ten-Year Warranty

When you use the 24KT™ compressor fluid, the Sullair 24KT™ System carries an unprecedented ten-year warranty on the Sullair air-end. You receive the benefits of our five-year coverage on all other major components.

Sullair Oil-Free and Critical Air Guarantee

Sullair matches the ideal combination of compressor, dryer, and filters to remove atmospheric particulate, aerosols, and other pollutants to provide two levels of air quality—from general purpose to the most critical air applications.
### Technical Specifications: 60 Hz

#### Constant Speed Drive Performance

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* at 1 Meter
** Capacity per CAGI / PNEUROP PN2CPTC2 (Annex C to ISO 1217)
Data subject to change without notice.
Sullair offers AirMetrixSM solutions to help compressed air users reduce their energy costs and improve their productivity by analyzing, managing and controlling total compressed air systems. Information on the compressed air system tailored to your specific needs can be obtained by contacting your local Sullair Distributor. To acquire local distributor contact information visit us online at www.Sullair.com or call 1-800-SULLAIR.

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