

EES[®] ENERGY EFFICIENT SYSTEMS

Rotary Screw Air Compressors

Available on select S-energy[®] & SN Series models

30–75 kW | 40–100 hp





Legendary Sullair Products

Sullair compressed air solutions have been at the leading edge of rotary screw technology since 1965. The legacy continues as Hitachi Global Air Power—featuring the legendary Sullair product line.

COMPRESSED AIR SOLUTIONS DESIGNED FOR RELIABILITY & DURABILITY

RELIABILITY

Customers who work with Sullair compressors have found intangibles make all the difference—things like trust, confidence and peace of mind. They go to work every day having full faith in their equipment, as well as the knowledge they have access to true compressor experts ready to support them every step of the way.

DURABILITY

Bulletproof. Built to last. However you spin it, Sullair compressors are in it for the long haul, driven by the design of the legendary air end. All over the world, you'll find Sullair compressors that have stood the test of time, running consistently today as they did on day one.

The Hitachi Global Air Power network of engineering and quality experts continues to build next-generation, environment-forward compressed air solutions to meet the demands of today's hard-working customers.

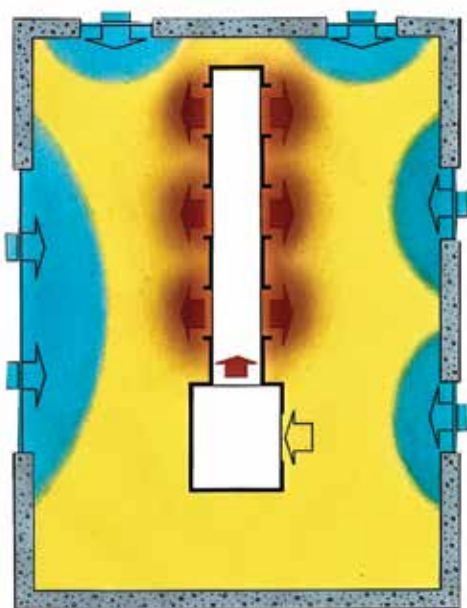


Figure 1
Conventional Recirculating System
 ■ 40°F ■ 65°F ■ 90°F

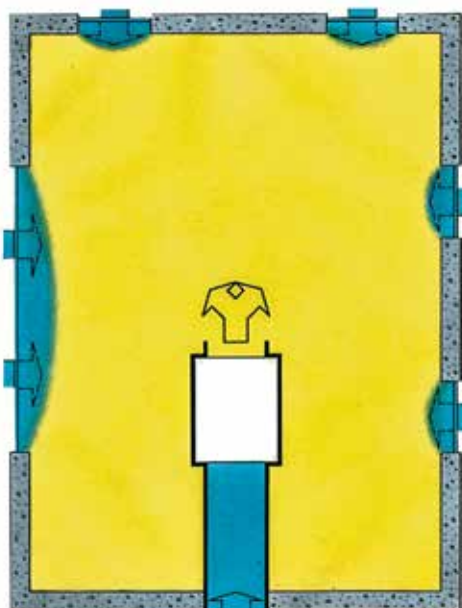


Figure 2
Sullair Energy Efficiency System
 ■ 40°F ■ 65°F ■ 90°F

WHY A SULLAIR EES®?

Figure 1 shows a conventional compressor recirculating system. For compressor cooling, it uses inside air rather than outside air. The warmed air is then distributed to the building through a costly ductwork system. While this system adds heat to the building, it fails to offset some of the negative pressure that causes infiltration.

Figure 2 shows the EES drawing in 40°F outside air, then discharging it into the plant at 65°F. Note the reduced infiltration.

Positive Pressure Make-Up Air

- May eliminate the need for additional or alternative make-up systems

Pre-Engineered Factory Package

- Assures system reliability and responsibility through one source
- High static fans optimize system performance

Sound Reduction

- EES enclosure provides additional sound reduction

Thermostatic Damper Package

- No manual damper adjustments necessary
- Adjustable make-up air temperature settings
- Consistent temperature in package and make-up air to plant

Constant Clean Inlet Air

- Minimizes compressor maintenance

Select a Long-Life Fluid

Factory Filled with Genuine Sullube®

- An extended-life synthetic fluid, Sullube has been used in more than 50,000 compressors worldwide

Optional PristineFG™

- Food Grade Designed specifically for compressors used in food, beverage and pharmaceutical applications and meets FDA and USDA H-1 requirements

10-year Diamond Warranty

The Sullair 10-Year Diamond Warranty provides comprehensive protection for Sullair lubricated rotary screw air compressors. This program distinguishes itself by covering all major components for new air compressors (with discharge pressures up to 150 psi):

10 Years Coverage:

Sullair Air End

5 Years Coverage:

- Main motor
- Fan motor
- Aftercooler
- Oil cooler
- Separator vessel
- Variable speed drive (if equipped)

Maintaining the Sullair 10-Year Diamond Warranty requires using Genuine Sullair parts, Sullube® and participation in the oil sampling program. Restrictions apply.



WHY A HEAT RECOVERY SYSTEM?

Energy from Compressed Air

The Sullair EES[®] recovers energy that is expended while producing compressed air and converts it into a usable source of heat. The heat is stored in the compressor cooling air as it passes through the after-cooler and fluid cooler. This air can then be used as pre-heated make-up air or heating air for plants, warehouses and other buildings. Heat that is not needed is rejected from the system.

Primary Function: Make-Up Air

The EES is designed primarily to recover the heat of compression in the form of heated make-up air. When the EES is used for this purpose, energy is fully utilized, installation costs are minimized and return on investment is maximized. For every cubic foot of outside air brought into a building by the EES, another cubic foot of air that would have infiltrated into the building at outside temperature is eliminated. Fuel savings are possible because the plant's primary heating system does not have to heat that cubic foot of outside air up to the temperature of the heated space.

Supplementary Heating

The EES can also operate efficiently as a heating system. In this type of application, the air is drawn and heated to a higher temperature (90°F/32°C, for example), and then distributed throughout the heated space. This kind of application usually requires a larger ductwork system to distribute the heated air, and therefore a bigger capital investment.

Process Heating

The EES can also utilize the wasted heat of compression for some process heating applications, such as drying parts, boiler and process combustion air pre-heating. These kinds of applications provide an excellent return on investment because the heat can be used year-round.





Types of Heat Loss

A plant's heat load is the amount of heat required to overcome the sum of two types of losses: infiltrative and conductive.

Infiltrative losses result when cold air comes into the plant through cracks, open doors and other openings. Ventilation, processing and other operations utilize the building's air, then exhaust it to the outside. As air is exhausted, it must be replaced by make-up air. If the primary heating system does not draw in outdoor air, there may be insufficient compensation for the exhausted air. When this occurs, a negative pressure is created, causing infiltration.

Conductive losses result when heat escapes through a building's barriers, including walls, floors, roofs and glass windows.

Less Infiltration, Lower Heating Costs

The Sullair EES® takes some of the burden off the primary heating system. It draws in cooling air for the compressor from the outside, then recovers the compressor-heated air and delivers it into the building. This can substantially reduce heating costs.

OUTSTANDING ENERGY SAVINGS

Annual Energy Savings Up to \$16,700

With the Sullair EES[®], significant savings on fuel heating bills are possible. For example, a 300 hp compressor can generate 13,610 BTU/minute. This represents 8.16 therms/hour of usable heat worth \$4,080 per 1000 hours of compressor operation at \$0.50/therm. And the EES does not impair compressor cooling efficiency.

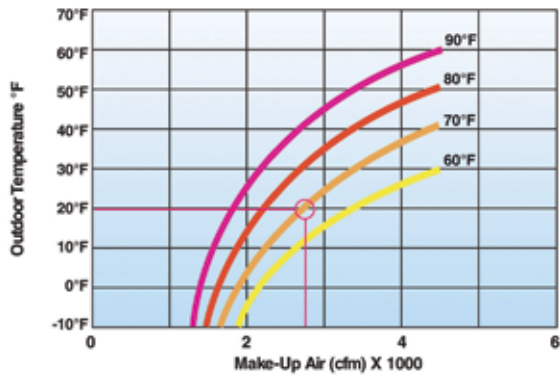
CFM Make-Up Air vs. Outdoor

Temperature for Typical 50 hp Compressor

The make-up air versus outdoor air temperature curve (right) indicates the quantity of make-up air provided by a Sullair EES under common outdoor and recovered air temperature conditions. The curve shown applies to Sullair 50 hp compressors.

For example, for a 20°F outside temperature and a desired delivered air temperature of 70°F, follow the 20°F horizontal line to its point of intersection on the 70°F curve. Read down to find a make-up flow of 2700 cfm make-up air at full-load on the compressor.

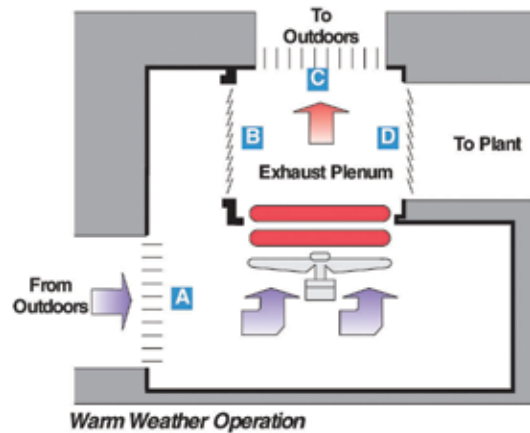
CFM Make-up Air vs. Outdoor Temperature for Typical 50 hp Compressor



HOW THEY WORK

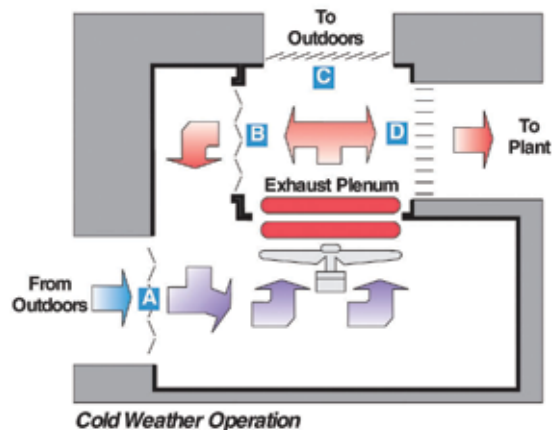
Warm Weather Operation

The temperature controller signals damper C to open and discharge the compressor-heated air to the outside. Simultaneously, damper A opens fully while dampers B and D close. The compressor takes in all cooling air from the outdoors and the heat recovery module discharges all of the heated cooling air to the outdoors, thus isolating the compressor cooling system from the indoor plant environment.

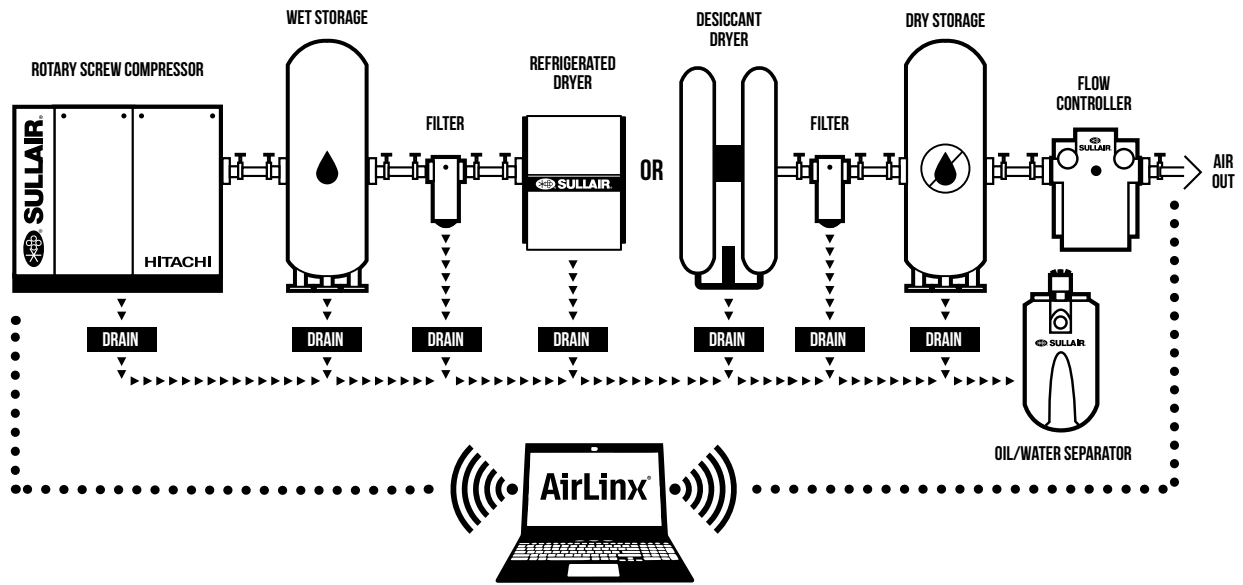


Cold Weather Operation

When the compressor isn't operating, dampers A, C and D are fully closed to prevent heat loss and damper B is open. When the compressor starts, damper A opens, and either damper C or D also opens, depending on the signal received from the room thermostat or the outside air changeover control.



SULLAIR STATIONARY AIR POWER SYSTEMS



Hitachi Global Air Power offers total compressed air systems to help compressed air users reduce energy costs and improve productivity by analyzing, managing and controlling their compressed air systems.

Sullair air systems include: plant air audits, energy efficient products, compressed air system controls, equipment to monitor and manage systems, air distribution products, and after-purchase support.

Each component of the system is carefully matched for capacity and pressure to provide maximum performance and energy efficiency.

The system includes:

- Rotary screw compressor
- Wet storage
- Refrigerated dryer or desiccant dryer
- Filters to meet your requirement
- Dry storage
- Flow controller
- Drains
- Oil/water separator

Solutions to Help Reduce Life Cycle Costs



- Equipment
- Maintenance
- Electricity

Air Compressor Life Cycle Costs

According to *Best Practices for Compressed Air Systems, Compressed Air Challenge* [Second Edition, 2007] energy costs now represent 82% of the total operating expenses. Energy savings from Sullair S-energy® and SN Series compressors can significantly reduce life cycle costs.

S-energy and SN Series compressors significantly reduce operating and energy costs over the entire compressor life cycle.

- Proven Sullair air end with a 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, S-energy and SN compressors are factory-filled with biodegradable Genuine Sullube® fluid.

- Protects and cleans (no varnish)
- Controls operating temperatures
- Optimal viscosity
- Environmentally friendly
- Reduces fluid loss
- High flash point (505°F/263°C)

TECHNICAL SPECIFICATIONS

MODEL	MOTOR		LENGTH		WIDTH		HEIGHT		WEIGHT*	
	hp	kW	in	mm	in	mm	in	mm	lbs	kg
3000PB	40	29	67	1704	35	876	98	2496	2272	1031
3000PVB	40	29	67	1704	35	876	98	2496	2348	1065
3700B	50	36	67	1704	35	876	98	2496	2322	1053
3700VB	50	36	67	1704	35	876	98	2496	2398	1087
4500B	60	44	67	1704	35	876	98	2496	2772	1257
4500VB	60	44	67	1704	35	876	98	2496	2640	1198
4500PB	60	44	88	2133	43.3	1099	112	2819	3189	1447
SN5500	75	55	88	2133	43.3	1099	112	2819	3260	1779
SN5500V	75	55	88	2235	43.3	1099	112	2819	3586	1627
SN5500S	75	55	88	2133	43.3	1099	112	2819	3651	1656
SN7500	100	73	88	2133	43.3	1099	112	2819	3587	1627
SN7500V	100	73	88	2133	43.3	1099	112	2819	3921	1779
SN7500S	100	73	88	2133	43.3	1099	112	2819	3793	1721

* Weight based on 460v ODP

For more information, contact your local authorized Sullair distributor.