SM and SMC Modular Regenerative Dryers

.08-33.9 m³/min ▪ 3-1200 SCFM

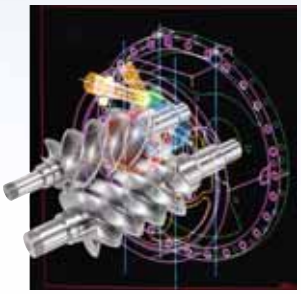
- Efficient
- Quiet
- Compact
- Reliable
- Easy to install
- Easy to maintain

SULLAIR®
Always air. Always there.™

Sullair Capabilities

Sullair Leadership

Since 1965, Sullair has been recognized around the world as an innovator and a leader in rotary screw compression and vacuum 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 innovative compressed air and vacuum 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

Sullair's Statistical Process Control (SPC) system monitors rotor quality standards to assure consistent compressor and vacuum performance.

Sullair's Commitment to Innovation

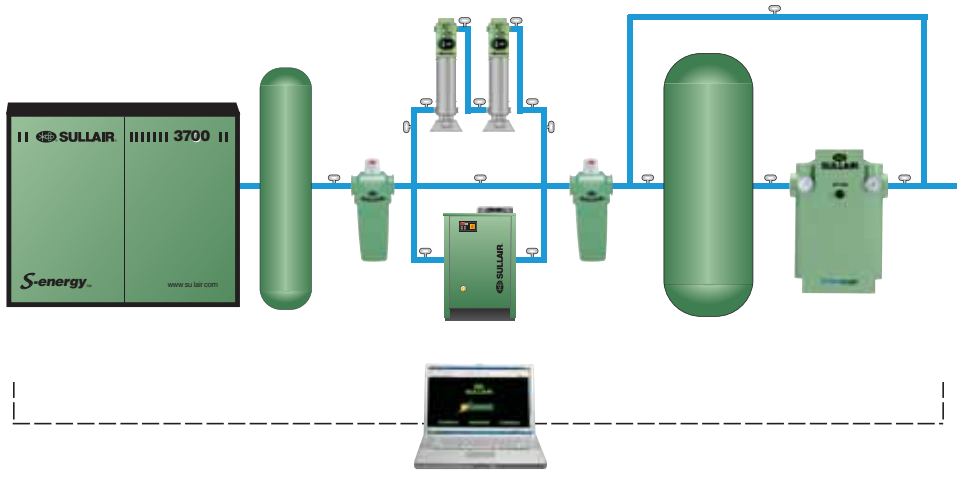
Underlying Sullair's leadership is a dedication to excellence and a commitment to innovation. Sullair is constantly exploring new ideas and seeking new ways to meet industry's need for increasingly energy-efficient compressed air and vacuum solutions.

Sullair Stationary Air Power Systems

Sullair 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's 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. A total Sullair system provides the user with an air quality guarantee.



This System includes:

- **rotary screw compressor**
- **desiccant or refrigerated dryer**
- **filters to meet your requirement**
- **flow controller**
- **ethernet-based eConnect™ to monitor and control the entire system**

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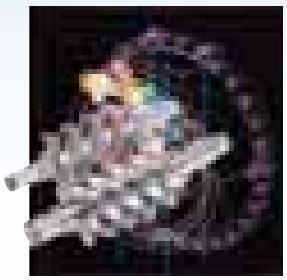

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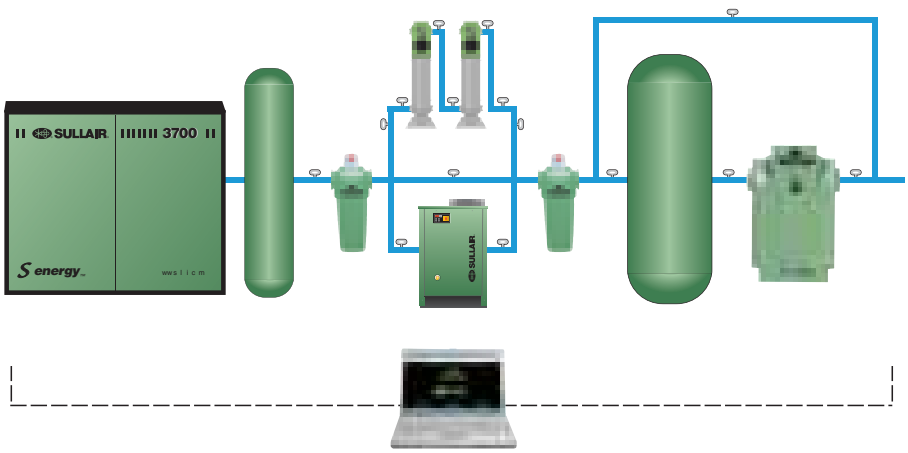

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The Sullair Warranty

All Inclusive "Peace of Mind" Warranty

Sullair backs our commitment to quality with an unparalleled, non-pro-rated 5 year warranty (*parts and labor*) on the major components. No other manufacturer offers a warranty that is as all inclusive.

(Note: a Sullair prefilter must be installed upstream of the dryer as a prerequisite for this warranty.)

Quality is Third Party Certified and Guaranteed by Sullair.

Dryers are manufactured in an ISO 9001 environment and are ETL (UL), CSA Approved.

The Importance of Clean, Dry Compressed Air

Water Jeopardizes Everything You Want Your Compressed Air System To Do. It Ruins Product and Fouls Processes.

How Much Water is Too Much?

Any Amount of Water is Too Much.

- Relative humidity is the amount of water vapor in air relative to what it could hold at a given temperature
- Moisture in compressed air remains in a vapor state through the compression cycle, so it is not a problem until it leaves the compressor
- Air discharged from a compressor is approximately 150°F to 450°F
- At 75°F and 75% relative humidity, a 75 HP compressor takes in 46 gallons of water vapor in 24 hours. When this air is cooled to approximately 35°F at 100 psig, the water vapor condenses into *46 gallons of liquid!*

Liquid remaining after the aftercooler

Liquid remaining after a refrigerated dryer

Liquid remaining after a desiccant dryer

Sullair SM Modular Regenerative Dryers

Capacities from 24 to 1,200 scfm. Designed for Dew Points of -40ºF Standard and Optional -100ºF.

Market Leading Design

- High tensile extruded aluminum towers, Alocrom treated and externally coated in a dry epoxy powder for optimum corrosion protection
- Snowstorm filled activated alumina desiccant for the highest possible efficiency and reduced channeling
- Dual depressurization mufflers offer the lowest noise levels—less than 75 dBA
- Electronic controls with LED power and fault indication and Digital Dew point Display with DDS option (SM-230 to SM-1200)
- High performance poppet style, aluminum body, pilot air driven, modular valve assemblies (SM-106 to SM-1200)
- Optimum parts commonality through modular design

Easy to Install

Sullair SM dryers are less than half the weight and size of a traditional twin tower package allowing even the largest models to be moved through a standard doorway. They are prepackaged requiring only air inlet/outlet and single point power connections. Sullair recommends the use of a Sullair SCH/PH coalescing pre-filter to ensure long desiccant life and SCR/PR particulate after-filter to catch any desiccant dust.

Conventional Dryer

Sullair SM Dryer

Smaller and Lighter

- Less than half the size and weight of conventional twin-tower dryers makes the SM dryer easy to install
- Requires less than 50% desiccant volume

Wide Range of Operating Conditions

The Sullair SM dryers can operate with inlet temperatures from 35°F to 122°F, inlet pressures from 58 to 232 psig (may be lower on some models) and can be banked to meet any flow. They can be sized to provide either -4°F, -40°F, or -100°F outlet pressure dew point.

Standard Features

The SM modular desiccant air dryers combine proven traditional twin-tower dryer principles with the latest technology to provide unsurpassed efficiency, flexibility and reliability for critical dry air applications.

- Small footprint, lightweight, advanced design
- High tensile extruded aluminum construction
- Alocrom and dry epoxy powder corrosion protection
- Snowstorm desiccant filling provides greater efficiency and less attrition
- Modular design allows flexibility to meet any flow requirements
- Efficient abrasion-resistant activated alumina desiccant

ENERGY STAR PARTNER

- Depressurization mufflers for optimum noise reduction
- Fail safe electronic solid state timer controls
- No interruption of flow
- No dew point spikes

Options

- Dew Point Dependent Switching (DDS). If the hygrometer senses that there is moisture adsorption capacity available in the on-line desiccant bed before the tower reaches the end of its cycle, a signal is sent to the controller to delay the changeover and utilize the spare desiccant capacity. Dryers with DDS can achieve energy savings from 30% to as much as 80% with a *payback in as little as 3 months.*
- -100°F dew point
- -4°F dew point
- 4-20ma dew point signal re-transmitter to provide remote dew point indication

ANOTHER ENERGY SAVINGS SOLUTION • FROM SULLAIR •

Modular Capabilities

- Buy only what you need, pay only for what you use... bank multiple dryers for greatest flexibility
- 100% standby with just one additional bank
- Isolate individual units for service or maintenance while maintaining a continuous supply of dry air
- Add additional banks (dryers) when needed to meet future air requirements
- Turn banks on and off to meet changing air flow requirements.
- No wasted purge air
- Provides maximum parts commonality

Features of the SM-24 to SM-175 Dryers

- Adjustable purge control
- Can be floor or wall mounted
- Choice of inlet and outlet ports
- Acoustic shroud for noise attenuation (<75 dBA average)
- Fully pneumatic controls available as an option for NEMA 7 applications
- Energy-saving Dew point Demand Switching (DDS) option available
- Tower pressure gauges
- DDS power and alarm indication lights

Sullair SM-230 to SM-1200 Modular Regenerative Dryers

"Snow Storm" Desiccant Filling

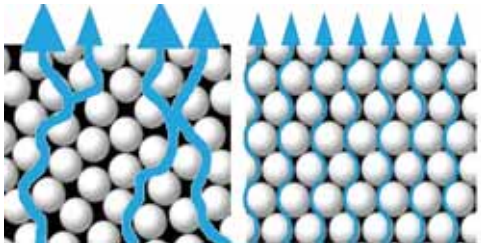
Air flow always takes the path of least resistance. In conventional, loose-filled vessels, the air creates channels, leading to inefficient use of the desiccant. Typical twin tower designs counteract this with:

- Flow distribution plates
- Low bed velocities
- Proportional vessel designs
- Large volumes of desiccant

SM modular dryers are filled by a patented technique known as "Snow Storm". This technique is possible because of access to the full cross-section of each tower. The "Snow Storm" filler causes the desiccant beads to spin and fall evenly.

The result is a compact and uniform desiccant bed, as shown below. The desiccant is uniformly distributed:

- Eliminates channeling
- Evenly distributed flow
- Maximizes desiccant efficiency
- Reduces bed size
- Reduces pressure drop
- Eliminates movement
- Minimizes attrition

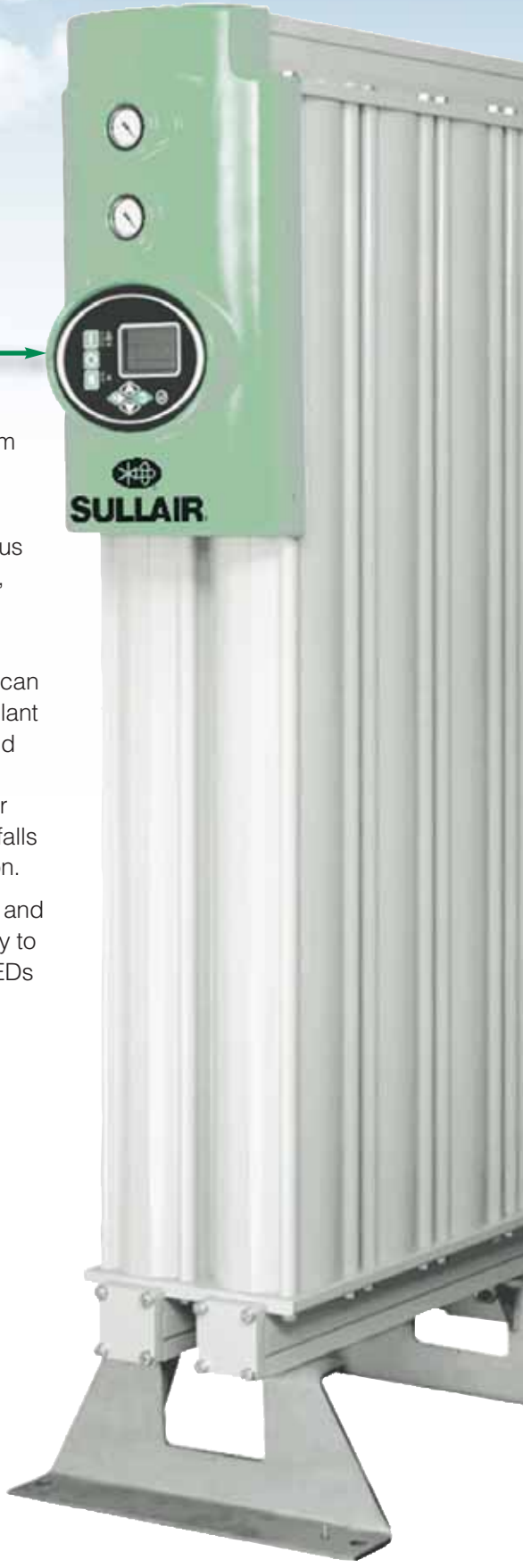


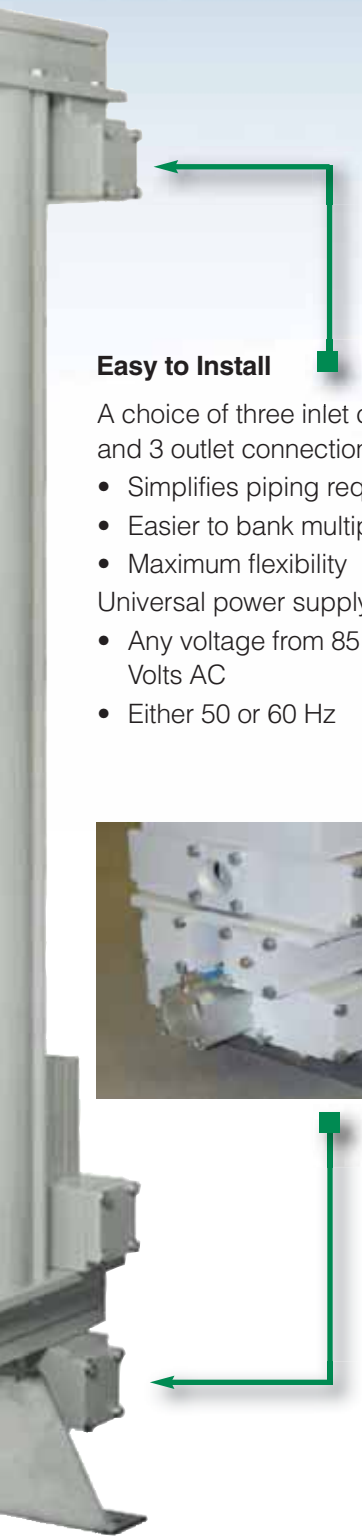
Conventional Filling *"Snow Storm" Filling*

Electronic Controllers

A reliable energy management system ensures cost effective operation and optimum system performance.

- Controllers provide full system status display, temperature and pressure, service indication and DDS that incorporates a dew point display.
- Microprocessor-controlled system can be custom configured to monitor plant requirements. System warnings and fault alarms can be configured to by-pass or even shut down your air supply in the event that air quality falls outside of the required specification.
- The user interface is simple to use and incorporates LCD display with easy to understand symbols, five status LEDs and an integrated keypad.





Easy to Install

A choice of three inlet connections and 3 outlet connections.

- Simplifies piping requirements
- Easier to bank multiple dryers
- Maximum flexibility

Universal power supply:

- Any voltage from 85 to 265 Volts AC
- Either 50 or 60 Hz

Aluminum Construction

- Optimum Corrosion resistance
- High tensile extruded aluminum
- Vessels are under 6" in diameter, making them exempt from most pressure vessel regulations
- Design approved to CRN, CR and PED

Dual Noise Attenuation

- Internal baffle tube permanently fixed to dryer
- Secondary element-style silencer
- Modular construction
- Reduces noise to <75 dBA (average)

Alocrom Corrosion Protection

Aluminum is Alocrom treated internally and externally

- Non-electrolytic multi-dip process
- Integral with surface of metal
- Not susceptible to scratching or denting
- Surface is highly adhesive for paint
- Secondary external protection is dry powder epoxy coating

Alocrom Treated *Untreated Aluminum*

Low Pressure Drop

Low pressure drop—as much as 50% less than conventional twin tower dryers—contributes to the performance of the SM dryers. A drop of less than 3 psi is due to:

- Large bore extrusions
- "Snow Storm" filling
- High flow valve design

Sullair SMC Desiccant Air Dryers

Capacities from 3 to 20 scfm. Designed for dew points of -40°F standard and optional -100°F.
Your compressed air system will contain water, dirt, wear particles and even degraded lubricating oil which mix together to form an unwanted condensate. This often acidic condensate degrades tools and machinery, blocks valves and orifices, and causes high maintenance costs and expensive air leaks. It can corrode piping systems and bring your production to an expensive stand still!

While the use of high efficiency compressed air filters fitted with condensate drains will remove oil, water and dirt particles, in many cases it is not enough. Modern production systems and processes demand an even higher level of air quality. “point of use” desiccant dryers can provide the correct air quality, without the need for drying the complete compressed air installation, which can be costly and unnecessary.

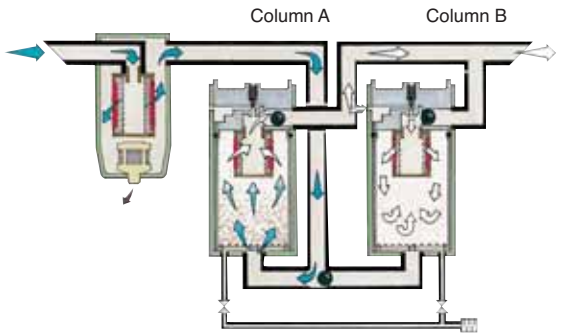
- The foremost feature of the Sullair SMC desiccant air dryers are integrated filters and desiccant in a single cartridge that can be easily changed. These features and the in-line air connections allow for easy maintenance
- Sullair SMC desiccant air dryers offer uncompromised performance from a dedicated “point of use” compressed air drying system
- Easy to install, Sullair SMC dryers will transform an ordinary process into a highly efficient and reliable operation
- Sullair SMC dryers clean and dry compressed air down to -40°F (-40°C) pressure dew point, meeting the requirements of ISO 8573.1 Class 1.2.1. as standard. For critical applications, a pressure dew point of -100°F (-70°C) ISO 8573.1 Class 1.1.1. is achievable

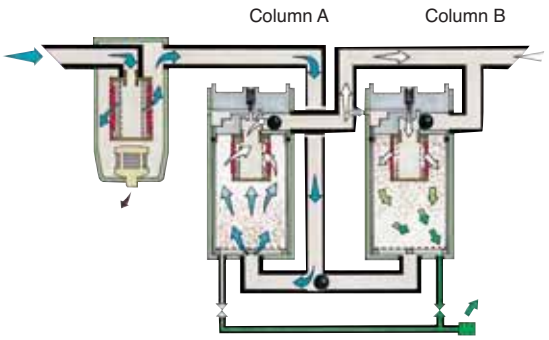
How the SMC Dryer Works

Compressed air enters the integral pre-filter and passes into the left chamber (Column A) where the air is dried before passing to the application.

A small amount of dry purge air is used to regenerate the right chamber (Column B), which is wet, using a pressure swing absorption method of regeneration, venting the saturated air to the atmosphere under pressure. The same regeneration air is also used to “back flush” the integral filter to prolong its working life.

Prior to changeover, the right chamber (Column B) enters repressurization where the exhaust valve is closed to allow pressure to increase. The process ensures a smooth uninterrupted changeover, preventing the loss of any system pressure, before the process repeats itself.





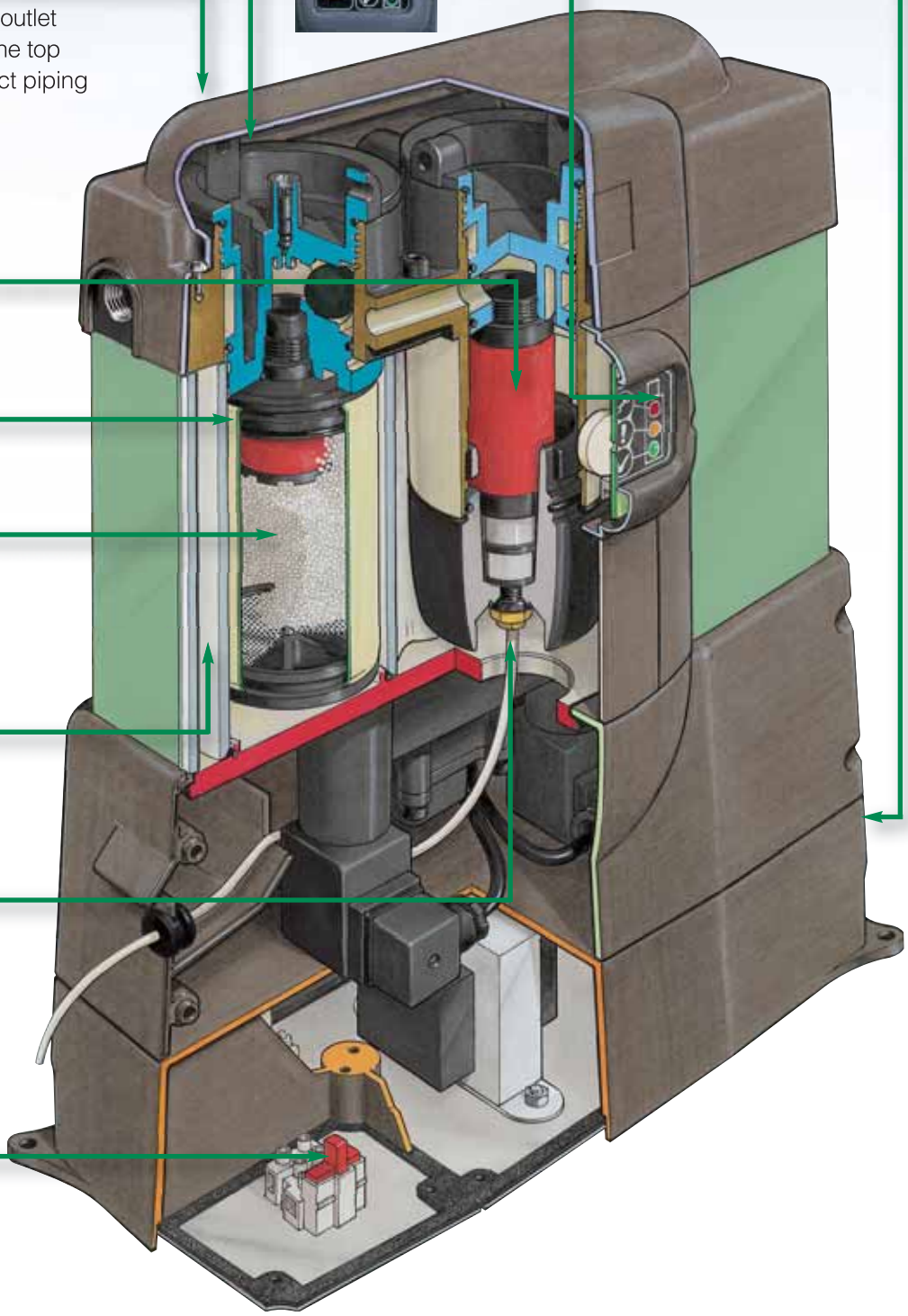
Sullair SMC Dryer Features

Top end repressurization—ensuring uninterrupted compressed air at all times

Electronic display providing high visibility LED indication with an audible internal alarm

Alarm reset facility to cancel the audible alarm for 24 hours while replacement components are sourced

ISO 7000 inlet and outlet symbols cast into the top cover ensure correct piping installation



Integral high efficiency filter

Corrosion protection by Alocrom and epoxy painting

One desiccant/filter cartridge per column contains desiccant and particulate filter

Patented high tensile extruded aluminum column with twin dryer chambers

Positive removal of prefilter condensate by piping away for remote collection

Easy access to electronic control box for main connection

Sullair SMC Dryer Benefits

- **Point of Use Application**
  Bringing clean dry air just where you need it

- **Approved for International Standards**
  Designed in accordance with ASME VII Div. 1, approved to CSA/UL/CRN and fully CE marked (PED, EMC, LVD) as standard

- **Simple to Install**
  Flexible installation using the multiple in-line inlet and outlet connection ports

- **Compact and Lightweight**
  Can be floor, bench or wall/canopy mounted

- **Very Quiet Operation**
  Noise level less than 75 dBA

- **Install Almost Anywhere**
  IP66/NEMA 4 protection is standard

- **Audible Alarm**
  Indicating service interval for optimal performance

- **Easy to Maintain**
  Full operational service can be achieved in less than fifteen minutes due to the quick release top cap arrangement, which does not require the inlet/outlet ports to be disconnected as with traditional systems

The Sullair SMC dry air system is the reliable, cost effective and flexible way to provide clean, dry air exactly where you need it.

Options

- For quieter operation, the regeneration exhaust air can be piped away.
- Remote indication provides a warning of the dryer's need for servicing. (Audible alarm included.)
- A 45° tilt wall mounting kit is also available for vertically securing the dryer to the wall, canopy or inside a product where access to the top of the dryer is restricted.
- In conditions of limited access, the electronic control box (base) can be detached and relocated remotely from the dryer.
- -100°F (-70°C) ISO 8573.1 Class 1.1.1. is available for extreme dry air requirements.

Electronic control box can be remotely located.

Tilt mounting kit facilitates easy cartridge replacement in restricted access applications.

Seven SMC models available.

Specifications

SM Modular Regenerative Dryers

Model	Max Inlet Flow scfm[1]	Inlet/Outlet Connection	Required Pre and After Filter[2]	Height (in)	Dimensions[3] Width (in)	Depth (in)	Total Weight[3]	Standard Voltage
SM-24	24	3/4" NPT	SCH/SCR-40	33	12	12	70	115/1/60
SM-32	32	3/4" NPT	SCH/SCR-40	40	12	12	81	115/1/60
SM-42	42	3/4" NPT	SCH/SCR-40	46	12	12	92	115/1/60
SM-53	53	3/4" NPT	SCH/SCR-65	53	12	12	103	115/1/60
SM-65	65	3/4" NPT	SCH/SCR-65	59	12	12	114	115/1/60
SM-88	88	3/4" NPT	SCH/SCR-125	69	12	12	132	115/1/60
SM-106	106	1" NPT	SCH/SCR-125	57	9	23	176	115/1/60
SM-129	130	1" NPT	SCH/SCR-125	63	9	23	198	115/1/60
SM-175	176	1" NPT	SCH/SCR-235	73	9	23	229	115/1/60
SM-230	240	2" NPT	SCH/SCR-465	65	22	35	800	115-230/1/50-60
SM-360	360	2" NPT	SCH/SCR-465	65	22	35	1025	115-230/1/50-60
SM-450	450	2" NPT	SCH/SCR-465	75	22	35	1140	115-230/1/50-60
SM-600	600	2" NPT	SCH/SCR-700	75	22	41	1350	115-230/1/50-60
SM-750	750	3" NPT	SCH/SCR-910	75	22	48	1515	115-230/1/50-60
SM-900	900	3" NPT	SCH/SCR-910	75	22	54	1740	115-230/1/50-60
SM-1050	1050	3" NPT	SCH/SCR-1315	75	22	61	2050	115-230/1/50-60
SM-1200	1200	3" NPT	SCH/SCR-1315	75	22	68	2285	115-230/1/50-60

NOTES [1] Maximum rated inlet flow at 95°F and 102 psig.
[2] Filters are sold separately.
[3] Weights and dimensions are approximate. Contact Sullair for drawings.

SM-24 to SM-88 • Maximum operating pressure 232 psig*
SM-106 to SM-175 • Maximum operating pressure 152 psig
SM-230 to SM-1200 • Maximum operating pressure 190 psig

All models
• Minimum operating pressure 58 psig
• Maximum operating temperature 122°F
• Minimum operating temperature 35°F

*With pneumatic controls maximum operating pressure 152 psig

Pressure Correction Factor:

Minimum Inlet Pressure		Maximum Inlet Temperature			
psi g	bar g	95 (35)	104 (40)	113 (35)	122 (50)
58	4	.63	.61	.55	.46
73	5	.75	.73	.66	.55
87	6	.88	.85	.77	.64
102	7	1.00	.97	.88	.73
116	8	.97	.94	.85	.71
131	9	1.08	1.05	.95	.79
145	10	1.18	1.14	1.04	.86
160	11	1.29	1.25	1.14	.94
174	12	1.40	1.36	1.23	1.02

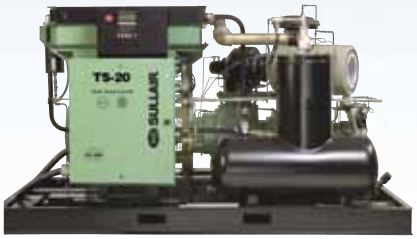
SMC Air Dryers

Model	Capacity @ 100 psig	Air In/Out	Dimensions Height (in.)	Width (in)	Depth (in)	Weight (lbs)
SMC-3	3	3/8" NPT	16.6	11.4	5.9	24.3
SMC-5	5	3/8" NPT	19.7	11.4	5.9	28.7
SMC-8	8	3/8" NPT	24.3	11.4	5.9	35.3
SMC-10	10	3/8" NPT	27.2	11.4	5.9	39.7
SMC-13	13	3/8" NPT	33.3	11.4	5.9	44.1
SMC-15	15	3/8" NPT	35.7	11.4	5.9	50.7
SMC-20	20	3/8" NPT	43.2	11.4	5.9	61.7

• Maximum operating pressure 174 psig
• Minimum operating pressure 58 psig
• Maximum operating temperature 122°F
• Minimum operating temperature 35°F

Sullair Supplies Compressed Air Systems

For the lowest total cost of ownership, Sullair provides an air system designed to lower operating cost, improve reliability and maximize return on investment.



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SULLAIR®

Always air. Always there.™

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COMPRESSED AIR CHALLENGE

ENERGY STAR PARTNER