

Compressed Air Filtration and Mist Eliminators

Efficient Filtration Solutions

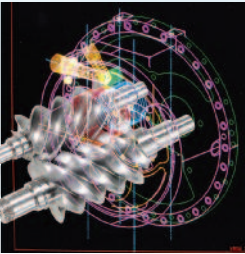


- Low pressure drop
- Reduces energy requirements
- Performance guarantee
- Durable element construction

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.



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.

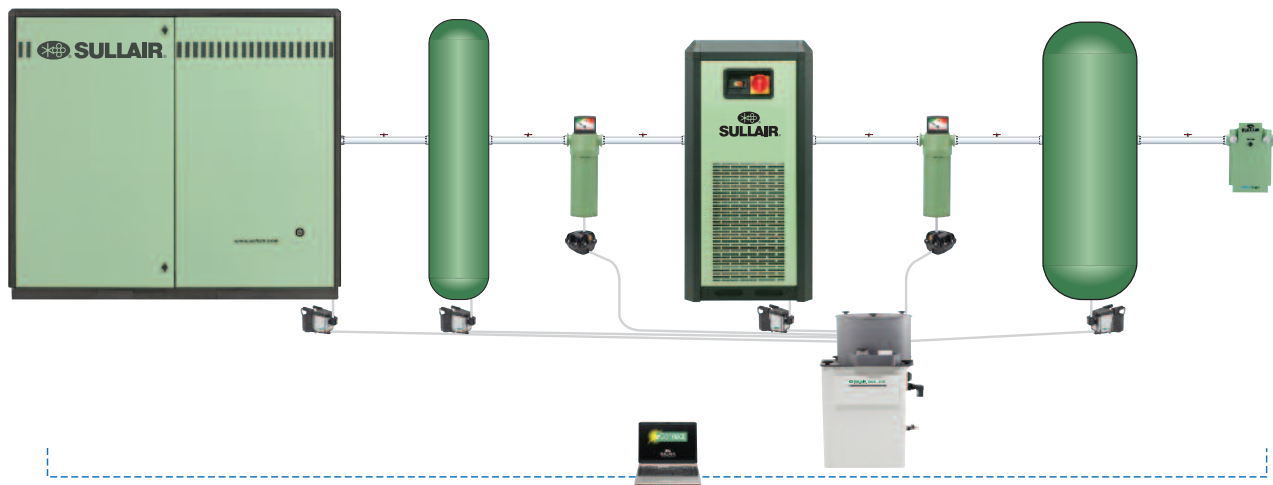
Sullair's Commitment to Innovation

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 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

The Sullair Stationary Air Power System



This System includes:

- rotary screw compressor
- wet storage
- refrigerated dryer
- filters to meet your requirement
- dry storage
- flow controller
- drains
- oil/water separator
- ethernet-based eConnect™ to monitor and control the entire system

The Importance of Clean, Dry Compressed Air

How much water is too much?

Any amount of water is too much.

Water jeopardizes everything you want your compressed air system to do. It ruins product and fouls processes.

- 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: 14.7 gallons (32%)



Liquid remaining after a refrigerated dryer: 1.8 gallons (.4%)



Liquid remaining after a desiccant dryer: .14 gallon (0.3%)

Sullair Family of Filtration

Sullair offers superior filtration from 1 micron to .01 micron. Durable element construction and an efficient drain layer ensure continued performance after optimal element change periods.

Particulate Filters: F and FR Elements

High-efficiency particulate filters remove particles to 1 micron, including coalesced liquid water and lubricants. Maximum remaining aerosol content after filtration is 0.5 ppm at 70°F.

High Efficiency Coalescing Filtration: H and HR Elements

For maximum filtration, Sullair offers compressed air filters to remove particulate down to 0.01 micron, including water and oil aerosols, providing a maximum remaining oil aerosol content of 0.01 ppm at 70°F, when used with Sullair particulate filters.

Vapor Removal: C Elements

Sullair filters use activated carbon to remove lubricant and hydrocarbon odors. After filtration, remaining vapor content is less than 0.003 ppm (excluding methane). This filter installation should always be preceded by high efficiency filter grades.

High Pressure: HP Element

Sullair high pressure filters are available up to 725 psig.

High Temperature: HT Element

Sullair high temperature filters are available up to 180°F.

Ultra Filter: U Element

For your most sensitive and high end applications Sullair offers the Ultra Filter. The Ultra Filter is an extremely high efficiency particulate filter. The Ultra is an absolute high efficiency filter.

FX = Standard NPT inlet and outlet ports (BSP optional)

FW = Flange inlet and outlet ports



Sullair Compressed Air Filters

Sullair filters protect your plant equipment and processes, improve your product quality and reduce your energy costs. Sullair offers filtration products in an application range from general purpose air to the most stringent food and pharmaceutical applications. Sullair filters are available from 25 to 17,700 scfm, 15 to 725 psig, 35°F to 250°F, ISO 8573.1 quality classes (ASME/CRN approved).

- Filtration equipment includes pre-filters, high efficiency filters, high pressure high temperature and odor-removal filters.
- The type, number, and placement of filters depend on the applications and the degree of contaminant removal required.

Element Features

- 7 Element types
- Superior construction
- Efficient drainage layer
- Hydrophobic micro fiber
- Deep pleats
- Stainless steel cores
- Special disruptive pattern
- PVC impregnated layer
- End cap key fit
- Color coded elements
- Color coded elements

Five-Year Filter Guarantee

Sullair backs this technology with a five-year warranty on the housing and a five-year warranty on performance, provided the element is changed annually.

All Inclusive “Peace of Mind” Warranty

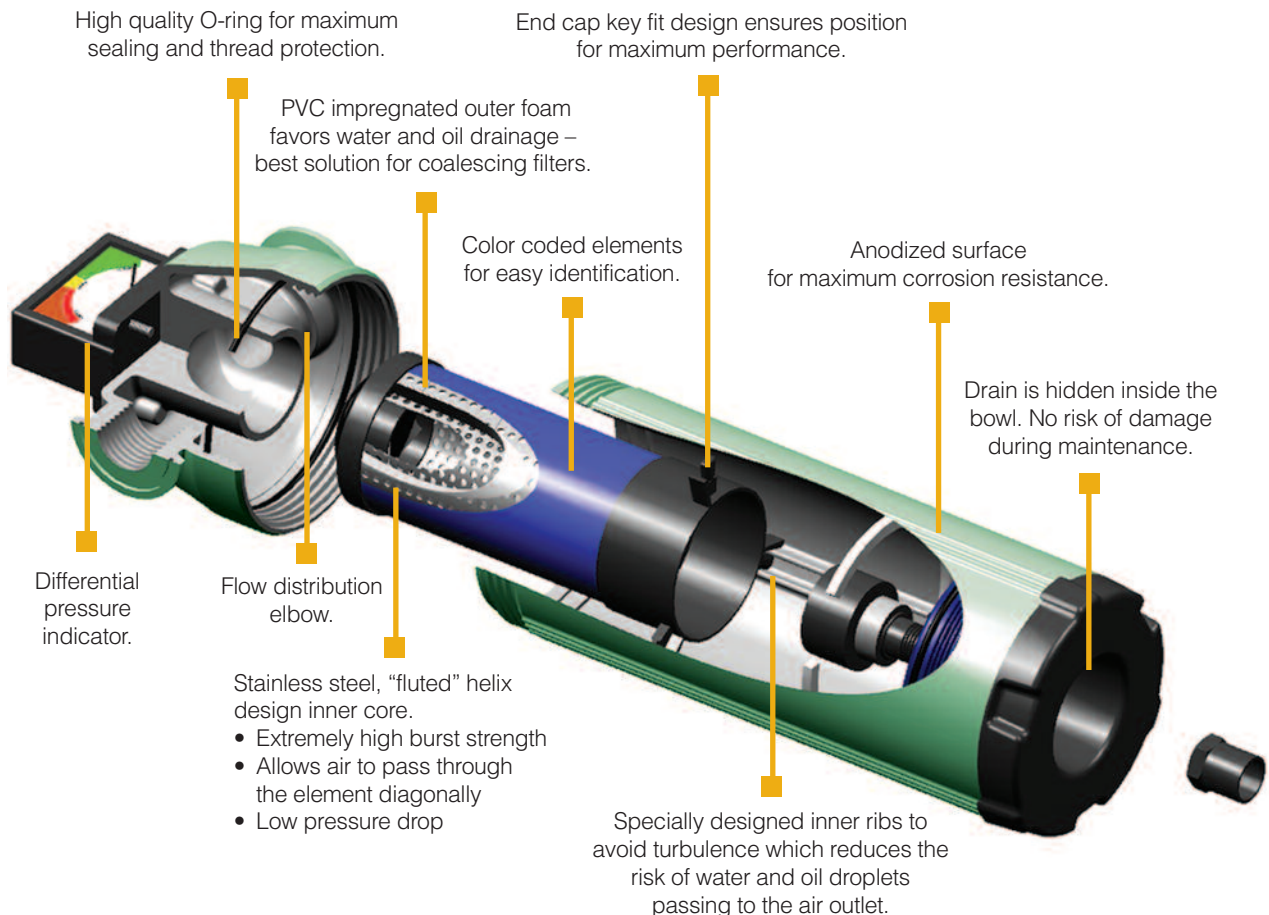
Sullair backs our commitment to quality with an unparalleled, non-prorated 5-year warranty (*parts and labor*) on the major components. No other manufacturer offers a warranty that is as all inclusive.

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



Quality is Third Party Certified and Guaranteed

Filters are manufactured in an ISO 9001 environment.



Sullair Advanced Filter Housings



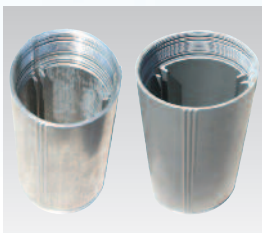
Compact and Lightweight

Advanced housing and element design provide a smaller, more compact and lightweight filter which is quick and easy to maintain.



Filter Connections

More port sizes are available to match both pipe size and system flow rate giving additional customer choice.



Fully Corrosion Protected

Anodized aluminum and dry powder epoxy coated for full corrosion protection.



Differential Pressure Indicator

A high quality differential pressure indicator is used to identify pressure differential.



Fixing Clamp

Joins two filters, and is a wall mounting bracket all in one.



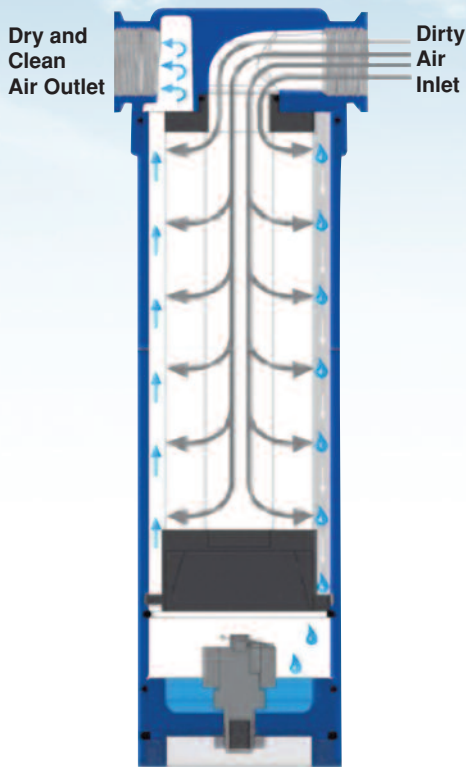
“Clean Change” Filter Element

Element changes are now easy and do not require the user to touch the contaminated element during annual element change.

Zero Clearance

Space saving design minimizes service clearance and allows installation in confined spaces.

State of the Art Filter Element and Features

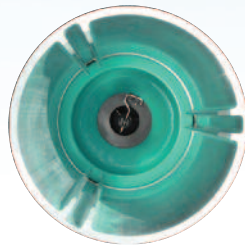


Sullair's range of compressed air filters have been designed from the outset to meet current and forthcoming requirements for compressed air quality. Using aerospace technology, Sullair has optimized the flow path

through the housing and element, significantly reducing air turbulence and pressure losses. Providing an optimal flow path is key to reducing pressure drop and system operating costs.

Drainage Ribs

Filter housing and element integrate to provide capillary action which greatly improves liquid drainage. Interaction between housing and element also ensures maximum coalescing performance is achieved at all times.



Recessed Drain

Specially designed auto drain system protects the auto drain against damage during shipping, handling and installation.



The Filtration Process

Deep Bed Pleating

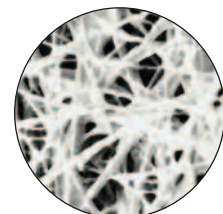
For particle and aerosol removal, deep bed pleating provides 450% more filter media than an ordinary element, giving a larger filtration area, lower flow velocities, increased dirt holding capacity, lower running costs and a more compact filter element. Graded density further improves filter life and overall performance.

solid particles, it cannot remove gaseous contaminants such as oil vapor or odors. To efficiently remove these vapors, Sullair FXC and FWC filters employ absorption techniques.



Oil Vapor Removal

While mechanical filtration is capable of removing extremely fine liquids and



Micro-glass filter media

Sullair's Mist Eliminators

The time-tested range of Sullair Mist Eliminators combine extensive research and development with decades of experience in compressed air treatment.

Sullair now offers the ideal solution to ever increasing demands from the industry for clean, high quality compressed air, efficient removal of oil-mist carryover from piston or oil flooded rotary compressors.

Compressed air processing equipment must have a very low pressure drop, long service life, and be strong enough to withstand the most harsh operating conditions. Protection from slugs of oil or compressor air/oil separator failure is essential.

The range of Mist Eliminators is specifically designed to meet these demands and will optimize oil removal while ensuring extremely low pressure drop and long service life.

Element

- Ultra low .05 psi differential
- High load factor compared to conventional hand packed media which is prone to poor performance under varying load conditions
 - Provides 9–10 times greater filtration surface area, greater dirt holding capability, and lower pressure drop
 - Eliminates migration of airflow to area of least resistance, also known as “channeling”
 - Eliminates the shedding of media
 - Consistent quality
- Strong stainless steel support sleeve construction
 - Eliminates rust and corrosion which can contaminate the air system
 - Integral support of the filtration media to eliminate bypass of contaminants



- For the removal of particles down to 1 micron including coalesced liquid water and oil providing a maximum remaining oil aerosol content of 0.5 ppm

Special machine pleated element construction

The machined pleating of the filter media increases its stability under changing loads and reduces the specific surface tension.

Low Pressure Drop and Operating Costs

The Sullair Mist Eliminator's pressure drop is one of the lowest available at 0.5 psi which is typically 4 psi lower than conventional filters. This provides significant energy savings based on the rule of thumb for every 2 psi pressure drop that is eliminated a 1% energy reduction in compressor horsepower is achieved.

Therefore annual energy savings would be:

4 psi = 2% savings in lost compressor power

Annual energy savings on 100 hp system

$\$0.05/\text{kWh} \times 8760 \text{ hours} \times 74.6 \text{ kW} \times 2\% = \$ 653$

$\$0.08/\text{kWh} \times 8760 \text{ hours} \times 74.6 \text{ kW} \times 2\% = \1046

$\$0.10/\text{kWh} \times 8760 \text{ hours} \times 74.6 \text{ kW} \times 2\% = \1307

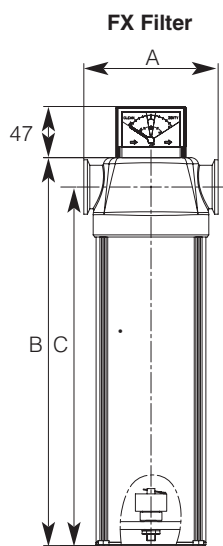


5 year
PERFORMANCE
GUARANTEE

5-Year Performance Guarantee that the differential pressure will not exceed 1 psid

Specifications

| Filter Model | Port Size NPT | scfm | Dimension in inches | | | Weight lbs |
|--------------|---------------|------|---------------------|----|----|------------|
| | | | A | B | C | |
| FX-25 | 1/4" | 25 | 4 | 8 | 7 | 3 |
| FX-25 | 3/8" | 25 | 4 | 8 | 7 | 3 |
| FX-25 | 1/2" | 25 | 4 | 8 | 7 | 3 |
| FX-45 | 3/8" | 45 | 4 | 10 | 9 | 3 |
| FX-45 | 1/2" | 45 | 4 | 10 | 9 | 3 |
| FX-65 | 1/2" | 65 | 5 | 10 | 11 | 4 |
| FX-65 | 3/4" | 65 | 5 | 10 | 11 | 4 |
| FX-65 | 1" | 65 | 5 | 10 | 11 | 4 |
| FX-130 | 3/4" | 130 | 5 | 15 | 14 | 6 |
| FX-130 | 1" | 130 | 5 | 15 | 14 | 6 |
| FX-240 | 1" | 240 | 5 | 19 | 17 | 7 |
| FX-240 | 1-1/4" | 240 | 5 | 19 | 17 | 7 |
| FX-240 | 1-1/2" | 240 | 5 | 19 | 17 | 7 |
| FX-350 | 1-1/4" | 350 | 5 | 21 | 19 | 8 |
| FX-350 | 1-1/2" | 350 | 5 | 21 | 19 | 8 |
| FX-475 | 1-1/4" | 475 | 6 | 24 | 22 | 12 |
| FX-475 | 1-1/2" | 475 | 6 | 24 | 22 | 12 |
| FX-475 | 2" | 475 | 6 | 24 | 22 | 12 |
| FX-700 | 2" | 700 | 6 | 27 | 25 | 12 |
| FX-925 | 2" | 925 | 8 | 29 | 26 | 23 |
| FX-925 | 2-1/2" | 925 | 8 | 29 | 26 | 23 |
| FX-925 | 3" | 925 | 8 | 29 | 21 | 23 |
| FX-1350 | 2-1/2" | 1350 | 8 | 29 | 27 | 26 |
| FX-1350 | 3" | 1350 | 8 | 29 | 27 | 26 |
| FX-1600 | 3" | 1600 | 8 | 42 | 40 | 27 |



| | FXF | FXH | FXC | FXR | FXHR |
|---|-------|-------|--------|--------|--------|
| Maximum operating pressure - with auto drain (psig) | 232 | 232 | 232 | 232 | 232 |
| Maximum operating pressure - with manual drain (psig) | 290 | 290 | 290 | 290 | 290 |
| Maximum operating temperature - with auto drain | 176°F | 176°F | 176°F | 176°F | 176°F |
| Maximum operating temperature - with manual drain | 212°F | 212°F | 212°F | 212°F | 212°F |
| Minimum operating temperature | 35°F | 35°F | 35°F | 35°F | 35°F |
| Standard drain type | auto | auto | manual | manual | manual |

Pressure correction factor for standard pressure filters

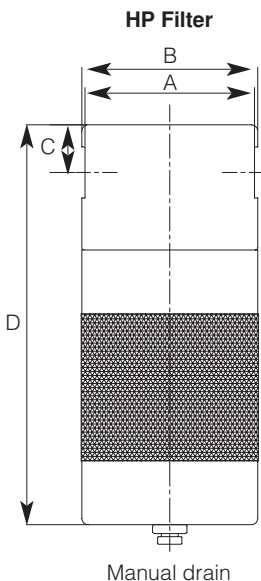
Optional zero loss drain is available for all Sullair filters.

| | | | | | | | | | | | | | | |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Line Pressure (psig) | 25 | 40 | 50 | 60 | 75 | 90 | 100 | 110 | 125 | 140 | 150 | 160 | 175 | 200 |
| Correction Factor | 0.49 | 0.62 | 0.69 | 0.76 | 0.86 | 0.95 | 1.00 | 1.04 | 1.10 | 1.17 | 1.21 | 1.25 | 1.31 | 1.40 |
| Line Pressure (barg) | 1 | 2 | 3 | 5 | 7 | 9 | 11 | 13 | | | | | | |
| Correction Factor | 0.38 | 0.53 | 0.65 | 0.85 | 1.00 | 1.13 | 1.25 | 1.36 | | | | | | |

Specifications

| Sullair Element Type | Color Code | Efficiency Performance | Media / Type / Pattern | Flow Direction | Dry Pressure Drop (psig) | Wet Pressure Drop (psig) |
|----------------------|------------|--|------------------------|----------------|--------------------------|--------------------------|
| F | Blue ● | 1 micron & .5 ppm carryover | Wrapped | In-to-Out | .6 | 1.2 |
| FR | White ○ | Reverse 1 micron & .5 ppm carryover | Pleated | Out-to-In | .35 | .6 |
| FRHT | Metal ● | High temperature reverse 1 micron & .5 ppm carryover | Pleated | Out-to-In | .35 | .6 |
| H | Red ● | 0.01 micron & .01 ppm carryover | Wrapped | In-to-Out | 1.2 | 2.3 |
| HR | White ○ | Reverse 0.01 micron & .01 ppm carryover | Pleated | Out-to-In | .45 | .7 |
| Ultra U | White ○ | 0.01 micron absolute | Wrapped | Out-to-In | 5 | absolute |
| C | Metal ● | 0.01 micron & .003 ppm carryover | Granular | Out-to-In | 2.3 | 2.3 |

| Filter Model | BST/NPT Port Size | scfm | Dimension in inches | | | | Weight lbs |
|-----------------|-------------------|------|---------------------|---|---|----|------------|
| | | | A | B | C | D | |
| FHP-60 | 1/4" | 60 | 4 | 9 | 1 | 6 | 7 |
| FHP-175 | 1/2" | 175 | 4 | 9 | 1 | 6 | 7 |
| FHP-350 | 3/4" | 350 | 4 | 9 | 1 | 8 | 8 |
| FHP-500 | 1" | 500 | 5 | 5 | 1 | 10 | 14 |
| FHP-700 | 1" | 700 | 5 | 5 | 1 | 12 | 18 |
| FHP-950 | 1-1/2" | 950 | 5 | 5 | 2 | 14 | 21 |
| FHP-1500 | 2" | 1500 | 6 | 6 | 2 | 15 | 25 |
| FHP-1750 | 2-1/2" | 1750 | 6 | 7 | 2 | 15 | 28 |



Pressure correction factor for high pressure filters

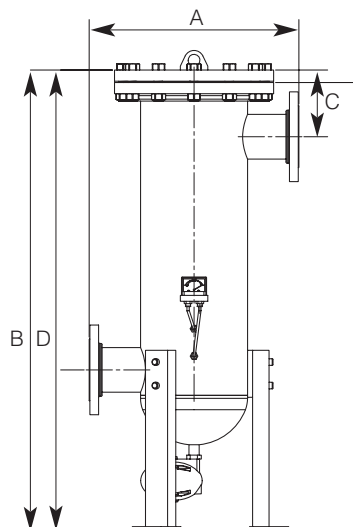
| | | | | | | | |
|-------------------|------|-----|------|------|-----|-----|-----|
| Pressure psig | 290 | 363 | 435 | 508 | 580 | 653 | 725 |
| Pressure barg | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| Correction factor | 0.63 | 0.7 | 0.78 | 0.83 | 0.9 | .95 | 1 |

Specifications

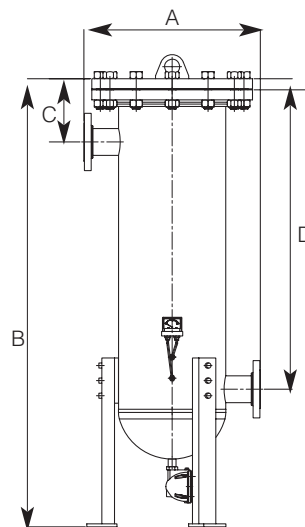
| Filter Model | Inlet-Outlet Port Size | Dimension in inches | | | | Min. Clearance for Element Change | Drain Port Size NPT | Element Qty. |
|--------------|------------------------|---------------------|----|----|----|-----------------------------------|---------------------|--------------|
| | | A | B | C | D | | | |
| FW-1500 | 3" flange | 18 | 46 | 6 | 30 | 26" | 1/2" | 2 |
| FW-1900 | 4" flange | 18 | 46 | 6 | 30 | 26" | 1/2" | 3 |
| FW-2500 | 4" flange | 21 | 46 | 6 | 30 | 26" | 1/2" | 4 |
| FW-3800 | 6" flange | 23 | 50 | 9 | 31 | 26" | 1/2" | 6 |
| FW-5000 | 6" flange | 23 | 51 | 10 | 31 | 26" | 1/2" | 8 |
| FW-6500 | 6" flange | 29 | 53 | 10 | 33 | 26" | 1/2" | 10 |
| FW-8300 | 8" flange | 30 | 55 | 10 | 33 | 26" | 1/2" | 14 |
| FW-10000 | 10" flange | 32 | 58 | 13 | 34 | 26" | 1/2" | 16 |

| Mist Eliminator Model | Inlet-Outlet Port Size | Dimension in inches | | | | Min. Clearance for Element Change | Drain Port Size NPT | Separator Qty. |
|-----------------------|------------------------|---------------------|----|----|----|-----------------------------------|---------------------|----------------|
| | | A | B | C | D | | | |
| ELM-150 | 2" flange | 16 | 34 | 6 | 17 | 13" | 1/2" | 1 |
| ELM-300 | 2" flange | 16 | 38 | 6 | 21 | 17" | 1/2" | 1 |
| ELM-600 | 2" flange | 19 | 52 | 6 | 37 | 31" | 1/2" | 1 |
| ELM-800 | 3" flange | 19 | 56 | 7 | 43 | 37" | 1/2" | 1 |
| ELM-1200 | 3" flange | 23 | 52 | 7 | 38 | 31" | 1/2" | 1 |
| ELM-1600 | 3" flange | 23 | 58 | 8 | 41 | 37" | 1/2" | 1 |
| ELM-2100 | 4" flange | 25 | 55 | 9 | 38 | 31" | 1/2" | 1 |
| ELM-2750 | 4" flange | 25 | 61 | 9 | 44 | 37" | 1/2" | 1 |
| ELM-4200 | 6" flange | 27 | 56 | 9 | 38 | 31" | 1/2" | 1 |
| ELM-6000 | 6" flange | 27 | 66 | 10 | 49 | 41" | 1/2" | 1 |
| ELM-8000 | 8" flange | 30 | 67 | 10 | 49 | 41" | 1/2" | 1 |
| ELM-10000 | 10" flange | 34 | 70 | 12 | 50 | 41" | 1/2" | 1 |
| ELM-12000 | 12" flange | 34 | 90 | 12 | 71 | 61" | 1/2" | 1 |

FW Filter

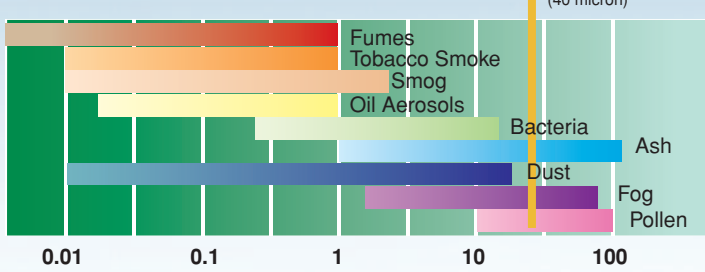


Mist Eliminator

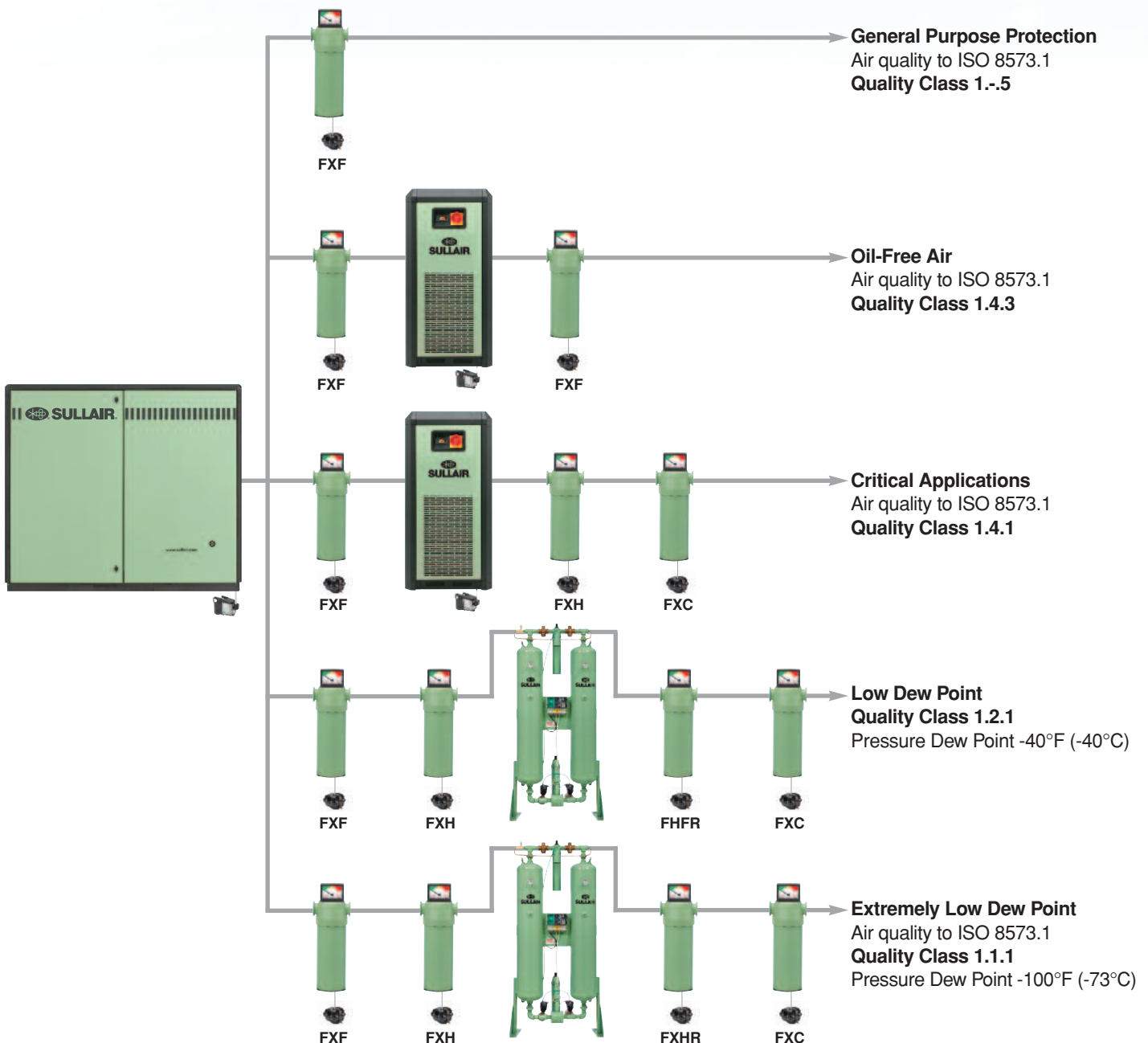


Air Quality Standards ISO 8573.1 Classes

Particle (micron) size of some common substances. Eye Sight Threshold (40 micron)

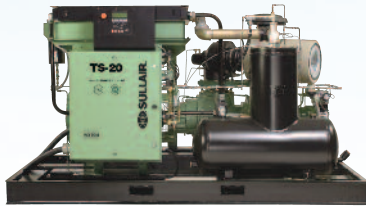


| Class | Solid Particle Maximum number of particles per m ³ | | | Pressure Dew Point °F | Oil (incl. vapor) mg/m ³ |
|-------|---|-----------------|-----------------|-----------------------------|---|
| | 0.1-0.5 micron | 0.5-1 micron | 1.0-5 micron | | |
| 1 | 100 | 1 | 0 | -94 | 0.01 |
| 2 | 100,000 | 1,000 | 10 | -40 | 0.1 |
| 3 | - | 10,000 | 500 | -4 | 1.0 |
| 4 | - | - | 1,000 | 37 | 5.0 |
| 5 | - | - | 20,000 | 45 | - |
| 6 | - | - | - | 50 | - |



Sullair's Compressed Air Products

www.sullair.com



Fundamental to Sullair's leadership is a dedication to reduce not only the amount of natural resources consumed to create energy, but to minimize environmental impact, in both the manufacture and use of all our products. We are constantly exploring new ideas and seeking new technologies to meet the ever-increasing need for high quality, energy-efficient compressed air products and environmental sustainability.



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