

Compressed Air Filtration and Mist Eliminators

Efficient Filtration Solutions

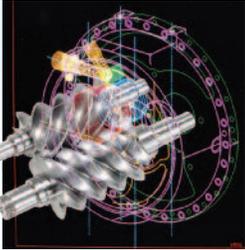


- Low pressure drop
- Reduces energy requirements
- Performance guarantee
- Durable element construction

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.



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.

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

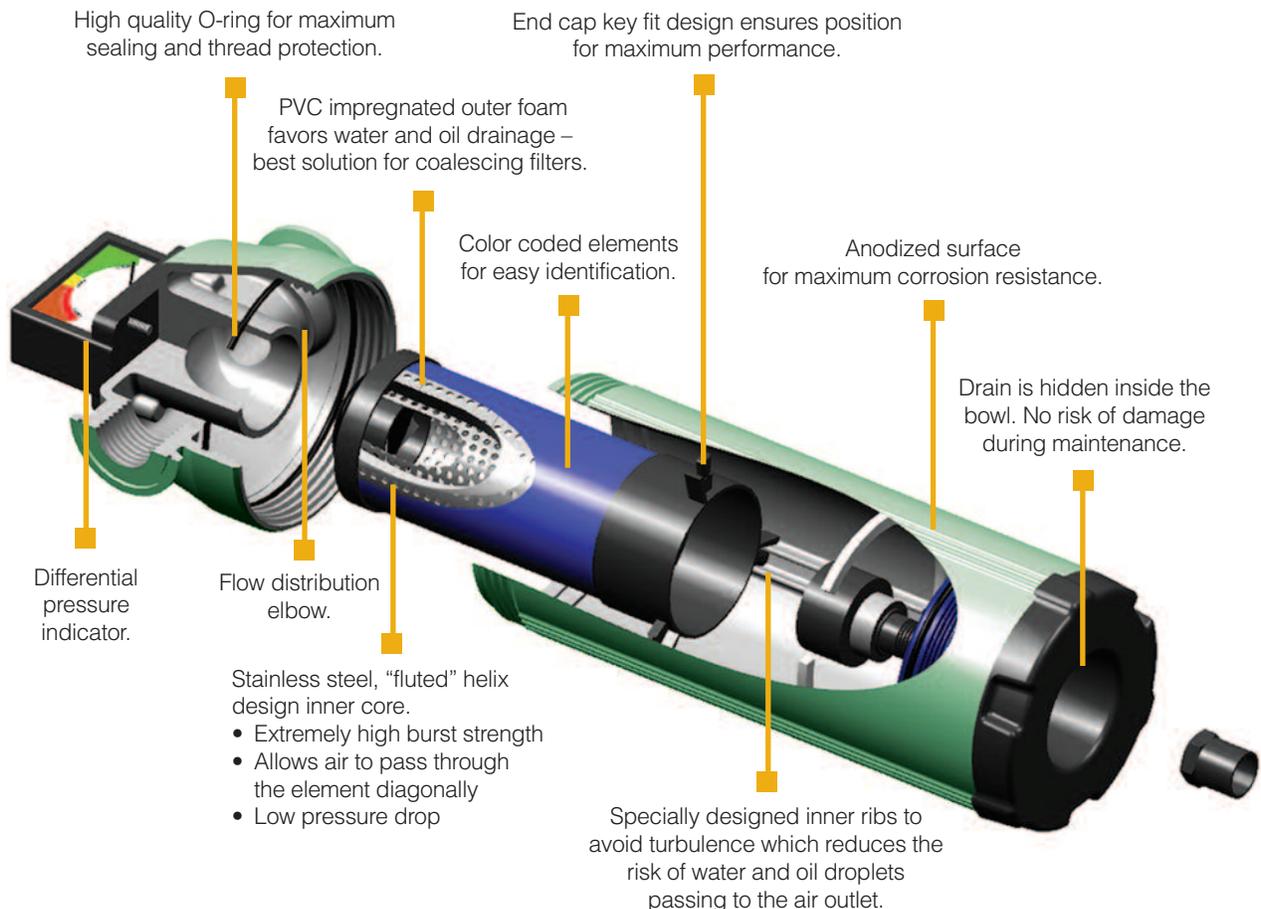
Sullair backs our commitment to quality with an unparalleled, non-prorated 5-year warranty (*parts and labor*) on the major components. No other manufacturer offers a warranty that is as all inclusive.

(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.



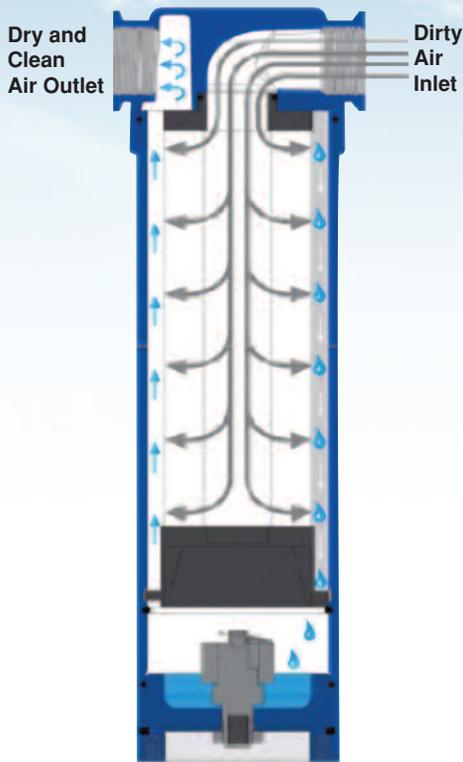
“Clean Change” Filter Element

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

Zero Clearance

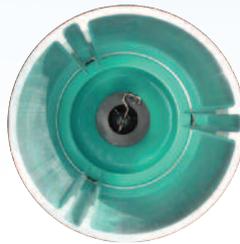
Space saving design minimizes service clearance and allows installation in confined spaces.

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



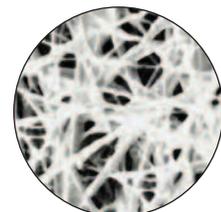
Deep Bed Pleating

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.

Oil Vapor Removal

While mechanical filtration is capable of removing extremely fine liquids and

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.



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

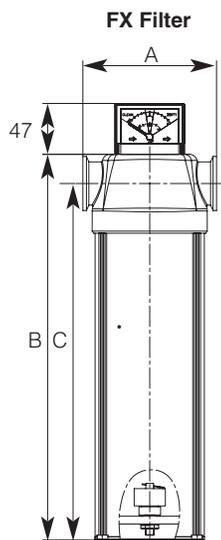


5 year
PERFORMANCE
GUARANTEE

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

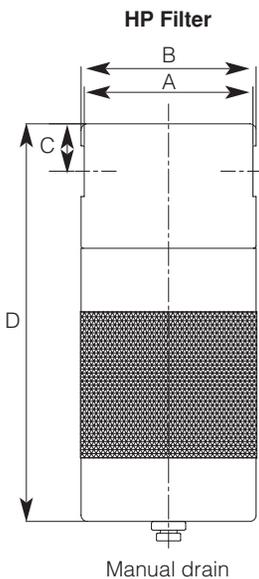
Optional zero loss drain is available for all Sullair filters.

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

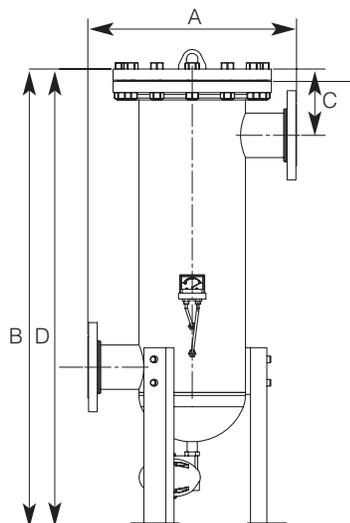
Pressure psig	290	363	435	508	580	653	725
Pressure barg	20	25	30	35	40	45	50
Correction factor	0.63	0.7	0.78	0.83	0.9	.95	1

Specifications

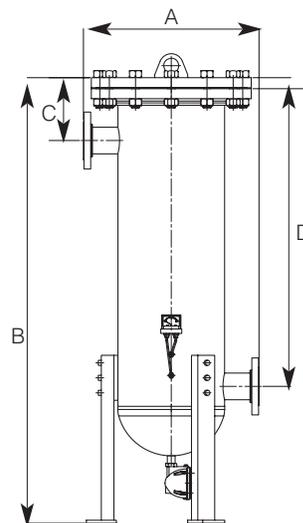
Filter Model	Inlet-Outlet Port Size	Dimension in inches				Min. Clearance for Element Change	Drain Port Size NPT	Element Qty.
		A	B	C	D			
FW-1500	3" flange	18	46	6	30	26"	1/2"	2
FW-1900	4" flange	18	46	6	30	26"	1/2"	3
FW-2500	4" flange	21	46	6	30	26"	1/2"	4
FW-3800	6" flange	23	50	9	31	26"	1/2"	6
FW-5000	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

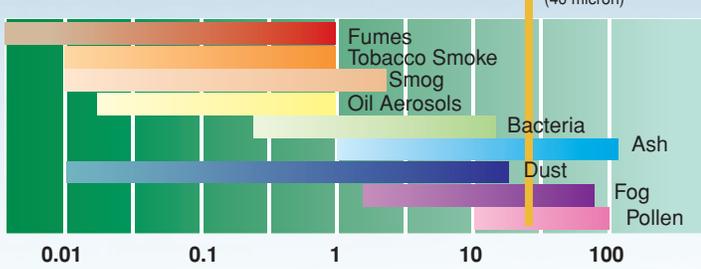


Mist Eliminator

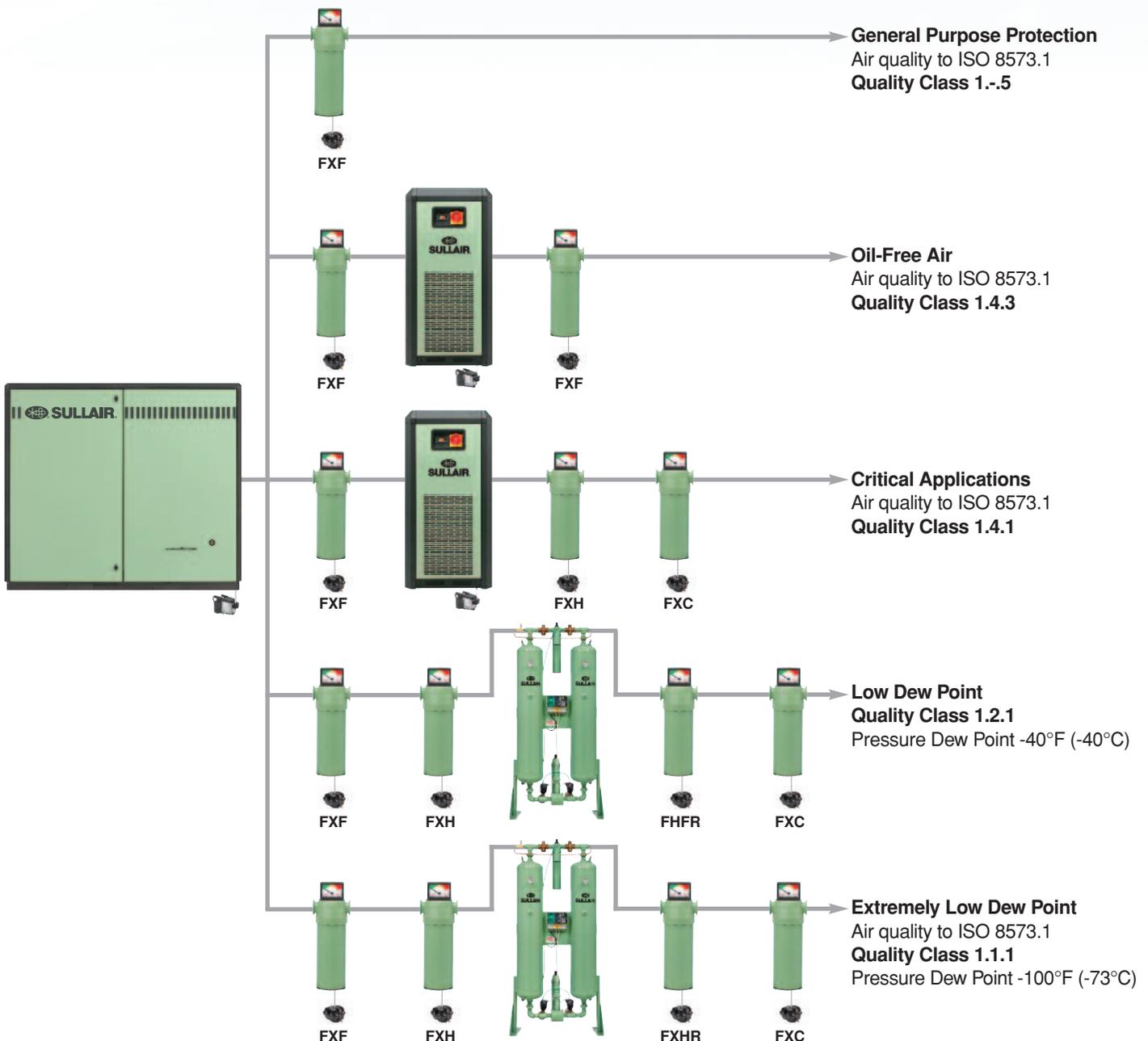


Air Quality Standards ISO 8573.1 Classes

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

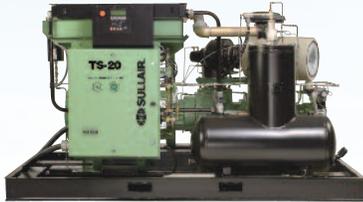


Class	Solid Particle Maximum number of particles per m ³			Pressure Dew Point °F	Oil (incl. vapor) mg/m ³
	0.1-0.5 micron	0.5-1 micron	1.0-5 micron		
1	100	1	0	-94	0.01
2	100,000	1,000	10	-40	0.1
3	-	10,000	500	-4	1.0
4	-	-	1,000	37	5.0
5	-	-	20,000	45	-
6	-	-	-	50	-



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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