Compressed Air Filtration

Oil and Particulate Contamination Removal

- Low Pressure Drop
- Reduces Energy Requirements
- Comes With A Performance Guarantee

AirMetrix℠ by SULLAIR®

SULLAIR®

Sullair Compressed Air Filters

Sullair filters protect your plant equipment and processes, improve your product quality and reduce your energy costs. Sullair offers filters for general purpose compressed air and for high quality compressed air for instrumentation, food processing and pharmaceutical production. Sullair filters are available from 13 to 16,500 scfm, 15 to 725 psig, 35°F to 250°F, ISO 8573.1 quality classes.

- Compressed air is filtered to remove atmospheric particulate, aerosols and other pollutants to provide compressed air for general purposes to the most critical application.
- Filtration equipment includes pre-filters, high efficiency filters and odor-removal filters.
- The type, number, and placement of filters depend on the applications and the degree of contaminant removal required.

Five-Year Filter Guarantee

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

Particulate Filters: SCF, SCR, PF and PR

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

High Efficiency Filtration: SCH, SCHR and PH

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 @ 70°F, when used with SCF and PF pre-filters.

Odor Removal: SCC, PC

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.

Combination Filters: MPHC
This package combines high efficiency and odor-removal type filters in one housing.

New Sullair Filtration Technology

New Sullair Filtration Technology

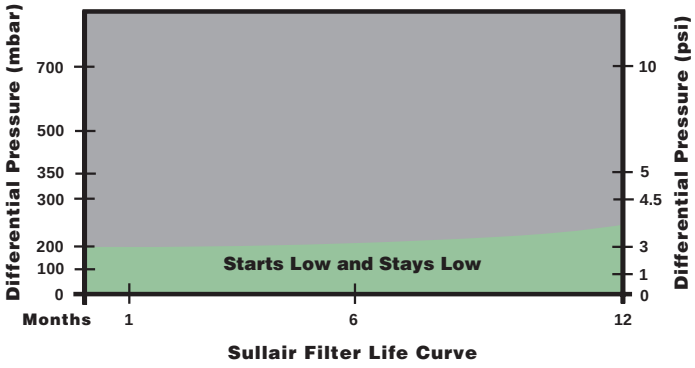
Sullair compressed air filters use very little energy as they have a low resistance to air flow. Advancements such as deep bed pleating, graded density media and an oleophopic coating have led to a high performance filter element with low initial energy costs. Differential pressure starts low and stays low throughout its life. Service life is no longer dependent on differential pressure, but is based on annual filter element change, backed up with a one-year air quality guarantee.

Old Filtration Technology

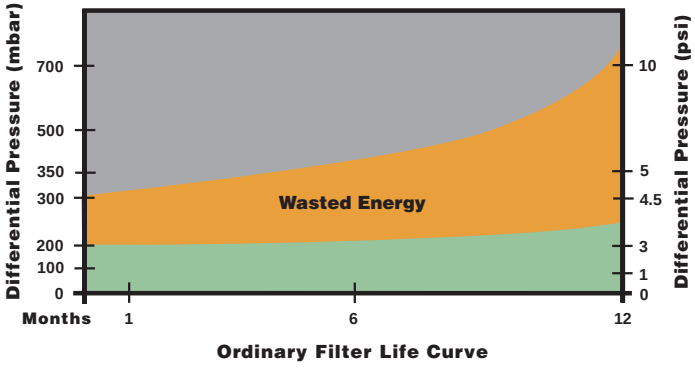
Ordinary compressed air filters have always consumed too much energy, as they are by design, a restriction to air flow. During their working life, this restriction increases dramatically, and over time, can consume more energy than they are worth. As service life is dependent upon differential pressure, most manufacturers recommend a replacement filter element between 7 psi (500 mbar) and 10 psi (700 mbar) differential. This adds up to a massive 3.5% extra in compressor energy costs.

Filter Life Comparison

Data shown is for the SCH filter.

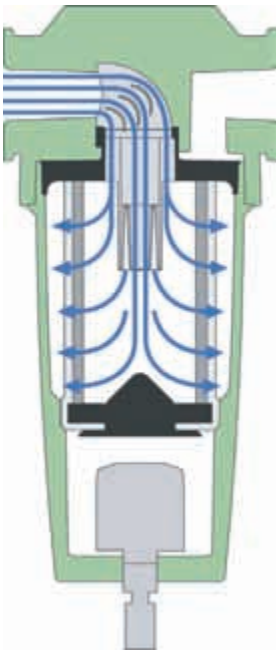


Sullair Filter Life Curve



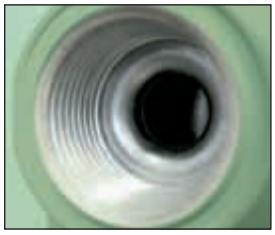
Ordinary Filter Life Curve

The World's Most Efficient Filter Element



Sullair's new 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 system operating costs.

Full Flow Inlet
Inlet conduit matches inlet diameter, reducing pressure drop and running costs.



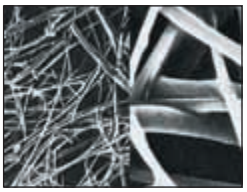
Even Flow Distribution
Air flow is distributed evenly throughout the filter element using a flow distributor.

Conical Air Diffuser
Air flow distribution is further improved by elimination of turbulence.

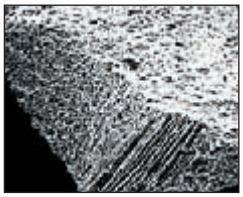
The Filtration Process

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 SCC filters employ absorption techniques.



Nanofiber filter media



Activated carbon

Aerospace Turning Vanes
Turning vanes effectively direct air flow into the filter element.

Air Stabilizers
Smooth outlet air flow.

Special Filter Media
Oleophopic nanofiber filter media actively repels oil and water to reduce pressure drop and keep running costs to a minimum.

High Efficiency Drainage Layer
Ensures coalesced liquids are removed quickly and efficiently.

No Wet Band Formation
Allows 40% more air flow through a smaller filter element.

Filter media actively repels oil and water

International Patents Pending

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.

Sullair Advanced Filter Housings

Compact and Lightweight
Advanced housing and element design have also provided a smaller, more compact and lightweight filter which is quick, easy and clean to maintain.

Choice of Drains
Manual or float drain standard, optional SCD Zero Air Loss drain available. Easy connection with standard fittings via 1/2" threaded drain port.

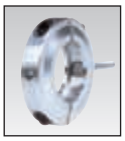
Filter Connections
More port sizes are available to match both pipe size and system flow rate giving additional customer choice.

Fully Corrosion Protected
Alocrom and dry powder epoxy coated for full corrosion protection.

Left: No corrosion with Alocrom treatment
Right: Rapid corrosion of untreated aluminum

Incident Monitor
Used to indicate premature high differential pressure.

Fixing Clamp
Joins two filters and is a wall mounting bracket in one.

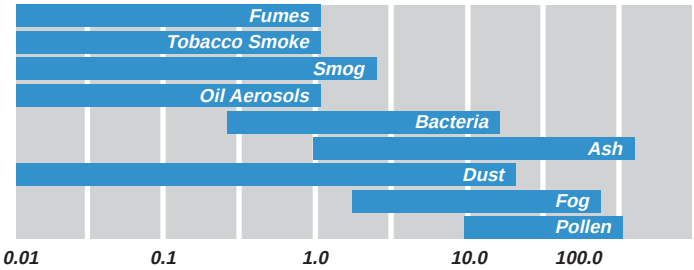


"Clean Change" Filter Element
Element changes are now easy and do not require the user to touch the contaminated element during annual element change.

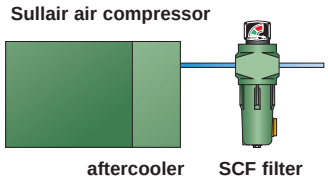
Minimal Service Clearance
Space saving design minimizes service clearance and allows installation in confined spaces.

Air Quality Standards ISO 8573.1 Classes

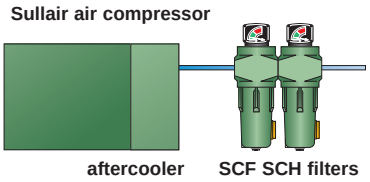
Particle size (in microns) of some common substances



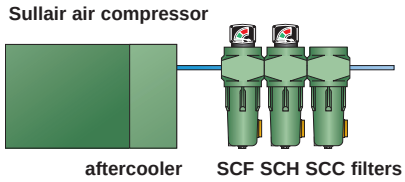
Class	Solid Particle Maximum number of particles per m³			Pressure Dewpoint °F	Oil (incl. vapor) mg/m³
	0.1-0.5 micron	0.5-1 micron	1.0-5 micron		
1	100	1	0	-94	0.01
2	100,000	1,000	10	-40	0.1
3	-	10,000	500	-4	1.0
4	-	-	1,000	37	5.0
5	-	-	20,000	45	-
6	-	-	-	50	-



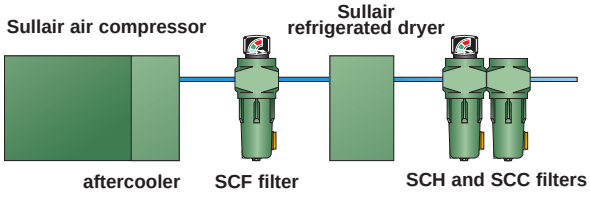
General Purpose Protection
Air quality to ISO 8573.1
Class 3 (dirt), 3 (oil)
Particles <1 micron
Oil content <0.5 ppm



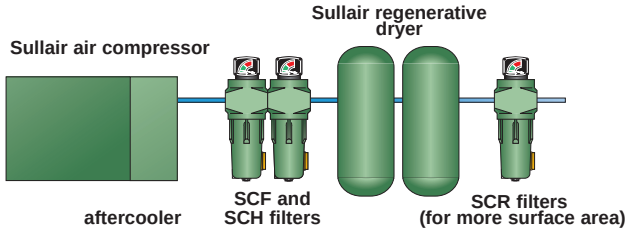
Oil-Free Air
Air quality to ISO 8573.1
Class 2 (dirt), 2 (oil)
Particles <0.01 micron
Oil content <0.01 ppm



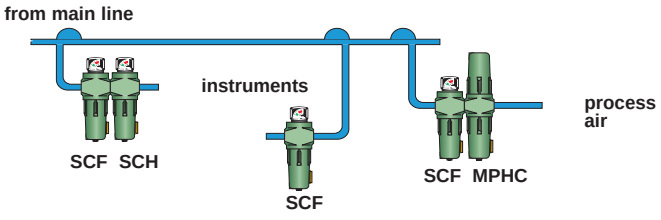
Critical Applications
Air quality to ISO 8573.1
Class 2 (dirt), 1 (oil)
Particles <0.01 micron
Oil content <0.003 ppm



Low Dew Point
Air quality to ISO 8573.1
Class 2 (dirt), 4 (water), 1 (oil)



Extremely Low Dew Point
Air quality to ISO 8573.1
Class 2 (dirt), 2 (water), 1 (oil)
Pressure dew point -40°F (40°C)



Point-Of-Use Filtration

Specifications:
Sullair SCF, SCH, SCR, SCC and SCHR Filters

Model SCF, SCH, SCR SCC, SCHR	Capacity @ 100 psig	Inlet/Outlet Connection	Dimension (in.) A	B	C	D	E	Weight (lbs)
20	21	3/8"	3.0	7.2	6.0	-	4.0	0.9
40	42	1/2"	3.8	9.3	7.9	-	4.0	2.2
65	64	3/4"	3.8	9.3	7.9	-	4.0	2.2
125	127	1"	5.1	10.8	9.2	-	4.0	4.9
235	233	1-1/2"	5.1	14.3	12.7	-	4.0	5.7
340	339	1-1/2"	6.7	17.0	15.1	-	4.0	10.0
465	466	2"	6.7	20.6	18.7	-	4.0	11.6
700	699	2"	6.7	20.6	18.7	-	4.0	11.6
910	911	3"	8.1	25.3	22.9	-	4.0	22.0
1315	1314	3"	8.1	32.8	30.4	-	4.0	26.4
2120	2119	4"	16.5	46.2	43.1	-	4.0	98.0
MPHC 13	13	1/4"	3.0	5.3	5.3	5.3	2.8	2.2
MPHC 27	27	3/8"	3.5	6.3	6.3	6.3	3.8	2.7
MPHC 53	53	1/2"	3.5	6.3	7.6	6.3	5.1	3.1
MPHC 84	84	3/4"	4.8	9.8	9.8	9.8	6.8	7.1
MPHC 140	140	1"	4.8	9.8	13.8	9.8	10.8	8.2
MPHC 180	180	1-1/4"	4.8	13.8	13.8	13.8	10.8	8.4

Note: The SCC grade filter will not remove CO/CO_2 or other toxic gases or fumes.

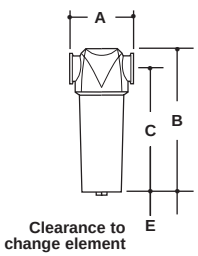
Consult factory for additional inlet/outlet connection sizes.

	SCF	SCH	SCC	SCR	SCHR
Maximum operating pressure - with autodrain (psig)	232	232	232	232	232
Maximum operating pressure - with manual drain (psig)	290	290	290	290	290
Maximum operating temperature - with autodrain	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

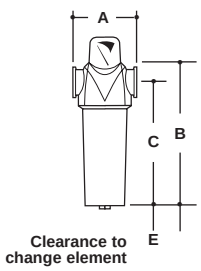
Pressure Correction Factor

Line Pressure psig	15	29	44	58	73	87	100	116	131	145	160	174	189	203	218	232
Correction Factor	0.38	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.19	1.25	1.31	1.36	1.41	1.46	1.51
Line Pressure barg	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Correction Factor	0.38	0.53	0.65	0.76	0.85	0.93	1.00	1.07	1.13	1.19	1.25	1.31	1.36	1.41	1.46	1.51

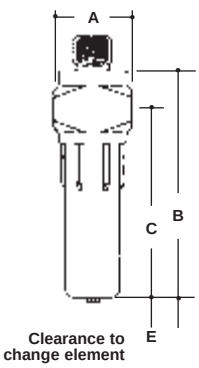
Grade 20



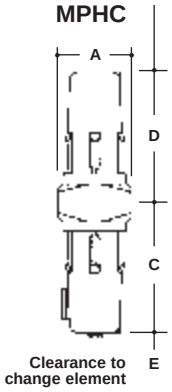
Grade 40-1315



Grade 2120



MPHC



Specifications:
Sullair PF, PR, PC and PH Welded Housing Filters

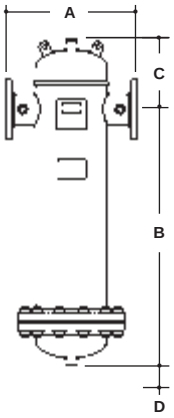
Model	Capacity @100 psig	Air In/Out	Dimensions (in.) A	B	C	D	Drain Port (in.)	Weight (lb.)
PF/PR-600	600	2" FLG	17-3/4	35	8-3/4	21	1/2	165
PF/PR-1200	1200	3" FLG	17-3/4	37-1/2	9-1/2	21	1/2	171
PF/PR-1600	1600	3" FLG	20	39-3/4	10-5/8	21	1/2	195
PF/PR-2100	2100	4" FLG	20	39-3/4	10-5/8	21	1/2	267
PF/PR-2750	2750	4" FLG	20	39-3/4	10-5/8	21	1/2	270
PF/PR-4200	4200	6" FLG	24	45	13-1/4	21	1/2	424
PF/PR-7000	7000	8" FLG	29-1/2	54	12-3/4	21	1	720
PF/PR-11000	11000	10" FLG	29-1/8	60-1/2	16	26	1	1040
PF/PR-16500	16500	12" FLG	39-3/8	66-5/8	18-1/2	28	1	1610
PC/PH-600	600	2" FLG	12	37-1/4	6	22	1/2	90
PC/PH-1200	1200	3" FLG	15-3/8	43-3/4	8-1/4	26	1/2	158
PC/PH-1600	1600	3" FLG	20	49-1/2	10-1/4	21	1/2	289
PC/PH-2100	2100	4" FLG	20	49-1/2	10-1/4	21	1/2	304
PC/PH-2750	2750	4" FLG	20	49-1/2	10-1/4	21	1/2	320
PC/PH-4200	4200	6" FLG	22-3/4	50-1/2	12-3/4	21	1/2	451
PC/PH-7000	7000	8" FLG	29-1/2	54	12-3/4	21	1	720
PC/PH-11000	11000	10" FLG	29-1/8	60-1/2	16	26	1	1040
PC/PH-16500	16500	12" FLG	39-3/8	66-5/8	18-1/2	28	1	1610

Dimension “D”: Distance required for element removal
Note: The PC grade filter will not remove CO/CO_2 or other toxic gases or fumes.

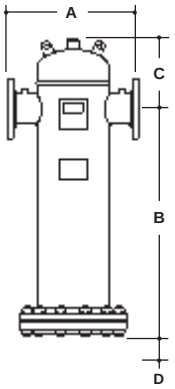
	PF/PR	PH	PC
Maximum operating pressure	200 psig (14 barg)	200 psig (14 barg)	200 psig (14 barg)
Maximum operating temperature	250°F	150°F	86°F
Minimum operating temperature	35°F	35°F	35°F
Operating pressure differential fully saturated	2.0 psig	3.0 psig	4.5 psig

Pressure Correction Factor														
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	1.0	1.04	1.1	1.17	1.21	1.25	1.31	1.4
Line Pressure barg	1	2	3	5	7	9	11	13						
Correction Factor	.038	0.53	0.65	0.85	1.0	1.13	1.25	1.36						

PC/PH*



PF/PR*



*Consult factory for filter drawings above 4200 cfm

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.

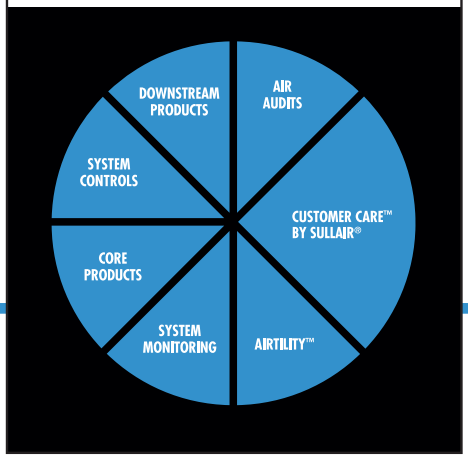
The Sullair Oil-Free Air Quality Guarantee.
The System consists of a Sullair compressor, Sullair dryer, and Sullair SCF and SCH or PF/PH filters. The compressed air from this system contains particulates no larger than .01 micron, including coalesced liquid water and lubricants. Maximum remaining oil 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.

AirMetrix™ by SULLAIR

Sullair offers AirMetrix™ solutions that help reduce energy costs and improve productivity by analyzing, managing, and controlling the total compressed air system.



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For more information on Sullair products and services, please contact your local Sullair distributor.

SULLAIR®

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