

Large Capacity Compressed Air Filters

Series **AFW**

Compressed Air Threaded Filters



- 8 models available with flow capabilities up to 1500 SCFM
- Three filtration/coalescing grades available as well as activated carbon
- Modular head design permits compact connection of multiple units
- Differential pressure indicator and float type auto drains standard
- 232 psi max. operating pressure

Compressed Air Flanged Filters



- 12 models available with flow capabilities up to 16,100 SCFM
- Three filtration/coalescing grades available as well as activated carbon
- ASME "U" stamped and CRN approved
- Differential pressure indicator and manual drain standard
- 235 psi max. operating pressure

Centrifugal Water Separators



- Removes large quantities of condensate by centrifugal action
- Threaded models to 3"/1500 SCFM
- Flanged models to 12"/16,500 SCFM (ASME "U" stamped and CRN)
- Low operating differential pressure
- Float type auto drain standard on threaded models, manual drain on flanged
- 232 psi max. operating pressure
- Silicone free



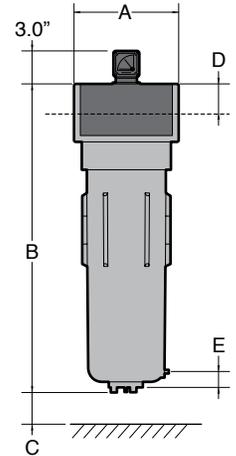
Compressed Air Threaded Filters – Series AFW

The series AFW threaded filters are offered in 8 models with connections from 1" to 3" NPT ports, offering flow capacities from 150 to 1500 CFM. These models incorporate the unique "push on" filter element, which reduces maintenance time and allows the filter to be located in the most confined places. These filters are manufactured using die-cast aluminum housings for pressure ratings up to 232 psig (1.6MPa). They are a proven success due to the inclusion of such features as differential pressure indicators which allow continuous monitoring of filter performance.

Specification

Model Number	Element Model	Flow Rate		Dimensions (in)				Connections (NPT female)			Weight Lbs
		SCFM	Nm ³ /h	A	B	C	D	In/Out	Side	Bottom	
AFW150-N10DG-[a]	EL-AFW150-[a]	150	255	4.5	14	6	1.25	1"	1/4"	1/8" male	5.5
AFW225-N14DG-[a]	EL-AFW150-[a]	225	382	5.75	19	6.5	1.5	1-1/2"	1/2"	1/4"	12
AFW300-N14DG-[a]	EL-AFW150-[a]	300	510	5.75	19	6.5	1.5	1-1/2"	1/2"	1/4"	12
AFW450-N20DG-[a]	EL-AFW150-[a]	450	765	5.75	19	6.5	1.5	2"	1/2"	1/4"	12
AFW650-N20DG-[a]	EL-AFW150-[a]	650	1,105	5.75	26.75	6.5	1.5	2"	1/2"	1/4"	12.5
AFW1000-N30DG-[a]	EL-AFW150-[a]	1,000	1,700	9	27.5	7	1.5	3"	1/2"	1/2"	32
AFW1250-N30DG-[a]	EL-AFW150-[a]	1,250	2,125	9	32.5	7	1.5	3"	1/2"	1/2"	33.5
AFW1500-N30DG-[a]	EL-AFW150-[a]	1,500	2,550	9	38.5	7	1.5	3"	1/2"	1/2"	33.5

[a] Element grade, specify E5 (5 μm), EA (0.01 μm), or EC (activated carbon).
 DG auto drain/DP indicator combo is standard for threaded filter units. Either/both can be omitted upon request.
 If 145 pressure rating is acceptable, the equivalent AFF / AM* model is preferred.



Technical Notes

1. Threaded filters are manufactured from aluminum and comply with the Pressure Equipment Directive PED/97/23/EC.
2. Threaded connections are NPT to ANSI B2.1.
3. Direction of air flow, inside to out through coalescing filter elements and outside to in through activated carbon element.
4. Activated carbon filters must not operate in oil saturated conditions and will not remove certain types of gases including carbon monoxide and carbon dioxide.
5. Grade EC elements must be changed periodically to suit application but at least every 6 months.
6. Activated carbon towers for large applications are available to order. Please contact SMC.
7. Differential pressure indicators are fitted to all models, part number AFW-55DPIW (with the exception of grade EC). EC grade filters do not include AFW-55DPIW differential pressure indicator.
8. Float operated automatic drain valves, model AFWADV-16 with manual override facility are fitted to all standard models. Semi automatic drain valves, model AFWADV-25 with manual override facility are fitted to all EC grade filters.
9. All filter bodies are electrophoretically painted and then coated with grey polyester powder paint finish to eliminate corrosion.

Threaded filters and filter elements are suitable for use with mineral and synthetic oils plus oil free compressed air applications.

For larger flow application, please refer to the flanged filter detail.

Accessories

Description	Outlet port size (NPT)	Applicable body size		
		AFW150	AFW225-650	AFW1000-1500
Connection kit		AFW-CK150	AFW-CK650	AFW-CK1500
Mounting bracket kit (2 per kit)		AFW-BK150	AFW-BK650	AFW-BK1500
Port plate kits ^{Note}	1-1/2"	AFW-E150-N04	N/A	N/A
	2"	AFW-E150-N06	N/A	N/A
		AFW-E150-N10	N/A	N/A
		AFW-E150-14	AFW-E650-N14	N/A
		N/A	AFW-E650-N20	N/A

Note: Port plate kits packaged each, 2 port plate kits required to convert both sides of the housing

Element Specifications - Threaded & Flanged

Filtration grade	E5	E1	EA	A
Description	General Purpose	Prefiltration / Coalescing	High Efficiency Coalescing	C
Particle removal, μm	5	1	0.01	
Max. particle size class ⁴⁾	3	2	1	
Max. oil content class ⁴⁾	4	2	1	
Max. oil carryover 68°F (20°C), ppm	5	0.1	0.01	
Recommended temperature, °F (°C)	100 (38)			7
Max. temperature, °F (°C)	250 (120)			
Max. working pressure, psig	300 (element only, see housing rating)			
Pressure loss - clean & dry, psid	0.5	1	1.5	
Pressure loss - oil saturated, psid	1	2	3	See Te #
Pressure loss - change element, psid	6	6	6	
Element Media	Borosilicate microfiber multi-wrap			Carbon

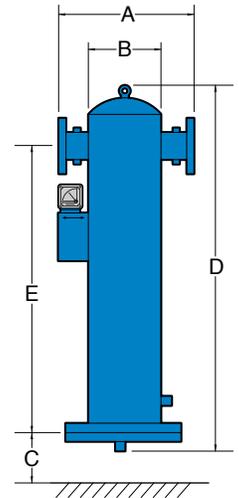


Compressed Air Flanged Filters – Series AFW

Series AFW flanged filters are built to ASME VIII and CRN pressure vessel standards. The range includes various model sizes with flow capacities to suit all industrial applications, high capacity filters are available upon request. Unique features of this range include stainless steel internal parts for maintenance free operation, a dual sided differential gauge for easy viewing and a side mounted drain port for permanent connection to an electronic drain or for a drain balance line. Four grades of filter elements are available and have a tie rod construction for easy replacement. The coalescing elements feature a high temperature drainage layer which is resistant to all oils including synthetic coolants. A tough corrosion resistant polyester powder coating both inside and out eliminates corrosion.

Specification

Filter 1)	Element 1)	No. of Elements	Flow Rate (SCFM)	Flange Size ANSI ISO#	Max. Working Pressure	Max. Temperature	Dimensions					Weight lb
							A	B	C	D	E	
AFW1400-N30FGM-E*	EL-AFW700-E*	2	1,400	3"	232 psi	250°F	18"	8-5/8"	32"	45.30"	38.30"	215
AFW2100-N40FGM-E*		3	2,100	4"			18"	10.80"		48.20"	38.40"	326
AFW2800-N60FGM-E*		4	2,800	6"			20"	12.80"		50.30"	39.30"	439
AFW3500-N60FGM-E*		5	3,500	6"			20"	12.80"	50.30"	39.30"	439	
AFW4200-N60FGM-E*		6	4,200	8"			20"	14"	54.30"	40.40"	536	
AFW5600-N80FGM-E*		8	5,600	8"			24"	16"	55.10"	40.60"	647	
AFW7000-N80FGM-E*		10	7,000	10"			28"	18"	58.10"	40.60"	778	
AFW8400-N100FGM-E*		12	8,400	10"			28"	18"	58.10"	42.60"	778	
AFW9800-N100FGM-E*		14	9,800	10"			28"	20"	59.40"	42.80"	936	
AFW11200-N100FGM-E*		16	11,200	12"			33"	24"	61"	43.20"	1,214	
AFW12600-N100FGM-E*		18	12,600	12"			33"	24"	61"	43.20"	1,214	
AFW16100-N120FGM-E*		23	16,100	12"			C/F	C/F	C/F	C/F	C/F	



1) Specify filtration grade by replacing; * = 5µm; 1 = 1µm; A = 0.01 µm; C = activated carbon

Correction Factor - Threaded & Flanged

Operating pressure		Correction factor
MPa	psi	
0.03	4	0.21
0.06	9	0.29
0.1	14.5	0.38
0.2	29	0.53
0.3	44	0.65
0.4	58	0.76
0.5	72	0.84
0.6	87	0.92
0.7	100	1
0.8	115	1.07
0.9	130	1.13
1	145	1.19
1.1	160	1.25
1.2	174	1.31
1.3	189	1.36
1.4	203	1.41
1.5	218	1.46
1.6	232	1.51

Technical Notes

1. Flanged filters are designed and manufactured in accordance with ASME VIII and U Stamped for the USA, CRN approved for use within Canada.
2. Flanged connections are to ANSI class 150.
3. Filter element bottom end caps are internally threaded to ease installation. Direction of air flow inside to out through coalescing filter elements and outside to through activated carbon element.
4. Activated carbon filters must not operate in oil saturated conditions and will not remove certain types of gases including carbon monoxide and carbon dioxide.
5. Grade EC elements must be changed periodically to suit application but at least every 6 months.
6. Activated carbon towers for large applications are available to order. Please contact SMC.
7. Differential pressure indicators are fitted to all models, part number AFW65DPIW.
8. Inlet and outlet pressure tappings are included to facilitate pressure gauge installation.
9. 1/2" manual drain valves are fitted to AFW1400 to AFW7000, 3/4" fitted to AFW8400 and AFW16100 as standard. An additional 1/2" side entry drain port is included on models AFW1400 to AFW7000, 3/4" to AFW8400 and AFW16100.

All filter bodies are coated inside and out with a white paint finish to eliminate corrosion.

Flanged filters and filter elements are suitable for use with mineral and synthetic oils plus oil free compressed air applications.

Flanged filters and filter elements are silicone free.

Centrifugal Water Separators – Series AFW-WS

High quality compressed air is essential to pneumatic and automation systems and correct air preparation minimizes component failure, increases the operating life of equipment and reduces energy consumption. Water vapor occurs naturally in air and is present in the hot air discharged from air compressors. The hot air will then release condensate as it meets the colder surfaces of down stream equipment. Although the condensate can be removed via drains, liquid will remain in the air stream. The liquid condensate will break down lubricating oils, increasing friction between moving surfaces and corrode exposed metal components. For compressed air installations where water contamination is a real problem, SMC's range of silicone free water separators can deal simply and effectively with the problem. Typically, water separators are installed downstream of after coolers and air receivers, refrigerant dryers and at strategic points in pipe work installations. The design utilizes an internal spinner which removes large quantities of condensate by centrifugal action. Water separators are available for operating pressures up to 232 psig (1.6 MPa).



Max. recommended operating temperature	248°F (120°C)
Min. recommended operating temperature	35°F (1.5°C)
Typical pressure loss at rated flow	0.7psi (50mbar)
Max. working pressure	232psig (1.6MPa)

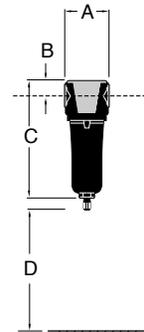
Specification

	Model Number	Flow Rate		Dimensions (in)				Connections (NPT female)			Weight Lbs
		SCFM	Nm³/h	A	B	C	D	In/Out	Side	Bottom*	
Threaded Models	AFW175-N10D-WS	175	297	3.94	1.38	10.87	4.33	1"	N/A	1/4"	3.3
	AFW275-N12D-WS	280	476	4.80	1.65	18.11	5.91	1-1/4"	N/A	1/4"	5.5
	AFW325-N14D-WS	320	545	4.80	1.65	18.11	5.91	1-1/2"	N/A	1/4"	5.5
	AFW400-N14D-WS	400	680	5.75	2.05	18.98	7.09	1-1/2"	N/A	1/4"	8.8
	AFW700-N20D-WS	700	1,189	5.75	2.05	18.98	7.09	2"	N/A	1/4"	8.8
	AFW850-N25D-WS	850	1,445	8.27	2.64	23.43	7.87	2-1/2"	N/A	1/4"	18.7
Flanged Models	AFW1500-N30D-WS	1,500	2,550	8.27	2.64	23.43	7.87	3"	N/A	1/4"	18.7
	AFW1500-N30FM-WS	1,500	2,550	16	7.5	39	32	3" flg. **	1/2"	1/2"	215
	AFW2100-N40FM-WS	2,100	3,570	18.25	9.75	39.5	32	4" flg. **	1/2"	1/2"	326
	AFW3800-N60FM-WS	3,800	6,460	20.5	12	41	32	6" flg. **	1/2"	1/2"	439
	AFW6500-N80FM-WS	6,500	11,050	24	14.5	41.5	32	8" flg. **	3/4"	3/4"	647
	AFW10000-N100FM-WS	10,000	17,000	28	17.5	42.5	32	10" flg. **	3/4"	3/4"	778
	AFW16500-N120FM-WS	16,500	28,050	CF	CF	CF	CF	12" flg. **	CF	CF	CF

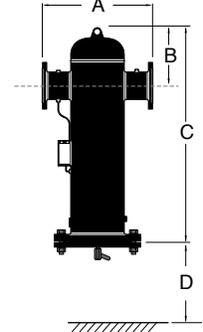
* Bottom drain, with mechanical float drain

** ANSI 150# type

Threaded water separators are standard with auto drain valves, flanged units with manual drain valves. Manual unit can be substituted on threaded unit, or valves can be omitted on either type.



Threaded



Flanged

Correction Factor

Operating pressure	MPa	0.03	0.06	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5	1.6
		psi	4	9	14.5	29	44	58	72	87	100	115	130	145	160	174	189	203	218
Correction factor		0.21	0.29	0.38	0.53	0.65	0.76	0.84	0.92	1	1.07	1.13	1.19	1.25	1.31	1.36	1.41	1.46	1.51

Technical Notes

1. Threaded separators are manufactured from aluminum and comply with the Pressure Equipment Directive PED/97/23/EC.
2. Threaded connections are NPT to ANSI B2.1.
3. Float operated automatic drain valves, model AFW-DVAS16, with manual override facility are fitted to models AFW150-WS to AFW1500-WS. When high quantities of liquid are anticipated, SMC recommend the use of a "no loss" type drain valve.
4. All aluminum separator bodies are electrophoretically painted and then coated with black polyester powder paint finish to eliminate corrosion.
5. Flanged separators are designed and manufactured in accordance with ASME VIII and U Stamped for the USA, CRN approved for use within Canada.
6. Flanged connections are to ANSI class 150.
7. 1/2" manual drain valves are fitted to AFW1500-WS to AFW6500-WS, 3/4" fitted to AFW10000-WS and AFW15000-WS as standard. An additional 1/2" side entry drain port is included on models AFW1825-WS to AFW6470-WS, 3/4" to AFW10000-WS and AFW15000-WS.
8. All flanged separator bodies are coated inside and out with blue polyester powder paint finish to eliminate corrosion.
9. Separators are suitable for use with mineral and synthetic oils plus oil free compressed air applications.



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