TECHNICAL INFORMATION

Installation, Operation and Maintenance
Balston® Large Capacity Filters

These instructions must be thoroughly read and understood before installing and operating this product. All installation, operation, and maintenance procedures for the Balston Large Capacity filters should be performed by suitable personnel using reasonable care. If you have any questions or concerns, please call the Technical S ervices Department at 800-343-4048, 8 AM to 5 PM Eastern Time (North America only) or email at balstontechsupport@parker.com. For other locations, please contact your local representative.

General Description

When filtering compressed air or any other compressed gas, install the filter assembly so the flow of the compressed gas through the filter cartridges is from inside-to-outside. When the filter is installed correctly, the gas will flow into the housing through the inlet port, be directed upward through the center of the filter cartridges, flow through the filter cartridges and exit the housing through the outlet port. During filtration, fine liquid droplets that are removed from the compressed gas supply drain from the outside surface of the filter cartridge. The liquid is subsequently removed from the housing through the drain port. 99.5% of .3 micron particulate matter in the compressed air supply is trapped in the depth of the filter media.

Proper installation of the filter assembly includes provisions for draining the liquid that is removed from the compressed gas supply. Balston large capacity compressed gas filters are shipped with an automatic float drain (P/N ADT-50). Allow adequate space around the drain port for the installation of a drain.

Note: In applications where the compressed air supply contains heavy water loading, an adequately sized aftercooler and drip leg (with automatic drain) should be installed upstream from the filter assembly.

The replacement interval for the filter cartridges is dependent on the pressure drop across the filter housing. The pressure drop across the housing may be measured across the upstream and downstream pressure taps in the housing, and monitored by using a Balston Differential Pressure

Installation

Location

Indicator (DPI, P/N KBDPI-25) which is supplied with the filter housing.
Install the filter as close to the point of use as possible to minimize the recontamination of the compressed gas supply by pipe scale, condensation, or other materials in the pipeline. If it is not convenient to install the filter close to the point of use, additional filtration at the point(s) of use is recommended. Parker manufactures a complete line of point-of-use filters to fit a variety of line sizes. The filter assembly must be installed in a vertical orientation (i.e., inlet and outlet ports parallel to the ground) if liquid drainage is expected. If the gas is dry, and no condensate is expected, the filter may be installed in any orientation which allows easy installation and service at the customer site. See outline drawings on page 3 for top load or bottom load housings. For any installation, allow adequate room for the cover to swing open and expose the filter cartridges. Provisions should be made to allow the operator to reach at least 12 inches down into the housing when changing the filter cartridges.

Installation (continued)

Filter Cartridge Installation

The filter assembly will need to be isolated from gas supply and depressurized to change the filter cartridges. Changing the cartridges requires approximately 15-30 minutes (depending on the number of cartridges in the housing). If the filter assembly is part of a continuous process for which there is no convenient shutdown period, provisions must be made to bypass the filter assembly in order to change the cartridges on a regular basis. The procedure for installing the filter cartridges is outlined below:

1. Turn off compressed gas supply to housing. Depressurize housing. (If the housing is installed in a continuous flow process, switch the flow to bypass and depressurize the filter housing.)
2. Open the housing cover.
3. Unscrew the seal nut, remove the filter end cap and remove the spent filter cartridge.
4. Install a new filter cartridge over the tie rod. Make sure that the bottom of the cartridge slides over the centering guide at the bottom of the housing and that the cartridge seats squarely on the flat surface of the tube seat.
5. Place the filter end cap on top of the cartridge. Thread the seal nut on to the tie rod until it is hand tight and tighten an additional 1-1/2 to 2 turns to ensure that the filter cartridge is securely sealed in place.
6. Inspect all seals and replace as needed.
7. Replace filter housing cover and tighten securely.
8. Initiate flow through the housing and return to normal service.

Draining

If liquid drainage is expected, the Balston filter assembly must be fitted with a drain. Balston filters are equipped with automatic drains. If a manual drain valve is installed, provisions must be made to drain the housing on a regular basis.

Note: Any drain installed on the filter assembly must have a pressure rating equal to or greater than the maximum operating pressure of the installation.

Maintenance

A Balston coalescing filter cartridge will remove liquids from a compressed gas supply for an unlimited period of time without loss of efficiency or flow capacity. However, over time, solid particulate contamination will be trapped in the depth of the filter cartridge and will cause an increased pressure drop across the housing. Balston filter assemblies are shipped with a differential pressure indicator (DPI). The DPI monitors the pressure drop across the housing and gives the operator a visual indication of when it is time to change the filter cartridges. The filter cartridge(s) should be changed when the pressure drop through the housing reaches 5-7 psid, or once per year (minimum). The procedure for changing the filter cartridge is detailed in the Installation section of this bulletin.

Assorted Parts

Part No.	Media	Complete Frame Kit	Seal Nut	End Cap	Housing Closure Seal	DP Indicator
ALN3-0128-HFC	510-28-HFC	KV-2A	71054	80000	80005	KBDPI-25
ALF3-0128-HFC	510-28-HFC	KV-2A	71054	80000	80005	KBDPI-25
ALF4-0125-HFC	850-25-HFC	KV-5A	71054	80003	80007	KBDPI-25
ALF6-0136-HFC	850-36-HFC	KV-6A	71054	80003	80007	KBDPI-25
ALF6-0336-HFC	510-28-HFC	KV-2A	71054	80000	76463V	KBDPI-25
AFN3-0128-HFC	510-28-HFC	KV-2A	71054	80000	80005	KBDPI-25
AFF3-0128-HFC	510-28-HFC	KV-2A	71054	80000	80005	KBDPI-25
AFF4-0125-HFC	850-25-HFC	KV-5A	71054	80003	80007	KBDPI-25
AFF6-0136-HFC	850-36-HFC	KV-6A	71054	80003	80007	KBDPI-25
AFF6-0328-HFC	510-28-HFC	KV-2A	71054	80000	76463V	KBDPI-25
AFF8-0428-HFC	510-28-HFC	KV-2A	71054	80000	76467V	KBDPI-25
AFF10-0728-HFC	510-28-HFC	KV-2A	71054	80000	76472V	KBDPI-25
AFF12-1128-HFC	510-28-HFC	KV-2A	71054	80003	75035V	KBDPI-25
AFF16-1528-HFC	510-28-HFC	KV-2A	71054	80002	75036V	KBDPI-25

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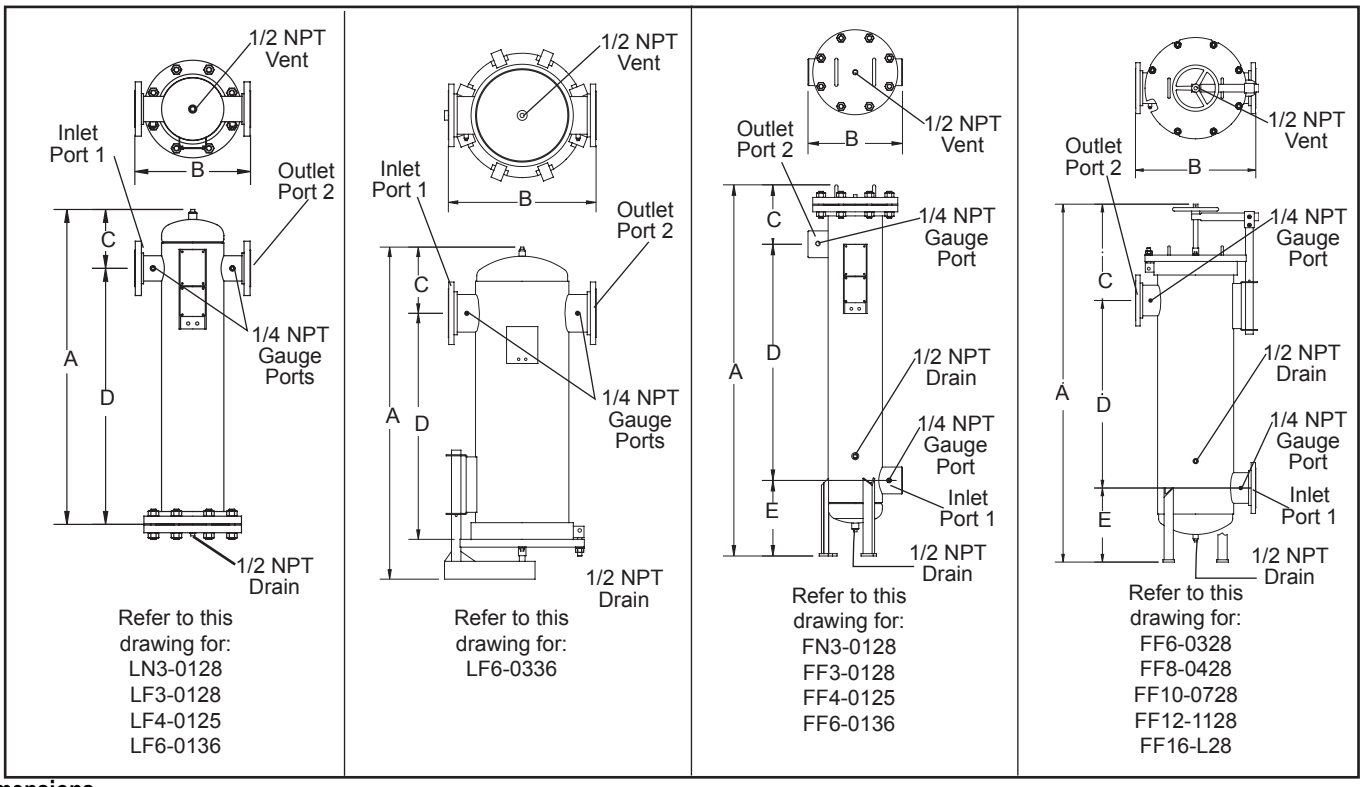
Drawings, Dimensions & Specifications



Dimensions

Model	A	B	C	D	E	Element Removal Clearance	Sump Capacity (2)	Weight (3)	Pressure Rating (4)	# of Filter Elements
ALN3-0128-HFC	43.1 (109.5)	15.0 (38.1)	7.7 (19.5)	35.4 (89.9)	---	28 (71.1)	0.81 (3)	190 (86)	250	1
ALF3-0128-HFC	43.1 (109.5)	16.0 (40.6)	7.7 (19.5)	35.4 (89.9)	---	28 (71.1)	0.81 (3)	190 (86)	250	1
ALF4-0125-HFC	42.7 (108.5)	20.0 (50.8)	9.7 (24.6)	33.0 (83.8)	---	25 (63.5)	2.0 (7)	390 (173)	220	1
ALF6-0136-HFC	56.4 (143.3)	20.0 (50.8)	11.4 (29.0)	45.00 (114.3)	---	36 (91.4)	2.0 (7)	380 (173)	220	1
ALF6-0336-HFC	57.8 (146.8)	26.0 (66.0)	11.0 (27.9)	39.8 (101)	---	28 (71.1)	2.0 (7)	340 (155)	220	3
AFN3-0128-HFC	58.9 (149.6)	15.0 (38.1)	9.4 (23.8)	37.5 (95.2)	12.0 (30.4)	28 (71.1)	1.1 (4)	190 (86)	250	1
AFF3-0128-HFC	58.9 (149.6)	16.0 (40.6)	9.4 (23.8)	37.5 (95.2)	12.0 (30.4)	28 (71.1)	1.2 (4)	200 (91)	250	1
AFF4-0125-HFC	63.3 (160.7)	20.0 (50.8)	12.3 (31.2)	35.0 (88.9)	16.0 (40.6)	25 (63.5)	4.2 (16)	370 (168)	220	1
AFF6-0136-HFC	75.3 (191.2)	20.0 (50.8)	12.3 (31.2)	35.0 (88.9)	16.0 (40.6)	25 (63.5)	4.2 (16)	370 (168)	250	1
AFF6-0328-HFC	75.3 (191.2)	20.0 (50.8)	12.3 (31.2)	47.0 (119.3)	16.0 (40.6)	36 (91.4)	3.6 (14)	410 (186)	220	3
AFF8-0428-HFC	87.3 (221.7)	30.0 (76.2)	25.8 (65.5)	42.5 (108.0)	19.0 (48.3)	28 (71.1)	8.7 (33)	550 (250)	250	4
AFF10-0728-HFC	96.0 (243.8)	34.0 (86.3)	28.5 (72.4)	45.4 (115.5)	22.0 (55.8)	28 (71.1)	14.8 (56)	750 (341)	250	7
AFF12-1128-HFC	101.0 (256.5)	44.0 (111.7)	27.5 (69.8)	47.5 (120.6)	26.0 (66.0)	28 (71.1)	25.5 (97)	1300 (591)	250	11
AFF16-1528-HFC	112.0 (28.4)	52.0 (132.0)	32.0 (81.3)	50.0 (127.0)	30.0 (76.2)	28 (71.1)	56.2 (231)	1700 (773)	250	15

(1) Dimensions are in inches (cm). (2) Sump Capacity is in gallons (liters). (3) Weight is in pounds (kg). (4) Pressure rating is in psig.

Materials of Construction:	
Body	Carbon Steel
Paint	Epoxy Enamel
Internals	Epoxy powder painted carbon steel
Seals	Aramid fibers/NBR binder flange gasket (single element vessels) Fluorocarbon o-ring (multi-element vessels)
Internal Coating	Epoxy enamel

Specifications:

Max. Pressure
Models ALF4, AFF4, ALF6, AFF6-0328: 220 psig (16.5 barg)
Models ALN3, AFN3, ALF3, AFF3, AFF6-0136, AFF8, AFF10: 250 psig (17.2 barg)

Max. Temperature 225°F (107°C)

Meets

A.S.M.E. Code, Section VIII, Division 1

Note: Consult factory for special requirements.

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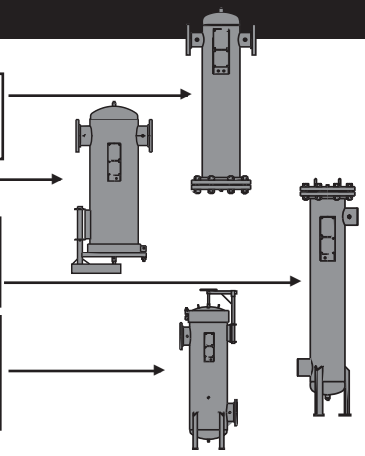
HFC MEDIA Max. Rated Flows (SCFM) at Various Operating Pressures
(0.25 psi pressure drop)

Model Number	2 PSIG	20 PSIG	40 PSIG	80 PSIG	100 PSIG	125 PSIG	150 PSIG	175 PSIG	200 PSIG	220 PSIG	250 PSIG
ALN3-0128-HFC	363	753	1187	2056	2490	3033	3575	4118	4661	5095	5746
ALF3-0128-HFC	363	753	1187	2056	2490	3033	3575	4118	4661	5095	5746
ALF4-0125-HFC	483	1004	1583	2741	3320	4044	4767	5491	6215	6793	N/A
ALF6-0136-HFC	725	1507	2375	4112	4980	6065	7151	8236	9322	10190	N/A
ALF6-0336-HFC	1088	2260	3562	6167	7470	9098	10726	12354	13983	15285	N/A
AFN3-0128-HFC	363	753	1187	2056	2490	3033	3575	4118	4661	5095	5746
AFF3-0128-HFC	363	753	1187	2056	2490	3033	3575	4118	4661	5095	5746
AFF4-0125-HFC	483	1004	1583	2741	3320	4044	4767	5491	6215	6793	N/A
AFF6-0136-HFC	725	1507	2375	4112	4980	6065	7151	8236	9322	10190	11493
AFF6-0328-HFC	1088	2260	3562	6167	7470	9098	10726	12354	13983	15285	N/A
AFF8-0428-HFC	1450	3013	4750	8223	9960	12131	14302	16472	18644	20380	22984
AFF10-0728-HFC	2538	5273	8312	14391	17430	21229	25028	28826	32627	35665	40222
AFF12-1128-HFC	3988	8286	13062	22614	27390	33360	39330	45298	51271	56045	63206
AFF16-1528-HFC	5438	11299	17812	30837	37350	45491	53632	61770	69915	76425	86190

HEC MEDIA Max. Rated Flows (SCFM) at Various Operating Pressures
(1.5 psi pressure drop)

Model Number	2 PSIG	20 PSIG	40 PSIG	80 PSIG	100 PSIG	125 PSIG	150 PSIG	175 PSIG	200 PSIG	220 PSIG	250 PSIG
ALN3-0128-HEC	218	454	715	1238	1500	1827	2154	2481	2808	3069	3462
ALF3-0128-HEC	218	454	715	1238	1500	1827	2154	2481	2808	3069	3462
ALF4-0125-HEC	219	605	954	1651	2000	2436	2872	3308	3744	4092	N/A
ALF6-0136-HEC	437	908	1431	2477	3000	3654	4308	4962	5616	6139	N/A
ALF6-0328-HEC	654	1362	2145	3714	4500	5481	6462	7443	8424	9207	N/A
AFN3-0128-HEC	218	454	715	1238	1500	1827	2154	2481	2808	3069	3462
AFF3-0128-HEC	218	454	715	1238	1500	1827	2154	2481	2808	3069	3462
AFF4-0125-HEC	291	605	954	1651	2000	2436	2872	3308	3744	4092	N/A
AFF6-0136-HEC	437	908	1431	2477	3000	3654	4308	4962	5616	6139	6923
AFF6-0328-HEC	654	1362	2145	3714	4500	5481	6462	7443	8424	9207	N/A
AFF8-0428-HEC	872	1816	2860	4952	6000	7308	8616	9924	11232	12276	13848
AFF10-0728-HEC	1526	3178	5005	8666	10500	12789	15078	17367	19656	21483	24234
AFF12-1128-HEC	2398	4994	7865	13618	16500	20097	23694	27291	30888	33759	38082
AFF16-1528-HEC	3270	6810	10725	18570	22500	27405	32310	37215	42120	46035	51930

Model Number	HFC Replacement Element	HEC Replacement Element	Port Size	Port Type	# of Elements
LINE MOUNT VESSELS					
ALN3-0128-H?C	510-28- HFC	510-28-HEC	3	NPT	1
ALF3-0128-H?C	510-28- HFC	510-28- HEC	3	FLANGE	1
ALF4-0125-H?C	850-28- HFC	850-28- HEC	4	FLANGE	1
ALF6-0136-H?C	850-36- HFC	850-36- HEC	6	FLANGE	1
ALF6-0336-H?C	510-36- HFC	510-36- HEC	6	FLANGE	3
FLOOR MOUNT VESSELS					
AFN3-0128-H?C	510-28- HFC	510-28- HEC	3	NPT	1
AFF3-0128-H?C	510-28- HFC	510-28- HEC	3	FLANGE	1
AFF4-0125-H?C	850-25- HFC	850-25- HEC	4	FLANGE	1
AFF6-0136-H?C	850-36- HFC	850-36- HEC	6	FLANGE	1
AFF6-0328-H?C	510-28- HFC	510-28- HEC	6	FLANGE	3
AFF8-0428-H?C	510-28- HFC	510-28- HEC	8	FLANGE	4
AFF10-0728-H?C	510-28- HFC	510-28- HEC	10	FLANGE	7
AFF12-1128-H?C	510-28- HFC	510-28- HEC	12	FLANGE	11
AFF16-1528-H?C	510-28- HFC	510-28- HEC	16	FLANGE	15



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