

Compressed Air Systems

Instrumentation & Automated Pneumatic Controls

**Pneumatic Tools & Cylinders** 

## Balston High Flow, Low Pressure Drop Coalescing Compressed Air Filters

- Remove 99.5% of 0.3 micron particles of oil, water, and dirt from compressed air and other gases
- Extremely low pressure drop
- Low operating costs
- Continuously trap and drain liquids
- Service flow ranges from a few scfm to 65,000 scfm
- Pleated media offering long filter life

### Applications

Plant Air Systems

**Air Dryer Protection** 

Critical Low Pressure Drop Source Air

High Solids Contamination

High Efficiency Filtration Requirement with Space Limits



#### **Balston High Flow Capacity Filter Assemblies**

Balston Coalescing Compressed Air Filters protect your equipment and delicate instruments from the dirt, water, and oil usually found in compressed air. Balston Coalescing Filters remove these contaminants at a very high efficiency - up to 99.5% for 0.3 micron particles and droplets. Liquid releases from the filter cartridge to an automatic drain as rapidly as it enters the filter. This allows the Balston coalescing filter to continue removing liquids for an unlimited time without loss of efficiency of flow capacity. In addition, this new HF media technology offers the lowest operating pressure drop performance in the industry. At only 0.25 psi (dry) and 0.5 psi (wet), the new HF media offers significant operating cost savings.





# New LF/FF Series Multiple Cartridge Filter Assemblies

These filter assemblies provide high efficiency filtration of compressed air and other compressed gases at very high flow rates. With inlet and outlet ports accommodating 3" to 10" pipe sizes, the new LF/FF Series housings are capable of flow rates up to a maximum capacity of 37,350 SCFM at 100 psig. The standard carbon steel units, which are generally in stock (through 6" line sizes), have pressure ratings up to 185 psig.

All LF/FF series housings are ASME Code Stamped for the rated maximum operating pressure. All FF Series vessels have built-in legs for floor mounting. Selected models have swing bolt enclosures for easy access to the internals. The filter cartridges in all models are sealed by tightening the threaded retainer cap onto the rigid tie rod, ensuring a leak tight seal on both ends of the cartridge.

Each assembly is equipped with an automatic float drain, differential pressure indicator, and a set of filter cartridges (except where noted).



#### **Benefits**

Low Pressure Drop Lower Change out/Labor Costs Lower Energy Costs High Dirt Holding Capacity Heat and Chemical Resistant No Wet Zone Oleophobic/Hydrophobic High Burst Strength

### EW! High Flow Coalescing Filter Media

Balston's HFC media consists of two layers. The outer layer features a dense matrix of glass fibers. It provides highly efficient coalescing aerosol removal and very low pressure drop. The inner layer, or



initial stage of filtration, effectively traps dirt particles, protecting and extending the life of the outer layer. A metal retainer is used for strength and stability.

This media is used in bulk coalescing applications and when relatively high efficiency and low pressure drop are required.

### **HFC Savings**

Annual electricity costs to operate a 100 HP Compressor can be as high as \$50,000. Pressure loss in the system adds to this expense. For a system operating at 100 psig that loses 2 psig of pressure through a filter, requires an additional 1% in operating energy costs (1).

Installing a single stage HFC Filter in place of a standard brand X filter, will reduce the pressure drop by 2+ psi.

Based on a standard 100 HP compressor operating at a 65% load cycle, a 1% reduction in annual operating costs would be equal to \$542.00

Calculation with Part-Load Operation (100 hp compressor)
Annual Electricity Costs = [(Motor full-load brake horsepower) x (0.746 kW/hp) x (Annual Hours of Operation) x (Electricity Cost in \$/kWh)] x [(Percent of time running fully loaded) + (0.30) x (Percent of time running unloaded)] For example: Full load motor efficiency = 90% Motor full load bhp = 100 hp Annual hours of operation = 8,760 hours (3-shift, continuous operation) Runs 65% of the time fully loaded, 35% of the time unloaded Unloaded operation consumes 30 percent of the electricity of fully loaded operation Cost of electricity = \$0.10/kWh Annual electricity costs = [(100 hp) x (0.746 hp/kW) x (8,760 hrs) x \$0.10/kWh) / 0.9] x [0.65 + (0.30) x (0.35)] = <b>\$54,272.00</b>

(1) Compressed Air Challenge, Doc # F9-1, April, 1998-Rev.0.





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

Model Number	2	20	40	80	100	125	150	185
	PSIG	PSIG	PSIG	PSIG	PSIG	PSIG	PSIG	PSIG
ALN3-0128-HFC	363	753	1187	2056	2490	3033	3575	4335
ALF3-0128-HFC	363	753	1187	2056	2490	3033	3575	4335
ALF4-0125-HFC	483	1004	1583	2741	3320	4044	4767	5780
ALF6-0136-HFC	725	1507	2375	4112	4980	6065	7151	8670
ALF6-0328-HFC	1088	2260	3562	6167	7470	9098	10726	13006
AFN3-0128-HFC	363	753	1187	2056	2490	3033	3575	4335
AFF3-0128-HFC	363	753	1187	2056	2490	3033	3575	4335
AFF4-0125-HFC	483	1004	1583	2741	3320	4044	4767	5780
AFF6-0136-HFC	725	1507	2375	4112	4980	6065	7151	8670
AFF6-0328-HFC	1088	2260	3562	6167	7470	9098	10726	13006
AFF8-0428-HFC	1450	3013	4750	8223	9960	12131	14302	17341
AFF10-0728-HFC	2538	5273	8312	14391	17430	21229	25028	30347
AFF12-1128-HFC	3988	8286	13062	22614	27390	33360	39330	47688
AFF16-1528-HFC	5438	11299	17812	30837	37350	45491	53632	65029

#### **Housing Selection Chart**





## **Drawings, Dimensions & Specifications**



Model	Δ	в	C	D	F	Element Remov	al Sump	Weight (3)
Wieder	, ,				<b>_</b>	Clearance		Weight (0)
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)
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)
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)
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)
ALF6-0328-HFC	57.8 (146.8)	26.0 (66.0)	11.0 (27.9)	39.8 (101)		28 (71.1)	2.0 (7)	340 (155)
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)
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)
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)
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)
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)
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)
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)
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)
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)
(1) Dimensions are	in inches (cm).	(2) Sump Ca	pacity is in gallons	(liters). (3) Weigh	nt is in pounds	(kg).		

Body	Carbon Steel
Paint	Epoxy Enamel
Internals	Epoxy powder painted carbon steel
Seals	Inorganic flange gasket (single element vessels) Fluorocarbon o-ring (multi-element vessels)
Internal Coating	Epoxy enamel

Specifications:				
Max. Pressure	185 psig (12.5 bar)			
Max. Temperature	450°F (232°C)			
Meets				
A.S.M.E. Code, Section VIII, Division 1				
Note:	Consult factory for special requirements.			



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