



## Features

The Fairchild Automatic Drain Filter Series is designed for use in systems that require clean, oil-free air. This series consists of a particulate filter and two coalescing filters with automatic drains. You can easily replace all filter elements.

Automatic Drain Filters are highly effective in removing oil and liquid-borne particulate matter. These units are recommended for use when clean air or inert gas environments are required in laboratory air, process control, instrument and compressed air systems. Automatic Drain Filters have the following features:

- Pre-filters remove water and dirt particles from air lines up to a maximum size of 5 microns.
- Coalescing filters are available in 0.3 micron and 0.01 micron sizes to remove 99.9% of oil mist.
- Maximum operating pressure of 150 psig.
- Differential pressure automatic drain provided on 1/4" port, 5-micron pre-filter. Float type automatic drain provided on all others.
- Easily replaceable filter element saves service time.
- Die cast aluminum or zinc body with Polycarbonate bowl and metal guard assures safety and durability.

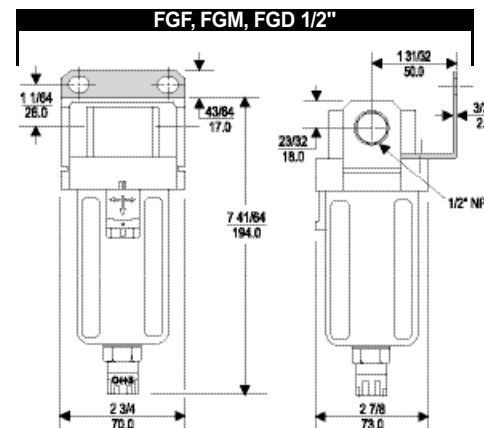
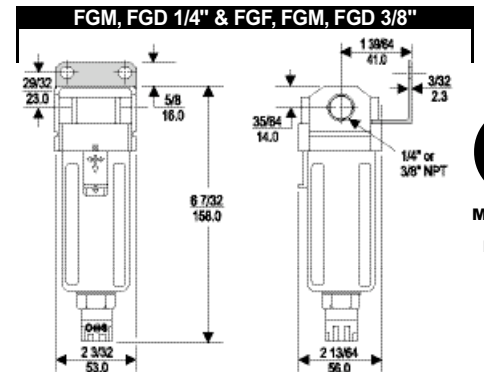
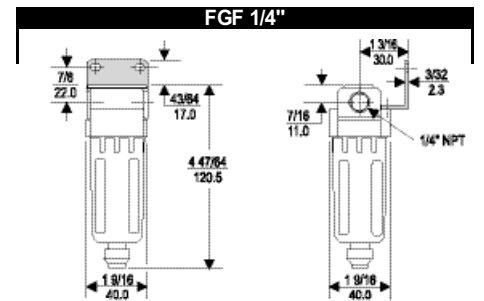
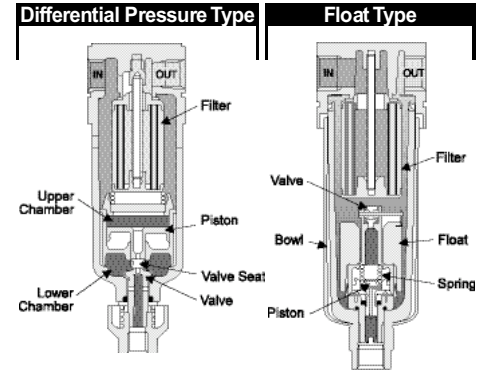
## Operating Principles

### Differential Pressure Type

Before air is supplied to the Filter, the Piston rests against the Valve Seat. When air pressure greater than 15 psig is supplied to the Filter, air pressure in the Upper Chamber acts against the Piston to bring the Valve Seat against the Valve. As air withdraws from the Filter, pressure in the Upper Chamber decreases to create a pressure differential between the Upper and Lower chambers. The Piston moves upward to open the Valve and drain the collected fluid. As the fluid drains, pressure in the Lower Chamber decreases. The higher pressure in the Upper Chamber acts against the Piston to bring the Valve Seat against the Valve. When the air flow through the Filter is constant, the pressures in the Upper and Lower chambers are equal and the Valve remains closed.

### Float Type

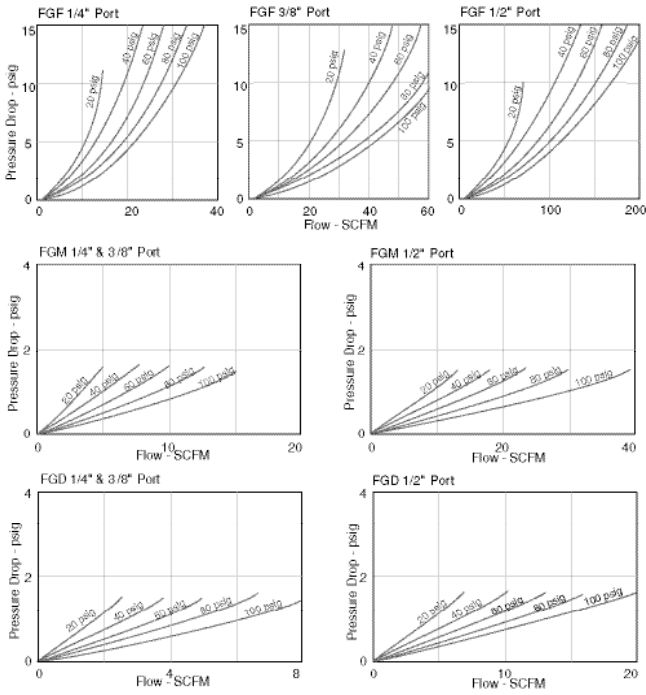
Before air is supplied to the Filter, the Spring force holds the Piston open. The Float, in its lowest position, closes off the Valve. When air is supplied to the Filter, the force of air pressure acting on the bottom of the Piston overcomes the Spring force that holds the Piston open and closes the drain passage. As fluid collects in the Bowl, the Float rises and opens the valve. The force of air pressure that acts on the top of the Piston is greater than the force of the air pressure that acts on the bottom of the Piston. This force drives the Piston down, opens the passage, and allows the Bowl to drain.



**E**  
Models  
FGF  
FGM  
FGD

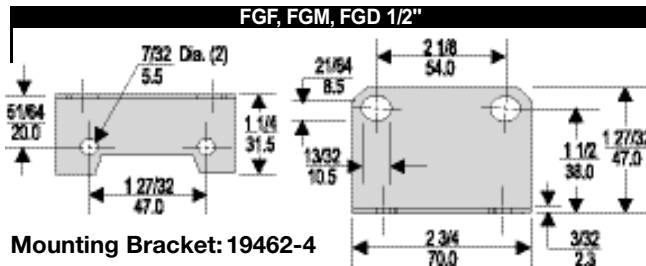
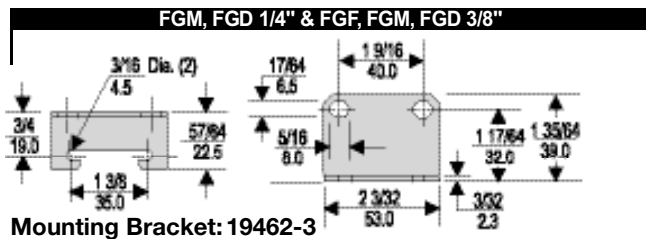
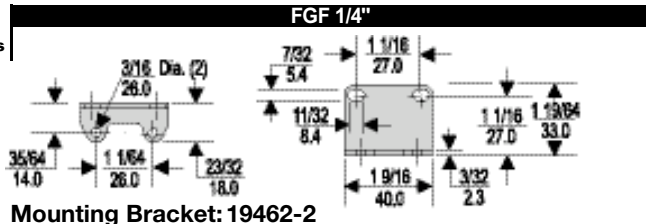
# FGF, FGM, FGD Automatic Drain Filter Series

## Flow Characteristics



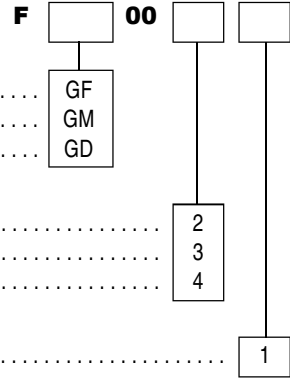
## Models FGF, FGM & FGD Accessories

Mounting Bracket ..... 19462-2 (sold separately)  
 19462-3 (sold separately)  
 19462-4 (sold separately)



## Catalog Information

### Catalog Number



### Type

Filter, 5.0 micron ..... GF  
 Mist separator, 0.3 micron ..... GM  
 Micro-mist separator, 0.01 micron ..... GD

### Port Size

1/4" ..... 2  
 3/8" ..... 3  
 1/2" ..... 4

### Thread Type

NPT ..... 1

## Installation

For installation instructions, refer to the *Fairchild Automatic Drain Filter Series Installation, Operation and Maintenance Instructions, IS-40FGFMGD*.

## Specifications

	FGF	FGM	FGD
<b>Minimum Operating Pressure</b>	15 psig, [1.0 BAR], 100 kPa)		
<b>Maximum Operating Pressure</b>	150 psig, [10 BAR], (1000 kPa)		
<b>Auto Drain Type</b>	Differential Pressure <sup>1</sup>	Float Type	
<b>Ambient Temperature</b>	23°F to 140°F (-5°C to 60°C)		
<b>Filtration</b>	5.0 micron	0.3 micron	0.01 micron
<b>Oil Mist Removal Rate</b>	NA	> 99.9%	
<b>Materials of Construction</b>	Body Die Cast Zinc <sup>2</sup>	Die Cast Aluminum	
	Bowl Polycarbonate with metal guard		
	Filter Element Synthetic Fiber and Polyurethane Foam		

<sup>1</sup> FGF 1/4" only, All other sizes, Float Type

<sup>2</sup> FGF 1/4" only, All other sizes, Die Cast Aluminum

### NOTES:

- 1) NOT suitable for flows less than 3.5 SCFM
- 2) Polycarbonate bowls may be damaged and possibly fail if exposed to atmospheres containing synthetic oils, thinner solvents, trichlorethylene, kerosene or other aromatic hydrocarbons. These filters are intended for use in industrial compressed air or inert gas systems only.
- 3) Filter element to be changed after 1 year or when a pressure drop of 15 psig, [1.0 BAR], (100 kPa) is reached.