



# AFC-Series Filter Unit

9151 Shaver Road • Portage, Michigan USA 49024-6798 • Phone +1 269 323 1313 • Customer Service 1 800 525 4214

## WARNING

**Maximum working pressure is  
150 PSI (10.3 bar)**

**Maximum Differential Pressure is  
150 PSID (10.3 bar)**

**This unit is a pressure vessel. Extreme care must  
be taken when inspecting or servicing the  
equipment**

### SERVICE REQUIREMENTS

- **Electrical:** 115 VAC or 230VAC at 50/60 Hz (FIG 1)
- **Air:** Minimum 60 PSIG (4 bar), Maximum 120 PSIG (8 bar) at 5.0 CFM (140 dm<sup>3</sup>/m) clean, dry, non-lubricated air (FIG 2)

### STANDARD AUTOMATION

- DELTAGARD<sup>®</sup> Controller (see part no. 48053)
- SIEMENS<sup>®</sup> S7 Programmable Logic Controller (see part no. 48054)

### STANDARD GAUGES

- 0-200 PSIG (0-14 bar), red lined at 150 PSIG (10 bar)

### STANDARD PIPING CONNECTIONS

- Inlet, Outlet, Drain and Backwash headers have either ANSI 150# Raised Face backup flanges or DIN PN16.

### INSTALLATION

#### 1. TRANSPORTATION

- a) Lift the entire filter system from the bottom of the filter frame or skid only. Do not lift it with a crane or overhead hoist.
- b) Move the filter system as close as possible to the installation site before it is removed from the crate and skid.
- c) Position the filter frame on a prepared, level foundation. Level the filter frame before it is anchored to the foundation.

#### 2. SECURING TO THE FOUNDATION

Anchor the filter frame legs to the foundation using the mounting pads provided with the filter system. Consult the customer drawings for dimensional details.

#### 3. CONNECTION TO PROCESS PIPING

- a) Support all external process piping independently from the filter system.
- b) Connect the inlet and outlet process piping (customer supplied) to the filter system's respective headers. Consult your pump manufacturer's installation guide for minimum pipe runs between the pump's outlet and the inlet of the filter system. NOTE: isolation / block valves (supplied by others) are required on all process connections of the filter unit so it may be isolated from process liquids in the event that service is required.
- c) Connect the drain line (customer supplied) to the filter system's drain header. Do not restrict or prohibit the flow of backwash liquids from the filter. See the following table for proper flow rates:

| SIZES    |                          |                      |                        |
|----------|--------------------------|----------------------|------------------------|
|          |                          | 1100                 | 3300                   |
| ELEMENTS | Single Stick             | 25 GPM<br>(95 l/min) | 90 GPM<br>(340 l/min)  |
|          | Tri-Cluster <sup>®</sup> | N/A                  |                        |
|          | ACCUFLUX <sup>®</sup> -7 | N/A                  | 150 GPM<br>(570 l/min) |

A lack of 45 PSI (3 bar) during the backwash cycle will compromise the regeneration of the filter media. NOTE: When using fabric media, an orifice plate or flow control valve in the drain piping may be required to limit the differential pressure across the filter element to approximately 60 PSI (4 bar). This will prevent damage to the filter media.

#### 4. CONNECTION OF THE ELECTRICAL SUPPLY

Connect the incoming single-phase electrical supply to the panel mounted disconnect switch inside the automation enclosure. Line voltage (Load) connects to pin 1, neutral connects to pin 3 and ground connects to the buss bar mounted to the left of this switch inside the control panel. See FIG 1 for details.

#### 5. CONNECTION OF THE AIR SUPPLY

This filter system is equipped with an air filter/regulator/lockout device. This device supplies air to the individual solenoid valves and the rotary actuators. See FIG 2 for details.

**INSTALLATION CHECKLIST**

Before operating the filter system for the first time, complete the following checklist:

- ❑ Verify that the input power wiring is attached correctly to the main disconnect switch mounted inside the enclosure.
- ❑ Verify that the incoming automation electrical supply is the proper voltage. Improper voltage will cause serious damage to the filter system's electrical systems. The proper voltage is 115 volts or 230 volts (single phase VAC). Reference the electrical schematic for the proper voltage of this unit.
- ❑ Verify that all headers are piped correctly and supported independently from the filter system.
- ❑ Verify that all incoming instrument air pressure matches the requirements for this filter system.
- ❑ Verify that all filter body couplers, vent and drain plugs are closed tightly.

**ISOLATING A SINGLE FILTER STATION**

Internal Backwashing Units:

- ❑ Push in and turn the manual override button 90° on the solenoid valve of the station to be serviced. Pushing this button will cause the inlet valve to rotate to its off-stream position. Turning it 90° will lock the button in this position.
- ❑ Close off flow to the Outlet Header by rotating the Ball Valve located between the Filter Station and the Outlet Header.

External Backwashing Units:

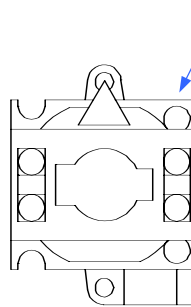
- ❑ Push in and turn the manual override button 90° on the solenoid valve of the station to be serviced. Pushing this button will cause the inlet & outlet valves to rotate to its off-stream position. Turning it 90° will lock the button in this position.

**BODY TUBE ASSEMBLY/DISASSEMBLY**

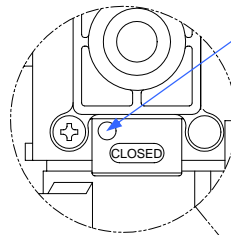
- ❑ Unscrew the two (2) lid nuts at the rear of the lid and swing them out of the way. Loosen the front lid nut far enough to swing the lid off the body tube. Be careful not to damage the Filter Screen or Lid O-rings.
- ❑ Reach into the top of the Filter Housing and lift out the filter screen. Be careful not to damage the Filter Screen or elastomers.
- ❑ Inspect the Filter Screen for damage. If damage exists, repair or replace the filter screen. Clean the Filter Screen thoroughly. Clean and inspect all elastomers. Replace defective elastomers with factory replacement parts to prevent process fluid leakage.



**FIG 1**



**CUSTOMER CONNECTIONS**  
 CONNECT LOAD TO 1  
 CONNECT NEUTRAL TO 3  
 CONNECT GROUND TO THE  
 BUSS BAR LOCATED AT THE  
 LEFT OF THIS SWITCH

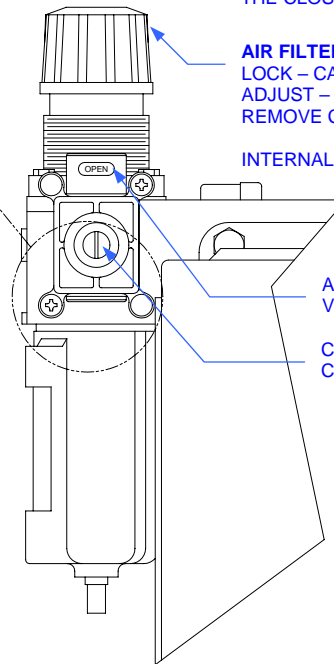


**SLIDE VALVE:**  
 3-WAY OSHA LOCKOUT  
 VALVE CAN BE LOCKEED IN  
 THE CLOSED POSITION

**AIR FILTER/REGULATOR:**  
 LOCK – CAP IN DOWN POSITION  
 ADJUST – CAP IN UP POSITION  
 REMOVE CAP – TAMPER PROOF

**INTERNAL FLOAT TYPE DRAIN**

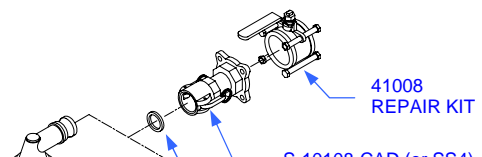
**FIG 2**



**AIR SHUTOFF SLIDE VALVE**

**CUSTOMER AIR CONNECTION: 1/2" NPTI**

**FIG 3**



INSTALLATION AND MAINTENANCE INSTRUCTIONS



# AFC-Series Filter Unit

PART NO. 48052

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INSTALLATION AND MAINTENANCE INSTRUCTIONS



AFC-Series Filter Unit

PART NO. 48052

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TABLE 1 - ELASTOMER REFERENCE - 1100 SERIES

| Elastomer Type    | Abbr<br>*** | Max Temp     | AVAILABILITY |          |           |          |          |          |          |  |
|-------------------|-------------|--------------|--------------|----------|-----------|----------|----------|----------|----------|--|
|                   |             |              | P-10002-     | S-67004- | BP-10003- | S-67001- | S-67005- | P-22211- | S-10313- |  |
| Buna-N            | BUN         | 225°F(107°C) |              |          |           |          |          |          |          |  |
| Nordel            | EPT         | 300°F(149°C) |              |          |           |          |          |          |          |  |
| White Neoprene    | FGL         | 225°F(107°C) |              |          |           |          |          |          |          |  |
| Viton             | VIT         | 350°F(176°C) |              |          |           |          |          |          |          |  |
| Silicone          | SIL         | 450°F(232°C) |              |          |           |          |          |          |          |  |
| Teflon            | TFE         | 350°F(176°C) |              |          |           |          |          |          |          |  |
| Teflon / Buna-N   | TBG         | 350°F(176°C) |              |          |           |          |          |          |          |  |
| Teflon / Silicone | TSG         | 350°F(176°C) |              |          |           |          |          |          |          |  |
| Teflon / Viton    | TVG         | 350°F(176°C) |              |          |           |          |          |          |          |  |

TABLE 1 - CONTINUED

| Elastomer Type    | Abbr<br>*** | Max Temp     | AVAILABILITY |          |           |          |  |  |  |  |
|-------------------|-------------|--------------|--------------|----------|-----------|----------|--|--|--|--|
|                   |             |              | P-10003-     | P-10001- | BP-10001- | P-12467- |  |  |  |  |
| Buna-N            | BUN         | 225°F(107°C) |              |          |           |          |  |  |  |  |
| Nordel            | EPT         | 300°F(149°C) |              |          |           |          |  |  |  |  |
| White Neoprene    | FGL         | 225°F(107°C) |              |          |           |          |  |  |  |  |
| Viton             | VIT         | 350°F(176°C) |              |          |           |          |  |  |  |  |
| Silicone          | SIL         | 450°F(232°C) |              |          |           |          |  |  |  |  |
| Teflon            | TFE         | 350°F(176°C) |              |          |           |          |  |  |  |  |
| Teflon / Buna-N   | TBG         | 350°F(176°C) |              |          |           |          |  |  |  |  |
| Teflon / Silicone | TSG         | 350°F(176°C) |              |          |           |          |  |  |  |  |
| Teflon / Viton    | TVG         | 350°F(176°C) |              |          |           |          |  |  |  |  |

TABLE 2 - ELASTOMER REFERENCE - 3300 SERIES

| Elastomer Type    | Abbr<br>*** | Max Temp     | AVAILABILITY |          |          |          |          |          |          |          |          |
|-------------------|-------------|--------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------|
|                   |             |              | P-10008-     | S-67008- | P-10005- | S-67006- | S-67009- | P-22206- | P-10007- | S-10370- | P-12467- |
| Buna-N            | BUN         | 225°F(107°C) |              |          |          |          |          |          |          |          |          |
| Nordel            | EPT         | 300°F(149°C) |              |          |          |          |          |          |          |          |          |
| White Neoprene    | FGL         | 225°F(107°C) |              |          |          |          |          |          |          |          |          |
| Viton             | VIT         | 350°F(176°C) |              |          |          |          |          |          |          |          |          |
| Silicone          | SIL         | 450°F(232°C) |              |          |          |          |          |          |          |          |          |
| Teflon            | TFE         | 350°F(176°C) |              |          |          |          |          |          |          |          |          |
| Teflon / Buna-N   | TBG         | 350°F(176°C) |              |          |          |          |          |          |          |          |          |
| Teflon / Silicone | TSG         | 350°F(176°C) |              |          |          |          |          |          |          |          |          |
| Teflon / Viton    | TVG         | 350°F(176°C) |              |          |          |          |          |          |          |          |          |

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