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## Cartridge Filter Housing Operations Manual



**USE OF CARTRIDGE FILTER HOUSINGS THAT ARE NOT COMPLIANT WITH THESE INSTRUCTIONS INDEMNIFY PRM FROM ANY DAMAGES THAT MAY RESULT FROM THEIR MISUSE. PLEASE READ AND UNDERSTAND THIS MANUAL AND ONLY USE THE EQUIPMENT AS SPECIFIED. IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT A REPRESENTATIVE AT PRODUCT RECOVERY MANAGEMENT.**

# 1. General Safety Instructions



Please read the instruction book before using



Ensure the connections to the housing are secure and without leaks



Always close the isolation valves, vent and drain the housing before opening. Opening the housing while it is under pressure may result in the contents spraying out, potentially causing damage to equipment and personal injury.



Housings are only for water filtration. Processing anything other than water indemnifies Product Recovery Management, Inc. from any liability of any problems or damages that may arise.

***PRM accepts no liability for system venting and safety relief systems nor any damages that may arise from them.*** It is the project engineer's responsibility to ensure that the design includes these devices and that adequate venting is installed to mitigate the potential buildup of gases inside of vessels. If these are not installed, serious damages or injury could occur. PRM is expressly not responsible for all installations and any damages due to leaks, ruptures, bursting or other damages caused by improper installation or pressure maintenance.

## 2. Summary

PRMFiltration.com is a wholly owned Trade Name of Product Recovery Management, Inc. (PRM). PRM is proud to be able to supply a variety of Filter Housing models to accommodate your treatment needs. Available as bare housings or predesigned, packaged skids and ready to go when it reaches the project site. PRM supplies a wide variety of replaceable filter elements for the housings.

Filter Housings are one of the most common and efficient technologies implemented for filtration of water where it is desirable to capture insoluble particles cost effectively. The operator simply selects the filter element that goes in the housing by gauging its level of necessary filtration sizing. Cartridge elements are rated in micron sizes typically 25 micron to 1 micron in size where smaller numbers mean more aggressive filtration.

Solids are captured by the cartridge filter and are replaced as the solids collection causes the differential pressure (dp) across the housing to increase. Typically cartridge elements are replaced when the dp gets between 5 and 10psig. If critical systems are being utilized, it is recommended that differential pressure transmitters or switches be implemented to ensure that the pump feeding the system is turned off before damage can occur.

It is common for cartridge filter housings to be installed in series where larger micron ratings are implemented in the first housings and smaller micron rated bags are implemented downstream. This method can be implemented to extend the effectiveness of filtration over time and to minimize O&M activities.

Please consult with PRM for design assistance questions or for quotations for packaged filtration systems to meet your needs.

### 3. Cartridge Model Features:

The standard features for the single bag filter housings are shown below. Each style can be made in a variety of configurations. For the full breadth of housings we offer and their specifications, visit [shop.prmfiltration.com](http://shop.prmfiltration.com):

#### **PVC 9 Cartridge Filter Housing, 40" Cartridges, 3 Inch Socket In/Out**

SKU: BFCARTHPCF9DC4BX

- PVC construction for corrosion resistance
- Uses (9) 40" Cartridge Filters
- Flow Capacity up to 216 GPM
- 3" Socket Inlet and Outlet Connections
- (2) 1/4" Ports in top cover, for pressure gauge (not included) and venting
- Silicone Gaskets
- Temperature Range: 41°F - 104°F
- Max. Operating Pressure: 85 psi
- 1/2" Drain
- 316 Stainless Steel Lid Retention Hardware with 316 SS Bolts
- Filtration for sediment, silt, odor/taste or organic compounds



#### **PVC 9 Cartridge Filter Housing, Uses 20" Cartridges, 3 Inch NPT In/Out**

SKU: BFCARTHPCF9DC2BX

- PVC construction for corrosion resistance
- Uses (9) 20" Cartridge Filters
- Flow Capacity up to 108 GPM
- 3" Inlet and Outlet Connections
- (2) 1/4" Ports in top cover, for pressure gauge (not included) and venting
- Silicone Gaskets
- Temperature Range: 41°F - 104°F
- Max. Operating Pressure: 85 psi
- 1/2" Drain
- 316 Stainless Steel Lid Retention Hardware with 316 SS Bolts
- Filtration for sediment, silt, odor/taste or organic compounds



**PVC 5 Cartridge Filter Housing, Uses 20" Cartridges,  
1-1/2 Inch NPT In/Out**

SKU: BFCARTHPCF5DC2B3X

- PVC construction for corrosion resistance
- Uses (5) 20" Cartridge Filters
- Flow Capacity 50 gpm rating
- 1-1/2" Inlet and Outlet Connections
- (2) 1/4" Ports in top cover, for pressure gauge (not included) and venting
- Silicone Gaskets
- Max. Temperature 113°F
- Max. Operating Pressure: 58 psi
- 1/2" Drain
- 316 Stainless Steel Lid Retention Hardware with 316 SS Bolts
- Filtration for sediment, silt, odor/taste or organic compounds



**304 Stainless Steel 4 Cartridge Filter Housing, Uses 20" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC8304X

- 304 SS construction for corrosion resistance
- Uses (4) 20 Inch Cartridge Filters
- Flow Capacity 48 gpm
- 2 Inch FNPT Inlet/Outlet
- Silicone O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 108 psig
- Operating temperature: 40°-140°F



**Stainless Steel 5 Cartridge Filter Housing, Uses 20" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC10304X

- 304 SS construction for corrosion resistance
- Uses (5) 20 Inch Cartridge Filters
- Flow Capacity 60 gpm
- 2 Inch FNPT Inlet/Outlet
- Silicone O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 108 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 7 Cartridge Filter Housing, Uses 20" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC14304X

- 304 SS construction for corrosion resistance
- Uses (7) 20 Inch Cartridge Filters
- Flow Capacity 84 gpm
- 2 Inch FNPT Inlet/Outlet
- Silicone O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 108 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 4 Cartridge Filter Housing, Uses 40" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC16304X

- 304 SS construction for corrosion resistance
- Uses (4) 40 Inch Cartridge Filters
- Flow Capacity 96 gpm
- 2 Inch FNPT Inlet/Outlet
- EPDM O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 108 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 5 Cartridge Filter Housing, Uses 40" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC20304X

- 304 SS construction for corrosion resistance
- Uses (5) 40 Inch Cartridge Filters
- Flow Capacity 120 gpm
- 2 Inch FNPT Inlet/Outlet
- EPDM O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 108 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 6 Cartridge Filter Housing, Uses 40" Cartridges,  
3 Inch Flange In/Out**

SKU: BFCARTSSC24304X

- 304 SS construction for corrosion resistance
- Uses (6) 40 Inch Cartridge Filters
- Flow Capacity 144 gpm
- 3 Inch 150# Flange Inlet/Outlet
- EPDM O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 145 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 7 Cartridge Filter Housing, Uses 40" Cartridges,  
3 Inch Flange In/Out**

SKU: BFCARTSSC28304X

- 304 SS construction for corrosion resistance
- Uses (7) 40 Inch Cartridge Filters
- Flow Capacity 168 gpm
- 3 Inch 150# Flange Inlet/Outlet
- EPDM O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 145 psig
- Operating temperature: 40°-140°F



**304 Stainless Steel 9 Cartridge Filter Housing, Uses 40" Cartridges,  
2 Inch NPT In/Out**

SKU: BFCARTSSC36304X

- 304 SS construction for corrosion resistance
- Uses (9) 40 Inch Cartridge Filters
- Flow Capacity 125 gpm
- 2 Inch NPT Inlet/Outlet
- EPDM O-Ring
- 1/2" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 145 psig
- Operating temperature: 40°-140°F



**CFX Series 304 Stainless Steel 36 Cartridge Filter Housing,  
Uses 40" Cartridges, 6 Inch Flange In/Out**

SKU: BFCARTSSCFX144304VX

- 304 Stainless Steel construction, 316 SS Optional
- Uses (36) 40 Inch Cartridge Filters
- Flow Capacity 720 gpm
- 6 Inch 150# Flange Inlet/Outlet
- Silicone, Buna-N or Viton O-Ring
- 3/4" NPT drains
- Top vent port for pressure gauge or relief valve
- Max. Operating pressure: 145 psig
- Operating temperature: 40°-140°F, depending on selected seals





## 4. Instructions

### **Step 1. Connecting a Cartridge Filter Housing**

Before bolting the legs to the surface on which it is placed, and ensure that the housing is as level as possible.

Isolation valves should be used before and after the housing to allow for safe filter replacement.

If the connection style is flanged, the provided gaskets should be used to ensure a good seal is made between the Housing and the inline pre and post isolation valves.

When connecting an NPT fitted Housing thread sealant should be applied to ensure a watertight seal is achieved.

The included ball valve should be installed in the 1/4 inch port in the lid to allow for venting the filter housing.

### **Step 2. Accessing the interior of the Cartridge Filter Housing**

Always release the pressure within the Housing before opening, by closing the inlet isolation valve and opening the vent. Once the internal pressure has normalized, close the outlet isolation valve. With both isolation valves closed and the pressure released the lid can be safely opened.

#### **For bolt plate lid models:**

Loosen the eye bolts in diagonal pairs so that it is evenly loosened and fold the hinge bolts down. When preparing to fasten the lid back on the housing, inspect the O-ring for damage or debris before putting the lid in place. The bolts should be tightened in an alternating star pattern to ensure a tight and even seal.

#### **For swing assisted lids:**

Once the eye bolts are loosened and folded down, turn the screw wheel located in the middle of the lid in order to lift the lid. When the lid is high enough to clear the housing and the rubber gasket, swing the lid clear of the housing.

### Step 3. Releasing the Cartridge Plate

1. The cartridges are held in place by the cartridge plate which is fastened with a wingnut. Remove the plate, careful not to drop the tension assemblies into the housing.
2. With the plate out of the way, remove the tension assemblies. Each tension assembly is made of 3 parts, 2 caps and 1 spring.

Cartridge plate

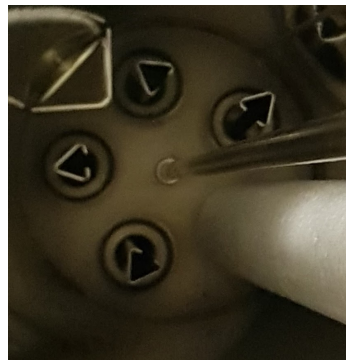


Tension Assembly



### Step 4. Inserting Cartridges

1. Insert the Cartridge into the housing so that it fits over the inlet ports at the bottom of the housing.



### Step 5 . Housing Reassembly

1. Place a completed tension assembly in the top of each cartridge filter, careful not to drop a tension assembly into the housing.
2. Place the Cartridge Plate in place by fitting the top caps of the tension assemblies through the holes in the plate.
3. Check the gasket for damage or debris before replacing the lid. The bolts should be tightened in an alternating star pattern to ensure a tight and even seal.

Secured Cartridge Plate



## SECTION 5. Replacement Cartridges

PRM proudly stocks NSF Certified Spun Polypropylene sediment filter cartridges.

### Spun Polypropylene Cartridges

- Cartridges are available in 20", 30" and 40" lengths
- Nominal filter ratings of 1, 5, 10 and 25 Micron
- Temperature range of 40 to 140 degrees F
- Bonded polypropylene microfiber for resistance to chemicals and bacteria
- Reduces sand, silt, scale, and rust particles in water and industrial fluid applications
- NSF 42 Tested and Certified



Replacement

## **DISCLAIMER OF WARRANTIES; LIMITATION OF LIABILITY**

We do not guarantee, represent or warrant that your use of our service will be uninterrupted, timely, secure or error-free.

We do not warrant that the results that may be obtained from the use of the service will be accurate or reliable.

You agree that from time to time we may remove the service for indefinite periods of time or cancel the service at any time, without notice to you.

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