

# Multi Cartridge Filters

Endotoxin-Retentive Filter, System Pre-Filter, and RO Pre-Filter





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## 1 THEORY OF OPERATION

The Endotoxin-Retentive Filters are the final purification process prior to distribution of the product water. They are sub-micron filters with the ability to remove bacteria and endotoxin. The filters are enclosed in an opaque housing to inhibit the proliferation of algae. Water flows through the filter assembly, which traps bacteria and endotoxin.

The cartridge system pre-filter removes coarse particulate matter (sediment) from the incoming water supply. The cartridge system pre-filter includes a 304 stainless steel housing designed for high flow rates using cartridges of the style and micron rating desired. Water enters the housing and flows through the filter cartridges, which trap sediment. The cartridges are considered exhausted when the delta pressure (inlet minus outlet = delta) across the filter assembly is 10 PSI, at which point the cartridges are replaced with new cartridges.

The reverse osmosis (RO) pre-filter is a cartridge filter that removes particulate matter (sediment, carbon fines) from the incoming water supply to protect downstream water purification components. Water is forced through the porous material of the filter cartridge resulting in particulate matter being trapped in the material. AmeriWater recommends using filters rated at 1-micron, but 5-microns rated filters may also be used.

### 1.1 Models

	Model	Cartridges	Connections	Max Rated Flow of Housing*
<b>Endotoxin-Retentive Filter</b>	001-021-0006	7 (20")	1.5" SOC or THRD	98 GPM
	001-021-0007	4 (20")	1.5" SOC or THRD	56 GPM
	001-021-0008	4 (10")	1.5" SOC or THRD	28 GPM
	0021-0021	4 (20")	1.5" SOC or THRD	56 GPM
<b>System / RO Pre-filter</b>	0021-504	4 (10")	1.5" SOC or THRD	28 GPM
	0021-508	4 (20")	1.5" SOC or THRD	56 GPM
	0021-512	4 (30")	1" SOC or THRD	84 GPM

\*Flow Rate is limited by the filter cartridge capacity

#### Optional Bypass Headers:

P/N	Description	Compatible Models
0021-600	1" Pre-filter Bypass Header	0021-512
0021-601	1 ¼" Pre-filter Bypass Header	0021-512
0021-602	1 ½" Pre-filter Bypass Header	0021-504, 0021-508

## 2 SYSTEM INSTALLATION

Locate and install the filter assembly on a level floor.

Inlet water supply piping should be  $\geq$  the inlet piping on the filter assembly header.

Outlet piping from the ultra filter should be  $\geq$  the outlet pipe on the filter assembly outlet.

Follow all local plumbing codes and local codes for securing the assembly to the floor

## 3 MONITORING

### **Endotoxin-Retentive Filters:**

Monitor/ record pressure drop across filters daily for a pressure differential ( $\Delta P$ ) of less than 15 psi between the inlet and outlet pressure gauges.

Test samples of pre- and post-filter water for bacteria and endotoxin when the filter is installed and whenever the specific type of filter is changed. Results should indicate that bacteria and endotoxin are reduced as stated by the manufacturer.

AmeriWater recommends that Endotoxin-Retentive Filters be changed at least every (12) months or when the ( $\Delta P$ ) increases by 15 psi.

**WARNING: Endotoxin-retentive filters are essential to patient safety and should never be bypassed or removed during treatment!**

### **System Pre-Filters:**

Monitor and record the pressure drop (delta pressure) across the cartridge system pre-filter daily.

Replace the filter cartridges when the delta pressure is  $> 10$  PSI.

### **RO Pre-Filters:**

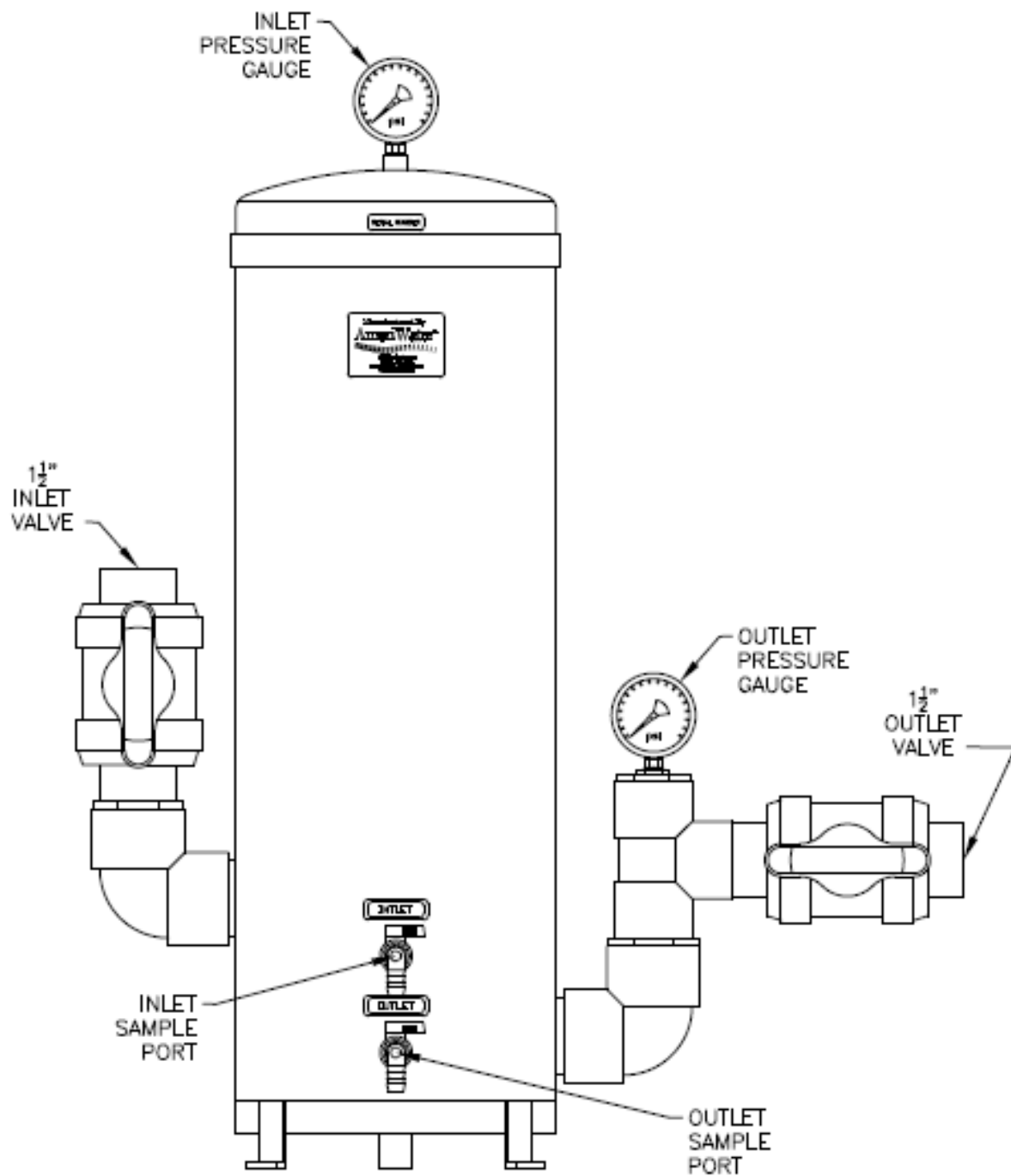
Monitor and record the inlet and outlet pressures across the filter daily. The delta pressure (inlet minus outlet = delta) should not exceed 10 psi. Delta pressures exceeding 10 psi may result in improper operation of the RO.

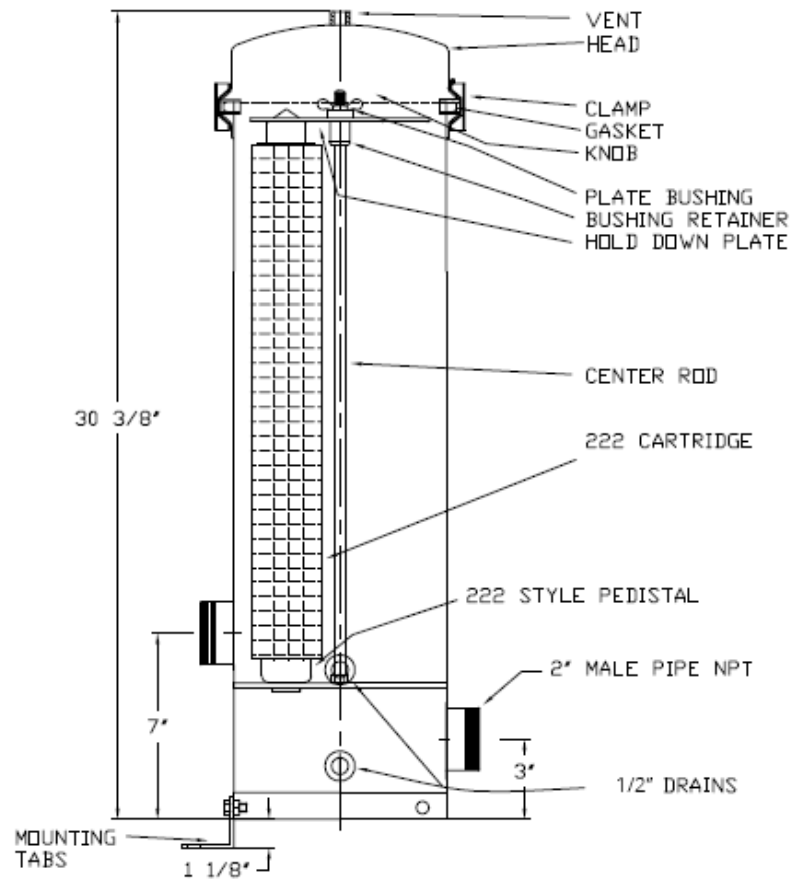
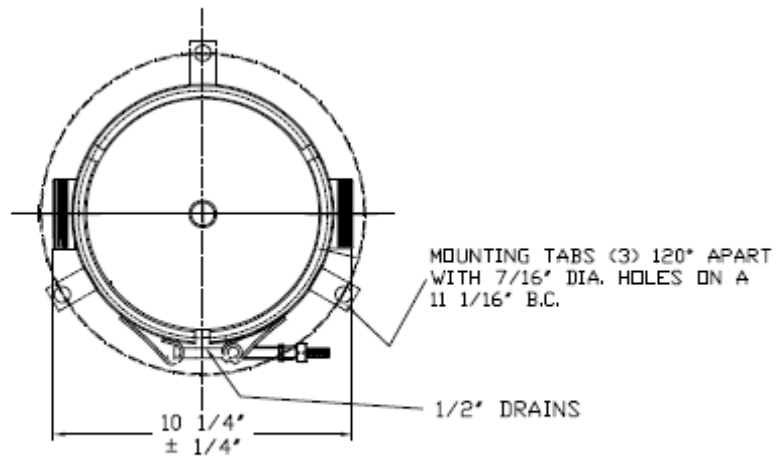
AmeriWater recommends that the filter cartridge be replaced with a new filter cartridge when the delta pressure exceeds 10 psi, or at least monthly.

Pre-filter cartridges should also be replaced on the third day following a carbon bed exchange.

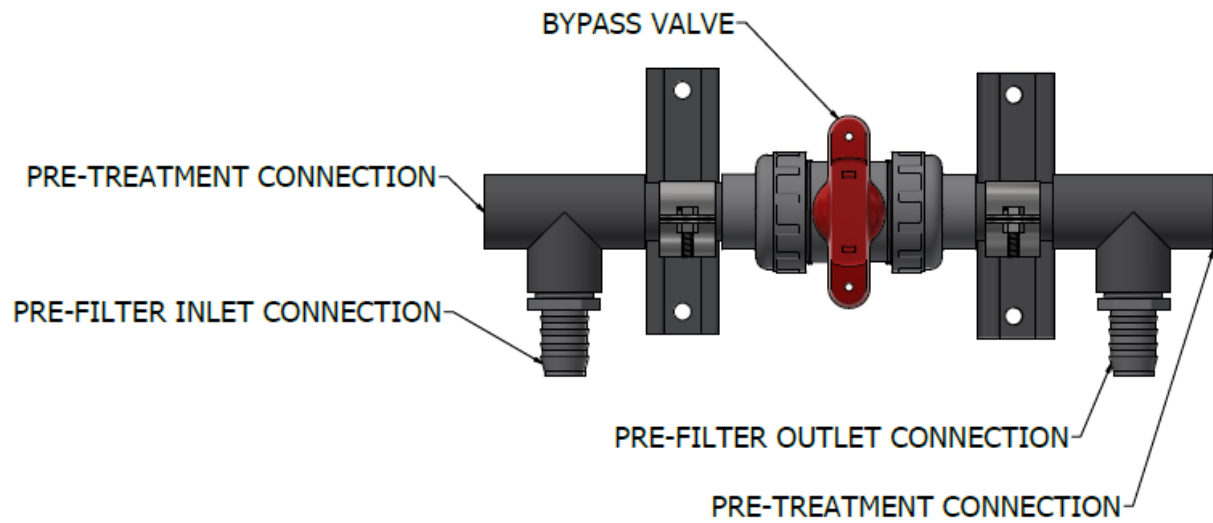
Excessive debris loading of the filter can be caused by failure of an upstream component or insufficient rinsing of carbon tanks following re-bedding.

#### 4 SYSTEM SCHEMATICS





#### 4.1 Optional Bypass Header





## 5 SPARE PARTS LISTING

Description	Part Number
GAUGE,0-160,.25,BM,2.5,LF,SS/SS,NR	43-0023
GAUGE,0-100,.25,BM,2.5,LF,SS/BR	43530711
VALVE,BALL,1.5,TU,PVC80	041531840
VALVE,BALL,1,TU,PVC80	041720169
VALVE,BALL,.25,MPTXFPT,PVC80	041002

### 5.1 Consumables

Model	Housing	Cartridge	Endotoxin- Retentive Filter Cartridge	O-ring
001-021-0006	021-0014	Universal	2 ½" x 20"	021-0016
001-021-0007	21-0042	222 style	2 ½" x 20"	021-0015
001-021-0008	21-505	222 style	2 ½" x 10"	021-0015
0021-0021	21-0042	222 style	2 ½" x 20"	021-0015

Model	Housing	Cartridge	System Pre- filter Cartridge (5 micron)	RO Pre-filter Cartridge (1 micron)	O-ring
0021-504	21-529	DOE	20-1051	20-1011	021-0015
0021-508	21-508	DOE	20-1052	20-1012	021-0015
0021-512	21-512	DOE	20-1053	N/A	021-0015

**CALIFORNIA PROPOSITION 65**

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**WARNING**

This product can expose you to chemicals such as vinyl chloride (used in the production of PVC) or Nickel (used in the production of stainless steel), that are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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Dear Valued Customer,

California Proposition 65 (Prop 65) is the Safe Water and Toxic Enforcement Act of 1986. The State of California began enforcing amendments to California Prop 65 at the end of August 2018. Prop 65 requires manufacturers to provide a clear and reasonable warning to residents of California about chemicals used in products that they purchase that are included on the Prop 65 Chemical List. The chemicals included on the list are chemicals that are known to the State of California to cause cancer, birth defects, or other reproductive harm. One such chemical is Vinyl Chloride, a compound used to produce Polyvinyl Chloride (PVC). The AmeriWater system you have purchased may contain PVC or stainless steel parts.

While warnings are only required in the State of California, AmeriWater has initiated the use of Prop 65 labeling for all products to ensure compliance with California regulations. Please note that the above warning does not necessarily mean that the product that you have purchased is unsafe. Products that have been cleared for market by FDA have been determined to be safe and effective by the United States Food and Drug Administration. The warning is simply a requirement by the State of California. If you wish to obtain additional information, please visit: [p65warnings.ca.gov](http://p65warnings.ca.gov). You may also contact your AmeriWater representative if you have any questions.

Thank you for your understanding and we look forward to continuing to serve you.