



ULTRAFILTRATION SYSTEMS
OWNER'S MANUAL

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OWNER INFORMATION

GENERAL

The water filtration system features a combination of the latest technologies to consistently deliver high-quality water.

The system is manufactured from the finest materials available and assembled to our strict quality standards. We thoroughly test each system in the factory to ensure it operates properly.

This manual includes detailed information on safety, installation, and operation for your water filtration system. Please read the information in this manual before installing and operating your system.

TECHNICAL ASSISTANCE

If you have any problems with the installation or operation of your water filtration system, please contact us at (801) 921-7889.

Fill in the information below and have it ready when calling for assistance. The serial number can be found on the specification plate located on the system.

Purchased From: _____

Date of Purchase: _____

Model No.: _____

Serial No.: _____

Mfg. No.: _____

OWNER INFORMATION (CONT.)

IMPORTANT SAFETY INFORMATION

- Review the owner's manual prior to using the water filtration system.
- Install the system for its intended use as outlined in this manual.
- Do NOT operate the system if the cord or plug is damaged; if it is not working properly, or if it has been damaged or dropped.
- Only qualified personnel should service the system.
- Do NOT allow the cord or plug in water.
- Do NOT allow the cord near heated surfaces.
- Only use this system with cold water.

Carefully observe the following warnings and cautions, which appear throughout this manual.

- Unplug the power cord before servicing this system.
- Follow all local electrical codes and any other applicable codes with all electrical connections.
- Install a ground fault circuit interrupter (GFCI) on the circuit to this system.
- Do NOT modify the power cord. If necessary, contact a qualified electrician.
- Do NOT use an extension cord.
- If the power cord is damaged, contact the manufacturer, its service agent, or a similarly qualified person.
- Follow all local plumbing code and any other applicable code when installing the system.
- If the system is installed on metallic plumbing, an electrical bonding jumper must be installed across the inlet and outlet pipes.
- Water pressure must not exceed 100 psig (690 kPa). If necessary, install a water pressure regulator.
- If the inlet water pressure is less than 50 psig (345 kPa), install a booster system.
- Do NOT allow the trans membrane pressure to exceed 45 psi (310 kPa). Trans membrane pressure is the pressure differential (delta) from the influent side of the membrane wall to the effluent side on the membrane wall.
- Protect the ultrafilter from becoming dry by keeping it wet and sealed at all times.
- Do NOT allow the ultrafilter to freeze during operation or storage to avoid damage.
- Do NOT allow long-term exposure to direct sunlight or other UV sources.
- Avoid any sudden changes in operating temperature. Make any changes to the operating temperature slowly.
- Do NOT drop or bump the system to avoid damage or breakage of the filter. Be sure to handle carefully during transportation and installation.
- Do NOT use strong solvents containing chlorine, or concentrated acids on the ultrafilter membrane.
- Do NOT use strong solvents or concentrated acids on the plastic parts of the system, which includes acetone, methyl acetate (nail polish remover); hexane (spot removers); turpentine, toluene (paint thinners); dry cleaning solutions, insecticides.
- Flush all pipes before installing the system. Any abrasive materials can cause irreversible damage to the membrane.
- Do NOT use sharp objects, like knives, sandpaper, or other tools on the plastic parts of the system. A cut or nick on a plastic part can weaken it and cause a leak.
- Do NOT use abrasive cleaners on plastic parts.
- Protect the system from shock, pressure surges, or pulsation that can occur in water pipes. Use a water hammer arrestor to reduce pressure shock on the inlet side of the the system if necessary.

OWNER INFORMATION (CONT.)

WARRANTY INFORMATION

All Crusader products are constructed of the finest materials available and manufactured to high quality standards. Complete Filtration Systems & Water Treatment Systems (excluding water filters and water treatment replacement cartridges) are warranted to be free from manufacturers' defects in materials and workmanship for a period of Five (5) years from date of purchase, under normal use and service, and when installed in accordance with Crusader's recommendations outlined in the filtration systems owner's manual. Service Replacement Parts (cartridges, Filter elements, Feeder elements, etc.) are warranted to be free from manufacturers' defects in materials and workmanship for a period of one (1) year from the date of purchase or the remainder of the original warranty, whichever is longer. Discrete Components (flow restrictors, drain saddles, mounting clips, automatic check valves, etc.) are warranted for a period of Ninety (90) days from the date of purchase.

All defects or warranty claims must be reported to Crusader within the applicable warranty period.

1. This warranty does not cover failures due to improper system installation, defects caused by improper storage or handling prior to placing the equipment into service. This warranty does not include overtime charges or work done by unauthorized service agencies or personnel. This warranty does not cover normal maintenance, calibration, or regular adjustments as specified in operating and maintenance instructions of this manual, and/or labor involved in moving adjacent objects to gain access to the Equipment.
2. Crusader shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Crusader has no control. This warranty shall

be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.

3. This warranty does not cover premature plugging, fouling or scaling of cartridges due to unknown or aggressive water conditions.
4. This warranty excludes pre-filter elements, batteries, etc.
5. Crusader reserves the right to make changes in design or add any improvements on any product. The right is always reserved to modify equipment because of factors beyond our control and government regulations. Changes to update equipment do not constitute a warranty charge.
6. If shipment is damaged in transit, the purchaser should make a claim directly upon the carrier. Careful inspection should be made of the shipment as soon as it arrives and visible damage should be noted upon the carrier's documentation. Damage should be reported to the carrier. This damage is not covered under this warranty.

7. RESPONSIBILITY OF THE CONSUMER:

The original purchaser-consumer's sole responsibility in the instance of a Warranty claim shall be to notify Crusader of the defect, malfunction, or other manner in which the terms of this Warranty are violated. You may secure performance of obligations hereunder by (in writing).

- a. Identify the Product involved (by model or serial number or other sufficient description that will allow Crusader to determine which Product is defective).
- b. Specify where, when and from whom the Product was purchased.
- c. Describe the nature of the defect, malfunction, or other violation of this Warranty
- d. Send such notification together with the defective Product to:

Crusader Water Systems
281 S Vineyard Rd STE 107
Orem, UT 84059

OWNER INFORMATION (CONT.)

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE

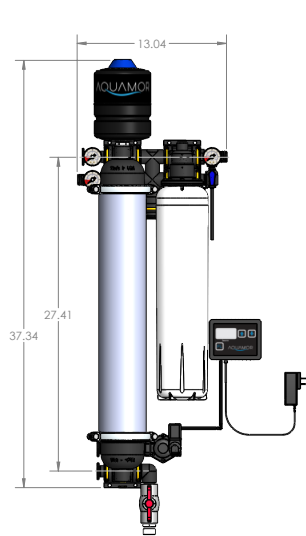
THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HERE BY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL CRUSADER BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.



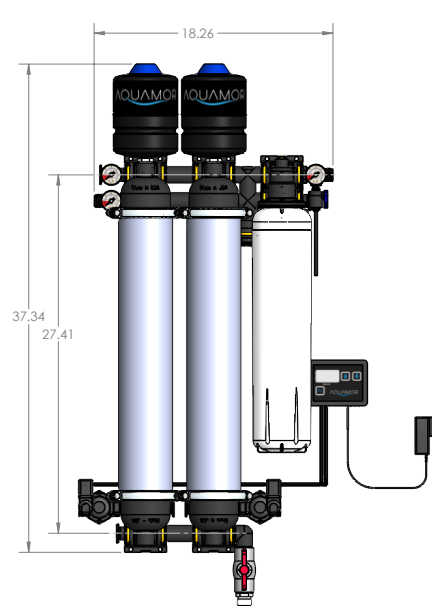
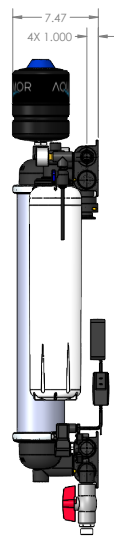
WATER FILTRATION SOLUTIONS

This system is manufactured with pride in the United States of America by Aquamor, LLC - Temecula, CA

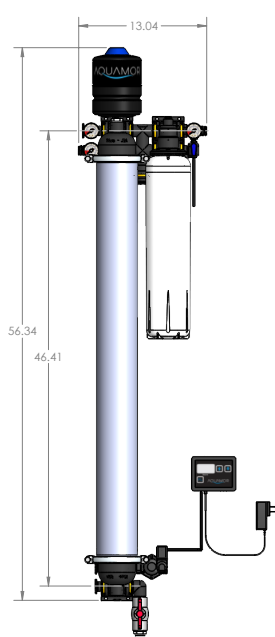
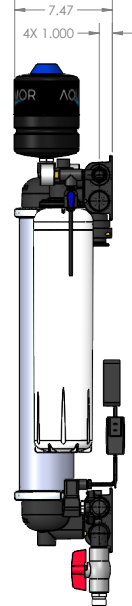
SYSTEM SPECIFICATIONS



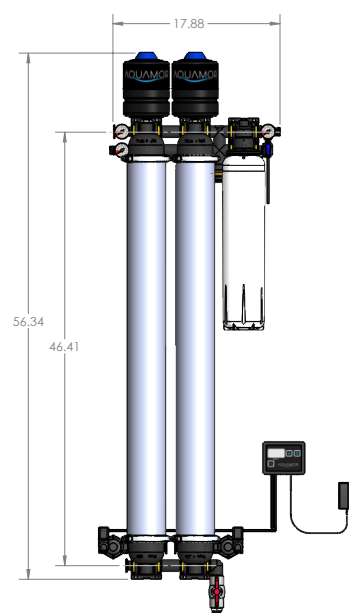
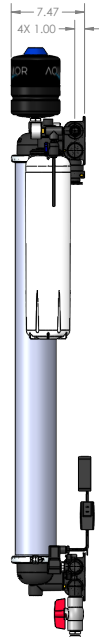
UF-4211 Models



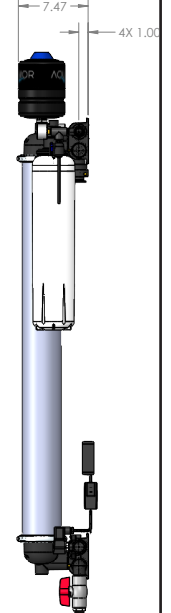
UF-4221 Models



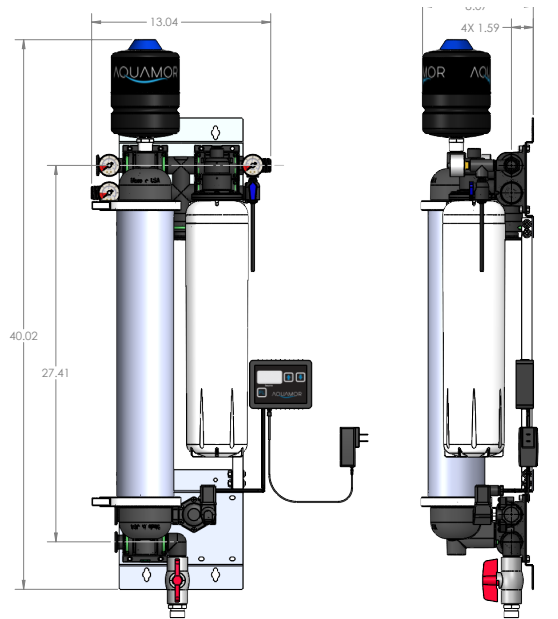
UF-4411 Models



UF-4422 Models



SYSTEM SPECIFICATIONS (CONTINUED)



AUF-4211 Models

SYSTEM SPECIFICATIONS (CONTINUED)

Model No.	UF Membrane		Number of UF Membranes	Number of Post Filters	Type of Post Filter	Peak Flow Rate (gpm)
	Diameter	Length				
UF-4210-0000X	4"	20"	1	0	N/A	8
UF-4211-4B25X	4"	20"	1	1	4B25X	8
UF-4211-4B25P	4"	20"	1	1	4B25P	8
UF-4211-4B33X	4"	20"	1	1	4B33X	8
UF-4211-4B33P	4"	20"	1	1	4B33P	8
UF-4220-0000X	4"	20"	2	0	N/A	15
UF-4221-4B25X	4"	20"	2	1	4B25X	15
UF-4221-4B25P	4"	20"	2	1	4B25P	15
UF-4221-4B33X	4"	20"	2	1	4B33X	15
UF-4221-4B33P	4"	20"	2	1	4B33P	15
UF-4211-4B25X	4"	20"	1	1	4B25X	8
UF-4211-4B25P	4"	20"	1	1	4B25P	8
UF-4211-4B33X	4"	20"	1	1	4B33X	8
UF-4211-4B33P	4"	20"	1	1	4B33P	8
UF-4221-4B25X	4"	20"	2	1	4B25X	15
UF-4221-4B25P	4"	20"	2	1	4B25P	15
UF-4221-4B33X	4"	20"	2	1	4B33X	15
UF-4221-4B33P	4"	20"	2	1	4B33P	15
UF-4411-4B25X	4"	40"	1	1	4B25X	15
UF-4411-4B25P	4"	40"	1	1	4B25P	15
UF-4411-4B33X	4"	40"	1	1	4B33X	15
UF-4411-4B33P	4"	40"	1	1	4B33P	15
UF-4421-4B25X	4"	40"	2	1	4B25X	30
UF-4421-4B25P	4"	40"	2	1	4B25P	30

SYSTEM SPECIFICATIONS (CONTINUED)

Model No.	UF Membrane		Number of UF Membranes	Number of Post Filters	Type of Post Filter	Peak Flow Rate (gpm)
	Diameter	Length				
UF-4421-4B33X	4"	40"	2	1	4B33X	30
UF-4421-4B33P	4"	40"	2	1	4B33P	30
UF-4422-4B25X	4"	40"	2	2	4B25X	30
UF-4422-4B25P	4"	40"	2	2	4B25P	30
UF-4422-4B33X	4"	40"	2	2	4B33X	30
UF-4422-4B33P	4"	40"	2	2	4B33P	30
UF-4423-4B25X	4"	40"	2	3	4B25X	30
UF-4423-4B25P	4"	40"	2	3	4B25P	30
UF-4423-4B33X	4"	40"	2	3	4B33X	30
UF-4423-4B33P	4"	40"	2	3	4B33P	30
AUF-4210-0000X	4"	20"	1	0	N/A	8
AUF-4211-4B23X	4"	20"	1	1	4B23X	8
AUF-4211-4B25X	4"	20"	1	1	4B25X	8
AUF-4211-4B25P	4"	20"	1	1	4B25P	8
AUF-4211-4B33X	4"	20"	1	1	4B33X	8
AUF-4211-4B33P	4"	20"	1	1	4B33P	8
AUF-4220-0000X	4"	20"	2	0	N/A	15
AUF-4221-4B25X	4"	20"	2	1	4B25X	15
AUF-4221-4B25P	4"	20"	2	1	4B25P	15
AUF-4221-4B33X	4"	20"	2	1	4B33X	15
AUF-4221-4B33P	4"	20	2	1	4B33P	15

CARTRIDGE SPECIFICATIONS & PERFORMANCE DATA

Model No.	Item No.	Micron Rating	Flow Rate	Capacity	NSF Std. 42	NSF Std. 53	Scale Inhibitor	Dia.	Ht.
BGX-4B25XHC	105298	5.0	7.5	265,000	Chlorine	No	No	4-1/2"	20"
BGX-4B25PHC	105299	5.0	7.5	265,000	Chlorine	No	Yes	4-1/2"	20"
BGX-4B33X	105284	0.2	3.5	60,000	Chloramines	Yes	No	4-1/2"	20"
BGX-4B33P	105285	0.2	3.5	60,000	Chloramines	Yes	Yes	4-1/2"	20"

INSTALLATION

ELECTRICAL

The line voltage must match the voltage on the specification label. The plug on the power cord must match the appropriate outlet. Do NOT connect the system to a switched electrical outlet.

PLUMBING

Only connect the system to the cold water line. Do NOT connect it to the hot water line.

When making plumbing connections, be sure to use a back-up wrench on the supporting plumbing. Use pipe sealant or thread seal tape on pipe threads, but do NOT allow pipe sealant inside the pipes.

Be sure to NOT overtighten any of the connections.

If you use soldered plumbing with your system, do NOT apply heat to the filtration system.

MOUNTING THE SYSTEM

Use the following recommendations when mounting your system.

- Be sure to allow sufficient access for cartridge replacement.
- Be sure to mount the system near an electrical outlet, but NOT directly above.
- Be sure to mount the system so it has access to a drain for flushing.
- Be sure to mount the system prior to any filtration processes for consumable water (ex. water softener).
- Optional bracket and hardware available for installations requiring additional support.

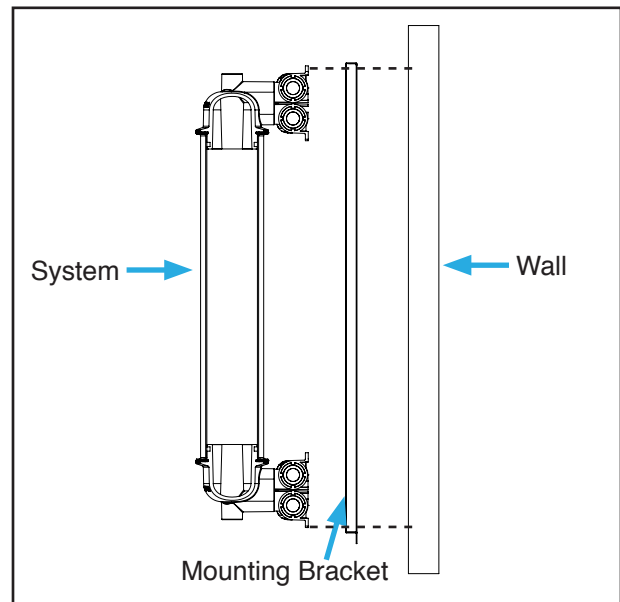


FIGURE 1. MOUNTING THE SYSTEM WITH OPTIONAL BRACKET

Use these steps when mounting the system directly onto the wall:

1. Attach the system securely to the wall. Use a stud finder and level as necessary.
2. Secure the bottom portion of the system to the wall using the provided holes, either into wall studs or with the appropriate hardware.

Use these steps to when mounting the system with the optional brackets:

1. Attach the mounting brackets securely to the wall. Use a stud finder and level as necessary.
2. Lift the system and seat it onto the mounting bracket so it fits securely in place.
3. Secure the bottom portion of the system's mounting bracket to the wall using the provided holes, either into wall studs or with the appropriate hardware.
4. Install the carbon or post filters into their respective heads.

INSTALLATION (CONTINUED)

DRAIN VALVE CONNECTION

The drain valve (solenoid valve) is used to flush buildup of particles from the system during self-cleaning. To properly install the drain valve connection:

1. Cut tubing (not supplied) so that it is able to reach the drain from the drain valve.
2. Use an appropriate fitting (not supplied) to connect an end of the tubing to the drain valve.
3. Direct the other end of the tubing to the drain.

When making the drain valve connection, be sure to follow these guidelines:

- The tubing must be able support the flow rate, which depends on the inlet water pressure, inlet pipe size, and system.
- The tubing should be as short as possible while sloping downwards to avoid any kinks, head pressure, or loops.
- Secure the tubing so that there is a proper air break, at least 2 inches above the drain to protect from contamination in case the drain ever backs up.
- Ensure the drain is not blocked or restricted in any way.
- Ensure the drain is as large or larger than the tubing used for the drain valve connection.

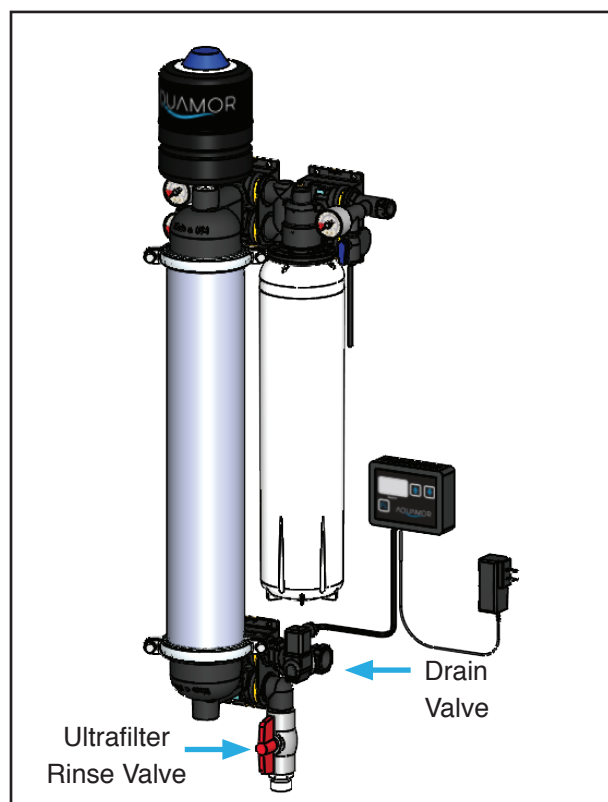


FIGURE 2. DRAIN VALVE

INSTALLATION (CONTINUED)

ULTRAFILTER RINSE VALVE CONNECTION

Insert supplied tubing into ball valve prior to rinsing the membrane.

SYSTEM INLET CONNECTION

The inlet connection on your water filtration system has a 3/4" NPT male thread. Be sure to NOT overtighten the fittings, which could cause damage to the fittings.

When making connections to the system, be sure to use plastic fittings and a pipe thread sealant that is approved for use on PVC fittings.

SYSTEM OUTLET CONNECTION

The outlet connection on your water filtration system has a 3/4" NPT female thread. Be sure to NOT overtighten the fittings, which could cause damage to the fittings.

When making connections to the system, be sure to use plastic fittings and a pipe thread sealant that is approved for use on PVC fittings.

INLET WATER PLUMBING

Install a T Fitting with plug before the system inlet, which can then be used to sanitize the system and any downstream plumbing.

Be sure to flush the plumbing to the system of all debris before making connections to the system inlet. Slowly open the inlet water valve while holding a bucket at the inlet water line until all debris is removed from the pipe.

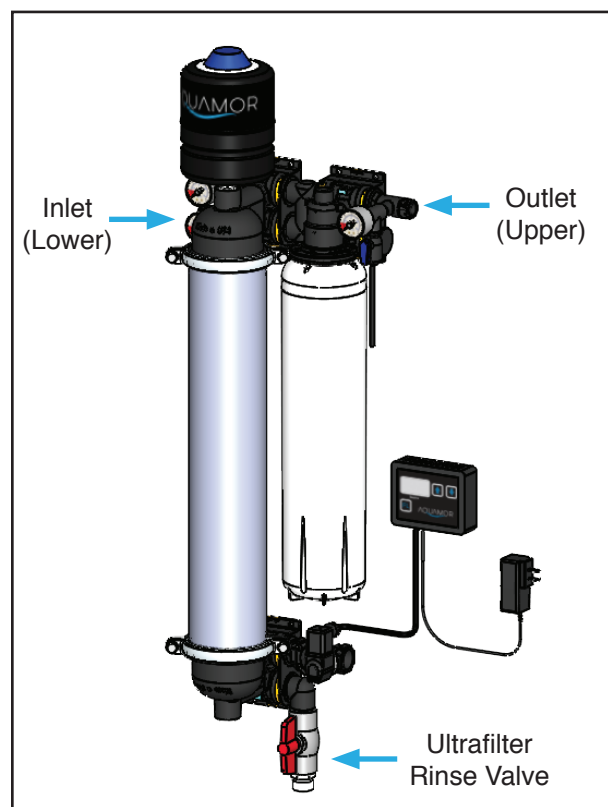


FIGURE 3. SYSTEM CONNECTIONS

INSTALLATION (CONTINUED)

BYPASS INSTALLATION

Installing an optional bypass on the system is recommended as it will help with cartridge replacement and servicing. To install a bypass:

1. Install tee on the inlet and outlet ball valves.
2. Install plumbing and a fully ported ball valve to connect the tees on the inlet and outlet ball valves.
3. When the system is in use, be sure to close the bypass ball valve while opening the inlet and outlet ball valves.
4. When the system needs to be serviced, be sure to open the bypass valve while closing the inlet and outlet ball valves.

STARTING THE CONTROLLER

1. Plug the power cord into the controller.
2. Plug the other end of the power cord into the outlet.
3. The system will automatically enter Flush Mode and the display will count down until the duration of the flush is completed.

RINSING THE ULTRAFILTER

Your system comes with the ultrafilter installed. However, the ultrafilter needs to be rinsed prior to system use to remove any air and the protective storage solution.

NOTE: Be sure the carbon filter is not installed prior to rinsing the ultrafilter.

1. Direct the ultrafilter rinse valve connection to a drain.
2. Close the outlet and inlet valves.
3. Open the ultrafilter rinse valve.
4. Slowly turn on the water supply to the system.
5. Slowly open the inlet valve. Air and water will then come out of the ultrafilter rinse valve.
6. Press the FL button to open the drain valve. Air and water will come out of the drain line.
7. Press the FL button six more times to ensure all air and storage solution are flushed from the ultrafilter.
8. Allow water to run at full flow out of the ultrafilter rinse valve for at least 15 minutes.
9. Close the ultrafilter rinse valve and then allow the system to sit without any water flow for 15 minutes to release any remaining trapped air from the ultrafilter.
10. Inspect the unit and all connections for leaks and repair as needed.
11. After 15 minutes, open the ultrafilter rinse valve and allow the system to flush out any remaining air for 5 minutes.
12. Close the ultrafilter rinse valve and disconnect the hose.
13. Open the drain valve by pressing the FL button six times to flush any remaining air from the system.
14. Open the closest downstream tap or faucet.
15. Open the outlet valve slowly and then let water flow through the system and out the faucet for 5 minutes.

INSTALLATION (CONTINUED)

SANITIZING THE SYSTEM AND LINES

(IF SANITATION T IS INSTALLED IN FRONT OF THE INLET CONNECTION)

Sanitizing the plumbing to eliminate any possible contamination that resulted from the installation process.

To sanitize the plumbing, use one ounce (30 ml) of liquid chlorine bleach (regular bleach, unscented 5.25 % - 6 % sodium hypochlorite) or Kay-5 sanitizer solution (Sodium Dichloro-s-Triazinetrione Dihydrate, 6%) or equivalent.

You can make the Kay-5 sanitizer solution by dissolving a 1 oz. packet of Kay-5 powder in 2 oz. (60 ml) of clean warm water. When added to the system, this will create a 60-100 ppm chlorine solution.

NOTE: Be sure to follow the safety instructions supplied with the sanitizer.

NOTE: Remove the carbon cartridge from the system before sanitizing.

1. Rinse the ultrafilter according to the steps in this manual.
2. Turn off the water to the system.
3. Open the faucet or tap closest downstream to the system so that the system and plumbing can drain.
4. Remove the plug installed on the T fitting at the inlet of the system and allow any remaining water to drain out of the system.
5. Use a cup or funnel to carefully pour the sanitizer into the T fitting. Then reattach the plug onto the T fitting.
6. Slowly turn on the water supply to the system.
7. Let the water flow through the system and out of the nearest faucet or tap.
8. Once the smell of sanitizer is noticeable, close the faucet or tap.
9. Allow the system to stand without water flow for at least 15 minutes to sanitize the pipes.
10. After 15 minutes, open the faucet or tap.
11. Allow water to flow until the presence of sanitizer is gone.
12. Flush the remaining sanitizer from the plumbing by opening all other faucets and taps in line with the system.
13. Then close all faucets and taps.

RINSING THE CARBON CARTRIDGE

Be sure to rinse the carbon cartridge prior to using the system the first time and immediately after replacing the carbon cartridge.

1. Install the carbon cartridge into the manifold head.
2. Direct water from ultrafilter rinse valve to a drain. Then open the ultrafilter rinse valve and close the outlet valve.
3. Slowly open the valve to turn water on to the system.
4. Allow water to flow through to flush out trapped air and any debris that may be present.
5. To help remove trapped air, press the FL button on the controller three times, leaving at least 15 seconds between manual flushes.
6. Allow the carbon cartridge to rinse for at least 5 minutes.

NOTE: Do NOT consume water used during this process.

7. Close the ultrafilter rinse valve when rinsing completes.
8. Open the outlet valve. The system is now ready for use.
9. For new piping installations: After making the connection to the outlet:
 - Open the faucet or tap closest to the system.
 - Slowly open the water valve.
 - Allow the pipe to flush until all debris is removed.

OPERATION

OVERVIEW

The system features two modes: Normal Operation Mode and Flush Mode.

In Normal Operation Mode, water enters the inlet and flows into the filter and then out the Permeate Outlet as usable water.

In Flush Mode, water enters the Inlet and cleans the ultrafilter by removing any debris from the membrane wall.

NOTE: Do NOT unplug the power cord or turn off the water filtration system when it is in Flush Mode. If there is a power outage or the system is unplugged, water will continue to be filtered but the system will NOT flush. This could plug the ultrafilter prematurely and may reduce its lifespan.

The flush is automated to take place in one-hour intervals and last for 10 seconds. To change this setting, refer to the Maintenance section of this manual.

MANUAL FLUSHING

You can manually flush the system at any time by pressing the FL button on the controller. The display will then countdown the seconds of the flush interval.

Once the flushing is completed, the drain valve will close and the system will then return to Normal Operation Mode.

NOTE: Manually flushing the system will not affect the interval flush setting.



FIGURE 4. UF SYSTEM

MAINTENANCE

REPLACING THE ULTRAFILTER

NOTE: Always install new Carbon Cartridge after replacing the Ultra Filter Cartridge.

1. Close the incoming water valve and outlet valve.
2. Flush the system by pressing the FL button multiple times to empty the permeate tank.
3. Remove the carbon cartridge from the system.
4. Remove the (2) rear yellow, blue or green manifold clips. Then pull the entire system portion from the two manifold blocks (still mounted to wall or bracket).
5. Remove the end caps by loosening both end-cap metal clamps and remove UF cartridge.
6. Inspect the O-rings for nicks or cuts. Replace as needed.
7. Apply a food-grade silicone lubricant to all O-rings. Then lubricate the inside center tube at both ends of the new cartridge.
8. Locate and record the serial number of the new cartridge, which is located on one end of the outer tube.
9. Install the end cap O-ring on the end cap and insert the large end cap into the end of the new cartridge.
10. Carefully insert the cartridge and end caps into the housing.
11. Install new replacement ultrafilter cartridge and reinstall endcap with end clamps (keep slightly loose).
12. Reinstall ultrafilter sub-assembly into manifold blocks already mounted. Once connector tubes are seated, reinstall rear manifold clips. Then tighten endcap clamps both top and bottom.
13. Rinse the new ultrafilter before placing the system back into operation. Refer to the Rinsing the Ultrafilter, Sanitizing the System and Lines, and Rinsing the Carbon Cartridge procedures in this manual.
14. After rinsing, open the outlet valve and inlet valve to repressurize the system.

REPLACING THE CARBON CARTRIDGE

1. Holding the cartridge with both hands, swiftly rotate the cartridge quarter turn to the left until disengaged. The inlet water will automatically shut off.
2. Discard old cartridge.
3. Install the filter into the manifold by inserting it into the manifold head and swiftly turning it quarter turn to the right (clockwise) until it fully seated (Figure 6).

NOTE: Remove all plastic wrapping and dust caps prior to filter installation.

4. Write the date the filter was installed in the designated box on the filter canister.

NOTE: A small amount of water may weep out of the BIS indicator ports while the filtration system pressurizes.

5. Check the system for leaks.
6. Flush the cartridge(s) by running water for five minutes through the system. This will purge any trapped air and fines from the system.

MAINTENANCE (CONTINUED)

CONTROLLER

The controller on the UF system directs the interval timing and duration when the system flushes. When the system flushes, the controller will display "FLU" and then count down the duration of the flush.

The settings of the flush interval can be changed, though it is recommended to leave them at the default setting of flushing for 10 seconds every hour.

To change the settings on the UF controller:

1. Hold the Up and Down arrow buttons for three seconds.
2. The display will flash "INT" and then the current interval setting.
3. Use the Up and Down arrow buttons to select the timing for the interval from the following preprogrammed options: 15 minutes, 30 minutes, 45 minutes, 1 hour, 4 hours, 6 hours, 12 hours, and 24 hours.
4. After five seconds of no activity, the display will flash the selected interval setting and store it into memory.
5. After three seconds, the display will flash "DUR" and then the current duration setting.
6. Use the Up and Down arrow buttons to select the timing for the flush duration from the following preprogrammed options: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55 and 60 seconds.
7. After three seconds, the display will flash the selected flush duration setting and store it into memory.

To reset the UF controller to the factory default settings, press and hold the FL, Up, and Down arrow buttons together.

CHECK PERMEATE TANK PRE-CHARGE

The air charge on the system's permeate tank should be checked every 6 months. In order to check the charge, you will need the following items:

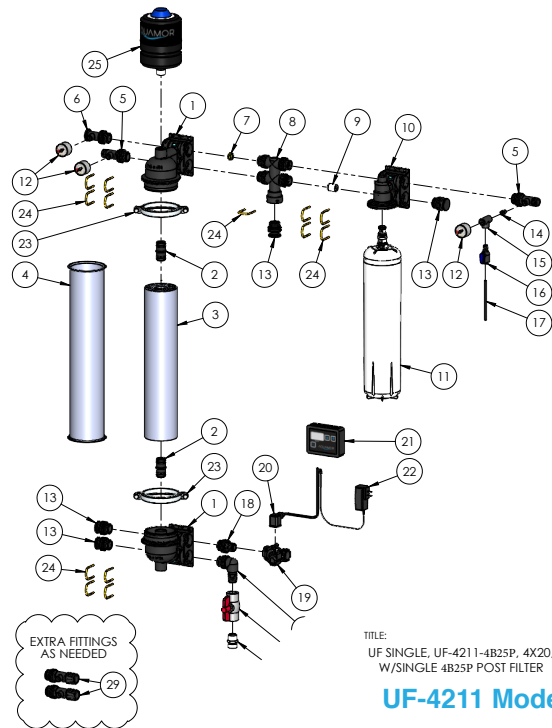


FIGURE 5. CONTROLLER

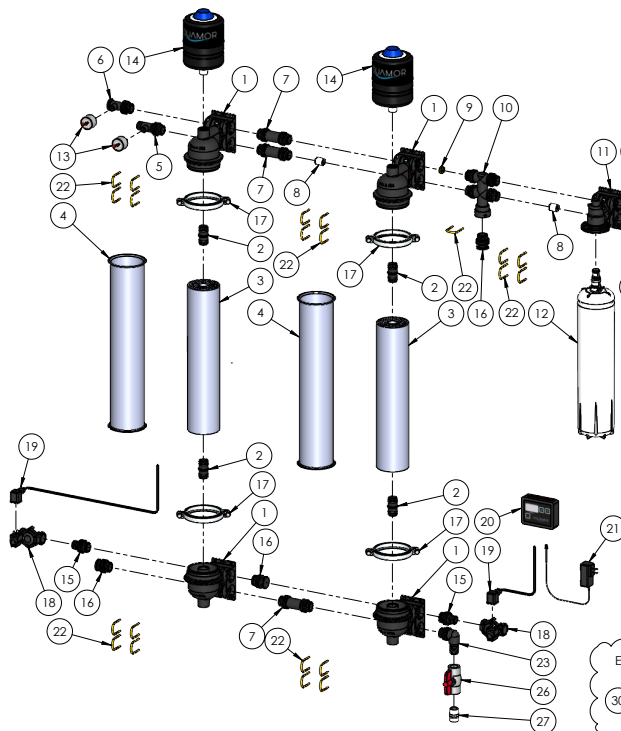
- An air pressure gauge with a 5-40 psi range (0.3-2.7 bar) and tire valve (Schrader Valve) connection
 - A source of compressed air, which could be an air compressor or manual air pump
1. Close the inlet and outlet valves and then open the ultrafilter rinse valve to depressurize the system. Allow the permeate tank to fully drain.
 2. Remove the cap from the air valve on the permeate tank.
- NOTE: If water comes out the air valve, the tank needs to be replaced as the internal bladder has ruptured.
3. Check the tank precharge for pressure by using a pressure gauge. It should have a pressure of 13-18 psi.
 - If you need to add pressure to the tank, use an air compressor or manual air pump. Be careful not to add too much pressure to the tank.
 - If you need to remove pressure from the tank, press the center pin on the air inlet valve.
 4. Once the permeate tank is at 13-18 PSI, replace the protective cap on the air valve.
 5. Close the ultrafilter rinse valve and open the inlet and outlet valves to repressurize the system.

REPLACEMENT PARTS

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	306085	HEAD/MANIFOLD, FLG B, 3/4 INCH NPT W/O-RINGS	2
2	306089	UNION, MEMBRANE W/O-RINGS	2
3	105065	MODULE, UF, MULTIBORE, 20 INCH	1
4	305512	VESSEL, PRESSURE, 20 INCH, SS T304	1
5	306037	FITTING, 3/4 INCH MNPT+PR W/O-RINGS	2
6	306038	FITTING, PLUG+PR W/O-RINGS	1
7	502806	FLOW CONTROL, 8 GPM, YELLOW	1
8	306040	FITTING, SERIAL COUPLING W/O-RINGS	1
9	502805	VALVE, CHECK VALVE W/SPRING	1
10	306033	MANIFOLD, HEAD, CLIPS, BGX-C	1
11	105283	CARTRIDGE, BGX-4B25P, 5.0 MICRON BLOCK	1
12	500007	GAUGE, PRESSURE, BACK MOUNT, 1.5 INCH DIA, 1/4 INCH MNPT	3
13	306035	FITTING, PLUG W/O-RINGS	4
14	304626	FITTING, 1/4 INCH MNPT CLOSE NIPPLE	1
15	304627	FITTING, 1/4 INCH FNPT TEE	1
16	304533	BALL VALVE, 1/4 INCH MNPT X 1/4 INCH QC, PARKER	1
17	309090	TUBING, 1/4 INCH, BLACK	10 FT
18	306036	FITTING, 3/4 INCH MNPT W/O-RINGS	1
19	502804	VALVE, SOLENOID, 24VAC, 3/4 INCH FNPT	1
20	503034	HARNESS, CONTROLLER TO SOLENOID VALVE	1
21	503031	CONTROLLER, PULSE, 24VAC, UF	1
22	503033	POWER-SUPPLY, UNIVERSAL, 24VAC	1
23	501229	CLAMP, PRESSURE VESSEL, 4 INCH, FLANGE B, STAMPED	2
24	501219	U-CLIP, YELLOW	13
25	502503	TANK, FLUSH, .5 GAL, 3/4 INCH NPT	1
26	306057	FITTING, ELBOW, 3/4 INCH MNPT W W/O-RINGS	1
27	304628	FITTING, BALL VALVE, 3/4 INCH FNPT X 3/4 INCH FNPT	1
28	304629	FITTING, ADAPTER, 3/4 INCH MNPT TO GARDEN HOSE	1
29	306067	FITTING, 1 INCH MNPT+PR W/O-RINGS	2



UF-4211 Models



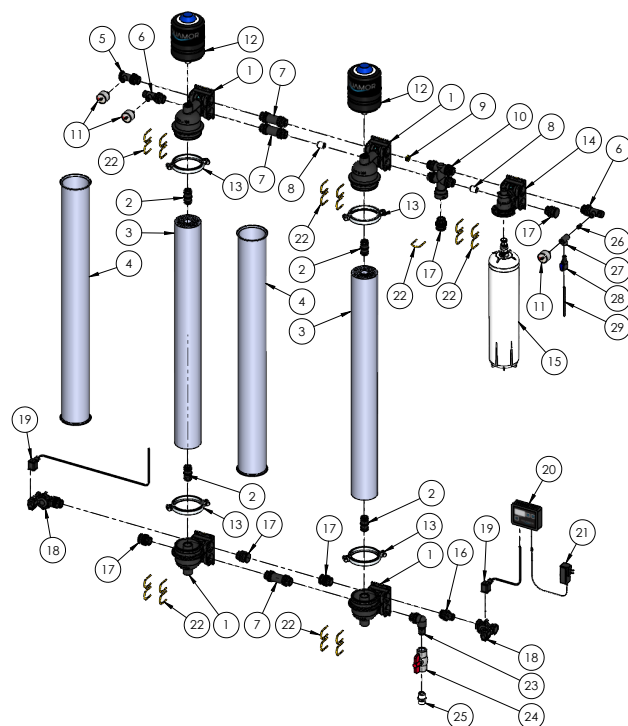
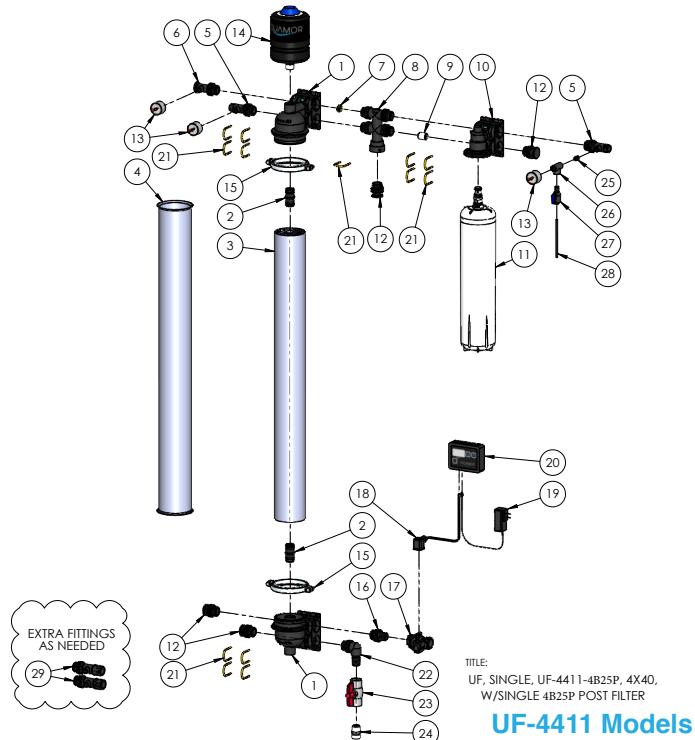
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	306085	HEAD/MANIFOLD, FLG B, 3/4 INCH NPT W/O-RINGS	4
2	306089	UNION, MEMBRANE W/O-RINGS	4
3	105065	MODULE, UF, MULTIBORE, 20 INCH	2
4	305512	VESSEL, PRESSURE, 20 INCH, SS T304	2
5	306037	FITTING, 3/4 INCH MNPT+PR W/O-RINGS	2
6	306038	FITTING, PLUG+PR W/O-RINGS	1
7	306034	FITTING, UNION W/O-RINGS	3
8	502805	VALVE, CHECK VALVE W/SPRING	2
9	502806	FLOW CONTROL, 8 GPM, YELLOW	1
10	306040	FITTING, SERIAL COUPLING W/O-RINGS	1
11	306033	MANIFOLD, HEAD, CLIPS, BGX-C	1
12	105283	CARTRIDGE, BGX-4B25P, 5.0 MICRON BLOCK	1
13	500007	GAUGE, PRESSURE, BACK MOUNT, 1.5 INCH DIA, 1/4 INCH MNPT	3
14	502503	TANK, FLUSH, .5 GAL, 3/4 INCH NPT	2
15	306036	FITTING, 3/4 INCH MNPT W/O-RINGS	2
16	306035	FITTING, PLUG W/O-RINGS	5
17	501229	CLAMP, PRESSURE VESSEL, 4 INCH, FLANGE B, STAMPED	4
18	502804	VALVE, SOLENOID, 24VAC, 3/4 INCH FNPT	2
19	503034	HARNESS, CONTROLLER TO SOLENOID VALVE	2
20	503031	CONTROLLER, PULSE, 24VAC, UF	1
21	503033	POWER-SUPPLY, UNIVERSAL, 24VAC	1
22	501219	U-CLIP, YELLOW	21
23	306057	FITTING, ELBOW, 3/4 INCH MNPT W W/O-RINGS	1
24	304626	FITTING, 1/4 INCH MNPT CLOSE NIPPLE	1
25	304627	FITTING, 1/4 INCH FNPT TEE	1
26	304628	FITTING, BALL VALVE, 3/4 INCH FNPT X 3/4 INCH FNPT	1
27	304629	FITTING, ADAPTER, 3/4 INCH MNPT TO GARDEN HOSE	1
28	304533	BALL VALVE, 1/4 INCH MNPT X 1/4 INCH QC, PARKER	1
29	309090	TUBING, 1/4 INCH, BLACK	1
30	306067	FITTING, 1 INCH MNPT+PR W/O-RINGS	2

UF, DUAL, UF-4221-4B25P, 4X20, W/SINGLE 4B25P POST FILTER

UF-4221 Models

REPLACEMENT PARTS (CONT.)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	306085	HEAD/MANIFOLD, FLG B, 3/4 INCH NPT W/O-RINGS	2
2	306089	UNION, MEMBRANE W/O-RINGS	2
3	105083	MODULE, UF, MULTIBORE, 40 INCH	1
4	305510	VESSEL, PRESSURE, 40 INCH, SS T304	1
5	306037	FITTING, 3/4 INCH MNPT+PR W/O-RINGS	2
6	306038	FITTING, PLUG+PR W/O-RINGS	1
7	502809	FLOW CONTROL, 15 GPM, YELLOW	1
8	306040	FITTING, SERIAL COUPLING W/O-RINGS	1
9	502805	VALVE, CHECK VALVE W/SPRING	1
10	306033	MANIFOLD, HEAD, CLIPS, BGX-C	1
11	105283	CARTRIDGE, BGX-4B25P, 5.0 MICRON BLOCK	1
12	306035	FITTING, PLUG W/O-RINGS	4
13	500007	GAUGE, PRESSURE, BACK MOUNT, 1.5 INCH DIA, 1/4 INCH MNPT	3
14	502503	TANK, FLUSH, .5 GAL, 3/4 INCH NPT	1
15	501229	CLAMP, PRESSURE VESSEL, 4 INCH, FLANGE B, STAMPED	2
16	306036	FITTING, 3/4 INCH MNPT W/O-RINGS	1
17	502804	VALVE, SOLENOID, 24VAC, 3/4 INCH FNPT	1
18	503034	HARNESS, CONTROLLER TO SOLENOID VALVE	1
19	503033	POWER-SUPPLY, UNIVERSAL, 24VAC	1
20	503031	CONTROLLER, PULSE, 24VAC, UF	1
21	501219	U-CLIP, YELLOW	13
22	306057	FITTING, ELBOW, 3/4 INCH MNPT W W/O-RINGS	1
23	304628	FITTING, BALL VALVE, 3/4 INCH FNPT X 3/4 INCH FNPT	1
24	304629	FITTING, ADAPTER, 3/4 INCH MNPT TO GARDEN HOSE	1
25	304626	FITTING, 1/4 INCH MNPT CLOSE NIPPLE	1
26	304627	FITTING, 1/4 INCH FNPT TEE	1
27	304533	BALL VALVE, 1/4 INCH MNPT X 1/4 INCH QC, PARKER	1
28	309090	TUBING, 1/4 INCH, BLACK	1
29	306067	FITTING, 1 INCH MNPT+PR W/O-RINGS	2



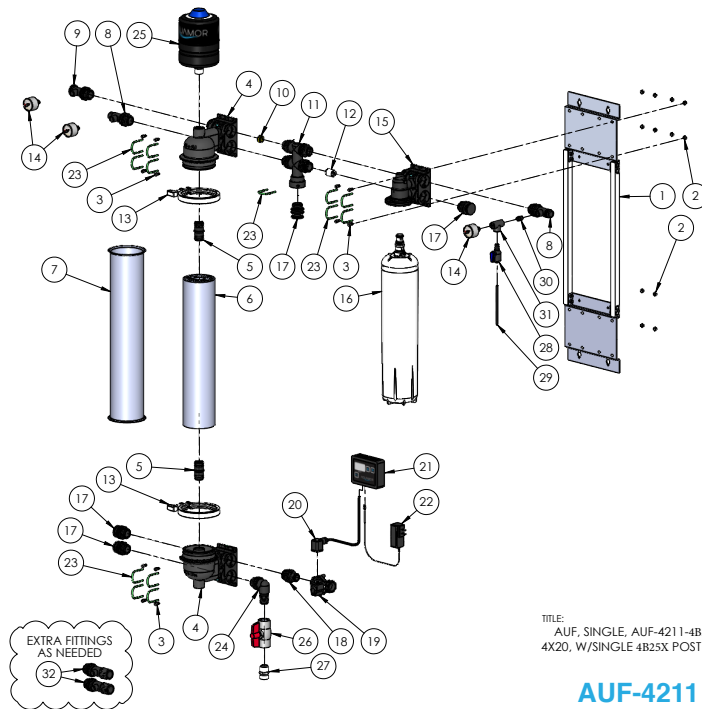
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	306085	HEAD/MANIFOLD, FLG B, 3/4 INCH NPT W/O-RINGS	4
2	306089	UNION, MEMBRANE W/O-RINGS	4
3	105083	MODULE, UF, MULTIBORE, 40 INCH	2
4	305510	VESSEL, PRESSURE, 40 INCH, SS T304	2
5	306038	FITTING, PLUG+PR W/O-RINGS	1
6	306037	FITTING, 3/4 INCH MNPT+PR W/O-RINGS	2
7	306034	FITTING, UNION W/O-RINGS	3
8	502805	VALVE, CHECK VALVE W/SPRING	2
9	502809	FLOW CONTROL, 15 GPM, YELLOW	1
10	306040	FITTING, SERIAL COUPLING W/O-RINGS	1
11	500007	GAUGE, PRESSURE, BACK MOUNT, 1.5 INCH DIA, 1/4 INCH MNPT	3
12	502503	TANK, FLUSH, .5 GAL, 3/4 INCH NPT	2
13	501229	CLAMP, PRESSURE VESSEL, 4 INCH, FLANGE B, STAMPED	4
14	306033	MANIFOLD, HEAD, CLIPS, BGX-C	1
15	105283	CARTRIDGE, BGX-4B25P, 5.0 MICRON BLOCK	1
16	306036	FITTING, 3/4 INCH MNPT W/O-RINGS	2
17	306035	FITTING, PLUG W/O-RINGS	5
18	502804	VALVE, SOLENOID, 24VAC, 3/4 INCH FNPT	2
19	503034	ELECTICAL HARNESS, CONTROLLER TO SOLENOID VALVE	2
20	503031	CONTROLLER, PULSE, 24VAC, UF	1
21	503033	POWER-SUPPLY, UNIVERSAL, 24VAC	1
22	501219	U-CLIP, YELLOW	21
23	306057	FITTING, ELBOW, 3/4 INCH MNPT W W/O-RINGS	1
24	304628	FITTING, BALL VALVE, 3/4 INCH FNPT X 3/4 INCH FNPT	1
25	304629	FITTING, ADAPTER, 3/4 INCH MNPT TO GARDEN HOSE	1
26	304626	FITTING, 1/4 INCH MNPT CLOSE NIPPLE	1
27	304627	FITTING, 1/4 INCH FNPT TEE	1
28	304533	BALL VALVE, 1/4 INCH MNPT X 1/4 INCH QC, PARKER	1
29	309090	TUBING, 1/4 INCH, BLACK	1
30	306067	FITTING, 1 INCH MNPT+PR W/O-RINGS	2

UF, DUAL, UF-4421-4B25P, 4X40,
W/SINGLE 4B25P POST FILTER

UF-4421 Models

REPLACEMENT PARTS (CONT.)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	306073	UNIVERSAL MOUNTING BRACKET	1
2	501233	1/4-20 UNC X .219 L HEX NUT, ZINK PLATED	12
3	501234	1/4-20 X .50 L SHCS, BLK OXIDE	12
4	306099	HEAD/MANIFOLD, FLANGE A, 3/4 INCH NPT W/O-RINGS	2
5	306089	UNION, MEMBRANE W/O-RINGS	2
6	105065	MODULE, UF, MULTIBORE, 20 INCH	1
7	305512	VESSEL, PRESSURE, 20 INCH, SS T304	1
8	306037	FITTING, 3/4 INCH MNPT+PR W/O-RINGS	2
9	306038	FITTING, PLUG+PR W/O-RINGS	1
10	502806	FLOW CONTROL, 8 GPM, YELLOW	1
11	306040	FITTING, SERIAL COUPLING W/O-RINGS	1
12	502805	VALVE, CHECK VALVE W/SPRING	1
13	501230	CLAMP, FLANGE, 4 INCH, SS 304, HEAVY DUTY	2
14	500007	GAUGE, PRESSURE, BACK MOUNT, 1.5 INCH DIA, 1/4 INCH MNPT	3
15	306098	MANIFOLD, HEAD, CLIPS, BGX-A	1
16	105283	CARTRIDGE, AQ8E-4B25X, 5.0 MICRON BLOCK	1
17	306035	FITTING, PLUG W/O-RINGS	4
18	306036	FITTING, 3/4 INCH MNPT W/O-RINGS	1
19	502804	VALVE, SOLENOID, 24VAC, 3/4 INCH FNPT	1
20	503034	HARNESS, CONTROLLER TO SOLENOID VALVE	1
21	503031	CONTROLLER, PULSE, 24VAC, UF	1
22	503033	POWER-SUPPLY, UNIVERSAL, 24VAC	1
23	501224	U-CLIP, GREEN, NYLON 6, 20% GF	13
24	306057	FITTING, ELBOW, 3/4 INCH MNPT W/O-RINGS	1
25	502503	TANK, FLUSH, .5 GAL, 3/4 INCH NPT	1
26	304628	FITTING, BALL VALVE, 3/4 INCH FNPT X 3/4 INCH FNPT	1
27	304629	FITTING, ADAPTER, 3/4 INCH MNPT TO GARDEN HOSE	1
28	304533	BALL VALVE, 1/4 INCH MNPT X 1/4 INCH QC, PARKER	1
29	309090	TUBING, 1/4 INCH, BLACK	1
30	304626	FITTING, 1/4 INCH MNPT CLOSE NIPPLE	1
31	304627	FITTING, 1/4 INCH FNPT TEE	1
32	306067	FITTING, 1 INCH MNPT+PR W/O-RINGS	2



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