Homespring Water Purifier System

INTERIM Operations Manual
Homespring Qualified Technician Operation and Maintenance Guide

homespring

UFC 211
UF 211

IMPORTANT: See safety warnings inside

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A. LEGAL DISCLAIMER

This manual outlines some of the basic principles of household water collection, treatment, discharge and some of the features of the **Homespring Water Purifier System** (the "System"). It is not intended to be a definitive dissertation on the principles set out above, nor is it intended to be relied upon by anyone but **Homespring Customer Care** ("Consultants") and **Qualified Service Technicians**. Any other reliance is expressly excluded. Further, in so far as Consultants and **Homespring Qualified Service Technicians** are concerned, this document must be utilized in connection with all authorized training procedures created by **Homespring** and/or **GE Water & Process Technologies**. It should be remembered that homeowners will also be provided with an Owner's Manual, which will provide a more general overview of the above mentioned principles and features of the System.

The **Homespring Water Purifier System** must be installed by a **Homespring Qualified Technician** and properly maintained in accordance with the Operations and the Owner's Manual. Failure to properly maintain the System will compromise performance and/or result in the failure to control water quality.

B. SAFETY WARNINGS

Before, during and after installation, follow the safety instructions provided in this manual to avoid possible serious illness or death from contaminated water.

1. WARNING! Operational

All System Parts and Components must be installed in accordance with all local building and plumbing codes.

The System must be installed on a cold-water supply line only. Failure to do so may cause System damage, leading to personal injury and/or physical damage.

The System has been designed, built and tested to offer reliable service, provided if it is installed, commissioned, operated, maintained and tested in strict accordance with the instructions contained in this manual. Failure to properly maintain the System will compromise performance and/or result in a failure to control water quality, which may lead to delivery of contaminated water. Consuming contaminated water could result in serious injury or possibly death.

To avoid System damage, ensure that a Stainless Steel Prefilter or Carbon Prefilter is in place during operation of the System. Failure to do so **will void all warranties.** In the absence of either filter, abrasive damage to the System may occur. A damaged System may permit contaminated water to enter the household distribution system, causing illness or death. Irreversible and premature fouling of the System may also occur resulting in System replacement at the owner's expense.

Tools used to install the System should be maintained in sterile condition so that the risk of cross-contamination is minimized. Bacteria, parasites, and viruses can live for long periods of time. As a result, dangerous organisms can be carried from one installation or maintenance site to another and may potentially cause serious personal injury, sickness and/or death. Proper tool care and disinfection procedures will minimize these risks. Always wash hands thoroughly with soap and water after servicing the System.

Do not attempt to remove System Cap when System is under pressure.

Premature fouling of the System is not covered by the warranty.

The System has a shelf life of ten months after its manufacturing.

The System must be kept wet all times after installation. Do not let the System dry for longer than 12 hours. Failure to do so may damage the System causing personal injury, physical damage, illness and/or death and **will void all warranties**.

Except in emergencies, do not open the bypass valve (if applicable); bypassing the System may contaminate water supply and water supply system.

ONLY OEM parts supplied by the manufacturer are to be used when installing or servicing the Filtration system (System). Failure to do so may result in System damage, serious personal injury,

death and/or property damage. Use of non-OEM parts will void the manufacturer's warranty.

2. WARNING! Biological

The System is not intended for the treatment of water from an obvious contamination source (such as sewage or wastewater).

Biofilm and pathogens already present in home piping lines downstream of the system could migrate into filtered water unless the piping has been properly sanitized. All household piping and distribution lines should be sanitized prior to consuming the filtered water using proper sanitization procedures (see your local Health Authority). The system owner should verify the water outlet quality at the outlet sources by having it tested by an approved or qualified water testing laboratory prior to consumption.

The System must be commissioned and maintained in accordance with the Owner's Manual by an Authorized Service person. Failure to properly maintain the System will compromise performance and shorten the life of the System and may result in delivery of contaminated water. Consuming contaminated water could result in serious injury or possibly death.

3. WARNING! Emergency Bypass Safety

If System is equipped with a Bypass Valve, do not open Bypass Valve except in emergencies. Opening the Bypass Valve will permit potentially microbiologically contaminated water to enter the household water distribution system. Drinking contaminated water may cause serious illness and/or death. Do not drink the water if the System has been operated in bypass mode.

If the System has been operated in bypass mode and if the water is being drawn from a well or surface water source, the System and the household water distribution system should be disinfected again once returned to filtration mode.

If the System is in bypass mode, the controller must be unplugged. Failure to do so may cause System to dry and become damaged, leading to personal injury, and/or physical damage and will **void all warranties**.

A bypass is not required for proper operation of the System. However, some local plumbing codes may require a bypass. If a bypass is to be installed, the procedure described below is to be followed in order to provide water in an emergency or during System malfunction.

3.1 Bypass Procedure

1. Close Inlet and Outlet Valves. (If ball valves are installed, turn the handles perpendicular to the water pipe.)
2. Open Bypass Valve (If ball valve is installed, turn the handle in-line with the water pipe).
3. Unplug Controller.

3.2 To return to filtered water service:

1. Close Bypass Valve. (If ball valve is installed, turn the handle perpendicular to the water pipe.)
2. Open Inlet and Outlet Valves. (If ball valves are installed, turn the handles in-line with the water pipe.)
3. Plug in the controller.
4. Follow the **Cleaning** section under **F. COMMISSIONING** in this manual to recommission the System.

4. WARNING! Winterization

The System will be damaged if frozen. The System must be winterized according to the Winterization Procedure described in this manual. The System must be winterized prior to temperatures falling below 32°F (0°C). Failure to do so may cause the System to dry, freeze, become damaged, and **will void all warranties**. Operating a damaged System may lead to personal injury, and/or physical damage.

5. WARNING! Cleaning

The MC-1 cleaner SHOULD NOT be combined with any other chemical or cleaning solution, especially hypochlorite or household bleach. Failure to do so can result in serious personal injury, illness, or death.

C. CERTIFICATIONS

Current System certifications, as well as the limits to those certifications held, are listed below.
The System should only be installed where it complies with provincial, state or municipal laws and regulations.
The System should only be used to filter cold supply water.

1. NSF Certifications

The System conforms to ANSI/NSF 42/53 for the claims set out below, as verified and substantiated by test data.
The UF 211 model has been certified as:

System Tested and Certified by NSF International against NSF/ANSI 42 and 53 for:
- Cyst Reduction
- Turbidity Reduction
- Particulate Reduction - Class 1

The UFC 211 Model (equipped with a Carbon Prefilter) has been certified as:

System Tested and Certified by NSF International against NSF/ANSI 42 and 53 for:
- Cyst Reduction
- Turbidity Reduction
- Particulate Reduction - Class 1
- Chlorine, Taste and Odor Reduction

UFC 211 model Chlorine Reduction Capacity Rating:
130,000 / 491,400 (US gallons/liters)

Models with activated carbon filter option certified for cyst reduction may be used on disinfected waters that may contain filterable cysts.

2. BioVir Laboratories

NELAP* and California Department of Health accredited laboratory

*National Environmental Laboratory Accreditation Program (NELAP) Accredited #05234CA

The Homespring UF200 Series** Water Purifiers have been tested by BioVir Laboratories Inc. and found to meet all the requirements of the USEPA's Guide Standard and Protocol for Testing Microbiological Water Purifiers (OPP Task Force Report, 1987) as interpreted by the BioVir Laboratories specifically for the Homespring UF200 Series Products.

The test results were:
Bacteria Reduction: >99.99999%
Virus Reduction: >99.999%

**Applies to the following models: UF211, UFC211

3. Water Quality Association

The Homespring UF200 Series Water Purifiers have been tested and certified by the Water Quality Association (WQA) to the USEPA's Guide Standard and Protocol for Testing Microbiological Water Purifiers (OPP Task Force Report, 1987) as interpreted by the WQA and to NSF/ANSI 42 and 53.

Applies to the following models: UFC 211, UF 211.

D. CONTACT INFORMATION

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3239 Dundas Street West
Oakville, ON, Canada
L6M 4B2

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www.homespring.com

E. INSTALLATION INSTRUCTIONS

All sales, commissioning and maintenance personnel are required to participate in a Homespring Qualified Technician training program to ensure that they have been trained to maintain and diagnose the System. Since the primary usage of the System is to remove bacteria, certain parasites and certain viruses from drinking water sources, this certification program is important and mandatory for both safety and liability reasons.

All efforts must be made to ensure that installations are performed in a careful, sanitary manner for the safety of the homeowner, home occupants, and technicians.

The following section outlines the installation procedures, the tools required in the installation, and the commissioning procedures.

Note: The images in this manual may appear slightly different than the actual System or parts.

WARNING!
To reduce the risk of severe injury, illness, death and/or property damage, read and follow all instructions. Use only **factory supplied** parts, where required.

1. System Installation Location with other Water Treatment Devices

If other water processing devices are currently installed in the home, the System should be located as shown in the diagram:

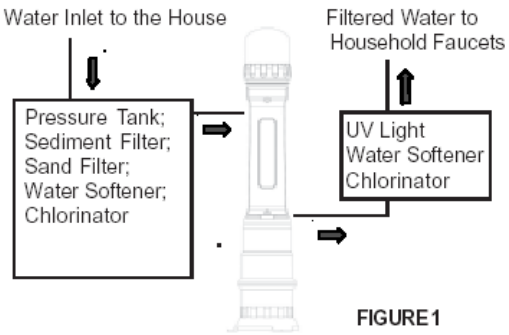


FIGURE 1

A water softener can be placed either before (upstream) or after (downstream) the System. If the softener is downstream of the System, it is recommended that a supply line of hard water be plumbed to the kitchen so that filtered, mineralized water can be utilized in food preparation and for human consumption.

If a chlorinator is used to control bacterial and virus growth in pipes, a Stainless Steel Prefilter may be installed in the System instead of a Carbon Prefilter.

2. System Configuration for Standard Installations

For households on a municipal system, locate the water main, which connects the household to the municipal supply line. Usually this is near the water meter. For private pump/pressure tank style system, locate the outlet of the pressure tank. The System must be installed downstream of the water meter or pressure tank in order to provide treated water to the whole household.

The System is installed directly in-line with the home supply, following the water meter or pump and pressure tank.

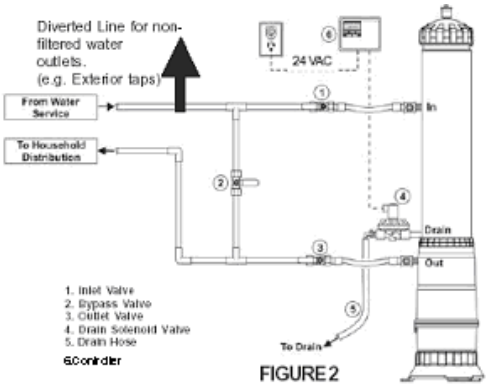


FIGURE 2

Note: A dedicated line, diverted from the main water line, may be installed upstream of the System for all exterior taps, pool or hot tub makeup valves, and irrigation systems. This arrangement will extend the life of the System membrane.

3. System Configuration for models equipped with optional Surface Water Option Kit

Systems purchased with the Surface Water Option Kit are installed at the same location and in the same manner as a standard System, with the exception of additional parts, which must be installed, as shown. Additional parts include an Inlet Solenoid Valve, Check Valve, and External Prefilter.

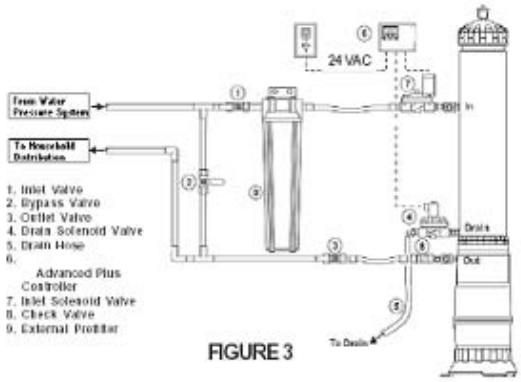


FIGURE 3

Note: The Inlet Solenoid Valve of the Surface Water Option Kit creates a non-pressurized draining of the System. The entire drain line, including the floor drain, must be below the Drain port of the System.

WARNING!

When treating surface water sources, an External Prefilter of 25-microns nomimal mesh size is required. Failure to provide this level of prefiltration may lead to System damage and will void the warranty. A damaged System may cause serious personal injury, illness, and/or death.

4. Tools, Supplies and Parts

WARNING!

Tools used to install the System should be maintained in sterile condition so that the risk of cross-contamination is minimized. Bacteria, parasites, and viruses can live for long periods of time. As a result, dangerous organisms can be carried from one installation or maintenance site to another and may potentially cause serious personal injury, sickness and/or death. Proper tool care and disinfection procedures will minimize these risks.

The following list of tools and supplies are required for the completion of this installation:

4.1 Tools (not provided)
- Slip joint pliers 12”
- Pipe Wrench 12”
- Adjustable wrenches
- Torpedo Level
- Fine slot drivers
- Phillips drivers: #0,1
- Nut drivers:5/16, 3/8
- Knife
- Air pump
- 1/4" Hex key
- Torch with gas
- Masonry Drill with 3/8” bit
- Robertson drivers: #1,2
- Snips

4.2 Supplies Required (not provided)
- Copper pipe
- Assorted Copper fittings
- Flux and flux brush
- Solder (Lead free)
- Tie wraps or cable ties
- Teflon® tape or pipe dope (for potable water)
- 5/8” hose for drain (comply with local plumbing code)
- 3 water shut-off valves (same size as install piping)
- Unscented Chlorine Bleach- 5-6% or 12%
2’ x 2’ patio stones (required only for heated floor)
pen or pencil
- Funnel
- Hose clamps
- Suspension strap
- Ground wire

4.3 Tools supplied with Service Testing Kit
- Integrity Tester
- Cap Wrench
- Two 1/4” tubings
- Silicon Lubricant - DOW CORNING 111
- Housing Wrench
- Two Pressure Gauges
- Digital Air Pressure Gauge
- Transformer
- 2 JG Mini Ball Valve

4.4 Spare parts (Recommended)
- AA batteries
- Inlet Solenoid Valve
- Air Relief Valve
- 1/4” Mini Ball Valve with Plug
- Advanced Plus Controller
- Stainless Steel Flex Hose
- Drain Solenoid Valve
- O-ring
- 3/4" Inlet/Outlet Fitting, 1/2" Nipple.

WARNING!

Ball valves are recommended for use as the Bypass, Inlet and Outlet Valves. Gate valves have a tendency to leak, allowing unfiltered water to mix with filtered water. The result may cause personal injury, sickness and/or death.

5. System Part List

5.1 UF 211/UFC 211
- System (pre-assembled)
- System Base
- Advanced Plus Controller
- Transformer (120VAC or 230 VAC)
- Carbon Prefilter for UFC 211
- Stainless Steel Prefilter for UF211
- Two Stainless Steel Flex Hoses
- Cap Wrench

Inside the bubble bag:
- 1 – Drain Solenoid Valve (Normally Closed)
- 1 – Air Relief Valve
- 1 – Nylon Elbow
- 3 – 3/8” bolts
- 2 – 1/4" Mini Ball Valves with Plugs
- 3 – washers
- 3 – 1/4" x 2 1/2" anchors
- 3 – shims
- 2 – 3/4" Inlet/Outlet Fittings
- 1- 1/2" Nipple

5.2 Surface Water Kit: (Optional)
- 1 – External Prefilter Housing
- 1 – Wall Bracket Kit
- 1 –1/4” Mini Ball Valve with Plug
- 1 – Inlet Solenoid Valve (Normally Open)
- 1 –External Prefilter cartridge (30-micron nominal)
- Mounting screws
- 1 – Check Valve
- 4 – 1/2" Lag Bolts

5.3 Horizontal Mounting Kit: (Optional)
- 2 – Cast Iron Stands
- 1 – Metal Support Strap
- 1 – Brass 1/2" Elbow
- 1 – Brass 1/2" Plug
- 1 – PVC 1/2" Nipple at 2” long
- 1 – Brass 1/2" x 1/2" Reducer Elbow
- 1 – Polypropylene 1/4" Closed Nipple
- 1 – Polypropylene 1/2" Closed Nipple
- 1 – Concrete floor bolt
- 4 – Wall mounting bolts 2 1/2" long
- 3 – 1/4"x 1” bolt & lock nut
- 5 – 5/16” x 1 1/4" bolt & lock nut
- 2 – Cast Iron Cross Members
- 1 – Air Relief Valve
- 1 – Brass 1/4" Tee
- 1 – Foam gasket

6. Preparing for installation

6.1 Pre-Installation Inspection
Prior to beginning the installation, check for the following:
• Space near point of entry of water supply
• Footprint and Height Clearance:
Vertical Systems
Footprint: minimum18"x18" (46cm x 46cm)
Height clearance: minimum 74" (188cm)
Horizontally-mounted Systems
Footprint (including 14" (36cm) of clearance beyond the System Cap): minimum 24" x 74" (61cm x 188cm)
Height clearance: minimum 36" (91cm)
• All Systems - level area (for floor mounting)
• Indoors with ambient temperature between 40°F-90 °F (4°C-32°C)
• Drillable floor, patio stone, or wood base
• Electrical outlet, 120VAC/230VAC, within 10' (305cm)
• Existing water equipment (e.g. water softeners, filters upstream and UV downstream)
• Recommended household water pressure is 2.07 bars (30 psi) minimum. If water pressure is less than 30psi, adjust Backpluse Tank pressure. Refer to Step 4 in the **System Installation** section.
• Drain within 20' (610cm) and up to 72" (183cm) high. If the System is to be equipped with an Inlet Solenoid Valve, the drain cannot be higher than the drain port (60 cm) of the System for proper draining.

Note: All outlets downstream of the System will provide filtered water.

7. Part Identification

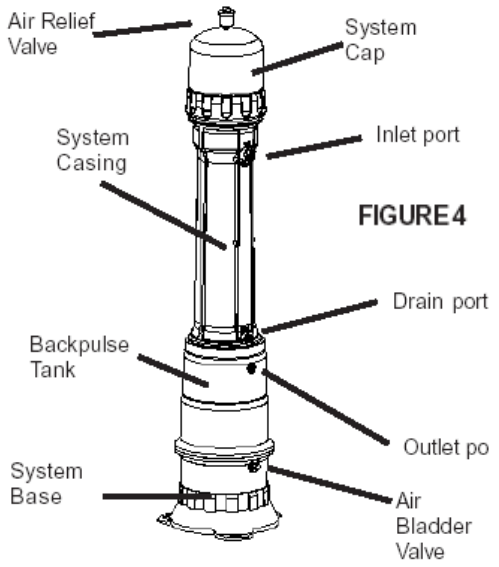


FIGURE 4

8. Horizontal Mounting

If the installation requires the System to be installed horizontally, complete the steps described in this section. If the System is to be installed in a vertical orientation, go to the **System Installation** section.

The Horizontal Mounting Kit is to be purchased separately. The Horizontal Mounting Kit must be used in the installation of Horizontally-mounted Systems.

8.1 Planning
The Horizontal Mounting Bracket must be assembled and installed prior to the installation of the System.

8.1.1 Mounting
The Horizontal Mounting Bracket can be installed either on the floor or on a wall, with adequate support. If mounted on a wall, the Bracket must be supported by studs, or mounted directly onto brick/block. The width of the Bracket is 36" (91cm) on center and can be installed directly across three wall studs if the wall studs are spaced 18" (46 cm) apart. If the wall studs are spaced differently, two pieces of 2x4 lumber must be mounted horizontally, at 8" (20 cm) apart middle-to-middle, on the wall studs to provide mounting surfaces for the Bracket. The fasteners used in mounting the two pieces of 2x4 lumber to the wall studs must be strong enough to support a minimum weight of 180lb (82 kg).

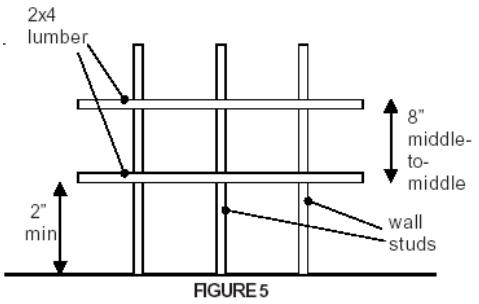


FIGURE 5

8.1.2. Spacing
For servicing, leave a minimum of 14" (36 cm) clearance beyond the System Cap. The vertical spacing required is 36" (91 cm) from the bottom of the bracket. If possible, install the System at a height convenient for servicing.

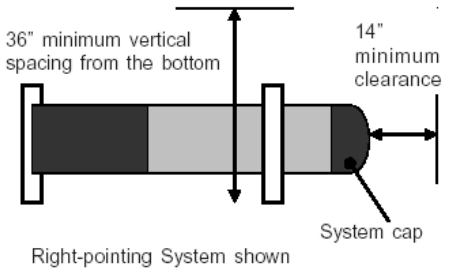


FIGURE 6

8.1.3 Orientation

The Horizontal Mounting Bracket can be configured to suit installation, in which the System Cap points to the left or the right. The bottom of the System is cradled in the concave feature of the Cast Iron Stand. The figure below shows the configuration for a right-pointing System. For left-pointing System configuration, flip both Cast Iron Stands up side down.

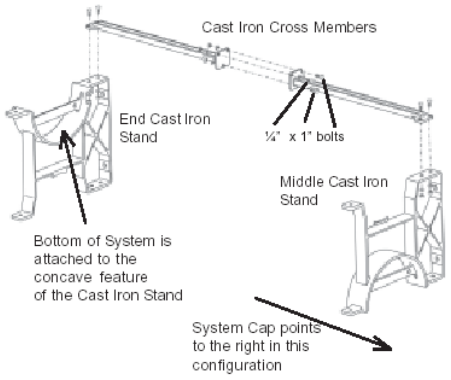


FIGURE 7

8.2 Installation

8.2.1 Depending on the particular installation, orient the cast iron stands in either a left pointing or rightpointing System configuration.

8.2.2 Connect the two Cast Iron Cross Members together using the three 1/4" x 1" bolts and lock nuts.

8.2.3 Attach the two ends of the Cross Member assembly to the Cast Iron Stands using the four 5/16" x 1 1/4" bolts and lock nuts.

8.2.4 (a) FLOOR MOUNTING

If the System is mounted on the floor, the floor surface must be leveled. Place patio blocks beneath the Bracket assembly and level the blocks with sand or stone if necessary.

Drill into the concrete floor or block and anchor the Bracket with the four supplied concrete bolts. Three of the concrete bolts come with the System and the forth bolt is supplied with in Horizontal Mounting Kit. If required, use the shims supplied with the System for leveling.

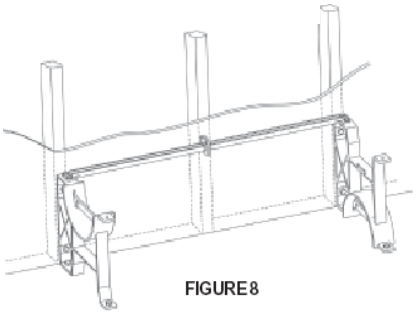


FIGURE 8

Note: If the System is being installed on a heated floor, use a 2'x2' patio stone for a base. Do not drill the floor.

8.2.4 (b) WALL MOUNTING

The Bracket assembly must be mounted directly to the wall studs or the two pieces of 2x4 lumber installed earlier. The four 2½" wall-mounting anchoring bolts are for wood studs only. If the wall is made of concrete, use appropriate concrete bolts for this installation.

- Mark the first hole location on the stud or lumber. Ensure that all spacing requirements are satisfied.
- Drill a hole suitable for the supplied 2½" anchoring bolt.
- Leaving one end of the Bracket assembly on the ground for support, lift the opposite end of the Bracket up, align the top mounting hole on the Bracket assembly with the pre-drilled hole on the wall stud, and secure the Bracket assembly with one 2½" anchoring bolt. Do not tighten this bolt completely.

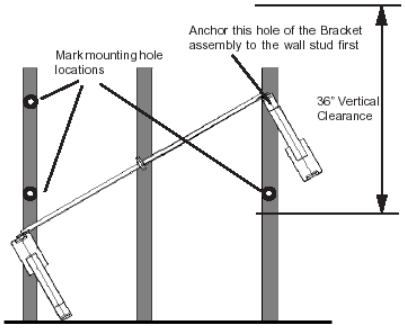


FIGURE 9

- Swing opposite end of the Bracket assembly upward. Level the Bracket. Mark the locations of the remaining three anchoring bolts with a pen or pencil.
- Lower the unattached end of the Bracket assembly back to the floor.
- Pre-drill the three holes for the remaining three 2½" anchoring bolts at the marked locations.
- Lift Bracket assembly up again, insert the three 2½" anchoring bolts, and tighten all four anchoring bolts.

9. System Installation

9.1 The System is shipped fully assembled, except for the System Base. Attach the System Base to the Backpulse Tank, using the supplied 3/8" bolts and washers.

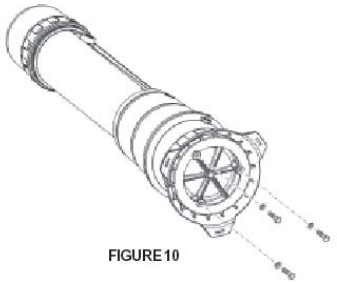


FIGURE 10

9.2 Stand the System upright carefully.

Note: Cut open the plastic bag before standing the System upright.

WARNING!
Handle the System with care. The outside surfaces of the System may be slippery with a food-grade preservative used in the manufacturing process.

WARNING!
If the Backpulse Tank has less than 20 psi (1.38 bars) of pressure, the integrity test will fail.
Only check the Backpulse Tank when the System is depressurized.

9.3 The Backpulse Tank has been pre-pressurized to approximately 30-35 psi (2.07-2.41 bars) from the factory. Confirm the Backpulse Tank pressure. If the Backpulse Tank pressure is less than 30 psi (2.07 bars), add air using a pump. Recheck the pressure after 15 minutes to ensure that there are no leaks in the Backpulse Tank.

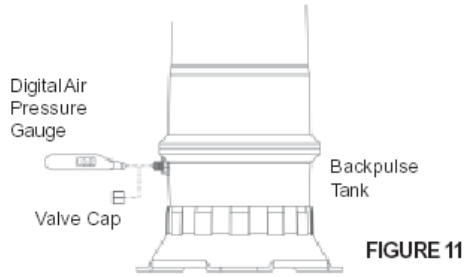


FIGURE 11

9.4 The pressure may require adjustment depending on the water system of the home. Refer to the Table below to ensure proper tank pressure. Air can be added or released from the Air Bladder Valve as required.

Application / Pump Set-points	Backpulse Tank Pressure
Municipal	30-35 psi (207 kPa)
Pump (20psi low - 40 psi high)	20 psi (140 kPa)
Pump (30psi low - 50 psi high)	30 psi (207 kPa)
Pump (40psi low - 60 psi high)	30-35 psi (207 kPa)

WARNING!
Do not pressurize the Backpulse Tank to greater than 35 psi (2.41 bars). Higher pressures may cause the tank's bladder to burst, leading to ineffective daily cleaning. Ineffective cleaning can greatly reduce the life of the System, leading to personal injury, illness, and/or death.
Once the Backpulse Tank pressure is checked, adjusted, and set, record final pressure on the Service Tag and on Page 2 of the Owner's Manual.

10. Pipe Assembly and Installation

Ensure that all threaded connections are fitted with NSF approved Teflon® Tape or Pipe Dope (for potable water) to prevent leakage. For Systems being installed on surface water applications, the Surface Water Option Kit must be installed.

10.1 Turn off water supply where the water enters the home.

Vertical Systems:
Plumb the Inlet pipe at approximately 48" (122cm) and the Outlet pipe at approximately 20" (50cm) off the ground. Install water shut-off valves on the new plumbing. The terminal ends of the new plumbing must be a 3/4" MNPT adapter in order to use the supplied Stainless Steel Flex Hoses.

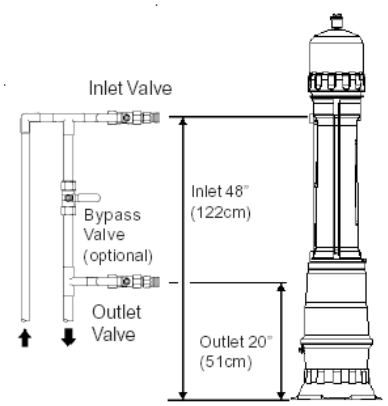


FIGURE 12

Note: The water bypass in the figure only bypasses the System. This configuration may be required according to the local plumbing code in your area.

Horizontally-mounted Systems:
Plumb the Inlet pipe at approximately 48" (122cm) away and the Outlet pipe at approximately 20" (50cm) away from the End Cast Iron Stand. Install water shut-off valves on the new plumbing. The terminal ends of the new plumbing must be a 3/4" MNPT adapter in order to use the supplied Stainless Steel Flex Hoses.

Right-pointing System configuration shown

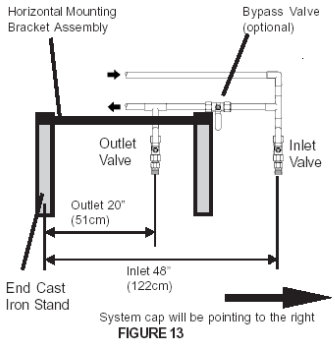


FIGURE 13

For **left-pointing System configuration**, reverse horizontal orientation in FIGURE 13.

Note: The water bypass in the figure only bypasses the System. This configuration may be required according to the local code in your area.

10.2 The two Inlet/ Outlet Fitting assemblies are shipped pre-assembled, with the Mini Ball Valves and Plugs already installed. Ensure that the Teflon® tape at both threaded ends are in good condition. Assemble the Inlet and Outlet Fitting assemblies as shown.

Inlet Fitting Assembly

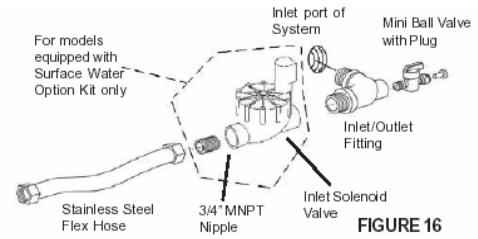


FIGURE 16

The directional arrow on the Inlet Solenoid Valve must point in the direction of the water flow.

Outlet Fitting Assembly

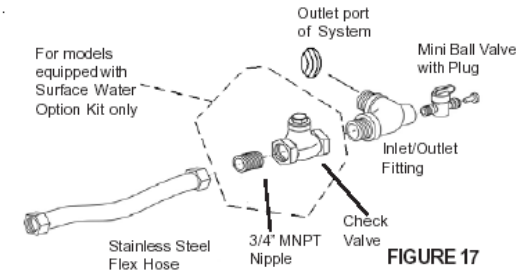


FIGURE 17

The directional arrow on the Check Valve must point in the direction of the water flow.

10.3 Install the Drain Solenoid Valve (normally closed) to the 1/2" Nipple to the Drain port of the System. The directional arrow on the Drain Solenoid Valve must point in the direction of the water flow (i.e. away from the System). Install the Nylon Elbow to the flow exit port of the Drain Solenoid Valve.

Horizontally-mounted Systems
Install the 1/2" Nipple and the 1/2" Brass Elbow provided in the Horizontal Mounting Kit at the Drain port of the System. Install the Drain Solenoid Valve to the 1/2" Brass Elbow using another 1/2" Nipple.

10.4 Applicable to Horizontally mounted Systems: The System Base is not required in this installation. Peel off the adhesive backing on the foam gasket supplied in the Horizontal Mounting Kit. Attach the foam gasket to the concave feature on the End Cast Iron Stand.

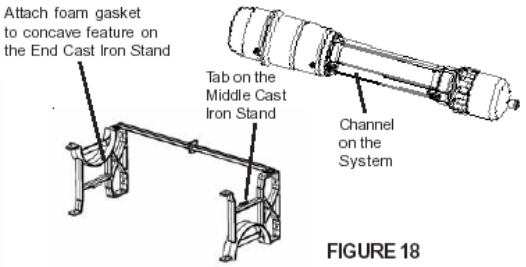


FIGURE 18

Lift up and place the System in the Bracket. Orient the System to make the Inlet, Drain, and Outlet ports facing downward. Ensure that the channel on the back of the System locks into the tab on the Middle Cast Iron Stand.

Using two of the 3/8" bolts supplied with the System, fasten the bottom of the System to the cross bar on the End Cast Iron Stand. The Middle Cast Iron Stand is attached to the Cast Iron Cross Member by two 1/4" bolts and lock nuts. Unscrew the 1/4" bolt and lock nut closest to the System.

Position the semi-circular Metal Support Strap over the System. Align the holes on the Metal Support Strap with the holes on the Middle Cast Iron Stand. Reusing the 1/4" bolt and lock nut from the last step, fasten one end of the Metal Support Strap to the Middle Cast Iron Stand. Use the remaining 1/4" bolt and lock nut supplied in the Horizontal Mounting Kit to fasten the other end of the Metal Support Strap to the Middle Cast Iron Stand.

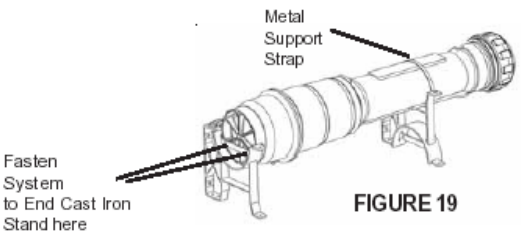


FIGURE 19

10.5 Applicable to Systems in non-surface water applications only: Connect the Inlet and Outlet Fitting assemblies to the 3/4" MNPT ends of the new plumbing with the supplied Stainless Steel Flex Hoses.

10.6 Applicable to Vertical Systems only: Once the Inlet and Outlet plumbing connections are made, the System must be secured to the floor. Drill a 3/8" hole through the feet of the System Base.

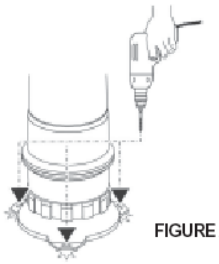


FIGURE 21

To level the System, insert the supplied shims beneath the feet of the System Base. Check with a level. Once leveled, fasten the System to the floor with the supplied 1/4" x 2 1/2"anchors (for concrete floor) or use screws (not supplied) for wood floors.

Note: If the System is being installed on a heated floor, use a 2'x2' patio stone for a base. Do not drill the floor.

10.7 Vertical Systems: Apply Teflon® tape to the 1/4" threads on the Air Relief Valve. Using a pair of pliers (or a hex key if applicable), remove the plug that is located at the top of the System Cap. Thread the Air Relief Valve into the opening. Do not use tools to tighten the Air Relief Valve to the System Cap as it may cause damage. Back off the black cap of the Air Relief Valve 1-1/2" turns to allow for proper venting.

Horizontally mounted Systems: NOTE: Ensure that all threaded connections are fitted with Teflon® tape or pipe dope (for potable water) to prevent leakage.

Inlet Fitting Assembly: Follow instructions in the System Operations Manual to assemble the Inlet Fitting Assembly. If the Surface Water Option Kit is installed, rotate the Inlet Solenoid Valve right-side-up.

Drain Line Assembly: Install the 1/2" Nipple and the 1/2" Brass Elbow provided in the Horizontal Mounting Kit at the Drain port of the System. Install the Drain Solenoid Valve to the 1/2" Brass Elbow using another 1/2" Nipple. Thread the Nylon Elbow to the water flow exit port of the Drain Solenoid Valve. Follow instructions in the System Operations Manual to finish the drain line assembly.

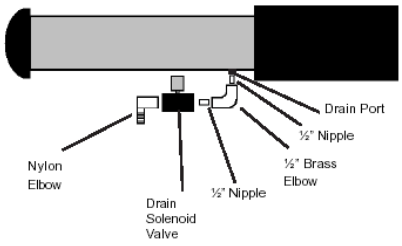


FIGURE 22

Air Vent Assemblies:

1. Using a 1/4" hex key, unscrew the two black plastic plugs on the System Casing. The two plugs should be facing upward when the System is installed on the Bracket.
2. Complete the Fiber Chamber Air Vent Assembly as shown in FIGURE 23a. Use Teflon® tape at all connections.

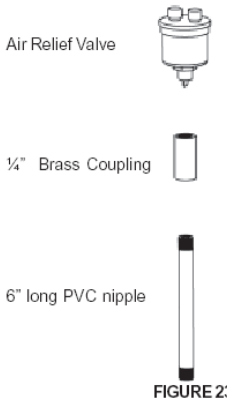


FIGURE 23a

Install Fiber Chamber Air Vent Assembly on the ¼" NPT port close to the Backpulse Tank. Do not use tools and do not over-tighten the connection. Take care not to crossthread this connection.

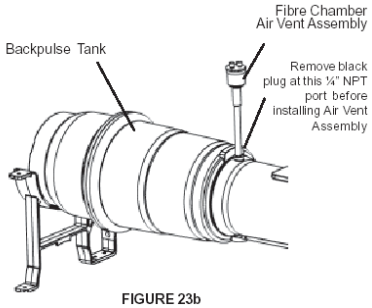


FIGURE 23b

3. Complete Prefilter Chamber Air Vent Assembly as shown in FIGURE 24. A second Air Relief Valve is provided with the Water Purifier System. Use Teflon tape at all connections.

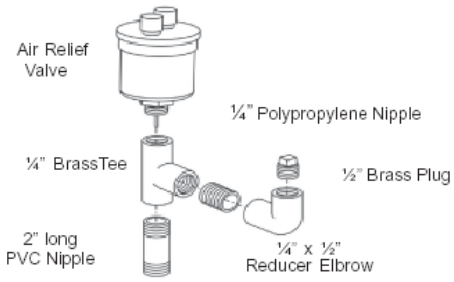


FIGURE 24a

Install the Prefilter Air Vent Assembly on the 1/4" NPT port close to the System Cap. Do not use tools and do not over-tighten this connection. Take care not to cross-thread this connection.
Ensure that the 1/2" Brass plug is at an accessible orientation (i.e. not facing the wall).

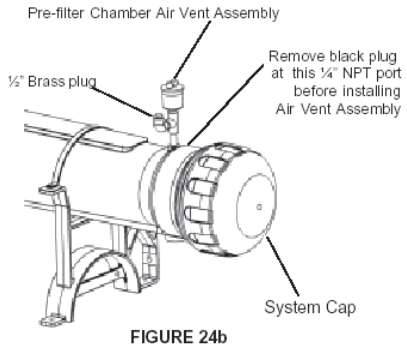


FIGURE 24b

11. Finished Assembly

The System, when properly assembled, will appear as shown in FIGURE 24c.

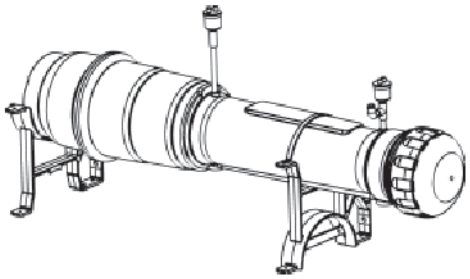


FIGURE 24c

Follow the instructions in the System Operations Manual to finish installing and commissioning the System.

11.1 Fasten a drain hose to the Nylon Elbow of the Drain Solenoid Valve. Run the drain hose to a floor drain, sink or dedicated drain that can accommodate the pressure and flow created during a flush/drain cycle. The drain hose must be free of kinks and leaks. Fasten the hose to the floor or wall and direct the hose into the drain with an elbow or clamp. Ensure that the drain hose can withstand the pressure of the home's water supply.

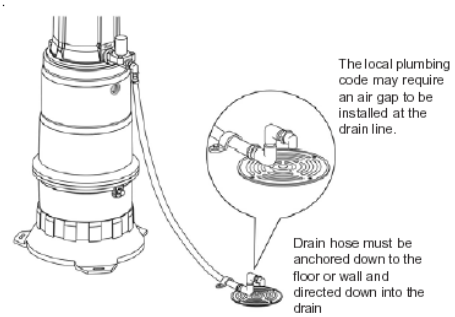


FIGURE 25

All Systems will undergo a pressurized flush sequence during its cleaning cycle. Depending on the Controller program selected, the System may also undergo a draining sequence. Refer to the **Controller Settings** section under **E. INSTALLATION INSTRUCTIONS** for detailed information on flushing and draining cycles. The following are recommended drain line discharge set-ups for the Systems.

Note: Drain configuration must comply with the local plumbing code.

11.1.1 For Systems that undergo only flushing sequences:
The floor drain and/or drain hose may be raised above the Drain port of the System. The entire drain line must be leak-proof. The floor drain does not have to be in the same room as the System.

As an alternative, the System may be drained directly into a laundry tub. The laundry tub is usually above the Drain port of the System.

11.1.2 For Systems that undergo both flushing and draining sequences:
Note: Systems installed in surface water applications must undergo flushing and draining cycles.

The draining sequence is non-pressurized. Because the System is completely emptied under only atmospheric pressure during the draining sequence, the entire drain line, including the floor drain, must be below the Drain port of the System.

Dedicated Trap Drain: The trap drain must be installed in accordance with local plumbing regulations. Ensure that there is an adequate air gap between the drain and the main discharge line. If a Dedicated Trap Drain is installed in a System that undergoes both draining and flushing cycles, ensure that the Dedicated Trap Drain is below the Drain port of the System.

WARNING!

A dedicated trap drain must be installed by a licensed plumber due to the complexity of venting, sizing and trap installation. Improper venting and trap installation can lead to sewer gases backing up into the house. Exposure to contaminated water or gases could lead to personal injury and/or death.

11.2 The cold water pipe is often used to ground electrical outlets inside the dwelling. If grounding connection(s) to the cold water line exists downstream of the System, the grounding path might have been broken after this installation. To restore the grounding path, attach a ground wire across the Inlet and Outline lines of the System. Refer to the local electrical code for the ground wire gauge, ground wire material, and connection method requirements.

WARNING!
Grounding protects home occupants from electrical shock. Broken grounding path may cause personal injuries and/or death.

12. Installing the Controller

WARNING!
To ensure personal safety and that the internal fuse in the 24VAC transformer is not blown during installation, install the two leads from the transformer into the controller terminals labeled 24VAC before plugging the transformer into an outlet. Failure to do so may result in the leads touching together and shorting out the transformer resulting in irreparable damage to the transformer which is not covered by the manufacturer's warranty.

12.1 Drill a hole suitable for #8 screw on an adjacent wall. Insert a #8 screw in this hole and tighten the screw, leaving a 1/4" gap between the screw head and the wall. Use the provided plastic anchor if necessary. Ensure that the controller is within the proximity of the System so that the cables can reach the Drain Solenoid Valve and the Inlet Solenoid Valve (***for Systems equipped with the Surface Water Option Kit only)***. The transformer cable should also be long enough to reach the electrical receptacle. Do not connect any cables at this time.

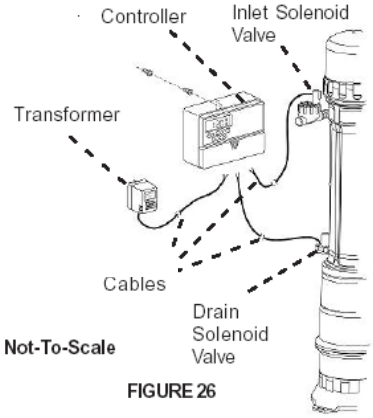


FIGURE 26

12.2 Mount the Controller by supporting the keyhole located at the back of the Controller on the screw head. Level the Controller. Remove the Controller front cover and drill two additional holes suitable for a #8 screw through the openings. Insert two additional #8 screws into these two holes and secure the Controller to the wall by tightening the two screws. Use the plastic anchors if necessary.

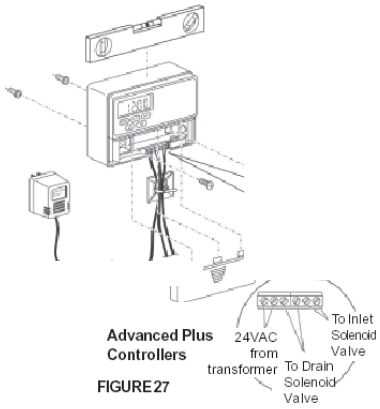


FIGURE 27

12.3 Ensure the transformer is not plugged into the electrical receptacle. Connect the power supply cable from the transformer to "24VAC" terminals on the Controller. Polarity is not important.

12.4 Connect the Drain Solenoid Valve cable to the **"Drain"** terminals on the Controller. Refer to FIGURE 27. Plug the Drain Solenoid Valve adaptor into the Drain Solenoid Valve. Ensure that the orientation of the adaptor is correct as shown below and the gasket is in place. Secure the adaptor to the Drain Solenoid Valve by tightening the screw on the adaptor.

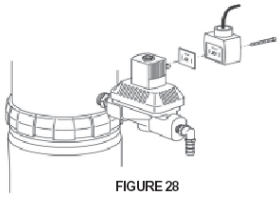


FIGURE 28

Note: Some valves may have an integratec cable, some may have a connector.

12.5 For The Optional Surface Water Option Kit: Connect the Inlet Solenoid Valve cable tc the **"Inlet"** terminals on the Controller. Refer to FIGURE 27. Polarity is not important. Plug the Inlet Solenoid Valve adaptor into the Inlet Solenoid Valve. Ensure that the orientation of the adaptor is correct and the gasket is in place. Secure the adaptor to the Inlet Solenoid Valve by tightening the screw on the adaptor. Refer to FIGURE 28.

12.6 Install the two provided AA batteries in the Controller. Replace the Controller front cover and plug the transformer into the electrical receptacle.

13. Controller Settings

Note: Electrical power to the Controller must be on to activate the flushing and draining sequences. The batteries are for keeping the time in case of power failure and will not activate the flushing and draining sequences.

Note: Once the Controller is set, the Controller will remember the Start Time, Program Number, and Flush/ Drain Interval settings ***(if applicable)*** *even if the electrical power to the Controller is interrupted.*

Note: When the System is undergoing a flushing or a draining sequence, very little or no water will be available for use in the dwelling. If possible, select a time for the flushing and draining when no water generation is required. Normal operation will resume once the flushing and draining sequences are finished.

13.1 Settina the Clock

FIGURE 29

1 Press NEXT twice until **"SET TIME"** flashes on screen. Press ENTER.
2 Press the UP and DOWN arrows to set the hour. Press ENTER.
3 Press the UP and DOWN arrows to set the minute. Press ENTER.

13.2 Setting Flush/Drain Time

FIGURE 30

1 Press NEXT three times until **"START TIME"** flashes on screen. Press ENTER.
2 Press the UP and DOWN arrows to set the hour. Press ENTER.
3 Press the UP and DOWN arrows to set the minute. Press ENTER.

Note: Select a time that water usage is not expected in the dwelling. (e.g. 2:00 a.m.) Check with homeowner.

13.3 Setting the Program

Choosing a program:
- Low Turbidity (Less than 0.5 NTU): Program 1
- Medium Turbidity (Peaks to 1 NTU, less than 72 min. per day): Program 2
- High Turbidity (Peaks to 5.0 NTU, less than 72 min. per day): Program 3
- Very high Turbidity (Peaks to 10 NTU, less than 72 min. per day): Program 4

Note: If surface water is the source, select either Program 3 or Program 4 in this application.

Program 1	2 flushes	2.5 minutes	7.5 US Gal
Program 2	4 flushes	6 minutes	15 US Gal
Program 3	2 flushes and 1 drain	8.5 minutes	13.5 US Gal
Program 4	2 flushes and 2 drains	16.5 minutes	19.5 US Gal

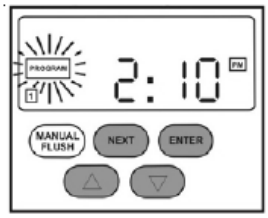


FIGURE 31

1 Press NEXT four times until **"PROGRAM"** flashes on screen.
2) Press ENTER.
3) Press the UP and DOWN arrows to set the Program number. Select the appropriate Program for your application. Press ENTER.

13.4 Setting the Flush/Drain Interval:

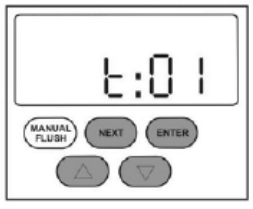


FIGURE 32

1 Press NEXT five times until "**t:01**" appears on screen.
2 To change the flush/drain interval setting, hold the UP and DOWN arrows down **together** and press NEXT. Release all buttons and repeat to shift to the next interval. There are five interval settings to choose from:

Flush / Drain Interval Setting	No. of Flush/Drain Cycles per Day	Time Interval Between Flush/Drain Cycles
t:01	once	24 hours
t:02	2 times	12 hours
t:04	4 times	6 hours
t:08	8 times	3 hours
t:24	24 times	1 hour

Note: Under conditions of turbid water and high usage of the System, select a Flush/Drain Interval setting appropriate to the specific application. Increase frequency of flush/drain cycle if the System TMP rises too quickly. Increasing the number of Flush/Drain cycles per day will prolong the life of the System; however, more water will be used for system cleaning purposes.

14. Controller Functions

14.1 Manual Flush

Note: For use when the instructions in this manual or the Owner's Manual call for a Manual Flush.

To manually flush the System, press NEXT once. **"MANUAL"** flashes on the screen. Press MANUAL FLUSH to open the Drain Solenoid Valve. If the MANUAL FLUSH button is held down for 5 seconds, the Drain Solenoid Valve will remain open for 5 minutes. To interrupt flushing, press MANUAL FLUSH again. The Drain Solenoid Valve will be closed automatically after 5 minutes if not interrupted.

14.2 Light and Alarm Function

The green light on the controller indicates that the System is in operation. The green light will be on for 10 months from the first commissioning of the System.

WARNING!
The green light is NOT an indication of the integrity of the membrane inside the System.

At the start of the System's 11th month of operation, the yellow service indicator light will come on. This is an indication that the System Annual Maintenance is required.

At the System's 11 1/2 th month of operation, the yellow service indicator light will begin to flash and an audible alarm will start to beep.

To temporarily silence the alarm, depress and hold the UP and DOWN arrows **together** for three seconds. The alarm will come back on in seven days after this command is executed.

To permanently turn the alarm off, depress and hold the UP and DOWN arrows **together** and press ENTER. "A oF" (alarm off) will appear on the screen. To turn the alarm on again, repeat the above step. "A on" (alarm on) will appear on the screen.

To reset the Controller, press NEXT and ENTER together and hold for 3 seconds. The yellow light will go off and the green light will come on again.

15. Surface Water Option Kit Installation

WARNING!
In surface water installations, the Homespring Qualified Technician must inform the homeowner and home occupants that the entire water supply and distribution system of the dwelling must be disinfected prior to use.

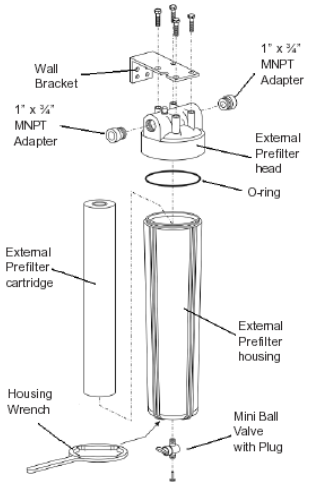


FIGURE 33

The Surface Option Kit is purchased separately from the System. Install this kit in surface water applications.

For convenience or servicing, install the External Prefilter between the Inlet Valve and the Inlet Fitting Assembly.

The Inlet Solenoid Valve (normally open) must be installed as part of the water inlet line and the Check Valve must be installed as part of the water Outlet Line. Refer to steps 6 and 9 in

System Installation section under **E. INSTALLATIONS INSTRUCTIONS**.

15.1 Mount the Wall Bracket to the wall.

15.2 Attach the External Prefilter head to the Wall bracket using the four supplied lag bolts.

15.3 Remove the plastic wrap on the External Prefilter cartridge and insert the cartridge into the External Prefilter housing.

15.4 Ensure that the O-ring is seated at the lip of the External Prefilter housing. Screw the External Prefilter housing into the External Prefilter head. Tighten the connection with the Housing Wrench.

15.5 The plumbing must be compatible with the Inlet and Outlet ports of the External Prefilter.

If necessary, insert the supplied 1" x 3/4" MNPT adapters into the External Prefilter ports and then attach the External Prefilter head to the plumbing.
15.6 Install the Mini Ball Valve with Plug at the bottom of the External Prefilter housing.

When the External Prefilter housing needs to be removed for servicing (e.g. to change the filter cartridge), close the Inlet Valve and depressurize the External Prefilter by draining the water inside. To drain the water inside, open the Mini Ball Valve at the bottom of the External Prefilter housing. Depress the red button on the External Filter head to speed up draining. A 1/4" tubing can be inserted into the port of the Mini Ball Valve to direct water into a drain or a large pail.

Note: Before installing or replacing the External Prefilter housing on the External Prefilter head, inspect the O-ring to ensure that it is in good condition. Lubricate the O-ring sparingly with DOW CORNING 111 silicone lubricant.

WARNING!
In surface water applications, failure to install and/ or properly maintain the External Prefilter cartridge may cause premature fouling of the System and therefore, shorten the System's life or damage the System membrane, causing personal injury and /or death.

F. COMMISSIONING

WARNING!
The System must be filled with water at all times once commissioned. Failure to do so may cause System to dry and become damaged, resulting in personal injury, illness, and/or death.

Do not turn on any hot water taps when flushing the System during commissioning or maintenance. If hot water is used, high levels of factory preservative, chlorine, or MC1 cleaning agent may enter the hot water tank and may cause personal injury, illness, and/or death.

Disposable protective gloves must be worn during commissioning of the System to protect your hands. At the end of the procedure, wash your hands thoroughly with soap and water. Do not reuse gloves. Dispose of gloves in the garbage.

1. Filling and Flushing

WARNING!
If the System Cap is not properly tightened and/or the O-ring is not clean, System leaks may occur. Leaks may cause personal injury or property damage. Take care not to cross-thread the System Cap during cap installation. Ensure that the System Cap has at least two full revolutions from where the threads first engage to where resistance is first felt. Once resistance is felt, use the Cap Wrench to turn the cap one more revolution until the cap stops.

When the Internal Prefilter is removed, ensure the Thimble Filter remains in place, seated in the spigot of the Prefilter cavity. Removal of the Thimble Filter may permit damage to the System membrane, which may lead to illness or death.

1.1 Remove the System Cap and remove the Internal Prefilter. Place the Internal Prefilter in a clean, dry area. Replace the System Cap and tighten using the Cap Wrench.

For models with a Stainless Steel Prefilter, a Carbon Prefilter may be purchased separately if desired.

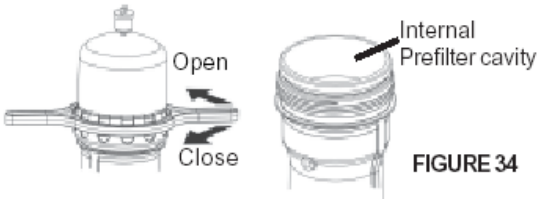


FIGURE 34

1.2 Slowly open the Inlet Valve half way, allowing water into the System. Avoid opening the Inlet Valve quickly as this will introduce air pockets that will take longer to escape. Keep the Outlet Valve closed. Check for any leaks in the plumbing. If present, close the Inlet Valve

immediately and repair. As pressure builds in the System, air will begin to escape from the Air Relief Valve. Once air is no longer passing through the Air Relief Valve, the System is pressurized.

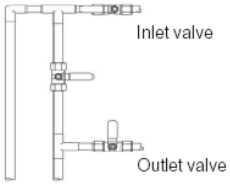


FIGURE 35

For **Horizontally-mounted Systems**, check to make sure that no air comes out from either Air Relief Valve.

If an External Prefilter is installed, depress the red button on the External Prefilter head to allow air to escape from the External Prefilter housing. Once water emerges from the button, all air has been removed.

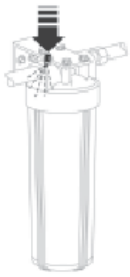


FIGURE 36

1.3 Using the Controller, initiate a Manual Flush sequence. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence. Following the Manual Flush, open the outlet valve, and then open a cold water tap that is downstream of the System. Allow water to flow for 15 minutes. The System requires a 15-minute flush to remove the food-grade factory preservative.

2. Cleaning

2.1 Ensure that the two Mini Ball Valves are closed (To close, turn the handle perpendicular to the Plug/hose end). Remove the Plugs from the two Mini Ball Valves by depressing the lock ring and pulling on the Plug. Insert a Pressure Gauge from the Service Testing Kit into the Inlet Mini Ball Valve, open valve and observe System pressure.

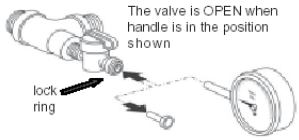


FIGURE 37

2.2 Close the Inlet and Outlet Valves, leaving the Inlet Mini Ball Valve open. Using the Controller, initiate a Manual Flush sequence to bring System pressure to close to zero. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence. Once the Pressure Gauge registers close to zero pressure, stop the Manual Flush immediately.

2.3 Vertical Systems: Remove the System Cap using the Cap Wrench. The water level should be at least 2" above the Internal Prefilter spigot.

If the water level is below 2", open the Inlet Valve slowly to raise the water level.

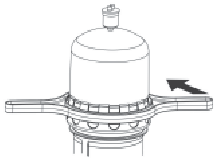


FIGURE 38

Horizontal-mounted Systems: Ensure that there is still some water inside the System after the Manual Flush. Do not empty the System completely. If water stops coming out during the Manual Flush, open the Inlet Valve slowly to fill the System again.

WARNING!
Do not use a bottle of bleach more than 3 months old.

If a Bypass Valve is installed, the Bypass Valve should be closed for the entire procedure to avoid contaminated water entering the household distribution system. Contaminated water might cause personal injury and in some cases death.

This cleaning procedure does NOT disinfect the household pipes. If potentially microbiologically unsafe water was present in the pipes, it is strongly recommended that all pipes be sanitized.

2.4 Vertical Systems: With the Internal Prefilter still removed, pour 2 cups (500 ml) of 5 - 6% unscented household chlorine bleach OR 1 cup (250 ml) of 12% chlorine bleach into the Prefilter cavity. Replace the System Cap. Slowly open

the Inlet Valve to pressurize the System. Let stand for **15 minutes**.

Horizontally Mounted Systems: With the Internal Prefilter still removed, unscrew the 1/2" Brass Plug on the Air Vent Assembly near the System Cap.

Pour 2 cups (500 ml) of 5 - 6% unscented household chlorine bleach OR 1 cup (250 ml) of 12% chlorine bleach into the System Casing cavity. A funnel may be used in this step to assist pouring. Replace the 1/2" Brass Plug. Slowly open the Inlet Valve to pressurize the System. Let stand for **15 minutes**.

2.5 Using the Controller, activate the Manual Flush sequence. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence. Once the flushing is complete, open the Outlet Valve and a nearby COLD water tap to flush most of the chlorine from the System. Run the tap fully open for at least 10 minutes. **Further flushing must be performed by the homeowner later**. Refer to the **Final Flush by Homeowner** section at the end of **F. COMMISSIONING**.

Note: Use only COLD water taps and continue the flow of water until there is no chlorine smell.

3. Integrity Test

3.1 Purpose: This test ensures that the membranes are intact and free from tears or ruptures that would permit bacteria and other particles to pass through the membranes, contaminating the filtered water. The Integrity Test is conducted at initial commissioning after the 15 minute flush and subsequent sanitization and on an annual basis by a Homespring Qualified Technician.

3.2 Test Description: This automated test will pressurize the membranes with air from the Outlet side of the System, forcing clean water back through the membranes. Water easily passes through the membranes due to the surface tension of water, however air has a different surface tension and does not normally pass through an intact membrane. Once adequate air pressure has been achieved, a pressure sensor measures any decay of that pressure. The Integrity Tester analyzes the pressure data over this interval. If the decay is within acceptable limits the Integrity Tester will indicate a 'PASS'.

3.3 Tools Required

- Integrity Tester
- 2 – 1/4" tubing
- 2 cups (500mL) of unscented household chlorine bleach OR 1 packet of MC1 cleaning agent and a 1 cup (250 mL) container
- Cap Wrench
- 2 - Pressure Gauges

Other than the sanitizers, all required tools are included in the Service Testing Kit.
Note: A bucket may be required to collect some water if the ¼" tubing is not long enough to reach a drain.

3.4 Disinfection Procedure for Tools
All Pressure Gauges and tubing MUST be disinfected prior to use to avoid cross contamination and introduction of contaminated water into the household System.

Place and soak the adaptor tip and the 1/4" tubing ends in 5-6% unscented household chlorine bleach for 5 minutes. The brass adaptor will tarnish with time but this is acceptable. Do not submerge the entire Pressure Gauge into the sanitizer as it may damage its internal components. See FIGURE 40.

FIGURE 40

3.4.1 Close Inlet and Outlet valves. Using the Controller, initiate a Manual Flush sequence to bring the system pressure to zero. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence. Inserting the Pressure Gauges into the Inlet and Outlet Mini Ball Valves and opening the valves. Confirm that the System pressure is zero.

3.4.2 For Vertical Systems: Close the Inlet Mini Ball Valve, remove the Pressure Gauge, insert a 1/4" tubing into the Inlet Mini Ball Valve, direct

COMMISSIONNING section in the Operations Manual.
1. Close the Outlet JG Valve
2. Disconnect the hose from the Integrity Tester
3. Point the hose towards a drain or empty bucket and open the Outlet JG Valve.
4. Keep the valve open until all the air has left the unit, a steady slow stream or water should be flowing out of the hose.
5. Close the JG Valve
6 Re-attach the hose to the Integrity Tester and restart the Integrity Test.

Following a FAULT notification, take the appropriate corrective action and re-do the Integrity Test.

3.4.6 Ensure that the Inlet Valve is still in the closed position. Once a PASS is achieved, close all Mini Ball Valves and remove both 1/4" tubings from the Mini Ball Valves. Open the Outlet Valve and turn on a tap downstream of the System to relieve the air pressure inside the System Turn off the tap once water stops coming out from the tap.

Applicable to Vertical Systems only: Insert Plugs back into the Inlet and Outlet Mini Ball Valves. Once the System has been depressurized, remove the System Cap. Using the Controller, perform a Manual Flush to drain the Prefilter cavity so that the spigot at the bottom can be observed. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence.

Applicable to Horizontally mounted Systems only: Remove the spare Mini Ball Valve and reinstall the Air Relief Valve (Refer to FIGURE 22). Attach a 1/4" tubing to the Inlet Mini Ball Valve. Direct the other end of the 1/4" tubing to a drain of large pail. Open the Inlet Mini Ball Valve and drain out the water in the Internal Prefilter cavity.

3.4.7 Remove the System Cap using the Cap Wrench. Insert the clean Internal Prefilter into the System Prefilter cavity. Push down gently to ensure it is seated properly.

UFC211, and UF211models, do not remove the Thimble Filter from the spigot. If the Thimble Filter is dislodged, gently push it back into place.

FIGURE 45

3.4.8 Replace the System Cap and open the Inlet Valve. Turn on a cold water tap to remove any remaining air and residual chlorine from the System and plumbing. Once the remaining air is released, leave the tap on for the rest of this procedure.

4. Transmembrane Pressure (TMP) Test

The TMP test measures the pressure drop across the membrane. This is the pressure change that the homeowner will observe as a result of the filtering process. The TMP is tracked during the life of the System and is used to determine the condition of the System membrane. As the membrane fouls, the TMP will increase.

4.1 Insert a Pressure Gauge into each of the Inlet and Outlet Mini Ball Valves and open the valves.

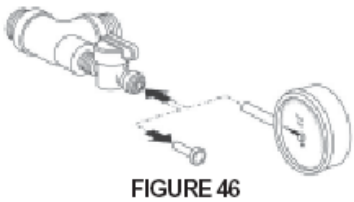


FIGURE 46

4.2 With a nearby tap running with a high flow rate, read the two Pressure Gauges and subtract the Outlet pressure from the Inlet pressure. The resulting value is the TMP. Record the value on the Service Tag.

When a pump/pressure tank is in use, use the following inlet pressure to determine TMP:

Pump Set Points (psi)	Inlet Pressure (psi)
20/40	35
30/50	45
40/60	55
X/Y	Y-5

5. Complete Paperwork

The following documents are shipped with the System:
- Owner's Manual
- Congratulations letter
- Installation Checklist
- Service Tag
- Warranty Card
- Pipe Labels

• Complete all info on the Service Tag and hang from System Cap.
• Complete and return the Installation/Registration Checklist, ensure that all fields are complete, including the homeowner's signature.

• Record the serial number on page 2 of the Owner's Manual for future reference.

6. Final Flush by Homeowner

Have the homeowner continue to run a cold water tap for 60 minutes. This is required to meet NSF drinking water standards and to remove residual chlorine. The homeowner may notice chlorine taste/smell when a tap is first opened for a day or two following the cleaning procedure.

G. ANNUAL MAINTENANCE

To extend the life of the System's membrane, maintenance procedures are recommended on a minimum of an annual basis. A Service Testing Kit is required, including an Integrity Tester and other necessary tools, to perform the Annual Maintenance. A Homespring Qualified Technician must perform all maintenance including the annual Integrity Test as required as part of the 5 year limited prorated System warranty. If the Homespring Qualified Technician determines that the System has a high degree of debris causing a reduction in the flowrate, the number of maintenance visits per year may be increased to ensure that the System stays within operational limits, and to ensure the limited prorated warranty protection remains in effect.

1. Annual Maintenance Procedure

1.1 Transmembrane Pressure Test

The first step will be to perform a "pre-cleaning" transmembrane pressure test. To perform this test, follow the steps in the **Transmembrane Pressure Test** section under **F. COMMISSIONING**. This test will be performed prior to the cleaning and again following the Integrity Test. The results of these tests are to be recorded on the Service Tag.

If the Inlet Valve is upstream of the External Prefilter, change the External Prefilter following guidelines in the **Surface Water Option Kit Installation** section under **E. INSTALLATION INSTRUCTIONS** to install a new External Prefilter cartridge before beginning the Membrane Cleaning.

1.2 Backpulse Tank Pressure Check

Using the Digital Air Pressure Gauge, check the Backpulse Tank pressure. If it is not at the correct pressure (Approximately 35 psi/2.41 bars for most installations. Refer to the Service Tag for the actual reading), adjust the pressure using an air pump or compressor. Refer to Step 3 of the **System Installation** section under **E. INSTALLATION INSTRUCTIONS** for guidance.

1.3 Membrane Cleaning

WARNING!

Disposable protective gloves must be worn during maintenance of the System to protect your hands. At the end of the procedure, wash your hands thoroughly with soap and water. Do not reuse the gloves. Dispose of the gloves in the garbage.

For installations excluding ground water installations, clean the membrane following the steps in the **Cleaning** section under **F. COMMISSIONING** with the following exceptions. In Step 3, after the System Cap is removed, wipe the System Cap out with a clean, soft cloth, remove the O-ring carefully, wipe the O-ring with a clean cloth, check the O-ring for damage or wear, apply a very small amount of DOW CORNING 111 silicone lubricant on the O-ring, and replace the O-ring. If necessary, replace the O-ring with a new O-ring. And in step 4, let the System stand for **60 minutes** instead of **15 minutes**.

For surface water installations, clean the membrane following the steps in the **Cleaning** section under **F. COMMISSIONING** with the exception of replacing Step 4 with the following:

Pour the content of MC1 cleaning agent into a container with 250 mL of water. Mix thoroughly to dissolve the crystals.

For **Vertical Systems**, with the Internal Prefilter still removed, pour the solution into the Prefilter cavity.

For **Horizontally-mounted Systems**, remove the 1/2" Brass Plug of the Prefilter Chamber Air Vent Assembly and pour the solution into the Casing cavity through the 1/2" NPT port. Refer to FIGURE 23 for the location of the 1/2" Brass Plug.

WARNING!

Be careful to avoid MC1 cleaning agent coming in contact with skin or clothing. Wash the mixing container well before reuse.

WARNING!

The MC-1 cleaner SHOULD NOT be combined with any other chemical or cleaning solution, especially hypochlorite or household bleach. Failure to do can result in serious personal injury, illness, or death.

Replace the System Cap **(Vertical Systems)** or the 1/2" Brass Plug **(Horizontally-mounted Systems)**. Let stand for 60 minutes.

1.4 Integrity Test and Prefilter Replacement
The Integrity Test is to be performed as described in the **Integrity Test** section under **F. COMMISSIONING**, including the installation of a new Carbon Prefilter if a Carbon Prefilter is in use. If the System includes an External Prefilter (a Model with the Surface Water Option Kit) and is installed downstream of the Inlet Valve, the External Prefilter should be replaced during the cleaning time. Follow guidelines in the **Surface Water Option Kit Installation** section under **E. INSTALLATION INTRUCTIONS** to install a new prefilter cartridge.

1.5 Transmembrane Pressure Test
Following a successful Integrity Test, with the System still flushing through a tap, the TMP must again be measured and recorded on the Service Tag. To perform this test, follow the steps in the **Transmembrane Pressure Test** section under **F. COMMISSIONING.**

1.6 Battery Replacement
The two AA-sized batteries in the System Controller should be replaced once a year. The batteries are located under the front cover. Ensure that the settings of the Controller are still appropriate. Refer to the **Installing the Controller** and the **Controller Settings** sections under **E. INSTALLATION INSTRUCTIONS**.

1.7 Maintenance Service Tag
Ensure the Maintenance Service Tag has been completed.

1.8 Final Flush by Homeowner
Have the homeowner continue to run a cold water tap for 60 minutes. This is required to meet NSF drinking water standards and to remove residual chlorine. The homeowner may notice chlorine taste/smell when a tap is first opened for a day or two following the sanitization procedure.

Annual Maintenance Check Summary
"Pre-cleaning" TMP completed
"Pre-cleaning" TMP recorded on Service Tag
Backpulse Tank pressure checked
System depressurized and opened
System soaked with sanitizer (either bleach or MC1) for 1 hour
System flushed for 10 min
Integrity Test completed
Either Carbon Prefilter replaced or Stainless Steel Prefilter cleaned and reused
If External Prefilter is used, External Prefilter cartridge is replaced
"Post-cleaning" TMP completed
"Post-cleaning" TMP recorded on Service Tag
Batteries (2 AA) are replaced
Service Tag completed
Homeowner informed to leave cold tap on for 1 hour

Every 6 Months: For models equipped with **the Surface Water Option Kit**, the External Prefilter Cartridge must be inspected, cleaned and/or replaced.

2. Cleaning the Stainless Steel Façade or Nameplate

If required, the surface may be cleaned using a mild soap solution. Do not use any other cleaners or abrasive materials on the stainless steel surface as these cleaners may damage the labels. Wipe surface dry with a soft cloth afterward.

H. WINTERIZATION PROCEDURE

1. Tools/Supplies Required

For **all Systems** you will need:
- Cap Wrench
- Adjustable wrench
- Nut driver
- 3 US gallons (12 liters) plumbers antifreeze that is **propylene glycol** based and rated for -58 °F (-50 °C).
- 1- 3/4" MNPT PVC plug
- 1 – 1/2" MNPT PVC plug

WARNING!
Never use AUTOMOTIVE type antifreezes when winterizing the System. This may result in serious injury or death.

Only plumbing antifreeze, consisting primarily of **propylene glycol** with no ethanol or other alcohols, rated for -58 °F (-50 °C), may be used to winterize the System. The use of less expensive 'nonpropylene glycol based' plumbing or RV antifreezes may damage the System's internal components **voiding all warranties**. This may also result in serious injury or death.

Plumbing antifreeze containing **propylene glycol** will provide protection of the System against freezing to -40 °F (-40 °C) as long as the proportion of antifreeze to water is correct. This procedure only protects the System from freezing and does not protect the rest of the household water distribution system.

Propylene glycol based antifreeze is available at most hardware stores.

1.1 Close the Inlet Valve. Completely drain the System and household piping. To drain the System, refer to the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush. To drain the household pipes, open a cold water tap (on the lowest level of the home) and leave until the tap

only drips. Turn off the tap when the pipes are drained.

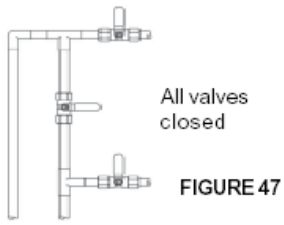


FIGURE 47

1.2 Remove the drain hose and Nylon Elbow from the Drain Solenoid Valve and install a 1/2" MNPT or 3/4" MNPT PVC plug (depending on the size of the port) into the Drain Solenoid Valve.

1.3 Drain the filtered water from the System by disconnecting the Outlet Stainless Steel Flex Hose where it connects to the home plumbing, and drain into a large bucket. Plug the Flex Hose and System by installing a 3/4" MNPT PVC plug.

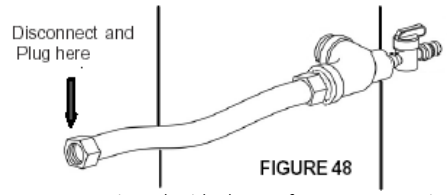


FIGURE 48

Systems equipped with the Surface Water Option Kit have different Outlet Fitting Assemblies

1.4 If an External Prefilter has been installed, open the Mini Ball Valve on the bottom of the housing and allow to drain. Press the red button on the External Prefilter head to speed up draining. Unscrew the housing from the head and remove the External Prefilter cartridge from the housing, and discard. Do not install a new filter cartridge. Re-attach the filter housing to the head.

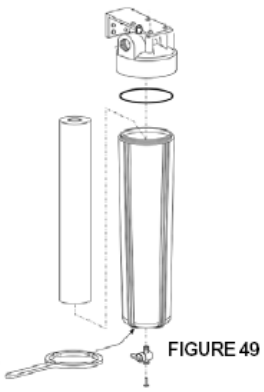


FIGURE 49

1.5 Remove the System Cap and remove the Prefilter. If the System is equipped with the Carbon Prefilter, discard the Carbon Prefilter. If the System is equipped with the Stainless Steel Prefilter, clean and set aside the Stainless Steel Prefilter temporarily. The Stainless Steel Prefilter can be stored in the System for the winter in Step 7.

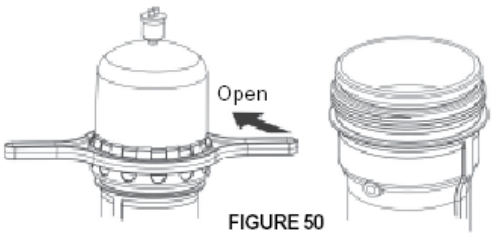


FIGURE 50

1.6 Fill with approximately 3 US gal (12 liters) of –58°F (-50°C) **propylene glycol** based plumbing antifreeze. The UFC 211 and UF 211 Series models do not have enough internal space to accommodate 3 gallons of antifreeze initially. Remove the plug from the Outlet Stainless Steel Flex Hose and drain some antifreeze/water mix from the System into an empty container. Add the remainder of the antifreeze into the Internal Prefilter cavity. The fluid level in the System must be at least 2" above the bottom of the Internal Prefilter cavity. Reinstall the plug into the Outlet Stainless Steel Flex Hose.

FIGURE 51

1.7 If a Stainless Steel Prefilter has been set aside, place the Stainless Steel Prefilter in the Prefilter cavity.

1.8 Replace the System Cap using the Cap Wrench and check both plugs (drain and outlet) for any leaks. The System is ready for winter.

2. Spring Start-Up Following Winterization

WARNING!

Do NOT allow the plumbing antifreeze/ water mix to drain onto the ground, or into a septic bed, storm sewer or any body of water. Check the plumbing antifreeze manufacturer's directions and warnings for more information.

2.1 Drain antifreeze solution from the System by removing the outlet plug. Drain into proper containers. Dispose of the antifreeze solution in accordance with the manufacturer's directions.

2.2 Remove drain plug from Drain Solenoid Valve and reconnect the elbow and piping. Ensure the drain is in accordance with the initial set-up as described in the **System Installation**

section (Step 12) under **E. INSTALLATION INSTRUCTIONS**.

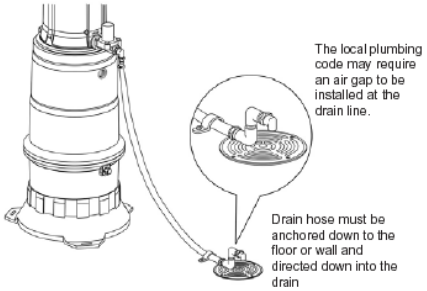


FIGURE 52

2.3 Open the Inlet Valve to fill the System with water. Air will escape through the Air Relief Valve in the System Cap.

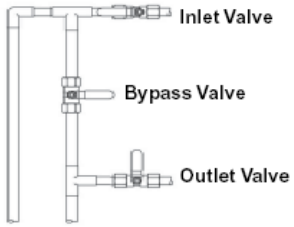


FIGURE 53

2.4 Open a nearby cold water high demand tap, then open the Outlet Valve. This will prevent antifreeze from spreading throughout the piping system. Run the tap for 30 minutes. Open all other cold water taps in the home and flush separately for 1 minute each.

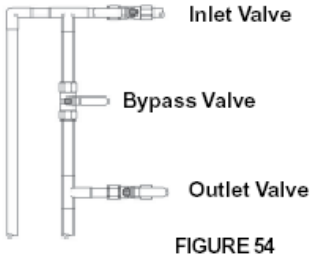


FIGURE 54

2.5 Close the Inlet Valve and Outlet Valve. Partially drain the System using the Manual Flush function for 1 minute to depressurize the System. Refer to the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence. Use a Pressure Gauge on the Inlet Assembly to ensure there is no pressure in the System.

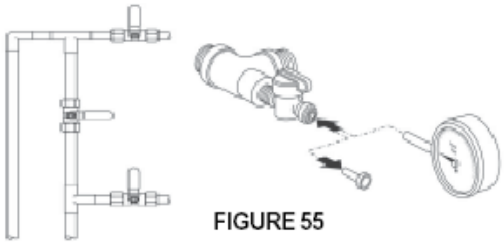


FIGURE 55

2.6 Remove System Cap. If a Stainless Steel Prefilter was stored in the Prefilter cavity over the winter, remove, wash and set aside.

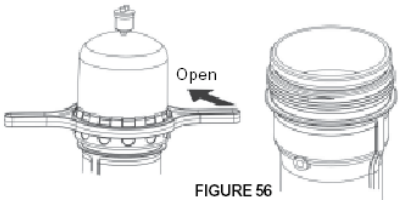


FIGURE 56

2.7 Be sure the water level in the System is 2" above the bottom of the Prefilter cavity. Add more water by slowly opening the Inlet Valve if necessary.

Add 2 cups (500 ml) of unscented household bleach (5 - 6% chlorine) or 1 cup (250 ml) chlorine bleach (12% chlorine), maximum 3 months old, to the System.

2.8 Allow the System to soak for 15 minutes. With the System Cap tightened, drain the System using the Controller. Open the Inlet Valve and allow System to pressurize.

Note: If the winterization spring start up is combined with the annual maintenance cleaning procedure, the System must soak for 60 minutes. If the System is on surface or well water, the chlorine must be substituted with Homespring MC1 Cleaning Agent instead of chlorine bleach. Follow the directions on the package for preparing the MC1 Cleaning Agent. ***Never mix chlorine bleach with the MC1 Cleaning Agent.***

2.9 Open the Outlet Valve and a nearby COLD water tap to remove chlorine from the System. Run the tap fully open for 5 minutes. Further flushing must be performed by the homeowner.

2.10 Close the Inlet Valve and Outlet Valve. Use the Controller to depressurize the System. Use Pressure Gauges to ensure no pressure remains in the System.

2.11 Open the System Cap and install a new Carbon Prefilter. If using a Stainless Steel Prefilter, insert a clean, undamaged Stainless Steel Prefilter and replace the System Cap.

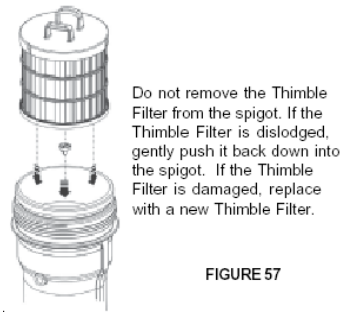


FIGURE 57

2.12 If an External Prefilter is present, drain the housing through the Mini Ball Valve on the bottom and use the red button on the top of the External Prefilter head. Remove the plastic wrap from a new Prefilter cartridge and insert into housing. Tighten the External Prefilter housing to the External Prefilter head.

2.13 Open the Inlet Valve and fill the System. Watch for leaks. Open the Outlet Valve and a nearby cold water high demand tap. Have the homeowner continue to run the cold water tap for 30 minutes.

Note: If the winterization spring start up is combined with the annual maintenance cleaning procedure, have the homeowner continue to run a cold water tap for 60 minutes instead of 30 minutes. This is required to meet NSF drinking water standards and to remove residual chlorine. The homeowner may notice a chlorine taste / smell when a tap is first opened for a day or two following this procedure.

I. TROUBLESHOOTING

Area	Problem/Situation	Corrective Action/Remedy
General	A part is missing	Contact Homespring Consumer Products Customer Service
		Purchase part (most standard hardware parts) from local hardware store
	System leaks water	Tighten System Cap
		Check O-ring is in place, is clean and is intact
		Ensure connections are tight
		Replace broken part from an over tightened connection
		Rewrap thread connections with new Teflon tape. Do not reuse Teflon tape.
	System water flow is noticeably reduced	Check if Thimble Filter is clogged. Depressurize System, remove System Cap and Internal Prefilter, remove Thimble Filter using a pair of needle nose pliers, clean Thimble Filter and Reinsert Thimble Filter
		Check if External Prefilter is clogged, if installed. Refer to **L. REPLACEMENT PART LIST AND PROCEDURE**
		Check if Internal Prefilter is clogged. Refer to **L. REPLACEMENT PART LIST AND PROCEDURE**
		Check Trans Membrane Pressure and perform a cleaning if necessary as described in **G. ANNUAL MAINTENANCE**
		Check if Drain Solenoid Valve functions. A malfunctioning valve will increase the rate of the membrane fouling. Refer to Controller Functions section under E. INSTALLATION INSTRUCTIONS, initiate a manual flush and verify Drain Solenoid Valve is working. Replace valve if necessary
	Water does not flow through System	Black cap on Air Vent must be backed off by 1.5 turns from tight to allow air in and our of System
		If the Optional Surface Water Option Kit is installed, check if Inlet Solenoid Valve is in the normally open position. Using the Controller, initiate a manual flush sequence while simultaneously pressing the down arrow and hold for a full 5 seconds. Refer to Controller Functions section under **E. INSTALLATION INSTRUCTIONS** on how to perform a manual flush sequence. A buzz sound should be heard from the Inlet Solenoid Valve. Replace Valve if necessary
Checking Backpulse Tank Pressure	Pressure is too HIGH (greater than 35 psi)	Release air from the Air Bladder Valve on the Backpulse Tank by gently pushing in the valve stem
	Pressure is too LOW or NO pressure (less than 30 psi when unboxed	Add air using a compressor or hand pump. Check the pressure again in 15 minutes and before leaving the site. If pressure is lost, replace Backpulse Tank
Connecting Pipe Assemblies	Parts are cross-threaded	Undo connection, add Teflon tape and slowly thread the 2 parts together. If threads are stripped, replace the part(s)
	Leak is detected	Tighten connections
		Loosen connections that are too tight
		Reinstall the part with Teflon Tape
Air Relief Valve	Water spouts from top	Replace Air Relief Valve (Duo Vent)
System Cap Removal	System Cap does not loosen	Close Inlet Valve and depressurize the System. Refer to **Controller Functions** section under E. **INSTALLATION INSTRUCTIONS** to initiate a manual flush
External Prefilter	Water does not flow through	Press RED button on top of housing to release air until water flows from button as air may be trapped in housing
		Replace External Prefilter Cartridge if water pressure has been gradually decreasing as the External Prefilter may be plugged or fouled. Refer to **L. REPLACEMENT PART LIST AND PROCEDURES**
	Does not drain fast enough	Depress red button on housing to drain quickly
	Water leaks from bottom	Check Mini Ball Valve on bottom of housing. Close tightly
Drain Solenoid Valve	Does not open to allow flushing	Using the Controller, initiate a manual flush sequence. Refer to Controller functions section under E. INSTALLATION INSTRUCTIONS on how to perform a manual flush sequence and ensure button on controller is pressed for a full 5 seconds. A buzz sound should be heard from the Drain Solenoid Valve. Replace valve if necessary
		Check connections are installed correctly and transformer is plugged in
Inlet Solenoid Valve	Does not close to allow System to drain	On the Controller, press NEXT once. Simultaneously press MANUAL FLUSH and the down arrow together and hold for a full 5 seconds. A buzz sound should be heard from the Inlet Solenoid Valve. Replace valve if necessary
		Check connections are installed correctly and transformer is plugged in
Controller	Flushing and/or draining of System does not work	Check if the Drain Solenoid Valve functions. Check connection to Controller is correct and initiate a manual flush to hear a buzz sound. Refer to **Controller Functions** under **E. INSTALLATION INSTRUCTIONS**
		Check if both the inlet Solenoid Valve, if installed, and the Drain Solenoid Valve function properly. On the Controller, press NEXT once. Simultaneously press MANUAL FLUSH and the up arrow together and hold for a full 5 seconds. A buzz sound should be heard from both the Inlet Solenoid Valve and the Drain Solenoid Valve. Replace valve(s) if necessary
		Check connections to Controller are correct for the Drain Solenoid Valve and Transformer and if applicable the Inlet Solenoid Valve
		Check if the transformer is connected and plugged in

J. SYSTEM SPECIFICATIONS

Parameter	UFC 211/UF 211
Recommended maximum peak flow rate (US gallons per minute/liters per minute)	11 gpm (42 Lpm)
Maximum continuous flow rate*	4.5 gpm (17 Lpm)
Pressure Drop at maximum contiuous flow rate when new, at 25°C**	5 psi (35 Kpa)
Annual water volume treatment capacity*** (US Gallons)	130,000 gal. (491,400 liters)
GAC water volume capacity at maximum continuous flow rate (US Gallons)	130,000 gal. (491,400 liters)
Maximum working pressure	100 psi (690 kPa)
Minimum working pressure	30 psi (207 kPa)
Maximum water temperature	100°F (38°C)
Minimum water temperature	>32°F (>0°C)
Maximum ambient temperature	140°F (60°C)
Minimum ambient temperature	>32°F (>0°C)
Operating pH range	6-10.5
Flush Volume per day*****	7.5-19.5 gal (28.4-73.7 liters)
System efficiency	94%-97%****
Controller voltage	24 VAC
Inlet port (female)	3/4-14 NPT
Outlet port (female)	3/4-14 NPT
Drain port (female)	1/2-14 NPT
Vertical mount footprint: inches (cm)	18*18 (45*45)
Vertical mount installation height: inches (cm)	74 (188)
Horizontal mount footprint: inches (cm)	24*74 (61*188)
Horizontal mount installation height: inches (cm)	36 (91)
Shipping weight	82 lbs (37.3 kg)
Shipping dimensions W*H*L inches (cm)	15.5*16*72.5 (39.4*40.6*184.2)
* Chlorine reduction claims are based on a continuous flow of 4.5 gpm	
** Pressure drops are given for systems when they are new and equipped as specified by the model number. At temperature below 25°C the pressure drop will be higher and at temperatures higher than 25°C the pressure drop will be lower	
*** Annual water volume capacity is dependent on water quality	
**** The efficiency numbers assume that the flush program is run once per day	
***** Flush volumes are based on a drain flow rate of 5 US gpm	

Controller Specifications

Controller	Advanced Plus**
Fuse	3.0 Amp
Voltage in	24 VAC
Voltage output	24 VAC
Number of Outputs	2
Program 1	2 Flush/Backpulse cycles
Estimated water use (US gallons)	7.5 gal (28.4 liters)
Program 2	4 flush/backpulse cycles
Estimated water use (US gallons	15 gal (56.7 liters)
Program 3	2 flush/backpulse cycles, 1 drain cycle
Estimated water use (US gallons)	13.5 gal* (51 liters)
Program 4	2 flush/backpulse cycles, 2 drain cycles
Estimated water us (US gallons)	19.5 gal* (73.7 liters)

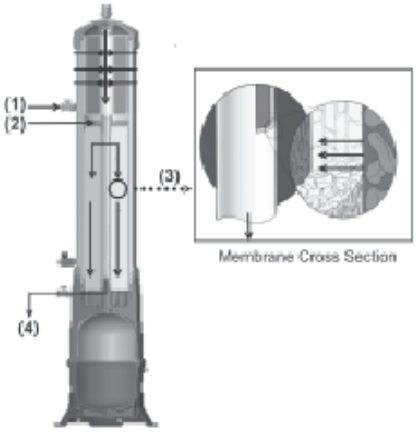
* Water used based on the assumption that the drain flow rate is 5 US gpm

** The Advanced Plus Controller is capable of running the cleaning cycle 1 per day, twice, four times, eight times or 24 times per day. The water usage estimate assumes the controller is running the cleaning cycle once per day.

K.FREQUENTLY ASKED QUESTIONS (FAQ)

1. What Does the System Do?

This System has been tested to significantly physically block pathogens including bacteria, viruses, and cysts from your water. The pore size on the surface of the ultrafilter membrane is 0.02 microns nominal. The System has been certified by the National Sanitation Foundation (NSF) for NSF 42 and 53 (aesthetic and health claims) for the removal of Cysts, Turbidity, Particulates and Chlorine. Further test results from BioVir Laboratories in California include Bacteria and Virus reduction performance. Please refer to **C. CERTIFICATION** for more information.



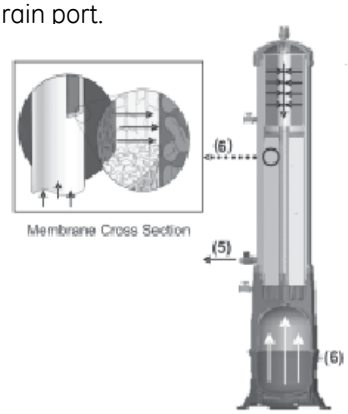
2. How does the System work?

2.1 Filtering- When a household water fixture is turned on, the water pressure forces unfiltered water into the Prefilter Housing.
(1) Larger particles (and chlorine when using the Carbon Prefilter) are removed as the water passes from the outside of the Prefilter to the inside.
(2) The prefiltered water then passes down into the System to the membrane chamber.
(3) In the membrane chamber, the water travels through membrane pores from the outside of the hollow fiber membrane to the inside, leaving behind unwanted particles such as bacteria, parasites and certain viruses.
(4) The filtered water then travels through the household piping, to the household fixture that is being used.

2.2 Automatic Cleaning Cycle – The System uses 2 methods to clean its membrane: a) flushing and b) draining. The Controller automatically executes a cleaning sequence consisting of a number of flushes and drains to clean the membrane. System cleaning may be performed multiple times per day, up to 24 times. For choices of cleaning sequences and intervals, refer to the **Controller Settings** section under **E. INSTALLATIONS INSTRUCTIONS.** Water pressure inside the dwelling will be significantly reduced during System cleaning.

2.3 Flushing – Flushing includes a Front-flush and a Back-flush. Systems that are installed in municipal, cistern, or ground water sources may use the flushing method to control the fouling rate of the membrane.

(5) Front flush – The Controller opens the Drain Solenoid Valve. The water supply line pressure causes an inrush of water into the System, scouring the surfaces of the membrane and expelling impurities through the drain.
(6) Back-Flush – At the same time, the air bladder inside the Backpulse Tank expands rapidly, pushing clean water out of the membrane surfaces from the hollow cores. This action dislodges and pushes out impurities trapped inside the membrane pores. Impurities are then expelled out of the System through the drain port.



2.4 Draining – Systems that are installed in surface water sources must use the draining method in addition to the flushing method to control the fouling rate of the membrane. During draining, the Controller closes the Inlet Solenoid Valve and opens the Drain Solenoid Valve, allowing water to be completely drained out of the System.

3. Where should the System be installed?

The System is installed inside the home at the point where water enters the house so that filtered water is provided from every tap. In order to allow only indoor water to be treated, a dedicated line should be installed from the inlet of the System to all external taps for pool or hot tub makeup valves and irrigation systems. Reducing the volume of water filtered will assist in prolonging the life of the System membrane. For Spacing Requirement refer to **J. SPECIFICATIONS.**

4. Does the System require electricity?

In most installations, the System runs on existing household water pressure provided that a minimum pressure of 30 psi (2.07 bars) is met. Unless electricity is required for pump operation, the System will continue to filter water during a power failure and Controller settings will be saved by battery backup power. The Controller must be plugged into a standard 120V/230V outlet to provide power to operate the solenoid valves that initiate flushing of the System. If electrical power is not available, the System will not conduct automatic cleaning and the rate of fouling will increase.

5. Will the System act as a water softener?

The system will not soften water or remove dissolved solids. Given the pore size of the membrane, dissolved particles smaller than 0.02 microns nominal will pass through the membrane and remain in your water. This includes calcium and magnesium which contribute to your hard water, and other dissolved solids like natural minerals and fluoride.

6. How long does the automatic cleaning cycle take?

Depending on the program selected, each cleaning cycle may use from 2.5 to 16.5 minutes. Refer to the **Controller Settings** section under **E. INSTALLATION INSTRUCTIONS** for details.

7. How much water is used in the daily cleaning cycle?

Depending on the program selected, each cleaning cycle may use from 7.5 to 19.5 US Gallons (28.4 to 73.7 Liters) of water. Refer to the **Controller Specifications** section under **J. SPECIFICATIONS.**

8. If the Homespring Water Purifier System unit removes chlorine out of the water, is there an issue with bacteria in the pipes inside the house?

If you already had municipally chlorinated water in your household pipes and there have been no water quality issues, there should be no pathogenic bacteria in your household pipes. Upon installation, the System should block and prevent any new growth of pathogenic bacteria in the household lines. Over time non-pathogenic HPC bacteria may become present in your household pipes. However, scientific studies have shown that there are no health concerns with these non-pathogenic bacteria. Sanitization of the household municipal fed water lines will provide further reassurance for the elderly, small children or those who are otherwise immune depressed. If there has been a water quality issue such as a recent boil water alert or water main break from the municipal water source, the household pipes should be sanitized upon installation of the System.

9. How long does the activated carbon filter last?

The Activated Carbon filters have been certified to filter over 130,000 US gallons (491,400 liters). The average homeowner will find it necessary to change the activated carbon filter approximately every 12 months. The quality of water, the amount of chlorine and other contaminants in the water, and the amount of water used determines the actual life of the Activated Carbon filter.

10. What does the Carbon Prefilter do?

The Carbon Prefilter is Certified by NSF International against NSF/ANSI 42 and 53 for chlorine, taste and odor reduction. The Carbon Prefilter is packed with Activated Carbon which can significantly reduce residual chlorine, chlorine related tastes and odours, and tastes and odour of inorganic or organic particles which can be unappealing to the homeowner. The Prefilter also protects and extends the life of the System by preventing large, sharp particles from passing through the System membrane.

11. What minimum water line pressure is recommended for the System?

The minimum water pressure requirement is 30 psi (2.07 bars). If the System is installed on a pump/pressure tank scenario the requirement may be less. Refer to the **System Installation** section under **E. INSTALLATION INSTRUCTIONS** to adjust backpulse tank pressure.

12. Does the System affect water pressure?

There is a minimal effect on existing water pressure. Under most circumstances, no change in water pressure will be noticed.

13. How often the System needs to be serviced?

To maintain warranty, the System must be serviced by a Homespring Qualified Technician at least once per year. During this service the System is cleaned and tested using Integrity Tester to ensure that the membrane is functioning correctly. Twice per year service visits may be recommended depending on water quality (e.g. dirtier lake sources). Also at this time, the Carbon Prefilter is replaced, or the Stainless Steel Prefilter is cleaned and reused. If an External Prefilter is present, the External Prefilter cartridge is also replaced.

14. How long does the System last?

The System will generally last an average of 10 years or more if used on municipal or well water and will last from 5 to 10 years on surface/lake waters depending on the level of contamination of the incoming water. Regular maintenance and bypassing the System for outdoor taps, pool and hot tub makeup valves and irrigation systems will extend the life of the System membrane.

15. What is the maximum size water feed line the Homespring Whole Home Water Filtration System can be installed to?

The inlet and outlet ports and devices of the System are 3/4 inch. The plumbing must be adapted to this 3/4 inch measurement at the System. Independent of the plumbing size, the operational limits of the System remain consistant.

16. How often the System need to be replaced?

The life of the System relies primarily on the lifespan of the membrane. When the membrane is fouled, the water flow rate is too low and the annual clean does not correct the fouling, the System, excluding the attached parts, will need to be replaced.

17. Will the system remove iron/sulfur?

The pore size of the membrane is 0.02 microns nominal which may help in the filtration of particulate iron. The carbon filter may help in the reduction of taste and odour caused by sulfur.

L. REPLACEMENT PROCEDURES AND PART LIST

1. Replacement Procedures

1.1 System Replacement

A System may require replacement for one of three possible reasons. The need for a System to be replaced must be recommended and confirmed by a Qualified Service Technician. Possible reasons for replacement include: 1) The System (during Commissioning or Annual Maintenance) fails the Integrity Test. 2) The TMP result during Annual Maintenance after the Membrane Cleaning is too high (greater than 20 psi TMP) indicating there is too much fouling of the membrane and the household water flow rate is too low. The water quality entering the System will greatly influence how fast the System will foul. 3) The System is damaged on delivery and is not suitable for installation.

Replacement Instructions for UFC211 and UF211 Series:

1. Close the Inlet and Bypass Valves.
2. Depressurize the System by turning on a tap until no water flows out from the tap.
3. Drain the System by activating a Manual Flush sequence. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence.
4. Turn off the tap and close the Outlet Valve.
5. Unplug the Controller.
6. Disconnect the Drain Solenoid Valve cable and the Inlet Solenoid Valve cable (if applicable) at the Controller. Refer to FIGURE 27.

Follow Steps 7 to 16 for Vertical Systems:

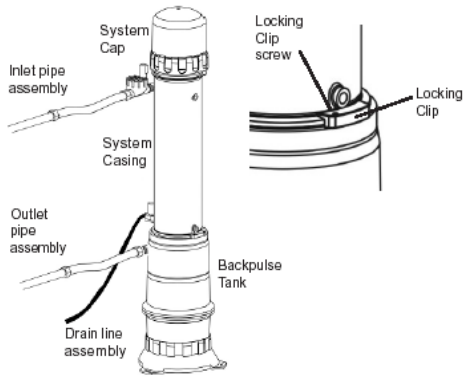


FIGURE 58

7. Remove the Air Relief Valve, the Inlet pipe assembly, and the Drain line assemblies from the System. Removal of the Inlet pipe assembly may require disconnecting the Inlet line at multiple places.
8. Remove all the Inlet, Drain, and Air Relief Valve plugs from the new System and insert those plugs into the equivalent ports of the old System.

WARNING!

Some water may still remain in the System. Plug the Inlet, Outlet, and Drain ports immediately once the pipe assemblies have been removed.
9. Using the Cap Wrench, remove the System Cap.
10. Remove the Internal Prefilter from the System. Set the Internal Prefilter aside in a clean area for reuse.
11. Unscrew the Locking Clip screw and remove the Locking Clip.
12. Unscrew the System Casing from the Backpulse Tank using a strap wrench.
13 If under warranty, the old System must be completely sealed, packaged and returned to the factory within 24 hours to avoid internal damage and allow a cause analysis to be completed.
14. Label the box appropriately as in the table below. Call the GE Homespring Consumer Products Customer Service for shipping and handling details at 1-866-418-7412.

Label on System Box	Use only If:
"INTEGRITY" + Homespring Qualified Technician Number	If the System has failed the Integrity Test.
"FOULED" + Homespring Qualified Technician Number	If the System is fouled.
"DAMAGED" - Homespring Qualified Technician Number	If the System has been damaged during transportation, warehousing or installation steps.

15. Remove the new replacement module from the packaging. Screw it onto the Backpulse Tank.
16. Reattach the Locking Clip, Air Relief Valve, Inlet / Outlet / Drain pipe assemblies, Internal Prefilter, System Cap, External Prefilter (if applicable), and Controller.
17. Reconnect the System to the house plumbing and the drain. Follow **F. COMMISSIONING** to start up the System again.

Follow steps 18 to 31 for Horizontally-mounted Systems:

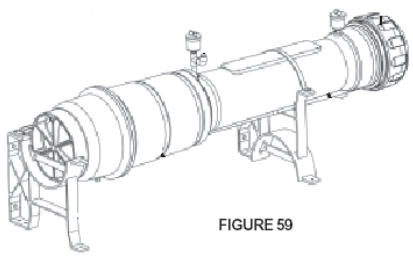


FIGURE 59

18. Attach a 1/4" tubing to the Inlet Mini Ball and direct the other end to a large pail. Open the Mini Ball Valve to drain the water inside the Internal Prefilter cavity. Remove the 1/4" tubing from the Mini Ball Valve.
19. Remove the Metal Support Strap.
20. Remove the Air Relief Valve, the Air Vent Assembly, the Inlet pipe assembly, the Outlet pipe assembly, and the Drain line assembly from the System. Removal of the Inlet pipe assembly and the Outlet pipe assembly may require disconnecting the Inlet line and Outlet line at multiple places.
21. Using the Cap Wrench, remove the System Cap.
22. Unscrew the Locking Clip Screw and remove the Locking Clip.
23. Using a strap wrench, loosen the System casing from the Backpulse Tank. Do not detach the System casing from the Backpulse Tank completely.
24. Unscrew the two bolts securing the bottom of the Backpulse Tank to the End Cast Iron Stand.
25. Remove the entire System from the Horizontal Mounting Bracket and stand the System upright on the floor.
26. Remove all the Inlet, Drain, and Air Relief Valve plugs from the new System and insert those plugs into the equivalent ports of the old System.
27. Remove the Internal Prefilter from the System. Set the Internal Prefilter aside in a clean area for reuse.
28. Unscrew the System Casing from the Backpulse Tank.
29. If under warranty, the old System must be completely sealed, packaged and returned to the factory within 24 hours to avoid internal damage and allow a cause analysis to be completed.
30. Label the box appropriately as in the table below. Call the GE Homespring Consumer Products Customer Service for shipping and handling details at 1-866-418-7412.

Label on System Box	Use only If:
"INTEGRITY" + Homespring Qualified Technician Number	If the System has failed the Integrity Test.
"FOULED" + Homespring Qualified Technician Number	If the System is fouled.
"DAMAGED" - Homespring Qualified Technician Number	If the System has been damaged during transportation, warehousing or installation steps.

31. Partially screw the new System Casing on the Backpulse Tank by hand. Do not use a strap wrench.
32. Lift and place the System on the Horizontal Mounting Bracket. Reattach the Backpulse Tank to the End Cast Iron Stand. Once finished, tighen the System Casing on the Backpulse Tank by hand.
33. Reattach the Locking Clip, Air Relief Valve, Inlet / Outlet / Drain pipe assemblies, Internal Prefilter, System Cap, External Prefilter (if

applicable), and the Air Vent Assembly. Reattach the Metal Support Strap and the Controller. Refer to **E. INSTALLATION INSTRUCTIONS**.
34. Reconnect the System to the house plumbing and the drain. Follow **F. COMMISSIONING** to start up the System again.

1.2 O-RING REPLACEMENT
The O-ring may require a replacement if there is a leak between the System Cap and the System.

Replacement Instructions:
1. Close the Inlet Valve.
2. Depressurize the System by performing a Manual Flush sequence. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence.
For **Horizontally-mounted Systems**, connect a 1/4" tubing to the Inlet Mini Ball Valve, direct the other end of the 1/4" tubing to a drain or a pail, and open the Inlet Mini Ball Valve to drain the water in the Internal Prefilter cavity.
3. Using the Cap Wrench, remove the System Cap.
4. Carefully remove the O-ring from the System.
5. Clean the O-ring with a clean, soft cloth. Check for nicks, pits, proper formation and cleanliness.
6. If nothing appears unusual, apply a very small amount of DOW CORNING 111 silicone lubricant to the O-ring and reinstall the O-ring. If the O-ring appears damaged, replace the O-ring with a new O-ring.
7. Replace System Cap tightly using the Cap Wrench.
8. Open the Inlet Valve slowly.

1.3 INTERNAL PREFILTER REPLACEMENT (CARBON OR STAINLESS STEEL)
The Carbon Prefilter may require replacement more frequently than once a year during the Annual Maintenance or if there is a chlorine taste in the water after the System has been in use for a period of time. The Carbon Prefilter may also remove some other tastes and/or odours. In some cases, the Carbon Prefilter may become fouled earlier than one year depending on the intake water source.

The Stainless Steel Prefilter generally does not need to be replaced. It may become dirty and may be cleaned under a tap. Replace the Stainless Steel Prefilter if damaged.

Replacement Instructions:
1. Close the Inlet Valve.
2. Depressurize the System by performing a Manual Flush sequence. Refer to the instructions in the **Controller Functions** section under **E. INSTALLATION INSTRUCTIONS** on how to perform a Manual Flush sequence.

For **Horizontally-mounted Systems**, connect a 1/4" tubing to the Inlet Mini Ball Valve, direct the other end of the 1/4" tubing to a drain or a pail, and open the Inlet Mini Ball Valve to drain the water in the Internal Prefilter cavity.

3. Using the Cap Wrench, remove the System Cap.
4. Put on a pair of disposable gloves and carefully remove and dispose of the Internal Prefilter. Check that the Thimble Filter is in place, seated in the spigot. DO NOT attempt to remove the Thimble Filter. If the Thimble Filter is loose, gently push it into place.
5. Remove the new Internal Prefilter from the packaging.
6. Insert the new Internal Prefilter into the Prefilter cavity and push it down gently to ensure it is seated properly.
7. Replace the System Cap tightly.
8. Open the Inlet Valve slowly.
9. Dispose the disposable gloves.

1.4 EXTERNAL PREFILTER REPLACEMENT
Depending on the water quality, the External Prefilter may need to be washed or replaced prior to the Annual Maintenance. A decrease in water pressure at the taps indicates that the External Prefilter may need to be replaced.

Note: For rinsing of the used External Prefilter cartridge, save a bucket of filtered water from a tap in the dwelling before servicing the External Prefilter. Water supply in the dwelling will be interrupted temporarily during servicing.

Replacement Instructions:
1. Close the Inlet Valve to the External Prefilter.
2. Attach a 1/4" tubing to the Mini Ball Valve at the bottom of the External Prefilter. Direct the other end of the 1/4" tubing to either a drain or a pail.
3. Open the Mini Ball Valve slowly.
4. Press and hold down the red button on the External Prefilter Head to shorten the time to drain the External Prefilter.
5. Once the External Prefilter is drained, close the Mini Ball Valve.
6. Using the Housing Wrench, loosen the External Prefilter Housing from the External Prefilter Head. Refer to **Surface Water Option Kit Installation** section for the diagram.

7. Wear a pair of disposable gloves and carefully remove the External Prefilter cartridge from the External Prefilter Housing.
8. Rinse off the used External Prefilter cartridge. If the used External Prefilter cartridge is no longer reusable, replace it with a new one. If a new External Prefilter cartridge is to be installed, remove the plastic wrap on the outside of the cartridge.
9. Ensure that the O-ring is in good condition and seated at the lip of the External Prefilter Housing. If necessary, replace the O-ring with a new one.
10. Screw the External Prefilter Housing into the External Prefilter Head and tighten the connection using the Housing Wrench.
11. Open the Inlet Valve slowly and depress the red button on the External Prefilter Head to allow air to escape from the External Prefilter Housing.
12. Once water emerges from the button, release the button.
13. Dispose of the disposable gloves.

2. Parts List

UFC 211 and UF 211 Series

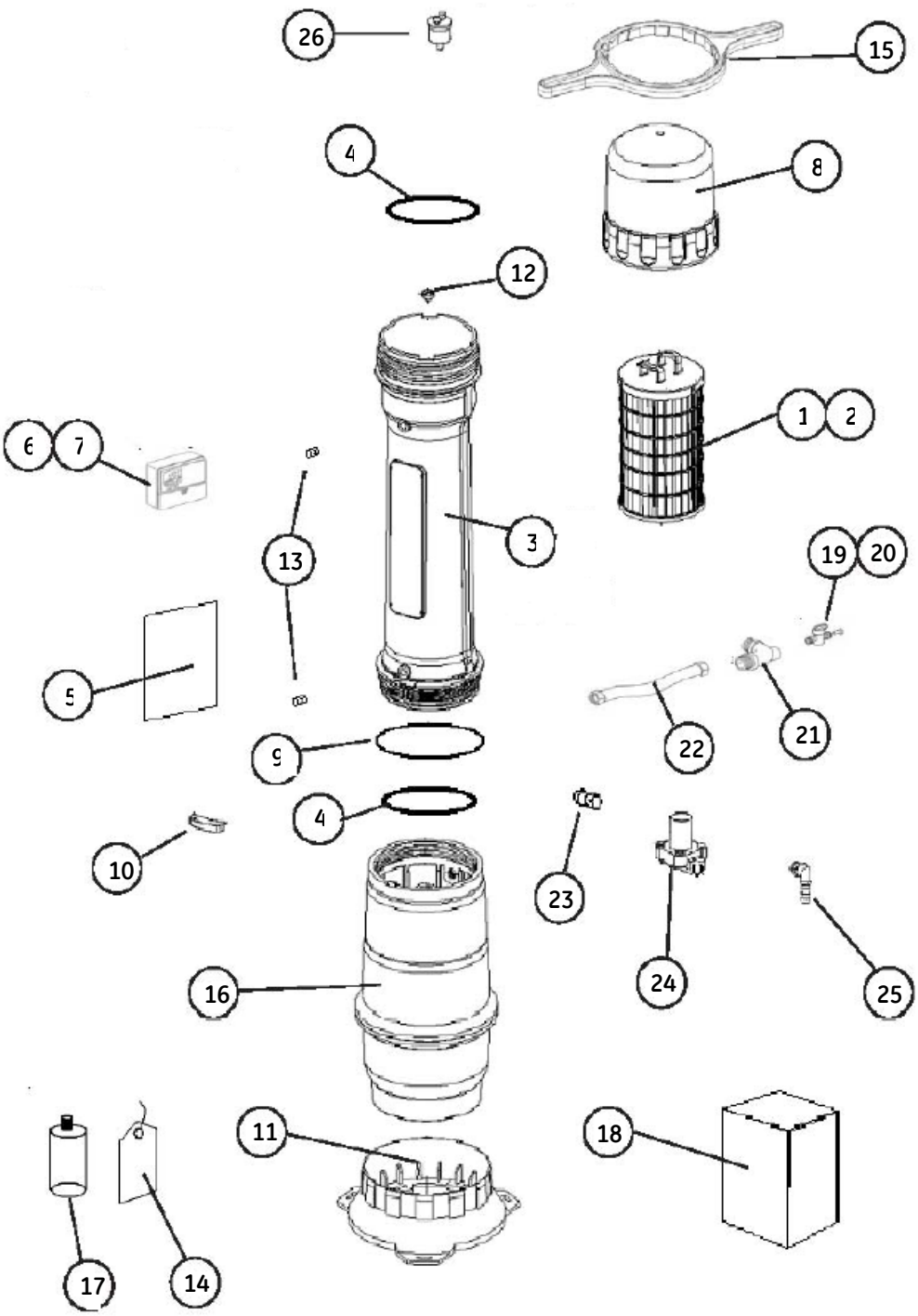
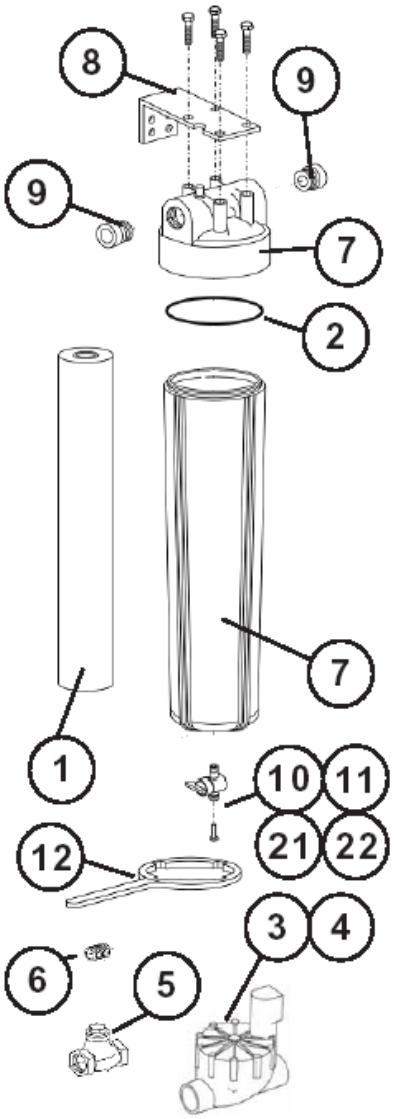


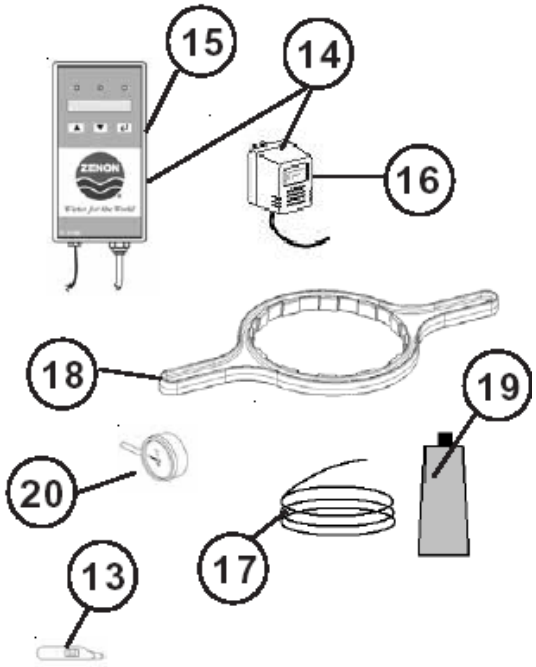
FIGURE 61

Item n°	P/N	Description	UFC211/UF211
		SYSTEM	
1	23106	Carbon Prefilter, 12"	UFC model only
2	23107	Stainless Steel Prefilter, 12"	UF Model only
3	26004	System Replacement for UFC211SS or UF211SS	X
4	23081	8" o-ring	X
5	23331	Owner's manual	X
5	23332	Operations Manual	X
6	23319	Advanced Plus Controller (230V)	X
7	23321	230 V ROHS Transformer	X
8	23154	System Cap - Long	X
9	23214	Loading O-ring	X
10	23260	Kit, Locking Clip with mounting screw	X
11	23159	System Base	X
12	23172	Thimble Filter	X
13	23221	Plug, 1/4" MNPT	X
14	23145	Service Tag	X
15	23029	Cap Wrench	X
16	23160	Backpulse Tank	X
17	23070	MC1 Cleaning Agent (Surface/Well Water applications)	X
		SUB ASSEMBLY KIT	
18	23236	Installation Sub Assembly Kit (Base, Shims, Anchors, Mini Ball valves with plugs (2), Nylon Elbow, Inlet/Outlet fittings (2), ½" Nipple, drain Solenoid Valve, stainless Steel Flex Hoses (2), Air Relief Valve)	X
19	23062	Mini Ball valve (JG)	X
20	23063	Mini Ball valve Plug	X
21	23203	Inlet / Outlet Fitting	X
22	23141	Stainless Steel Flex Hose	X
23	23225	½" Nipple	X
24	23223	Drain Solenoide Valve (Normally Closed)	X
25	23224	Nylon elbow, ½" MNPT x 5/8" Hose Barb	X
26	23028	Air Relief Valve	X

Surface Water Option Kit and Service Testing Kit



Item n°	P/N	Description
1-11	23234	Surface Water Kit (External Prefilter Kit)
1	23071	External Prefilter Replacement
2	23090	External Prefilter O-ring
3	23317	Inlet solenoid valve
4	23230	Inlet solenoid valve
5	23054	Check valve
6	23137	¾" Brass Closed Nipple
7	23072	External Prefilter Housing and Head
8	23060	Wall Bracket
9	23061	1" to ¾" Reducing Bushing
10	23063	Plug
11	23062	Mini Ball valve (JG)
12-21	23791	Service Testing Kit (230V)
12	23104	Housing Wrench (External Prefilter)
13	23180	Digital Air Pressure Gauge
14	23110	Integrity tester kit (Integrity tester, transformer, ¼" tubing (2x))
15	23147	Integrity tester (no transformer)
16	23191	Transformer, 230VAC/50 Hz, 12VDC –Integrity Tester
17	23182	¼" tubing (for integrity tester)
18	23029	Cap Wrench
19	23083	Dow Corning, 111 Silicon Lubricant
20	23150	Pressure test gauge assembly
21	23063	Plug
22	23062	Mini Ball valve (JG)



P/N E-Man-LDE070807Rev1

imagination at work