

Installation Instructions & Owner's Manual

UF Series

Membrane Filtration System



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YOUR WATER TEST

Hardness	gpg
Iron	ppm
рН	number
*Nitrates	ppm
Manganese	
Sulfur	yes/no
Total Dissolved Solids	

*Over 10 ppm may be harmful for human consumption.

Water conditioners do not remove nitrates or coliform bacteria, this requires specialized equipment.

STARTUP DATA

Installation Date
Installation Dealer
Separate Source Reg. Kit Installed
Volume Between Flushing (gallons)
Time Between Regeneration (hrs)

Your CustomCare UF Filtration system is a precision built, high quality product. This unit will deliver quality water for many years to come, when installed and operated properly. Please study this manual carefully and understand the cautions and notes before installing and operation. This manual should be kept for future reference. If you have any questions regarding your system, contact your local dealer or Water-Right at the following:

Water-Right, Inc. 1900 Prospect Court • Appleton, WI 54914 Phone: 920-739-9401 • Fax: 920-739-9406

PRE-INSTALLATION INSTRUCTIONS FOR DEALERS:

The manufacturer has preset the water treatment units sequence of cycles, cycle times, salt dosage and salt refill time, if used. The installing dealer should read this guide thoroughly before set up, installation, and operation of equipment. If there are any question regarding the operation of UF-835 please consult the manufacturer.

For the installer, the following must be used:

- Set Installer Settings
 - Gallon Setting
 - Every Day Regeneration
 - Service Alarms and Alarm Times (if desired)
- Read Normal Operating Displays
 - Set Time of Day
- Read Installation Instructions
 - Allow Space for Membrane Removal
 - Installation must be in compliance with all state and local regulations

For the homeowner, please read Programming Procedures and Operating Displays and Instructions.

During operation, the normal user display is time of day and gallons per minute. Flow Rate, Vacation Mode, Capacity Remaining and Days to a Regeneration are optional displays but are not normally used. (Vacation Mode is used only when there will be no water usage for an extended period of time. Once 50 gallons of water is used, the unit will automatically regenerate that night and resume normal operation.) Each of these can be viewed by pressing **NEXT** to scroll through them. When stepping through any programming, if no buttons are pressed within 5 minutes, the display returns to a normal user display. Any changes made prior to the 5 minute time out are incorporated. To quickly exit any Programming, Installer Settings, etc., press **SET CLOCK**. Any changes made prior to the exit are incorporated.

FLUSHING SCHEDULE:

The UF Series Filter is factory preset to backwash every day at midnight; this is dependent on the quality of water being treated and may be adjusted by the installing dealer based on the water quality. A post ultra-filtration pressure tank may be installed to ensure a sufficient flow of water and pressure to the home during a flush cycle.

IMPORTANT: If a post pressure tank is used a check valve may be required to allow for treated water regeneration. In this case an expansion tank should be installed to account for thermal expansion. See drawing in the back of this manual.

Default Factory Setting

Standard Unit with or without Separate Source Regeneration (SSR) Flush Frequency: Every Day Backwash Flush Duration: 2 Min. at 5.3 GPM Rinse Duration: 1 Min. @ 5.3 GPM



BYPASS VALVE:

The bypass valve is typically used to isolate the control valve from the plumbing system's water pressure in order to perform control valve repairs or maintenance. The 1" full flow bypass valve incorporates four positions, including a diagnostic position that allows a service technician to have pressure to test a system while providing untreated bypass water to the building. Be sure to install bypass valve onto main control valve before beginning plumbing. Or, make provisions in the plumbing system for a bypass. The bypass body and rotors are glass-filled Noryl[®] and the nuts and caps are glass-filled polypropylene. All seals are self-lubricating EPDM to help prevent valve seizing after long periods of non-use. Internal "O" Rings can easily be replaced if service is required.

The bypass consists of two interchangeable plug valves that are operated independently by red arrow shaped handles. The handles identify the direction of flow. The plug valves enable the bypass valve to operate in four positions.

- 1. **NORMAL OPERATION POSITION:** The inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve. Water flows through the control valve for normal operation of a UF filter. During the regeneration cycle this position provides regeneration water to the unit, while also providing untreated water to the distribution system (*Fig. 1*).
- 2. **BYPASS POSITION:** The inlet and outlet handles point to the center of the bypass. The system is isolated from the water pressure in the plumbing system. Untreated water is supplied to the building **(Fig. 2)**.
- 3. **DIAGNOSTIC POSITION:** The inlet handle points toward the control valve and the outlet handle points to the center of bypass valve. Untreated supply water is allowed to flow to the system and to the building, while not allowing water to exit from the system to the building (**Fig. 3**). This allows the service technician to service the unit and perform other tests without the test water going to the building.

NOTE: The system must be rinsed before returning the bypass valve to the normal position.

4. SHUT OFF POSITION: The inlet handle points to the center of the bypass valve and the outlet handle points away from the control valve. The water is shut off to the building. The water treatment system will depressurize upon opening a tap in the building. A negative pressure in the building combined with the filter being in regeneration could cause a siphoning of brine (if used) into the building. If water is available on the outlet side of the softener, it is an indication of water bypassing the system (Fig. 4) (i.e. a plumbing cross-connection somewhere in the building).



GENERAL INSTALLATION & SERVICE WARNINGS

The control valve, fittings and/or bypass are designed to accommodate minor plumbing misalignments. There is a small amount of "give" to properly connect the piping, but the water filter is not designed to support the weight of the plumbing.

Do not use Vaseline®, oils, other hydrocarbon lubricants or spray silicone anywhere. A silicone lubricant may be used on black "O" Rings, but is not necessary. Avoid any type of lubricants, including silicone, on red or clear lip seals.

Do not use pipe dope or other sealants on threads. Teflon® tape must be used on the threads of the 1" NPT inlet and outlet, the brine line connection at the control valve, and on the threads for the drain line connection. Teflon® tape is not used on the nut connections or caps because "O" Ring seals are used. The nuts and caps are designed to be unscrewed or tightened by hand or with the special plastic Service Wrench, #CV3193-02. If necessary pliers can be used to unscrew the nut or cap. Do not use a pipe wrench to tighten nuts or caps. Do not place screwdriver in slots on caps and/or tap with a hammer.

SITE REQUIREMENTS

- water pressure 25-100 psi
- water temperature 33-100°F (0.5-37.7°C)
- electrical 115/120V, 60Hz uninterrupted outlet
- the tank should be on a firm level surface

- current draw is 0.5 amperes
- the plug-in transformer is for dry locations only



There are many different types of regeneration configurations: raw water regeneration, treated water regeneration, separate source regeneration with treated water, and twin regeneration. Each regeneration configuration requires a different installation diagram. Pictured above is a standard installation. In the back of this manual is an additional installation diagram (**see page 24**). Please consult CustomCare for the proper installation diagram if not located within this manual.

- 1. The distance between the drain and the water conditioner should be as short as possible.
- 2. It is not recommended to install any water conditioner with less than 10 feet of piping between its outlet and the inlet of a water heater.
- 3. Do not locate unit where it or its connections (including the drain and overflow lines) will ever be subjected to room temperatures under 33°F.
- 4. Do not subject the tank to any vacuum, as this may cause an "implosion" and could result in leaking. If there is a possibility a vacuum could occur, please make provision for a vacuum breaker in the installation.
- 5. Installation of a 5 micron pre-filter is recommended before the UF Filter. This will ensure that larger particles will not prematurely foul the membrane.



- 7. **INLET/OUTLET PLUMBING:** Be sure to install Bypass Valve onto main control valve before beginning plumbing. Make provisions to bypass outside hydrants and other untreated fixtures are plumbed properly. Install an inlet shutoff valve and plumb to the unit's bypass valve inlet located at the right rear as you face the unit. There are a variety of installation fittings available. They are listed under Installation Fitting Assemblies, page 25-26. When assembling the installation fitting package (inlet and outlet), connect the fitting to the plumbing system first and then attach the nut, split ring and "O" Ring. Heat from soldering or solvent cements may damage the nut, split ring or "O" Ring. Solder joints should be cool and solvent cements should be set before installing the nut, split ring and "O" Ring. Avoid getting solder flux, primer, and solvent cement on any part of the "O" Rings, split rings, bypass valve or control valve. If the building's electrical system is grounded to the plumbing, install a copper grounding strap from the inlet to the outlet pipe. Plumbing must be done in accordance with all applicable local codes.
- 8. **INSTALLING GROUND:** To maintain an electrical ground in metal plumbing of a home's cold water piping (such as a copper plumbing system), install a ground clamp or jumper wiring. (See drawing to the right.)
- 8. CONTROL VALVE DRAIN LINE: First, be sure that the drain can handle the backwash rate of the system. Solder joints near the drain must be done prior to connecting the drain line flow control fitting. Leave at least 6" between the drain line flow control fitting and solder joints. Failure to do this could cause interior damage to the flow control. Install a 1/2" I.D. flexible plastic tube to the Drain Line Assembly or discard the tubing nut and use the 3/4" NPT fitting for rigid pipe (recommended). If the backwash rate is greater than 7 apm, use a 3/4" rigid drain line. Where the drain line is elevated but



empties into a drain below the level of the control valve, form a 7" loop at the discharge end of the line so that the bottom of the loop is level with the drain connection on the control valve. This will provide an adequate anti-siphon trap. Piping the drain line overhead <10 ft is normally not a problem. Be sure adequate pressure is available (40-60 psi is recommended). Where the drain empties into an overhead sewer line, a sink-type trap must be used. Run drain tube to its discharge point in accordance with plumbing codes. Pay special attention to codes for air gaps and anti-siphon devices.

NOTE: Drain line nut will not be supplied for units having a backwash rate greater than 7 gpm.



9. BOTTOM OF TANK DRAIN CONNECTION: At the bottom of the tank is a 1" male threaded connection fitting. This connection should be fitted with a ball valve. IMPORTANT – the 1" connection is wide open and will require a ball valve. A drain line should then be run to the nearest drain location. The ball valve is in the closed position and opened manually to periodically blow the tank down of debris. This should be done manually at least once per month or if a pressure drop is noticed across the system.

NOTE: The manufacturer does not include the ball valve or drain line – this needs to be supplied and installed by the dealer or installer.



Optional Automatic Blow Down Kit:

The optional automatic blow down kit can be utilized to open the bottom drain automatically. This is operated by using a No Hard Water Bypass (NHBP) motorized valve and a MAV driver from the control valve. The NHBP can be triggered to open by time and will automatically flush the tank of debris. This is recommended in some well water conditions where heavy loading of the membranes is likely to occur.

For systems with an automatic blow down please follow the instructions accompanying the NHBP. Make sure the drain receptacle can adequately handle the flow from this line.



CAUTION: Never insert a drain line into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.

12. **BACK FLUSH SURGE TANK:** For installations with a high fouling potential, a back flush surge tank and/or a Separate Source Regeneration Valve (SEPS) or three way valve on the inlet is recommended. During regeneration the three way valve will close the normal service inlet and open the inlet from the back flush surge tank. The back flush surge tank supplies clean, treated water for regeneration. See additional diagram on page 24.



CAUTION: This backflush surge tank must be sized to provide enough water for the entire regeneration whether an auto flush kit is installed or the chlorine generator option is used.

See installation diagrams on page 5 and page 24 in the back of this manual.

PROGRAMMING PROCEDURES:

1. Set time of day:

Time of day should only need to be set after extended power outages or when daylight saving time begins or ends. If an extended power outage occurs, the time of day will flash on and off indicating that the time should be reset.

- STEP 1 Press SET CLOCK.
- **STEP 2 CURRENT TIME (HOUR):** Set the hour of the day using + or buttons. AM/PM toggles after 12. Press **NEXT** to go to step 3.
- STEP 3 CURRENT TIME (MINUTES): Set the minutes using + or buttons. If it is desired to back up to the previous step press REGEN button once. Press NEXT to go to step 4.
- **STEP 4 CURRENT DAY:** Set the day of the week using + or buttons. Pressing **NEXT** will exit **SET CLOCK** and return to the general operating display (page 9).



2. Programming:

NOTE: The manufacturer has preset the control value to back flush once a day, with a 300 Gallon Setting between regenerations. If 300 gallons are used the unit will regenerate at the next regeneration time.

- **STEP 1** Press **NEXT** and **+** simultaneously for 3 seconds.
- STEP 2 Set the time between regenerations. The manufacturer has set this for once per day. To change use the + or buttons, toggle the correct amount of regenerations per day or select "OFF" and press NEXT to advance to days between regeneration. If a specific number of days between regeneration is desired press the + or buttons to toggle to the correct number. From the day screen, to return back to multiple regenerations in one day press both the *cLOCK* and + button at the same time.
- STEP 3 REGENERATION HOUR: The manufacturer has factory set 12:00 A.M. as the default. This is the hour of day for regeneration and can be reset by using + or buttons. "AM/PM" toggles after 12. The default time is 12:00 a.m. (recommended for a normal household).

Press **NEXT** to go to step 5. Press **REGEN** to return to the previous step.

STEP 4 – REGENERATION MINUTES: Set the minutes using + or – buttons. Press NEXT to go to step 6. Press REGEN to return to previous step. To initiate an immediate manual regeneration, press and hold the REGEN button for three seconds. The system will begin to regenerate immediately. The control may be manually stepped through the regeneration cycles by pressing REGEN.

Press NEXT to go to step 6. Press REGEN to return to the previous step.

STEP 5 – SERVICE ALARM GALLONS: The manufacturer has factory set "OFF" as the default. This feature is used to signal service into the future. This is typically set by the installing dealer to warn homeowner that service is required after a preset number of gallons have been consumed. If the feature is active, a specific gallon amount will appear.

Press **NEXT** three times to advance past this screen.

STEP 6 – SERVICE ALARM TIME: The manufacturer has factory set "OFF" as the default. This feature is used to signal service into the future. This is typically set by the installing dealer to warn homeowner that service is required after a period of time has passed. If the feature is active, a specific number of days will appear.

Press **NEXT** three times to advance past this screen.

STEP 7 – ALARM BUZZER: The manufacturer has factory set "OFF" as the default. An alarm will sound (at the indicated time) after a regeneration, if there is no salt (optional) or if another error has occurred. Turn the alarm "OFF" or "ON" using the + or - buttons. Press NEXT.

NOTE: This feature allows you to program the time in which the alarm buzzer will sound, permitting the installer to pick a time when the owner will be home or awake to hear it.

Setting Alarm Buzzer Start Time: Press + or - button to select the correct hour the buzzer is to start sounding. Be sure to also set AM or PM as necessary. (Default is set to 6:00 a.m.) Press **NEXT**.

Setting Alarm Buzzer End Time: Press + or - button to select the correct hour the buzzer is to stop sounding in the day. Be sure to also set AM or PM as necessary. (Default is set to 10:00 p.m.) Press **NEXT**.

STEP 8 – DISPLAY BACKLIGHT: The manufacturer has factory set "ON" as the default. Turn the light "OFF" or "ON" using the + or - buttons. "OFF" will turn display backlight off after five minutes of keypad inactivity.

Press **NEXT** to exit installer programming.

1	+
2	REGENS PER DAY SET 1 PER -
	SET CLOCK REGEN NEXT Example: Indicates unit set to regen once per day.
4	REGEN TIME HOUR SET 11:00 PM -
5	REGEN TIME MINUTES
	SET CLOCK REGEN NEXT
6	SERVICE ALARM
7	SERVICE ALARM SET OFF YR -
8	ALARM BUZZER START SET 6:00 AM
	ALARM BUZZER END
	SET 10:00 PM -
9	SET ON -

OPERATING DISPLAYS AND INSTRUCTIONS:

1. **GENERAL OPERATION:** When the system is operating, one of five displays may be shown and will alternate with the installing dealer's name and phone number for future service. Pressing **NEXT** will alternate between the displays.

- 1. CURRENT TIME OF DAY and GPM.
- 2. FLOW RATE which is the current treated water flow rate through the system in Gallons Per Minute.
- 3. VACATION MODE allows the system to be "shut down" when there will be no water usage for an extended period of time.
- 4. CAPACITY REMAINING which is the gallons that will be treated before the system signals a regeneration cycle.
- 5. TIME TO A REGEN is the number of days left before the system goes through a regeneration cycle, based on the days override value. Because default is every day, 0 Days will appear.
- 6. DEALER NAME AND PHONE NUMBER is the dealer information to call when service is needed (this screen will only appear if set by dealer).



If the system has called for a regeneration that will occur at the preset time of regeneration, the words "REGEN TODAY" will appear on the display.

If a water meter is installed, "GPM" flashes on the display when water is being treated, indicating gallons per minute going through the system.

VACATION MODE: This feature may be used to "shut down" the system while on vacation. The manufacturer has
factory set "OFF" as the default. Turn feature "OFF" or "ON" using the + or - buttons. When turned "ON", the unit
will not regenerate while there is no water usage. Once water usage is observed (minimum of 50 gallons), the unit





CAUTION: Depending on the severity of water conditions and the length of no water usage, it may not be recommended to use this feature. Please contact dealer or manufacturer for more information.

3. **REGENERATION MODE:** Standard UF Filters are set to regenerate once a day. This is a short (2 minute) back flush of the membrane. If water is used at this time, it may be possible to notice untreated water in the system. If this becomes an issue please contact dealer as options are available to alleviate this. When the system begins to regenerate, the display will include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.





- 4. **MANUAL REGENERATION:** Sometimes there is a need to regenerate before the control valve calls for it. This may be needed if a period of heavy water use is anticipated or if a pressure drop is noticed in the system.
 - To initiate a manual regeneration at the next preset regeneration time, press and release **REGEN**. The words "REGEN TODAY" will flash on the display to indicate that the system will regenerate at the next regeneration time (set in Programming, steps 3 and 4). If you pressed the **REGEN** button in error, pressing the button again will cancel the command.
 - To initiate a manual regeneration *immediately*, press and hold the **REGEN** button for three seconds. The system will begin to regenerate immediately. **This command cannot be cancelled.**

On Standard UF Filters once a manual regeneration is initiated the unit will proceed to the backwash position. In this position a 2 minute flush to drain will occur. This backwash allows for flushing of particulates from the membrane, flushing them to the drain. Once this is complete the unit transfers to a 1 minute rinse. This rinses the tank of these same particles.

MANUAL REGENERATION



5. **POWER LOSS AND BATTERY REPLACEMENT:** The transformer comes with a 15 foot power cord and is designed for use with the control valve; the transformer should only be used in a dry location.

In the event of a power outage, the control valve will remember all settings and time of day. If an extended power outage occurs, the control valve will keep time of day until the battery is depleted. When the battery becomes depleted, the only item that needs to be reset is the time of day and will be indicated by the time of day flashing or by a blank screen. All other settings are permanently stored in the nonvolatile memory.

If a power loss occurs and the time of day flashes or a blank screen occurs, this indicates that the battery is depleted. The time of day should be reset and the non-rechargeable battery should be replaced. The battery is a 3 Volt Lithium Coin Cell type 2032 and is readily available at most stores. To access battery location, remove front cover (see diagram on page 17 for battery location).



7. **ERROR MESSAGE:** If the word "ERROR" appears and flashes alternately with the dealer name and phone number, or time of day record the ERROR number and your contact servicing dealer promptly. This indicates that the control valve was not able to function properly.



START-UP INSTRUCTIONS FOR ULTRA FILTRATION UNITS:

System regeneration sequence is in the following order. (If it is desired to change this sequence, please refer to the Dealer Manual or contact the manufacturer.)

Regeneration Sequence:

- 1. Backwash (2 minutes)
- 2. Rinse (1 minute)

The system is now ready for filling with water and for testing.

- With the UF Filter Control Valve in bypass mode and unplugged (Fig. 2 on page 4) turn water on slowly. Water will fill system (not the membrane tank) including the pre-filter and post storage tank if used. Run water preferably at a laundry sink or tub faucet and allow plumbing to clear. Check for any leaks at this time in newly installed plumbing.
- 2. With the UF Filter Control Valve in bypass mode (Fig. 2 on page 4) plug control valve transformer into a permanent 110 volt outlet. The valve should be in normal operating mode where the display shows either time of day or gallons remaining, press and hold the **REGEN** button until the motor starts. The display will indicate the unit is in the regeneration mode. Release the button.
- 3. The unit is now in backwash position, this will be indicated on the control valve screen. Do not turn the water on.
- 4. Push **REGEN** button to advance the control valve to the rinse position. Once the valve enters the rinse position, unplug from receptacle. Leaving the valve in this position, open the inlet bypass valve to the system slowly, this will allow water to enter the tank slowly and flush the air to the drain. Once system is full, a steady stream of water will be observed at the drain. Open inlet bypass valve completely (**Fig. 3 on page 4**) and allow water to drain for 20 minutes. This will allow for proper flushing of the membrane and any preservatives used in the manufacturing and storage process.
- 5. Plug unit back into the receptacle.
- 6. Push **REGEN** button and system will return to the normal service position.
- 7. Again, follow steps 2–6 with the bypass inlet valve open. This will allow for any additional air to be dispelled from the system. It is not necessary to flush for 20 minutes again as in step 4. When or if no air is observed at the drain, proceed to step 8.
- 8. Advance control valve to the service position. Upon returning to the service position, open the outlet valve of the bypass to the normal operating position. **NOTE:** Bypass valves should be in the normal operation position. **(Fig. 1 on page 4)**.
- 9. Open a faucet at a laundry sink or at a bath tub. Water will now be flowing through the UF filter system. Run system until water is clear.

NOTE: If a back flush tank is being used, this will need to be isolated during startup to ensure that no disinfection chemicals enter the tank. This could cause premature failure of the tank.

NOTE: If a SEP (Separate Source Regen Kit) or a NHBP (No Hard Water Bypass Kit) will be used these should be left in the normally service position and disconnected during start up.

NOTE: If an Auto Flush Kit is being used, this should be in the normally closed position during start up.

TROUBLESHOOTING GUIDE:

PROBLEM	CAUSE	CORRECTION
	A. No power at electric outlet	A. Repair outlet or use working outlet
	B. Control valve power adapter not plugged into outlet or power cord end not connected to PC board connection	B. Plug power adapter into outlet or connect power cord end to PC board connection
1. No display on PC board	C. Improper power supply	C. Verify proper voltage is being delivered to PC board
	D. Defective power adapter	D. Replace power adapter
	E. Defective PC board	E. Replace PC board
	F. Dead battery	F. Replace battery
	A. Power adapter plugged into electric outlet controlled by light switch	A. Use uninterrupted outlet
2. PC board does not	B. Tripped breaker switch and/or tripped GFI	B. Reset breaker switch and/or GFI switch
display correct time of day	C. Power outage	C. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
	D. Defective PC board	D. Replace PC board
	A. Bypass valve in bypass position	A. Turn bypass handles to place bypass in service position
3. Display does not indicate that water is	B. Meter is not connected to meter connection on PC board	B. Connect meter to three pin connection labeled METER on PC board
flowing. Refer to user instructions for how the	C. Restricted/stalled meter turbine	C. Remove meter and check for rotation or foreign material
display indicates water is flowing.	D. Meter wire not installed securely into three pin connector	D. Verify meter cable wires are installed securely into three pin connector labeled METER
	E. Defective meter	E. Replace meter
	F. Defective PC board	F. Replace PC board
	A. Power outage	 A. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
4. Control valve	B. Time of day not set correctly	B. Reset to correct time of day
regenerates at wrong time of day	C. Time of regeneration set incorrectly	C. Reset regeneration time
	D. Control valve set at "on 0" (immediate regeneration)	D. Check programming setting and reset to NORMAL (for a delayed regen time)
	E. Control valve set at "NORMAL + on 0" (delayed and/or immediate)	E. Check programming setting and reset to NORMAL (for a delayed regen time)
5. Time of day flashes on and off	A. Power outage	A. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
6. Control valve does not regenerate automatically when the correct button(s)	A. Broken drive gear or drive cap assembly	A. Replace drive gear or drive cap assembly
is depressed and held. For time clock valves the	B. Broken piston rod	B. Replace piston rod
buttons are ▲ & ▼. For all other valves the button is REGEN.	C. Defective PC board	C. Defective PC board

PROBLEM	CAUSE	CORRECTION
	A. Bypass valve in bypass position	A. Turn bypass handles to place bypass in service position
7. Control valve does not regenerate automatically	B. Meter is not connected to meter connection on PC board	B. Connect meter to three pin connection labeled METER on PC board
but does when the correct button(s) is depressed and held. For	C. Restricted/stalled meter turbine	C. Remove meter and check for rotation or foreign material
time clock valves the	D. Incorrect programming	D. Check for programming error
buttons are ▲ & ▼. For all other valves the button is REGEN.	E. Meter wire not installed securely into three pin connector	E. Verify meter cable wires are installed securely into three pin connector labeled METER
BOHON IS RECEIV.	F. Defective meter	F. Replace meter
	G. Defective PC board	G. Replace PC board
	A. Bypass valve is open or faulty	A. Fully close bypass valve or replace
	B. Media is fouled or ruptured	B. Clean or replace membrane
	C. Meter not registering	C. Remove meter and check for rotation or foreign material
	D. Water quality fluctuation	D. Test water and adjust program values accordingly
8. Untreated water is being delivered	E. No regenerant or low level of regenerant in regenerant tank (if option is chosen)	E. Add proper regenerant to tank
being delivered	F. Control fails to draw in regenerant	F. Refer to Troubleshooting Guide number 12
	G. Insufficient regenerant level in regenerant tank	G. Check refill setting in programming. Check refill flow control for restrictions or debris and clean or replace
	H. Damaged seal/stack assembly	H. Replace seal/stack assembly
	 Control valve body type and piston type mix matched 	I. Verify proper control valve body type and piston type match
9. Water running to drain	A. Power outage during regeneration	A. Upon power being restored control will finish the remaining regeneration time. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
	B. Damaged seal/stack assembly	B. Replace seal/stack assembly
	C. Piston assembly failure	C. Replace piston assembly
	D. Drive cap assembly not tightened in properly	D. Retighten the drive cap assembly

TROUBLESHOOTING GUIDE:

PROBLEM	CAUSE	CORRECTION
10. E1, Err – 1001,	A. Motor not inserted fully to engage pinion, motor wires broken or disconnected	A. Disconnect power, make sure motor is fully engaged, check for broken wires, make sure two pin connector on motor is connected to the two pin connection on the PC board labeled MOTOR. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
Err – 101 = Control unable to sense motor movement	B. PC board not properly snapped into drive bracket	B. Properly snap PC board into drive bracket and then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. Missing reduction gears	C. Replace missing gears
	D. Board unable to read middle reduction gear	D. Check foil on reduction gear; make sure no film is covering foil on reduction gear
	E. Defective Optical Encoder	E. Replace PC board
	A. Foreign material is lodged in control valve	A. Open up control valve and pull out piston assembly and seal/stack assembly for inspection. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
11. E2, Err – 1002, Err – 102 = Control valve	B. Mechanical binding	B. Check piston and seal/stack assembly, check reduction gears, check drive bracket and main drive gear interface. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
motor ran too short and was unable to find the next cycle position and stalled	C. Main drive gear too tight	C. Loosen main drive gear. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	D. Improper voltage being delivered to PC board	D. Verify that proper voltage is being supplied. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	E. Valve type is programmed incorrectly	E. Verify valve body and program PC board to match.

PROBLEM	CAUSE	CORRECTION
	A. Motor failure during a regeneration	A. Check motor connections then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
12. E3, Err – 1003, Err – 103 = Control valve motor ran too long and was unable to find the next cycle position	B. Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	B. Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	C. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
13. E4, Err – 1004, Err – 104 = Control valve motor ran too long and timed out trying to reach home position	A. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	A. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
14. Err -1006, Err – 106, Err - 116 = MAV/ SEPS/ NHBP/ AUX	A. Control valve programmed for ALT A or B, nHbP, SEPS, or AUX MAV with out having a MAV or NHBP valve attached to operate that function	A. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect. Then reprogram valve to proper setting.
MAV valve motor ran too long and unable to find the proper park position Motorized Alternating	B. MAV/NHBP motor wire not connected to PC board	B. Connect MAV/NHBP motor to PC board two pin connection labeled DRIVE. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. MAV/NHBP motor not fully engaged with reduction gears	C. Properly insert motor into casing, do not force into casing Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
Auxiliary MAV = AUX MAV	D. Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	D. Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.

TROUBLESHOOTING GUIDE:

PROBLEM	CAUSE	CORRECTION
15. Err – 1007, Err – 107, Err - 117 = MAV/ SEPS/NHBP/AUX MAV valve motor ran too short (stalled) while looking for proper park position	A. Foreign material is lodged in MAV/NHBP valve	A. Open up MAV/NHBP valve and check piston and seal/ stack assembly for foreign material. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
Motorized Alternating Valve = MAV Separate Source = SEPS No Hard Water Bypass = NHBP Auxiliary MAV = AUX MAV	Value = MAVeparate Source = SEPSIo Hard Water Bypass NHBPWater Bypass NHBPuxiliary MAV = AUXB. Mechanical bindingB. Mech	motor for being jammed into motor body. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for
16. Err – 109	A. Invalid motor state detected	A. Replace PC board
17. Err – 201	A. Invalid regeneration cycle step detected	A. Replace PC board
18. Err – 204 = Leak Detected	A. Occurs when dP input is active for "ALARM" and the input is closed. The alarm buzzer will activate and the screen will display the error.	A. Check for low flow leak. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC Board for 5 seconds and then reconnect to clear error.
19. Err – 402 = Power Down Memory	A. Diagnostic memory failure during power down	A. Replace PC board
20. Err – 403 = Program Memory	A. Occurs when new software is flashed to a PC board	A. Factory resets this error not seen in the field
21. Err – 404 = Diagnostic Memory	A. Corrupt diagnostic display information is stored in the memory	A. Replace PC board
22. Err – 410 = Configurator Download	A. Occurs when downloading an invalid configuration file	A. Not seen in the field

	FROM	NT COVER AND DRIVE ASSEMBLY	
ltem No.	Part No.	Description	Qty.
1	CV3540CC-A	CustomCare black cover	1
2	CV3107-1	Motor	1
3	CV3106-1	Drive bracket & spring clip	1
4	CV4022WU	PC board (standard)	1
5	CV3110	Drive gear, 12 x 36	3
6	CV3109	Drive gear cover	1
7	CV3002CC	Drive assembly, CC	-
not	CV3186	Transformer, 110V-12V, AC (standard)	1
shown	CV3543	Optional weather cover	1





		PISTON ASSEMBLY	
ltem No.	Part No.	Description	Qty.
1	CV3005	1" spacer stack assembly	1
1	CV3430	1.25" spacer stack assembly	1
2	CV3004	Drive cap assembly	1
3	CV3135	O-ring 228	1
	CV3011	1" piston assembly downflow	1
4	CV3011-01	1" piston assembly upflow	1
	CV3407	1.25" piston assembly downflow	1
5	CV3174	Regenerant piston	1
6	CV3180	O-ring 337	1
7	CV3105	O-ring 215	1
8	CV3556	Screw, 1/4-20x1-1/2 18-8SS	1
9	CCI-00318337	Nut, 1/4-20 HEX 18-8SS	1
10	CV3016	QC2 clamp assembly (includes screw & nut)	1
11	CV3452	O-ring 230	1
12	CV3015	WS1 QC2 tank adapter assembly (includes O-rings)	1
	CV3001-04	1" body assembly downflow	1
13	CV3001UP	1" body assembly upflow	1
	CV3020	1.25" body assembly downflow	1
14	CV3541	Drive backplate	1

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	BYPASS VALVE					
Item No.	Part No.	Description	Qty.			
1	CV3151	Nut, 1″ quick connect	2			
2	CV3150	Split ring	2			
3	CV3105	O-ring 215	2			
4	CV3145	Bypass rotor, 1"	2			
5	CV3146	Bypass cap	2			
6	CV3147	Bypass handle	2			
7	CV3148	Bypass rotor seal retainer	2			
8	CV3152	O-ring 135	2			
9	CV3155	O-ring 112	2			
10	CV3156	O-ring 214	2			





INJECTOR ASSEMBLIES			
Item No.	Part No.	Description	Qty.
1	CV3176	Injector cap	1
2	CV3152	O-ring 135	1
3	CV3177-01	Injector screen	1
4	CV3010-1Z	Injector assembly plug	1
	CV3010-1A	A injector assembly, BLACK	
	CV3010-1B	B injector assembly, BROWN]
	CV3010-1C	C injector assembly, VIOLET]
	CV3010-1D	D injector assembly, RED	
	CV3010-1E	E injector assembly, WHITE	1
5	CV3010-1F	F injector assembly, BLUE	1
	CV3010-1G	G injector assembly, YELLOW	
	CV3010-1H	H injector assembly, GREEN]
	CV3010-11	I injector assembly, ORANGE]
	CV3010-1J	J injector assembly, LIGHT BLUE	
	CV3010-1K	K injector assembly, LIGHT GREEN	
not shown	CV3170	O-ring 011, lower	*
not shown	CV3171	O-ring 013, upper	*
*The injector	plug and the inje	ctor each use one lower and one upper	O-ring

2

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	WATE	R METER & METER PLUG		
em No.	Part No.	Description	Qty.	
1	CV3151	Nut, 1″ QC	1	
2	CV3003-02	Meter assembly, includes items 3 & 4	1	
3	CV3118-01	Turbine assembly	1	
4	CV3105	O-ring 215	1	
5	CV3003-01	Meter plug assembly		
			TANK	
		Part No. D	escription	
	Item No.		escription	Qty.

em No.		E ASSEMBLY 3/4"		
	Part No.	Description	Qty.	
1	CH4615	Elbow locking clip	1	
2	CPKP10TS8-BULK	Optional insert, 5/8" tube	1	
3	CV3192	Optional nut, 3/4" drain elbow	1	
4	CV3158-02	Drain elbow, 3/4" NPT with O-ring	1	
5	CV3163	O-ring 019	1	
6	CV3159-01	DLFC retainer assembly	1	
	CV3162-007	0.7 DLFC for 3/4" elbow		
	CV3162-010	1.0 DLFC for 3/4" elbow		
	CV3162-013	1.3 DLFC for 3/4" elbow		
	CV3162-017	1.7 DLFC for 3/4" elbow		
	CV3162-022	2.2 DLFC for 3/4" elbow		
	CV3162-027	2.7 DLFC for 3/4" elbow		
7	CV3162-032	3.2 DLFC for 3/4" elbow	1 1	
	CV3162-042	4.2 DLFC for 3/4" elbow		
	CV3162-053	5.3 DLFC for 3/4" elbow		
	CV3162-065	6.5 DLFC for 3/4" elbow		
	CV3162-075	7.5 DLFC for 3/4" elbow		
	CV3162-090	9.0 DLFC for 3/4" elbow		
	CV3162-100	10.0 DLFC for 3/4" elbow		
8	CV3331	Drain elbow and retainer assembly		
			•	

INSTALLATION FITTING ASSEMBLIES:



1" PVC MALE NPT ELBOW					
Item No.	Part No.	Description	Qty.		
	CV3007	1" PVC male NPT elbow assembly	2		
1	CV3151	Nut, 1″ quick connect	2		
2	CV3150	Split ring	2		
3	CV3105	O-ring 215	2		
4	CV3149	Fitting	2		



3/4" & 1" PVC SOLVENT ELBOW				
Item No.	Part No.	Description	Qty.	
	CV3007-01	3/4" & 1" PVC solvent elbow assembly	2	
1	CV3151	Nut, 1″ quick connect	2	
2	CV3150	Split ring	2	
3	CV3105	O-ring 215	2	
4	CV3189	Fitting	2	



	1" BRASS SWEAT					
Item No.	Part No.	Description	Qty.			
	CV3007-02	1" brass sweat assembly	2			
1	CV3151	Nut, 1″ quick connect	2			
2	CV3150	Split ring	2			
3	CV3105	O-ring 215	2			
4	CV3188	Fitting	2			



3/4" BRASS SWEAT					
ltem No.	Part No.	Description	Qty.		
	CV3007-03	3/4" brass sweat assembly	2		
1	CV3151	Nut, 1″ quick connect	2		
2	CV3150	Split ring	2		
3	CV3105	O-ring 215	2		
4	CV3188-01	Fitting	2		



1" PLASTIC MALE NPT				
ltem No.	Part No.	Description	Qty.	
	CV3007-04	1" plastic male NPT assembly	2	
1	CV3151	Nut, 1" quick connect	2	
2	CV3150	Split ring	2	
3	CV3105	O-ring 215	2	
4	CV3164	Fitting	2	



	1-1/4" PLASTIC MALE				
ltem No.	Part No.	Description	Qty.		
	CV3007-05	1-1/4" plastic male assembly	2		
1	CV3151	Nut, 1″ quick connect	2		
2	CV3150	Split ring	2		
3	CV3105	O-ring 215	2		
4	CV3317	Fitting	2		

INSTALLATION FITTING ASSEMBLIES:



1-1/4" & 1-1/2" BRASS SWEAT				
ltem No.	Part No.	Description	Qty.	
	CV3007-09	1-1/4 & 1-1/2" brass sweat assembly	2	
1	CV3151	Nut, 1″ quick connect	2	
2	CV3150	Split ring	2	
3	CV3105	O-ring 215	2	
4	CV3375	Fitting	2	



	1-1/4″ 8	a 1-1/2" PVC SOLVENT	
Item No.	Part No.	Description	Qty.
	CV3007-07	1-1/4" & 1-1/2" PVC solvent assembly	2
1	CV3151	Nut, 1″ quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3352	Fitting	2



3/4" BRASS SHARK BITE			
Item No.	Part No. Description		Qty.
	CV3007-12	3/4" brass Shark Bite assembly	2
1	CV3151	Nut, 1″ quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3628	Fitting	2



3/4" JOHN GUEST ELBOW			
Item No.	Part No. Description G		Qty.
	CV3007-15	3/4" John Guest elbow assembly	2
1	CV3151	Nut, 1″ quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3790	Fitting	2



1" BRASS SHARK BITE			
Item No.	Part No.	Description	Qty.
	CV3007-13	1" brass Shark Bite assembly	2
1	CV3151	Nut, 1″ quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3629	Fitting	2



1" JOHN GUEST ELBOW			
Item No.	Part No.	Description	Qty.
	CV3007-17	1″ John Guest elbow assembly	2
1	CV3151	Nut, 1″ quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV4045	Fitting	2



UF SERIES SPECIFICATIONS:

Operating Specification	0	perating	Sp	becif	ficat	ion
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Filtration Level (micron) 0.02 ¹ Peak Flow Rate (at 77° F and 60 psi) 12 gpm Continuous Flow Rate 10 gpm Water Pressure Range (psi) 10-100 Water Temperature 35-100° F Electrical Requirements (V/Hz) 100V/60Hz
Pipe Size
Total Dimensions (inches): Media Tank

¹Flow rates depend upon pressure, temperature, and suspended solids being removed.

Application Specifications

Pre-filtration (micron)
Chlorine (ppm, continuous flow) 1
Iron, ppm<0.3
Manganese, ppm 0.05
pH
Tannin

*Molecular weights of tannins vary greatly. It is important that the filtration level be demonstrated prior to installation.

NOTE: This product is not certified as a microbiological purifier and should not be applied as a stand-alone disinfection solution for microbiologically unsafe water.



ADDITIONAL INSTALLATION:



A 50 gallon (total volume) Pressure Tank is advisable. This is the minimum needed tank size to perform a treated water backwash.

Additional needed parts (not included):

- Lower tank shut-off valve
- Check valve (see drawing for location)
- No Raw Water Bypass (activated during regeneration). CV-3070FM





SEPARATE SOURCE REGENERATION



Water Filter System Limited Warranty

Congratulations. You have purchased one of the finest water filtration systems available. In the unlikely event of a problem due to defects in material and workmanship, we proudly warrant our filtration system to the original owner, at the original installation location, when installed within recommended parameters from the date of original installation as follows:

For the LIFETIME of the original owner:	Media tank, except for damages due to freezing, high pressure (120 PSI and above), extreme temperature (100° F and above) or a vacuum on the system.
For a period of TEN YEARS:	Brine tank (if applicable).
For a period of FIVE YEARS:	Complete valve.
For a period of ONE YEAR:	All other parts and components.

Any part found defective within the terms of this warranty will be repaired or replaced by the dealer at the manufacturer's discretion. You pay only freight from our factory and local dealer charges. To obtain local warranty service, contact original dealer. If original dealer is unknown, contact Water-Right for authorized service dealer in your area. If no authorized dealer is located in your area, please ship defective part or component freight prepaid to:

Water-Right, Inc. 1900 Prospect Ct. Appleton, Wisconsin 54914

Water-Right, at its discretion, will repair or replace the part or component at its expense and return part freight collect.

The above provisions of the warranty are valid as long as the unit is connected in compliance with local plumbing codes and in an equivalent manner and condition of the original installation and is owned by the original owner.

This warranty does not cover expendable or misapplied medias, or damages due to accident, fire, flood, freezing, or any other Act of God. Water-Right is not responsible for damages due to change in water conditions, misapplication, misuse, neglect, vacuum, oxidizing agents, alteration, or lack of maintenance. No responsibility is assumed for loss of use of the unit, inconvenience, loss or damage to real or personal property or any incidental or consequential damages. Furthermore, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source. To the extent permitted by law, Water-Right disclaims all implied warranties, including without limitation warranties of merchantability and fitness for particular purpose; to the extent required by law, any such implied warranties are limited in duration to the period specified above for the specified components.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

QUICK REFERENCE GUIDE:

4. capacity remaining

6. dealer name and phone

Pressing **NEXT** will toggle

5. days to a regen

number

GENERAL OPERATION

When the system is operating, one of six displays will be shown:

- 1. time of day/gpm
- 2. flow rate
- 3. vacation mode



TO SET TIME OF DAY

In the event of a prolonged power outage, time of day flashes, indicating that this needs to be reset. All other information will be stored in memory no matter how long the power outage.

- 1. Accessed by pressing SET CLOCK
- 2. Adjust hours with + and buttons, AM/PM toggles at 12
- 3. Press NEXT
- 4. Adjust minutes with + and buttons
- 5. Press NEXT
- 6. Adjust current day with + and buttons
- 7. Press **NEXT** to complete and return to normal operation



MANUAL REGENERATION

NOTE: For UF filters with optional chlorine generator, if brine tank does not contain salt, fill with salt and wait at least two hours before regeneration. If you need to initiate a manual regeneration, either immediately, or the same night at the preprogrammed time for regeneration (typically 2:00 AM), complete the following steps.

For Immediate Regeneration:

Press and hold **REGEN** until valve motor starts (typically 3 seconds).

For Regeneration the same night:

Press and release **REGEN** (notice that flashing "REGEN TODAY" appears).

ERROR

If the display toggles between "Error" and an error code (i.e. a number), call a service technician and report the error code.



REGENTODAY and **TIME OF DAY**

will flash alternately if a regeneration

2:40

REGEN

MON

NEXT

÷

is expected tonight.

4

GPM 8

SET CLOCK

REGEN TODAY

BYPASS VALVE OPERATION

To shut off water to the system, position arrow handles as shown in the bypass operation diagram below. If your valve doesn't look like the diagram below, contact your service technician for instructions on how to shut off water.



ADJUST TIME, DAYS BETWEEN REGENERATION, TIME OF REGENERATION AND ALARM BUZZER (Optional)

For initial set-up or to make adjustments, please complete the following steps.

- 1. Accessed by pressing **NEXT** and **+** button simultaneously
- 2. Adjust hardness using + and buttons
- 3. Press **NEXT**
- 4. Adjust days between regenerations using + and buttons
- 5. Press **NEXT**
- Adjust time of regeneration hour with + and buttons, AM/PM toggles at 12.
- 7. Press **NEXT**
- 8. Adjust time of regeneration minutes with + and buttons
- 9. Press NEXT
- 10. Turn service alarm time ON with + and buttons. Default is OFF.
- 11. Press **NEXT** twice
- 12. Turn service alarm gallons ON with + and buttons. Default is OFF.
- 13. Press **NEXT** twice
- 14. Turn alarm buzzer ON or OFF with + and buttons.
- 15. Press NEXT
- 16. Adjust alarm buzzer start time with + and buttons.
- 17. Press **NEXT**
- 18. Adjust alarm buzzer end time with + and buttons.
- 19. Press **NEXT**
- 20. Turn display backlight ON or OFF with + and buttons. Default is ON.
- 21. Press **NEXT** to complete and return to normal operation.







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