EVERGREEN BY PARGREEN

EverGreen Water Softening System



INSTALLATION, OPERATING AND START-UP MANUAL

REV 03.22

PARGREEN WATER TECHNOLOGIES

1206 W. Capitol Drive
Addison, IL 60101
800-323-2810

sales@pargreen.com
www.pargreenwater.com

EVERGREEN BY PARGREEN

Table of Contents

Product Features and Applications ..... Pg 2
System Specification ..... Pg 3
Control Dimensions and Specification ..... Pg 4
Pre-installation Checklist ..... Pg 5
Installation ..... Pg 6-8
Programming ..... Pg 9
System Set-up ..... Pg 10
System Installation ..... Pg 11-14
Troubleshooting ..... Pg 15-17
Warranty ..... Pg 18

1206 W. Capitol Drive
Addison, IL 60101
800-323-2810

sales@pargreen.com
www.pargreenwater.com

Product Features and Applications

Primary Applications

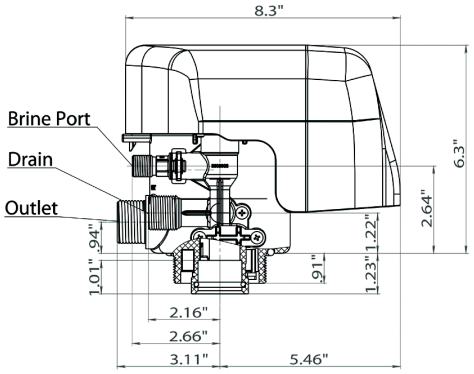
Recommended for commercial and residential softening or demineralization water treatment systems.

- Softening System
- Iron Removal System
- Ion Exchange Equipment
- Boiler Softening Water Treatment
- RO Pre-treatment

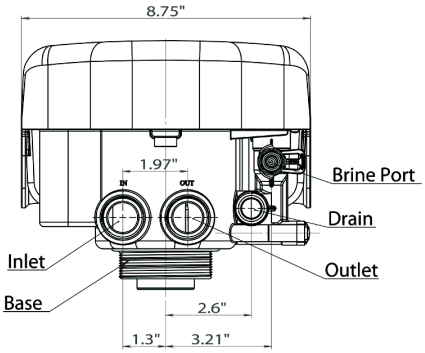
Product Characteristics

- **Mechanical Components**
  The EverGreen uses internal ceramic discs which are corrosion and abrasion resistant to form a hermetic seal. Rotation disc aligns to the corresponding lower disc ports for Service, Backwash, Brine & Slow Rinse, Brine Refill and Fast Rinse modes.
- **Hard Water/No Hard Water Bypass**
  Up-flow regeneration with no hard water and hard water bypass options. This valve operates as a hard water bypass.
- **Excellent Flow Rate:** 20 gpm @ 15 psi drop.
- **365 Day Usage Memory**
- **Manual / Delayed Regeneration**
  Pressing at any time results in an immediate manual regeneration.
  Pressing and holding for 3 seconds, when system is locked, results in a delayed regeneration at the preselected time.
- **Extended Power Outage Indicator**
  If outage exceeds 3 days, the time of day indicator "" will flash 12:12. The current time of day needs to be re-set. All other set parameters remain stored in memory. The valve will resume to operate from the point of the power outage.
- **Three Regeneration Sequences**
- **Lockout Function**
  Keypad will lock after 5 minutes without use. To access the parameter changes press and hold and simultaneously for 3 seconds to unlock.
- **LCD Display Screen**
- **Advanced Valve and External Device Connections**
  Interlock and Alternate Interlock
  Remote Handling
  Solenoid Valve
- **7 Regeneration Mode Options with Adjustable Cycle Times**
- **Maximum Day Regeneration Interval**
  When the valve reaches the maximum programmed service days, without reaching the set service capacity, it will trigger a regeneration at the pre-programmed time of day. Regeneration(s) reset both the maximum day regeneration value and the service capacity value.
- **One Button to Change the Current Time**
  Pressing and holding the button for 3 seconds, when system is locked, allows the current time of day to be adjusted.
- **Service Alarm**
  When the service alarm feature counts-down and reaches set point, (Selectable 30 day min to 900 day max in 30 day increments) the alarm will activate at 8pm. The alarm will sound for 2 minutes and then shut off automatically. To silence alarm within the 2 minute period, press any button. A service call message will then appear on the screen as a signal for the homeowner to contact a water treatment professional for routine service. To eliminate this message from the screen, unlock the valve programming by pressing the UP and DOWN arrows simultaneously until the padlock in the upper left corner of the screen disappears (approximately 3 seconds). Next, enter the programming menu by pressing the MENU/CONFIRM button once and then pressing the BACK/REGENERATION button once. The system will then go back to normal status and the operational days will re-start new count-down. Note: The system will operate normally when it is displaying the service alarm message.

EverGreen Water Softening System







EverGreen System Specifications

Model*	Resin** Cubic Feet	Overall Height Inches	Diameter Inches	Flow Rate Gallons Per Minute[1]	Water (Gallons) Used Per Regeneration[2]	Ultra High Efficiency: Grains Exchanged Per lb. Salt[3]	High Efficiency: Grains Exchanged per lb. Salt
SSB948	1	54.7	9	16	46	4,000 to 5,000	3,111
SSB1054	1.5	60.9	10	18	58	4,000 to 5,000	3,111
SSB1252	2	59.0	12	20	84	4,000 to 5,000	3,111
SLB1354	2.5	61.4	13	22	96	4,000 to 5,000	3,111
SLN1465	3	72.2	14	24	113	4,000 to 5,000	3,111
SLN1665	4	72.1	16	26	148	4,000 to 5,000	3,111

* Additional Sizes Available
1 - Flow Rate at 25 PSI Drop
2 - Usage Based on Water Supply Quality; Usage ± 25%
3 - Salt Efficiency Subject to Water Quality

** Available in SR (Standard Resin) and FR (Fine Uniform Mesh)

Electrical / Operational Specifications

Control Valve		Working Conditions	
Transformer Input	120VAC - 60Hz	Water Pressure	20 -120 PSI
Transformer Output	12VDC - 2A	Water Temperature	35°F - 125°F
Valve Wattage	24W	Hardness Level[4]	3 to 50 Grains

4 - For Water Hardness Over 50 Grains, Contact PWT Technical Support

Control Valve Parameters

Inlet	Outlet	Drain[5]	Brine Line	Base	Riser Tube	Hard Water Bypass
.75″, 1″, 1.25″	.75″, 1″, 1.25″	1/2″ Barb	3/8″	2.5″ - 8NPSM	1-1/4″	Yes - During Regeneration

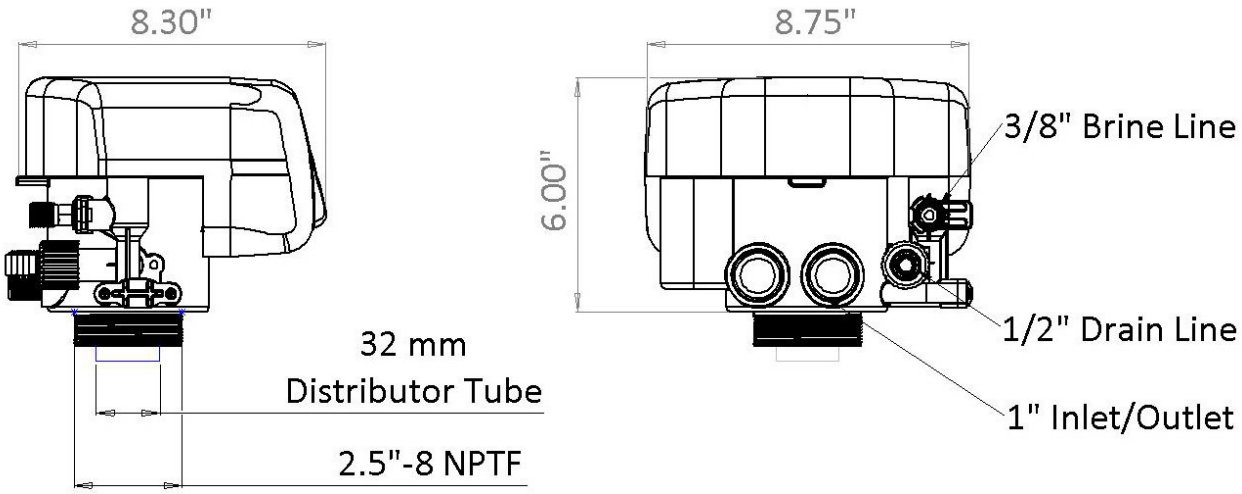
5 - Drain Connection Also 3/4″ MNPT

Additional Specifications

Valve Material	Tank Material	Meter Accuracy	Clock
Noryl®	FRP	± 5%	12 Hour - with Battery Back-up

PARGREEN WATER TECHNOLOGIES
1206 W. Capitol Drive
Addison, IL 60101
800-323-2810
sales@pargreen.com
www.pargreenwater.com

Product Dimensions and Specifications



Model	Length(max)	Width(max)	Height (max)	Regeneration Mode
PWT 4	8.3”	8.75”	7.5”	Up-flow
The valve dimensions are for reference only.				

Connect Port Dimensions							
Product Model	Inlet Port	Outlet Port	Drain Port	Brine Port	Base	Riser Pipe	Hard Water Bypass
PWT 4	1” NPT	1” NPT	3/4” NPT	3/8”	2.5” 8NPSM	1.25"	Yes

Main Technical Parameters	
Water Capacity	See Performance Data Sheet
Power Input	100VAC 60Hz
Power Output	12VDC @ 2A
Regeneration Cycles	Sequence 1: Service → Backwash → Brine & Slow Rinse → Fast Rinse → Brine Refill Sequence 2: Service → Backwash → Brine & Slow Rinse → Backwash → Fast Rinse → Brine Refill Sequence 3: Service → Brine Refill → Service (180 min-time fixed) → Backwash → Brine & Slow Rinse → Backwash → Fast Rinse
Regeneration Mode	A-01 Meter Delay: Regeneration happens when the capacity reaches zero and the preset time of regeneration is reached. A-02 Meter Immediate: Regeneration happens when the capacity reaches zero. A-03 Intelligent Meter Delay: The same delay function as A-01 but the capacity is determined by entering the total Resin Capacity, Feed Water Hardness, and the Number of People in the household. The control valve automatically calculates the gallons for regeneration. A-04 Intelligent Meter Immediate: The same function as A-02 but the capacity is determined by entering the Total Resin Capacity and Feed Water Hardness. The control valve automatically calculates the gallons for regeneration. A-05 Remaining Compare: Compares current usage with previous 365 day daily usage to intelligently determine when regeneration will occur. Regeneration starts at the set regeneration time. A-06 By Day (timer): Service days count down to zero (0) and regeneration starts at the set regeneration time. A-07 Filter Meter: Filter mode, regeneration occurs when the capacity reaches zero and the preset time for regeneration is reached.

Pre-Installation Check List

Before installation, read through this manual thoroughly. Then obtain all materials and tools needed for installation.

This softening system will operate at maximum efficiency when the following conditions are considered.

Required PWT 4 Operation Conditions:		
Working Conditions	Working pressure	20psi - 120psi
	Water temperature	35 °F - 125 °F
Working Environment	Environment temperature	35 °F - 125 °F
	Relative humidity	≤95%
	Power source	100 - 240VAC 50/60Hz
Inlet Water Quality	Turbidity	2FTU
	Hardness	50 grains per gallon
	Chlorine	0.1 mg/l
	$Iron^{2+}$ / $Iron^{3+}$	5.0 mg/l / 0.30 mg/l

EverGreen equipment, like all modern electronic devices, can be damaged by electrical surges or brown outs. Every effort has been taken to harden the circuits, by design, to protect against such events. These precautions, or even additional surge protection, are not 100% effective. Therefore, equipment damage caused by abnormal electrical events is not covered by warranty.

*****Failure to use this product within the described conditions may void the warranty*****

Installation

- **Installation Notice**
  - Before installation, read through this manual thoroughly and obtain all materials and tools needed for installation.
  - All plumbing and electrical work should be performed by an accredited professional to ensure all federal, state, local and municipal guidelines are met.
- **Unit Location**
  - The filter or softener should be located close to a floor drain away from direct sunlight and any heat sources.
  - Protect equipment from direct sunlight and precipitation exposure.
  - Install equipment in a location safe from unauthorized access or vandalism.
  - Ensure that the unit is installed with enough space for operation and maintenance.
  - The installation surface should be clean and level.
  - Install the unit in an environment which minimizes consumer risk of loss in the event of malfunction.
  - Hankscraft offers many different products for many different applications, for both indoor and outdoor environments. If you are not 100% sure the equipment purchased is suitable for the installation application or environment, please check with a Pargreen representative, or your local equipment provider, to ensure the proper equipment is selected. Equipment installed in inappropriate applications or environments are not covered by warranty.
  - Brine tank should be installed close to the PWT 4 control valve.
- **Plumbing and Mechanical Setup**

  Note:

  1) *If the water outlet or water tank is installed higher than control valve, or parallel interlock system with multi-outlets, a liquid level controller must be installed in the brine tank. If not, the water outlet or source tank will flow backwards into brine tank during backwashes.*

  2) *If making a soldered copper installation, all sweat soldering should be done before connecting pipes to the valve. Torch heat will damage plastic parts.*

  3) *When turning threaded pipe fittings onto plastic fitting, take precaution not to cross thread or over tighten.*

  - Control Valve Installation
    - As Figure 1-1 shows; insert a 32mm riser pipe with bottom basket into the center of the mineral tank. If pipe is higher than the top of the pressure tank, mark it, remove from tank, and cut. Take care to keep foreign material out of pressure tank.
      Note: *The length of riser pipe should be below tank flange. The distance from the top of the tank to the top of the pipe should be between* **3/16" and 1/4"***. The edges of the pipe should not be sharp to avoid damage to the seal inside the* PWT 4 *valve.*
    - If mineral tank was not purchased as part of a complete system from Pargreen be sure to plug the riser pipe prior to filling with media. Media quantity is relative to desired capacity and tank size. (Refer to Product Sizing table on page 7)
    - Install Valve Base O-ring around the neck of the valve.
    - Lubricate the center hub O-ring of the PWT 4 valve.
    - Install the top basket with a twist and lock action to center hub of the PWT 4 valve.
    - Place PWT 4 valve onto tank with the distributor pipe inserted down the middle of The top basket. Rotate clockwise to secure onto the tank. Do not overtighten! Overtightening may cause the valve to crack and void the warranty.

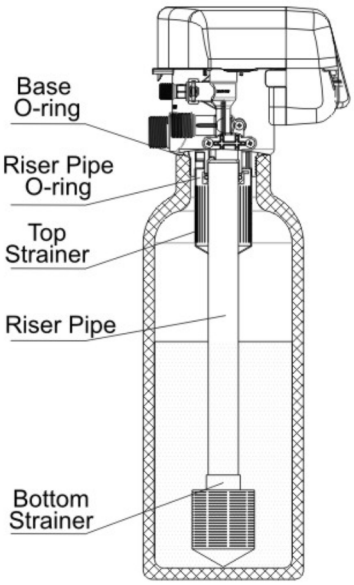
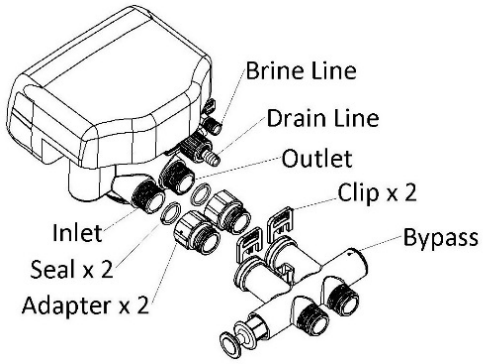


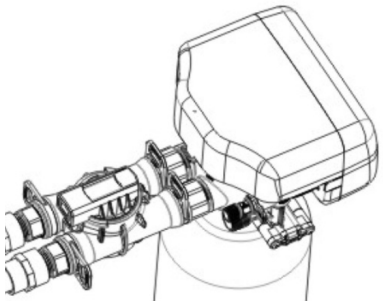
Figure 1-1

Installation- Continued

- Control Valve Configuration (refer to chart on page 43 for specific recommendations)
  - Drain Line Flow Control (DLFC) Button Installation
    - If you wish to change the DLFC button, unscrew drain barb collar and remove drain barb.
    - Remove current DLFC button and replace with desired DLFC button.
    - Replace drain barb and tighten down drain barb collar.
  - Brine Line Flow Control (BLFC) Button Installation
    - If you wish to change the BLFC button, remove brine connector clip and then brine connector from valve.
    - Remove current BLFC button and replace with desired BLFC button.
    - Replace brine connector to valve and insert brine connector clip.
  - Injector Throat and Nozzle Installation
    - If you wish to change the injector, unscrew the two screws from the injector body and remove the cover.
    - Unscrew, in a counter-clockwise direction, remove the nozzle and throat.
    - Replace with desired nozzle and throat. Tighten in a clockwise direction until seated. Take care not to over tighten or strip the parts.
- Bypass Installation
  - Push Pull Bypass – 41204 / Ceramic Bypass -- 41205

    Note: *Before attaching the bypass to the valve, verify the meter is installed into the outlet side of the bypass with the impeller facing in.*
    - As Figure 1-2 shows; install the seals into the animated connector.
    - Attach animated connectors to the inlet/outlet and grease the O-rings.
    - Attach the bypass valve and insert the clips.
    - Meter cable is installed into cable port on the outlet side during system start-up, see page 25.





EverGreen uses the Ceramic Upgrade By-Pass

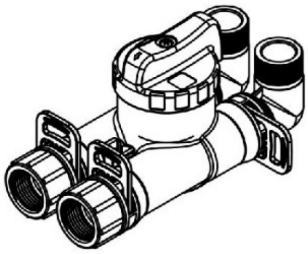


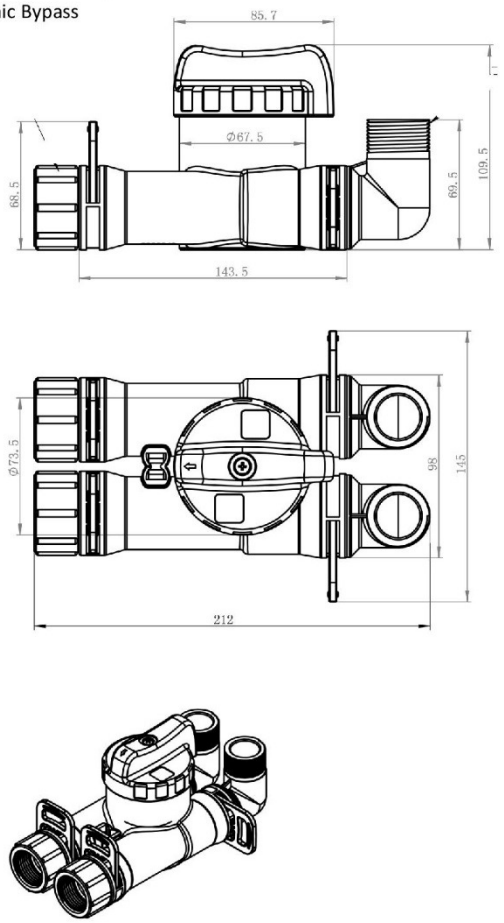
Figure 1-2

  - Metal Bypass
    - Detach animated connectors from the female adaptor and install washer before attaching them to the inlet and outlet of the valve.
    - Attach female adaptors to the 1” yoke; be certain meter impeller is installed on the outlet side, impeller facing in.
    - Attach metal bypass to the yoke with two flanged spools. Secure with metal clips.
    - Grease O-ring of the animated connectors and attach bypass assembly to valve, secure with clips.
    - Meter cable installed into cable port on the outlet side during system start-up.

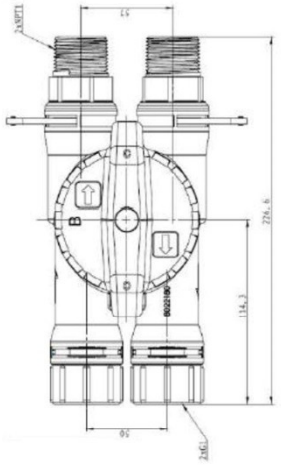
Installation - Continued

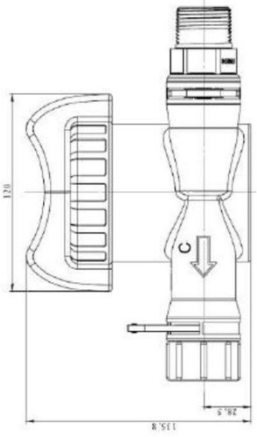
Ceramic Bypasses

Hankscraft Part Number 41207
Large Ceramic Bypass

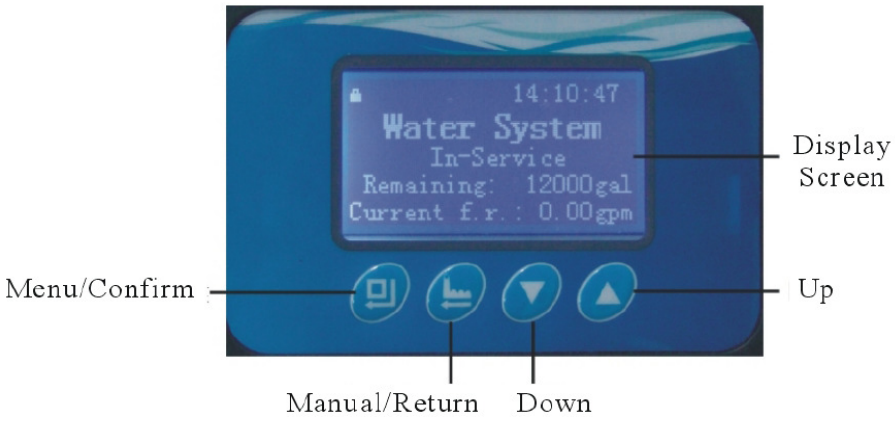


Hankscraft Part Number 41205
Small Ceramic Bypass





Programming: Display and Instructions



- **Programming Instructions**

  Pressing and holding the button for 3 seconds, when system is locked, allows the current time of day to be adjusted.

  Unlocking the Keypad

  icon indicates the buttons are locked within 5 minutes of idle use. To unlock press and hold and for 3 seconds until the icon is off.

  Enter Key

  Manual / Delayed Regeneration

  Pressing at any time results in an immediate manual regeneration.

  Pressing and holding for 3 seconds, when system is locked, results in a delayed regeneration at the preselected time.

  One Button to Change the Current Time

  Press button to enter the basic programming mode, modify highlighted options, and return to the main menu.

  Manual Regen/Esc. Key

  Press at any phase during manual regeneration to advance to the next phase or press during programming to exit to the home screen without modifying the current highlighted option.

  Up and Down Arrows

  or buttons are used to scroll through the various basic programming options as well as adjust values.

- **Programming Modes**
  - Basic Programming – Allows you to adjust the time values for each phase. To enter basic programming, follow the directions below.
    - When the icon is on, press and hold both and for 3 seconds to unlock the keypad; then press to enter the main menu; press or to highlight each option. Press to enter that option. Press or to adjust the value. Press to accept changes. (Press to exit back to service status)
  - Advanced Programming – Allows you to set the Regen Cycle and Regen Mode that will work best for your customer; as well as adjust or set each phase time. To enter advanced programming, follow the directions below.
    - Plug the PWT 4 in and immediately press in sequence to enter into the advanced setting. Press or to select the menu item to be changed (Press to return to the previous menu).
      Note: *If valve locks while programming, unplug power supply and repeat step above.*
    - Press to enter the main menu; press or to highlight each option. Press to enter highlighted option. Press or to adjust the value. Press to accept changes. (Press to advance to service status)
      The following pages will outline programming for each regeneration mode.

EverGreen - Water Softener

System Set-up Sheet

Control Valve - PWT 4

Regen Cycle 2; Regen Mode A-03

Screen View	Setting	Additional Information
Review Company Info	NA	
Set Valve Model	72605	
Set Language	English	
Set Company Info	NA	
Set Hour Mode	12 HR	
Set Time of Day	Actual Time	
Set Date	Current Date	
Set Program Type	Interlock	
Set Regen Cycles 1,2,3,4	2	
Clear Data	Close	
Set Regen Mode: A-01-A-07 *	A-03	Intell. Meter Delayed
Set Total Capacity	gr	SSB948 = 32,000; SSB1054 = 48,000; SLB1252 = 64,000 SLB1354 = 80,000; SLN1465 = 96,000; SLN1665 = 128,000
Set Regen Time	12am	
Set Backwash Time	00 Min	
Set B.S.R Time	60 Min	
Set Secondary B.W.T.	10 Min	
Set Fast Rinse Time	8 Min	
Set B.R. Time	Min →	SSB948 = 10; SSB1054 = 11; SLB1252 = 5; SLB1354 = 6; SLN1465 = 7.5
Max Days for Regeneration	30 Days	
Signal Output Mode b-01 (02)	b-01	
Set Service Alarm	disabled	
Review Regen Times	NA	
Review Software Ver.	Ver. 5.0	

PARGREEN WATER TECHNOLOGIES

1206 W. Capitol Drive
Addison, IL 60101
800-323-2810

sales@pargreen.com
www.pargreenwater.com

System Installation

- **Valve Set-up and Installation** - Refer to page 5-6.

  - **Plumbing Connections**
    - As Figure 1-3 shows; connect inlet pipe, via a 1” NPT female connector, to the inlet connector of bypass. Repeat steps for the outlet pipe.

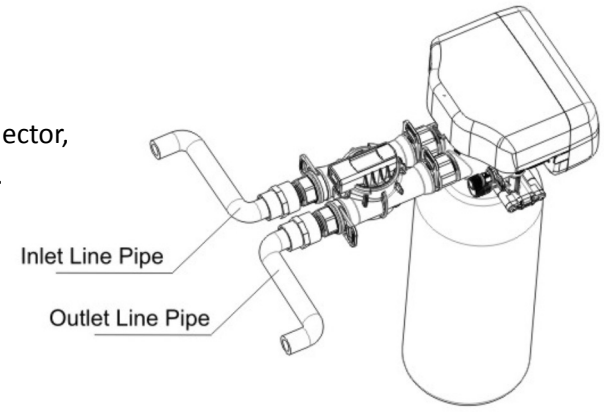


Figure 1-3

  - **Drain Line Installation**
    - As Figure 1-4 shows; insert drain line with an air gap to the floor drain. Valve drain hose not supplied.

	An air gap is required between the drain line and the drain (sewer). This avoids a syphon effect and reverse contamination. Minumum 1"

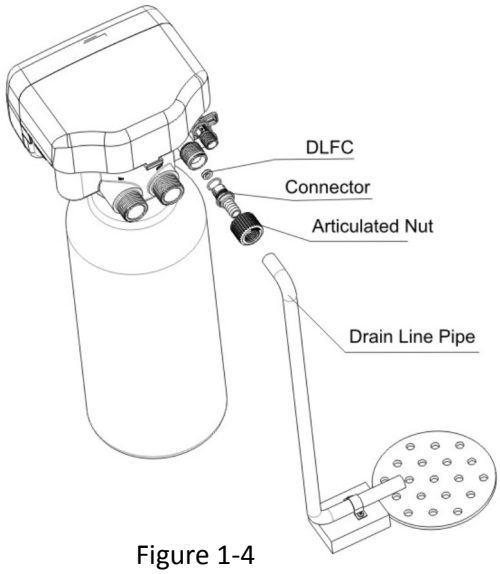


Figure 1-4

  - **Brine Line Connection**
    - As Figure 1-5 shows; slide brine nut onto the 3/8” brine tubing.
    - Install the filter screen into the ferrule and insert the ferrule into the end of brine tube.
    - Insert tube into brine connector and tighten brine nut to the brine connector.
      Note: *Take care to not crimp or plug the brine line or drain line.*

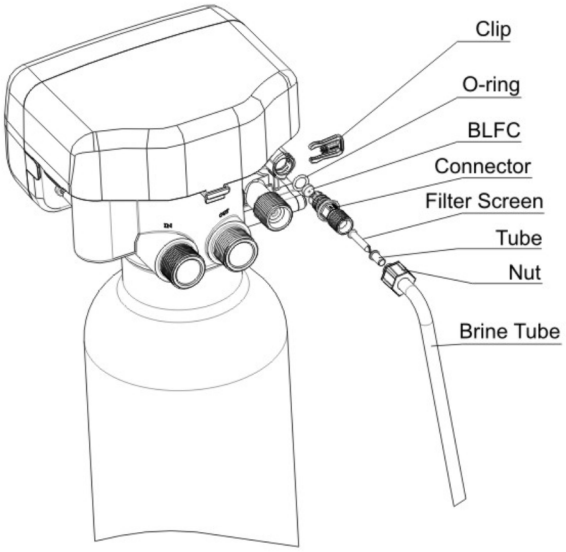


Figure 1-5

System Installation- Continued

- **Brine Tank Installation**
  - Remove cap from brine well. Remove overflow nut and float.
  - Adjust float to the proper salt tape line. Loosen compression nut at the top of the float to adjust it to the desired position. Tighten to lock into place.
    Note: *Hold float rod securely to not pull from air check assembly.*
    Refer to Figure 1-8.
    - 3 lb. salt setting @ black tape mark or above
    - 6 lb. salt setting @ red tape mark or above
    - 9 lb. salt setting @ white tape mark or above
    - 12 lb. salt setting @ blue tape mark or above
    - 15 lb. salt setting @ green tape mark or above
  - Secure brine well to brine tank with the brine well stand-off, gaskets and nut using the upper hole.
    Refer to Figure 1-7.
  - Replace brine float into brine well.
  - Insert brine line tubing through the upper hole of tank, stand-off and well.
    Refer to Figure 1-6.
  - Thread the brine line through the well stand-off and push brine line into the quick connect elbow at the top of the float assembly.
  - Replace brine well cap.
  - Attach a drain tube to the overflow elbow. Maintain an air gap between the tube and floor drain per these instructions and Figure 1-4.



Figure 1-6



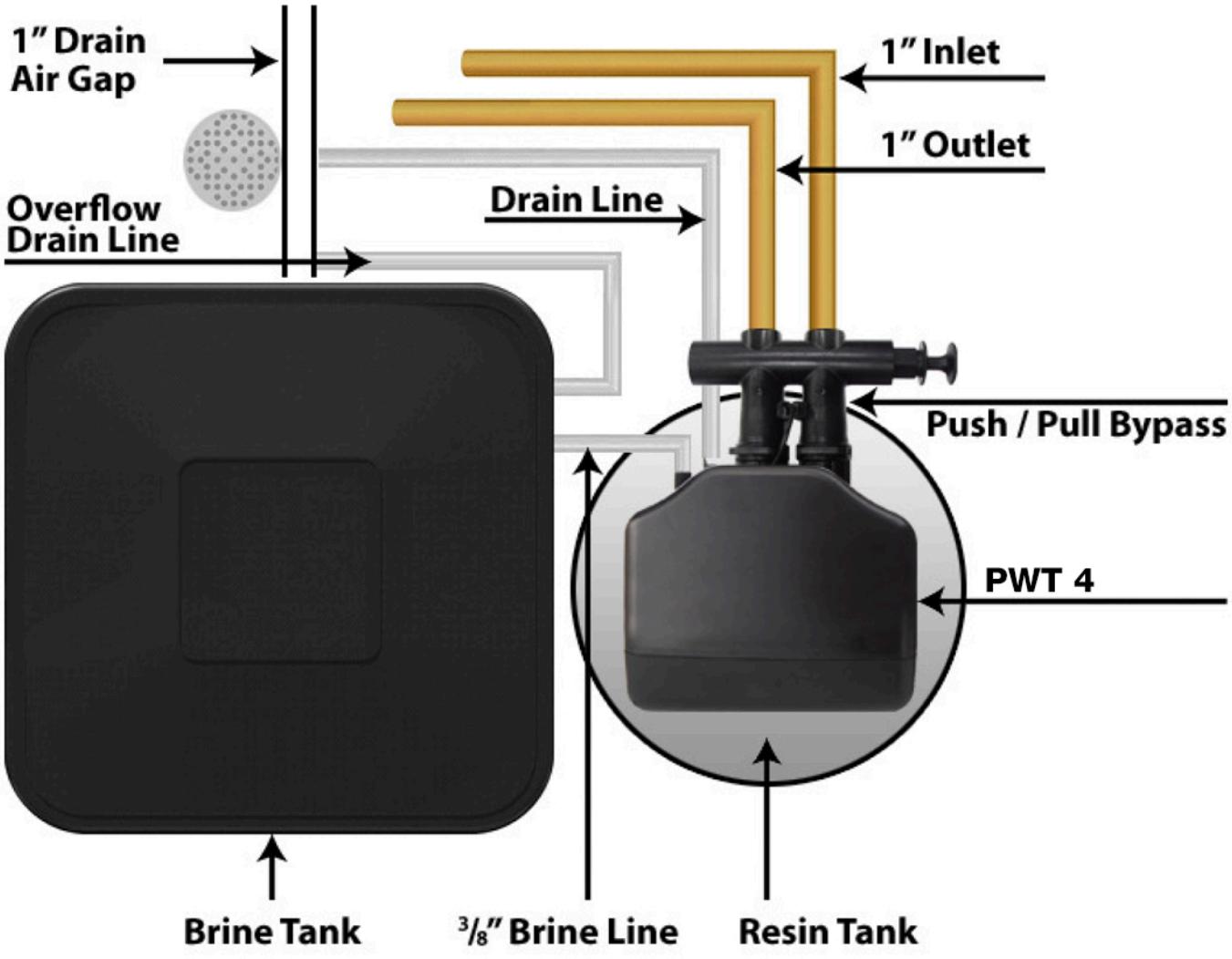
Figure 1-7



Figure 1-8

System Installation- Continued

- **System Installation Chart**



System Installation- Continued

- **Disinfection Procedure**

At the start up or after service, the following procedure is recommended to exclude the possibility of microbiological contamination of the system. This procedure relates only to the original description of equipment and options described for this system. Any alterations to the configuration would require evaluation by a trained water professional.

- Remove the brine tank cover and locate the brine well.
- Remove the brine well cap.
- Pour 1/3 cup of unscented bleach into the brine well.
- Place cap back on brine well and cover back on brine tank.
- The system must be regenerated. Select an immediate regeneration or a delayed regeneration.
  a) Immediate Regeneration: at the control valve, press ▲ and ▼ and hold for 3 seconds to unlock the valve. Press ⏻ to start an immediate regeneration. Allow approximately 2 hours for the valve to complete its regeneration cycle and return to service mode.
  b) Delayed Regeneration: at the control valve, press ⏻ and hold for 3 seconds to set a delayed regeneration that very next morning at the programmed time. (Default setting is 2:00am)

Troubleshooting

● Control Valve

Problem	Cause	Correction
1. Softener fails to regenerate	A. Electrical service to unit has been interrupted. B. Regeneration cycles set incorrectly. C. Controller is defective. D. Motor failure.	A. Check for consistent electrical service. B. Reset regeneration cycles. C. Replace controller. D. Replace motor.
2. Regeneration time is not correct	A. Time of Day not set correctly. B. Power failure over 3 days.	Check program and reset time of day.
3. Hard water	A. Bypass valve is open or leaking. B. No salt in brine tank. C. Injector plugged. D. Insufficient water level in brine tank. E. Leak at O-ring on riser pipe. F. Internal valve leak. G. Regeneration cycles not correct. H. Shortage of resin. I. Bad quality of feed water or meter blocked.	A. Close or repair bypass valve. B. Add salt to brine tank and maintain salt level above water level. C. Change or clean injector. D. Check brine tank refill time. E. Make sure riser pipe is not cracked. Check O-ring and tube pilot. F. Change valve body. G. Set correct regeneration cycles in the program. H. Add resin to mineral tank and check for leaks. I. Reduce the inlet turbidity, clean or replace meter.
4. Softener fails to draw brine	A. Line pressure is too low. B. Brine line is plugged. C. Brine line is leaking. D. Injector is plugged. E. Internal leakage. F. Drain line is plugged. G. Wrong size BLFC, DLFC and injector.	A. Increase line pressure. B. Clean brine line. C. Replace brine line. D. Clean or replace injector. E. Replace valve body. F. Clean drain line flow control. G. Install properly sized BLFC, DLFC and injector. See page 7.
5. Unit uses too much salt	A. Improper salt setting. (Brine refill time) B. Excessive water in brine tank.	A. Check salt usage and salt setting. (Brine refill time) B. See problem no.6.
6. Excessive water in brine tank	A. Brine refill time is too long. B. Foreign material in brine line. C. Foreign material in brine valve or plugged drain line flow control. D. Power outage during brine fill. E. Safety valve in brine tank malfunction.	A. Reset correct refilling time. B. Clean brine line. C. Clean brine valve, and DLFC. D. Put the valve in bypass. Install a safety float in brine tank. E. Repair or replace brine safety valve.
7. Pressure lost or iron in conditioned water	A. Iron in the water supply pipes. B. Iron mass in the softener. C. Fouled resin bed. D. Too much iron in the raw water.	A. Clean the water supply pipe. B. Clean valve and add resin cleaning chemical, increase frequency of regeneration. C. Check backwash, brine draw and brine refill. Increase frequency of regeneration and backwash time. D. Install Iron removal equipment before softening.
8. Loss of mineral through drain line	A. Air in water system. B. Bottom strainer broken. C. Improperly sized drain line control (DLFC).	A. Assure that well system has proper air eliminator control. B. Replace bottom strainer. C. Check for proper drain rate.

Troubleshooting- Continued

● **Control Valve Continued**

Problem	Cause	Correction
9. Control cycles continuously	A. Signal to the locating PCB is interrupted. B. Controller is faulty. C. Foreign material in the drive gear. D. Time of regeneration steps were set to zero.	A. Check the connection between the main PCB to the locating PCB. B. Replace controller. C. Remove blockage in drive gear. D. Check program setting and reset.
10. Drain flows continuously	A. Internal valve leak. B. Interrupted power supply during backwash.	A. Check and repair valve body or replace it. B. Adjust valve to service position or turn off bypass valve and restart when power is restored.
11. Interrupted or irregular brine	A. Water pressure too low or not stable. B. Injector is plugged or faulty. C. Air in resin tank.	A. Increase water pressure. B. Clean or replace injector. C. Check and find the reason.
12. Water flows from drain or brine line after regeneration	A. Foreign material in the valve body. B. Hard water mixed in valve body. C. Water pressure is too high.	A. Clean foreign material in valve body. B. Change valve core or sealing ring. C. Reduce water pressure or use pressure release function.
13. High concentration of brine	A. Foreign material in injector. B. Brine valve cannot be shut-off. C. Rapid rinse time is too short.	A. Clean and repair injector. B. Replace brine valve or clean it. C. Extend rapid rinse time.
14. Decreased Capacity	A. Regeneration is not occurring. B. Fouled resin bed. C. Safety float is not at the proper height or brine time is low. D. Softener setting not proper. E. Raw water quality has altered. F. Flow meter is slow or stationary.	A. Reset regeneration parameters. B. Increase backwash flow rate and time, clean or change resin. C. Adjust brine draw time and float height. D. Re-test the water and change the valve parameters. E. Regenerate unit manually then reset regeneration cycle. F. Disassemble and clean flow meter or replace.
15. Power Outage Occurs During Regeneration	A. System locked in current phase/cycle.	A. Close the bypass until power resumes. If power outage lasts over 72 hours, the time of day will need to be reset.

Troubleshooting- Continued

● **Electronics**

Problem	Cause	Correction
1. Abnormal display	A. Wiring to the front panel is loose. B. Control board is faulty. C. Transformer malfunction. D. Electrical service unstable.	A. Check and replace the wiring. B. Replace control board. C. Check and replace transformer. D. Verify power source.
2. Blank display	A. Wiring to the front panel is loose. B. Front panel damaged. C. Control board damaged. D. Electricity is interrupted.	A. Check and replace wiring. B. Replace front panel. C. Replace control board. D. Check power source.
3. E1 code	A. Wiring of locating board with controller fails to work. B. Locating board damaged. C. Mechanical drive failure. D. Faulty control board. E. Wiring to the motor has a short. F. Motor damaged.	A. Replace wiring. B. Replace locating board. C. Replace Discs or drive gear. D. Replace control board. E. Replace wiring. F. Replace motor.
4. E2 code	A. Hall effect on locating board damaged. B. Possible short in the wiring to the locating board. C. Control board malfunction.	A. Replace locating board. B. Replace wiring. C. Replace control board.
5. E3 or E4 code	A. Control board malfunction.	A. Replace control board.

Warranty

Limited Warranty

As described herein, Hankscraft Runxin, LLC (“Hankscraft”), warrants its products are free from defects in material and workmanship only, when properly installed, operated, and maintained. This warranty is subject to the exceptions herein.

Hankscraft warrants to the original owner that the items listed below, excluding but not limited to wear parts like O-rings, gaskets and seals, will be free from defects in materials and workmanship for the period of time specified below from the original purchase date.

- Control valves and all internal valve parts and the salt storage tank – FIVE (5) YEARS
- Mineral tank – TEN (10) YEARS
- Any other component – ONE(1) YEAR
- Ceramic disc for rotary valve (applicable to RevV series valves only) – LIFETIME
- RO and UF Filter Systems- ONE (1) YEAR

Media/resin is not warrantied due to water supply quality differences

Any parts used for replacement are warrantied for the remainder of the original warranty period applicable to the part from the date of manufacture so long as the parts are installed by a Hankscraft factory trained and authorized installer.
Hankscraft’s obligation by this Limited Warranty, at is option, is to repair or replace any warrantied product only. Labor for repair or replacement is not included as part of this warranty. Prior to returning the product to Hankscraft, a valid return materials authorization number must be obtained from Hankscraft. Any product returned to Hankscraft without a valid return authorization number will be rejected. Any product found to be defective will, at the sole discretion of Hankscraft, be repaired or replaced. Hankscraft is not responsible for shipping cost to the repair facility. This section lists the sole remedies for any valid warranty claim.

This warranty does not apply to defects reported to Hankscraft outside of the warranty period.

This warranty does not apply to defects caused by installing, operating, servicing, modifying, repairing or maintaining (or lack of maintaining) the product outside of Hankscraft’s recommendations. Filters, membrane elements and flow restrictors that become fouled or plugged due to excessive turbidity, dissolved solids, or microorganisms are not covered by this warranty. This warranty does not apply to defects caused by damage during shipment, neglect, misuse, modification, accident, noncompliance with local codes and ordinances, hot water, frozen water, sediment, corrosive liquids, gases, chemicals, bacteria, animals, sand, salt, flood, wind, fire, outdoor installations where the product is not reasonably covered, pneumatic use, natural disasters, war, terrorism or acts of God. No other person is authorized to make any other warranty on behalf of Hankscraft either during or after the applicable warranty period.

Hankscraft assumes no liability for determining the proper products and equipment or installation necessary to meet the requirements of the user of the product, and Hankscraft does not authorize others to assume such liability on its behalf.

THE WARRANTIES AND REMEDIES HEREIN ARE EXCLUSIVE AND IN LIEU OF ANY AND ALL OTHER WARRANTIES OR REMEDIES EITHER EXPRESSED OR IMPLIED, HEREIN OR ELSEWHERE, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, NON-INFRINGEMENT OR WARRANTIES RESULTING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR FROM USAGE OF TRADE. HANKSCRAFT HEREBY DISCLAIMS ALL OTHER WARRANTIES. HANKSCRAFT’S LIABILITY SHALL NOT EXCEED THE COST OF THE PRODUCT. HANKSCRAFT IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR EXPENSES OF ANY KIND WHATSOEVER, INCLUDING LOSS OF PROFITS, UNDER ANY CIRCUMSTANCES AND REGARDLESS OF WHETHER HANKSCRAFT WAS AWARE OF THE POSSIBILITY OF ANY SUCH LOSS.