

# Installation Instructions and Owner's Manual

## **PTS1 Series Water Softener System**



---

---

### **Franklin Water Treatment, LLC**

12630 US Highway 33 N  
Churubusco, IN 46723

Phone (260) 693-1972      Fax (260) 693-0602

# TABLE OF CONTENTS

<b>Pre-installation Instructions</b>	<b>Page 2</b>
<b>General Installation</b>	<b>Page 3</b>
<b>Bypass Valve</b>	<b>Page 4</b>
<b>Installation Instructions</b>	<b>Page 5</b>
<b>Control Valve Programming – Set Time-of-Day</b>	<b>Page 7</b>
<b>Control Valve Programming – Initial Settings</b>	<b>Page 8</b>
<b>Control Valve Displays &amp; Button Operation</b>	<b>Page 11</b>
<b>Troubleshooting Guide</b>	<b>Page 12 - 14</b>
<b>Specifications</b>	<b>Pages 15-16</b>
<b>Component Parts Breakdown &amp; List</b>	<b>Page 17</b>
<b>Control Valve Breakdown</b>	<b>Page 18</b>
<b>Control Valve Parts List</b>	<b>Page 19</b>
<b>Installation Fitting Assemblies</b>	<b>Pages 21-23</b>
<b>Limited Warranties</b>	<b>Page 24-25</b>

# Pre-Installation Instructions

## Description of the softener

The softener system includes two mineral tanks (with gravel, distributor and softener resin), one brine tank (with salt shelf {some models}, brine well, brine tank lid and safety brine valve), and a twin alternating, meter initiated, digital, backwashing control valve with bypass and brine line.

## Successful Application

Softeners are designed to remove hardness minerals (calcium and magnesium) from water by the process of ion exchange. They may also remove small amounts of “clear water” iron (2 ppm or less). Softeners are not designed to remove “red water” iron or bacterial iron. If greater levels of iron, “red water” or iron bacteria are present, an iron filter must precede the softener. Softeners are not designed to remove particulates. If there is any sediment or turbidity present in the water, a backwashing filter with appropriate media must precede the softener. Only specialty tannin softeners are designed to remove tannins and the yellow to tea color from water. Softeners will not reduce hydrogen sulfide (“rotten egg” odor).

## Time of Regeneration

Periodically the control valve will go through regeneration. Regeneration is factory preset to 2:00 A.M. The time of regeneration may be changed if needed (see programming procedures on page 7).

## Location Considerations

The proper location to install the softener will ensure optimum performance and satisfactory water quality. The following factors should be considered in selecting the location of this system.

1. The softener must be installed after the pressure tank (private well system only). Operating pressure of the softener must be limited to within 25 – 100 psi range.
2. The softener should be installed after any iron filter and/or other backwashing filter.
3. If chlorine is present in the supply water a whole house carbon filter (CS-1 or other backwashing carbon filters or DF non-backwashing carbon filters.) should be installed before the softener.
4. The system must not be subject to freezing temperatures.
5. Ensure that any in-line filter installed prior to the softener does not restrict the flow or pressure required to backwash the softener.
6. The system should be installed as close as possible (preferably within 15') to an adequate floor or laundry drain capable of handling the backwash cycle volume and flow rate (refer to unit specifications on pages 15-16). An air gap should be provided between the drain line and plumbing drain.
7. All water conditioning equipment should be installed at least 10' prior to the water heater. Water temperatures exceeding 100°F can damage the internal components of the control valve and mineral tank. An expansion tank may need to be installed in the line to the water heater to allow for thermal expansion and comply with local plumbing codes.
8. Appliances requiring extended periods of continuous or high flow water use (i.e., geothermal heat pumps, swimming pools, lawn irrigation, outside hose bibs, etc.) should bypass all water conditioning equipment unless the equipment has been specifically designed for that purpose.

# General Installation

## GENERAL INSTALLATION & SERVICE WARNINGS

The softener is not designed to support the weight of 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 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, not included). 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.*

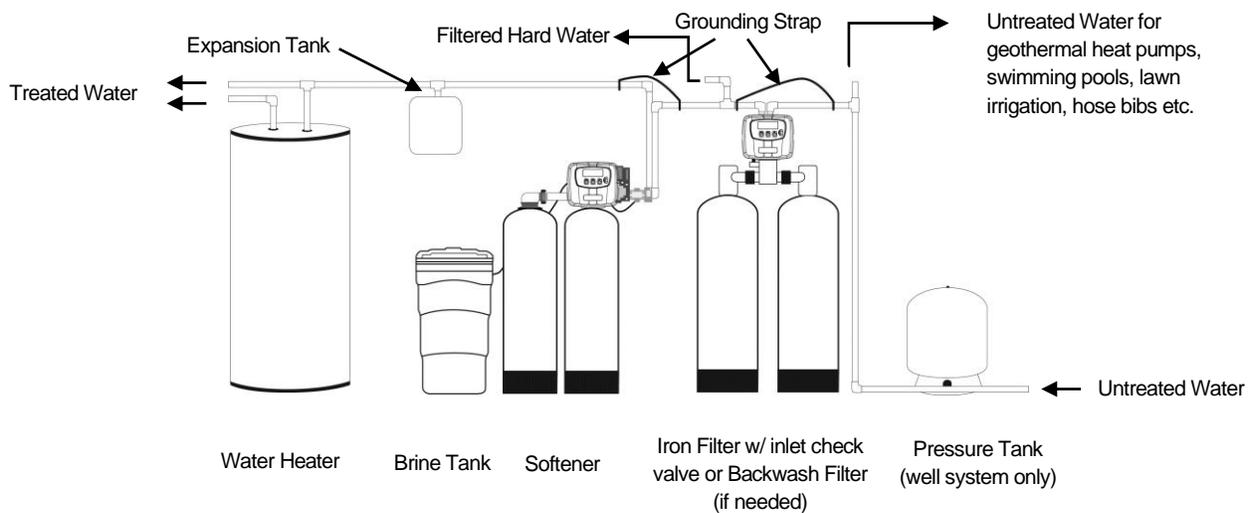
NOTE: If the plumbing system is used as the ground leg of the electric supply, continuity should be maintained by installing ground straps around any non-conductive plastic piping or bypass used in the installation.

Make sure the softener is not installed backwards. The softener will not function properly if installed backwards and softener resin may be forced into the water lines. Arrows molded into the valve body indicate the direction of flow.

## Site Requirements

- water pressure -- 25-100 psi (1.7 – 6.9 bar)
- water temperature -- 33-100°F (0.5-37.7°C)
- electrical -- 115/120 V, 60 Hz uninterrupted outlet dry locations only
- the tank should be on a firm level surface

## Typical Installation



**FIGURE 1: Typical Installation**

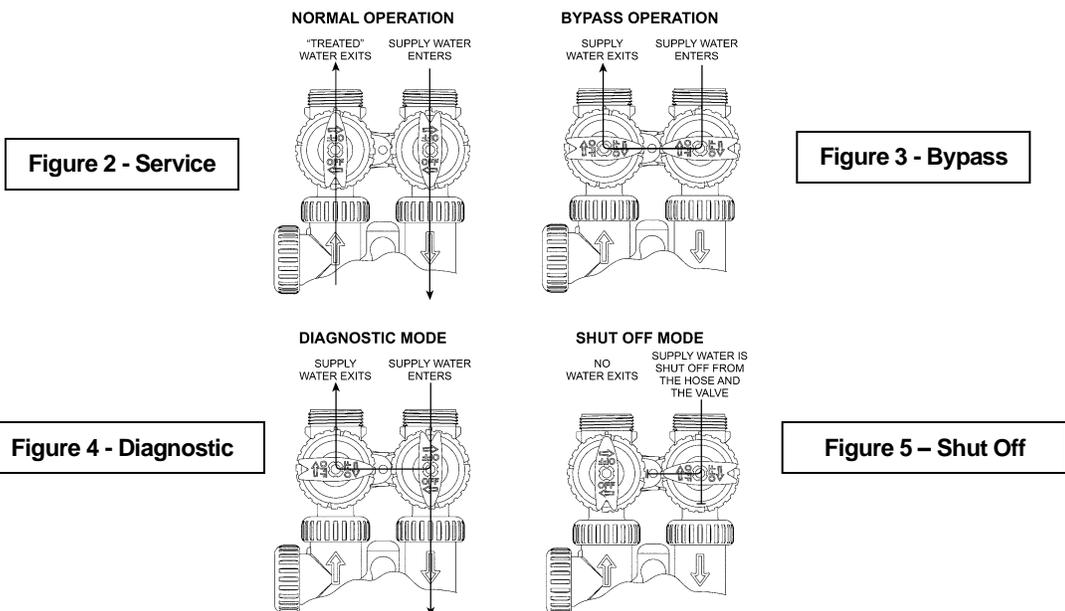
# Bypass Valve

The bypass valve is 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 water softener or filter. During the regeneration cycle this position provides regeneration water to the unit, while also providing treated water to the distribution system (**Fig. 2**).
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. 3**).
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. 4**). This allows the service technician to draw brine and perform other tests without the test water going to the building.

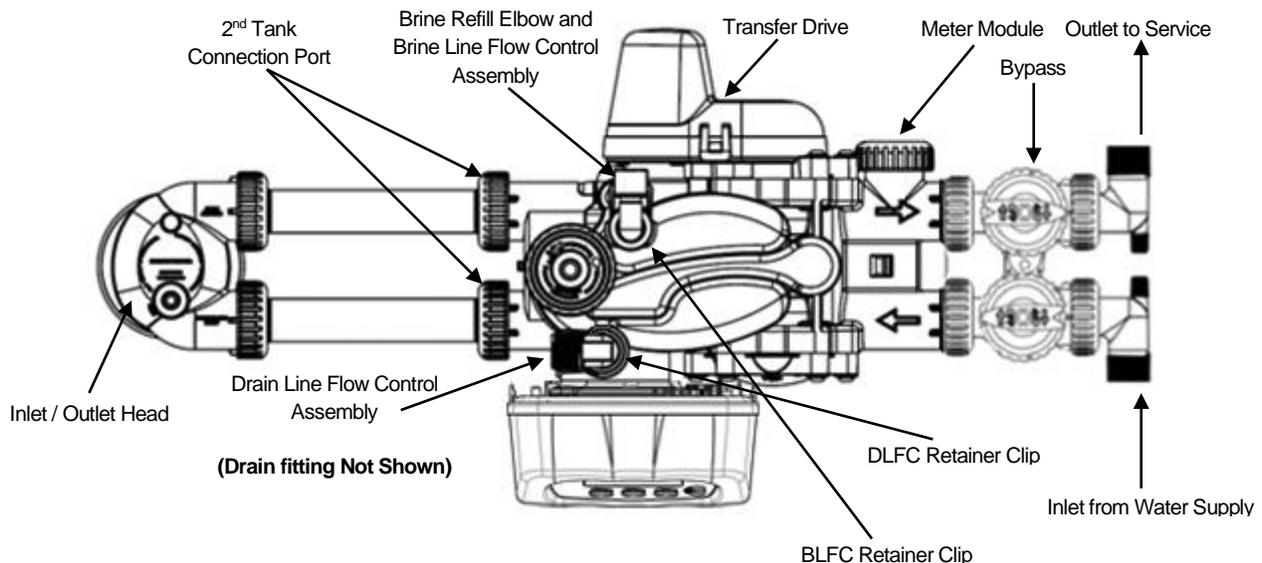
**NOTE:** The system must be run through a rinse cycle before returning the bypass valve to the normal position.

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 softener being in regeneration could cause a siphoning of brine into the building. If water is available on the outlet side of the softener it is an indication of water bypassing the system (**Fig. 5**)



# Installation Instructions

- STEP 1:**     **Unpack softener**, making sure to remove entire contents of the shipping container prior to disposal.
- STEP 2:**     **Fill the resin tanks. (3 cubic foot & larger units).** Cover the top of the distributor tube of each resin tank with the included red cap and, using the included blue media funnel, pour the included softener resin into the resin tanks.
- STEP 3:**     **Install the control valve & 2<sup>nd</sup> tank in/out head (3 cubic foot & larger units).** Clean resin tanks threads to remove any resin beads. Remove red cap from distributor tube and install control valve and 2<sup>nd</sup> tank in/out head by threading them securely onto the mineral tanks. (O-ring seal; HAND TIGHTEN ONLY!).
- STEP 4:**     **Shut off all water** at main supply. On private well system, turn off power to pump and drain pressure tank. Make certain pressure is relieved from complete system by opening nearest faucet to drain system. SHUT OFF FUEL / ELECTRICAL SUPPLY TO WATER HEATER.
- STEP 5:**     **Plumb the water supply line to the unit's bypass valve inlet** located on the right side, front, as you face the unit. There are a variety of installation fittings available. They are listed under Installation Fitting Assemblies, pages 21-23. 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. **MAKE CERTAIN WATER ENTERS THROUGH INLET AND DISCHARGES THROUGH OUTLET**



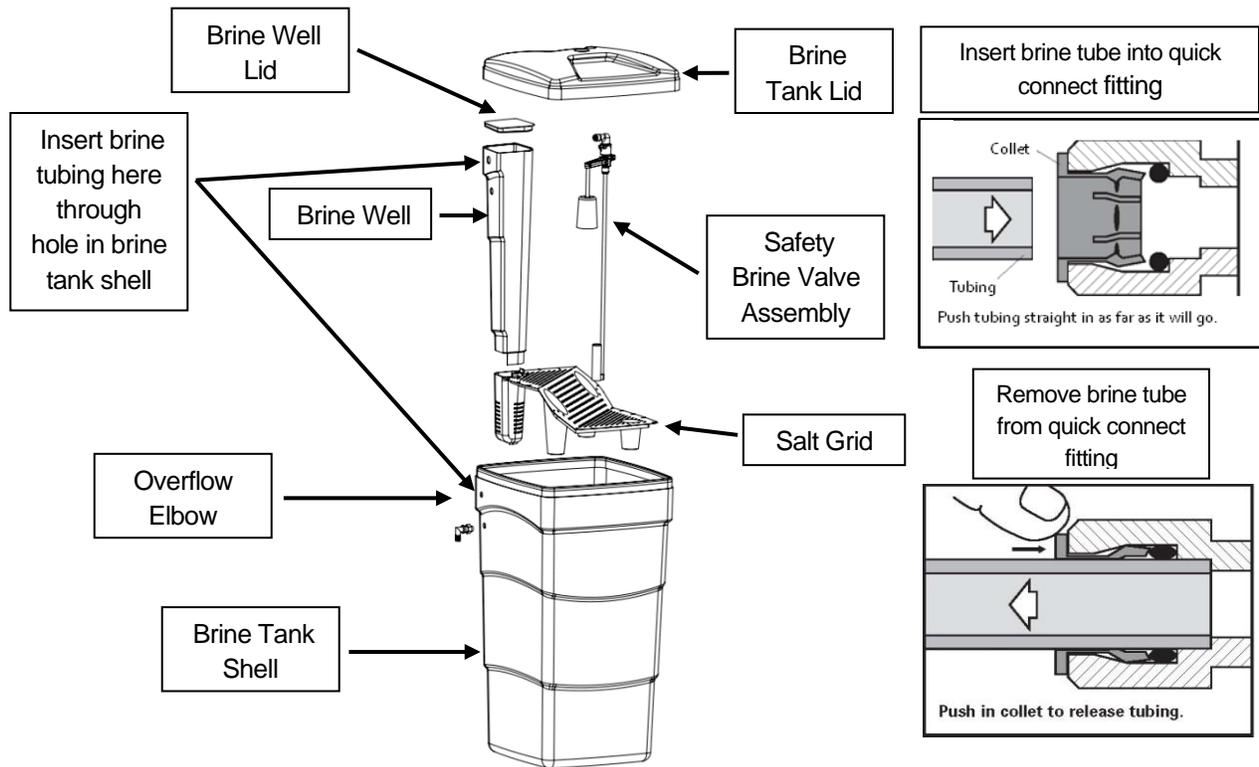
**FIGURE 6: Top View of Control Valve with Bypass Installed**

## Installation Instructions (cont.)

**STEP 6:**     **Apply thread tape to DLFC Assembly.** Remove drain line flow control (DLFC) retainer clip (Figure 6, Page 5) and remove the DLFC assembly from the valve body, (Figure 6, Page 5). Apply thread tape to threads. Slide drain fitting compression nut onto provided drain tubing and place the tube insert inside the end of the tubing. Insert tubing end with insert into drain elbow and tighten the compression nut onto the thread taped elbow. Reinsert DLFC assembly into the valve body, making certain it is FULLY inserted before replacing the retaining clip.

**STEP 7:**     **Install softener drain line.** Use 1/2" I.D. polyethylene tubing (**DO NOT USE FLEXIBLE VINYL TUBING!**) to run drain line from control valve DLFC fitting (Page 19, Reference 19) to floor drain or sump pit capable of handling the backwash rate of the filter (refer to specifications and flow rate on pages 15-16) or discard the compression fitting and use 3/4" NPT fitting to connect a rigid pipe drain line (recommended). If backwash flow rate is greater than 7 gpm, use 3/4" NPT connector with rigid drain line. There must be an air gap at the end of the drain line to prevent siphoning of wastewater. Length of drain line should be 15' or less. **AVOID OVERHEAD DRAINS.**

**STEP 8:**     **Connect brine line between the softener and safety brine valve.** Install the 3/8" O.D. polyethylene tube from the brine refill elbow (Figure 6, Page 5) to the safety brine valve (Figure 7) inside the brine tank. **DO NOT INSERT THE BRINE REFILL LINE INTO THE BRINE TANK OVERFLOW ELBOW FITTING. Do not put salt in the tank until STEP 27.**



**FIGURE 3: Brine Tank Components**

**STEP 9:**     **Install brine tank overflow drain line (not included).** An overflow drain line is recommended where a brine overflow could damage furnishings or the building structure. Your softener is equipped with a brine tank safety float (Figure 7) which greatly reduces the chance of an accidental brine overflow. In the event of a malfunction, however, an overflow line connection will direct the "overflow" to the drain instead of spilling on the floor where it could cause considerable damage. This fitting is an elbow on the side of the brine tank (Figure 7). Attach a length of 1/2" I.D. (5/8" O.D.) tubing to fitting and run to drain. (Continued on next page)

## Installation Instructions (cont.)

Do not elevate overflow line higher than 3" below bottom of overflow fitting. DO NOT "TIE" THIS TUBE INTO THE DRAIN LINE OF THE CONTROL VALVE AS IT WILL RESULT IN OVERFILLING THE BRINE TANK AND FLOODING. The overflow line must be a direct, separate line from the brine tank overflow elbow to a drain or sump pit.

**STEP 10:** With the bypass valve handles in the bypass position (Figure 3, Page 4), turn on water supply. Turn the inlet bypass valve handle to the diagnostic position (Figure 4, Page 4) and allow the online tank to pressurize. NOTE: the INLET and OUTLET knobs turn *clockwise* to close the port to the softener and *counterclockwise* to open the port to the softener. Check for leaks and correct as needed. **Return the bypass valve handles to the bypass position.**

**STEP 11:** **Program control valve.** Plug the transformer of the control valve into an uninterrupted electrical outlet (not wired to a switch) and use the buttons on the front of the control valve to adjust the initial settings:

### A) SET THE TIME OF DAY

1. Press the "CLOCK" button
  - a. The upper left of the display will show "TIME HOUR"
  - b. The lower left of the display will show "SET"
  - c. The hour and AM or PM will flash
2. Press the UP or DOWN buttons (triangle pointing up or down) until the correct combination of hour and "AM" or "PM" is reached to match the current time.
3. Press the "NEXT" button
  - a. The upper left of the display will show "TIME MINUTES"
  - b. The lower left of the display will show "SET"
  - c. The minutes will flash
4. Press the UP or DOWN buttons until the minutes match the current time. If you need to go back to the HOUR screen press the "REGEN" button.
5. Press the "NEXT" button to return to the main screen.

**Power Loss** - Lithium battery on circuit board provides up to 2 years of time clock backup during power outages. If the power is out when battery is depleted, only time of day needs to be reset, all other values are stored in non-volatile memory. When time of day is flashing, replace lithium coin type 2032 battery. Battery back-up feature will be activated after 24 hours of power.

**B) Enter Programming:** The manufacturer has preset the unit so gallons between regenerations are automatically calculated after hardness is entered.

1. **Hardness:** Press "NEXT" and UP (triangle pointing up) buttons simultaneously for 3 seconds.
  - a. The upper left of the display will show "WATER HARDNESS"
  - b. The lower left of the display will show "SET"
  - c. A number will flash (default 20) followed by "GR" (grains).
2. Based on water analysis results (obtained either from a lab or in-field testing). Set the amount of hardness in grains per gallon using the UP or DOWN (triangle pointing up or down) buttons. The allowable range is from 1 to 150 in 1 grain

increments. **Note: Increase the grains per gallon if soluble (“clear water”) iron and/or manganese is present (1 ppm iron = 3 gpg hardness and 1 ppm manganese = 5 gpg hardness).**

3. **Regeneration Days Override:** Press the “NEXT” button
  - a. The upper left of the display will show “DAYS BETWEEN REGEN”
  - b. The lower left of the display will show “SET”
  - c. A number will flash (default 14)
  
4. Using the UP or DOWN (triangle pointing up or down) buttons, set the maximum number of days (default 14, recommended) the softener will go without initiating regeneration even if the unit still has capacity remaining based on water usage, hardness setting and capacity setting. The allowable range is 1 to 28 and OFF. If set to OFF, the unit will only regenerate based on water usage, hardness and capacity.
  
5. **Regeneration Time:** Press the “NEXT” button
  - a. The upper left of the display will show “REGEN TIME HOUR”
  - b. The lower left of the display will show “SET”
  - c. The hour and AM or PM will flash
  
6. **Regeneration Hour:** Using the UP or DOWN buttons, set the combination of hour of day and “AM” or “PM” that the BACKWASH cycle of regeneration should occur. Please note that regeneration will actually begin with the short (less than 10 minutes) Brine Fill cycle 90 minutes prior to the time set here followed by 90 minutes (default) of inactivity to allow water in the brine tank to become saturated with salt.
  
7. **Press the “NEXT” button**
  - a. The upper left of the display will show “REGEN TIME MINUTES”
  - b. The lower left of the display will show “SET”
  - c. The minutes will flash
  
8. **Regeneration Minutes:** Using the UP or DOWN buttons, set the minutes portion of the time when regeneration should occur. If you need to go back to the HOUR screen press the “REGEN” Button.
  
9. **Energy Saver:** Using the UP or DOWN buttons, set the mode of operation for Energy Saver; OFF, ON or AUTO. Unless set to OFF the display will dim when not actively using the buttons.
  
10. **Exit Programming: Press the “NEXT” button**
  - a. The upper left of the display will show “TIME”
  - b. The current time of day will be shown on the right side of the display
  - c. Only the colon between the hour and minutes will be flashing

## Installation Instructions (cont.)

- STEP 12:** **Initiate Manual Regeneration (Fill Cycle):** NOTE – With the bypass handles in the “BYPASS” position, press and hold the “REGEN” button until the motor starts. The word “Fill” will appear in the upper left of the display and a count-down timer will appear in the lower right of the display. **Take this opportunity to add water to the brine tank, with a hose or bucket, up to the top shelf of the salt grid (if applicable) or above the air check.** When the count-down clock reaches 00:00 or when the “REGEN” button is pressed the control valve will advance to the next cycle.
- STEP 13:** **Softening Cycle:** “SOFTENING” will appear in the upper left of the display. Another count-down timer will appear in the lower right of the display. **Both times through this cycle:** Turn the inlet bypass valve handle to the diagnostic position (Figure 4, Page 4) and allow the online tank to pressurize. Check for leaks and correct as needed. **Return the inlet bypass valve handle to the bypass position (Figure 3, Page 4).** **Both times through this cycle:** Press the “REGEN” button to advance the control valve to the “BACKWASH” cycle.
- STEP 14:** **Backwash Cycle:** There may be an audible release of pressure to the drain. Another count-down timer will appear in the time-of-day position, “BACKWASH” will be shown in the upper left of the display.
- STEP 15:** **Both times through this cycle:** Slowly turn the INLET knob of the bypass valve counter-clockwise to the diagnostic position (Figure 4, Page 4) to release any remaining air from the offline mineral tank. **2<sup>nd</sup> time ONLY through this step proceed to STEP 22.**
- STEP 16:** When water flows clear to the drain **then turn the INLET knob of the bypass valve clockwise until it is fully in “Bypass” position** (Figure 3, Page 4). Press the “REGEN” button to advance to the “Brine Draw” cycle.
- STEP 17:** **Brine Cycle:** “REGENERANT DRAW DN” will appear across the top of the display, A new count-down timer will begin. Press “REGEN” to advance to the second “Backwash” cycle.
- STEP 18:** **Backwash Cycle 2:** A “1:00” minute count-down timer will appear in the lower right of the display and “BACKWASH” will be shown in the upper left, with a flashing “2” below. Press “REGEN” to advance to the “Rinse” cycle.
- STEP 19:** **Rinse Cycle:** Another count-down timer will appear in the time-of-day position and “RINSE” will be shown in the upper left of the display. Press the “REGEN” button to exit manual regeneration.
- STEP 20:** **Exit Manual Regeneration:** “SOFTENING” will flash in the upper left of the display and the drive motor will run for a few seconds and then the display will return to its normal position when in service.
- STEP 21:** **Purge air from second tank:** Repeat steps 12 – 15 and then proceed with step 22.
- STEP 22:** When the water flowing to drain runs clear, press the “REGEN” button to advance to the “Brine Draw” cycle.

## Installation Instructions (cont.)

**STEP 23:** **Brine Cycle:** “REGENERANT DRAW DN” will appear across the top of the display and a new count-down timer will begin. **Allow this cycle to continue until most of the water is drawn out of the tank.** Press “REGEN” to advance to the second “Backwash” cycle.

**IMPORTANT:** If most of the water is NOT drawn out of the brine tank within 10 – 20 minutes (depending on softener size); complete the next two steps of installation and refer to the “Brine Tank Overfill” section of Troubleshooting (page 12) to resolve this problem. Failure to do so will prevent the softener from functioning properly. Test the solution by returning to STEP 12 and proceeding from there.

**STEP 24:** **Backwash Cycle 2:** A “1:00” minute count-down timer will appear in the lower right, “BACKWASH” will be shown in the upper left of the display with a flashing “2” below. Press “REGEN” to advance to the “Rinse” cycle.

**STEP 25:** **Rinse Cycle:** Another count-down timer will appear in the time-of-day position and “RINSE” will be shown in the upper left of the display. Press “REGEN” to exist manual regeneration.

**STEP 26:** **Exit Manual Regeneration:** “SOFTENING” will flash in the upper left of the display and the drive motor will run for a few seconds and then the display will return to its normal position when in service.

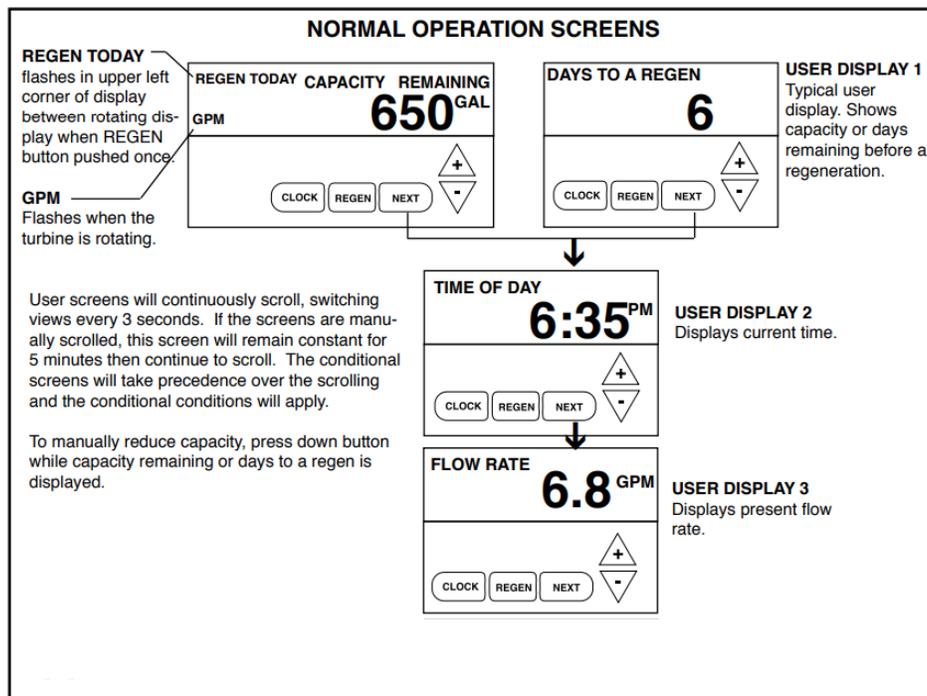
**STEP 27:** **Add salt to brine tank.** Fill the brine tank with salt. Any type of softening salt may be used.

**STEP 28:** **TURN ON FUEL / ELECTRICAL SUPPLY TO WATER HEATER.**

# Displays & Button Operation

## USER DISPLAYS

When the system is operating, one of several displays may be shown. Pressing NEXT will alternate between the displays. One of the displays is the current time of day. The second display shows days to a regen/gallons remaining. Days To A Regen is the number of days left before the system goes through a regeneration cycle. Capacity remaining is the number of gallons that will be treated before the system goes through a regeneration cycle. The third display is current flow in gal/min. The user can scroll between the displays as desired by pushing NEXT or display will scroll automatically. When water is being treated (i.e. water is flowing through the system) the word "GPM" flashes on left side of display when other than flow rate is displayed. User screens will continuously scroll, switching views every 3 seconds. If the screens are manually scrolled, this screen will remain constant for 5 minutes then continue to scroll. The conditional screens will take precedence over the scrolling and the conditional conditions will apply. To manually reduce capacity, press down button while capacity remaining or days to a regen is displayed.



## MANUAL REGENERATION

Sometimes there is a need to regenerate the system sooner than when the system calls for it, usually referred to as manual regeneration. There may be a period of heavy water usage because of guests or a heavy laundry day. To initiate a manual regeneration at the preset delayed regeneration time, press and release "REGEN". The words "REGEN TODAY" will flash in left corner of display as it scrolls through displays to indicate that the system will regenerate at the preset delayed regeneration time. If you pressed the "REGEN" button in error, pressing the button again will cancel the request. To initiate a manual regeneration immediately, press and hold the "REGEN" button for five seconds. The system will begin to regenerate immediately. The request cannot be cancelled. You must cycle all the way through the cycles to make it stop. PLEASE NOTE: This will reset the meter. Note: If the salt tank does not contain salt, fill with salt and wait at least two hours before regenerating. If two regenerations are desired within 24 hour period, press /release REGEN button. REGEN TODAY will flash on screen. Press and hold REGEN button until valve initiates an immediate regeneration.

# Troubleshooting

PROBLEM	CAUSES	SOLUTIONS
Brine tank overfills or does not draw brine	<ul style="list-style-type: none"> <li>A) Loose connector at either end of the brine line</li> <li>B) Plugged injector</li> <li>C) Brine line inserted into the brine tank overflow fitting rather than connected to the safety brine valve</li> <li>D) Softener drain line connected to brine overflow fitting or overflow drain line</li> <li>E) Obstruction in the control valve</li> <li>F) Problems with drain line: plugged, frozen, kinked, flexible tubing, overhead installation, diameter too small, longer than 15'</li> <li>G) Missing BLFC</li> <li>H) Missing brine stem</li> <li>I) Drive cap too loose</li> </ul>	<ul style="list-style-type: none"> <li>1) Push tubing completely into the connector at either end of brine line</li> <li>2) Clean injector and injector screen</li> <li>3) Verify brine line is installed correctly</li> <li>4) Verify softener drain line is not connected to brine overflow elbow or brine overflow drain line</li> <li>5) Check for debris in DLFC Assembly, BLFC Assembly, injector, injector screen</li> <li>6) Manually put softener into Backwash Cycle (page 8, beginning with step 12) and unplug the transformer for 30 minutes to dislodge debris from inside the control valve or disassemble and clean control valve internal components</li> <li>7) Resolve issues with the drain line</li> <li>8) Verify brine line flow control button is not missing</li> <li>9) Verify piston brine stem is not missing</li> <li>10) Tighten drive cap</li> </ul>
Hard water or softener not using salt	<ul style="list-style-type: none"> <li>A) Electrical outlet is dead or on a switch</li> <li>B) No salt in the brine tank</li> <li>C) Salt in the brine tank has "bridged"</li> <li>D) Bypass Valve is not in "Service" position or is leaking</li> <li>E) Obstruction in control valve</li> <li>F) Problems with drain line: <i>(See letter "E" in prior section)</i></li> <li>G) Control valve programmed incorrectly</li> <li>H) Softener sized improperly</li> <li>I) Faulty or unplugged drive motor</li> <li>J) Meter is not registering flow</li> <li>K) Time of Day is flashing</li> </ul>	<ul style="list-style-type: none"> <li>1) Verify softener has uninterrupted power</li> <li>2) Fill brine tank with salt</li> <li>3) Hit the side of the brine tank with rubber mallet to break any bridging</li> <li>4) Verify bypass is in "Service" position (Figure 2, Page 4)</li> <li>5) Check for debris in DLFC, BLFC, injector, injector screen, cartridge seal assembly</li> <li>6) Manually put softener into Backwash Cycle (page 8, beginning with step 12) and unplug transformer for 20-30 minutes to dislodge debris</li> <li>7) Resolve issues with drain line</li> <li>8) Review control valve programming</li> <li>9) Verify actual service flow rates required and compare to system specifications (pages 15-16)</li> <li>10) Verify drive motor is connected to control valve circuit board connector J1 (labeled "MOTOR")</li> <li>11) Verify meter cable (grey cable, 3 pins) is connected to control valve circuit board connector J2 (labeled "METER"), verify impeller spins freely and registers flow and there are no obstructions preventing it from spinning, replace meter if defective</li> <li>12) Reset time &amp; replace backup battery if needed</li> </ul>

## Troubleshooting (cont.)

PROBLEM	CAUSES	SOLUTIONS
Softener regenerates at wrong time of day	<ul style="list-style-type: none"> <li>A) Clock is not set</li> <li>B) Power outage</li> <li>C) Incorrect control valve programming</li> </ul>	<ul style="list-style-type: none"> <li>1) Reset softener clock (page 7) &amp; replace backup battery if needed</li> <li>2) Verify control valve programming (page 8)</li> </ul>
Resin in water lines, plugged aerators	<ul style="list-style-type: none"> <li>A) Unit is installed backwards</li> <li>B) Distributor basket is damaged</li> </ul>	<ul style="list-style-type: none"> <li>1) Re-plumb unit with water supply entering bypass inlet (page 5)</li> <li>2) Replace damaged distributor basket</li> </ul>
Salty Water	<ul style="list-style-type: none"> <li>A) Brine tank overfilled</li> <li>B) Problems with drain line: (See Letter "E" in Brine Tank Overfill section)</li> <li>C) Rinse cycle is short</li> <li>D) Injector too small</li> <li>E) Distributor tube not seated in valve</li> <li>F) Low water pressure</li> <li>G) High TDS</li> </ul>	<ul style="list-style-type: none"> <li>1) See "Brine tank overfills" section (Page 12)</li> <li>2) Resolve drain line issues</li> <li>3) Contact technical support for assistance in verifying \ adjusting Rinse Cycle length and Salt Setting</li> <li>4) Replace injector</li> <li>5) Verify proper installation of distributor tube</li> <li>6) Verify at least 25 psi of line pressure</li> <li>7) Install a Point-of-Use Reverse Osmosis system</li> </ul>
Softener leaks to drain in "Service" position	<ul style="list-style-type: none"> <li>A) Problem in piston cartridge assembly</li> <li>B) Control valve is jammed or halted during regeneration</li> <li>C) Drive cap assembly is not tightened properly</li> </ul>	<ul style="list-style-type: none"> <li>1) Replace seals and/or piston if needed</li> <li>2) Verify control valve is in "SOFTENING" mode</li> <li>3) Tighten drive cap assembly</li> </ul>
Low water pressure	<ul style="list-style-type: none"> <li>A) Iron or sediment build up in softener</li> <li>B) Insufficient pump capacity</li> <li>C) Gravel underbed has shifted in transit</li> </ul>	<ul style="list-style-type: none"> <li>1) Increase backwash frequency by increasing hardness setting (page 8)</li> <li>2) Verify at least 25 psi of line pressure</li> <li>3) Redistribute gravel underbed evenly</li> </ul>
Display is blank	<ul style="list-style-type: none"> <li>A) Control valve circuit board needs reset</li> <li>B) Transformer is unpowered, unplugged or defective</li> <li>C) Defective circuit board</li> </ul>	<ul style="list-style-type: none"> <li>1) Hold "NEXT" and "REGEN" buttons for 3 seconds</li> <li>2) Remove battery, unplug power for 5 seconds, plug back in, replace dead battery</li> <li>3) Verify electrical outlet that has power and transformer cable (black, 4 pins) is plugged into control valve connector J4 (labeled "12VAC PWR")</li> <li>4) Use a volt meter to test the 2 outer pins (furthest left and furthest right) of connector J4 on the control valve circuit board. Should be approximately 12 volts AC. Replace transformer if defective.</li> <li>5) Replace circuit board if needed</li> </ul>
"SOFTENING" does not display when water is flowing or does not regenerate automatically	<ul style="list-style-type: none"> <li>A) Bypass valve not in "Service" position</li> <li>B) Meter cable disconnected</li> <li>C) Restricted/stalled meter turbine</li> <li>D) Defective meter</li> <li>E) Defective PC board</li> </ul>	<ul style="list-style-type: none"> <li>1) Verify bypass is in "Service" position (Figure 2, Page 4)</li> <li>2) Verify meter cable (grey cable, 3 pins) is connected to control valve circuit board connector J2 (labeled "METER")</li> <li>3) Remove meter and check for restriction</li> <li>4) Replace meter if needed</li> <li>5) Replace PC board if needed</li> </ul>

## Troubleshooting (cont.)

PROBLEM	CAUSES	SOLUTIONS
Softener does not regenerate either manually or automatically	<ul style="list-style-type: none"> <li>A) Broken drive gear</li> <li>B) Broken piston rod</li> <li>C) Defective PC board</li> </ul>	<ul style="list-style-type: none"> <li>1) Replace broken drive gear</li> <li>2) Replace broken piston rod</li> <li>3) Replace circuit board if needed</li> </ul>
Display shows incorrect time-of-day or time-of-day flashes	<ul style="list-style-type: none"> <li>A) Outlet is switched</li> <li>B) Power outage</li> <li>C) Control valve was reset</li> <li>D) Defective circuit board</li> </ul>	<ul style="list-style-type: none"> <li>1) Use an un-switched outlet</li> <li>2) Reset time-of-day, replace backup battery if needed</li> <li>3) Replace circuit board if needed</li> </ul>
<b>ERROR CODE:</b>		
<b>1001</b> – unable to sense motor movement	<ul style="list-style-type: none"> <li>A) Drive motor not inserted fully to engage pinion or is defective</li> <li>B) Circuit board not properly snapped into drive bracket</li> <li>C) Center reduction gear reflector dirty</li> </ul>	<ul style="list-style-type: none"> <li>1) Re-insert motor, check for broken wires, verify motor plugged into connector J1 (labeled “MOTOR”) on control valve circuit board and reset control valve (hold “NEXT” and “REGEN” buttons for 3 seconds)</li> <li>2) Re-seat circuit board into drive bracket and reset control valve</li> <li>3) Clean reduction gear reflectors</li> </ul>
<b>1002</b> – unexpected motor stall	<ul style="list-style-type: none"> <li>A) Obstruction in control valve</li> <li>B) Main drive gear too tight</li> <li>C) Improper voltage delivered to circuit board</li> </ul>	<ul style="list-style-type: none"> <li>1) Remove piston and seal assemblies for inspection and repair or replacement and reset control valve (hold “NEXT” and “REGEN” buttons for 3 seconds)</li> <li>2) Loosen main drive gear and reset control valve</li> <li>3) Verify proper voltage is being supplied to circuit board (see Solution 4 under “Display is Blank” section, page 13)</li> </ul>
<b>1003</b> – motor ran too long, cannot find next cycle position	<ul style="list-style-type: none"> <li>A) Motor failure during regeneration</li> <li>B) Obstruction in control valve</li> <li>C) Drive bracket not snapped in place properly</li> </ul>	<ul style="list-style-type: none"> <li>1) Re-insert motor, check for broken wires, verify motor plugged into connector J1 (labeled “MOTOR”) on control valve circuit board and reset control valve (hold “NEXT” and “REGEN” buttons for 3 seconds)</li> <li>2) Remove piston and seal assemblies for inspection and repair or replacement and reset control valve</li> <li>3) Re-seat drive bracket assembly and reset control valve</li> </ul>
<b>1004</b> – motor ran too long, timed out trying to reach home position	<ul style="list-style-type: none"> <li>A) Drive bracket not snapped in place properly</li> <li>B) Center reduction gear reflector dirty</li> </ul>	<ul style="list-style-type: none"> <li>1) Re-seat drive bracket assembly and reset control valve (hold “NEXT” and “REGEN” buttons for 3 seconds)</li> <li>2) Clean reduction gear reflectors</li> </ul>
<b>1006</b> – MAV/SEPS/NHBP/AUX MAV motor ran too long, looking for park position	<ul style="list-style-type: none"> <li>A) Control valve not programmed for ALT OFF</li> <li>B) Obstruction in control valve</li> </ul>	<ul style="list-style-type: none"> <li>1) Enter cycle programming level and verify second parameter is set to ALT OFF</li> <li>2) Remove piston and seal assemblies for inspection and repair or replacement and reset control valve (hold “NEXT” and “REGEN” buttons for 3 seconds)</li> </ul>
<b>1007</b> – MAV/SEPS/NHBP/AUX MAV motor ran too short looking for park position	<ul style="list-style-type: none"> <li>A) Control valve not programmed for ALT OFF</li> <li>B) Obstruction in control valve</li> </ul>	<ul style="list-style-type: none"> <li>1) Enter cycle programming level and verify second parameter is set to ALT OFF</li> <li>2) Remove piston and seal assemblies for inspection and repair or replacement and reset control valve.</li> </ul>

# Specifications

Description	Model Numbers				
	PTS1-0948	PTS1-1054	PTS1-1248	PTS1-1354	PTS1-1465
<b>Media Volume, ft<sup>3</sup></b>	1.0	1.5	2.0	2.5	3.0
<b>Capacity, grains</b>					
@ Factory Salt @ 9lb/ft <sup>3</sup>	24,000	36,000	48,000	60,000	72,000
@ Max. Salt @ 15lb/ft <sup>3</sup>	30,000	45,000	60,000	75,000	90,000
<b>Operating Flow Rate, gpm</b>					
Continuous (3 gpm/ft <sup>3</sup> )	3	5	5	8	9
Service (8 gpm/ft <sup>3</sup> , <= 15 psi drop)	8	12	14	18	19
Peak (Max. 20 psi drop)	18	18	23	22	23
<b>Pressure Loss psi</b>					
@ Continuous Flow Rate	2	4	2	5	5
@ Service Flow Rate	7	11	9	14	15
@ Peak Flow Rate	19	19	20	19	20
<b>Regen. Flow Rates, gpm</b>					
Backwash & Rapid Rinse	2.2	2.7	3.2	4.2	5.3
Brine Draw / Rinse	0.38 / 0.5	0.38 / 0.5	0.38 / 0.5	0.43 / 0.64	0.6 / 1.1
Injector	Blue	Blue	Blue	Yellow	Orange
<b>Service Pipe Size, in.</b>	1"	1"	1"	1	1"
<b>Factory Regeneration Settings</b>					
Brine Tank Fill (lbs of salt)	9	13.5	18	22.5	27
Softening (minutes dissolving salt)	90	90	90	90	90
Backwash (minutes)	6	7	7	8	8
Brine Draw & Rinse (minutes)	45	60	70	80	65
Backwash 2 (minutes)	1	1	1	1	1
Rapid Rinse (minutes)	5	7	6	7	7
<b>Total Water Used, gallons</b>	48	69	78	114	145
<b>Dimensions in.</b>					
Mineral Tank, diameter x height	9 x 48	10 x 54	12 x 48	13 x 54	14 x 65
Brine Tank, diameter x height	18 x 33	18 x 33	18 x 33	18 x 33	23 x 42
Overall, length x depth x height	48 x 18 x 56	49 x 18 x 62	51 x 18 x 56	53 x 18 x 62	62 x 34 x 76
<b>Approximate Ship Wt., lbs.</b>	193	259	309	411	544

Description	Model Numbers				
	PTS1-0948-HE	PTS1-1054-HE	PTS1-1248-HE	PTS1-1354-HE	PTS1-1465-HE
<b>Media, Volume, ft<sup>3</sup></b>	1.0	1.5	2.0	2.5	3.0
<b>Capacity, grains</b>					
@ Factory Salt @ 9lb/ft <sup>3</sup>	22,000	33,000	44,000	55,000	66,000
@ Max. Salt @ 15lb/ft <sup>3</sup>	31,000	46,500	62,000	77,500	93,000
<b>Operating Flow Rate, gpm</b>					
Continuous (3 gpm/ft <sup>3</sup> )	3	5	5	8	9
Service (8 gpm/ft <sup>3</sup> , <= 15 psi drop)	8	12	14	18	19
Peak (Max. 20 psi drop)	18	18	23	22	23
<b>Pressure Loss psi (kPa)</b>					
@ Continuous Flow Rate	2	4	2	5	5
@ Service Flow Rate	7	11	9	14	15
@ Peak Flow Rate	19	19	20	19	20
<b>Regen. Flow Rates, gpm</b>					
Backwash & Rapid Rinse	2.2	2.7	3.2	4.2	5.3
Brine Draw / Rinse	0.38 / 0.5	0.38 / 0.5	0.38 / 0.5	0.43 / 0.64	0.6 / 1.1
Injector	Blue	Blue	Blue	Yellow	Orange
<b>Service Pipe Size, in.</b>	1"	1"	1"	1	1"
<b>Factory Regeneration Settings</b>					
Brine Tank Fill (lbs of salt)	6	9	12	15	18
Softening (minutes dissolving salt)	90	90	90	90	90
Backwash (minutes)	5	6	6	7	7
Brine Draw & Rinse (minutes)	40	55	60	70	55
Backwash 2 (minutes)	1	1	1	1	1
Rapid Rinse (minutes)	4	5	5	5	5
<b>Total Water Used, gallons</b>	41	59	67	97	122
<b>Dimensions in.</b>					
Mineral Tank, diameter x height	9 x 48	10 x 54	12 x 48	13 x 54	14 x 65
Brine Tank, diameter x height	18 x 33	18 x 33	18 x 33	18 x 33	23 x 42
Overall, length x depth x height	48 x 18 x 56	49 x 18 x 62	51 x 18 x 56	53 x 18 x 62	62 x 34 x 76
<b>Approximate Ship Wt., lbs.</b>	193	259	309	411	544

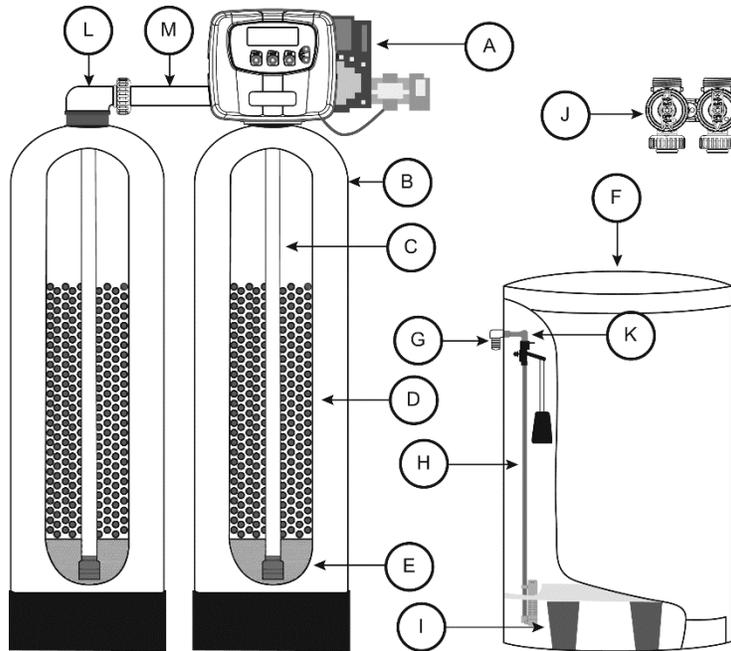
## Specifications (cont.)

Description	Model Numbers		
	PTS1-1665	PTS1-1865	PTS1-2162
<b>Media Volume, ft<sup>3</sup></b>	4.0	5	7
<b>Capacity, grains</b>			
@ Factory Salt @ 9lb/ft <sup>3</sup>	96,000	120,000	168,000
@ Max. Salt @ 15lb/ft <sup>3</sup>	120,000	150,000	210,000
<b>Operating Flow Rate, gpm</b>			
Continuous (3 gpm/ft <sup>3</sup> )	12	15	21
Service (<= 15 psi drop)	20	21	22
Peak (Max. 25 psi drop)	27	28	30
<b>Pressure Loss psi</b>			
@ Continuous Flow Rate	7	8	13
@ Service Flow Rate	15	14	14
@ Peak Flow Rate	24	24	25
<b>Regen. Flow Rates, gpm</b>			
Backwash & Rapid Rinse	6.5	7.5	11
Brine Draw / Rinse	0.7 / 1.35	0.75 / 1.8	0.75 / 1.8
Injector	Light Blue	Light Green	Light Green
<b>Service Pipe Size, in.</b>	1"	1"	1"
<b>Factory Regeneration Settings</b>			
Brine Tank Fill (lbs of salt)	36	45	63
Softening (minutes dissolving salt)	90	90	90
Backwash (minutes)	8	8	8
Brine Draw & Rinse (minutes)	65	70	95
Backwash 2 (minutes)	1	1	1
Rapid Rinse (minutes)	8	8	8
<b>Total Water Used, gallons</b>	186	230	325
<b>Dimensions in.</b>			
Mineral Tank, diameter x height	16 x 65	18 x 65	21 x 62
Brine Tank, diameter x height	23 x 42	23 x 42	24 x 50
Overall, length x depth x height	66 x 34 x 76	70 x 34 x 78	76 x 34 x 78
<b>Approximate Ship Wt., lbs.</b>	650	762	1,128

Description	Model Numbers		
	PTS1-1665-HE	PTS1-1865-HE	PTS1-2162-HE
<b>Media Volume, ft<sup>3</sup></b>	4.0	5	7
<b>Capacity, grains</b>			
@ Factory Salt @ 9lb/ft <sup>3</sup>	88,000	110,000	154,000
@ Max. Salt @ 15lb/ft <sup>3</sup>	124,000	155,000	217,000
<b>Operating Flow Rate, gpm</b>			
Continuous (3 gpm/ft <sup>3</sup> )	12	15	21
Service (<= 15 psi drop)	20	21	22
Peak (Max. 20 psi drop)	27	28	30
<b>Pressure Loss, psi</b>			
@ Continuous Flow Rate	7	8	13
@ Service Flow Rate	15	14	14
@ Peak Flow Rate	24	24	25
<b>Regen. Flow Rates, gpm</b>			
Backwash & Rapid Rinse	6.5	7.5	11
Brine Draw / Rinse	0.7 / 1.35	0.75 / 1.8	0.75 / 1.8
Injector	Light Blue	Light Green	Light Green
<b>Service Pipe Size, in.</b>	1"	1"	1"
<b>Factory Regeneration Settings</b>			
Brine Tank Fill (lbs of salt)	24	30	42
Softening (minutes dissolving salt)	90	90	90
Backwash (minutes)	7	8	8
Brine Draw & Rinse (minutes)	60	60	80
Backwash 2 (minutes)	1	1	1
Rapid Rinse (minutes)	5	5	6
<b>Total Water Used, gallons</b>	163	206	287
<b>Dimensions in.</b>			
Mineral Tank, diameter x height	16 x 65	18 x 65	21 x 62
Brine Tank, diameter x height	23 x 42	23 x 42	24 x 50
Overall, length x depth x height	66 x 34 x 76	70 x 34 x 78	76 x 34 x 78
<b>Approximate Ship Wt., lbs.</b>	650	762	1,128

# Component Parts Breakdown & List



REF	DESCRIPTION	MODEL NUMBER				
		PTS1-0948	PTS1-1054	PTS1-1248	PTS1-1354	PTS1-1465
A*	Control Valve	PTS1-0948-VLV-L-BP-	PTS1-1465-VLV-L-BP-	PTS1-1248-VLV-L-BP-	PTS1-1354-VLV-L-BP-	PTS1-1465-VLV-L-BP-
B	Mineral Tank	MTP0948GR	MTP1054GR	MTP1248GR	MTP1354GR	MTP1465N
C	Distributor	D100S-48	D100S-54	D100S-48	D100S-54	D100S-65
D	Resin	2 – H05P (standard) 2 – UHE05P (-HE)	3 – H05P (standard) 3 – UHE05P (-HE)	4 – H05P (standard) 4 – UHE05P (-HE)	5 – H05P (standard) 5 – UHE05P (-HE)	6 – H05P (standard) 6 – UHE05P (-HE)
E	1/4" x 1/8" gravel	QC20	QC20	QC20	2 – QC20	1 – QC50
F	Brine Tank Assy	BTSQ1833ASSY	BTSQ1833ASSY	BTSQ1833ASSY	BTSQ1833ASSY	BT2342ASSY
G	Overflow Elbow	BT-OVERFLO	BT-OVERFLO	BT-OVERFLO	BT-OVERFLO	BT-OVERFLO
H	Safety Brine Valve	SBV14ASSY	SBV14ASSY	SBV14ASSY	SBV14ASSY	SBV23ASSY
I	Salt Platform	BTSG18SQ	BTSG18SQ	BTSG18SQ	BTSG18SQ	BTSG23
J**	Bypass Valve Less Fittings	CV3006	CV3006	CV3006	CV3006	CV3006
K	Elbow Locking Clip	FC103	FC103	FC103	FC103	CH4615
L	In/Out Head	CD1400	CD1400	CD1400	CD1400	CD1400
M	Interconnect Assy	CV4017-01	CV4017-01	CV4052-01	CV4052-01	CV4052-01

REF	DESCRIPTION	MODEL NUMBER		
		PTS1-1665**	PTS1-1865**	PTS1-2162**
A*	Control Valve	PTS1-1665-VLV-L-BP-	PTS1-1865-VLV-L-BP-	PTS1-2162-VLV-L-BP-
B	Mineral Tank	MTP1665N-4.0	MTP1865N-4.0	MTP2162N-4.0
C	Distributor	D100S-65	D100S-65	D100S-65
D	Resin	8 – H05P (standard) 8 – UHE05P (-HE)	10 – H05P (standard) 10 – UHE05P (-HE)	10 – H05P (standard) 10 – UHE05P (-HE)
E	1/4" x 1/8" gravel	1 – QC50	1 – QC50	1 – QC50
F	Brine Tank Assy	BT2342ASSY	BT2450ASSY	BT2450ASSY
G	Overflow Elbow	BT-OVERFLO	BT-OVERFLO	BT-OVERFLO
H	Safety Brine Valve	SBV23ASSY	CH4700-48BTKIT	CH4700-48BTKIT
I	Salt Platform	BTSG23	BTSG24	BTSG24
J***	Bypass Valve Less Fittings	CV3006	CV3006	CV3006
K	Elbow Locking Clip	CH4615	CH4615	CH4615
L	In/Out Head	CD1400	CD1400	CD1400
M	Interconnect Assy	CV4052-01	CV4052-01	CV4052-01

\*A top screen (CD1203, not shown) is included with the control valve assembly of HE series units

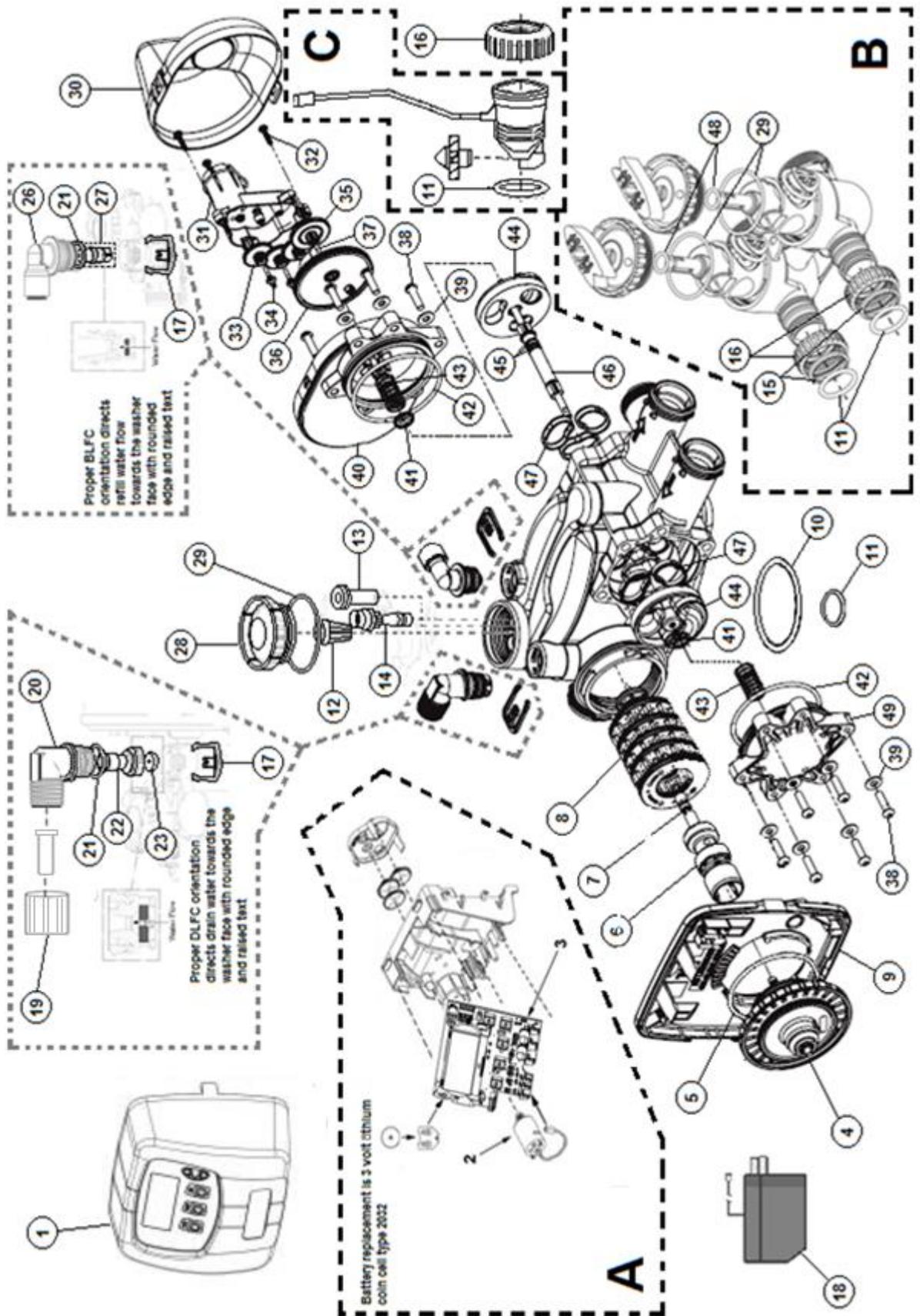
\*\*A 4" x 2.5" tank busing (SF4821-2, not shown) is included with models PTS1-1665 through PTS1-2162

\*\*\*Refer to "Installation Fitting Assemblies" pages 21-23 for available I/O fittings.

**ALL MODELS EXCEPT PTS1-2162 & PTS1-2162-HE INCLUDE 3/4" QUICK CONNECT FITTINGS AS WELL AS 1" MALE NPT ELBOWS**

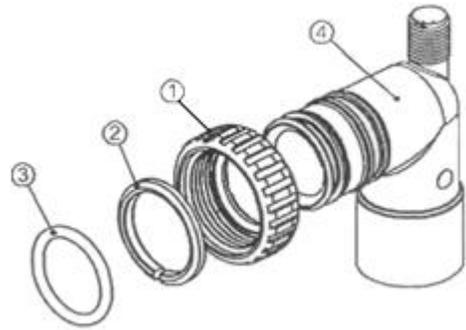
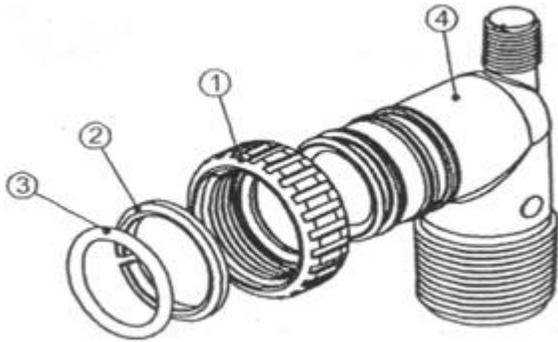
**This page intentionally left blank**

# Control Valve Breakdown



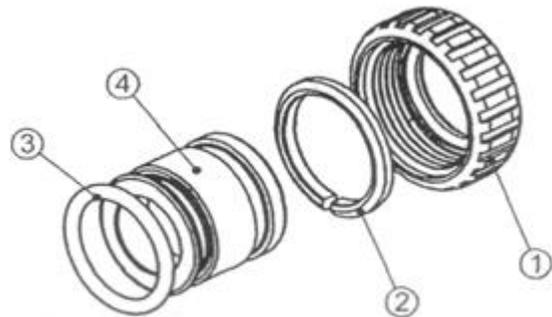
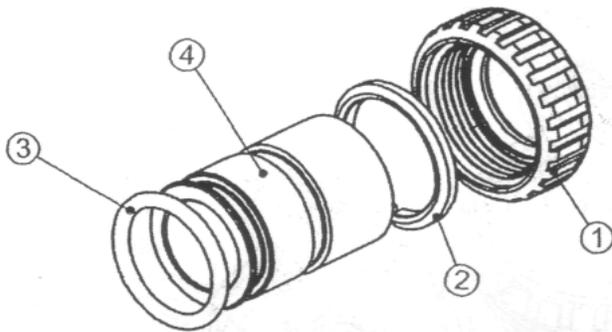


# Installation Fitting Assemblies



1" PVC MALE NPT ELBOW			
Ref	Part #	Description	Qty
	CV3007	1" PVC male NPT elbow assy	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3149	Fitting	2

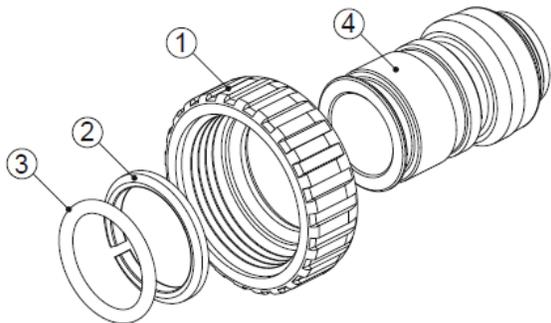
3/4" & 1" PVC SOLVENT ELBOW			
Ref	Part #	Description	Qty
	CV3007-01	3/4" & 1" PVC solvent elbow assy	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3189	Fitting	2



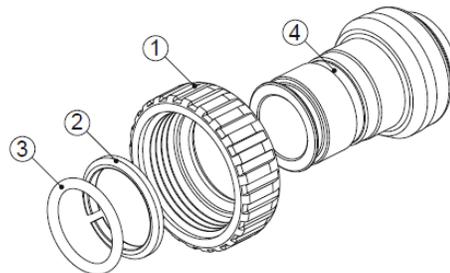
1" BRASS SWEAT			
Ref	Part #	Description	Qty
	CV3007-02	1" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3188	Fitting	2

3/4" BRASS SWEAT			
Ref	Part #	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

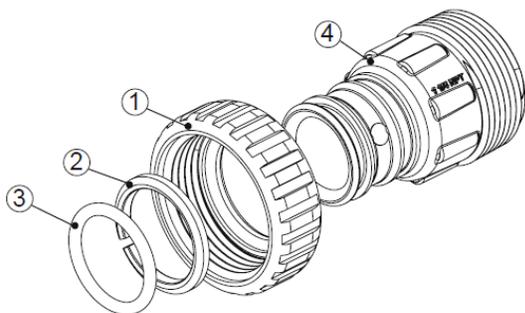
## Installation Fitting Assemblies (cont.)



3/4" BRASS SHARK BITE			
Ref	Part #	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

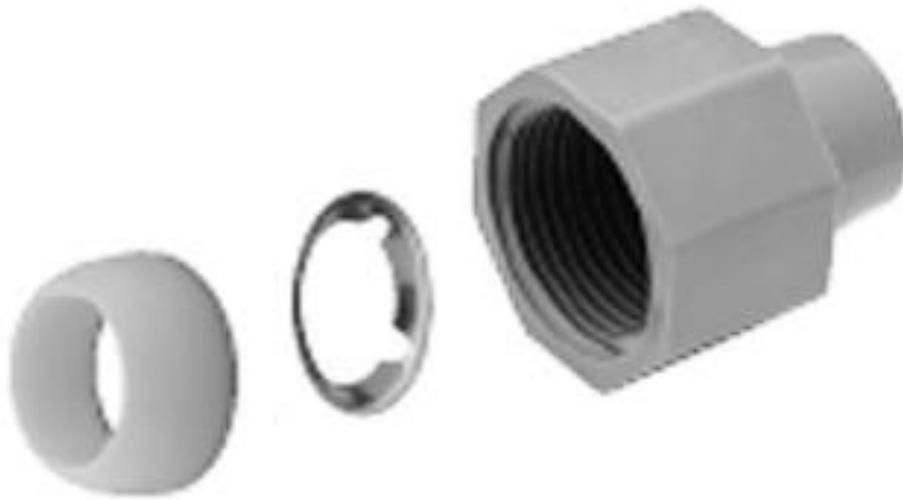


1" BRASS SHARK BITE			
Ref	Part #	Description	Qty
	CV3007-13	1" brass shark bite assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3629	Fitting	2



1-1/4" PLASTIC MALE NPT			
Ref	Part #	Description	Qty
	CV3007-05	1-1/4" plastic male NPT 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 (cont.)



3/4" QUICK CONNECT			
Ref	Part #	Description	Qty
K	QFNCR4	3/4" QUICK CONNECT	1*

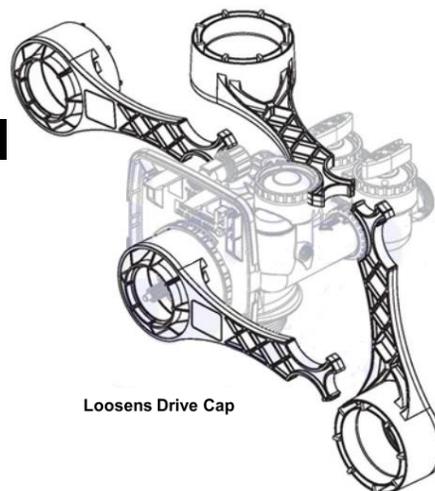
(\*2 required)

### SERVICE WRENCH - CV3193

Although no tools are necessary to assemble or disassemble the valve, the *Service Wrench*, (shown in various positions on the valve) is available to aid in assembly or disassembly.

Loosens Drain Nut In Polytube Applications

Loosens Injector and Bypass Caps



Loosens Quick Connect Nuts

Loosens Drive Cap

# TEN YEAR LIMITED WARRANTY

Models: PTS1-0948, PTS1-1054, PTS1-1248, PTS1-1354, PTS1-1465 (including “-HE”)

**WARRANTY – Franklin Water Treatment, LLC, warrants this water conditioner against any defects that are due to faulty material or workmanship during the warranty period. This warranty does not include damage to the product resulting from accident, neglect, misuse, misapplication, alteration, installation, or operation contrary to printed instructions, or damage caused by freezing, fire, flood, or Acts of God. From the original date of consumer purchase, we will repair or replace, at our discretion, any part found to be defective within the warranty period described below. Purchaser is responsible for any shipping cost to our facility and any local labor charges.**

- One year on the entire water conditioner
- Five years on the control valve  
(except the seal & spacer kit which is a wear & tear component, 1 year)
- Five years on the brine tank (if applicable)
- Ten years on the mineral tanks

**GENERAL CONDITIONS – Should a defect or malfunction occur, contact the dealer that you purchased the product from. If you are unable to contact the dealer, contact Franklin Water Treatment, LLC at (260)693-1972. We will require a full description of the problem, model number, date of purchase, and selling dealer’s business name and address.**

**We assume no warranty liability in connection with this water conditioner other than specified herein. This warranty is in lieu of all other warranties, expressed or implied, including warranties of fitness for a particular purpose. We do not authorize any person or representative to assume for us any other obligations on the sale of this water conditioner.**

**FILL IN AND KEEP FOR YOUR RECORDS**

<b>Original Purchaser</b>	<b>Date of Purchase</b>	<b>Model #</b>	
<b>Address of Original Installation</b>		<b>City</b>	<b>State</b>
<b>Dealer Purchased From</b>	<b>Dealer Address</b>	<b>City</b>	<b>State</b>

Franklin Water Treatment, LLC  
12630 U.S. 33 North, Churubusco, IN 46723  
Phone: (260)693-1972 Fax: (260)693-0602

# FIVE YEAR LIMITED WARRANTY

Models: PTS1-1665, PTS1-1865, PTS1-2162 (Including “-HE”)

**WARRANTY** – Franklin Water Treatment, LLC, warrants this water conditioner against any defects that are due to faulty material or workmanship during the warranty period. This warranty does not include damage to the product resulting from accident, neglect, misuse, misapplication, alteration, installation, or operation contrary to printed instructions, or damage caused by freezing, fire, flood, or Acts of God. From the original date of consumer purchase, we will repair or replace, at our discretion, any part found to be defective within the warranty period described below. Purchaser is responsible for any shipping cost to our facility and any local labor charges.

- One year on the entire water conditioner
- Three years on the control valve  
(except the seal & spacer kit which is a wear & tear component, 1 year)
- Three years on the brine tank
- Five years on the mineral tanks

**GENERAL CONDITIONS** – Should a defect or malfunction occur, contact the dealer that you purchased the product from. If you are unable to contact the dealer, contact Franklin Water Treatment, LLC at (260)693-1972. We will require a full description of the problem, model number, date of purchase, and selling dealer’s business name and address.

We assume no warranty liability in connection with this water conditioner other than specified herein. This warranty is in lieu of all other warranties, expressed or implied, including warranties of fitness for a particular purpose. We do not authorize any person or representative to assume for us any other obligations on the sale of this water conditioner.

## FILL IN AND KEEP FOR YOUR RECORDS

Original Purchaser	Date of Purchase	Model #	
Address of Original Installation		City	State
Dealer Purchased From	Dealer Address	City	State

Franklin Water Treatment, LLC  
12630 U.S. 33 North, Churubusco, IN 46723  
Phone: (260)693-1972 Fax: (260)693-0602