Pure Water Treatment, Inc.™

PURE TECH 2200

Owners Manual

Installation Instructions

For Models

- **PTUF-5600-10**
- **PTUF-5600-13**

MEMBER Water Quality ASSOCIATION

FWQA FLORIDA WATER QUALITY ASSOCIATION

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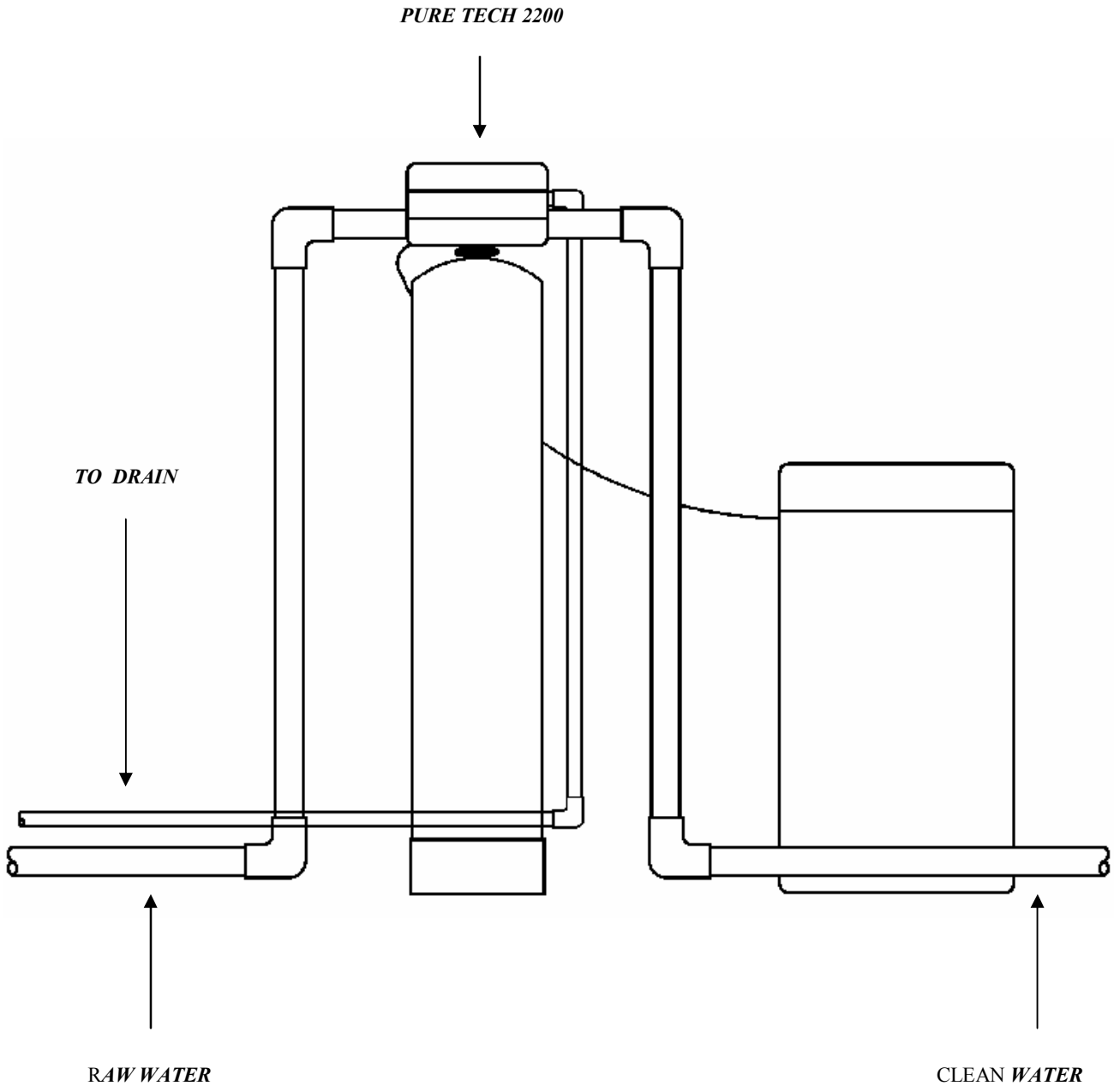


Figure A

- JOB NO. _____
- MODEL NO. _____
- WATER TEST _____
- CAPACITY PER UNIT _____ MAX. _____ PER REGENERATION
- MINERAL TANK SIZE DIA. _____ HEIGHT _____
- BRINE TANK SIZE & SALT SETTING PER REGENERATION:

- CONTROL VALVE SPECIFICATIONS:

Type of Timer

A) Std C) 7 Day E) Meter, Std.

B) *L* D) 12 Day F) Meter, Ext.

Day/Time of Regeneration

Drain Line Flow Control _____ gpm

Brine Refill Rate _____ gpm

Injector Size _____

Meter Gallon Setting _____ gal.

TYPICAL CONTROL VALVE INFORMATION

Tank Dia.	Injector	Inj. Color	Draw/Slow Rinse Rate (gpm)*	BLFC **	DLFC ***
6”	#0	Red	.28 gpm/ .31 gpm	.5 gpm	1.2 gpm
7”	#0	Red	.28 gpm/ .31 gpm	.5 gpm	1.2 gpm
8”	#1	White	.38 gpm/ .45 gpm	.5 gpm	1.5 gpm
9”	#1	White	.38 gpm/ .45 gpm	.5 gpm	2.0 gpm
10”	#1	White	.38 gpm/ .45 gpm	.5 gpm	2.4 gpm
12”	#2	Blue	.56 gpm/ .84 gpm	1.0 gpm	3.5 gpm
13”	#2	Blue	.56 gpm/ .84 gpm	1.0 gpm	4.0 gpm
14”	#3	Yellow	.63 gpm/ 1.0 gpm	1.0 gpm	5.0 gpm
16”	#3	Yellow	.63/ gpm/ 1.0 gpm	1.0 gpm	7.0 gpm

Due to varying water conditions, tank sizes and water pressures, the above settings should be used only as a guideline.

** B.L.F.C. (Brine Line Flow Control). Refill Rate for Filling Brine Tank.

*** D.L.F.C. (Drain Line Flow Control). Backwash and Rapid Rinse Flow Rates.

- This installation guide gives a step by step, start to finish procedure for installing ***PURE TECH 2200*** systems using Fleck valves. All of these systems will regenerate with softener Solar Salt or Potassium Chloride.
- Your new system from the PURE WATER TREATMENT, INC. comes with an owner/service manual, which, is enclosed along with these instructions, and will help explain all necessary details required for successful installation and operation of your system. Please refer to these instructions and the service manual supplied with your system during installation and programming.
- All steps provided herein are for typical installations only. If you require additional plumbing to install your system, simply contact a person who is knowledgeable in residential plumbing or have a local plumbing company help you install, or install the system for you.
- There is a bit of "over-kill" in our instructions, but please bear with us as we want to ensure that you, our customer, fully understand the instructions and are completely satisfied with your installation!
- We recommend that you take a few minutes and look at the service/parts manual for your particular model, to help you better understand your new water system. Take your time and carefully read the instructions.
- Get all of your plumbing parts together before you start, and have an assistant help you, if possible. Typical installation should take no more than a few of hours.
- If you are going to turn the water off to your house while installing the system, we recommend that you turn off the electricity to your electric water heater during installation. After the system is installed with water running through it, turn on a few hot and cold-water faucets, and let them run until there is no more air in your lines, then turn the electricity back on to your water heater.
- Our systems can safely handle a pressure range of 35-95 psi. However, as with most residential plumbing and for best operation causing the least wear on critical parts, we recommend an operating range of 40-65psi. Now all you have to do is plumb in the system, plug it in and set the current time of day!

- Your system should be located in a protected, dry, level and non-freezing area. The brine tank and resin tank can have as much as 20 feet of 3/8" brine tubing connecting them. So, the brine tank can set several feet from the resin tank. The brine tank will hold 240lbs of softener Solar Salt or Potassium Chloride, so be sure to make it accessible for filling the tank when needed.
- We recommend a ½" drain for the regeneration/backwashing cycles. If possible, the house drain should be no farther than 20 feet from the system. You will also need to purchase some flexible ½" inside diameter, plastic tubing from a local hardware or building supply store. This same size tubing will be used for both the valve drain fitting, and on your brine tank safety overflow fitting. (Always follow local plumbing codes).
- You will need a standard 3-prong, 120V, grounded outlet that is not controlled by a switch. Our Fleck valves have a 5' power cord, but you can use an extension cord if an outlet is not nearby. Please follow any local building/safety codes if you need to use an extension cord.
- IMPORTANT NOTE ! IF you decide to set the brine tank in your garage, remember that the water inside the brine tank will not freeze, but the water in the small 3/8" plastic water line running from the system valve to the brine tank will. Make certain the garage is warm enough to prevent this line from freezing!
- Make a list of all the plumbing fittings you will need to completely install the system to make it ready for operation.
- Assemble all tools needed to install the system, and start your installation!

Tools and Materials needed

1) Pipe Cutters
2) PVC Glue
3) PVC, copper or CPVC pipe
4) Two 1” or ¾” male adapters—Depending on which bypass is ordered.

1. Turn off the main water shutoff valve.
2. Next, open all plumbing fixtures in the house including all outside faucets in order to drain the lines of all water possible.
3. Cut and remove a section of the main incoming water line near where the system is to be installed. Allowing this line to drain thoroughly.
4. Remove the yoke (or optional bypass valve) from the back of the tank valve by loosening the two small stainless steel clamps on either side of the rear valve assembly, that holds it in place. Then simply pull it off the back of the valve. Now that you have the yoke or bypass valve removed, follow the directions below to make them ready to install on the valve.
5. INSTRUCTIONS FOR USING A YOKE. If you have a standard Noryl Plastic yoke, it will have two ¾" or 1" male thread nipples, (one inlet & one outlet). You will need to buy two ¾" or 1" Female thread adapters to whatever type and size of piping you are plumbing the system to.
6. INSTRUCTIONS FOR USING A BYPASS. If you are using our optional ¾" or 1" brass bypass valve, you will need to purchase two ¾" or 1" Male thread adapters to whatever type and size pipe you are plumbing to.
7. If you are going to use copper piping and be soldering joints, we do not recommend applying intense heat, to your new valve/meter assembly. We always recommend that you remove the yoke or bypass from the valve assembly, and attach your plumbing adapters to the yoke or bypass away from the valve. This simple step will ensure that you are not applying any heat as you solder or pressure as you tighten the adapters onto the yoke/bypass, while they are mounted on the valve body itself.
8. Another tip if you are using copper adapters. Always solder a 3" to 5" piece of copper pipe into each of the two pipe adapters away from the valve, then let them cool off before threading each one onto the yoke or bypass valve.
9. After they cool off, apply Teflon tape to the male threads of the Noryl yoke, (or onto the male adapters for the brass bypass valve), and securely tighten them to the yoke or bypass valve. Again, doing this before you re-attach them back onto the rear of the valve/meter body assembly.

11. Important!! WE DO NOT recommend connecting adapters to either the yoke or by-pass valve, while the yoke or bypass valve is connected to the Valve/Meter assembly! You may exert too much pressure on the valve while securing the adapters, causing damage to the valve housing!)
12. After all soldering is finished and the adapters are securely threaded onto either the yoke or the brass bypass valve assembly, then attach the yoke or bypass valve back onto the valve/meter assembly and secure it with the two small stainless steel clamps.
13. Now position your conditioning system in place for the final water line installation.
14. Remember; if you are using our optional brass bypass valve, make certain the bypass valve is set in the "Service" position, while soldering the pipes to the system. Then return it to the "Bypass" position before turning your water back on to the house.
15. Measure and cut the lengths of pipe you need to plumb the main hard water line into your system. Then do the same for the conditioned water line that will exit from the system, back out into the house.
16. *NOTE* As you look directly into the two holes in your Fleck valve, the hard water line will always enter the hole on the LEFT SIDE of the yoke or bypass valve assembly. The valve body also has an arrow stamped into each side, showing the direction of flow.
17. If you use our optional bypass valve, arrows indicating water flow direction are printed on the top of the bypass valve assembly.
18. Just remember, that as you are looking directly into the two holes where the water enters and exits the valve, the hard water line from your house always enters the hole on the LEFT. The conditioned water flowing out from the system, back into your house is always the hole on the RIGHT.
19. If you purchased a Meter On Demand Water Softener, you will need to make sure the gold-tipped black cable protruding from the valve is securely plugged into the domed shaped portion of the rear of the valve.

Installing the Drain Line to the Valve

1. (All of our Fleck valves have a drain hose barb, generally located on the lower, back-side or side of the valve. First, check to make certain this drain hose barb is securely threaded into the valve body and that the threads have been sealed with Teflon tape.
2. Once you know the drain hose barb is installed properly, carefully push the 1/2" ID plastic drain hose completely over the barbed end of the fitting, and then attach a small hose clamp to the end of the line so it cannot work loose over time. Run the opposite end of this drain hose to the drain you are going to use for your system. Remember to leave a small air gap at the end of the hose going to the house drain. (Follow local plumbing codes), and secure it there.
3. When the system is in the backwash/regeneration mode, water will flow out of this drain line with a fair amount of pressure, especially during the "rapid rinse phases" of the process, and the line may sometimes "jump" a little when changing cycles.

1. Next, connect your brine tank to your system. One end of the supplied 3/8" brine line tubing will be connected to your brine tank and the opposite end needs to be connected to your Fleck valve.
2. Look inside your brine tank and you will see a 4" diameter "Brine Well" tube. Remove the lid off the top of the brine well and look inside this tube. Here you will find the "Brine Float" assembly. The brine float assembly works like a toilet tank float, shutting the water off inside the brine tank should the level of water get too high.
3. Check to see if the brine float assembly is loose inside the brine well tube. If it is, simply pull it up out of the brine well and look about 2" down from the top of the brine float assembly where you will see the metal end of a small threaded screw sticking out about ½". There will be a small black plastic nut threaded on it. Remove the black nut and then put the brine float back into the brine well. Notice there is a small hole drilled in the brine well, that you can insert this small section of screw through.
4. Hold the brine float with the section of screw in the hole as you put the small black nut back on. This is what holds the brine float in place.
5. On top of the brine float, you will see a larger black elbow with a black plastic nut. Carefully remove the black nut and you will find two small compression rings inside the nut, one black and one white. These small pieces help seal the end of the 3/8" tube that connects the brine tank with the valve on top of the system.
6. Each one of these small rings has a flat side. Hold the two small rings together with the flat sides touching. This is the way they fit together when they go inside the black nut, white piece first.
7. Next, insert one end of the 3/8" tubing though the hole in the side of the brine tank and brine well, and slide the black nut onto the tube with the threads facing the end of the tube. Then, slide the two small compression rings onto the tube, white piece first, then the black piece making sure the flat edges of both rings are together.
8. Now insert the end of the tube into the black elbow as far as it will go. Hold it there as you thread the black nut onto the black elbow, tightening it finger tight which compresses the two rings inside the nut onto the tubing.
9. Replace the lid on the top of the brine well! Your brine tank is now ready to be connected to the Fleck valve.
10. Take the other end of the 3/8" brine tube and find the 3/8" brass nut located on the valve body of your system. Remove this brass nut and you will find a small plastic compression ring inside.

11. Slide the brass nut over the end of the tube, threads facing the end of the tube. Then slide the compression ring on with the narrow side facing the end of the tube.
12. Insert the end of the tube fully into the opening on the valve where the brass nut was located, then slide the compression ring and brass nut up the tube, finally threading the brass nut back onto the threads. Tighten the brass nut gently with a small wrench.
13. Notice the plastic elbow that is located on the side of your brine tank. This is a "Safety Overflow", and will use the same size drain line that is used on the valve drain (1/2" ID flexible plastic line). This drain line will not be under pressure, so it must be directed to a drain that is physically lower than it is. DO NOT connect this drain line into the drain line coming from the Fleck valve! It must be run separately to the drain.
14. Fill the brine tank with 9 gallons of water.
15. Add 240 lbs of "Solar Salt" or "Potassium Chloride" to the brine tank, and you are now ready to turn the water back on!

1. INSTRUCTIONS FOR USING A BYPASS VALVE. If you are using a bypass valve, make sure your bypass valve is now in the "BYPASS" position.
2. Turn your water on slowly, leaving all your faucets in the house open until water starts coming out of them. After they are all running steady and the air is out of the water lines, turn them off one by one. The raw water will be bypassing your system at this time.
3. Slowly open your bypass valve to the “SERVICE” position and begin filling the softener resin tank with water. In a few minutes the sound of water entering the system will stop.
4. Next, open one faucet, (preferably an outside faucet, a laundry sink or bathtub), letting the water run through it slowly for a few minutes. This allows the water to rinse the inside of your resin tank out and settle the media.
5. Sometimes you may experience some light/medium brown color rinsing off the new resin beads..... This is normal...and should only last a few minutes.
6. This is why we suggest running the water through only one faucet, to clear the softener of this colored water.
7. After a few minutes, and the water is running clear.....turn the faucet off.
8. You now have soft water on your cold water side.... The hot water will take a couple of days to become soft, as your hot water tank is full of hard water.
9. Finally, if you are using a demand valve firmly insert the small brass end of the black Meter Cable, into the small hole located on top of the dome shaped Meter housing. The end of the cable will only insert about 1/8" - 3/16" into the meter housing hole.

1. We will have already pre-set the meter on the system to regenerate, according to your water test results. You will only need to set the time of day on the front of the valve. If you are not sure what the meter is supposed to be set on, please give us a call with information on your water test results, and we will help you determine what setting to place your meter on.
2. Look in your service manual, for your particular model Fleck valve, and manually run your valve through a regeneration cycle. To do this, simply turn the manual "Regen" dial clockwise just a few "clicks" at a time, stopping at each setting for a minute, to clear the air out of the resin tank and valve. Once you have completed turning the "Regen" knob one complete revolution and it is set back to the "Service" position, the system is now ready for use!
3. Finally, plug the valve in the electrical outlet and set the current time of day. Our systems will regenerate around 2:00am.
4. Check all connections for leaks.
5. You are now ready to experience PURE WATER!

Don't forget to tell your friends, family and neighbors about how excellent the

PURE TECH 2200 works for you.

Maintaining Your System

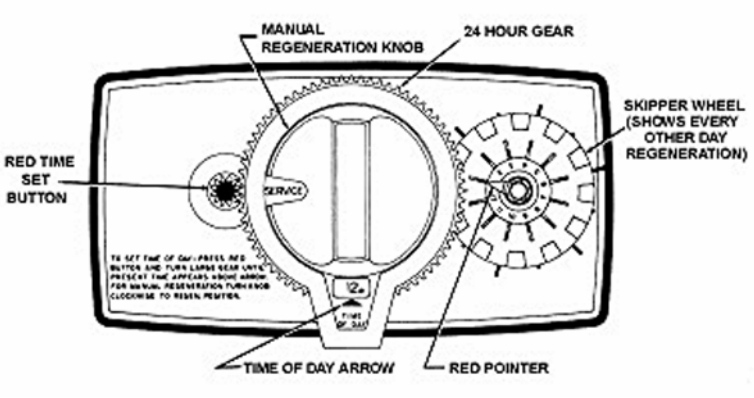
The system is set to use about 9-lbs. of salt or potassium per regeneration cycle. For the next few months, monitor the brine tank to establish how often to add salt or potassium. If your system has a timed valve, you should have to fill the brine tank about every 5 to 6 weeks. If your system is metered, it may be less often based on water usage and the meter setting for your water.

The system will manually regenerate itself clean. If you find that the system is not producing enough clean water, then set the 'regen' pins to regenerate more often.

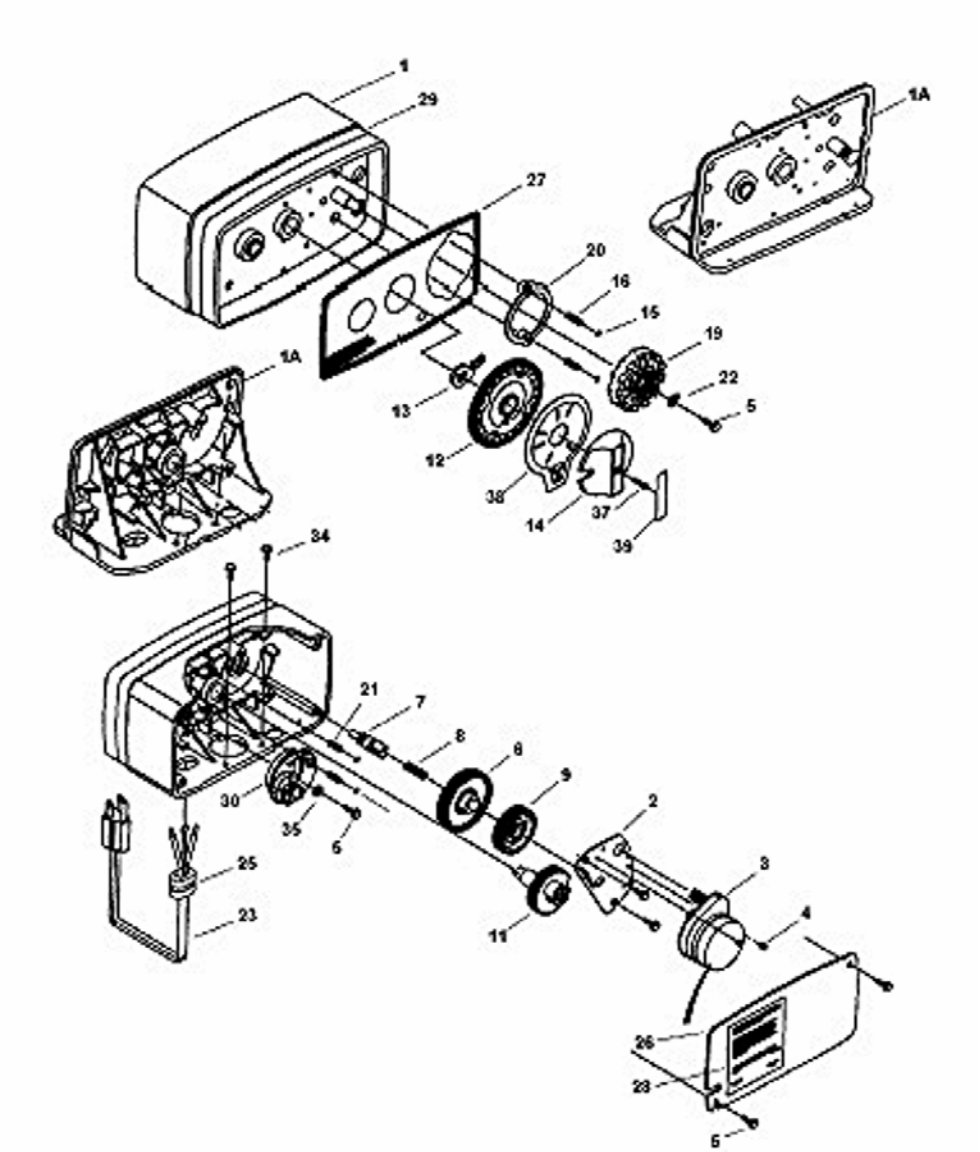
If the system doesn't seen to be pulling any brine solution in, check the screen in the brine line at the base of the valve. It may be clogged and need cleaning.

- Even though you now have ***PURE WATER*** in your cold water lines, your water heater is still full of raw water. Through normal use, this water will be replaced with soft water in about 2 to 3 days.
- You may experience cloudy water in the mornings. This is caused by the clean water sitting in your pipes over night and stripping the build up off. Run your water for 2 to 3 minutes every morning until it clears. This should last no longer than 1 to 2 weeks.
- We supply a toll free number (888-989-7873), to all of our customers to use, in case they don't understand something contained in our installation instructions.
- Be sure to cut back on your detergent, soap and shampoo usage! Generally, you should be able to cut your soap use in half!
- Hard copper pipe generally comes in two types. Use the thicker "L" type copper pipe rather than thinner "M" type copper pipe.
- Follow your local plumbing and building codes when installing our systems.
- Please Email us a picture of your installed system!! Let us see how good of a job you did on the installation. **PureWT@aol.com**

The water softener should be installed with the inlet, outlet and drain connections made in accordance with manufacturer's recommendations and to meet applicable plumbing codes.



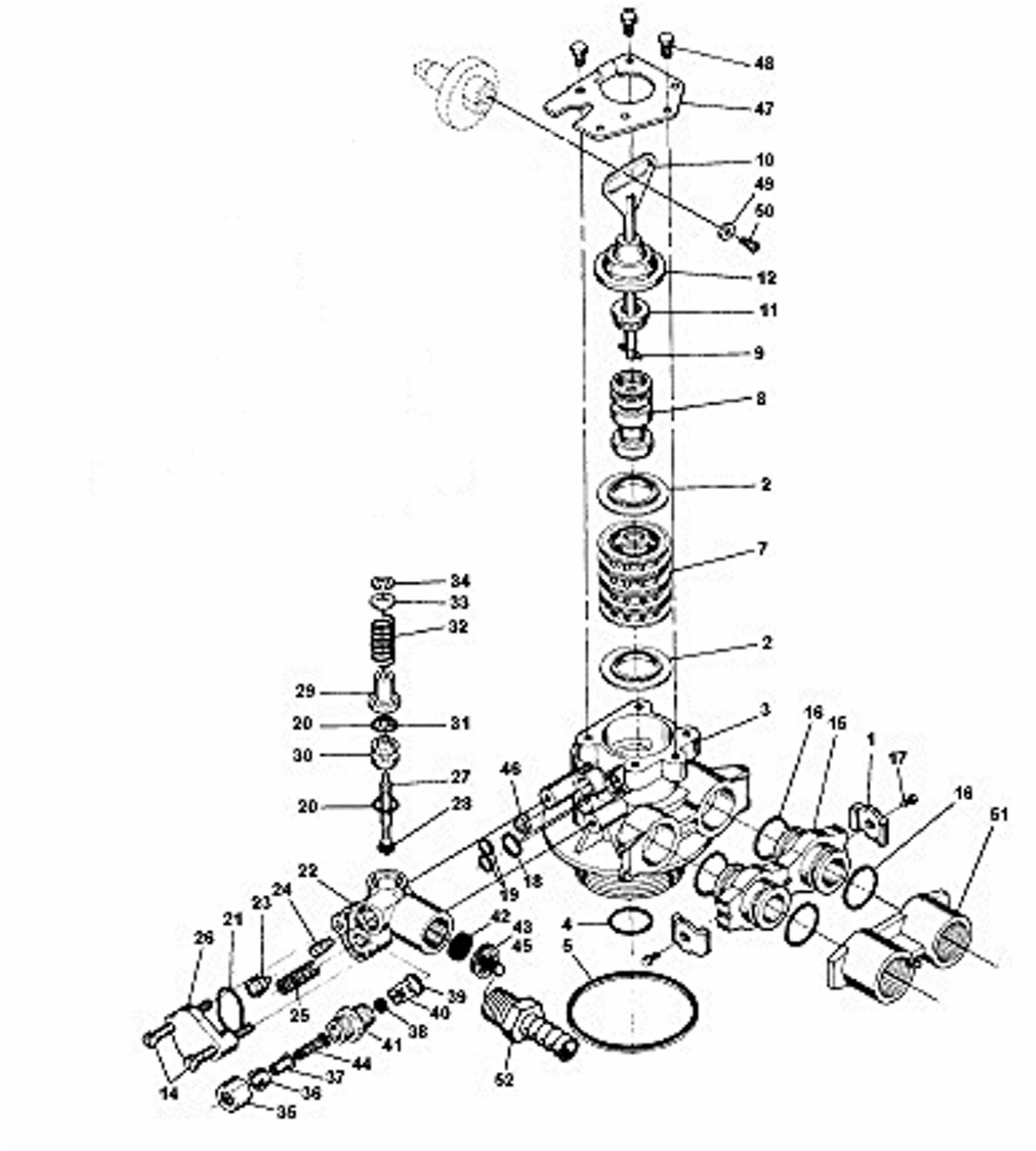
1. Manually index the softener control into the service position and let water flow into the resin tank. When the water flow stops, open a softened water tap until all air is released from the lines, then close the tap.Note: the various regeneration positions may be dialed manually by turning the knob on the front of the control until the indicator shows that the Aoftener is in the desired position.
2. Manually index the control to the backwash position and allow water to flow at the drain for 3 or 4 minutes.
3. Remove back cover plate.
4. Make sure that the salt dosage is set as recommended by the manufacturer. If necessary, set salt in accordance with the setting instruction sheet. Manually index the control to the brine fill position and allow the brine tank to fill to the top of the air check.
5. Manually index the control to the brine draw position and allow the control to draw water from the brine tank until it stops.
6. Plug in the electrical cord and look in the sight hole in the back of the motor to see that it is running. Set the days that regeneration is to occur by sliding tabs on skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Moving clockwise from red pointer, extend or retract fingers to obtain the desired regeneration schedule.
7. Manually advance the control to the beginning of the brine fill position; and allow the control to return to the service position automatically.
8. Fill the brine tank with salt.
9. Replace back cover on the control.
10. Make sure that any by-pass valving is left in the normal service position.



Part List

Item No.	No. Req'd	Part No.	Description
1.	1	14448-010	Housing - w/Pin
	1	14448-011	Housing - w/Pin Drilled for Screw
	1	14448-012	Housing - w/Pin Drilled for Thumb Screw
1A	1	15494-01	"L" Housing - w/Pin
	1	15494-03	"L" Housing - w/Pin Drilled for Designer
2.	1	13175.	Motor Mounting Plate
3.	1	18743.	Motor - 120V., 60 Hz.
	1	19659.	Motor - 24V., 60 Hz.
4.	(2-3)	11384.	Screw - Motor Mtg. & Ground Wire
5.	(3-5)	13296.	Screw - Component Mounting

Item No.	No. Req'd	Part No.	Description
6.	1	13017.	Idler Gear
7.	1	13018.	Idler Pinion
8.	1	13312.	Spring - Idler
9.	1	13164.	Drive Gear
11	1	13170.	Main Gear & Shaft
12	1	19205.	24 Hour Gear Assembly, Silver
	1	19205-01	24 Hour Gear Assy, Tan
13	1	13011.	Cycle Actuator Gear
14	1	14177.	Knob - Manual Regeneration
15	4	13300.	Ball - 1/4″ Dia.
16	2	13311.	Spring - Detent - Skipper Wheel
19	1	14381.	Skipper Wheel Assembly - 12 Day
	1	14860.	Skipper Wheel Assembly - 7 Day
20	1	13864.	Skipper Wheel Ring
21	2	14457.	Spring - Detent - Main Gear
22	1	13014.	Regeneration Pointer
23	1	11842.	Electrical Cord - Standard
24	2	12681.	Wire Connector (Not Shown)
25.	1	13547.	Strain Relief
26.	1	13229.	Back Cover
27.	1	13309.	Front Label - Brown on Beige
	1	13437.	Front Label - Blue/Silver on Black
28.	1	13310.	Rear Label - Softener
	1	18520.	Rear Label - Filter
29.	1	13348.	Tape Stripe - Brown on Beige
	1	13436.	Tape Stripe - Blue on Silver
30	1	60514.	Brine Cam Assy., 3-18
	1	60514-0	Brine Cam Assy., 6-36
	1	60514-0	Brine Cam Assy. - Minutes
34	2	12473.	Screw-Drive Mounting
35	1	12037.	Washer
37	1	15151.	Screw - Knob
38	1	14176.	Valve Position Dial - Standard
	1	14278.	Valve Position Dial - Low Water
	1	15478.	Valve Position Dial - Chemical Filter
	1	16715.	Valve Position Dial - Filter
39.	1	14175.	Knob Label - Beige
	1	14207.	Knob Label - Silvers
40	1	40214.	Screw, Brine Cam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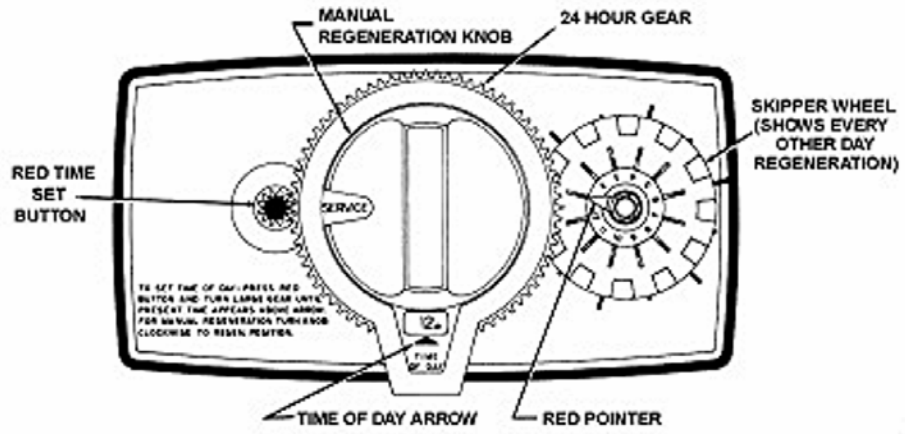
Control Valve Drive Part List For (Clock Or Meter)

Item No.	No. Req'd	Part No.	Description
1	2-4	13255	Adapter Clip (clock or meter)
2	5	13242	Seal
	5	17772	Silicone Seal
3	1	61400-12	Valve Body Assembly - 1″ Dist.
	1	61400-11	Valve Body Assembly - 3/4″ Dist.
4.	1	13304	O-Ring - Distributor Tube - 1″
	1.	10244	O-Ring - Distributor Tube - 13/16″
5	1	12281	O-Ring - Top of Tank
6			Not Assigned
7	4	14241	Spacer
8.	1	13247	Piston - Standard
	1	13781	Piston - Low Water
	1	13852	Piston - Filter
9.	1	10696	Piston Pin
10.	1	13001	Piston Rod Assembly
11.	1	12953	Piston Retainer
12.	1	13446	End Plug Assembly Std. - White
	1	13446-10	End Plug Assembly Filter - Black
	1	13446-20	End Plug Assembly Low Water - Gray
14.	2	13315	Screw- Injector Mounting
*15	2	19228	Adapter Coupling
*16.	4	13305	O-Ring- Adapter Coupling
*17.	2-4.	13314	Screw- Adapter Coupling (clock or meter)
18	1	12638	O-Ring - Drain
19.	2	13301	O-Ring - Injector
20.	2	13302	O-Ring - Brine Spacer
21.	1	13303	O-Ring - Injector Cover
22.	1	13163.	Injector Body
23.	1	10913U	Injector Nozzle - Undrilled
24.	1	10914.	Injector Throat - Specify Size
25.	1	10227.	Injector Screen
26.	1	13166.	Injector Cover
27.	1	13172.	Brine Valve Stem
28.	1	12626.	Brine Valve Seat
29.	1	13165.	Brine Valve Cap
30.	1	13167.	Brine Valve Spacer
31.	1	12550.	Quad Ring
32.	1	11973.	Spring - Brine Valve
33.	1	16098.	Washer - Brine Valve
34.	1	11981-01	Retaining Ring
35.	1	10329	B.L.F.C. Fitting Nut
36.	1	10330	B.L.F.C. Ferrule
37.	1	10332	B.L.F.C. Tube Insert

Item No.	No. Req'd	Part No.	Description
38	1	12094	B.L.F.C. Button - .25 GPM
	1	12095	B.L.F.C. Button - .5 GPM
	1	12097	B.L.F.C. Button - 1.0 GPM
39	1	12977	O-Ring - B.L.F.C.
40	1	13245	B.L.F.C. Button Retainer
41	1	13244	B.L.F.C. Fitting, 3/8″
42	1		D.L.F.C. Button - Specify Size
43	1	13173	D.L.F.C. Button Retainer
44	1	12767	Screen - Brine Line
45	1	15348	O-Ring - D.L.F.C. (not shown)
46	1	13497	Air Disperser
47	1	13546	End Plug Retainer
48	3	12112	Screw
49	1	13363	Washer
50	1	13296	Screw
51A	1	13398	Yoke, Brass, 1″ NPT
	1	13708	Yoke, Brass, 3/4″ NPT
51B	1	18706	Yoke, Plastic, 1″ NPT
	1	18706-02	Yoke, Plastic 3/4″ NPT
52	1	13308	Drain Hose Barb

* Not used with meter controls

The water softener should be installed with the inlet, outlet and drain connections made in accordance with manufacturer's recommendations and to meet applicable plumbing codes.



1. Manually index the softener control into the service position and let water flow into the resin tank. When the water flow stops, open a softened water tap until all air is released from the lines, then close the tap. NOTE: The various regeneration positions may be dialed manually by turning the knob on the front of the control until the indicator shows that the softener is in the desired position.
2. Set water usage program wheel using any one of the following procedures:

Typical Residential Application

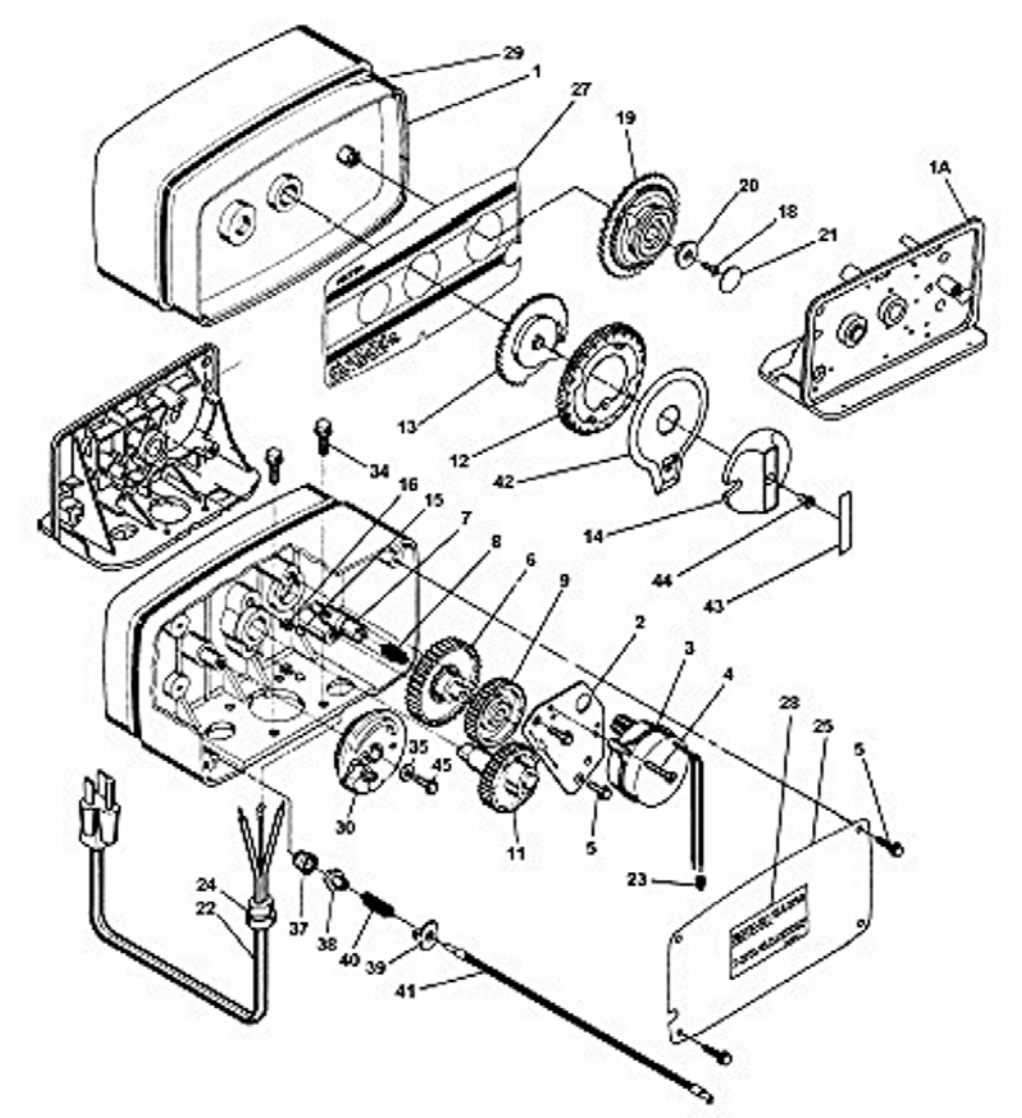
To program, just set the time, set the hardness and it automatically monitors system needs and regenerates only when necessary. To set time of day press red time set button and turn 24 hour gear until present time of day is at "time of day". Set program wheel by lifting the "people" dial and rotating it so that the number of people in the household is aligned with the household grains per gallon water hardness. Release the dial and check for firm engagement at setting. (This method will provide reserve capacity based on 75 gallons per person.)

Optional Programming Procedures

Calculate the gallon capacity of the system, subtract the necessary reserve requirement and set the gallons available at the small white dot on program wheel gear. Note, drawing shows 850 gallon setting. The capacity (gallons) arrow denotes remaining gallons exclusive of fixed reserve.

3. Rotate the program wheel counterclockwise until it stops at regeneration position.
4. Manually index the control to the back-wash position and allow water to flow at the drain for 3 or 4 minutes.
5. Remove back cover plate. Make sure than the salt dosage is set as recommended by the manufacturer. Manually index the control to the brine fill position and allow the brine tank to fill to the top of the air check.
6. Manualy index the control to the brine rinse position and allow the control to draw water from the brine tank until it stops.
7. Plug in the electrical cord and look in the sight hole in the back of the montor to see that it is running.
8. Manually advance the control to the beginning of the brine fill position and allow the control to return to the service position automatically.
9. Fill the brine tank with salt. Replace back cover on the control. Be sure cable is not pinched between cover and housing.
10. Make sure that any by-pass valving is left in the normal service position.

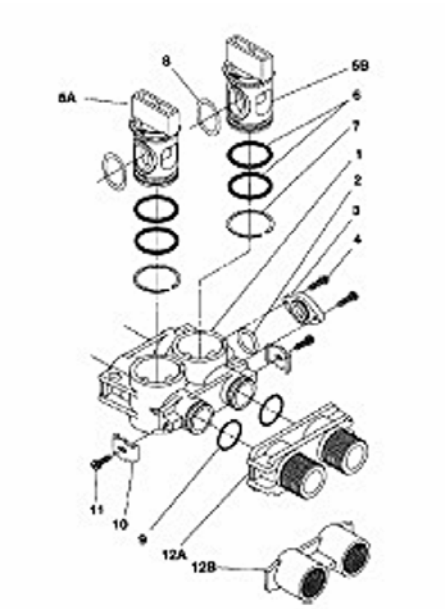
Metered Control Valve Drive Assembly



Item No.	No. Req'd	Part No.	Description
1	1	14448-000	Housing - with Roll Pin
	1	14488-001	Housing - w/Pin Drilled for Screw
	1	14448-0	Housing - w/Pin Drilled for Thumb Screw
1A	1	15494-01	"L" Housing - w/Pin
	1	15494-03	"L" Housing - w/Pin Drilled for Designer
2	1	13175	Motor Mounting Plate
3	1	18743	Motor - 120V., 60 Hz.
	1	13494	Motor - 24V., 60 Hz.
4	2-3	11384	Screw - Motor Mtg. & Ground Wire
5	2-4	13296	Screw - Component Mounting
6	1	13017	Idler Gear
7	1	13018	Idler Pinion
8	1	13312	Spring - Idler
9	1	13164	Drive Gear
11	1	13170	Main Gear & Shaft
12	1	19205	24 Hour Gear Assembly, Silver
	1	19205-01	24 Hour Gear Assy, Tan
13	1	13802	Cycle Actuator Gear
14	1	14177	Knob - Manual Regeneration
15	2	13300	Ball - 1/4″ Dia.
16	2	14457	Spring - Detent
18	1	13748	Screw - Program Wheel
19	1	60405-15	Program Skipper Wheel Assy. - Specify Hardness Capacity
20	1	13806	Program Wheel Retainer
21	1	13953	Cover Label - Program Wheel
22	1	11842	Electrical Cord
23	2	12681	Wire Connector
24	1	13547	Strain Relief
25	1	13229	Back Cover
26			Not Assigned
27	1	13955	Front Label - Beige
	1	13958	Front Label - Silver
28	1	13310	Rear Label - Softener
	1	18520	Rear Label - Filter
29	1	13957	Tape Stripe - Beige
	1	13960	Tape Stripe - Silver
30	1	60514	Brine Cam Assembly, 3-18
	1	60514-01	Brine Cam Assembly, 6-36
	1	60514-02	Brine Cam Assembly - Minutes
34	2	12473	Screw-Drive Mounting
35	1	12037	Washer
37	1	13830	Drive Pinion - Program Wheel
38	1	13831	Clutch - Drive Pinion
39	1	14253	Spring Retainer

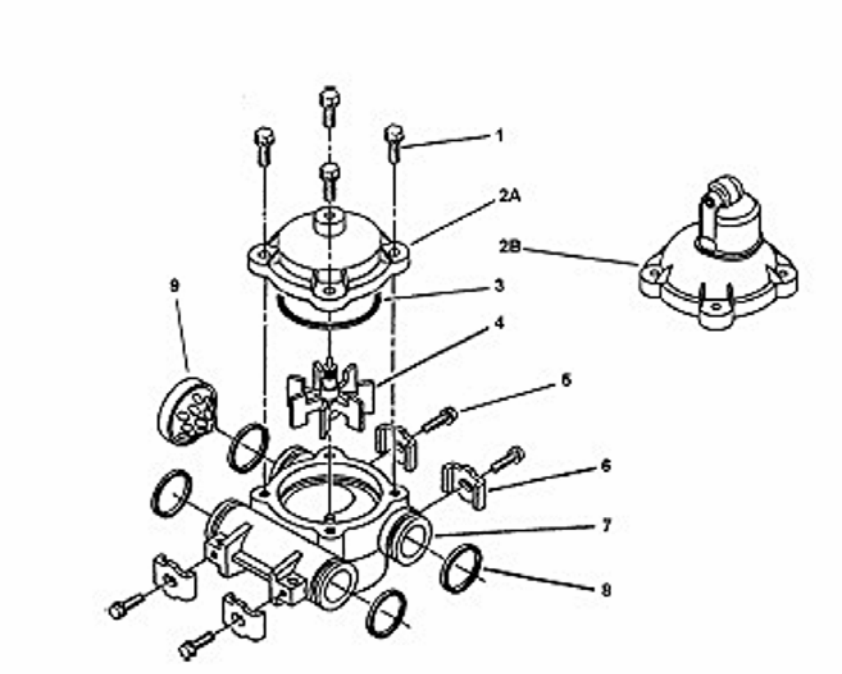
Item No.	No. Req'd	Part No.	Description
40	1	14276	Spring
41	1	14043	Cable Assembly, Std
	1	14910	Cable Assembly, Ext, Rt Angle
42	1	14176	Valve Position Dial - Standard
	1	14278	Valve Position Dial - Low Water
	1	15478	Valve position Dial - Filter
43	1	1417	Knob Label - Beige
	1	14207	Knob Label - Silver
44	1	15151	Screw - Knob
45	1	40214	Screw, Brine Cam

Bypass Valve Assembly, Plastic



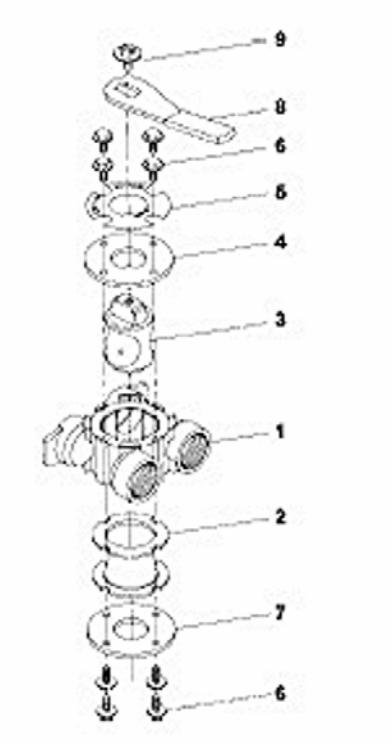
Item No.	No. Req'd	Part No.	Description
1	1	19723	By-Pass Valve Body, Plastic
2	1	11183	O-Ring, -015
3	1	19724	Cap, By-Pass
4	2	17512	Screw, Hex Washer Head, #6-24 x 3
5A	1	17820	Plug, By-Pass, Inlet
5B	1	17820-01	Plug, By-Pass, Outlet (White)
6	4	18661	O-Ring, -218
7	2	18662	Retaining Ring
8	2	18660	O-Ring
9	2	13305	O-Ring, -119
10	2	13255	Clip, Mounting
11	2	13314	Screw, Hex Washer Head, 8-18 x 5/8
12A	1	18706	Yoke, Plastic, 1″ NPT
		18706-02	Yoke, Plastic 3/4″
12B	1	13708	Yoke, 3/4″
	1	13708NP	Yoke, 3/4″ Nickel Plated
	1	13398	Yoke, 1″
	1	13398NP	Yoke, 1″ Nickel Plated

Meter Assembly



Item No.	No. Req'd	Part No.	Description
1	4	12473	Screw - Meter Cover Assembly
2A	1	14038	Meter Cover Assembly - Standard
2B	1	15659	Meter Cover Assembly - Extended Range, Rt. Angle
3	1	13847	O-Ring - Meter Cover Assembly
4	1	13509	Impeller
5	4	13314	Screw - Adapter Clip
6	4	13255	Adapter Clip
7	1	13821	Meter Body
8	4	13305	O-Ring - Meter Body
9	1	14613	Flow Straightener

Bypass Valve Assembly, Brass



Item No.	No. Req'd	Part No.	Description
1	1	19723	By-Pass Valve Body, Plastic
1	1	17290	By-Pass Valve Body, 3/4″
	1	17290NP	By-Pass Valve Body, 3/4″ Nickel Plate
	1	13399	By-Pass Valve Body, 1″
	1	13399NP	By-Pass Valve Body, 1″ , Nickel Plate
2	1	11726	Seal, By-Pass
3	1	11972	Plug, By-Pass
4	1	11978	Side Cover
5	1	13604-01	Label
6	8	15727	Screw
7	1	11986	Side Cover
8	1	11979	Lever, By-Pass
9	1	11989	Screw, Hex Head, 1/4-14

Part No.	Description
60102-00	Piston - Softener
60102-10	Piston - Filter
60102-20	Piston - Low Water
60125	Seal Kit
60084-XX	Injector
60032	Brine Valve
60514	Brine Cam, 3-18
60514-01	Brine Cam, 6-36
60514-02	Brine Cam, Minutes
60510	Coupling with Clip & Screws
60040	Bypass, Brass 3/4″ NPT
60041	Bypass, Brass 1″ NPT
60049	Bypass, Brass, Plastic
60086	Meter, Std.
60087	Meter, Ext.
60136-5600	Service Kit, Meter
60135-5600	Service Kit, Clock
14860	Skipper Wheel 7 Day
14381	Skipper Wheel 12 Day
60405-10	Meter Program Wheel, Std.
60405-20	Meter Program Wheel, Ext.

PROBLEM	*CAUSE*	*CORRECTION*
1. Softener Fails to Regenerate	A. Electrical Service To Unit Has Been Interrupted.	A. Assure Permanent Electrical Service. (Check Fuse, Plug, Pull chain or Switch)
	B. Timer is Defective	B. Replace Timer.
	C. Power Failure	C. Reset Time of Day.
2. Softener delivers Hard water	A. Bypass Valve is open.	A. Close Bypass Valve.
	B. No Salt in Brine Tank.	B. Add Salt to Brine Tank and maintain Salt Level above water level.
	C. Injectors or Screen Plugged.	C. Clean Injector Screen.
	D. Insufficient Water Flowing Into Brine Tank.	D. Check Brine Tank Fill Time and Clean Brine Line Flow Control if Plugged.
	E. Hot Water Tank Hardness.	E. Repeat Flushings of the Hot Water Tank is Required.
	F. Leak At Distributor Tube.	F. Make Sure Distributor Tube is Not Cracked. Check "O" Ring and Tube Pilot.
	G. Internal Valve Leak.	G. Replace Seals and Spacers and/or Piston.
3. Unit Uses too much salt.	A. Improper Salt Setting.	A. Check Salt Usage and Salt Setting.
	B. Excessive Water in Brine Tank.	B. See Problem No. 7.
4. Loss of Water Pressure	A. Iron Buildup in Line to Water Conditioner.	A. Clean Line to Water Conditioner
	B. Iron Buildup in Water Conditioner	B. Clean Control and Add Mineral Cleaner to Mineral Bed. Increase Frequency of Regeneration.
	C. Inlet of Control Plugged Due to Foreign Material Broken Loose From Pipes by Recent Work Done on Plumbing System.	C. Remove Piston and Clean Control.
5. Loss of Mineral Through Drain Line.	A. Air in Water System.	A. Assure that Well System has Proper Air Eliminator Control. Check for Dry Well Condition.
6. Iron in Conditioned Water.	A. Fouled Mineral Bed.	A. Check Backwash, Brine Draw and Brine Tank Fill. Increase Frequency of Regeneration. Increase Backwash Time.
7. Excessive Water in Brine Tank.	A. Plugged Drain Line Flow Control.	A. Clean Flow Control.
8. Salt water in service line	A. Plugged Injector System.	A. Clean Injector and Screen.
	B. Timer Not Cycling.	B. Replace timer.
	C. Foreign Material in Brine Valve	C. Replace Brine Valve Seat and Clean Valve.
	D. Foreign Material in Brine Line Flow Control.	D. Clean Brine Line Flow Control.
9. Softener Fails to Draw brine.	A. Drain Line Flow Control is Plugged.	A. Clean Drain Line Flow Control.
	B. Injector is Plugged.	B. Clean Injector.
	C. Injector Screen Plugged.	C. Clean Screen.
	D. Line Pressure is too Low.	D. Increase Line Pressure to 20 P.S.I.
	E. Internal Control Leak.	E. Change Seals, Spacers and Piston Assembly.

PROBLEM	*CAUSE*	*CORRECTION*
10. Control Cycles Continuously.	A. Broken or Shortened Switch.	A. Determine if Switch or Timer is Faulty and replace it, or Replace Complete Power Head.
11. Drain Flows Continuously.	A. Internal Control Leak.	A. Replace seals and/or piston assembly.
	B. Foreign Material in Control.	B. Remove piston assembly and inspect bore. Remove Foreign Material and Check Control in Various Regeneration Positions.
	C. Control valve jammed in brine or back-wash position	C. Replace Seals and/or Piston Assembly.
	D. Timer motor stopped or jammed.	D. Replace timer.

GENERAL SERVICE HINTS FOR METER CONTROL

Problem: Softener Delivers Hard Water
Cause could be that . . . Reserve capacity has been exceeded.

Correction: Check salt dosage requirements and reset program wheel to provide additional reserve.
Cause could be that . . . Program wheel is not rotating with meter output.

Correction: Pull cable out of meter cover and rotate manually. Program wheel must move without binding and clutch must give positive “clicks” when program wheel strikes regeneration stop. If it does not, replace timer.
Cause could be that . . . Meter is not measuring flow.

Correction: Check output by observing rotation of small gear on front of timer (Note - program wheel must not be against regeneration stop for this check).
Each tooth to tooth is approximately 30 gallons. If not performing properly, replace meter.

A. TO REMOVE TIME BRINE VALVE, INJECTORS, AND SCREEN

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the by pass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Disconnect brine tube and drain line connections at the injector body.
5. Remove the two injector body mounting screws. The injector and brine module can now be removed from the control valve. Remove and discard valve body Orings
6. To Replace Brine Valve
   1. Pull brine valve from injector body, also remove & discard O-ring at bottom of brine valve hole.
   0. Apply silicone lubricant to new O-ring and reinstall at bottom of brine valve hole.
   0. Apply silicone lubricant to O- ring on new valve assembly and press into brine valve hole, shoulder on bushing should be flush with injector body.
7. To replace injectors and screen.
   1. Remove injector cap and screen, discard O-ring. Unscrew injector nozzle and throat from injector body.
   0. Screw in new injector throat and nozzle, be sure they are seated tightly. Install a new screen.
   0. Apply silicone lubricant to new "O" ring and install around oval extension on injector cap.
8. Apply silicone lubricant to three new O-rings and install over three bosses on injector body.
9. Insert screws with washers thru injector cap and injector. Place this assembly thru hole in timer housing and into mating holes in the valve body. Tighten screws. (Be sure to reinstall brass spacers with injector on model 4600 valve.)
10. Reconnect brine tube and drain line.
11. Return by-pass or inlef valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
12. Check for leaks at all seal areas. Check drain seal with the control in the backwash position.
13. Plug electrical cord into outlet.
14. Set time of day and cycle the control valve manually to assure proper function. Make sure the control valve is returned to the service position.
15. Make sure there is enough brine in the brine tank.
16. Rotate program wheel counter-clockwise until it stops at regeneration position
17. Start regeneration cycle manually if water is hard.

B. TO REPLACE TIMER

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily.
6. Put new timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
7. Replace timer mounting screws. Replace screw and washer at drive yoke.
8. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
9. Plug electrical cord into outlet.
10. Set time of day, program wheel, and salt usage. Cycle the control valve manually to assure proper function. Make sure the control valve is returned to the service position.
11. Replace the control valve back cover. Be sure grommet at cable hole is in place.
12. Make sure there is enough brine in the brine tank.
13. Rotate program wheel counter-clockwise until it stops at regeneration position.
14. Start regeneration cycle manually if water is hard.
15. Plug cable into meter cover, rotate cable to align drive flat if necessary.

C. TO REPLACE PISTON ASSEMBLY

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily. Remove end plug retainer plate.
6. Pull upward on end of piston yoke until assembly is out of valve.
7. Inspect the inside of the valve to make sure that all spacers and seals are in place, and that there is no foreign matter that would interfere with the valve operation.
8. Take new piston assembly as furnished and push piston into valve by means of the end plug. Twist yoke carefully in a clockwise direction to properly align it with drive gear. Replace end plug retainer plate.
9. Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).

C. TO REPLACE PISTON ASSEMBLY cont.

10. Replace timer mounting screws. Replace screw and washer at drive yoke.
11. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
12. Plug electrical cord into outlet.
13. Set time of day. Cycle the control valve manually to assure proper function. Make sure the control valve is returned to the service position.
14. Replace the control valve back cover. Be sure grommet at cable hole is in place.
15. Make sure there is enough brine in the brine tank.
16. Rotate program wheel counter-clockwise until it stops at regeneration position.
17. Start regeneration cycle manually if water is hard.
18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

D. TO REPLACE SEALS AND SPACERS

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there as only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover. Remove the control valve back cover.
5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly will now lift off easily. Remove end plug retainer plate.
6. Pull upward on end of piston rod yoke until assembly is out of valve. Remove and replace seats and spacers with fingers.

E. TO REPLACE METER

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a "three valve" by-pass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover.
5. Remove two screws and clips at by-pass valve or yoke. Pull resin tank away from plumbing Connections.
6. Remove two screws and clips at control valve. Pull meter module out of control valve.
7. Apply silicone lubricant to four new O-rings and assemble to four ports on new meter module.
8. Assemble meter to control valve. Note, meter portion of module must be assembled at valve outlet.
9. Attach two clips and screws at control valve. Be sure clip legs are firmly engaged with lugs.

E. TO REPLACE METER cont.

10. Push resin tank back to the plumbing connections and engage meter ports with by-pass valve or yoke.
11. Attach two clips and screws at by-pass valve or yoke. Be sure clip legs are firmly engaged with lugs.
12. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
13. Check for leaks at all seal areas.
14. Plug electrical cord into outlet.
15. Set time of day. Make sure the control valve is in the service position.
16. Rotate program wheel counter-clockwise until it stops at regeneration position.
17. Start regeneration cycle manually if water is hard.
18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

F. TO REPLACE METER COVER AND/OR IMPELLER

1. Unplug electrical cord from outlet.
2. Turn off water supply to conditioner:
   a. If the conditioner installation has a “three valve” by-pass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
   b. If the conditioner has an integral by-pass valve, put it in the by-pass position.
   c. If there is only a shut-off valve near the conditioner inlet, close it.
3. Relieve water pressure in the conditioner by putting the control in the backwash position momentarily. Return the control to the service position.
4. Pull cable out of meter cover.
5. Remove four screws on cover
6. Lift cover off of meter module, discard O-ring.
7. Remove and inspect impeller for gear or spindle damage, replace if necessary.
8. Apply silicone lubricant to new O-ring and assemble to the smallest diameter on meter cover.
9. Assemble cover to meter module. Be sure impeller spindle enters freely into cover. Press firmly on cover and rotate if necessary to assist in assembly.
10. Replace four screws and tighten.
11. Return by-pass or inlet valving to normal service position. Water pressure should now be applied to the conditioner, and any by-pass line shut off.
12. Check for leaks at all seal areas.
13. Plug electrical cord into outlet.
14. Set time of day. Make sure the control valve is in the service position.
15. Rotate program wheel counter-clockwise until it stops at regeneration position.
16. Start regeneration cycle manually if water is hard.
17. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

Pure Water Treatment, Inc. 10 YEAR WARRANTY FOR RESIDENTIAL APPLICATIONS

Congratulations on the purchase of your *PURE TECH Water System.* *PURE WATER TREATMENT, INC.* warrants its products to be free from defects in material and workmanship according to the following terms and conditions:

What is Covered?

I. ***The PURE TECH 2200 series.***
10 YEARS ON PARTS

II. ***The PURE TECH 1000 R.O. System***

A. ***Installed following a PURE TECH 2200.***
10 YEARS PARTS
5 YEARS ON THE REVERSE OSMOSIS MEMBRANE

B. ***Installed separately.***
10 YEARS PARTS
3 YEARS REVERSE OSMOSIS MEMEBRANE

Who is Covered?

This product warranty is transferable to a subsequent owner. The only requirement is that the system must remain at the site of original installation.

Extension of Warranty to a Subsequent Installation

The ORIGINAL OWNER may move the system to another location. The influent water quality at the subsequent location MUST, however, be within your system's operating specifications. Please contact a local authorized PURE TECH dealer prior to installation at another location.

Registration and Service

To place your system under warranty, your authorized PURE TECH dealer should complete the owner's registration form and return one copy to: PURE WATER TREATMENT, INC., P.O. Box 730486, Ormond Bch, FL 32173-0486, within 30 days of the installation date. For service under this warranty, you should contact the dealer. Retain a copy of this warranty for reference if service is necessary.

Limits on this Warranty

Your system must be sold to you by an authorized PURE TECH dealer in order to receive coverage under this warranty. Additionally, this warranty does not cover products installed for commercial, industrial, institutional or multi-family applications.

The design of the overall treatment system and performance of your system is related to the chemistry of the water being treated; therefore, <u>This warranty is limited to the equipment manufactured and distributed by PURE WATER TREATMENT, INC.</u>

This Warranty does not include damage to your system due to:

- ***Abuse, misuse or neglect***
- ***Excessive pressure (over 100 psi for a PURE TECH 1000 R.O. system, or 125 psi for all other PURE TECH systems)***
- ***Excessive water temperature (over 100° for a PURE TECH 1000 R.O. system, or 120° for all other PURE TECH systems)***
- ***Freezing, alterations or misapplication***
- ***A change in the influent water characteristics***

Your equipment must be installed and operated in accordance with your owners manual's recommendations and applicable state and local codes.

No Other Warranties

There is no other express warranty. Implied warranties including any warranty of merchantability or fitness for a particular purpose, are limited to the duration of this warranty and are excluded to the extent permitted by law. There are no warranties other than those contained herein. In no event shall the company be liable for indirect, special or consequential damages in connection with the use of the system.

Modification of the Warranty

PURE WATER TREATMENT, INC. does not authorize any other person to assume for PURE WATER TREATMENT, INC. any other liability in connection with this product.

The dealer has no authority to make any representations on behalf of PURE WATER TREATMENT, INC. or to modify the terms of this warranty in any way.

Pure Water Treatment, Inc.
P.O. Box 730486
Ormond Beach, FL 32173-0486
OFFICE 1-888-989-*PURE* · FAX 1-877-219-*PURE*
"Our Reputation Is Worth More Than Money"