# Installing Water Softener
# FLECK 9000

Presented by
Glass Water Systems
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# Purchasing Installation Materials

This can be done before the unit arrives. This list is broken down for either a customer using copper or pvc pipe. Therefore, the list will vary depending on your plumbing material that you use for the connection. Also, this list may be added to and is based on installing the unit on 3/4” plumbing. If you are installing on 3/4" plumbing just substitute this for 3/4”. The same applies for if you are using CPVC, Sch 80 , or PVC. This is strictly a guide and you can purchase less or more of the supplies depending on your situation. Always feel free to call us with any questions about installation at **1-877-345-2770**

**PVC installation:**

1. 20’ – 40’ 3/4" OR 1" PVC pipe
2. 20’ – 60’ ½” PVC pipe or 5/8” Poly Tubing
3. 10 - 3/4" OR 1" 90s PVC
4. 4 - 3/4" OR 1" 45s PVC
5. 5- 3/4" OR 1" Couplings PVC
6. 2 – 3/4" OR 1" Tees (Optional for Hard Water Faucet)
7. 2- 3/4" x ¾” Slip x Thr Bushing OR 1" X ¾” Slip x Thrd
8. 1- ¾” Hose Bibb
9. 1-3/4" or 1" Ball Valve (Optional for shut-off on entire system
10. 2- ½” PVC Female Adapter
11. 10 – ½” 90s PVC
12. 5 – ½” Couplings PVC
13. Rain & Shine Glue / CPVC Glue
14. Pipe Cleaner
15. Teflon Tape

**If you have additional items you would recommend please call us – improvement and customer satisfaction is our goal.**

**Copper installation:**

1. 10’ – 20’ 3/4" L hard copper pipe
2. 20’ – 60’ ½” PVC pipe or 5/8” Poly Tubing
3. 6 - 3/4" 90s Copper
4. 4 – 3/4" Female Adapters Copper
5. 2 - 3/4" 45s Copper
6. 5- 3/4" Couplings Copper
7. 2 – 3/4" Tees (Optional for Hard Water Faucet)
8. 2- 3/4" x ¾” Slip x Thr Bushing
9. 1- ¾” Hose Bibb
10. 1-3/4" Ball Valve (Optional for shut-off on entire system
11. 2- ½” PVC Female Adapter
12. 10 – ½” 90s PVC
13. 5 – ½” Couplings PVC
14. Lead Free Soder
15. Flux and Brush
16. Sand Cloth

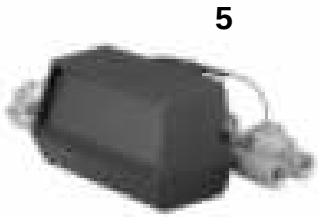
**If you have additional items you would recommend please call us – improvement and customer satisfaction is our goal.**

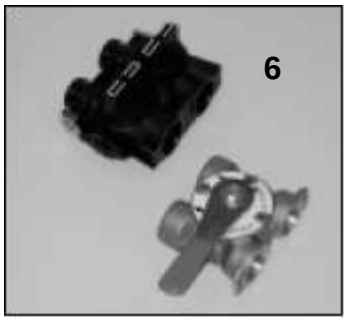
# Inventory Contents

It is probably the most important thing to do the day your receive your package. This unit will either be drop shipped from our main supply warehouse in Florida or from our numerous nation wide suppliers. We use this method to keep the cost of shipping low for the customers. The unit may come in numerous packages. The Glass Water Systems representative will inform you of the number of packages. Also, you need to keep all packages if the unit is damaged in shipping and call us immediately. We need this to file a claim with the shipping company.

1. 1- Fiberglass Media Tank **TWO** (8x44, 9x48, 10x47,12x52) depends on the system you orderd
2. 2-Distributor Tube and Basket
3. High Capacity Resin- **X TWO**
    1. 24K Unit = ¾ Cu Ft Bag
    2. 32K Unit = 1 Cu Ft Bag
    3. 40K Unit = 1-1/4 Cu Ft Bag
    4. 48K Unit = 1-1/2 Cu Ft Bag
    5. 64K Unit = 2 Cu Ft Bag
4. Gravel (Optional)
5. Fleck 9000 Control Valve
6. Bypass
7. Piping Boss
    1. 3/4“ – 1” NPT
    2. ¾”-1" Female Brass
    3. ¾” - 1" Brass Sweat
8. Brine Tank
9. 3/8” Brine Line







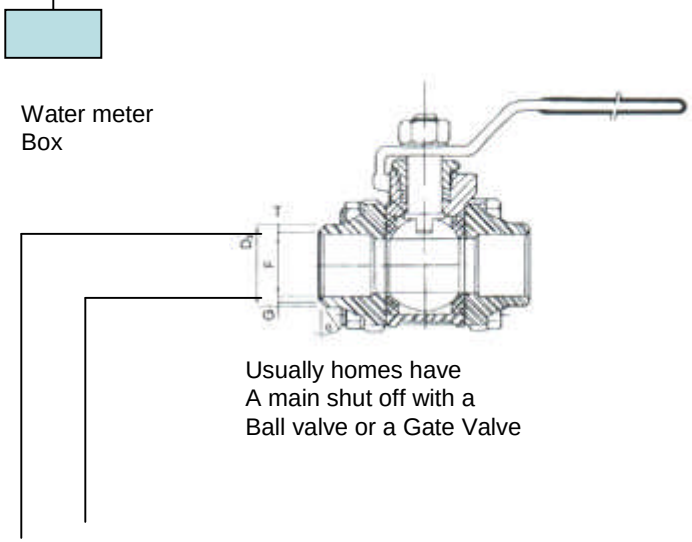
# Determining where to install the unit

This is the portion where you decide where to install you water softener. You need to make sure that you follow your local plumbing codes. This information will serve as a guide to help you with this process. We encourage you to call with any questions about placement **1-877-345-2770.**

You need to first find the main coming into your home.

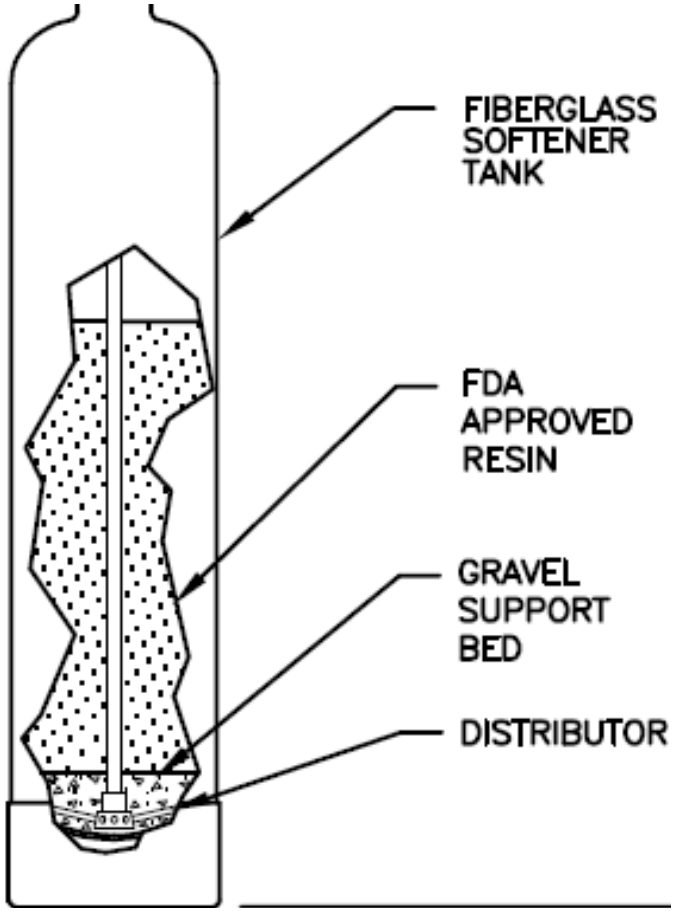
1. Locate your water meter
2. This is usually the side of the house it comes in on
3. Most Homes have a L shaped pipe going into the side of the home.
4. Once you have found this you need to dig down and locate the pipe to tie into.

1. Electric
   1. Try and find an outside socket.
   2. If you have to run a further distance than you have cord – you can slice in and extend the line.
   3. You can also drill a hole through the wall and fish it through.
2. Drain
   .. You can either use a sink, an outside drain, or dig a hole approximately 24-36” and fill with rock The hole needs to be about 12-18” in diameter



# BEDDING THE UNIT AND PREPARING FOR INSTALLATION

1. Put the Distributor Tube into the tank and tape the opening of the pipe. You cannot get resin or gravel inside the distributor tube.
2. Get a bucket 5 gallon type and cut a hole that will fit over the tank – Tape the Sides. Or use the funnel provided with the package (optional)
3. Fill the tank with the large gravel first and then the fine gravel. You may have no gravel or just one bag of gravel. If you do not have gravel do not worry about it.
4. Put the ¾, 1, 1.25, 1.5, or 2 Cu Ft of Resin in the tank
5. Remove the tape
6. Clean the threads of any resin etc. This will possibly make the valve not seat correctly
7. Take the Valve and screw back on the tank – be careful not to cross-thread the tank. We usually go backwards until it locks in and then tighten it down.
8. After you have the valve on take it and place it where you want it.
9. **<u>YOU NEED TO FILL BOTH TANKS WITH WATER – THIS WILL HELP DURING START-UP</u>**



# Installing the Inlet / Outlet

1. Find the main line to your home to install the inlet and outlet. This is usually located on the same side of the house as your water meter.
2. Once you have found the main line you need to cut it and install 2 90s.
3. Turn your water off at the meter or main shut off to the house. This has to be prior to where you are installing the water softener
4. The first 90 will be the inlet to the water softener. You need sweat or glue this fitting.
5. Run the pipe (copper or pvc) up to the sweat copper fitting or pvc fitting The sweat fitting will require you use another 90 to put into the copper fitting adapter.
6. You need to either glue or sweat the fitting before connection to the fitting on the bypass
7. The brass connection fitting that has to be sweat or glued is item 1 in both drawing below.
8. Once you have done this you will follow the procedures on installing the fitting adapters. These are items a and b.

Item 1

# Installation Procedures

1. Place the softener tank where you want to install the unit.

NOTE: Be sure the tank is level and on a firm base.

2. During cold weather it is recommended that the installer warm the valve to room temperature before operating.
3. Perform all plumbing according to local plumbing codes.

— Use a 1/2" minimum pipe size for the drain.

— Use a 3/4" drain line for backwash flow rates that exceed 7 gpm or length that exceeds 20' (6 m).

4. Both tanks must be the same height and diameter and filled with equal amounts of media.
5. The distributor tube must be flush with the top of each tank. Cut if necessary. Use only non-aerosol silicone lubricant.
6. Lubricate the distributor o-ring seal and tank o-ring seal. Place the main control valve on one tank and the tank adapter on the second tank.

NOTE: If required, solder copper tubing for tank interconnection before assembling on the main control valve and tank adapter. Maintain a minimum of 1" distance between tanks on final assembly.

7. Solder joints near the drain must be done before connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6" (152 mm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to DLFC.
8. Use only Teflon tape on the drain fitting.
9. Be sure the floor under the salt storage tank is clean and level.
10. Place approximately 1" (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air check in the salt tank. Do not add salt to the brine tank at this time.
11. On units with a bypass, place in Bypass position.
— Turn on the main water supply.

— Open a cold soft water tap nearby and let water run a few minutes or until the system is free of foreign material (usually solder) resulting from the installation. Close the water tap when water runs clean.

12. Place the bypass In Service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let water run until air is purged from the unit. Then close tap.

Electrical

13.Make all electrical connections according to codes. Plug the valve into an approved power source. Do not insert meter cable into the meter yet.

14.Tank one has control valve and tank two has adapter. See Figure 1 .

15.Look on the right side of the control valve, it has indicators showing which position the control valve is in during Regeneration and which tank is In Service.

— Figure 2 shows the valve In Service position with tank one supplying conditioned water and tank two on standby.

NOTE: Make sure the meter cable is not inserted in the meter dome. Swing the timer out to expose the program wheel (to swing timer out) grab onto the lower right corner of timer face and pull outward. See Figure 3

Figure 1

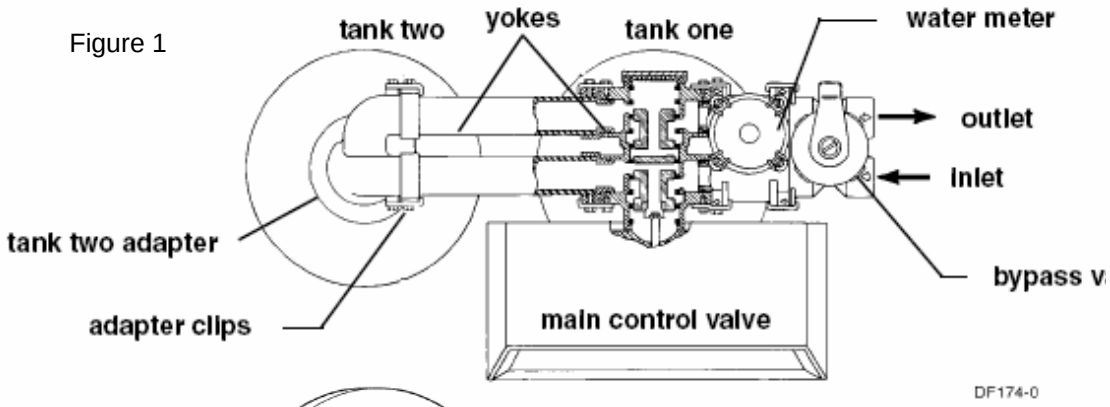



Figure 2

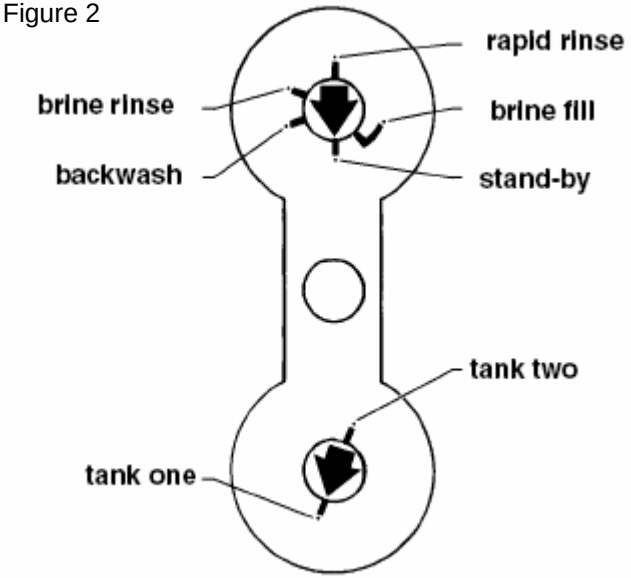
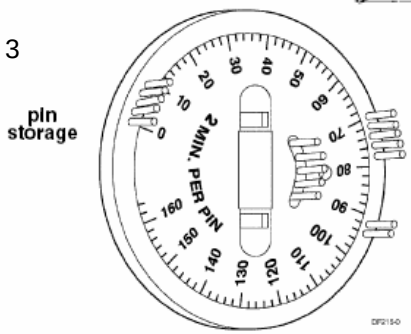



Figure 3



Setting the Regeneration Cycle Program

The Regeneration cycle program on the water conditioner is preset at the factory. However, portions of the cycle or program time may be lengthened or shortened for local conditions or system design.

1.Expose cycle program wheel by grasping timer in lower right hand corner and pulling. This releases snap retainer and swings timer to the left

NOTE: Meter cable must be removed from meter dome before opening timer.

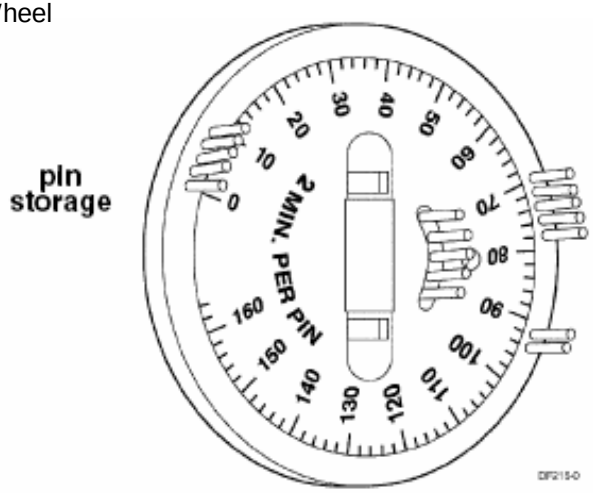
2.Remove the program wheel by grasping program wheel and squeezing protruding lugs towards center. Lift program wheel off timer.

— Switch arms may require movement to facilitate removal.

3.Return timer to closed position by engaging snap retainer in back plate.

— Make certain all electrical wires locate above snap retainer post.

Program Wheel



Changing Length of the Backwash Time

The program wheel is In Service position. Looking at the numbered side of the program wheel, the group of pins starting at zero determines the length of time the unit backwashes.

Example: If there are six pins in this section, the time of backwash is 12 minutes (2 minutes per pin). To change the length of backwash time, add or remove pins as required.

— The number of pins multiplied by two equals minutes of backwash.

Changing Length of Brine and Rinse Time

The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that a unit will brine and rinse (2 minutes per hole).

To change the length of brine and rinse time, add or remove pins in the rapid rinse group of pins to increase or decrease the number of holes in the brine and rinse section.

— The number of holes multiplied by two equals minutes of brine and rinse.

Changing Length Of Rapid Rinse

The second group of pins on the program wheel determines the length of time the water conditioner rapid rinses (2 minutes per pin). To change the length of rapid rinse time, add or remove pins at the higher numbered end of this section as required.

— The number of pins multiplied by two equals minutes of rapid rinse.

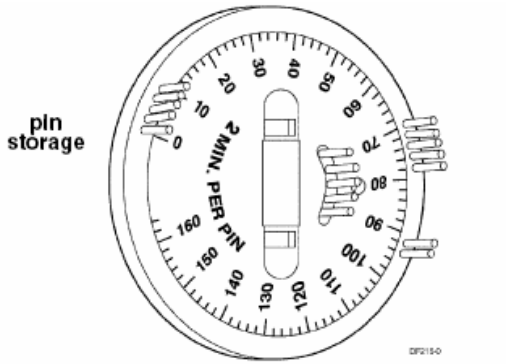
NOTE: Program wheels with 0-82 minute cycle times, use one minute per pin or hole to set Regeneration times. The layout of pins and holes on the program wheel follow the same procedure as on this page.

Changing Length of Brine Tank Refill Time

The second group of holes on the program wheel determines the length of time the water conditioner refills the brine tank (2 minutes per hole).

To change the length of refill time, move the two pins at the end of the second group of holes as required.

The Regeneration cycle is complete when the two pin set at end of the brine tank refill section trips the outer micro-switch. The program wheel, however, continues to rotate until the inner micro-switch drops into the notch on the program wheel.



Program Wheel

Time Brine Refill and Meter Setting Procedure

Programming

1. The control valve is set at the factory for backwash; brine and slow rinse; rapid rinse and brine tank fill times.
Change any of these times by repositioning the pins and holes or adding more pins.
NOTE: Two speed timer motors are available

1/15 RPM has 82 minute Regeneration Time and each pin or hole equals one minute.
1/30 RPM has 164 minute Regeneration Time and each pin or hole equals two minutes.

2. The control valve has a separate brine tank fill cycle.

— Calculate the desired salt setting using the brine line flow control rate of refill (in gpm) multiplied by the timer setting. Then, using one gallon of fresh water dissolving approximately 3 lbs salt, calculate the refill time.

Example: A desired 30 lbs salt setting:

The unit has a 1.0 gpm refill rate so a 10 gallon fill is required.

10 gallons x 3 lbs/gals = 30 lbs salt

Set the timer refill section at 10 minutes.

10 minutes x 1.0 gpm = 10 gallon fill

NOTE: There must always be two pins at the end of a refill time to stop the fill cycle.
With the Regeneration times set, place timer back to its original position, making sure the lower right hand corner snaps back into the backplate and the meter cable slides through the backplate and does not bind.

Program Wheel

3. Setting the gallon wheel.

Knowing the amount of resin in each tank and the salt setting per Regeneration, calculate the gallons available, using the following capacities as a guide:

(capacity per ft3 x ft3 of resin per tank)
= gallons available
compensated hardness of H2O

NOTE: Based on tank size:

More resin increases capacity, less resin decreases capacity. More salt increases capacity, less salt decreases capacity.

Example:

tank diameter
compensated hardness
ft3 resin (based on flow rate)
lbs of salt
capacity per ft3
(24,000 x 4 ft3 of resin per tank)
35 grains
DO NOT SET THIS FIGURE - GO TO STEP 4

3. Setting the gallon wheel.

Knowing the amount of resin in each tank and the salt setting per Regeneration, calculate the gallons available, using the following capacities as a guide:

(capacity per ft3 x ft3 of resin per tank)
= gallons available
compensated hardness of H2O

NOTE: Based on tank size:

More resin increases capacity, less resin decreases capacity. More salt increases capacity, less salt decreases capacity.

Example:

tank diameter
compensated hardness
ft3 resin (based on flow rate)
lbs of salt
capacity per ft3
(24,000 x 4 ft3 of resin per tank)
35 grains
DO NOT SET THIS FIGURE - GO TO STEP 4

= 16"
= 35 grains per gal (tested sample)
= 4
= 8
= 24,000
= 2740 gallons available before regeneration

— Because the control valve regenerates with soft water from the other tank, subtract the water used for Regeneration. Take each Regeneration cycle and calculate the water used.

Example: Unit is set for a 16" diameter tank with 4 ft3 of resin and salted at 8 lbs. per ft3, 7 gpm backwash, #3 injector, 1.0 gpm brine refill, and 60 psi and timer set for 10 min. backwash, 60 min. brine and rinse, 10 min. rapid rinse, 10 min. brine tank fill.

| | | | |
|---|---|---|---|
| Backwash | 10 minutes x 7.0 gpm = | 70.0 gallons | |
| Brine and Rinse | 60 minutes x 1.0 gpm = | 60.0 gallons | |
| Rapid Rinse | 10 minutes x 7.0 gpm = | 70.0 gallons | |
| Brine Tank Fill | 10 minutes x 1.0 gpm = | 10.0 gallons | |
| Total Regeneration Water = | | 210.0 gallons | |

With the 2740 gallons available calculated in Step 3, subtract the Regeneration water used from the total water available.

| | | | |
|---|---|---|---|
| 2740 gallons available | - | 210 gallons used = | 2530 gallons |

(in Regeneration, Step 4)

4. Set meter wheel at approximately 2530 gallons. Lift the inner dial of the meter program wheel so that you can rotate it freely. Position the white dot opposite the 2530 gallon setting.

NOTE: There is a slight delay between the time the meter zeros out and the cycle starts. Units using the: 1/15 RPM motor, 82 minute Regeneration Time has a 9 minute delay
1/30 RPM motor, 180 minute Regeneration Time has an 18 minute delay.
This delay period is not critical on residential equipment. However, take this factor into consideration for commercial applications by subtracting continuous flows for 9 minutes or 18 minutes from water available.

5. Insert meter cable into meter.
6. Check bypass.
7. Plug in unit.

# Starting up the system

1. Once all this is installed – let the glue dry
2. **CHECK FOR LEAKS**
3. Open the inlet side valve and slowly let water in
4. Once pressurized open the outlet valve
5. Turn The Knob in figure A clockwise and start backwashing tank #1 – Let the unit complete the cycle
6. Go inside and start running your hot water – this will let you have immediate soft water
7. Please call us with any questions 1-877-345-2770