WATER SOFTENER ASSEMBLY INSTRUCTIONS

We think installing our softeners is very easy (if you are somewhat mechanically inclined and have a little experience doing basic plumbing).

Note:
If you have an electric water heater we recommend that you turn off the electricity to the heater while installing softener. Once you are satisfied with the installation, turn on a few hot and coldwater faucets, and let them run. Once you are certain that there is no more air in your pipes, then turn the electricity back on to the water heater.

Your kit should include:

- Tall fiberglass mineral tank with distributor tube (or Turbulator tube, if ordered)
- Box(es) of resin
- Small box of gravel under bed (only on 2 cubic foot units)
- Large funnel for pouring media into tank
- Brine tank with 3/8" connecting tube
- Autotrol control valve
- Autotrol by-pass valve assembly
- Tailpieces for valve – either copper or CPVC as specified
- Autotrol Manual

Step 1:
Location of your softener is important. It should be in a level and non-freezing area (34-120 degrees F). See manual for more details. The 2 tanks should be set close to each other. The square tank with the black lid is your brine tank (for softener salt or potassium chloride) and it is the tank that you will have to refill sometimes, so make it the more accessible of the 2 tanks. Do not put salt in this tank until you have put the softener into service and have tested the cycles.

Step 2:
You will need a standard outlet that is not controlled by a switch, which can be 50 feet from your softener.

Step 3:
You will need a drain for the backwashing cycles. This should be no longer than 20 feet from the softener. Refer to the Autotrol manual for exceptions and more details. You will need to purchase this flexible 1/2 i.d. plastic pipe (can be vinyl, polyethylene polybutylene, etc. and same size will be used in step 8). This backwashing drain line will be under pressure when the backwash cycle is working. Make sure the drain line is secured. The drain line will need to drain into a drain, which should be a minimum of 1 1/2" size, and ideally be below the top of the head of your softener. Local codes should be adhered to.
Note: Never connect the drain line directly into a drain. Allow an air gap between the drain line and waste line to prevent possibility of back- siphoning.

Step 4:
Once you have determined the exact location of your softener, it is time to fill the media/mineral tank (taller of the 2) with the furnished media (looks like brown tiny beads and has a consistency of wet sand).
The distributor tube should be in the mineral tank - screen intake would be at the bottom; open end will be at the top. The open end should be sticking 1 1/4" out of the mineral tank. The screen intake should be resting on the bottom, centered.
There should be a plug in the open end of the distributor tube. This is to keep any media from falling into the distributor tube while pouring the media into the mineral tank.

Place the funnel (provided) into the mineral tank, and begin to put the resin into the mineral tank. Be careful to keep the distributor tube centered as best you can, while filling. There should only be enough resin to fill the tank about ½ to 2/3 full, but all the resin should be used. The mineral tank should not be filled to the top. It is necessary for the media to have room to move during the backwash cycle. An easy (but slower) way to fill the mineral tank is to take a small scoop and pour the media into the funnel. The resin beads tend to stick to the funnel so by filling slowly the media will go into the tank easier. NOTE: larger units will have a gravel underbed – pour this in before the resin.

Once the filling of the mineral tank is completed, carefully remove the plug from the distributor tube. Do not pull upwards on the distributor tube.

The control valve (head) now must be screwed onto the mineral tank (be sure the large O-ring is in place). As you start to screw the control valve onto the tank, make sure the hole in the center of the control valve fits over the distributor tube. NO pipe dope or Teflon tape should be used on the threads. The control valve should be hand tightened, snugly, clockwise.

Step 5:
You are now ready to install the bypass valve to the control valve. Follow the instructions in the box. The in and out arrows on the bypass valve should be pointing the same direction as the in/out arrows on the outside of the control valve. The arrows are molded into the plastic on both the bypass valve and the control valve.

Step 6:
Water connections to and from softener will now be connected to the bypass 1 1/4"IPS male threads by using the two 1 1/4" Female nuts provided. Slip one 1 1/4" female nut over one of the flanged tailpieces, so that the tube is sticking through the nut and the flanged piece is resting on the inside of the female threaded part of the nut. Use one 1 3/4" o.d. rubber washer to fit into the female part of the nut on top of the flanged tailpiece and screw the nut onto the 1 1/4" IPS male threads on the control valve. Do the same for the other side.

Step 7:
Between the valve and the brine tank you will need to connect the furnished 3/8” O.D. tubing. One end is to the fitting on the clear air check (255 valve only) or 3/8” fitting on the valve, and the other end attaches to the elbow fitting inside the brine tank. Pass the tubing through the hole and connect the fitting entirely inside the brine tank. **Do not use the fitting in the brine tank as a “bulkhead” fitting (i.e. fastening the nut on the outside of the brine tank) – it must be connected entirely inside the brine tank.** Hand tightening is all that should be needed.

Step 8:
Brine tank Overflow. Attach 1/2" i.d. plastic tubing to the fitting from the brine tank and run to a drain. This drain line will not be under pressure. DO NOT tie into the backwash drain line! This line should be higher than your drain line. Overflow drain line must be a separate line from fitting to the floor-drain, sewer, tub, etc.

Now follow the instructions in the Autotrol manual for putting the softener into service.

NOTES ON SALT: Your brine tank will hold about 250 pounds of softer salt (about six 40-lb bags, or five 50-lb bags. We recommend a high quality pellet-type salt – look for a low "insoluble" level (insoluble is a nice word for dirt). Potassium chloride salt substitute can be used as well, with no adjustments needed. **DO NOT ADD SALT UNTIL YOU HAVE COMPLETED THE SECTION ON PUTTING THE UNIT INTO SERVICE!**

NOTES ON PROGRAMMING:
Logix 760 Controls –
To program the Logix control you simply need to enter in the amount of resin in cubic feet (see the Logix Series Installer Quick-Start Sheet, Step 1). The 32 Kgr units are 1.0 cubic foot, the 48 KGr are 1.5, and the 64 KGr are 2.0. In step 5, we recommend the Standard Salt (or "S") setting for most applications.

460i Controls –
You will need to program three items into your Autotrol computer control: current time, capacity, and water hardness. You also need to set the salt dial to the proper setting (except Logix and 960). Refer to your manual for details.

When setting the capacity, you can take advantage of better salt efficiencies by setting them at a lower capacity than the peak. It will regenerate slightly more often, but the salt savings (up to 60% less salt) make it worth it. The chart in the Autotrol manual will show you the options.

One cubic foot (1.0 ft3) units have a peak capacity of **32,000** grains. We suggest that you program **"24"** (for 24,000 grains) and the salt setting to **8.5**.

One and a half cubic foot (1.5 ft3) units have a peak capacity of **48,000** grains. We suggest you program the capacity to **"35"** and set the salt setting to **12** (set it at **6** on **460i** units –they have the "XS" extra salt cam which doubles the amount of salt – you need to cut the amount shown in the chart in half).

Two cubic foot (2.0 ft3) units have a peak capacity of **64,000** grains. We suggest you program the capacity to **"40"** and set the salt setting to **12** (set it at **6** on **460i** units –they have the "XS" extra salt cam which doubles the amount of salt – you need to cut the amount shown in the chart in half).

If you do not know your **hardness number**, call your water department, or send us a water sample. If your water department gives you the hardness number in milligrams per liter (mg/l) or in parts per million (ppm) you need to convert it to grains per gallon by dividing the number by 17.1.

Other Notes:
If using copper pipe, we recommend using type L copper. Type L is thicker than type M copper.

Caution: A common problem for beginners when soldering onto the copper tailpieces is overheating them, melting the plastic nuts that connect to the bypass valve. We recommend that you wrap a wet rag

around the nuts and tailpieces to keep the heat away. Also use care when tightening the tailpiece nuts so you do not crack them!

Important: Be sure you double-check the inlet and outlet arrows on your softener before soldering!
Remember that your pipes and water heater contain hard water, so it will take a few days until your water is 100% soft. Draining your water heater can hasten this. This also will remove any build up sediment (you are supposed to do this annually).

Remember to now not use as much soap for dishwashing, laundry, etc. etc. No need for it! Many people report needing to use only about 1/3 to 1/2 as much as they previously needed.

Remember to check with local code officials and install per local code.