

Installing CASCADIAN[®] Softeners

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Please call or e-mail if there are questions.

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Your CASCADIAN[®] softener comes with a control valve manual that should explain all necessary detail required for successful installation and operation of your system. Installation procedures are similar for many of our available water softening systems, but some models are installed in a slightly different fashion and may have different control valve programming/setting procedures than as described below. You should always refer to the manual supplied with your softener during installation and programming.

General water softener installation.

If you are mechanically inclined and have a little experience doing basic plumbing, installing a water softener can be very easy. These instructions are lengthy and detailed, but we want our customer's installation experience to be a pleasant one and want our customers to be satisfied with their own "professional" installation.

- If you have an electric water heater, we recommend that you turn off the electricity to the heater while installing the softener. Once you are satisfied with the installation, turn on a few hot and cold-water faucets, and let them run. Once there is no more air in your pipes, then turn the electricity back on to the water heater.
- The softener system can safely handle a pressure range of 25-95psi; however, like most residential plumbing, for best operation and least wear on critical parts, we recommend an operating range of 45-55psi.

Step 1:

The location of your softener is important. It should be in a protected dry, level and non-freezing area (34-120 degrees F). If you have purchased a two tank unit (rather than a single tank cabinet model), the brine tank and resin tank should be placed close to each other. The larger of the two tanks is your brine tank (for softener sodium chloride or potassium chloride salt) this is the tank that you will have to refill, so be sure to make it the more accessible of the two tanks.

Step 2:

You will need a standard 3-prong, 120V, grounded outlet that is not controlled by a switch. The supplied power cord will reach an outlet up to 6 feet away. The outlet can be up to 50 feet from your softener. An extension cord may be used. A 14/3 (or larger) extension cord is preferred.

Step 3:

You will need a drain for the regeneration and/or backwashing cycles. If possible, the drain should be no farther than 20 feet from the softener. The softener is set-up to use flexible tubing as the drain line. You will need to purchase this flexible 5/8" diameter (1/2" inside diameter) plastic tubing from your local hardware or building supply store. The tubing can be vinyl, polyethylene, polybutylene, etc. The same size tubing will be used in step 8.

The drain line will be under pressure when the regeneration/backwash cycle is working, therefore make sure the drain line is secured with a hose clamp on the softeners drain fitting and with pipe clamps to the wall. The drain line will need to dump into a drain that is a minimum diameter of 1 1/2" and ideally be below the top of the head of your softener. All local building codes should be adhered to.

Note: Never connect the drain line directly into a drain. Allow an air gap between the drain tubing and waste line to prevent the possibility of reverse siphoning. Often times, a washing machine drain is conveniently located and can be used.

Step 4:

Once you have determined the exact location of your softener it is time to fill the media/mineral tank (smaller of the 2 tanks) with the furnished media (looks like brown/yellow/tan tiny beads).

- Put the distributor tube into the tank, the screen intake will be at the bottom and the open end will be at the top (Figure 1).
- The open end should be flush with the top of the mineral tank (Figure 2). If necessary cut the distributor tube to the correct length and round off the edge with a file or sand paper. The screen intake should be resting on the bottom and centered.



Figure 1

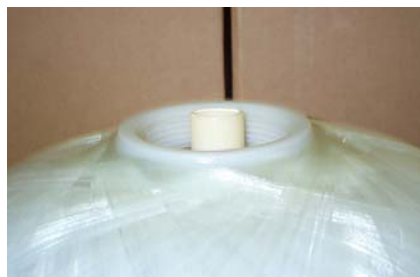


Figure 2



Figure 3

- Use masking tape or scotch tape to tape over the open end of the distributor tube. This is to keep any media from falling into the distributor tube while pouring the media and gravel under bedding into the mineral tank (Figure 3).
- Place a funnel into the mineral tank, and begin to slowly pour the gravel (**if included with system**) into the mineral tank, there should be enough gravel to cover the screen intake (Figure 4).



Figure 4

- After filling with the gravel under bedding add the softener resin. While filling, be careful to keep the distributor tube centered as best you can. There should only be enough media to fill the tank $\frac{1}{2}$ to $\frac{3}{4}$ full. 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 media beads tend to stick to the funnel, so by filling slowly, the media will go into the tank easier. If you try to fill too fast, you will probably have difficulties.
- Once the filling of the mineral tank is completed, remove the tape from the distributor tube. Do not pull upwards on the distributor tube.

Step 5:

Attach the upper basket to the bottom of the control valve (**Figure 5**).



Figure 5

Step 6:

The control valve now must be screwed onto the mineral tank. Before screwing the head onto the tank be sure to lube the inner o-ring (you may use plumbers grease, silicon or soap as a lubricant but never Vaseline!). 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 should be used on the threads. The control valve should be hand tightened, snugly, clockwise. Try not to over tighten the control valve, over tightening can make future removal difficult. (**Figure 6**)



Figure 6

Step 7:

You are now ready to install the bypass valve to the control valve (head). The in and out arrows on the bypass valve should be pointing the same direction as the in and out arrows on the outside of the control valve. The arrows are molded into the Noryl (plastic) or brass on both the bypass valve and the control valve. The Noryl bypass valve has two (2) male socket ends (1" IPT threads). The brass bypass valve has two (2) female socket ends (1" IPT threads). Use caution when inserting o-ring fitted adapter into valve and bypass you may wish to lubricate these o-rings (you may use plumbers grease, silicon or soap as a lubricant but never Vaseline!). Tighten the screws until the stainless clamps are seated on both valve and bypass, but be sure not to over tighten. (Figure 7)

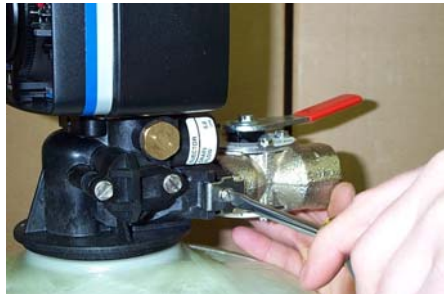


Figure 7

Step 8:

Water connections to and from softener will now be connected to the bypass. When using copper pipe please pre-solder 6" to 8" fittings on your adapters. When fittings are cool use Teflon tape and pipe dope on adapter fittings. Caution: A common problem for beginners is soldering copper fittings while connected to the bypass DO NOT DO THIS! This can damage the bypass valve. The important thing is not to overheat the bypass. If you have to solder your water connections you can wrap the bypass with a wet towel during the soldering process for an additional measure of safety.

Step 9:

Between the two tanks you will need to connect the furnished brine tube. It will be necessary to connect the tube brine well elbow to the control head (refer to control manual for location).

Step 10:

Brine tank overflow. Attach 3/8" diameter 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! The overflow drain line must be a separate line from fitting to drain, sewer, tub, etc. This is a safety overflow drain and will not be in use under normal operation and should not be installed higher than fitting on brine tank. Depending on your installation, running the drain tubing to an open basement floor drain is sometimes possible.

Step 11:

With a bucket or hose, pour approximately 4-5 gallons of water into the brine tank. The exact level is not critical.

Step 12:

Refer to the manual that was supplied with your softener for detailed instruction on how to set up and program your specific control valve.

Plug control valve power cord into the power outlet following guidelines described in Step 2.

Step 13:

Purchase softener sodium chloride or potassium chloride salt (DO NOT USE ROCK SALT!) and put only 40 lbs in the brine tank at this time. The tank will hold a large quantity of salt, so you won't have to refill at frequent intervals. You can fill the brine tank with additional sodium chloride or potassium chloride salt after your system is successfully installed and operating trouble-free. NOTE: After successful installation add remaining salt. Do not allow the salt level to fall below the water level in the brine tank.

Step 14:

Make sure the main water supply is off. Manually set your softer to first stage of regeneration (backwash) water supply off, place the bypass valve into the service position. Open the water supply valve very slowly to approximately the 1/4 open position. In this position, you should hear air escaping slowly from the drain line. CAUTION: If opened too rapidly or too far, some mineral (resin) may be lost and plugging of the valve is possible. When water begins to flow steadily from the drain, signifying the air has been purged from the tank, open the main water supply valve all the way. Let the unit run through a complete backwash cycle. This will allow the softener salt (or potassium chloride) to be introduced into the mineral tank so it can begin to soften your water.

Step 15:

Check for leaks and tighten any loose fittings.

Step 16:

After the backwash cycle is complete, (it takes approximately one hour) observe the water in the brine tank. The water level should be the same as when the cycle started. If the water level is extremely higher or lower, then see the "Trouble Shooting" section in the control valve manual. If the water level is about the same, go ahead and finish filling the brine tank with salt or potassium chloride. You can now enjoy your soft water!

Additional Notes:

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

We highly recommend that you install a surge protector before the power supply. As in the case of most electronic devices, the power supply is susceptible to damage by power surges. For quite some time your pipes and water heater might give off some hard water as the accumulated deposits exchange back into the now soft water. Drain your heater at least once a week until you get no more sediment.

With soft water, remember not to use as much soap for dishwashing, laundry, etc. Many people report needing to use only about 1/3 to 1/2 as much as they previously needed.

Remember to check with local building code officials and do your installation per local codes. Please work slowly and carefully for personal safety and a proper installation!