



# Installing CASCADIAN<sup>®</sup> Backwashing Filters

O<sub>3</sub> Water Systems Inc.

Please call or e-mail if there are questions.

(360) 794-9511, [info@o3water.com](mailto:info@o3water.com)

**Note: These instructions apply to filters without chemical injectors.**

Large backwashing filters are simple devices. They consist of a tank filled with a filter medium, a tube called a distributor inserted into the tank, a control valve (head) to manage the flow of water through the filter and a bypass assembly to allow water to bypass the filter. All CASCADIAN<sup>®</sup> backwashing filters use the Fleck control valve, which are simple, time-proven tough performers that will give many years of trouble-free service under normal conditions. Fleck control valves are easy to install and easy to program. You should always refer to the manual supplied with your filter during installation and programming. The Fleck control valve manual will explain all necessary detail required for successful installation and operation of your valve. Installation procedures are similar for many of our available water filter systems, but some models are installed in a slightly different fashion and may have different control valve programming/setting procedures than as described below.

## General Backwashing Filter Installation

### For Filters with Bypass

If you are mechanically inclined and have a little experience doing basic plumbing, installing a water filter 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 filter. 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 filter system can safely handle a pressure range of 25-95 psi; however, like most residential plumbing, for best operation and least wear on critical parts, we recommend an operating range of 45-55 psi.

### Step 1:

The location of your filter is important. It should be in a protected dry, level and non-freezing area (34-120 degrees F).

### 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 filter. An extension cord may be used. A 14/3 (or larger) extension cord is preferred.

### Step 3:

You will need a drain for the backwashing and rinse cycles. If possible, the drain should be no farther than 20 feet from the filter. The filter 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, etc.

The drain line will be under pressure during the backwash/rinse cycle, therefore make sure the drain line is secured with a hose clamp on the filters 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 filter. All local building codes should be adhered to.

Note: Never connect the drain line from the filter 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 filter it is time to fill the media tank with the furnished under-bedding /media.

- 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**).



**Figure 1**



**Figure 2**



**Figure 3**

- 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.

- 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 (**Figure 4**), begin by slowly pouring the gravel into the mineral tank, there should be enough gravel to cover the screen intake.



**Figure 4**

- Add the filter media (if your filter has multiple layers of different media be sure to add the media in the sequence specified for your filter). 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.
- Once the filling of the 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 damage the valve or tank and make future removal difficult. (**Figure 6**)



Figure 6

**Step 8:**

Water connections to and from filter will now be connected to the bypass. Be sure to follow local plumbing codes when making plumbing connection to filter. 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:**

Refer to the manual that was supplied with your filter 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 10:**

Make sure the main water supply is off. Manually set your filter to first stage of regeneration (backwash), 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 media 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 filter to clean any dust from the media before use.

**Step 11:**

Check for leaks and tighten any loose fittings.

### **Additional Notes:**

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 sediment as the accumulated deposits exchange back into the now clean water. Drain your hot water heater at least once a week until the water runs clear (be sure to turn off the power before starting and to turn it back on when finished draining).

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!

If you have problems or questions, don't hesitate to call (360)794-9511 or e-mail [support@o3water.com](mailto:support@o3water.com)