Multi-Media & Filter AG Installation

Installation of an multi-media or filter AG system is very similar to the installation procedure used for a water softener. A water softener system contains a brine tank, while an filter does not, however, there will be a few added steps in adding the filter media and flushing of the system.

Important: If installing a filter in combination with a water softener or other equipment, always place the filter upstream of the softener.

Your **CAI** backwashing filter comes with a manual covering the control valve and system. The manual should explain all necessary detail required for successful installation and operation of your filter system. Many different valves and controls are supplied depending on which model you have purchased. Refer to the manual that was supplied with your filter for specific instructions on unit installation and programming of your control. Below we have described the basic installation steps that are common to every filter unit that uses an Autotrol clock control.

If you are mechanically inclined and have a little experience doing basic plumbing, installing a 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 25-95psi; 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 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 outlet can be up to 50 feet from your filter. The furnished 12V transformer has 10 feet of cord attached. If it is necessary to extend the length of the transformer cord, it may be spliced to a maximum of 50 feet. Basic 18/2 AWG or thicker wire may be used. Splice connectors and extension wire are not included, but are readily available at electrical or hardware stores.

Step 3:

You will need a drain for the backwashing cycles. If possible, the drain should be no farther than 20 feet from the filter. You will need to purchase this flexible 5/8” diameter (1/2” inside diameter) plastic tubing from CAI or your local hardware or building supply store. The tubing can be vinyl, polyethylene, polybutylene, etc. The drain line will be under pressure when the backwash cycle is working, therefore make sure the drain line is secured. 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. 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 a conveniently located and can be used.

Step 4:

(Only required for units that do not have the media pre-installed; otherwise, skip to the next step)

Once you have determined the exact location of your filter it is time to fill the tank with the furnished media.

Put the distributor tube into the mineral tank, the screen intake will be at the bottom and the open end will be at the top. The open end should be sticking 1 1/4" out of the mineral tank. The screen intake (or turbulator) 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 into the mineral tank.

Multi-Media

You will receive five (5) boxes, each containing a different filter media. Each box will have a number labeled on the outside which corresponds to the order in which the material is added into the tank. The contents of each box are pre-measured - you won't overfill. Place a funnel into the mineral tank, and pour the entire contents of each box as follows (from bottom to top).

1) Gravel-flint on bottom
2) 8/12 mesh garnet
3) 30/40 mesh garnet
4) Filter sand
5) Anthracite on top

Filter AG or

You will receive the correct amount of filter AG or material for the size filter you have purchased. You will also receive a quantity of gravel that is placed in the bottom of the tank first. The amount of filter AG/ and gravel is pre-measured - you won't overfill.

Place a funnel into the mineral tank, and pour the entire contents of each box as follows (from bottom to top).

1) Gravel-flint on bottom
2) Filter AG/Filter AG Plus (Turbidex)

Don't be concerned if you mistakenly add some of the filter media in an incorrect order – each layer of media has a different density, and the media will migrate to the correct position after the first automatic backwashing. While filling the bottom of the tank with gravel, be careful to keep the distributor tube centered as best you can. Once the filling of the mineral tank is completed, remove the tape from the distributor tube. Do not pull upwards on the distributor tube.

The control valve (head) now must be screwed onto the mineral tank. 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. You will also note a tank ring that is threaded onto the bottom of the valve – after the valve has been screwed down onto the tank, tighten this ring securely down onto the tank by hand to create a seal.

Step 5:

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 plastic (Noryl) on both the bypass valve and the control valve. The bypass attaches to the head with two (2) female threaded nuts found on the bypass valve. The control valve has two male threaded ends on the back of the valve these are the inlet and outlet water connections. The two female nuts on the bypass thread onto the 2 male threaded ends of the control valve. Make sure that the two (2) gaskets provided are installed inside of the female nuts on the bypass valve to insure a good seal. Tighten the screws until the bypass valve is firmly seated, but be sure not to over tighten.

Step 6:

Water connections to and from the filter will now be connected to the bypass male threads by using the two female nuts provided. Slip one female nut over one of the flanged copper 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. The two other gaskets provided fit into the female part of the nut on top of the flanged tailpiece. Screw the nut onto the male threads on the bypass valve. Do the same for the other side. Now connect your water source to the tailpieces. Located between the inlet and outlet water connection on the by-pass valve, you will find a male threaded nipple. This is the connection for your drain line. Be sure it is connected as per the instructions in step 3 (above). Depending on the size of your system, we may substitute the internal backwash

flow control with an external one. If this is the case, refer to the pictures of this control at the end of this document to see proper installation orientation. The external flow control will need to be threaded onto this nipple, with the drain line then connected to it. Note: only some systems will require this device – do not be concerned if your unit is not supplied with one.

Caution: A common problem for beginners is overheating the copper tailpiece stub-outs during the soldering process. This can melt the plastic (bakelite) nuts that connect to the Noryl bypass valve. We recommend that you solder first and then install the nuts. The important thing is not to overheat the tailpiece stub-outs. If you have to solder your water connections with the plastic nuts in place on the copper tailpiece, you can wrap the flanged part of the tailpiece (now positioned inside of the plastic nuts) in a wet towel during the soldering process for an additional measure of safety.

Step 7:

Make sure the main water supply is off. Depress the Red Pointer Knob and turn the knob counter-clockwise into the backwash position. With the 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 filter media may be lost and plugging of the valve is possible.

Step 8:

Check for leaks and tighten any loose fittings

Step 9:

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. You will notice that the water running in the drain line is slightly cloudy. This is normal, and you are now backwashing a small amount of "fine" material contained in the filter media from the bed. After the water in the drain line is running clear to the drain (this can sometimes take up to ½ hour), initiate a manual backwash by turning the red pointer knob to the indicated position, and allow the unit to run through a complete cycle.

Step 10:

Now refer to the manual that was supplied with you specific model and set the time and backwash cycle frequency as directed. We recommend that you set the filter to backwash one to two times each week. You can now enjoy you filtered water!

<u>Additional Notes:</u>

- If a water softener or reverse osmosis system is to be installed downstream of a backwashing filter, make sure that the by-pass valve on the water softener is in by-pass

during filter installation. This will guarantee that this equipment is not contaminated with an excessive amount of filter media. You can take the equipment out of by-pass when water from filter is running clear. If some amount of cloudy water from the multi-media filter media initial backwash makes its way into the home's downstream piping, do not worry – the media is non-hazardous, and opening the house faucets for a time until no cloudiness is detected in the water will solve the problem.

- If you are 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.

- 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!

- External Flow Control. If your unit requires an external flow control, please note the pictures below for proper installation orientation: