

## Iron/Sulfur Pro III Filter Installation

Your **CAI** Iron/Sulfur Pro III 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 Pro system.

If you are mechanically inclined and have a little experience doing basic plumbing, installing a Pro III system 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 Pro 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 Pro 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 45-60 psi.

### Step 1:

The location of your Pro filter is important. It should be in a protected dry, level and non-freezing area (34-120 degrees F). A Pro system is normally installed after the supply line to any outside faucets, after any sediment filters or pH neutralizer systems. The system should be installed in advance of a water softener or taste/odor filters (like a carbon filter system).

### 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 Pro 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 10 feet from the Pro system. 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. If your drain location is more than 10 feet in distance from the unit, then we recommend that you use 1" inside diameter PVC piping to run to drain. 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". 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 Pro system it is time to fill the tank with the furnished gravel. 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 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 into the mineral tank. Place the supplied plastic funnel into the mineral tank, and pour the larger "gravel" into the tank. The gravel aids in even distribution of the water flow throughout Pro filter media to soon be placed on top. While filling the bottom of the tank with gravel, be careful to keep the distributor tube centered as best you can.

The Pro filter media is supplied to you in bags. Iron Pro systems are supplied with Birm media, and sulfur Pro systems use centaur carbon. Using a funnel, fill the tank with all of the media supplied. Add the media slowly, it can get the room dusty if added to rapidly. The media will not fill the tank completely – this is intentional, and insures proper operation of the Pro system.

#### Step 5:

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 6:

The control valve (head) now must be screwed onto the mineral tank. Be sure that the "umbrella" shaped plastic cone is located on the top of the riser tube as you begin to thread the control valve onto the tank. This umbrella deflects a curtain of water along the sides of the tank during operation, and the top location is important for proper operation of the system. The valve will push the plastic cone down onto the riser to the correct location as it is threaded into 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 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.

#### 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 bypass attaches to the head using two (2) metal clips with threaded screws. Tighten the screws until the bypass valve is snug, but be sure not to over tighten. There will be some “play” in the by-pass valve connection to allow for easy piping connection.

#### Step 8:

Water connections to and from the Pro filter will now be connected to the bypass valve provided. If the Pro system is not followed by a water softener or other filter which automatically backwashes/regenerates, be sure to run the outlet piping down in a loop 2-3 feet down from the control valve. This will trap any air that may escape during regeneration as a result of the operation of automatic devices (like humidifiers or reverse osmosis units). The bypass valve has 3/4" inlet/outlet connections – use Teflon pipe tape or pipe dope on the threads when making these connections.

#### Step 9:

Make sure the main water supply is off. 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 Pro media may be lost and plugging of the valve is possible.

#### Step 10:

Check for leaks and tighten any loose fittings. Be sure to confirm secure connection of the backwash drain line!

#### Step 11:

Leave the unit in service position, it is not necessary to run the control unit through it's cycles. This is especially important if you are using a sulfur Pro system with carbon media – the carbon media needs time to absorb water - and starting the backwash process too soon, may not give sufficient time for the carbon to soak up water. Carbon that has not had enough time to absorb water may lodge in the control valve during the backwashing process.

#### Step 12:

Now refer to the “Setting The Control” section of the manual that was supplied with you Pro system and set correct time of day (just press “set up” or “set down” buttons to adjust time. The control is pre-set at the factory for proper backwash & regeneration every three days. While it is not advised to modify the cycle times as pre-set, you can increase the frequency of backwash/regeneration – contact the factory for instructions on how to do this if you require more instruction. You can now enjoy you filtered water!

### Additional Notes:

- If a water softener is to be installed downstream of a Pro filter, make sure that the by-pass valve on the water softener is in by-pass during Pro system installation. If some amount of cloudy water from the Pro system's 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.
- Keep in mind that the Pro filter media will require replenishment from time to time. This is normally required after 3 to 5 years, but will depend on your incoming water quality and overall water usage.
- 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:



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