PLEASE CALL WITH ANY QUESTIONS 1877 477 5452.

THANK YOU

Thank you for purchasing a new Greensand System. We appreciate the opportunity you have given us to provide you with better water. We are committed to providing the best customer experience possible and have provided these installation instructions to make things as simple as possible. If you have read through these entire instructions and FAQ section and still have questions feel free to contact us for further help. Our office hours are Monday-Friday 8:00 AM - 5:00 PM CT, and you can call us at 877-477-5452. You can also use the contact us link above to connect you to one of our technical experts.

BEFORE YOU BEGIN

Basic plumbing skills are required for installation. If you are unsure of your abilities to install the system using these intructions please hire a qualified plumber.

Read through your parts list and verify all components are accounted for and in good condition BEFORE scheduling a plumber.

Please read through the entire instruction manual carefully. If hiring a plumber ensure they have a copy before they start.

Most common questions are answered in the instructions or FAQ section. If you have read both of those and still have questions you may contact us for further help.

Plumbing related questions need to be directed to a locally qualified plumber. We are not plumbers and any plumbing questions we receive will not be answered.

SYSTEM REQUIREMENTS

Your chosen installation location and water supply must meet ALL of the following requirements:

- 20-90 PSI (1.38-6.20BAR)
- 34-110°F (1.1-43.3°C)
- System must be protected from freezing
- Firm level surface AFTER the pressure tank
- 3-prong, 120V outlet within 5 ft. (1.5 m) of the control head with constant power. GFCI outlet is recommended. Use of an extension cords is not recommended.

- A 1.5 inch standpipe, sump pit, or outside drain. Please note: The drain line is pressurized and can be ran vertically if necessary.

1. VERIFY SYSTEM INVENTORY

Use the following table to help verify the parts that are included with your system and verify that they are all accounted for. Inspect all parts for damage and report any damage immediately. Damage claims must be made within 30 days of delivery to be eligible for replacement.

<table>
<tr><td>  </td></tr>
<tr><td>Polyglass Tank</td></tr>
<tr><td> 
OR</td></tr>
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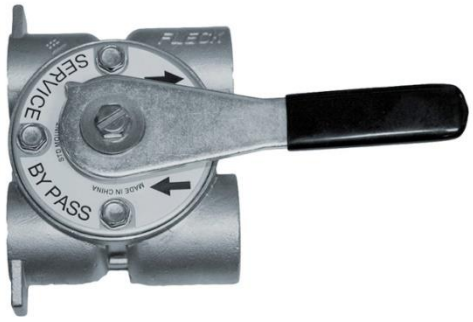
Riser/Distributor Tube

Control Head

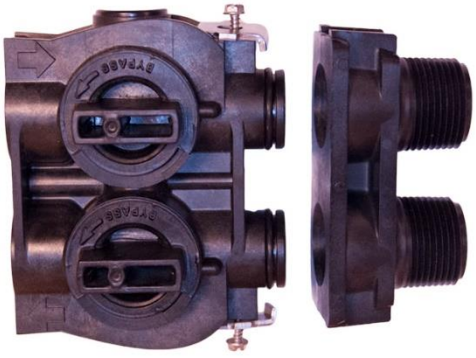
Chemical Tank

Gravel/garnet

Media



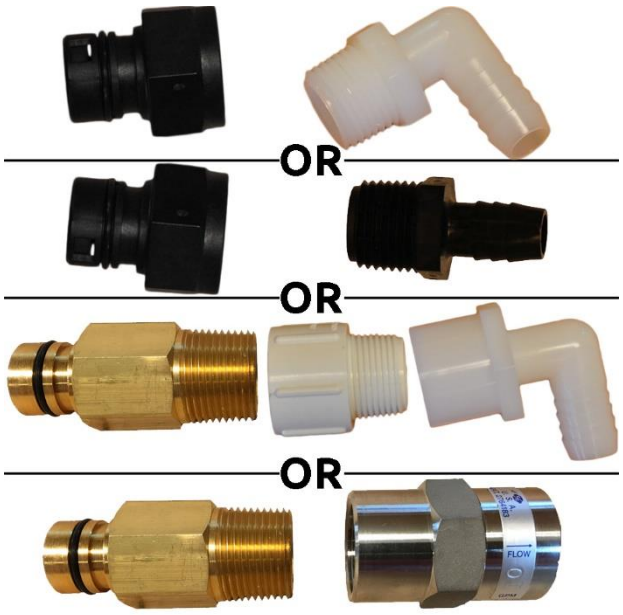
OR



Bypass Valve

Couplers

Brine Connection Parts



Drain Fitting

Funnel

Depending on system size you can see what tank size and media amounts you will receive:

Tank (in inches)	8 x 44	8 x 44	9 x 48	10 x 54
Gravel/Garnet	10 lb	10 lb	12 lb	16 lb
Media	0.5 ft^3	0.75 ft^3	1 ft^3	1.5 ft^3
On systems shipped by truck the media may be preloaded				

Before you start plumbing

1. PRE-INSTALLATION PREPERATION

Money-saving tip: If hiring a plumber to do the installation you can save some money by preparing the tank ahead of time. This cuts down on the time the plumber has to spend and doing so is simple enough that most people can accomplish it in less than an hour.

1. **Verify riser tube sizing**

Tank & Riser

Vortech Tank

NOTE REGARDING VORTECH TANKS: The Vortech tank replaces the standard tank. If installing more than one system ensure to match up the media with the correct tank. Vortech tanks are most commonly used in backwashing iron filters and will not typically be used for water softeners (including All-in-one and Iron Pro softeners).

Verify the riser tube fits and seals into the control head.. A mismatched riser tube will prevent proper treatment, and it is much easier to correct the problem before the media is loaded. The riser tube sits in an indentation centered in the bottom of the tank. With the riser tube properly positioned, ensure that it is within 1/3 inch (8 mm) above or below the lip of the tank. If it is not contact us for help correcting the problem. NOTE REGARDING VORTECH TANKS: Systems upgraded with the Vortech tank are have the riser tube attached and it will not come out of the tank, do NOT try to pull the riser tube out of a Vortech tank.

1. **Fill tank partially with water** Optional

This optional step will help buffer the media as it is poured in and will also help minimize air bubbles upon initial startup. Simply pour water into the tank until it is 1/4 - 1/3 filled with water.

1. **Load media and gravel—**gravel goes in first

Tank with Funnel

Make sure to cover the opening of the riser tube. Simply put something over the end of the tube such as a piece of tape, to prevent anything from falling into the riser tube.

If you have gravel with your system it will go in first!
Please note: MOST systems upgraded with a Vortech Tank do NOT require gravel. With some medias (such as Filox/Mang-Ox) gravel is still required for the best results, so if you have gravel,

use it. Make sure to empty all boxes to verify it is not in the bottom of the tank box or in a box with the media.

When filling the tank, do so slowly and ensure the riser tube stays correctly positioned and centered in the tank. If you have more than one bag of media, after gravel the order does not matter and all of it should be used. Once all the media is loaded the tank will not be completely full, this is normal.

1. **Finish filling tank with water** Optional

Once the media is loaded you may finish filling the tank with water. Allow media to soak for 12-24 hours. This can help reduce air bubbles and ease initial startup.

1. Attach the Control Head

1. **Lubricate the O-rings** DO NOT use Vaseline

Tank O-ring

Pilot O-ring

The tank O-ring——seals the control valve to the tank, and the pilot O-ring——seals around the riser tube. Verify they are present and free from nicks or kinks. Use a silicon lubricant or vegetable oil to both O-rings. DO NOT use petroleum based lubricants! Please note that the pilot O-ring is up inside the control head and you will usually have to reach up inside to feel it. It is very secure inside the head and almost impossible for it to come out. It is also a good idea to verify that the riser tube fits snugly into the pilot hole and that the O-ring seals around it.

1. **Inspect and install top distributor basket if applicable**

Top Distributor Basket

Attached Top Distributor Basket

Depending on system configuration your system may include a top distributor basket—. If your system includes one it is recommended that you use it. If you do not have one then it is not needed. If you do have one the larger end will fit inside the bottom of your control valve, with the smaller end sliding over the riser tube pointing down into the tank—. Please note that locking tabs hold it in place so a fair amount of force is needed to install or remove it.

1. **Screw on control head** hand tight only

DO NOT apply anything (pipe dope, plumbers paste, Teflon tape, etc.) to the threads on the control head or the resin tank!

Ensure the riser tube slips inside the pilot opening in the bottom of the head. Screw the head down onto the resin tank until solid contact is made between the tank and O-ring, then tighten about another 1/4–1/3 of a turn and STOP. Do not over tighten the control head as this can cause damage. Once properly tightened down check to ensure the tank and control head meet evenly all the way around.

1. Prepare and Connect Chemical Tank

Chemical Tank

Locate the chemical tank, it is a plastic tank about the size of a 5 gallon (18.9 L) container—. This tank is used to hold the potassium permanganate (not included) used for regeneration. Remove the lid and look down inside, you will see the brine well—a cylinder about 3 inches (7.6 cm) in diameter—that houses the float assembly. Remove the brine well cap and you will see the float assembly inside. Check all components and ensure there is no visible damage to anything. If a rubber band is present, remove it. At the bottom of the tank you will see a felt pad. This is what holds the potassium permanganate.

1. **Use 3/8 inch line to connect chemical tank to control head**

Brine Fitting

You will need a 3/8 inch flexible line long enough to reach from the control head to the brine tank, with a little extra to allow for some slack. Remove the large nut from the end of the elbow on the float assembly and slide it over one end of a 3/8 inch flexible line. If your float fitting has an insert (some do and some do not) push it into the end of the tubing AFTER sliding the nut on. Push the tubing into the float fitting and secure in place with the nut. Repeat the process on the other end of the brine line to connect it to the brine fitting on the control head—. Some systems will include a wire mesh screen, if you have one install it inside the brine line on the control head side, inside of the insert if there is one.

1. **Connect overflow to floor drain** Optional

The chemical tank has a hole that can be used to run an overflow line to a floor drain. The overflow is a fail-safe should both the control head and the float mechanism malfunction, as such it is extremely unlikely that it would be utilized, but it can be hooked up if desired. To make use of it, you will need a bulkhead fitting for a 5/8 inch hole (available at most hardware stores), with a barbed or other connection of your choice. Connect the fitting to a matching flexible line and run it to the nearest floor drain. Do not tie in to drain from control head, and do not run above the level of the overflow outlet. The overflow is gravity based and will not run above the level of the fitting. Connecting it to the same line that the drain fitting on the control valve uses will cause the chemical tank to fill with drain water.

1. **Add potassium permanganate and water to the chemical tank**

Potassium Permanganate is a strong chemical oxidizer. Wear gloves when handling and keep away from pets and children.

Once the chemical tank is connected you may add potassium permanganate to it. You can use either the coarse or fine crystals as you prefer. It is recommended to start with 2-5 pounds (1-2 kg), monitoring it periodically to ensure there is sufficient potassium permanganate available. Add water to the chemical tank until it is about 1" above the felt pad. When given time to dissole the water should be a dark purple color. When you notice the color starting to lighten to a lighter purple or pink color it is time to add more potassium permangate to the tank. Frequency of addition will vary depending on system size and regeneration frequency.

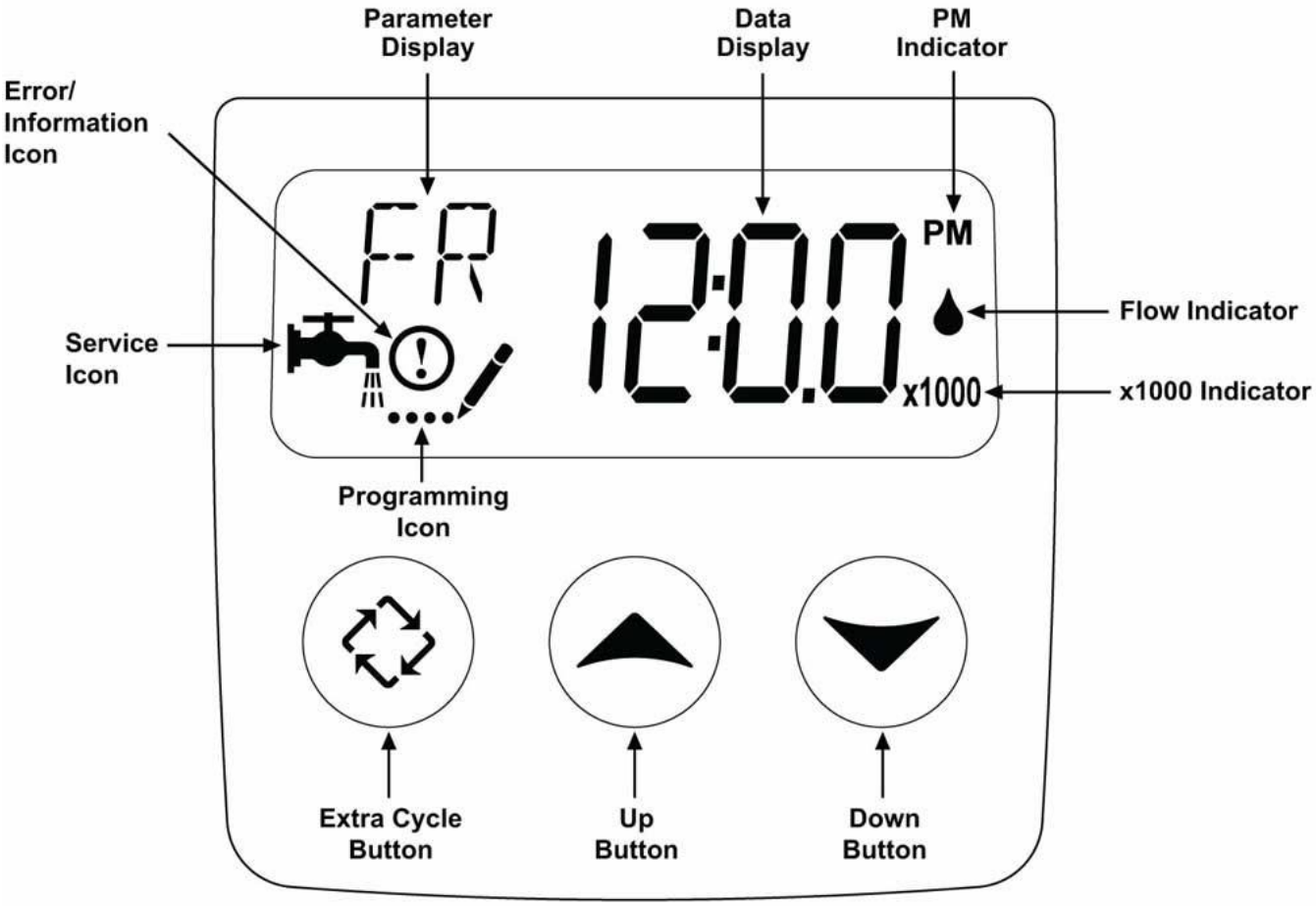
1. Setup Control Head

1. Plug control head in

Plug the control head into a qualifing outlet as stated in the requirements section. Please Note: The contol head can be plugged in and operated without water, this will not damage the control head. Once plugged in, verify the system is receiving power and ensure the outlet is not on a switch that might get turned off. On digital valves the display should light up and start flashing a time, on mechanical valves you may hear a quiet hum of the motor or you may have to wait to see if the time dial keeps track of time.

1. Inital valve setup

If you have the mechanical valve you can skip down to the mechanical setup



SXT Controls

To set the time of day press and hold the up OR down arrow until the service icon is replaced with the programming icon. Use the up and down arrows to set the time of day (PM is indicated in the upper right corner of the screen). Hold the arrow down to advance quickly through the time. Once the time is set, press the extra cycle button to save the setting.

For initial programming ensure the clock says 12:01 pm and the parameter display is NOT shown. Press and hold the up AND down arrow buttons together for 5-10 seconds until the programming icon appears and [DF] is shown in the parameter code. Once each setting has been

entered, use the extra cycle button to advance to the next setting. Please Note: Most of these settings will be left alone.

Do not change any settings unless specifically instructed to do so by these instructions or one of our techs.

[DF]
Display format, should be set to Gal, and all instructions are based on this format.

[VT]
DO NOT CHANGE.

[CT]
DO NOT CHANGE.

[NT]
DO NOT CHANGE. NOTE: May not show on all systems.

[TS]
DO NOT CHANGE. NOTE: May not show on all systems.

[C]
If you are seeing this setting please contact one of our support technicians for assistance.

[H]
If you are seeing this setting please contact one of our support technicians for assistance.

[RS]
If you are seeing this setting please contact one of our support technicians for assistance.

[SF]
If you are seeing this setting please contact one of our support technicians for assistance.

[RC]
If you are seeing this setting please contact one of our support technicians for assistance.

[DO]
Day Override - this setting will start the backwash cycle after the set number of days. Typically set no higher than 3 to ensure the media gets lifted and cleaned off. This ensures effective filtration and long media life.

[RT]
Regen Time, this is the time of day the backwash will start. This process typically takes 30-40 minutes depending on system size, so schedule it when water will not be used. It is common to set to run when everyone is asleep, and ensure it does not conflict with any other systems you may have.

[BW]
DO NOT CHANGE

[BD]
DO NOT CHANGE

[RR]
DO NOT CHANGE

[BF]
SET TO 10 MINUTES.

[D1 - D7]
If you are seeing this setting please contact one of our support technicians for assistance.

[CD]
If you are seeing this setting please contact one of our support technicians for assistance.

[FM]
If you are seeing this setting please contact one of our support technicians for assistance.

[K]
If you are seeing this setting please contact one of our support technicians for assistance.

[UD - sync]
[Calc]
After making adjustments to the programming, the display may display one of the above screens to indicate it is making the adjustments the new settings require.

Once all parameters have been set, press the extra cycle button one more time to save your settings (setting changes will be canceled if no buttons are pressed for 60 seconds). The display should then show the service icon, with the data display flashing between the current time of day and days remaining until the next backwash. Once it reaches 0 the system will queue a backwash for the set time. A flashing service icon indicates that a backwash is queued. A manual backwash can be queued by pressing the extra cycle button. An immediate backwash can be initiated by holding the extra cycle button for about 5 seconds. The service icon indicates that the system is "In Service" and functioning correctly, it does NOT mean that the system needs service.

After intial setup programming should not need to be set again unless a system reset is performed. Even in the event of a power outage all settings are retained. If your water use or water quality changes you can use the user programming to make common changes to the programming as lined out below.

1. **User Programming**

To enter user programming ensure the clock DOES NOT say 12:01pm and the parameter display is NOT shown. Press and hold the up AND down arrow buttons together for 5-10 seconds until the programming icon appears and [DO] is shown in the parameter code. Once each setting has been entered, use the extra cycle button to advance to the next setting.

[DO]
Day Override, this setting will start the backwash cycle after the set number of days.

[RT]
Regen Time, this is the time of day the backwash will start. This process typically takes 1.5-2 hours depending on system size.

1. **Controller resets**

If your controller is showing odd behavior such as erratic display, no display, or showing an error code, the first step is to try and reset it. Start with the soft reset, and if that does not solve the problem move on to the master reset. If the problem persists contact one of our technicians.

Soft Reset
Press and hold the extra cycle and down buttons for 25 seconds while in normal service mode. This resets all parameters to the system default values except the days since regeneration.

Master Reset
Unplug the unit. While holding down the extra cycle button, plug the unit back in and continue to hold the button. Once the display powers on you can let go of the button. This resets all of the parameters in the system.

Please Note: After performing either reset you will need to go through the initial programming to verify settings.

1. **Mechanical valve setup**

The only programming needed on the system is to set the current time and the backwash frequency (how often the system backwashes). To set the backwash frequency, there is a ring of day tabs numbered 1 - 12 on the system. Each tab can be either inward towards the middle of the ring (inactive) or outward away from the middle of the ring (active). To set up you system, simply slide the tabs out on the days you want it to backwash. For example, to backwash every 3 days (the minimum requirement for most backwashing systems) simply slide the tabs numbered 3, 6, 9, & 12 to their outward active position. Depending upon your water usage and contaminate level, you may need to backwash more frequently. To backwash every 2 days (every other day) slide the tabs numbered 2, 4, 6, 8, 10, & 12 to the outward active position, to backwash every day push all tabs to their outward active position.

To set the time, locate the 24 hour time gear (the large gear located behind the manual cycle knob) and note the current time arrow. Push the red time set button in and rotate the 24 hour time gear until the current time arrow lines up with the current time of day. the system will run a

backwash cycle that night at midnight or 2 AM (depending on the system, the time is usually indicated on a label located on the back of the valve). During backwash there should be no water being used, and the default time is usually fine for most homes. To have it run at a different time (for example if you work late and are up and using water at the default time) you will need to adjust the current time of day to trick the system into doing so at the desired time. For example: if the system is set to run at 2 AM and you want it to run at 8 AM, set the current time of day 6 hours behind, that way the system will think it is 2 AM when it is actually 8 AM.

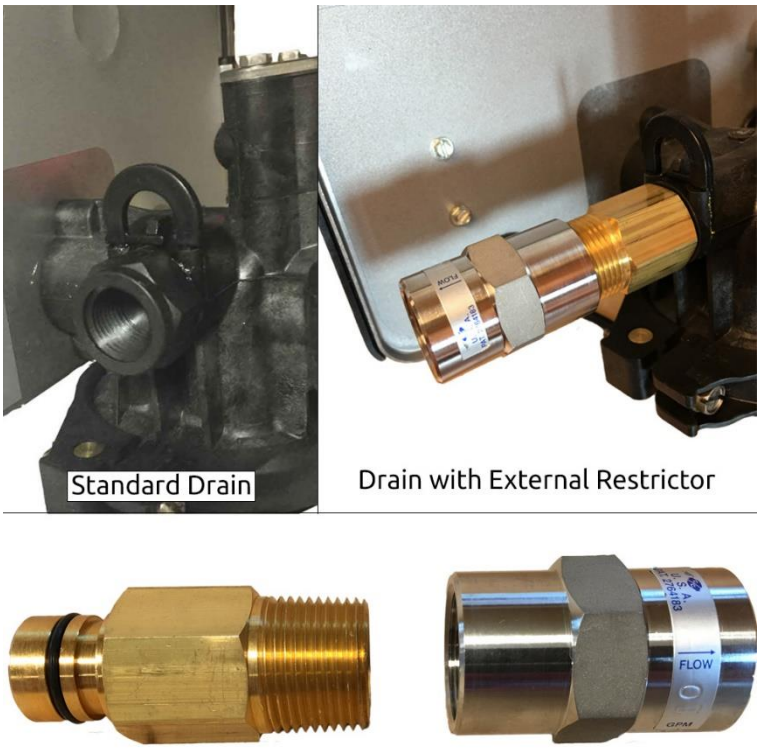
Plumbing the system in

1. PLUMBING GUIDELINES

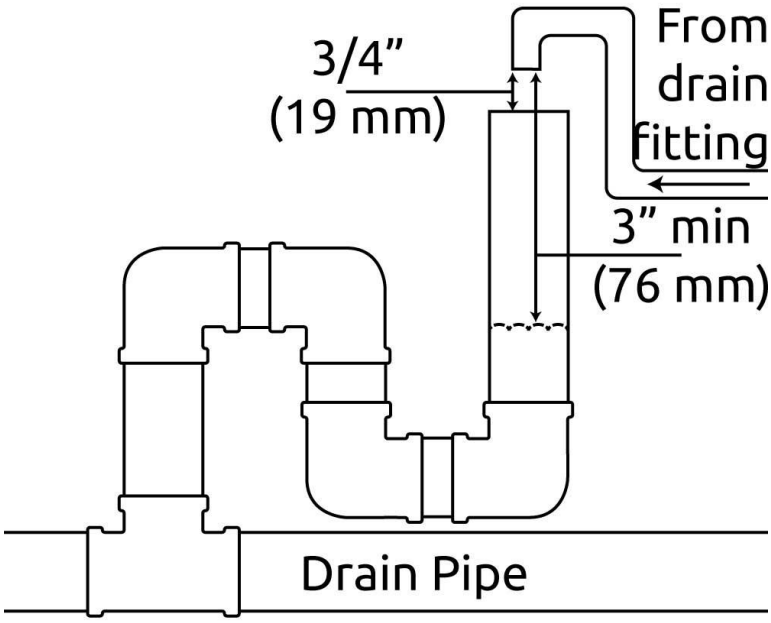
Before you continue Many homeowners install their own water systems with basic plumbing skills; if you are not comfortable with projects like this, please hire a professional plumber. Make sure to check local plumbing codes and follow any codes that apply. These intructions offer basic plumbing tips and can not cover every situation. They are intendend as a supplement and should not replace local plumbing codes or actual plumbing experience.

1. Drain Line Connection

Please note: Drain water comes out under line pressure, so it can be run vertically to connect to an overhead drain pipe.



Drain Fitting



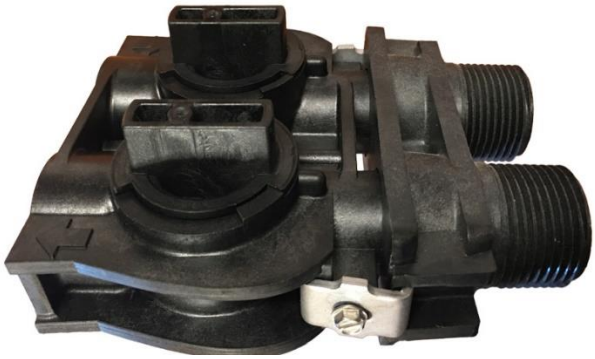
Example Drain w/ Air Gap

Never make a direct connection into a waste water drain. A physical air gap of at least 3 inches (76 mm) between the end of the drain line and the wastewater level in the drain pipe should be used to avoid contamination of the line. An additional gap of 3/4 inch (19 mm) between the drain pipe and drain line is recommended to prevent any problems in the case of a pipe overflow. Using a simple P-trap as shown——is ideal as well, but a stand pipe with a diameter of at least 1.5 inches (38 mm) is adequate. As the water coming out is under pressure, make sure to secure the drain line so that it does not move and create a mess.

Do not tie multiple systems into a single drain line.
If hooking up multiple systems, each system needs a separate, independent drain line to ensure proper operation and prevent damage. Systems can all be run to the same standpipe/sump/outside drain, but the drain line from each system needs to be separate.
Do not use additional fittings on the drain line.
Avoid installing any additional fittings (check valves, ball/gate valves, etc.) as this can prevent proper backwash and cause premature system failure.

1. **Inlet/Outlet Connections**

OR

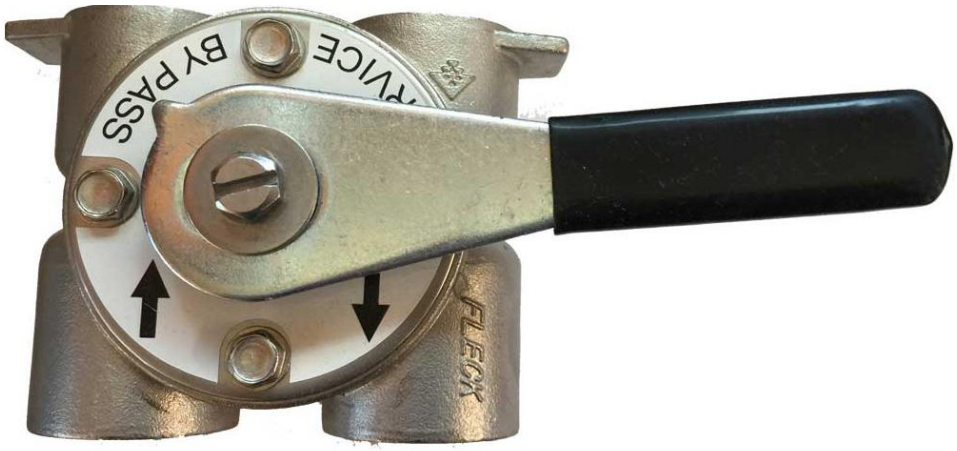


Connection Fitting

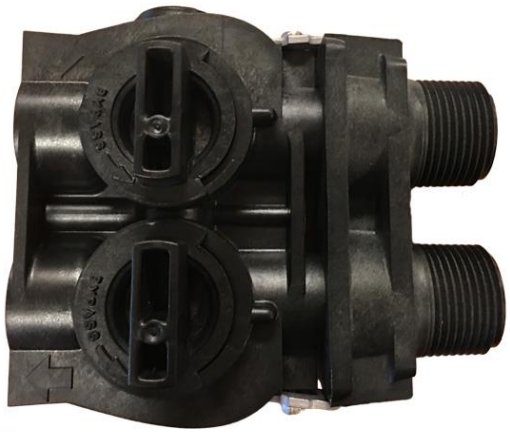
Do not overtighten the screws. The clips simply hold the connection fittings together and the screws only need tightened enough to keep the clips in place. Further tightening will not stop leaks and tightening too much can damage the system, which will not be covered under warranty.

Verify flow direction. Untreated water will enter the system on the side marked with an arrow pointing toward the front of the control head (on both the bypass valve and the control head itself). Treated water will exit the system on the side marked with an arrow pointing away from the front of the control head (on both the bypass valve and the control head itself).

Correct inlet/outlet connections are vital. Improper flow direction will prevent proper operation and can damage your system and your plumbing. The direction of flow can not be changed. Turning the bypass upside down will not change the direction of the water flow.



OR



Bypass Position

It is recommended to keep the bypass in the service position when making plumbing connections and turn it to bypass when first turning the water back on. shows the bypass position. In service position the handles will be turned 90-degrees and be perpendicular to the inlet and outlet fittings.

When soldering do not solder directly to the included connection or close to the control control head. First solder a short (min 3-inch [7.6-cm]) piece of copper pipe onto the adapters, away from the valve, before connecting the adapter to the bypass or yoke fitting.

For threaded connections, do NOT tighten the adapters into fittings while they are connected to the control head. Disconnect the bypass or yoke fitting, and connect the adapter using a high quality thread sealant (pipe joint compound or Teflon/PTFE tape), and replace.

When installed the bypass valve can move up and down, this is normal.

1. PLACE SYSTEM IN SERVICE

Once all plumbing is done and plumbing connections have been checked for leaks you can place the system in service.

1. **Open bypass valve** slowly

If you have more than one system, enure the other systems are bypassed to prevent any possible problems. Open a faucet that is near the system, a laundry sink or outside faucet (if it will be treated by the system) is ideal, this will allow the air to bleed out of the system. Slowly open up the bypass valve just to the point of allowing water to enter the system at a trickle, and leave it like that until the tank is full of water. If you prefilled the system it should only take a minute or two. Once the tank is full, slowly open the bypass valve the rest of the way. Allow water to run out of the faucet for 15-20 minutes to ensure all the air is worked out of the tank and off of the , then close the faucet.

1. Check for leaks

Check the system for any leaks, paying attention to the seal between the tank and control head as well as the connections between the bypass valve and control head. Open a nearby faucet and check to ensure there is no leaks that show up when water is running.

1. **Flush the system**

Open a nearby faucet. The water may be discolored at first, this is normal. Let water run out of the faucet for at least 10 minutes, or until any discoloration clears up. Depending on the system this may be almost immediate, or it may take a couple of hours. Once the water is cleared up a manual backwash should be run.

1. **Initiate manual backwash**

Greensand systems required a manual cycle to be run before use. On mechanical valves, turn the main knob until it clicks into the first position. On digital systems, hold the extra cycle button for 5-10 second until the backwash starts.

1. **Verify proper operation**

Watch the system as it steps through each cycle, make sure it moves to each position, that water is not leaking from any other fittings, and that water is flowing down the drain line.

Be sure to return any other systems to the service position.

Frequently Asked Questions

INVENTORY AND SETUP

What is the proper order to arrange multiple systems?

If you are installing more than one tank system the typical order for installation is: sediment filter > pH filter > iron filter > carbon filter > water softener > arsenic filter Whole house cartridge systems are typically installed after any tank systems, the Scale Sentry system after the cartridge system(s), and any UV systems will be last.

Do I need a prefilter?

In most cases a prefilter is not necessary. Since the system cleans itself most particulate in the water will be trapped and rinsed off by the backwash cycle, eliminating the need for a sediment prefilter. If you have a lot of sand in the water a spin down filter (part #SDF-100) is recommended to protect the control head

My polyglass tank arrived and sits crooked, what do I do?

The black boot on the bottom of the tank may get knocked out of alignment during shipment. If your tank is a bit tilted, simply pick the tank up 2–3 inches (5–8 cm) off the floor and drop it gently but firmly down, favoring the side that needs to be adjusted to make the tank stand straight.

I have read or seen that I shouldn't install the top distributor basket, is that true?

The top distributor basket is used to help prevent media from getting up into the control head and into your pipes, it also keeps the resin from going down the drain during water or air surges. While systems that are installed correctly and fuctioning properly will not have issues, the top basket is included as a saftey measure to prevent problems and it is recommended to use it if present. Those who recommend leaving it off usually do so to prevent buildup on that basket that can lead to flow restrictions (more common in high iron waters), but it is usually easier to clean or replace a top basket periodically than cleaning out clogged fixtures if something does go wrong.

After installing the bypass it still moves up and down, is that normal?

Yes. The bypass seals with O-ring and even when tightened down some movement will occur, without leaking. The system requires this movement to allow for pressure changes in the system. Do not overtighted the bypass valve. As long as the screws are snug enough to keep the bypass from coming apart further tightening will just cause damage.

DRAIN LINE

Can I run my drain line to a sewer/septic?

Yes. These systems can be ran to your sewer or septic line and is typically the recommended place to run the drain. Most concerns are related to the amount of water going down the drain, and a properly designed septic/sewer system will not have a problem handling it.

Can my drain line be ran vertically?

Yes. Water from the drain comes out under pressure and can be ran vertically if needed.