

# Guide to filter installation

## Placement of the filter:

The filter is ALWAYS placed AFTER the pressure tank.

When installing several different types of filters, they are placed in the following order:

*Well → Chemical Feed System → Pressure Tank → Sediment Filter → Neutralizer  
→ Iron/Manganese Filter → Softener → UV System → House*

## A few things to keep in mind...

Be mindful of the “inlet” & “outlet” when plumbing in the water treatment system.

Each filter has a minimum flow rate and pressure requirement. The filter will not work correctly beyond first couple of weeks if the pressure and flow of the well are too high or (more commonly) too low. *All filters quoted by Filter Tech are sized for residential applications with a pressure of 40-60 psi and a flow of 8 - 10 gpm unless something different is requested by the Filter Tech Dealer.*



## Drain line:

- ⇒ The drain line needs to be properly sized in length and diameter with minimal disruption in flow such as ells and tees.
- ⇒ This rule is especially important with heavier medias, like Catalox or larger systems in bigger tanks that require more pressure & water flow for proper bed expansion. Over half of complaints of staining after the filter is installed relate back to proper installation of the drain line. During the backwash cycle, the water coming from the filter is very turbulent and creates backpressure that will effect how well the filter cleans itself during backwash. **THE DRAINLINE NEEDS TO BE AS SHORT AS POSSIBLE.**
- ⇒ Filter Tech recommends using PVC pipe instead of tubing to prevent crimping of the drain line.
- ⇒ 1” pipe can run 10’ from the valve to the end of the drain line. If the drain line runs further than 10’ we suggest using 1 ½” PVC until the water reaches outside the house/well house. Once outside, we suggest using 4” black corrugated flexible gutter pipe to direct the water flow where ever it is desired.

- ⇒ NEVER ATTACH A SPIGOT OR GARDEN HOSE TO THE END OF THE DRAINLINE. The filter will not clean itself thoroughly and stains will reappear in the house.
- ⇒ Backwash line can be plumbed outside the house/well house or into a septic line. Be mindful of air gap regulations if backwash is plumbed into septic line. *Installing a Filter Tech water treatment system into a septic line without the proper air-gap voids the warranty on the system. Filter Tech is not responsible for cross contamination or damages created by a vacuum.*

Unions are not necessary with the Clack **WS1** valve. A bypass is included and pre-installed with the system. Two 1" couplings will be needed to connect the filter to 1" plumbing.

### **Filling the filter tank:**

It is easiest to fill the filter tank at the site of installation. Although some tanks include a fill hole near the top of the tank, it is easiest to fill at the valve opening before screwing the valve onto the tank. (If this is chosen, cover the top of the distributor tube with a 3/4" cap to prevent mineral from entering the distributor tube.)

The order in which to fill the tanks:

1. Gravel or Garnet: (*MOST SYSTEMS*) Load enough to cover the basket at bottom of the Distributor tube. This will be different according to the size of the tank.
2. KLOX Systems: KDF is loaded on top of a garnet bed and Catalox is loaded on top of the KDF. The freeboard will consist of over half the height of the filter tank which gives the media plenty of room to expand and rinse itself during backwash.
3. NC Systems: Load calcite on top of a gravel bed. Mix corosex thoroughly with a bag of calcite for remainder of space in filter tank. (Mixing the corosex and the calcite prevents the corosex from hardening.) Leave a freeboard space of 18" inches so that mineral has adequate room to be lifted and washed during backwash.
4. GSPlus Systems: Greensand Plus is loaded on top of a mixed gravel bed. Leave a freeboard (the space between the top of the media bed and the top of the tank) space of 18" inches so that the mineral has adequate room to be lifted and washed during backwash.
5. HSGS Systems: Greensand Plus is loaded on top of a mixed gravel bed. The HSR is loaded on top of the Greensand Plus media. Leave a freeboard space of 18" inches so that the mineral has adequate room to be lifted and washed during backwash.

6. C249 (Softener) Systems: These systems come with a turbulator distributor tube. No gravel is required. Because media is so light, the drain line flow control must be very small, depending on the tank size. (2.7, - 4.5gpm) Brine tanks with salt are required for the ion exchange process to take place. Leave a freeboard space of 18" inches so that mineral has adequate room to be lifted and washed during backwash.

### **Initially starting the filter: WS1 Valve**

Starting the filter up for the first time is going to be a long process for several reasons. First, the media is dry and tends to "float" if the system is started too quickly. If water is fed too quickly into the system after initial installation, the dry media can be pushed up into the valve, clogging the valve and/or drain-line. Second, the media contains a lot of dust and fine particles that have to be rinsed out of the media bed before the water can be sent to the house. The rinse process can take anywhere from 10 to 45 minutes.

Another important item to remember is that the water needs to be initially fed into the filter while the valve is in its "backwash" cycle. The "backwash" cycle feeds the water into the bed from the bottom of the tank so that the water goes through the filter system from bottom to top. Starting the system in this manner allows the dust and fines to be pushed up and out of the system through the drain line instead of being pushed further down into the bed around the fine-slotted distributor basket. REMEMBER: Turn on the water very slowly to prevent the media from "floating" into the filter valve.

### **Make sure the filter is in bypass before beginning.**

The red handles behind the back plate that are shaped like arrows should be pointed at each other.

1. Prior to turning the water on, plug the WS1 digital metered valve into an electrical outlet. The motor on the valve will run for a few seconds and stop (It is finding its "home" position). Once the motor has stopped, press and hold the "REGEN" button until the screen changes. The motor will put the valve into a backwash cycle (no water will be running) and you will notice that time is counting down on the digital readout. Pull the valve's plug from the electrical outlet to prevent the valve from changing cycles while the bed is being cleaned of all dust and debris for the first time.
2. Assuming that the WS1 valve is set to bypass (The red arrows are pointing at each other) and the water from the well is currently on, barely turn the handle on the inlet side of the bypass (If you are facing the front of the valve, the inlet side is behind the valve on the right side). Allow only about 1-2 gpm of water to flow into the system initially. It is best to wait until water is dribbling out the drain line before opening the inlet valve any further.

3. Once you see water dribbling out of the drain line. Slowly open the inlet valve over a 1 to 2 minute time period until it is fully open. Leave the outlet handle in the closed position to prevent dusty water from going down line toward the house.
4. Allow the system to backwash until the water coming from the drain line is clear and free from any cloudiness or discoloration. Doing this allows trapped air to safely escape and rinses the mineral of all loose dust that naturally occurs on the dry mineral. Replug the valve power to wall outlet once drain line water is clean and clear.
5. Once the cycle is complete, the system is ready for regular service. Turn left red arrow clockwise so that it is pointed away from valve. Make sure right red arrow is pointed toward valve head and in the open position. Have homeowner open all faucets to release air trapped between house fixtures and filter during installation.

**Questions?** Call Filter Tech at 770-487-1066. After hours, call Jay at 770-328-0536.



