

Assembling a Bed Filter: Multi-port valve models

1. Introduction:

- 1) NON-SKID bed filters are usually shipped un-assembled due to difficulties in handling on site. This is to prevent damage to the tanks due to weight.
- 2) This guide explains the general overall steps to follow to set up your new bed filter. It is meant to be used in conjunction with the multiport valve which has been supplied.
- 3) Normally bed filters are installed with isolation valves (not supplied unless ordered separately).
- 4) Normally bed filters are installed with by-pass valves. These can be part of the supply on some smaller models. This depends on the product ordered.
- 5) Make sure the connections to multi-port valves on the filter tank are flexible enough to avoid damage to the valve or the tank. The weight of media and water and variations in temperature will cause small changes in height. This is especially true with fiberglass tanks.
- 6) Drains need to be adequately sized.
- 7) The drain line from the filter should not be hard piped into the drain. You must be able to observe and sample the flush water from time to time.
- 8) Regenerant tanks should be placed in proximity to the filters.

2. Riser & Distributor

- 1) Glue the distributor to the riser tube with PVC glue. DEFINITION: This is the tube that goes from the multi-port valve at the top to the bottom of the tank.
- 2) Place the riser and distributor in the vessel and cut the riser tube such that it passes the lip of the tank by no more than 1/2".
- 3) Let the glued distributor dry and solidify.

3. ****IMPORTANT**** Before filling the vessel

- 1) Make sure that the riser and distributor are properly glued.
- 2) Make sure that the riser is cut to an appropriate length.
- 3) Place the vessel at its intended location
- 4) The control valve can be screwed onto the tank initially just to double check if the placement of the tank(s) is acceptable. Remove the control valve afterwards.

NOTE: small tanks can be moved slightly after filling. Tanks larger than 21" are more difficult to move so the above is important.

- 5) Fill the vessel to about 1/3 full of water. The water is used to keep the gravel from damaging the bottom laterals or basket.
- 6) Cover the top of the riser tube, the easiest is with duct tape

4. Filling the vessel

- 1) **WARNING:** While pouring in the media make sure the riser does not lift up and let media get under it. ALSO while filling it is a good idea to try and keep the riser centered in the opening.
- 2) If applicable, pour the gravel in first, starting with the finest grade.
- 3) Pour the media in the vessel.
- 4) Remove the tape or other cover from the top of the riser tube.

5. Installing the control valve

Note: for more details, please refer to the manual of the control valve included with the equipment.

- 1) **NOTE: Make sure the center o-ring in the valve bottom is in place and lubricated.**
- 2) Align the riser tube to the center hole under the control valve, and carefully screw it onto the tank. The riser should slide into the valve.
- 3) If applicable, install the by-pass onto the control valve as necessary.
- 4) Install the controller onto the control valve.
- 5) Connect the plumbing to the appropriate inlet, outlet and drain ports.
- 6) If applicable, connect the plumbing to the Injection (Brine Draw) port.

6. Starting Up

Note: Refer to the manual of the control valve for how to initiate a regeneration / backwash

- 1) The first step is to fill the filter with water.
 - a. Close the outlet valve.
 - b. Initiate a backwash on the control valve.
 - c. SLOWLY open the inlet valve until you hear the water begin to flow into the tank. You should hear the air coming from the drain line.
NOTE: It is important not to allow too high a flow as you could lose some media to drain in some system configurations.
- 2) Once the tank is full of water, let the media soak for about 12 hours. The media will have entrapped air which makes it too light for a normal backwash.
- 3) After the recommended soak time open the inlet valve all the way.
- 4) Start the initial regeneration or backwash.
 - a. In the case of a carbon filter it is recommended to perform at least 2 backwash cycles to reduce the quantity of fines in the product water.
 - b. In the case of ion exchange filters such as a water softener, de-alkalizer, polisher contact supplier for guidance.
- 5) Once the initial regeneration / backwash is complete, open the outlet valve.