



# Commercial REACTR™ System

Please fill in this data for future reference :

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Date Installed \_\_\_\_\_

Installed By \_\_\_\_\_

- *Please refer to specification drawing for maximum temperature & pressure. Do not exceed these limits!*
- *Please comply with all applicable plumbing codes.*
- *Confirm that water with sufficient volume and pressure is available to backwash this system.*
- *Read instructions completely before installing.*

## **Installation Procedure**

1. **Unpacking & Inspection** - Inspect for any visible damage; if found, contact transportation company for damages. Please refer to enclosed spec drawing for a listing of all included items. Piping and standard plumbing items are not included.  
**NOTE:** It is recommended to install unions at all connections to this equipment.
2. **Location** - Select a location near the water service inlet that is near a floor drain, kept from freezing, and reasonably dry. The floor should be level, and capable of bearing the heavy load. Keep in mind any future media replacement and allow adequate access. This unit must be installed so that pressurized water is available **at all times**, for backwash.

- A. **REACTR Tank(s)** - On pressurized systems, the REACTR™ tanks(s) must be installed between the well pump and pressure tank(s). On atmospheric systems, the REACTR™ tank(s) must be installed between the well pump and filter media tanks. The inlet is in the top of the tank and the outlet in the bottom. If more than one (1) REACTR™ tank is required, manifold the inlet piping in parallel so as to have a uniform length to each tank to equalize water flow. (Consult enclosed specification drawing.)

**CAUTION:** If using PVC pipe for installation of REACTR™ tank(s), assemble inlet tee before installing on tank manifold to prevent excess solvent from entering REACTR™ manifold assembly. **Do not** use plumber's dope as this will attack the PVC and will cause cracking! Use only a teflon based paste and/or tape. If using copper pipe for installation, sweat solder inlet tee before installing on tank manifold to prevent excessive heat exposure.

- B. **Filter Media Tanks** - On pressurized systems, the filter media tanks must be installed after the pressure tank(s) before the hot water tank, if applicable. On atmospheric systems, the filter media tanks must be installed between the REACTR™ tank(s) and treated water storage tank(s). These type systems *must* have the clean water backwash option. (Consult specifications drawing.)

3. **Check Distributor & Bottom Closure** - Confirm that the tank bottom closure (if used) is tight. Look down into the media tank(s) with a flashlight to confirm that distributor has not been damaged during shipment. (The valve body adapter on 2750 valve units will need to be removed.) The smaller units use a single basket-type distributor. On larger units, there are two different styles used :

- A. **Hub & Lateral with Threaded Laterals** (used on 36" diameter tanks and smaller with 2750, 2850 and 3150 control valves) consists of eight (8) lateral sections connected to a hub attached to the bottom of the distributor tube. These lateral sections are threaded into the hub (one at a time) by lifting up on the distributor tube and reaching hand (holding one section) down into the top opening of the tank. They are screwed into the hub until snug only.

- B. **Hub & Lateral with Stacked Distributors** (used on 42" diameter tanks and larger) consists of six (6) lateral arms (each with multiple stack distributors), that are glued into the hub at the bottom of the distributor tube.

On tanks 30" diameter and larger, the distributor sits on top of a small pad at the tank bottom. Your distributor may have shifted during shipment. Be sure to check before filling.

4. **Filling Media Tanks** - Plug the top opening of the distributor tube(s) with a piece of cloth, cork, etc. **Fill the tank(s) about 1/3 with water**, then pour in gravel **slowly**. For units with multiple gravel sizes, put the largest ("A") in first, followed by medium ("B"), and finally the smallest ("D"). Pour in the media, which should result in the tank(s) being approximately 1/2 to 2/3 full. If this is a multiple tank system, be sure to divide the gravel and media evenly. Fill tank(s) **completely** with water, and remove plug(s) that you put into distributor tube(s).

**NOTE:** If using Manganese Greensand or MTM™ media, mix 4 ounces of dry Potassium Permanganate (KMNO<sub>4</sub>) with one (1) gallon of water for each cubic foot of media in filter tank. Pour KMNO<sub>4</sub> mixture into filter tank then fill the tank completely with water, this procedure will activate the media for initial start-up.

**CAUTION - IF YOU DUMP IN THE GRAVEL WITHOUT FIRST FILLING TANK(S) 1/3 WITH WATER, THEN THE DISTRIBUTOR MAY CRACK. MEDIA AND GRAVEL WILL PASS ONTO SERVICE, AND THE TANK MAY EVENTUALLY LEAK FROM INTERNAL "SANDBLASTING". TO REPLACE THE DISTRIBUTOR, YOU'LL HAVE TO EMPTY THE TANK COMPLETELY!**

5. **Control Valve** - Lubricate the o-rings for the distributor and tank top with silicone lube. For 2750 valves, lubricate o-ring and securely thread tank top adapter into media tank. For 30" diameter tanks and larger, secure the flange tank top adapter to the media tank using the hardware provided. Securely thread the control valve (valve body adapter for 2750 units) into the media tank, being careful to center the distributor tube. On 2750 units, mount the control valve onto the valve body adapter, using the supplied cap screws.
6. **Water Supply Connections** - Inlets and outlets are indicated on the control valve with raised arrows. Install pressure gauges on the inlet and outlet piping, and pipe in a bypass. If your system has any type of water heating device, then a check valve *must* be installed in the outlet line from the control valve. The tanks can "grow" up to 1/8" in height due to water pressure. If the piping cannot bend adequately to compensate for this deviation, install flexible connections. Install a vacuum breaker if a siphon condition could occur (from a break at lower elevation, etc.).

**NOTE:** If diaphragm valves are to be installed for clean water backwash systems, refer to system specifications drawing included for location and tubing connections. Diaphragm valves for 1" or 1 1/2" units are supplied with grooved male adapter nipples and 2" valves have a female weld connection.

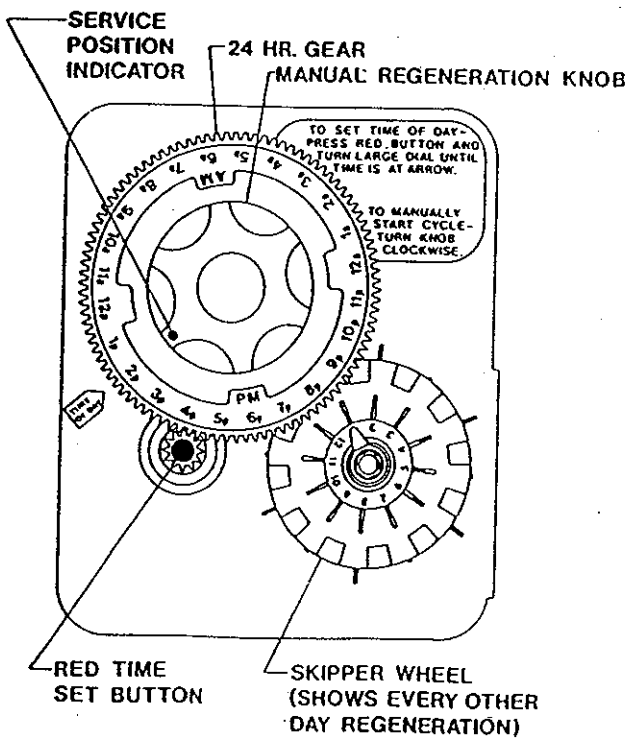


Figure 1

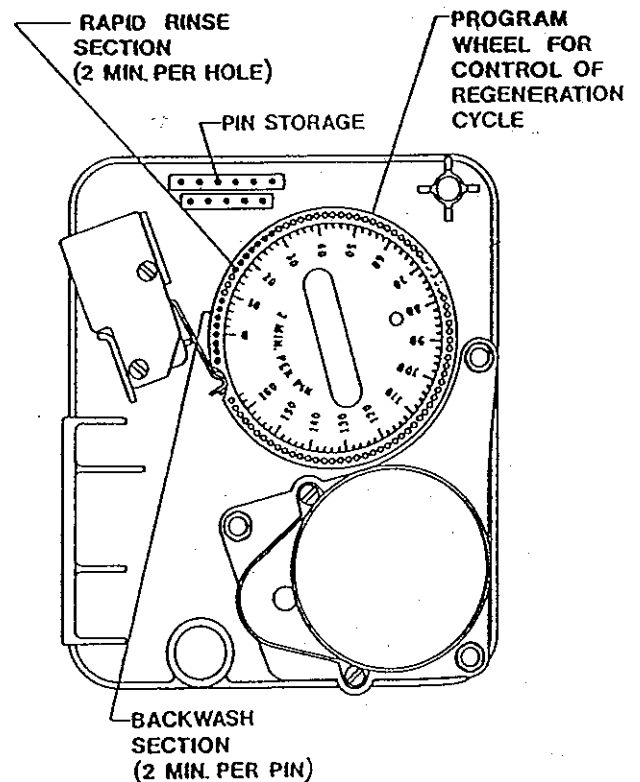


Figure 2

7. **Drain Line Connections** - Each Control Valve is supplied with a fixed flow control in the drain line. The drain line from each Control Valve may be manifolded into one common line. If this is done, a check valve *must* be installed on each control valve drain line. Do *not* connect drain line directly to a sewer line, but position the end of the drain line securely above a floor drain, maintaining at least a 4" air gap, to prevent siphoning. This line may be elevated up to 10 feet above the floor level, but the discharge end must be less than 4 feet above the floor. The drain piping must be the same pipe size as the flow control, unless it exceeds 20 feet in length. In that case, increase the drain line pipe size.
8. **Electrical Connection** - Plug the power cord attached to the control valve into a standard 115 Vac 3-prong grounded receptacle. Do not use an outlet that is controlled by a wall switch or pull chain switch that could be inadvertently turned off.
9. **Setting Time of Day** - Depress the red button and then rotate the large gear until the actual time of day is next to the "Time of Day" pointer, then release the red button. (Refer to Figure 1.) The units are factory preset to begin backwash at approximately 1:00 a.m.

**NOTE:** If a different backwash time is desired, set the time of day ahead or behind the actual time of day. If this is done it is recommended that the time dial be re-labeled.

10. **Setting Backwash Frequency** - Rotate the "Skipper Wheel" (Refer to Figure 1) until "1" is at the red pointer. Each number on the skipper wheel represent one day. Set the day that you want backwash to occur on by simply sliding out its tab on the skipper wheel. It is recommended to backwash filters every six (6) days. Slide out TAB number 6 and 12 for this setting.
11. **Control Valve Position** - To set the control valve to the various positions noted in the next step, the "Manual Regeneration Knob" is *slowly* turned in a clockwise direction until the drive motor(s) run and move the piston(s), as shown in the control valve service manual.

**CAUTION:** When you're manually advancing the regeneration knob, you **MUST** wait until all drives have fully stopped before advancing knob to next position. (This can take up to one minute!)

12. **Starting Pressurized Units** - After all plumbing connections have been made, control valve plugged in and set, the unit can be placed in service as follows :
  - A. With timer and valve in "Service" position, slowly rotate the regeneration knob clockwise until the motor runs and drive shaft goes into backwash position. You may wish to swing open the timer so that you can see which pin or hole section is engaging the outer microswitch. (Refer to Figure 2.) This determines which "Mode" the control valve is in.
  - B. Open the inlet valve *very slowly* to allow water to enter the unit. Water will enter in an upflow direction, and permit any trapped air to escape to drain. When all of the air has disappeared and a steady stream of water is observed in the drain, the inlet valve may be fully opened.
  - C. Advance the regeneration knob to put the control valve into "Rapid Rinse" position. Confirm that water is flowing to drain and allow to run for 3 - 4 minutes.

**NOTE :** If charging Manganese Greensand or MTM™ media, run water to drain until  $KMnO_4$  is evident in drain line effluent. Position valve to service mode and allow to set for one (1) hour before proceeding.

- D. Position valve to "Backwash" mode and allow to remain there for amount of factory preset, or until water becomes clear at drain. During these initial backwash periods, some media fines may be lost. This is normal and extra media was provided to allow for this loss.

**NOTE :** If charging Manganese Greensand or MTM™ media, repeat this procedure until all traces of  $KMNO_4$  are gone.

- E. Position control valve to the start of "Service" position.
- F. Repeat steps A - E for remaining filters.
- G. Open outlet valve and close the bypass valve. The unit is now in service!

12B. **Starting Clean Water Backwash Systems** (Parallel unit installations only) - After all plumbing connections have been made and the control valves are plugged in and set, the units can be placed in service as follows :

- A. With timers and valves in "Service" position, open the inlet / outlet valve(s) **very slowly** to allow water to enter the units. Close the bypass valves, if installed.
- B. Allow storage tank(s) to fill until there is enough water to check cycles on all units.
- C. Slowly rotate the regeneration knob clockwise on the first unit until the motor runs and drive shaft goes into backwash position. You may wish to swing open the timer so that you can see which pin or hole section is engaging the outer microswitch. (Refer to Figure 2.) This determines which **mode** the control valve is in.
- D. Open the inlet valve for the backwash line **very slowly** to allow water to enter the unit. Water will enter in an upflow direction, and permit any trapped air to escape to drain. When all air has disappeared and a steady stream of water is observed in the drain, the inlet valve may be fully opened.
- E. Advance the regeneration knob to put the control valve into **Rapid Rinse** position. Confirm that water is flowing to drain and allow to run for 3 - 4 minutes.

**NOTE :** If charging Manganese Greensand or MTM™ media, run water to drain until  $KMNO_4$  is evident in drain line effluent. Position valve to the service mode and allow to set for one (1) hour before proceeding.

- F. Position valve to **Backwash** mode and allow to remain there for amount of factory preset, or until water becomes clear at drain. During these initial backwash periods, some media fines may be lost. This is normal and extra media was provided to allow for this loss.

**NOTE :** If charging Manganese Greensand or MTM™ media, repeat this procedure until all traces of  $KMNO_4$  are gone.

- G. Position control valve to the start of **Service** position.
- H. Repeat steps C - G for remaining filters.
- I. The system is now in service!

13. **Multiple Parallel-Unit Installations** - For installations with multiple units that are all in service together, we recommend setting them to backwash one at a time. This is accomplished by simply setting the timer to regenerate on different days, or setting the timeclocks at least one hour apart.



