

Installation / Operation Manual

REACTR™ Water Treatment System

(2510 Control Valve)

For Model Numbers :

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|----------------------------------|-----------------------------------|
| <input type="checkbox"/> RF10-25 | <input type="checkbox"/> RF10L-25 |
| <input type="checkbox"/> RF15-25 | <input type="checkbox"/> RF15L-25 |
| <input type="checkbox"/> RF20-25 | <input type="checkbox"/> RF20L-25 |
| <input type="checkbox"/> RF25-25 | <input type="checkbox"/> RF25L-25 |
| <input type="checkbox"/> RF30-25 | <input type="checkbox"/> RF30L-25 |

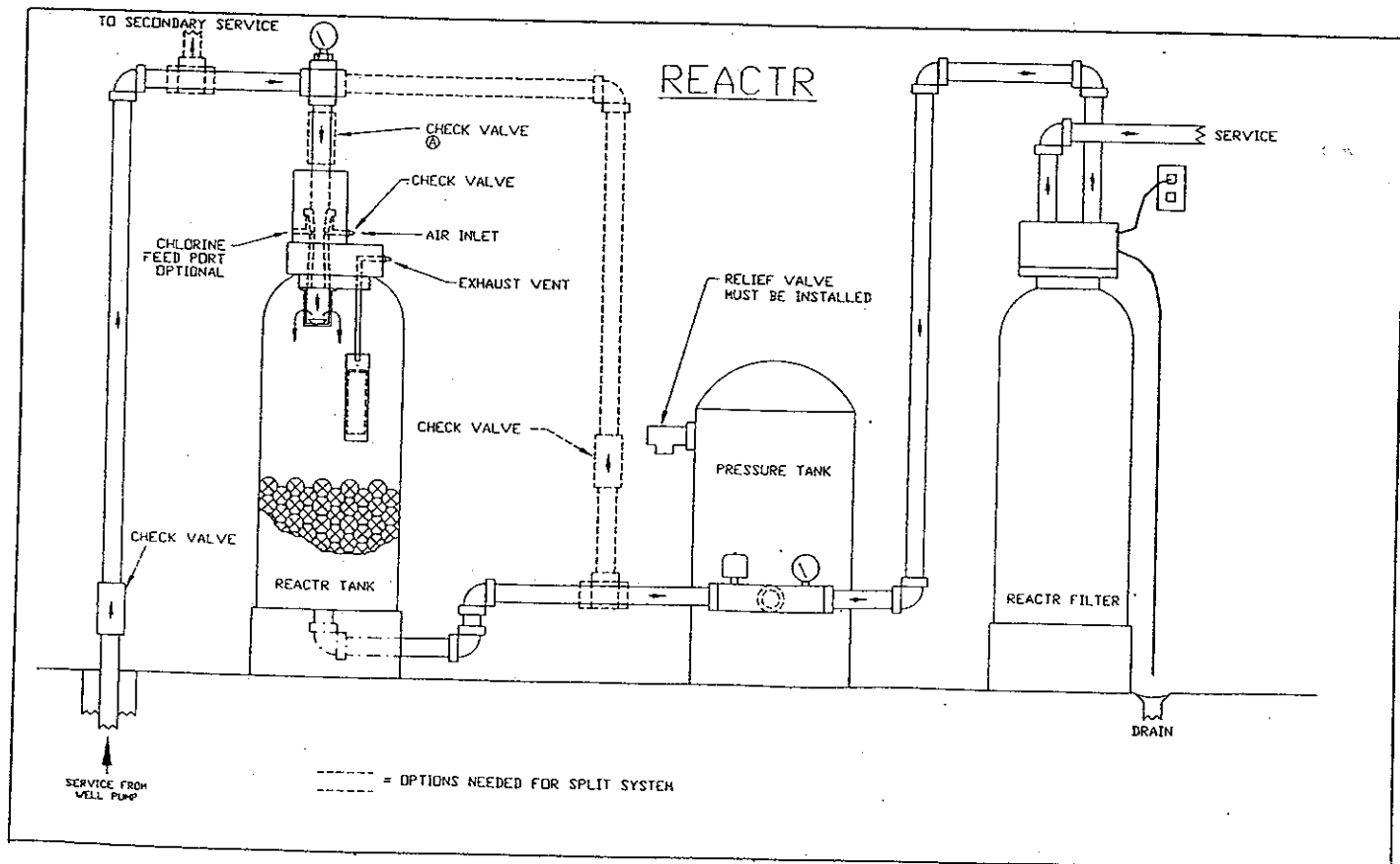
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How The REACTR™ Works

The REACTR™ requires no chemicals for its operation. It consists of two components : (1) REACTR™ Tank and (2) Filter Tank. The first item serves to oxidize and precipitate iron and sulfur so that they can later be removed by the filter. The water flows down through the mineral bed of the filter and out to the service lines. The collected precipitates must be regularly removed from the filter by reversing the flow of water through the filter and running to drain. Called "Backwashing" and lasting 10 minutes, the process expands the mineral freeing the iron, sulfur and turbidity which is then washed out of the filter to the drain. It is important that the correct amount of water is available for the Backwash cycle. Check pumping capacity to be certain water is available in sufficient volume to adequately backwash the equipment at the specified rate. (See specifications.)

General Specifications	Series			
	RF10-25	RF15-25	RF25-25	RF30-25
Filter Media Type	REACTR™ Blend			
Filter Media Capacity (cu. ft.)	1.00	1.50	2.50	3.00
Underbed "D" Gravel Required (pounds)	20	20	50	50
REACTR™ Tank	9 x 48	9 x 48	9 x 48	9 x 48
Mineral Tank	9 x 48	10 x 54	13 x 54	14 x 65
Service Flow Rate - Continuous (gpm)	4	5	8	9
Service Flow Rate - Intermittent (gpm)	6	7	10	11
Backwash Flow Rate (gpm)	5.0	5.0	7.0	10.0
Gallons Used / Backwash	130	130	182	260
Space Required (D x W x H inches) REACTR™ Tank	10 x 10 x 62	10 x 10 x 62	10 x 10 x 62	10 x 10 x 62
Space Required (D x W x H inches) Filter Tank	10 x 10 x 36	11 x 11 x 62	14 x 14 x 62	15 x 15 x 73
Approximate Shipping Weight (pounds)	133	165	270	311



Installation Requirements

REACTR™ Tank

- A level floor position between the well pump and pressure tank. (See Typical Installation Diagram.)
- DO NOT install in an area of direct sunlight or where freezing temperatures may occur!

Filter Tank

- A level floor position ahead of piping into water heater.
- Unit must be installed at least 10' ahead of the inlet to a water heater to prevent damage due to back-up of hot water.
- DO NOT install the unit in an area of direct sunlight or where freezing temperatures may occur! (See Typical Installation Diagram.)

REACTR™ Location / Other Requirements

- Locate the filter near an unswitched, 120 volt / 60 Hz grounded electrical outlet.
- Check for distance and proper drain installation (e.g. floor drain, washing machine standpipe).
- Determine type and size of piping required for REACTR™ connection (e.g. galvanized, PVC plastic).

NOTE: If household plumbing is galvanized and you intend to make an installation with copper (or vice versa), obtain dielectric unions to prevent dissimilar metal corrosion.

NOTE: Where the drain line is elevated above the control valve or exceeds 20 feet in length to reach the drain, use 3/4" I.D. drain line tubing instead of 1/2" I.D. Drain line tubing is not included.

CAUTION: When sweat soldering copper pipe, remember to always use lead free solder and flux. Cover yoke and bypass valve with wet rags to prevent heat damage to connections and control valve! If using PVC or plastic pipe, primers and solvent cements specifically recommended for use with potable water are required.

NOTE: All plumbing lines not requiring "filtered" water should be connected "upstream" of the REACTR™ Tank. (See Typical Installation Diagram.)

Installation Procedure

- Water Supply Connection and Bypass Valve -

To allow REACTR™ Filter servicing, swimming pool filling or lawn sprinkling, a manual Bypass Valve has been installed at the factory. The Bypass allows raw water to be manually routed around the filter.

1. Position REACTR™ tank and filter tank at desired location for installation. The REACTR™ tank must be installed between the pump and pressure tank. (See Installation Diagram.) If a water softener is to be installed, the filter should be positioned first and then the softener.
2. The filter material is shipped separately from the filter tank. The filter tank must be loaded with material after tank has been placed at the desired location.
 - a. Remove the control valve by unscrewing from the tank.
 - b. Remove and inspect distributor tube and bottom basket.
 - c. Replace distributor tube and use a cork or tape to place over top of distributor tube to prevent mineral from entering tube while filling.
 - d. Place mineral funnel in hole on top of tank.
 - e. Pour several gallons of water in the tank.

CAUTION: Not following this procedure can cause damage to distributor tube or basket when loading material!!

- f. First pour in the "D" gravel underbedding and then the filter material.
- g. If using REACTR™ Blend media, go to step H. If using Manganese Greensand or MTM™ media, mix 4 oz. of dry Potassium Permanganate ($KMNO_4$) with one (1) gallon of water for each cubic foot of media in filter tank. Pour $KMNO_4$ mixture into filter tank then fill tank completely with water. This procedure will activate the media for initial start-up. It is strongly recommended to include the OXY-08 OxyClean Option to help keep the media activated by automatically adding chlorine to the system during backwash cycles.

NOTE: The required quantity of gravel and material is listed in the filter specifications.

- h. After filling the tank with material, fill the tank completely with water.

NOTE: This will permit the filtering material to become soaked while preparing the installation and will prevent the control valve from being plugged with floating material on initial backwash.

- i. Remove funnel and clean filter material from tank threads.
- j. Remove cork or tape from distributor tube.
- k. Replace control valve on mineral tank.

CAUTION: Be extremely careful to position distributor tube into control valve distributor tube pilot hole.

3. Turn OFF main water supply and OPEN nearest faucet to relieve pressure.
4. Loosen clips on each side of valve body lubricate o-rings on adapters and firmly press bypass assembly (packaged separately) onto valve body. Align clips and tighten.
5. Cut main line and install appropriate elbows and extensions. Inlet / outlet connection on the REACTR™ tank is 1" FNPT. Inlet is in the top of the tank and outlet is in the bottom. Inlet / outlet connections on the filter yoke are 3/4" FNPT.

CAUTION: If a check valve is installed between REACTR™ Tank outlet and pressure tank, it should be relocated prior to REACTR™ Tank inlet. If mineral build up inside of check valve is evident, replacement is advised. (See Typical Installation Diaphragm.)

NOTE: An optional 1" FNPT yoke is available.

CAUTION: Raised arrows located on the sides of control valve body and/or bypass valve indicate proper direction of water flow. Install inlet and outlet piping in direction of arrows.

CAUTION: If using PVC pipe for installation of REACTR™ Tank, assemble inlet tee before installing on tank manifold, to prevent excess solvent from entering REACTR™ manifold assembly. **Use only Teflon based tape and paste for threaded connections!**

6. Rotate inlet and outlet knobs of the bypass valve to the bypass position (position of bypass knobs are at right angles to inlet / outlet piping).
7. Turn the main supply line on to restore water service to the home.
8. **OPEN** nearest faucet to evacuate air and repressurize plumbing lines.
9. Check for leaks!!

- Drain Line Connections -

1. Pull out clip and remove drain line assembly located on the left side of control valve. Remove drain line hose barb and wrap threads with Teflon tape. Reinstall drain line hose barb.

CAUTION : Hand tighten only!! Replace drain line assembly and reinstall clip.

2. Install 1/2" I.D. drain line tubing (not included) from hose barb to an open drain. A 4" gap between the end of the drain line and the open drain is required to prevent waste water backflow. Keep the drain line as short as possible. An overhead drain line can be used if necessary but should discharge below the control valve. A syphon trap (taped loop) at the outlet of the drain line is advisable to keep the drain line full and assure correct flow during regeneration. Elbows or other fittings must be kept at a bare minimum.

NOTE: Where the drain line is elevated above the control valve or exceeds 20' in length, 3/4" I.D. drain line tubing should be used.

- Electrical Connection -

1. Remove control valve face cover.
2. The control valve **must be in the SERVICE position!** If needed, rotate manual regeneration knob on timer clockwise until white dot aligns with raised time of day arrow. (See Figure 1.)
3. Plug the cord from the control valve into a standard 115 volt / 60 Hz receptacle.
4. For your protection, this unit is equipped with a 3-prong plug and should be plugged into a grounded receptacle. If the receptacle is designed to accept 2-prong plugs, obtain a 3-prong adapter and secure the ground wire to the receptacle plate mounting screw.

WARNING: Do not remove grounding prong! An improperly grounded unit could cause injury from electric shock!

- Pressuring The System -

1. The control valve **must be in the SERVICE position!** If needed, rotate manual regeneration knob on timer clockwise until white dot aligns with raised time of day arrow. (See Figure 1.)
WARNING: NEVER turn the regeneration knob counter clockwise as this will cause damage to the control valve!
2. Slowly rotate inlet knob of the bypass valve to the **SERVICE** position. Slowly rotate outlet knob to the **SERVICE**

- position (position of the bypass knobs are parallel to inlet / outlet piping).
3. Open the nearest faucet to evacuate air from plumbing lines.
 4. Check for leaks!

- Control Valve Operation -

Each control valve position can be manually selected by rotating the **manual regeneration knob** clockwise until the first microswitch located on rear of timer door is aligned with each cycle position on the program wheel. (See Figure 2.)

NOTE: To expose the program wheel, grasp the upper left corner of the timer face and pull outward.

WARNING: When selecting cycle positions, you *must wait* until position of the piston has stopped before advancing the timer further.

If using REACTR™ Blend Filter Media

1. Manually index **manual regeneration knob** to **BACKWASH** position and allow water to run to drain for 3 to 4 minutes. (See Figure 2.)
2. Manually index **manual regeneration knob** to **RAPID RINSE** position and allow water to run to drain for 3 to 4 minutes. (See Figure 2.)
3. Manually index **manual regeneration knob** to **SERVICE** position. (See Figure 2.)
4. Snap timer door closed.

If using Manganese Greensand or MTM™ Filter Media

- A. Manually index **manual regeneration knob** to **RAPID RINSE** position and allow water to run to drain until $KMNO_4$ is evident in the effluent (dark purple color). (See Figure 2.)
- B. Manually index **manual regeneration knob** to **SERVICE** position. (See Figure 2.)
- C. Let filter soak for one (1) hour.
- D. Manually index **manual regeneration knob** to **BACKWASH** position and allow filter to complete entire cycle (backwash and rapid rinse). (See Figure 2.)
- E. Repeat step D until water to drain runs clear.

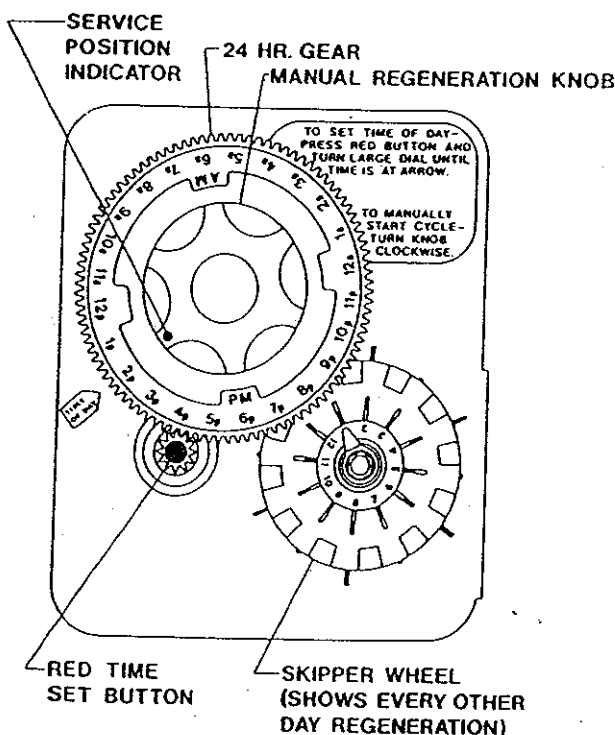


Figure 1

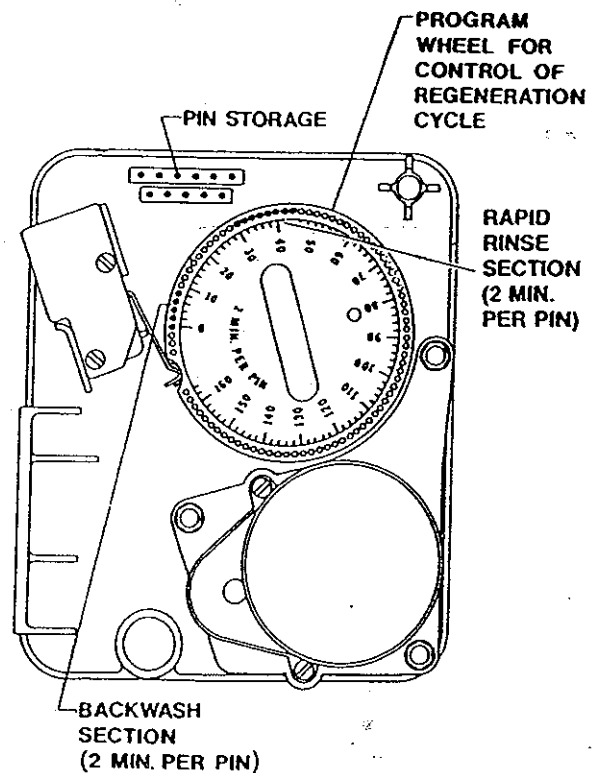


Figure 2

- Setting the Backwash Schedule -

Under most circumstances a backwash schedule of every six (6) days should suffice. However, depending on water usage and local water conditions, the backwash cycle may need to be accomplished more frequently.

NOTE: A significant pressure drop in the home before the filter backwashes would be an indication that a more frequent backwash schedule is needed.

1. Locate the skipper wheel just to the right of the manual regeneration knob. (See Figure 1.)
2. Refer to the regeneration frequency chart (Figure 3) and select the number of days between backwash desired.
3. Slide out the corresponding tab number(s) on the program wheel.

Figure 3

Regeneration Frequency (# of Days)	Slide Out TAB NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
1	●	●	●	●	●	●	●	●	●	●	●	●
2		●		●		●		●		●		●
3			●			●			●			●
4				●				●				●
6						●						●
12												●

NOTE: Figure 1 shows the program wheel set for every two (2) days.

- Setting the Time of Day -

1. Depress red button on lower left side of timer door. (See Figure 1.)
2. Rotate the 24 hour gear on the manual regeneration knob until the time of day is aligned with time of day arrow. (Note a.m. and p.m.)
3. Check that red button has engaged in the 24 hour gear.
4. The starting time for backwash is factory preset to occur at 1:00 a.m. on each day for which a program tab is extended.
5. Replace cover valve face cover.

NOTE: If a different backwash time is desired, adjust the time plate per instructions on page 5 of the 2510 Service Manual

- Final Check -

1. Be certain the bypass is in the "SERVICE" position.
2. Make sure the electric cord is connected to an uninterrupted 115 volt outlet.
3. Check that the time of day is set.
4. Double check backwash schedule.
5. Make final check for leaks!
6. Fill-out and mail warranty card.
7. Leave this manual with the unit.

Operation, Care and Cleaning

When the inlet / outlet knobs of the bypass valve are in the **SERVICE** position (position of bypass knobs are parallel to inlet / outlet piping), water is directed through the water filter. Water may be bypassed by turning the inlet / outlet knobs to the **BYPASS** position (position of bypass knobs are right angles to inlet / outlet piping). Water to the home will bypass the filter and be **untreated**.

You should manually bypass the filter if :

1. The outside lines do not bypass the water filter and water is to be used for lawn sprinkling or other similar uses.
2. Servicing the water filter.
3. A water leak from the water filter is evident.
4. **Shock Treating** water well and piping with chlorine or other disinfectant.

- Extra Backwash -

If water demands are unusually heavy, an extra backwash can be initiated manually :

1. Remove the control valve face cover to access control panel.
2. Rotate manual regeneration knob **CLOCKWISE** one (1) click.

CAUTION: Do not rotate regeneration knob **COUNTER CLOCKWISE** as this will cause damage to the control valve!

3. Backwash will begin immediately and the filter will automatically return to the "SERVICE" position.

NOTE: Water will not start flowing for several minutes.

4. Replace the control valve face cover.

- To Skip a Backwash -

1. For vacations or extended periods of absence, the electric cord can be pulled from the receptacle.
2. Upon return, plug in the cord and reset the time of day.

- General Care and Cleaning -

1. Do not place heavy or sharp objects on water filter.
2. Use only mild soap and warm water to clean exterior of the unit. Never use harsh, abrasive cleaners.
3. Protect the water filter and drain line from freezing.
4. Reset the time of day on the control valve after any interruption of the electrical power occurs in order to keep the unit on the proper backwash schedule. Also reset time for daylight saving time periods.

How To Set The Backwash Cycle Program :

The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

To expose cycle program wheel, grasp timer in upper left hand corner and pull, releasing snap retainer and swinging timer to the right.

To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs towards center, lift program wheel off timer. (Switch arms may require movement to facilitate removal.)

How To Change The Length Of The Backwash Time :

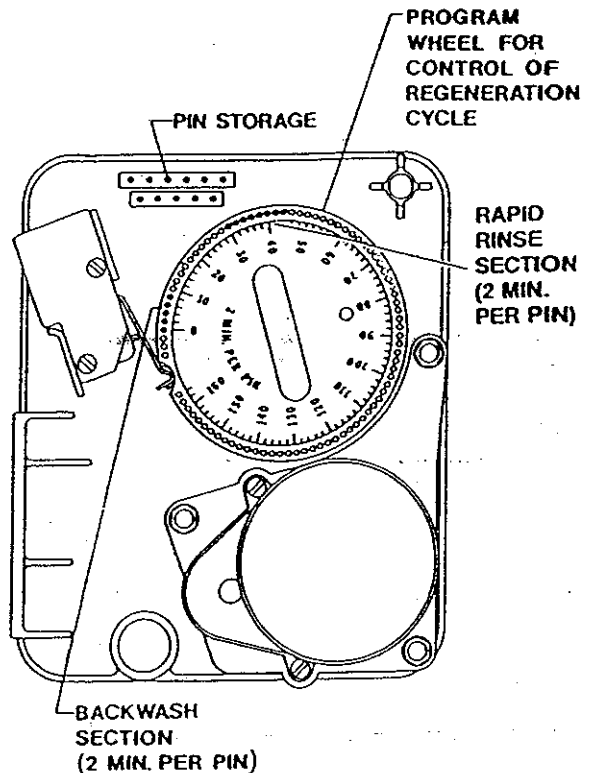
The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

FOR EXAMPLE: If there are six pins in this section, the time of backwash will be 12 minutes (2 minutes per pin). To change the length of backwash time, add or remove pins as required. The number of pins times two equals the backwash time in minutes. (Note : Do not add pins before "0" minutes designated.)

How To Change The Length Of Rapid Rinse :

The second group of pins on the program wheel determines the length of time that your water conditioner will rapid rinse (2 minutes per pin).

To change the length of rapid rinse time, add or remove pins at the higher numbered end of this section as required. The number of pins times two equals the rapid rinse time in minutes.



NOTE : The program wheel has been programmed at the factory for the **OXYCLEAN Option**. If the **OXYCLEAN Option** is used, no changes to the cycle times are necessary.

Factory Settings

Backwash - 10 minutes (5 pins)
Rest Period - 20 minutes (10 holes)
Rapid Rinse - 16 minutes (8 pins)