

# Installation / Operation Manual

## “UT” Style REACTR™ Water Treatment System

### *Signature Series* Control Valve

For Model Numbers :

- |                               |                                |
|-------------------------------|--------------------------------|
| <input type="checkbox"/> UT10 | <input type="checkbox"/> UT10L |
| <input type="checkbox"/> UT15 | <input type="checkbox"/> UT15L |
| <input type="checkbox"/> UT20 | <input type="checkbox"/> UT20L |
| <input type="checkbox"/> UT25 | <input type="checkbox"/> UT25L |
| <input type="checkbox"/> UT30 | <input type="checkbox"/> UT30L |
| <input type="checkbox"/> UT40 | <input type="checkbox"/> UT40L |

***CSI Inc.***

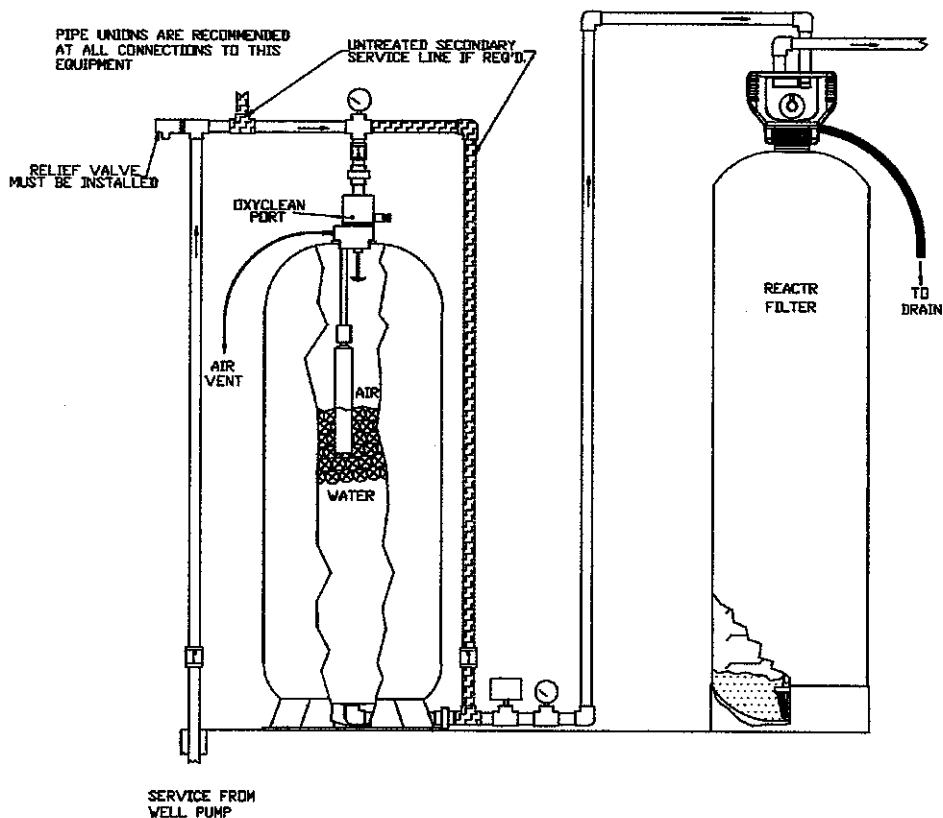
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## How The REACTR™ Works

The REACTR™ requires no chemicals for its operation. It consists of two components : (1) REACTR™ Tank, (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 bed 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	UT10	UT15	UT20	UT25	UT30	UT40
Filter Media Type	REACTR™ Blend					
Filter Media Capacity (cu. ft.)	1.00	1.50	2.00	2.50	3.00	4.00
Underbed "D" Gravel Required (pounds)	20	20	50	50	50	70
REACTR™ Tank (polyglass)	16 x 44	16 x 44	16 x 44	16 x 44	16 x 44	16 x 44
Mineral Tank (polyglass)	9 x 48	10 x 54	13 x 48	13 x 54	14 x 65	16 x 65
Service Flow Rate - Continuous (gpm)	4	5	6	8	9	11
Service Flow Rate - Intermittent (gpm)	6	7	8	10	11	13
Backwash Flow Rate (gpm)	5.0	5.0	6.0	7.0	10.0	15.0
Gallons Used / Backwash	130	130	156	182	260	390
Space Required (DxWxH inches) REACTR™ Tank	16x16x51	16x16x51	16x16x51	16x16x51	16x16x51	16x16x51
Space Required (DxWxH inches) Filter Tank	9x9x56	10x10x62	13x13x56	13x13x62	14x14x73	16x16x74
Approximate Shipping Weight (pounds)	145	177	222	282	323	465

"UT" SERIES REACTR



## Installation Requirements

### "UT" REACTR™ Tank

- A level floor position between the well pump and filter tank. (Between pump and pressure tank, if currently installed tank is used.)
- 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 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 the installation with copper (or vice versa), obtain di-electric unions to prevent dissimilar metal corrosion.

**Note :** Where the drain line is elevated above the control valve or exceeds 20' 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 :** *If sweat soldering copper pipe (remember to always use lead free solder and flux), cover yoke or bypass valve with wet rags to prevent heat damage to connection 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 Diagrams.)

## Installation Procedure

### - Water Supply Connection and Bypass Valve -

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

1. Position "UT" REACTR™ Tank and Filter Tank at desired location for installation. (See Installation Diagram.) If a water softener is to be installed, it should be positioned after the Filter Tank.
2. The filter material is shipped separately from the Filter Tank. The Filter Media must be loaded after Filter Tank has been placed at desired location.
  - A. Remove the control valve by unscrewing from the Filter Tank.
  - B. Remove and inspect distributor tube and bottom basket.
  - C. Replace distributor tube and plug open end with a cork or cover with tape to prevent media from entering tube while filling.
  - D. Place media 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 media.
- 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<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 tank completely with water. This procedure will activate the media for initial start-up. It is strongly recommended to include the OXY-08R Oxyclean Option to help keep the media activated by automatically adding chlorine to the system during backwash cycle.

**Note :** The required quantity of gravel and media is listed in the filter specifications.

H. After filling the Filter Tank with media, fill the tank completely with water.

**Note :** This will permit the filtering media 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 media 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. Cut main line and install appropriate elbows and extensions. Inlet connections on the "UT" REACTR™ Tank is 1" FNPT and the bottom outlet is 1" FNPT. Inlet is in the top of the tank and outlet is out the bottom. Inlet and outlet connections on filter yoke are 3/4" FNPT pipe size.

**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 Diagram.)*

**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.*

**Caution :** *Arrows located on the sides of control valve body and bypass valve indicate proper direction of water flow. Install inlet and outlet piping in directions of arrows.*

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 Connection -**

1. Pull out clip and remove drain line assembly located on back 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" air 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 backwash. 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.

3. Install included 3/8" x 1/4" tubing to air vent hose barb on REACTR™ Tank Manifold and run to drain. An air gap **must** be provided.

**Warning :** *Do not tee air vent line to drain line or soil line. Protect air vent line from freezing.*

#### **- Electrical Connection -**

1. Connect the power supply to the control valve and plug into a 115 volt / 60 Hz receptacle.

**Note :** **DO NOT** plug into an outlet controlled by a wall switch or pull chain that could inadvertently be turned off.

**- Installing Battery Back Up -**

1. Remove the rear cover.
2. Install a 9 volt battery. Refer to page 2, item 3 of the Signature Series Service Manual.
3. Reinstall rear cover.

**- Pressurizing The System -**

1. Slowly rotate inlet knob of the bypass valve to the **SERVICE** position. Slowly rotate outlet knob to the **SERVICE** position. (Position of bypass knobs are parallel to inlet / outlet piping.)
2. Open the nearest faucet to evacuate air from plumbing lines.
3. Check for leaks!

**- Programming The Control Valve -**

Refer to page 2 of the Signature Series Service Manual for main menu programming and instruction.

1. Set time of day.
2. Set a.m. and p.m.
3. Set number of days between backwash. (This generally will be every 4 to 6 days.)

Refer to page 7 of the Signature Series Service Manual for master programming and instruction.

1. Set regeneration time if other than 12:00 a.m. is desired.

**- Pressurizing The System And Control Valve Operation -**

Refer to page 4, item 2 of the Signature Series Service Manual Instructions.

If using REACTR™ Blend Filter Media :

1. Manually index **control valve** to **BACKWASH** (cycle 1) position and allow water to run to drain for 3 to 4 minutes.

**Warning :** *Close inlet valve on bypass prior to selecting the backwash position. After backwash position has been established, slightly open inlet valve on bypass to evacuate air from the media tank. Fully open inlet valve when all air is depleted. This procedure will prevent media from being uplifted into control valve.*

2. Manually index **control valve** to **RAPID RINSE** (cycle 3) position and allow water to run to drain for 3 to 4 minutes.
3. Manually index **control valve** to **SERVICE** (cycle 0) position.

If using Manganese Greensand or MTM™ Filter Media :

1. Manually index **control valve** to **RAPID RINSE** (cycle 3) position and allow water to run to drain until  $KMNO_4$  is evident in the effluent (dark purple color).
2. Manually index **control valve** to **SERVICE** position (cycle 0).
3. Put filter in **BYPASS** and let soak for one (1) hour.
4. Place filter bypass in **SERVICE** and manually index **control valve** to **BACKWASH** (cycle 1) position and allow filter to complete entire cycle (backwash and rapid rinse).
5. Repeat step 4 until water to drain runs clear.

## Operation, Care and Cleaning

When the inlet / outlet knobs of the bypass valve are in **SERVICE** position (position of bypass knobs are parallel to the 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 at 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. Refer to page 4, item 2 of the Signature Series Manual.

### **- To Skip A Backwash -**

1. For vacations or extended periods of absence, the power supply can be pulled from the receptacle.
2. Upon return, plug the cord and reset the time of day, if 9 volt battery was not installed. If battery was installed, replace battery.

### **- 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 time for daylight savings time periods.
5. Replace 9 volt battery once a year.

**Note :** The control valve cycle times have been programmed at the factory for the **Oxyclean Option**. If the **Oxyclean Option** is used, no changes to the cycle times are necessary. The **Oxyclean Option** model number for use with the Signature Series REACTR™ is **OXY-08R**.

### **Factory Settings**

Backwash - 10 minutes  
Rest Period - 20 minutes  
Rapid Rinse - 16 minutes