



# **5600SE Valve**

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## **Iron & Sulfur Filter Operation Manual**



# Performance and Specifications

## Hydrotech Iron & Sulfur (Manganese Greensand) Filter

Item Number	Model Number	Media cu. ft. (litres)	Pipe Size inches (mm)	Max. Bed Capacity (ppm)	Iron removal Capacity (ppm)	Service Flow Rate	Peak Flow Rate	Backwash Flow Rate	Mineral Tank size inches (mm)	KMnO <sub>4</sub> Regeneration (oz)	Shipping Weight Lbs. (kg)
						USGPM (LPM)					
7621	5600SEM-847IF	0.75 (21)	3/4 (19)	6000	4500	3.0 (7.6)	4.0 (15)	3.5 (13)	8 x 47 (203 x 1194)	2	120 (55)
7622	5600SEM-948IF	1.00 (28)	3/4 (19)	8000	6000	3.0 (11)	5.0 (19)	4.0 (15)	9 x 48 (229 x 1219)	4	135 (61)
7623	5600SEM-1054IF	1.50 (42)	3/4 (19)	12000	9000	5.0 (19)	8.0 (30)	5.0 (19)	10 x 54 (254 x 1372)	6	185 (84)

**Caution:** These water conditioners are not intended to be used for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

**Notes:**

**Operating Temperature Range:** 34° to 110°F (1° to 43°C)

**Operating Pressure Range:** 20 to 120psi (137 to 827 kPa)

**Electrical:** 24V/60Hz with a supplied 120V/60Hz Wall Mount CSA Approved Transformer

1. The manufacturer reserves the right to make product improvements which deviate from the specifications and descriptions stated herein without obligation to change previously manufactured products or to note the change.
2. Peak flow rates are intended for intermittent use only and are for residential application only.
3. KMnO<sub>4</sub> refers to Potassium Permanganate.

## How Your 5600SE Water Filter Works

Your automatic iron filter is an ingeniously simple and reliable design. The unit consists of a bed of filter media contained in a fiberglass tank; a specially designed feeder containing potassium permanganate for the regeneration of the filter and a proven automatic control.

Raw water enters your home through the main supply line, enters your iron filter and passes down through the filter media. Any iron, manganese or hydrogen sulfide present in your water supply is exposed to oxygen stored in the filter media. The oxygen causes precipitation of the minerals and they are trapped in the filter media. Only clean filtered water flows to your household water line. The filter media is periodically regenerated, automatically backwashing the trapped minerals to the drain and replacing the oxygen. This is done by introducing potassium permanganate to the media.

1. Your automatic iron filter can be programmed to operate according to your needs by making the appropriate settings on the timer. On the days your filter regenerates, the operating cycles will be automatically performed. In the service position, filtered water is supplied for household use.
2. The automatic control reverses the flow of the water through the filter, backwashing minerals trapped in the filter to the drain.
3. The control pulls a vacuum on the feeder. This causes an exact volume of saturated potassium permanganate solution to be drawn into the filter tank.
4. The control slowly rinses the chemical through the media tank. The potassium permanganate supplies oxygen to the filter media.
5. The control fast rinses the media bed to settle it and to ensure that all the chemical and mineral precipitate is removed.
6. The control adds water to entirely fill the previously evacuated feeder. The feeder is now ready for the next regeneration. The control puts the system into service, supplying iron-free water to the household. All this is performed automatically over a period of 2 ¾ hours. Water runs to the drain for approximately 80 minutes.

In normal operation, the Time of Day display will alternate being viewed with the Volume Remaining display. This display will be in gallons. As treated water is used, the Volume Remaining display will count down from a maximum value to zero or (---). Once this occurs, a regeneration cycle will be initiated at the Set Regeneration Time. Water flow through the valve is indicated by the Flow Dot that will flash in direct relationship to flow rate.

<b>Example</b>	833 Gallons of Treated Water Remaining	Service	•	833	•	Flow
		Program				P.M.
	0 Gallons of Treated Water Remaining	Service	•	- - -	•	Flow
		Program				P.M.

In regeneration, the control will display a special regeneration display. In this display, the control will show the current regeneration step number the valve is advancing to or has reached and the time remaining in that step. The step number displayed will flash until the valve has completed driving into this regeneration step position. Once all regeneration steps have been completed, the valve will return to Service and resume normal operation.

<b>Example</b>	Less than 6 minutes remaining in Regen Step #1	Service		1 - - 5		Flow
		Program				P.M.

Pushing the Extra Cycle Button during a regeneration cycle will immediately advance the valve to the next cycle step position and resume normal step timing.

### Control Operation During Programming

The control will only enter the Program Mode with the valve in Service. While in the Program Mode, the control will continue to operate normally, monitoring water usage and keeping all displays up to date. Control programming is stored in memory permanently, eliminating the need for battery back-up power.

### Control Operation During a Power Failure

During a power failure, all control displays and programming will be stored for use upon power re-application. *The control will retain these values for years, if necessary, without loss.* The control will be fully inoperative and any calls for regeneration will be delayed. The control will, upon power re-application, resume normal operation from the point where it was interrupted. *An indication that a power outage has occurred will be an inaccurate Time of Day display.*

# Sizing and Operating Requirements

## Water Pressure

The water system must have a pump big enough to deliver the recommended backwash rate with a minimum pressure at the inlet of the filter of 20 psi (137 kPa). If the existing system cannot do this, it must be upgraded to do so. Whenever possible, the water system should be adjusted to deliver at least 30 psi (206.8 kPa) for even more satisfactory results. Maximum pressure should not exceed 100 psi (689 kPa).

## Backwash Flow Rates

The most important criteria in sizing an iron filter is the capacity of the pump. The water must pass through the filter media at a service flow rate that allows it to oxidize and collect the iron. The filter must also be backwashed at a flow rate sufficient to dislodge and remove the captured iron. Failure to provide sufficient water will cause a build-up of iron in the filter media, impairing its iron removing ability and resulting in iron bleeding out into the service water.

In order for your filter to backwash and rinse properly, your pump must be capable of providing the backwash flow rates indicated in the above specification chart.

## Capacity

An iron filter with one cubic foot of filter media regenerated with one Potassium Permanganate feeder will work well for most residential applications. For example, with iron in the range of 3-6 ppm, most filters will need to regenerate every two or three days providing an average family size of four or five people.

The specification chart above shows the iron removal capacity in ppm that can be expected on automatic iron filters. The specifications are based on obtaining 6,000 ppm of capacity for each cubic foot of filter media. Two different Potassium Permanganate feeders are available – one feeding 2 oz. per regeneration, the other feeding 4 oz.

In order to obtain the above capacities, the pH of the water being treated must be 7.0 or above. In the event the water is below 7.0, it must be treated with the appropriate equipment before going through the filter.

## Removal of Iron, Manganese & Hydrogen Sulfide

For the purpose of sizing a filter, consider 1 ppm of manganese equal to 2 ppm of iron and 1 ppm of hydrogen sulfide equal to 3 ppm of iron. Manganese and hydrogen sulfide (sulfur) are more difficult to oxidize than iron. Therefore, we suggest that, when making your sizing calculations and regeneration frequency calculations, calculate iron x 1, manganese x 2 and hydrogen sulfide x 3. All three must equal less than 10 ppm. Manganese is often present in water when iron is present. Hydrogen sulfide can normally be identified by a strong rotten egg odor.

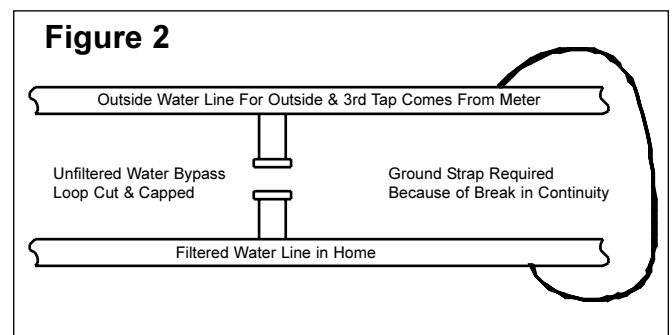
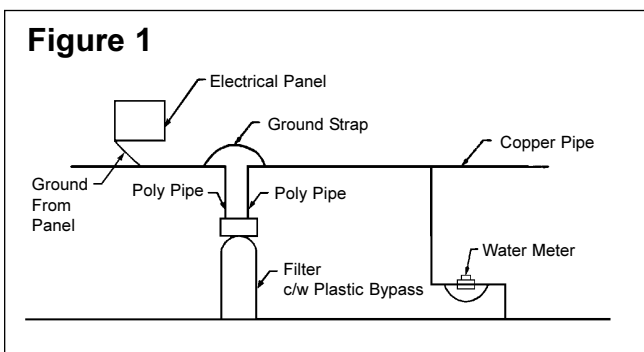
## Installation Instructions

**All government codes and regulations governing the installation of these devices must be observed.**

**CAUTION:** If the ground from the electrical panel or breaker box to the water meter or underground copper pipe is tied to the copper water lines and these lines are cut during installation of the Noryl bypass valve and/or poly pipe, an approved grounding strap must be used between the two lines that have been cut in order to maintain continuity. The length of the grounding strap will depend upon the number of units being installed and/or the amount of copper pipe being replaced with poly. See Figure 1.

In all cases where metal pipe was originally used and is later interrupted by poly pipe or the Noryl bypass valve as in Figure 1 or by physical separation as in Figure 2, an approved ground clamp with no less than #6 copper conductor must be used for continuity, to maintain proper metallic pipe bonding.

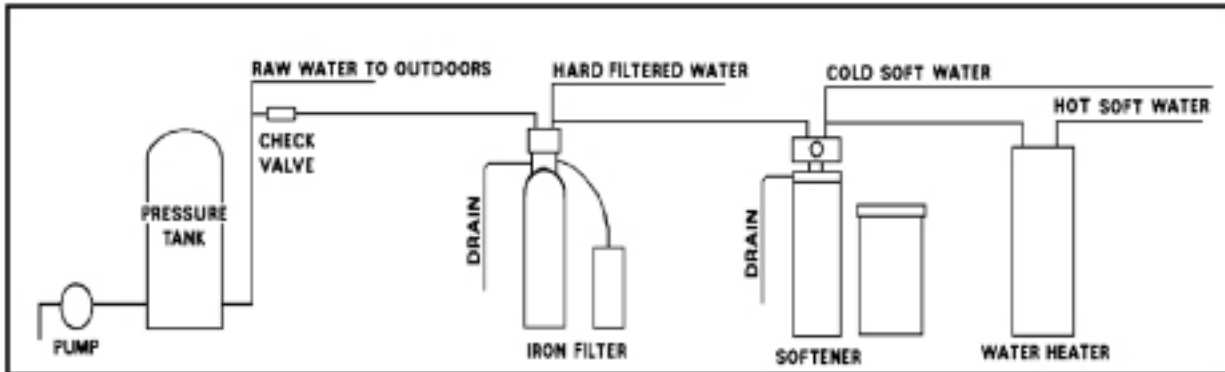
Check your local electrical code for the correct clamp and cable size.



- Place the iron filter and the chemical feeder container on a flat surface in desired location, near a drain and 120 volt AC outlet. Subjecting your filter to freezing or to water temperatures above 110°F (43°C) will void the warranty.

**NOTE:** Some units are shipped with the media bed in separate bags. To install, unscrew the control valve from the top of the fiberglass tank, position the riser tube in the center of the tank plugging the tube with a cloth and pour the media into the tank in the following order: coarse, fine gravel and then the filter media. Remove the cloth and carefully screw the valve into the tank (When replacing the media, the tank must first be inverted and the old media bed removed. See instructions provided with the replacement media).

## Rural Well Supply - Iron & Hardness Removal



- Attach the installation kit or bypass to the control valve. Make the inlet and outlet connections to meet applicable plumbing codes. A 3/4" inlet line is recommended. When sweat fittings are used, solder the adapters for the inlet and outlet to a short length of copper pipe first. This procedure is necessary because the controls **MUST NOT** be subjected to temperatures above 160°F (71°C). Then, using Teflon tape, screw the adapters for the inlet, outlet and drain into the valve.  
**CAUTION:** Do not use pipe thread compound as it may attack the material in the valve body.
- On the drain, use the 1/2" hose barb supplied and a full 1/2" ID hose (not supplied) for the drain line and make the shortest run to a suitable drain. The drain lines must be secured in position at the ends which discharges into the drain so it cannot be inadvertently moved from the drain, resulting in chemical spillage.
- Connect the feeder container to the control valve with the flexible polyethylene tubing provided. The connection to the container is made with the fitting nut provided (do not overtighten).
- Attach the 5/8" hose (supplied) to the over flow fitting on the feeder and run the hose to the floor drain.
- Make sure the bypass valve is in the service position.
- Plug the 24-volt transformer into a 120 VAC 60 Hz outlet. This valve has four positions: 1) Backwash 2) Brine/Rinse 3) Rapid Rinse and 4) Brine Refill. When the valve is in the Service position, the *extra cycle* button (far left button as shown on Figure 4) must be pressed and held for 5 seconds before it activates. Press and hold the *extra cycle* button for 5 seconds to advance the valve to the "1" Backwash position. Slowly turn on the water supply and allow the unit to backwash until the air purges out of the tank and clears the system.
- Advance to the brine refill position "4". Allow to fill for 5 minutes. Make sure there are no leaks in the top connection to the feeder container.
- Advance to the Brine/Rinse position "2". Proper draw is indicated by upward motion of water droplets in the tube connected to the feeder container. Allow to draw for 5 minutes to pull the air out of the feeder container.
- Put control into the service position.
- Set the time of day and gallons between regeneration following the information on Pages 5-8.
- Make sure any bypass is in the service position.
- Cautiously pour the Potassium Permanganate into the feeder and replace the cover and safety screws. (See the refilling instructions on page 10).
- Manually initiate regeneration after about one hour for the potassium permanganate to activate the manganese greensand.

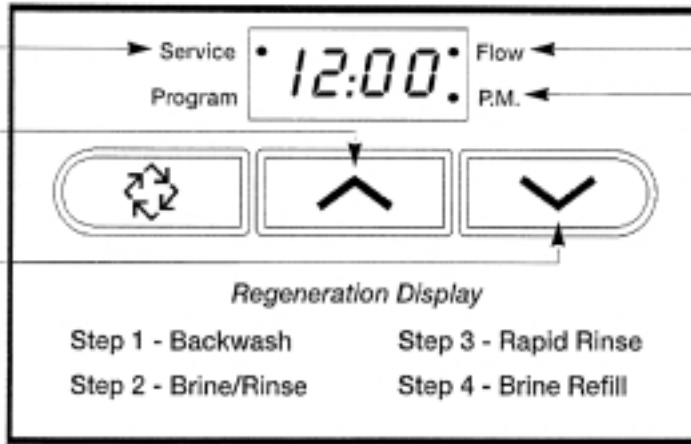
**ALL STATE AND LOCAL GOVERNMENT CODES GOVERNING INSTALLATIONS OF THESE DEVICES MUST BE OBSERVED.**

# Operating Instructions

Service Indicator:  
Valve in Service - Dot On  
Extra Cycle Tonight - Flashing Dot

Flow Indicator:  
Flashing Dot With Water Flow  
P.M. Indicator

Set Up Button  
Set Down Button



**Figure 3**

The valve has been pre-programmed with factory settings as follows:

### Regeneration Cycle Step Programming

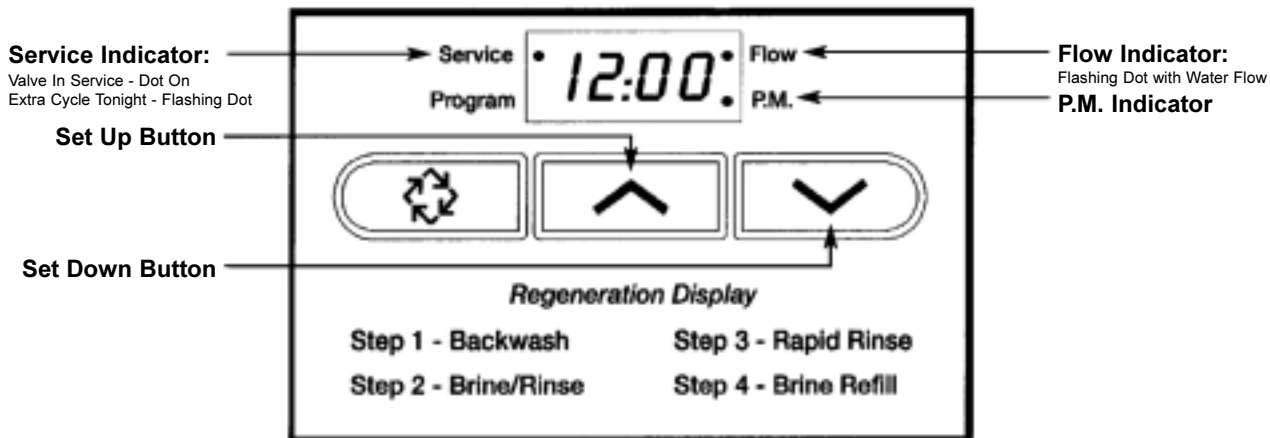
1. Backwash .....10 minutes
2. Brine Rinse.....50 minutes
3. Rapid Rinse .....10 minutes
4. Brine Refill .....4 minutes

**Installation Tip:** The 5600SE Filter should not be allowed to regenerate at the same time as any other water treatment units. If adjustment is required, consult programming chart to adjust default regeneration time. Default setting is 11:00 pm.)

## Operating Instructions

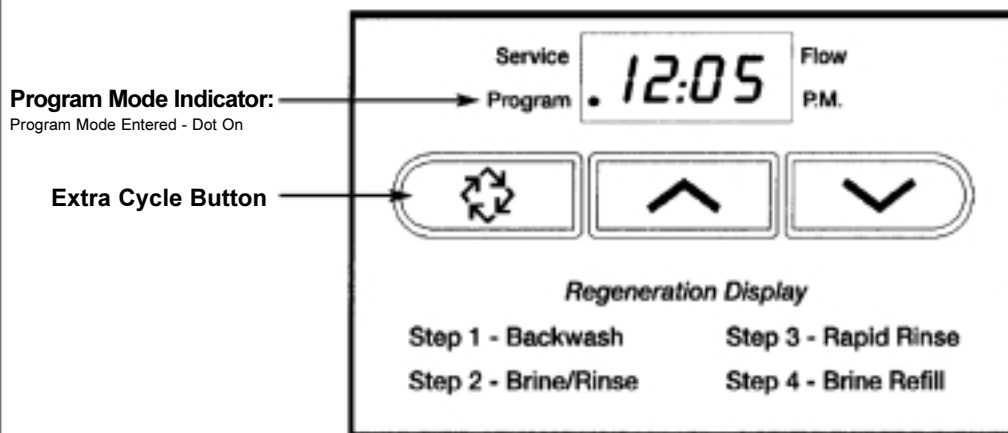
Whenever the valve is in Service the current time of day can be set, the control programmed, or an extra regeneration initiated at any time.

### 1. Set Time Of Day



Push either the Up or Down Set Button once to adjust Time of Day Display by one digit.  
Push and hold either Up or Down Set Button to adjust Time of Day Display by several digits.

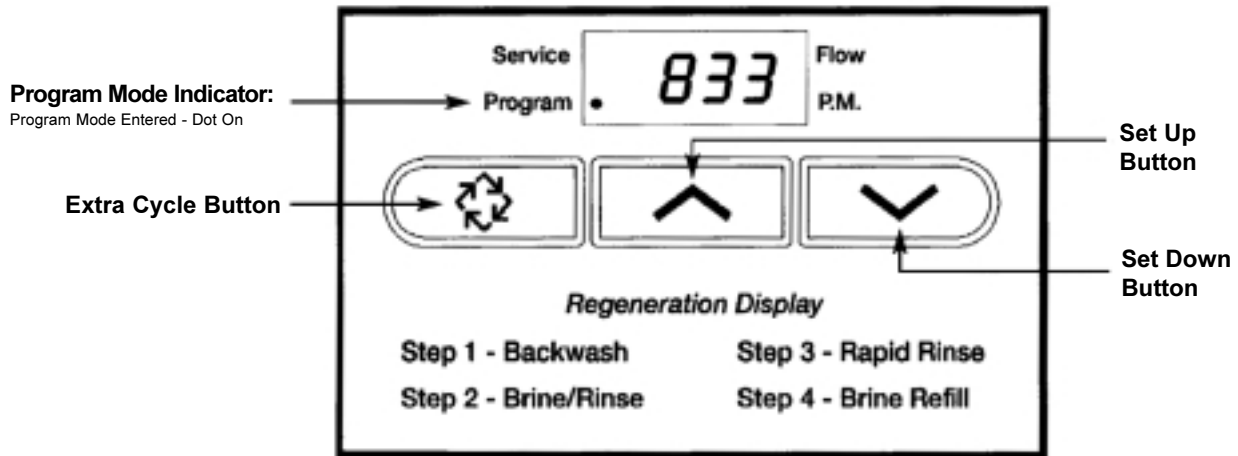
### 2. Enter Control Programming Mode



1. Push and hold for 5 seconds *both* the Up and Down Set Buttons to enter Programming Mode.
2. Push the *Extra Cycle Button* once per display until all have been viewed and this mode is exited and normal operation is resumed.



# 3. Set Control Programming



1. The first option setting display that appears in the Program Mode is Treated Water Capacity. Using the Set Up or Down Buttons, set the amount of treated water that can flow through the unit before a regeneration is required. For Example:

650 Gallons Capacity      Service      Flow  
 Program      . 650      P.M.

2. Push the Extra Cycle Button. The second option setting display that appears is Regeneration Time. Using the Set Up or Down Buttons, set the desired time of day when a regeneration can occur, is required. For Example:

2:00 A.M. Regeneration Time      Service      Flow  
 Program      . 2:00      P.M.

3. Push the Extra Cycle Button. The third option setting display that appears is Regeneration Day Override. Using the Set Up or Down Buttons, set the maximum number of days before a regeneration cycle must occur. For Example:

Regenerate Every      Service      Flow  
 7 Days Minimum      Program      . A--7      P.M.

***This is an option only. Please do not adjust before consulting an authorized dealer.***

**To determine the frequency of regeneration, use this procedure:**

**Days:**

Total amount of iron to be removed between regenerations -

$$\frac{\div \text{ppm of iron to be removed per day}}{= \text{NUMBER OF DAYS BETWEEN REGENERATIONS}}$$

**Example:**

	5	people in the household
x	60	gallons of filtered water per person
=	300	gallons of filtered per day
x	8	ppm of iron
=	2400	PPM OF IRON TO BE REMOVED PER DAY

*Using 5600 SEM-948IF + 1 Feeder*

	6000	ppm capacity
÷	2400	ppm to be removed per day
=	2	DAYS BETWEEN REGENERATIONS

**Setting the Frequency of Automatic Regeneration (SE Models)**

The number of gallons of filtered water your iron filter can supply between regenerations must first be determined using the following calculations.

**Gallons:**

ppm of capacity between regenerations (see Specifications - Page 1)

$$\frac{\div \text{ppm of iron in the water sample}^*}{= \text{number of gallons supplied between regenerations}} - \text{reserve capacity (number of people x 60 gallons)}$$

*Example - Using 5600 SEM-948IF + 1 Feeder*

	6000	ppm between regenerations
÷	8	ppm of iron
=	750	gallons between regenerations
-	300	gallons reserve capacity (5 people x 60 gallons)
=	450	GALLONS - BETWEEN REGENERATIONS

**\* 1 ppm of manganese = 2 ppm of iron; 1 ppm of hydrogen sulfide = 3 ppm of iron**

## **Manual Regeneration Cycle**

If you run out of filtered water because of inadequate regeneration frequency, inadequate reserve capacity, power failure or unusually high water usage, you can initiate a manual regeneration simply by pressing the extra cycle button. The filter will now automatically complete a regeneration cycle and return to service. If possible, avoid water use during the regeneration cycle.

Once you have set your filter you may experience frequent loss of water pressure, you may have to increase the frequency of regeneration by decreasing the number of gallons between regeneration.

## **Potassium Permanganate Feeder**

The potassium permanganate feeder assembly incorporates a non-pressurized storage tank and innovative new grid design along with a dependable float valve.

The attractive 10" x 16" black tank is made of tough blow-molded high density polyethylene. It has a potassium permanganate capacity of 30 lbs. and a liquid capacity of 5 gallons.

The black injection molded cover is securely fastened with three stainless steel safety screws to prevent access by children and pets. Also, the potassium chemical tank should be placed where it is free from possible upset or access by children or pets.

Chemical warning label and drain caution label are affixed to unit.

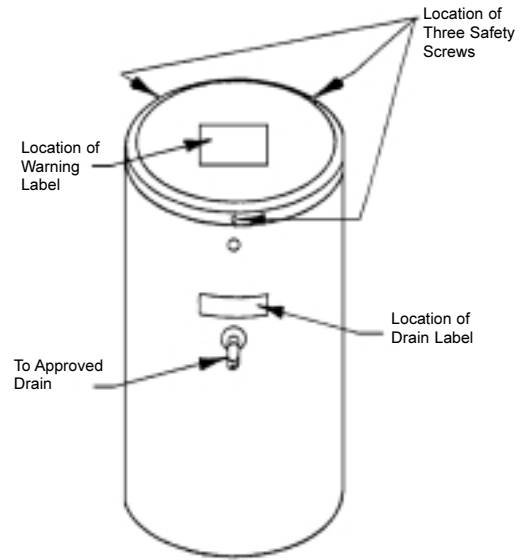
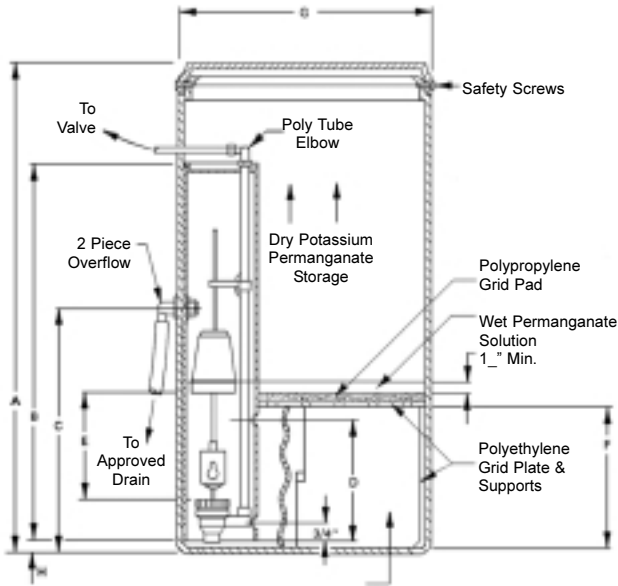
The unique polypropylene grid pad refuses to allow even the finest grade of undissolved potassium permanganate to pass through the grid. This permits efficient use of our assembly with all grades of potassium permanganate. Standard grid platform height is 6". Additional heights are available - consult factory.

The unit is shipped fully tested and assembled and weighs approximately 7 lbs. The feeder assembly includes:

- 10" x 16" black tank
- 3 Stainless steel safety screws
- 4" Well and cap
- 15 ft of 5/8" x 1/2" poly drain tubing\*
- Drain caution label
- 1/4" PVC riser pipe
- 1/4" or 3/8" poly tube elbow

- Black injection molded cover
- Grid with polypropylene grid pad
- Float valve
- Chemical warning label
- 4 ft of 1/4" or 3/8" suction tubing
- 1/2" Overflow fitting

The potassium storage tank placement should be such to permit the installation of the overflow line to a permanent drain facility.



**Dimensions - Inches**

- A = 16-1/2"      E = See Table
- B = 14-1/2"      F = 5-3/4" (2 oz. to 4 oz.)
- C = 10-1/2"           7-5/8" (6 oz.)
- D = 5-1/4"      G = 10-1/2"
- H = 1/8"

Oz. Of Potassium Permanganate	Gallons of Solution	Float Setting	Riser Pipe Length
2	3/4	2-1/2	11
4	1	4	12-1/2
6	1-1/2	5-5/8	12-1/2

Correct water temperature is important for obtaining properly dissolved potassium permanganate.

Tables based on permanganate solubility of 4 oz/gal at 50°F or 8 oz/gal at 72°F.

Float setting is based on distance between brine valve top body nut and the bottom of the float with the valve in the closed (float up) position.

All dimensions nearest 1/4 inch.

**Iron and Manganese Removal**

A recommended dose of 2 oz. to 6 oz. of potassium permanganate per cubic foot of manganese greensand is suggested for regeneration. Correct water temperature is important in obtaining proper dissolving of potassium permanganate. At 50°F (10°C), 4 oz. of potassium permanganate can dissolve in one gallon of water. At room temperature 72°F (22°C), 8 oz. will dissolve in one gallon of water.

# Operating Instructions

## Sounds

You will notice new sounds as your filter operates such as the hum of the timer or click of the actuator arm. During regeneration, it will not be uncommon to hear the sounds of water running to the drain.

## Manual Bypass (Figure 4)

In case of an emergency you can isolate your water filter from the water supply using the bypass valve located at the back of the control.

In normal operation the bypass is open with the ON/OFF knobs in line with the INLET and OUTLET pipes. To isolate the filter, simply rotate the knobs clockwise (as indicated by the word BYPASS and arrow) until they lock.

You can use your water related fixtures and appliances as the water supply is bypassing the filter. However, the water you use will be untreated.

To resume filtered water service, open the bypass valve by rotating the knobs counter-clockwise.

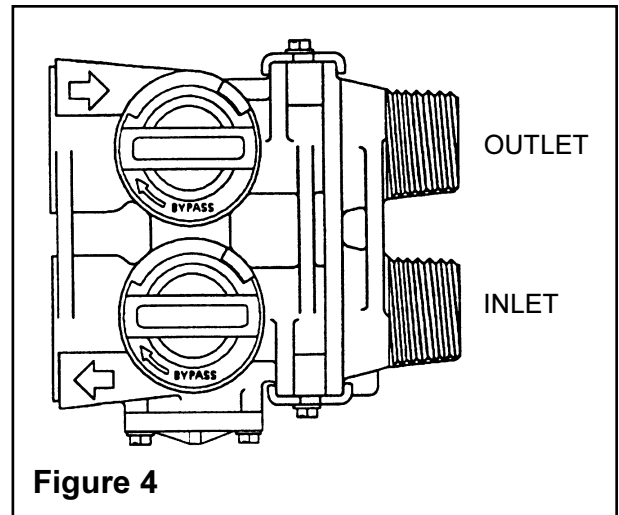


Figure 4

# Maintenance Instructions

Maintenance of your new water filter requires very little time or effort but it is essential. Regular maintenance will ensure many years of efficient and trouble free operation.

**PLEASE NOTE: THE FOLLOWING MAINTENANCE PROCEDURES MUST BE PERFORMED REGULARLY FOR YOUR GUARANTEE TO BE VALID.**

## Cleaning The Injector Assembly (Figure 5)

The presence of iron and sediment will restrict and clog the injector assembly which is located on the right hand side of the control valve. This assembly is easy to clean.

Shut off the water supply to your unit and reduce the pressure by turning the large knob to backwash. Using a screwdriver, remove the two screws holding the injector assembly to the control valve body. Carefully remove the assembly and disassemble.

The injector nozzle is removed for the injector body by carefully turning it out with a large screwdriver. Carefully flush all parts with water. Use a mild acid such as vinegar or Iron Out to clear the small holes in the nozzle and throat. Reassemble using the reverse procedure.

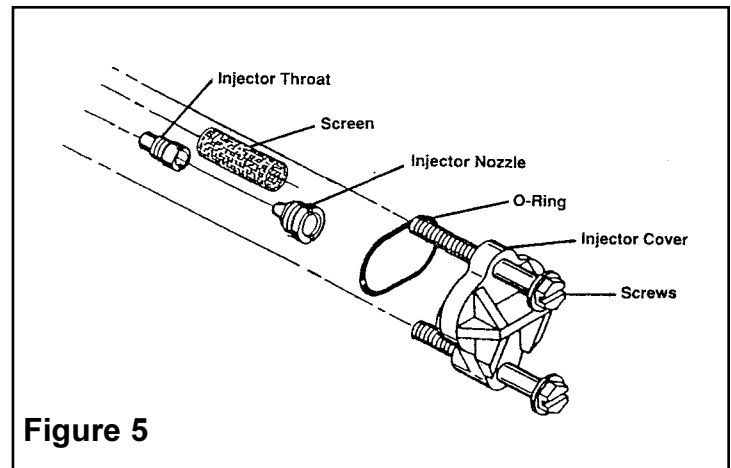


Figure 5

## Care Of Your Filter

Your filter tank and chemical feeder container can be cleaned with a mild soap solution. Never subject the unit to freezing. Do not strike or drop the chemical feeder container. If the container is found to be leaking, shut off the water supply to your filter and replace the container at once.

# Trouble Shooting Guide

PROBLEM	CAUSE	CORRECTION
1. Filter fails to regenerate or regenerates at wrong times	<ul style="list-style-type: none"> <li>A. Electrical service to unit has been interrupted</li> <li>B. Timer is defective</li> <li>C. Power failure</li> <li>D. Timer motor does not run</li> </ul>	<ul style="list-style-type: none"> <li>A. Assure permanent electrical service (check fuse, plug or switch)</li> <li>B. Repair or replace timer</li> <li>C. Reset time of day</li> <li>D. Replace defective motor</li> </ul>
2. Filter bleeds iron or odor	<ul style="list-style-type: none"> <li>A. Bypass valve is open</li> <li>B. Container is depleted</li> <li>C. Excessive water usage</li>   <li>D. Insufficient water flowing into chemical container</li> <li>E. Hot water tank rusty</li>   <li>F. Leak at distributor tube</li>   <li>G. Defective or stripped media bed</li> <li>H. Not backwashing enough</li>   <li>I. Internal valve leak</li> <li>J. Electrical Service to unit has</li>   <li>K. Control will not draw chemical properly (see below)</li>   <li>L. Quality of water has worsened</li>   <li>M. Filter capacity is too small</li> </ul>	<ul style="list-style-type: none"> <li>A. Close bypass valve</li> <li>B. Replace or refill container</li> <li>C. Increase frequency of regeneration and/or settings. Make sure there are no leaks in toilets and sinks</li> <li>D. Check refill setting. Check for plugged container tube and flow control</li> <li>E. Repeated flushings of the hot water tank are required. Do not use hot water during regeneration</li> <li>F. Make sure distributor tube is not cracked. Check O-ring and tube pilot</li> <li>G. Replace media</li> <li>H. Be sure flow control is not clogged or drain line restricted. Be sure water pressure has not dropped and that pump has sufficient capacity.</li> <li>I. Replace seals and spacers and/or piston</li> <li>J. Assure permanent electrical service (check been interrupted fuse, plug or switch)</li> <li>K. Maintain water pressure at 20 psi (139.9 kPa) minimum. Clean or replace injector assembly. Check for air leaks along brine line and tighten all connections.</li> <li>L. Have water sample analysed to determine any change</li> <li>M. Replace with larger unit</li> </ul>
3. Filter regenerates every day	<ul style="list-style-type: none"> <li>A. Faulty gear train</li> </ul>	<ul style="list-style-type: none"> <li>A. Check the mechanical linkage on the timer control to eliminate possible binding in the gear train.</li> </ul>
4. Iron filter uses too much chemical	<ul style="list-style-type: none"> <li>A. Defective chemical container</li> </ul>	<ul style="list-style-type: none"> <li>A. Replace container</li> </ul>
5. Loss of water pressure	<ul style="list-style-type: none"> <li>A. Iron or turbidity build-up in filter</li>   <li>B. Inlet to control blocked with iron build-up or foreign matter</li> </ul>	<ul style="list-style-type: none"> <li>A. Increase frequency of regeneration so filter backwashes more often. NOTE: Make sure filter is sized large enough to handle water usage</li> <li>B. Clean inlet line. Remove piston and clean control.</li> </ul>
6. Loss of media through line	<ul style="list-style-type: none"> <li>A. Air in water system</li>   <li>B. Backwash rate too fast</li> </ul>	<ul style="list-style-type: none"> <li>A. Assure that well system has proper air eliminator control. Check for dry well condition.</li> <li>B. Check drain flow control for proper flow rate</li> </ul>

## Trouble Shooting Guide Cont'd

PROBLEM	CAUSE	CORRECTION
7. Iron filter fails to draw chemical	<ul style="list-style-type: none"> <li>A. Drain line flow control is plugged</li> <li>B. Injectors and/or screen plugged</li> <li>C. Line pressure is too low</li> <li>D. Internal control leak</li> </ul>	<ul style="list-style-type: none"> <li>A. Clean drain line flow control</li> <li>B. Clean or replace injectors and/or screen</li> <li>C. Maintain line pressure at 20 psi (139.9 kPa) minimum</li> <li>D. Change seals and spacers and/or piston assembly</li> </ul>
8. Drain flows continuously	<ul style="list-style-type: none"> <li>A. Foreign material in control</li> <li>B. Internal control leak</li> <li>C. Control valve jammed in brine or backwash position</li> <li>D. Timer motor stopped or jammed</li> </ul>	<ul style="list-style-type: none"> <li>A. Remove piston assembly and inspect bore, remove foreign material and check control in various regeneration positions</li> <li>B. Change seals and spacers and/or piston assembly</li> <li>C. Replace piston and seals and spacers (and drive motor if necessary)</li> <li>D. Replace timer motor</li> </ul>
9. Pink color (potassium permanganate) present after regeneration; medicinal water taste	<ul style="list-style-type: none"> <li>A. Poor water pressure or insufficient pump capacity</li> <li>B. Chemical in water supply</li> </ul>	<ul style="list-style-type: none"> <li>A. Be sure pump is set at 20 psi (139.9 kPa) minimum and is capable of producing 5 - 12 USGPM according to filter size</li> <li>B. Decrease frequency of regeneration</li> </ul>

# **GUARANTEE**

**HYDROTECH** guarantees that your new water conditioner is built of quality material and workmanship. When properly installed and maintained, it will give years of trouble-free service.

## **FIVE YEAR COMPLETE PARTS GUARANTEE**

**HYDROTECH** will replace any part which fails within 60 months from date of manufacture, provided the failure is due to a defect in material or workmanship. The only exception shall be when proof of purchase or installation is provided and then the warranty period shall be from the date thereof.

## **TEN YEAR GUARANTEE ON MINERAL TANKS**

**HYDROTECH** will provide a replacement mineral tank to any original equipment purchaser in possession of a tank that fails within 120 months, provided that the water conditioner is at all times operated in accordance with specifications and not subject to freezing or exposure to direct sunlight.

## **GENERAL PROVISIONS**

**HYDROTECH** assumes no responsibility for consequential damage as a result of escaped water from the water filter; labor or expense incurred as a result of a defect or for failure to meet the terms of these guarantees because of circumstances beyond its control.

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