

# Installation, Operation and Maintenance Manual

## E-Treat®

### E-Treat® Salt-Free Scale Prevention and Water Conditioning System

#### Model ETREATWCS

#### ⚠ WARNING



Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.



#### ⚠ WARNING

If you are unsure about installing your Watts E-Treat® system contact a Watts representative or consult a professional plumber.

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product. **FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS COULD RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.** Watts is not responsible for damages resulting from improper installation and/or maintenance. Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

Save manual for future reference.

Refer to the enclosed for operating parameters to ensure proper use with your water supply.

- Use only lead-free solder and flux for sweat-solder connections, as required by state, province and federal codes.
- Handle all components of the system with care. Do not drop, drag or turn components upside down.
- Be sure the floor under the system is clean, level and strong enough to support the E-Treat system while in operation.
- Install the system in a protected area.
- Do not attempt to treat water over 100°F (38°C) with the system.
- Always connect the system to the main water supply pipe before the water heater.
- Do not expose the system to freezing temperatures. Water freezing in the system causes equipment damage.
- Do not install in direct sunlight. Ultraviolet rays from the sun may cause damage.
- Do not use on water that is microbiologically unsafe or of unknown quality.



E-Treat  
PN # 68101336

## Table of Contents

	Pages
Introduction . . . . .	2
Setup . . . . .	2
E-Treat Benefits . . . . .	2
Equipment Specifications . . . . .	2
Feed Water Chemistry Requirements . . . . .	3
Contaminant Treatment . . . . .	3
Cautions . . . . .	3
Notes to the Installer . . . . .	3
Installation Instructions . . . . .	4
Start Up Instructions . . . . .	4
Bypass Valve and Plumbing Adapters . . . . .	4
Maintenance . . . . .	5-8
Media Replacement Tools . . . . .	9
Replacement Components . . . . .	9
Note to the Home Owner . . . . .	10
Limited Warranty . . . . .	11

## Introduction

The E-Treat system is an economical physical water treatment technology that helps protect pipes, extend the life of appliance, and provide better tasting water through filtration and conditioning. The E-Treat system is a dual compartment tank based system with 2 cubic feet of high capacity activated carbon which reduces sediment, chlorine taste and odor, and integrated OneFlow® scale prevention media.

The E-Treat system contains our highly effective OneFlow® media, which uses template assisted crystallization (TAC) to attract dissolved hardness minerals and convert them into harmless, inactive microscopic crystal particles.

These crystals stay suspended in the water and are passed to drain. The system requires very little maintenance, no backwashing, no salt and no electricity. Typical hardness problems, especially build-up of scale in heating elements, pipes, water heaters, boilers and on fixtures, are reduced.

The E-Treat system is not a water softener. It does not add chemicals to the water or to the environment. It is a scale prevention device with proven third party laboratory test data and years of successful commercial, residential and food service applications. The E-Treat system is the intelligent scale solution and is a great salt-free alternative to water softening (ion exchange) or scale sequestering devices.

## Setup

Unpack and check the system components for damage or missing parts.

## Installation Considerations

Consider the following points when determining where to install the system:

- Do not install the system where it would block access to the water heater, main water shutoff, water meter, or electrical panels.
- Install the system in a place where water damage is least likely to occur if a leak develops.

## Using E-Treat Systems with Other Water Treatment Equipment

There are some unique requirements for using E-Treat systems in conjunction with other forms of water treatment.

1. The E-Treat system must be the last stage in the treatment chain. Do not install any filters after the E-Treat system or before any devices for which scale prevention is required.
2. Do not apply any other antiscalants before or after E-Treat.

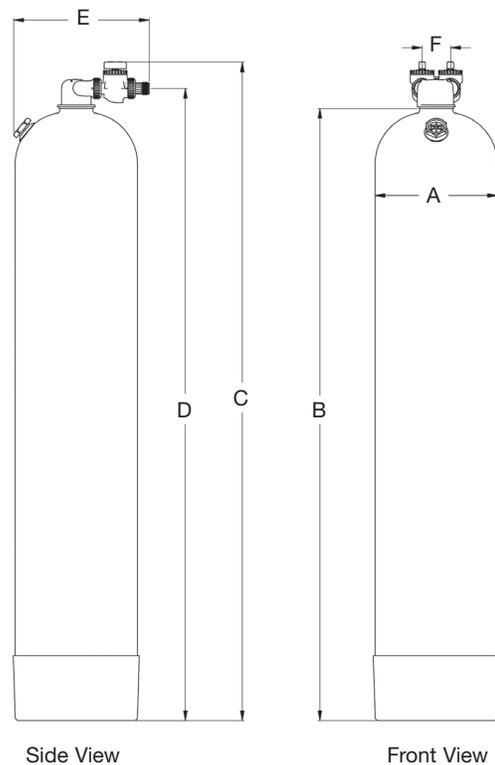
## E-Treat System Benefits

- Reduces sediment, chlorine taste and odor
- Chemical-free scale prevention and protection – converts hardness minerals to harmless, inactive microscopic crystals making E-Treat systems an effective salt-free alternative to ion exchange water softeners
- Virtually maintenance free – No salt bags or other chemicals to constantly add or maintain
- No control valve, no electricity and no wastewater
- Improves efficiency of all water heating devices and downstream plumbing components
- Simple installation – standard 1" connections
- Excellent system for homes where equipment protection is desired for longer equipment life and reduced energy consumption
- E-Treat's dual media systems are easily maintained

## Equipment Specifications

Watts E-Treat systems are complete, self-contained, loaded with media and ready to use. A simple inlet and outlet connection is all that is required for installation. Please review operating pressures, temperatures and water chemistry limitations to ensure compatibility and performance.

### Dimensions



MODEL	A	B	C	D	E	F
ETREATWCS	13"	65"	71"	67.3"	14.5"	3"

The overall height and the height of the inlet fitting varies due to material variations and assembly tolerances. Please allow additional clearance above the system for making connections and servicing the system.

# Feed Water Chemistry Requirements

pH	6.5-8.5
Hardness (maximum)	30 grains (513 ppm CaCO <sub>3</sub> )*
Water Pressure	20 psi to 125 psi (1.37 bar to 8.61 bar)
Temperature	40°F to 100°F (5°C to 38°C)
Free Chlorine	<2 ppm
Iron (maximum)	0.3 ppm**
Manganese (maximum)	0.05 ppm**
Copper	1.3 ppm***
Oil & H <sub>2</sub> S	Must be Removed Prior to E-Treat System
Total Phosphates	< 3.0 ppm
Silica (maximum)	20 ppm †
TDS	1500 mg/l ††

## NOTICE

\* Systems using OneFlow® technology are effective at controlling lime-scale formation inside the plumbing system at influent hardness levels up to 30 grains per gallon (513 ppm CaCO<sub>3</sub>) of calcium carbonate. Due to variances in water chemistry, 30 grains per gallon is a recommended hardness maximum due to potential aesthetic issues related to soft scale residue formation outside of the plumbing system. Testing should be performed to determine proper application where hardness levels exceed 30 grains per gallon.

\*\*Just as with conventional water softening media, OneFlow® media needs to be protected from excess levels of certain metals that can easily coat the active surface, reducing its effectiveness over time. Public water supplies rarely, if ever, present a problem, but if the water supply is from a private well, confirm that the levels of iron (Fe) and manganese (Mn) are less than 0.3 ppm and 0.05 ppm, respectively.

## WARNING

\*\*\*Pursuant to the EPA drinking water standards, the copper concentration permitted is up to 1.3 ppm. Typically originating from new copper plumbing, high levels of copper can foul OneFlow® media. New Copper lines need to be passivated for a minimum of 4 weeks before placing unit into service. For applications with copper concentration greater than 1.3 ppm, please consult Watts Water Quality Technical Service. To further minimize any problem with excess copper, avoid applying excessive flux on the inner surfaces of the pipe and use a low-corrosivity water soluble flux listed under the ASTM B813 standard.

## NOTICE

† OneFlow® media does not reduce silica scaling. While silica tends to have a less significant effect on scale formation than other minerals, it can act as a binder that makes water spots and scale residue outside the plumbing system difficult to remove. This 20 ppm limitation is for aesthetic purposes.

†† All other contaminants must meet the requirements of the USEPA Safe Drinking Water Act. Specific Mineral and Metal MCL's, identified in Watts published Feed Water Chemistry Requirements, supersedes the USEPA SDWA.

Water known to have heavy loads of dirt and debris may require pre-filtration prior to the E-Treat System.

## NOTICE

# Contaminant Treatment

Chlorine Reduction: 300,000 gallons or up to 3 years @ 12 gpm

Scale Prevention: Up to 3 years

## CAUTION

- Do not let the system freeze. Damage to the system may result.
- System must be shipped and operated in an upright and vertical position. It must remain in an upright and vertical position during operation.
- Place the system on a smooth, level surface. Because the inner OneFlow® tank operates in an UP-Flow, fluidized bed mode, having a level surface is more important than with a softener or media filter.
- A bypass valve should be installed on every system to facilitate installation and service.
- Observe all local plumbing and building codes when installing the system.
- All new copper pipe and fittings used in the installation of this system should be allowed to self passivate, under normal operation and water flow, for a period of 4 weeks minimum before placing the unit into service.
- If making a soldered copper installation, do all sweat soldering before connecting pipes to the bypass valve. Torch heat will damage plastic parts.
- When turning threaded pipe fittings onto plastic fittings, use care not to cross-thread.
- Use PTFE tape on all external pipe threads. Do not use pipe joint compound.
- Support inlet and outlet plumbing in some manner (use pipe hangers) to keep the weight off of the bypass fittings.
- Do not use on water that is microbiologically unsafe or of unknown quality.

## NOTICE

# Notes to the Installer

The E-Treat system differs from a conventional softener or media filter in a number of key respects.

- Must be installed in VERTICAL POSITION.
  - Please see the notes about "Feed Water Chemistry Requirements" section on page 3.
  - Please see the note about "Using E-Treat Systems with Other Water Treatment Equipment" on page 2.
  - This system is designed for residential applications only.
- Note: Plumbing tape and general plumbing tools required.

# Installation Instructions

The new system comes with the media, bypass, and tail pieces in the carton. Installer should verify this prior to installation. How to install your E-Treat system can also be found at [www.PremierH2O.com](http://www.PremierH2O.com).

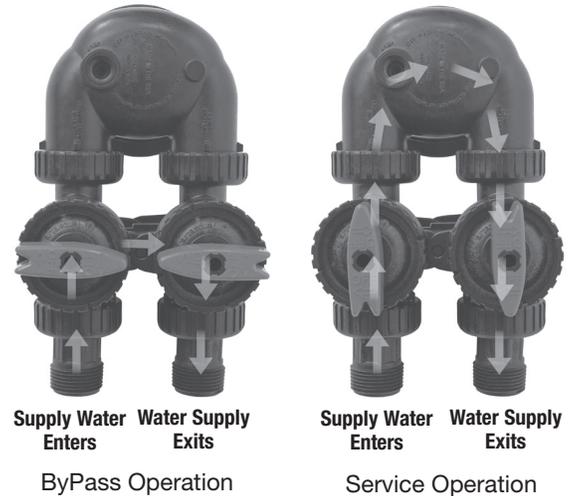
## NOTICE

Please confirm that all items required are included in the kit ready for assembly and remove from carton.

1. The system can stand upright in the desired location without the need to affix to a wall.
2. Place the system in the desired location. Make sure that the location is level and sturdy enough to support the weight of the wetted system.
3. Turn off the main water supply to the home and open an inside faucet to relieve any pressure within the plumbing system.
4. Install a supply valve (user supplied) in the supply line and close it.
5. Take the two 1" NPT (Item 2 below) threaded adapters and apply PTFE plumbing tape to the plumbing adapter threaded ends. Install first the union nut, white split ring then the o-ring onto each plumbing adapter. Place the threaded adapters into the bypass valve (Item 1) as shown in Diagram A.
6. Secure the adapters with the nuts on the threaded connections on the bypass valve. Hand Tighten Only. Do Not use PTFE tape on the threaded ports of the bypass valve assembly.
7. Attach the bypass valve (Item 1 below) to head assembly shown in Diagram A on the E-Treat system. Do Not use PTFE tape on the threaded ports of the head assembly.
8. Secure the bypass to the head with nuts on bypass. Hand Tighten Only.
9. Place the bypass into the Service Operation Position.
10. Connect the cold water supply to the inlet of the E-Treat system.
11. Connect the outlet of the E-Treat system to the supply line going into the home.



Diagram A



## Start Up

1. Remove the dome plug at the top of the tank so most of the air can vent from the tank during its initial fill with water.
2. Open the nearest cold water side of a faucet.
3. Turn water on at main supply line slowly and open the newly installed supply valve to 1/4 open position. Inspect systems for leaks. If leaks are present, repair immediately before proceeding.
4. Allow tank to fill with water until the water level in the tank can be seen through the dome hole port. Then reinstall the dome hole plug and hand tighten it into the top of the tank.
5. Close the cold faucet, put the system in bypass mode and fully open the supply valve. Allow the tank to sit for 24 hours to soak media before finalizing the startup procedure.

## WARNING

Failure to soak media for 24 hours could result in OneFlow media escaping the system and obstructing fixtures.

6. Once the E-Treat system has soaked for 24 hours close the supply valve, place bypass into the service position and open a nearby cold water faucet to relieve pressure from the system.
7. Disconnect the outlet line and place a bucket under outlet of system.
8. Open the supply valve to the 1/4 open position and allow water to run into the bucket until water runs clear then turn off the supply valve. If outlet is flowing into a bucket, water could splash on nearby objects. If this threatens the safety, value, structure, or appearance of these objects, protect/remove them or use the outlet to drain option.
9. Connect the outlet of the E-Treat system to the cold water supply to the house and slowly fully open the supply valve.
10. Open hot and cold faucets downstream from the E-Treat system to relieve any air from the plumbing system and water heaters. Then close the faucets.
11. Check for leaks. Repair as needed.

## E-Treat Parts



1 Bypass Valve



2 NPT Threaded Inlet/Outlet Adapters (x2)



Diagram A

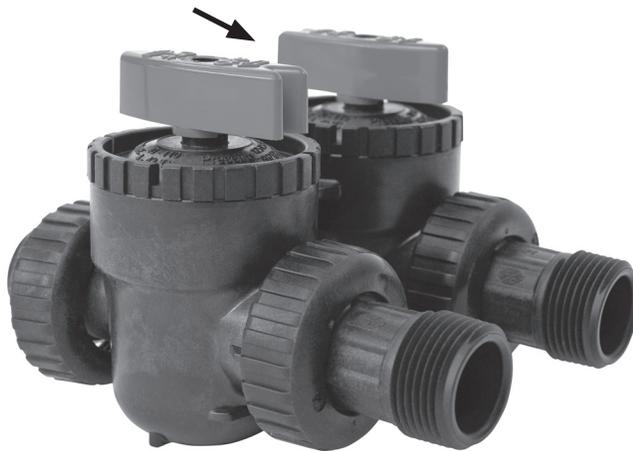


Diagram B

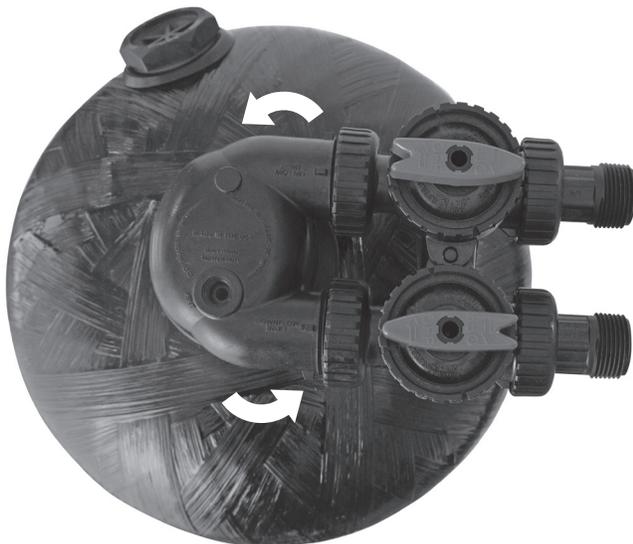


Diagram C

## Maintenance

### Removing Carbon Media

1. Turn off water at supply valve or at main valve to home.
2. Open faucet in home to relieve pressure from E-Treat system, then place the system into the bypass position. Once placed in the bypass position, the main water supply valve can be turned to the ON position to restore water flow to the home.
3. Loosen nuts on bypass valve to E-Treat system as shown in Diagram A.
4. Separate E-Treat system from bypass valve as shown in Diagram B.
5. Unscrew head from tank counterclockwise as shown in Diagram C.

#### **⚠ WARNING**

To avoid risk of electric shock, use only a wet dry vacuum rated for water applications. Must be used in conjunction with a ground fault circuit interrupted (GFCI) power outlet.

6. Use a wet/dry vacuum to extract carbon from vessel.
7. Start the vacuum and slowly push the hose into carbon bed as shown in Diagram D. Add water as needed until all carbon is removed.



Diagram D

## Removing OneFlow® Media

1. Once the Carbon has been removed you can now insert the pipe as shown in Diagram A with the notched end over the distributor tube and down into the tank as shown in Diagram B.
2. Lower the pipe onto the mid plate adapter and rotate it until you feel the notches engage the tabs on the mid plate adapter.
3. Rotate the mid plate adapter counterclockwise as shown in Diagram C using the notched pipe.
4. Twist the adapter off with a quarter twist using the included adapter pipe tool. Once the adapter is loose pull the distributor tube straight out as shown in Diagram C.
5. Insert an extended vacuum wand and/or hose from replacement media kit into the tank and through the mid plate into the bottom chamber as shown in Diagram D.
6. Turn on the vacuum to extract the media.
7. Add water and repeat until all OneFlow media has been evacuated.



Diagram A



Diagram B



Diagram C



Diagram D



Diagram E



Diagram A



Diagram B



Diagram C



Diagram D

## Filling OneFlow® Media

1. The 2.5" x 1.5" PVC coupling needs to be attached to the non-notched end of the 1.5" PVC pipe as shown in Diagram A. This keeps the pipe from falling into the tank.
2. With the distributor tube removed from the system, insert the pipe into the tank and through the center of the mid plate as shown in Diagram B.
3. Put media funnel into the top of the coupling as shown in Diagram C.
4. Pour the new media into the funnel. Shake the funnel and pipe to make sure all the media drops into the bottom chamber.
5. Remove the funnel and the pipe.
6. Reinstall the distributor tube and screen assembly by lowering it through the mid plate and turning it clockwise as shown in Diagram D with the notched end of the pipe. Remove the 1.5" pipe.
7. Proceed with Carbon replacement instructions.

## Filling Carbon Media

1. Place tape over the top of the distributor tube to prevent Carbon from getting inside the distributor tube as shown in Diagram A. The tube should be completely covered as shown in Diagram B.
2. Put the blue media funnel into the top of the tank as shown in Diagram C. Slowly pour the new carbon media into the funnel until all media is inside the vessel.
3. Remove the funnel, and the tape from the distributor tube.
4. Reinstall the tank head and connect system to bypass valve shown on Diagram D.
5. Proceed with Start Up on page 4.

### **⚠ WARNING**

Failure to soak media for 24 hours before placing system into operation could result in OneFlow media escaping the system and obstructing fixtures. Be certain to follow the media soaking requirement described in the Start Up section, steps 5 – 6, of this manual.



Diagram A



Diagram B



Diagram C



Diagram D

# Media Replacement Tools

Tools needed to replace E-Treat media that are not supplied by Watts: Standard wet/dry vacuum, and tape.

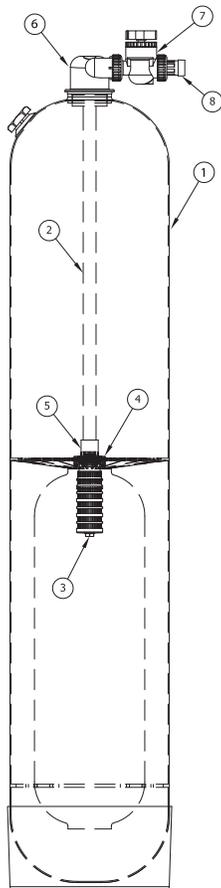
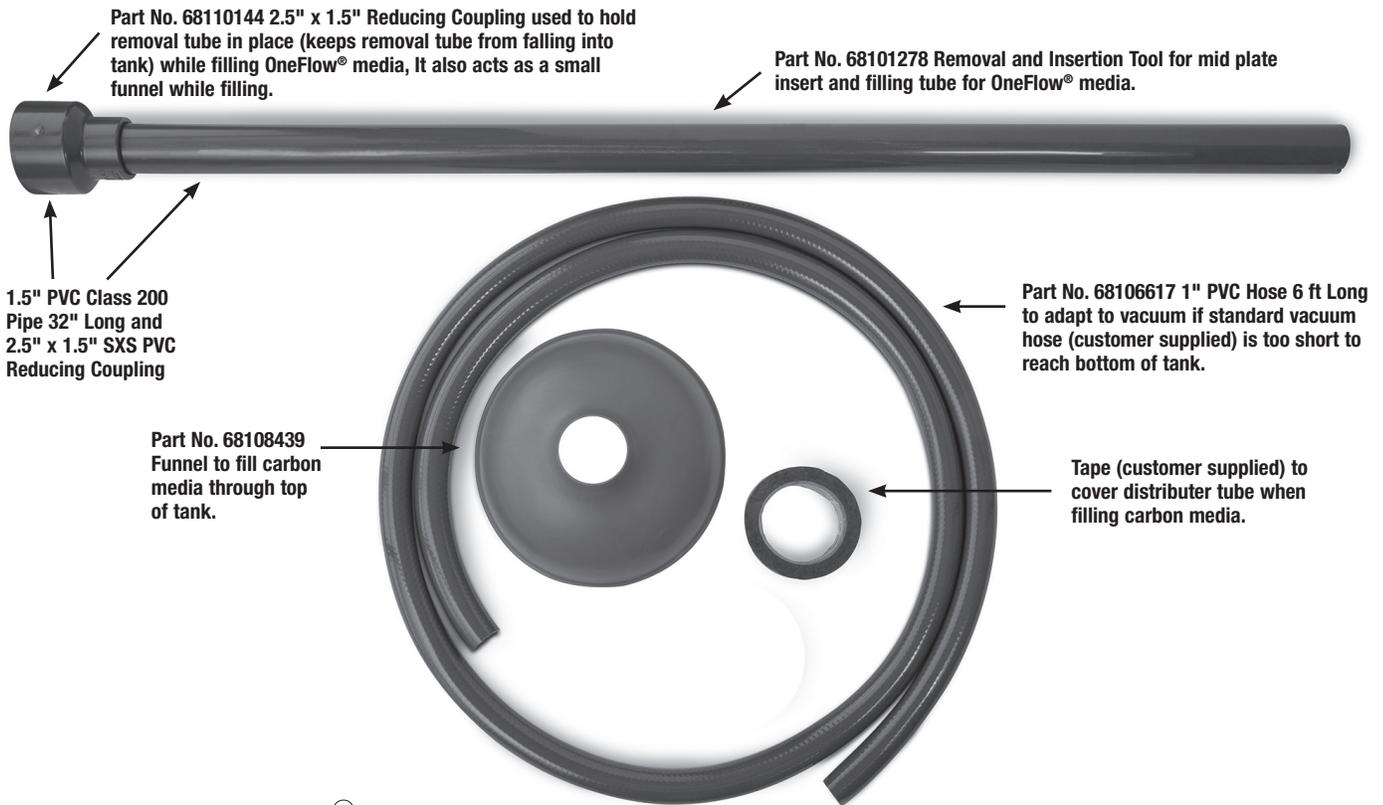


Diagram B

REPLACEMENT COMPONENTS			
Item	QTY	Part No.	Description
1	1	68100992	13" x 65" Black Tank- in-Tank With Base & Dome Hole with Plug
2	1	68101076	Distributor Pipe 1.05" Diameter ABS
3	1	68101149	Distributor Screen for Inner Tank ¾" MPT With 4 Screens/ 5.75" length
4	1	68101280	Distributor Adapter for Mid Plate Large Tank-in-Tank
5	1	68103002	Female Plumbing Adapter PVC SCH 40 ¾" SXF
6	1	68104871	Tank Head 1191 Without Bypass Valve Assembly
7	1	68104876	W100 Bypass Valve Assembly, Does Not Include Plumbing Adapters
8	2	68106630	WS1 Plumbing Adapter Fitting Assembly 1" MNPT (2 per Pack)

PART NO.	REBED KIT
68110169	Replacement Carbon and OneFlow® Media
68110145	Replacement Carbon and OneFlow® Media Plus Tools

Note: Before replacing any media ensure you have a wet/dry vacuum, all your media replacement tools shown in image above, and rebed kit ready in order to proceed.

## Note To The Home Owner

Your E-Treat system will improve the properties of water throughout your home. Here are some things to expect and some recommendations for maximizing the benefits and your enjoyment of E-Treat:

**Sinks and fixtures –** should have reduced spotting. If water is allowed to evaporate off a surface, small spots may be left behind. Many times this residue is easier to clean up than the previous hard water spotting.

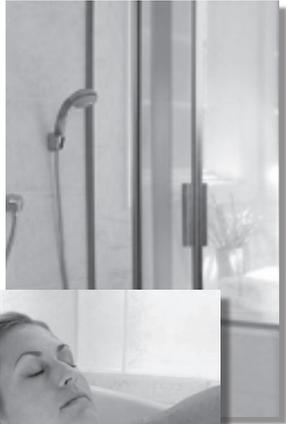


**Dishwasher-Spotting on dishes and on the surface of the dishwasher should be greatly reduced.**

We recommend that you immediately reduce the amount of dishwashing detergent by approximately 50% as compared to hard water use. Dishwashing detergents low in phosphates are highly recommended as they are better for the environment and phosphates can cause spotting. In very hard water areas, the use of a rinse aid may be advised.



**Shower doors and tiles –** should have reduced spotting. When water evaporates off a surface, small spots may be left behind. Depending on water chemistry, these spots may be easy to remove with a damp cloth or sponge.



**In the bath** you should notice that soaps and shampoos lather more than with untreated water. Soaps and shampoos will also rinse off much easier and faster than they would with traditional soft water. We recommend the use of modern soaps for the best results.



## Things to watch for:

During the first 30-90 days:

- Faucet aerators and drains may plug occasionally as old scale is removed from your plumbing system and water heater.
- You may also see milky water while the descaling is taking place. This is simply an increase in the calcium in the water because OneFlow® media is removing old scale deposits from your pipes.

## Good practices:

If your dishwasher is severely coated with scale at the time of installation, we recommend that you purchase a product like Jet-Dry® Dishwasher cleaner to accelerate the cleaning. After this initial cleaning OneFlow® media should keep it clean.

We also recommend that you drain your water heater tank. This should be done 30 to 60 days after your E-Treat System is installed, and again in one year. This is a good practice that can dramatically increase the life of your water heating appliance. The E-Treat System will help keep the tank and heating elements free of scale and operating at peak efficiency. Please follow the manufacturer's instructions when draining the tank!



## Limited Warranty

- Watts Regulator Co. (the "Company") warrants the E-Treat system is warranted to be free of defects in materials and workmanship for 5 years from the date of original shipment.

## Conditions

1. E-Treat systems are warranted for domestic use in residential single family dwelling applications excluding irrigation water treatment. The use of these systems in light commercial, commercial, or industrial applications will void their limited warranty.
2. The E-Treat system must be installed in applications with municipally supplied water adhering to EPA guidelines.
3. Any component failure must not result from abuse, fire, freezing or other acts of nature, violence, or improper installation.
4. Equipment must be installed and operated in compliance with the local plumbing codes and on an approved water supply.
5. Equipment is limited to use at water pressures and temperatures that do not exceed our published specifications.
6. Water supply must not exceed 2.0 PPM chlorine. For water supply exceeding 2.0 PPM chlorine, pretreatment is required. (Please contact your water treatment specialist.)
7. Information, including model number, serial number, and date of installation, must be provided for any claims pertaining to equipment in warranty.
8. Defective parts are subject to inspection by either the Company or its authorized representative before final commitment of warranty adjustment is made.
9. The Company reserves the right to make changes or substitutions in parts or equipment with material of equal quality or value and of then current production.

## Limitations

Our obligation under this warranty with respect to the tank or valve is limited to furnishing a replacement for, or at our option, repairing any part or parts to our satisfaction that prove defective within the warranty period stated above. Such replacement parts will be delivered to the owner F.O.B. nearest factory, at no cost, excluding freight and local labor charges, if any.

Our obligation under this warranty with respect to the OneFlow® media will be limited to furnishing a replacement for the media within two years from date of original installation. Such replacement media will be delivered to the owner F.O.B. nearest factory, at no cost, excluding freight and local labor charges, if any. Damage to the media due to chlorine, other oxidizers or fouling caused by local water conditions or any other operation outside of the limits shown under Specifications, is not covered by this warranty.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described under this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, freight, handling, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product.

Some states do not allow limitations on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state. You should consult applicable state laws to determine your rights. SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE APPLICABLE WARRANTY PERIODS STATED ABOVE.

