Premier™

A WATTS® Brand

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Reverse Osmosis System
Models: RO-TFM-4SV-W50
RO-TFM-5SV-W50

⚠ WARNING

THINK SAFETY FIRST

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

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

⚠ WARNING

Discard small parts remaining after the installation.

NOTICE

If you are unsure about installing this product, consult a professional plumber or call a WATTS representative.

Failure to follow instructions and install correctly may result in leaks, property damage and/or product not performing correctly, and voids warranty.

Handle all system parts and components carefully. Do not drop, drag, or turn components upside down.

Be sure floor under the system is clean, level and strong enough to support the unit, and that the Module is mounted to a surface strong enough to support its weight.

TESTED AND CERTIFIED WaterQuality UNDER INDUSTRY STANDARDS

System Tested and certified by WQA against NSF/ANSI Standard 58 for the reduction of the claims specified on the performance data sheet and NSF/ANSI Standard 372 for lead free.

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

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199348

Manual Edition: 08/08/2017

Overview

Thank you for your purchase of the Premier Reverse Osmosis (RO) water treatment system. This Premier water treatment system has been designed and tested to provide you with high quality drinking water when installed, maintained and used in accordance with the instructions in this Manual, and any requirements of local, state and federal law. Failure to do so could result in personal injury, property damage or damage to the equipment. This Manual should be considered a permanent part of your system and should be kept available for easy reference by any user.

If this system or any of its parts becomes damaged or needs repair, turn off the water supply, stop using the system and contact an experienced service individual immediately.

If on-product labels or this Manual are misplaced, damaged or illegible, or if you require additional copies, please contact Watts for these items at no charge.

If you are ever uncertain about a particular task or the proper method of operating this system, consult this Manual, contact a licensed plumber, or contact Watts at 800-752-5582

Your Reverse Osmosis System:

Osmosis is the process of water passing through a semi permeable membrane in order to balance the concentration of contaminants on each side of the membrane. A semi permeable membrane is a barrier that will allow clean drinking water through, but will reduce the passage of containments such as arsenic or lead*. This reverse osmosis system also utilizes carbon block filtration technology, and can therefore provide a higher quality drinking water than carbon filtration systems alone.

This product cannot effectively reduce the trivalent form of Arsenic. Please read the Arsenic Fact Sheet and Data Performance Sheet in the back of this manual for additional information.

The Stages of Filtration

Your system is a four or five stage (4SV or 5SV) RO which is based upon separate treatment segments within the one complete water filtration system. These stages are as follows:

Stage 1: **Sediment filter, recommended change 6 months.**
The first stage of your RO system is a five micron sediment filter that traps sediment and other particulate matter like dirt, silt and rust which affect the taste and appearance of your water.

Stage 2 & 3: **Carbon filters, recommended change 6 months.**
The second and third stages each contain a 5 micron carbon block filter. This helps ensure that chlorine and other materials that cause bad taste and odor are greatly reduced.

Note: Four stage unit only has one carbon block pre-filter.

Stage 4: **Membrane, recommended change 2-5 years.**
Stage four is the heart of the reverse osmosis system, the RO membrane. This semi permeable membrane will effectively reduce TDS & Sodium and a wide range of contaminants such as Percholate, Chromium, Arsenic, Copper, Lead as well as Cysts, such as Giardia and Cryptosporidium (See Data Performance Sheet for more information). Because the process of extracting this high quality drinking water takes time, your RO water treatment system is equipped with a storage tank.

Stage 5: **Carbon in-line filter, recommended change 6 - 12 months.**
The final stage is an in-line granular activated carbon (GAC) filter. This filter is used after the water storage tank, and is used as a final polishing filter.

Note: Filter & Membrane life will vary based upon local water conditions and/or use patterns.

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Operational Parameters

NOTICE ***System must be installed, maintained and used in accordance with the instructions in this Manual, and any plumbing or other requirements of local, state and federal law.***

⚠ WARNING ***Do not use with water that is microbiologically unsafe or of unknown quality, without adequate disinfection before or after the system.***

	Maximum	Minimum
Operating Temperature:	100°F (37.8°C)	40° F (4.4°C)
Operating Pressure:	100 psi (7.03 kg/cm²)	40 psi (2.81 kg/cm²)
pH Parameters:	11	4
Iron	0.2 ppm	
TDS (Total Dissolved Solids)	< 1800 ppm	
Turbidity	< 5 NTU	
Hardness	10 gpg (170 ppm)*	

****System can operate with hardness over 10 grains but the membrane life will be shortened. Addition of a water softener may lengthen the membrane life.***

NOTICE ***To avoid excessive pressure that can cause leaks, flooding, and property damage:***

Water Pressure: The operating water pressure of your home MUST be tested over a 24-hour period to measure the maximum pressure. Contact a qualified professional to conduct proper testing. If the incoming water pressure is 85 psi or above, a pressure regulator MUST be installed.

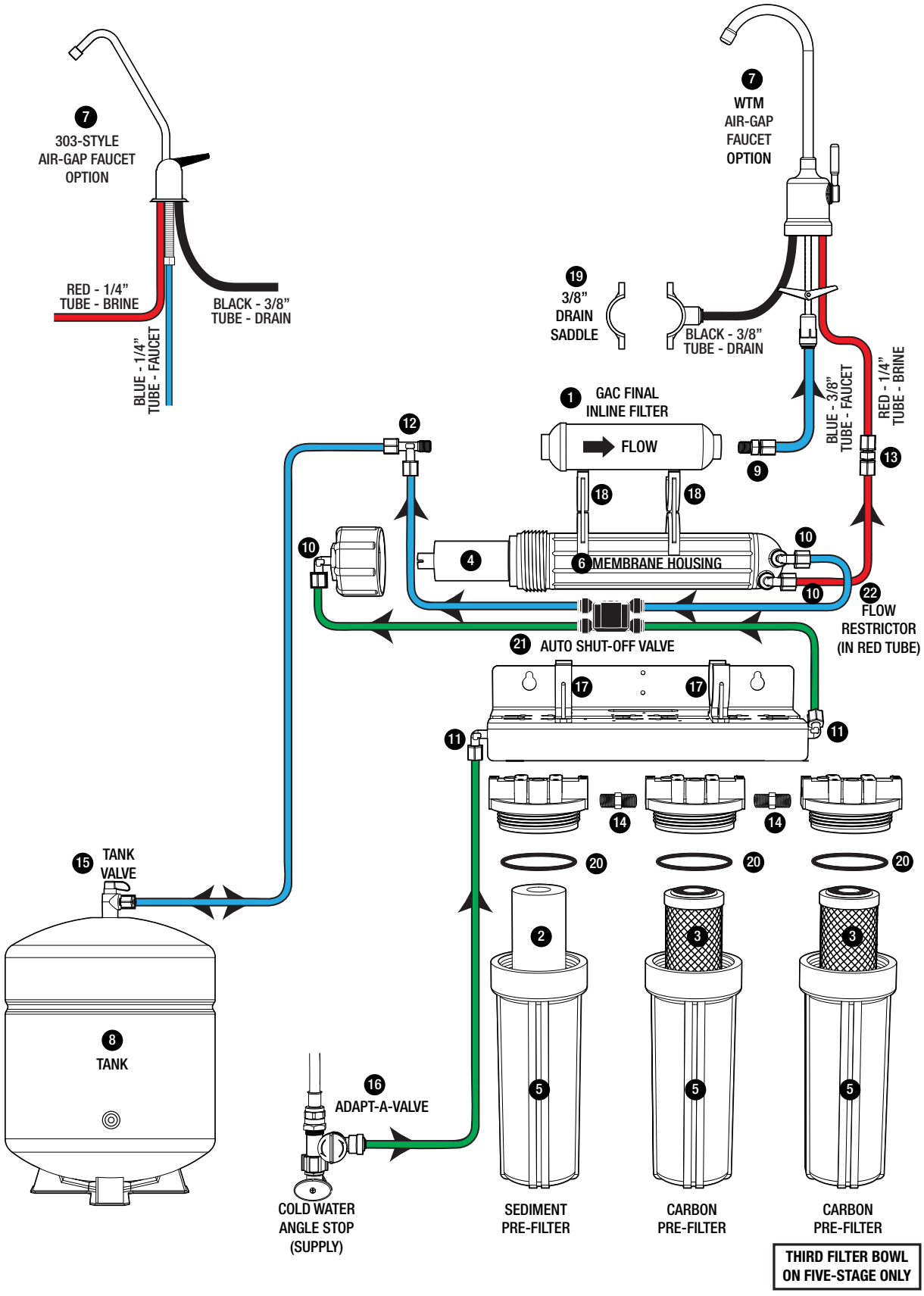
Copper Tubing: Reverse Osmosis water should not be run through copper tubing as the purity of the water will leach copper causing an objectional taste in water and pin holes may form in the tubing. Premier supplies speciality filters that can be used if copper tubing follows the Reverse Osmosis unit. Be sure to follow any state or local regulations during installation.

Contents of Under Counter Filter

Please make sure all of the items listed below are contained in the box. If any of the items are missing please contact Watts Premier at 800-752-5582 prior to installing.

- ❑ 1 Tank
- ❑ 1 RO Module (Filters Pre-Installed)
- ❑ 1 Parts Bag
- ❑ 1 Faucet Bag/Box
- ❑ 1 Manual

System Diagram



Key	Part #	Description
1	560010	GAC In-Line Filter - 10” (1/4” FPT)
1 ALT	560005	GAC In-Line Filter - 6” (1/4 FPT)
2	104017	Sediment Filter - 10” (5 micron)
3	101009	Carbon Block Filter- 10” (5 micron)
4	560018	50 GPD Reverse Osmosis Membrane
5	500017	Housing - White - (1/4” FPT)
6	500075	Membrane Housing (with Elbows)
7	116001	303-Style Faucet
7 ALT	116094	Top-Mount Faucet
8	119007	Storage Tank
9	125017	Adapting Connector - 1/4” C x 1/4” MPT
9 ALT	400031	Adapting Connector - 3/8” C x 1/4” MPT
10	125031	Elbow - 1/4” C x 1/8” MPT
11	125034	Elbow - 1/4” C x 1/4” MPT
12	125063	Tee - 1/4” MPT x 1/4” C x 1/4” C
13	125041	Union Connector 1/4” C x 1/4” C
14	131021	Brass Hex Nipple - 1/4” MPT x 1/4” MPT
15	134039	Tank Valve - 1/4” FPT x 1/4” C
16	560080	Adapt-A-Valve Kit
17	164006	Clip - Membrane to Bracket
18	164010	Double Clip - Membrane to In-Line Filter
19	164056	Drain Saddle - 3/8” QC
20	113029	O-Ring for Filter Housing (560045 FOR 3-PACK)
21	134003	Automatic Shut-Off-Valve
22	622055	Flow Restrictor (500mL - Green)

NOTE: Parts may vary depending on model

Tools Recommended For Installation

Power Tools:

- ❑ Electric Drill

Drill/Driver Bits

- ❑ Phillips Driver Bit
- ❑ 1/8” Diamond-tip Drill Bit (for pilot hole)
- ❑ 1-1/4” Diamond-tip hole saw bit for faucet opening (Counter Tops/Porcelain & Stainless Sinks)
- ❑ 3/8” Drill Bit (for drain saddle hole)

Wrenches:

- ❑ 1 1/4” Adjustable Wrench
- ❑ 1/2” Open End Wrench
- ❑ 5/8” Open End Wrench

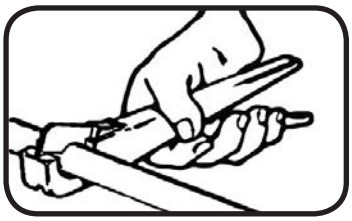
Other Tools:

- ❑ Needle Nose Pliers
- ❑ Adjustable Pliers
- ❑ Sharp Knife
- ❑ Phillips Screw Driver

Using Quick-Connect Fittings

Cutting

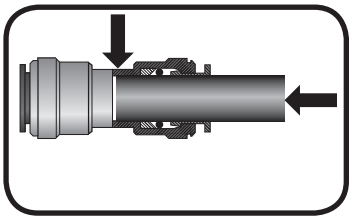
Cut the tube square. It is essential that the outside diameter be free of score marks and that burrs and sharp edges be removed before inserting into fitting.



Connecting

Make certain to push the tubing completely into the connector until it comes into contact with the internal tubing stop. The collet (gripper) has stainless steel teeth which hold the tube firmly in position while the O-ring provides a permanent leak proof seal.

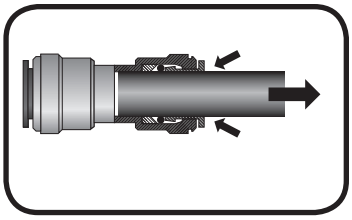
Pull on the tube to check that it is secure.



NOTICE ***Always test the system and all connections for leaks prior to concluding installation and before use.***

Disconnecting

To disconnect, ensure the system is depressurized before removing the tube. Push in collet squarely against the face of the fitting. With the collet held in this position, the tube can be removed. The fitting can then be reused.

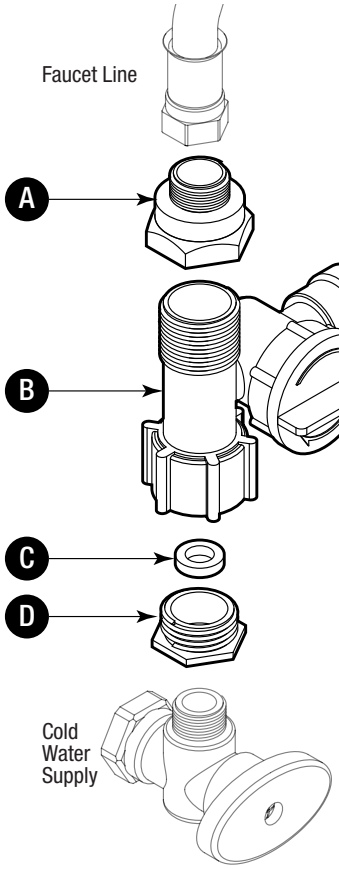


Step 1. Adapt-A-Valve™ Installation

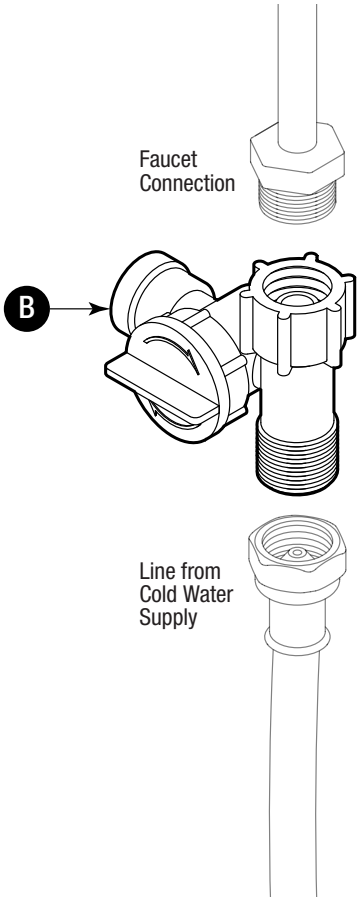
NOTICE ***Water supply line to the system must be from the cold water supply line only. Hot water will severely damage your system.***

NOTICE ***Do not use Teflon tape with the Adapt-A-Valve™.***

Parts List for Adapt-A-Valve™	
Item	**Description**
A	Brass Adapter with black washer
B	Plastic Adapt-A-Valve™ & black collet
C	White Rubber Washer
D	Brass Adapter with no washer



For 3/8" Configuration



For 1/2" Configuration

Step A: Turn off the cold water supply to the faucet by turning the angle stop valve completely off.

Step B: Open cold water sink faucet to relieve pressure.

Step C: Choosing the configuration that fits your plumbing, attach the Adapt-A-Valve™ as illustrated in the diagrams above.

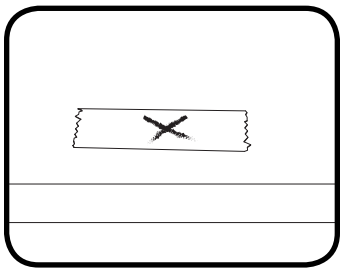
NOTICE ***Make sure that the black collet is installed in to the 1/4" opening on the Adapt-a-valve™. Don't forget to install the white compression washer with the 3/8" configuration. The Brass Adapters do not need to be tightened with a wrench, only finger tight.***

Step 2. Drill a Hole for the Faucet in a Sink

Note: Some sinks have predrilled 1 ¼" or 1 ½" holes that are suitable for installation of your Drinking Water faucet. If so, please Skip to step Step 3.

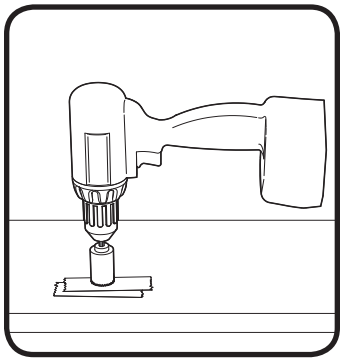
NOTICE ***Drilling a hole in a sink or countertop for faucet installation is entirely out of the control of Watts. Watts accepts no responsibility for damage resulting from installing faucet in any surface including marble countertop or a porcelain sink.***

For Marble countertops, porcelain sinks and other surfaces: ALWAYS use a qualified contractor for drilling a hole in a marble counter-top, porcelain sink and other surfaces because they can crack and chip easily when drilling the hole.



NOTICE ***Always use a diamond-tip drill bit and hole saw.***

Step A: Determine desired location for the faucet on your sink and place a piece of masking tape over where the hole is to be drilled. Mark the center of the hole on the tape.



Step B : Using a variable speed drill set on the slowest speed, drill a 1/8" pilot hole through both porcelain and metal casing of sink at the marked center of the desired location. Use lubricating oil or liquid soap to keep the drill bit cool (If drill bit gets hot it may cause the porcelain to crack or chip).

Step C: Using a 1-1/4" diamond-tip hole saw, proceed to drill the large hole. Keep drill speed on the slowest speed and use lubricating oil or liquid soap to keep the hole saw cool during cutting.

Step D: After drilling, remove all sharp edges and make sure the surroundings of the sink are cooled before mounting the faucet

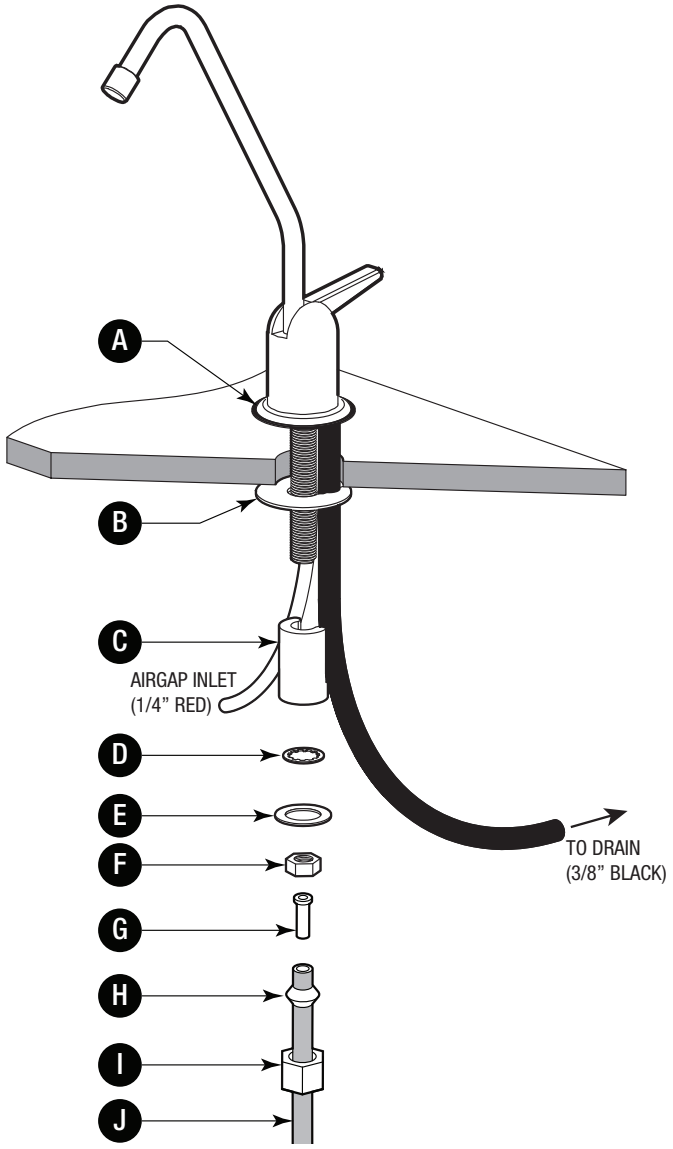
Step 3. Faucet Installation

Step A: Choose the faucet installation instructions (Step 3A or 3B) that matches the faucet included with your unit

Step 3A. Standard Faucet Installation

NOTE: ***A 1" to 1-1/4" mounting hole is required for the faucet installation***

Parts List for Faucet	
Item	**Description**
A	Escutcheon Plate & Rubber Washer
B	Slotted Metal Washer
C	Spacer
D	Lock Washer
E	Plain Washer
F	Locking Nut
G	Tube Insert
H	Delrin Sleeve
I	Compression Nut
J	Blue 1/4" Tube (Located in Faucet Box)



Step 3A-1: Gather and identify the faucet pieces from the faucet parts bag and system parts bag.

Step 3A-2: Feed both the red and black tubing through the pre-drilled hole in the sink/counter until the faucet is seated.

Step 3A-3: Insert the threaded stem through the hole in sink and let it rest on the sink top.

Step 3A-4: From the underside of the sink, slide on the slotted metal washer, spacer, lock washer and locking nut onto the threaded stem.

NOTICE ***Do not overtighten fittings***

Step 3A-5: Check the orientation then tighten the locking nut securely using a wrench.

Step 3A-6: Locate the blue 1/4" tube from the faucet box. Remove the compression nut, delrin sleeve, and tube insert from the faucet parts bag.

Step 3A-7: To assemble, place the compression nut on the blue tube first, then the sleeve (small tapered end towards the end of the blue tube) and finally, push the tube insert all the way into the tube

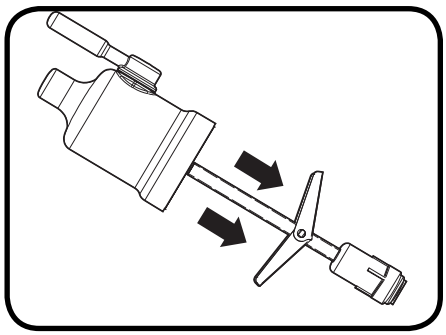
NOTICE ***Do not overtighten fittings***

Step 3A-8: Insert the blue tube into the end of the threaded stem of the faucet and use a wrench to tighten the nut securely.

Step 3A-9: Proceed to Step 4

Step 3B. Watts Top Mount Faucet Installation

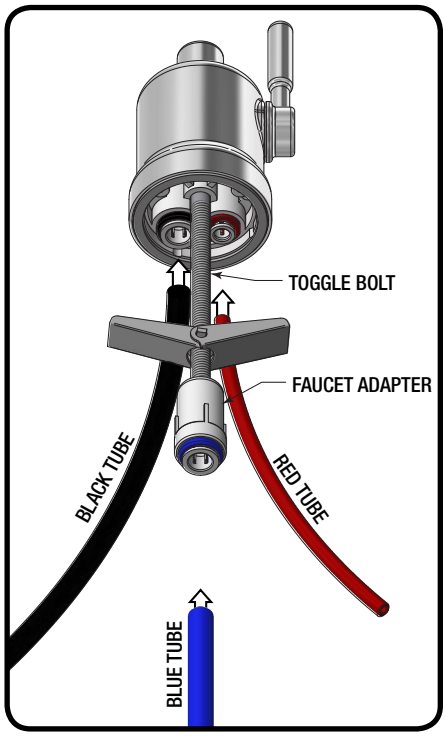
This RO faucet is equipped with quick connect fittings for easy tube installation. To connect tubes, simply push them firmly into their corresponding fitting on the RO faucet until fully seated.



NOTE: ***A 1" to 1-1/4" mounting hole is required for the faucet installation***

Step 3B-1: During shipping/handling the toggle bolt on your new faucet may push up out of position. Prior to the install, hold the faucet as shown in the picture and pull down on the wing nut. This will ensure that the O-rings are in their proper position and that your faucet will have a good seal.

NOTICE ***The quick-connect ports on the faucet are color coded. Make sure the tube being inserted matches the color of the port.***



Step 3B-2: Connect the 3/8" BLUE tube to the faucet adapter at the bottom of the toggle bolt. Make sure to push the tube 3/4" into the fitting.

Step 3B-3: Connect the 3/8" BLACK tube into the bottom of the faucet. Make sure to push the tube 3/4" into the fitting.

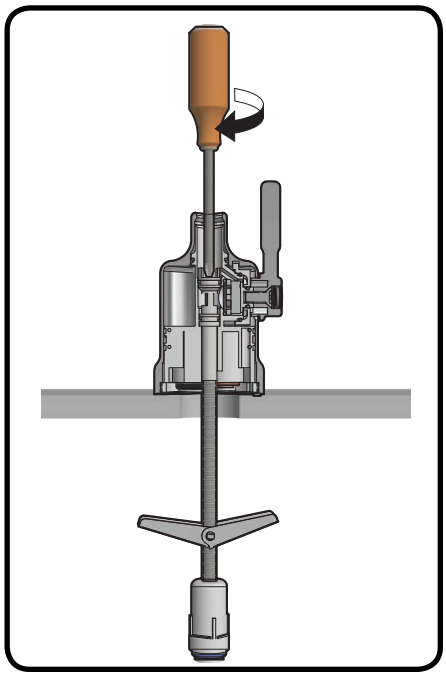
Step 3B-4: Connect the open end of the 1/4" RED tube into the bottom of the faucet. Make sure to push the tube 3/4" into the fitting.

NOTICE ***Approximately 3/4" of the tube must go into the fitting***

Step 3B-5: From above the sink, feed the faucet tubing & toggle bolt down through the mounting hole in the sink. Test fit the faucet placement.

Step 3B-6: Peel the white backing paper off the seal on the bottom of the faucet base and press firmly over the mounting location

Step 3B-7: Insert your Phillips head screwdriver through the spout hole of the RO faucet and then turn the toggle bolt until the faucet is secure.



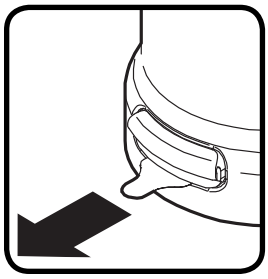
NOTICE ***Do not overtighten***

Step 3B-8: Once the faucet base is securely fastened to the sink top, insert the faucet spout into the faucet base until it is fully seated. Turn the handle up (away from you) to the "OFF" position.

Step 3B-9: Pull the Battery Safety Tab out to activate the faucet monitor. Make sure that the clear drawer is firmly seated in the faucet base. The monitor will flash briefly once activated.

⚠ DANGER ***KEEP AWAY FROM CHILDREN***

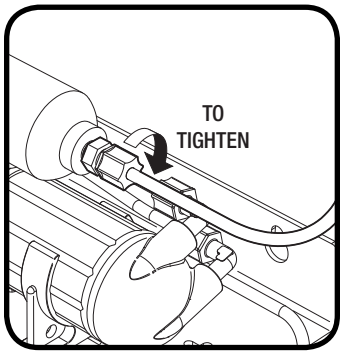
This product contains a button (coin) cell battery. If swallowed, it could cause severe injury or death in just 2 hours. Seek immediate medical help. Contact a Poison Control Center.



Step 3B-10: Proceed to Step 4

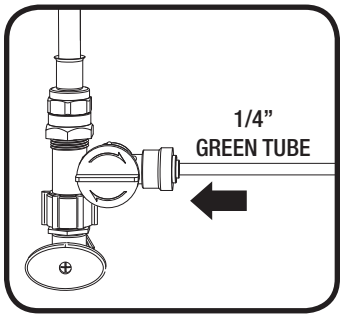
Step 4. Blue Tube to In-line GAC Filter

Step A: Insert the open end of the blue tube from the faucet into the fitting at the end of the GAC In-line Filter. Use a 5/8" wrench to tighten the white plastic nut securely.



Step 5. Green Tube Connection

Step A: Location the 1/4" Green tube plugged into the left (inlet) side of the unit. Take the open end of the 1/4" Green tube and insert into the 1/4" quick connect fitting on the plastic Adapt-A-Valve™. Make sure to push the tube in all the way to the tube stop.



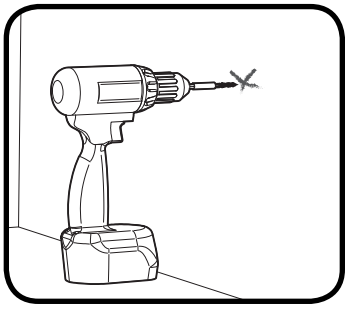
Step 6. Reverse Osmosis Module Mounting

Step A: Determine best location for the RO module to be mounted to allow for future system maintenance.

NOTICE ***Make sure to allow a minimum of 1-1/2" under the system for removing the bottom bowls.***

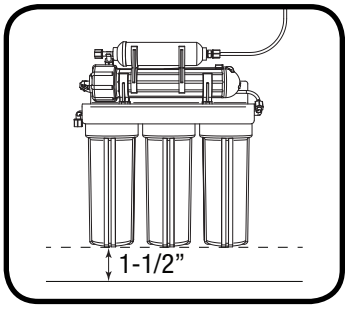
There must be at least 1" of wood material for the mounting screw to grip to or if mounting against a drywall and wood framed

When securing the screws to the mounting wall, make sure you provide one of the following: (a) At least 1" of wood material for the screw to grip into; (b) drywall clad wood framed wall where the mounting screws can be attached into the wood studs; or (c)



Step B: Using the mounting holes on the bracket, mark the location for the mounting screws on the cabinet wall under the sink.

Step C: In the parts bag, locate the two self tapping screws. Using an electric drill with a Phillips bit, screw them into the cabinet at the marked location. Hang the module on the screws using the mounting holes in the bracket



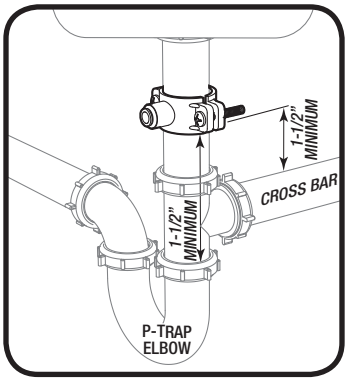
NOTICE ***The RO Module can be installed where it is standing in the cabinet without being mounted to the wall.***

Step 7. Drain Saddle Installation

NOTICE ***Drain Saddle fits standard 1 ¼" – 1 ½" drain pipes***

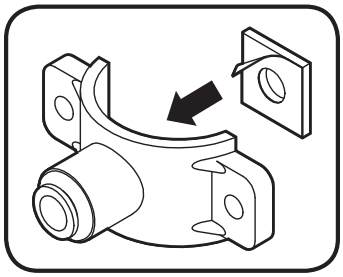
NOTICE ***If you have a garbage disposal, do not install the drain saddle downstream of it. Installation of the drain saddle should be on a separate sink, if available.***

The drain connection can instead be made at the dishwasher inlet port of the garbage disposal using a Garbage Disposal Drain Line Adapter which is available for purchase from Watts Premier (PN# 164020).



Step A: Gather the pieces of the drain saddle:
- (1) Saddle - Front Portion
- (1) Saddle - Rear Portion
- (1) Foam Gasket
- (2) Screws
- (2) Nuts (for Screws)

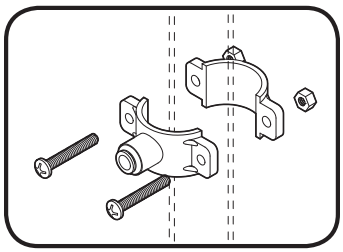
NOTICE ***The drain saddle must be installed at least 1 ½" above the nut of the P-Trap elbow or cross bar from the garbage disposal to ensure proper drainage.***



Step B: The small square black foam gasket with a circle cut out of the middle must be applied to the inside of the drain saddle. Remove sticky tape backing and stick to the drain saddle as shown.

NOTICE ***Take extreme caution to only drill through one side of the drain pipe.***

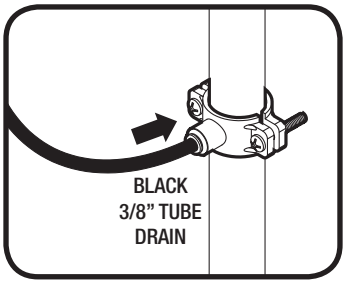
Step C: The drain saddle must be installed at least 1 ½" above the nut of the P-Trap elbow or cross bar from the garbage disposal to insure proper drainage. Using the 3/8" drill bit, drill into the drain pipe at the best available location as specified above.



Step D: Assemble the drain saddle around the drain pipe and align drain saddle fitting opening with the hole drilled in the previous step - you may use a small screwdriver to feed through the drain saddle into the drain pipe to aid with the alignment. Using a Phillips screw driver tighten the drain saddle bolts evenly and securely on both sides.

NOTICE ***Do not over tighten the screws. It may crack the drain saddle.***

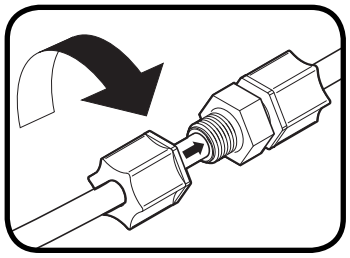
NOTICE ***The black 3/8" drain tube must be as SHORT and STRAIGHT as possible to the drain saddle. Make sure there is a downward slope from faucet to drain saddle to allow for proper drainage without stretching or sagging of the tube. This is a gravity fed line and if there is any bend or dip in the tube, the rinse water will not flow into the drain properly. Water may back up and come out the air gap hole in the back of the faucet.***



Step E: Measure the 3/8" black tube from faucet to the drain saddle on the drain pipe and make a straight cut to the correct length.

Step F: Connect the black tube to the open quick connect fitting on the drain saddle by pushing the tube all the way to the tube stop.

Step 8. Red Tube Connection

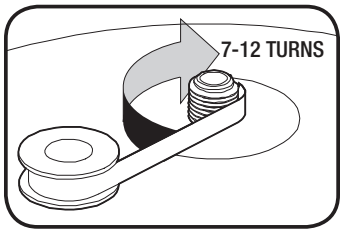


Step A: Cut the excess red tube from RO faucet leaving a straight cut edge.

NOTICE ***Do not overtighten***

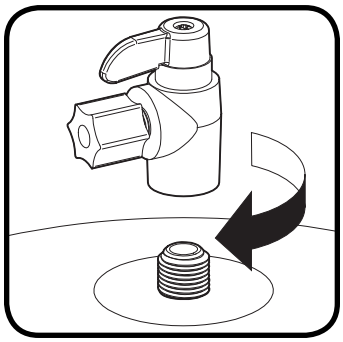
Step B: Using the white plastic union found in the parts bag, join the 1/4" red tubing from the faucet to the 1/4" red tubing from the RO membrane housing. Insert the red tube from RO faucet in one end of the white plastic union and the red tube from RO membrane housing in the other end. Use a 5/8" wrench to tighten both of the white plastic nuts securely

Step 9. Tank Ball Valve Installation



Step A: Teflon tape must be applied in a clockwise direction. Wrap (7 to 12 turns) around the male pipe threads (MPT) on the stainless steel fitting on top of the tank.

NOTICE ***Do not over-tighten.***



Step B: Thread the elbow ball valve (supplied in the parts bag), by hand, onto the stainless steel connector on the tank.

Step 10. Blue Tube Connection From Tank

Step A: Position tank in desired location. Stand it upright or lay it on its side (using the black plastic stand). Measure the blue tube (marked "TANK") from the RO module to the tank and cut it to length leaving a straight, square edge. To connect the blue tube to the ball valve fitting, slip the blue tube through the white compression nut, hand tighten the white nut and add 1/4 turn with a wrench.

Note: Set the blue ball valve knob in-line with the blue tube, this is the "open" position.

Step 11. Ice maker Connection

Step A: If you have a refrigerator / ice maker that you would like to connect to your RO system, you can connect that to the blue tube (purified water) leading to the RO faucet.

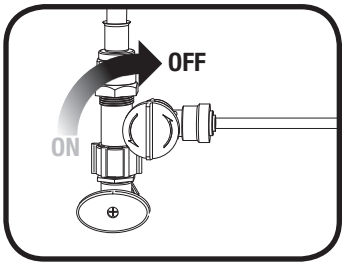
NOTICE ***A connection from the RO to the refrigerator / ice maker system must have an in-line valve installed in-between so it can easily be closed to prevent water flowing to the ice maker during start up and periodic maintenance. An Ice maker Connection Kit can be purchased through Premier***

Startup

NOTICE ***If your RO system is connected to a refrigerator / ice maker, you must turn off the connection to that appliance during the system startup.***

Do not re-open the connection until after the system has been completely flushed (as described below) and the tank is allowed to fill up completely in order for the appliance to work properly.

Discard the first batch of water or ice made from the RO water after startup.



Step A Turn on the water supply at both the cold water supply valve and Adapt-A-Valve™. Check the system for leaks and tighten any fittings as necessary. (Continue to check frequently over the next 24 hours to ensure no leaks are present).

Step B: Open the RO faucet and leave it open until water begins to trickle out (this may take a few minutes and the water will come out slowly).

Step C: Close the RO faucet allowing the storage tank to fill with water. It may take 3 to 6 hours to fill the tank completely depending on the production capability of the membrane, local water temperature and water pressure.

NOTE: ***During the fill period you may hear water trickling which is a normal occurrence.***

Step D: After the storage tank has filled, open the RO Faucet to flush the tank completely. You will know that the tank is empty when the flow rate from the RO faucet is down to a trickle. Repeat this step two more times. The fourth tank can be used for drinking.

NOTE: ***The flushing process should take about a day to complete.***

NOTE: ***Flushing of the tank 3 times is only necessary during the initial startup and after replacing the membrane.***

NOTICE ***Check frequently over the next 24 hours to ensure no leaks are present***

Maintenance

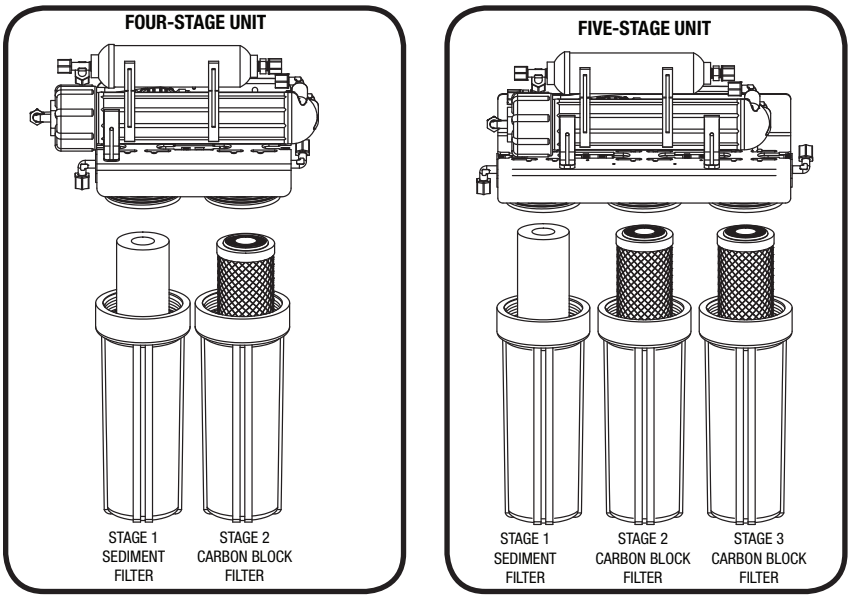
⚠ WARNING ***For proper performance and to help avoid exposure to contaminants, this system must be installed, maintained and operated as specified in this Manual.***

It is important to change out your filters at the recommended intervals as indicated in this system manual. When replacing the filter elements, pay special attention to any cleaning instructions. Should you have any further questions please refer to our web site at www.premierh2o.com or call our customer service department at 1-800-752-5582.

With proper installation and maintenance, this system will provide you with high quality water for years to come. All of Premier's water enhancement products are rigorously tested by independent laboratories for safety and reliability. If you have any questions or concerns, please contact our customer service department at 1-800-752-5582 (outside USA 480-675-7995) or refer to our on-line troubleshooting guide at www.premierh2o.com.

NOTICE ***If your RO system is connected to a refrigerator / ice maker, you must turn off the connection to that appliance during the system maintenance.***

NOTICE ***The following is a minimum replacement schedule – More frequent filter replacement may be required depending on your particular water conditions and use.***



6 Month Maintenance

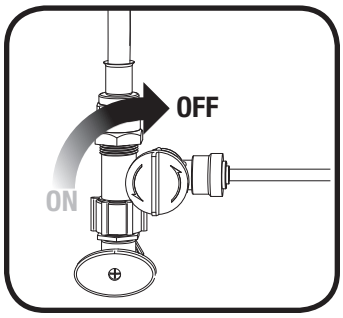
****Order filters by calling 1-800-752-5582 or buy online at www.premierh2o.com.***

Replace:	5 micron Sediment Pre-Filter	Part# 104017
	5 micron Carbon Pre-Filter	Part# 101009 (2 Needed for 5-Stage Unit)

NOTE: ***A filter housing wrench (part #164002) may be purchased from Premier to aid with filter removal (not required)***

Step A: Close the tank ball valve.

Step B: Turn off the incoming water supply to the RO by turning the knob at the Adapt-A-Valve™ clockwise until it stops.



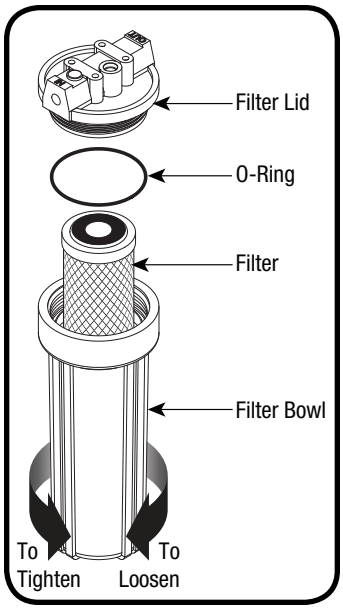
Step C: Open RO Faucet to depressurize system. Let system sit for 10 to 15 minutes after the tank is empty to let the system depressurize before attempting to remove filter housings.

NOTICE ***Water may be saved in a container for drinking or to rinse system parts.***

Step D: For more leverage you may leave the RO module attached to wall of cabinet. If you are unable to access the module while it is mounted, remove it prior to changing filters. Starting with the First Bowl on the left (Stage 1), remove it by turning it clockwise (left), empty water, then discard filter. Continue on to the 2nd Bowl (Stage 2) and then 3rd Bowl (Stage 3 on the five-stage unit).

NOTE: ***If you have a four-stage system, it will only have two vertical housing assemblies at the bottom***

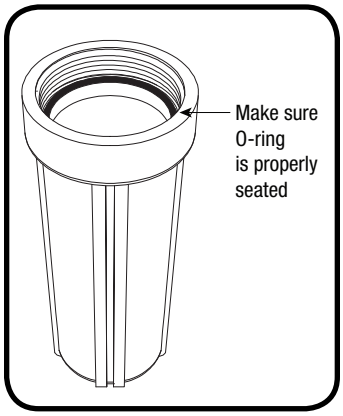
Step E: Clean the filter housings (bowls) with a mild soap solution and rinse with water. Check O-rings and lubricate with water soluble lubricant. KY Jelly®, canola oil or other water based lubricants may be used. Petroleum based lubricants (such as Vaseline®) must not be used. If performing Annual Maintenance, return to Step A below.



NOTICE ***Before re-installing the filter bowls back on to the system, check O-rings to make sure they are still in place.***

Step F: Insert a new sediment filter (cloth like appearance) into the 1st filter housing which is the one on the water inlet side (green tubing from the Adapt-A-Valve™) of the RO system, and re-install bowl.

Step G: Insert the new Carbon Block filter (White end caps & plastic netting) into the second and third filter bowl and re-install bowl.



Step H: Turn on the water supply to the unit at the Adapt-A-Valve™.

Step I: Keep the RO faucet open until water begins to trickle out (it will come out slowly)

Step J: Close the RO Faucet and open the tank ball valve.

NOTICE ***Do not over-tighten filter housing, overtightening may damage O-ring(s), cause water leaks, or affect system performance.***

SANITATION STEPS

Annual Maintenance

Replace:	5 micron Sediment Filter	Part # 104017
	5 micron Carbon Block Filter	Part # 101009 (2 Needed for 5-Stage Unit)
	GAC Final In-line Filter	Part # 560005 (6” Filter) OR 560010 (10” Filter)

If you are sanitizing your unit, you will also need 1/4 cup (60mL) of common household bleach.

If not already complete, go back & perform Steps B through E in the 6 Month Maintenance.

NOTICE ***During normal use, a reverse osmosis system tank may become fouled with organic matter or in some cases bacteria from the water supply. This may result in an off-taste or odor in your drinking water. The sanitizing of the unit is recommended to be performed during your Annual Maintenance. The storage tank MUST be drained for this process. If not sanitizing your unit, Skip to Step J***

Step A: Remove the RO membrane from its housing and rest in a clean sanitary place. (Refer to “Membrane Replacement” section on page 18 for directions on removing the membrane). Replace cap onto empty membrane housing and re-connect green tubing.

Step B: Leaving the filters out, replace stage 2 & 3 empty filter housing (hand tight) onto unit. Measure & pour 1/4 cup of common household bleach into the 1st filter housing (Stage 1) and hand tighten onto unit.

⚠ DANGER

IF BLEACH GETS IN EYES: Hold eye open and rinse slowly and gently with water for 15 - 20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

Step C: With the RO faucet in the closed position turn on the incoming water supply to the system by turning the Adapt-A-Valve™ counter clockwise. Let the unit fill with water (approximately 8 minutes) allowing the bleach to dilute.

Step D: Let the system sit idle for 1 minute

Step E: Drain the system completely

Step F: Let the system fill again (approximately 8 minutes) and sit idle for 10 minutes before draining the system again.

Step G: Turn off the incoming water at the Adapt-A-Valve™ and open the faucet to make sure all the water has been drained

Step H: Open the membrane housing and re-install the RO membrane while making sure not to kink the O-rings. (Refer to "Membrane Replacement" section on page 18 for directions on installing the membrane). Tighten the cap back on the housing and reconnect green tubing.

Step I: Remove filter housings Stage 1, 2 and 3 and empty water.

NOTICE ***Before re-installing the filter bowls back on to the system, check O-rings to make sure they are still in place and lubricate with water soluble lubricant.***

Step J: Insert the new sediment filter (cloth like appearance) into the 1st filter housing which is the one on the water inlet side (green tubing from the Adapt-A-Valve™) of the RO system and re-install housing

Step K: Insert the new Carbon Block filter (White End Caps) into the 2nd and 3rd housing and re-install housing.

Step L: The final in-line filter is located on the blue tube between the storage tank and the RO faucet. Remove it by loosening the compression fittings on both ends of the filter and replace with new filter. (Discard used final filter after sanitizing)

NOTICE ***The arrow on the final filter must be pointing towards the RO faucet / away from the RO storage tank.***

TIP: ***This is a good time to check the air pressure in your storage tank. For instructions please see page 19.***

Step M: Follow the Start Up Instructions on Page 14.

NOTICE ***This reverse osmosis system contains a replaceable component (the RO membrane) which is critical to the efficiency of the system. Replacement of this reverse osmosis membrane should be with one of identical specifications as defined by Premier to assure the same efficiency and contaminant reduction performance.***

Membrane Replacement

Replace: RO Membrane Part# 560018

Membranes have a life expectancy between 2 and 5 years, depending on the incoming water conditions and the amount the RO system is used. This reverse osmosis membrane is critical for effective reduction of total dissolved solids (TDS). The product water should be tested periodically to verify that the system is performing satisfactorily.

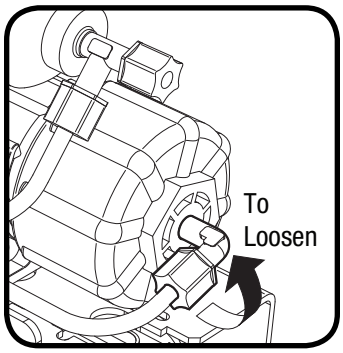
Normally, a membrane would be replaced during a semiannual or annual filter change. However, if at any time you notice a reduction in water production or an unpleasant taste in the reverse osmosis water, it could be time to replace the membrane. Premier recommends replacing the membrane when TDS reduction falls below 75%.

NOTE: ***A water sample may be sent to Premier for a free diagnosis of your membrane performance. To send a water sample, use two (2) clean containers and fill ½ cup of tap water in one container and ½ cup of reverse osmosis water in 2nd container. Clearly label each sample. Send the samples to the address listed on the cover of this manual attention "Water Samples". Premier will test the water and mail or call you with the results.***

Step A: Turn off the incoming water supply to the RO system.

Step B: Open the RO Faucet and allow water to drain from the tank until it is completely empty.

Removing the membrane:

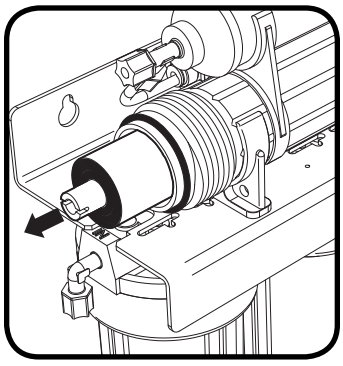


Step C: Disconnect the hose from the cap of the membrane by loosening the compression nut on the elbows

Step D: Remove the end cap from the membrane housing by turning it counter clockwise to loosen.

Step E: Using a pair of pliers, grip the PVC tube of the RO membrane and pull firmly on the membrane to remove from the housing and discard.

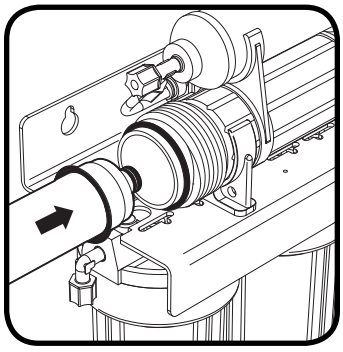
Installing the membrane:



Step F: Lubricate the O-rings on the new membrane with a water soluble lubricant such as KY Jelly®. Insert the end with the two black O-rings on the PVC tube first into the housing.

Step G: Once the membrane has been inserted into the housing, you must take your thumb and give a firm push at the center plastic tube of the membrane to properly seat it. Replace membrane housing cap and tighten.

Step H: Re-attach the green tube to the elbow fitting on the end cap of the membrane housing.



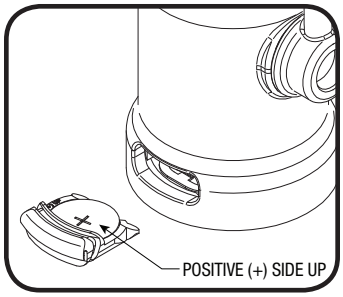
Step I: Follow the Start Up Instructions on Page 14.

Replacing the Faucet Battery

Step A: Remove the battery tray at the bottom of the faucet. Note: Water may dribble out of the spout, use caution when handling the electronic components.

Step B: Slide the old battery out and replace with new battery ("+" Positive Side Up).

Step C: Replace battery tray. Once the battery is pushed into the clip, a red and blue light will flash indicating proper installation.

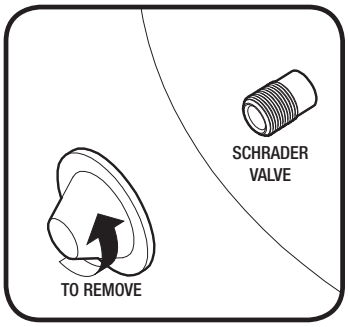


⚠ DANGER ***KEEP AWAY FROM CHILDREN***

This product contains a button (coin) cell battery. If swallowed, it could cause severe injury or death in just 2 hours. Seek immediate medical help. Contact a Poison Control Center.

Check Air Pressure in the Tank

NOTICE ***Check air pressure only when tank is empty of water!***



Check air pressure in the storage tank when you notice a decrease in available water from the RO system. Air can be added with a bicycle pump using the schrader valve that is located on the lower side of the tank behind the blue plastic cap.

Step A: Turn off the incoming water supply to the RO.

Step B: Open the RO Faucet and allow water to drain from the tank until it is completely empty.

TIP: ***When water from the RO faucet slows to a trickle, with the faucet still in the open position, you may add air to the tank to purge any left over water, this will ensure that the tank is completely empty.***

Step C: Once all water in the tank is purged, check air pressure using an air pressure gauge, it should read between 5 - 7 PSI. (Digital air pressure gauge is recommended)

Step D: Follow startup procedure on page 14.

Procedure for Extended Non-Use (More than 2 months)

Step A: Turn off the water supply to your RO system at the Adapt-A-Valve™ and open the RO faucet to drain the storage tank. Once the storage tank is empty, remove all filter cartridges (order not important), place them into a sealed plastic bag and store in your refrigerator.

NOTICE ***Do Not Freeze!***

To Restart your system

Step A: Reinstall the RO Membrane (per Page 18) and replace the filters (per Page 16 - Annual Maintenance).

Step B : Follow the Startup Procedure on Page 14.

NOTICE ***If you have connected your RO system to a refrigerator / ice maker, make sure the ice maker is off (do not allow water to flow to the ice maker) until the tank has been allowed to completely fill.***

Troubleshooting

NOTICE **BEFORE DISCONNECTING ANY TUBES, MAKE SURE TO TURN OFF WATER SUPPLY AND MAKE SURE THE SYSTEM IS DEPRESSURIZED**

Problem	Possible Causes	Solution
1. Low/Slow Production	Low Water pressure	Make sure there is at least 40 psi of pressure for the incoming water pressure. Premier sells a booster pump if the home water pressure is low. Make sure water supply is completely opened.
		If you have recently installed the system, make sure any old Adapt-A-Valves™ have been replaced
	Crimps in tubing	Check tubing and straighten or replace as necessary
	Clogged pre-filters	Replace pre-filters
	Fouled Membrane	Replace Membrane. Make sure hot water return has been turned on.
	Clogged Post-Carbon Filter	Replaced Post-Carbon filter
2. Milky colored water	Air in system	Air in the system is a normal occurrence with the initial start-up after RO installation or filter replacement. This will disappear during normal use within 1-2 weeks. If it continues, check incoming water for air
3. System is constantly running	Low water pressure	See #1 above
	Crimp in supply tube	Check tubing and straighten or replace as necessary
	Clogged pre-filters	Replace prefilters
	Fouled Membrane	Replace Membrane. Make sure hot water return has been turned on.
4. Small amount of water in storage tank	System is starting up	Normally it takes 4-6 hours to fill tank. Note: low storage tank incoming water pressure and/or temperature can drastically reduce production rate.
	Low water pressure	Make sure there is at least 40 psi of pressure for the incoming water pressure
	Too much air in tank	Follow the steps for checking air pressure in tank from Page 19
	Too little air in tank	Follow the steps for checking air pressure in tank from Page 19
5. Low flow from faucet	Faucet	If the pressure out of the tank is good, but pressure out of the faucet is bad, replace faucet
	Low Pressure in tank	Follow the steps for checking air pressure in tank from Page 19

6. Leak at Fitting	Damaged Tube	Disconnect the tube (See Section "Using Quick-Connect Fittings" at beginning of manual) then cut about 1" from the tube or replace tube and then re-insert.
	Damaged Fitting	Replace fitting
7. Unpleasant taste from water	Tank needs to be sanitized	Sanitize your system
	Bad Automatic Shut-Off (ASO) Valve	Check TDS Levels. If the TDS levels of your tap water and filtered water are the same, replace. Replace ASO Valve
	Filters are Fouled	Replace Filters
	Filters weren't removed prior to an extended period of non-use	Replace filters and Sanitize your system
8. High TDS		Reverse Osmosis Systems will reduce Total Dissolved Solids (TDS), but will not reduce the level to zero. The effectiveness of the system depends on chemistry of your water (including pressure and temperature). The Performance Data Sheet shows the test results of the unit in a laboratory environment. Your results will vary.
	Fouled RO Membrane	If the TDS level is not reduced by at least 75%, then replace the RO Membrane and follow the Maintenance Procedures described in the manual.

Performance Data Sheet

Watts Premier
8716 W Ludlow Drive, Suite 1
Peoria, AZ 85381

System conforms to NSF Standard 58 for Specific Claims and NSF/ANSI Standard 372 for lead free

Models: RO-TFM-4SV-W50, RO-TFM-5SV-W50

General Use Conditions

1. System to be used with municipal or well water sources treated and tested on regular basis to insure bacteriological safe quality. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.

⚠ WARNING DO NOT use with water that is micro biologically unsafe or unknown quality without adequate disinfection before and after the system.

2. Operating Temperature — Maximum: 100°F (40.5°C) — Minimum: 40°F (4.4°C)
3. Operating Water Pressure — Maximum: 100 psi (7.03 kg/cm²) — Minimum: 40 psi (2.81 kg/cm²)
4. pH — 4 to 11
5. Maximum iron present in incoming feed water supply must be less than 0.2 ppm
   Hardness of more than 10 grains per gallon (170 ppm) may reduce membrane life expetancy
6. Recommend TDS (Total Dissolved Solids) not to exceed 1800 ppm

Recommended Replacement Parts and Change Intervals

Note: Depending on incoming feed water conditions, replacement time may vary

Description	Part#	Change Time Frame
Sediment Pre-Filter	104017	6 Months
Carbon Pre-Filter	101009	6 Months
Final Carbon Filter	560010 / 560005	12 Months
RO Membrane	560018	2 to 5 Years

Performance Claims

	Influent Challenge (mg/L)[1]	Average Effluent (mg/L)[1]	% Reduction[2]	pH	Pressure	Max Effluent (mg/L)[1,2]	Infl. Challenge concentration	Max Allowable concentration (mg/L)
Arsenic (Pentavalent)	334.62µg/L	5.039 µg/L	98.4%		50 psi	10 µg/L	0.30 ± 10%	0.010
Barium	10.2	0.13	98.7%	7.24	50 psi	0.27	10.0 ± 10%	2.0
Cadmium	0.031	0.0001	99.7%	7.49	50 psi	0.0009	0.03 ± 10%	0.0005
Chromium (Hexavalent)	0.30	0.006	98.0%	7.24	50 psi	0.013	0.03 ± 10%	0.1
Chromium (Trivalent)	0.30	0.003	99.0%	7.24	50 psi	0.008	0.03 ± 10%	0.1
Copper	3.0	0.04	98.7%	7.64	50 psi	0.06	3.0 ± 10%	1.3
Cysts	222,077 @/mL	10 #/mL	99.99%		50 psi	58	min 50,000/mL	N/A
Fluoride	8.0	0.33	95.9%	7.49	50 psi	0.47	8.0 ± 10%	1.5
Lead	0.15	0.004	97.3%	7.49	50 psi	0.008	0.15 ± 10%	0.0107
Radium 226/228	25 pCi/L	5 pCi/L	80.0%	7.24	50 psi	5 pCi/L	25 pCi/L	5 pCi/L

	Influent Challenge (mg/L)[1]	Average Effluent (mg/L)[1]	% Reduction[2]	pH	Pressure	Max Effluent (mg/L)[1,2]	Infl. Challenge concentration	Max Allowable concentration (mg/L)
Selenium	0.10	< 0.001	99.0%		50 psi	< 0.001	0.10 ± 10%	0.05
TDS	760	85	88.0%	5.94	50 psi	100	750 ± 40mg/L	187
Turbidity	81 NTU	0.15 NTU	99.8%		50 psi	0.28 NTU	11 ± 1NTU	0.5 NTU

Recovery: 18% [5] Daily Production Rate: 17.32 GPD (W50) Efficiency: 10.4% [4]

[1] Measurement is in Milligrams per Liter (mg/L) unless noted otherwise. Milligrams per Liter (mg/L) is equivalent to parts per million (ppm)

[2] This system has been tested according to NSF/ANSI 58 for reduction of the substances listed below under standard laboratory conditions. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system as specified in NSF/ANSI 58. **Depending on the system and water chemistry, water temperature, and water pressure, the production and performance will vary.**

[3] This system has been tested for the treatment of water containing pentavalent arsenic (also known as As (V), As (+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please refer to the Arsenic Facts section below for further information.

[4] Efficiency rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage. There is an average of 4 gallons of reject water for every 1 gallon of product water produced without the tank.

[5] Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is bypassed.

REFER TO OWNER'S INSTALLATION/SERVICE MANUAL FOR FURTHER MAINTENANCE REQUIREMENTS AND WARRANTY INFORMATION.

Arsenic Facts

Arsenic (As) is a naturally occurring contaminant found in many ground waters. Arsenic in water has no color, taste or odor. It must be measured by an arsenic test kit or lab test.

Public water utilities must have their water tested for arsenic. You can obtain the results from your water utility contained within your consumer confidence report. If you have your own well, you will need to have the water evaluated. The local health department or the state environmental health agency can provide a list of test kits or certified labs.

There are two forms of arsenic: pentavalent arsenic (also called As (V), As (+5)) and trivalent arsenic (also called As (III), As (+3)). In well water, arsenic may be pentavalent, trivalent, or a combination of both. Although both forms of arsenic are potentially hazardous to your health, trivalent arsenic is considered more harmful than pentavalent arsenic.

RO systems are very effective at removing pentavalent arsenic. A free chlorine residual will rapidly convert trivalent arsenic to pentavalent arsenic. Other water treatment chemicals such as ozone and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) where it does convert trivalent arsenic to pentavalent arsenic, may not convert all the trivalent arsenic in to pentavalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system.

This reverse osmosis system is designed to remove up to 98% of pentavalent arsenic. It will not convert trivalent arsenic to pentavalent arsenic. Under laboratory standard testing conditions, this system reduced 0.30 mg/L (ppm) pentavalent

arsenic to under 0.010 mg/L (ppm) (the USEPA standard for drinking water). Actual performance of the system may vary depending on specific water quality conditions at the consumer's installation. In addition to the independent laboratory standard testing conditions we have conducted additional field testing on our reverse osmosis units to determine trivalent arsenic reduction capabilities. Based upon field testing, it has been determined that the RO units are capable of reducing up to 67% of trivalent arsenic from the drinking water.

This reverse osmosis system contains a replaceable component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specifications, as defined by the manufacturer, to ensure the same efficiency and contaminant reduction performance. Specific component identification and ordering information can be found in the maintenance section of this manual.

Service Record

Date of Purchase: _____ Model Number: _____ Serial Number: _____

Date of Install: _____ Installed by: _____

Date	Sediment (6 Months)	Carbon Block (6 Months)	Carbon Block (6 Months) (5-Stage Only)	GAC Final Inline	TFM RO Membrane (2-5 Years)

Premier™

A WATTS® Brand

Limited Warranty

WHAT YOUR WARRANTY COVERS:
Watts Regulator Co. ("WATTS") warrants its Reverse Osmosis System to be free from defects in workmanship (excluding replaceable filters and membranes), for a period of 1 year from the date of original retail purchase. In the event of such defects, return the unit (less tank) after obtaining a return authorization (see below) within the 1 year warranty period, and Watts will repair or, at Watts's option, replace the unit at no charge.

HOW TO OBTAIN WARRANTY SERVICE:
For warranty service, call 1-800-752-5582 for documentation and a return authorization number. Once the return authorization number has been created, ship your Reverse Osmosis unit (less tank) to our factory, freight and insurance prepaid, with proof of date of original purchase. Include a note stating the problem experienced and include your name, address and your return authorization number. No returns will be accepted without the proper return authorization number. Watts will repair it or, at Watt's option, replace and ship it back to you prepaid.

WHAT THIS WARRANTY DOES NOT COVER:
This warranty does not cover defects resulting from improper installation, (contrary to Watts's printed instructions), from abuse, misuse, misapplication, improper maintenance, neglect, alteration, accidents, casualties, fire, flood, freezing, environmental factors, water pressure spikes or other such acts of God.

This warranty will be void if defects occur due to failure to observe the following conditions:

1. The Reverse Osmosis System must be hooked up to a potable municipal or well cold water supply.
2. The hardness of the water should not exceed 10 grains per gallon, or 170 ppm.
3. Maximum incoming iron must be less than 0.2 ppm.
4. The pH of the water must not be lower than 4 or higher than 11.
5. The incoming water pressure must be between 40 and 100 pounds per square inch (2.81 - 7.03 kilograms per square centimeter).
6. Incoming water to the RO cannot exceed 100 degrees F (40.5 degrees C.)
7. Incoming TDS/Total Dissolved Solids not to exceed 1800 ppm.
8. Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

This warranty does not cover any equipment that is relocated from the site of its original installation. This warranty does not cover any charges incurred due to professional installation. This warranty does not cover any equipment that is installed or used outside the United States of America and Canada.

OTHER CONDITIONS:
If Watts chooses to replace the equipment, may replace it with reconditioned equipment. Parts used in repairing or replacing the equipment will be warranted for 90 days from the date the equipment is returned to you or for the remainder of the original warranty period, whichever is longer. This warranty is not assignable or transferable.

LIMITATIONS AND EXCLUSIONS:
THE WARRANTY DESCRIBED ABOVE IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY WATTS WITH RESPECT TO THE EQUIPMENT. WATTS MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED AND 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. WATTS WILL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING TRAVEL EXPENSE, TELEPHONE CHARGES, LOSS OF REVENUE, LABOR CHARGES, DAMAGE CAUSED BY ADVERSE WATER CONDITIONS, LOSS OF TIME, INCONVENIENCE, LOSS OF USE OF THE EQUIPMENT, AND DAMAGE CAUSED BY THIS EQUIPMENT AND ITS FAILURE TO FUNCTION PROPERLY. THIS WARRANTY SETS FORTH ALL OF WATTS'S RESPONSIBILITIES REGARDING THIS EQUIPMENT.

YOUR RIGHTS UNDER STATE LAW:
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 Limited 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 ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. For more information: www.watts.com/prop65