

Installation, Operation and Maintenance Manual for Model RO5M-50

Save Manual for future reference



Warning

Please read carefully before proceeding with installation. Your failure to follow any attached instructions or operating parameters may lead to the product's failure and possible damage to property.



System Tested and certified by NSF International Against ANSI/NSF Standard 58 for the reduction of claims specified on performance data sheet.

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

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

For more information: www.watts.com/prop65

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Thank You!

Thank you for your purchase of a state of the art Reverse Osmosis (RO) water treatment system. Water quality concerns are quickly becoming more of a focus for the public. Lately you may have heard about contaminant's in the drinking water, such as arsenic, chromium, cryptosporidium or Giardia. There may also be some local water issues in your area such as high levels of lead and copper. This water treatment system has been designed and tested to provide you with high quality pure water for years to come. The following is a brief overview of the system.

Your Reverse Osmosis System:

Osmosis is the process of water passing through a semi permeable membrane in order to balance the concentration of contaminant's on each side of the membrane. A semi permeable membrane is a barrier that will pass some particles like pure water, but not other particles like arsenic and lead.

Reverse osmosis uses a semi permeable membrane; however, by applying pressure across the membrane, it concentrates contaminant's (like a strainer) on one side of the membrane, producing crystal clear water on the other. This is why RO systems produce both pure drinking water and waste water that is flushed from the system. This reverse osmosis system also utilizes carbon block filtration technology, and can therefore provide a higher quality drinking water than carbon filtration systems can alone.

Your system is a five stage RO which is based upon five 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 and 3 – Carbon filters, recommended change 6 months.

The second and third stages each contain a high quality carbon block filter. This helps ensure that chlorine and other materials that cause bad taste and odor are greatly reduced.

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 take out TDS, Sodium and heavy metals as well as Cysts, such as Giardia and cryptosporidium. Because the process of making this high quality drinking water takes time, your RO water treatment system is equipped with a storage tank.

Stage 5- Carbon inline filter, recommend change 6 - 12 months.

The final stage is an inline granular activated carbon (GAC) filter. This filter is used after the water storage tank, and is used as a final polishing filter.

System Maintenance

Just because you can not taste it, does not mean that it is not there. Contaminant's such as lead, chromium and arsenic (to name a few) are undetectable to the taste. Additionally, over time if you do not replace the filter element, other bad tastes and odors will be apparent in your drinking water. This is why it is important to change out your filter at the recommended intervals as indicated in this system manual. When replacing the filter elements, pay special attention to any cleaning instructions.

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Operational Parameters

Operating Temperatures:

Maximum 100°F (37.8°C)

Minimum 40°F (4.4°C)

Operating Pressures:

Maximum 85psi (6.0 kg/cm²)

Minimum 40psi (2.80 kg/cm²)

pH Parameters:

Maximum 11

Minimum 3

Iron:

Maximum 0.2 ppm

TDS (Total Dissolved Solids):

< 1800 ppm

Turbidity:

< 5NTU

Hardness: Recommended hardness should not exceed 10 grains per gallon, or 170 ppm. System will operate with hardness over 10 grains but the membrane life will be shortened. (Addition of a water softener may lengthen the membrane life.)

Note: The operating pressure in your home should be tested over a 24 hour period to attain the maximum pressure. If it is above 80 psi a pressure regular is recommended and if over 100psi then a pressure regulator is required.

Note: Reverse Osmosis water should not be run through copper tubing as the purity of the water will leach copper and cause an objectional taste in water and may cause pin holes. Be sure to follow any state or local regulations.

Contents of Reverse Osmosis System



- 1 Tank – White
- 1 Module – White
- 1 Parts Bag – With a Final Filter
- 1 Faucet Bag
- 1 Manual and Warranty Card

Tools Recommended For Installation



- 1 1/4" Hole Saw Bit for Faucet opening
- Round Knock out Punch for Stainless Sinks, 1/2" & 1 1/4"
- Adjustable Wrench
- Sharp Knife
- 1/2" - 13/16" Open End Wrenches
- Phillips Screw Driver
- Needle Nose Pliers – Adjustable Pliers
- Electric Drill
- 1/8", 1/4" & 3/8" Drill Bits

Drill a Hole for the Faucet in a Porcelain Sink

Note: For the Air Gap Faucet (included), a 1¼" hole will be required. If using a non air gap faucet, a ¾" hole will be required.

Porcelain sink surface material is extremely hard and can crack or chip quite easily. Use extreme caution when drilling. Watts Pure Water accepts no responsibility for consequential damage resulting from the installation of faucet. Most sinks are predrilled with 1½" or 1¼" diameter holes (if you are already using it for a sprayer or soap dispenser, continue to step 1).

Caution: Professional installation may be required for Granite or Corian surfaces.

Step 1

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



Step 2

Using a variable speed drill on the slowest speed, drill a ⅛" pilot hole through both porcelain and metal casing of sink at the center of the desired location. (If drill bit gets hot it may cause the porcelain to crack or chip), use lubricating oil or liquid soap to keep cool.



Step 3

Using a 1¼" 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 4

Make sure the surroundings of the sink are cooled before mounting the faucet to the sink after drilling. Remove all sharp edges.

Punch a Hole for the Faucet in a Stainless Steel Sink

Note: If mounting faucet to a stainless steel sink you will need a ½" & 1¼" hole punch. The faucet opening should be centered between the back splash and the edge of the sink, ideally on the same side as the vertical drain pipe.

Step 5

Drill a ¼" pilot hole. Use a ½" hole punch and an adjustable wrench to punch the hole in the sink. Change to the 1¼" hole punch to enlarge the hole.

The faucet can now be installed.

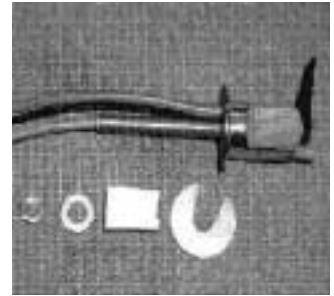


Faucet Installation

Step 6

Remove the brass nut, washer, spacer and slotted washer from faucet.

- 1 faucet base with tubing attached
- 1 small washer
- 1 brass nut
- 1 white plastic spacer
- 1 slotted washer



Step 7

Slide tubes through the opening for the faucet until faucet base is resting on top of sink.



Step 8

Slip blue tube through small washer and brass nut. Position white washer into place then tighten to within 1/4" of top. Slip slotted washer into position. Check orientation of faucet on top of sink. Tighten with a wrench. **DO NOT OVERTIGHTEN.** Some porcelain sinks could crack if over tightened.

The three (3) tubes from the faucet will be cut to length later in the installation.



Step 9

Remove the piece of tubing from the top of the faucet base by pulling upward. Needle nose pliers can be used to grip the tube.

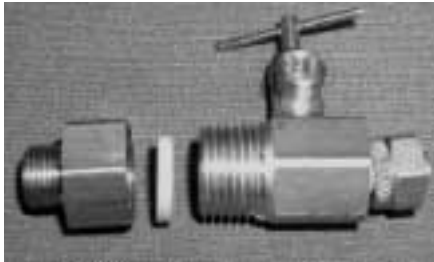


Step 10

Insert spout of faucet into the opening in front of the black lever and push down firmly.



Adapta Valve Installation



Configuration for $\frac{3}{8}$ "
compression fittings



Configuration for $\frac{1}{2}$ "
compression fittings



Hot water angle stop valve

Cold water angle stop valve

Step 11

Turn off cold water supply to the kitchen faucet by turning the angle stop valve clockwise.

Step 12

Attach adapta valve as illustrated in the three photos above, choosing the configuration that fits your plumbing. The green tube from inlet side of RO module will be cut to length and attached later in the installation.

**Caution: Water supply line to the system must be from the cold water supply line.
Hot water will severely damage the system.**

Reverse Osmosis Module Mounting

Step 13

Determine best location for the RO module to be mounted to allow for future system maintenance. The parts bag has 2 self tapping screws. Using a phillips screwdriver, screw them into the cabinet wall 6" apart and at least 16" from the bottom of the cabinet.



Drain Saddle Installation

Drain Saddle fits standard 1¼" – 1½" drain pipes

Step 14

Gather the pieces of the drain saddle found in parts bag.

- 1 black compression nut
- 1 semi-circle bracket with fitting
- 2 screws
- 1 foam washer
- 2 nuts for screws
- 1 semi-circle bracket (Fig. A)



Figure A

Step 15

The black square foam gasket with a hole 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 matching holes as shown. Be sure to remove the hole cut out. (Fig. B)



Figure B

Step 16

Drill a ¼" hole through the drain pipe at least 1½" above the nut of the P-trap to allow for the removal of the P-trap. Assemble the drain saddle around the drain pipe. Position the drain saddle over the drilled hole in pipe. Insert screw driver into the opening of the drain saddle and align with drilled hole in drain pipe. Using Phillips screw driver tighten screws evenly and securely on both sides of the drain saddle. Over tightening the screws may break drain saddle. **Caution: Hand tighten compression nut. If necessary you can turn ¼ turn with a wrench.** Attach black compression nut, but do not tighten at this time. The black tubing will be installed later.



Tank Ball Valve Installation

Step 17

Wrap (7 to 12 turns) Teflon® tape clockwise around the male pipe threads (MPT) on the side of the tank.

Note: Do not let the tape cover the opening.



Step 18

Thread the plastic ¾" ball valve elbow (supplied in the parts bag) onto the connection on the side of tank. Tighten using an adjustable wrench.

Do not over tighten as plastic could crack.

Caution: Do not Teflon® tape the compression fitting threads as this may cause leaks.



Green Tube Connection

Step 19

Measure the green tube coming from the port marked TAP on the Reverse Osmosis Module over to the adapta valve attached to the angle stop valve. Leaving a gentle curve in the tubing so the tube does not kink. Cut to desired length using a sharp knife.



Step 20

Remove a brass nut, plastic Delrin sleeve and brass insert from the parts bag. Slide the nut on the tube first, then the Delrin sleeve (Small taper end of Delrin sleeve must point to the end of tube). Then insert the brass Insert into the end of the tube.

Step 21

Insert the green tube into the 1/4" opening on adapta valve until it stops. Slide nut and sleeve down and thread onto the male pipe threads. Hand tighten brass nut, add one full turn with a 1/2" wrench for secure fit.



Connect Blue Tube from TANK port on RO Module to the Tank

Step 22

Position tank in desired location. Stand it upright or lay it on its side (using the black plastic stand). Measure the blue tube from the RO module port marked TANK over to the tank and cut it to desired length.



Step 23

Insert the blue 3/8" tube into the compression nut as far as it will go. Tighten the compression nut securely with a wrench.



3/8" Black Tube Connection

Note: The tubing must be as SHORT and STRAIGHT as possible to the drain saddle, making a downward slope from module to drain saddle to allow for proper drainage.

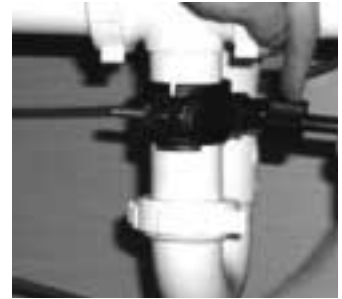
Step 24

Measure the black tube from faucet to the black drain saddle and make a straight cut with a sharp knife through tube.

Step 25

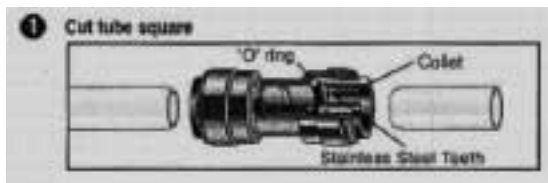
Remove black plastic nut from drain saddle. Slip black tube through black nut. Insert black tube into the opening in the drain saddle and hand tighten the black nut, and add 1/4 turn with a wrench.

Note: This is a gravity fed line, if there is any bend or dip in the tube the rinse water will not flow into the drain properly. Water will back up and come out the air gap hole in the back of the faucet base.



How to use the quick connect fittings on the RO Module

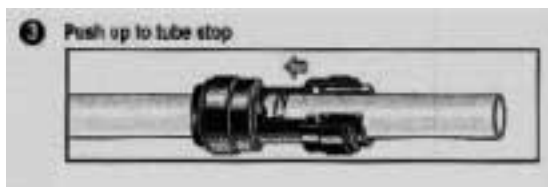
To make a connection, the tube is simply pushed into the fitting. Place a piece of tape 1/2" from end of tube to indicate how far the tube should be inserted. The unique patented John Guest® locking system holds the tube firmly in place without deforming it or restricting flow.



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.



Fitting grips before it seals. Ensure tube is pushed into the tube stop.



Push the tube into the fitting, to the tube 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. It is a good practice to test the system prior to leaving site and /or before use.



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

Connect the Red Tube from Faucet to RO Module

Step 26

Insert the red $\frac{1}{4}$ " tube from the faucet into the port on the module marked DRAIN. Make sure the tube is pushed in all the way to the tube stop.



Final Filter Installation

Step 27

The Final Filter and 2 white plastic connectors are in the parts bag.



Step 28

Remove the blue caps from the final filter.



Step 29

Thread the smaller ($\frac{1}{4}$ ") white plastic connector into the end of the Final Filter and tighten, (flow arrow on filter points to the $\frac{1}{4}$ " connector).

Step 30

Thread the larger ($\frac{3}{8}$ ") white plastic connector into the other end of the final filter.



Step 31

Insert the $\frac{3}{8}$ " blue tube attached to the faucet into the outlet of the filter. The flow arrow should be pointing toward the faucet. Insert the $\frac{3}{8}$ " blue tube attached to the module into the $\frac{3}{8}$ " inlet white connector on the in-line Final Filter. Tighten the white compression nuts with an adjustable wrench.



Start up Instructions

Step 1

Turn on the incoming cold water at the angle stop valve. Open the needle valve on the brass adapta valve by turning counter clockwise. Check the system for leaks and tighten any fitting as necessary. (Check frequently over the next 24 hours to ensure no leaks are present).

Step 2

Open the RO faucet and leave it open until water begins to trickle out, (it will come out slowly).

Step 3

After water trickles out of the faucet, close RO faucet so the tank will fill with water. The tank will take approximately 6 hours at first to fill completely depending on the size of the membrane, local water temperature and pressure.

Step 4

After the Tank has filled, open the RO faucet and drain the tank completely to remove carbon particles from the system. Repeat steps 3 and 4, this initial flushing of the system should take about a day to complete. Note: The flushing of the system is only necessary during initial installation.

Step 5

If system is connected to an ice maker, turn the ice maker off until flushing is complete and the tank has refilled. The system should have an in-line valve installed before the ice maker so it can be closed to prevent water flowing to the ice maker. Your tank must be allowed to fill up in order for the unit to shut off. (If you are installing an ice maker kit, tee off after the final filter).

Note: Your reverse osmosis system contains replaceable treatment components that are critical for effective contaminant reduction. Periodic inspection and following proper system maintenance is critical for continued performance.

6 Month System Maintenance

- √ One 10" sediment filter (part no. 104017)
- √ Bucket to catch water from filter housings.
- √ Two 10" carbon filters (part no. 101009)

Step 1

Turn off incoming water supply to the RO by turning the needle valve on the adapta valve clockwise. (The green tube is connected to the adapta valve.)

Step 2

Open RO Faucet to allow water to drain from the tank until completely empty. Water can be saved in a container for drinking or to rinse system parts.

Step 3

Let system sit for 10 – 15 minutes after tank is empty to depressurize before attempting to remove filter housings.

Step 4

For more leverage, leave RO module attached to wall of cabinet. If you are unable to access the module you may remove it to change filters. Starting with the closest housing, remove and empty water, then discard filters. Continue on to the 2nd and/or 3rd Bowls.

Step 5

Clean all 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 and other water based lubricants can be used, petroleum based lubricants (such as Vaseline[®]) must not be used.

Step 6

The sediment filter has a cloth like appearance. It should be in the 1st housing on the side with tubing connections.

Caution: Check O-rings to make sure they are still in place.

Step 7

Insert the carbon block filter (filter has a gasket on each end) into the middle housing.

Step 8

Repeat this step for 3rd housing.

Note: If also doing the annual maintenance at this time continue to Step 2 on page 14.

Step 9

Turn water on to the unit by turning the needle valve on the adapta valve counter clockwise.

Step 10

Open RO faucet and leave open until water begins to trickle out. Close RO faucet to allow tank to fill with water.



Annual Maintenance

Step 1

Perform 6 month system maintenance. (previous section)

Note: Be sure water is turned off before going to step 2.

Step 2

The Final Filter (should be replaced annually). Remove white nuts at both ends of the filter to replace the old final filter. Replace with new filter and connectors (as shown on page 10). The white nuts can be re-used so they do not have to be removed from the tubes.

Note: Flow arrow on final filter must be pointing in the direction of the faucet.

Step 4

Annual sanitizing of unit is recommended to prevent bacteria growth. Remove the Blue Tube from the module marked TANK.

Step 5

Using a clean eye dropper insert ½ teaspoon of 3% hydrogen peroxide or common household bleach into the blue tube. This will flow into the tank once water is turned back on to unit.

Reattach the blue tube to the port marked TANK on the module. Then follow steps 3 and 4 on page 12 in the start up procedure.



Membrane Maintenance

Membranes have a life expectancy of between 2 and 5 years, depending on the incoming water conditions and the amount of use of the RO system.

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.

Step 1

Turn off the cold water supply and open the RO faucet to drain the tank.

Step 2

Remove the membrane vessel on top of the unit by turning the vessel counter clockwise to loosen.



Step 3

Pull firmly on the membrane to remove from the housing and discard.

Step 4

Unwrap new membrane and lubricate the O-rings with water soluble lubrication such as KY Jelly® before inserting into housing. Insert end with the two black O-rings into the cap. Twist the membrane as you push firmly into the cap.

Step 5

Replace the vessel onto the cap by turning clockwise. Tighten securely.



Changing the Flow Restrictor

Step 6

The flow restrictor plug (part no. 164015) must be replaced each time you change the Membrane (part no.110009.) Remove the existing flow restrictor with a screwdriver and discard.



Step 7

Insert the new flow restrictor plug and tighten.

Step 8

Follow the Start Up Instructions on page 12.



Checking Air Pressure in the Tank

Note: Check air pressure when tank is empty.

Step 1

Use a digital air gauge to check the air pressure in the tank. You should always have between 5–7psi on an empty tank. If you have more than 7psi release air and recheck. If you have less than 5psi, add air. Air can be added with a bicycle pump.

Your unit comes with a stand for your storage tank to sit on if you need to turn the unit on its side. This allows air flow under the tank keeping moisture and standing water from rusting out the bottom of your tank which voids your warranty.



Limited Warranty

What your Warranty Covers:

If any part of your WATTS PURE WATER Reverse Osmosis System is defective in workmanship excluding replaceable filters and membranes), return unit after obtaining a return authorization (see below), less tank, within 3 years of original retail purchase. WATTS PURE WATER will repair or, at WATTS PURE WATER'S option, replace the system at no charge.

How to obtain Warranty Service:

For warranty service, call 1-800-752-5582 for a return authorization number. Then, ship your Reverse Osmosis unit (less tank) to our factory, freight and insurance prepaid, with proof of date of original purchase. Please include a note stating the problem. WATTS PURE WATER will repair it, or replace it, 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 PURE WATER'S printed instructions), from abuse, misuse, misapplication, improper maintenance, neglect, alteration, accidents, casualties, fire, flood, freezing, environmental factors, 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 7 grains per gallon, or 120 ppm.
3. Maximum incoming iron must be less than 0.2 ppm.
4. The pH of the water must not be lower than 3 or higher than 11.
5. The incoming water pressure must be between 40 and 100 pounds per square inch.
6. Incoming water to the RO cannot exceed 105 degrees F (40 degrees C.)
7. Incoming TDS/Total Dissolved Solids not to exceed 1800 ppm.
8. Do not use with water that is micro-biologically 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 equipment that is installed or used outside the United States of America.

LIMITATIONS AND EXCLUSIONS:

WATTS PURE WATER WILL NOT BE RESPONSIBLE FOR ANY IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WATTS PURE WATER WILL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING TRAVEL EXPENSE, TELEPHONE CHARGES, LOSS OF REVENUE, 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 PURE WATER'S RESPONSIBILITIES REGARDING THIS EQUIPMENT.

OTHER CONDITIONS:

If WATTS PURE WATER chooses to replace the equipment, WATTS PURE WATER may replace it with reconditioned equipment. Parts used in repairing or replacing the equipment will be warrantee 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.

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, so the above limitations or exclusions may not apply. This warranty gives you specific legal rights, and you may have other legal rights which vary from state to state.

Troubleshooting

PROBLEM	CAUSE	SOLUTIONS
1. Low/Slow Production	Low Water Pressure	Assure a minimum of 40psi incoming water pressure. Watts sells a booster pump if home water pressure is low. Make sure water supply is turned on and Adapt Valve is all the way open.
	Crimps in tubing	Check tubing and strengthen or repair as necessary.
	Clogged pre-filters	Replace pre-filters.
	Fouled membrane	Replace membrane and flow restrictor.
2. Milky Colored Water	Air in system	Air in the system is a normal occurrence with initial start up of the RO system. This milky look will disappear during normal use within 1-2 weeks. If Condition reoccurs after filter changes, drain tank 1 to 2 times.
3. Water constantly running / unit will not shut off	Low water pressure	See #1 above.
	Crimp in supply tube	Check tubing and strengthen or repair as necessary.
	High water pressure	Check incoming water pressure to make sure it does not exceed 100psi. A pressure regulator may be necessary.
	High pressure in tank	Empty storage tank of water. Set tank air pressure to 5psi. See previous page.
4. Noise from faucet or drain	Air gap faucet	Inherent sound with air gap faucet.
	Location of drain saddle	See diagram for proper location of drain saddle.
	Restriction in drain tube	Clear blockage sometimes caused by debris from garbage disposal or dishwasher.
	High water pressure	Pressure regulator recommended if 80psi and required if 100psi.
5. Faucet leaks from the air gap feature	Crimp in drain line	Check tubing.
	Restriction in drain line	Straighten all drain lines. Clear blockage. Cut off any excess tubing.
	Drain tube clogged	Caused from dishwasher or garbage disposal. Disconnect the 3/8" black line at the drain, clean the 3/8" black line out with a wire, then re-connect. Blowing air through the line will not always remove the clog.
6. Small amount of water in storage tank	System just starting up	Normally it takes 6-10 hours to fill tank. Note: Low pressure and/or temperature can drastically reduce production rate.
	Low water pressure	See #1 above.
	Excessive air in tank bladder	Tank pressure is set at the factory and should be 5psi when empty. Add if below 5psi and bleed if above 5psi. Check only when tank is empty. See previous page.
7. Water leaks from the filter housing	Not properly tightened	Tighten the bowl. (Hand Tight)
	Missing O-ring	Turn off the water supply and release the pressure. Replace the O-ring if necessary. Then lubricate it and make sure the O-ring is seated in the filter bowl properly before reinstalling the filter bowl.
	Kinked O-ring	

Performance Data Sheet ROM5M-50

Watts Pure Water
1725 W. Williams Drive C-20
Phoenix, AZ 85027 USA
(800) 752-5582 purewater@wattsind.com

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. Do not use with water that is microbiologically unsafe or unknown quality without adequate disinfection before and after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.
2. This system is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psig) or greater. If your water supply is under 40 psi, Watts Pure Water recommends the use of a RO booster pump for proper operation.
3. Operating Temperature: Maximum: 100°F (40.5°C) Minimum: 40° (4.4°)
4. Operating Water Pressure: Maximum: 85 psi (7.0kg/cm2) Minimum: 40 psi (2.8kg/cm2)
5. pH 3 to 11
6. Hardness of more than 10 grains per gallon (170 ppm) may reduce TFM membrane life expectancy.
7. Recommend TDS (Total Dissolved Solids) not to exceed 1800 ppm.

RECOMMENDED REPLACEMENT PARTS AND CHANGE INTERVALS:

Depending on incoming feed water conditions replacement time frame may vary.

Change time Frame	Description
6 months:	Sediment Pre-filter; Carbon Pre-filters
12 months	Final Carbon filter
2 to 5 years	R.O. Membrane

This system has been tested according to NSF/ANSI 58 for reduction of the substances below. 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. 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 see the Arsenic Facts section of the Performance Data Sheet for further information.

	Avg. In.	Avg. Eff.	% Reduction	pH	Pressure	Max Eff.	Inf. challenge concentration	Max Allowable concentration
							mg/L	mg/L
Arsenic (Pentavalent)	334.615 ug/L	5.0385 ug/L	98.4%		50psi	19 ug/L	0.30±10%	0.010
Barium Reduction	10.2 mg/L	0.207 mg/L	97.9%	7.24	50psi	0.3 mg/L	10.0±10%	2.0
Cadmium Reduction	0.036 mg/L	0.0005 mg/L	98.6%	7.49	50psi	0.0007	0.3±10%	0005
Chromium (Hexavalent)	0.15 mg/L	0.013 mg/L	91.3%	7.24	50psi	0.03	0.3±10%	0.1
Chromium (Trivalent)	0.17 mg/L	.01 mg/L	94.1%	7.24	50psi	0.01	0.03±10%	0.1
Copper Reduction	3.1 mg/L	0.03 mg/L	99.0%	7.64	50psi	0.04	3.0±10%	1.3
Cysts	222.077#/ml	10 #/ml	99.99%			58	minimum 50,000/mL	
Fluoride Reduction	8.0 mg/L	0.5 mg/L	93.9%	7.49	50psi	0.7	8.0±10%	1.5
Lead Reduction	0.15 mg/L	0.002 mg/L	98.6%	7.49	50psi	0.003	0.15±10%	0.010
Nitrate & Nitrite	28.8 mg/L	6.6 mg/L	77.0%		50 psi	10 mg/L	30±10%	10.0
Nitrate	26.0 mg/L	6.1 mg/L	76.5%		50 psi	10 mg/L	27±10%	10.0
Nitrite	2.8 mg/L	0.5 mg/L	82.1%		50 psi	0.77mg/L	3.0±10%	1.0
Perchlorate	0.10 mg/L	0.003 mg/L	96.5%	7.39	50 psi	0.005 mg/L	0.10±10%	0.006
Radium 226/228	25 pCi/L	5 pCi/L	80.0%	7.24	50psi	5 pCi/L	25pCiL±10%	5 pCi/L
Selenium	0.10	0.008	92.0%		50psi	0.011	0.10±10%	0.05
TDS	765	23	96.8%	7.84			750±40mg/L	187
Turbidity	10.2 mg/L	0.26 mg/L	97.5%			0.83	11±1 NTU	0.5 NTU

RECOVERY - 16.34% GALLONS - 17.32 GPD EFFICIENCY - 8.91%

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. 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. There is an average of 4 gallons of reject water for every 1 gallon of product water produced. Testing performed under standard laboratory conditions, actual performance may vary. Refer to owners manual for further maintenance requirements and warranty information.

Phone: (800) 752-5582 Email: purewater@wattsind.com

Arsenic Fact Sheet

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 with in 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.

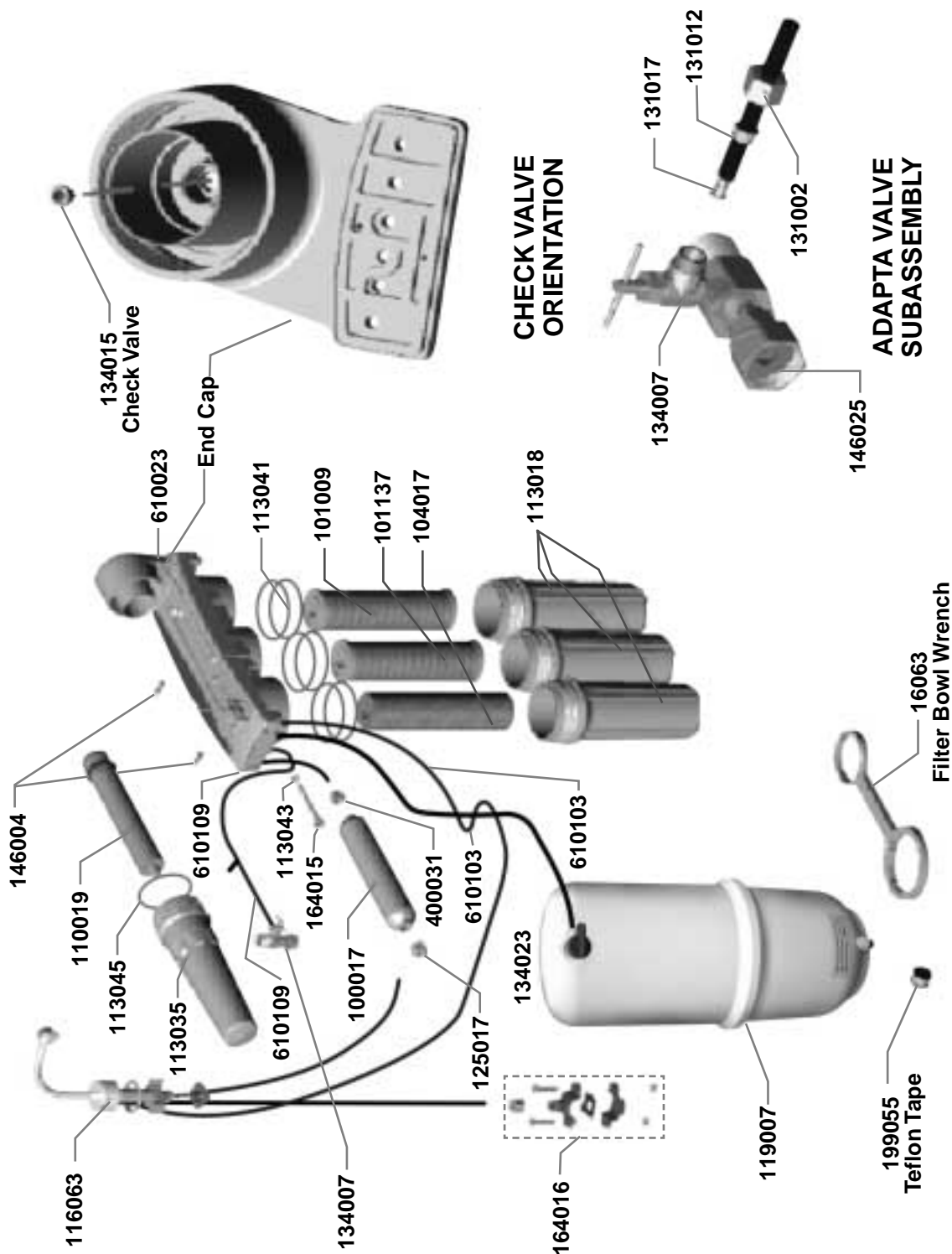
There are two forms of arsenic: pentavalent arsenic (also called As (V), As (+5)) and trivalent arsenic (also called As (III), As (+3)). In well water, arsenic may be pentavalent, trivalent, or a combination of both.

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) may not convert all the trivalent 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 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.

The RO component of this reverse osmosis system must be maintained according to its recommended maintenance cycle.

One Piece Manifold Drawing



Part Number	Description	Quantity
100017	10" In Line Filter	1
101009	Filter, Carbonblock 5mic	2
104017	Filter, SED-SPUN-10" CTG (5M-10)	1
110019	Filter, MEM-TFM-50 GPD	1
113009	Manifold*	1
113018	Bowl, Filter	3
113035	Membrane (vessel)	1
113041	Bowl, Filter Slip/Compression O-ring (2-341)	6
113043	Flow Restrictor, Plug Seal O-ring (2-013)	1
113045	Membrane Slip & Compression O-ring (2-233)	1
113049	Flow Insert O-ring (2-109)	2
116063	Faucet, TF-AG-Chr	1
119009	Tank, Pres-3 Gal White	1
125017	¼" JACO connector for in-line filter	1
134023	Valve, Ball, plas ⅜ x ¼	1
131002	Valve, Adapta Valve Nut-Brass-¼	1
131012	Valve, Adapta Valve Sleeve-Delrin-¼	1
131017	Valve, Adapta Valve Insert-Brass-¼C	1
134007	Valve, Adapta Valve	1
134015	Valve, Check	1
146004	Screw-#10-1" Phil Panhead	2
146025	Washer, Adapta Valve	1
164003	Double Wrench	1
622010	Flow Restrictor, Plug	1
164016	Drain Saddle ⅜"	1
199055	Tape, Roll Teflon Tape ½ x 60	1
400031	⅜" JACO connector for in-line filter	1
610023	Manifold Assembly (See Parts Description*)	1
610103	Tube, ⅜" Blue Tubing 4'	2
610109	Tube, ¼" Green Tubing (4')	1

Notes

For Technical Assistance Call Your Authorized Watts Agent.

			Telephone #	Fax #
	HEADQUARTERS: Watts Regulator Company	815 Chestnut St., North Andover, MA 01845-6098 U.S.A.	978 688-1811	978 794-1848
North East	Edwards, Platt & Deely, Inc.	271 Royal Ave., Hawthorne, NJ 07506	973 427-2898	973 427-4246
	Edwards, Platt & Deely, Inc.	368 Wyandanch Ave., North Babylon, NY 11703	631 253-0600	631 253-0303
	W. P. Haney Co., Inc.	51 Norfolk Ave., South Easton, MA 02375	508 238-2030	508 238-8353
Mid Atlantic	J. B. O'Connor Company, Inc.	P.O. Box 12927, Pittsburgh, PA 15241	724 745-5300	724 745-7420
	RMI	Glenfield Bus. Ctr., 2535 Mechanicsville Tpk., Richmond, VA 23223	804 643-7355	804 643-7380
	The Joyce Agency, Inc.	8442 Alban Rd., Springfield, VA 22150	703 866-3111	703 866-2332
	Vernon Bitzer Associates, Inc.	980 Thomas Drive, Warminster, PA 18974	215 443-7500	215 443-7573
	WMS Sales, Inc. (Main office)	9580 County Rd., Clarence Center, NY 14032	716 741-9575	716 741-4810
South East	Billingsley & Associates, Inc.	2728 Crestview Ave., Kenner, LA 70062-4829	504 602-8100	504 602-8106
	Billingsley & Associates, Inc.	478 Cheyenne Lane, Madison, MS 39110	601 856-7565	601 856-8390
	Francisco J. Ortiz & Co., Inc.	Charlyn Industrial Pk., Road 190 KM1.9 - Lot #8, Carolina, Puerto Rico 00983	787 769-0085	787 750-5120
	Mid-America Marketing, Inc.	203 Industrial Drive, Birmingham, AL 35211	205 879-3469	205 870-5027
	Mid-America Marketing, Inc.	1364 Foster Avenue, Nashville, TN 37210	615 259-9944	615 259-5111
	Mid-America Marketing, Inc.	5466 Old Hwy. 78, Memphis, TN 38118	901 795-0045	901 795-0394
	Smith & Stevenson Co., Inc.	4935 Chastain Ave., Charlotte, NC 28217	704 525-3388	704 525-6749
	Watts	2861-B Bankers Industrial Drive, Atlanta, GA 30360	770 209-3310	770 447-4583
North Central	Aspinall Associates, Inc.	6840 Hillsdale Court, Indianapolis, IN 46250	317 849-5757	317 845-7967
	Dave Watson Associates	1325 West Beecher, Adrian, MI 49221	517 263-8988	517 263-2328
	Disney McLane & Associates	428 McGregor Ave., Cincinnati, OH 45206	800 542-1682	877 476-1682
	BWA Company	17610 S. Waterloo Rd., Cleveland, OH 44119	216 486-1010	216 486-2860
	Mid-Continent Marketing Services Ltd.	1724 Armitage Ct., Addison, IL 60101	630 953-1211	630 953-1067
	Soderholm & Associates, Inc.	7150 143rd Ave. N.W., Anoka, MN 55303	763 427-9635	763 427-5665
	Stickler & Associates	333 North 121 St., Milwaukee, WI 53226	414 771-0400	414 771-3607
South Central	Hugh M. Cunningham, Inc.	13755 Benchmark, Dallas, TX 75234	972 888-3808	972 888-3838
	Mack McClain & Associates	11132 South Towne Square, Suite 202, St. Louis, MO 63123	314 894-8188	314 894-8388
	Mack McClain & Associates, Inc.	1450 NE 69th Place, Ste. 56 Ankeny, IA 50021	515 288-0184	515 288-5049
	Mack McClain & Associates, Inc.	15090 West 116th St., Olathe, KS 66062	913 339-6677	913 339-9518
	OK! Sales, Inc.	2200 Blue Creek Dr., Norman, OK 73026	405 360-6161	405 360-0092
	Phoenix Marketing, Ltd.	2416 Candelaria N.E., Albuquerque, NM 87107	505 883-7100	505 883-7101
Western	Delco Sales, Inc.	1930 Raymer Ave., Fullerton, CA 92833	714 888-2444	714 888-2448
	Delco Sales, Inc.	111 Sand Island Access Rd., Unit I-10, Honolulu, HI 96819	808 842-7900	808 842-9625
	Fanning & Associates, Inc.	6765 Franklin St., Denver, CO 80229-7111	303 289-4191	303 286-9069
	Hollabaugh Brothers & Associates	6915 South 194th St., Kent, WA 98032	253 867-5040	253 867-5055
	Hollabaugh Brothers & Associates	3028 S.E. 17th Ave., Portland, OR 97202	503 238-0313	503 235-2824
	P I R Sales, Inc.	3050 North San Marcos Place, Chandler, AZ 85225	480 892-6000	480 892-6096
	Preferred Sales	31177 Wiegman Road, Hayward, CA 94544	510 487-9755	510 476-1595
	R. E. Fitzpatrick Sales, Inc.	4109 West Nike Dr. (8250 South), West Jordan, UT 84088	801 282-0700	801 282-0600
Canada	Watts Industries (Canada) Inc. (Watts Regulator Co. Division)	5435 North Service Road, Burlington, Ontario L7L 5H7	905 332-4090	905 332-7068
	Con-Cur West Marketing, Inc.	71B Clipper Street, Coquitlam, British Columbia V3K 6X2	604 540-5088	604 540-5084
	D.C. Sales Corporation Inc.	#10-6130 4th St. S.E., Calgary, Alberta T2H 2A6	403 253-6808	403 259-8331
	D.C. Sales Corporation Inc.	11420 142 Street, Edmonton, Alberta T5M 1V1	780 496-9495	780 496-9621
	GTA Sales Team.	Greater Toronto Area	888 208-8927	888 479-2887
	Hydro-Mechanical Sales, Ltd.	3700 Joseph Howe Drive, Suite 1, Halifax, Nova Scotia B3L 4H7	902 443-2274	902 443-2275
	Hydro-Mechanical Sales, Ltd.	P.O. Box 1445 (Mailing), 297 Collishaw St., Suite 7 (shipping) Moncton, New Brunswick E1C 9R2	506 859-1107	506 859-2424
	J.D.S. Sales Ltd.	4 Lancaster Street, St. John's, Newfoundland A1A 5P7	709 579-5771	709 579-1558
	Le Groupe B.G.T., Inc.	23 du Buisson, Pont Rouge, Quebec G3H 1X9	418 873-2500	418 873-2505
	Le Groupe B.G.T., Inc.	86 des Entreprises #208, Boisbriand, Quebec J7G 2T3	450 434-9010	450 434-9848
	Mar-Win Agencies, Ltd.	1333 Clifton St., Winnipeg, Manitoba R3E 2V1	204 775-8194	204 786-8016
	Northern Mechanical Sales	P.O. Box 280 (mailing) 163 Pine St. (shipping), Garson, Ontario P3L 1S6	705 693-2715	705 693-4394
	Palser Enterprises, Ltd.	P.O. Box 28136 (mailing), 1885 Blue Heron Dr., #4, London, Ontario N6H 5L9	519 471-9382	519 471-1049
RAM Mechanical Marketing Inc.	1401 St. John Street, Regina, Saskatchewan S4R 1S5	306 525-1986	306 525-0809	
RAM Mechanical Marketing Inc.	510 Ave M South, Saskatoon, Saskatchewan S7M 2K9	306 244-6622	306 244-0807	
Walmart Mechanical Sales	24 Gurdwara Rd., Nepean, Ontario K2E 8B5	613 225-9774	613 225-0673	
0510	EXPORT Hdqtrs.: Watts Regulator Co.	815 Chestnut St., North Andover, MA 01845-6098 U.S.A.	978 688-1811	978 794-1848



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Watts Canada website: www.wattscanada.ca