

4-Stage Drinking Water Systems (MODEL: MPDW, DWS, DWS-PP)



MPDW-90





INSTRUCTIONS

WARNING

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

SpectraPure[®] **Inc**. assumes no responsibility for water damage due to leaks. It is the user's responsibility to determine that the system is leak-free.

05-16-2022

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Thank You for your purchase of a SpectraPure[®] System. With proper installation and maintenance, this system will provide you with high quality water for years to come. All SpectraPure[®] products are rigorously tested by us for safety and reliability. If you have any questions or concerns, please contact our customer service department at 1.800.685.2783 or refer to our online troubleshooting at www.spectrapure.com.

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OPERATIONAL SPECIFICATIONS

RO Feed water requirements

Operating Pressure: pH Range: Max. Temperature: Max. Feed Turbidity: Max. Silt Density Index: Maximum Chlorine: Maximum TDS: Maximum Hardness: Maximum Hardness: Maximum Manganese: Maximum Manganese: Maximum Hydrogen Sulfide: Langelier Saturation Index (LSI): 40-80 psi (2.75-5.5 bar) 3-11 113°F (45°C) 1.0 NTU 5.0 (based on 15 min. test time) < 0.1 ppm 2000 ppm 10 grains (170 ppm as CaCO₃) < 0.1 ppm. < 0.1 ppm. 0 ppm must be negative

- NOTE: MOST MUNICIPAL WATER SUPPLIES MEET THE ABOVE REQUIREMENTS. IF WELL WATER IS USED, PLEASE MAKE SURE THAT YOU OBTAIN A WATER TEST BEFORE INSTALLATION.
- NOTE: THE OPERATING PRESSURE IN YOUR HOME SHOULD BE TESTED OVER A 24 HOUR PERIOD TO OBTAIN THE MAXIMUM PRESSURE. IF IT IS ABOVE 80 PSI THEN A PRESSURE REGULATOR WILL BE REQUIRED.

SAFETY PRECAUTIONS:

Failure to follow the listed precautions may result in bodily injury, equipment damage, and/or loss of warranty coverage.

<u> MARNING</u>

- Do not mount your water purification system above an electrical outlet. Leakage may cause the outlet to short circuit and could possibly result in bodily injury.
- This system is meant for use with potable water sources. Do not use with water that is microbiologically unsafe.

CAUTION

- Install in compliance with state and local electrical and plumbing codes.
- · Do not install where system will be exposed to direct sunlight.
- Protect against freezing temperatures and temperatures over 113°F/45°C which may damage components.
- When using in conjunction with an open reservoir, user should install bulkhead fitting and tube to drain at highest point of reservoir to avoid catastrophic flooding.

GENERAL SYSTEM OVERVIEW

This manual covers three different models of our Drinking Water Systems; MPDW-90, DWS-90, DWS-PP-90. Each of these models has four stages that the water passes through.

1st Stage (Sediment Prefilter) — The incoming feed water from a cold water source passes through a sediment prefilter. This filter removes excess turbidity, sand, dust, silt, etc., that would otherwise cause the carbon filter to become prematurely fouled.

2nd Stage (Carbon Block Prefilter) — After passing through the sediment filter, the water passes through the carbon block prefilter. The activated carbon removes tastes, odors, colors, and contaminants from the water. It will also reduce the amount of particulates, microscopic cysts, lead, volatile organic compounds (VOCs), and other contaminants.

3rd Stage (RO Membrane) — After passing through the two prefilters, the water then passes through the Reverse Osmosis (RO) membrane. With a pore size of 0.0001 microns (0.00000004 inches), the RO membrane is capable of removing over 99% of TDS (Total Dissolved Solids) in the water.

After passing through the first three stages, the purified water goes to a pressurized storage tank where it is held until the faucet is opened.

4th Stage (Post Carbon Filter) — Once the faucet is opened, the water flows from the storage tank back to the RO system where it passes through the fourth and final stage. This carbon stage removes any tastes or odors that the purified water might have acquired while stored in the tank. This ensures that the water from the faucet is as pure and fresh tasting as possible when you drink it.

Optional 4th Stage (DWS-90 and DWS-PP-90) — Optionally, the fourth stage may be replaced with a remineralization cartridge or a combination carbon/remineralization cartridge. The RO process removes "good" minerals such as calcium and magnesium. This can give RO water a "flat" taste. A remineralization cartridge will add calcium and magnesium back into the final product water. This gives the purified water a "sparkly" flavor and helps to improve the taste of coffee or tea that is made with the RO water.

INCLUDED COMPONENTS



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INCLUDED COMPONENTS (continued)



RIGHT ANGLE PUSH FITTING ADAPTER

For installation on Feed Water Inlet of Sediment Filter housing (See Common Connections on page 7.)



STEM ADAPTER (MPDW ONLY) Adapts Faucet Tubing Adapter for 1/4" tubing. (See MPDW-90 Connections on page 7.)



DRAIN SADDLE Connects waste water line to sink drain (See page 16 for installation instructions.)



AIR GAP FAUCET (DWS-90 and DWS-PP-90) (See page 14 for installation instructions.)



NON-AIR GAP FAUCET (MPDW) (See page 15 for installation instructions.)



4 GAL PRESSURIZED BLADDER TANK

(3.1 Gallons actual capacity) (See page 17 for installation instructions.)



FILTER HOUSING WRENCH For removing filter housings. DO NOT USE to tighten housings as you may damage the housing.



TUBING

MPDW

6ft 1/4" Blue Tubing 6ft 1/4" Black Tubing 6ft 1/4" Yellow Tubing

DWS & DWS-PP

6ft 1/4" Blue Tubing 6ft 1/4" Yellow Tubing 4ft 3/8" Black Tubing 12ft 3/8" Blue Tubing

SYSTEM COMPONENTS



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DRINKING WATER SYSTEMS PLUMBING CONNECTIONS

Each of our Drinking Water Systems (DWS-90, DWS-PP-90, MPDW-90) has 4 water connections. These consist of Tap Water In, Waste Water Out, Line Out to the Pressurized Storage Tank, and Line Out to the Faucet. See the following pictures and diagrams for the correct connections for each of the three systems.

COMMON CONNECTIONS

On all three of our drinking water systems, the threaded elbow must be attached to the Feed Water IN port of the sediment filter housing. The threaded fitting is attached to one end of the included 1/4" Black tubing. The Feed Water IN port is located on the side of the sediment filter housing (the leftmost filter housing when viewed from the front of the system). Remove the elbow from the tubing and screw it into the IN port on the filter housing. Hand-tighten until the O-ring contacts the side of the housing. DO NOT OVERTIGHTEN!





DRINKING WATER SYSTEMS PLUMBING CONNECTIONS (cont.)



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DRINKING WATER SYSTEMS PLUMBING CONNECTIONS (cont.)







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DRINKING WATER SYSTEM WITH PERMEATE PUMP (DWS-PP-90)

WORKING WITH PUSH FITTINGS

To remove the tubing from its push fitting:

- 1. Firmly depress and hold the push fitting collar down with your thumbnail.
- 2. While the push fitting collar is depressed, pull the tubing straight out of the push fitting. Once the tubing is removed, release the collar.

To reinsert the tubing into its push fitting:

- 1. Moisten the O-ring seal inside the push fitting by dripping a few drops of clean water into the fitting.
- 2. Grasp the tubing near the end, and insert the tubing into the push fitting.
- 3. Push the tubing into the fitting until resistance is felt, approximately 1/2 inch (12.7 mm). The tubing is now resting on the O-ring seal inside the fitting.



- 4. Firmly push the tubing approximately an additional 1/4 inch (6.35 mm) further into the fitting to completely seat the line into the fitting and past the O-ring seal.
- 5. Turn on the system water supply and check for leaks prior to further use or testing. If a leak is observed, you may not have pushed the tubing into the push fitting far enough to seal the tubing against the O-ring. Turn off the system water supply and reseat the tubing as described above.

PREPARATION

- 1. Prepare for installation by removing all items from under the sink. Locate and turn off the COLD water supply and open the sink faucet to relieve any remaining pressure.
- 2. Determine an appropriate location for the Drinking Water System, Bladder Tank, Feed Water Connection, Drain Saddle, and the Air Gap or Non-Air Gap Faucet for your specific application.
- 3. Use two (2) self-tapping screws and a Phillips screwdriver. Measure the distance between the keyhole slots on the back of the bracket and install screws.

NOTE: Be sure to leave enough space and tubing so that you can pull the system out for maintenance.

- 4. TOOLS RECOMMENDED FOR INSTALLATION:
 - Adjustable Wrench
 - Sharp Knife
 - Open End Wrench
 - Phillips Screw Driver
 - Needle Nose Pliers-Adjustable Pliers
 - Electric Drill
 - 7/8" or 1/2" Hole Saw Bit for Faucet Opening (depends on faucet used)
 - Round Knockout Punch for Stainless Sinks, 7/8" and 1/2"



DRILL HOLE FOR FAUCET IN A PORCELAIN SINK

NOTE: Porcelain sink material is extremely hard and can crack or chip quite easily. To avoid this, use extreme caution when drilling. A carbide tipped masonry bit is recommended. **SpectraPure® accepts no responsibility** for consequential damage resulting from the installation of the faucet.

When drilling, allow cool down time for drill bit so that it does not overheat and crack porcelain.

A gurgling sound may be heard coming from the Air Gap Faucet when the system is running. This is normal and is in compliance with UPC Codes.

- STEP 1. Determine a desired location for the faucet on your sink and place a piece of masking tape on the location where the hole is to be drilled. Mark the center of the hole on the tape.
- STEP 2. Use a variable speed drill on the slowest speed. Drill a 1/8" 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)
- STEP 3. Use a hole saw and proceed to drill the large hole (For AIR-GAP Faucet 7/8". For NON AIR-GAP Faucet 1/2"). 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 with a file.

PUNCH HOLE FOR FAUCET IN STAINLESS STEEL SINK

- STEP 1. If mounting faucet to a Stainless Steel Sink you will need a bimetal or carbide tipped hole saw.
- STEP 2. 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 3. Drill a 1/4" pilot hole. Use a bimetal or carbide tipped hole saw to punch the hole in the sink. (For AIR GAP Faucet 7/8" For NON-AIR GAP Faucet 1/2").

FEED SUPPLY VALVE INSTALLATION

- STEP 1. Follow the cold water line from shutoff valve to the existing faucet and unscrew the threaded connection.
- STEP 2. Insert feed supply valve between cold water line and existing connection.
- STEP 3. Follow the assembly sequence shown for attaching valve to the existing cold water line.
- STEP 4. Connect Black line from RO system as shown in Diagram below.
 - a. Remove the 1/2" Compression Nut from Valve body. Be careful not to loose the plastic or brass Insert and the Conical Compression Sleeve.
 - b. Insert the 1/4" Black Tubing into the Compression Nut with the threads towards the end of the tube.
 - c. Slip the Conical Compression Sleeve onto the Black Tube with the long slope pointing toward the end of the tube.
 - d. Place the Insert into the end of the Black Tubing. Make sure you push the insert in all the way.
 - e. Tighten Compression Nut back on the Valve body.
- STEP 5. When installation of the valve is complete, check for leaks as follows:
 - a. Close Feed Supply Valve that you just installed.
 - b. Open cold water supply valve and check for leaks around feed supply valve fittings. Tighten if necessary.
- NOTE: To be certain of the cold line; turn on the hot water, allow water to run until pipe becomes warm. Then attach fitting to the cold water line. If you run hot water through your system it will damage the membrane.



FEED VALVE



INSTALL ON COLD WATER LINE



FEED SUPPLY INSTALLATION

FAUCET INSTALLATION

AIR GAP FAUCET INSTALLATION (DWS-90 and DWS-PP-90)

- A. Place the chrome counter plate and rubber washer over the threaded shaft and barbed nipples on the faucet (Refer to Figure below).
- B. Pass the Blue 3/8" tubing, the Yellow 1/4" tubing, and the Black 3/8" tubing up through the drilled countertop hole and temporarily secure them so they don't fall back through the hole.
- C. Place the galvanized flange, plastic spacer, flat metal washer, and hex nut in sequence over the threaded shaft and temporarily hand-tighten, then screw the push fitting onto the end of the threaded shaft.
- D. Insert the Blue 3/8" tubing into the Ouick Connect Tubing Adapter.
- E. Connect the 1/4" yellow tubing to the smaller barb and connect the 3/8" Black tubing to the larger barb.
- F. Drop the entire assembly into the hole, resting on the chrome counter plate. Loosen the nut and position the Galvanized Flange under the counter top and then securely tighten the hex nut.
- G. DO NOT CUT EXCESS TUBING AT THIS POINT. YOU WILL NEED THE TUBING TO INSTALL TANK.
- **TIP:** When connecting the tubes to the hose barbs, try using HOT water to soften the plastic tubes. When connecting the drain lines to the saddle, make the lengths as short and straight as possible to reduce drainage noise.



NON-AIR GAP FAUCET INSTALLATION (MPDW-90)

- A. Place the chrome counter plate and large rubber washer over the threaded shaft on the faucet and place in hole previously drilled. (See Page 12.)
- B. Place the small rubber washer, locating washer, flat metal washer, and hex nut in sequence over the threaded shaft and temporarily hand-tighten.
- C. Insert the Blue Tube into the Compression Nut with the threads towards the end of the tube. Then add the Compression Sleeve.
- D. Place the Insert into the end of the Blue Tubing. Make sure you push the insert in all the way. Screw the Compression Nut onto the threaded shaft.
- E. Securely tighten both hex nut and Compression Nut.
- F. DO NOT CUT EXCESS TUBING AT THIS POINT. YOU WILL NEED THE TUBING TO INSTALL TANK.
- **TIP:** When connecting the tubes to the hose barbs, try using HOT water to soften the plastic tubes. When connecting the drain lines to the saddle, make the lengths as short and straight as possible to reduce drainage noise.



DRAIN SADDLE INSTALLATION

- 1. Refer to Diagram below and determine the location for the drain saddle assembly and drain hole. It must be located above the "P" trap ("U" shaped bend in drain pipe) on the sink side of the drain pipe.
- 2. Place the half of the drain saddle with threaded nipple at a predetermined location. Slide a pencil through the plastic nipple and make a mark on the drain pipe.
- 3. Use a small punch and indent a start position to prevent the drill bit from wandering.
- 4. Drill a 3/8" hole in the drain pipe through the mark **on one side only**, do not drill through both sides of the drain pipe. Clean any loose shavings from around the hole.
- 5. Refer to diagram below showing the drain saddle assembly sequence. Press nuts in back half of drain saddle assembly.
- 6. Align the front half of the drain saddle by inserting a pencil through the plastic nipple and the newly drilled hole in the drain pipe.
- 7. Install the back half of the drain saddle and clamp assembly to drain pipe by screwing in the mounting bolts until snug.





WASTE WATER LINE INSTALLATION

(See Drinking Water Systems Plumbing Connections on Pages 7-9.)

- NOTE: The tubing must be as SHORT and STRAIGHT as possible to allow for proper drainage and reduce the noise of the Air Gap faucet.
- 1. Measure from the waste tube on the faucet to the drain saddle and make a straight cut with a sharp knife (DWS-90 and DWS-PP-90). For MPDW-90, the tubing will run from the union fitting at the end of the Red tubing connected to the waste water port on the membrane housing to the drain saddle.
- 2. Remove Nut from drain saddle. Slip the waste tube through the nut. Insert waste tube into the opening in the drain saddle and tighten the nut securely.
- 3. This line is gravity fed. If there is any bend in the tube the waste 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 base (DWS-90 and DWS-PP-90).

INSTALLING BALL VALVE ON TANK



- 1. If there is not Teflon tape applied to the nipple on the tank, wrap (7-12 turns) around the pipe threads (MPT) on the Stainless Steel fitting.
- 2. Thread the Ball Valve (supplied in the parts bag) onto the stainless steel nipple on top of the tank. Hand-tighten only.
- 3. The storage tank is pressurized with air at the factory to 7 psi with the tank totally drained. Over a period of time, air may leak out causing the delivery rate of the stored water to decrease. If this occurs, verify correct tank pressure using a low pressure air gauge on the tire valve stem located on the bottom of the tank with tank completely empty of water.

TANK INSTALLATION

- 1. Position tank in desired location. Stand it upright (using the black plastic stand). Measure the Blue tube from the Tee Fitting on the rear of the system (See pages) to the tank and cut it to length.
- 2. Connect the Blue tube to the Right Angle Ball Valve that is attached to the top of the tank.
- 3. Connect the 3/8" Blue tube that is connected to the Ouick connect plastic tubing adapter on the Threaded Shaft of the faucet (Page 9), to the Carbon Post Filter (3rd filter on the right).
- 4. Connect the 3/8" Black tube to the Drain Saddle.

ICE MAKER HOOKUP (OPTIONAL)

Part No. IMK-UNIV

- 1. Turn off feed supply valve and the ball valve on tank. Open the faucet to relieve pressure.
- 2. Locate the Blue tube that leads to the faucet.
- 3. Cut the tube and reconnect the cut ends with a Tee.
- 4. Connect 1/4" Tubing to the third leg of the tee and route to refrigerator.
- 5. Close the faucet, turn on feed supply valve, and open the ball valve on tank.
- 6. Check for leaks.

STARTUP PROCEDURES

- 1. Slowly turn the cold water supply to full flow. Check for leaks.
- 2. Turn off the ball valve at the storage tank and open the faucet.
- 3. Watch the clear housings fill with water. When water comes out of the faucet, turn the faucet off. The system will pressurize rapidly and should shut off with a "click".

NOTE: It is important that air is purged from system during initial operation. To do this, orient the RO unit with the product (permeate) and reject (brine) water ports pointing upwards. (Round end of RO membrane housing is up, prefilter housings are horizontal). Allow a minimum of 15 minutes operation with this orientation.

- 4. Look for leaks and do not leave the system alone until you are sure there are no leaks. Now, turn the valve on the tank to the "OPEN" position.
- 5. Before using the system, allow three tank fillings to occur while flushing the contents between each filling by locking the air gap faucet lever to the open position until drained.
- 6. Wait for an hour before drawing water from the faucet.

Note: NEVER RUN HOT WATER (>113°F/45°C) THROUGH THE SYSTEM.

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RO MEMBRANE REPLACEMENT

- 1. Turn off the water supply to the RO system, close the ball valve on the tank, and open the faucet to relieve pressure in the system.
- Remove the black tubing from the membrane feed push fitting by depressing the collar on the fitting with your thumb and pulling the tubing from the push fitting (See "Working With Push Fittings on Page 11.).
- 3. Lift the membrane housing from the retention clips.
- 4. Unscrew the membrane housing lid. This may require two people.
- 5. Use a pair of pliers to grasp the membrane stem and pull the membrane from the housing.



Removing the Membrane Element



6. Remove the black housing O-ring. Wash the empty housing with soapy water. Rinse thoroughly with hot, clean water.



- 7. Insert new membrane into the housing, with the double O-ring end first. The tube must fit into the recess at the bottom of the membrane housing. When the membrane is aligned with the hole, firmly push the membrane into the hole until it bottoms out.
- 8. Place the black housing O-ring on the housing rim and carefully screw the lid back on to the base.
- 9. Reconnect the black tubing to the membrane feed push fitting and insert the membrane housing back into the retention clips.
- 10. Close the faucet, open the ball valve on the tank, and turn the water supply back on.
- 11. Allow the tank to fill, then open the faucet and allow it to drain completely. Repeat this two more times. This will help to ensure that you have flushed all of the preservatives from the new membrane.
- 12. Check the system for leaks before allowing it to run unattended.
- **NOTE:** If you are replacing the membrane with one of a different flow rate (i.e. Replacing a 90 GPD membrane with a 200 GPD membrane) you must replace the flow restrictor with the appropriate one for the flow rate of the new membrane.

FILTER REPLACEMENT

(See Page 6 for filter locations.)

For maximum contaminant removal and long membrane life, the sediment and carbon prefilters should be changed at 6-month intervals. If your water contains a great deal of sediment or chlorine, the prefilters might have to be changed at more frequent intervals to maintain an adequate production rate.

Sediment and Carbon block filter Replacement:

Maintenance Regime:	15-20% drop in pressure OR at least once in 6 months OR when chlorine breakthrough occurs.
Materials Needed: (DWS-90; DWS-PP-90)	0.5 micron MicroTec™ sediment filter, 0.5 micron carbon block filter, GAC carbon post filter, filter wrench
Materials Needed: (MPDW-90)	1 micron MicroTec [™] sediment filter, 1 micron carbon block filter, Inline carbon post filter, filter wrench.

Procedure:

- 1. Shut off feed supply valve, close ball valve on tank, open the faucet and wait until pressure is relieved.
- 2. Remove the filter housings from their caps by unscrewing them clockwise as viewed from top or side. A filter wrench may be needed. Discard old filters.
- 3. Thoroughly wash out the housings with hot soapy water to which a few teaspoons of household bleach have been added, and rinse well with clean hot water.
- 4. Install the new sediment prefilter in the leftmost housing. Check to be sure that the O-ring is positioned in its groove and hand tighten housing.
- 5. Install carbon block prefilter in appropriate housing making sure O-ring and black gaskets are in place. Hand tighten housing.
- 6. (DWS-90, DWS-PP-90) Install GAC carbon post filter in rightmost housing making sure O-ring and black gaskets are in place. Hand tighten housing.
- 7. (MPDW-90) Disconnect blue lines from inline carbon filter (See page 5 for location), remove the filter from the clips and discard, insert new filter in clips and reattach blue lines.

NOTE: Make sure arrow on inline carbon housing is pointing towards the faucet (See "MPDW-90 Connections on page 6).

8. Close faucet, open ball valve on tank, turn feed supply valve "ON", wait for tank to fill, and check for leaks.

POST FILTER REPLACEMENT

(See Page 6 for filter locations)

Maintenance Regime:At least once every 12 months or whenever odor or bad taste occurs.Materials Needed:Replacement Carbon Post Filter (CF-OCB-10)

Procedure:

- 1. Shut off feed supply valve, close the ball valve on the tank, then open the faucet to relieve system pressure.
- 2. Remove the filter housing from its cap by unscrewing it clockwise as viewed from the top or side.
- 3. Discard old filter.
- 4. Thoroughly wash out the housing with hot soapy water to which a few teaspoons of household bleach have been added, and rinse well with clean hot water.
- 5. Install the new post filter, making sure the O-ring is properly seated in its groove. Hand tighten filter housing onto the cap.
- 6. Close the faucet, turn feed supply valve on, open the ball valve on the tank and check for leaks.
- NOTE: The MPDW-90 uses an encapsulated Post Carbon Filter. Follow Step 1 above, then disconnect the Blue tubing from the push fittings on either side of the filter housing. Dispose of the old filter and connect the lines to the new filter housing, making sure the the new filter housing is oriented correctly, (See MPDW-90 Connections on Page 7.) Follow Step 6 above to complete the installation.

RECHARGING THE BLADDER TANK

If the storage capacity of the tank is diminished significantly it is likely that the tank has lost its air charge. Recharging the bladder tank will restore its capacity.

Be sure water supply to the RO/DI system is turned off and the dispenser faucet is open. This will completely drain the pressure tank.

- 1. Put the dispenser faucet in the "open" position (lever in up position). Leave the faucet in the open position until the procedure is completed.
- 2. Drain as much water as possible from the tank.
- 3. Hook up an air pump to the "schrader" (tire) valve on the pressure tank and start pumping air into the tank.
- 4. Expel all the water from the tank.
- 5. Continue pumping air into the tank until the pressure reads NO MORE than 7 PSI.
- 6. This completes the procedure. Turn system back on.

NOTE: Should this procedure fail to restore the capacity of the tank, it is very likely that the bladder in the tank is ruptured and the tank needs to be replaced.

SANITIZING THE RO SYSTEM (once a year)

Sanitizing is recommended at least once every year or if water smells (or tastes) bad even after a post carbon filter replacement. A convenient time for sanitization is during a filter changeout. IT IS IMPORTANT THAT YOU HAVE CLEAN HANDS WHILE HANDLING INNER PARTS OF THE SYSTEM.

- 1. Be sure water supply to the drinking water system is turned off, and the dispenser faucet is open. This will completely drain the pressure tank.
- 2. Next, remove the 1/4" black tubing from the feed port of the membrane and lift membrane housing from clips. (See "RO Membrane Replacement" on previous page.)
- 3. Remove the membrane housing cap by unscrewing it counterclockwise. Grasp the membrane stem with a pair of pliers and pull the membrane from the housing.
- 4. Screw the cap back on to the membrane housing making sure that the o-rings are in place.
- 5. Reconnect the 1/4" black tubing to the feed port of the membrane.
- 6. Remove sediment, carbon block, GAC post carbon filter (DWS-90 and DWS-PP-90) and inline post carbon (MPDW-90) filters.
- 7. Put 1.5 2.0 oz. of household bleach in the leftmost filter housing and fill it halfway with tap water. Put all filter housings back on the bracket, keeping the one with the bleach on the left side.
- 8. Close the dispenser faucet (put lever in DOWN position).
- 9. Open feed supply valve 1/4 turn from closed position.
- 10. Allow 15 minutes for the bleach solution to flow through the system. Open the dispenser faucet and keep the lever in the UP position until some bleach solution is dispensed through the faucet. IMMEDIATELY close the faucet as soon as the bleach solution is dispensed.
- 11. Let the system sit for 2 hours. This will sterilize the faucet and the line going to the faucet.
- 12. Open the dispenser faucet to drain bleach solution from the pressure tank as completely as possible and then close the faucet.
- 13. Open the feed supply valve fully.
- 14. Allow the tank to fill until pressure gauge reaches 40 psi. Then open the dispenser faucet and flush system until all bleach solution has been dispensed from the system.
- 15. Close the feed supply valve, close the ball valve on the tank, and open the faucet to relieve system pressure.
- 16. Remove filter housings and membrane housings from the system, rinse them with tap water and drain them completely.
- 17. Put new replacement filters (sediment filter, carbon block filter and inline post carbon filter) into the filter housings and put the membrane back into the membrane housing.
- 18. Reinstall the housings back on the system.
- Close the faucet, open the ball valve on the tank, and open the feed valve.
 CAUTION: Be sure to check the system for leaks before allowing it to run unattended.

TROUBLESHOOTING GUIDE

	Problem		Cause		Corrective Action
1.	Low production rate.	а.	Plugged prefilters.	i.	Replace prefilters.
		b.	Low water temperature.	ii.	Use higher GPD membrane.
		C.	Low water pressure (< 40 psi).	iii.	Use booster pump OR use higher GPD membrane.
		d.	High TDS content (< 1000 ppm).	iv.	Use booster pump OR use higher GPD membrane.
		e.	Fouled membrane.	V.	Replace membrane.
		f.	Plugged flow restrictor.	vi.	Replace flow restrictor
		g.	Tank bladder lost air charge.	vii.	Repressurize bladder to 7 psi (when empty).
		h.	Too much pressure in bladder tank.	viii.	Repressurize bladder to 7 psi (when empty).
		i.	Ruptured bladder.	ix.	Replace tank.
		j.	Backpressure exerted by the pressurized bladder tank causes a reduction in production rate.	X.	Use of permeate pump retrofit kit (PPRFK-DI) eliminates the back pressure.
2.	Zero production rate.	а.	Missing flow restrictor.	i.	Put flow restrictor in the red brine line.
		b.	Dried membrane.	ii.	Replace membrane.
		C.	Plugged flow restrictor.	iii.	Replace flow restrictor and check membrane.
		d.	Bladder lost air charge.	iv.	Repressurize bladder to 7 psi (when empty).
		e.	Ruptured bladder.	V.	Replace tank.
3.	Extremely high a	а.	Ruptured membrane.	i.	Replace it.
		b.	Very high line pressure (over 80 psi).	ii.	Use a pressure reducing valve.

Troubleshooting Guide Continued on Next Page.

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	Problem		Cause		Corrective Action
4.	Water smells bad.	a.	Bacterial contamination of bladder tank.	i.	Sanitize RO/DI System.
		b.	Ruptured bladder in storage tank.	ii.	Replace tank.
		c.	Exhaused post carbon filter.	iii.	Replace post carbon filter.
5.	Milky colored water.	a.	Air in system.	i.	Air in the system is a normal occurrence with initial start-up of the RO/DI system. This milky appearance will disappear during normal use within 1-2 weeks. If condition reoccurs after filter changes, drain tank 1 to 2 times.
6.	Reject (yellow) line never stops flowing water.	а.	Faulty 1 lb. check valve.	i.	Replace it.
		b.	Faulty auto shut-off valve.	ii.	Replace it.
7.	Leak around the base of the spout.	а.	Displaced O-rings.	i.	Pull the faucet spout out. Seat O-rings in place.
		b.	Worn O-rings.	ii.	Replace O-rings
8.	Noise from faucet or drain.	а.	Location of drain saddle.	i.	See page 11 for proper location of drain saddle.

ONE YEAR LIMITED WARRANTY

SpectraPure, Inc.[®] warrants the product to the original owner only to be free of defects in material and workmanship for a period of one year from the date of receipt. SpectraPure's liability under this warranty shall be limited to repairing or replacing at SpectraPure's option, without charge, F.O.B. SpectraPure's factory, any product of SpectraPure's manufacture. SpectraPure will not be liable for any cost of removal, installation, transportation or any other charges which may arise in connection with a warranty claim. Products which are sold but not manufactured by SpectraPure are subject to the warranty provided by the manufacturer of said products and not by SpectraPure's warranty. SpectraPure will not be liable for damage or wear to products caused by abnormal operating conditions, accident, abuse, misuse, unauthorized alteration or repair or, if the product was not installed in accordance with SpectraPure's or other manufacture's printed installation and operating conditions, or damage caused by hot water, freezing, flood, fire or acts of God.

SpectraPure will not be responsible for any consequential damages arising from installation or use of the product, including any water or mold damage due to flooding which may occur due to malfunction or faulty installation, including, but not limited to failure by installer to over- or under-tighten fittings, housings, and/or push-style fittings, or improper installation of push-style fittings. Consumable items such as prefilters and membranes are not covered under the one year warranty.

To obtain service under this warranty, the defective system or components must be returned to SpectraPure with proof of purchase, installation date, failure date and supporting installation data. Any defective product to be returned to the factory must be sent freight prepaid. Documentation supporting the warranty claim and a Return Merchandise Authorization (RMA) number must be included. SpectraPure will not be liable for shipping damages due to the improper packaging of the returned equipment and all returned goods must also have adequate insurance coverage and a tracking number.

SpectraPure will not pay for loss or damage caused directly or indirectly by the presence, growth, proliferation, spread or any activity of "fungus", wet or dry rot or bacteria. Such loss or damage is excluded regardless of any other cause or event that contributes concurrently or in any sequence to the loss. We will not pay for loss or damage caused by or resulting from continuous or repeated seepage or leakage of water, or the presence or condensation of humidity, moisture or vapor, that occurs over a period of 14 days or more. "Fungus" and "fungi" mean any type or form of fungus or Mycota or any byproduct or type of infestation produced by such fungus or Mycota, including but not limited to, mold, mildew, mycotoxins, spores, scents or any biogenic aerosols.

SpectraPure will not be liable for any incidental or consequential damages, losses or expenses arising from installation, use, or any other causes. There are no expressed or implied warranties, including merchantability or fitness for a particular purpose, which extend beyond those warranties described or referred to above.

* The one year limited warranty does not apply to consumable items, including but not limited to, filters and cartridges unless specifically stated above.

TERMS AND CONDITIONS:

- 1. Shipping charges on units or parts submitted to our facility for repair or replacement must be borne by the registered purchaser. After repair or replacement, the factory will return the unit or part freight prepaid to the customer.
- 2. We assume no warranty liability in connection with our equipment other than as herein specified.
- 3. This warranty is in lieu of all other warranties expressed or implied, including warranties of fitness for a particular purpose.
- 4. We do not authorize any person or representative to assume for us any other obligation on the sale of our equipment. This is the exclusive remedy and liability for consequential damages under any and all warranties which are excluded to the extent exclusion is permitted by law.
- 5. Proof of original purchase date must accompany all warranty claims.
- 6. SpectraPure, Inc. Reserves the right to change prices without notice when necessary. All prices in the catalog are quoted in US dollars.
- 7. Claims for error in quantity or condition must be made within 10 days of receipt of material. SpectraPure, Inc. will not be responsible for any claimed shortages not reported within 10 days. Returns other than warranty claims may be subject to 20% restocking fee.
- 8. SpectraPure, Inc. cannot be held liable for damage or loss to a shipment by a freight carrier. Check shipment for damage before acceptance or note on freight bill subject to inspection for concealed damage. Consignee must file claim. SpectraPure, Inc. will offer as much assistance as possible.
- 9. A complete credit check is required prior to shipping on a Net 30 basis. In the interim period during which credit references are being evaluated, all orders must be prepaid until approved.
- 10. All returned checks (due to insufficient funds or closed accounts) will be subjected to a \$35 penalty charge.
- 11. Invoices on Net 30 accounts not paid within 30 days of shipment will be considered delinquent and will accrue Finance charges at the rate of 1.5% per month (18% per annum).

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REPLACEMENT PARTS FOR MPDW:

Part Number	Part	Description
SF-MT-1-10	Sediment Filter	1 micron Sediment Prefilter (1 st Stage)
CF-1-10	Carbon Filter	1 micron Carbon Block Prefilter (2 nd Stage)
MEM-0090	90 GPD RO Membrane	90 gpd/340 lpd TFC Membrane (3 rd Stage)
CF-IN-4JG-10	10" Carbon Post Filter	Polishes water and removes taste (4th Stage)
FR-90-RED, -GRN	Flow Restrictor	Flow Restrictors for 90gpd/340 lpd System*
V-ASO-4JG	Automatic Shutoff Valve	Completely shuts off product and waste water
VA-CK-IL-1LB-4JG	Check Valve	Used in conjunction with ASO valve

* Green Flow Restrictors have a 2:1 waste ratio recommended for water <180 ppm Red Flow Restrictors have a 3:1 waste ratio recommended for water ≥180 ppm

REPLACEMENT PARTS FOR DWS & DWS-PP:

Part Number	Part	Description
SF-MT-0.5-10	Sediment Filter	0.5 micron Sediment Filter (1 st Stage)
CF-0.5-10	Carbon Filter	0.5 micron Carbon Block Prefilter (2 nd Stage)
MEM-0090	90 GPD RO Membrane	90 gpd/340 lpd TFC Membrane (3 rd Stage)
CF-OCB-10	10" GAC Post Filter	Polishes water and removes taste (4th Stage)
FR-90-RED, -GRN	Flow Restrictor	Flow Restrictors for 90gpd/340 lpd System*
V-ASO-PP-4JG	Permeate Pump ASO Valve	ASO Valve for Permeate Pump (DWS-PP-90)
V-ASO-4JG	Automatic Shutoff Valve	Shuts off product and waste water (DWS-90)
VA-CK-IL-1LB-4JG	1 LB.Check Valve	Used in conjunction with ASO valve

* Green Flow Restrictors have a 2:1 waste ratio recommended for water <180 ppm Red Flow Restrictors have a 3:1 waste ratio recommended for water ≥180 ppm

OPTIONAL PARTS:

Part Number	Part
IMK-UNIV	Ice Maker Kit
PPRFK-DI	Permeate Pump Retrofit Kit for RO systems
V-PREG-0-125-4GJ	Pressure reducing valve (pressure regulator)