



Ultra-High Efficiency RO/DI (100 GPD U.H.E RO/DI)



OWNER'S MANUAL & INSTALLATION INSTRUCTIONS

WARNING

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

SpectraPure®

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

Tap Water Pressure:	30 psi
pH Range:	3-11
Max. Temperature:	113°F (45°C)
Max. Feed Turbidity:	1.0 NTU
Max. Silt Density Index:	5.0 (based on 15 min. test time)
Maximum Chlorine:	< 0.1 ppm
Maximum TDS:	2000 ppm
Maximum Hardness:	10 grains (170 ppm as CaCO ₃)
Maximum Iron:	< 0.1 ppm.
Maximum Manganese:	< 0.1 ppm.
Maximum Hydrogen Sulfide:	0 ppm
Langelier Saturation Index (LSI):	must be negative

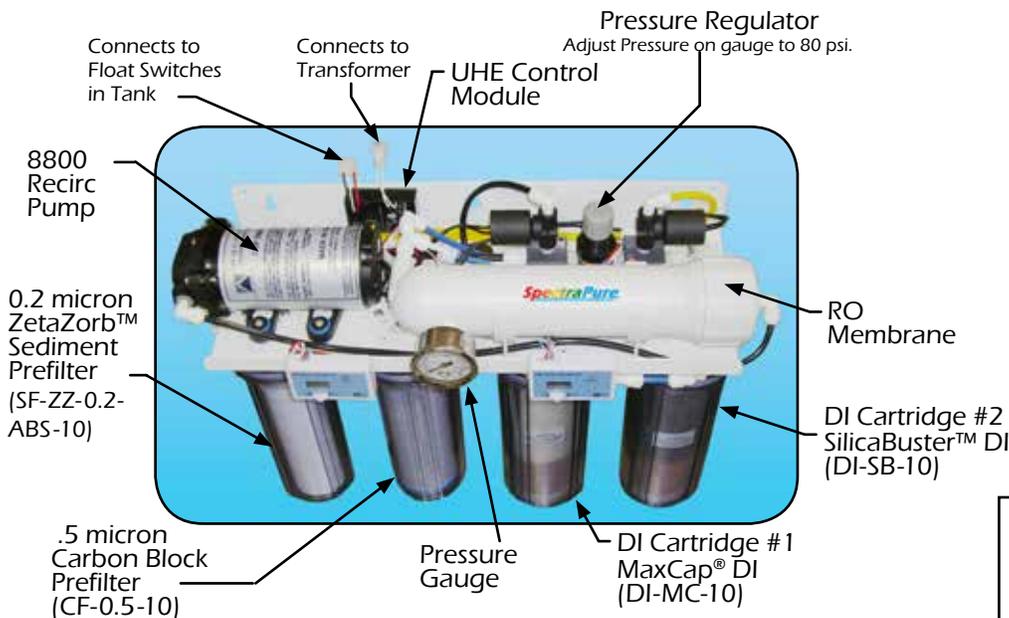
NOTE: MOST MUNICIPAL WATER SUPPLIES MEET THE ABOVE REQUIREMENTS. IF WELL WATER IS USED, PLEASE MAKE SURE THAT YOU OBTAIN A WATER TEST BEFORE INSTALLATION.

CONTENTS OF UHE WATER SYSTEM

UHE System Components

(1) 5-Stage System

- (1) Membrane (90 GPD)
- (1) 0.2 Micron ZetaZorb™ Sediment Filter
- (1) 0.5 Micron Carbon Block Filter
- (1) MaxCap® DI Cartridge
- (1) SilicaBuster™ DI Cartridge
- (1) High Flow Recirculation Pump
- (1) UHE Module
- (1) Pressure Regulator
- (1) Pressure Gauge
- (2) Dual Probe Inline TDS Meters
- (1) High & Low Float Switches (with 6ft extension cable)
- (1) 24VAC Transformer
- (1) Filter Wrench
- (2) Bulkhead Fittings
(1/4" for Product Water and 3/8" for Pure Water Flush Cycle)



1/4" BLACK LINE: Tap Water input
 1/4" BLUE LINE: Product Water
 1/4" YELLOW LINE: Waste Water
 3/8" BLUE LINE: Pure Water Flush

IF ANY OF THE ITEMS LISTED ABOVE ARE MISSING PLEASE CONTACT SPECTRAPURE PRIOR TO INSTALLATION. ALL RETURNS WITHOUT RMA# WILL BE REFUSED. CLAIMS MUST BE WITHIN 10 DAYS FROM RECEIPT.

OPERATION DESCRIPTION *(how the system functions)*

1. The incoming feed water (1/4" Black line) is passed through a 0.2 Micron ZetaZorb™ Sediment Filter. This filter is required to remove excess turbidity (particulate matter) that may cause the carbon block filter to plug.
2. The second stage of filtration is a 0.5 micron carbon block prefilter. This filter removes organics and chlorine from the feed water that can damage the membrane.
3. The third filtration stage of the system is a high rejection thin film composite (TFC) reverse osmosis membrane. It removes over 98% of most inorganic salts, all microorganisms and organics above 100 daltons molecular weight. A Flow Restrictor, located in the waste water line, is preadjusted for your location's maximum tap water temperature. This Flow Restrictor regulates the amount of water going to drain and determines the waste-to-product ratio. At the maximum yearly tap water temperature, the ratio should be close to 1 to 1. As the water gets colder, the ratio will increase by a small factor.
4. The fourth and fifth stage filter are our MAXCAP® DI cartridge followed by our SilicaBuster™ DI cartridge. These two cartridges remove the remaining silicates, phosphates, and nitrates that make it past the RO membrane.

High and Low Float Operation:

1. Floats are to be mounted horizontal when dry and float up when wet.
2. When the bottom float goes dry, the input solenoid (INSOL) is opened and one second later, the Recirculation Pump (PUMP) turns on.
3. When the top float becomes wet, a Flush Cycle commences and then the System shuts off until the bottom float goes dry again.

Flush Cycle (flush cycle consumes only a couple of quarts of pure water):

1. As the system is running, a periodic sequence of flushes is performed.
2. When the top float gets wet, or every 8 hours of uninterrupted operation, the flush cycle is initiated.
3. After the flush cycle, the system shuts down if the tank is full or pauses for an hour to let the pure water soak the membrane before continuing.

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.

PREPARATION

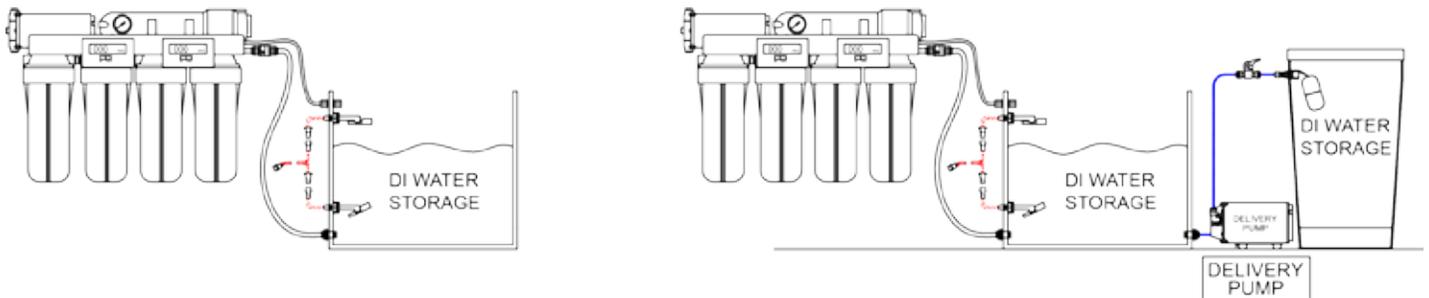
1. CHOOSING THE BEST MOUNTING LOCATION:

LIGHT SOURCE: Algae is more likely to thrive inside clear housings when exposed to ultraviolet light and other sources like metal halide lighting. Avoid installing the unit in bright light or direct sunlight.

EXTREME TEMPERATURES: The unit **MUST** be kept out of areas that are subject to extreme temperatures like freezing or temperatures greater than 113° F (45° C)

FRESH WATER RESERVOIR: Mount system in an area that will have enough room for a small trash can or reservoir. This Fresh Water Reservoir is to be used for the Flush Cycle. (Reservoir needs to hold at least 10 gallons)

ELEVATION FOR SYSTEM: When mounting your UHE, make sure it is elevated above your fresh water reservoir:



USE DELIVERY PUMP TO DELIVER WATER WHERE NEEDED FOR SALT MIXING OR TO SUMP

GRAVITY DRAIN WATER FROM ELEVATED TANK TO TRASH CAN FOR SALT MIXING OR TO SUMP

2. TOOLS RECOMMENDED FOR INSTALLATION:

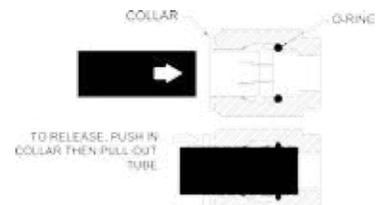


- Adjustable Wrench	- Phillips Screw Driver
- Sharp X-acto® Knife	- Trash Barrel or Reservoir
- Open End Wrench(s)	- Optional Ball Valve or Float Valve. (as shown above)
- Electric Drill	- Optional Delivery Pump (as shown above)
- 5/8" Drill bit	
- 13/16" Drill bit	

3. INTRODUCTION TO PUSH FITTINGS:

Push fittings are similar to a Chinese finger trap toy. In order to release its grip from tubing,..

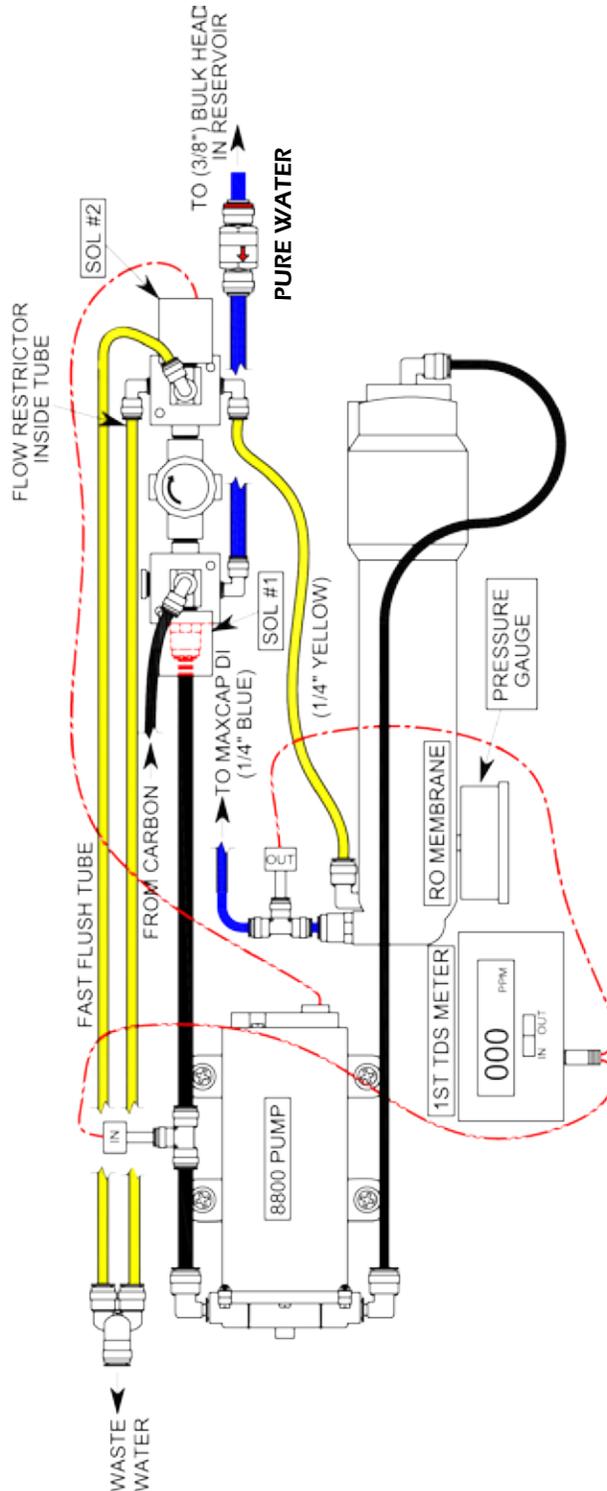
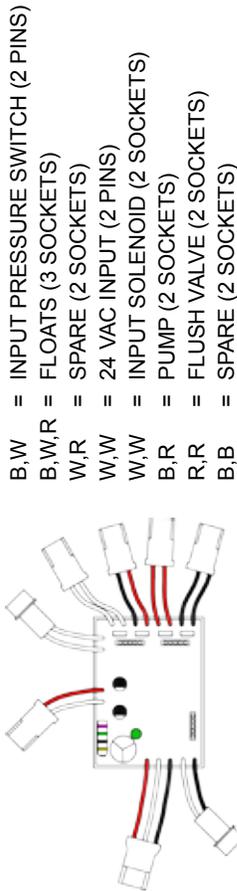
- Firmly depress and hold the push-fitting collar down with your thumbnail.
- While the push fitting collar is depressed, pull the tubing straight out of the push fitting. Once the tubing is removed, release the collar.



4. GETTING TO KNOW YOUR SYSTEM:

If you are setting up this system for the first time, or replacing either DI cartridge, it is very important that you rinse the MaxCap® DI cartridge with the downstream DI removed. There is a large ionic load present in a new MaxCap® DI cartridge. Failure to flush this cartridge, will shorten the life of the downstream DI.

UHE CONTROL MODULE



TOP VIEW

NOTE: WHEN MOUNTING YOUR UHE, MAKE SURE IT IS ELEVATED ABOVE YOUR FRESH WATER RESERVOIR.

SETUP PROCEDURES

STEP 1: Unscrew the third position housing (MaxCap® DI) and the fourth position housing (SilicaBuster DI) from the system and remove the DI Cartridges. Then, reinstall the empty housings back onto the system.

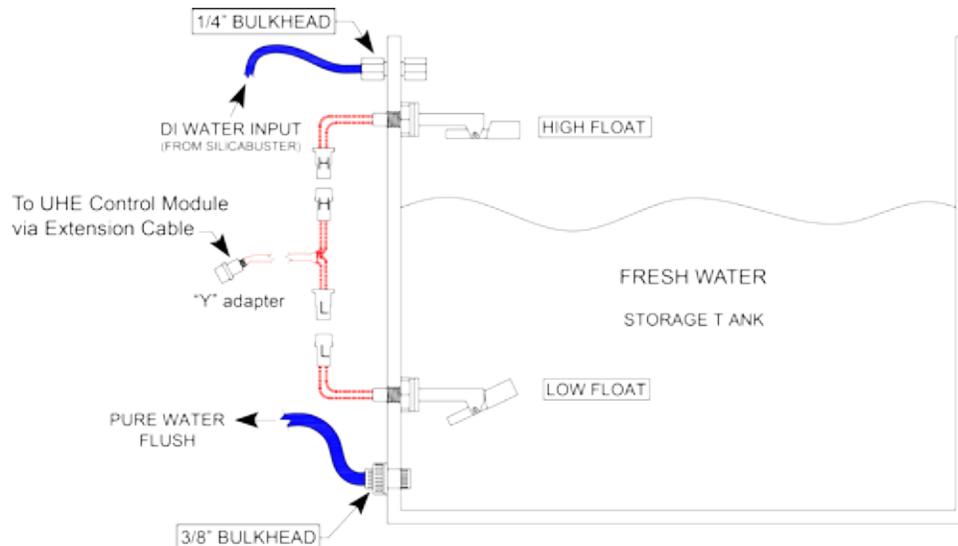
STEP 2: Connect the 1/4" Black Line to the cold water line by using either the garden hose adapter, which is provided with the system, or a Feed Water Adapter.



STEP 3: INSTALLATION USING THE HIGH & LOW FLOAT SWITCHES and BULKHEAD FITTINGS:

- A. Install both the High and Low Floats onto a open container, such as a Rubbermaid® trash can. The floats can be mounted by drilling a 5/8" hole.
(The High Float shuts down the system, while the Low Float turns the system on).
- B. Connect the floats to the "Y" adapter.
- C. Attach the 3-pin connector on the float switches to the UHE CONTROL MODULE.

NOTE: Floats are to be mounted horizontal when dry and float up when wet. In most instances we recommend locating the low float approximately halfway down your reservoir. DO NOT OVERTIGHTEN when installing the floats.



NOTE: Floats must be installed in the FRESH WATER storage container.
This system MUST be connected to the floats to operate the Flush Cycle.
Failure to install the pure water flush connection for this unit will void any warranty.

STEP 4: For now, direct both the 1/4" blue (product or permeate) line and the yellow (waste or concentrate) line to drain.

STEP 5: Open the cold water (tap water) feed, connected to the black line. Plug in the 24 V transformer to the UHE Module and connect to 120VAC power.

SETUP PROCEDURES (continued)

STEP 6: At this stage, the system will start producing water from the 1/4" blue and yellow lines. Discard that water for approx. 15-20 min.

STEP 7: PRESSURE ADJUSTMENT USING THE PRESSURE REGULATOR:



- A. The Pressure Regulator, when pushed down, is in the lock position. Pull out on it to release lock.
- B. While the system is producing water, turn the Pressure Regulator clockwise to increase pressure or counterclockwise to decrease pressure. Set the pressure to 80 PSI. Then relock the pressure knob.

STEP 8: REINSTALLING AND FLUSHING DI CARTRIDGES:

- A. Disconnect power to the system and turn off the water supply line.
- B. Unscrew the third clear housing and reinstall the MaxCap® Cartridge.
NOTE: At this time, leave the fourth clear housing empty.
- C. Turn on water supply line and reconnect power to system. Allow water to run through the MaxCap® Cartridge and down the drain, until the right-hand meter (SET TO "IN") reads "000".
- D. Then, follow step A and place the SilicaBuster™ DI in the fourth clear housing.
- E. Finally, turn the water supply line back on, plug the power back in and allow the water to run through the SilicaBuster™ DI Cartridge and down the drain, until the right-hand meter (SET TO "OUT") reads "000".

NOTE: At least 2 gallons (7.57 liters) of purified water should be discarded during the flushing procedure before you can collect purified water for use.

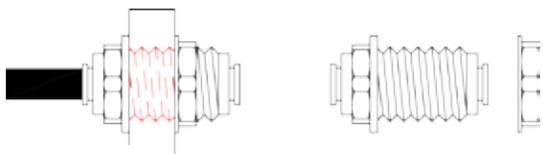
Upon startup, air may be trapped in the DI cartridges (housings may not appear full). This is a normal condition and will not affect the operation of the RO/DI system.



SETUP PROCEDURES (continued)

STEP 9: CONNECT BULKHEAD FITTINGS:

(Bulkhead Fittings MUST be installed on the same container that the floats are on, SEE DIAGRAM ON PAGE 7)

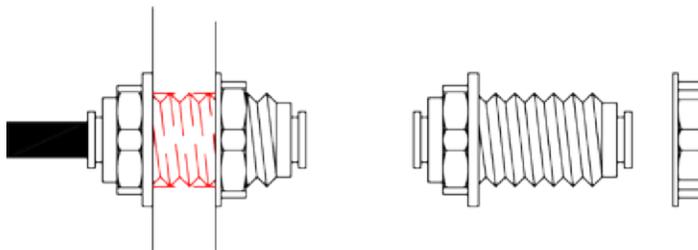


1/4" BULK HEAD FITTING:

Use a paddle bit and carefully drill a 5/8" hole for installation at the top of the reservoir (above the high level float).

3/8" BULK HEAD FITTING:

Use a paddle bit and carefully drill a 13/16" hole for installation at the bottom of the reservoir (below the low level float).



STEP 10: FINAL CONNECTION:

- A. Direct the waste line (yellow) to a drain or connect it permanently to a drain pipe via a Drain Saddle. (Drain Saddle is not included with system.)

CAUTION: Inspect for leaks and do not leave the system alone until you are sure there are no leaks. Monitor the system for 72 hrs.

CAUTION

An extremely long drain line may create a siphon which will pull the water past the 4# check valve and cause water to drain from the tank after shutdown. The following solution assumes that you have already installed the system above the tank.

Route the yellow 1/4" waste water line up above the system as high as possible. Run a 1/2" drain pipe (or a garden hose) from the drain location up vertically to the elevated yellow 1/4" waste water line. Insert the waste water line down into the 1/2" drain line a few inches to create a "siphon break".

SETUP PROCEDURES (continued)

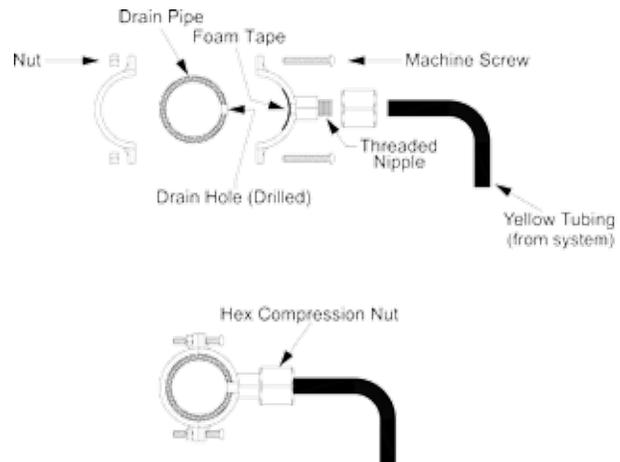
ERRATIC OPERATION

Erratic operation can almost always be determined to be caused by the electric floats or the wires connecting them to the control module.

Here's a test to determine if the problem lies with the floats or the control module. Disconnect the 3 pin cable to the floats at the control module. Looking back at the control module, there should be 3 socket holes in the connector. Get two small paper clips and bend them so you can insert one into the red (#1) and white (#2) socket holes and the other into the black (#3) hole and again into the white (#2) hole.

Electrically, this should look like two dry floats and the system should start up. Remove the white-black jumper and the system should continue to run (this represents the bottom float getting wet). Remove the red-white jumper and the system should start its final flush (this represents the top float getting wet) and then shut off. Reverse the sequence by inserting the red-white jumper. Nothing should happen because this just looks like the top float going dry. Insert the white-black jumper and the system should start up again (as the bottom float goes dry). If you can reliably repeat this sequence multiple times, then the problem is with the floats or the wires. Look for loose connections and floats that have rotated in the reservoir, no longer pointing straight out when dry and bending up when wet.

OPTIONAL INSTALLATION FOR WASTE WATER LINE (USING A DRAIN SADDLE)



CHECK BEFORE LEAVING SYSTEM UNATTENDED:

- Ensure that all fittings are tight and leak-free before leaving the system unattended.
- The concentrate line (yellow) includes a smaller capillary tube (flow restrictor) that is located "inside" of the tubing. Do not remove or discard this restrictor; the system will not produce permeate water without the flow restrictor.
- The following conditions must be met before water can be produced: The water source must be turned "ON" and the water level in the reservoir tank must be below the low level float.

MAINTENANCE REGIMEN

Maintenance and troubleshooting procedures have been made easy and effective with a combination of the (2) Dual TDS meters and a built-in pressure gauge. It is recommended that you keep replacement cartridges on hand, ready to install as soon as the monitor indicates that the cartridge in use is exhausted.

METERING AND DIAGNOSTICS:

The digital TDS meter (left side) will provide a reliable means of evaluating the efficiency of the RO membrane. This meter will indicate the tap water conductivity (IN PROBE) and the RO water conductivity (OUT PROBE). The difference between the two meter readings can be used to calculate the percentage rejection of the (TFC) RO membrane (as shown on page 12).

The Digital TDS meter (right side) will be used to determine the condition of the two DI stages. When the reading on the IN probe reads 50% of the left-side meter's OUT reading, then the MaxCap® DI Cartridge needs to be replaced. When the reading on the OUT probe is higher than 001 PPM, replace the SilicaBuster Cartridge.

SHELF LIFE FOR FILTERS:

PREFILTERS (Sediment & Carbon Block Filters): Prefilters have an infinite shelf life.

REVERSE OSMOSIS MEMBRANE (RO): Purchase an RO membrane when needed. If you would like to keep one on hand, you can store it in the refrigerator for up to 1 year. (Keep it in its sealed, original packaging). You should always see moisture inside the bag. If the membrane dries out, it will not produce water and any warranty will be voided.

DEIONIZING CARTRIDGES (DI): Replacement DI cartridges are shipped in a Mylar® Bag. Keep them in their sealed, original packaging until use. You can store them for up to 1 year.

SEDIMENT PREFILTER REPLACEMENT:

For maximum contaminant removal and long membrane life, the sediment prefilter must be changed when the system fails to maintain the preset pressure of 80 PSI. If your water contains a great deal of sediment, the pre-filter may require more frequent changes to maintain adequate production rate and extended membrane life.

Materials Required: 0.2 micron ZetaZorb™ Sediment Filter (SF-ZZ-0.2-10), Filter Wrench. (Failure to use a ZetaZorb sediment filter as the replacement will void the system's warranty.)

Procedure: (FIRST FILTER ON LEFT)

1. Turn off water supply to the system.
2. Using the provided filter wrench, remove the first housing on the left. Unscrew it counterclockwise as viewed from the bottom.
3. Remove the old filter and discard.
4. Thoroughly wash the housing with a mixture of hot soapy water and a few teaspoons of household bleach. Rinse well with clean hot water.
5. Install the new pre-filter into the housing, Screw the housing back onto the assembly, and **hand tighten only**.

NOTE: Do not use filter wrench to tighten housings. Over-tightening will damage housings and void your warranty.

6. Proceed with carbon block filter replacement.

MAINTENANCE REGIMEN (continued)

CARBON BLOCK PREFILTER REPLACEMENT

For maximum contaminant removal and long membrane life, the Carbon prefilter must be changed when the Chlorine Test Kit shows more than 0.1ppm of chlorine in the waste water stream.

Materials Required: 0.5 micron Carbon Block Filter (CF-0.5-10), Filter Wrench, Chlorine Test Kit (TK-CL-10-KIT)

Procedure: (SECOND FILTER ON LEFT WHEN FACING SYSTEM)

1. Perform steps 1-5 for the second housing on page 11.
2. Turn on system's water supply and check for leaks.

REVERSE OSMOSIS MEMBRANE DIAGNOSTICS

Although RO membranes are capable of maintaining high water quality over extended periods of time, they eventually will begin to deteriorate. Normally, the conductivity of the permeate water will increase as the membrane ages. By comparing the difference in TDS readings between the Tap water TDS and the RO water TDS, the "percentage rejection" of the RO membrane may be calculated and the resultant value may then be used to determine the condition of the membrane. In this way, the operator will know when the membrane needs to be replaced. Membrane failure will be indicated by a reduction in the percentage rejection which will be determined by calculating the differential between the input and output TDS readings.

In order to accurately determine the condition of the RO Membrane, a conductivity tester (TDS meter) capable of reading the tap water conductivity and the permeate water conductivity has been provided with this system. With the assistance of the left-hand Dual TDS meter (meter #1), you will be able to easily determine the RO membrane's condition.

Before performing the diagnostic test on the RO membrane, make sure that the RO system has been "ON" and producing pure water for a minimum of 10 minutes. Also check the brine (yellow) line to make sure that water is flowing and that the flow ratio between the brine water and the permeate water is at a ratio that is between 1:1 and 2:1.

NOTE: The pressure gauge should indicate a pressure reading of 80 PSI during this 15-20 minute test period.

Procedure:

1. Turn on the left-side meter by depressing the "ON" button.
2. Locate the meter slide switch on the front of the DM-1 TDS meter.
3. Slide the switch to the left "IN" position and read the Tap water conductivity, then record the reading _____.
4. Next, slide the switch the to right "OUT" position and read the Permeate water conductivity, then record the reading _____.
5. Use the two readings to apply them to the calculation below:

$$\frac{(X - Y) = Z}{X} = \begin{array}{l} \% \text{ REJECTION} \\ \text{BY MEMBRANE} \end{array} \quad \begin{array}{|l} \text{TAP WATER TDS} = X \\ \text{RO WATER TDS} = Y \end{array}$$

EXAMPLE: $(500 - 20) = 480 / 500 = 0.96$ (96% rejection)

6. The general rule is to replace your Reverse Osmosis (RO) Membrane when the % rejection falls below 95%.

MAINTENANCE REGIMEN (continued)

REVERSE OSMOSIS MEMBRANE PERFORMANCE TESTING

Actual performance of a membrane is dependent on two factors: Tap Water Pressure and Tap Water Temperature. In order to characterize a membrane, there must be common testing data. Industry standards for testing membrane performance are: 60 PSI tap water pressure and 77 degree tap water temperature. Most locations will not have exactly 77 degree water. The UHE System is set to run at 80 psi. Use the calculation below to determine what the membrane should produce with your water conditions.

PRESSURE COMPENSATION:

The UHE System uses an RO Membrane which is nominally-rated to produce 90 GPD at 60 psi. Since the UHE system has an integrated booster pump that maintains the water pressure at 80 psi despite the existing tap water pressure, the pressure compensation is always: $80/60 \times 90$, or 120 GPD.

TEMPERATURE COMPENSATION:

Look up the water temperature on the chart below to determine the Temperature Compensation Factor (TCF) value. Multiply it by the pressure-compensated flow rate of 120 GPD.

For Example: If your tap water temperature is 59° F, the TCF is 0.730.
Multiplying 120 GPD by 0.730 results in a temperature-compensated flow rate of 87.6 GPD.

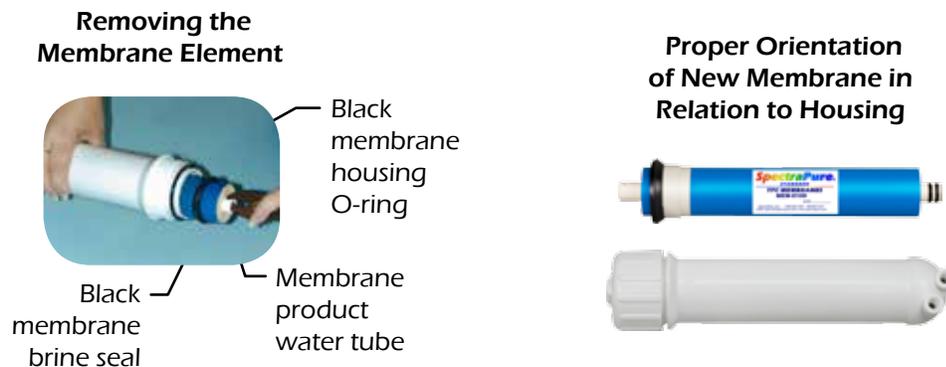
Temperature Correction Factor Table (TCF)

°F/°C	TCF	°F/°C	TCF	°F/°C	TCF
41.0 /5	0.521	59.0 /15	0.730	77.0 /25	1.000
42.8 /6	0.540	60.8 /16	0.754	78.8 /26	1.031
44.6 /7	0.560	62.6 /17	0.779	80.6 /27	1.063
46.4 /8	0.578	64.4 /18	0.804	82.4 /28	1.094
48.2 /9	0.598	66.2 /19	0.830	84.2 /29	1.127
50.0 /10	0.620	68.0 /20	0.857	86.0 /30	1.161
51.8 /11	0.640	69.8 /21	0.884	87.8 /31	1.196
53.6 /12	0.661	71.6 /22	0.912	89.6 /32	1.232
55.4 /13	0.684	73.4 /23	0.941	91.4 /33	1.267
57.2 /14	0.707	75.2 /24	0.970	93.2 /34	1.304

MAINTENANCE REGIMEN (continued)

REVERSE OSMOSIS MEMBRANE REPLACEMENT

1. Turn off the water supply to the RO system and unplug the transformer. Place the system where the membrane housing is easily accessible.
2. 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.
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.
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.



TIPS FOR LONG MEMBRANE LIFE

1. Replacement of 0.2 micron ZetaZorb™ sediment filter once every 6 months. This will prevent membrane fouling due to silt or sediment depositing on the membrane.
2. Replacement of 0.5 micron carbon block filter at least once every 6 months or when chlorine breakthrough occurs. This will ensure good membrane life and protect the membrane from chlorine damage.
3. Soft water will greatly increase the life of an RO membrane.
4. Membrane should not be operated at lower than the preset concentrate to purified water ratios.
5. Operating reverse osmosis systems on softened feed water greatly reduces the chances of membrane fouling.

MAINTENANCE REGIMEN (continued)

DEIONIZATION CARTRIDGE MAINTENANCE AND REPLACEMENT

Materials Required: Filter wrench and DI cartridges

NOTE: In order to receive an accurate reading, the system must be producing water for at least 10 minutes before reading the TDS meters.

Maintenance for MaxCap® DI Cartridge:

When the reading on the right-hand TDS meter (set to "IN") displays 50% (or greater) of the reading on the left-hand TDS meter (set to "OUT"), it is time to replace the MaxCap® DI cartridge.

1. Disconnect power to the system and shut down the water supply line.
2. Unscrew the third clear housing and insert the new Cartridge. Discard the old one to the trash.
NOTE: at this time leave the fourth clear housing empty.
3. Make sure the DI cartridge is installed in the correct direction as marked on the cartridge shell and be sure that the top seal is securely attached to the top of the cartridge.
4. Tighten the cartridge housing by rotating it clockwise and hand tighten.
5. Turn the supply line back on, plug the power back in, and redirect the product water to drain. Allow water to run through the MaxCap® DI Cartridge until the reading on the right-hand meter (set to "IN") is "000".
6. Check system for leaks.

NOTE: When replacing DI cartridges, ALWAYS flush the MaxCap® DI with the downstream cartridge removed.

Maintenance for SilicaBuster™ DI Cartridge:

When the reading on the right-hand TDS meter (set to "OUT") displays "001" (or greater), it is time to replace the SilicaBuster™ DI cartridge.

1. Disconnect power to the system and shut down the water supply line.
2. Unscrew the fourth clear housing and insert the new Cartridge. Discard the old one to the trash.
3. Make sure the DI cartridge is installed in the correct direction as marked on the cartridge shell and be sure that the top seal is securely attached to the top of the cartridge.
4. Tighten the cartridge housing by rotating it clockwise and hand tighten.
5. Turn the supply line back on, plug the power back in, redirect the product water to drain and allow the water to run through the SilicaBuster™ DI Cartridge until the right-hand meter (set to "OUT") is "000".
6. Check system for leaks.

TROUBLE SHOOTING GUIDE

1. LOW PRODUCTION RATE.

- | | |
|-----------------------------|-----------------------------------------|
| a. Plugged prefilters. | i. Replace prefilters. |
| b. Low water temperature. | ii. Use higher GPD membrane. |
| c. Fouled membrane. | iii. Replace membrane. |
| d. Plugged flow restrictor. | iv. Replace flow restrictor & membrane. |

2. ZERO PRODUCTION RATE.

- | | |
|--------------------------------|----------------------------------------------------------|
| a. Dried membrane. | i. Replace membrane. |
| b. Power supply not plugged in | ii. Plug power in. |
| c. Both floats need to be dry | iii. Both floats need to be dry and level, not drooping. |

3. EXTREMELY HIGH PRODUCTION RATE.

- | | |
|-----------------------|----------------|
| a. Ruptured membrane. | i. Replace it. |
|-----------------------|----------------|

4. MILKY COLORED WATER.

- | | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a. Air in system. | i. Air in the system is a normal occurrence with initial startup of the RO/DI system. This milky appearance will disappear during normal use within 1-2 weeks. If condition recurs after filter changes, drain tank 1 or 2 times. |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

5. THE WATER IN THE PURE WATER CONTAINER DRAINS OUT WHEN NOT USED.

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|--------------------------------------------------------------------|--------------------------------------------------------------------------------|
| a. The system is not elevated higher than the Pure Water container | i. Elevate the system higher than the Pure-Water container to avoid siphoning. |
| b. Check Valve on Pure Water Flush is not functioning | ii. Replace Check Valve |
| c. An air gap is needed | iii. Create an air gap in the waste water line. |

THREE YEAR MANUFACTURERS WARRANTY

SpectraPure, Inc.® warrants the product to the original owner only to be free of defects in material and workmanship for a period of three years 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 manufacturer'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 three year warranty.

SpectraPure warrants (prorated) the performance of tested SpectraSelect™ RO membrane elements only, for one year from date of receipt by the buyer, providing that the loss of performance was not caused by fouling, neglect or water conditions exceeding the feed water parameters listed in the applicable product manual (refer to detailed membrane warranty information). SpectraPure will, on confirmation of loss of performance during the warranty period, credit the prorated amount of the current catalog price of the element. The disposable filters and cartridges are not covered under the 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 Goods Authorization (RGA) 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 three year limited warranty does not apply to consumable items, including but not limited to, filters and cartridges unless specifically stated above.**

REPLACEMENT PARTS

<u>Catalog No.</u>	<u>Replacement Part</u>	<u>Description</u>
SF-ZZ-0.2-10	ZetaZorb® Sediment Filter	0.2 Micron Sediment Filter (1st Stage) (Failure to use a ZetaZorb® sediment filter for replacement will void the system's warranty.)
CF-0.5-10	Carbon Filter	0.5 Micron Carbon Pre-Filter (2nd Stage)
MEM-0090	RO Membrane	90 GPD Membrane (3rd Stage)
DI-MC-10	MaxCap® DI	MaxCap® Deionization Cartridge (4th Stage)
DI-SB-10	SilicaBuster™ DI	SilicaBuster™ Deionization Cartridge (5th Stage)
FR-60	Flow Restrictor	Flow Restrictor modified for maximum water temperature