



Single Tank Liquid Replenisher System (LLC-S-115)



INSTALLATION MANUAL

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 by monitoring installation for 72 hrs..

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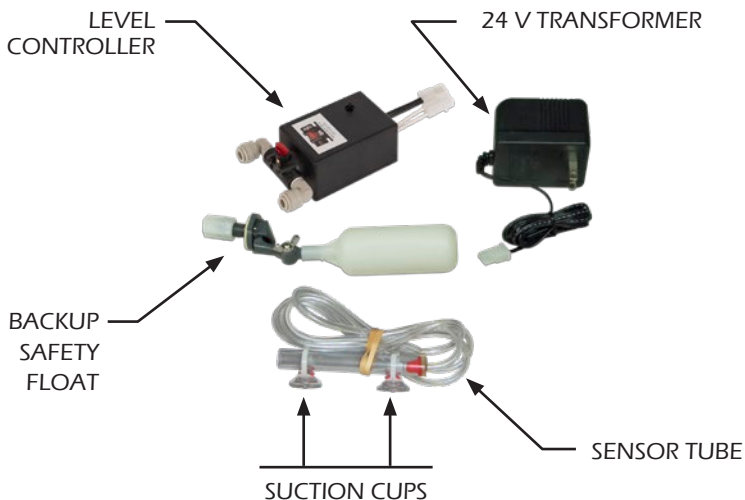
OVERVIEW:

LLC-S Single Tank Liquid Level Controller - 115VAC for use with systems up to 90 GPD and 70 psi (For water pressure above 70 psi, contact SpectraPure® Technical Support)

FEATURES:

- Single Tank Controllers include a switched 24VAC connector for controlling a booster pump or other 24VAC operated devices, push fittings, 5 feet of tubing for remote mounting of the sensor tube assembly, fittings and float valve.
- For automatic replenishment of evaporated liquid and liquid level control on single tanks, sumps or reservoirs
- Safe low voltage operation
- Automatically turns off in the event of a power failure
- Longer membrane and filter life
- 5 feet of Remote sensor tubing provided (custom lengths available)
- Additional switched 24VAC outlet for controlling booster pump or other 24 volt AC operated devices
- Safety backup float

FIGURE 1: SYSTEM COMPONENTS



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OPERATION

The **Single Tank Liquid Replenisher System** is ideal for replenishing evaporated water in aquariums or liquids in other constant level containers. An onboard air pressure-activated electrical switch opens a solenoid valve when the liquid level drops approximately 1" and closes it when the liquid level rises back to its original level.

Research shows that the Single Tank Liquid Replenisher provides a significant advantage over conventional float and backpressure-activated automatic shutoff valves by maximizing the duration of membrane operation. This minimizes the buildup of impurities due to "TDS creep".*

All wetted components are constructed of inert and saltwater safe materials. Power is provided by a 24VAC (UL listed and CSA approved) transformer.

The single reservoir model is provided with the controller, which includes a switched 24VAC outlet for controlling a booster pump or other 24VAC operated devices, compression fittings, and 5 feet of tubing for remote mounting of the sensor. If you choose to use a booster pump, replace this transformer with the transformer that is supplied with the booster pump.

* When the RODI system is not operating, TDS in the feed water tends to migrate to the pure water side of the membrane. This results in a blast of high TDS water when the system turns on, which can drastically shorten the life of your DI cartridges. This problem is greatly alleviated by having the system stay on for longer periods of time instead of constantly turning on and off.

INSTALLATION INSTRUCTIONS

(Refer to Figures 5 and 6 on Pages 8 and 9.)

1. Locate the BLACK TUBING connecting the carbon filter housing to the RO membrane housing. Cut this tubing in half above the bracket and between the bracket and the membrane housing's input fitting.
2. Locate the port marked IN (labelled on side of box) on the LLC BOX and connect it to the black tubing that is still attached to the carbon filter housing.
3. Connect the loose end of the tubing that is still attached to the RO membrane housing to the other port on the LLC BOX.
4. Locate the transformer provided, insert the male connector into the female connector on the LLC BOX. (See Figure 2 on Page 6)
5. Locate the sensor tube with clear air line tubing attached to it and connect the loose end of the tubing to the 1/8" nipple on the top of the LLC Box.

WARNING: Airline tubing **MUST** be connected to the 1/8" nipple on the top of the LLC Box **BEFORE** immersing the sensor tube in water.

6. Submerge Sensor Tube into water until you hear a "click" in the LLC Box. This is the turnoff point. Mark that spot with a permanent marker. Slowly pull the tube out of the water until it clicks again. This is the turn on point. Mark it, too. (See Figure 3 on Page 6.)
7. Mount the sensor tube with the suction cups provided or by whatever means you prefer. Water will cover approximately half of the sensor tube when shutoff occurs.

NOTE: A small dab of aquarium silicone sealant on each suction cup will prevent them from detaching.

8. Install the backup safety float at any convenient location which is slightly above the shutoff level of the LLC. **Failure to install backup float will void any warranty and may cause property damage.** (See "Installing the Backup Float" on page 7.)



9. It is highly advisable that you provide and install a safety overflow to drain plumbing to protect against catastrophic flooding. (See Figures 5 and 6 on Pages 8 and 9.)

NOTE: Turn on the water supply to the RO System before plugging in the transformer.

FIGURE 2: LLC BOX

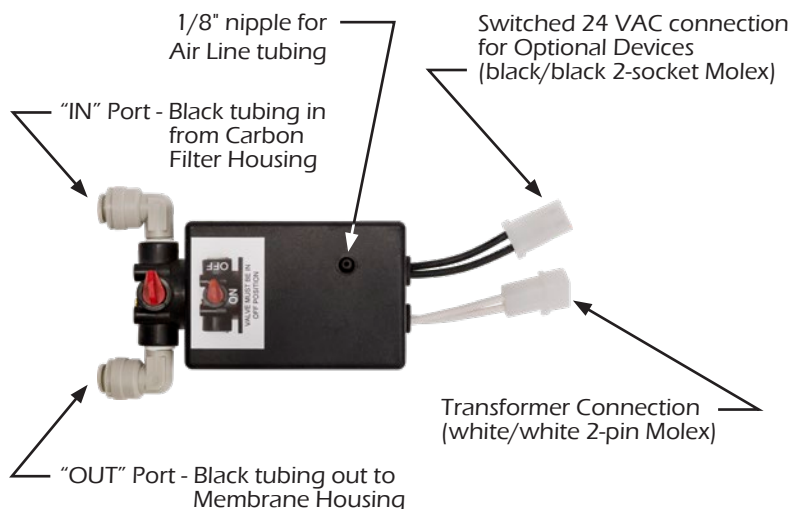
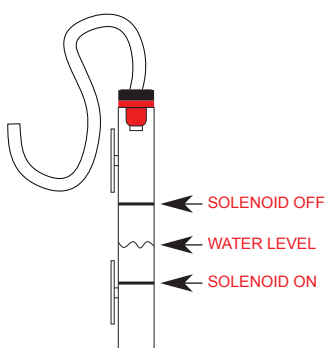


FIGURE 3: SENSOR TUBE ON/OFF POINTS



The distance between the marks will be approximately 1"

INSTALLING THE BACKUP FLOAT

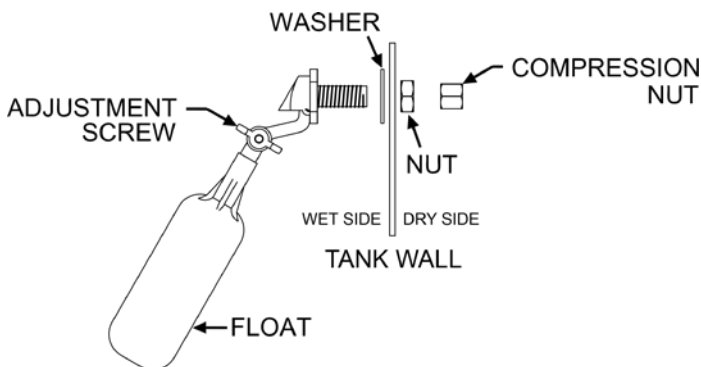
1. Drill a 1/2" hole into your sump or reservoir. If the thickness of the sump is too thick for the Float to install properly, you need to counterbore the hole.

NOTE: If you are installing the Backup Safety Float onto an acrylic tank we recommend using a new Forstner Bit to reduce the chance of cracking the acrylic.



2. (Refer to Figure 4 below.) Remove the Compression Nut from the float body.
3. Insert the 1/4" Blue Tubing into the 1/2" Compression Nut with the threads towards the end of the tube.
4. Unscrew the Nut from the float body.
5. Insert the float body and washer into the 1/2" hole and tighten the Nut, which securely tightens the float to the tank wall.
6. Push the Compression Nut towards the end of the tubing and screw the Compression Nut back onto the float body.
7. To tighten, use one 1/2" wrench on the flats of the plastic threads and another 1/2" wrench on the compression nut.

FIGURE 4: ADJUSTABLE FLOAT ASSEMBLY



WARNING !

THE SAFETY BACKUP FLOAT MUST BE INSTALLED. FAILURE TO DO SO WILL VOID ANY WARRANTY AND POSSIBLY CAUSE PROPERTY DAMAGE.

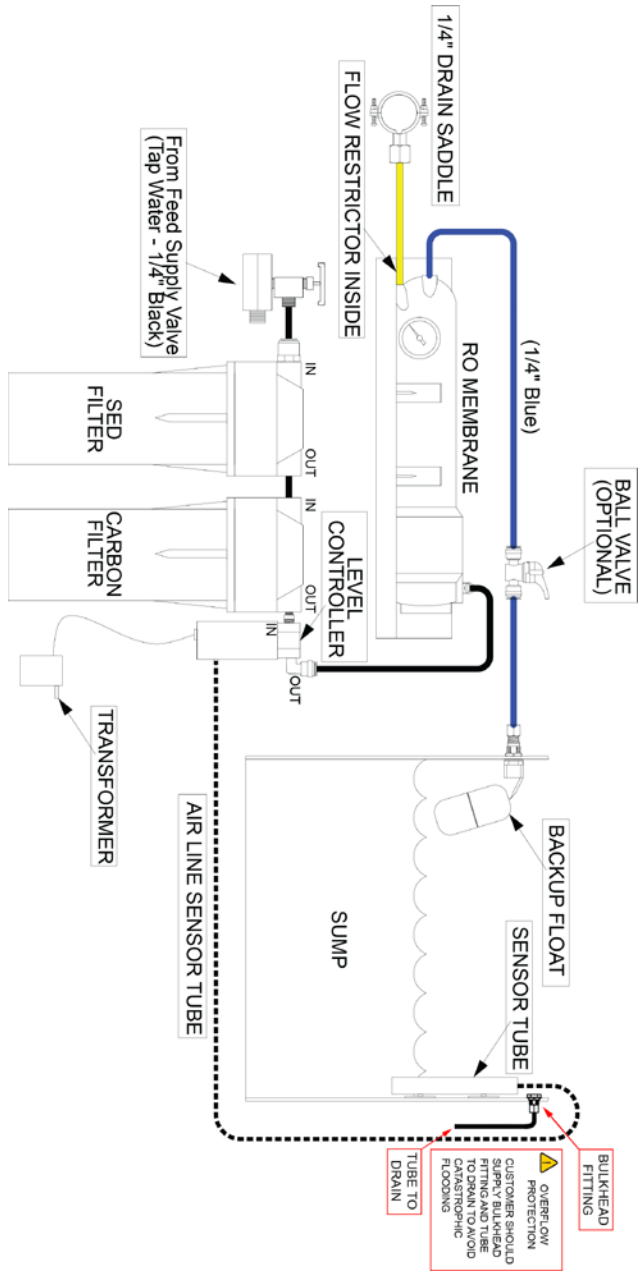
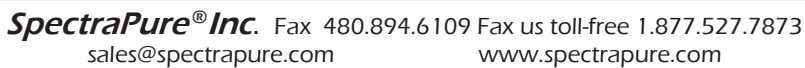


FIGURE 5: INSTALLATION OF LLC-S-115 ON RO SYSTEMS



TROUBLESHOOTING GUIDE

Problems, Causes and Corrective Actions

1. LLC System not working (overflow, system not shutting off, etc.)
 - a. Defective pressure switch
 - b. Water in the clear air line tubing
 - c. Defective solenoid valve
 - d. Dirt or corrosion on solenoid valve.
 - i. Replace it.
 - ii. Disconnect the tubing and blow air through it to get the water out.
 - iii. Replace it.
 - iv. Clean or replace valve.
2. Solenoid will not turn on.
 - a. Water pressure above 80 psi.
 - b. No power.
 - i. Reduce pressure with pressure regulator.
 - ii. Check power outlet and transformer.

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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 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 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).