

## FIVE YEAR LIMITED WARRANTY

SpectraPure, Inc. warrants each new LiterMeter Precision Dosing System to the original owner only to be free of defects in material and workmanship for a period of 5 years from the date of receipt. SpectraPure's liability under this warranty shall be limited to repairing or replacing on 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 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 printed installation and operating conditions or damage caused by power failures, freezing, flood, fire, or acts of God.

## TERMS AND CONDITIONS OF SALE

To obtain service under this warranty, the defective system or components must be returned to SpectraPure with proof of purchase, installation date and failure date.

Any defective product to be returned to the factory must be sent freight prepaid; documentation supporting the warranty claim and/or a Return Goods Authorization must be included, if so instructed.

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.

Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages and some jurisdictions do not allow limitations on how long implied warranties may last. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary jurisdiction to jurisdiction.

SpectraPure, Inc. reserves the right to change prices without notice when necessary.

## Ultra-Precise Liquid Level Controller (UPLC-LM)



## INSTALLATION MANUAL

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**SpectraPure® Inc.** assumes no responsibility for water damage due to leaks or misapplications of our products. It is the user's responsibility to determine that the system is leak-free and properly installed.

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## TROUBLESHOOTING

Symptom	Remedy
Noise	The LiterMeter Pump Module is considered the quietest pump on the market, but the pump will produce some noise. Here are some suggestions to limit any perceived noise. 1. Do not attach the Pump Module to a box or enclosure that will act as a "speaker" and amplify the vibration of the pump. 2. Secure the attached tubing from vibrating against nearby walls, cabinets or other objects.
Pump is on, but rollers are not turning	Determine if drive shaft is rotating. If not: Call Technical Support. If shaft is turning: The pump head needs to be cleaned.
Pump is running and rollers are turning but no fluid is being pumped	1. Check the ends of the tubing. Kalkwasser or other substances may be blocking the lines at either tubing end. 2. Loose connection on the Suction side will cause it to lose its prime.
Pump runs but erratically with float operation	1. Reverse the Float connections at the Pump Module.

## ACCESSORIES & REPLACEMENT PARTS:

	Catalog No.	Optional Part	Price
	LM3-TRK	Tubing Replacement Kit	\$ 15

## Pump Head Maintenance



Fig. B-7



Fig. B-8



Fig. B-9



Fig. B-10



Fig. B-11



Fig. B-12

## SYSTEM FEATURES

- New and Improved Pump. Highest quality and accuracy
- Fully automatic operation - Set it and forget it
- All metal pump housing
- Virtually maintenance free
- No check valves to clog or seals to leak
- Self-priming and anti-siphoning
- High delivery pressure - over 55 psi
- Compact size and cool operation
- Kalkwasser safe
- No damage to the pump if run dry
- Quiet operation and low power consumption
- Complete system consumes less than 4 Watts when pump is on
- Extended **5-year Warranty**

## SYSTEM SPECIFICATIONS:

- **Pump Flow Rate:** approx. 250 ml/min. (8.45 oz./min.)
- **Dimensions:** 7.5" x 3.7" x 2.2" (19 cm. x 9.4 cm. x 5.6 cm.)
- **Maximum Daily Total (per Pump):** 360 liters (95 gals.)
- **Draw Height:** from maximum **25 feet** (7.7 meters) below
- **Delivery Height:** to maximum **60 feet** (18.5 meters) above
- Pump is closely controlled with high-precision float switch
- 115VAC / 12VDC wall-mounted power supply
- Uses less than 4 Watts of power when operating pump
- Can be powered by 12VDC battery

## OTHER APPLICATIONS

- Automatic Invertebrate Feeding
- Hydroponics Nutrient Dosing and Mixing
- Bio-Remediation
- Laboratory use

## SYSTEM DESCRIPTION

The UPLC-LM is a precision liquid dosing system with very fine level control of the same peristaltic pump used in the LiterMeter III. Level control has been refined to be less than one-tenth of an inch.

The UPLC-LM eliminates the manual drudgery of dosing Kalkwasser or trace elements, or just topping off evaporated water. The UPLC-LM automatically and reliably performs this task for you.

The UPLC-LM offers features found only on expensive laboratory pumps. Unlike noisy industrial metering pumps or IV pumps sold to the aquarium trades, the UPLC-LM was specially designed for critical aquarium dosing and is so quiet you can use it in your living room. Superior three-roller direct-motor drive eliminates noisy gears and improves flow accuracy and tubing life. It can be run dry without damage.

## OPERATION

Top-off replenishment will be added to your aquarium as consistently and as often as necessary to maintain a very precise water level.

A Primary Float Switch controls the on-and-off action of the Pump. A Back-Up Float Switch is used as a safety backup. The Pump is turned off and on as the water level rises and lowers about the Primary Float Switch. The Back-Up Float Switch is as named, a second shut-off switch just in case something happens to the Primary Float Switch. **These float switches are configured differently and can not be interchanged.** The Primary Float Switch also has an extra washer atop the float barrel to provide added stability. A dab of silicon sealant on the suction cups will help ensure stability and reliability.

## WARRANTY SUPPORT

As confident as we are in our Pump Technology, we request that you fill out and return the Warranty Card in order to take full advantage of our FIVE YEAR WARRANTY. This even includes tubing replacements for as long as you own the UPLC, or FIVE YEARS, whichever comes first.

## Pump Head Maintenance



Fig. B-1



Fig. B-2



Fig. B-3



Fig. B-4



Fig. B-5

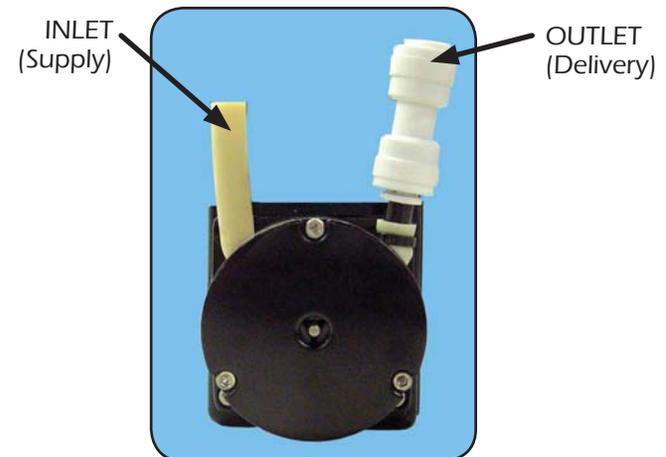
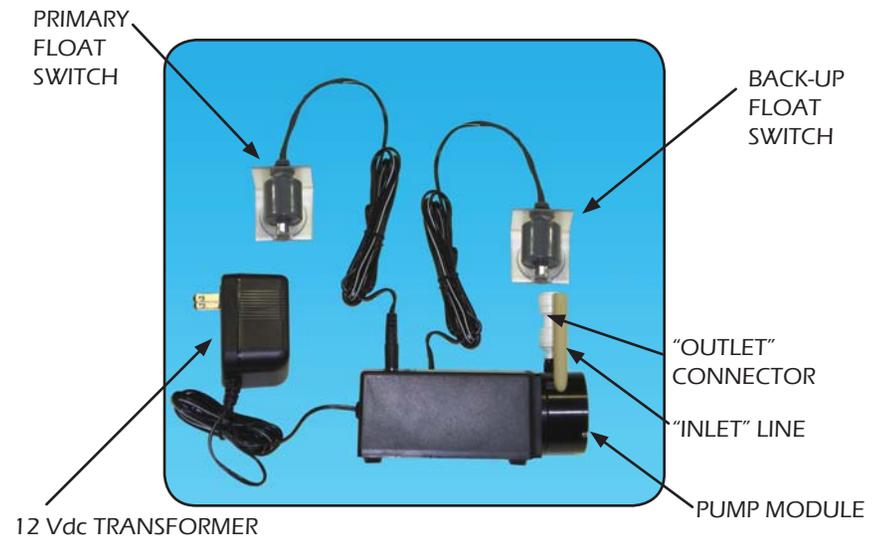


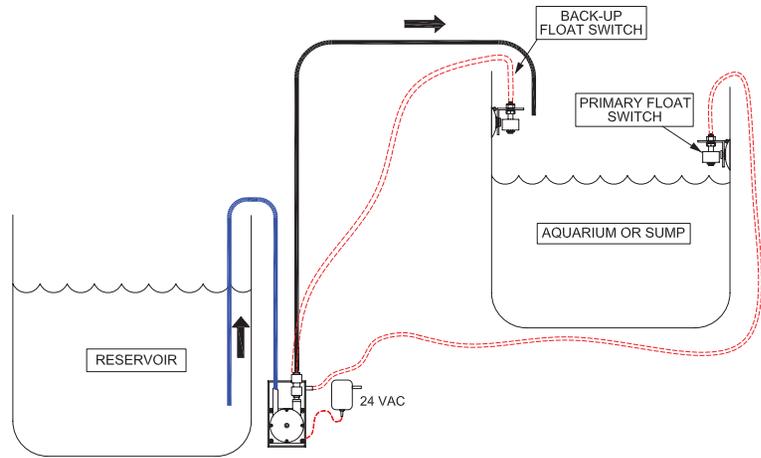
Fig. B-6

## SERVICING The Pump Module

It is recommended that the pump head be inspected and cleaned, or the tubing replaced per the following procedure.

- 1: If you are just inspecting the pump head, it is not absolutely necessary to disconnect the two tubings from the head, but it might make this task easier (Fig. B-1).
- 2: Use a 3/32" Allen Hex Key to remove the three bolts in the pump head and lift the pump head away from the motor shaft. (Fig. B-2)
- 3: Remove the three white rollers and tubing from the head.
- 4: If they are dirty, clean the three white rollers, tubing, lid and body with a cloth soaked in De-Solv-it® (available in most grocery stores), acetone, or petroleum spirits. Make sure you remove all gummy deposits, then rinse parts with water and dry. Next, wipe the motor shaft clean. If you use acetone, be careful not to spill on the plastic case or it will damage the finish. Keep cleaning fluids away from the bearing at the base of the motor shaft.
- 5: Remove the tubing from the pump head as shown in Fig. B-3.
- 6: Replace tubing assembly with a new or re-furbished tubing assembly. Reinstall by pinching the tubing one inch from the studded end and inserting it into the outlet port of the pump body. (Fig. B-4)
- 7: Pinch the other end of the tubing and insert it into the inlet port of the pump body. Manipulate the tubing so that it conforms to the inside diameter of the pump body. Be sure that the tubing is completely pushed down into the ports and the plastic "wear tag" is positioned to the inside. See Fig. B-5.
- 8: Place two of the three rollers into the pump body, pushing them against the tubing. Hold them in position with your left thumb and then push the third roller into place. (Fig. B-6 and B-7)
- 9: Carefully align and press the pump head assembly onto the motor shaft. (Fig. B-8)
- 10: Push the pump head firmly against the pump body and check for proper alignment. (Fig. B-9)
- 11: Use the 3/32" Allen Hex Key to re-install the three pump head bolts. (Fig. B-10)
- 12: Replace the union connector on the output port stud. (Fig. B-11)





## INSTALLING The System

- 1: Connect the 12 VDC, power supply to to any proper 120 VAC source.
- 2: Use a dab of Aquarium Sealant to securely affix the Primary Float Switch to the inside wall of the evaporating sump. Connect its cord to the jack on **THE TOP** of the Pump Module. Do not connect the Back-Up Float Switch at this time. Position the Primary Float Switch at the level you want the sump to be. Observe the operation of the Pump as you determine the exact point where the Pump is activated.
- 3: Use another dab of sealant and affix the Back-Up Float Switch to the sump wall, at least one inch above the Primary Float Switch, usually just higher than the normal drain-back level. Day-to-day, this float should not get wet - just one more assurance that, when called upon to work in an emergency, there will be no reason for it not to.
- 4: Plug the connector attached to the Back-Up Float Switch into the jack on **THE SIDE** of the Pump Module.
- 5: Press-fit the end of a length of ¼" polyethylene tubing into the rubber **INLET** hose at least ½". This is connected to the supply reservoir. This reservoir needs to be vented to prevent occlusion.
- 6: Insert the end of a piece of ¼" polyethylene tubing into the white connector on the **OUTLET** hose until firmly seated. This should lead to your aquarium (or sump).

- 7: You may re-position the Pump head by gently removing the four self-tapping screws located around the Pump head, rotating to the more desirable orientation, and re-installing the screws - be careful not to over-tighten!
- 8: The supply reservoir can be any size and located as much as 25 feet below the Pump Module. If the Pump Module is located at the same level as the supply tank, delivery to a height of 60 feet above the Pump Module is possible.
- 9: Although the peristaltic pump inherently prevents back-flow conditions, it is always good practice to locate the Pump Module above and to the side of the supply vessel and aquarium (or sump). Providing an air-gap between the hose end and the top-most water level in the aquarium is also accepted practice. Note: when dosing Kalkwasser, the end of the tubing will eventually become calcified and interfere with the flow. To prevent this, it is suggested that the end of the dispensing tubing be inspected and cleaned periodically.

**This system is not water-proof. Saltwater damage is not covered in our five year warranty. Do not let the Pump Module fall into the water!**

