



# VIPER SL SERIES

## INSTALLATION MANUAL



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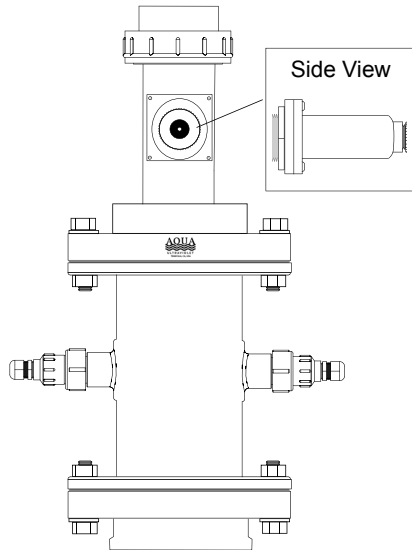
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### BLOG

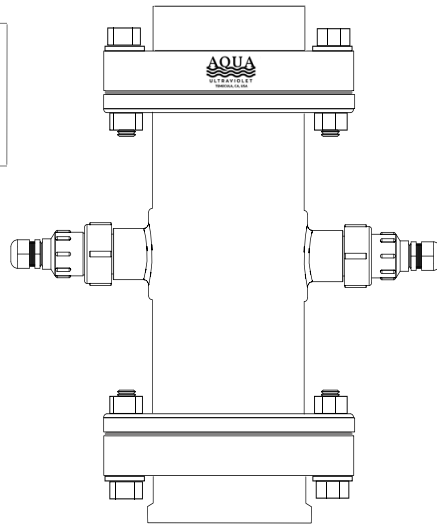
Read about us at  
[www.aquaultraviolet.com/blog](http://www.aquaultraviolet.com/blog)

# VIPER SL 400 WATT STAINLESS STEEL UNITS

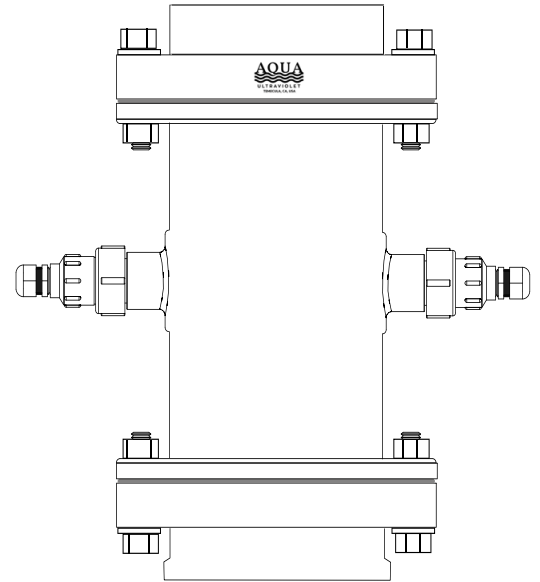
2" Stainless Steel



3" Stainless Steel

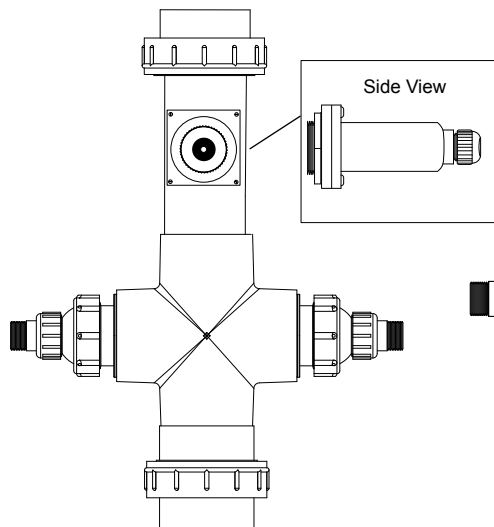


6" Stainless Steel

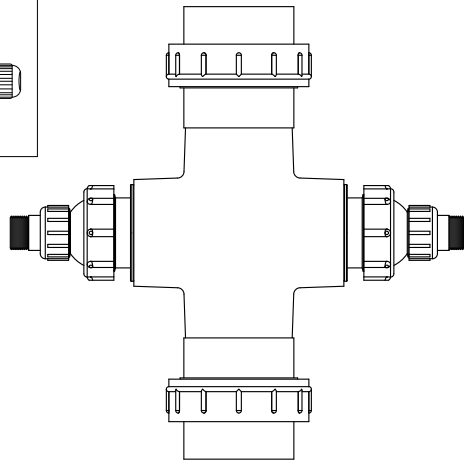


# VIPER SL 400 WATT PLASTIC UNITS

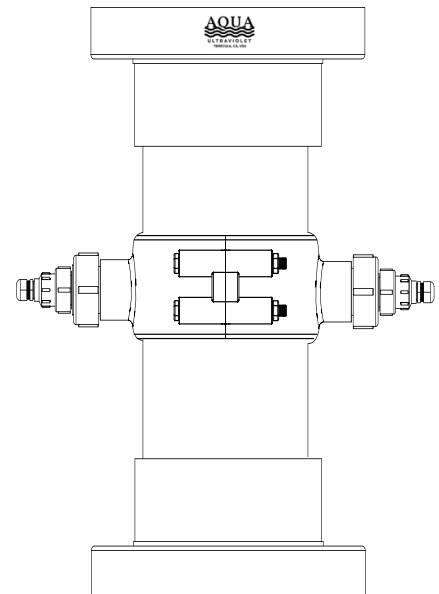
2" Plastic



3" Plastic



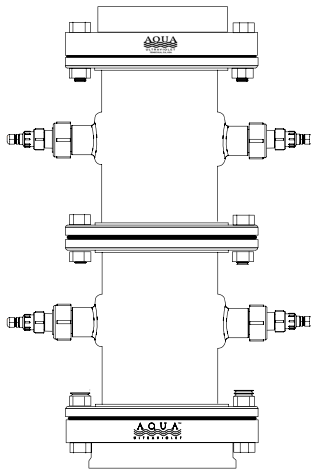
6" Plastic



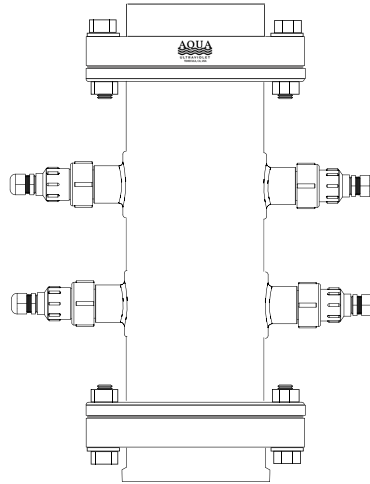
- ALL VIPERS COME COMPLETE WITH UNIT, TRANSFORMER AND FLOW SWITCH
- WIPER OPTION AVAILABLE
- CUSTOM UNITS AVAILABLE

# LARGE VIPER STAINLESS STEEL UNITS

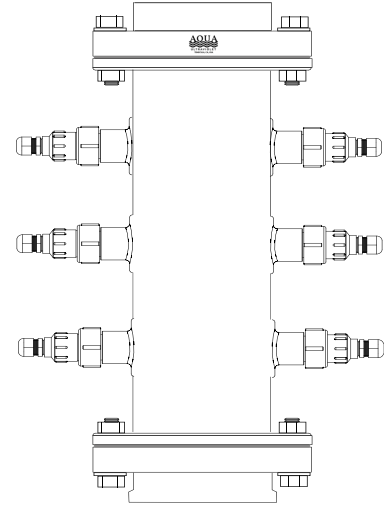
800 WATT  
3" Stainless Steel Multi Unit



800 WATT  
6" Stainless Steel

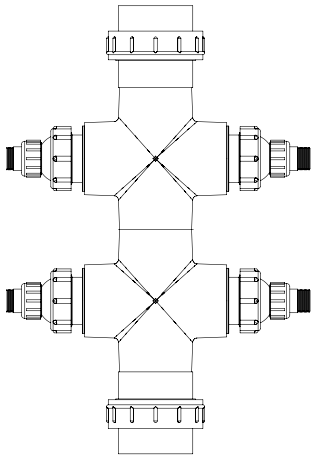


1200 WATT  
6" Stainless Steel

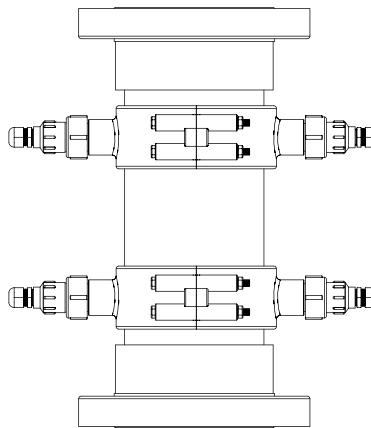


# LARGE VIPER SL PLASTIC UNITS

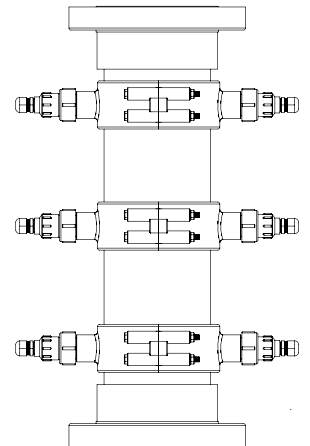
800 WATT  
3" Plastic Multi Unit



800 WATT  
6" Plastic

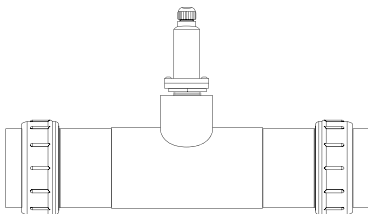


1200 WATT  
6" Plastic

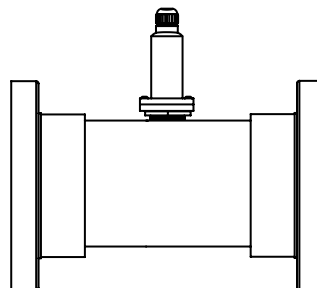


# FLOW SWITCHES

3" Flow Switch



6" Flow Switch



Transformer



- ALL VIPERS COME COMPLETE WITH UNIT, TRANSFORMER AND FLOW SWITCH
- WIPER OPTION AVAILABLE
- CUSTOM UNITS AVAILABLE

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**CAUTION:**  
This unit must be installed by a licensed contractor/electrician only. When installing unit, make sure to follow all applicable electrical codes.

**THANK YOU FOR PURCHASING THE BEST ULTRAVIOLET SYSTEM**

**WE CAN HELP YOU**

Returning product is expensive and time consuming for you, your retailer and for us, the manufacturer. Should you encounter any problems with your product, please call our toll free "HELP" line for assistance. **PLEASE DO NOT** return your product to the store! Your dealer or distributor cannot offer any warranty work or exchanges on your product.



**In the US please call**  
**TOLL FREE (800) 454-2725**  
**(951) 296-3480 Outside the U.S.**  
or email [info@aquauv.com](mailto:info@aquauv.com)

**THANK YOU!**

**NAVIGATING THIS MANUAL**

Various signposts and icons are located throughout the Viper Instruction Manual to assist you. These icons appear in the text to indicate important or especially helpful items. Here's a list of the icons and their functions:



**CAUTION -**

The caution icon is your warning of a potential problem or pitfall.



**HINT -**

Hints provide extra knowledge that make the installation process easier.



**WARNING -**

When you see the warning icon go no further without applying the specific information to your install.



**NOTE -**

Notes provide additional or critical information and technical data on the current topic.

# WARRANTY INFORMATION

---

Aqua Ultraviolet systems are warranted against failure due to defects in materials and/or workmanship during the warranty period. This warranty covers defects occurring under normal use and applies to the original retail purchaser and may not be transferred. The warranty and remedies set forth herein are conditional upon proper storage, installation, use, maintenance and conformance with the applicable use. It will be based upon Aqua Ultraviolet's discretion as to whether the defects are of manufacturing origin. Any damages due to shipping and handling, packing, or installation are not covered by this warranty.

This warranty does not apply to appearance or accessory items. This warranty does not include damage due to handling, transportation, unpacking, set up, installation, repair or replacement of parts supplied by any other than Aqua Ultraviolet, improper maintenance, incorrect line voltage, modification, or repairs by the purchaser, abuse, misuse, neglect, accident, fire, flood, or other acts of God.

Any oral statements about product made by the seller, the manufacturer, their representatives or any other parties do not constitute warranties and shall not be relied upon by the user and are not part of this contract.

Neither the seller nor the manufacturer shall be liable for any injury, loss or damages, direct, incidental or consequential including but not limited to lost profits, lost sales, injury, inability to use the product and the user agrees that no other remedy is available.

Before installing, the user shall determine the suitability of the product for their intended use and the user shall assume all risk liability whatsoever in connection therewith.

To validate this warranty, mail the enclosed warranty card within 10 days of purchase along with proof of purchase (copy of sales receipt).

## **Warranty Period:**

Housing: Limited lifetime warranty on housing against Ultraviolet degradation.

Complete Unit: One year from the date of purchase or 18 months from manufacturing date.

## **Limitations:**

Warranty does not cover any malfunction from improper installation (we recommend that a licensed electrician install your system to the specifications outlined in this owners guide).

Warranty only applies to the original end user and is not transferable.

Warranty does not cover repairs done by anyone other than Aqua Ultraviolet.

Warranty is void if system is not plugged into a G.F.C.I. (Ground Fault Current Interrupter).

Warranty may not be modified by verbal statements by Aqua Ultraviolet, distributors, retailers, their agents or any other party.

Warranty covers the repair or prorated replacement of the Aqua Ultraviolet products. Aqua Ultraviolet denies all liability for any other loss including but not limited to loss of equipment, income, livestock or personal injury.

Warranty does not cover damage caused by rust or other non-uv causes.

There is no warranty on the Quartz Sleeve.

There is no warranty on broken lamps. Lamps are prorated by usage.

## **Warranty is voided by the following:**

**Flow Switch is tampered with, disabled or removed.**

**Product labels defaced or removed.**

**Housing has been painted.**

**Product is improperly installed or maintained by user or agent.**

**Product abused, misused or damaged by user or their agent.**

**Product damage caused by electrical surges, electrical spikes, electrical brown outs or improper voltage.**

**Electrical cord has been cut.**

**Minimum flow rate requirements not met.**

**Unit was run without water.**

Any implied warranty granted under state law including warranties of merchantability or fitness for a particular purpose are limited to one year from the date of purchase or 18 months from the date of manufacture or as otherwise stated in the above warranty. Aqua Ultraviolet is not responsible for direct, indirect, incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts and/or does not allow the exclusions or limitations of incidental damages so the above limitation and exclusion may not apply to you. This warranty gives you special legal rights and you may also have other rights that vary from state to state.

## Warranty Returns or Repair Returns:

Please call Aqua Ultraviolet at (800) 454-2725 for a "Return Merchandise Authorization" number (RMA). You must have a valid RMA from an Aqua Ultraviolet customer service representative before sending any product in for warranty or repair. Please have your serial number, date of purchase and product type available when calling for an RMA number.

All warranty returns or repair returns must come freight prepaid with an RMA number outside clearly marked on the box. All other returns will be refused. Aqua Ultraviolet will not be liable for any shipping cost to return warranty or repair items. Include a note in the box with your RMA number, name, address, daytime phone number and brief description of the reason for return or repair.

Be sure to return product in the same packing or similar packing and insure the package (we recommend sending it UPS). If you do not have or can't locate proper packaging, please call our customer service department and we will be more than happy to send you packaging for a minimal charge.

Aqua Ultraviolet shall not be responsible for damage or loss done by the shipper. Nor shall Aqua Ultraviolet be responsible for merchandise that arrives damaged due to improper packaging. All claims for loss and damage must be filed by the customer with the shipper.

If unit is found to be out of warranty we will contact you with the cost of repair. Your authorization is required prior to making any repairs.

# INTRODUCTION

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*We at Aqua Ultraviolet would like to take the time to thank you for purchasing the finest ultraviolet system on the market.*

For over thirty years, Aqua Ultraviolet has manufactured ultraviolet systems used in various industries, including aquaculture, public and commercial aquariums, educational institutions, government agencies and research organizations throughout the world.

Aqua Ultraviolet sterilizers are used as a control to destroy single celled organisms, water borne bacteria, viruses, algae, fungi and protozoa. Aqua Ultraviolet sterilizers are recommended for both fresh and salt water systems as well as ponds. There are no residual effects when using an Aqua Ultraviolet Sterilizer. Ultraviolet will not affect Bio-filters or lower fish immune systems!

## HOW ULTRAVIOLET WORKS

The ultraviolet lamp emits a germicidal ray which alters or disrupts the DNA or RNA of single celled organisms such as algae, bacteria and protozoa. By properly implementing an Aqua Ultraviolet system in-line, these organisms can be eradicated effectively without any harmful residuals.

Your Aqua Ultraviolet system was made to work as a control for green water and single celled organisms. This unit will not, nor will any other unit, completely sterilize your pond/aquarium as the pond/aquarium itself is not a sterile environment. As a control, this unit will effectively lower your water's bacterial count allowing your fish to stay healthier with less risk of disease.

The Aqua Ultraviolet sterilizer works better on filtered water. Any debris in the water can inhibit UV transmission.



**CAUTION: READ ALL INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION OR OPERATION.**



**NOTE: THE QUARTZ SLEEVE MAY NEED PERIODIC CHECKING AND CLEANING DUE TO CALCIUM AND MINERAL BUILDUP WHICH WILL INHIBIT UV TRANSMISSION.**

The manual should answer most of the questions that you may have about the installation, operation and use of your new Aqua Ultraviolet Sterilizer. View our installation videos at [www.aquauv.com](http://www.aquauv.com). If you need technical support, we offer this service for free by telephone (800) 454-2725, or by fax (951) 296-3490 M-F 8:00am - 4:30pm PST except selected holidays. You may reach us through the web at [www.aquauv.com](http://www.aquauv.com) or [info@aquauv.com](mailto:info@aquauv.com).



## Fresh Water UV Sizing Chart

VIPER SL UV UNITS	Size Fresh Water Sterilizer * In Gallons	30,000 $\mu\text{w}/\text{cm}^2$ (EOL) GPH	Fresh Water Pond Clarifier ***	
			Gallons	Min Flow GPH
Viper SL 400 Watt	14,400 - 30,000	17,500	50,000	7,500 GPH
Viper SL 800 Watt	28,800 - 60,000	35,000	100,000	7,500 GPH
Viper SL 1200 Watt	43,200 - 90,000	52,500	150,000	7,500 GPH

### Minimum flow rate for all Vipers 125 GPM - 7,500 GPH

Use the clarifier column when the pond is partially in shade and has 50% plant coverage. This will improve water clarity resulting in a natural looking water garden environment.

Use the sterilizer column for crystal clear water and bacterial control, in pond and aquarium environments.

Sterilizer numbers are based on turning the water over a minimum of 1 to 1-1/2 times per hour for optimal results.

Clarifier numbers are based on turning the water over every 2 to 3 hours.

UV dosage is calculated at the end of lamp life (14 months).

## Salt Water UV Sizing Chart

VIPER SL UV UNITS	**Salt Water Tank Gallons	30,000	45,000	60,000	75,000	90,000
		$\mu\text{w}/\text{cm}^2$ (EOL) GPH	$\mu\text{w}/\text{cm}^2$ (EOL) GPH	$\mu\text{w}/\text{cm}^2$ (EOL) GPH	$\mu\text{w}/\text{cm}^2$ (EOL) GPH	$\mu\text{w}/\text{cm}^2$ (EOL) GPH
Viper SL 400 Watt	3,600	17,500	11,667	8,750	7,000	5,833
Viper SL 800 Watt	7,200	35,000	23,333	17,500	14,000	11,667
Viper SL 1200 Watt	10,800	52,500	35,000	26,750	21,000	17,500

### Minimum flow rate for all Vipers 95 GPM - 5,700 GPH

**Reef Tanks:** A UV rated in the 30,000 - 45,000 columns is ideal for the reef environment. UV's rated at higher kill rates will destroy the planktonic food supply for the reef.

**Marine Fish Tank (No Reef or Live Rock):** A UV rated in the 75,000 to 90,000 columns will be the most effective at controlling fish disease.

All UV dosages are calculated at end of lamp life (14 months).

# FREQUENTLY ASKED QUESTIONS

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## **Where do I install my UV?**

The best place to install your Viper SL is after the filter and lower than the return water line. If an after the filter installation is not feasible, your sterilizer can be installed before the filter, but consideration must be given to the total dissolved solids in the water that may inhibit UV transmission.

## **Is the Flow Switch Necessary?**

YES, The Viper SL Units are water cooled and the flow switch turns the Viper SL off when the flow is below the minimum requirement of 95 GPM. The Warranty is voided if the Flow Switch is tampered with, disabled or removed.

## **Do I have to turn my UV off when I clean my filter?**

Yes, the Viper SL Units are completely water cooled, and should not be run without water or when water is at a stand still for any length of time. This may cause extensive, irreversible damage to the unit and is not covered under warranty.

## **Do I install my UV vertically or horizontally?**

The Viper SL Ultraviolet Sterilizer must be installed horizontally.

## **What should my flow rate be on my pond or fresh water aquarium?**

The optimum flow rate on your pond or fresh water aquarium is to turn over the volume of water once every hour or a minimum of once every one and one half hours. Please also note the minimum flow rate requirement of 95 gallons per minute.

## **What should my flow rate be on my salt water aquarium?**

Your minimum flow rate should be 3 to 5 times the volume of water per hour. Please also note the minimum flow rate requirement of 95 gallons per minute.

## **Should I bypass part of my water through the UV and the rest back to the water supply?**

No. Our UV's are specifically designed to handle high flow rates for easier installation and the best water quality.

## **Is this unit submersible?**

Not this specific series.

## **Does the UV light have any residual effect to the fish?**

UV only effects what passes through the chamber. There is no residual effect from UV light.

## **Does the UV kill good bacteria?**

Ultraviolet light does not discriminate about what it destroys. If good bacteria passes by the light it will be destroyed. Beneficial bacteria are colonized in your filter and along the sides and bottom of your pond. The only time these will be affected is if they become free floating. All the bacteria in the filter are safe because UV has no residual.

## **How often should I change my lamp?**

The lamp, quartz sleeve and seals should be replaced after 14 months of continuous use.



**IMPORTANT: Please Read Before Beginning Installation**



**NOTE:** All units are quality tested at the factory. All units are rated up to 50 PSI.



**CAUTION:** You must install this unit in the described manner, if you choose to install your unit in any other manner, the unit may malfunction and cause irreversible damage that is not covered under warranty.



**WARNING:** Before mounting or installing your unit check the quartz sleeve. Do not try to install, mount or operate this unit if the quartz sleeve appears to be broken or cracked. Contact your dealer, for a new Quartz Sleeve.



**CAUTION: PERFORM A LEAK TEST: INSTALL THE UNIT WITHOUT THE LAMP AND BALLAST. PUMP WATER THROUGH. CHECK FOR LEAKS THEN INSTALL LAMP AND BALLAST! READ AND FOLLOW ALL INSTRUCTIONS AND/OR SAFETY INSTRUCTIONS FIRST!**



**CAUTION:** Your Aqua Ultraviolet unit is not submersible. If this unit falls into the water, turn the main power off and then retrieve it. Do not attempt to use this sterilizer if it has been submerged. Do not operate this unit if it has a damaged cord or plug, if it is malfunctioning or if it has been dropped or been damaged in any manner.



**HINT:** The UV should be installed after the filter on the return line. This ensures the water is clear of debris that could inhibit the UV's effectiveness. The UV can be installed before the filter, however, consideration must be given to the total dissolved solids that may inhibit UV transmission.



**CAUTION: THIS UNIT MUST HAVE WATER FLOWING THROUGH IT OR IT WILL BURN UP. THIS PROBLEM IS NOT COVERED UNDER WARRANTY AND YOU WILL NEED TO PURCHASE A NEW UNIT!**



**Warranty is Void if the Flow Switch is tampered with, disabled or removed.**

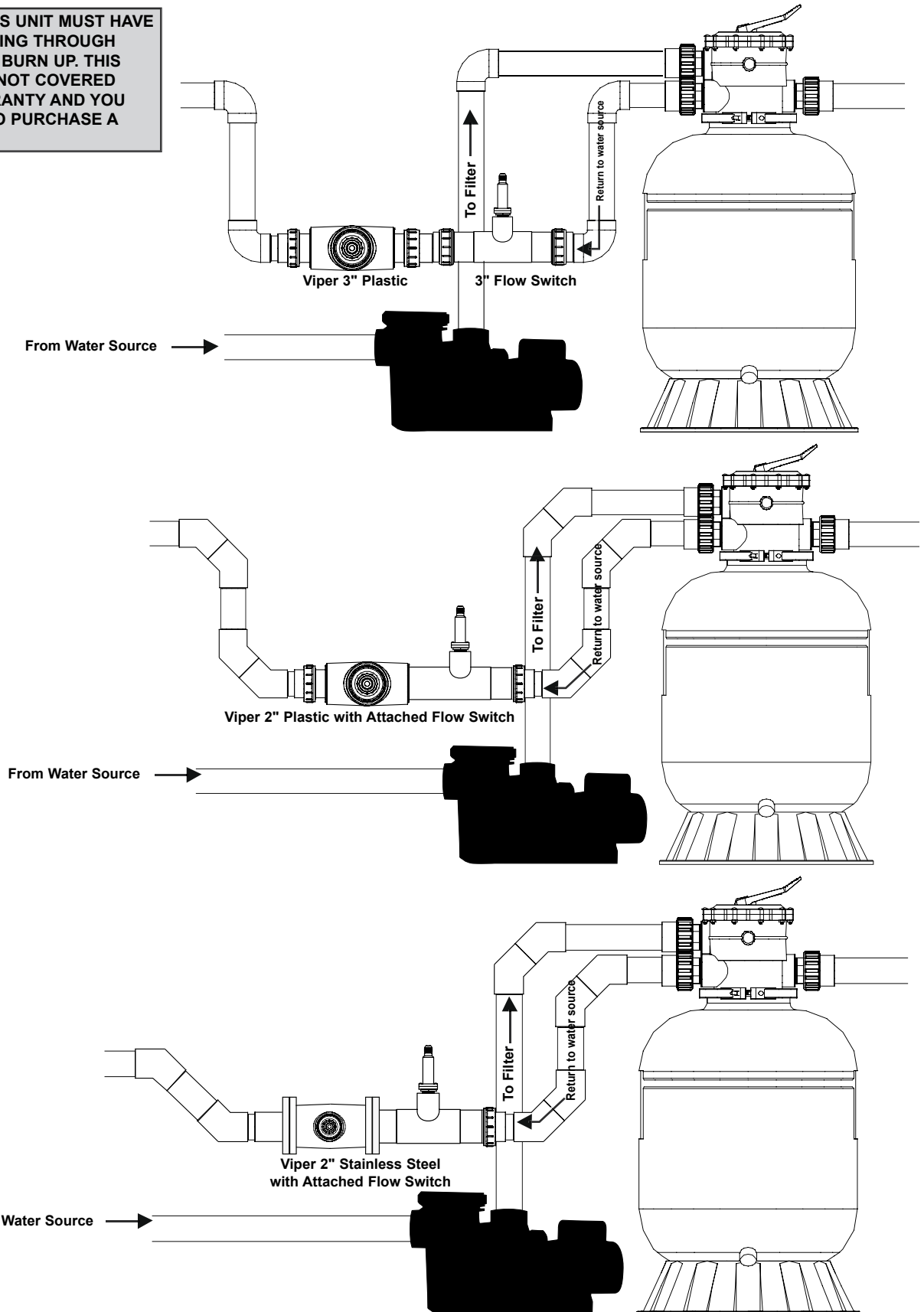
# INSTALLATION REQUIREMENTS



**NOTE:** Your Viper SL Unit must be installed lower than the return water line in one of the following configurations, to ensure the chamber stays full of water. Installing your Viper SL in any other manner may void the warranty, and may cause fire.

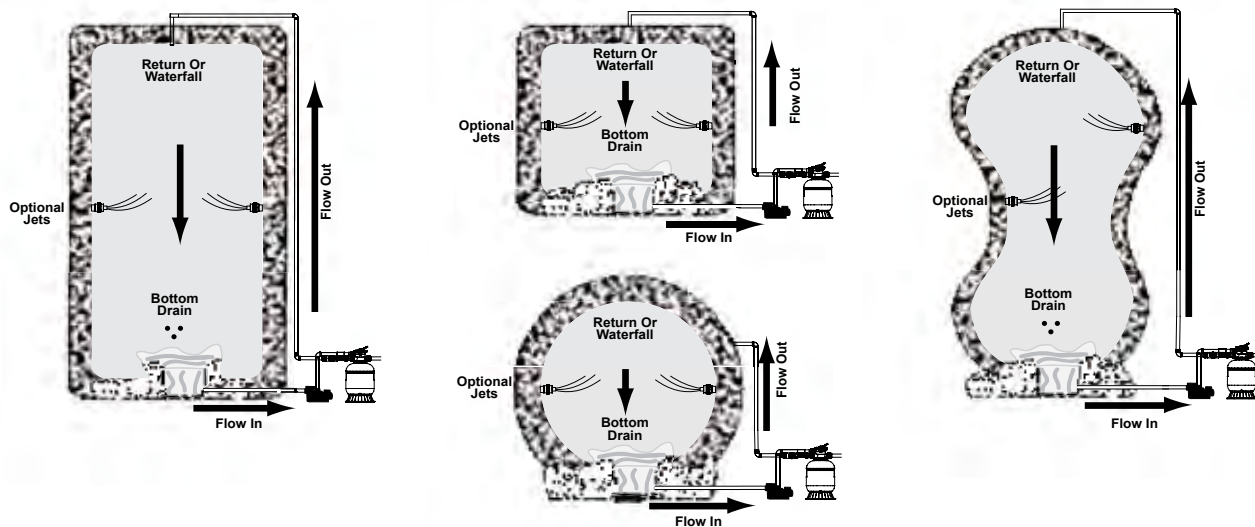


**CAUTION:** THIS UNIT MUST HAVE WATER FLOWING THROUGH IT OR IT WILL BURN UP. THIS PROBLEM IS NOT COVERED UNDER WARRANTY AND YOU WILL NEED TO PURCHASE A NEW UNIT!



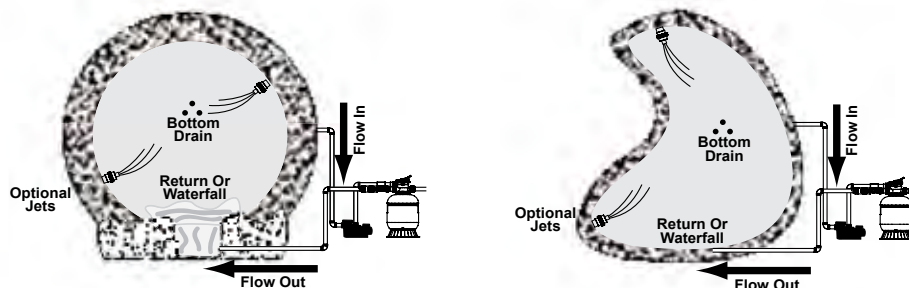
RECOMMENDED POND LAYOUTS

Correct Installation



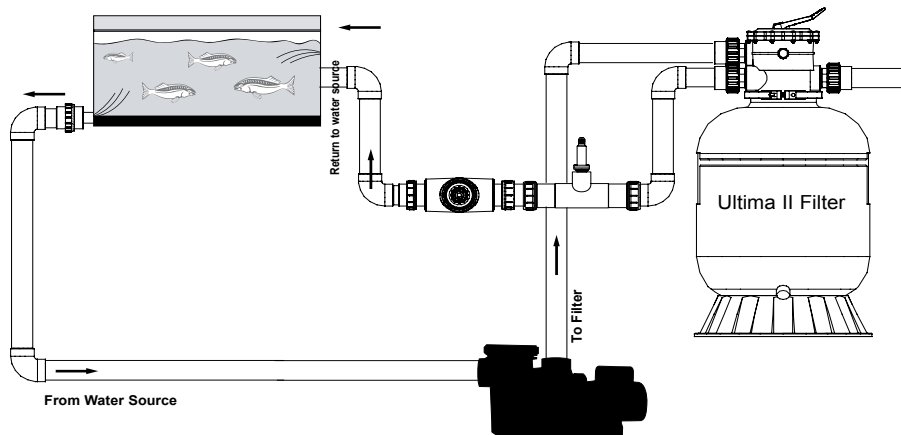
The drain should pick up on the bottom of one side and return to the top of the opposite side.

Incorrect Installation



The Bottom drain pickup is too close to return.

RECOMMENDED AQUARIUM LAYOUT

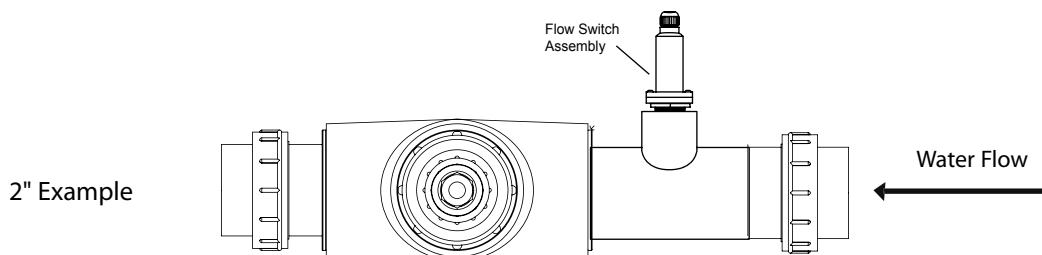


Pickup on the bottom of one side of the tank and return to top of the opposite side of the tank.

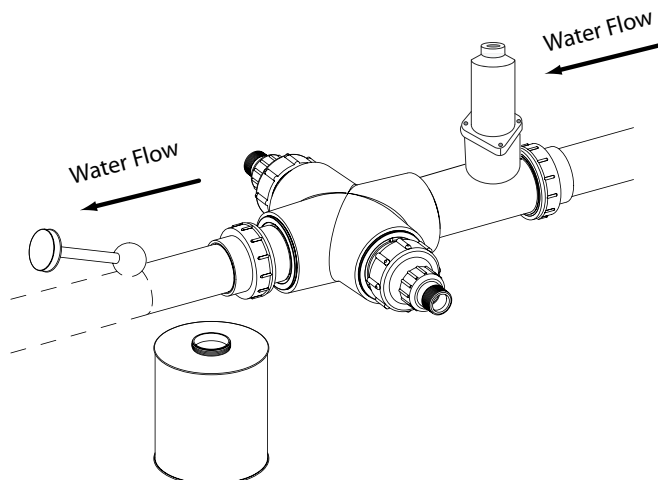
# VIPER SL SERIES INSTALLATION INSTRUCTIONS

**OVERVIEW:** This unit can only be installed horizontally, **DO NOT** install vertically. Do not install at ground level to prevent it from lying in standing water. Your system should be easily accessible and as close to the filter as possible. Do not submerge.

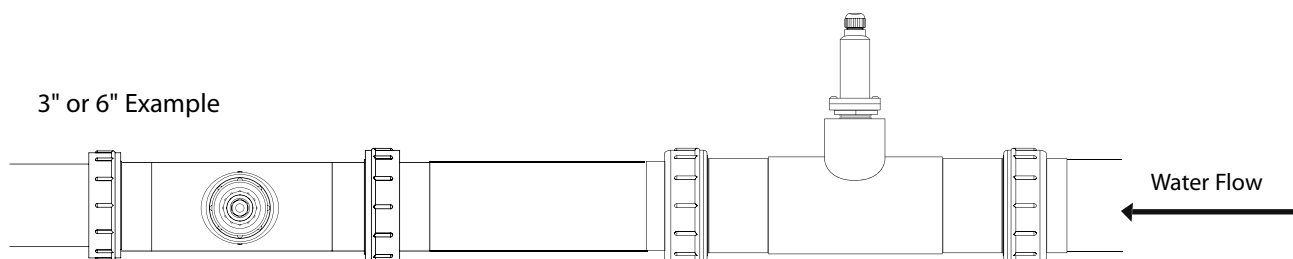
1. MOUNTING: Make sure water flow direction corresponds with the arrow below.



2. WATER LINE CONNECTION: Glue union to your pipe making sure water flow matches the arrow's direction below.



3. LEAK TESTING: Do not install lamp or electrical components yet. After all the connections have been made and the glue dries, turn the pump on and run it for five minutes to check for leaks.



When installing a 3" Viper or larger, the Flow Switch is not attached to the unit body and must be installed in line before the unit.



**CAUTION:** If there are no leaks, turn the pump off and continue to the ELECTRICAL INSTALLATION on page 12. If your unit leaks turn to the next page for leak solutions.

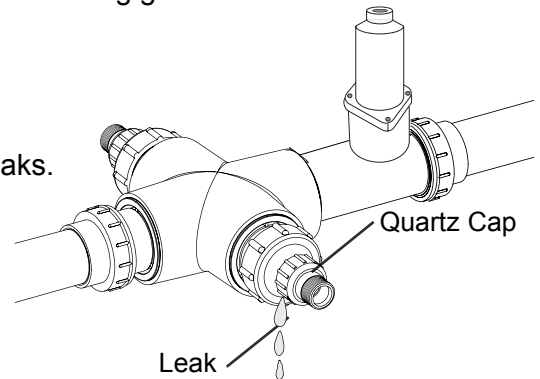


**WARNING:** DO NOT CONTINUE UNTIL YOUR INSTALLATION PASSES THE LEAK TEST

If your unit is leaking turn off your pump and troubleshoot using the following guide.

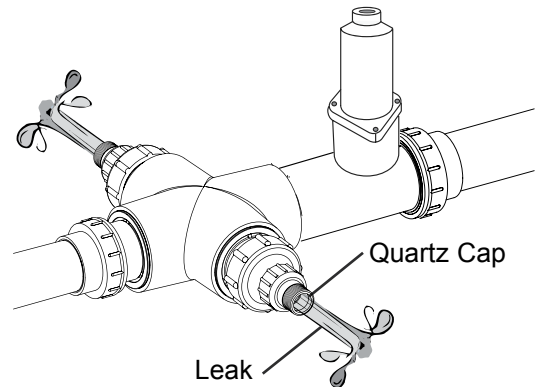
**A. If your unit leaks from the Quartz Cap:**

1. Hand Tighten Quartz Cap until leak stops
2. Turn the pump on and run it for 5 minutes to check for leaks.



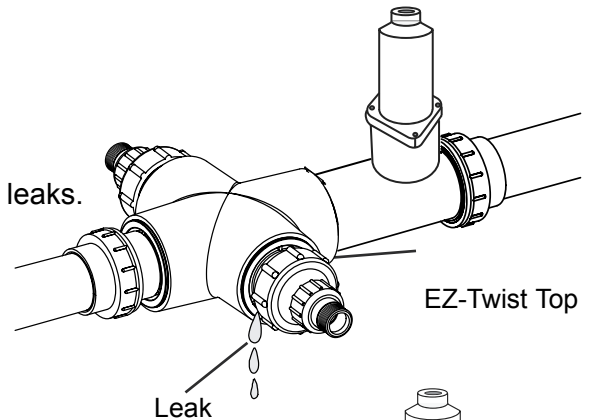
**B. If your unit leaks from the Quartz Sleeve:**

1. Check Quartz Sleeve for cracks or breakage. If there are cracks or breakage, a new Quartz Sleeve will be needed.
2. Contact a dealer to purchase a new Quartz Sleeve.



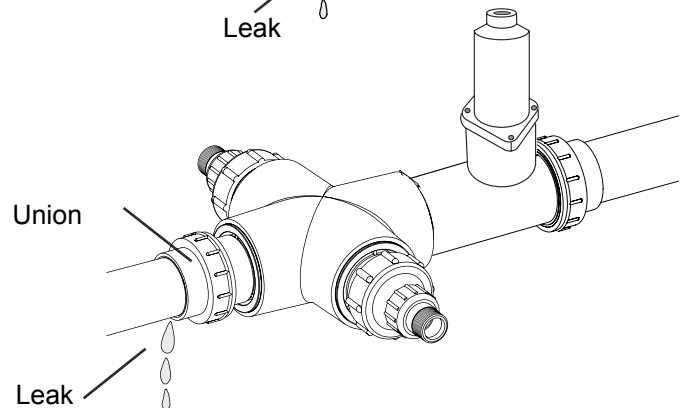
**C. If your unit leaks from the EZ-Twist Top:**

1. Check that the O-ring is in the EZ- Twist Top
2. Hand tighten EZ-Twist Top until leak stops
3. Turn the pump on and run it for 5 minutes to check for leaks.



**D. If your unit leaks from the Union:**

1. Please contact our customer service at: (800) 454-2725



**WARNING: DO NOT CONTINUE UNTIL YOUR INSTALLATION PASSES THE LEAK TEST**

# ELECTRICAL INSTALLATION



**CAUTION:** This unit should be installed by a licensed electrician.



**CAUTION:** The 220V transformer must be hardwired into a dedicated 20 amp line of the appropriate voltage and hertz. (The 110V transformer does not need to be hardwired.)



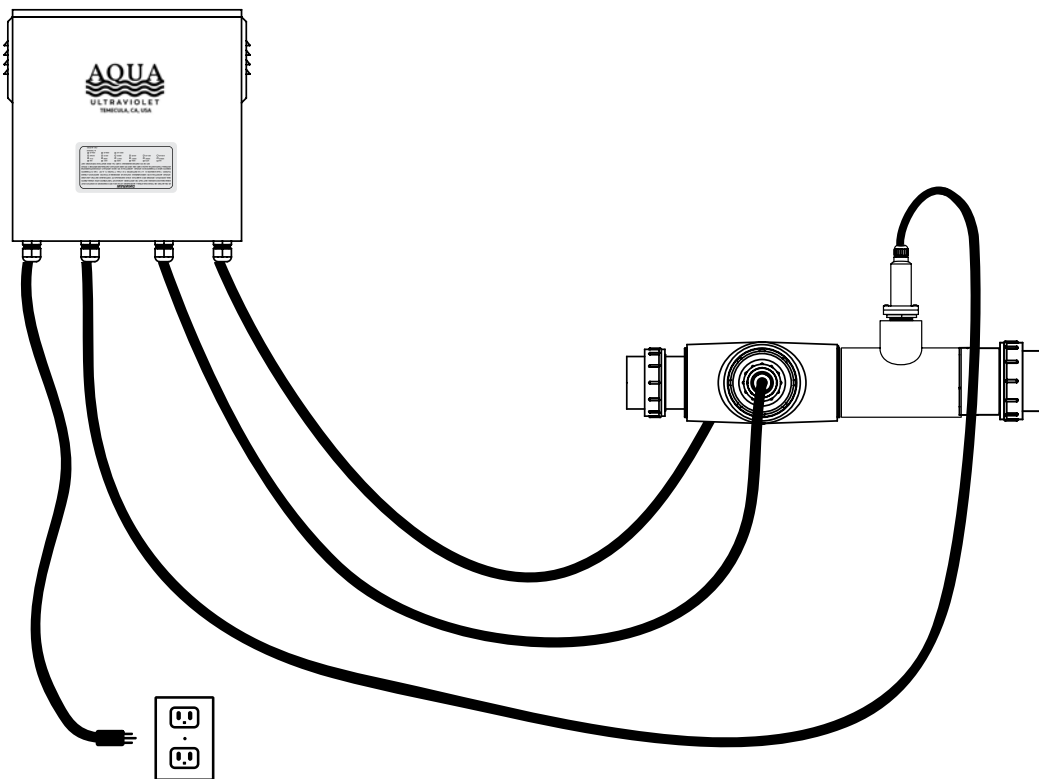
**CAUTION:** The 220V transformer must be hardwired into a dedicated line with a steady voltage output. If the voltage is not steady or the unit is not wired into a clean line irreversible damage may occur to the unit which is not covered under warranty.



**CAUTION: GFCI Information:** The warranty is null and void if the Viper SL unit is not plugged into a G.F.C.I. (Ground Fault Circuit Interrupter). A Surge Suppressor should be added for extra protection, it is not required, but recommended.

**1. COVER REMOVAL:** Remove the cover from the transformer box to allow access to screw holes located on the back panel of the box. The cover slides down.

**2. MOUNTING:** Mount the Transformer vertically on to a wall or other sturdy surface a minimum of 4 feet away from any dwelling. Make sure the transformer is close enough to attach to the UV unit.



G.F.C.I. Outlet

**3. 220V TRANSFORMER:** Must be hardwired into a dedicated 20 Amp Line of the appropriate voltage and hertz.

**4. 110V TRANSFORMER:** Plug into 3 prong G.F.C.I. Outlet.

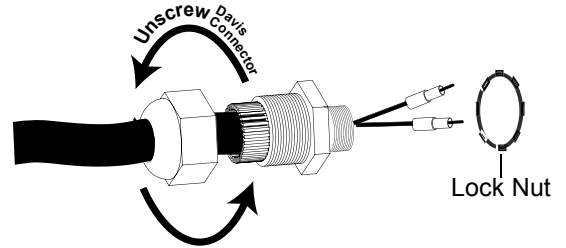


## INSTALL FLOW SWITCH CONNECTION

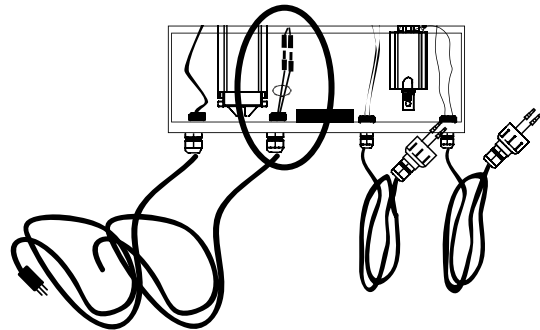


Warranty is Void if the Flow Switch is tampered with, disabled or removed.

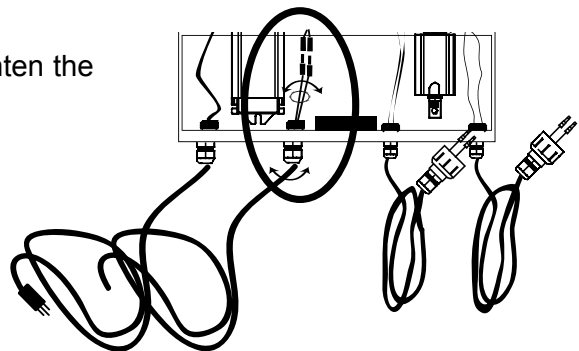
5. Unscrew the Davis Connector, and lock nut.



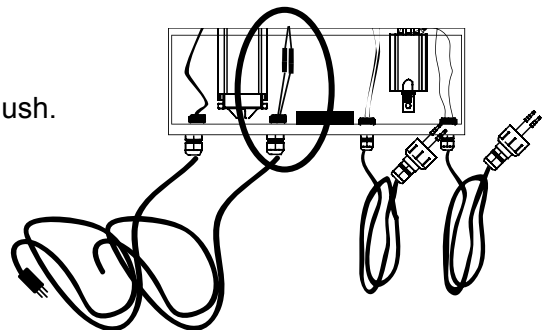
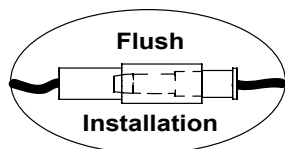
6. Thread the flow switch wire and the Davis Connector fitting through the transformer opening.



7. Tighten the lock nut inside the transformer and retighten the Davis Connector.



8. Make sure all connections are tight. Plug the Clip Connectors together, making sure the connection is flush.



9. Return the cover to the transformer box.

# INSTALLING THE LAMP



**NOTE:** If you touch the lamp use denatured alcohol and a soft cloth to clean it. If you do not clean the lamp the fingerprints will become etched into the glass which will diminish UV Output and may cause premature lamp failure.



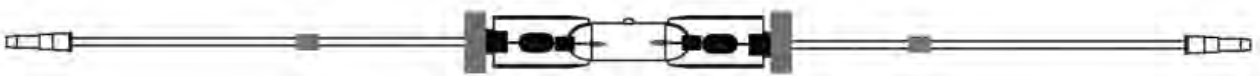
**NOTE:** Lamps and Quartz Sleeves should be handled with care. Lamps and Quartz Sleeves are not warranted against breakage and damage.



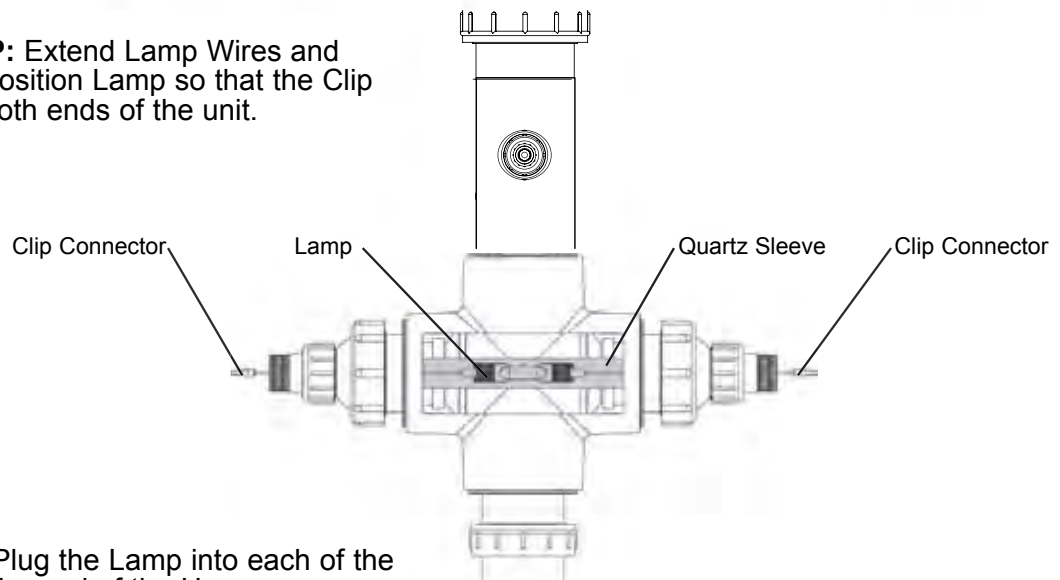
**WARNING:** Do not install the lamp at an angle (even a slight angle); this may cause a U shaped crack at the end of the quartz sleeve, or possible breakage of the lamp. If this should happen, do not proceed with the installation. Purchase a new Quartz Sleeve or Lamp from your dealer and refer to the proper installation instructions.



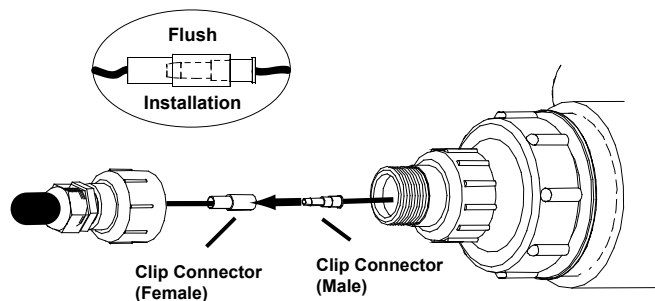
**NOTE:** Do not force the Lamp into the Quartz Sleeve.



**1. INSTALLING THE LAMP:** Extend Lamp Wires and insert into Quartz Sleeve. Position Lamp so that the Clip Connectors are visible on both ends of the unit.



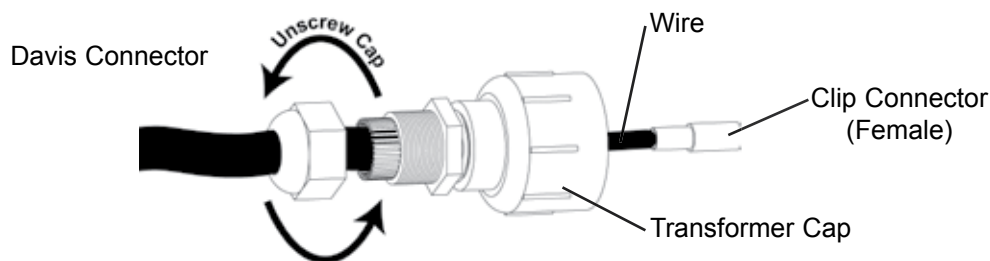
**2. CONNECT THE LAMP:** Plug the Lamp into each of the Clip Connectors located at the end of the Harness. Make sure the Lamp is plugged in all the way and flush with each of the Clip Connectors.



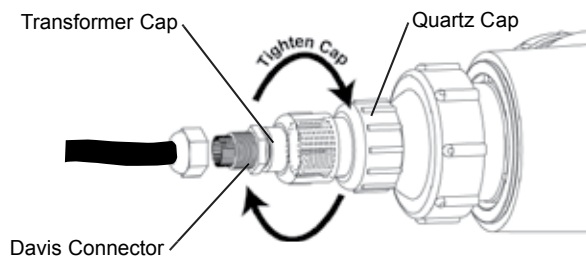
**WARNING:** Be careful when installing the lamp. If the lamp is not plugged in all the way this may cause damage to the unit and is not covered under warranty, nor is any other damage caused by improper installation.

## INSTALLING THE LAMP - Continued

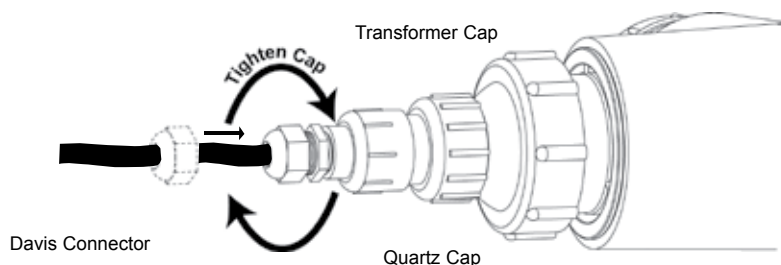
**3. DISCONNECT THE DAVIS CONNECTOR:** Unscrew the Davis Connector located just above the Transformer Cap. This will allow the Transformer Cap to turn without kinking the Harness cord.



**4. CONNECT THE TRANSFORMER CAP:** Twist on transformer cap. Do not over tighten. This is a connection only and is not in contact with water. Do not use a pipe wrench, pliers or any other tool, hand tighten only.



**5. Tighten the Davis Connector** located just above the Transformer Cap.



**6. FINAL LEAK CHECK:** Do not plug the sterilizer into power yet, turn on pump and check for leaks again. For illustrations, **SEE PAGE 11.**

- a. If you have a leak, return to **Trouble Shooting Leaks** on page 11. Carefully examine this unit after installation. This unit should not be plugged in if there are any leaks on any part of this unit.
- b. If there are no leaks, turn on power.



**CAUTION:** Do not look at or handle UV Lamps when lit outside of the housing. Considerable Ultraviolet energy is emitted which may produce severe sunburn and/or conjunctivitis. As long as the UV Light is in its housing it is 100% safe for humans and fish.



**NOTE:** The average life expectancy of Aqua Ultraviolet Lamps is 14 months of continuous operation. After 14 months the lamp may still light, but the germicidal rays are diminished.



**NOTE:** We recommend that the UV Sterilizer be used in continuous operation 24 hours a day, 7 days a week. Frequent Starts and Stops may shorten the life of your lamps.



**WARNING:** If you are medicating your fish, we recommend shutting down the sterilizer as the UV Radiation may affect the treatment.



**CAUTION:** Do not use the Aqua Ultraviolet Sterilizer for anything other than its intended use.

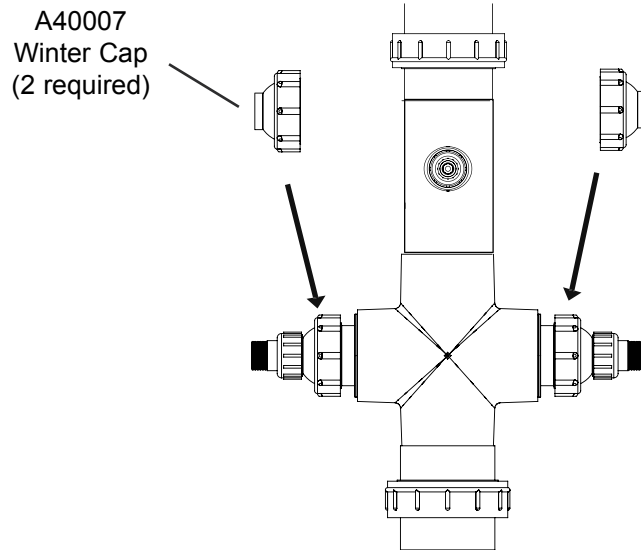
# WINTERIZING



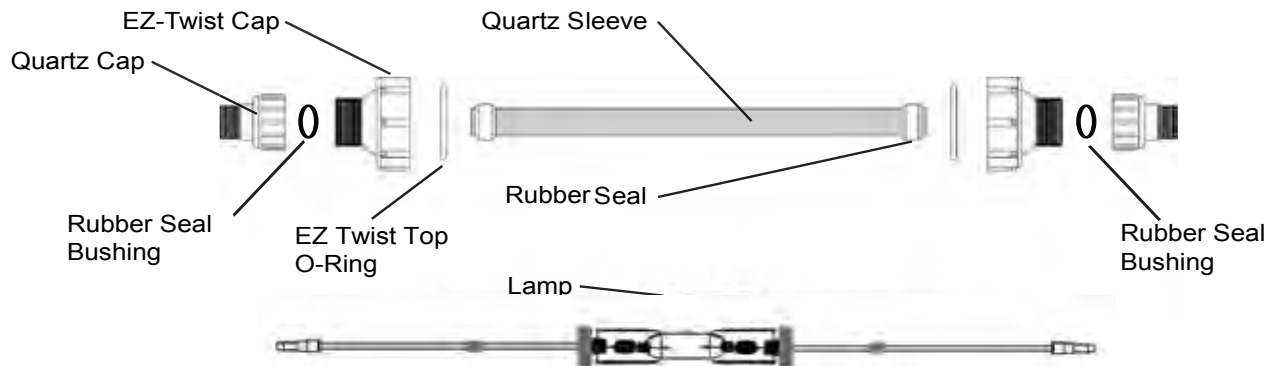
**CAUTION:** Always turn off the pump and disconnect electricity from the unit prior to any maintenance.

## WINTERIZING: 2" or 3" Plastic Viper

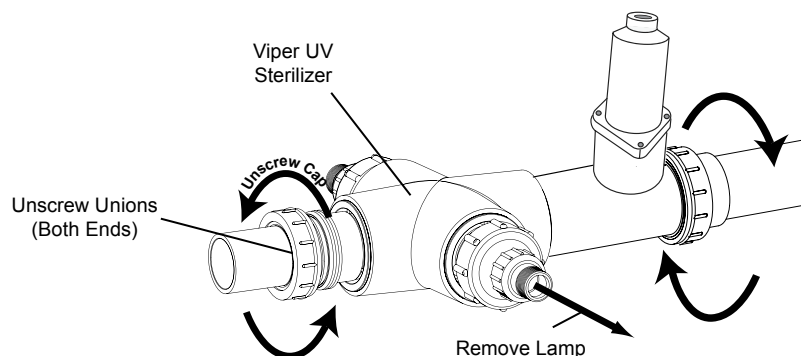
**OPTION 1:** If you are going to continually run water through your unit and it will be exposed to freezing temperatures be sure to install winterizing caps (sold separately) on both sides of the unit and take all the internal parts inside (Quartz Sleeve, EZ-Twist Top, Quartz Caps, Lamps, Rubber Seals, and or Bushings). Transformer Box may be left outside.



### Take These Parts Inside



**OPTION 2:** If you shut down your system for winter (no water flowing) remove the lamp and store separately. Disconnect unions or flanges and take the Viper UV Sterilizer inside.





**CAUTION:** Always turn off the pump and disconnect the electricity from the unit prior to any maintenance.



**NOTE:** Before re-installing the Unit, the Seals and the Quartz Sleeve will need to be replaced.



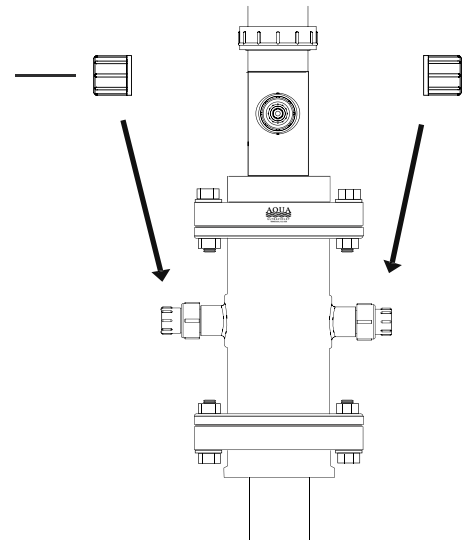
**WARNING:** Do not allow Viper Unit to be exposed to freezing temperatures without choosing a winterizing option, severe damage and/or breakage to the Unit, Lamp and/or Quartz Sleeve may result and are not covered under warranty.

## WINTERIZING: 4",6",8" Plastic and all Stainless Steel Vipers

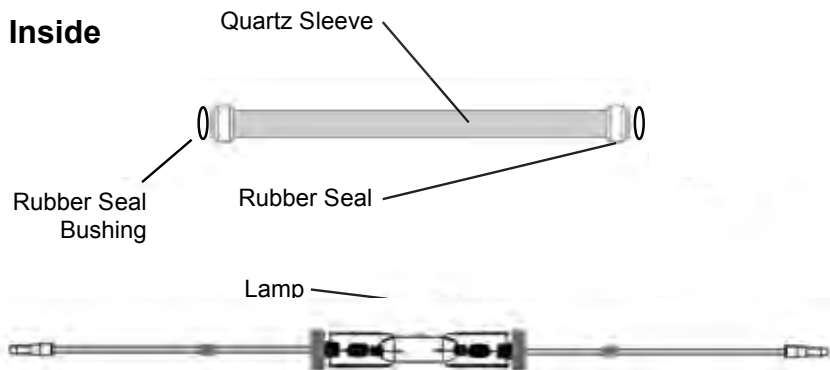
**OPTION 1:** If you are going to continually run water through your unit and it will be exposed to freezing temperatures be sure to install a 1" threaded cap (Sold separately) on both sides of the unit and take all the internal parts inside (Quartz Sleeve, Rubber Seal Bushings, and Lamp). Transformer Box may be left outside.

The Cap may be purchased through your local hardware store or through Aqua UV, part # A50109.

A50109  
1" Threaded Cap  
(2 required)

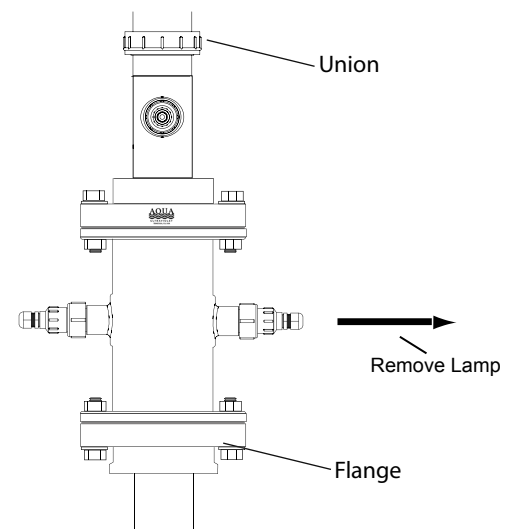


### Take These Parts Inside



Units may have a Rubber Seal Bushing and/or Rubber Seal.  
Stainless Steel units use rubber seal bushings only.

**OPTION 2:** If you shut down your system for winter (no water flowing) remove the lamp and store separately. Disconnect unions or flanges and take the Viper UV Sterilizer inside.



# MAINTENANCE

## INSTALLING A NEW LAMP KIT (LAMP, QUARTZ SLEEVE, BUSHINGS AND SEALS)



**WARNING:** Use only genuine AQUA ULTRAVIOLET replacement parts when changing your lamp. This is a specialized lamp, while others may look similar they are not the same. Other lamps will not produce the same result and can damage your Viper SL Unit.



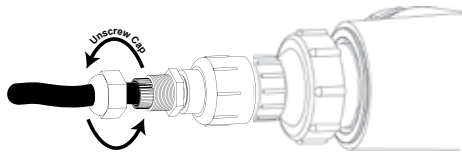
**maintenance.**

**CAUTION:** Always turn off the pump and disconnect the electricity from the unit prior to any maintenance.

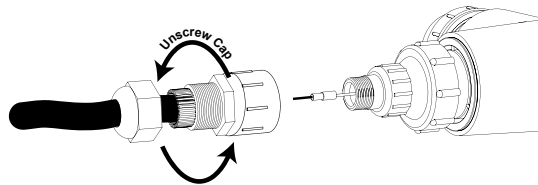
1. Unplug the system, turn off the pump and drain the housing.

Complete steps 2-4 on one side of the unit before starting on the other side

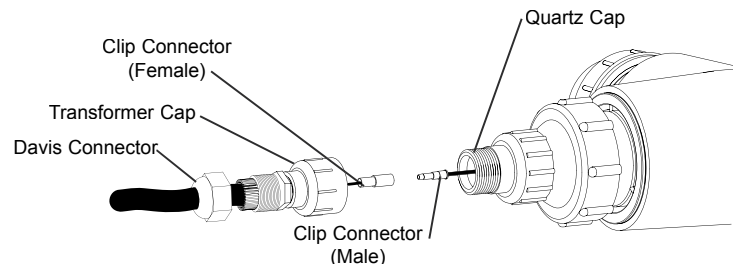
2. Unscrew the Davis Connector located just above the Transformer Cap.



3. Twist the Transformer Cap off.



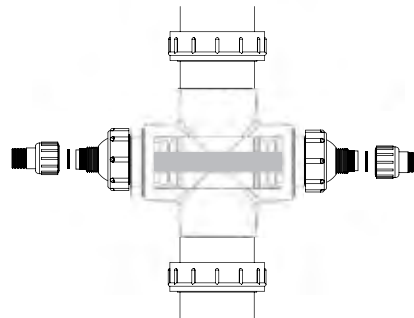
4. Disconnect the clip connector.



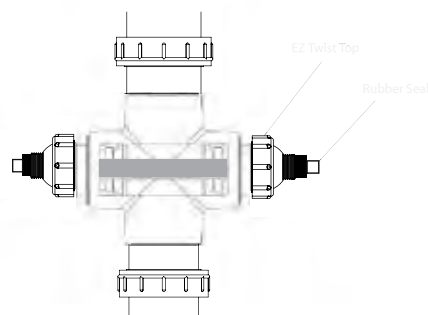
5. Repeat steps 2 , 3, 4 on the opposite side.

6. Slide lamp out, be careful not to slide the lamp out at an angle (even a slight angle) this may cause a “U” shaped crack at the end of the quartz sleeve, or possible breakage of the lamp.

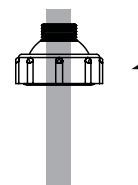
7. Remove Quartz Caps and O-Rings.



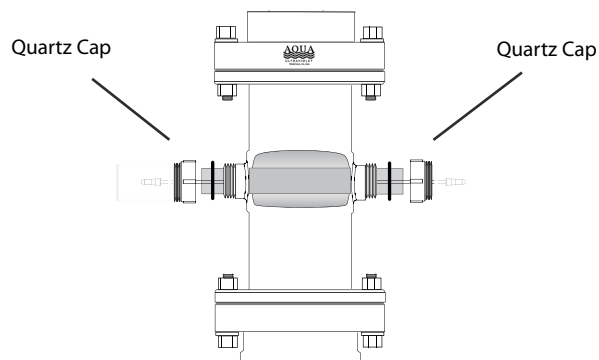
8. Loosen EZ Twist Top from one side then remove the Rubber Seal and Rubber Seal Bushings (Plastic Units).



9. Remove EZ Twist Top from the opposite side of the housing keeping the Quartz Sleeve attached. Push the Quartz Sleeve up through the EZ Twist Top.



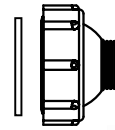
10. If your unit does not have EZ Twist Top just remove Quartz Sleeve Caps, Rubber Seal Bushing and push the Quartz Sleeve through one side of the unit.



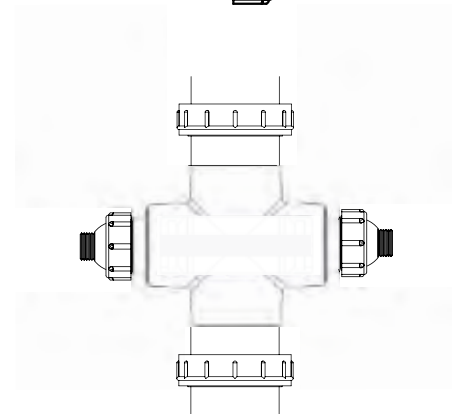
11. Discard old Lamp, Quartz Sleeve, Rubber Seals, and or Rubber Seal Bushings. Your Lamp Kit contains a new set of these parts.

## MAINTENANCE - INSTALLING NEW LAMP KIT CONTINUED

12. Check that the O-Ring is seated in both EZ-Twist Tops.



13. Screw the EZ Twist tops on both sides of the Viper. Hand tighten only. Do not use a pipe wrench, pliers or any other tool.

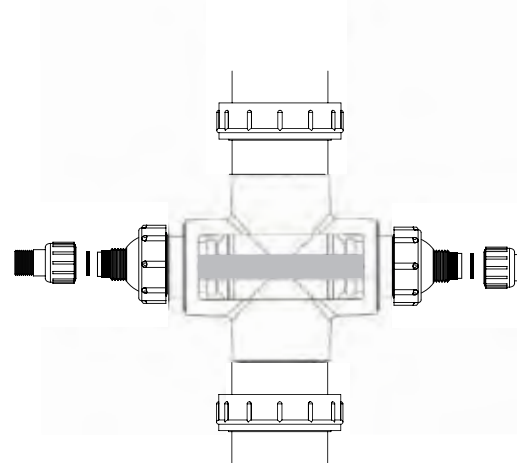


14. Center new quartz sleeve in housing (THIS STEP MAY REQUIRE TAKING THE UNIT OFFLINE TO BETTER STEADY THE QUARTZ SLEEVE).

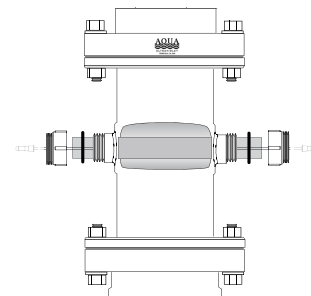
15. Install both Rubber Seals until they touch the Inner Rim of the EZ Twist Cap. The Rubber Seal should be 1/4" from each end of the Quartz Sleeve.

16. Place the Rubber Seal Bushings on the ends of the Quartz Sleeve above the Rubber Seal on both sides of the Unit.

17. Screw on the Quartz Caps at the same time making sure not to pinch the Rubber Seal Bushing. Keep equal amounts of the Quartz Sleeve on both sides. Use extreme caution. DO NOT use a pipe wrench, pliers or any other tool on this unit. Tighten by hand only.



18. If your unit does not have EZ Twist Tops, Place the Rubber Seal Bushings on the ends of the Quartz Sleeve on both sides of the Unit. Screw on the Quartz Caps at the same time making sure not to pinch the Rubber Seal Bushings. Keep equal amounts of the Quartz Sleeve on both sides. Use extreme caution. DO NOT use a pipe wrench, pliers or any other tool on this unit. Tighten by hand only.



19. Run Leak Test . Do not install lamp or electrical components yet. After the Quartz Sleeve has been installed, turn on pump and run it for five minutes to check for leaks. If there are leaks see page 11 for solutions.

20. When there are no leaks install the lamp.



# MAINTENANCE- INSTALLING A NEW LAMP KIT CONTINUED

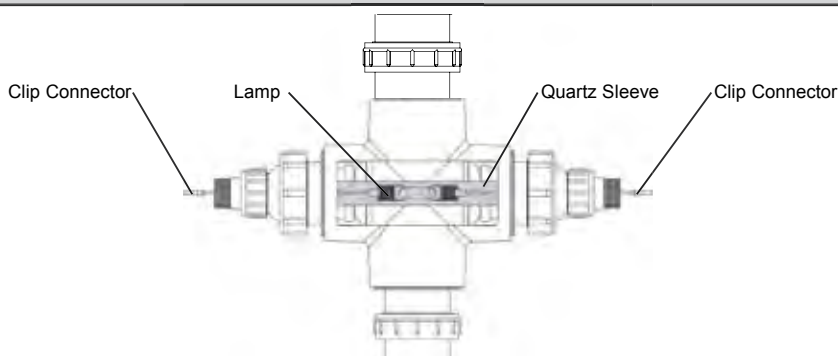
**NOTE:** If you touch the Lamp use denatured alcohol and a soft cloth to clean it. If you do not clean the Lamp the fingerprints will become etched into the glass which will diminish UV output and may cause premature lamp failure.

**NOTE:** Lamps and Quartz Sleeves should be handled with care. Lamps and Quartz Sleeves are not warranted against breakage and damage.

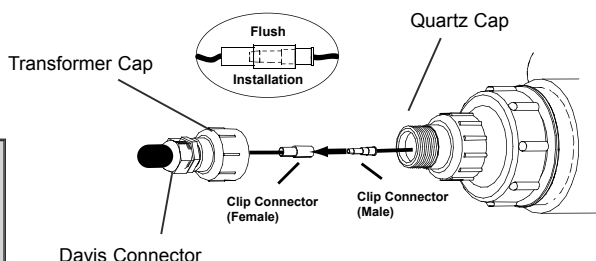
**WARNING:** Do not install the Lamp at an angle (even a slight angle); this may cause a U shaped crack at the end of the Quartz Sleeve, or possible breakage of the Lamp. If this should happen, do not proceed with the installation. Purchase a new Quartz Sleeve or Lamp from your dealer and refer to the proper installation instructions.

**NOTE:** Do not force the Lamp into the Quartz Sleeve.

**21. INSTALLING THE LAMP:** Extend Lamp Wires and insert into Quartz Sleeve. Position Lamp so that the Clip Connectors are visible on both ends of the unit.



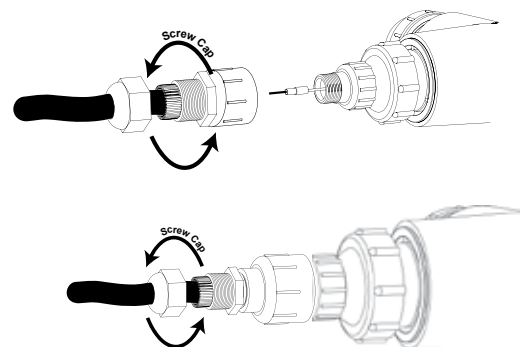
**22. CONNECT THE LAMP:** Plug the Lamp into each of the Clip Connectors located at the end of the Harness. Make sure the Lamp is plugged in all the way and flush with each of the Clip Connector.



**WARNING:** Be careful when installing the Lamp. If the Lamp is not plugged in all the way this may cause damage to the unit and is not covered under Warranty, nor is any other damage caused by improper installation.

**23.** Twist on transformer cap. Do not over tighten. This is a connection only and is not in contact with water.

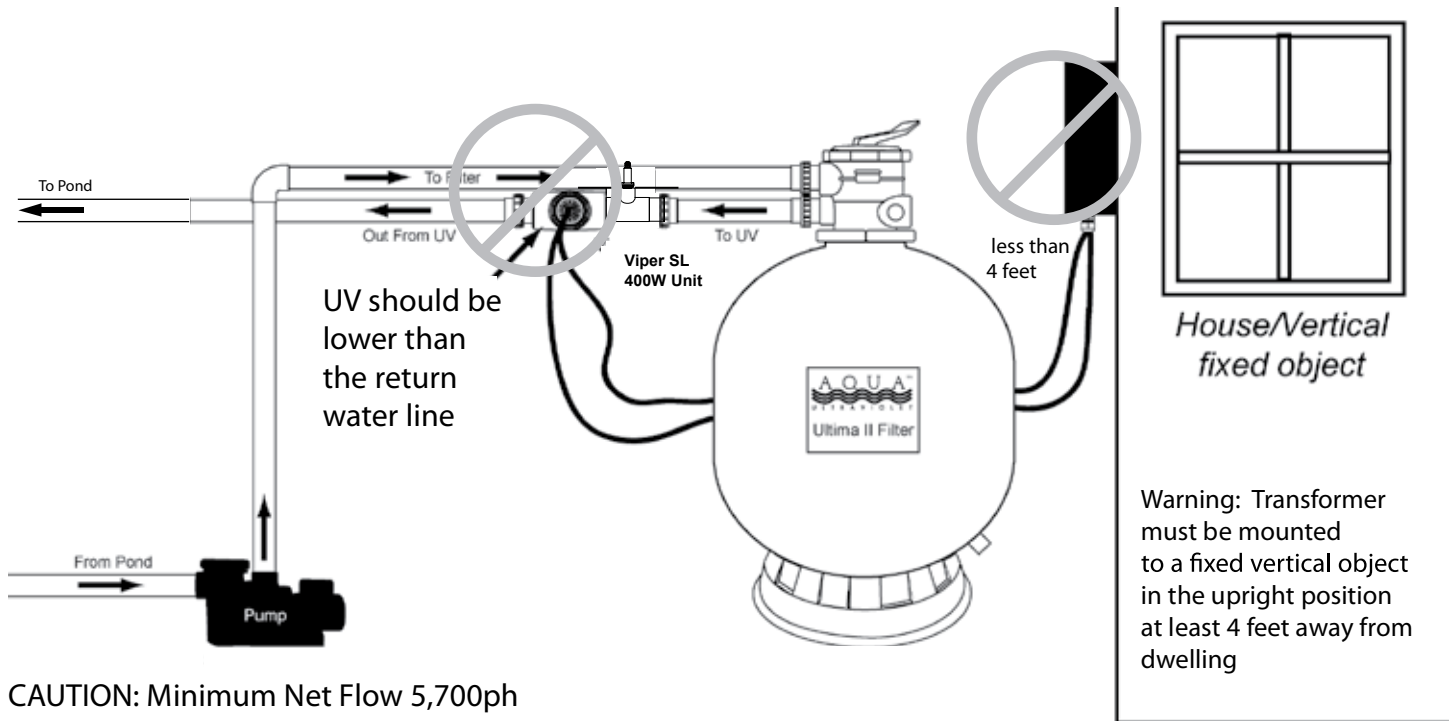
**24.** Tighten the Davis Connector located just above the Transformer Cap.



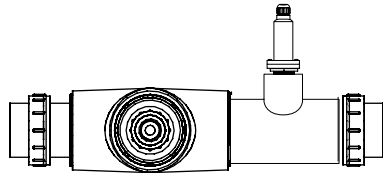
**25. FINAL LEAK CHECK:** Do not plug the Sterilizer into power yet, turn on the pump and check for leaks again. For illustrations, **SEE PAGE 11.**

- a. If you have a leak, return to Trouble Shooting Leaks on page 11. Carefully examine this unit after installation. This unit should not be plugged in if there are any leaks on any part of this unit.
- b. If there are no leaks, turn power on.

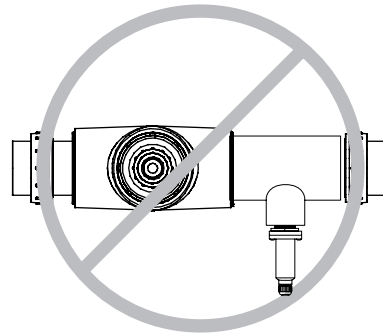
# INCORRECT INSTALLATION



**CORRECT**

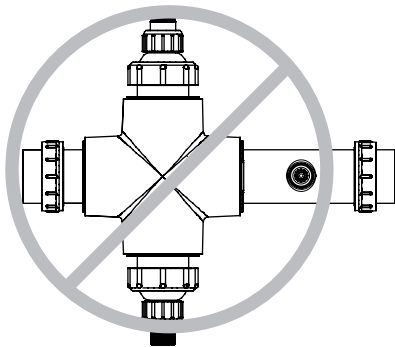


**INCORRECT**



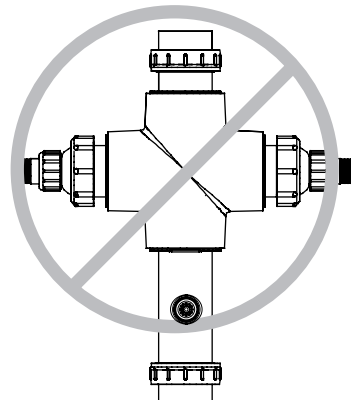
Flow switch is upside down

**INCORRECT**



Lamp is installed vertically

**INCORRECT**

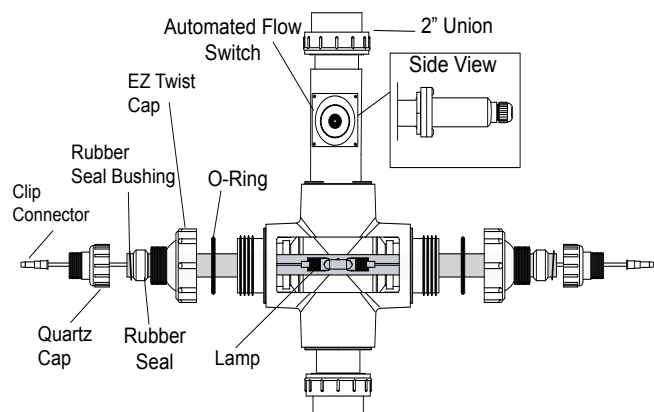


Unit is installed vertically

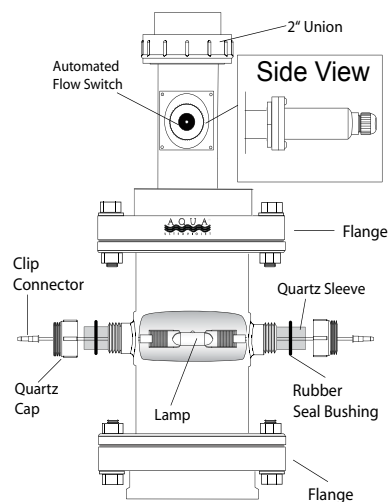
**See Page 8 for Recommended Installation Instructions**

# VIPER SL SERIES BREAKDOWN

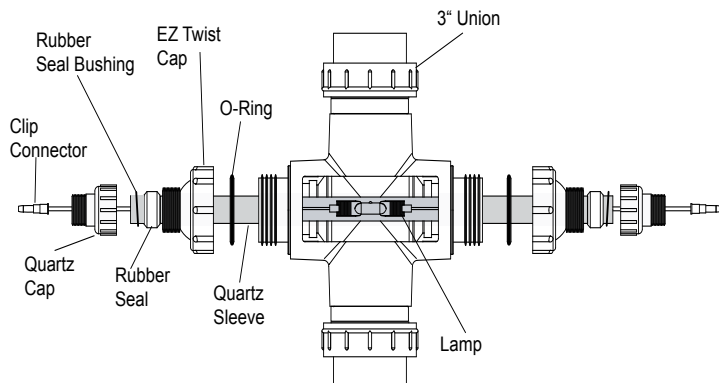
400 Watt  
2" Plastic



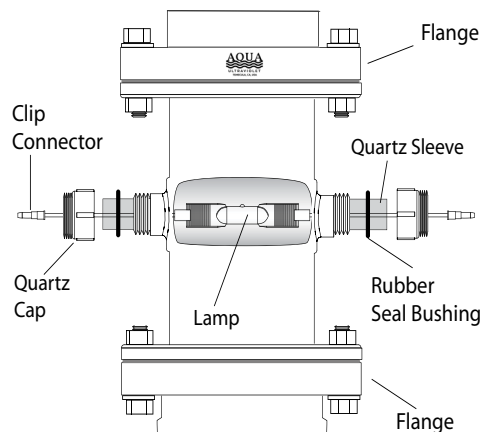
400 Watt  
2" Stainless Steel



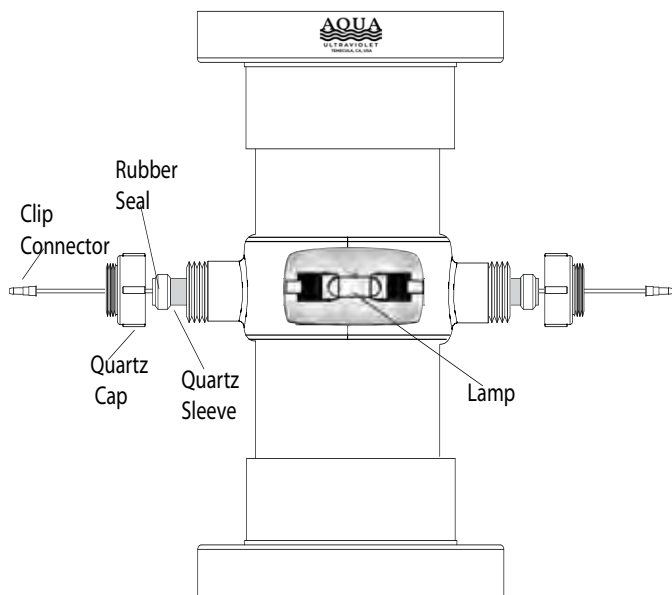
400 Watt  
3" Plastic



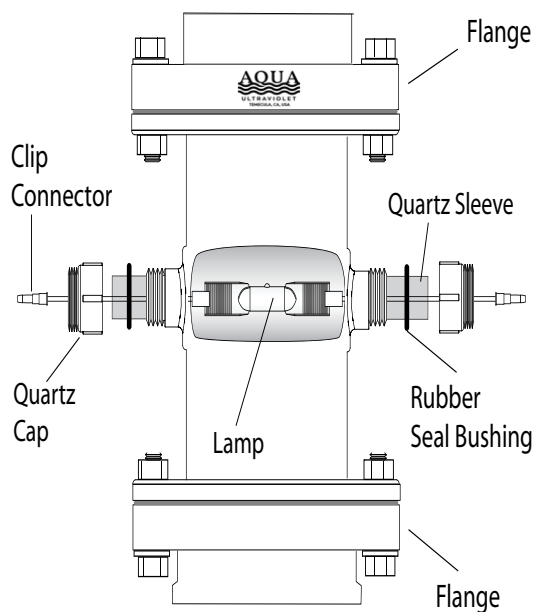
400 Watt  
3" Stainless Steel



400 Watt  
6" Plastic

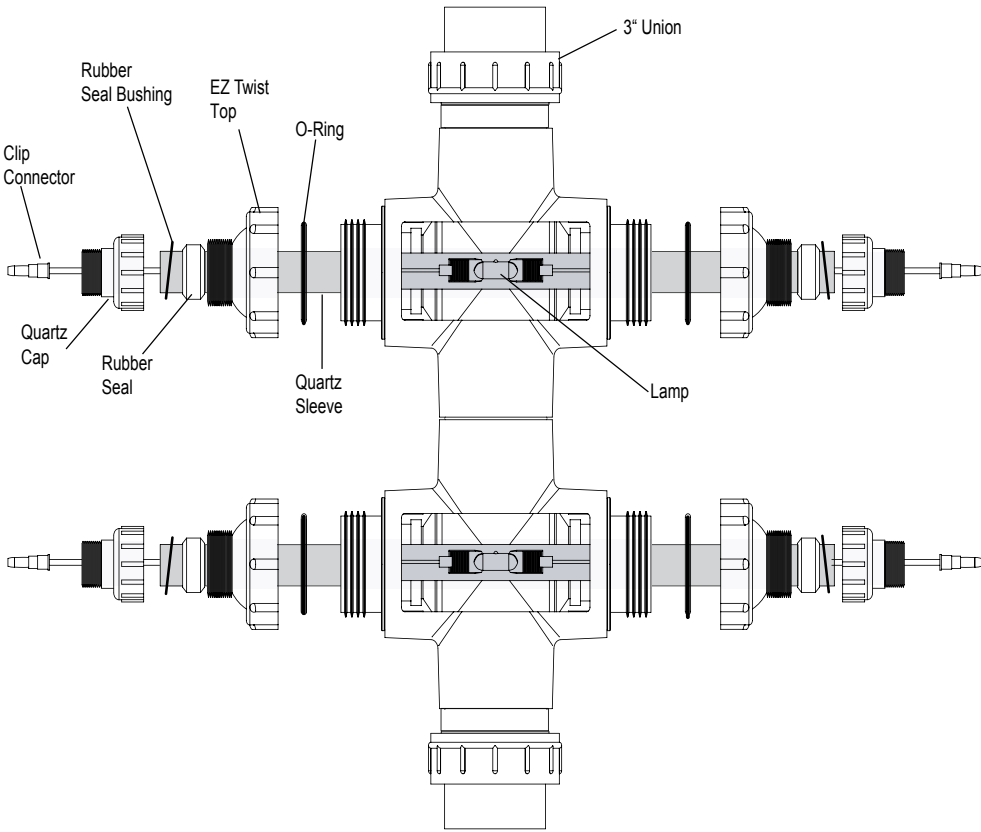


400 Watt  
6" Stainless Steel

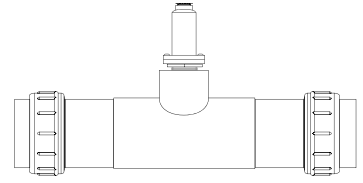


# VIPER SL SERIES BREAKDOWN

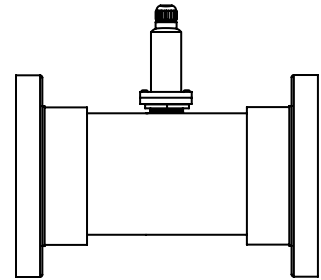
800 WATT  
3" Plastic Multi Unit



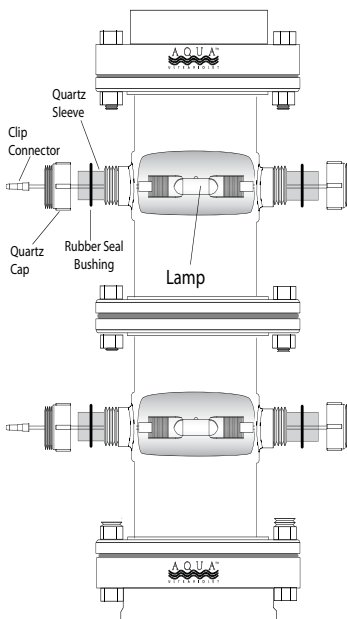
3" Flow Switch



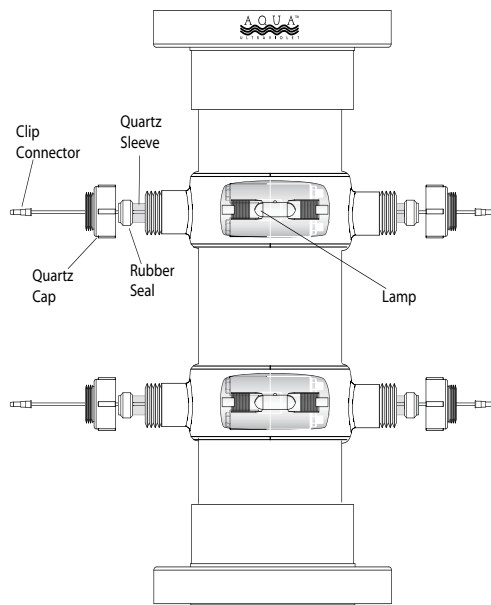
6" Flow Switch



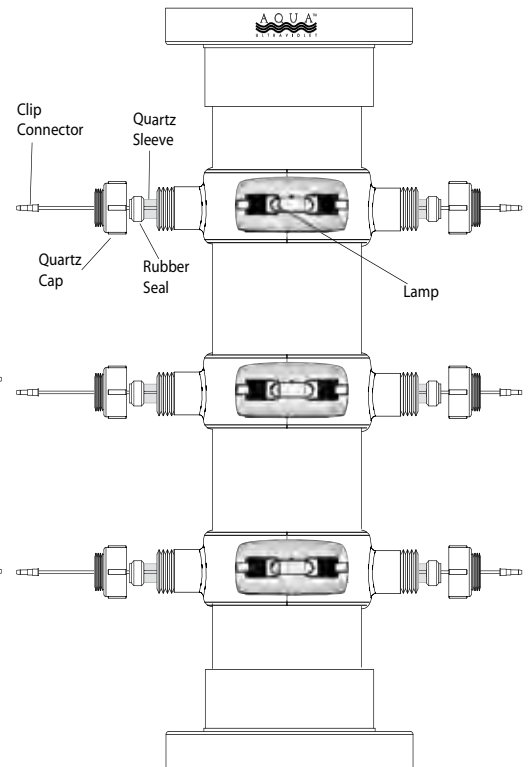
800 WATT  
3" Stainless Steel Multi Unit



800 WATT  
6" Plastic Unit

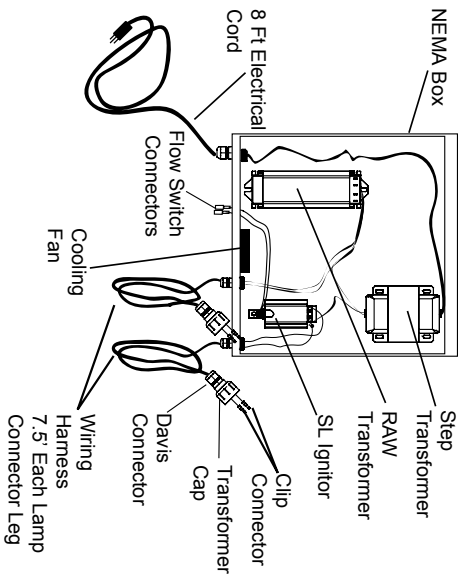


1200 WATT  
6" Plastic Unit

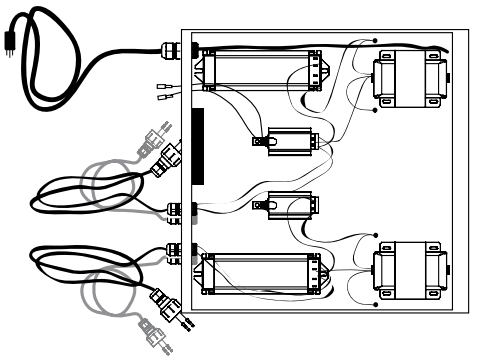


# VIPER SL SERIES TRANSFORMER BREAKDOWN

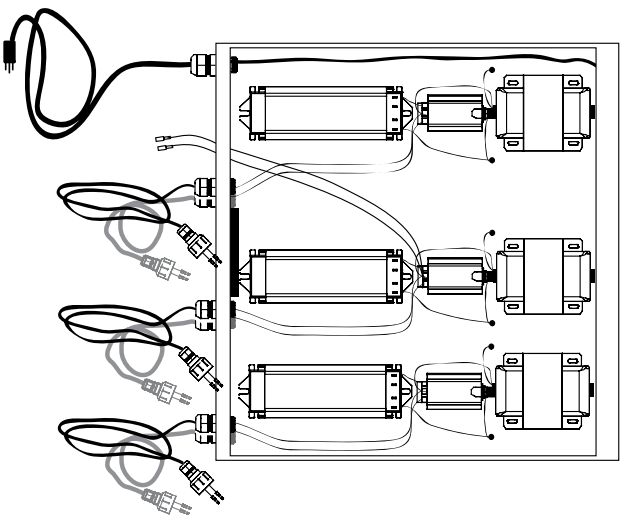
Viper 400 Trans 110V-60Hz



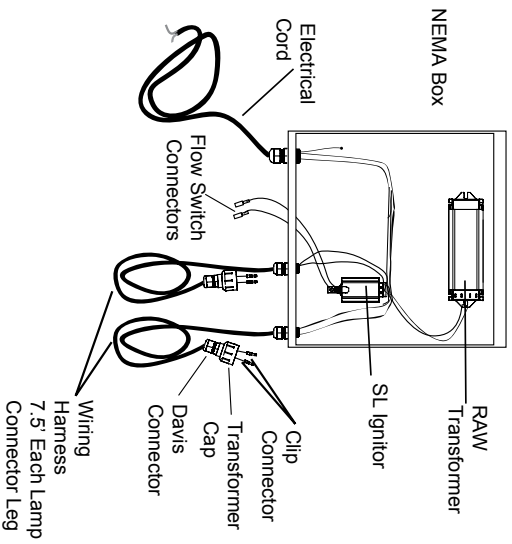
Viper 800 Trans 110V-60Hz



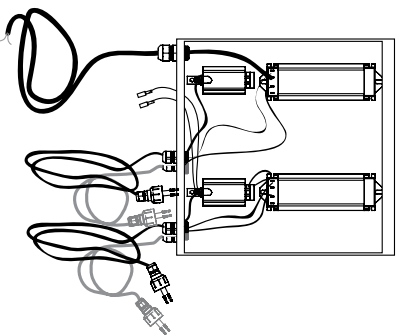
Viper 1200 Trans 110V-60Hz



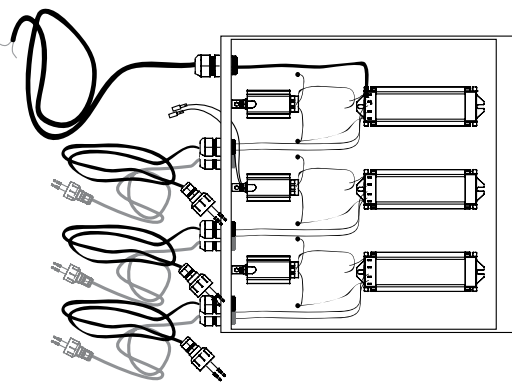
Viper 400 Trans 208/220/240V-60Hz



Viper 800 Trans 208/220/240V-60Hz



Viper 1200 Trans 208/220/240V-60Hz



# REPLACEMENT PARTS

## PARTS FOR VIPERS

A40061	Clip Connectors for Viper Lamps, Male/Female	A40139	Quartz Cap for Viper 2" / 3" Plastic Units White
A40115	Quartz Cap For Viper Stainless Steel Units (Clear)	A40142	Quartz Cap for Viper 6" Plastic Units (Grey)
A40015	Rubber Seal Bushing (O-Ring) for Viper - SS Unit	A40006	Rubber Seal for Viper 400
A40016	Rubber Seal For Viper 800/1200	A40174	EZ Twist Top With Black O-Ring, for Viper
A40014	O-Ring for EZ Twist Top		

## LAMP KITS FOR VIPERS:

Includes: The Lamp, Quartz Sleeve in the Indicated Size, Rubber Seal Bushing and Rubber Seal

A20402	Lamp Kit For Viper 400W 2" Stainless Steel (6.5" QS) 1/Set	A20404	Lamp Kit For Viper 400W 2" Plastic (15.5" QS) 1/Set
A20403	Lamp Kit For Viper 400W 3" Stainless Steel (8" QS) 1/Set	A20406	Lamp Kit For Viper 400W 3" Plastic (15.5" QS) 1/Set
A20412	Lamp Kit For Viper 400W 6" Stainless Steel (14" QS) 1/Set	A20401	Lamp Kit For Viper 400W 6" Plastic (14" QS) 1/Set
A20802	Lamp Kit For Viper 800W 3" Multi-Unit S/S (8" QS) 2/Sets	A20800	Lamp Kit For Viper 800W 6" Plastic (14" QS) 2/Sets
A20801	Lamp Kit For Viper 800W 3" Multi-Unit Plastic (15.5" QS) 2/Sets	A21200	Lamp Kit For Viper 1200W 6" Plastic (14" QS) 3/Sets

## VIPER TRANSFORMER PARTS

AS39406	Viper 400W Transformer 110V/ 60Hz, (For Plastic Unit)	AS39408	Viper 400W Transformer 220V/ 60Hz, (For Plastic Unit)
AS39403	Viper 400W Transformer 110V/ 60Hz, (For S/S Unit)	AS39407	Viper 400W Transformer 220V/ 60Hz, (For S/S Unit)
AS39806	Viper 800W Transformer 220V/ 60Hz, (For Plastic Unit)	AS39121	Viper 1200W Transformer 220V/ 60Hz, (For Plastic Unit)
AS39404	Viper 400W Raw Transformer	AS39405	Viper 400W Raw Transformer and Ignitor
A30106	Viper SL Step Transformer	A40167	Cooling Fan
A40113	Transformer Cap, Black, (for Stainless Steel Units)	A40023	Transformer Cap, Clear for Plastic Units
A40061	Clip Connectors for Viper Lamps, Male/Female	A40109	Davis Connector

## WARRANTY RETURNS OR REPAIRS

Please call Aqua Ultraviolet at (800) 454-2725 for a "Return Merchandise Authorization" number (RMA). You must have a valid RMA from an Aqua Ultraviolet customer service representative before sending any product in for warranty or repair. Please have your serial number, date of purchase and product type available when calling for an RMA number.

All warranty returns or repair returns must come freight prepaid with an RMA number outside clearly marked on the box. All other returns will be refused. Aqua Ultraviolet will not be liable for any shipping cost to return warranty or repair items. Include a note in the box with your RMA number, name, address, daytime phone number and brief description of the reason for return or repair.

Be sure to return product in the same packing or similar packing and insure the package (we recommend sending it UPS). If you do not have or can't locate proper packaging, please call our customer service department and we will be more than happy to send you packaging for a minimal charge.

Aqua Ultraviolet shall not be responsible for damage or loss done by the shipper. Nor shall Aqua Ultraviolet be responsible for merchandise that arrives damaged due to improper packaging. All claims for loss and damage must be filed by the customer with the shipper.

If unit is found to be out of warranty we will contact you with the cost of repair. Your authorization is required prior to making any repairs.



EPA Est 68177-CA-001

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