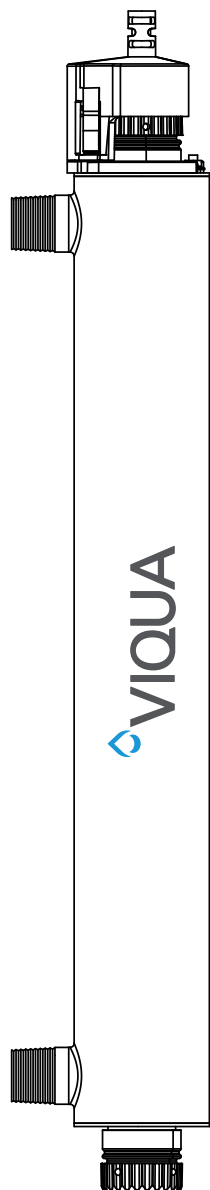




Owner's Manual



Models:
S2Q-PV, S5Q-PV, S5Q-PV-ASPL

Powered by
Sterilight®



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520026_RevP

Congratulations

on the purchase of your ultraviolet (UV) water system! This system uses the most advanced UV technology on the market and is designed to provide you with years of trouble free operation with minimal maintenance.

To ensure ongoing optimal operation, UV lamps need to be replaced annually with VIQUA factory-supplied replacements. VIQUA lamps are the result of extensive development resulting in a highly efficient platform with extremely stable UV output over the entire 9000 hour lifetime. Its success has led to a proliferation of non-genuine copies in the market.

The UV lamp is the heart of the UV system, and there should be no compromise when it's time for a replacement.

Why should you insist on genuine factory supplied VIQUA replacement lamps?

- Use of widely available, non-genuine, replacement lamps has been shown to damage the control module of VIQUA UV equipment.
- An increasing number of calls to VIQUA Technical Support are connected with non-genuine lamps being used (unknowingly) as replacements.
- Damage arising from the use of non-genuine lamps poses a safety risk and is not covered by equipment warranty.
- Unless the UV equipment is equipped with a UV sensor (monitor), it is not possible to verify the UV (invisible) output of replacement lamps.
- Similar appearance to the original lamp and the presence of (visible) blue light does not mean equivalent performance.
- VIQUA replacement lamps undergo rigorous performance testing and strict quality control processes to ensure that the safety and performance certifications of the original equipment are not compromised.

So, you can see that it's simply not worth the risk! Insist on genuine VIQUA replacement lamps.


















Section 1 Safety Information

These are the original instructions. Please read this entire manual before operating this equipment. Pay attention to all danger, warning, and caution statements in this manual. Failure to do so could result in serious personal injury or damage to the equipment.




Make sure that the protection provided by this equipment is not impaired. DO NOT use or install this equipment in any manner other than that specified in the installation manual.

1.1 Potential Hazards:

Read all labels and tags attached to the system. Personal injury or damage to the system could occur if not observed.

	Waste electrical and electronic equipment (WEEE). This symbol indicates that you should not discard wasted electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.		This symbol indicates not to store any combustible or flammable material close to the system.
	This symbol indicates there is Mercury present.		This symbol indicates that the contents of the transport package are fragile and the package should be handled with care.
	This is the safety alert symbol. Obey all safety messages that follow this symbol to avoid potential injury. When on the equipment, refer to the Operational and Maintenance manual for additional safety information.		This symbol indicates safety glasses with side protection is required for protection against UV exposure.
	This symbol indicates a risk of electrical shock and/or electrocution exists.		This symbol indicates gloves must be worn.
	This symbol indicates the marked equipment may contain a component that can eject forcibly. Obey all procedures to safely depressurize.		This symbol indicates safety boots must be worn.
	This symbol indicates the marked item could inject fluid into the skin.		This symbol indicates the operator must read all available documentation to perform required procedures.
	This symbol indicates there is a potential UV hazard. Proper protection must be worn.		This symbol indicates the plumber must use copper piping.
	This symbol indicates the marked item could be hot and should not be touched without care.		This symbol indicates that the system should only be connected to a properly grounded, grounding-type controller receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI).
	This symbol indicates there is a potential for VERY hot water when flow is started.		

1.2 Safety Precautions:

 DANGER	
 	<p>Failure to follow these instructions will result in serious injury or death.</p> <ul style="list-style-type: none"> • Electric Shock: To avoid possible electric shock, special care should be taken since water is present near the electrical equipment. Unless a situation is encountered that is explicitly addressed by the provided maintenance and troubleshooting sections, DO NOT attempt repairs yourself, refer to an authorized service facility. • GROUNDING: This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electrical shock. This system is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the outlet is properly grounded. DO NOT modify the plug provided with this system – if it does not fit in the outlet, have a proper outlet installed by a qualified electrician. DO NOT use any type of adapter with this system. • GROUND FAULT CIRCUIT INTERRUPTER PROTECTION: To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, this system should only be connected to a properly grounded, grounding-type controller receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI) or to a residual current device (RCD) having a rated residual operating current not exceeding 30 mA. Inspect operation of GFCI as per manufacturer's suggested maintenance schedule. • DO NOT operate the UV system if it has a damaged cord or plug, if it is malfunctioning or if it has been dropped or damaged in any manner. • DO NOT use this UV system for other than intended use (potable water applications). The use of attachments not recommended or sold by the manufacturer / distributor may cause an unsafe condition. • DO NOT install this UV system where it will be exposed to the weather or to temperatures below freezing. • DO NOT store this UV system where it will be exposed to the weather. • DO NOT store this UV system where it will be exposed to temperatures below freezing unless all water has been drained from it and the water supply has been disconnected.

⚠ WARNING



- During extended periods of no water flow, the water in your chamber can become very hot (Approx. 60 °C) and potentially lead to scalding. It is recommended to run your water until this hot water has been purged from your chamber. Do not allow water to contact your skin during this time. To eliminate this condition, a temperature management valve can be installed at the outlet of your UV system.
- Do not pass water through the UV system for a minimum of 5 minutes after applying power (including after power interruptions) to avoid passing under-treated water that may, in rare instances, pose health hazards.
- This system contains a UV Lamp. Do not operate the UV Lamp when it is removed from the chamber. Unintended use or damage of the system may result in the exposure of dangerous UV radiation. UV radiation may, even in little doses, cause harm to the eyes and skin.
- Changes or modifications made to this system without the consent of the manufacturer could render the system unsafe for operation and may void the manufacturer's warranty.



WARNING: This product can expose you to chemicals including phthalates, which is known to the state of California to cause cancer, and mercury, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ CAUTION



Failure to follow these instructions could result in minor or moderate injury.

- Carefully examine the UV system after installation. It should not be plugged in if there is water on parts not intended to be wet such as, the controller or lamp connector.
- Due to thermal expansion concerns and potential material degradation due to UV exposure, it is recommended to use metal fittings and at least 10" of copper pipe on the outlet of your UV chamber.
- Hg EXPOSURE:** The UV lamp contains mercury. If the lamp breaks, then avoid inhalation or ingestion of the debris and avoid exposure to eyes and skin. Never use a vacuum cleaner to clean up a broken lamp as this may scatter the spilled mercury. Obey local regulations and guidelines for the removal and disposal of mercury waste.

NOTICE



- The UV lamp inside the UV system is rated at an effective life of approximately 9000 hours. To ensure continuous protection, replace the UV lamp annually.
- The UV system is not to be used or played with by children. Persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, are also not to handle the UV system unless they have been given supervision or instruction.
- This system is intended to be permanently connected to the water lines.
- This system is not intended to be used in or above water or outdoors or used in swimming pools when persons are in the pool.
- EXTENSION CORDS:** If an extension cord is necessary, use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole cord connectors that accept the plug from this system. Use only extension cords that are intended for outdoor use. Use only extension cords having an electrical rating not less than the rating of the system. A cord rated for less amperes or watts than this system rating may overheat. Exercise caution when arranging the cord so that it will not be tripped over or pulled. DO NOT use damaged extension cords. Examine extension cord before using and replace if damaged. DO NOT abuse extension cord. Keep extension cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting this system from the extension cord. Never yank cord to pull plug from outlet. Always grasp the plug and pull to disconnect.
- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.
- SYSTEM PROTECTION:** To protect your Controller, a UL1449 certified (or equivalent) transient voltage surge suppressor is strongly recommended.
- The UV lamp in this system conforms to the applicable provisions of the Code of Federal Regulations (CFR) requirements including, Title 21, Chapter 1, Subchapter J, Radiological Health.
- Read and understand the Owner's Manual before operating and performing any maintenance on this equipment.

1.3 Water Chemistry

Water quality is extremely important for the optimum performance of your UV system. The following levels are recommended for installation:

Water Quality and Minerals	Level
Iron	< 0.3 ppm (0.3 mg/L)
Hardness*	< 7 gpg (120 mg/L)
Turbidity	< 1 NTU
Manganese	< 0.05 ppm (0.05 mg/L)
Tannins	< 0.1 ppm (0.1 mg/L)
UV Transmittance	> 75% (call factory for recommendations on applications where UVT < 75%)

* Where total hardness is less than 7 gpg, the UV unit should operate efficiently provided the quartz sleeve is cleaned periodically. If total hardness exceeds 7 gpg, the water should be softened. If your water chemistry contains levels in excess of those mentioned above, proper pre-treatment is recommended to correct these water problems prior to the installation of

your UV system. These water quality parameters can be tested by your local dealer, or by most private analytical laboratories. *Proper pre-treatment is essential for the UV system to operate as intended.*

Section 2 General Information

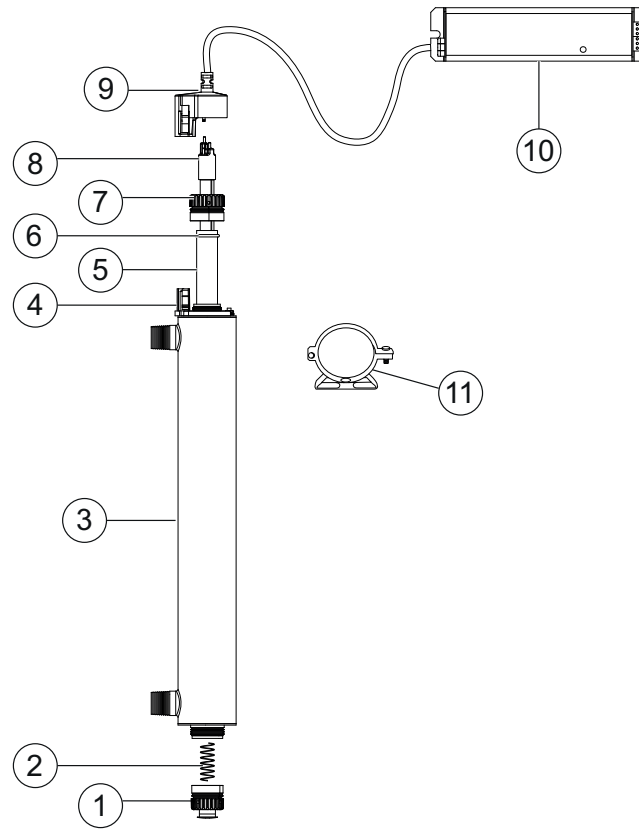


Figure 1 System Components

Item	Description	Part Number	UV Systems
1	Retaining nut with plug	RN-001/1	Used on all systems
2	Spring	SP008	Used on all systems
3	Chamber	-	Used on all systems
4	Connector base	270276	Used on all systems
5	Open-Ended 214 fused quartz sleeves with fire polished ends	QS-330	S2Q-PV
		QS-463	S5Q-PV-ASPL/S5Q-PV
6	O-ring	410867-R	Used on all systems
7	Retaining nut	RN-001	Used on all systems
8	Hard glass, coated Sterilume®-EX UV lamps for long, consistent life (9000 hours)	S330RL	S2Q-PV
		S463RL	S5Q-PV
		S463RL	S5Q-PV-ASPL
9	Lamp connector	-	Used on all systems
10	Controller (100-240V Systems)	BA-ICE-V	Used on all systems
11	2.5" Mounting Brackets	410958-R	Used on all systems

Section 3 Installation of UV System

⚠ CAUTION



Electronic controller must be connected to a Ground Fault Protected Circuit (GFCI) receptacle. Ensure green ground wire ring terminal is securely fastened to ground stud on UV chamber.s

The UV system is designed to be mounted either horizontally or vertically at the point-of-use or point-of-entry depending on the specific flow rate of the unit.

If installing the chamber in horizontal position the outlet port must be pointing upwards to ensure all air is fully purged from the chamber.

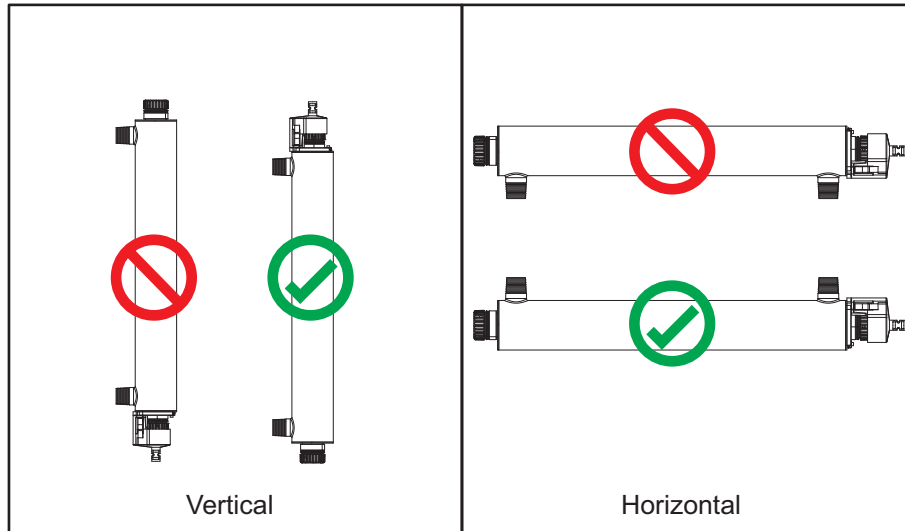


Figure 2 Installation - Vertical and Horizontal

Note: The ideal installation is vertical with the lamp connector on top. This is to prevent water damage from occurring on the lamp pins and lamp connector.

- The controller should be mounted either above or beside the chamber. Always mount controller horizontally to prevent moisture from running down cordage and causing a potential fire hazard. Drip loops in all cordage connected to controller is highly recommended.
- The complete water system, including any pressure or hot water tanks, must be sterilized before start up by flushing with chlorine (household bleach) to destroy any residual contamination.
- The UV system is intended for indoor use only. Do not install UV system where it may be exposed to the weather.
- Install the UV system on cold water line only, before any branched lines.
- A 5 micron sediment filter must precede the UV system. Ideally, the UV system should be the last treatment the water receives before it reaches the faucet.

Procedure:

1. For shipping purposes, the UV lamp is shipped in a separate cardboard tube. Carefully remove the UV lamp from the shipping tube being careful not to touch the "glass" portion with your fingers. Insert the UV lamp into the quartz sleeve and chamber making sure the connection end is inserted last. Mount the UV system to the wall with the supplied clamps. If required, a double-end clamp can be purchased from your dealer to affix to an RO membrane.
2. If the UV system is to be hard plumbed, make sure you leave enough clearance at lamp connector to facilitate lamp service (a length equal to the length of the unit should suffice).
3. Various connection methods can be used to connect the water source to the UV system, however union type connectors are recommended. The use of a flow restrictor device is strongly recommended when installing your UV system in order that the manufacturers recommended flow rate not be exceeded. These flow restrictors are available from your dealer.

Note: Do not solder connections while attached to the UV system as this could damage the o-ring seals.

4. Prior to connecting the power source, check all connections to ensure that they are indeed secure, turn on water supply and check for any leaks. If satisfied that there are no leaks, proceed with the following steps.
5. Attach the lamp connector to the UV lamp, slide the connector over the retaining nut.

Notes: 1) If ballast enters alarm condition, power must be removed for 30 seconds to allow ballast to reset.

2) As the system requires time to reach its full operating capacity, please allow the UV system to operate 3 - 5 minutes prior to using the water from the unit. In addition, to clear any air or debris from the system, allow water to run through the UV system for 2 - 3 minutes (when using an RO application, run the water for 30 - 45 seconds).

3.1 Power Installation

1. To connect the line voltage to the power connector terminal at the ballast, pull to remove the detachable power terminal connector from the mating connector at the Power side of the ballast.
2. Connect the Live line to the terminal marked 1 (L1), Neutral line to the terminal marked 2 (L2) and the Ground wire to the terminal marked 3 (GND), and secure with the associated screws on the connector.
3. Ensure that the Ground, Neutral and Live lines are all connected to the detachable plug in terminal connector then insert the connector back to the ballast mating connector located at the AC INPUT side of the ballast. Caution: Ensure the detachable power terminal connector is inserted at the AC INPUT side of the ballast ONLY
4. Apply power to the system.

Section 4 Maintenance

⚠ WARNING



- Always disconnect power before performing any work on the UV system.
- Always shut-off water flow and release water pressure before servicing.
- Regularly inspect your UV system to ensure that the power indicators are on and no alarms are present.
- Replace the UV lamp annually (or biennially if seasonal home use) to ensure maximum performance.
- Always drain the chamber when closing a seasonal home or leaving the unit in an area subject to freezing temperatures.

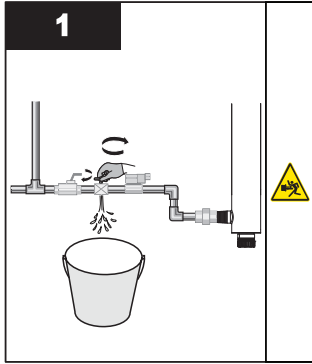
4.1 Replacing UV Lamp

NOTICE

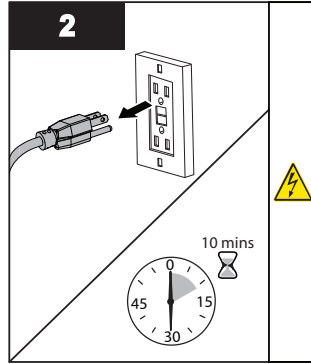
Do not use water during replacement of UV lamp.

Lamp replacement is a quick and simple procedure requiring no special tools. The UV lamp must be replaced after 9000 hours of continuous operation (approximately one year) in order to ensure adequate performance.

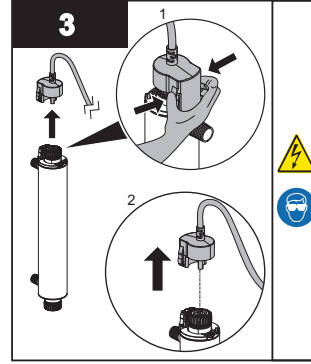
Procedure:



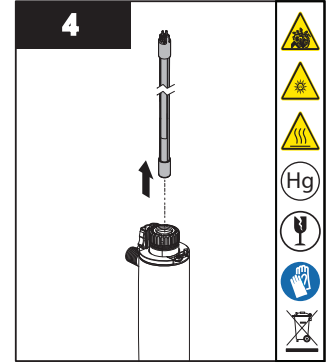
- Shut off the water line to UV chamber and release system pressure before servicing.



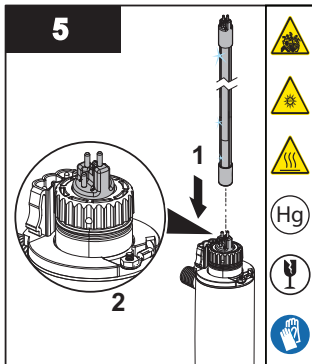
- Disconnect main power source and allow the unit to cool for 10 minutes.



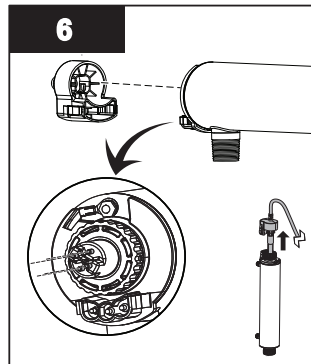
- Remove the lamp connector by squeezing the plastic locking tabs on the side of the connector.



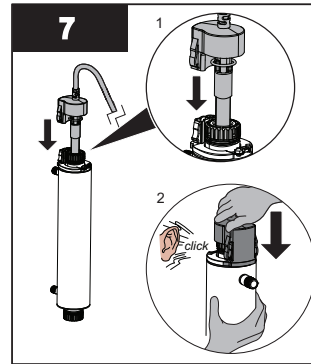
- Remove the UV lamp in upward direction from the chamber and lamp connector base.
- Hold the UV lamp at the ceramic ends.



- Insert the new lamp fully into the chamber leaving about two inches of the lamp protruding from the chamber.



- Attach the connector to the UV lamp and note that the connector will only allow correct installation in one position.



- Push the lamp connector against lamp connector base together until an audible click is heard.
- Re-pressurize the system to check for leaks.

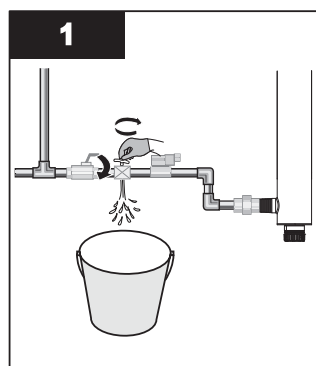
4.2 Cleaning and Replacing Quartz Sleeve

Note: Minerals in the water slowly form a coating on the lamp sleeve. This coating must be removed because it reduces the amount of UV light reaching the water, thereby reducing performance. If the sleeve can not be cleaned, it must be replaced.

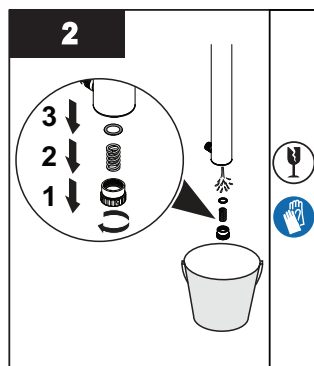
Prerequisites:

- Shut off water supply and drain all lines.
- Place a small pail under the unit to catch any spills.
- Remove the UV lamp. Refer to [Section 4.1](#).

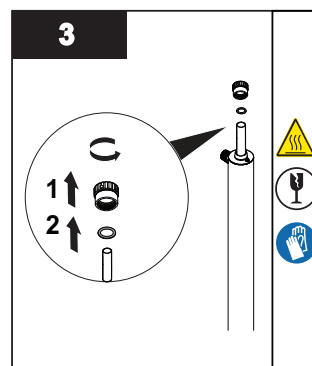
Procedure:



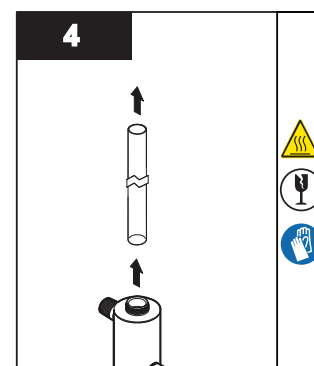
- Drain the UV chamber by using the drain port.



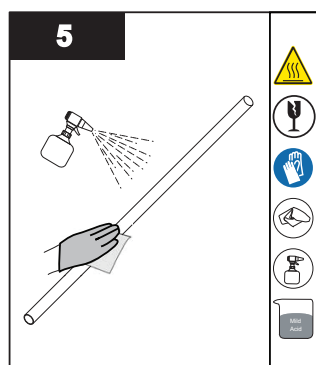
- Remove the bottom retaining nut, floating spring, and O-ring.



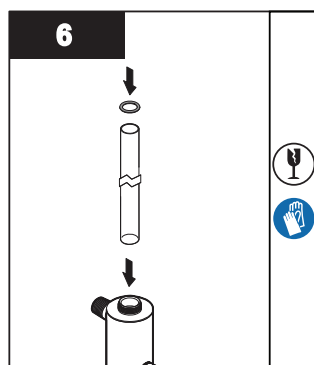
- Remove the top retaining nut and O-ring.



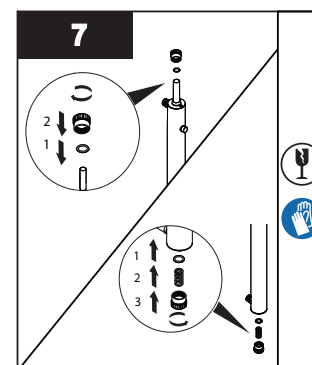
- Remove the quartz sleeve.



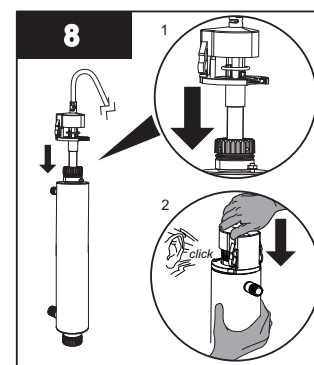
- Clean the quartz sleeve with a cloth soaked in CLR, vinegar or some other mild acid and then rinse with water.



- Reinstall the quartz sleeve in the UV chamber allowing the sleeve to protrude an equal distance at both ends of the UV chamber.
- Slide supplied and lubricated O-rings onto each end of the quartz sleeve.



- Reinstall the top and bottom retaining nuts, floating spring, and O-rings respectively.
- When service is complete, assemble the prerequisites in the reverse order of disassembly.



- Push the lamp connector against lamp connector base until an audible click is heard.
- Plug in controller and verify the POWER-ON LED is illuminated and controller power-up sequence operates.
- Re-pressurize the system to check for leaks.

Note: If the system is put on a temporary by-pass or if it becomes contaminated after the UV system, it is necessary to shock the system with household bleach for a full 20 minutes before resuming the use of the water.

Specifications

4.3 Alarm Connection

⚠ CAUTION



Ensure Alarm connector is connected to the Alarm side of the Ballast.

An Alarm feature is provided in the vending ballast allowing for dry contact connection for indicating when the system goes into a lamp OFF alarm condition and the UV unit is no longer treating the water source. The Alarm contacts are controlled by an internal relay within the ballast. When the unit is functioning and the lamp is ON the C to NO connection is closed and the C to NC connection is open. When the UV lamp turns off the ballast senses this alarm condition and causes the relay to shut off. This now causes the C to NO connection to open circuit and the C to NC to close. These connections can be configured in any manner appropriate for your application.

1. To connect to these contacts pull to remove the detachable terminal connecting plug from the Alarm side of the ballast.
2. Connect the appropriate wire configuration required as identified on the connector label. C is the common point; NC is open and NO is closed when the system is operating properly.

Note: Contact Rating Maximum of 2.0 amps @ 240VAC

3. Once the connections are made secure the wires with the terminal screws and plug the connector back onto the ballast Alarm side.

Section 5 Specifications

Model		S2Q-PV	S5Q-PV	S5Q-PV-ASPL
Flow Rate ¹	US Public Health 16mJ/cm ²	5 gpm (19 lpm) (0.9 m ³ /hr)	11 gpm (42 lpm) (2.5 m ³ /hr)	11 gpm (42 lpm) (2.5 m ³ /hr)
	Standard 30 mJ/cm ²	3 gpm (11 lpm) (0.7 m ³ /hr)	6 gpm (23 lpm) (1.4 m ³ /hr)	6 gpm (23 lpm) (1.4 m ³ /hr)
	NSF/EPA 40 mJ/cm ²	2 gpm (7 lpm) (0.5 m ³ /hr)	4.5 gpm (17 lpm) (1.0 m ³ /hr)	4.5 gpm (17 lpm) (1.0 m ³ /hr)
Dimensions	Length	47 cm (18.5")	56 cm (22")	56 cm (22")
	Width	6.5 cm (2.5")	6.5 cm (2.5")	6.5 cm (2.5")
	Height	6.5 cm (2.5")	6.5 cm (2.5")	6.5 cm (2.5")
	Diameter	6.5 cm (2.5")	6.5 cm (2.5")	6.5 cm (2.5")
Shipping Weight		2.7 kg (6 lbs)	2.7 kg (6 lbs)	2.7 kg (6 lbs)
Electrical	Voltage	100-240 V / 50/60 Hz	100-240 V / 50/60 Hz	100-240 V / 50/60 Hz
	Max. Current	0.6 A	0.6 A	0.6 A
	Power Consumption	19 W	26 W	26 W
	Lamp Watts	17 W	22 W	22 W
Maximum Operating Pressure		125 psi (861 kPa)	125 psi (861 kPa)	125 psi (861 kPa)
Minimum Operating Pressure		15 psi (103 kPa)	15 psi (103 kPa)	15 psi (103 kPa)
Ambient Water Temperature		2-40 °C (36-104 °F)	2-40 °C (36-104 °F)	2-40 °C (36-104 °F)
Inlet/Outlet Port Size		1/2" MNPT	3/4" MNPT	3/8" NPTF
Visual "Power-On"		Yes	Yes	Yes
Chamber Material		304 SS	304 SS	304 SS

¹Flow rates based on UVT=95% and End of Lamp Life; 20°C

²Units ending in */NOM are Certified to the Mexican NOM standard

Section 6 Manufacturer's Warranty

Our Commitment

VIQUA is committed to ensuring your experience with our products and organization exceeds your expectations. We have manufactured your UV system to the highest quality standards and value you as our customer. Should you need any support, or have questions about your system, please contact our Technical Support team at 1.800.265.7246 or technicalsupport@viqua.com and we will be happy to assist you.

How to Make a Warranty Claim

Note: *To maximise the performance and reliability of your VIQUA product, the system must be properly sized, installed and maintained. Guidance on the necessary water quality parameters and maintenance requirements can be found in your Owner's Manual.*

In the event that repair or replacement of parts covered by this warranty are required, the process will be handled by your dealer. If you are unsure whether an equipment problem or failure is covered by warranty, contact our Technical Support team at 1.800.265.7246 or e-mail technicalsupport@viqua.com. Our fully trained technicians will help you troubleshoot the problem and identify a solution. Please have available the model number (system type), the date of purchase, the name of the dealer from whom you purchased your VIQUA product ("the source dealer"), as well as a description of the problem you are experiencing. To establish proof of purchase when making a warranty claim, you will either need your original invoice, or have previously completed and returned your product registration card via mail or online.

Specific Warranty Coverage

Warranty coverage is specific to the VIQUA range of products. Warranty coverage is subject to the conditions and limitations outlined under "[General Conditions and Limitations](#)".

Ten-Year Limited Warranty for VIQUA UV Chamber

VIQUA warrants the UV chamber on the VIQUA product to be free from defects in material and workmanship for a period of ten (10) years from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective VIQUA UV chamber. Please return the defective part to your dealer who will process your claim.

Three-Year Limited Warranty for Electrical and Hardware Components

VIQUA warrants the electrical (controller) and hardware components to be free from defects in material and workmanship for a period of three (3) years from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective parts covered by the warranty. Please return the defective part to your dealer who will process your claim.

One-Year Limited Warranty for UV lamps, Sleeves

VIQUA warrants UV lamps, sleeves to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. During this time, VIQUA will repair or replace, at its option, any defective parts covered by the warranty. Your dealer will process your claim and advise whether the defective item needs to be returned for failure analysis.

Note: *Use only genuine VIQUA replacement lamps and sleeves in your system. Failure to do so may seriously compromise performance and affect warranty coverage.*

General Conditions and Limitations

None of the above warranties cover damage caused by improper use or maintenance, accidents, acts of God or minor scratches or imperfections that do not materially impair the operation of the product. The warranties also do not cover products that are not installed as outlined in the applicable Owner's Manual.

Parts repaired or replaced under these warranties will be covered under warranty up to the end of the warranty period applicable to the original part.

The above warranties do not include the cost of shipping and handling of returned items. The limited warranties described above are the only warranties applicable to the VIQUA range of products. These limited warranties outline the exclusive remedy for all claims based on a failure of or defect in any of these products, whether the claim is based on contract, tort (including negligence), strict liability or otherwise. These warranties are in lieu of all other warranties whether written, oral, implied or statutory. Without limitation, no warranty of merchantability or of fitness for a particular purpose shall apply to any of these products.

VIQUA does not assume any liability for personal injury or property damage caused by the use or misuse of any of the above products. VIQUA shall not in any event be liable for special, incidental, indirect or consequential damages. VIQUA's liability shall, in all instances, be limited to repair or replacement of the defective product or part and this liability will terminate upon expiration of the applicable warranty period.



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