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## Whole House System Instruction Manual



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

## **IMPORTANT INFORMATION**



### **WE CAN HELP YOU**

Returning this 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 1-800-454-2725.



**In the US please call  
TOLL FREE 1-800-454-2725  
(951) 296-3480 Outside the U.S.  
THANK YOU!**

# WARRANTY INFORMATION

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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, improper maintenance, incorrect line voltage, modification, abuse, misuse, neglect, accident, fire, flood, acts of God or repair or replacement of parts supplied by any other than Aqua Ultraviolet.

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: 5 Year warranty on housing.

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 plumber 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.

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:**

**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.**

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.

***We at Aqua Ultraviolet would like to take the time to thank you for purchasing the finest Whole House System on the market.***

For over thirty years, Aqua Ultraviolet has manufactured equipment 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.

Sediment Filters - Remove sediment dirt and rust.

Carbon Filters reduce taste and odors removing organic compounds, chlorine, pesticides, radon and hundreds of man-made chemicals.

## HOW ULTRAVIOLET WORKS

Ultraviolet light is very effective in its ability to penetrate the organisms to attack the DNA or RNA cell structure. The DNA and RNA are photochemically damaged, making it impossible for the cell to reproduce. AQUA ULTRAVIOLET Whole House Water systems use low-pressure Ultraviolet lamps.

Aqua Ultraviolet water sterilizers are made from 316 stainless steel. We utilize germicidal ultraviolet lamps that produce short wave radiation that is lethal to bacteria, viruses, and other micro-organisms present in common water, the ultraviolet lamp is protected from the water by a quartz sleeve. Systems are designed from 2 – 100 gallons per minute. A large variety of models and options are available to meet any requirements.



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

The manual should answer most of the questions that you may have about the installation, operation and use of your new Aqua Ultraviolet Sterilizer. If you need technical support, we offer this service for free by telephone (800) 454-2725, or by fax (951) 296-3490 M-F

8:00 am - 4:30 pm Pacific Standard time except selected holidays. You may reach us through the web at [www.aquauv.com](http://www.aquauv.com).

Your Aqua Ultraviolet Whole House System is shipped in two boxes. Please Check that you have all of the parts listed below before beginning installation. Disassemble the Blue Tanks from the Black Tank Valve:

1. Marked with the Number 1 are:
  - Blue Sediment Tank Housing
  - Black Tank Valve
  - Poly Sediment Filter Cartridge (Shipped inside the Blue Sediment Tank Housing)
  
2. Marked with the number 2 is:
  - Grey Threaded Coupler Nipple with Teflon Tape
  
3. Marked with the Number 3 are:
  - Blue Carbon Tank Housing
  - Black Tank Valve
  - Carbon Filter Cartridge (Shipped inside the Blue Carbon Tank Housing)
  
- Unnumbered:
  - 2 - White Mounting Brackets
  
4. Marked with the Number 4 are:
  - The Stainless Steel Ultraviolet Unit
  - The Ultraviolet Lamp
  - The Ultraviolet Transformer

Number 1



Number 2



Number 3



Number 4



# WHOLE HOUSE SYSTEM INSTALLATION INSTRUCTIONS

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Note: We recommend that this product be installed by a professional plumber. If you install this product yourself, please ensure that your installation meets all local building and plumbing codes. The following instructions are meant only as a general guide and should not be considered a substitution for your local plumbing and / or building codes.

## Blue Tank Installation:

You will need the following plumbing supplies:

1. One (1) shut-off valve with suitable sized unions to connect to your incoming water line. You can select threaded, compression or sweat (soldered) fittings on the shutoff valve as desired.
2. Plumber's cement or Teflon tape for all threaded fittings.

We Recommend Brass unions be installed before the Whole House System and before the Ultraviolet Connections.

The plumbing connections on the inlet and outlet of the water filter housings provided are 1" inside diameter (female) NPT threaded fittings. You may require additional plumbing adapters to connect to your selected shut-off valve. Your plumber will have all of these items, or they can be purchased at your local hardware or plumbing supply store at minimal cost (take these instructions to the store with you so the store clerk can make sure you get everything you need).

Note: In older homes with galvanized piping all fittings should be threaded.

STEP 1. Select an installation location. There are a variety of ways to install your filter system into a main water line. As a general recommendation, this system should be installed on the main cold water line after the pressure tank or water meter. Select an installation location with convenient access for regular filter replacements and maintenance. We recommend installing a shutoff valve upstream a the filter housing.

STEP 2. Shut off the main water supply and drain the pipes. Opening the highest and lowest fixtures in the house will help drain the pipes.

STEP 3. Using a pipe cutter, cut out a section of your main water line at the point where you want to install your filter system. There will probably be some water remaining in the line, so be sure to have a bucket and some rags handy to clean up any small spills. Make sure that the section of water line you remove is appropriately sized such that all of the components of the system including the shut-off-valve, adapters, and the Black Tank Valves will fit snugly when assembled. If in doubt, cut a smaller section at first – you can always remove a slightly larger section upon final assembly if necessary.

STEP 4. Unscrew the 4 Bolts from the tops of each Black Tank Valve. Set the Screws aside to be used with the White Mounting Brackets. Use the 1-1/2" Grey Threaded Coupler Nipple (Number 2) provided with this package to connect the 2 Black Tank Valves. Tighten with Channel Locks or a Pipe Wrench. Plumber's cement or Teflon tape should be used on all threaded fittings. Use the White mounting bracket provided to secure the Black Tank Valves to the wall or other solid surface. Allow enough space below the Black Tank Valve to accommodate the blue Tank Housing plus a minimum of an additional 6 inches of clearance.

STEP 5. Prior to installing the Blue Tank Housings turn on the water for a few seconds to flush any debris from the water lines.

## IMPORTANT WARNINGS:

Use extreme caution when soldering any connections between the main water line and the shut-off valve. If at all possible, solder all connections before the pipe is connected to the filter housings. If your water pipes are metal (galvanized or copper), they may be used to ground electrical systems, appliances, or your phone line. If this is the case, be sure to install regulation ground clamps to the metal pipe on each side of the plastic filter housing and connect a jumper wire between the 2 clamps (#4 gauge solid copper wire recommended). Alternatively, your plumbing code MAY allow you to connect the jumper wire to the 2 shut-off valves (see diagram). Consult a certified electrician or plumber if you are unsure.

**STEP 6.** Remove the protective plastic wrap from the Poly Sediment Cartridge marked number one (1) and place it in the Blue Sediment Tank Housing marked one (1). At the bottom of the Blue Sediment Tank Housing, there is a raised portion in the middle (standpipe) that will help center the filter in the housing. The standpipe will fit inside the hole that runs through the middle of the Sediment Cartridge. Check to make sure that the O-ring is seated properly in the groove at the top of the Blue Sediment Tank Housing, then screw the Blue Sediment Tank Housing containing the Sediment Cartridge onto the Black Tank Valve marked number one (1). Use a spanner wrench to tighten. Repeat this step for the Carbon Filter marked two (2).

**STEP 6.** Turn on the water and inspect all plumbing connections very carefully for leaks. Also inspect the seal between the Black Tank Valve caps and the Blue Sediment Tank Housing to ensure that the O-ring has formed a good seal. Tighten these connections again using the spanner wrench if necessary. If this connection still leaks, turn off the water supply and check to make sure that the filter is aligned properly in the housing and repeat your test for leaks. When you are confident that all connections are sound, run cold water for 5 minutes at any faucet to purge air out of your system and flush the filter before use. New cartridges may release "fines" (very fine black powder) after installation. Wait one hour, and flush again for another 5 minutes prior to using the water.

## Important Notes:

1. The manufacturer recommends that the blue housing sumps be replaced every 10 years or if you notice any cracks or damage.
2. This filter system should not be used with water that is micro biologically unsafe or of unknown quality without adequate disinfection before and/or after the system.
3. Water filter systems should never be exposed to freezing temperatures - severe damage to the filter and housings could result. Such damage is not covered under any warranty.
4. After prolonged periods of non-use (such as a vacation), it is recommended that the system be flushed thoroughly for at least 5-10 minutes before using the water.
5. The contaminants or other substances removed or reduced by this water treatment device are not necessarily in your water.
6. If you suspect that your water pressure will at any time exceed the maximum rating of 90 PSI (6.2 bar), a pressure regulator must be installed before the system. It is recommended that the pressure regulator be set at 75 PSI (5.2 bar) or less.

# WHOLE HOUSE SYSTEM INSTALLATION INSTRUCTIONS

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Note: We recommend that this product be installed by a professional plumber. If you install this product yourself, please ensure that your installation meets all local building and plumbing codes. The following instructions are meant only as a general guide and should not be considered a substitution for your local plumbing and / or building codes.

## Ultraviolet Installation:

We Recommend Brass unions be installed before the Whole House System and before the Ultraviolet Connections.

The plumbing connections on the inlet and outlet of the Ultraviolet housing is 3/4" outside diameter (male) NPT threaded fittings. You may require additional plumbing adapters to connect to your water line. Your plumber will have all of these items, or they can be purchased at your local hardware or plumbing supply store at minimal cost (take these instructions to the store with you so the store clerk can make sure you get everything you need).

Read the instructions carefully. Never look at a lighted ultraviolet lamp; it can be harmful to the eyes.

Note: In older homes with galvanized piping all fittings should be threaded.

STEP 1. Check UV and components: The Ultraviolet lamp is wrapped and packaged separately to avoid breakage. Handle only with clean gloves.

STEP 2. Shut off the main water supply and drain the pipes. Opening the highest and lowest fixtures in the house will help drain the pipes.

STEP 3. Location of UV unit: The UV Unit should normally be installed horizontally, using the brackets provided on the unit. Clearance on the head end should be a few inches more than the overall length of the chamber to allow for replacing of the lamp(s) and quartz sleeve(s). It should be protected from dust, heat, and freezing. Do not remove the ground prong on the electrical plug. In wet areas, run a separate ground wire from the chamber or power supply to the ground.

STEP 4. Inlet & Outlet: In a Vertical Installation, the lowest chamber is always the untreated water inlet, and the highest chamber is always the disinfected water outlet.

Flow Regulator: A pressure compensated flow control regulator is recommended. The flow controller is installed on the outlet.

Solenoid shutoff valve: If a normally closed solenoid shutoff valve is used, it is installed on the inlet of the sterilizer.

STEP 5. An Inlet manual shutoff valve should be installed. Teflon tape should be used on all threaded connections to ensure a good seal. Bypass around the unit is not recommended. A typical installation will have water flowing first through the inlet valve, then the solenoid valve to the sterilizer chamber through the control valve into the service line.

## Ultraviolet Installation Continued:

STEP 6. After tightening the compression nuts and all other plumbing connections have been made, flow water slowly into the sterilizer and verify that there are no leaks around the compression nut seals. If there are any leaks, release the water pressure, provide a small amount of additional tightening and re-pressurize the sterilizer.

### INSTALLING THE LAMP



**NOTE:** If you touch the Lamp use denatured alcohol and a soft cloth to clean the Lamp. 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.

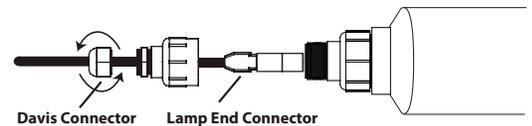


**WARNING:** Do not install the Lamp at an angle (even a slight angle); this may cause a U shaped crack at the end of the Quartz Sleeve, or possible breakage of the Lamp. If this should happen, do not proceed with the installation. Purchase a new Quartz Sleeve or Lamp from your dealer and refer to the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



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

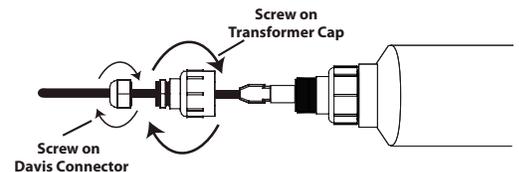
1. Unscrew the Davis Connector located behind the Transformer Cap, this allows your Transformer Cap to spin freely.



2. Plug the Lamp flush into the Lamp End Connector. If the Lamp is not plugged in all the way it may cause damage to the unit and is not covered under warranty.

3. Insert the Lamp straight into the Quartz Sleeve. Be careful, inserting the Lamp at an angle, even a slight angle, can cause a "U" shaped crack in the Quartz Sleeve.

4. Twist on the Transformer Cap. Do not over tighten. This is a connection only and is not in contact with water.



5. Tighten the Davis connector located behind the Transformer Cap.

6. **FINAL LEAK CHECK:** Do not plug the Sterilizer into power yet, turn on the water supply, let water run for 5 minutes and check for leaks. If there are any leaks, release the water pressure, provide a small amount of additional tightening and re-pressurize the sterilizer.

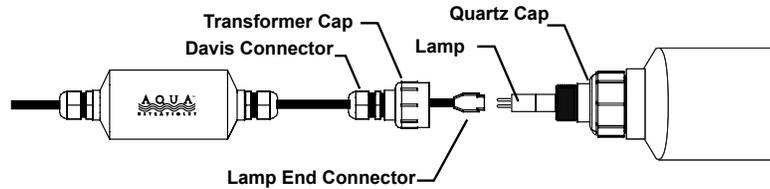
7. Once a leak test is completed, and there are no leaks, plug the Transformer into a GFCI outlet.

## MAINTENANCE



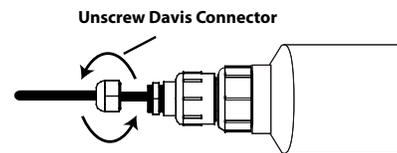
**CAUTION:** Always turn off the water supply and disconnect electricity from the unit prior to any maintenance.

### Changing the Lamp.

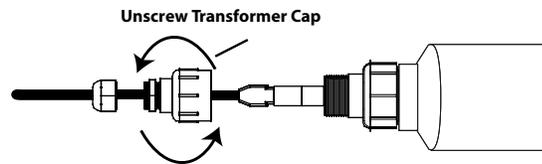


1. Unplug the UV from the power source and turn off the **water supply**.

2. Unscrew the Davis Connector located behind the Transformer Cap, this allows your Transformer Cap to spin freely.



3. Twist off the Transformer Cap.

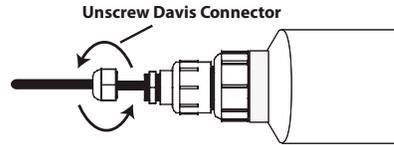


4. Slide Lamp out, be careful not to slide the Lamp out at an angle, even a slight angle, this may cause a "U" shaped crack at the end of the Quartz Sleeve, or possible breakage of the Lamp.
5. Disconnect the Lamp End Connector from the old Lamp.
6. Plug the new Lamp flush into the Lamp End Connector. If the Lamp is not plugged in all the way it may cause damage to the unit and is not covered under warranty.
7. Insert the Lamp straight into the Quartz Sleeve. Be careful, inserting the Lamp at an angle, even a slight angle, can cause a "U" shaped crack in the Quartz Sleeve.
8. Twist on the Transformer Cap. Do not over tighten. This is a connection only and is not in contact with water.
9. Tighten the Davis Connector located behind the Transformer Cap.
10. **FINAL LEAK CHECK:** Do not plug the Sterilizer into power yet, turn on the water supply, let water run for 5 minutes and check for leaks.
11. Once a leak test is completed and there are no leaks, plug the Transformer into a GFCI outlet.

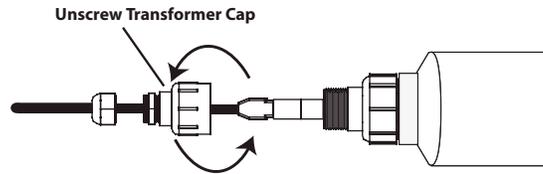
## CLEANING THE QUARTZ SLEEVE

1. Unplug the UV from the power source and turn off the water supply.

2. Unscrew the Davis Connector located behind the Transformer Cap, this allows your Transformer Cap to spin freely.



3. Twist off the Transformer Cap.



4. 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.

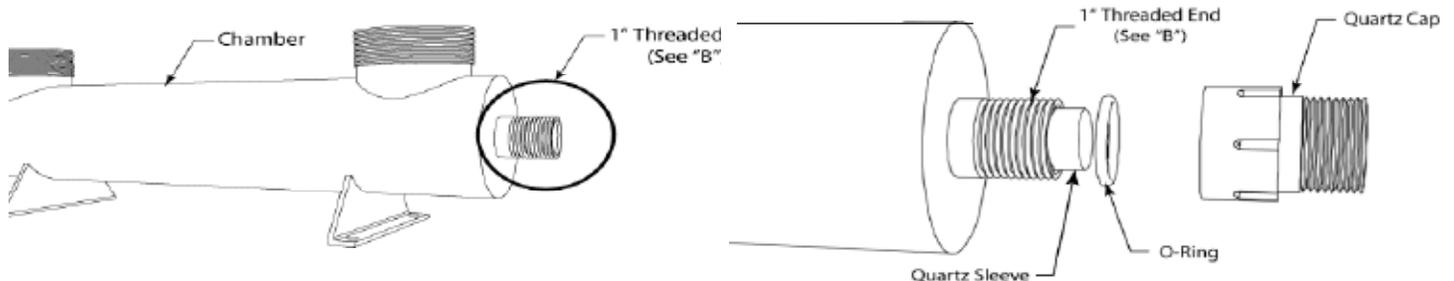


**NOTE:** The Lamps and Quartz Sleeves should be handled with care. Lamps and Quartz Sleeves are not warranted against breakage and damage.

5. Remove the compression nuts at the end of the sterilizer chamber. Slide the quartz sleeve through the stainless steel nipples.

6. The Quartz Sleeve can be cleaned with Lime Away or similar products.

7. To reinstall the Quartz Sleeve, carefully insert the Quartz Sleeve through the stainless steel nipples, allowing an equal amount to extend beyond each nipple (single ended sleeves must be carefully centered and bottomed into the "blind" end). Replace the compression nuts with the o-ring in place. Firmly hand-tighten each compression seal around the quartz sleeve. Avoid over tightening the nuts, this may cause a fracture on the end of the quartz sleeve. Under normal operating conditions, hand tightening will provide a 125 PSIG seal.



8. After tightening the compression nuts and all other plumbing connections have been made, flow water slowly into the sterilizer and verify that there are no leaks around the compression nut seals. If there are any leaks, release the water pressure, provide a small amount of additional tightening and re-pressurize the sterilizer.

9. Proceed to Installing the lamp on Page 9.



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