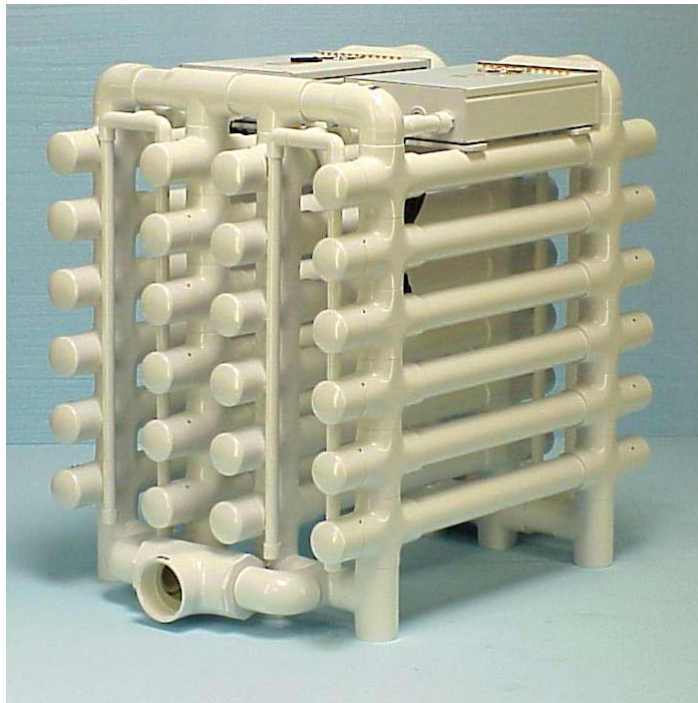# Installation and Operating Instructions
For ALQ60IL thru ALQ960IL Commercial UV Sterilizers

Please read all instructions before installing and using this unit

aquaLOGIC
Aquatic Design
Manufacturing & Integration

IMPORTANT SAFETY INSTRUCTIONS

> ### WARNING:
> To guard against injury, basic safety precautions should be observed including the following:

DO:
- Read and follow all safety instructions on unit and in these instructions.
- Save these instructions.
- Take special care to avoid possible electrical shock since water is employed in the use of this equipment.
- Use a ground fault interrupter (GFI) on all electrical equipment used near water.
- Carefully examine this unit after installation. It should not be plugged in if there is water on parts not intended to be wet.
- Immediately unplug the sterilizer if it shows any signs of leakage.
- Make sure unit is mounted securely before operating it.
- Always unplug unit when not in use, before taking off or installing any parts and before cleaning.

DO **NOT**:
- *DO NOT REACH FOR THE* STERILIZER if it falls into the water. Unplug it and then retrieve it.
- *DO NOT* attempt to use the equipment if it has been dropped into water.
- 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.
- Never yank cord to pull plug from outlet. Grasp the plug and pull to disconnect.
- Do not attempt repairs on the unit except those listed in these instructions.
- Do not operate UV sterilizer for more than a minute or two without water running through it.
- **NEVER** allow eyes or skin to be directly exposed to the ultraviolet bulb rays--*severe burns may result!!!* Always unplug unit when there is a possibility of direct exposure.
- Do not use indoor models in exterior applications unless they are well protected from the weather. Use pond models for exterior applications.
- Do not allow unit to be exposed to freezing temperatures. Severe damage may result.
- Do not operate this unit if you suspect that the bulb or quartz sleeve may be broken inside. Be safe: remove and inspect bulb or sleeve if you are not sure.
- Do not attempt to change bulb or quartz sleeve without using appropriate safety gear.
- Do not use on a system connected to a municipal water system.
- Do not exceed the maximum pressure rating of **15 psi** for all non-quartz models.
- Do not exceed the maximum pressure rating of **30 psi** for all quartz and pond models.

> **DO NOT** exceed this maximum rating or serious damage may result.
> High pressure units are available. Contact *AQUA LOGIC* for information.

Thank you for selecting an Aqua Logic,® Inc. ultraviolet (UV) sterilizer. Each model has been designed and built to provide years of reliable service and has been fully tested under pressure before it leaves the factory. Aqua Logic has been manufacturing UV sterilizers for more than 10 years. Today, there are hundreds of thousands of Aqua Logic UV sterilizers in use by aquarists, aquaculture, public aquariums, educational institutions, government agencies, industries and research organizations across the US and around the world.

Aqua Logic offers free technical information by telephone (858) 292-4773 or by FAX (858) 279-0537 M-F 8:00 am to 5:30 pm except selected holidays. Free technical assistance is also available by email (info@aqualogicinc.com) and through our website: www.aqualogicinc.com.

The following should answer most of the questions that you may have about the installation, operation and use of your UV sterilizer:

- What benefits do I receive by using a UV sterilizer on my system?
    Aqua Logic UV sterilizers are highly recommended for both fresh and saltwater (marine) systems as well as ponds. They may be used to kill waterborne bacteria and viruses, to control single-cell algae and/or to kill fungi and protozoa (parasites).

    UV sterilizers do NOT affect water chemistry, lower the livestock's immune systems, nor affect established biological filtration systems.

- How do I know which size UV I need to do the job?
    The following chart provides **maximum** flow rates in gallons per minute (GPM) to control typical bacteria and viruses, single-cell algae, and fungus/protozoa:

Model	Typical Bacteria & viruses (15000 μWSec/cm^2)	Typical algae (30000 μWSec/cm^2)	Typical Protozoa (45000 μWSec/cm^2)
ALQ60IL	33	16	11
ALQ90IL	50	25	17
ALQW120IL, Q120IL	66	33	22
ALQ180IL	100	50	33
ALQ240IL	133	66	44
ALQ300IL	166	83	55
ALQ360IL	200	100	67
ALQ480IL	266	133	89
ALQ600IL	332	166	111
ALQ720IL	400	200	133
ALQ960IL	534	267	178

The following sizing chart provides maximum flow rates (in gallons per hour) and suggested pond sizes to control typical waterborne single-cell pond algae:

Model	Maximum Flow Rate:	Pond Size (gal)
ALQ60IL	1,000	2,000-4,000
ALQ90IL	1,500	3,000-6,000
ALQW120IL, ALQ120IL	2,000	4,000-8,000
ALQ180IL	3,000	6,000-12,000
ALQ240IL	4,000	8,000-16,000
ALQ300IL	5,000	10,000-20,000
ALQ360IL	6,000	12,000-24,000

You may use additional units or larger units for greater capacity.

- How many hours per day should I use a UV on my system?

  We recommend that the UV sterilizer be placed in continuous operation for 24-hours-per-day 7-days-per-week after the biological filtration systems are established (typically about 4 weeks after starting or restarting a system).

- How often should I change the bulb?

  The minimum life expectancy of bulbs used in Aqua Logic UV sterilizers is about a year of continuous operation for commercial models. Even though the bulb may still be glowing with blue light after a year, the bulb may no longer produce the kill-rate you desire. If you are using a non-quartz model, we also recommend that you change the compression gaskets at least every other bulb change to minimize risk of leaking.

- What are the maximum pressures that I can use on Aqua Logic UV sterilizers?

  Non-quartz models may be used in applications up to a maximum of 15 psi.
  Quartz models may be used in applications up to a maximum of 35 psi.
  Aqua Logic Systems manufactures a line of special high-pressures units which handle up to 60 psi. Call for availability.
  WARNING: Never use Aqua Logic UV sterilizers on systems which are connected to municipal water systems since the available pressure may exceed the maximum rating of the equipment and result in serious damage or injury.

- Where should I put the UV sterilizer in my system?

  The UV sterilizer should be the last piece of equipment in your system before the water is returned to the tank or sump.

- How do I connect the water inlet and outlet?

  All free standing UV sterilizers have labels on the water inlets and outlets. All wall-mount models may be installed vertically. In all cases, be sure that the water goes into the UV sterilizer at the bottom and comes out at the top to prevent air from getting trapped in the unit.

- Can I use an Aqua Logic UV sterilizer outdoors?

  We recommend that you use all models indoors only since they are not weatherized and may be exposed to the elements.
  WARNING: Never allow any UV sterilizer be exposed to freezing temperature. Allowing the unit to be exposed to freezing temperatures may result in breakage to the bulb, the quartz sleeve or to the PVC chamber.
  Damage to the unit caused by freezing is not covered under warranty.

Unit Installation:

- Shut off or unplug pump which will drive UV sterilizer.
- Connect water from pumping source to either one of the ports on the UV [if mounting UV in a vertical position, this port must be at the bottom of the unit]. The UV should be installed after all other system components to minimize organic accumulation within the UV sterilizer. You may use either flexible tubing or rigid pipe.
- Do not exceed the maximum flow rate for your unit as shown on page 3.
- Connect the output from the UV to the return line to your tank.
- Turn on or plug in pump.
- Carefully inspect the installation for leaks.
- Plug ballast into an available Ground Fault Interrupt (GFI) protected outlet.
  NOTE: Make sure that ballast and outlet are protected from possible leaks and water drips. Make sure that the power cord between the UV and the ballast has a loop in it below the ballast to prevent water from following the cord into the ballast and outlet.
- Look through the viewport on the endcap or the neon indicator light on the ballast box to see if the bulb is glowing blue.
- Your UV sterilizer is now installed and operational.

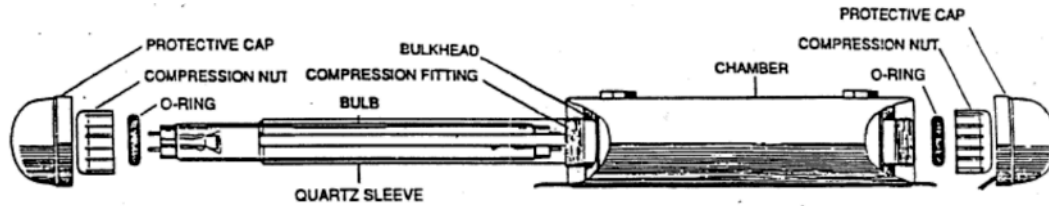**1 Month Scheduled Maintenance (all models):**

- Look through the viewport on the endcap to see if the bulb is glowing a bluish color.
- Carefully inspect the UV and plumbing for leaks.

1 Year Scheduled Maintenance:

- Replace bulb [see page 6].

Maintenance as required (all models):

- Replace quartz sleeve [see page 6].
- Remove organics from quartz sleeve [see page 7].

PROTECTIVE CAP · COMPRESSION NUT · O-RING · COMPRESSION FITTING · BULKHEAD · BULB · QUARTZ SLEEVE · CHAMBER · PROTECTIVE CAP · COMPRESSION NUT · O-RING

Replacing UV bulb

WARNING: Be sure to wear protective gear for your hands and eyes!!

- Turn off or unplug pump.
- Unplug UV sterilizer from outlet.
- Remove both endcaps from chamber by removing retainer screws and sliding endcap off chamber.
- Remove bulbpin connectors from both ends of bulb.
- Remove bulb by sliding it out of the quartz sleeve.
- Slide replacement bulb into unit. [DO NOT force the bulb into the quartz sleeve or you may break the quartz sleeve! We recommend using Aqua Logic certified bulbs for a perfect fit.]
- Attach bulbpins to bulb (It doesn't matter which connector goes to which pin).
- Slide endcaps on and put in retainer screws.
- Turn on or plug in pump.
- Carefully inspect for leaks.
- Plug UV sterilizer into outlet.
- The view port should show a blue light after a few seconds.

Replacing the quartz O-rings and/or quartz sleeve

WARNING: Be sure to wear protective gear for your hands and eyes!!
- Turn off or unplug the pump.
- Unplug the UV ballast.
- Disconnect UV from plumbing and drain it.
- Remove both endcaps from the UV sterilizer by pressing against their ends with the palm of your hand.
- Disconnect all 4 bulb pins from the bulb.
- Remove the bulb by sliding it out.
- Remove the compression nuts on each end of the UV. [NOTE: Some water may leak out during this procedure.] If you cannot loosen them by hand, you may obtain a UV bulb removal wrench from your distributor or from Aqua Logic Systems or use a pair of adjustable spanner pliers.
- Slide the quartz sleeve from the chamber in the same manner as removing the bulb.
- Remove both O-rings. If you are not replacing them, inspect them carefully for damage or cracks.
- Slide the sleeve back into the chamber until it is approximately centered in the sterilizer.
- Slide the O-rings onto the sleeve and snug them evenly against their seats.
- Screw the compression nuts back on. Hand tighten only. Do NOT overtighten.
- Reinstall the UV bulb and reconnect the bulbpins.
- Reconnect the UV to the plumbing.
- Turn on or plug in pump.
- Inspect carefully for leaks.
- Replace endcaps.
- Plug UV ballast into its outlet.
- After a few seconds, the view port should glow with a bluish color.

REMOVING ORGANICS FROM THE UV:

WARNING: Be sure to wear protective gear for your hands and eyes!!

- Unplug UV from the power.
- Disconnect UV from plumbing and drain it.
- Make a pure chlorine bleach solution (1 cup bleach to 1 quart water)
- Connect the flush kit hoses to the inlet and outlet of the UV sterilizer or to the drain and flush kit inlet (if available).
- Cycle the solution through the UV sterilizer for 5-10 minutes.
- Drain the bleach solution from the UV sterilizer.
- Rinse or flush the unit thoroughly to remove all chlorine. Continue to flush until you can no longer smell chlorine. You may wish to add a few drops of a de-chlorinator to insure that all chlorine has been neutralized.
- Reconnect the UV to the plumbing.
- Replace UV sterilizer lid and install screws.
- Turn pump on.
- Apply power to UV sterilizer.
- The view port should show a blue light after a few seconds.

Typical Flush Kit System

REMOVING MINERAL DEPOSITS FROM THE UV:

WARNING: Be sure to wear protective gloves and goggles!!

DO NOT COMBINE chlorine bleach with muriatic acid or equivalent. The resultant gases may be poisonous.

- Follow procedure as above except that you use muriatic acid or equivalent. Be sure to follow product instructions carefully.

Specifications:

Model	# of Bulbs	Amps @115VAC	Inlet/Outlet FPT	Ship Dim (L x W x H inch)	Ship Wt. (pounds)
ALQ60IL	2-30W	1	2	46x14x9	25*
ALQ90IL	3-30W	1	2	49x19x9	37
ALQW120IL	4-30W	1	2	46x25x9	48
ALQ120IL	2x2-30W	1	2	47x20x28	134
ALQ180IL	2x3-30W	2	2	47x20x34	155
ALQ240IL	2x4-30W	2	3	47x20x39	205
ALQ300IL	2x5-30W	2	3	47x20x44	210
ALQ360IL	2x6-30W	3	3	47x20x52	245
ALQ480IL	4x4-30	3	4	56x36x44	330
ALQ600IL	4x5-30	4	4	56x36x49	470
ALQ720IL	4x6-30	6	4	56x36x56	545
ALQ960IL	4x8-30	8	4	56x36x68	620

NOTES:
- ALQ60IL are subject to oversize shipping weight (30 pound) when shipped by UPS ground.
- All models use female pipe thread (fpt) inlet and outlet.
- All models also available in 220VAC/50Hz configurations at additional cost.
- All specifications subject to change without notice.
- Wall-mount models: ALQ60IL, ALQ90IL, ALQW120IL
- Free-standing models: ALQ120IL, ALQ180IL, ALQ240IL, ALQ300IL, ALQ360IL, ALQ480IL, ALQ720IL, ALQ960IL

Replacement Parts

Part No.	Description
Q30	Quartz sleeve for 30 watt and up
BULB PINS	Set of 2 wires with wire nuts
BS2-30B	Bulk 30 watt starters (50 pc)
ALAB-30SP	30 watt ballast potted (1 bulb each)
ALABP-30DP	30 watt ballast potted (2 bulb each)
ALAB-30TP	30 watt ballast potted (3 bulb each)
ALAB-30QP	30 watt ballast potted (4 bulb each)
HM-115	Hour meter 115v
HM-220	Hour Meter 220v
OKQ15-30	"O" ring kit for 15 watt and up quartz sleeve models

Limited Warranty Terms (PLEASE READ CAREFULLY):

All UV Sterilizers manufactured by **AQUA LOGIC,® INC.** (hereafter called **AQUA LOGIC**) are warranted against defects and workmanship for a period of one (1) year from the date of purchase by the original purchaser/enduser or eighteen (18) months after date of manufacture (whichever is sooner). Any **AQUA LOGIC** product found to be defective within the warranty period will repaired or replaced at the option of **AQUA LOGIC**.

Warranty **EXCEPTIONS**:

- All UV Sterilizer chambers are warranted for life against leakage caused by UV degradation.
- Light bulbs (including ultraviolet sterilizer bulbs) are warranted for a period of ninety (90) days from date of purchase.
- The warranty applies only to the original enduser and is not transferable.
- The limited warranty may not be modified by verbal statements by the manufacturer, distributors, retailers, their agents nor any other party.
- The warranty covers only the repair or replacement of the **AQUA LOGIC** product. **AQUA LOGIC** denies all liability for any other loss including but not limited to loss of equipment, income, livestock or personal injury.
- **AQUA LOGIC** does not warrant the suitability of the product for the enduser's application.
- All warranties are voided by the following:
  --Product labels defaced or removed.
  --Product improperly installed or maintained by user or their agent.
  --Product abused, misused, or damaged by user.
  --Product misapplied to application.
  --Product damage caused by electrical surges, spikes, brownouts or improper voltage.
  --Product damage caused by freezing, extremely cold or extremely high temperatures.
- **AQUA LOGIC** shall not be liable for the cost of field repairs, inspection, installation, replacement, etc., without prior written authorization and/or valid authorization number.
- **AQUA LOGIC** shall not be liable for shipping damage or loss.
- **AQUA LOGIC** shall not be liable for unauthorized shipping costs to return warranty items to **AQUA LOGIC.**