

Bio-Logic[®]

ULTRAVIOLET WATER PURIFIERS

Models BIO-1.5, BIO-3.0, BIO-4.0, BIO-5.0,
BIO-7.0, BIO-9.0 & BIO-12.0



Installation, Operation & Maintenance

ATLANTIC  **ULTRAVIOLET**
CORPORATION[®]

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Owner's Manual

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These instructions generally describe the installation, operation and maintenance of the **Bio-Logic**® Ultraviolet Water Purifiers, Models BIO-1.5 to BIO-12.0. Questions that are not specifically answered by these instructions should be directed to the Factory.

Atlantic Ultraviolet Corporation takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damage. Do not install damaged equipment.

Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.

SAFETY WARNINGS

- All personnel should be alerted to the potential hazards indicated by the product safety labeling on this unit.
- The following conventions are used to indicate and classify precautions in this manual and on product safety labeling. Failure to observe precautions could result in injury to people or damage to property.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Danger indicates an **IMMINENTLY** hazardous situation, which, if not avoided, **WILL** result in death or serious injury.



Warning indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **COULD** result in death or serious injury.



Caution indicates a **POTENTIALLY** hazardous situation, which, if not avoided, **MAY** result in minor or moderate injury.



Caution used without the safety alert symbol indicates a potentially hazardous situation, which, if not avoided, may result in property damage.



This symbol/pictorial is used to identify an **ELECTRICAL SHOCK** or **ELECTROCUTION** hazard.



This symbol/pictorial is used to identify an **ULTRAVIOLET LIGHT** hazard.

- Product safety labels should be periodically inspected and cleaned, as necessary, to maintain good legibility. Always replace illegible safety labels. Contact factory to obtain replacement safety labels.

SAFETY INSTRUCTIONS

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

1. Read and follow **ALL** safety instructions.
2. Do not use this water purifier for other than its intended purpose as described in this manual.
3. Do not alter design or construction.
4. Do not remove any labels or devices.
5. **▲ DANGER:** To prevent the risk of severe or fatal electrical shock, special precautions must be taken since water is present near electrical equipment. Always disconnect power before performing any service or maintenance.
6. **▲ WARNING:** Avoid exposure to direct or strongly reflected germicidal ultraviolet rays. **Germicidal ultraviolet rays are harmful to the eyes and skin.**
7. Intended for indoor use only. The water purifier should be protected from the elements and from temperatures below freezing.
8. Do not operate water purifier if lamp cable, lamp connection, power cord and/or plug are damaged, or if any other damage to the water purifier is visible or suspected.
9. Electrical power supplied, to the water purifier, **MUST** match power requirements listed on the water purifier.
10. Plug the water purifier into an approved ground fault circuit interrupt (GFCI) receptacle.
11. **▲ CAUTION:** Do not operate without proper electrical ground.
12. Do not exceed water purifier's maximum rated flow capacity.
13. Do not exceed maximum operating pressure of 100 PSI.
14. Read and follow all notices and warnings on the water purifier.
15. **SAVE THESE INSTRUCTIONS.**

PRODUCT APPLICATION

CONSTRUCTION

- The water purifier is designed to mount horizontally.
- The water purifier's dual chamber heads are removable and may be rotated independently, which aids in the installation, maintenance or the retrofitting of an existing system.
- The water purifier's chamber, and chamber heads are electropolished and passivated type 316 stainless steel.
- Easy-off end caps allow for quick and easy lamp change, without disconnecting the system from the water supply or draining the purifier. No tools are required.

PRINCIPLE OF OPERATION

The **Bio-Logic**® design has been carefully conceived to provide adequate germicidal dosage throughout the disinfection chamber. The dosage, as it applies to ultraviolet disinfection, is a function of time, and the intensity, of ultraviolet radiation, to which the water is exposed. The exposure time, in seconds, is the total time it takes the water to flow through the disinfection chamber, exposing it to the germicidal lamp. Exposure time is related to the flow rate; the higher the flow rate, the lower the exposure time or the lower the flow rate, the higher the exposure time. The ultraviolet intensity is the amount of energy, per unit time, emitted by the germicidal lamp. The Dosage is the product of ultraviolet intensity and the exposure time. The operation of the **Bio-Logic**® is as follows:

1. Water enters the purifier and flows into the annular space between the quartz sleeve and the chamber wall.
2. Suspended microorganisms are exposed to the ultraviolet rays emitted by the germicidal lamp.
3. The LED indicator light, located on the ballast, provides visual indication of germicidal lamp operation.
4. Water leaving the purifier is instantly ready for use, no further contact time is required

LIMITATION OF USE

The water purifier is intended for the use with visually clear water, not colored, cloudy or turbid.

See “**Water Quality**” section below.

The water purifier is **NOT** intended for the treatment of water that has an obvious contamination or intentional source, such as raw sewage; nor is the unit intended to convert wastewater to microbiologically safe drinking water.

WATER QUALITY

Water quality plays a major role in the transmission of germicidal ultraviolet rays. It is recommended that the water does not exceed the following maximum concentration levels:

Table 1 - Maximum Concentration Levels

Manganese:	0.05mg/l
Total Suspended Solids:	10 mg/l
pH:	6.5 - 9.5
Color:	None
Hardness:	6 GPG or 102.6 PPM
Iron:	0.3 mg/l

Effectively treating water with higher concentration levels than listed above can be accomplished, but may require added measures to improve water quality to treatable levels. If, for any reason, it is believed the ultraviolet transmission is not satisfactory, contact the factory.

UNPACKING

- Remove water purifier from shipping carton.
- Atlantic Ultraviolet Corporation takes all possible precautions when packaging this unit to prevent damage. Carefully inspect the water purifier, power cord and plug for damage, report all damage immediately. Do not assemble or operate if there is any damage, visible or suspected.
- Units occasionally experience damage in shipment due to the fragility of the quartz sleeve, it is recommended that the water purifier be inspected for damage to the quartz sleeve. Each end of the unit as well as the inlet and outlet should be viewed to see if the quartz sleeve has experienced damage. If the quartz sleeve shows signs of damage it should be replaced before the purifier is pressurized. See “**Replacement of Broken Quartz Sleeve**” in the “**Maintenance**” section for the proper method of replacing the quartz sleeve in your water purifier.
- All models, of the **Bio-Logic**® water purifiers, are shipped with the lamp packed separately. Keep the lamp aside for installation once the purifier has been properly installed.
- Carefully inspect all packing materials to prevent the loss of accessories, mounting hardware, spare parts or instructions.
- Do not discard packing materials until unit is assembled and check out is complete.

INSTALLATION

LOCATION

1. The water purifier is intended for indoor use only. The water purifier should be protected from the elements and from temperatures below freezing. The ambient temperature, in the area surrounding the water purifier, should be between 33° F and 100° F.
2. Electrical power supplied to the water purifier **MUST** match power requirements listed on the water purifier. Use of a voltage surge protector is recommended.
3. The water purifier should be located in a dry, well-lit area, which provides enough room to perform routine maintenance. This includes a minimum distance of one chamber length from the chamber end, to allow for cleaning and/or the changing of the lamp and quartz sleeve as well as a minimum of 6" on the opposite end of the water purifier.
4. The water purifier should always be located closest to the point of use. This reduces the chance of the purified water being re-contaminated by bacteria in the water distribution system after the water purifier.
5. **CAUTION:** As with any water handling device, the water purifier should be located in an area where any possible condensation or leakage from the water purifier, any purifier accessory and/or plumbing will not result in damage to the area surrounding the water purifier. For added protection, it is recommended that a suitable drain pan be installed under the purifier. The drain pan must be plumbed to an adequate, free flowing, drain to prevent water damage in the event of a leak. There are numerous leak detection/flood stop devices, available on the market today, designed to stop the flow of water, reducing the chance of water damage due to leakage. For more details regarding leak prevention and/or limiting damages due to leaks, please contact the factory.
6. The water purifier should be located after all other water treatments, such as de-ionizers, water softeners, carbon filters, pre-filters, reverse osmosis, pressure tanks, and pumps. This reduces the chance of the purified water being re-contaminated by bacteria in any of these units.
7. The system should be located within 5' of an electrical outlet. The electrical outlet should be an approved Ground Fault Circuit Interrupt (GFCI) receptacle. Do not use an electrical outlet, which can be switched off.

DIMENSIONAL DATA

Figure 1 - **Bio-Logic®** Dimensional Drawing

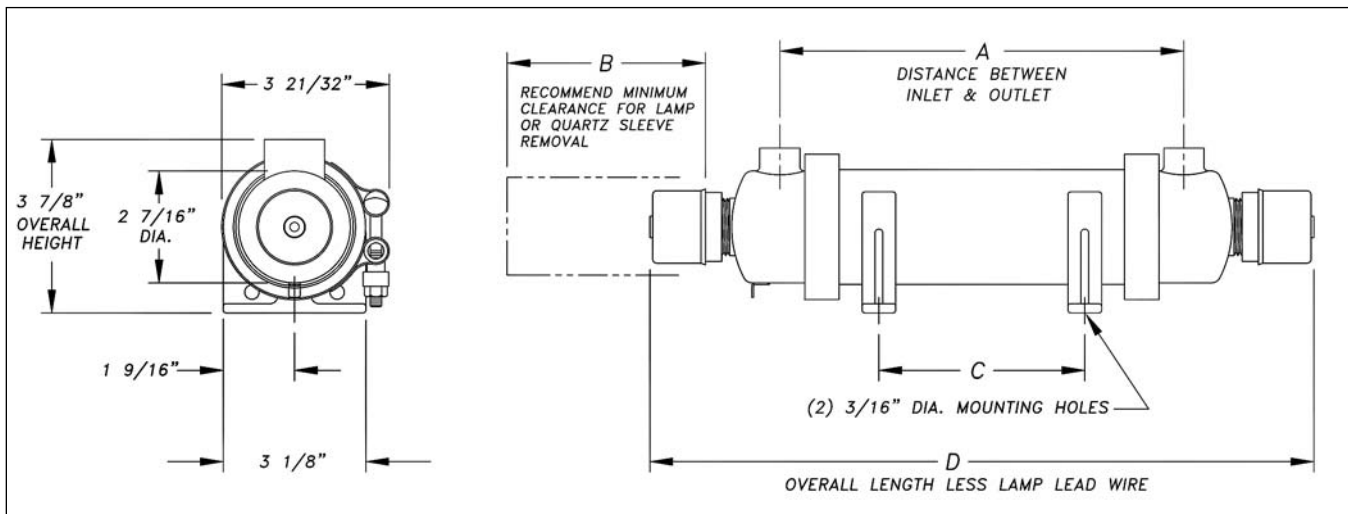


Table 2 - **Bio-Logic®** Dimensional Data

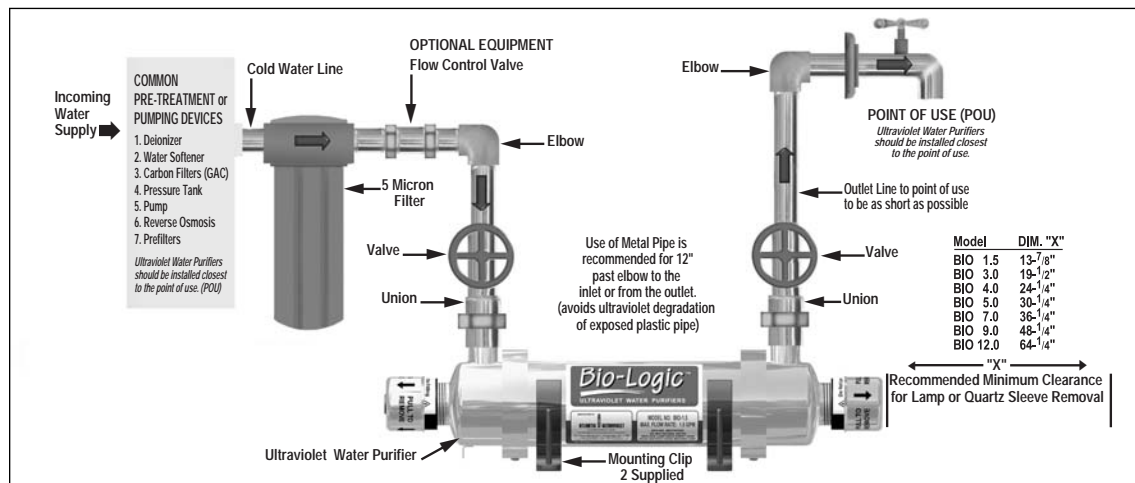
Model:	A	B	C	D	Inlet/Outlet
BIO-1.5	8 ^{-13/16"}	13 ^{-7/8"}	3" to 6"	14 ^{-1/2"}	3/8" F NPT
BIO-3.0	14 ^{-7/16"}	19 ^{-1/2"}	6" to 11"	20 ^{-1/8"}	3/8" F NPT
BIO-4.0	18 ^{-9/16"}	24 ^{-1/4"}	6" to 14"	24 ^{-7/8"}	3/4" F NPT
BIO-5.0	24 ^{-9/16"}	30 ^{-1/4"}	8" to 20"	30 ^{-7/8"}	3/4" F NPT
BIO-7.0	30 ^{-9/16"}	36 ^{-1/4"}	12" to 26"	36 ^{-7/8"}	3/4" F NPT
BIO-9.0	42 ^{-9/16"}	48 ^{-1/4"}	18" to 38"	48 ^{-7/8"}	3/4" F NPT
BIO-12.0	58 ^{-9/16"}	64 ^{-1/4"}	28" to 54"	64 ^{-7/8"}	3/4" F NPT

All specifications, dimensional data, etc are approximate and subject to change without notice.

INSTALLATION

1. The water purifier should be mounted horizontally, on a flat dry surface. The water purifier should be secured using the mounting clips. The purifier should not be solely supported by its plumbing connections.
2. The water purifier must be connected to the cold water line only.

Figure 2 - Recommended Installation



3. It is recommended that a 5-micron sediment filter be installed, in line, prior to the water purifier. The sediment filter will stop or trap any particulates from entering the water purifier. Particulates may cause damage to the quartz sleeve, as well as interfere with the purifier's ability to disinfect the water. The sediment filter may also help to reduce the amount of routine cleaning, of the quartz sleeve, required.
4. Shut off valves should be installed on both the inlet and outlet sides of the water purifier. **The use of bypass valves is not recommended.** The shut off valves allow the purifier to be isolated from the water supply, which is required when removing the quartz sleeve.
5. Unions should be installed on both the inlet and outlet of the water purifier; this will allow easy removal of the water purifier, from the plumbing, if required. Apply Teflon[®] tape as necessary to ensure a tight seal.
6. When all plumbing connections are complete, allow water to enter the water purifier at a low flow rate, until the purifier is pressurized. With the purifier pressurized, it should be checked for leaks. Once it is determined that there are no leaks, the inlet valve can be fully opened.
7. Unpack the lamp and ballast. While holding lamp end, carefully push lamp socket on. Carefully slide lamp straight into the quartz sleeve, without angling. Push the end cap on, over the static gland nut. For 120v or 220-240v operation, attach the ground connector to the grounding tab of the chamber.

▲ CAUTION: Lamp and quartz sleeve are easily damaged. Exercise care when handling.

8. **For 120v operation**, plug ballast into an approved Ground Fault Circuit Interrupt (GFCI) receptacle. Where a 2-prong or unprotected 3-prong receptacle is encountered, it must be replaced by a properly grounded Ground Fault Circuit Interrupt (GFCI) receptacle. Installation must be in accordance with the National Electrical Code and any local codes and ordinances by a qualified Electrician.

For 12v DC operation;

- The ballast must be wired to an adequate 12v DC source with appropriate gauge wire for the voltage and current. It is recommended that the ballast have a dedicated run to the 12v source, and protected by either a fuse or circuit breaker.
 - Always disconnect the battery(s), or other 12v source, before installation or performing any maintenance.
 - The ballast is supplied with a 6-foot, 2 wire, power cord and 5-foot lamp cord, the ballast must be located so the lamp is easily removed and does not put any tension on the lamp, which could cause damage to the lamp and/or quartz sleeve. All installed wiring should be protected from heat, wear points (abrading) or mechanical stress. Secure ballast using the mounting tabs located on the ballast body.
 - Wire ballast power cord as follows;
 - Brown wire - Positive (+) to protected (fuse or circuit breaker) 12v DC source.
 - Blue wire - Negative (-) to suitable chassis ground.
 - If there are any questions or concerns regarding the installation and/or wiring of the 12v system, consult a qualified installer.
9. Once the plumbing hook ups are made, it is a good practice to disinfect the "downstream" plumbing. This is done by introducing chlorine or other disinfectant solution directly into the purifier chamber, a 100-ppm of chlorine is suggested. With the disinfectant solution in the purifier chamber, turn the ultraviolet purifier on. Open the "down stream" outlet until a chlorine odor is noticed. Close the outlet and allow the disinfectant to remain in the plumbing for three (3) hours. Flush the plumbing with ultraviolet purified water; allow the water to run for several minutes before use, this will allow the ultraviolet lamp to reach its full germicidal output.

RECOMMENDED OPTIONS

Not all options are available in all voltages (120v, 220-240v or 12v DC); consult the factory with specific requirements.

1. **Sentry™ Safety Sensor:** Pilot lamps provide constant visual monitoring of normal operation. In the event of power or lamp failure the safety sensor indicates an alarm condition. The safety sensor is capable of operating an optional audio alarm and/or solenoid valve.
2. **Audio Alarm::** Lamp Status Alarm, activated by the **Sentry™ Safety Sensor**, produces a high pitched, pulsed tone to alert the user to any malfunction detected.
3. **Time Delay Mechanism:** Provides a 2-minute warm up period during which the ultraviolet lamp achieves its full germicidal output before the water is allowed to flow through the water purifier. The time delay mechanism is used in conjunction with, and is electrically connected to the Solenoid Valve.
4. **Elapsed Time Indicator:** A non-resettable display of the water purifier operating hours. Useful for scheduling and recording maintenance and lamp replacement.
5. **Solenoid Valve:** Operated in conjunction with the Safety Sensor or Time Delay Mechanism, this valve prevents water flow through the water purifier when an abnormal condition is detected or in the event of power failure.
6. **SureFLO™:** Flow Control Valve, limits water flow to the rated capacity of the purifier. The flow control valve is located in line prior to the water purifier, and should be protected from ultraviolet exposure by the use of a 90-degree elbow fitting between the flow control valve and the water purifier.

MAINTENANCE

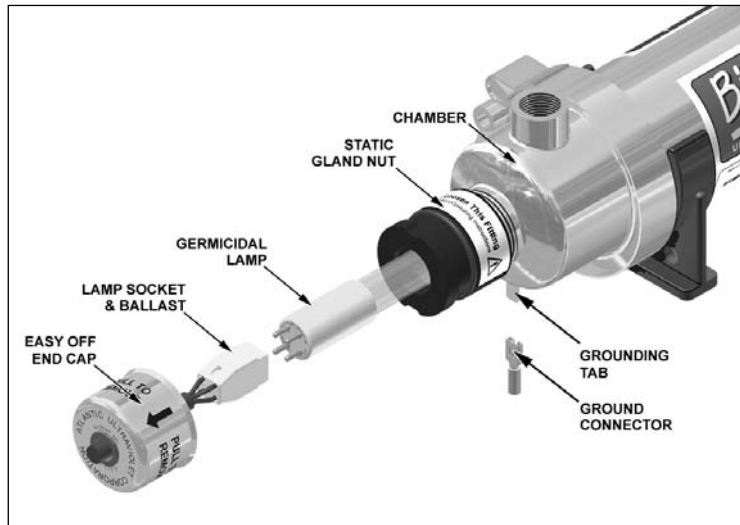
- The water purifier is designed to operate with a minimal amount of maintenance, providing the water quality does not exceed maximum concentration levels.
- Ordinary maintenance consists of the cleaning of the quartz sleeve, when conditions warrant.
- Lamp replacement is recommended every 10,000 hours of operation (approximately 12 months of continuous service).

INSPECTION

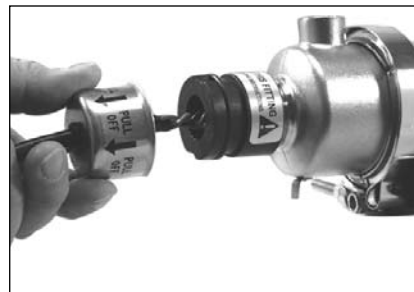
1. Regularly inspect the water purifier to ensure that the germicidal lamp is still in operation.
 - An LED indicator light, located on the ballast, provides visual indication of germicidal lamp operation. This provides an indication of lamp operation and does not indicate the level of ultraviolet intensity or transmission through the water.
 - On purifiers so equipped, the **Sentry™ Safety Sensor** provides visual indication of ballast and ultraviolet lamp operation.
2. To ensure proper operation of the water purifier, regular biological testing should be performed on a schedule recommended by local public health authorities, or at minimum; at installation, quarterly for the first year of service and annually, at lamp replacement, for the life of the water purifier.

LAMP INSTALLATION OR REPLACEMENT

Figure 3 - Lamp Replacement



Step 1 - Remove Ground Connector



Step 2 - Remove End-Cap



Step 3 - Remove Socket



Step 4 - Remove Lamp

1. **Disconnect power to water purifier, and remove ground connector from the chamber.**
2. Remove easy-off end cap by pulling cap off static gland nut.
3. Carefully withdraw lamp approximately 2 inches from chamber. While holding lamp end, remove lamp socket from exposed lamp end.
4. Carefully withdraw lamp from chamber. Be sure to withdraw lamp straight out without angling until completely clear of quartz sleeve.

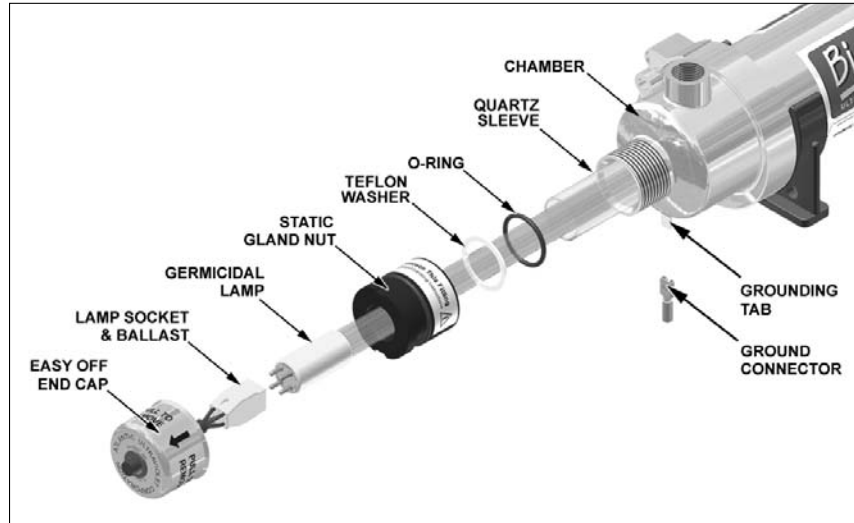
⚠ CAUTION: Lamp and quartz sleeve are easily damaged. Exercise care when handling.

5. Reinstall lamp in reverse order.

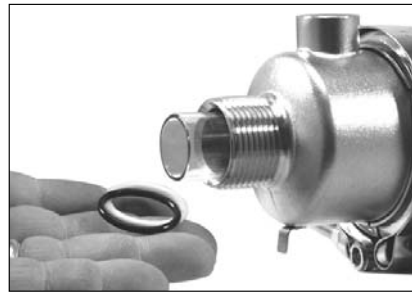
⚠ WARNING: Germicidal ultraviolet rays are harmful to eyes and skin. Do not restore power to water purifier until lamp and easy-off end caps have been properly reinstalled.

QUARTZ SLEEVE CLEANING OR REPLACEMENT

Figure 4 - Quartz Sleeve Cleaning or Replacement



Step 4 - Remove Gland Nuts



Step 5 - Remove Washer & O-Ring



Step 6 - Remove Quartz Sleeve

1. **Disconnect power to water purifier, and remove ground connector from the chamber.**
2. Shut off water supply to water purifier via inlet and outlet shut off valves and drain chamber, if possible.
3. Follow the steps in "LAMP INSTALLATION OR REPLACEMENT" to remove lamp.

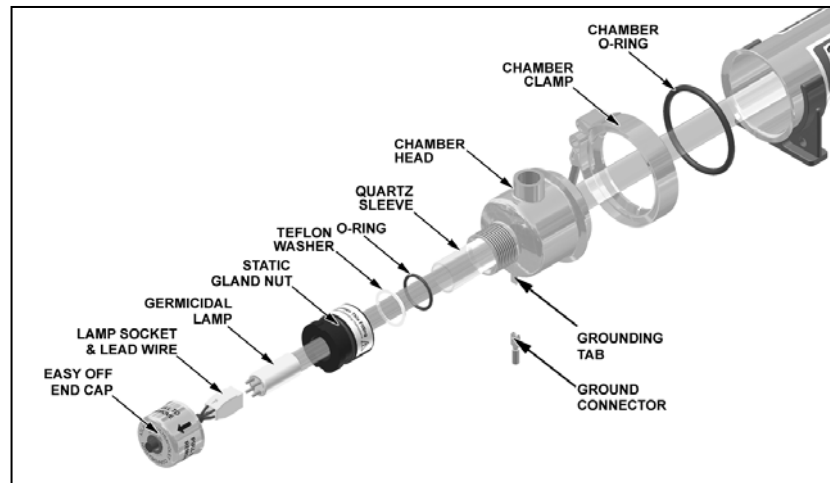
⚠ CAUTION: Lamp and quartz sleeve are easily damaged. Exercise care when handling.

4. Unscrew static gland nuts from each end of the chamber. Avoid striking quartz sleeve with static gland nut.
5. Remove Teflon[®] washer and o-ring from both ends of quartz sleeve. Teflon[®] washer will sometimes remain within the static gland nut. If so, remove Teflon[®] washer from static gland nut before proceeding.
6. Carefully remove quartz sleeve from chamber. **NOTE:** It is advisable to support the quartz sleeve on the backside with your finger so that it does not drop to the bottom of the chamber as it slides into the chamber.
7. Once the quartz sleeve is removed, clean with alcohol or a detergent. Stubborn stains usually can be removed with a dilute hydrochloric acid. **NOTE:** Follow all manufacturer's instructions and precautions when handling chemicals.
8. Reassemble in reverse order. Make sure the quartz sleeve protrudes an equal distance past each threaded nipple. Be sure O-rings are placed on quartz sleeve before Teflon[®] washer.
9. Tighten static gland nuts firmly by hand only, **DO NOT USE HAND TOOLS**. Tightening with hand tools is likely to cause quartz sleeve to break.
10. When all connections are complete allow water to enter the water purifier at a low flow rate until the purifier is pressurized. With the purifier pressurized, it should be checked for leaks.
11. If no leaks occur, reinstall lamp, following the steps in "LAMP INSTALLATION OR REPLACEMENT" section.

⚠ WARNING: Germicidal ultraviolet rays are harmful to eyes and skin. Do not restore power to water purifier until lamp and both easy-off end caps have been properly reinstalled.

REPLACEMENT OF BROKEN QUARTZ SLEEVE

Figure 5 - Chamber Head Removal



▲ CAUTION: Broken Quartz is SHARP. It is recommended that protective goggles and gloves are worn when handling.

1. Follow the steps in "Quartz Sleeve Cleaning or Replacement" to remove lamp and quartz sleeve.

▲ CAUTION: Considerable force may be required to pull purifier from the mounting clips.

Exercise extreme care when removing purifier.

2. Remove the water purifier from the mounting clips. Grasp the purifier chamber, and firmly pull each end free of the mounting clips.
3. Carefully remove as much of the broken quartz sleeve as possible, from each end of the chamber.
4. Remove chamber head clamp, by using a 7/16" wrench to loosen and remove the 1/4" nut from the head clamp.
5. Remove chamber head from the chamber.
6. Any broken pieces of the quartz sleeve can now be removed through the open end of the purifier chamber. Flush water through chamber being careful to remove all quartz fragments from the interior of the chamber.
7. Carefully discard all pieces of the broken quartz sleeve.
8. Inspect the large O-ring used to seal the chamber and the chamber head. Make sure the O-ring is seated properly between the chamber head ring and the flare of the chamber head.
9. To reinstall the chamber head, push chamber head flange into the chamber until both flared ends, of the chamber and the head, mate against the O-ring.
10. Replace the head clamp around the flared ends of the head and chamber. Install the 1/4" nut and tighten, using a 7/16" wrench, until approximately 7/8" to 1" of the bolt protrudes past the nut.
11. Carefully insert quartz sleeve into chamber. **NOTE:** It is advisable to support the quartz sleeve with your finger to guide it through the opening in the threaded gland fitting. Center the quartz sleeve in the chamber, making sure the quartz sleeve protrudes an equal distance past each threaded gland fitting.
12. Reinstall O-rings, Teflon[®] washers, and static gland nuts. Be sure O-rings are placed on quartz sleeve before Teflon[®] washer. Tighten static gland nuts firmly by hand only, **DO NOT USE HAND TOOLS**. Tightening with hand tools is likely to cause quartz sleeve to break.
13. Remount the water purifier to mounting clips, by firmly, but carefully, pushing the purifier into the mounting clips.
14. When all connections are complete, slowly restore water supply to water purifier and check for leaks.
15. If no leaks occur, reinstall lamp by following the steps in "Lamp Installation or Replacement" section.

▲ WARNING: Germicidal ultraviolet rays are harmful to eyes and skin. Do not restore power to water purifier until lamp and both easy-off end caps have been properly reinstalled.

DISPOSAL OF MERCURY ADDED LAMPS

Germicidal ultraviolet lamps, like standard fluorescent lamps contain small amounts of mercury. Mercury added lamps should not be placed in the trash. Dispose of properly.

For further information regarding the disposal and recycling of lamps containing mercury, along with Federal and State requirements visit <http://www.lamprecycle.org>. Product Data Sheets for germicidal ultraviolet lamps can be found in the "PDF Library for **Ster-L-Ray**[®] Germicidal Ultraviolet Lamps" section of <http://www.ultraviolet.com>.

TROUBLESHOOTING

▲ WARNING: Always disconnect power to the water purifier before performing any service or maintenance.
IMPORTANT: This unit is to be serviced **ONLY** by qualified, and appropriately licensed, personnel.

Table 3 - Troubleshooting

Problem	Possible Cause	Corrective Action
Purifier not operating.	No electrical power...	Verify that the purifier is connected to a live power source.
Water leaking into/from purifier.	Cracked or broken quartz sleeve...	Shut down purifier, drain, and replace quartz sleeve. See “ Quartz Sleeve Cleaning or Replacement ” in the “ Maintenance ” section.
	Quartz sleeve sealing o-ring (s) worn, damaged...	Shut down purifier, drain, and remove static gland nut, replace sealing o-ring. See “ Quartz Sleeve Cleaning or Replacement ” in the “ Maintenance ” section.
	Poor, or loose, connections or fittings...	Tighten suspect connection or fitting; or shut down purifier, drain, and remove fitting or connection. Clean threads; reapply thread sealing tape and reinstall.
Poor purifier performance	Quartz sleeve fouled...	Clean quartz sleeve, see “ Quartz Sleeve Cleaning or Replacement ” in the “ Maintenance ” section.
	Germicidal lamp output depreciating...	Replace lamp, as it nears its end of life (EOL). See “ Lamp Replacement ” in the “ Maintenance ” section.
	Germicidal lamp not functioning...	Replace lamp. See “ Lamp Replacement ” in the “ Maintenance ” section.
	Low input voltage...	Verify input voltage to purifier.
	Change in water quality...	Have water tested to confirm that it does not exceed maximum recommended concentration levels for use with this purifier.

TECHNICAL SPECIFICATIONS

Table 4 - Technical Specifications

MODEL:	BIO 1.5	BIO 3.0	BIO 4.0	BIO 5.0	BIO 7.0	BIO 9.0	BIO 12.0
Flow Rate GPM):	1.5	3.0	4.0	5.0	7.0	9.0	12.0
Inlet/Outlet	3/8" f NPT	3/8" f NPT	3/4" f NPT	3/4" f NPT	3/4" f NPT	3/4" f NPT	3/4" f NPT
Number of Lamps:	1	1	1	1	1	1	1
Lamp Model No.:	05-1366-R	05-1370-R	05-0222	05-0090-R	05-1016-R	05-0223-R	05-1313A-R
Quartz Sleeve:	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Length:	14-1/2"	20-1/8"	24-7/8"	30-7/8"	36-7/8"	48-7/8"	64-7/8"
Width:	3-21/32"	3-21/32"	3-21/32"	3-21/32"	3-21/32"	3-21/32"	3-21/32"
Height:	3-7/8"	3-7/8"	3-7/8"	3-7/8"	3-7/8"	3-7/8"	3-7/8"
Voltage:①	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz	120V 50/60Hz
Current @ 120v:	0.24A	0.35A	0.42A	0.54A	0.65A	0.84A	1.08A
Current @ 220v:	0.125A	0.183A	0.21A	0.27A	0.325A	0.42A	0.54A
Power Consumption:②	14 Watts	21 Watts	25 Watts	32 Watts	39 Watts	50 Watts	65 Watts
Max Operating Pressure:	100 PSI	100 PSI	100 PSI	100 PSI	100 PSI	100 PSI	100 PSI
Ambient Temperature:	33° F - 100° F	33° F - 100° F	33° F - 100° F	33° F - 100° F	33° F - 100° F	33° F - 100° F	33° F - 100° F
Lamp Out Indicator:	Yes	Yes	Yes	Yes	Yes	Yes	Yes

① 220-240v 50/60Hz and 12v DC units are also available. Consult Factory for specific voltage requirements.
 ② Wattage is lamp watts only, and does not include ballast loss.

All specifications, dimensional data, etc are approximate and subject to change without notice.

OPTIONAL ACCESSORIES

Optional accessories are available for operation at 120v 60Hz or 220v 50Hz, except Nylon solenoid valves. Please specify. Consult Factory for special input power requirements.

Table 5 - Optional Accessories

Optional Accessories	Available for:
Sentry™ Safety Sensor	BIO 1.5 through BIO 12.0
Steralert™ Lamp Status Alarm	BIO 1.5 through BIO 12.0
Time Delay Mechanism	BIO 1.5 through BIO 12.0
Elapsed Time Indicator, Universal Input	BIO 1.5 through BIO 12.0
Solenoid Valve - Nylon 3/4" NPT ①	BIO 1.5 through BIO 12.0
Solenoid Valve - Brass 3/4" NPT	BIO 1.5 through BIO 12.0
SureFLO™ Flow Control Valve ②	BIO 1.5 through BIO 12.0

- ① Valve requires 10-PSI pressure drop for satisfactory operation.
- ② Unless otherwise specified PVC flow control valves are supplied. Stainless Steel Flow Control Valves are available for certain models. All PVC and Stainless Steel flow control valves are male NPT. Consult Factory for other flow control valves.

REPLACEMENT PARTS

Bio-Logic® MODELS BIO-1.5 to BIO-12.0

Figure 6 - Exploded View

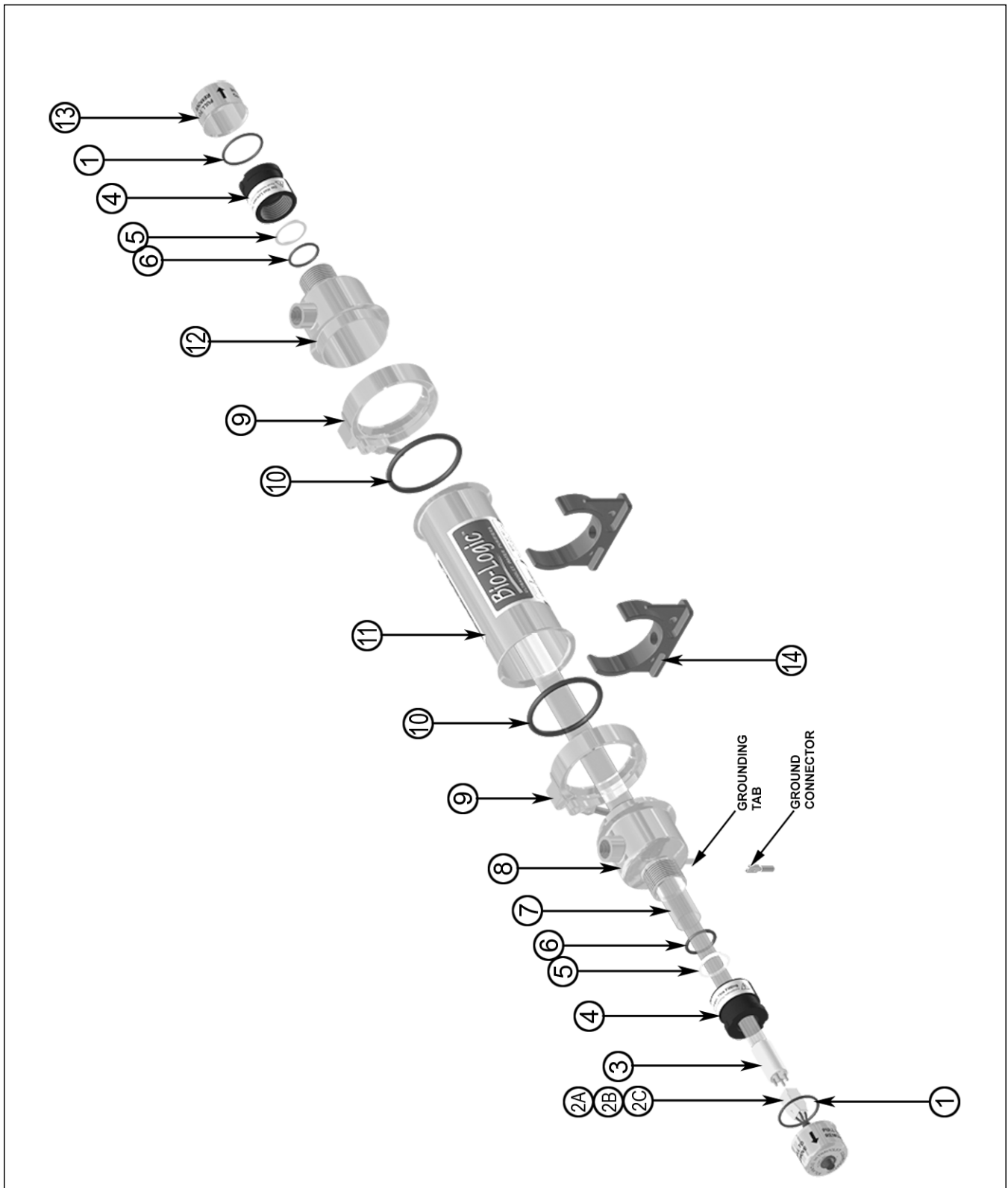


Table 6 - Replacement Parts BIO-1.5 to BIO-12.0

ITEM NO.	DESCRIPTION:	QTY	BIO 1.5	BIO 3.0	BIO 4.0	BIO 5.0	BIO 7.0	BIO 9.0	BIO 12.0
1	Rubber O-ring, Static Gland	2	00-1108B	00-1108B	00-1108B	00-1108B	00-1108B	00-1108B	00-1108B
2A	Lamp Socket & Ballast, 120v 60Hz	1	10-0010B	10-0015B	10-0072A	10-0072A	10-0072A	10-0072A	10-0072A
2B	Lamp Socket & Ballast, 220-240v 50/60Hz	1	10-0019B	10-0019B	10-0071A	10-0071A	10-0071A	10-0071A	10-0071A
2C	Lamp Socket & Ballast, 12v DC	1	10-1201A	10-1201A	NA	NA	NA	NA	NA
3	Germicidal Lamp	1	05-1366-R	05-1370-R	05-0222	05-0090-R	05-1016-R	05-0223-R	05-1313A-R
4	Static Gland Nut	2	25-1492D	25-1492D	25-1492D	25-1492D	25-1492D	25-1492D	25-1492D
5	Teflon® Washer	2	25-3023A	25-3023A	25-3023A	25-3023A	25-3023A	25-3023A	25-3023A
6	Rubber O-ring, Quartz Sleeve	2	00-1023A	00-1023A	00-1023A	00-1023A	00-1023A	00-1023A	00-1023A
7	Quartz Sleeve	1	15-1700A	15-1701A	15-1702A3	15-1702A4	15-1702A5	15-1702A6	15-1702A7
8	Chamber Head, 2 ½" with Ground Terminal	1	25-4506A	25-4506A	25-4506A	25-4506A	25-4506A	25-4506A	25-4506A
9	Chamber Clamp	2	25-6009	25-6009	25-6009	25-6009	25-6009	25-6009	25-6009
10	Chamber O-ring	2	00-0250A	00-0250A	00-0250A	00-0250A	00-0250A	00-0250A	00-0250A
11	Chamber Tube	1	25-6004A1	25-6004A2	25-6043A3	25-6043A4	25-6043A5	25-6043A6	25-6043A7
12	Chamber Head, 2 ½"	1	25-6042	25-6042	25-6046A	25-6046A	25-6046A	25-6046A	25-6046A
13	Easy-Off End Cap (no hole)	1	25-1493A	25-1493A	25-1493A	25-1493A	25-1493A	25-1493A	25-1493A
14	Mounting Clip	2	27-0045	27-0045	27-0045	27-0045	27-0045	27-0045	27-0045

All specifications, dimensional data, etc are approximate and subject to change without notice.

USER ASSISTANCE

Atlantic Ultraviolet Corporation makes every effort to ensure that the **Bio-Logic**® Ultraviolet Water Purifiers are products of superior quality and workmanship. This manual describes the installation, operation and maintenance of the **Bio-Logic**® Ultraviolet Water Purifiers.

Please read and become familiar with the contents of this manual before installing or using this unit. If after reading the manual you still have questions, or concerns, regarding the installation or use of this unit, contact our offices, weekdays between 8:30 am and 5:00 pm Eastern time, at:

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Hauppauge, New York, 11788

Tel: 631.273.0500
Fax: 631.273.0771

E-mail: info@ultraviolet.com
Website: www.ultraviolet.com

Please REGISTER your product immediately - you can do this in a number of ways. Go online to Ultraviolet.com and on the bottom left of each page either click on "Fill out Warranty Reg. Form on-line!" complete and hit submit or click on "Download a PDF of the Warranty Reg. card" which you can print, fill out and mail in. If you prefer to register over the telephone please call 631-273-0500.

Atlantic Ultraviolet Corporation takes all possible precautions when packaging equipment to prevent damage. Carefully inspect and report all damage. **Do not** install damaged equipment. Follow all instructions on any labels or tags. Carefully inspect all packing materials before discarding to prevent the loss of accessories, mounting hardware, spare parts or instructions.

For your convenience, record the following information below. The model and serial number can be found on a label located on the **Bio-Logic**® Ultraviolet Water Purifiers. Keep this manual, along with proof of purchase, handy when contacting our offices.

Purchased From:	Date:
Model:	Serial No.:

WARRANTY

We warrant that this product will be free from defects in material and workmanship for a period of one year from the date of shipment thereof or the product's total rated life, whichever first occurs. Within the warranty period we shall repair or replace such products, which are returned to us with shipping charges prepaid, and which are determined by us to be defective. This warranty will not apply to any product, which has been subjected to misuse, negligence, or accident; or misapplied; or modified; or repaired by unauthorized persons; or improperly installed.

The Buyer shall inspect the product promptly after receipt and shall notify us at our main office in writing of claims, including claims of breach of warranty, within thirty (30) days after the Buyer discovers or should have discovered the facts upon which the claim is based. Failure of the Buyer to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

The provisions of the above warranty are our sole obligation and exclude all other remedies or warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose, whether or not purposes or specifications are described herein. We further disclaim any responsibility whatsoever to the customer, or to any person, for injury to person, damage to, or loss of property or value caused by any product which has been subjected to misuse, negligence, accident; or modified or repaired by unauthorized persons; or improperly installed.

Under no circumstances shall the Company be liable for any incidental, consequential or special damages, losses or expenses arising from the contract for this product, or in connection with the use of, or inability to use, our product for any purpose whatsoever.

PATENT NOTICE

No attempt has been made to determine the patent status of applications illustrated or described in this publication. Inclusion in this publication of any design or method of use, which may be patented, is not to be construed as promoting or sanctioning unauthorized use.