

You will have received the following:

1. Disinfection chamber for GUV-C7/10/15/20
2. Removable cover (2 thumb screws hold cover on)
3. Ballast Power System (BPS) with lamp harness (removable on Plus Series)
4. Quartz sleeve
5. O-rings
6. Compression nuts
7. UV lamp



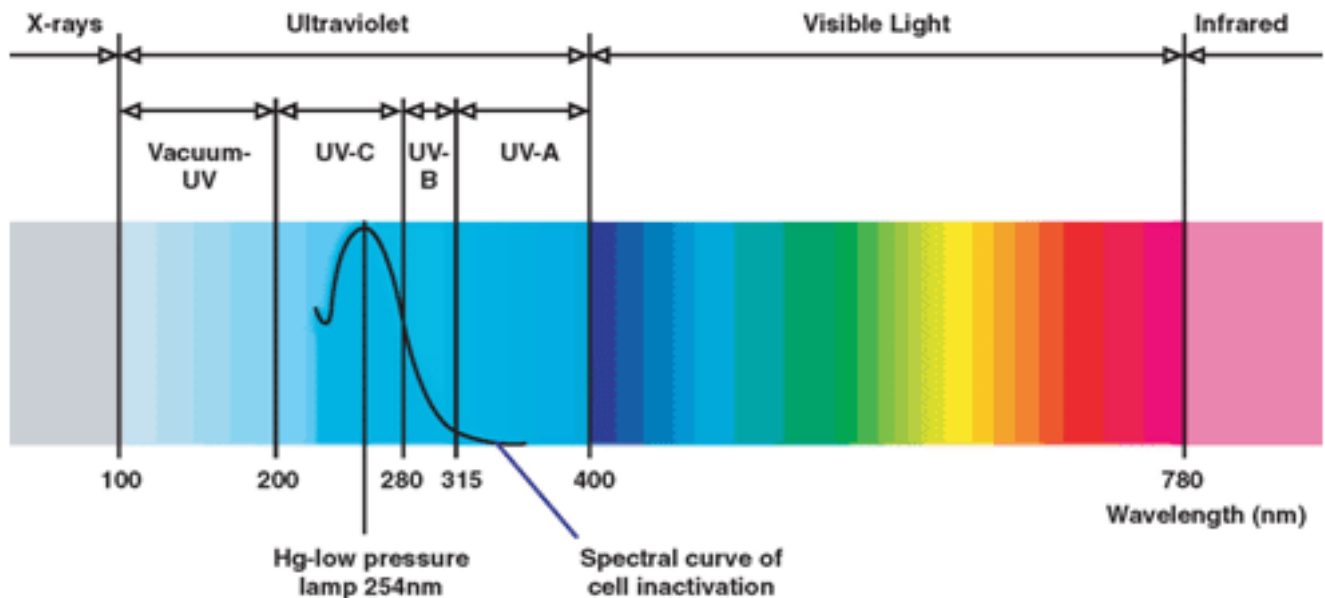
REPLACEMENT PARTS LIST

Model	Lamp #	Quartz #	Ballast #	O-rings	Compression Fittings
GUV-C7	L-501414	Q-511014	E-06105B	#2 M-75214O	#2 M-A015CN
GUV-C10	L-524414	Q-511014	E-06110B	#2 M-75214O	#2 M-A015CN
GUV-C15	L-572433	Q-502032	E-06105B	#2 M-75214O	#2 M-A015CN
GUV-C20	L-024433	Q-502032	E-06110B	#2 M-75214O	#2 M-A015CN
GUV-C7-Plus	L-501414	Q-511014	P-07100P	#2 M-75214O	#2 M-A015CN
GUV-C10-Plus	L-524414	Q-511014	P-10100P	#2 M-75214O	#2 M-A015CN
GUV-C15-Plus	L-572433	Q-502032	P-15100P	#2 M-75214O	#2 M-A015CN
GUV-C20-Plus	L-024433	Q-502032	P-20100P	#2 M-75214O	#2 M-A015CN
GUV-C7-SC+	L-501414	Q-511014	P-07100P-SC	#2 M-75214O	#2 M-A015CN
GUV-C10-SC+	L-524414	Q-511014	P-10100P-SC	#2 M-75214O	#2 M-A015CN
GUV-C15-SC+	L-572433	Q-502032	P-15100P-SC	#2 M-75214O	#2 M-A015CN
GUV-C20-SC+	L-024433	Q-502032	P-20100P-SC	#2 M-75214O	#2 M-A015CN

1. About Ultraviolet (UV) Disinfection

The technology uses UV light to target and disable disease-causing microorganisms (pathogens). This includes such waterborne diseases as: E-coli, hepatitis, cholera, dysentery, typhoid fever as well as many others.

Over 100 years ago, scientists discovered that if you exposed pathogens to UV light, their reproduction was limited. The UV light source that they used, resided in the UVC range of the light spectrum. Specifically, they discovered that light in the 254 nanometer (nm) range was the most effective wavelength. Today, specialized UV lamps are used for a variety of disinfection applications.



When water pathogens are exposed to UV light, their cells become damaged and this damage inhibits reproduction. The UV light, produced by a special UV lamp, damages the cell's DNA and RNA and once damaged, they are unable to replicate. This physical process renders them harmless.

The amount of damage is a result of the intensity of the lamp's UVC output multiplied by the time the water is exposed to the light. The applied dosage is expressed as milliwatt seconds per square centimeter (mW.s/cm²) or millijoules per square centimeter (mJ/cm²). Dosages of 30,000 uW.s/cm² (30 mJ cm²) to 40,000 uW.s.cm² (40 mJ cm²) are common for drinking water

Using UV for disinfection is a practical and acceptable technology, but do not confuse disinfection with sterilization. Sterilization means the complete and total inactivation of microorganisms.

When water enters the vessel, it is exposed to UV light. The UV lamp used for germicidal disinfection produces a portion of its light in the 254-nm wavelength. At this wavelength, UV light destroys bacteria, protozoa, viruses, molds, algae and other microbes.

The actual lamps are housed in quartz sleeves. Both lamps and sleeves are very fragile and are manufactured from a special material that allows UV light to emanate. These sleeves not only help maintain maximum operating temperature, but also prevent the lamps from coming in contact with the water.

2. Your Disinfection Unit – Pre-Installation

Your American manufactured Ultraviolet (UV) water disinfection system has been tested at Glasco’s manufacturing facility. The unit is constructed of high quality stainless steel that has been electropolished. The unit has been hydrostatically pressure-tested to 100 psi (system designed for typical house pressure of 40 psi). In some cases, a small amount of water may still remain in the vessel from this test. In order to ensure that the unit works at optimum performance, please follow the instructions outlined in this manual.

The following signs indicate important information:



INFORMATION. Signifies helpful information.



EYE PROTECTION. Indicates that eye protection must be worn to protect from UV light and debris.



CAUTION. Indicates a potentially dangerous situation. Failure to adhere to this warning may lead to serious injury and or death.



HAND PROTECTION. Indicates that gloves must be worn to protect the lamps from skin oils and protect operators from UV light and hazards from broken lamps or quartz.



ELECTRIC SHOCK. Indicates risk of electrical shock, which may cause serious injury and or death.

2.1. Warnings

UV light is harmful to your eyes and skin. Do not look directly into the light. Always unplug (disconnect power) your unit before installing or removing a lamp. Your unit may have a green LED light that indicates that the lamp is operating and or have an audible alarm that will sound in the event of lamp failure. If the LED goes out, contact your dealer for service. If your unit has an audible alarm and it goes off, contact your dealer.

Since the unit is run by electricity, please remember to disconnect all power before servicing the equipment. Failure to do so may result in serious injury or death.

When handling lamps and quartz, use gloves to prevent them from becoming dirty. If they do, wipe them with alcohol. Oils will block the proper transmission of UV light.

2.2. Your Water Supply

Since the use of UV generally indicates problems with waterborne pathogens (disease causing microorganisms), Glasco recommends that you regularly have your water supply tested by water professionals. In addition to testing the water to see if UV is appropriate, we recommend pre-filtering systems (softeners, carbon or reverse osmosis) to help remove tastes, odors, minerals and cysts.

This list is the maximum recommended concentration levels to ensure optimum UV performance:

Turbidity:	5 NTU	pH:	6.5 – 9.5
Color:	None	Hardness:	7 grains
Iron:	0.3 PPM	Tannins:	< 0.1 ppm (0.1 mg/L)
Suspended Solids:	10 mg/l	UV transmission:	>75%
Manganese:	0.05 mg/l		

2.3. UV Lamp and Effectiveness

Your disinfection unit needs to be maintained. Change lamp on a yearly basis and ensure that the quartz sleeve is cleaned on a regular basis. Failure to do periodic maintenance will impact your unit's effectiveness.



Just because the lamp is "ON" does not mean that it is actually producing the required UV light. Please change your lamp yearly. Lamps may burn with a blue color for years without producing UV. Lamps need to be recycled because they contain mercury. Many town recycling centers have the ability to collect fluorescent lamps. Further information can be found at www.lamprecycle.org.

2.4. Flow Rate

UV disinfection systems are selected based on a specific flow rate. Small homes may use a 7 or 10-gpm unit, while larger homes may use a 15 or 20-gpm unit. In order to work effectively, you may need to install a flow control device.



Some installations find that the device limits water pressure and therefore do not use. In many cases, home pressure will not exceed UV unit's designed flow rate.

This device attaches to the inlet and controls the water that enters the system. Note: your system may have come with a flow controller. It will look like a brass washer with a rubber fitting (needs to put into the inlet side). Failure to use a flow control (available at most plumbing supply stores) may reduce the effectiveness of your disinfection unit.



2.5. Inspection

Ensure that lamps and quartz have not been broken. Use gloves when handling lamps and quartz sleeves to prevent them from becoming dirty. Dirt and skin oils will impact the UV output.

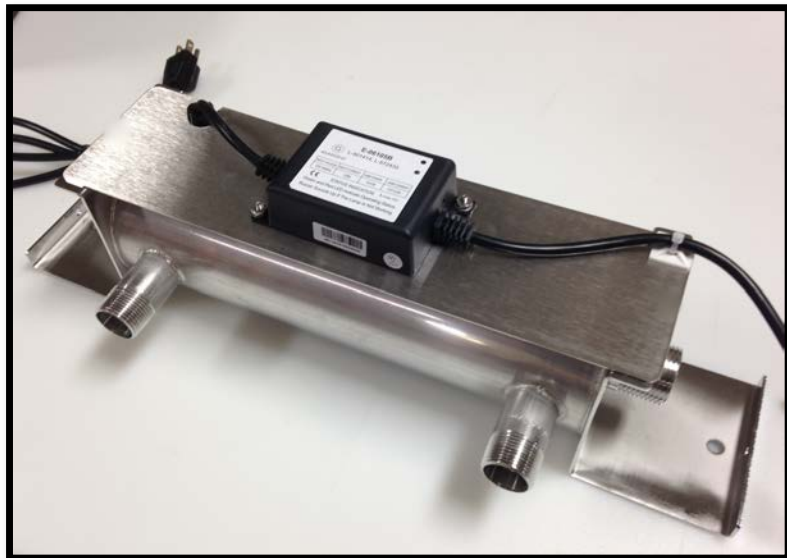
Warranty information has been attached. Please fill it out and send back to manufacturer or dealer. This warrants the chamber for 7-years and electrical components for 1-year.

2.6. Electrical Requirements

The electronics aka Ballast Control Systems (BCS) have been designed to work with standard power supplies. Since the unit is susceptible to power fluctuations, we recommend that the system be kept off any lines where there are surges and that it have a dedicated GFI outlet and a surge strip. Systems will come with plugs, which require no “hard wiring”. Please look at the nameplate for Voltage, Cycle and AMP draw.

The electronics are attached to the unit on a power plate. The plate is comprised of a ballast (an electronic device that regulates power to lamp), alarms and a lamp harness.

Unit should be grounded.



GUV C Classic – Electronics on the unit come with audible and visual lamp out alarms.



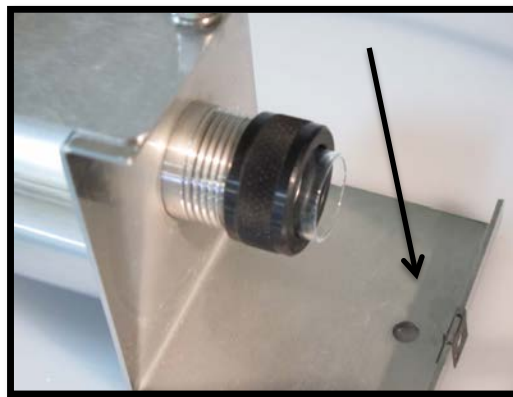
GUV C CLASSIC PLUS – Electronics are under the cover. The displays can be seen through the cover. To reset or silence the alarms, following the instructions on the front label. Basically, push button to scroll through options, once at the appropriate option, hold button to reset.

2.7. Location of Unit

UV disinfection works best when it is installed closest to point of use. Your unit may be installed under the sink or where the water enters the building. In either case, we recommend that shutoff valves be installed before the inlet and after the outlet. This allows for easier yearly servicing and allows you to shut off the water supply if you have a problem with the unit.

When installing, remember that you will need to be able to remove lamps and quartz as part of a maintenance schedule. Allow yourself enough room to accomplish these tasks. Unit can be mounted vertically or horizontally. Inlet and outlet can face up or down.

Prior to plumbing the unit, the system needs to be mounted to a beam or to a wall. This can be accomplished by screwing in the unit at the holes provided:



The inlet and outlet are inter-changeable.



3. Your Disinfection Unit – Installation

If you are attempting to install the unit by yourself and you have questions, please call your water quality or plumbing professional. Improper installation can cause potential water damage to your property and can also reduce the effectiveness of the UV disinfection system.

Recommended Supplies:

- Screws to fasten the unit into place
- Teflon tape to ensure quality sealing
- Shutoff valves for both the inlet and outlet
- Unions before and after the unit
- Drain spigot



Always The UV unit will hold water pressure. The system needs to be drained if left for prolonged periods where freezing may occur. Frozen pipes will burst the UV system and create a flood, which will damage property.

The unit's cover, protects the owner from UV light and glass if the system were to ever have a catastrophic failure (quartz sleeve breakage – under pressure the quartz could become damaged, break and shoot out of the unit. This can lead to severe injury. When working on the UV unit also ensure that there is no pressure to the unit. Also check to ensure that the oring seals are always hand tightened.

3.1. Quartz for Open-ended Units (creating a watertight unit)



System has openings on each end of the unit. The quartz will also have openings on both ends.

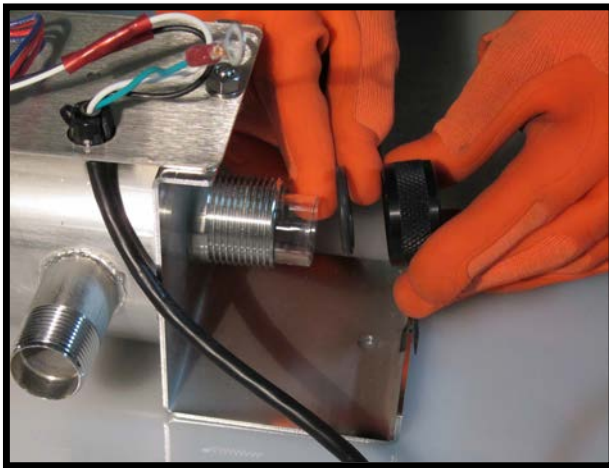


GLASCO UV

The unit will have come with compression nuts that are in place and hold O-rings. Remove the nut and the O-ring.

Insert the quartz into the unit. Use your fingers on both sides to guide it into place. Move the quartz so it comes out of the unit at equal lengths on both sides. (Note: Quartz is usually already inserted in GUV-C7/10 upon shipping)

Making sure that the O-ring is sitting properly in the compression nut, loosely hand tighten each nut into place. Before tightening, re-check to ensure that the quartz is extending equally out of each side. You can do this by inserting your fingers on both sides and judging the appropriate distance. Once done, tighten until you have a secure fit. Create a tight seal, but not too tight as you may crack the quartz.



Now that it is in place, you can test the unit to see if it is watertight. Slowly pressurize the unit by allowing water to run through the unit for five minutes. As this is happening, check to see if the seal is dry. If it is not, you will need to redo the seal. If it is dry, you are prepared for lamp installation.



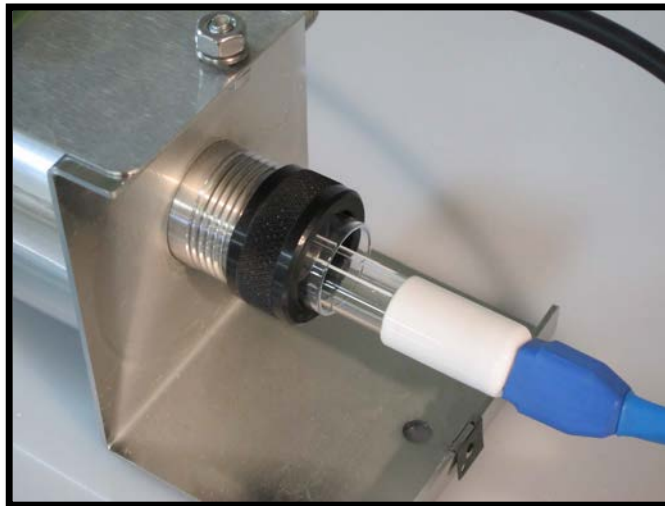
Always ensure that the UV unit is de-pressurized before doing any work on the compression fittings. Never position yourself in front of the quartz sleeves when the system is under pressure. The quartz sleeve can become a projectile and shoot out of the vessel if damaged under pressure.



A damaged quartz sleeve can cause a potential leaking problem. An unchecked leak can lead to severe flooding.

3.2. Installing the Lamp

Carefully slide the lamp into the quartz (dropping the lamp can break the quartz). Once it is in place, connect the lamp to the socket. When you have done that, put the cover back on and power on.



4. Maintenance

As noted in this manual, your lamp needs to be replaced on a yearly basis. The quartz sleeve may have to be cleaned on a more frequent basis depending on your water quality.

The quartz may have “build up” on it. This build up is generally from hardness and minerals in the water (calcium, magnesium, iron, manganese). If it does, clean it with soap and water. If the quartz is stained, use a product like CLR™ or Lime Away™ (both available at the grocery store).

When you remove the quartz, please follow the same instructions as above to re-install. Track your maintenance record on the front page of this manual.

For the CLASSIC PLUS System, you will need to reset the lamp change reminder or use the silence alarm reset button.

5. Operation Status and Alarms

5.1. CLASSIC

The GUV-C Classic comes with an audible and visual lamp status alarm. In the event of a lamp out, the audible alarm will sound. The unit's visual alarm is located on the system beneath the protective cover.

(Green light aka LED indicates lamp is on), the LED will go off when the lamp goes off. If this is the case, have your water professional check to see if the lamp needs to be replaced. When alarming, the water may not be safe to drink.

If the lamp is working, suspect that Ballast Power Center needs to be replaced.

5.2. CLASSIC PLUS

The GUV-C Classic PLUS comes with a countdown timer as well as an audible and visual lamp status alarm. In the event of a lamp out, the audible alarm will sound. The unit's visual alarm is located on the system beneath the protective cover.

(Green light aka LED indicates lamp is on), the LED will go off when the lamp goes off. If this is the case, have your water professional check to see if the lamp needs to be replaced. When alarming, the water may not be safe to drink.

If the lamp is working, suspect that Ballast Power Center needs to be repaired.

6. Recommendations, General Information and Reminders

- Use a licensed plumber or qualified water professional to do the installation.
- Check the unit on a regular basis to see if the lamp is on (the green LED indicator will tell you if the lamp is working).



- When first installing the unit, you will need to make sure that all plumbing after the unit has been sanitized. This will make sure that all microorganisms have been destroyed (pathogens can live in pipes). Plumbers often fill the UV chamber with disinfectant (household bleach) and flush out the pipes. They do this by opening all spigots and allowing the disinfectant to run its course through the pipes. Once detected, the disinfectant should be allowed to reside in the pipes for 30 minutes. Professionals should do this because many disinfectants can be harmful or fatal if swallowed.
- Install carbon filters, softeners and reverse osmosis systems **BEFORE** the UV system. These types of filters can breed microorganisms.
- Use a flow control device that is rated for your unit's GPM flow rate (7, 10 and 15 gpm come standard)

7. Options (NEED TO BE REQUESTED PRIOR TO SHIPMENT)

Your system may have come with optional equipment. If it did, instructions for these options are attached.

7.1. UV Monitoring

While the **Classic** and **Classic PLUS** system are considered “basic”, you do have an option to add a UV monitoring system (factory enhancement). Glasco UV does have units that are available with more options. The SHIELD Series offers options: quartz sleeve cleaner, UV monitor, solenoid, remote alarms.

7.2. Automatic Shut-off Valve aka Normally Closed Solenoid

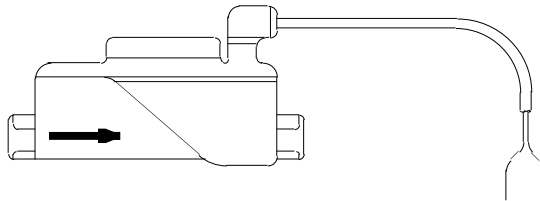
Your system may have come with an optional automatic solenoid valve.

The **CLASSIC PLUS** has the ability to connect to a solenoid shut off valve. In the event of lamp failure, the UV system would trigger a normally closed valve to shut off water. When ordering with a solenoid, system will be pre wired as an option.

The **CLASSIC** can use a solenoid, but it would have to work with an optional UV Monitor.

This device will stop the water flow if the UV lamp goes out or if the UV intensity falls. It is considered a “normally closed” valve. This means that when there is no power to it, it closes. This will occur during a power outage or lamp failure.

The solenoid will work off of a signal from the ballast, which indicates lamp out. If the lamp fails, then the solenoid will shut off the water supply.



The solenoid will also work off of a signal from an **OPTIONAL** UV monitor, when the UV intensity has fallen to an unsafe level. In the event of water stoppage, you will need to correct the problems.

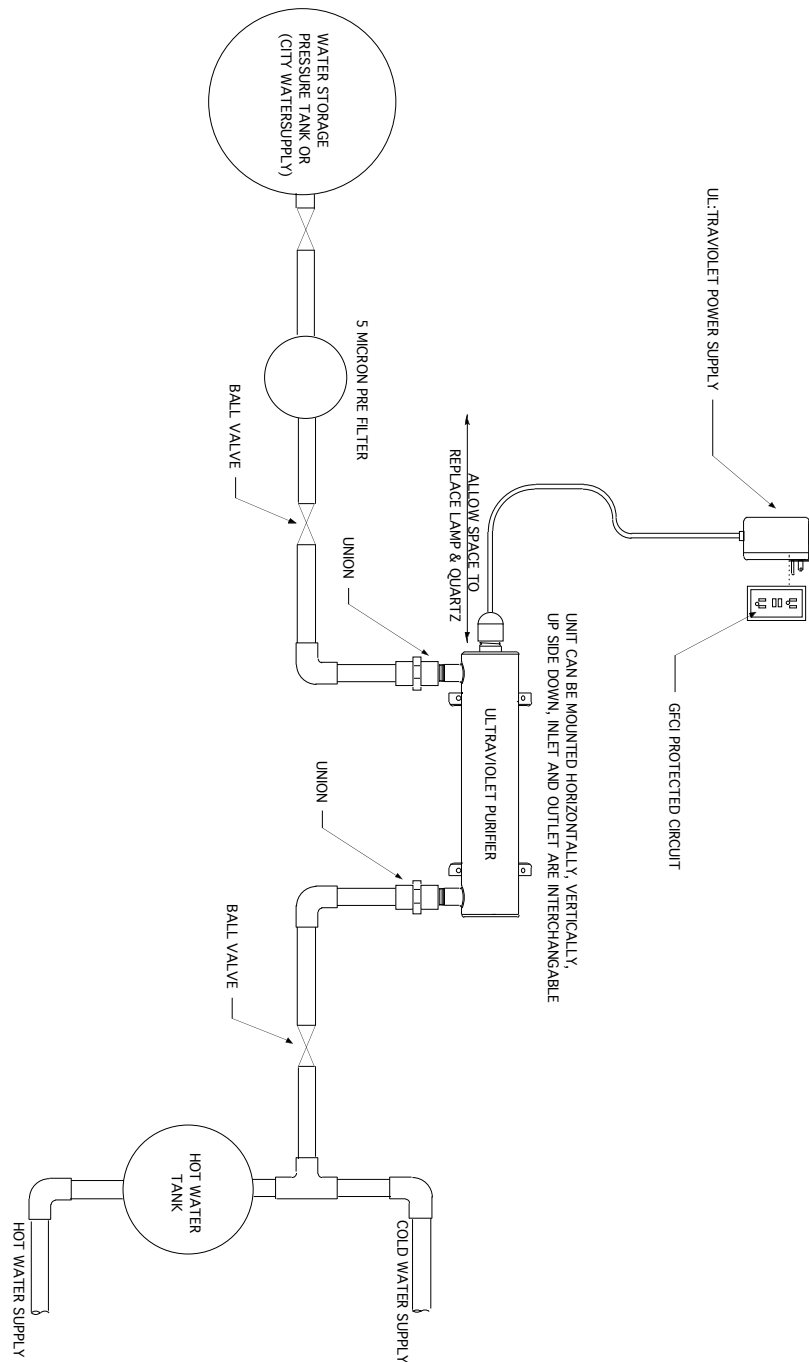
Reasons for stoppage include: Power failure, Lamp is out, Ballast is out, UV lamp is failing, Solenoid is damaged

There is a manual override on some of the valves. Call your water professional in case of an emergency. The manual valve is a white toggle switch. In order to open the valve, it must have power. This is generally provided by the UV system, but in emergencies, power can be brought directly to the valve by plugging it in to a 120-volt outlet.



The main power box control will have leads for attaching the solenoid. These leads will need to be connected to the leads on the actual solenoid valve. The solenoid will have come with connectors.

The solenoid valve will have an arrow on it indicating flow direction. Please install the solenoid so that the path of the water goes with the arrow.





WARRANTY REGISTRATION

MODEL NUMBER/TYPE: _____

DEALER NAME: _____

PURCHASE DATE: _____

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ POSTAL CODE: _____

COUNTRY: _____

PHONE: _____ EMAIL: _____

Please fill out the above information and forward it to your dealer or to Glasco UV LLC. This will provide you with a 7-year warranty on the stainless steel chamber and a 1-year warranty on the electrical components. UV lamps are warranted for 30 days. After the initial 30 days of operation, replacement or refund will be pro-rated based on the expected lamp life of 9,000 hours.

In addition, this may allow your dealer to remind you when it is time to replace your lamp and quartz.

Conditions and Exceptions:

This limited warranty applies to equipment that has been installed and maintained according to the instructions in this manual. Glasco UV LLC is not responsible for damage due to improper use, operation, installation or unauthorized repair. The warranty is exclusive to the original Owner with respect to the original installation.

This warranty needs to be received by Glasco UV LLC within 25 days of initial operation. The warranty applies to replacing defective equipment. The limited warranty applies to systems that are returned to the factory at the owner's expense and in accordance with Glasco UV's shipping instructions.

Glasco shall have no liability hereunder, either direct or contingent, for any incidental or consequential damages. Glasco recommends that you use pre-filters, flow-control devices and inspect the lamp to ensure that it is functioning. Glasco UV recommends that you test your water source periodically to ensure that it microbial safe to consume.

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