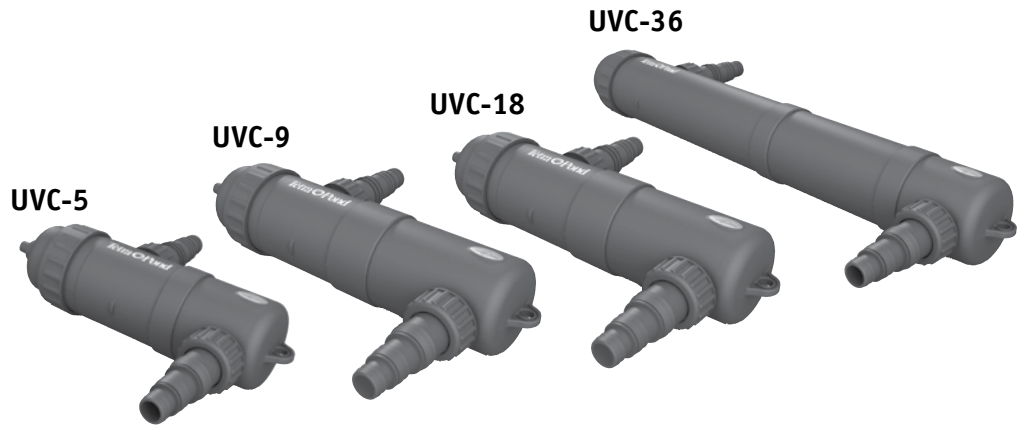




GREENFREE® UV CLARIFIERS



IMPORTANT SAFETY INSTRUCTIONS READ AND FOLLOW ALL SAFETY INSTRUCTIONS

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

1. Read and follow all safety instructions.
2. **DANGER:** To avoid possible electric shock, special care should be taken since water is employed in the use of this equipment. For each of the following situations, do not attempt repairs yourself:
 - A. If the appliance falls into the water, do not reach for it! First unplug it and then retrieve it. If electrical components of the appliance get wet, unplug the appliance immediately.
 - B. Do not operate any appliance if it has a damaged cord or plug, if it is malfunctioning, or if it is dropped or damaged in any manner.
3. When putting on or taking off parts, always unplug an appliance from the outlet first. Grasp the plug and pull to disconnect; never yank the cord.
4. Only use an appliance for its intended use. Non-recommended attachments that are not sold by the appliance manufacturer may cause an unsafe condition.
5. Read and observe all the important notices on the appliance.
6. Do not allow children to handle this equipment. This equipment should be kept away from children.

Grounding Instructions

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This appliance is equipped with a cord that has an appliance grounding conductor and a grounding plug. The plug must be plugged into the appropriate outlet that has been installed and grounded in accordance with all local codes and ordinances.

WARNING: Improper connection of the appliance-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you do not know whether the appliance is properly grounded. Do not modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified technician.

Ground-Fault Circuit-Interrupter Protection

To comply with the National Electrical Code (NFPA 70), and to provide additional protection from the risk of electric shock, this unit should only be connected to a receptacle that is protected by a ground-fault circuit-interrupter (GFCI).

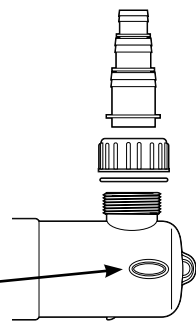
Extension Cords

Use only extension cords that are intended for outdoor use. These extension cords are marked: "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords that have an electrical rating that is not less than the rating of the product. Do not use damaged extension cords; examine extension cords carefully before use and replace if damaged. Do not abuse extension cord and do not yank on any cord to disconnect. Keep cord away from heat and sharp edges. Always disconnect extension cords carefully; disconnect them from the receptacle before disconnecting the product from the extension cord.

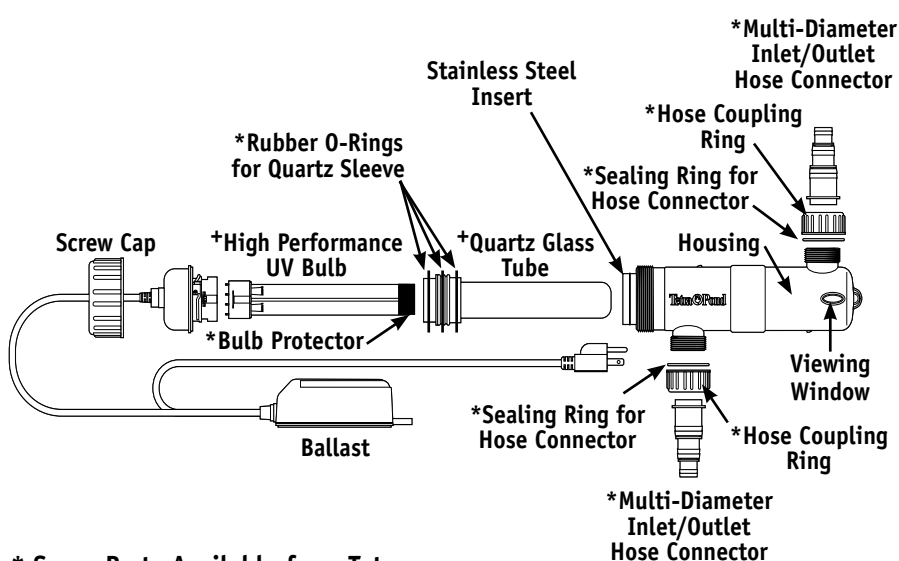
SAVE THESE INSTRUCTIONS

Safety Tips

- Never submerge the unit in water.
- To prevent overheating, always unplug the unit if there is no water running through it.
- This unit produces harmful ultra violet light. Do not look directly at the unshielded bulb as damage to the eyes may occur. Monitoring of lamp operation should only take place by looking through the **viewing window** on the unit.



UV CLARIFIER COMPONENTS



WARNING: To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.

This product conforms with the applicable provisions of The Code of Federal Regulations (CFR) including Title 21, Chapter 1, Sub part J - Radiological Health.

How the UV Clarifier Works

- The clarifier works by exposing single-celled algae to very high levels of ultra violet (UV) light as the pond water containing them is pumped through the unit.
 - The algae die and clump together, making them easier for the filter to remove.
 - While the UV clarifier will destroy the algae, water clarity is also dependent on adequate pond filtration to trap and remove the dead algae.
 - Dead algae may clump, sink and accumulate at the bottom of the pond. It can be removed with a fine mesh net.
 - For most ponds with normal levels of green water, the cleaning process should take about one week; however, with thicker algal blooms this may take 2-3 weeks.
 - The clarifying process can be made more efficient by regularly carrying out partial water changes (up to 25% of pond volume).
 - Always add a dechlorinator water treatment when adding tap water to a pond.
- Turn unit off when treating the pond with any fish medication or remedy.

SELECTING THE RIGHT EQUIPMENT FOR YOUR POND

Determining Pond Size:

In order to determine the gallons in your pond, use this easy calculation:
 Length (ft) x Width (ft) x Average Depth (ft) = **Cubic Feet**
 Cubic Feet x 7.5 = **Gallons**

UV Clarifier Size Selection:

Use the chart below to help determine the proper size UV clarifier using your pond size.
 It is still safe if the UV clarifier selected is stronger than what is specified for your pond size.

Pump Selection:

It is important to control the water through the UV clarifier with a flow rate that is within ±10% of the optimal flows shown below in the chart. The UV clarification process will be most effective at these flows. Water flow that is too fast will minimize the "dwell time" the algae cells have in front of the lamp, thus making it less effective. The flow rates should be measured on the return flow out of the UV clarifier.

Pond Size	UV Clarifier	Optimal Flow
660 gallons / 2500 liters	5 watt	330 gal/hr / 1250 l/hr
1800 gallons / 6800 liters	9 watt	900 gal/hr / 3400 l/hr
4400 gallons / 16,600 liters	18 watt	2200 gal/hr / 8300 l/hr
8800 gallons / 33,300 liters	36 watt	4400 gal/hr / 16,600 l/hr

Measuring Water Flow:

It is highly recommended that the flow to and from the filter be measured using the following technique.

Timing water flow: (determining gallons per hour)

- A. Record the number of seconds it takes to fill a 5 gallon bucket
- B. Divide the number of seconds into 3600, and then multiply by 5 gallons.

Example: If it takes 20 seconds to fill a 5 gallon bucket.

Seconds an hour	Seconds to fill bucket	Bucket Size	Flow gallons per hour
3600	÷ 20	x 5 gallons	= 900 gal/hr

Pump packaging instructions will give you guidelines on the flow rates (gal/hr) that can be expected at various pumping heights, as measured from the water surface in which the pump is located. Use this as a starting point, but measure the water going to and from the filter using this timing method.

Warranty information and mail in warranty card on reverse side.

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* Spare Parts Available from Tetra
 † Replacement Parts Available from Retailer

Regulating Flow to the UV:

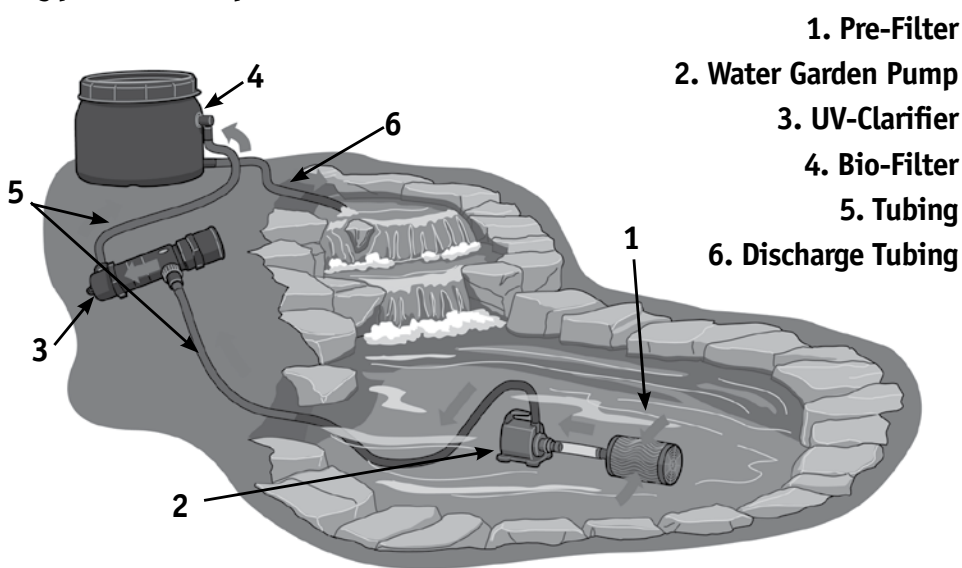
If the water flow through the UV clarifier exceeds the recommendations, you may put a ball valve in the tubing to restrict and regulate the flow. Place the ball valve between the pump and the UV clarifier unit.

Positioning and Assembly

The TetraPond® GreenFree® UV Clarifier is **not submersible** and should be positioned outside the pond where there is little likelihood of it sitting in puddles or falling into the pond.

It is recommended (but not necessary) that the UV clarifier is attached to the tubing that enters external pond filter. This prevents the flow restriction caused by the UV restricting the flow of the filter.

Typical Set-Up for Small & Medium Ponds



UV Bulb and Quartz Glass Tube Installation

Insert the UV-C bulb into the connector. (Note: Avoid touching the bulb with bare hands and remove any marks using a clean cloth or tissue. Oil from your fingers can reduce the life of your bulb.)

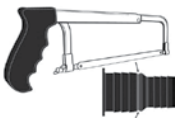
The quartz glass tube is positioned with three rubber O-rings in place. Be sure O-rings are positioned properly to form a tight seal. Water entering inside the quartz tube may cause damage to the electrical components.

Connecting the UV Clarifier to the Pump

The inlet connection (marked \triangle_{in}) is the one closest to the screw cap of the UV unit. Connect the pump tubing to this inlet.

All UVs come with 2 three-stepped adapters that fit the following internal diameter tubing (ID):

- $\frac{3}{4}$ in., 1 in. and 1 $\frac{1}{4}$ in. ID
 - Choose the hose adaptor size of the UV according to the tubing used.
 - Make sure that the hose adaptor for the outlet (marked ∇_{out}) is at least as large as the inlet.
- Cut the hose adaptor in the groove with hacksaw to fit the tubing selected (if necessary).



Ensure that the gasket is in place before attaching the hose adaptor into the unit.

- Hand-tighten the hose coupling rings. Do not use a wrench.
- Secure hoses to adaptors with hose clamps (not included).

UV Clarifier – Electrical Connection

Please read safety instructions before plugging the unit into the electrical outlet.

- When working, a purple UV light can be seen through the viewing window located in the UV housing.
- An operational test can only be carried out when the equipment is fully assembled.

Seasonal Use

Summer: The unit should remain in operation 24 hours a day.

Winter: It is recommended to store the unit in a frost-free location.

THE WARRANTY DOES NOT COVER DAMAGE TO THE UV CLARIFIER DUE TO FREEZING TEMPERATURES.

Maintenance and Care

When carrying out any maintenance, the unit must be disconnected from the electrical circuit.

- Clean the unit at least twice a year. A clean quartz tube will allow the UV light to be more effective in controlling algae. More frequent cleaning may be required for ponds with severe algae growth.

Tip: Use warm vinegar to wipe the quartz sleeve for a faster clean and efficient removal of mineral build up.

WARRANTY CARD

Please fill out this card and mail it to the address on back OR complete an e-registration form by logging on to www.tetrawarranty.com to validate your warranty. Thank you!

Name of Purchaser: _____
 Address: _____
 City _____ ST _____ Zip code: _____
 E-mail Address: _____
 Date of purchase: _____

TetraPond respects your privacy. Any and all personal information collected here will be kept strictly confidential and will not be sold, reused, rented, or otherwise disclosed.

Which GreenFree® UV-Clarifier did you purchase?

- UVC-5 UVC-9
 UVC-18 UVC-36

Electronic Newsletter

- Yes, I would like to receive free e-mail updates on water gardening, including tips, new products, and other helpful information.
 No, I would not like to receive any e-mail updates at this time.



WARNING: Do not allow water to come in contact with the electrical socket or bulb.

To disassemble:

- Always remove inlet and outlets by unscrewing the hose couplings.
- Drain the unit before cleaning.
- Carefully dismantle the unit by first unscrewing the screw cap and removing the quartz tube.
- The quartz tube may be loosened by using a small coin or a screwdriver and can then be carefully removed. Clean with a soft cloth and water to avoid scratching the glass quartz tube.

To reassemble:

- Be sure that the inside of the quartz sleeve is completely dry prior to reassembly.
- When reassembling, ensure that the sealing rings are properly seated (lubricate with a small amount of silicone lubricant/grease if necessary).

Replacement Parts - Bulbs and Quartz Sleeves:

The following parts are available through your TetraPond dealer/retailer:

Bulbs

- Use TetraPond replacement bulbs for maximum effectiveness.

UV-Clarifier	UV Bulb	Quartz Sleeve
UVC-5	5 Watt UV Bulb # 19526	# 19530
UVC-9	9 Watt UV Bulb # 19527	# 19531
UVC-18	18 Watt UV Bulb # 19528	# 19531
UVC-36	36 Watt UV Bulb # 19529	# 19533

Replacement of UV Clarifier Bulbs:

- TetraPond UV Clarifier Bulb should be replaced after 8,000 hours (about once every 11 months of operation).
- If using only 5 to 6 months a year, replace the bulb every two years.
- The bulb may continue to glow after 11 months of use, but its effectiveness has been greatly diminished.



All fluorescent bulbs contain mercury. Dispose of properly.



Replacement of Quartz Sleeves:

- Quartz glass tubes do not need to be replaced unless they are damaged.
- Please handle with care, and do not leave outside in winter, since they are fragile.

Additional Spare Parts - The following spare parts are available direct from Tetra: Please call us at 1-800-526-0650 for further information.

Item	Description
19354	UVC Adapter Set (Multi-diameter hose inlet/outlet connector, coupling ring and sealing ring for hose connector)
19355	Bulb Protector for UV 5W & 9W
19356	Bulb Protector for UV 18W & 36W
19362	Quartz Sleeve O-ring Set (3)

Warranty

Tetra warranties the product on this document will be repaired or replaced free of charge for the specified number of years from the date of purchase shown below, if it fails to work because of faulty material or workmanship. (Proof of purchase must be provided).

UVC-5 Item# 19523 3 years
UVC-9 Item# 19520 3 years
UVC-18 Item# 19521 3 years
UVC-36 Item# 19522 3 years

This warranty is subject to the following terms:

1. Should it become necessary to return the product during the warranty period, send the product directly to Tetra, Consumer Services, 3001 Commerce Street, Blacksburg, Virginia 24060-6671.
2. Tetra's decision on all questions relating to alleged defects and repair shall be conclusive.
3. This warranty does not invalidate your statutory rights, but preserves your full benefits.
4. Repair parts or replacement product will be given on an exchange basis and will either be new, equivalent to new, or reconditioned. All customer returned parts or products that we replace become the property of Tetra.
5. The warranty does not cover normal wear and tear, nor any deterioration suffered through overloading, improper use, negligence or accident or wearing out or breakage of the bulb and quartz glass tube. Similarly, any modification made by the purchaser to the appliance will invalidate the warranty. Bulbs should be replaced after 11 months of continuous operation, and are not covered by this warranty.
6. Except as set forth in this warranty, Tetra expressly disclaims any and all liability for any loss or damage whatsoever sustained by the purchaser to the fullest extent permitted by applicable law.



Questions? Problems? Missing Parts?

- Before returning the product, please call our Customer Care department at **800-526-0650**, Monday-Friday 7:30 a.m. to 5:30 p.m., Eastern USA Time.
- Or email us at consumer@tetra-fish.com. Often times, our Customer Care Department can provide advice that will help you solve the problem.



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