OPERATING AND SERVICE INSTRUCTIONS

Congratulations on the purchase of your new SMART UV, we want you to be safe and successful with our equipment so please, read our instructions prior to installing and operating this equipment!

Section One: SAFETY RULES FOR ALL SMART UV MODELS

Section Two: UV STERILIZATION FEATURES AND SPECIFICATIONS

Section Three: WHAT IS ULTRAVIOLET STERILIZATION

Section Four: PRE-INSTALLATION INSPECTION

Section Five: QUARTZ SLEEVE/UV LAMP INSPECTION

Section Six: THE QUARTZ SLEEVE ASSEMBLY

Section Seven: MOUNTING YOUR SMART UV

Section Eight: MANDATORY SMART UV WATER TESTING

Section Nine: ELECTRICAL REQUIREMENTS

Section Ten: UV LAMP INSTALLATION

Section Eleven: QUARTZ SLEEVE WIPERS

Section Twelve: SMART UV INSTALLATION/ OPERATION

Section Thirteen: SMART UV WINTERIZING

Section Fourteen: SMART UV MAINTENANCE

Section Fifteen: SMART UV REPLACEMENT PARTS

Section Sixteen: TROUBLESHOOTING

Section Seventeen: CONTACT INFO

Warranty
Section One: SAFETY RULES FOR ALL SMART UV MODELS

IMPORTANT SAFETY INSTRUCTIONS PLEASE READ PRIOR TO INSTALLATION AND OPERATION

WARNING TO GUARD AGAINST INJURY, BASIC SAFETY PRECAUTIONS SHOULD BE OBSERVED, INCLUDING THE FOLLOWING:

Water and electricity can be a dangerous combination. Help us ensure your safety PLEASE READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

DANGER: WARNING-Ultraviolet light is damaging to your eyes and skin! Do not handle or stare at an operating UV lamp. Note that the UV light rays are invisible to the human eye and precautions should be taken to prevent UV energy from entering the eyes.

IMPORTANT: READ AND OBSERVE ALL IMPORTANT NOTICES AND LABELS ON THE UNIT.

IMPORTANT: For Your Safety - The quartz sleeve and or the UV lamp in this product may have been broken or damaged during transit! It is therefore ESSENTIAL that the unit be CAREFULLY INSPECTED BEFORE CONNECTING TO ELECTRIC POWER (See Section 5.0)

DANGER: To avoid possible electric shock, special care should be taken since water is employed in the use of this aquarium and pond equipment. For each of the following situations, do not attempt repairs yourself. Call EMPEROR AQUATICS, Inc. customer service at 610-970-0440 Ext. 0 for services or discard the appliance.

DANGER: If the unit falls into the water, DO NOT REACH FOR IT! First unplug it and then retrieve it. If the internal electrical components of the unit get wet, unplug it immediately.

DANGER: If the unit shows any sign of abnormal water leakage, immediately unplug it from the power source.

IMPORTANT: Carefully examine the unit after installation. It should not be plugged in if there is water on any part not intended to be wet.

DANGER: Do not operate this unit if it has a damaged cord or plug, if it is malfunctioning, or if it has been dropped or damaged in any manner.
**IMPORTANT:** Close supervision is necessary when any appliance is used by or near children, and our equipment is no exception.

**IMPORTANT:** Always unplug the unit from an electrical outlet when not in use, before servicing, cleaning or removing parts. Never yank the cord to pull the plug from the outlet. Grasp the plug and pull to disconnect.

**IMPORTANT:** SMART UVs are designed for low-pressure water applications with or without aquatic livestock. **DO NOT use the EMPEROR AQUATICS, Inc. SMART UV for any application other than its intended use. The use of attachments not recommended or sold by Emperor Aquatics Inc. may cause unsafe conditions and possibly void any warranty.**

**IMPORTANT:** This unit must be wired in conjunction with a properly grounded, ground fault interrupter circuit (GFI).

Only (3) three wire grounded cable suitable for outdoor use should be used to connect this unit. If joining cables for outdoor use, a suitable watertight cable connector must be used. If an extension cord is necessary, a cord with a proper rating should be used. A cord rated for less amperes or watts than the appliance’s rating may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled. (If in doubt consult a qualified electrician)

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**Section Two: UV STERILIZATION FEATURES AND SPECIFICATIONS**

Our GPH T-5 and T-6 low pressure mercury vapor germicidal lamps, produce approximately 40% of their electrical input watts into UV-C output watts within the germicidal action spectrum (this means that 40% of electricity used is converted into useful UV light), the highest UV-C output conversion among all UV lamps.

**SMART UV FEATURES**

- UL listed for indoor and outdoor use, fresh and salt water use.
- Long lasting GPH/T5 and GPH/T6 UV lamps (9,000 hours to 80% efficiency).
- Protective Quartz Sleeve (maximizes UV lamp output and safety)
- Watertight Design
- Easy-to-Remove Power Assembly
- Remote Power Supply
- UV Resistant High Density Plastic UV Housing  
  (**Life time warranty** against UV degradation)
- Utilizes the UV lamp to its maximum potential  
  (maximum UV exposure)
- Non-UV Transmitting Clear Lamp Viewing Ports

**SMART UV Specifications Charts**
(See pages 3, 4, and 5)
### SMART UV Specifications Charts

#### SMART UV Lite Models

<table>
<thead>
<tr>
<th>Model No. /Watts</th>
<th>Maximum Pond Size</th>
<th>Maximum Aquarium Size</th>
<th>No. Lamps /Watt</th>
<th>Water Flow Rate Algae &amp; Bacteria 30,000 µWs/cm²</th>
<th>Water Flow Rate Protozoa 90,000 µWs/cm²</th>
<th>Input Watts</th>
<th>UV-C Output Watts</th>
<th>Dim. (Inches)</th>
<th>Inlet /Outlet</th>
<th>Input Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>02218-B/18</td>
<td>1,100 Gal.</td>
<td>70 Gal.</td>
<td>1/18</td>
<td>219 GPH/356 GPH</td>
<td>73 GPH/121 GPH</td>
<td>18</td>
<td>5</td>
<td>21.75&quot; x 2.5&quot;</td>
<td>1/2 Barb</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02225-B/25</td>
<td>1,600 Gal.</td>
<td>100 Gal.</td>
<td>1/25</td>
<td>332 GPH/554 GPH</td>
<td>110 GPH/184 GPH</td>
<td>25</td>
<td>8</td>
<td>29.75&quot; x 2.5&quot;</td>
<td>3/4 Barb</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02240-B/40</td>
<td>2,900 Gal.</td>
<td>200 Gal.</td>
<td>1/40</td>
<td>589 GPH/983 GPH</td>
<td>196 GPH/327 GPH</td>
<td>40</td>
<td>14</td>
<td>44.75&quot; x 2.5&quot;</td>
<td>1&quot; Barb</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02218-S/18</td>
<td>1,100 Gal.</td>
<td>70 Gal.</td>
<td>1/18</td>
<td>219 GPH/356 GPH</td>
<td>73 GPH/121 GPH</td>
<td>18</td>
<td>5</td>
<td>21.75&quot; x 2.5&quot;</td>
<td>2&quot; Socket</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02225-S/25</td>
<td>1,600 Gal.</td>
<td>100 Gal.</td>
<td>1/25</td>
<td>332 GPH/554 GPH</td>
<td>110 GPH/184 GPH</td>
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<td>8</td>
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<td>14</td>
<td>44.75&quot; x 2.5&quot;</td>
<td>2&quot; Socket</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02280-S/80</td>
<td>5,900 Gal.</td>
<td>400 Gal.</td>
<td>2/40</td>
<td>1,178 GPH/1,967 GPH</td>
<td>392 GPH/655 GPH</td>
<td>80</td>
<td>28</td>
<td>44.75&quot; x 14&quot;</td>
<td>2&quot; Socket</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>022218/18</td>
<td>1,100 Gal.</td>
<td>70 Gal.</td>
<td>1/18</td>
<td>219 GPH/356 GPH</td>
<td>73 GPH/121 GPH</td>
<td>18</td>
<td>5</td>
<td>21.75&quot; x 2.5&quot;</td>
<td>1.5&quot; Union</td>
<td>120VAC 50/60Hz</td>
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<td>1.5&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>02218-W/18</td>
<td>1,100 Gal.</td>
<td>70 Gal.</td>
<td>1/18</td>
<td>219 GPH/356 GPH</td>
<td>73 GPH/121 GPH</td>
<td>18</td>
<td>5</td>
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<td>1.5&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
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<td>1,600 Gal.</td>
<td>100 Gal.</td>
<td>1/25</td>
<td>332 GPH/554 GPH</td>
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<td>1.5&quot; Union</td>
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</tr>
</tbody>
</table>

Note: PVC Adapter Kits not included (but available separately)

"Suggested" Water Flow Rates are based on UV Lamp End of Useful Lamp Life, 80%, Maximum Water Flow Rates are based on New Lamp Condition. All water flow rates incorporate an 90% UV transmittance factor, considering "Green Water" conditions.
### SMART UV Sterilizer Models

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<th>Model No. /Watts</th>
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<th>UV-C Input Watts</th>
<th>Dim. (Inches)</th>
<th>Inlet /Outlet</th>
<th>Input Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>02025/25</td>
<td>2,360 Gal.</td>
<td>150 Gal.</td>
<td>1/25</td>
<td>472 GPH/788 GPH</td>
<td>157 GPH/262 GPH</td>
<td>25</td>
<td>8</td>
<td>29&quot; x 3.5&quot;</td>
<td>1.5&quot; Union</td>
</tr>
<tr>
<td>02040/40</td>
<td>4,725 Gal.</td>
<td>300 Gal.</td>
<td>1/40</td>
<td>943 GPH/1,574 GPH</td>
<td>314 GPH/525 GPH</td>
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<td>1.5&quot; Union</td>
</tr>
<tr>
<td>02065/65</td>
<td>8,565 Gal.</td>
<td>500 Gal.</td>
<td>1/65</td>
<td>1,710 GPH/2,855 GPH</td>
<td>570 GPH/952 GPH</td>
<td>65</td>
<td>25</td>
<td>70.5&quot; x 3.5&quot;</td>
<td>1.5&quot; Union</td>
</tr>
<tr>
<td>02080/80</td>
<td>9,445 Gal.</td>
<td>600 Gal.</td>
<td>2/40</td>
<td>1,885 GPH/3,148 GPH</td>
<td>628 GPH/1,049 GPH</td>
<td>80</td>
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<td>44.5&quot; x 15.5&quot;</td>
<td>1.5&quot; Union</td>
</tr>
<tr>
<td>02130/130</td>
<td>17,130 Gal.</td>
<td>1,140 Gal.</td>
<td>2/65</td>
<td>3,420 GPH/5,711 GPH</td>
<td>1,140 GPH/1,903 GPH</td>
<td>130</td>
<td>50</td>
<td>71.5&quot; x 15.5&quot;</td>
<td>1.5&quot; Union</td>
</tr>
<tr>
<td>02025-W/25</td>
<td>2,360 Gal.</td>
<td>150 Gal.</td>
<td>1/25</td>
<td>472 GPH/788 GPH</td>
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<td>25</td>
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</tr>
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<td>02130-W/130</td>
<td>17,130 Gal.</td>
<td>1,140 Gal.</td>
<td>2/65</td>
<td>3,420 GPH/5,711 GPH</td>
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<td>130</td>
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<td>1.5&quot; Union</td>
</tr>
</tbody>
</table>

**Note:** All SMART UV Sterilizer Models include a PVC adapter kit (slip to female thread adapter & male thread to barb fitting adapter).

"**Suggested**" Water Flow Rates are based on UV Lamp End of Useful Lamp Life, 80%. **Maximum Water Flow Rates** are based on New Lamp Condition. All water flow rates incorporate an 90% UV transmittance factor, considering "Green Water" conditions.
### SMART HO UV Sterilizer Models

<table>
<thead>
<tr>
<th>Model No. /Watts</th>
<th>Maximum Pond Size</th>
<th>Maximum Aquarium Size</th>
<th>No. Lamps/Watt</th>
<th>Water Flow Rate Algae &amp; Bacteria 30,000 μWs/cm²</th>
<th>Water Flow Rate Protozoa 90,000 μWs/cm²</th>
<th>UV-C Input Watts</th>
<th>Dim. (Inches)</th>
<th>Inlet /Outlet</th>
<th>Input Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>025050/50</td>
<td>5,900 Gal.</td>
<td>500 Gal.</td>
<td>1/50</td>
<td>1,560 GPH/1,980 GPH</td>
<td>540 GPH/720 GPH</td>
<td>50</td>
<td>28&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025080/80</td>
<td>10,800 Gal.</td>
<td>900 Gal.</td>
<td>1/80</td>
<td>2,700 GPH/3,600 GPH</td>
<td>900 GPH/1,200 GPH</td>
<td>80</td>
<td>43&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025120/120</td>
<td>13,800 Gal.</td>
<td>1,200 Gal.</td>
<td>1/120</td>
<td>3,840 GPH/4,600 GPH</td>
<td>1,260 GPH/1,560 GPH</td>
<td>120</td>
<td>56&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025150/150</td>
<td>19,000 Gal.</td>
<td>1,600 Gal.</td>
<td>1/150</td>
<td>5,040 GPH/6,360 GPH</td>
<td>1,680 GPH/2,100 GPH</td>
<td>150</td>
<td>70&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025050-W/50</td>
<td>5,900 Gal.</td>
<td>500 Gal.</td>
<td>1/50</td>
<td>1,560 GPH/1,980 GPH</td>
<td>540 GPH/720 GPH</td>
<td>50</td>
<td>28&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025080-W/80</td>
<td>10,800 Gal.</td>
<td>900 Gal.</td>
<td>1/80</td>
<td>2,700 GPH/3,600 GPH</td>
<td>900 GPH/1,200 GPH</td>
<td>80</td>
<td>43&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
<td>120VAC 50/60Hz</td>
</tr>
<tr>
<td>025120-W/120</td>
<td>13,800 Gal.</td>
<td>1,200 Gal.</td>
<td>1/120</td>
<td>3,840 GPH/4,600 GPH</td>
<td>1,260 GPH/1,560 GPH</td>
<td>120</td>
<td>56&quot; x 5.75&quot;</td>
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<td>120VAC 50/60Hz</td>
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<td>025150-W/150</td>
<td>19,000 Gal.</td>
<td>1,600 Gal.</td>
<td>1/150</td>
<td>5,040 GPH/6,360 GPH</td>
<td>1,680 GPH/2,100 GPH</td>
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<td>70&quot; x 5.75&quot;</td>
<td>2&quot; Union</td>
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</tr>
</tbody>
</table>

---

**Note:** All SMART UV HO Sterilizer Models include a PVC adapter kit (slip x female thread adapter & male thread x barb fitting adapter).

**"Suggested" Water Flow Rates** are based on UV Lamp End of Useful Lamp Life, 80%, **Maximum Water Flow Rates** are based on New Lamp Condition. All water flow rates incorporate an 90% UV transmittance factor, considering "Green Water" conditions.
Section Three: WHAT IS ULTRAVIOLET STERILIZATION

Using a low-pressure mercury vapor germicidal lamp. Input watts are supplied to the UV lamp creating an electrical arc with the mercury inside. This reaction creates UV-C light. The UV-C light between 250nm and 280nm (the germicidal action spectrum) when directly exposed to living microorganisms such as bacteria and Protozoa is very effective at altering their DNA, disabling them from reproducing, even destroying them.

Microorganisms vary in type and size. Identifying the targeted microorganism, (Algae, Bacteria etc...) and matching its type and size to its established UV exposure rate, are prerequisites for destroying that particular microorganism. Successful UV sterilization requires the UV-C (UV radiation @ 250-280nm) to penetrate the microorganism’s cell wall/cell membrane and destroy its nuclear material as discussed and shown in diagram above.

Successful UV sterilization in a water application requires the targeted waterborne microorganism to be in direct contact with the UV-C light (produced by the UV lamp) for a specific amount of time [UV exposure rate]. Established UV exposure rates must be applied to achieve successful UV sterilization.

Section Four: PRE-INSTALLATION INSPECTION

All SMART UV models are packaged complete, with all necessary components that are required to operate the unit. Upon unpacking your SMART UV, we recommend that a complete component inventory be taken to ensure that all components are present and accounted for, prior to installation.

The serial number of your UV unit is located on a small white label near the electrical end of the unit’s body. Smart HO UV units have their serial number’s located on the UV body label and on the power supply (ballast) label.
The model number of your UV unit can be found in two locations:
1. On the bar code label at the end of the box.
2. On the Body Label placed in the middle of the UV Housing, with a hole punch indicating the model number.

Please review the following SMART UV component diagrams, matching the proper diagram to the individual SMART UV model contained in this package. Unpack your SMART UV and lay out the packaged components for inspection. Please review the information listed in this section to familiarize yourself with the equipment’s various parts.

SMART UV Component Diagrams

SMART UV Lite Models (#02218, #02225, #02240, #02280*)

SMART UV Sterilizer Models (#02025, #02040, #02065, #02080*, #02130*)

* Indicates Dual Body UVs. (see page 30 for more information).
Included: UV Body, Power Supply w/cord, Quartz Sleeve, Lamp Assembly, Packet Containing Instructions, and Inlet/Outlet fittings (fittings vary per unit)

SMARTUVLite
Comes with 18, 25, 40, or 80 Watt Power Supply

SMARTUV Sterilizer
Comes with 25, 40, 65, 80 or 130 Watt Power Supply

SMART HO UV Sterilizer
Comes with 50, 80, 120, or 150 Watt Power Supply

- After Inventory is taken...make sure nothing is broken or damaged -

Section Five: QUARTZ SLEEVE/ UV LAMP INSPECTION

• (1) For models #02218, #02225, #02240, #02280, #02025, #02025-W, #02040, #02040-W, #02080, #02080-W, #025050, #02050-W skip to pg. 9

• (2) For models #02065, #02065-W, #02130, #02130-W, #025080, #025080-W, #025120, #025120-W, #025150, #025150-W skip to pg. 10

• (3) For models #02218-W, #02225-W, #02240-W, #02280-W skip to pg. 11
The following SMART UV Models are packaged with their quartz sleeve/power assembly, pre-assembled inside the UV body.

SMART UV Lite #02218, #02225, #02240, #02280,
SMART UV #02025, #02025-W, #02040, #02040-W, #02080, #02080-W,
SMART HO UV #025050, #02050-W

The Quartz Sleeve Module containing the UV lamp must be removed from the UV body and inspected for damage prior to installation. Extreme care should be used while this procedure is being performed.

Quartz Sleeve/UV lamp Inspection Procedure

Step # 1 - Carefully unthread and remove the black retaining nut found on the electrical end of the unit’s body. Hold and gently pull the clear quartz sleeve module away from the body, carefully removing the quartz sleeve assembly.

Step # 2 - With the quartz sleeve module and UV lamp removed from the unit’s body, lay them flat on a level surface and remove the UV lamp from the quartz sleeve by unthreading/removing the plastic threaded cap [in this case red, it may be a different color] on the clear quartz sleeve module. Next, remove the foam packing insulation. These items are disposable, please discard them.

Step # 3 - Damage to the quartz sleeve or UV lamp from shipping should be visible. Extreme caution should be used with handling broken glass to avoid injury. Do not attempt to repair broken glass components. With the plastic plug and foam packing insulation removed from the quartz sleeve, gently tilt the domed end of the quartz sleeve upwards and slide the UV lamp out in your hand. Since these units are shipped with the lamp and quartz sleeve assembly inside the UV body, shipping damage is prevented by two items around the lamp.

1. The lamp sits inside a blue cap at the bottom of the quartz sleeve.
Step # 4 - Inspect all other SMART UV components for damage (power supply, UV housing, unions) prior to installation.

#02240 / #02040 / #02280 / #02080
40 & 80 Watt models are packaged with each lamp in a corrugated tube. All other models in this section are packed with their lamp in the quartz sleeve/power assembly.

Upon inspection of the unit after shipping, if broken glass is found (this includes cracks, chips, pin holes and hair line fractures of any kind) please contact the place of original purchase immediately for replacements. Do NOT call the manufacturer (Emperor Aquatics, Inc.) regarding this problem.

Step # 4 - Inspect all other SMART UV components for damage (power supply, UV housing, unions) prior to installation.

(2) The following SMART UV Models are packaged with their UV lamp and quartz sleeve/power assembly separately wrapped and placed in a corrugated triangle box.

SMART UV #02065, #02065-W, #02130, #02130-W,
SMART HO UV #025080, #02580-W, #025120, #025120-W, #025150, #025150-W

Both the UV lamp and quartz sleeve/power assembly must be removed and inspected for damage prior to installation. Extreme care should be used while this procedure is being performed.

Quartz Sleeve/UV lamp Inspection Procedure

Step # 1 - Carefully unpack the clear quartz sleeve module/quartz sleeve and UV lamp from the triangle corrugated box and lay on a level, stable surface.
Step # 2 - The quartz sleeve assembly and UV lamp are packaged inside the triangle box separately. Once unpacked with the packaging material removed, inspect for shipping damage.

Step # 3 - Inspect all other SMART UV components for damage (power supply, UV housing, unions) prior to installation.

Upon inspection of the unit after shipping, if broken glass is found (this includes cracks, chips, pin holes and hair line fractures of any kind) please contact the place of original purchase immediately for replacements. Do NOT call the manufacturer (Emperor Aquatics, Inc.) regarding this problem.

(3) The following SMART UV Lite Models are packaged with their lamp and quartz sleeve/power assembly, pre-assembled inside the UV body.

SMART UV Lite #02218-W, #02225-W, #02240-W, #02280-W,

Quartz Sleeve/UV lamp Inspection Procedure

Step # 1 - Carefully unthread and remove the black retaining nut found on the electrical end of the unit’s body. Hold and gently pull the clear quartz sleeve module away from the body, carefully removing the quartz sleeve assembly.

Note: For UV Lite models with wipers, the wiper assembly is mounted on the non-electrical side of the UV, as a result it stays inside the body when removing the quartz sleeve assembly.
Step # 2 - With the quartz sleeve module and UV lamp removed from the unit’s body, lay them flat on a level surface and remove the UV lamp from the quartz sleeve by unthreading/removing the plastic threaded cap [in this case red, it may be a different color] on the clear quartz sleeve module. Next, remove the foam packing insulation. These items are disposable, please discard them.

Step # 3 - Damage to the quartz sleeve or UV lamp from shipping should be visible. Extreme caution should be used with handling broken glass to avoid injury. Do not attempt to repair broken glass components. With the plastic plug and foam packing insulation removed from the quartz sleeve, gently tilt the domed end of the quartz sleeve upwards and slide the UV lamp out in your hand. Since these units are shipped with the lamp and quartz sleeve assembly inside the UV body. To prevent shipping damage the lamp is protected by two items.

1. The lamp sits inside a blue cap at the bottom of the quartz sleeve. Make sure the Black retaining nut is screwed on tightly (hand tighten only) before attempting to remove this cap. With the lamp completely removed shake the unit gently until the cap falls out from the quartz sleeve. This blue cap is disposable, please discard.

2. Locate and remove the small black o-ring on the UV lamp. This o-ring prevents the lamp from moving too much inside the quartz sleeve during shipping. This item is disposable, please discard.

Upon inspection of the unit after shipping, if broken glass is found (this includes cracks, chips, pin holes and hair line fractures of any kind) please contact the place of original purchase immediately for replacements. Do NOT call the manufacturer (Emperor Aquatics, Inc.) regarding this problem.

Step # 4 - Inspect all other SMART UV components for damage (power supply, UV housing, unions, wiper assembly) prior to installation.
Section Six: THE QUARTZ SLEEVE ASSEMBLY

All SMART UV’s utilize the same style quartz sleeve module assembly.

There are 7 components that make up a complete assembly and they include:

1. Quartz Sleeve
2. White Quartz Sleeve Retaining Nut
3. Rubber Gasket
4. Rubber O-ring
5. Clear Quartz Sleeve Module (#20622- UV Lite Models / #20603 UV Sterilizer & UV HO Sterilizer Models)
6. Clear Quartz Sleeve Module O-ring
7. Power Supply Gasket

Improper Assembly May Result In Electrical Component Water Damage and Unsafe Conditions
Emperor Aquatics, Inc. is not responsible for improper re-assembly of these parts.

Assembly Instructions

6-1. Starting with the quartz sleeve, domed end down, place the white quartz sleeve retainer nut, rubber gasket and rubber o-ring onto the quartz sleeve. It is recommended that you wet the rubber o-ring and gasket before assembly to aid in creating a water tight seal.

6-2. Slide the quartz sleeve's open-end into the quartz sleeve module.

6-3. Slide the open-end of the quartz sleeve into the quartz sleeve module. The open-end of the quartz sleeve should mate smoothly flush with the internal plastic lip of the clear quartz sleeve module. This can be confirmed by placing index finger inside module opening and feeling where they meet.
6-4. Slide the rubber o-ring, gasket and white quartz sleeve retaining nut into position, thread (hand tighten) the white quartz sleeve retaining nut onto the male threads of the clear quartz sleeve module (D). If the quartz sleeve is crooked or not flush inside the clear quartz sleeve module seal failure may occur. Again, feel with finger to make sure that no gaps are present between the two parts.

6-5. With the quartz sleeve module/quartz sleeve assembly complete, stand the uv body on end, gently slide the entire assembly into the SMART UV body holding the clear quartz sleeve module as shown in image (E).

6-6. Once inside the SMART UV body, carefully guide the domed end of the quartz sleeve into the quartz sleeve retaining coupling located inside the UV housing at the non-electrical end. Image (F).

**TIP:** After the quartz sleeve assembly is properly assembled, please check and make sure the black o-ring on the underside of the clear quartz sleeve module is seated correctly.

When inserting the quartz sleeve assembly into the UV body (UV Lite Models only) this tip may help. With the lamp removed, look down inside the UV housing through the quartz sleeve. You will see a circle at bottom of the unit and a smaller circle that is the end of the quartz sleeve. You can easily seat the quartz sleeve assembly into the coupling when you align the two circles.

For UV Lite wiper models, guide quartz sleeve assembly through the wiper module and then into the coupling at the end of the UV housing.

6-7. With the quartz sleeve assembly properly in place, the clear quartz sleeve module (rubber o-ring in place) should sit flat against top (threaded coupling) of the UV housing. Thread the (G) black retaining nut onto the male threads of the UV housing, hand tighten only.

6-8. Perform the water test before installing/connecting the UV lamp and power supply (see section eight).
NOTE: The way UVs are mounted/positioned plays a very important role in the unit's performance and degree of safety. We STRONGLY RECOMMEND that you follow these instructions and guidelines precisely. Any deviation from these mounting instructions will void any warranty associated with the UV and all its components and may cause unsafe conditions.

**Trapped air inside the UV housing during operation may create excessive heat, damaging the UV’s internal components. (Please follow instructions to avoid this.)**

**Vertical Mounting:** Mount the SMART UV with the electrical end up. Use the bottom port as the inlet with the top port as the outlet.

**Horizontal Mounting:** Mount the SMART UV horizontally with the inlet/outlets facing up. If the unit is mounted horizontally but not level, the electrical end of the unit should be positioned higher than the non-electrical end. Choose the lower port for the inlet.

**Power Supply Mounting:** **DO NOT SUBMERGE THE POWER SUPPLY IN WATER.** The power supply may be camouflaged using rocks.

Note: Do not bury or place power supply where heat or moisture can be retained.

DO NOT mount/use the dual body UV (80 & 130 watt models) with one "tube" over-top of the other or with one "tube" higher than the other. Keep unit as flat and level as possible. If the unit cannot be mounted completely level, make sure that the electrical end of the UV is higher.
Section Eight: MANDATORY SMART UV WATER TESTING

Important Note: Failure to perform a water test could lead to conditions that will void your product's warranties.

A water test should be performed each time the quartz sleeve is installed inside the unit's body or when the quartz sleeve or gaskets and o-rings are replaced. [Once annually] Performing a water test is a precautionary function that will determine whether or not the critical seal between the quartz sleeve and quartz sleeve module has been achieved.

Failure to achieve a proper quartz sleeve/quartz sleeve module seal during SMART UV operation will allow water to leak into the inside of the quartz sleeve, potentially damaging the UV lamp, other electrical components, and can lead to dangerous situations.

For complete instructions regarding quartz sleeve and UV lamp replacement please review Section 7:

Five Steps to Water Test All SMART UV Models

8-1. Prepare the SMART UV for permanent operation by plumbing it in-line, into a filter system using the plumbing hardware of your choice. If PVC glue is used, follow the glue manufacturer’s instructions.

8-2. With the unit plumbed for operation and the clear quartz sleeve module securely in place, remove the UV lamp from the quartz sleeve module.

8-3. Roll-up a few paper towels creating a core approximately ¾" in diameter, 10" long then slide into the open quartz sleeve module port. Insert about six inches of the paper towel core down into the quartz sleeve, as shown at right.

8-4. With the paper towel in place, turn on the pump and recirculate water through the UV for no less than (30) thirty minutes.

8-5. After thirty minutes of recirculating water through the UV, remove the paper towels from the quartz sleeve module. Inspect closely for moisture. If the paper towels are completely dry, your water test is complete and successful. If moisture is detected on the paper towel the quartz sleeve’s rubber gasket and o-ring have failed to achieve a seal and must be re-assembled; repeat the water test until a seal is achieved. (see section 7 for assembly instructions)

DO NOT OPERATE THE SMART UV UNTIL A PROPER QUARTZ SLEEVE MODULE/QUARTZ SLEEVE SEAL HAS BEEN ACHIEVED!
Section Nine:  ELECTRICAL REQUIREMENTS

9-1. The electrical requirements for the UV Sterilizer is marked on the unit’s power supply label (120VAC 50/60 Hz.). The unit must be plugged into a well-grounded (GFI) electrical outlet. **Do not attempt to cut the ground plug off or change the cord to a two-wire plug. If you do so, the unit’s WARRANTY WILL BE VOID!**

9-2. This product must be grounded. If the unit should fail electrically, grounding provides a path of least resistance for electric current to pass to reduce the risk of electric shock. This product’s cord is equipped with an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. If in doubt consult a qualified electrician.

9-3. **DO NOT OPERATE THIS EQUIPMENT WITH TIMING DEVICES.**

9-4. **DANGER:** Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if in doubt as to whether the outlet is properly grounded. Do not modify the products plug. If it will not fit the electrical outlet, have a proper outlet installed by a qualified electrician. Do not use any type of adapter with the product.

9-5. **GROUND FAULT CIRCUIT INTERRUPTER PROTECTION:** To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electrical shock, this unit should only be connected to a receptacle that is protected by a ground fault circuit interrupter (GFI).

Section Ten:  UV LAMP INSTALLATION

Lamp indicators: Our lamps are manufactured with white ceramic end caps. All High Output (HO) Lamps, however, now come with Black end caps to help differentiate.

10-1. After a successful water test and **without the power supply plugged into an electrical receptacle**, attach the lamp’s 4-pins to the power cord’s white 4-pin connector. Then slide the UV lamp back into the UV Sterilizer’s quartz sleeve.

10-2. If the UV body is mounted vertically, be especially careful not to drop the lamp into the quartz sleeve it may break-out through the domed end of the quartz sleeve.
Note: The position of the lamp inside the quartz sleeve is an important factor for this UV to work as efficiently as possible. To ensure that the lamp is positioned entirely between the UV body's inlet and outlet ports, complete the following steps. Make sure the lamp is not connected to an electrical source, then proceed.

Unscrew and loosen the water tight connector. Move the cord through the grey power supply adapter in order to move the connected lamp entirely between the unit's inlet and outlet ports. Look down through the inlet/outlets to be certain the lamp is in the proper position. Then tighten the water tight connector back onto the gray power supply adapter.

IMPORTANT: If you do not have black jamb nut back far enough before tightening grey adapter, the grey adapter will not make contact with the power supply gasket and will cause unit to leak.

Section Eleven: OPTIONAL QUARTZ SLEEVE WIPERS

RECOMMENDED FOR FRESH WATER APPLICATIONS ONLY

If you purchased a SMART UV or SMART HO UV wiper skip this section and go to 11-2
If you did not purchase a wiper model skip to section 12

11-1 Quartz Sleeve Wiper Assembly for SMART UV Lite Models 02218-W, 02225-W, 02240-W, 02280-W

All SMART UV Lite Wiper models have their quartz sleeve wiper seal located on the non-electrical end of the UV housing. A "Seal Nut" creates the seal between the UV housing and the quartz sleeve wiper rod. Inside the "Seal Nut" there is a rubber o-ring and two rubber seals, all are replaceable. (annually)

To replace rubber seals, use a small screw-driver to pop the old seals out of the plastic nut. Replace with new seals (flat portion of the seals facing into the nut). Wet the seals before installation for assistance in creating a watertight seal.

A. Seal-Nut
B. Replaceable Rubber O-Ring
C. Replaceable Rubber Seals
Quartz Sleeve Wiper Assembly

To install the quartz sleeve wiper:

1. Fit the Squeegee onto the Wiper Rod (opposite end of the threads).
2. Push the C-Clamps onto the rod (one into each groove, opposite sides of the Squeegee).
3. Push the threaded end of the rod through the assembled and installed "Seal Nut" from the inside of the UV Housing.
4. Thread on the Wiper Rod Stop Nut and Wiper Handle.
5. Push the Wiper Rod completely into the UV Housing.
6. Push the assembled Quartz Sleeve Assembly, domed end of the Quartz Sleeve, into the Squeegee, gently continuing to push until the domed end of the Quartz Sleeve seats itself into the Quartz Sleeve Retaining Coupling.
7. Thread the Black Retaining Nut onto the UV Housing with the Clear Quartz Sleeve Module/Assembly in place, and tighten.
8. Installation is now complete.
All SMART UV Sterilizer & SMART HO UV Sterilizer Wiper models have their quartz sleeve wiper seal located on the clear quartz sleeve module. Two rubber seals together create a seal between the clear quartz sleeve module and the quartz sleeve wiper rod; both are easily replaced.

To replace rubber seals, use a small screw-driver to pop the old seals out of the plastic nut and replace with new seals (flat portion of the seals facing into the nut.) Wet the seals before installation.

Quartz Sleeve Wiper Assembly

To install the Quartz Sleeve Wiper:

1. Fit the Squeegee onto the Wiper Rod (opposite end of the threads).
2. Push the C-Clamps onto the Rod (one into each groove, opposite sides of the Squeegee).
3. Push the Domed End of the Quartz Sleeve through the Squeegee that is attached to the Wiper Rod.
4. Slide the Wiper Squeegee w/ Rod attached two thirds up the Quartz Sleeve.
5. Push the Wiper Rod threaded end completely into and through the Quartz Sleeve Module ¼" hole w/ Rubber Seals.
6. Thread on the Wiper Rod Stop Nut and Wiper Handle.
7. Push the Quartz Sleeve (open end) w/ White Retaining Nut, Quartz Sleeve Rubber Gasket and O-ring into the Clear Quartz Sleeve Module, line-up properly and tighten down white nut (hand tight- see section 7 installation).
8. Gently slide the entire Quartz Sleeve / Wiper Assembly into the UV housing; make sure the domed end of the Quartz Sleeve slides into the Quartz Sleeve Coupling.
9. Thread the Black Retaining Nut onto the UV Housing with the Clear Quartz Sleeve Module/Assembly in place, and tighten.
10. Installation is now complete.
Section Twelve: SMART UV Installation / Operation

SMART UV Installation Locations

Our SMART UVs are used in a variety applications to control waterborne pathogens; we encourage you to consider the installation/operation recommendations proved here.

Solid Waste Removal - Operating the SMART UV after the mechanical filter increases its overall performance. Suspended solid waste will absorb UV light and reduce the UV transmittance through water.

EA Recommended Water Flow Rates - When operating EA SMART UV sterilizers we encourage you to use our recommended water flow rates. Most competing UV's are supplied with exaggerated flow rate information that greatly jeopardizes their performance. Any deviation from our recommendations will void our Green to Clear in 3-5 days Guarantee.

12-1 Pond Installation Configurations

If purchased this product for aquarium please skip to section 12-2

12-1A Small Ponds (up to 1,000 Gallons) using a Dedicated Submersible Pump

For small ponds, or for applications where the SMART UV is operated independently from other filters, this installation configuration is ideal. Matching the pump to the SMART UV's recommended flow rate is critical to the UV's performance. Installing an adequate mechanical pre-filter on the pump suction ensures that solids-free water will be sent to the SMART UV. (see diagram #1)
12-1B Small to Moderately Sized Ponds (up to 5,000 Gallons) using Skimmer and Falls
This is a very popular filter system style. Placing the UV between the skimmer box and the bio-falls filter ensures that pre-filtered water reaches the UV, increasing its performance while reducing maintenance. Often the capacity of the pump exceeds the capacity of the UV, if this is the case, install a by-pass manifold. Be sure that the skimmer is equipped with mechanical (solid waste removal) filtering capacity. (see diagram #2)
12-1C Larger Sized Ponds (above 5,000 Gallons)
Surface Skimmer / Pressurized Filter
This is one of the most efficient pond/exhibit filter system styles we can recommend. This system is simple yet achieves critical filtering goals, such as good water circulation for increased solid waste suspension, and the bottom drain/surface skimming capabilities ensures maximum waste removal. (see diagram #3)

![Diagram #3](image)

The SMART UV is positioned after the mechanical filter where it can receive only solid waste free water, optimizing UV transmittance/performance. Notice the 3-way valve that regulates suction from the skimmer and drain to the pump, allowing flow control. Next, multiple "clean water returns improve circulation in the pool suspending solid waste, helping it to find the filter. If you have a flow rate that exceeds the UV’s, install a by-pass manifold. (see diagram #2)
12-2A Canister Filter / Aquarium Installation
Pressurized Canister filters are commonly used with small freshwater/saltwater aquariums. This diagram shows our EA SMART UV Lite Hang-On model. It is important to match the Canister Filter’s flow rate to the capacity of the SMART UV. If this is not plausible, use a by-pass manifold (see diagram #6). To prevent back-siphoning, consider installing a check valve or ball valve (see filter manufacturer’s instructions/recommendations). (see diagram #4)
12-2B Wet-Dry w/External or Submersible Pump Installation
This installation configuration shows the SMART UV capacity matched to the recirculating flow rate performance of the pump. We recommend mechanical filter media being used inside the over-flow and at the top of the wet-dry filter.

Installing a check valve after the UV will eliminate back siphoning. Installing true-union ball valves will allow flow adjustments and UV removal. For best results, install a saddle-style water flow meter, mounted horizontally on the outlet side of the UV. Follow the water flow meter manufacturer’s instructions for proper installation and operation. (see diagram #5)
12-2C Wet-Dry w/External or Submersible Pump Installation
This installation configuration is identical to diagram 12-2B with the addition of a by-pass manifold. The by-pass is used to deliver a precise water flow to the SMART UV when the overall clean water return flow rate exceeds the UV’s capacity.

Installing a check valve after the UV will eliminate back siphoning. Installing true-union ball valves will allow flow adjustments and easy UV removal for servicing. For best results, install a saddle-style water flow meter, mounted horizontally on the outlet side of the UV. Follow the water flow meter manufacturer’s instructions for proper installation and operation. (see diagram #6)

Diagram #6

Note: Before gluing pipe or a reducer bushing into the UV's union or socket, remove the quartz sleeve assembly to prevent glue from dripping onto the quartz sleeve. Use Teflon tape on all threaded connections.
Section Thirteen: SMART UV Winterizing

13-1 Winterizing: Using the SMART UV in extremely cold temperatures can cause damage to the unit, especially if the water is allowed to freeze inside the equipment. Please note that damage to the product in this manner is not covered under warranty.

13-2 We recommend shutting the SMART UV down when the temperature consistently falls below 50 degrees.

13-3 Drain and remove the SMART UV from the filtration system.

13-4 Disassemble the entire unit and carefully clean both the outside and interior (quartz sleeve) of the SMART UV.

13-5 Once clean and dry, store the SMART UV in a dry place for the winter. Return the SMART UV to service when temperatures consistently return to 50 degrees, be sure to replace the quartz sleeve gasket/o-ring and perform a water test prior to operating the equipment. (see section 6, 8, and possibly 11)

Section Fourteen: SMART UV Maintenance

14-1 Quartz Sleeve cleaning. We recommend that you clean your UV's quartz sleeve once every three (3) months of continual operation. The frequency required for cleanings will vary depending on the situation of your application and filtration system. To clean your quartz sleeve you will need to turn off you pump and unplug the UV from its power source. Next unthread the UV's black retaining nut and remove the quartz sleeve/UV lamp assembly from the UV body. Wipe the outside of the quartz sleeve with a soft, clean cloth. Return the assembly to its proper position inside the UV housing and re-thread the black retaining nut (If you are unsure on how to re-seat or remove the assembly, see sections 6 or 11). Lastly plug the UV Sterilizer into the GFI outlet and then turn on your pump.

14-2 UV lamps need to be replaced after 13 months (9,000 hrs.) of continual use.

14-3 Lamp Connector Removal: In the event that you would need to replace your 4-pin lamp connector follow these steps:

1. Un-plug unit from power source.
2. Remove Lamp from unit.
3. Unplug lamp from connector/power cord.
4. Grasp white 4 pin lamp connector with a pair of pliers while standing on that end of the electrical cord.

5. Pull connector straight off wires. (It will pull off hard)

6. Check to make sure ends of electrical wires are still tinned; they are pre-soldered before pushing them into connector. If they are no longer tinned you will need to dip them in some flux and then solder to make them firm enough to push back in new lamp connector.

7. Push wires back into new lamp connector making sure they are firmly attached. They should not pull out of connector easily. If your connector contains a starter bulb (12/18/25 models), place the wires in the only two open holes. If it does not contain a starter bulb (40/65/80/130 & larger) you will need to check with us as to how it gets wired (610-970-0440 x0).

8. Plug lamp back into connector and reassemble.

9. When reassembling lamp be sure to have black jamb nut all the way back on grey adapter. Tighten down grey adapter first and then the black jamb nut.

**IMPORTANT:** If you do not have black jamb nut back far enough before tightening grey adapter, the grey adapter will not make contact with the power supply gasket and will cause unit to leak.
Section Fifteen: SMART UV Replacement Parts

EMPEROR AQUATICS, INC.
SMART UV LITE STERILIZERS EXPLODED PARTS VIEW DIAGRAM
FOR MODEL #'s 02218, 02225, 02240, & 02280 UV STERILIZERS &
FOR MODEL #'s 02218-W, 02225-W, 02240-W, & 02280-W UV STERILIZERS

1. UV Lamp
2. 4-Pin Lamp Connector
4. Gray Power Supply Adapter
5. Power Supply Cord
6. Power Supply Module Assembly
7. Black Retaining Nut
8. Power Supply Gasket
9. Clear Quartz Sleeve Retaining Module
10. O-Ring for Clear Quartz Sleeve Retaining Module
11. Quartz Sleeve O-Ring
12. Quartz Sleeve Gasket
13. White Quartz Sleeve Gasket/O Ring Retaining Nut
14. Quartz Sleeve
15. UV Sterilizer Main Body
16. Water Inlet/Outlet Union O-Ring (used on union models only)
17. Water Inlet/Outlet Union Socket Half (used on union models only)
18. Water Inlet/Outlet Union Retaining Nut (used on union models only)
19. Hose Barb Insert (used on hose barb models only)
20. Quartz Sleeve Wiper Module (only with Wiper models)
21. Quartz Sleeve Wiper Rod and Handle (only with Wiper models)

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<th>Quartz Sleeve Part No.</th>
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<th>Lamp Connector Part No.</th>
<th>Fittings/Mounting Clamps Kit Part No. for 1.5&quot; Unions/2&quot; Socket</th>
<th>Gasket Service Kit Part No.</th>
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<td>20077 x 2</td>
<td>20061 x 2/20062 x 2</td>
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NOTE: Clear Quartz Sleeve Retaining Module #20622, White Quartz Sleeve Retaining Nut #20079; both fit all SMART UV Lite Models; two required for #02280.
1. UV Lamp
2. 4-Pin Lamp Connector
4. Gray Power Supply Adapter
5. Power Supply Cord
6. Power Supply Module Assembly
7. Black Retaining Nut
8. Power Supply Gasket
9. Clear Quartz Sleeve Retaining Module
10. O-Ring for Clear Quartz Sleeve Retaining Module
11. Quartz Sleeve O-Ring
12. Quartz Sleeve Gasket
13. White Quartz Sleeve Gasket/O-Ring Retaining Nut
14. Quartz Sleeve
15. UV Sterilizer Main Body
16. Water Inlet/Outlet Union O-Ring
17. Water Inlet/Outlet Union Socket Half
18. Water Inlet/Outlet Union Retaining Nut
19. Quartz Sleeve Wiper Rod and Handle (only with Wiper models)
20. Quartz Sleeve Wiper Module (only with Wiper models)
EMPEROR AQUATICS, INC.
SMART UV STERILIZER EXPLODED PARTS VIEW DIAGRAM
FOR 80 & 130 WATT UV STERILIZERS
MODELS #02080 & 02130 &
MODELS #02080-W & 02130-W

1. UV Lamp
2. 4-Pin Lamp Connector
4. Gray Power Supply Adapter
5. Power Supply Cord
6. Power Supply Module Assembly
7. Black Retaining Nut
8. Power Supply Gasket
9. Clear Quartz Sleeve Retaining Module
10. O-Ring for Clear Quartz Sleeve Retaining Module
11. Quartz Sleeve O-Ring
12. Quartz Sleeve Gasket
13. White Quartz Sleeve Gasket/O-Ring Retaining Nut
14. Quartz Sleeve
15. UV Sterilizer Main Body

(See chart on pg. 30 for part numbers)
EMPEROR AQUATICS, INC.
SMART HO UV STERILIZERS EXPLODED PARTS VIEW DIAGRAM
FOR MODEL #s 025050, 025080, 025120, & 025150 UV STERILIZERS &
FOR MODEL #s 025050-W, 025080-W, 025120-W, & 025150-W UV STERILIZERS

1. UV Lamp
2. 4-Pin Lamp Connector
4. Gray Power Supply Adapter
5. Power Supply Cord
6. Power Supply Module Assembly
7. Black Retaining Nut
8. Power Supply Gasket
9. Clear Quartz Sleeve Retaining Module
10. O-Ring for Clear Quartz Sleeve Retaining Module
11. Quartz Sleeve O-Ring
12. Quartz Sleeve Gasket
13. White Quartz Sleeve Gasket/O-Ring Retaining Nut
14. Quartz Sleeve
15. UV Sterilizer Main Body
16. Water Inlet/Outlet Union O-Ring
17. Water Inlet/Outlet Union Socket Half
18. Water Inlet/Outlet Union Retaining Nut
19. Quartz Sleeve Wiper Rod and Handle (only with Wiper models)
20. Quartz Sleeve Wiper Module (only with Wiper models)

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NOTE: Clear Quartz Sleeve Retaining Module #20693, White Quartz Sleeve Retaining Nut #20079, both fit all SMART UV Sterilizer Models as well as all SMART HO UV Sterilizers.
Section Sixteen: SMART UV Troubleshooting

1. **Paper towel test indicates a leak** - Turn off pump water flow to unit. Refer to section 6 & 10 (in reverse order) to disassemble unit. Reassemble Quartz sleeve following section 6 and repeat the water test (see section 8) until there are no indications of a leak. Key items to look for include the Quartz Sleeve for possible breakage/cracks, Quartz Sleeve Gasket and O-ring proper placement, and if the white quartz sleeve retaining nut is tightened down completely.

2. **GFI/Breaker is tripping** - A possible cause is water leaking inside quartz sleeve assembly or faulty GFI Receptacle. Immediately unplug the UV and turn off all water flow to unit. Follow section 6 & 10 (in reverse order) to disassemble unit and check for water/moisture inside quartz sleeve assembly. If this is completely dry try plugging the UV in a different receptacle.

3. **Pond still green after a week with UV operating?**
   - Check to make sure the lamp is lit by utilizing the safe viewing port. Or is the Quartz Sleeve dirty? Also, double check the flow rate through the unit and compare this to our flow rate chart for your specific model. To determine your flow rate, place a bucket of known capacity at the water return and time how long it takes to fill the container. Our SMART UV flow rates are listed in Gallons per Hour. To compare, follow the provided example: a 5 gallon bucket fills up in 20 seconds. Divide the 20 seconds into 60 (1 minute) = 3 to calculate your gallon per minute rate. In this case, 3 x 5 gallons (1 bucket full) = 15 GPM. Multiply this by 60 (minutes in an hour) to get 900 GPH.

4. **Lamp not lighting on 18/25-Watt Units?**
   - Check starter bulb on the white 4-pin lamp connector our part #20078, if this is out the UV Lamp will not light.

Section Seventeen: Contact Information

This is a recommended list of who to call incase you have a problem or question.

**I inspected my UV after I got it home from the store and the glass is broken or cracked.** Please call the Store from which the unit was purchased.

**I have a problem with my UV and I'm not sure if it's under Warranty.** Please call us at 610-970-0440 x0

**I'm not sure my UV is working properly.** Please call us at 610-970-0440 x0

**How do I connect my UV to the rest of my system?** Please call the Store from which the unit was purchased OR Contact your local Pond Contractor

**I need to replace my UV Lamp and/or Quartz Sleeve.** You might want to check out www.qualityuvlamps.com

If you have any questions regarding anything listed within this instruction booklet, please call us at 610-970-0440 x0
SERVICE AND REPAIR

Your retailer or distributor is not an authorized service or repair center! If trouble develops, do not take the unit back to your retail store. Instead, call Emperor Aquatics Inc. at (610)-970-0440 to discuss the problem then if necessary we will give you an RMA number, so you may return the unit to us for proper service. After being given an RMA number carefully pack the unit up to avoid shipping damage. Send the unit to the following address:

EMPEROR AQUATICS INC.
2229 SANATOGA STATION RD.
POTTSTOWN, PA 19464

DO NOT RETURN ANY PRODUCT WITHOUT PRIOR AUTHORIZATION

Be sure to insure your package prior to shipping it; clearly indicate the problem you are having on sheet of paper and placed in box. Please do not forget to give us your return address and a daytime phone number where you can be reached. Upon receipt of your unit, we will repair or replace the unit (at no charge if the warranty is still in effect, proof of date of purchase will be required) or call/send you an estimate of the cost of the repairs which requires your authorization in order for us to proceed.

WARRANTY

EMPEROR AQUATICS INC. warrants to the original purchaser of its Ultraviolet Sterilizers to be free from defects in workmanship or materials for a period of (12) months from the date of purchase on the power supply and all gasket seals. A lifetime warranty on the UV Sterilizer's plastic main body housing due to failure of the plastic from UV light exposure and 90 days on the UV lamp for electrical operation only. The UV lamp and the Quartz Sleeve are not warranted against breakage due to them being made of glass. Provided that the equipment is installed in accordance with the factory instructions & operated within the environment and limitations for which it was designed for. Should any of the integral parts of the unit become defective within their time constraints from the date of purchase, they will be repaired or replaced, if proven defective in workmanship or material in the opinion of the manufacturer, also not including damage by freezing or the reuse of gasket seals that are more than (12) months old.

Any costs incurred for the labor of removing the unit shall be the responsibility of the original purchaser, as will be all shipping charges to and from Emperor Aquatic's Inc. factory. Any non-warranty repair will be billed at $75.00 per hour with a minimum of 1 hour plus the cost of the parts. Damage or failure of any part of the UV Sterilizer covered by this warranty, which results from causes, directly or indirectly, connected with the installation, operation, environment, use or willful abuse, including, without limitation, improper packaging and damage incurred during shipping is not covered by this warranty. Otherwise, any implied warranties, which accompany the sale of these goods, are limited to their respective time constraints from the date of purchase. The manufacturer will only be responsible for the repair or replacement of any of its products or parts thereof that are found to be defective and will not bear the cost of any incidental or consequential damages arising out of the occurrence of such a defect.
The HydroMAX Pond Filter operates externally, is simple to install and operate, and offers a spacious filter area allowing for quick and easy cleaning. Standard and upgradeable features include durable polyethylene construction, efficient solid waste removal, biofiltration and UV sterilization.

Position the Hydromax at the head of a waterfall, and camouflage with decorative rocks and shrubs.

Standard - #01715
Super - #01714
Pro - #01713

PSP (Plastic Sinking Pellet) Filters redefine heavy solid waste filtration. PSP Filters combine effective sand filter technology with larger, yet lighter, media to create an efficient pressurized solid waste pond filter.

By modifying the filters’ internal workings and using specifically weighted, larger-sized filter media, PSP filters are better suited for heavy solid waste applications, such as ornamental ponds. PSP filters are designed to efficiently trap, hold, and flush out suspended solid waste with little effort from operator.
A complete submersible filter system for ponds up to 1,000 gallons

- Submersible, no plumbing
- Efficient & Easy to clean
- 500 GPH water pump
- Internal 25 watt UV
- Durable Construction

Combine with a SMART UV for complete "small" pond filtration

- Large surface area for efficient solid waste capture
- Easily attaches to the suction end of water pump using standard PVC fittings
- Keeps pumps, fountains, UVs and filters free of clogging
- Easy to install and clean

The IGF Bag & Bio Pond Filter is a simply designed, highly efficient biological filter that many of our dealers have been quite satisfied to operate on their own retail fish systems. This low-pressure filter requires an adequate pre-filter installed on the pump supplying the Bag & Bio water. Available in two sizes; suited for ponds up to 4,000 gallons.

- Internal Mesh Bag
- Solids Backwash
- Biological Capabilities
- Easy Servicing
OWNER'S REGISTRATION OF EQUIPMENT

FOR YOUR WARRANTY TO BE VALID YOU MUST SUBMIT A FILLED OUT INFORMATION CARD OR FILL OUT AN ONLINE REGISTRATION FORM AT WWW.EMPERORAQUATICS.COM WITHIN 30 DAYS OF PURCHASE.

PURCHASER'S NAME: __________________________________________________________

PHONE #: __________________________ FAX #: ________________________________

STREET ADDRESS: ____________________________________________________________________________

CITY: __________________________ STATE: _____ ZIP: ___________________________

SERIAL #: __________ MODEL #: ________ PURCHASE DATE: __________

EMAIL ADDRESS: ____________________________________________________________________________

(PLEASE PRINT)

HOW DO YOU LIKE OUR PRODUCT?

We at Emperor Aquatics take your comments about our products very seriously. Please take a few moments to answer these questions and return with your product registration.

1. Was this product packaged well? ________________________________

2. Did you receive all the parts and instructions with the unit? __________________________________________________________________________

3. Were the instructions easy to understand? __________________________________________________________________________

4. Were you happy with the quality of the product? __________________________________________________________________________

5. Are you happy with the product’s performance? __________________________________________________________________________

6. Would you recommend our products to someone else? __________________________________________________________________________

7. Where did you purchase the unit? __________________________________________________________________________

8. What did you pay for the unit? ________________________________