Section 1  Safety Information…………………4
Section 2  General Information……………5-13
   2.1  System Components
   2.2  Specifications
   2.3  Installation
   2.4  Initial Start-up & Seasonal Operation
Section 3  Maintenance………………………13
   3.1  Replacement Parts
Section 4  Troubleshooting…………………14
Section 5  After-Sales Service………………15
Section 1  Safety Information

Before starting the installation job, it's very important to read the entire instructions below. Make sure that you understand these in order to avoid potential hazards. Failure to do so may result in serious personal injury or damage to the equipment.

Electric Shock

• To reduce the risk of electric shock, connect only to a properly grounded, grounding-type receptacle. If in doubt, have the outlet checked by a qualified electrician.
• This unit is to be used in a circuit protected by a ground fault circuit interrupter (GFCI).
• Disconnect unit from power source before handling or maintenance.
• Do not attempt operate any electric part of this unit. Connect the power supply should be the only installation step that involved the electricity.

Safety Precautions

• Keep the compressor ventilated, cool and dry.
• Do not allow anything to rest on the power cord.
• Never attempt any maintenance function that is not specified in the user manual.
• Never operate the system if unusual noises or odors are detected. Disconnect the power cord from the outlet and call for service

⚠️ This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances

⚠️ Improper installation of the grounding plug is able to result in a risk of electric shock. When repair or replacement of the cord or plug is required, do not connect the grounding wire to either flat blade terminal. The wire with insulation having an outer surface that is green is the grounding wire.
Check with a qualified electrician when the grounding instructions are not completely understood, or when in doubt as to whether the product is properly grounded. Do not modify the plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified technician.

Section 2  General Information

2.1 System Components

1. High efficiency, continuous-duty rocking piston compressor.
2. Rubber compressor mounts reduce noise and vibration for silent operation.
3. 4.5 ft Electrical cord with a 3-pin plug.
4. Airflow manifold simplifies airflow management to individual diffusers.
5. Airflow valve for individual diffusers.
6. Air Filter maximizes the life of the compressor.
7. Pressure relief valve safeguards from back pressure.
8. Capacitor that work as a part of the compressor. Do not operate the electrical connection of it.
1. EPDM non-stick 10” membrane diffuser sticks provides the synergy of air stones while being virtually maintenance-free.
2. Stainless steel connector for the airline and the diffuser plate.
3. 12” square stainless steel base for the diffuser’s stability

---

**HQUA-PAS20AL Airline**

3/8” 100 ft lead-free airline is made of durable PVC composite. Fish hook resistant and kink-free.

Use from the compressor to diffuser and the connector kits are needed for the connection.

---

### 2.2 Specification

<table>
<thead>
<tr>
<th>Item Name</th>
<th>HP</th>
<th>Max Amps</th>
<th>Volts</th>
<th>Max CFM</th>
<th>Power Cord</th>
<th>Max Pond Size</th>
<th>Max Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS20</td>
<td>1/2</td>
<td>4.8</td>
<td>110V</td>
<td>4.6</td>
<td>5’</td>
<td>3 Acres</td>
<td>50’</td>
</tr>
</tbody>
</table>

Notice: The amps will be different in different depth caused by the water pressure.
2.3 Installation

Tool Required:

- Rake
- Shovel
- Boat/Raft/Swimsuit
- Phillips screwdriver
- 7/8" Wrench
- Shovel
- Phillips screwdriver
- 7/8" Wrench
- Coast Guard-approved life jacket

Step 1: Find a place for the compressor to be ventilated and shelter from rain, sunshine, also less dust.

Air Filter
HQUA-PAS20AF

Compressor HQUA-PAS20PRC

Step 2: Screw the air filter into the compressor right near the pressure relief valve. Hand tighten only, use teflon tape if is needed.
Step 3: Using your shovel, dig a trench from the shelter to the pond’s edge. This trench should be a minimum depth of 8” to protect the airline. We recommend having utility lines marked before you begin digging.

An extend airline might be needed for a long distance. We offer the conector kit for that.
Conector Kit
HQUA-PAS20CK01

Step 4: Screw the conector kit on the airflow manifold with a 7/8” wrench. Use teflon tape if is in need.

Airline HQUA-PAS20AL

Hose clamp HQUA-PAS20HC

Step 5: Slide a hose clamp (HQUA-PAS20HC) onto the airline and insert it into the conector kit (HQUA-PAS20CK01).

Step 6: Using a phillips screw driver, secure the hose clamp onto the PVC airline.
Step 7: Backfill the airline trench in a few areas to temporarily keep the airline in place until installation is complete.

Step 8: Slide a hose clamp onto the airline from the other end. And insert it into the connector kit on the stainless steel base. Using a phillips screw driver, secure the hose clamp onto the PVC airline.
Final Step: Installing Diffusers from a Boat/Raft:

Have one person on shore guiding the airline as a second person uses a boat or raft, extend the airline out to the area of the pond that the diffuser will be located. Gently release the diffuser into the water. Repeat until all diffusers are in position. Complete backfill on airline trenches and level with a rake. Complete installation by reviewing and following the Initial Start-Up Procedure in Section 2.4.

Notice:

1. Make sure your diffusers won’t get twined by any nets or fish line.
2. Make sure two diffusers are separated for equal water space to keep their best performance.
2.4 Initial Start-up & Seasonal Operation

⚠️ The circulation of poor quality, low oxygen, deep water to the pond’s surface can introduce harmful gases and by-products into the previously healthy upper regions of the water column. These by-products can make the upper regions unfit for aquatic life and could result in fish-kill.

We suggest the customer initial Start-Up procedure to prevent fish-kill. No matter what kind of pond you have. Or anytime system has been shut-off for an extended period of time.

**Start-Up Procedure:**

Day 1: Run system for 30 minutes; turn system off for remainder of day.

Day 2: Run system for 1 hour; turn system off for remainder of day.

Day 3: Run system for 2 hours; turn system off for remainder of day.

Day 4: Run system for 4 hours; turn system off for remainder of day.

Day 5: Run system for 8 hours; turn system off for remainder of day.

Day 6: Run system for 16 hours; turn system off for remainder of day.

Day 7: Begin running system 24 hours/day, 7 days/week.

**Summer Operation**

To reduce the risk of fish kills in hot summer months and for optimum aeration benefits, HQUA PAS20 Aeration Systems should run continuously throughout the summer.

**Winter Operation**

Owner assumes all responsibility for operating HQUA PAS20 Aeration System during winter months. Operating in freezing conditions on an ice-covered pond will cause large open water areas at diffuser sites. Ice thickness around open areas will be much thinner than the surrounding areas. HQUA strongly recommends that “Danger - Thin Ice” be posted at frequent intervals around pond.

If you choose to turn your system off for the winter, do the following:

- Unplug your aeration system.
• Disconnect compressor and the airline.
• Cover airline ends with the caps or cloth to prevent debris from entering airline.
• If operating during the winter season, condensation could cause airlines to freeze. If so:
  • Use 1 cup isopropyl alcohol in the airline running out to each diffuser plate.
  • Turn on compressor to push through line and free any ice blockage.

Section 3  Maintenance

HQUA PAS20 Aeration Systems are designed for low-maintenance and require minimal scheduled maintenance. Keep the room cool, dry and ventilated for the compressor.
• Always unplug system before performing any maintenance or troubleshooting.
• Always unplug system and refer servicing to a qualified electrician when: cord is damaged or frayed, compressor, power control, compressor fan, or other electrical components are producing unusual noises or odors.

Notice: Local environmental conditions may require more frequent maintenance.

WARNING: Compressors are equipped with a thermal overload switch. If temperature becomes high enough to trip the overload, the compressor will shut down. It will then automatically start up when temperature decreases as long as power is applied.

3.1 Replacement Parts

EVERY 3-6 MONTHS – Air Filter: Clean/replace air filter HQUA-AF11.
Pressure Relief Valve: Check to ensure air is not escaping from valve and replace if needed.
EVERY 24-36 MONTHS – Membrane Sticks: We recommend inspecting and/or cleaning the membrane diffuser sticks every 24-36 months.

Section 4  Troubleshooting
### Troubleshooting

#### IF THE COMPRESSOR IS NOT WORKING:

<table>
<thead>
<tr>
<th>Check</th>
<th>Possible Reason</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Check for power.</td>
<td>Compressor is not receiving power.</td>
<td>Check the power outlet or electrical cord.</td>
</tr>
<tr>
<td>2. GFCI circuit tripped.</td>
<td>Damage to electrical cord or low voltage from power supply.</td>
<td>Contact a qualified electrician for professional assistance.</td>
</tr>
<tr>
<td>3. GFCI circuit not tripped.</td>
<td>GFCI malfunction.</td>
<td></td>
</tr>
<tr>
<td>4. Poor connection with the capacitor.</td>
<td>Wiring loosened or was damaged during the shipment.</td>
<td>Contact HQUA or local dealer for repair/replacements.</td>
</tr>
<tr>
<td>5. No capacitor wiring issue can be observed.</td>
<td>Bad capacitor.</td>
<td></td>
</tr>
</tbody>
</table>

#### IF THE COMPRESSOR IS WORKING:

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>Check</th>
<th>Possible Reason</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No bubbles at any diffusers</td>
<td>No air leaks detected, the compressor running louder and possible excessive vibration.</td>
<td>Compressor air filter is dirty/dogged.</td>
<td>Clean or replace air filter. <strong>Do not wet the filter!</strong></td>
</tr>
<tr>
<td>No bubbles at some diffuser plates.</td>
<td>Check for leaks at all connection in line. If none are audible, carefully spray LITTLE soapy water onto connections and look for bubbles.</td>
<td>Vibration loosened connection or cracked fitting.</td>
<td>Tighten loose connection or replace cracked fitting as necessary.</td>
</tr>
<tr>
<td>Are all flow control valves in compressor wide open?</td>
<td>Improper “balancing” of diffusers.</td>
<td>Adjust air flow valves on main unit until all diffusers operate properly.</td>
<td></td>
</tr>
<tr>
<td>Large rolling bubbles instead of fine bubbles at surface above one or more diffuser plates.</td>
<td>Inspect each diffuser plate for malfunction.</td>
<td>Diffuser membrane damaged, diffuser plate fitting broken or diffuser plate is flipped over.</td>
<td>Contact HQUA or local dealer for repair/replacement.</td>
</tr>
<tr>
<td>Air coming out of pressure relief valve.</td>
<td>Inspect diffuser plates and tubing for clogging.</td>
<td>Clogging.</td>
<td>Remove any overgrowth around diffuser membrane surface.</td>
</tr>
<tr>
<td>Nothing clogging.</td>
<td>Bad pressure relief valve.</td>
<td>Contact HQUA or local dealer for repair/replacement.</td>
<td></td>
</tr>
<tr>
<td>Compressor stops working for periods of time, then starts.</td>
<td>Inspect the ventilation condition for compressor.</td>
<td>Compressor over-heating due to bad ventilation.</td>
<td>Make sure the room is ventilated. Try to low down the temperature of it.</td>
</tr>
</tbody>
</table>
Compressor shakes erratically and is making loud noises.

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check for low voltage while compressor is running.</td>
<td>Gauge of supply wires to circuit possibly undersized.</td>
<td>Replace the supply wires by a qualified electrician.</td>
</tr>
<tr>
<td>Check for clogged air filter.</td>
<td>Air filter in need of replacement.</td>
<td>Clean or replace air filter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do not wet the filter!</td>
</tr>
</tbody>
</table>

Section 5  After-Sales Service

If you need any support, or have questions about the system, please contact our Technical Support team via hqua_qin@163.com and we will be glad to assist you. We sincerely hope that you enjoy the benefits of clean and safe drinking water after the installation of HQUA disinfection system.