Aqua Master®
FOUNTAINS AND AERATORS
A DIVISION OF NIGRELLI INC.

AquaAir® Ultra Aeration Systems Owner's Manual

AquaAir® Ultra 1-3
AquaAir® Ultra 2S
50Hz Piston Compressor
220V

All **AquaMaster®** products are designed and built to be installed as a complete system. Any alterations to or substitution for items in this system, unless allowed by these installation instructions, will void the product warranty. It may also create a hazardous installation. Read these instructions thoroughly before starting your installation and follow them carefully throughout.

WARNING 

NOTICE: These installation and operation instructions should be kept in a safe place. Make sure to pass these installation and operating instructions to subsequent owners. The information provided is intended to notify and warn them about making unsafe modifications, repairs or using unauthorized parts or repair facilities.

- Read the entire manual before attempting to install, service or operate any AquaAir® Ultra Diffused Air Aeration unit.

- Improper installation, operation, service, repair, maintenance or alteration of this product may result in property damage or bodily injury.

- Turn off electrical power before servicing this unit.

- Risk of electric shock - this unit is supplied with a 3-wire ground electrical cord and plug. **Do not modify**. Plug into a Ground Fault Circuit Interrupter (GFCI) receptacle only. If in doubt, have the outlet checked by a qualified electrician. An improper connection can result in electrical shock.

- Use only parts that are supplied or approved by **AquaMaster®**. Use of other parts may result in poor performance, void warranty and could create a hazardous situation.

NOTICE: In the event of a motor thermal overload the compressor unit will stop and automatically restart upon cooling if the unit has power to it.

NOTICE: DO NOT carry this unit while it is in use.

Please read the following instructions thoroughly before operating your AquaAir® Ultra system.

Failure to follow the recommendations may result in personal injury or voiding of the product warranty. For additional safety information or supplied materials concerning your AquaAir® Ultra system call **AquaMaster®** at 800-693-3144 or +1-920-693-3121.

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SHIPPING CLAIMS

When you receive your **AquaMaster®** unit, examine the package for any signs of external damage it may have sustained en route. If there is apparent damage either outside the box or to its contents, make a claim with the shipper immediately. Save the original shipping carton and the packing material if a claim is to be filed.

AQUAAIR® ULTRA AERATION SYSTEM
AQUAAIR® ULTRA 1-3 & AQUAAIR ULTRA® 2S
50HZ PISTON COMPRESSOR 220V

AquaMaster's® AquaAir® Ultra Diffused Air Aeration system is the most efficient, durable, state of the art sub-surface aeration system in the Industry today.
Our revolutionary, stainless steel compressor enclosure will provide a lifetime of rust and corrosion protection, and provides superior cooling and performance.

Your **220 Volt** AquaAir® Ultra Diffused Air Aeration System information is as follows:

- AquaAir® Ultra 1 - (1) 1/3HP Single Head Compressor - 1.2 Running Amps
- AquaAir® Ultra 2S - (1) 1/3HP Dual Head Compressor - 1.2 Running Amps
- AquaAir® Ultra 2 - (1) 1/2HP Dual Head Compressor - 2.0 Running Amps
- AquaAir® Ultra 3 - (1) 1/2HP Dual Head Compressor - 2.0 Running Amps

SYSTEM MATERIALS AND PARTS LIST

Failure to remove foam packing material from between compressor and housing will result of overheating of the compressor. Verify that the following was received:

Rectangular Compressor Enclosure:
The rectangular compressor enclosure constructed of stainless steel provides a lifetime of rust and corrosion protection. This innovative design extends the life of the compressor and its components because of the superior cooling capabilities. The enclosure is assembled complete with the compressor, air intake filter, cooling fan and air discharge hose.

Diffusers with Single Round Hollow Base and Vent Plug:
Note quantity of diffuser stations should match system ordered, example:

AquaAir® Ultra should have 3 diffuser stations.
Diffusers can be:

1. Single 12” (30.5cm) diameter membrane flexible diffuser disc coated with PFTE for higher SOTE and fouling resistance.

2. Dual 12" (30.5cm) diameter membranes flexible diffuser discs coated with PFTE for higher SOTE and fouling resistance.

3. Quad 12" (30.5cm) diameter membranes flexible diffuser discs coated with PFTE for higher SOTE and fouling resistance.

Selected Length of Weighted Super Sink Air Discharge Tubing:
Used to supply air from the compressor enclosure on shore, along the lake bottom to the diffuser. Additional lengths connect with PVC insert fittings and PVC glue. Heavy, .275” (0.7cm), wall thickness provides protection from puncture or kinking.

Parts:
Stainless steel hose clamps, one for each diffuser and for each compressor brass hose barbs or insert fittings. Also included is one PVC insert fitting per 100 feet (30.5m) of Super Sink tubing.

INSTALLATION OF COMPRESSOR ENCLOSURE

Selecting a Location:
Select a level site away from every day activity. A 220 Volt 15 Amp Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) protected power source is required to plug in the compressor. If you desire to hide the compressor enclosure with landscape bushes, shrubs, or plantings, it is necessary to provide adequate clearance between these and the compressor enclosure for proper cooling. **DO NOT block the air intake holes.** When placing the compressor enclosure into a structure, surround or building, make sure it is large enough to prevent the compressor from overheating and able to provide proper ventilation.

CAUTION: The compressor enclosure must be located a safe distance from the ponds edge, standing water, flooding and irrigation sprinklers.

DO NOT USE an extension cord when powering the AquaAir® Ultra Diffused Air Aeration System.

GROUNDING INSTRUCTIONS

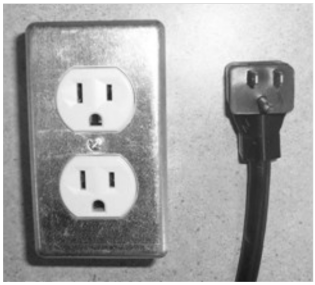
This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate ground plug. The plug must be plugged into an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

WARNING: Improper installation of the grounding plug may 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 with or without yellow stripes is the ground wire.

Check with a qualified electrician or serviceman 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 electrician.

This product is for use on a nominal 220 Volt circuit and has a grounding plug similar to the plug illustrated below. Only connect the product to an outlet having the same configuration as the plug. For a 220 Volt only connect this product to a power source having Ground Fault Protection.

INSTALLATION OF COMPRESSOR ENCLOSURE (CONT.)



120V

220V

1. Locate the enclosure assembly on a solid, level surface. If building an additional support structure, make sure it is adequate to support the weight of the AquaAir® Ultra system.

2. The AquaAir® Ultra 1-3 are mounted on a polyethylene base. Locate the pad and housing assembly on a solid, level surface.

3. When an additional support structure is required, make sure it can adequately support the weight of the AquaAir® Ultra system. Also, make sure there is enough space between the support pad and poly base to connect the Super Sink tubing to the high-temperature discharge hose from the compressor.

DIFFUSER ASSEMBLY AND PLACEMENT

CAUTION: When in or around water always wear a Coast Guard approved life j and follow all water safety guidelines.

1. Fill the diffuser base completely with pea gravel or sand and insert the vent plug. Apply silicone grease (provided in packet) to the diffuser threads. Screw the membrane diffuser(s) discs onto the base riser pipes.

2. Determine the placement of the diffuser(s). It is recommended to install a marking buoy in the general location of where the diffuser(s) will be installed to act as a reference point. The diffuser(s) should be close to, but not centered in, the deepest portion of the waterway where the bottom is level and solid.

   When fish are present, DO NOT place the diffuser(s) in water deeper than 35 feet (10.7 m). At depths greater than 35 feet (10.7 m) mixing can cause dissolved nitrogen levels to rise becoming hazardous to fish.

3. Uncoil the roll(s) of air supply tubing along the shoreline. It is imperative that tubing not be twisted or tangled for proper installation. If more Super Sink tubing is needed, glue a PVC insert fitting between the required lengths of tubing. Let the PVC cement dry before pulling the tubing into the water.

4. Before installing the Super Sink tubing in the water, tie several feet of tubing to the compressor enclosure, post or wall. This will ensure you will have enough tubing to connect to the compressor and will not pull the free end of the tubing into the water.

5. Tie the free end of the tubing to the boat and head towards the marking buoy.

6. Connect the free end of the tubing to the diffuser assembly and secure it with a stainless steel hose clamp.

NOTE: PVC glue can also be used if additional tubing will not be added or diffuser location will not be changed in the future.

7. Thread one end of rope through the two eyelets of the diffuser base – these are the larger diameter holes. Pull through until the base is at the midway point of total rope length.

8. Hold the two ends of the rope in your hand and lower the diffuser assembly slowly into the water. Air in the diffuser base will begin to vent causing unit to sink to the bottom of the lake.

9. Once the diffuser assembly is situated on the lake bottom, release one end of the rope and pull the rope back into the boat. Following the above installation guidelines will help ensure that the diffuser assembly does not invert during I installation.

DIFFUSER ASSEMBLY AND PLACEMENT (CONT.)

NOTE: The ropes on the diffuser assembly can be left attached to a float or buoy for future repositioning or removal of the diffuser assembly only if it is not a liability to boaters, fisherman and swimmers when they are present.

10. On AquaAir® Ultra 2-3 systems, repeat the previous procedures as there is more than one diffuser assembly.
11. (In pond) installation is now complete.

12. Trench and bury the Super Sink tubing from the water line to the compressor enclosure. This will need to be buried 4 – 6" (10.2 - 15.2 cm) below the surface.

13. Attach the open end of the Super Sink tubing to the brass hose barbs or insert fittings coming out of the compressor enclosure. Secure and tighten the stainless steel hose clamp(s).

COMPRESSOR START-UP PROCEDURES

CAUTION: Remove foam packing and other packaging material from between the compressor and housing and dispose of properly. Failure to do this will result in overheating of the compressor.

1. Plug the compressor unit into a 220 Volt 15 Amp GFCI/RCD protected receptacle that has been installed by a qualified, licensed electrician. **DO NOT USE EXTENSION CORDS**. Protect the power cord from damage by objects laying or falling on it. Protect the cord from people walking or stepping on or over the cord.
2. On systems with multiple diffusers, adjust the air flow valves so the surface boil is approximately the same for all diffusers.

3. If upon startup or during operation, unusual noises or odors are detected in the compressor enclosure, unplug the compressor immediately until the problem is rectified. Call your representative or AquaMaster® to resolve any problems.

DANGER: To prevent severe shock or electrocution, always turn the power OFF at the service panel before working with electricity. All maintenance and troubleshooting should be performed by a qualified electrician or serviceman.

WARNING: The replacement of the power cord shall be performed by a qualified electrician.

If a grounding receptacle is not provided, **DO NOT USE AN ADAPTER.** Do not use this product until a GFCI/RCD can be provided and wired by a qualified, licensed electrician.

SYSTEM STARTUP PROCEDURES

Circulating the entire water column will aid in eliminating drastic temperature layering while maintaining or increasing dissolved oxygen levels.

CAUTION: The circulation of the ponds deep water which, is of poor quality and low in oxygen, can introduce harmful gases and by-products into the healthy upper regions of the body of water. If precautions are not taken when initial startup is implemented, the gases and harmful byproducts will be mixed with the upper water and may make it harmful and unfit for aquatic life and can result in a fish-kill.

PREVENTING INITIAL FISH-KILL

Implementing the following startup procedures that have been established can help in preventing a possible fish kill:

1. Turn on system and look for discolored water. Position yourself downwind of surface boil. If discolored water or a strong odor (i.e. rotten eggs) is present, do not operate the system for any longer than 15 minutes.

NOTE: If fish are present in the body of water but the foul odor is not noticed, let the compressor run for one hour the first day, two hours the second day, four hours the third day and so on until the system is running 24 hours a day.

2. Turn off the system for the remainder of the day.

3. Restart the system the next day and operate for 30 minutes. Turn the system off for the rest of the day.

4. Each day double the operating time from the previous day until the system is running continuously. This should take 8 days.

NOTE: The start-up procedures are to be used as a general guideline. If you should have any questions or concerns, contact your representative or **AquaMaster®** at 800-693-3144 or +1-920-693-3121 for technical assistance.

NOTE: If fish and aquatic life are not present in the body of water, you can start up the system and let the system run continuously.

WINTER OPERATION & PRECAUTIONS

The AquaAir® Ultra Diffused Air Aeration System has been designed to operate year-round and in all climates. In freezing weather and on ice covered bodies of water, certain precautions must be taken to prevent personal injury or fatalities.

NOTE: In extreme cold weather, the airflow may need to be decreased to keep the body of water open. The amount of open water vs. ice will be determined by the air and water temperature and the amount of air flowing to the diffuser(s).

DANGER THIN ICE

DANGER: When operating the AquaAir® Ultra system on ice covered bodies of water, the ice around the open water will be dangerously thinner than the rest of the body of water. Signs such as **DANGER THIN ICE** need to be posted of this condition. Injury and/or fatality may result if this danger is not posted. Owner assumes all responsibility.

To prevent freezing of the entire water column, the diffuser should be moved to a shallower portion of the pond (typically half the depth of original placement). Warmer water will remain in the lower regions. In extreme cold weather, the airflow may need to be decreased to keep the body of water open. The amount of open water vs ice will be determined by the air and water temperature and the amount of air flowing to the diffuser(s).

GROUND FAULT CIRCUIT INTERRUPTER/ RESIDUAL CURRENT DEVICE (GFCI/RCD) TESTING

1. If the GFCI/RCD is not operating correctly it may not prevent personal injury or death due to a ground fault (electrical shock). If GFCI/RCD does not reset or operate correctly, call a licensed electrician.

2. Press the TEST button in order to trip the device. This should stop the flow of electricity, making the fan/compressor shut OFF. If the power stays ON, go To Troubleshooting. If the power goes OFF, the GFCI/RCD receptacle is working correctly.

3. Perform GFCI/RCD testing monthly to assure proper operation.

MAINTENANCE & TROUBLESHOOTING

Under normal conditions, the air filter and piston replacement is required after approximately 18 months of continuous use. It will be necessary to replace the air intake filter more often if dusty and dirty conditions exist.

The enclosures air inlets and discharge ventilation holes need to be kept clean and free of debris and clear of weed and plant growth. If the circulation of air is prevented by debris, the compressor will overheat and reduce the life of the compressor and possibly burn out the system.

CAUTION: Before performing any maintenance and troubleshooting unplug system. All maintenance and troubleshooting should be preformed by a qualified electrician or serviceman.

WARNING: The replacement of the power cord shall be performed by a qualified electrician.

If a GFCI receptacle is not provided, **DO NOT USE AN ADAPTER**. Do not use this product until a GFCI receptacle can be provided and wired by a qualified electrician.

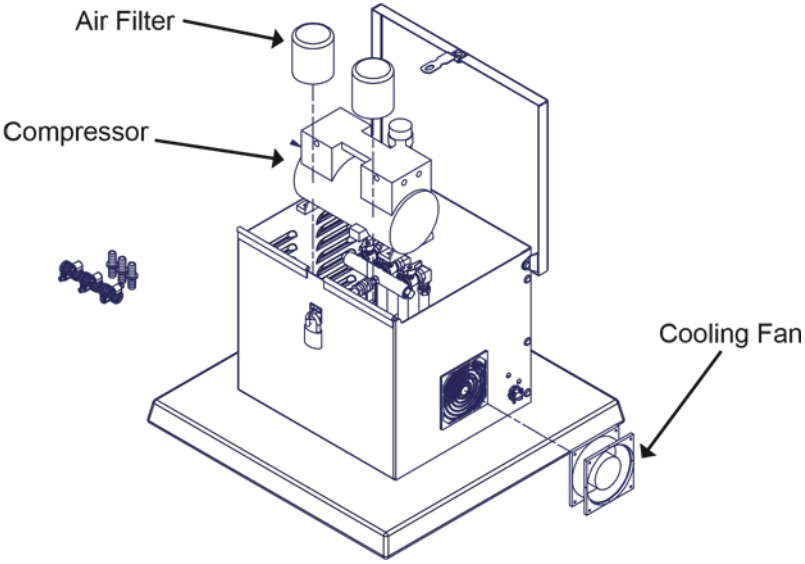
DECREASED SURFACE BOIL

If the surface boil has decreased from the initial installation, check the following:

1. Air filter: Replace once a year, **AquaMaster®** part number is 940017.

2. Piston Replacement: Replace every 18 months.

NOTE: Complete maintenance and replacement instructions are included in each kit.



		COMPRESSOR	FILTER	COOLING FAN	MAINTENANCE
Air 1	220V	(1) 940458	(1) 940017	(1) 940493	(1) 940289
Air 2S	220V	(1) 940458	(1) 940017	(1) 940493	(1) 940289
Air 2	220V	(1) 940460	(2) 940017	(1) 940493	(1) 940286
Air 3	220V	(1) 940460	(2) 940017	(1) 940493	(1) 940286

PRODUCT DAMAGED IN DELIVERY

The AquaAir® Ultra Diffused Air aeration system was properly packed and accepted by the freight carrier for shipment. It is therefore their responsibility to deliver the system in perfect condition.

APPARENT DAMAGE OR LOSS

When you receive your **AquaMaster®** unit, closely examine the package and inspect materials for any signs of external or internal damage it may have sustained en route. If there is apparent damage save the original shipping carton and the packing material. If upon delivery the equipment or containers indicate DAMAGE IN TRANSIT, such goods should be refused or not accepted until the transportation company's agent has noted such on the freight bill. A copy of such bill will be given to you, noting the nature and extent of the damage. If any part of shipment is LOST IN TRANSIT, have shortage noted on freight bill by agent.

CONCEALED DAMAGE

If damage is discovered, that was not apparent upon delivery, notify the Transportation Company immediately to inspect damaged equipment. The inspector will be required to provide a "CONCEALED DAMAGE" report.

Inspections must be requested within 15 days of delivery. Do not move damaged goods from original point of delivery. Retain all original packing/ containers for inspection. File a "FULL VALUE REPLACEMENT" claim against the Transportation Company.

PRODUCT WARRANTY

All **AquaMaster®** AquaAir® Ultra Diffused Air Aeration Systems have a Limited Lifetime Warranty on the enclosure, 5 years on the tubing and on the diffuser assembly and all other components including compressor and cooling fan have a 2 year parts and labor warranty. Vanes & Pistons are considered "Wear Items" and are not covered under the factory warranty, consult factory for assistance. Base Mounted AquaAir® units without enclosure are not UL or cUL listed and carry a 1 year warranty. Warranty is in effect from the date of shipment, when given normal and proper usage as determined by the seller upon examination, and when owned by the original user. The Customer is responsible for all shipping costs of any materials for warranty inspection back to **AquaMaster®.** After inspection, if product shows manufacturing defect, **AquaMaster®** will replace or repair it at no cost to the customer. Should inspection indicate non-warranty failure (incorrect voltage, faulty installation procedures, vandalism, customer negligence, etc.) warranty will be void.

PRODUCT WARRANTY (CONT.)

AquaMaster® reserves the right to change this information without notice, and makes no warranty, express or implied, with respect to this information. **AquaMaster®** shall not be liable for any loss or damage, including consequential or special damages, resulting from the use of this information, even if **AquaMaster's®** negligence or other fault causes loss or damage.

The warranty period for all warranty work is equal to the remaining time period of the original new equipment warranty. Warranty claims are based on the date you notify your representative or **AquaMaster®** at 800693-3144 or 920-693-3121. All claims must be made to **AquaMaster®** Fountains and Aerators or an Authorized Distributor.

Aqua Master®
FOUNTAINS AND AERATORS
A DIVISION OF NIGRELLI INC.

Floating Fountains
- Masters Series®
- Masters Decorative Series
- Celestial Fountains®

Fixed Base Fountains
- Fixed Base Fountains Series

Aeration
- Volcano III & Hydromax Series
- AquaAir® Ultra Aeration Systems
- Ultimax® Subsurface Aeration Systems

Lighting and Accessories
- Night Glow Lighting and Control Panel
- LED Lighting System
- RGBW Lighting Systems

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