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800 Deere Road

Prescott, WI 54021

## Bantam-Aire™ Diffused Aeration Owner's Manual



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# 772438

Thank you for purchasing this Bantam-Aire Diffused Aeration System. It is manufactured to the highest standards using quality materials. Please follow all recommended maintenance, operational and safety instructions and you will receive years of trouble free service.

**IMPORTANT: PLEASE READ THIS MANUAL AND SAVE FOR FUTURE REFERENCE.**

To facilitate future spare, or replacement, parts ordering or technical assistance, please copy the details from the compressor nameplate onto the nameplate image below and save for future reference.

<p><b>KASCO TEICH-AIRE LINEAR COMPRESSOR</b></p> <p>MODEL:</p> <p>FLOW:</p> <p>MAX.</p> <p>POWER:</p>	
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**IMPORTANT PRODUCT USE INFORMATION**

- To avoid accidents or injury, do not use compressor in any way other than described in this manual.
- Do not lift compressor by the filter cover or by the power cord to avoid injury to yourself or damage to the compressor.
- Pump only clean, dry air.
- Operate at 41°F – 104°F (5°C – 40°C).
- Protect unit from dirt and moisture.
- Do not pump flammable or explosive gases or use in an environment that contains such gases.
- Protect all surrounding items from exhaust air. Exhaust air can become very hot.
- Corrosive gases and particulate material will damage unit. Water vapor, oil-based contaminants or other liquids must be filtered out.
- This compressor is oil-less and requires no lubrication.

## INSTALLATION REQUIREMENTS


- Correct installation is your responsibility. Make sure you have the proper installation conditions and that installation clearances do not block air flow.
- Compressor needs to be installed in a clean, dry location.
- Compressor needs to be protected from dust, dirt and moisture and from the outdoor elements such as direct sunlight, rain, snow and flooding.
- Ambient air temperature must not exceed 104°F (40°C).
- In high temperature climates, a cooling fan with ventilation is recommended.
- Operate compressor horizontally on a stable, rigid surface.

<b>⚠ WARNING</b>

<b>Electrical Shock Hazard</b>
<p>Disconnect electrical power at the circuit breaker or fuse box before installing this product.</p> <p>Install this product where it will not come into contact with water or other liquids.</p> <p>Install this product where it will be weather protected.</p> <p>Electrically ground this product.</p> <p>Failure to follow these instructions can result in death, fire or electrical shock.</p>

## ELECTRICAL

- Verify that the power supply voltage agrees with that listed on the compressor nameplate.
- This compressor must be properly grounded and plugged into an outlet that is properly installed and grounded in accordance with all national and local codes and ordinances.
- Do not modify plug provided; if it does not fit the outlet, have the proper outlet installed by a qualified electrician.
- It is your responsibility to contact a qualified electrician and assure that the electrical installation is adequate and in conformance with all national and local codes and ordinances.

<b>⚠ WARNING</b>

<b>Electrical Shock Hazard</b>
<p>This product must be properly grounded.</p> <p>Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.</p> <p>If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The wire with insulation that is green or green with yellow stripes is the grounding wire.</p> <p>Check the condition of the power supply wiring. Do not permanently connect this product to wiring that is not in good condition or is inadequate for the requirements of this product.</p> <p>Failure to follow these instructions can result in death, fire or electrical shock.</p>

## IMPORTANT SAFETY INSTRUCTIONS



### CAUTION

- Caution should be used when dealing with any electrical equipment with moving parts.
- Extreme caution should be used around water, especially cold water, such as in Spring, Fall, and Winter, which poses a hazard in and of itself.
- Running the system in freezing conditions may create open areas of water in the ice at the diffuser locations and thin ice around the area. Check your local laws and ordinances as some areas require warning signs to be posted. The owner will assume all risks with operating the Bantam-Aire™ System during winter months or months experiencing freezing temperatures.

- Do not use waders in deep ponds/lakes or ponds/lakes with drop-offs, drastic slopes, or soft bottom material.
- Do not use boats that tip easily for installation, such as a canoe, and follow all boating safety rules and regulations, including wearing a PFD (Personal Flotation Device).
- Means for disconnection must be incorporated in the fixed wiring in accordance with local and national wiring rules.
- Consult a qualified electrician for electrical installation.

**UNIT SPECS**

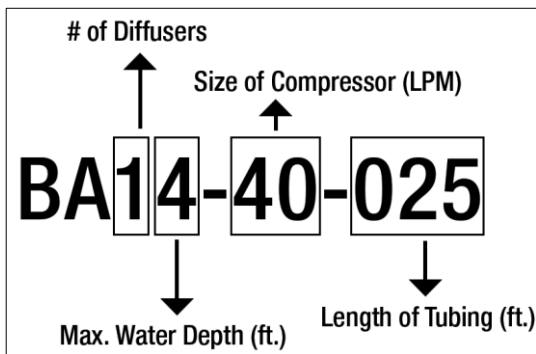
Model #	Voltage	Total Amps	Max. Diffuser Operating Depth
BA14-40-025	120	1.0	4 ft.
BA24-60-050	120	1.5	4 ft.
BA26-80-100	120	1.4	6 ft.
BA46-160-200	120	2.3	6 ft.



Caution: Linear Compressors are pressure sensitive devices. The Bantam systems have been designed for optimal performance up to the maximum diffuser operating depth as shown in the chart above. Installing diffusers at depths greater than what is listed will reduce overall performance, cause premature failure of the compressor, and will void the warranty.

The specs should be used by your qualified electrician to ensure properly sized circuits are installed. For all BA systems, a dedicated 15 amp 120V circuit is sufficient to supply power to the system.

**PART NUMBER BREAKDOWN**



**PARTS INCLUDED**

**BA14-40-025 – BANTAM 1 SYSTEM**

- (1) 772300 – Bantam-Aire™ Diffuser Assembly
- (1) 772401 – 40 LPM Teich-Aire™ Linear Compressor
- (1) 773372 – 3/8" x 25' SureSink™ Tubing
- (1) 773008 – 3/8" Tubing Clamp

**BA24-60-050 – BANTAM 2 SYSTEM**

- (2) 772300 – Bantam-Aire™ Diffuser Assembly
- (1) 772402 – 60 LPM Teich-Aire™ Linear Compressor
- (1) 773375 – 3/8" x 50' SureSink™ Tubing
- (1) 772382 – 2 Station Manifold Assembly
- (2) 772381 – Manifold Mounting Screw
- (1) 772380 – 5/8" x 5' Blue Rubber Hose
- (6) 773008 – 3/8" Tubing Clamp

**BA26-80-100 – BANTAM 3 SYSTEM**

- (2) 772300 – Bantam-Aire™ Diffuser Assembly
- (1) 772403 – 80 LPM Teich-Aire™ Linear Compressor
- (1) 773381 – 3/8" x 100' SureSink™ Tubing
- (1) 772382 – 2 Station Manifold Assembly
- (2) 772381 – Manifold Mounting Screw
- (1) 772380 – 5/8" x 5' Blue Rubber Hose
- (6) 773008 – 3/8" Tubing Clamp

**BA46-160-200 – BANTAM 4 SYSTEM**

- (4) 772300 – Bantam-Aire™ Diffuser Assembly
- (1) 772405 – 160 LPM Teich-Aire™ Linear Compressor
- (2) 773381 – 3/8" x 100' SureSink™ Tubing
- (1) 772384 – 4 Station Manifold Assembly
- (3) 772381 – Manifold Mounting Screw
- (1) 772380 – 5/8" x 5' Blue Rubber Hose
- (9) 773008 – 3/8" Tubing Clamp
- (1) 773009 – 5/8" Tubing Clamp

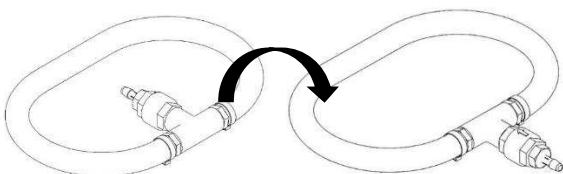
**INSTALLATION TOOLS & MATERIALS**

- Pliers
- Flat Head screwdriver
- 1/4", 5/16" & 9/32" Socket/Nut drivers (for tightening tubing clamps; drive head sizes may vary from clamp to clamp)
- Phillips Head screwdriver

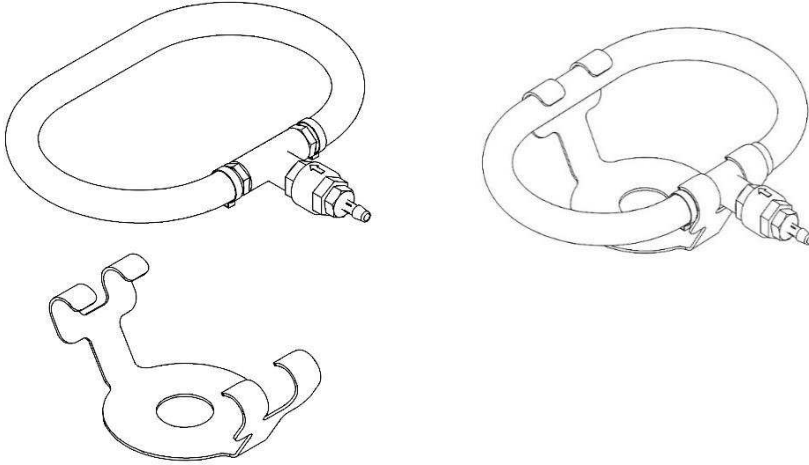
**ON-SHORE PREPARATION**

**DIFFUSER ASSEMBLY**

Check valve is rotated inward for shipping only. Rotate check valve to point outwards.

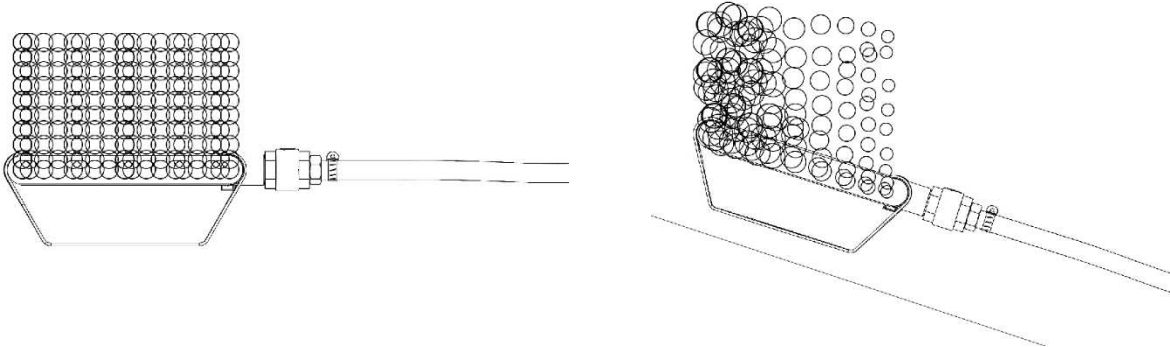


Insert diffuser assembly into self-weighted substrate as shown.



### DIFFUSER INSTALLATION

For optimal performance, make sure the diffuser is positioned as level as possible once in the water to ensure an even flow of bubbles. If the diffuser slants too much in any direction, the flow of bubbles will be non-uniform which may reduce the performance of the aeration system.



### WEIGHTED TUBING

Uncoil SureSink™ tubing.

For multiple diffuser systems, more than one coil of tubing may have been provided or you may need to divide a single coil into two separate tubing runs.

Example: BA24-60-050 is a two diffuser system that is supplied with one continuous 50' length of SureSink™ tubing. Divide the tubing into two sections by cutting with a tubing cutter or sharp utility knife making a clean, square cut. You may divide the tubing into two 25' sections or you may have one tubing length longer than the other (ie. (1) 30' run and (2) 20' run) depending on your installation requirements.

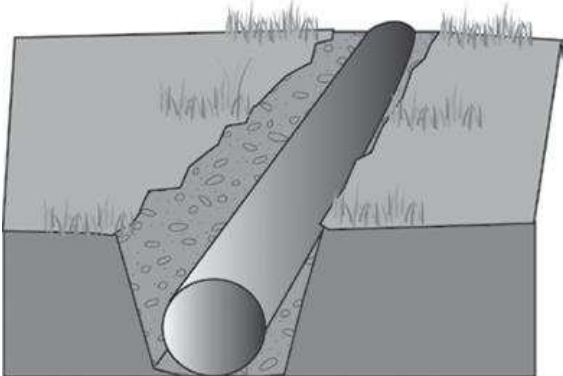
On the end of the SureSink™ Tube that will be connected to the diffuser assembly, slide a clamp over the tubing and connect the end of the tubing to the barbed fitting on the diffuser

assembly. Position clamp over tubing and barbed fitting and tighten using a socket/nut driver or flat head screwdriver. Do not over tighten

## **COMPRESSOR INSTALLATION**

Correct installation is your responsibility. Make sure you have the proper installation conditions and that installation clearances do not block air flow.

- Compressor needs to be installed in a clean, dry location and elevated above the ground and above the pond's maximum water level.
- Compressor needs to be protected from dirt and moisture and from direct outdoor environments such as rain, snow, flooding and direct sunlight.
- Ambient air temperature (temperature readings taken 4" away from any surface of the compressor) must not exceed 104° F (40°C).
- It is highly recommended that the compressor be covered for protection against the elements, however sufficient ventilation must be provided to prevent overheating of the compressor.
- It is recommended to trench and bury the air line tubing from the compressor or manifold to the shore. Start by determining the path of the trench from the compressor or manifold to an area by shore. The path should be in as straight of a line as possible with a gentle downward slope from the compressor down towards the shore. Excavate the trench 6" to 8" deep.



## **FINAL CONNECTIONS**

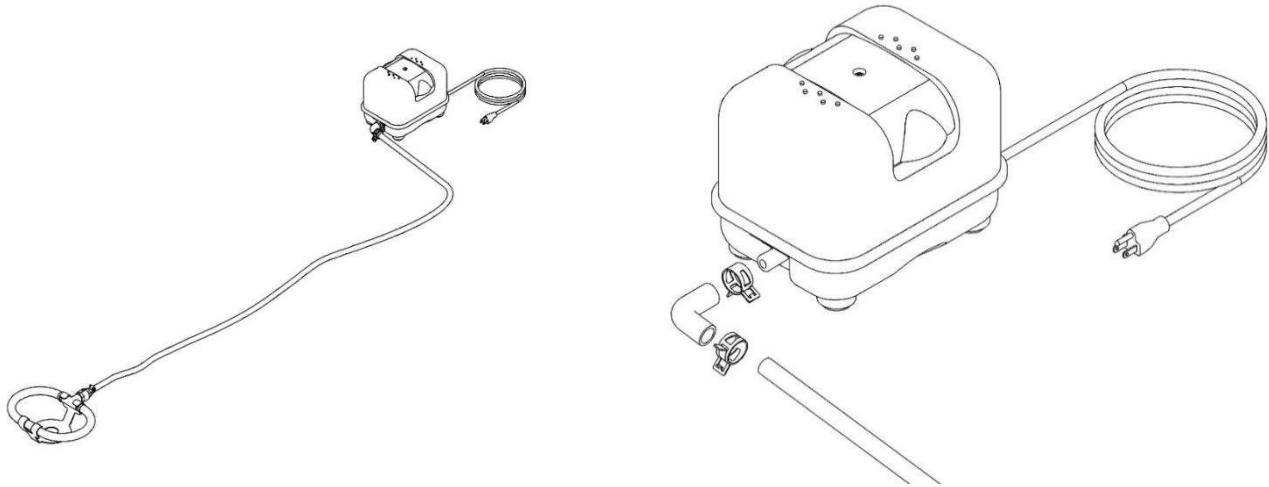
- The exhaust port should be connected with the supplied flexible elbow or directly using appropriately sized tubing. Use the supplied hose clamps to secure elbow to port and tubing, or ½" PVC rigid pipe, to elbow.
- Take care to avoid bending, or causing a pinch point, in the elbow or using small diameter pipe, or tubing. Doing so may cause excessive pressure and overheat the compressor and/or shorten the life of the valves and diaphragms.
- Plumbing runs should be as straight and short as possible to reduce pressure.
- It is your responsibility to operate this compressor at recommended pressures and permissible ambient temperatures.
- Do not start against a vacuum or pressure load.

- If compressor fails to exhaust air while under load, shut off and disconnect from power supply.

See model numbers below for final assembly instructions.

**BA14-40-025 (Bantam 1)**

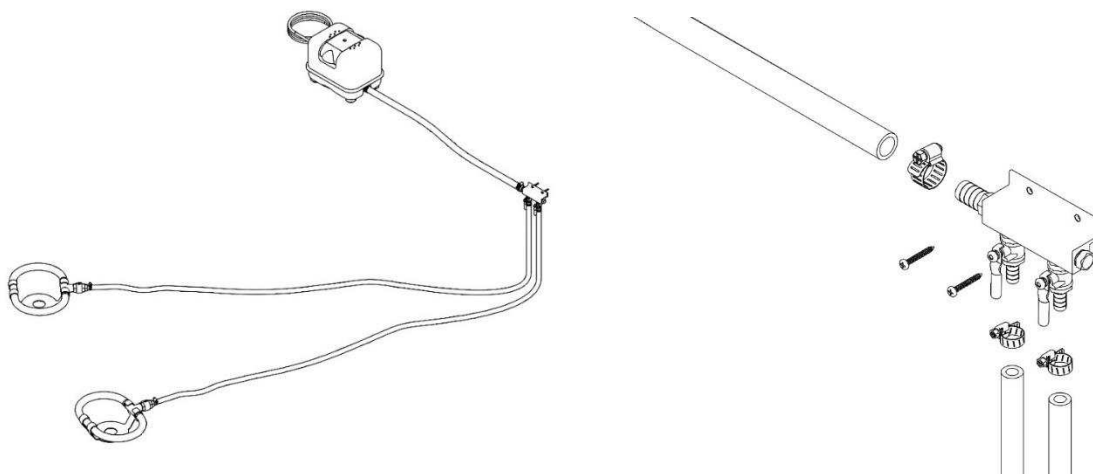
Connect SureSink™ Weighted Tubing to compressor outlet port using supplied flexible elbow and spring clamps.



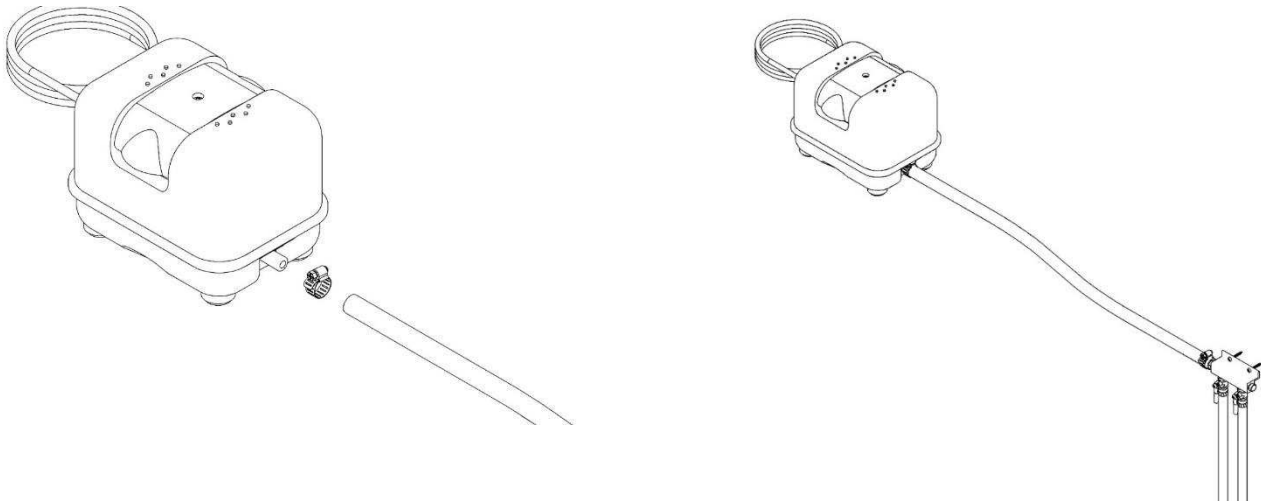
**BA24-60-050 (Bantam 2) & BA26-80-100 (Bantam 3)**

Position and mount manifold in desired location close to compressor. Use the (2) screws to mount the manifold to a wall or post if desired. Use the blue airline to connect the compressor to the manifold. Insert one end of blue airline over outlet port of compressor and secure with clamp. Connect opposite end of blue airline to large barbed fitting on manifold and secure with clamp.

Connect SureSink™ weighted tubing to barbed fittings on manifold and secure with clamps as shown.



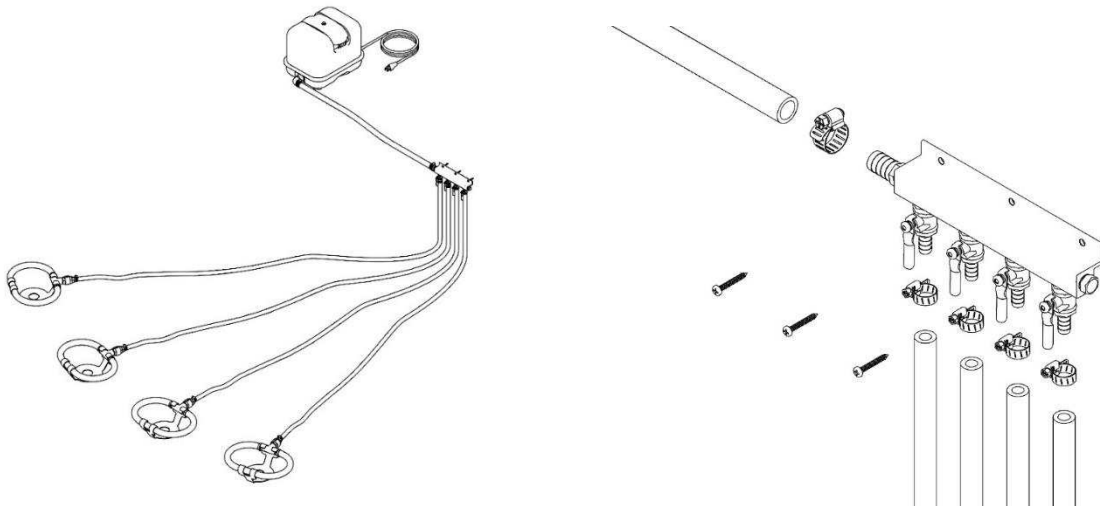


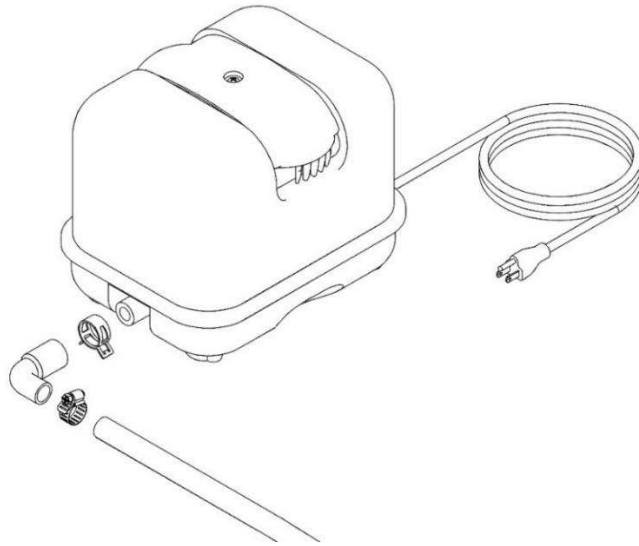


**BA46-160-200 (Bantam 4)**

Position and mount manifold in desired location close to compressor. Use the (3) screws to mount the manifold to a wall or post if desired. Connect one end of the blue airline to the compressor using the flexible elbow and clamps provided. Connect opposite end of blue airline to large barbed fitting on manifold and secure with clamp.

Connect SureSink™ weighted tubing to barbed fittings on manifold and secure with clamps as shown.





### **STARTUP PROCEDURE - IMPORTANT INSTALLATION WARNING**

Thermal stratification refers to the layering that can occur in some lakes which allows warmer (less dense) water to sit on the top of colder denser water on the lake bottom. The Bantam-Aire™ Diffuser system has been designed to keep thermal stratification from occurring in the first place.

In the event that you install your unit into a body of water that is extremely stratified, caution should be used as you start up the unit. In some cases, the colder water sitting on the bottom could be holding gases that if totally mixed within the water column could be harmful to fish. There could also be concern that the colder water has little or no dissolved oxygen.

I suppose you are asking yourself “what does this mean by extremely stratified and how do I measure it?” A simple method of testing for thermal stratification is to drop a thermometer into the body of water and slowly check for temperature change from the surface to the depths of the lakes. Our suggestion would be to measure temperature every two feet. Be sure to keep the thermometer at a given depth long enough for the correct temperature to be measured and then bring it to the surface fast and read it immediately.

If the colder water (4 degrees F colder than the surface water) represents more than 30% of the overall water volume, it is suggested to allow the water to mix at a slower pace by not running the system continuously but for only short time intervals. Suggested start up time for the unit for a stratified lake might be initially running for 1 hour per day during daylight hours for the first week and gradually increase until running continuously. Each lake will react slightly different to our unit so a precise timeframe is difficult to predict. Sunny days are preferable to cloudy days to start the system because the photosynthesis will supplement oxygen levels as the water is mixed.

If you are at all uncertain about this procedure, contact the distributor you purchased the unit from or e-mail us at [sales@kascomarine.com](mailto:sales@kascomarine.com).

## WINTER WARNING

Check your local laws and ordinances as some areas require warning signs to be posted. The owner will assume all risks with operating the Bantam-Aire™ System during winter months. Operating the Bantam-Aire™ system during the winter or freezing temperatures may create open areas of ice at the diffuser locations. Also, ice will be thin surrounding those areas. Extreme caution should be used in these areas to avoid injury or fatality from falling through the ice. It is highly recommended to use warning signs to indicate the danger to others.

If you choose to not run the system in the cold or winter months, be sure to refer to the startup procedure to avoid a fish kill in the spring when turning the system back on. Remove the system from the pond prior to freezing to prevent the system from getting iced-in.

### **Winter Operating Tip:**

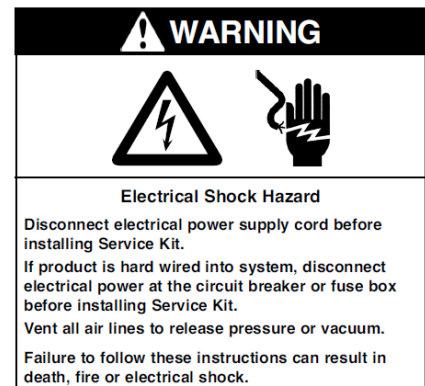
In climates where temperatures are likely to fall below freezing, it is recommended that you insulate the air lines from the compressor cabinet to a minimum of 3 feet into the water. Using closed cell polyurethane foam to insulate your air lines will prevent ice buildup in the lines which can occur due to condensation. Ice buildup in the line can block the flow of air to your diffuser and can cause damage to your compressor. If your body of water fluctuates greatly, run the insulation further in the water to account for low water level. You want the air line to be insulated through any ice thickness and into an area of water that will be below the ice level. If only desiring to keep a small area open to prevent winterkill, it is recommended to move the diffusers closer to shore to allow shoreline to be in direct contact with the ice-free opening.

## MAINTENANCE

It is your responsibility to:

- Regularly inspect and make necessary repairs to compressor to maintain proper operations.
- Make sure that pressure is released from compressor before starting maintenance.

*This compressor is oil-less and required NO lubrication.*



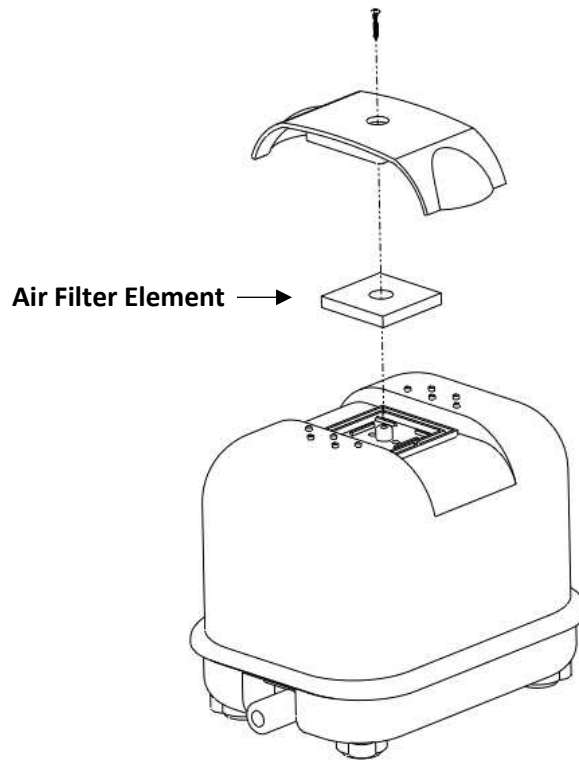
Dust and foreign matter entering the air inlet may cause excessive noise and may result in compressor failure. To ensure proper operation, inspect and clean air filter after the first 500 hours of operation. Clean filter and determine how frequently filters should be checked during future operation, keeping in mind changes of environment during different seasons (heavy pollen in spring or increased dust particularly

in dry summer months). Kasco recommends checking the filter every month and clean, or replace, as necessary. This one procedure will help assure the product's performance and service life. Failure to maintain clean air filter elements will lead to clogging which will cause excessive heat and premature failure of the compressor.

**For your convenience, one extra replacement air filter element has been included. Please keep available and use when original element gets too dirty or damaged.**

#### AIR FILTER ELEMENT CLEANING

- Disconnect electrical power supply to the compressor.
- Vent air line.
- Remove filter cover using a Phillips head screwdriver.
- Remove filter element and wash with clean water before drying thoroughly out of direct sunlight.
- Clean the air inlet, filter cover and element holding area using a clean, damp cloth.
- Install cleaned (or replacement) filter element back into place and re-attach filter cover.



#### **! WARNING**

##### **Injury Hazard**

Product surfaces become very hot during operation, allow product surfaces to cool before handling.

Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection.

Clean this product in a well ventilated area.

Failure to follow these instructions can result in burns, eye injury or other serious injury.

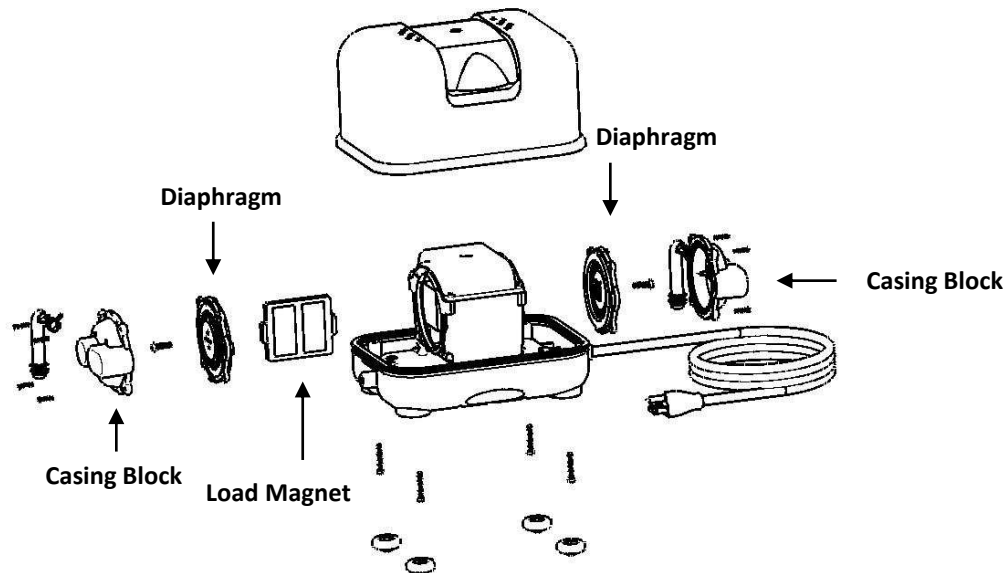
Replacement air filter elements are readily available. Contact your local Kasco distributor and ask for the appropriate Replacement Air Filter Element per the list below.

<b>Part Number</b>	<b>Description</b>	<b>Models Used On</b>
772459	Air Filter Element	TA-20L
772460	Air Filter Element	TA-40L, TA-60L, TA-80L
772461	Air Filter Element	TA-120L, TA-160L, TA-200L

**ADDITIONAL REPLACEMENT PARTS AVAILABLE**

Below is a list of additional replacement parts that are available if needed to repair a faulty compressor. Contact your local Kasco distributor and ask for the appropriate replacement parts per the list below.

<b>Part Number</b>	<b>Description</b>	<b>Models Used On</b>
772450	Diaphragm Kit <i>(includes 2 diaphragms)</i>	TA-20L
772451	Diaphragm Kit <i>(includes 2 diaphragms)</i>	TA-40L, TA-60L
772452	Diaphragm Kit <i>(includes 2 diaphragms)</i>	TA-80L
772453	Diaphragm Kit <i>(includes 2 diaphragms)</i>	TA-120L, TA-160L, TA-200L
772454	Load Magnet	TA-20L
772455	Load Magnet	TA-40L
772456	Load Magnet	TA-60L
772457	Load Magnet	TA-80L
772458	Load Magnet	TA-120L, TA-160L, TA-200L
772462	Casing Block	TA-20L
772463	Casing Block	TA-40L, TA-60L
772464	Casing Block	TA-80L
772465	Casing Block	TA-120L, TA-160L, TA-200L



## WARRANTY

WARRANTY PERIOD: 1 year

Kasco® Marine, Inc. warrants this Bantam-Aire™ Diffused Aeration System to be free from defects in material or workmanship under normal use and service. The Kasco Marine, Inc. obligation under this warranty is limited to replacing or repairing free of charge any defective part within the warranty period. Customer shall pay shipping charges for returning the unit to Kasco or an Authorized Repair Center.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND ANY OTHER OBLIGATION OR LIABILITY WHATEVER ON THE PART OF KASCO MARINE, INC. AND IN NO EVENT SHALL KASCO MARINE, INC. BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

Warranty is void if:

- The compressor is not maintained properly per the Maintenance Recommendations supplied in this owner's manual.
- The compressor is damaged by unauthorized tampering.

## WARRANTY CLAIM PROCEDURE

The best method for establishing warranty period is by the original receipt. Also, register the compressor online at: [www.kascomarine.com](http://www.kascomarine.com).

Once the warranty coverage has been established, the unit may be sent to Kasco or any Kasco Authorized Repair Center for evaluation and repair. Please call Kasco at 715-262-4488 prior to shipping to determine where best to send the unit for repair.

Kasco Marine, Inc.  
800 Deere Rd.  
Prescott, WI 54021  
Attn: Repairs

*Or call Kasco Marine at 715-262-4488 to locate your nearest Authorized Repair Center. You can also email Kasco at [returns@kascomarine.com](mailto:returns@kascomarine.com).*

Please include the Repair Form received from Kasco Marine or your local distributor with the shipment. If no Repair Form is available, include your name and physical address for return delivery of the repaired unit and a daytime phone number and/or e-mail address for correspondence regarding the warranty claim.

Any expedited shipping method for the return of the unit is at the customer's expense. Kasco Marine will return units repaired under warranty at our expense via ground freight within the continental United States.

## **OTHER REPAIRS**

Most failed equipment can be repaired at substantially lower costs than replacement with new. Please ship per the instructions in the previous section. Again, it is best to call ahead for updated information and/or repair form.

Kasco Marine does estimates on repairs at the request of the customer. The request for estimate should be included in the letter that accompanies the returned unit and must include a daytime phone number and/or e-mail address.

Estimate options are as follows: We will contact the customer with a total after the unit has been evaluated, but before the work is performed. We will repair the unit only if repair costs are under a stated dollar amount. Example: "Please repair if total is under \$150.00 before shipping charges."

All estimates that are rejected for repair will be destroyed unless otherwise directed by the customer. If the customer would like the unit returned, the unit will be restored as closely as possible to the condition in which it was received and shipped at the customer's expense for shipping and handling charges.

## **BILLING**

All non-warranty repairs will be returned to the customer unless otherwise directed. Kasco Marine also accepts Visa and MasterCard credit card payments. Kasco Marine will call for credit card information upon completion of the repair at the customer's request.

All other warranty and repair inquiries should be directed to Kasco Marine, Inc. at 715-262-4488 or [returns@kascomarine.com](mailto:returns@kascomarine.com).