



KEETON
INDUSTRIES
OTHER PONDS AND LAKES ARE GREEN WITH ENVY

Solar Lake Bed Aeration
Operation and Maintenance
Manual

Manufactured by Keeton Industries, Inc.
1520 Aquatic Drive
Wellington, CO 80549
(800) 493-4831

IMPORTANT

This equipment was thoroughly inspected and carefully packaged in our facility. Upon acceptance the carrier (UPS, USPS, Motor Freight or Other) assumes responsibility for the goods in transit and their ultimate safe arrival. Should you receive your shipment in a damaged condition, either apparent or concealed; a damage claim must be **made by you**, the customer, **directly with the shipping carrier**. **Keeton Industries cannot make this claim for you.**

APPARENT LOSS OR DAMAGE

Should visual inspection upon receipt of goods show loss or damage, it must be noted on the freight bill, express receipt, or UPS drivers record and signed by the driver or agent. **Failure to do so will result in the carrier refusing to honor your damage claim.** The carrier will furnish you the necessary form(s) for filing a claim should they be needed.

CONCEALED DAMAGE

When damage is not apparent until the equipment is unpackaged, a claim for concealed damage is to be made to the carrier. When damage is discovered, make a written or phone request to the carrier for inspection. **You must make this request for inspection within forty-eight (48) hours of delivery.** Immediately inspect all packages for exterior and interior damage upon receipt and make any claims as soon as possible.

Keep all cartons and packaging material to show the inspector. The carrier will furnish you with an inspection report and necessary forms for filling a concealed damage claim, **since such damage is the carrier's responsibility.**

RETURNS

If you are unhappy with your order for any reason, Keeton Industries will gladly exchange items; issue credit or refund the purchase price to you (less restocking charges) within 7 days of receiving the product. In all cases, **return freight costs are the responsibility of the customer.**

Please call or write for Return Authorization Number so that we may handle your return as quickly and efficiently as possible. We will not accept any returned merchandise without a Return Authorization number being displayed on the package.

NOTICE: There are no returns on Custom Designed equipment or Manufactured equipment for specific applications.

Limited Warranty Terms

All products manufactured by Keeton Industries are warranted against defects and workmanship for a period of two (2) years from the date of delivery to the original purchaser/end user or for thirty months after date of manufacture (whichever comes first). Any Keeton Industries product found to be defective within the warranty period will be repaired or replaced at the sole discretion of Keeton Industries. The warranty applies only to the original end user and is not transferable.

WARRANTY EXCEPTIONS

- The limited warranty may not be modified by verbal statements by the manufacturer, distributors, retailer, their agents or any other party.
- The warranty covers only the repair or replacement of Keeton Industries Product. Keeton Industries denies all liability for any other loss, including but not limited to, the loss of equipment, income, livestock or personal injury.

ALL WARRANTIES ARE VOIDED BY THE FOLLOWING:

- Product labels defaced or removed.
- Product improperly installed or maintained by the user or their agent.
- Product abuse, misuse or damage by the user.
- Product misapplied to application
- Product damage caused by electrical surges, spikes, brownouts or improper voltage.
- Product damage caused by freezing or extreme low or high temperatures.

Keeton Industries shall not be liable for the cost of field repairs, inspection, installation, replacement, etc. without prior written authorization and/or valid authorization number.

Keeton Industries shall not be liable for shipping damage or loss.

Keeton Industries shall not be liable for unauthorized shipping costs to return warranty items to Keeton Industries.

INSTALLATION INSTRUCTIONS FOR SOLAR AERATION SYSTEM

1. Determine the installation location, which must have unobstructed views of solar south and out of the shadow path of any nearby structures or vegetation.
2. Inspect top pole mount to determine the outside diameter size of schedule 40 steel pipe to be purchased locally. Mount this pipe into the ground; please see top pole mount instructions to determine the total pole length and the amount to be buried in the ground. It is very common to have as much as 6' of pole above ground. In areas with very heavy snow fall, a longer pole may be required. It is recommended to secure the solar panel mounting pole by filling the hole with concrete. Allow enough time for concrete to cure before proceeding with the solar panel mounting instructions.

Note: To keep the pole from turning in the wind, we suggest you cut at least two pieces of re-bar at lengths equal to the full diameter of the hole. Weld re-bar (or drill holes and insert through pipe) to the underground portion of the pipe so that the pieces of re-bar are perpendicular to each other and remain parallel to the ground. When the mounting pole is installed, the re-bar will protrude radially outward into the concrete foundation.

3. Place the compressor housing (cabinet) next to the mounting pole. The cabinet comes with four legs and is a free standing unit. You can pour a concrete pad to set the cabinet on if desired. Otherwise, the cabinet can be placed directly on level ground or on concrete pavers. In some situations (36"L by 36"W, large cabinets), it may be necessary to support the bottom of the cabinet with concrete blocks due to the weight of the batteries in the cabinet.
4. Mount Panels to top pole mount. Please refer to panel mounting instructions included in top pole mount box. All hardware has been included with panel mount. Solar panels will be prewired and ready for electrical hookup.
5. Set solar module tilt angle. Solar panels produce the most power when they are pointed directly at the sun. The module tilt angle is measured between the solar modules and the ground. Panel angle will need to be determined using the chart below:

Recommended Tilt Angles for a Fixed System	
Site Latitude in Degrees	Fixed Tilt Angle in Degrees
0 to 15	15
15 to 25	Same as Latitude
25 to 30	Latitude + 5
30 to 35	Latitude + 10
35 to 40	Latitude + 15
40+	Latitude + 20

6. Once the cabinet and panels are fully installed the electrical components can be wired together.
 - a. Place battery(s) in the cabinet and attached to the negative and positive battery leads from the ProStar charge controller. Be sure to attach the negative (black wire) terminal first.
 - b. Cover solar panels to eliminate the production of electricity during the wiring process.
 - c. Attach the negative and positive leads from the solar panel(s) to the negative and positive leads from the solar aeration cabinet. The MC4 connectors will need to be pushed together until they lock together. There is no specific order that needs to be followed and any two wires can be connected.
 - d. All of these wires run into the cabinet and attach to the ProStar on the solar input side (left). These wires are typically preinstalled. If not attach the negative wire to the negative terminal and the positive wire to the positive terminal located on the ProStar.
7. To install the diffuser(s), run the feeder tubing lines out to the deepest portion of the lake or pond and attach the diffuser. Start lowering the diffuser to the bottom. It is self-weighted and will self right once it hits the bottom.
8. Once on shore, run the tubing lines to the compressor housing and attach to the drop tubes coming from the cabinet using the hose barbs and screw clamps provided.
9. The system should now be ready to run. The control timer is already preset to your time zone and is programmed to maximize the system efficiency. The system will start operation at 2:00 pm local time and run until 10:00am the following day. If the system fails to run, check all wiring connections.

Note: Typical 20 hour per day run times are based on a minimum of 4 hours per day of full sun charge. During periods of extended cloudy weather, the system may self-regulate and interrupt the standard operation cycle to recharge the battery back up system.

RECOMMENDED TOOLS AND EQUIPMENT NEEDED

Shovel and/or posthole digger
Level
Electrician's pliers
Hammer
Level
Flathead screwdriver
½" and 7/16" open end wrenches
Knife or tubing cutter
Crescent wrench
Socket set
Sch. 40 steel pipe
2 pieces re-bar
Concrete

MAINTENANCE

Be sure to keep the unit clean at all times. Check felt air intake filters monthly and replace filters annually or if they have become soiled with dirt or dust. In very dusty locations, they may need to be clean or replaced more frequently.

If you have any questions please give us a call at (800) 493-4831.