



**For Solaer® Aeration Models:
SB-1, SB-2, SB-3, SB-4**

STEP 1



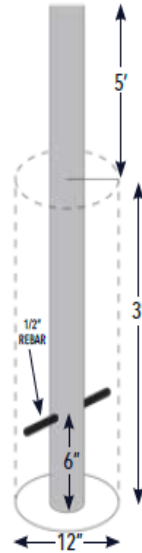
Find a location well above the high water mark with an unobstructed southern exposure away from anything that may shade the solar panels including trees, shrubs, buildings, fences, etc.

Warning: Shading on panels voids warranty and prolonged shading can cause irreparable damage.

STEP 2

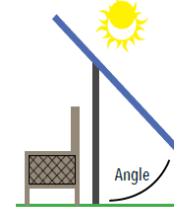
Purchase (at least) an 8' long Schedule 40 steel pipe in the appropriate diameter for your system. Refer to top pole mount instructions. Longer pipe may be required in areas with very heavy snow fall.

Dig 9"-12" in diameter hole with post hole digger. Secure pipe vertically in the ground with concrete; make sure it is plumb in all directions. Allow concrete to cure for 24 hours before mounting solar panel.



STEP 3

Attach solar panel to panel mounting bracket according to instructions included with the mounting bracket. Place solar panel and mounting bracket atop the SCH40 Steel pipe. Use a compass to face the panel directly to solar south. Tighten set screws firmly with a wrench. Set panel angle. Solar panels produce the most power when they are pointed directly at the sun. The angle is measured between the solar panel and the post. Use chart to determine angle.



Latitude	Angle
25° (Key West Taipei)	22.1
30° (Houston Cairo)	25.9
35° (Albuquerque Tokyo)	29.7
40° (Denver Madrid)	33.5
45° (Minneapolis Milano)	37.3
50° (Winnipeg Prague)	41.1

DO NOT INSTALL PANELS WHERE SHADING OCCURS

STEP 4



Create a level site to place your compressor cabinet on a Level-Aer™ pad next to the SCH40 Steel pipe. Place the compressor cabinet in the center of the Level-Aer pad with the lid opening away from the pipe.

STEP 5



Set system in place either on a Level-Aer Equipment Pad or on leveled and secure surface (as shown above).

STEP 6

Place batteries in cabinet and connect as shown. Attach the cables. Blue cable connects positive to negative (+ to -), Black cable connects negative to negative (- to -) combined with black negative lead to Prostar. Red cable positive to positive (+ to +) combined red positive lead to Prostar. Then attach wiring from solar panel(s) to cabinet.



SB-1 & SB-2



SB-3 & SB-4

STEP 7



Dig a trench from the compressor cabinet to the shoreline to cover/bury tubing.

STEP 8



Connect the self-weighted airline to the blue airline at the compressor cabinet. Ensure a secure connection.

STEP 9



Connect the self-weighted airline to the blue airline at the compressor cabinet. Ensure a secure connection. Layout the self-weighted airline in a zig-zag pattern on the shore with the air-line connected to the diffuser(s). Ensure a secure connection. You should not be able to twist the tubing on the fitting once connected.

STEP 10



Place one diffuser in the boat and head to the desired location. Drop the DuraPlate™ diffuser with attached airline into water. DuraPlate™ diffusers are self-righting and will land properly. Have your partner ensure there is slack in the airline at the cabinet for easy connection to the blue outlet airline.

STEP 11



Turn on the breaker that is located on the outside of the cabinet.

STEP 12



Use the manifold to balance airflow to diffusers by restricting flow to diffusers receiving the most air. Wait 90 seconds between adjustments.

STEP 13



Turn the switch to "MANUAL" to run the aerator 24/7 (recommended), or "TIMER" to use the programmable timer. Close the cabinet and enjoy!

STEP 14



Enjoy your installed system!

TOOLS NEEDED

Concrete



Shovel



Utility Knife



5/16 Nut Driver



Wrench



PRODUCTS USED IN SET UP

Solar Panel & Cabinet



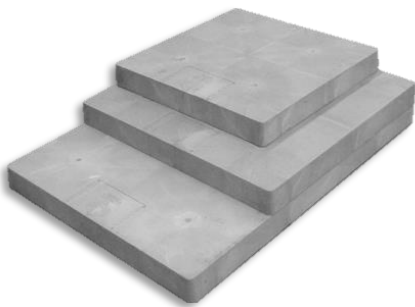
½ Inch Alpine Airline



Duraplate™ Diffuser



Level-Aer Equipment Pad



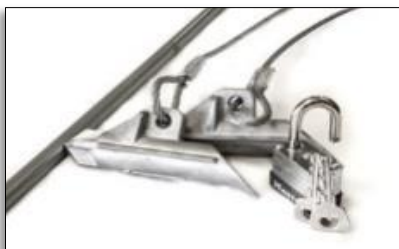
ProLake® Airline Connector Kit



Solaer® Air Filter Element



ProLake® AerLock™ Security Kit



*Optional

Comes With System Installed
*Replace Once A Year
As A Maintenance Part

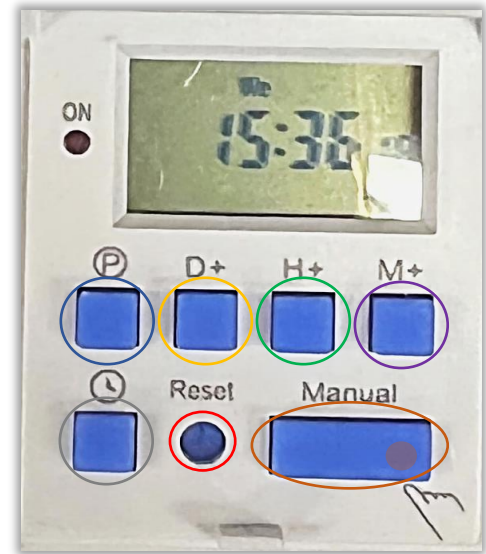
SETTING THE TIMER

The timer has battery back-up but may arrive without a charge. Timer will turn on when power is connected to 24 volt battery cell. **Note:** Timer is programmed in military time.

Timer Buttons

- (Reset) button will clear time and programs. •
- (D+) button advances day(s) of the week. •
- (H+) button advances hours. •
- (M+) button advances minutes. •
- (P) button selects program mode. •
- (Clock) button selects clock mode. •
- (Manual) selects program off/auto/on. •

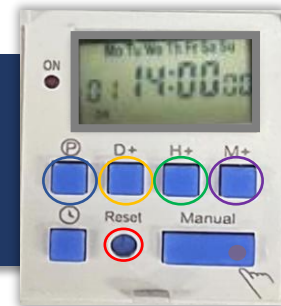
NOTE: Button must be pressed on the far right side to work.



PROGRAMMING THE TIMER

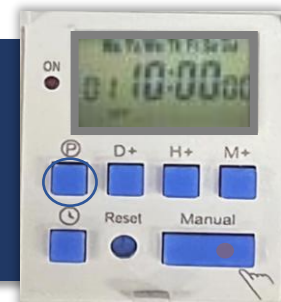
Programming your Solaer® timer to operate 20 hours per day*
***Weather conditions and solar input may reduce daily run time.**

1. Begin by pressing the (Reset) button. •
2. Set timer to the current day of the week and your local time, using the (D+) (H+) and (M+) buttons. • • •
3. Press the (P) button once to enter programming mode. Set Program 01 "on" to Monday-Sunday at 14:00. •



4. Press the (P) button once more to set program 01 "off" to Monday-Sunday at 10:00. •
5. Press the (Clock) button to return to the time. •

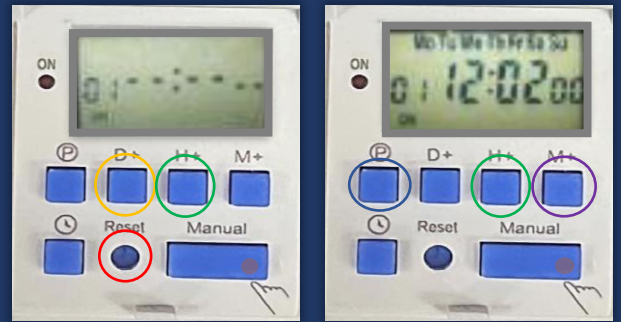
Congratulations! Your timer is now set to turn on at 2:00pm and off at 10:00am Monday-Sunday.



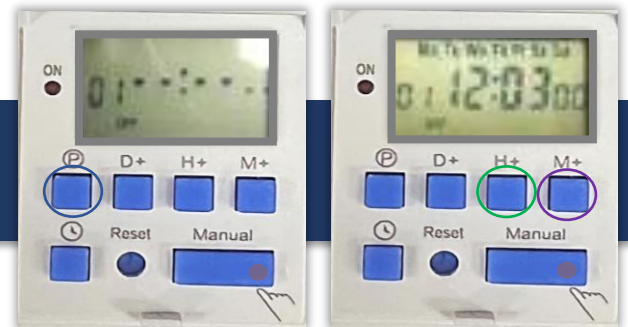
TIMER PROGRAM TESTING

1. Reset timer pressing (Reset) button. •
2. Set time to Monday at 12:00.
(D+) to select Monday. •
(H+) to select 12:00. •
3. Set Program 01 "on" time, Press the (P) button one time. •
The display will show (01 ON).
Set this to Monday-Sunday 12:02 using the (H+) and (M+) buttons. • •

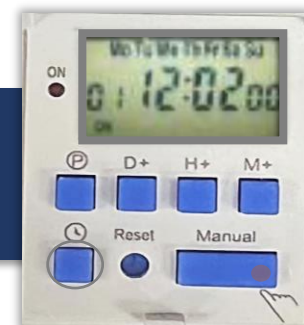
NOTE: Monday-Sunday is the first option, you will not have to press the (D+) button at all for this step.



4. Set Program 01 "off" time, Press the (P) button one more time. •
The display will show (01 OFF).
Set this to Monday-Sunday 12:03 using the (H+) and (M+) buttons. • •



5. Press the (Clock) button to return from programming mode back to the time. •
6. If the system is wired correctly the pump(s) and fan will turn on at 12:02 and turn off at 12:03.



SOLAER® MAINTENANCE AND REPAIR

MONTHLY SYSTEM CHECK

- Ensure compressor air intake filter is clean and not restricting airflow. Replace if necessary.
- Ensure air vents on bottom of cabinet are clean and free of debris.
- Ensure compressor and cooling fan are functioning properly. Repair or replace if necessary.

Solaer® Air Filter Element
Item Number: 40.1304



System failure is almost always a result of compressor overheating due to clogged intake filters and/or air vents or cooling fan failure. Every eighteen (18) to twenty four (24) months the compressor should have a repair kit installed. This is a fairly simple process that usually takes about an hour to complete. If you are not mechanically inclined it is recommended to have a service professional do this for you. Repair kits come with instructions. You may send your compressor to Keeton Industries for maintenance or repair.

SOLAER MAINTENANCE AND REPAIR:

STEP 1: Turn off breaker. Remove interconnecting tubing only where necessary.

STEP 2: Mark the position of the pump head plate A, intermediate plate C and crankcase L relative to each other by drawing a line on the edges with a pencil or other marker to assure proper reassembly. To access the counterweight N, remove the screws holding the compressor cover. Retain any gasketing for reuse.

STEP 3: Remove the four screws and washers B and remove the headplate A. Note the positioning of the valve plates D and seal rings E in relation to the valve ports on the headplate A and intermediate plate C. Lift off the seal rings and valve plates.

STEP 4: Remove the intermediate plate C. Carefully clean the head and intermediate plates of any residue using fine steel wool. DO NOT scratch.

STEP 5: Unscrew the old diaphragm F by turning it counterclockwise using both hands. DO NOT use tools! Take care not to lose any small parts such as the shim rings J, positioned between the diaphragm stud and connecting rod, as they must be replaced for proper pump operation. Parts removed must be replaced exactly as found.

STEP 6: Place the parts removed in step 5 onto the threaded stud of the new diaphragm. Carefully screw the new diaphragm F into the connecting rod C. Tighten firmly using both hands, NO TOOLS!

STEP 7: Turn the counterweight N until the diaphragm is flat across. Carefully center the diaphragm over the compressor housing L, firmly seating the diaphragm edge into housing groove.

STEP 8: Place the clean intermediate plate C onto the compressor housing L, according to your previously drawn markings, then place the new valve plates D and seal rings E on top of the intermediate plate. Make sure the seal rings are properly seated in intermediate plate recesses to avoid pinching.

STEP 9: Place the clean headplate A on top of the intermediate plate C according to your previously drawn markings and the locating pin. Then tighten the four screws B in a criss-cross pattern. Do not over tighten. Turn the counterweight or the fan by hand to ensure that the pump turns freely.

STEP 10: Remove any old Teflon® tape from all fittings. Carefully apply two layers of Teflon® tape around any fittings before reinstalling into the pump head. Install any tubing and fittings.

Do not apply tape beyond threads, as excess tape may tear off and lodge in the valves. Do not substitute any other type of tape.

Solaer® 24V DC Compressor Rebuild Kit
Item Number: 40.1501



TROUBLESHOOTING



	LOW PRESSURE	HIGH PRESSURE	PUMP OVERHEAT	WON'T START	EXCESS NOISE	REASON AND REMEDY
COMPRESSOR	✓		✓	✓		FILTER DIRTY. CLEAN OR REPLACE.
	✓					VALVES CLOSED. OPEN VALVES.
	✓					WORN CUP. REPAIR OR REPLACE.
		✓	✓	✓		RELIEF VALVE SET TO HIGH. INSPECT AND ADJUST
	✓					RELIEF VALVE SET TO LOW. INSPECT AND ADJUST
	✓	✓	✓	✓		PLUGGED PRESSURE LINE. INSPECT AND REPAIR.
			✓	✓		LOW VOLTAGE, WON'T START. CHECK POWER SOURCE.
			✓	✓	✓	VOLTAGE WRONG. CHECK POWER SOURCE.
	✓				✓	WORN DIAPHRAGM HITTING CYLINDER. REPLACE.
			✓		✓	CYLINDER MIDADJUSTMENT. REALIGN.
✓			✓		LEAKY HOSE OR CHECK VALVE. REPLACE.	
✓		✓	✓	✓	DIRT OR LIQUID ON TOP OF DIAPHRAGM. INSPECT & CLEAN.	
			✓		TIMER SET INCORRECTLY. INSPECT AND ADJUST.	
		✓	✓		WORN COOLING FAN. CLEAN OR REPLACE.	
DIFFUSERS	UNEVEN AIR FLOW	HIGH AIR FLOW	LOW AIR FLOW	WON'T START	"BURPING" BUBBLES	REASON AND REMEDY
	✓		✓	✓		SYSTEM LEAK. CHECK CONNECTIONS, TUBING & REPAIR.
	✓	✓	✓	✓		MANIFOLD NOT SET CORRECTLY. INSPECT AND ADJUST.
			✓	✓		COMPRESSOR ISSUE. SEE ABOVE.
					✓	DAMAGED OR TORN MEMBRANE. REPLACE.
✓					UNBALANCED MANIFOLD. INSPECT AND ADJUST.	

CABINET & DIFFUSER INTERNAL VIEWS

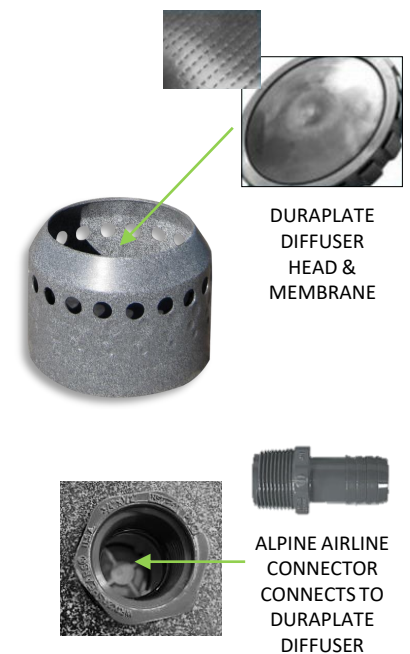


TIMER
AIR CONTROL VALVES
COMPRESSOR
AERFLOW MANIFOLD

AIR FILTER REPLACEMENT



12V DEEP CYCLE BATTERIES

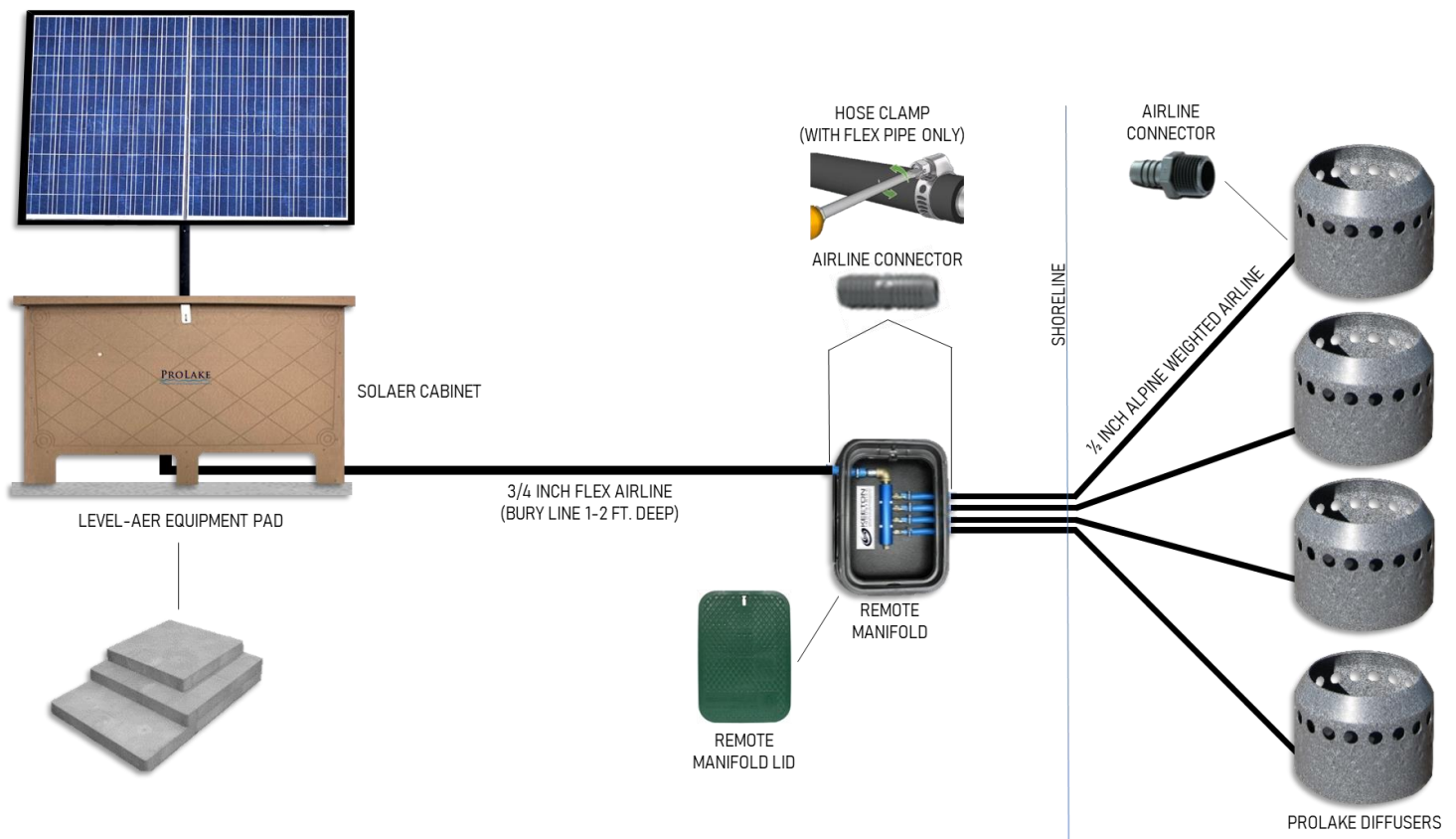


DURAPLATE DIFFUSER HEAD & MEMBRANE

ALPINE AIRLINE CONNECTOR CONNECTS TO DURAPLATE DIFFUSER

REMOTE SET UP DIAGRAM

Solaer® Aeration Systems should be installed close but away from the water's edge, but in the unique situation where a further distance is required a remote manifold can be utilized. We recommend only an additional 500-800 feet for optimal system performance. A ¾ inch poly-pipe line can be run from the cabinet to the remote manifold to accomplish this.



How To Install Remote Manifold

1. Decide on where to locate the remote manifold and bury 1-2 feet deep.
2. Pro Tip: Only backfill the remote manifold half way up with dirt then rip-rap rock around the rest to the edges.
3. Attach out lines with provided couplers to the weighted airlines that run to the Duraplate™ diffusers.
4. Attached ¾ inch flex airline coming from the cabinet to the remote manifold with the provided coupler.
5. Turn breaker on the back of the cabinet to the on position and enjoy!

SYSTEM SAFETY & WARRANTY



When completed, a Solaer® Aeration System installation should look the one pictured to the left. Make sure the unit is level once installed and sufficiently stationed away from the edge of the pond and any overflow area that could cause issues during times of flooding. The system cabinet can be locked if in a high traffic region or not if installed in a remote area.

We suggest using our ProLake® AerLock™ Security Kit.



IMPORTANT: This equipment was thoroughly inspected and carefully packaged in our facility. Upon acceptance by the carrier (UPS, USPS, Motor Freight or Other) the carrier assumes responsibility for the goods in transit and their ultimate safe delivery. 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 driver's 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.

When damage is not apparent until the equipment is unpackaged, a claim for concealed damage should 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 shipping costs are the responsibility of the buyer. Please call (970) 568-7754 for a required Return Authorization Number. We do not accept returned merchandise without a Return Authorization Number displayed on the package.

WARRANTY COVERAGE AND POLICIES: Keeton Industries finished products, when properly installed and operated under normal conditions of use, are warranted by Keeton Industries to be free from defects in material and workmanship for a period of twenty-four (24) months from the date of purchase from Keeton Industries or an authorized Keeton Industries representative or dealer. In order to obtain performance under this warranty, the buyer must promptly (in no event later than thirty (30) days after discovery of the defect) give written notice of the defect to Keeton Industries, 1520 Aquatic Drive, Wellington, CO 80549, or an authorized service center. Buyer is responsible for freight charges both to and from Keeton Industries in all cases. Keeton Industries' warranties also do not extend to any goods or parts which have been subjected to misuse, lack of maintenance, neglect, damage by accident or transit damage. Keeton industries will not be responsible or liable for indirect or consequential damages of any kind, however arising, including but not limited to those for use of any products, loss of time, inconvenience, lost profit, labor charges, or other incidental or consequential damages with respect to persons, business, or property, whether as a result of breach of warranty, negligence or otherwise.

SYSTEM SAFETY & WARRANTY

Notwithstanding any other provision of this warranty, buyer's remedy against Keeton Industries for goods supplied or for non-delivered goods or failure to furnish goods, whether or not based on negligence, strict liability or breach of express or implied warranty is limited solely, at Keeton Industries' option, to replacement of or cure of such nonconforming or non-delivered goods or return of the purchase price for such goods and in no event shall exceed the price or charge for such goods. Keeton Industries expressly disclaims any warranty of merchantability or fitness for a particular use or purpose with respect to the goods sold. There are no warranties which extend beyond the descriptions set forth in this warranty, notwithstanding any knowledge of Keeton Industries regarding the use or uses intended to be made of goods, proposed changes or additions to goods, or any assistance or suggestions that may have been made by Keeton Industries personnel.

Unauthorized extensions of warranties by the customer/dealer shall remain the customer's/dealer's responsibility. **DURAPLATE DIFFUSERS ARE COVERED BY A SEPARATE LIFE TIME WARRANTY AGAINST MATERIAL DEFECTS OR CRAFTSMANSHIP.**

This warranty can be modified only by authorized Keeton Industries Personnel by signing a specific, written description of any modifications.

NOTES

THIS EXPRESS WARRANTY EXCLUDES ALL OTHER WARRANTIES OR REPRESENTATIONS EXPRESSED OR IMPLIED BY ANY LITERATURE, DATA, OR PERSON. KEETON INDUSTRIES MAXIMUM LIABILITY UNDER THIS EXCLUSIVE REMEDY SHALL NEVER EXCEED THE COST OF THE SUBJECT PRODUCT AND KEETON INDUSTRIES RESERVES THE RIGHT, AT ITS SOLE DISCRETION, TO REFUND THE PURCHASE PRICE IN LIEU OF REPAIR OR REPLACEMENT.

CAUTION: It is dangerous to work in and around open water. Please wear safety equipment when using tools, shovels, etc. and be sure to wear a life vest while operating a boat. Be careful of ice covered lakes in the winter, aeration systems weaken the ice and it is never safe to walk on aerated lakes.

CONTACT US

Watch the instructional video for complete set-up and installation:



Questions?

Installation instructions and instructional videos are also available on our website, prolakeproducts.com. Contact us for help at 800.493.4831 or info@keetonaquatics.com.

For More Information & Instructional Video:

www.prolakeproducts.com
<https://www.youtube.com/watch?v=opxlqrxQK6E>