AquaElite™

# SonicAir

24v

## Delivery check material on delivery

**Apparent damage on delivery**

The system was properly packed and accepted by the freight carrier for the shipment. It is their responsibility to deliver the system in perfect condition. If the equipment or boxes are damaged customer will need to indicate (DAMAGED IN TRANSIT) on the carrier's freight bill of lading.

**Concealed Damage**

If damage is discovered, that was not visible upon delivery, notify the transportation company immediately to inspect damaged equipment. The inspector will be required to provide a "CONCEALED BAD ORDER" report. Inspections must be requested within 10 days of delivery. Do not move damaged goods from original point of delivery. Retain all original packing and containers for inspection. Photos will be needed of any damage

**Warranty**

**Aqua Elite Limited Warranty**

Warranty covers all aeration systems from purchase date against defects in workmanship.

1. Aqua Elite, Inc. (AQUA ELITE) will replace or repair any part deemed to be defective by Aqua Elite, Inc., due to defects in quality and/or workmanship within a 2 year period from the initial date of purchase. Note: Wearable parts are considered routine maintenance.

2. Warranty does not apply to AQUA ELITE products which were installed incorrectly, subject to an accident or neglect.

3. Product returned must have a return merchandise authorization number. Warranty repair must be returned to the address specified by the Manufacturer freight prepaid, and any warranty product sent to the customer will be sent freight prepaid.

4. Warranty coverage may be void if parts other than genuine Aqua Elite parts are utilized for repair or attached to an Aqua Elite Aeration system.

5. Proof of purchase/Serial # is required for warranty repairs.

6. If you have any warranty concerns, please contact Aqua Elite at 1-866-471-1614 in Canada or USA. International customers can call 1-479-756-1614 with any warranty concerns

## Avoid the following Installation Missteps that will VOID warranty

Installing a cabinet inside a box, shed decorative rock or other enclosures. Cabinet is designed to ventilate compressor/motor exhaust. Compressor air requires significate energy and generates heat. The cabinet has high-capacity cooling fans to reduce the heat.

Cabinet is powder coated in a light color to reduce temperatures. Painting exterior causes elevated cabinet temperatures and possible motor failure.

Installing a cabinet in too low of an evaluation (below pond/lake level) will be subject to flooding potential. Water that enters cabinet will destroy compressor, fans, and receptacle.

Installation of the cabinet in unusually dirty surroundings will damage the compressor and fans. Aqua Elite suggests changing the cabinet cooling fans during every compressor rebuild cycle. Not replacing non-working fans can cause compressor(s) failure as the fans will in time will not work

## Safety/Warnings

Risk of electric shock - this pump is supplied with a grounding conductor and grounding-type. To reduce risk of electric shock, be certain that it is connected only to a properly grounded.

An improper connection to the aerator grounding conductor can result in electrical shock**.**

Children being supervised are not to play with the system.

1. Do not place the cabinet where people may step or trip on the PV cords.
2. Follow all warnings and instructions that are marked on or supplied with the aeration system.
3. Never override or “cheat” on installation of electrical.
4. Always locate the cabinet on a solid ground support with adequate strength for the weight of the unit**.**
5. Install the cabinet at a distance and location safe from standing water or flooding per National Electric Code.
6. Place the cabinet away from irrigation sprinklers.
7. Never push objects of any kind into the slots in the covers, as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
8. Never attempt any maintenance function that is not specified in the user manual.

In no way remove any covers or guards that require a tool for removal, unless you are instructed

9. to do so. Ensure that you read all Warnings and Cautions, and follow each step in the instructions exactly as they are written.

10. Never attempt any activity that is not specified in the user manual, or that is not specifically directed by an authorized AQUA ELITE representative.

11. Never operate the system if unusual noises or odors are detected. Turn system off at covering panels and call AQUA ELITE to correct any problems.

12. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.

13. Before performing any maintenance and troubleshooting. Disconnect the electricity by covering panels then unplugging the unit from panels.

14. When in or around water, wear a Coast Guard approved life jacket and follow all water safety guidelines.

15. Refer to these instructions as needed in order to ensure the safe operation of the aerator

16. When on site with performance issues call Aqua Elite Compressor fan, outlet or any other electrical component is in need of service.
    - If the PV cord is frayed or damaged.
    - If the compressor or fan is producing unusual noises and/or odors.
    - Breakers continuously is tripping

**Installing solar panels and solar panel rack**

**Hardware for top pole racking**

List of parts for top pole racking

Qty:1- 50” cross pipe poles

Qty:2- Panel kit rail 82” each

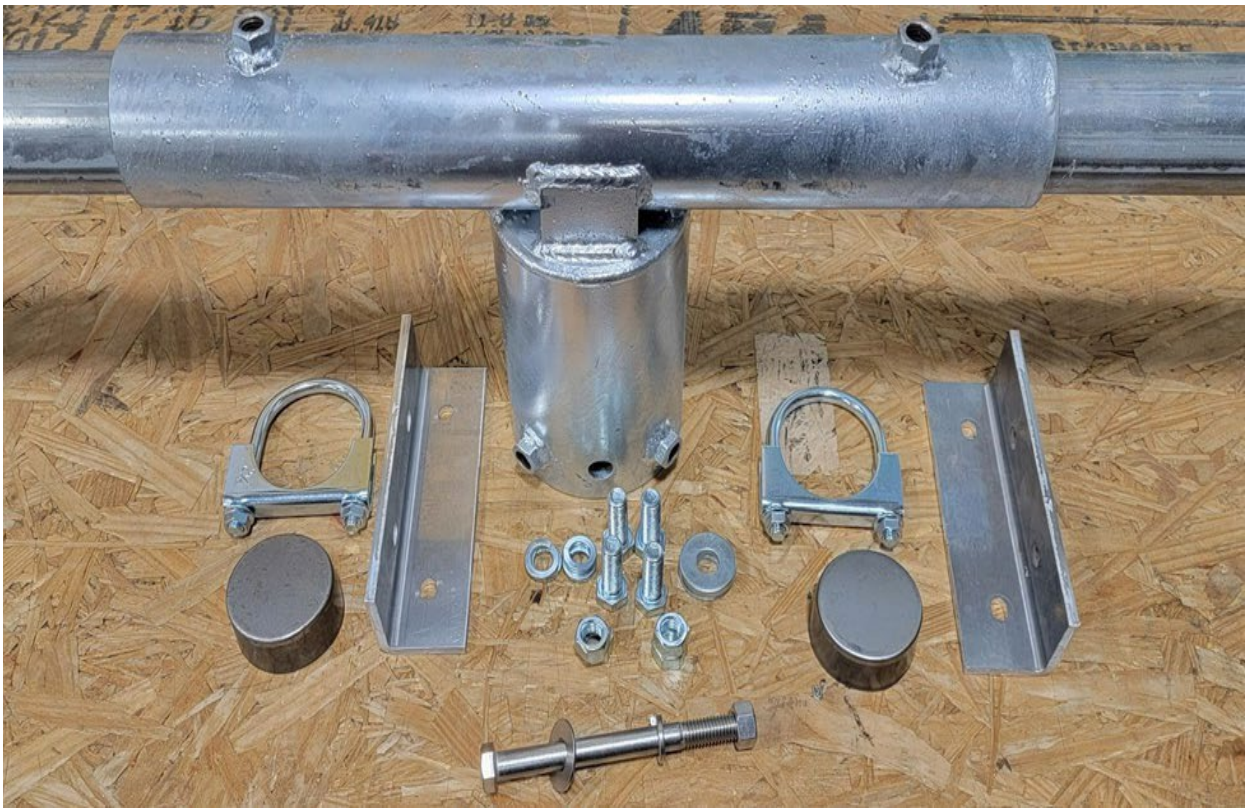
Qty:2- L-Bracket

Qty:2- U-Bolt with saddle bracket

Qty:2- Pipe end cap

Qty:4- 2” Hex bolts with nuts and lock washers

Qty:1- Safety hex bolt 5 ½” with nut and two washers



Tools/Supplies needed to install vertical pole

1. Shovel
2. Tape measure
3. Level
4. (4) bags of 80lbs cement
5. Pile for water to mix cement
6. ½” wrench
7. ¾” wrench

Pole hole dimensions

18”-20” Wide

28”-30” Depth

After hole is dug add provided rebar to pole as shown. This will prevent the pole from rotating in cement.

*Important* Make sure predrilled hole opening on the top is North and South. This allAqua Elite the top pole backet to fasten with a safety bolt and nut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Start to add cement and water mixture into hole

Check halfway point level front to back and side to side

Once cement is mixed now check that the pole is level front to back and side to side

*Important* Make sure predrilled hole opening on the top is North and South. This allAqua Elite the top pole backet to fasten with a safety bolt and nut

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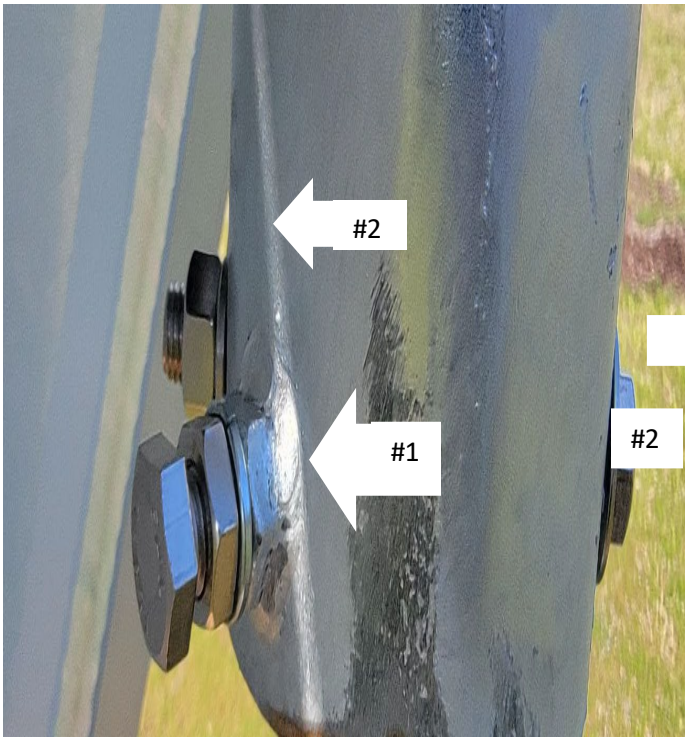
(#1) Bolt and lock washer will insert into pre-threaded inserts.

(#2) safety bolt will go completely through

predrilled hole through pole and tightened

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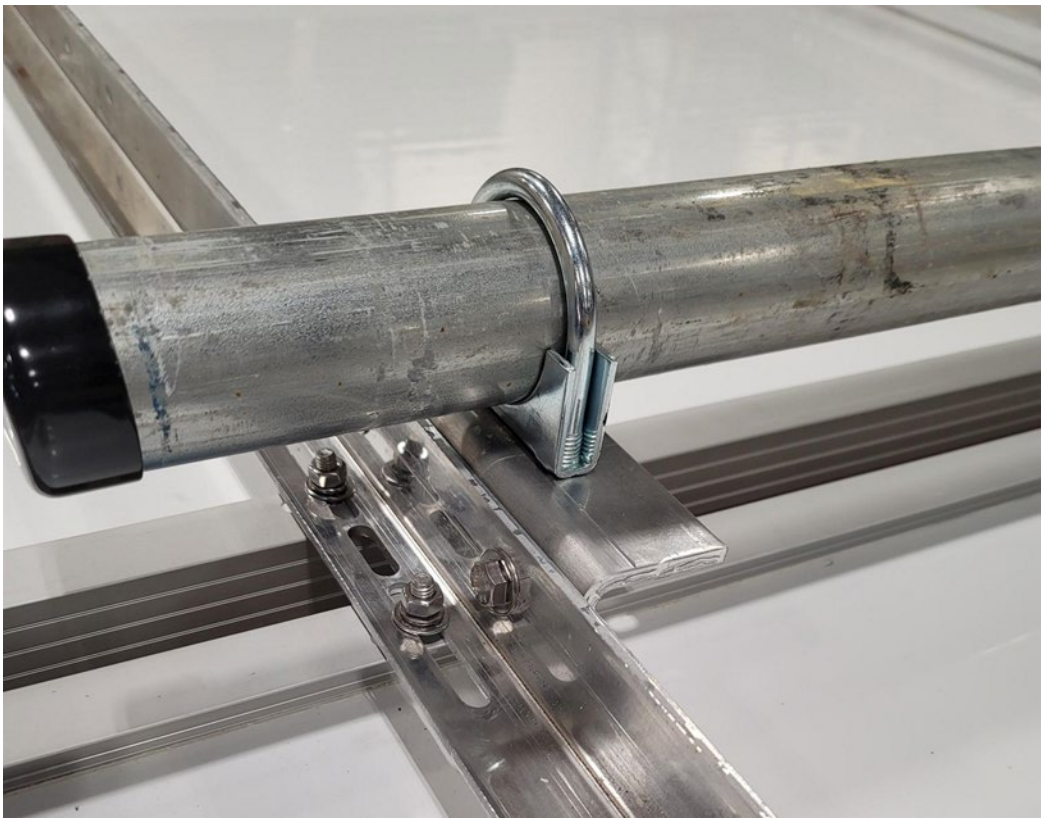
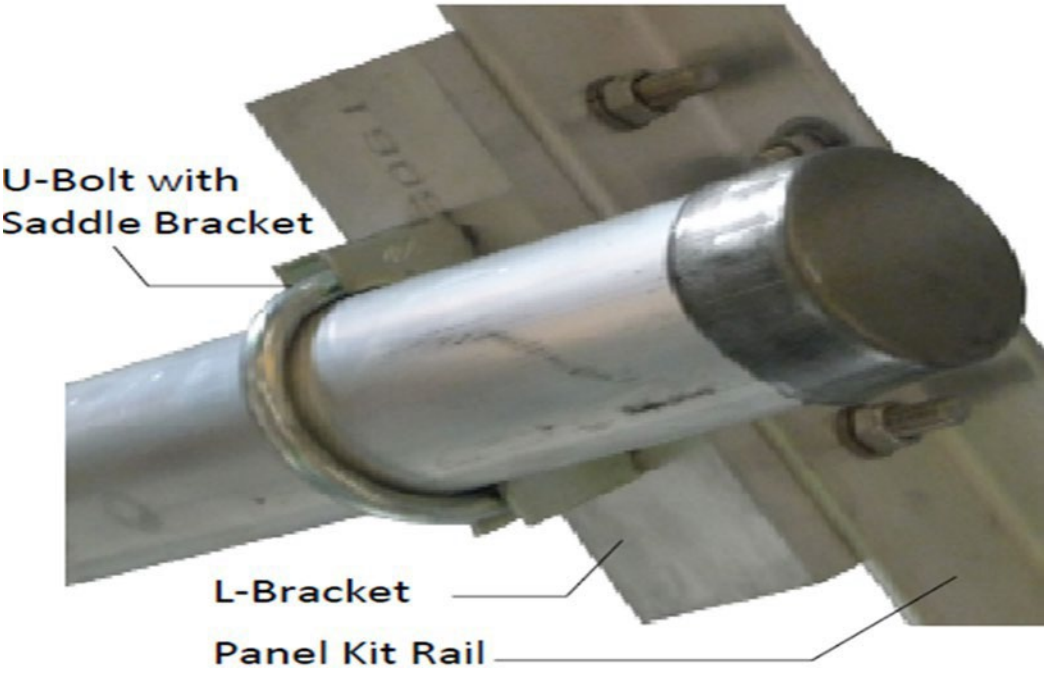


## Attachment to Panel Kit Rail

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NORTH

EAST

WEST

SOUTH

Bottom of  solar  panels will face South

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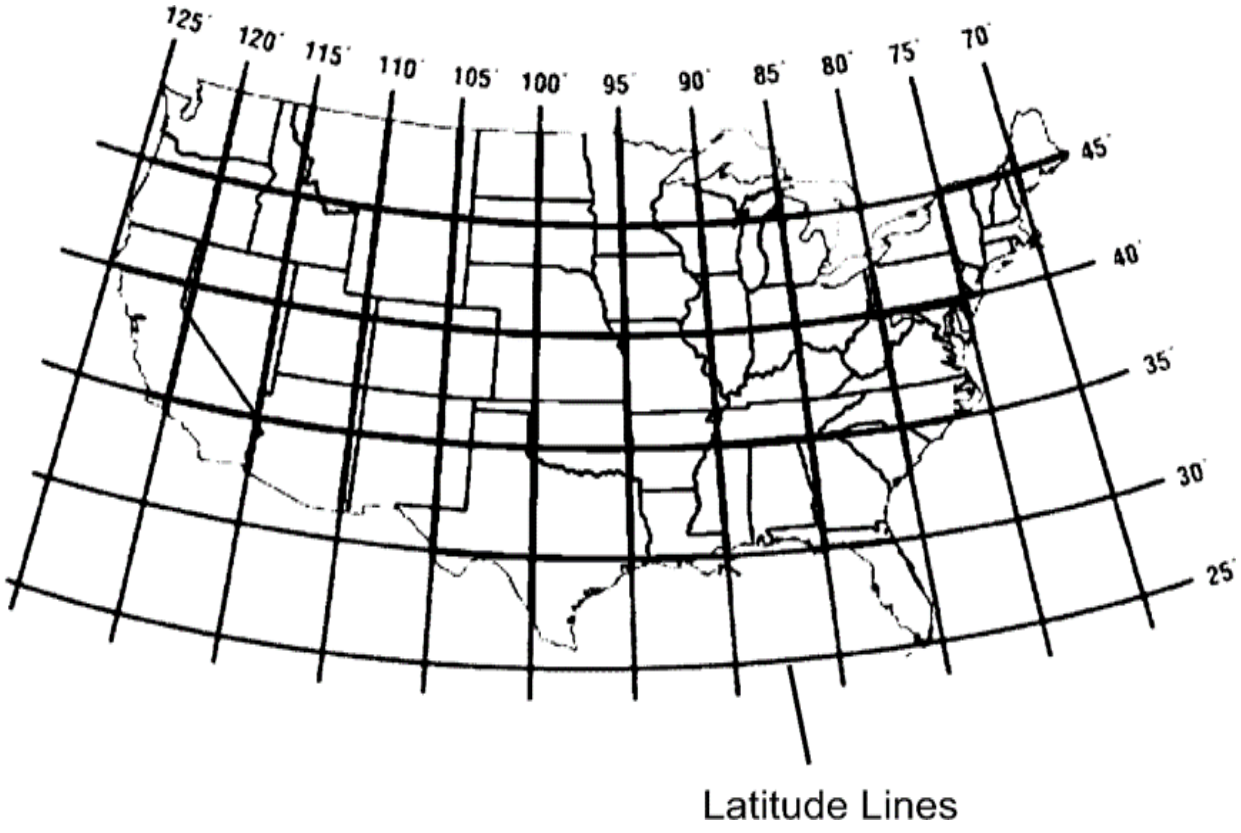
**Setting the tilt for your solar panels:**

To get the most power from your solar panel the adjustable mounting bracket must be set correctly.

The tilt should be equal to your latitude, minus 15 degrees in winter or plus 15 degrees in summer.

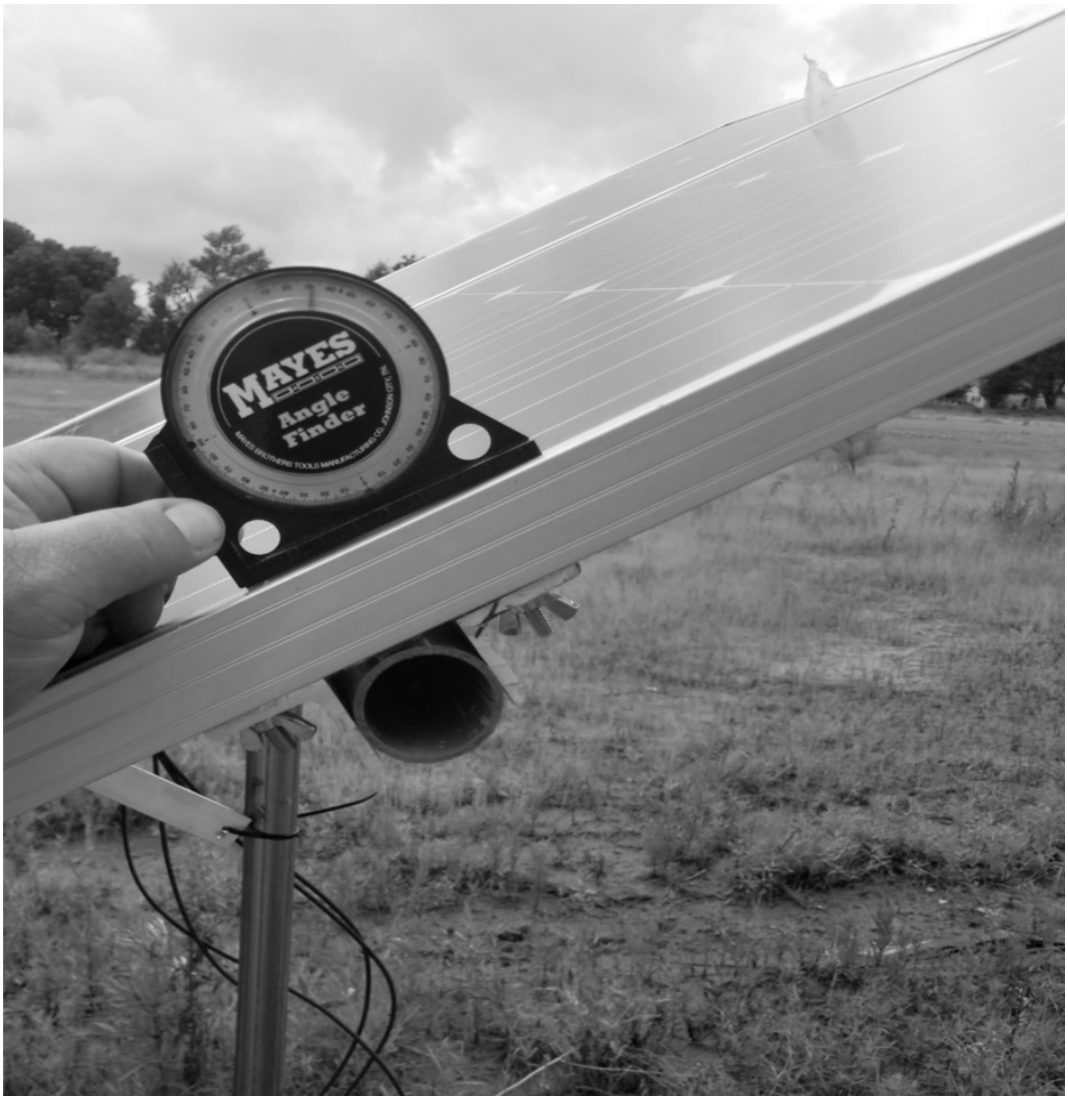
Example: If the Solar Panel is located near Denver, CO which has a latitude of 40 degrees, then:

- 40 minus 15 equals 25 degrees for the winter.
- 40 plus 15 degrees equals 55 degrees for the summer.
- Set the adjustable mounting bracket to correct degrees

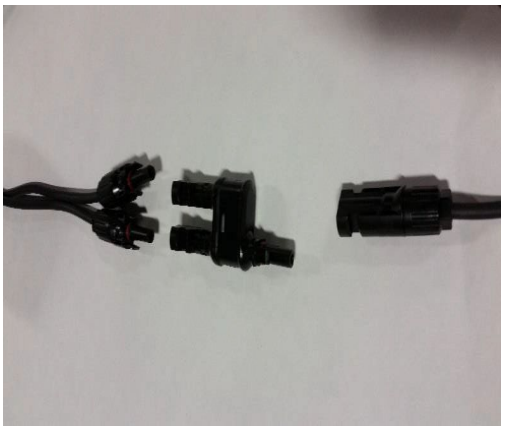


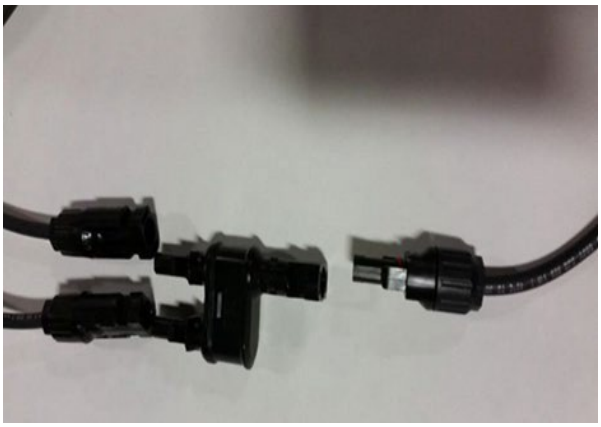

Latitude Lines

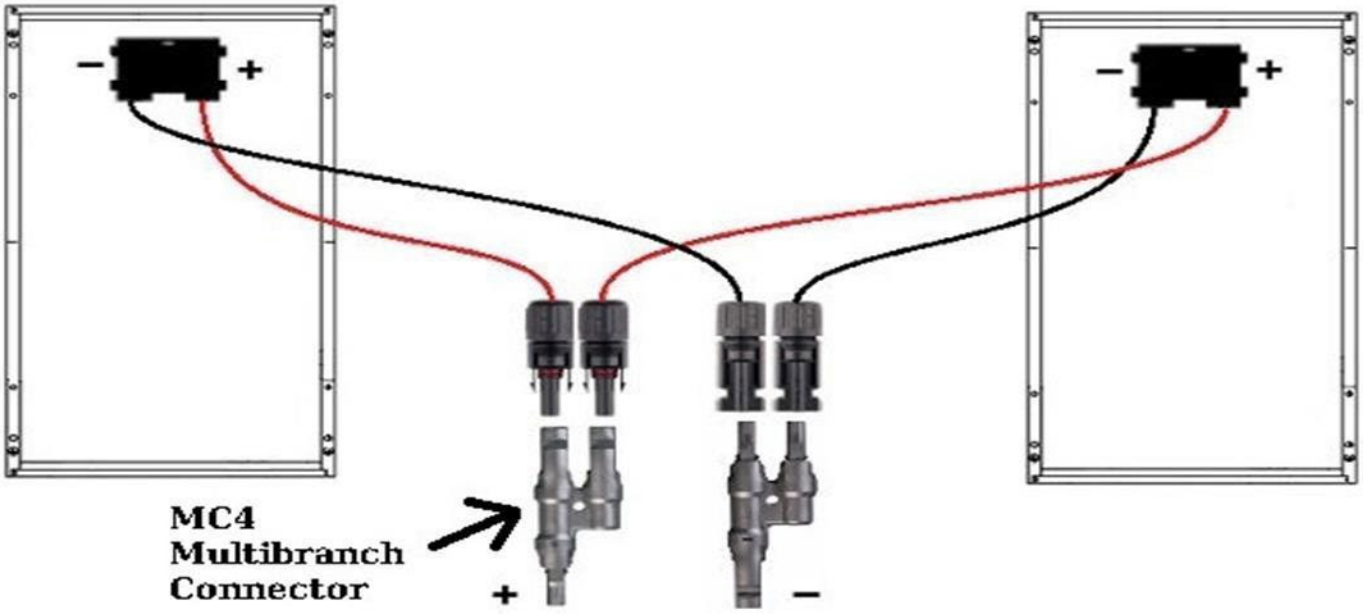
Use provided Angle Finder to correctly set the right degree for your panel location.



Solar wiring is in parallel. Start by connecting the two female on the Y-connector from the cabinet to the two male from solar panels. Connect the male connector to female Y-connector from solar panel. Use zip ties to secure all loose cables to pole and secure cable under panel.







The Aqua Elite Electric Aerator is designed to help keep your pond clean and healthy year around. We hope you enjoy your Aeration system for many years to come.

**Installation Instructions:**

On install decide on placement of cabinet and solar array. Once determined the position of the cabinet level the ground where placing the cabinet.

To reduce vibration noise AQUA ELITE suggest adding one bag of mulch under cabinet pad. Adding mulch helps reduce the vibration noise. If mulch is not available, use a soft (flexible) organic material.

- Aqua Elite does not suggest installing the cabinet on a cement pad. Cement will allow for additional vibration noise.
- Do not anchor cabinet to ground.

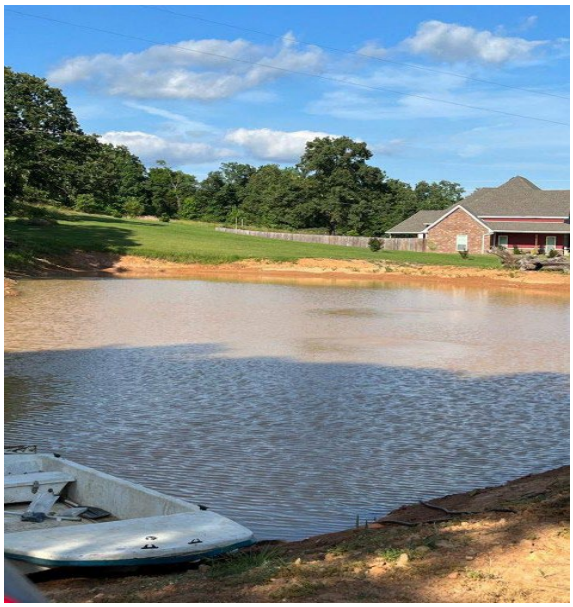
### Installing diffusers

**Note: Teflon tape is NOT recommended, not required for threaded connections on diffuser or diffuser plate**

While cabinet is powered on keep the longest/deepest airline run open valve fully then turn all other valves off. By completing this you will be able to install the diffuser at the correct position by the boil of bubbles. When finish with first run turn next longest airline run valve on then turn off first valve. Continue same process for each diffuser. Run each airline out to the place in the pond where you would like your diffuser and attach your diffuser. **Note:** Air will travel to the point of least resistance or to the shallow diffusers first. Adjusting the airflow so that it goes to the longest run/deeper diffusers is usually required. **Never retrieve diffuser from bottom of pond by airline.**

### Lowering diffusers

We suggest installing your diffuser into the deep part of the pond to ensure complete circulation of your water. For diffusers with a weighted base plate, lower the diffuser down to the bottom of the pond. Using rope will help with control the diffuser sinking to bottom of the pond. You don't have to tie the rope on, just fold the rope in half, lower the diffuser, then pull the rope up by pulling on one half. You can also leave rope attached to the diffuser plate if you would like to pull up years later. It is not necessary to pull back up the diffuser once installed. The diffuser membrane is self-cleaning.



**Winter diffuser placement**

If you would like to keep the water open for watering livestock in the winter, then you can putthe diffuser closer to the shoreline (or move it there in the fall). You can also place the diffuser in a shallower area ifyouare in a northern climate and have trout, walleye, Northern pike or Muskie in the pond and want the deep parts of thepond to remain colder in the summer months. **Never retrieve diffuser from bottom of pond by airline.**

**Retrieving diffusers from bottom of pond/lake**

If necessary to pull up diffuser you can complete the following to avoid pulling up by airline.

- Add a buoy or float to end of rope that is attached to diffuser

- When installing diffuser attach nylon rope securely to plate. Sink plate to bottom. Cut nylon rope approximately 8-12” above water line. Once rope is cut tie multiple knots in the same position on the rope. By tying multiple knots this will create a float on the end of the rope.

**Maintenance**

Clean intertior of the cabinet from any dirt and debris.
Change filter element every six months

## Air Filter replacement/Cleaning

Air filter replacement or cleaning: Unplug system from power source. Remove compressor air intake filter and wash with soap and water or replace with new filter cartridge. Washing or replacing should be completed 2-4 times per year. Ideally every three months for changing filter and cleaning inside of cabinet. Do not reinstall a wet or damp filter cartridge.

Twist to unlock

Remove top of filter

Line the notches twist and lock clean or replace

***Compressor Routine Maintenance***

System should be checked on a regular basis. Suggested every other week check boils in lake. Once a month clear any grass or weed debris from around cabinet. When compressor has a loss of compression the boils “Bubbles” in the lake will be not as visible or the boil area becomes smaller from shore. At this time the compressor will need a piston maintenance kit. The kit includes all new seals, flapper valves and piston rings.

Safety first – follow the system on/off procedure in your manual for shutting down the system before commencing cleaning.

Cabinet care- Every six months check the interior cabinet for outside debris and remove if any. Add ant/bug spray in and around cabinet. (as needed)

Inspect for bugs/ants/spiders Remove

***Solar Panel Maintenance***

For safety reasons, it's also wise to clean your panels from the ground if possible. A good quality soft brush and a squeegee with a plastic blade on one side and a cloth covered sponge on the other coupled with a long extension can make for the perfect tool allowing you to stay on the ground. Use a hose with a suitable nozzle to allow the stream of water to reach the panels.

*What to look for when cleaning*: Dust, bird droppings, pollution, pollen, tree sap, plant matter residue, etc., all reduce the overall effectiveness of solar panel generation capacity. Panels must be cleaned regularly to maximize system performance and longevity.

*When to clean solar panels*: Clean your panels on an overcast day, early in the morning or in the evening. If the sun is beating down on the panels, any water used can quickly evaporate and dirt will become smeared. Early morning can be a particularly good time for cleaning as dew that has settled on the panels overnight will likely have softened grime; meaning you'll need to use less water and less energy to clean your solar panels. If the panels are dry, before tackling the modules with water, brush off any loose materials first – this will make cleaning easier and faster.

*Solar panel cleaning warning*: DO NOT use common car-wash soaps and window cleaners which contain alkaline that promote oxidation and require a deionized water rinse. Never use an abrasive soap or a cleaning sponge - the goal is to get the glass as clean and clear as possible and you don't want to scratch it. Aqua Elite recommends using warm water and dishwashing soap.

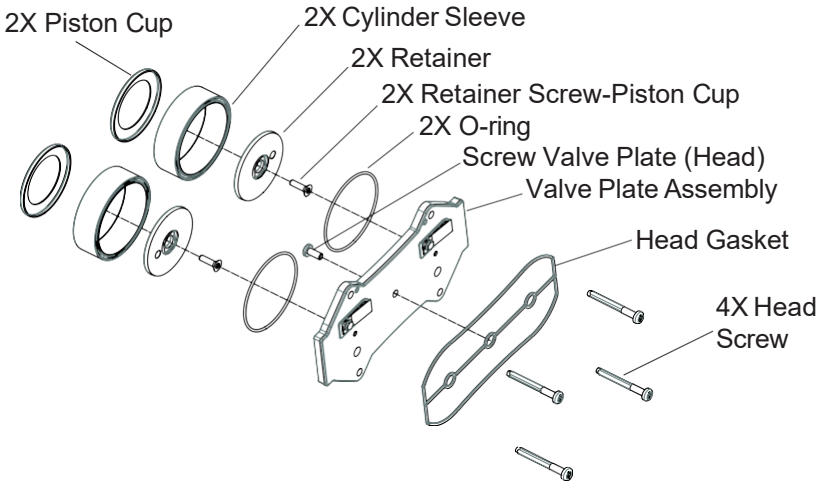
*Drying solar panels after washing:* Dry solar panels with a towel making sure the towel does not scratch the panels. A chamois that you would use for your car is a good choice.

# COMPRESSOR SERVICE KIT

⚠ **WARNING**: Unplug the compressor before beginning disassembly.

⚠ **CAUTION**: Improper assembly or use of damaged parts may lead to premature failure. To avoid frequent repairs follow the recommended assembly procedures.

This kit includes the following parts:




**NOTE**: Before you begin, read these instructions thoroughly and assemble the necessary tools. You will need:

- 1/4” Hex Socket attachment for torque wrench
- Torx T-25 attachment for torque wrench (for head screws)
- Clean Cloths
- Torx T-20 attachment for torque wrench (for valve plate to head screw & retainer screw).
- 5/32" Hex wrench for torque wrench (eccentric screw).
- Clean Cloths.

Part No.643328

## DISASSEMBLY

**STEP 1.** Clean loose dirt from the outside of the compressor.

**STEP 2.** Loosen the 4 head screws (1) with Torx T-25 and remove compressor head (2) (discard 4 head screws). Note orientation of head and valve plates for reassembly (very important). Gently remove the cylinder sleeve (6) and o-rings (5) and discard.

**Caution: Be careful not to crimp or bend the motor wires during repair**

**STEP 3.** Carefully remove the valve plate (3) from the bottom of the head (2) by loosening the head valve plate screw (7) with Torx T-20 and remove from valve plate assembly and discard valve plate and screw.

**STEP 4.** Remove the head gasket o-ring (4) and discard. Note orientation in Figure 1 for reassembly. (wipe head gasket o-ring surface with clean cloth, ensure no debris in groove or on seating surface to valve plate)

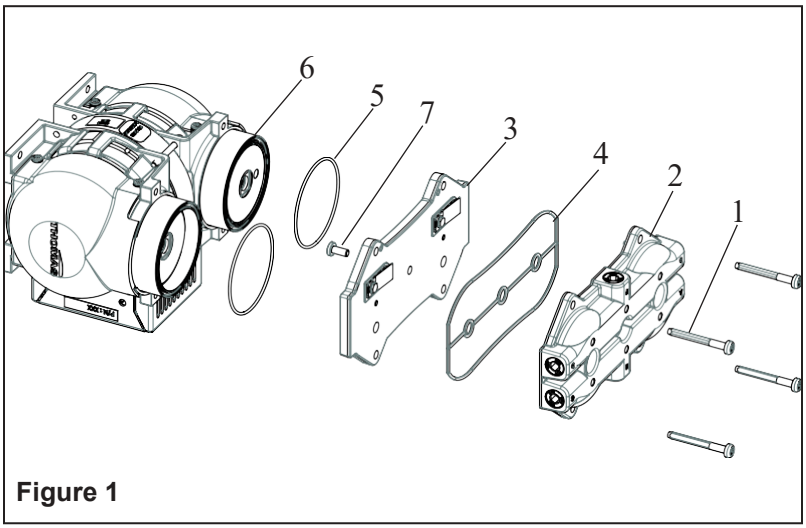



**Figure 1**

**STEP 5.** Install the new head gasket into head and seating it firmly into the groove with your finger, set aside. Align valve plate assembly to head, tighten screw to 40-45 in/lbs (See Figure 2).

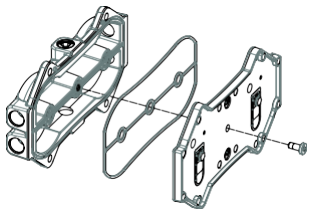


**Figure 2**

**STEP 6.** Loosen front covers by backing out 1/2-1 turn so you can pull off the cover and the control box stays in place. Note: the cover goes under the control box tabs. (4) ea cover screws (Torx T-15) (See Figure 8).

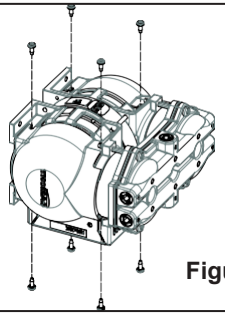


**Figure 8**

**STEP 7.** Insert the 5/32" Hex wrench into eccentric screw (Figure 5 & 6). Loosen the set screw 1/4 turn. Rotate connecting rod to top dead center (180°) and slide the connecting rod/ eccentric assembly off the shaft and through the opening in the housing.

**STEP 8**. Secure the rod assembly in a fixture. Remove the sleeve (discard) from the connecting rod. Remove the retainer screw (discard) from the cup retainer (retain for reassembly). Remove the piston cup (discard) and wipe debris from the top of the connecting rod and retainer with a clean damp cloth (Figure 3).

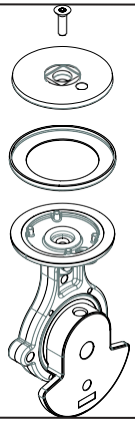


**Figure 3**

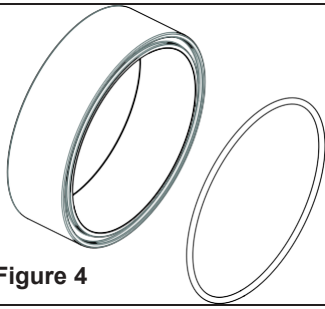


**Figure 4**

**STEP 12**. Hold the sleeve down against the housing with one hand, and slowly rotate the eccentric with the other hand to ensure all components are lined up properly. As the piston travels up and down it will also rock from side to side. This is a feature of the WOB-L Piston.
Repeat steps 6-11 on the other side of compressor.

**STEP 13**. Place valve plate and head assembly (2) over rod cylinder sleeves. Orient the head and valve plate assembly in the orientation as it was disassembled. (See Figure 7) Ensure to place head & valve plate straight down and align housing head screw holes. Do not drag across cylinder sleeve or you might pinch or knock sleeve o-ring out of the groove.

**STEP 14**. Place 4 new head screws (3) (hand start the screws counter clockwise until the screw clicks in, then torque the screws) and snug tighten in a criss-cross pattern. Tighten with a torque wrench to 25 inch-pounds in a criss-cross pattern with Torx T-25.

**STEP 15.** Slide the front cover (1) back into position. Tighten each screw (4) to 15 in-lbs (T-15 Tool).

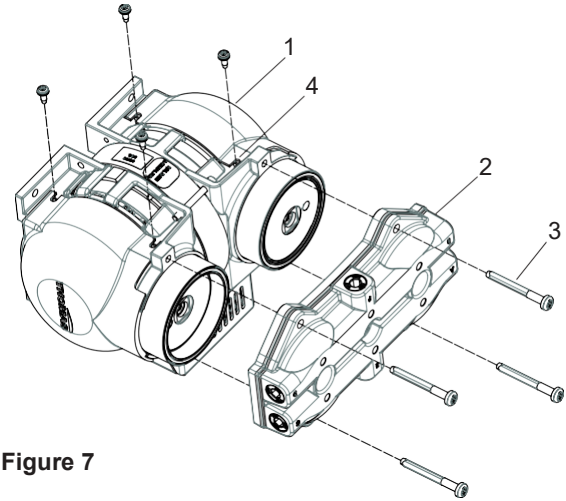



**Figure 7**

**STEP 9**. Carefully place new sleeve (1) over connecting rod top oring groove side up (Figure 4 & 6). Place new cup (4) in center of the retainer (2). Do not damage the cup. (counterbore up), making sure that the cup inside diameter is seated properly over retaining boss. Note that the retainer has a locating boss that must insert into rod top pilot. Align retainer to the 4 male pins and 1 female recess of the rod. Retainer has 1 boss (See Figure 6). Drive new retainer screw (3) to 55 in-lbs. Carefully push sleeve up forming the cup. Stop pushing the cylinder sleeve up when the piston cup is positioned midway inside the sleeve. Place new sleeve oring into groove on top of new cylinder sleeve (Figure 4).

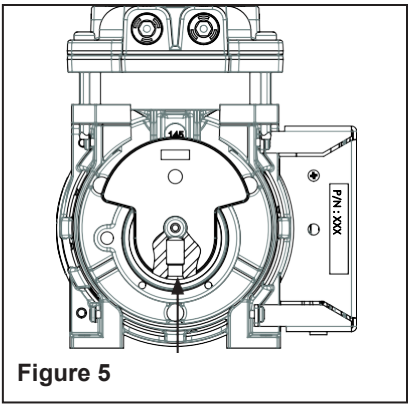


**Figure 5**

**STEP 10**. Rotate the rotor shaft so that flat faces up (12:00). Position piston cup at bottom dead center of cylinder sleeve.

**STEP 11.** Slide the connecting rod assembly onto the shaft until the eccentric face positively stops against the bearing. Align the eccentric set screw with the flat of the shaft. Rotate the eccentric and shaft 90 degrees so the set screw is visible, and tighten set screw to 125 in-lbs.

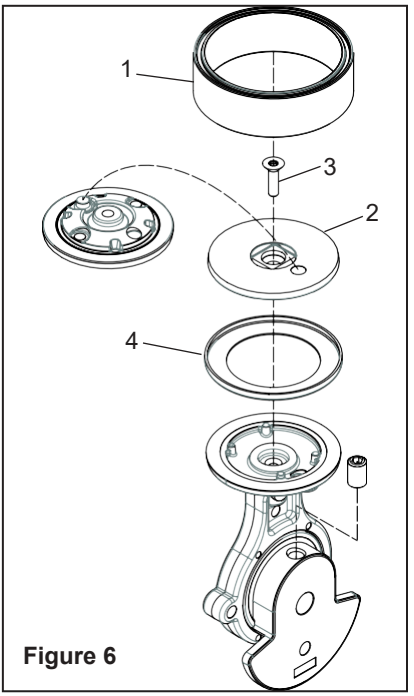


**Figure 6**