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ASA Aeration Compressors & Kits

Installation & Maintenance Owner's Manual

**Thank you for choosing an ASA Aeration System.
Please read the entire instructions prior to assembling and operating**

**Warning: Not recommended for pumping acid, base, organic vapors or explosive gases.
Be sure to properly identify intake and discharge before using pump.**



Warnings



Electrical Shock Hazard

- Disconnect electrical power at the circuit breaker or fuse box before installing this product.
- Install this product where it will not come into contact with water or other liquids.
- Install this product where it will be weather protected.
- This product must be plugged into a socket-outlet in accordance with AS/NZS3000 (the wiring rules) and supplied via an RCD having a rated residual operating current not exceeding 30mA.

Your safety and the safety of others is extremely important. Failure to follow these instructions can result in death, fire, or electrical shock.

We have provided many important safety messages in this manual and on your product. Always read and obey all safety messages.

Correct installation is your responsibility. Make sure you have the proper installation conditions, and that installation conditions and installation clearances do not block air flow. Blocking air flow over the product in any way can cause the product to overheat.

This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, unless they are being supervised and have been instructed on how to use it by a person responsible for their safety. Children should be supervised to ensure that they do not play with the product.

Operation

- Pump only clean, dry air.
- Operate at 0°C- 40°C
- Protect unit from dirt and moisture.
- Do not pump flammable or explosive gases or use in an atmosphere that contains such gases.
- Protect all surrounding items from exhaust air. This 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 pump is oil-less and requires NO lubrication.
- Do NOT use this product with an extension cord. Doing so will result in a hazardous situation and void the warranty.
- Do NOT “hard-wire” install this product. Doing so will result in a void of the warranty.

Warning

- Keep fingers and objects away from openings and rotating parts.
- When provided, motor terminal covers must be in place for safe operation.
- 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.
- Wear hearing protection. Sound level from motor may exceed 70 dB(A).
- Do not start against a vacuum or pressure load.
- Failure to follow these instructions can result in burns, eye injury, or other serious injury.

Start Up

If motor fails to start or slows down significantly under load, shut off and disconnect from power supply. Check that the voltage is correct for motor and that motor is turning in the proper direction. Check the plug, cord and switch for damage. If so equipped, the thermal protection switch has tripped, the motor can restart after cooling.

What is included with your ASA Aeration Kits?

- Compressor with or without cabinet including manifold, Air Filter and Pressure Gauge
- Diffuser/s
- Weighted Hose
- Hose Clamps

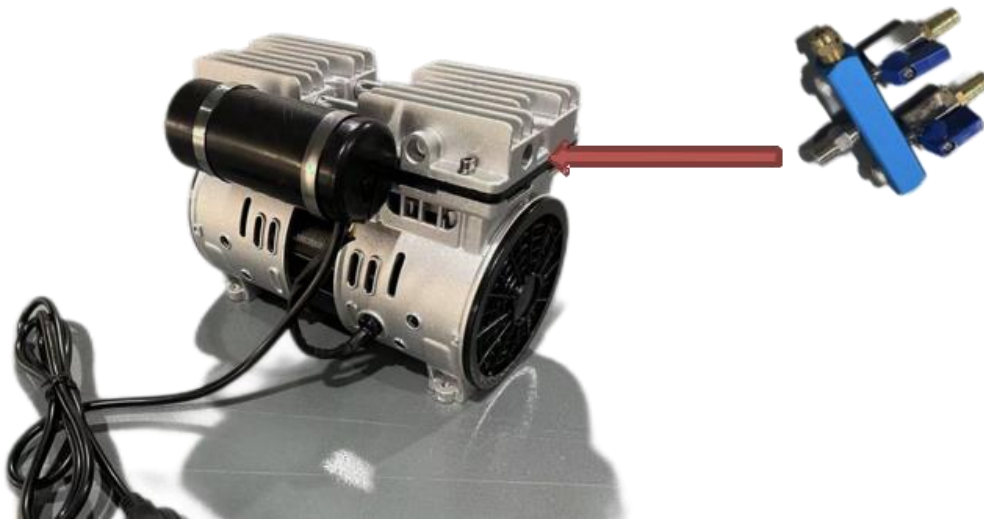
24V Solar Kits – in addition to the products listed above

- 6 x 100w Solar Panels, 6 x Solar Panel Brackets and cable accessories
- Digital Display Controller
- All required cables and connections

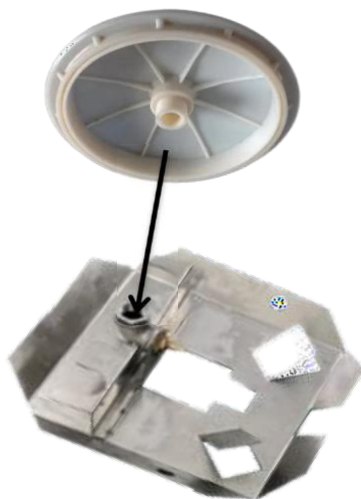
Note: Battery is not included and to be sourced separately. We recommend 2 x 12v 100ah batteries in series and a minimum 600w of Solar Panels with this system.

Assembly

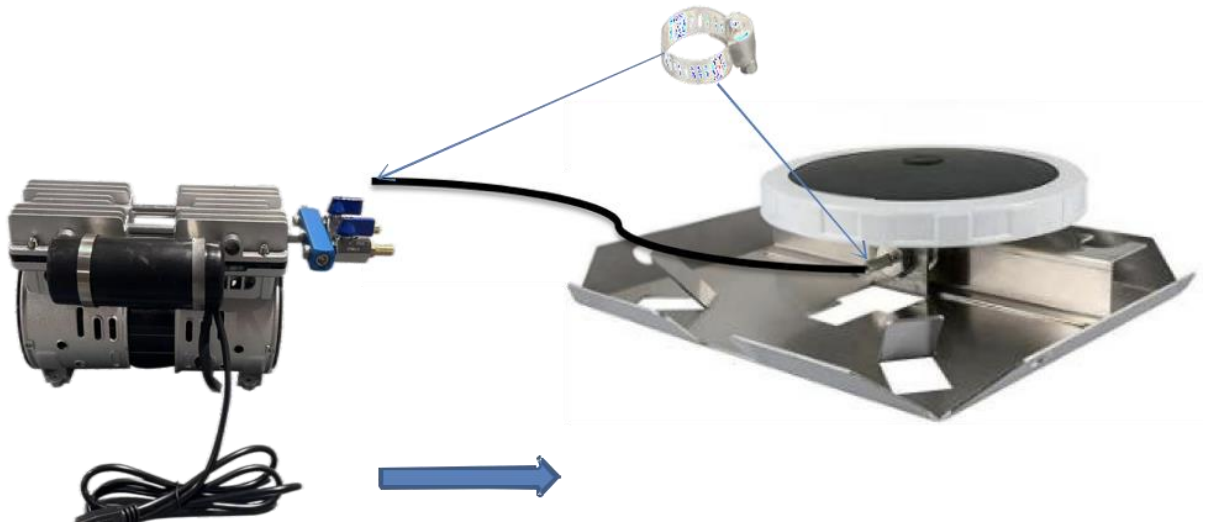
1. Assemble the Air Filter to the inlet and Manifold to the outlet of the compressor. These will already be assembled in the Cabinet Kits.



2. Mount the aeration diffuser to the stainless steel base



3. Connect the Self Weighted Hose to the aeration diffuser manifold, tighten the hose clamp, install the diffuser into position in the lake and run the hose back and connect to the compressor manifold.



Installation

Mounting

This product can be installed in any orientation. Mounting the product to a stable, rigid operating surface and using shock mounts will reduce noise and vibration.

Accessories

This product has an external intake and filtration. Check filter periodically and replace when necessary.

Install relief valve(s) at inlet or outlet or both, to monitor performance. Check Valves may be required to prevent back streaming through the pump.

Cabinet Placement

- If installing a system with a ground mount cabinet, place the cabinet on a level, unobstructed base to ensure the compressor does not overheat.
- A post mounted cabinet should be kept free from high weeds and other obstructions to ventilation system.
- Air compressor enclosures conceal and protect your air compressor. If air compressors get wet or too hot, they will stop working. ASA cabinets are specifically built to house Air Compressors to ensure a seamless fit. These Air Compressor cabinets not only protect your compressor from the elements, they also work against overheating with the help of built in fans and heat-resistant tubing.

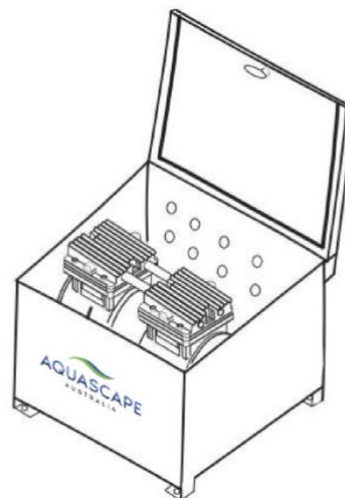
Compressor Placement

It is critical that the air compressors be protected from dust and the weather. If not purchasing with a cabinet, you will need to provide a shelter for your compressor to protect it from the elements.

- Be sure your shelter is adequately ventilated. A cooling fan may be necessary in warmer climates. Cabinet options with fans are available.
- Be sure the compressor does not sit directly on the ground, as the vibration from the motor will cause dust and dirt particles to be pulled into the motor and may cause premature failure. **NOTE** – Avoid areas with excessive dust, this can damage compressor.
- Ensure that compressors are placed where they will not become flooded with water.
- If possible, shaded areas are preferred.
- In areas with limited electrical supply, compressors can be placed long distances from the pond edge. A remote access valve assembly can be fed from the compressor with properly sized tubing.

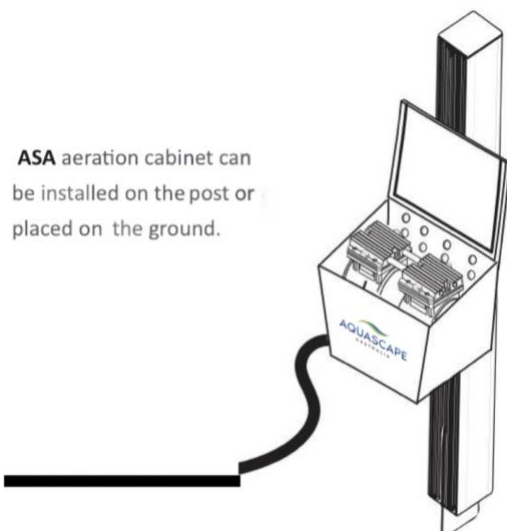
Ground Placement

Choose a location for your cabinet that will allow access to electricity. Make sure that the cabinet is placed far enough back to prevent exposure to water if the water feature could Flood. The cabinet can rest directly on the ground.



Post Mount

The cabinet can easily be attached to a wall or post. Measure and pre-drill holes smaller than your lag screw, then attach cabinet using screws. Tighten screws to hold cabinet securely (you may need a second person to hold the cabinet in place while installing). For mounting, we recommend using screws that are 2" or greater with a washer.



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- Ensure that compressors are placed where they will not become flooded with water.
- If possible, shaded areas are preferred.
- In areas with limited electrical supply, compressors can be placed long distances from the pond edge. A remote access valve assembly can be fed from the compressor with properly sized tubing.

Installing Diffusers From a Boat/Raft: Have one person on shore guiding the airline as a second person, using a boat or raft, extends the airline out to the area of the pond where the diffuser will be located. Gently lower the diffuser to the pond bottom using the weighted airline to ensure that the diffuser remains in the upright position. You may also choose to thread nylon rope through the diffuser manifold and use the nylon rope to gently lower the diffuser until it reaches the pond floor. Release one side of the nylon rope and remove. Repeat until all diffusers are in position.

Installing Diffusers from Shore: For smaller ponds you may choose to install the diffusers from shore. Have one person guide the airline while another walks around the pond with the diffuser. Then thread nylon rope through the diffuser manifold. Use the nylon rope and airline to gently guide the diffuser into place. Once set, release one side of the nylon rope and pull to shore. Repeat until all diffusers are in position.

Adjust Airflow

Bubbles should be noticeable on the pond's surface from the diffuser locations. When more than one diffuser is installed, adjust the airflow valves on the compressor manifold. Once an adjustment is made, you may need to wait several minutes to see the results at the diffuser location(s).

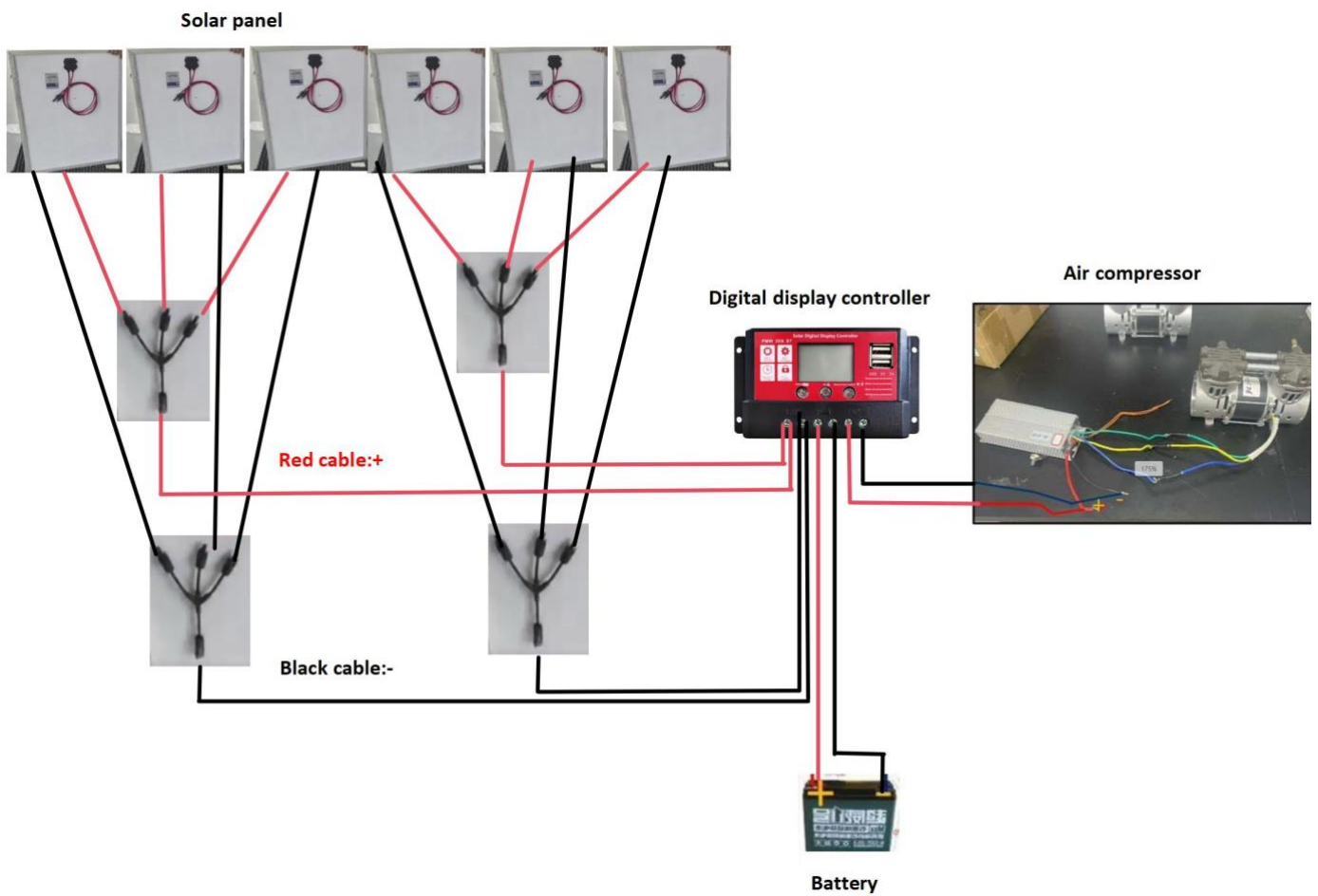
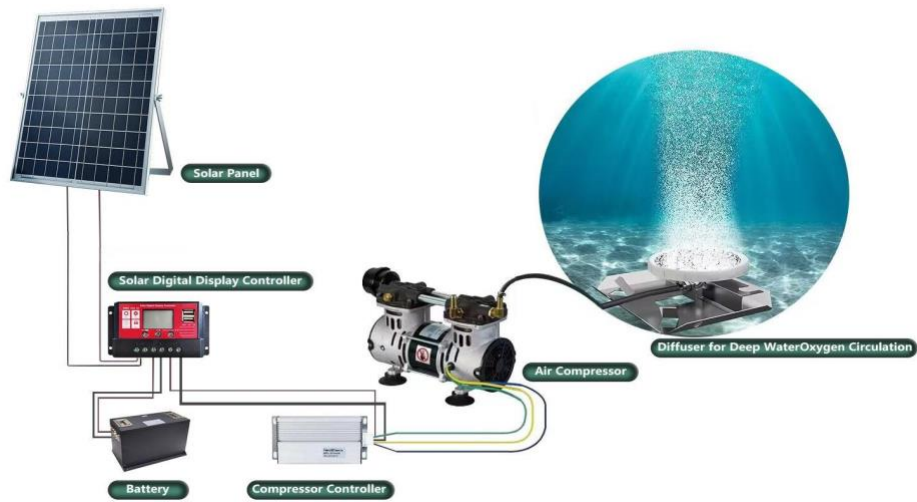
Note: Deeper placement of diffusers and longer runs of airline will require more flow.

Mark Pressure Gauge

Using a permanent marker, mark the current pressure gauge reading. During regularly scheduled filter changes, if the reading is above or below this mark, it may indicate that the system requires maintenance.

24V Solar Installation & Controller Wiring Diagram

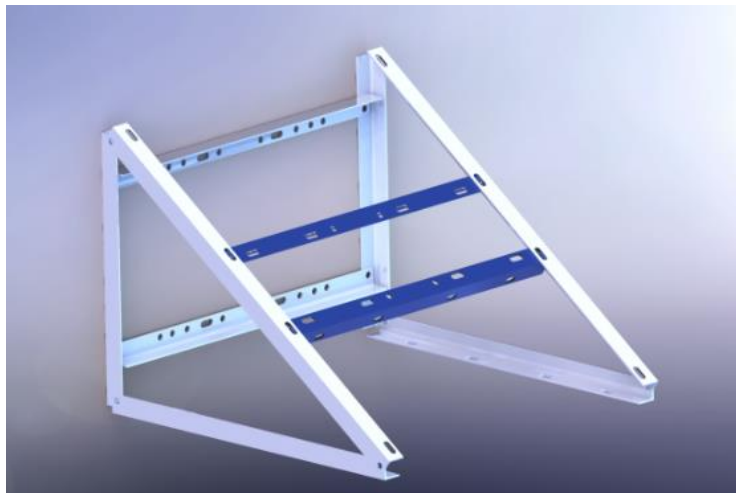
Solar Aeration System Connection Diagram



- First connect the 2 batteries in series, using the cables supplied by connecting the positive from one battery to the negative of the other battery.
- Then connect the cables from each terminal to the control panel.
- Finally connect the Solar Panels together and then to the control panel.
- The Solar Aeration is a dedicated battery system and will not operate unless the battery has been charged from the panels.
- For longer operating times, you will need to increase the overall Solar Panel wattage input by adding more panels or upgrading to larger panels.

Solar Panel Bracket Installation

- Watch the how to build the brackets video on our website:
<https://aquascapesupplies.com.au/collections/lake-aeration-products/products/asa-24v-solar-1-2hp-kit-with-2-way-manifold-in-cabinet-2-x-single-diffusers-2-x-30m-hose-4-x-hose-clamps-solar-panel-bracket-and-digital-controller>
- Position and secure the Solar panel brackets into position and then mount the panels to receive maximum sunlight. North facing panels will provide maximum solar output in Australia.



Maintenance

ASA Aeration Systems are designed for low-maintenance and require minimal scheduled maintenance. Cabinet inlets and outlets should be kept free of debris and weed growth allowing normal ventilation.

Keep your compressor and intake filter clean. Any excess dust and debris on motor or air intake may significantly shorten the life of the compressor.

Disconnect electrical power supply cord before performing maintenance on this product. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid hazards.

Always use parts that are supplied or approved by Aquascape Australia. Use of other parts may result in poor performance and could create a hazardous situation.

******Local environmental conditions may require more frequent maintenance.

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.

It is your responsibility to:

- Regularly inspect product in order to maintain proper operation.
- Make sure that pressure is released from product before starting maintenance.

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

Check intake filter after first 500 hours of operation. Clean filter and determine how frequently filter should be checked during future operation to assure the product's performance.

1. Disconnect electrical power supply to unit.
2. Vent all air lines.
3. Remove filter cover.
4. Check filter felt. Replace felt if it is covered with contamination or shows signs of increasing differential pressure.
5. Re-install felt and filter cover.

EVERY 6-12 MONTHS – Air Filter: Clean/replace air filter.

Cooling Fan: Check to ensure cooling fan is operating. Hot air should be pulled from the cabinet, not blowing in.

Pressure Gauge: Mark pressure gauge upon initial start-up. Check to verify pressure has not significantly risen above or dropped below initial reading. Normal operation will register approximately 1 PSI for every 600mm of depth.

Pressure Relief Valve: Check to ensure air is not escaping from valve and replace if needed.

EVERY 18-24 MONTHS – Compressor Rebuild Kit: It is recommended to install a Rebuild Kit every 18-24 months to ensure optimum performance.

EVERY 24-36 MONTHS – Membrane Diffusers: We recommend inspecting and/or cleaning the membrane diffusers every 24-36 months, or anytime the pressure gauge reading is significantly higher than normal or there is a reduction in bubbles from the diffuser. To clean, use a De-scaler and a soft cloth.

Rebuild Kit installation – Youtube video tutorial -

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

1. Remove the side cover
2. Remove the cylinder head
3. Heat the screw in the middle of the piston ring with a heat gun
4. Remove the middle screw
5. Remove the old piston rings and cylinder
6. Turn the fan blade from the side and adjust the connecting rod to the highest position
7. Position the new piston ring on the pressure plate
8. Ensure the mounting direction of the pressure plate is the same as the other side
9. Align the bump on the bottom of the pressure plate with the slot on the bottom
10. Use anaerobic glue to coat the screw in the middle
11. Firmly tighten the screw in the middle
12. Check that the piston rings are securely installed
13. Heat the piston ring (about 60°C) to soften
14. Shrinking the piston ring into shape
15. Replace a new cylinder over the piston ring
16. Checking whether the sealing gasket is missing under the valve plate
17. Align the screw point under the valve plate with the groove below
18. The position of the exhaust hole on the valve plate as shown by the arrow. Pay attention to the sealing gasket.
19. Place the cylinder cover back on and tighten screws (pay attention to the position of the elbow)
20. Rotate the side fan blades to check whether they hit the cylinder
21. Install the side cover and start the machine

Limited Warranty

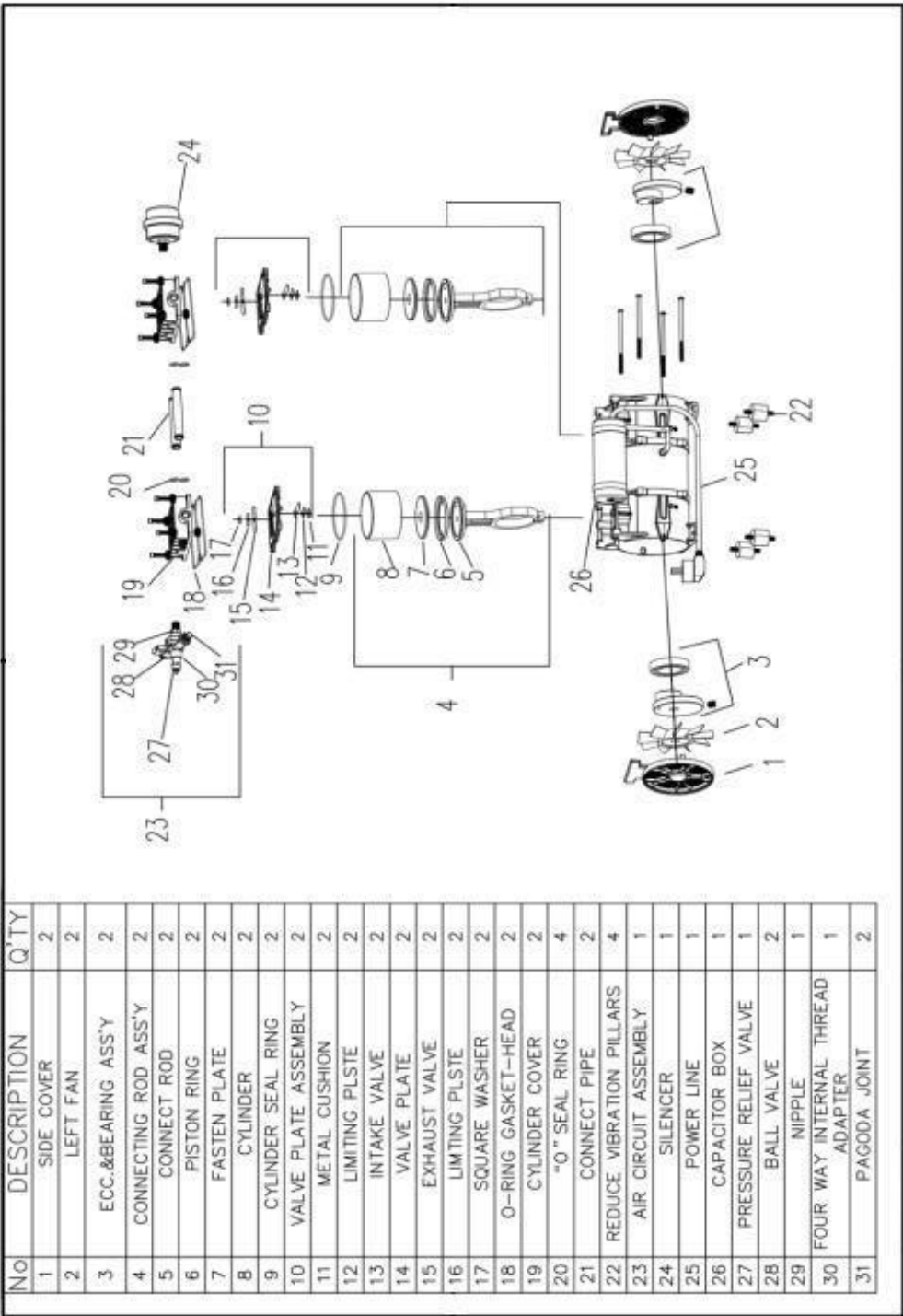
This limited warranty is against any mechanical or material defects for a period of (see below) from the date of purchase. Warranty only covers properly installed and maintained units.

- Compressors carry a 2 year warranty - covered by manufacturer's warranty (consult owners manual for full details).
- Air diffusers have a 5 year warranty. Use only in fresh water, **NOT for brackish or salt water**.
- Weighted tubing has a 5 year warranty.
- Solar panels - 5 year warranty (pay attention to the usage environment and be careful not to block them during the process. Long-term blockage will produce a hot spot effect)
- Solar controllers – 1 year warranty
- The limited warranty does not cover normal wear and tear, nor any deterioration suffered through overloading, improper use, negligence or accident. Similarly, any modification made by the purchaser to the product will cause the warranty to be null and void.
- All returned items will be inspected to determine cause of failure before warranty is approved.
- Warranty does not cover any cost associated with the installation or removal of the product subject to warranty claim.
- Contact Aquascape Australia or your supplier for all warranty claims. No warranty claims will be honoured without the original invoice or receipt.
- When returning for a warranty assessment, please ensure the product is properly packaged and insured for the replacement value. Damage due to improper packaging is the responsibility of the sender.
- The manufacturer or supplier shall not be held liable for any damages caused by defective components or materials of this product; or for loss incurred because of the interruption of service; or any consequential/incidental damages and expenses arising from the production, sale, use or misuse of this product.
- The manufacturer or supplier shall not be held liable for any loss of fish, plants or any other livestock as a result of any failure or defect of this product.
- Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Maintenance Notes

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Compressor Parts Diagram




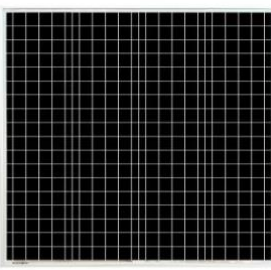
Service & Replacement Parts

Part Number	Item Description	Part Number	Item Description
1	SIDE COVER	12	LIMITING PLATE
2	LEFT FAN	13	INTAKE VALVE
3	ECC.& BEARING ASS'Y	14	VALVE PLATE
4	CONNECTING ROD ASS'Y	15	EXHAUST VALVE
5	CONNECT ROD	16	LIMITING PLATE
6	PISTON RING	17	SQUARE WASHER
7	FASTEN PLATE	18	O-RING GASKET-HEAD
8	CYLINDER	19	CYLINDER COVER
9	CYLINDER SEAL RING	20	"O" SEAL RING
10	VALVE PLATE ASSEMBLY	21	CONNECT PIPE
11	METAL CUSHION	22	REDUCE VIBRATION Pillars

AERATOR PARTS

NO	ITEM NAME	PICTURE
1	Single Diffuser	
2	Double Diffuser	
3	30.5m x 3/8" Weighted Aeration Tubing	
4	Air Filter	

Solar DC Aeration System Range

AERATOR PARTS		
NO	ITEM NAME	PICTURE
1	Digital display controller	
2	ASA Solar Panel 100W for 24V Aeration Systems	
3	ASA 100w Solar Panel Bracket	