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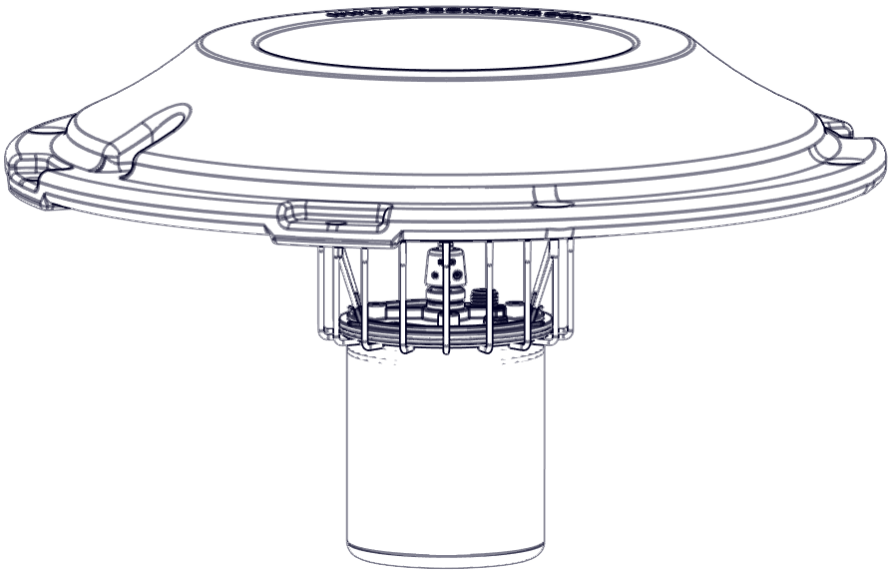

SURFACE AERATOR

2400EAF, 3400EAF, 4400EAF

Operation & Maintenance Manual

CE

Document number 884150
Document version 2022.1.0

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UNIT SPECIFICATIONS

OVERVIEW

Model	HP	Voltage / Phase / Hz	Amperage	Locked Rotor Amps	Suggested Pond Size (m^2)	Min. Depth of Operation
2400EAF	1/2	230 / 1 / 50	2.2	5.3	2,000	38cm
3400EAF	3/4	230 / 1 / 50	3.5	9	3,000	45cm
4400EAF	1	230 / 1 / 50	3.7	10	4,000	49cm

WIRE SIZE

	Cord Length			
	10m	30m	60m	90m
2400EAF	1.5mm^2	1.5mm^2	2.5mm^2	2.5mm^2
3400EAF	1.5mm^2	1.5mm^2	2.5mm^2	2.5mm^2
4400EAF	1.5mm^2	1.5mm^2	2.5mm^2	4mm^2

SAFETY FIRST

WARNINGS:

Moving Machinery

Shock Hazard

- NEVER enter the water with the electrical equipment connected and/or in operation.
- All electrical equipment must be Ground fault/leakage current protected. Use of a Ground fault protective device (GFI, RCD, RCBB, or RCBO type device) is required as directed by local and national codes.
- Stay clear of all moving parts.
- NEVER run the unit out of water. This will damage the equipment and pose a danger to the operator.
- Use extreme caution around water, especially cold water.
- NEVER lift or drag the unit by the power cord. Always use the ropes or mount to remove it from the water.
- Do not use waders in deep water or in areas with drop-offs, drastic slopes, or soft bottom material.
- Do not use boats that tip easily for unit installation (such as canoes).
- Follow all boating safety rules and regulations, including wearing a Personal Flotation Device.
- The unit is supplied with an internal grounding conductor. To reduce the risk of electrical shock, be certain that the unit is plugged in/connected to a circuit with ground fault protection.
- 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.

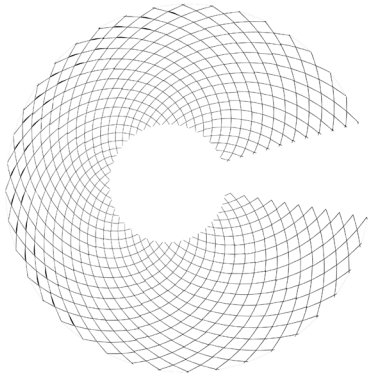
SUGGESTED TOOLS & SUPPLIES

- #2 Phillips-head screwdriver
- 3/8" socket or wrench
- 9/16" socket or wrench
- Anchors or stakes for installation
- 12" pieces of 1" galvanized pipe (optional weights for alternative anchoring)

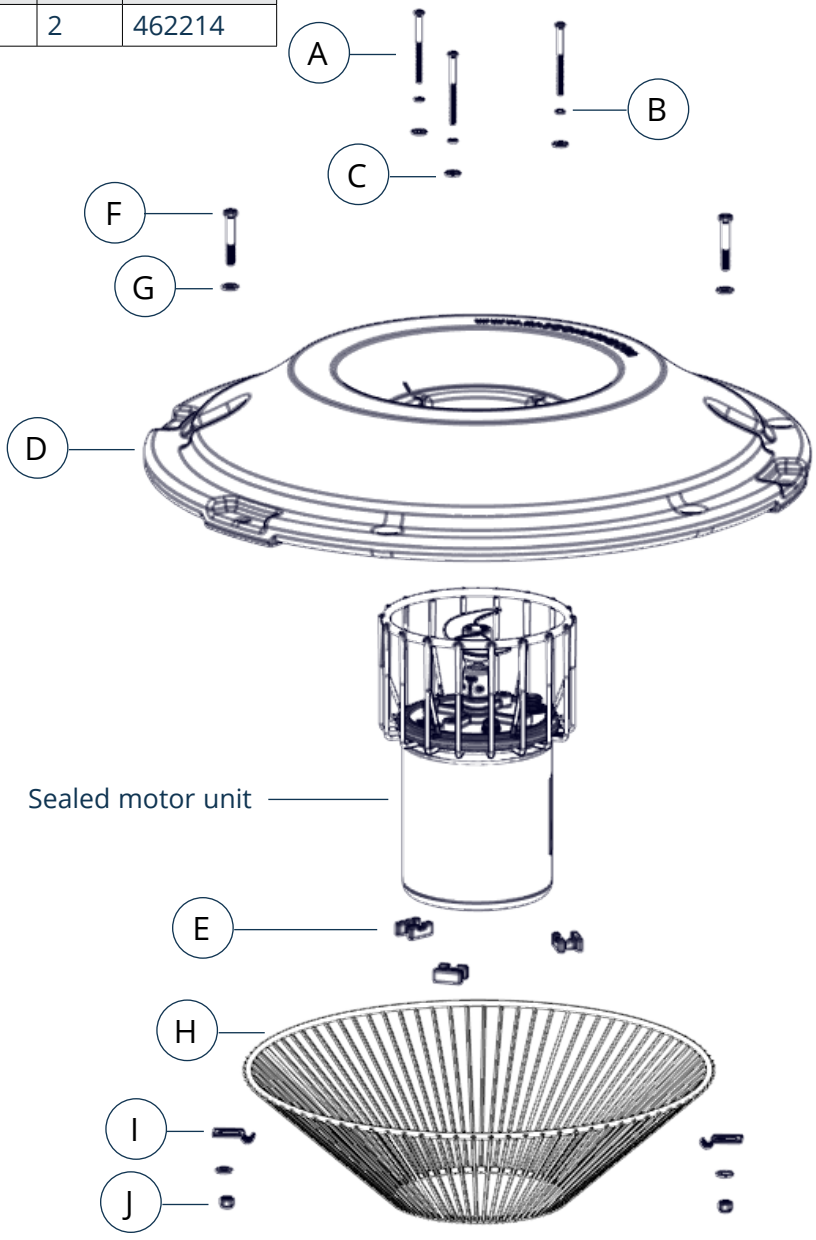
PARTS INCLUDED

Item	Description	Qty	Part No.
A	1/4"-20 x 3-1/2" screw	3	251210
B	1/4" split lock washer	3	840537
C	1/4", 3/4" OD flat washer	3	251300
D	Float	1	242003
E	Float retaining clip	3	222995
	Optional Bottom Screen Assembly		
F	3/8"-16 x 2-1/2" hex head screw	2	820095
G	3/8" flat washer	4	462216
H	Bottom screen	1	990162
I	Bottom screen clip	2	223240
J	3/8"-16 nut	2	462214

3 mooring ropes

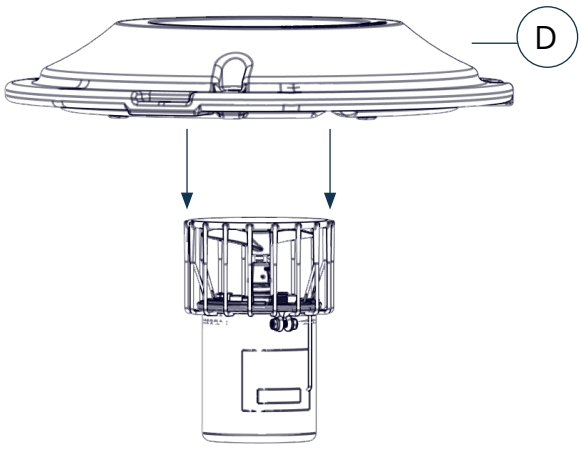


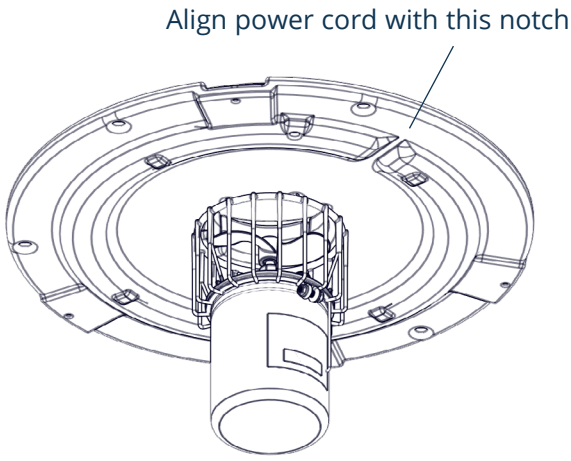
Optional mesh screen



ASSEMBLY INSTRUCTIONS

1





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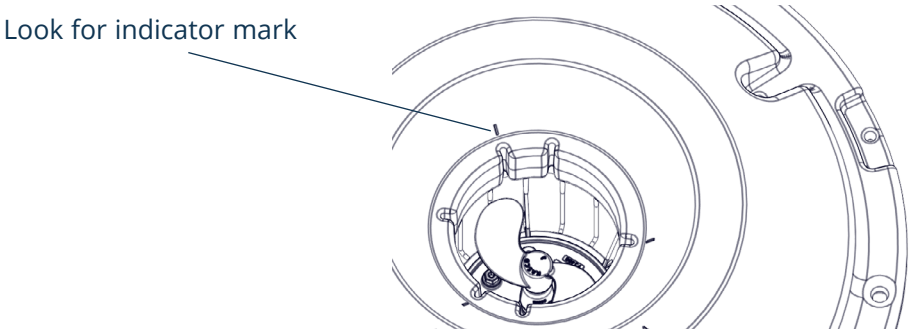

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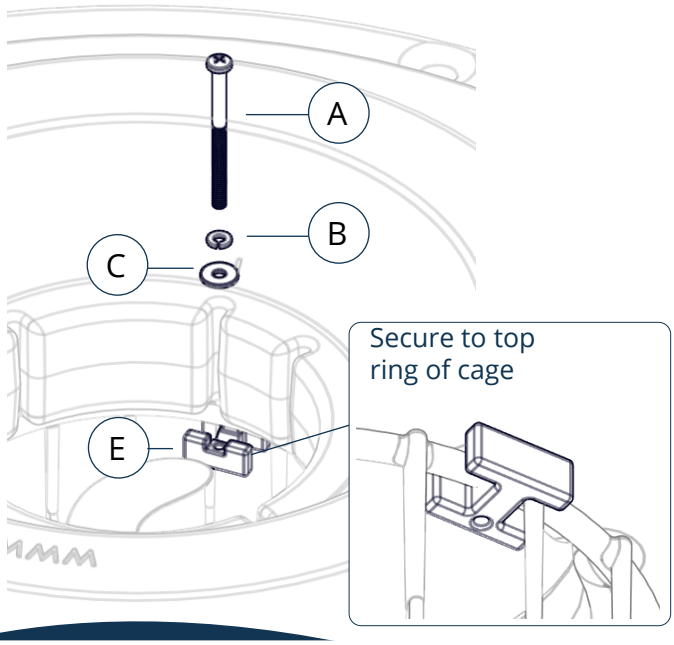

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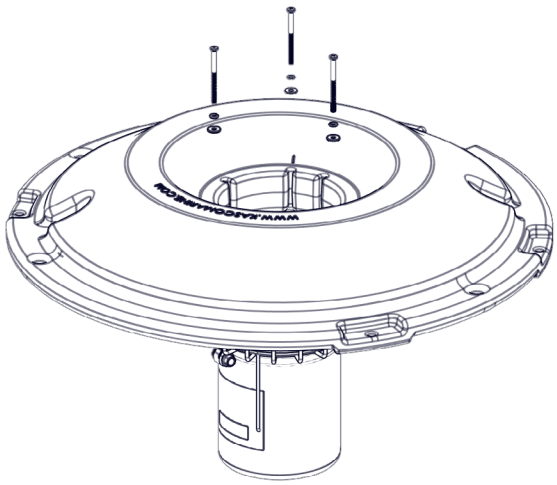
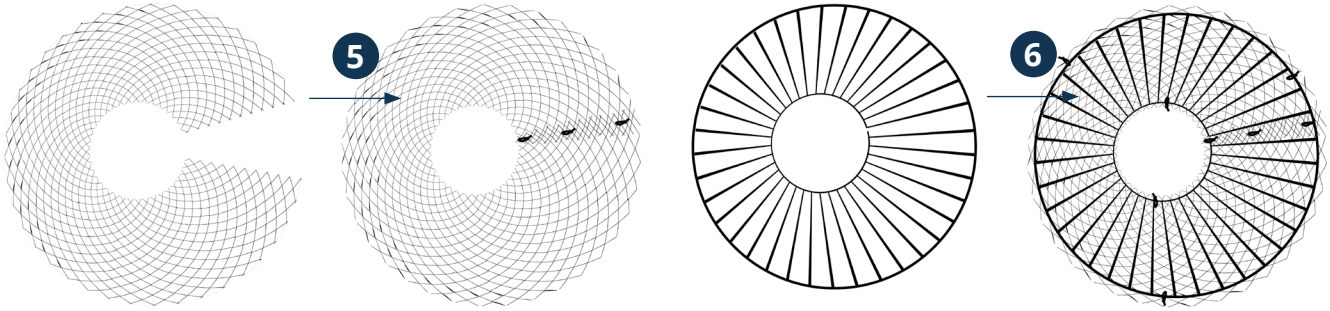
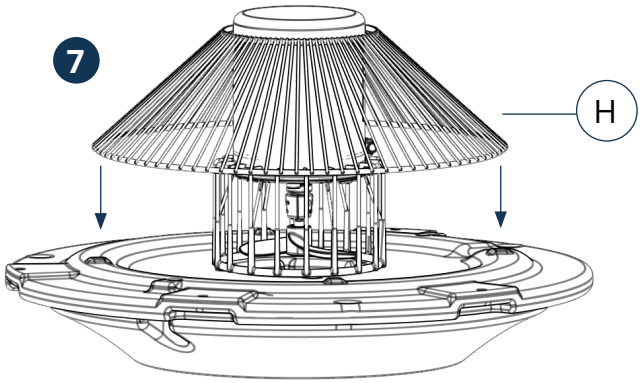


ASSEMBLY INSTRUCTIONS (CONT.)

Optional: wrap mesh around bottom screen and secure with zip ties.





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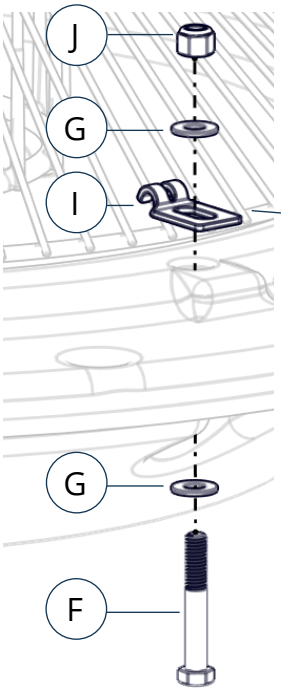
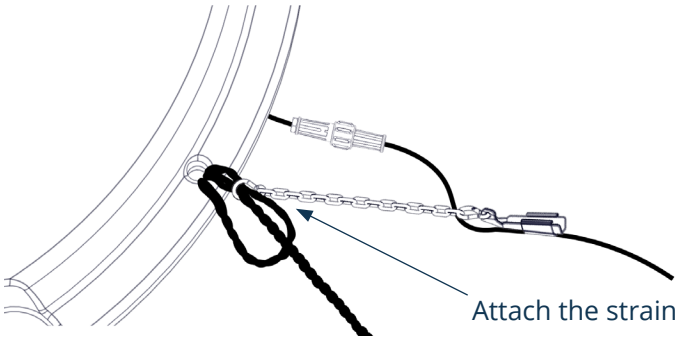


Position the clip flanges on either side of a vertical bar

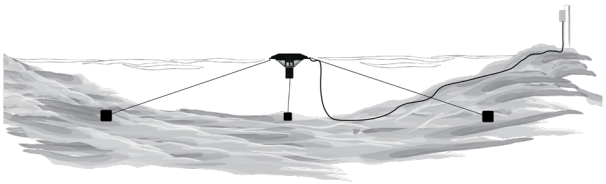
INSTALLATION INSTRUCTIONS



Attach the strain relief to the line closest to the cord.

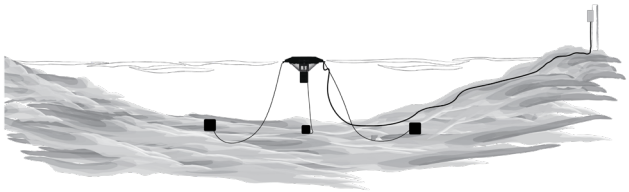
Correct anchoring

Mooring lines are proper length and taut between unit and anchors (at least 3 feet from the float for every foot of water depth).

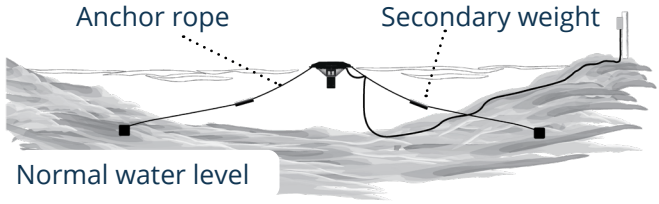


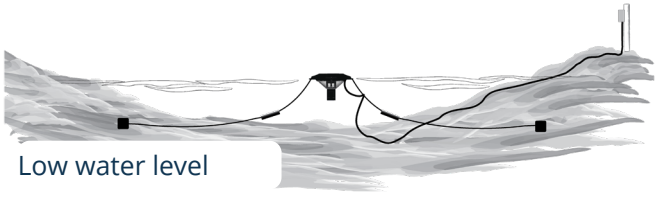
Incorrect anchoring

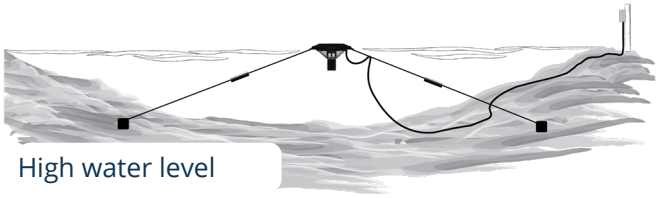
Mooring lines are too short or loose between unit and anchors.



Alternate Installation







MAINTENANCE RECOMMENDATIONS

Proper Installation

Proper installation of equipment will include a power source with ground fault protection. Ground fault protection devices can also alert you to electrical leaks in the equipment. It is extremely important to test the device upon installation and every month thereafter to ensure proper operation. In the case of consistent trips of the ground fault device, disconnect the equipment and remove it from the water. Inspect the power cord for damage

ALWAYS DISCONNECT POWER BEFORE PERFORMING MAINTENANCE.

Observation

Observe equipment in operation on a regular basis (daily, if possible). If you observe a change in performance, disconnect the equipment from the power source and inspect for any material clogging the system or wrapped around the motor shaft. To avoid damage to the equipment, it is important to remove clogs as soon as possible. ALWAYS DISCONNECT POWER TO THE UNIT BEFORE ATTEMPTING TO REMOVE CLOGS.

Cleaning

Buildup of algae, calcium, barnacles, or other matter on the motor housing creates insulation and blocks heat transfer, so to prevent overheating, it is important to clean the unit. In warmer regions or in other areas prone to buildup such as this, inspect and clean the equipment regularly. In all regions, inspect and clean the equipment at least once a year. It is easiest to clean the unit immediately after removing it from the water, when the equipment is still wet. If you use a power washer, avoid hitting the mechanical seal area directly.

Unit Storage

Store the equipment with the cage down if it is going to be out of the water for long periods of time, such as during off-season storage. Seals on units that sit upright on a shelf for extended periods of time are more likely to dry out. Storing upside down or sideways will ensure oil is reaching the seals and help to prevent drying.

Sacrificial Anode

All units include a sacrificial anode installed on the shaft to protect against corrosion and electrolysis. Replace the anode if it is reduced to half the original size or if it is white in color. Corrosion from electrolysis most commonly occurs in saltwater or brackish water, but it is important to check the anode in all installations at least every two to three months.

Seal And Oil Replacement

This is a sealed motor assembly. Like brake pads on a car, seals wear out over time. Replace the seals and change the oil after three years to increase the motor's longevity and to avoid more expensive repairs.

Other Repairs

Seal replacement and all other repair services should be performed at
authorized repair center.

Please keep the original box for maintenance shipping.

TROUBLESHOOTING TIPS

ALWAYS DISCONNECT EQUIPMENT FROM ELECTRICAL SOURCE BEFORE SERVICING

SERVICE SHOULD ONLY BE PERFORMED BY A QUALIFIED TECHNICIAN OR ELECTRICIAN

Ground fault/earth leakage protection (RCD) tripping

Typically indicates electrical current is leaking to earth (ground).

- Consult a qualified service technician or electrician to address the issue.

Possible causes:

- Control panel damaged or defective ground fault protection device (RCD, GFI)
- Water contamination in the motor unit or Electrical motor damage
- Power cord damage or water leak at quick disconnect

Collect this information for the electrician:

- How long until the RCD trips after resetting?
- Does the trip time vary or repeat the same interval of time?
- Does it trip randomly or same time of day?
- How many times has it tripped?
- Any electrical problems in the area recently, or changes made to site wiring?

Unit appears to run slowly

Typically indicates low voltage to the motor or motor damage.

- Contact a qualified service technician or electrician to measure for proper voltage and motor amps while the motor is operating. Voltage drop should be no more the 5% from power source to motor control panel.

Unit hums and will not start

Typically indicates a motor capacitor problem (single phase motor), a motor controller problem (3 phase), or debris preventing the unit from starting.

- Turn the unit off and disconnect from power source to prevent motor damage.
- Remove the equipment from the water and inspect for debris or damage.
- Remove the debris and clean the equipment.
- If there is no debris in the unit and it will not start. Turn the unit off and contact a qualified service technician to address the issue.

Unit cycles on/off by itself

Typically indicates the motor is overheating. The Motor overload (single phase motor) will automatically reset once cooled down and restart the motor.

Possible causes:

- Low water level, build-up of material on motor can preventing heat dissipation, or debris around the motor shaft or propeller area creating excess motor loading.
- Turn the unit off and disconnect from power source to prevent motor damage.
- Remove the equipment from the water and inspect for debris or damage.
- If there is a build-up on the unit and motor can, remove the debris and clean the equipment.

Unit flow/performance fluctuates

Typically indicates debris is clogging the unit and preventing water flow into the unit.

- Turn the unit off and disconnect from power source.
- Remove the equipment from the water and inspect for debris or damage.
- If there is build-up on the unit and motor can, remove the debris and clean the unit.

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