aquaLOGIC
Aquatic Design
Manufacturing & Integration

CYGNET

Titanium Aquatic Heater

Installation Instructions & Operating Manual

Rev 8-2019



Important Notes!

Thank you for purchasing the CYGNET Aquatic Heater manufactured to the highest standards.

To ensure your new heater will give years of trouble free service **please carefully read the following instructions.**

Incorrect installation will affect your warranty.
Do not discard this manual, please retain for future reference.

Product Overview

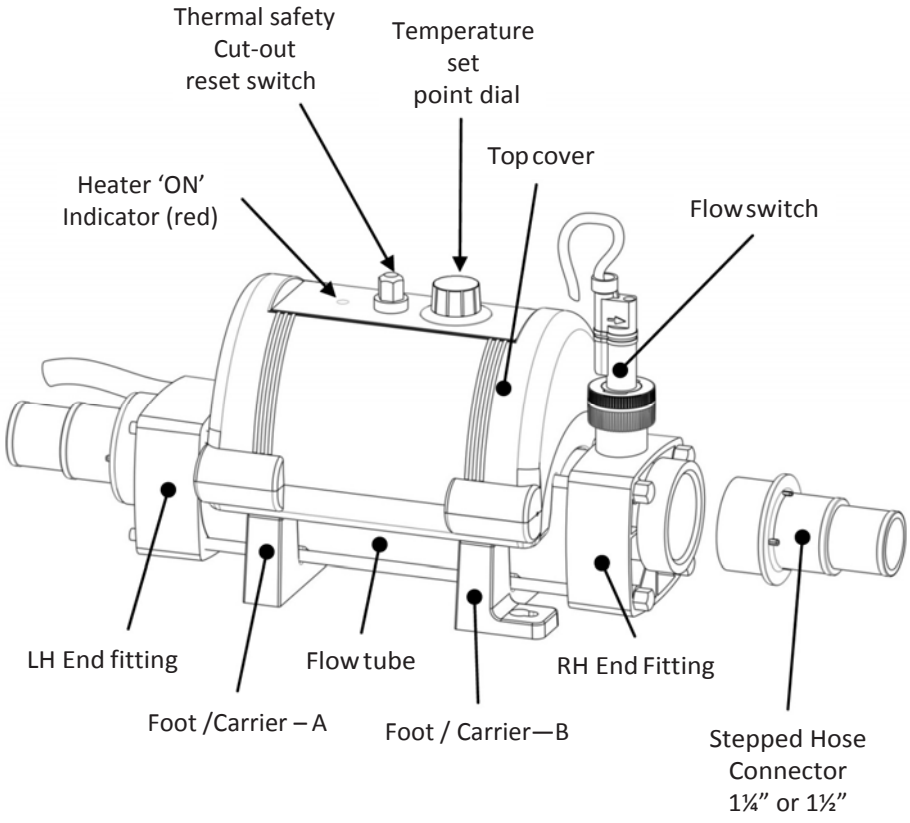


Fig 1.

Positioning

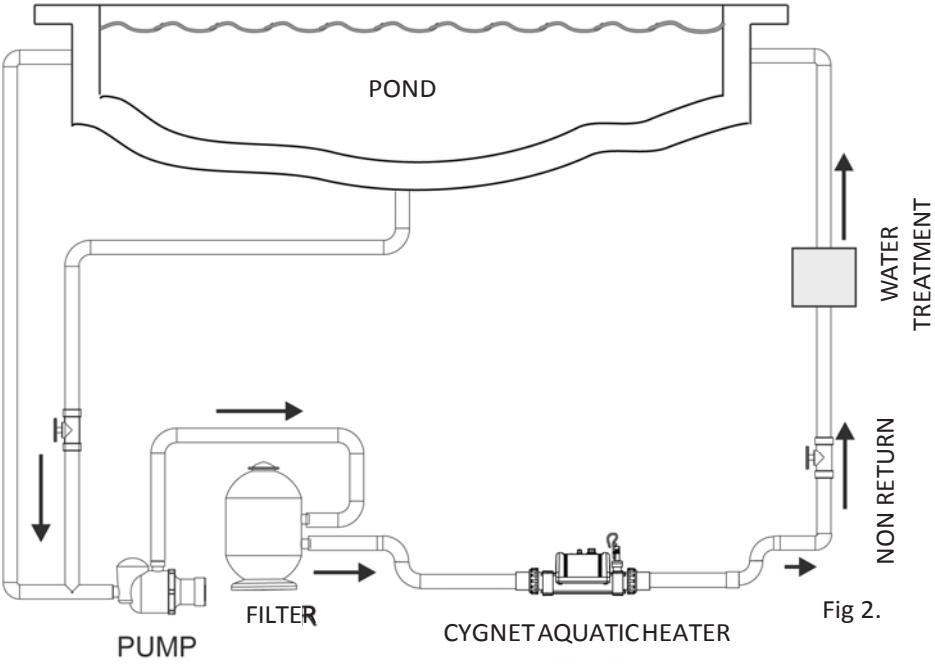


Fig 2.

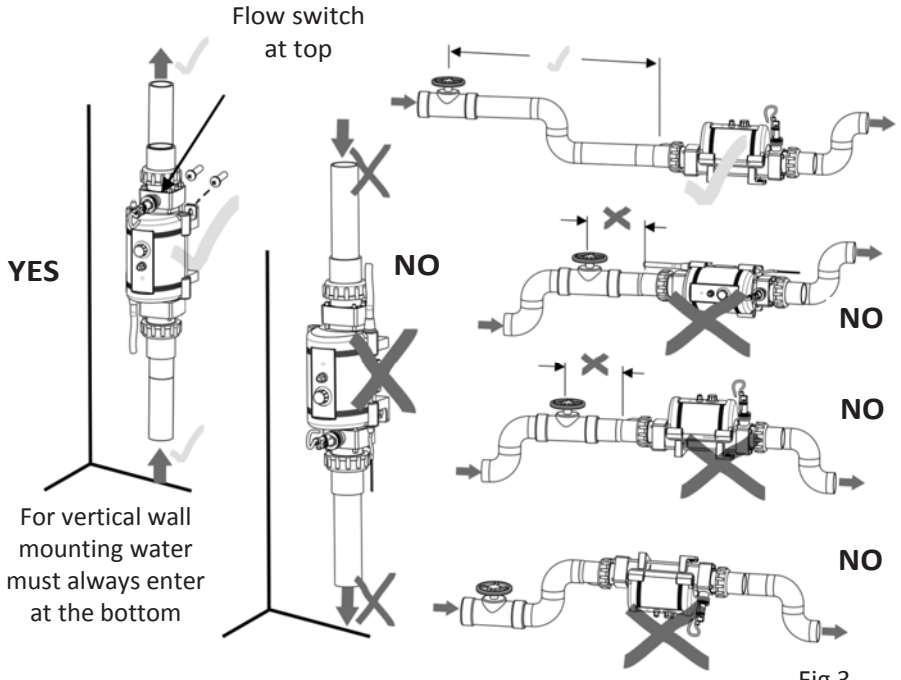


Fig 3.

Positioning *(continued)*

Your heater should be horizontally or vertically sited allowing sufficient space for pipe connections and wiring, it should be securely screwed to a base or wall.

The heater should be installed at a low point in the filtration system. It must be positioned downstream of (after) the filter and upstream of (before) any dosing or other water treatment plant. (see Fig.2)

Pipe Work

It is essential that the plumbing connecting to and from the heater has a minimum size of 1¼".

To assist correct air purging and to ensure the heater remains completely full of water during operation, the return pipe which carries the water back to the pond must incorporate a safety loop or 'kick-up' in the pipe as close as possible to the heater (see fig 3).

NOTE: When coupling to a flexible hose a safety loop can simply be created by routing the hose up and over an obstacle. Remember to use hose clamps to securely fasten all connections.

Weather Protection

The heater must be installed within a dry weather proof enclosure.

CAUTION! *If the heater is not used during winter months it must be drained to prevent frost damage.*

Electrical Connection

IMPORTANT! *All heaters have been supplied pre-wired with a power cord and require a Ground Fault Interruption Circuit (GFIC) outlet for safety protection.*

If the heater is hard wired in to a power box, it must be installed in accordance with the country / regional requirements and regulations. In any event the work must be carried out by a qualified electrician, who will provide a certificate of conformity upon completion of the work.

It is essential that the power supply to the heater is protected by a GFIC (Ground Fault Interruption Circuit). If in doubt consult a qualified Electrician.

Power Requirements

115V 1 Phase-Power Input	Load Amps
0.5-kW	4.5
1-kW	9
1.5-kW	13

Flow Requirements

The flow rate of water into the heater **must not exceed 17,000 litres per hour** (17m3/h / 4500 US gallons/hour) A higher flow rate **will** require the installation of a bypass to prevent damage to the heater elements. The heater will not operate with a flow rate below 1,000 litres / hour or 10 US gallons/hour

Water Quality

The water quality **must** be within the following limits:

PH 6.8 - 8.0 TA (Total alkalinity) 80—140ppm (parts per million)
TDS (Total Dissolved Solids) / Calcium hardness 200 - 1,000ppm

The Cygnet Aquatic heaters are suitable for use with salt water ponds with a salt concentration up to 8000ppm (8g/litre).

Water chemistry is complicated if in doubt seek expert advise.

Operating Instructions

Upon completion of the installation, run the water-circulating pump to purge the system and heater of air (i.e. remove any trapped air in the system and heater). **TIP:** You can encourage air out of the heater flow tube by gently elevating the exit port of the heater when the pump is running. The heater will only switch 'On' (red light indicator illuminated) when the following criteria are met ie:

- Water circulating pump is 'On' delivering in excess of 1,000 litres / hour (1m3/h or 220 gallons/hour)

- Required temperature is set to a higher value than the water temperature.

Useful advice: To reduce running costs and speed up the heating process, insulate the pond wherever possible.

Quick Function Test

Observe the main electricity meter when the heater is on (ie: red light 'On') and then observe it again when the red light is off. The test should show that the meter is recording more electricity being used by the heater when the red light is 'On'.

It is impossible for an electric heater to waste energy, if it is drawing power then that power will be turned into heat that will be transferred to the water.

Accurate Function Test

If a more accurate test is required to confirm that your heater is delivering the specified heat output, two electricity meter readings will need to be taken from the properties main electricity meter, with an exact one hour interval (ie: take one meter reading and then a second reading exactly one hour later) then by subtracting the first reading from the second reading the number of units (kilowatts / kW) consumed can be calculated.

Note that your heater is also rated in kW hours. The pond pump and heater will need to be running continuously during the test (ie: with the heater red light 'On') To avoid inaccurate results when performing this test, it is important to refrain from using other high current consuming appliances in the property (such as tumble dryer, showers, cookers etc).

A large aquatic pump of 1 horsepower will draw less than 1-kW in a one hour period. The conclusion of the test should prove that for example 3-kW heater and a ½ horsepower pump will draw between 3.3-kW ~ 3.5-kW in one hour. It is impossible for an electric heater to waste energy, if it is drawing power then that power will be turned into heat that will be transferred to the water.

Trouble Shooting

HEATER WILL NOT SWITCH 'ON'
In most cases this will be the result of one of the following points not being met.

Possible cause 1: *The required temperature has been achieved.*
To confirm: increase the set point value by turning the temperature set point dial to a value greater than the current water temperature.

Possible cause 2: *The 'Thermal safety cut-out' has tripped.*
Remedy: Remove button cover and press red button to re-set (see fig 4) If a positive click is felt, the cause of the tripping must be investigated and could be caused by a debris build-up or air pocket trapped inside the flow tube of the heater.

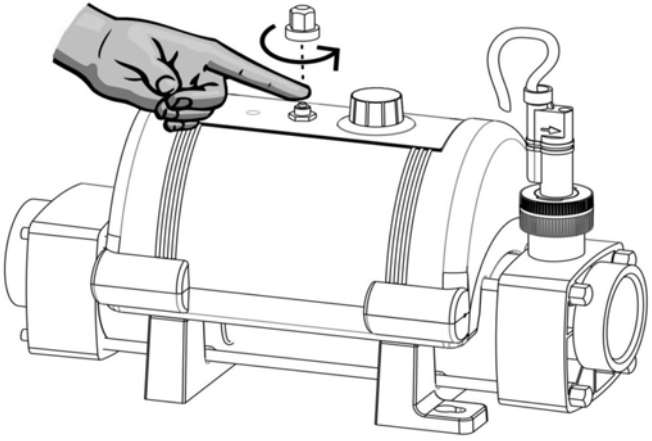


Fig 4.

Possible cause 3: *Insufficient flow.*
If using a cartridge filter: Confirm this by running the system with the cartridge removed from your pump and filter unit, this will supply the heater with the maximum flow rate your unit is capable of. If the heater then switches 'On' (ie: red light 'On') a blocked cartridge can be confirmed to be the cause. The cartridge should be cleaned or replaced.
If using a sand filter: Check the pressure indicator on your sand filter and back wash if necessary.

Note: In some cases the 'Thermal safety cut-out' tripping and a low flow rate can be linked ie: when a filter becomes choked air can be drawn into the filtration system and become trapped inside the heater, so causing the thermal cut-out to trip.

General Trouble Shooting

THE FLOW TUBE DOES NOT FEEL WARM

Due to the high efficiency of your electric heater no warmth should be detectable from the flow tube of the heater.

The most likely causes of the flow tube feeling warm are:-

Possible cause 1: *The heater has been positioned in direct sunlight.*
Possible cause 2: *An air pocket is trapped inside the heater particularly if the flow tube feels warmer at the highest point (as air rises).*

THE WATER ENTERING MY POND DOES NOT FEEL MUCH WARMER

The temperature gain of the water after it has passed through the heater will be directly proportional to the volume of water being pumped in relationship to the power output of the heater.

For example: A 6-kW heater, when connected to a 4,000 litre / hour (4m3/h) pump, will produce a lift in temperature of approximately 1.2°C (almost undetectable to the human hand) however, as the water being heated is re-circulated from a single body of water, the time required to heat it remains unaffected by the volume of flow. A popular misconception is that slowing down the flow rate will speed up the heating process.

RoHS Compliance Statement

Elecro Engineering Limited certify that our Electric Aquatic Heater Range complies in accordance with RoHS Directive 2002/95/EC on the restriction of hazardous substances.

Waste of Electrical / Electronic Equipment

Do Not dispose of this product as unsorted municipal waste.



This symbol on the product or on it's packaging indicates that this product should not be treated as household waste. Instead it should be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more information, please contact your local Civic office, your household waste disposal service or the retailer where you purchased the product.

Guarantee

Your heater is guaranteed for 1 year from the date of purchase against faulty workmanship and materials.

The manufacturer will replace or repair, at its discretion, any faulty units or components returned to the company for inspection. Proof of purchase may be required.

The manufacturer will not be liable in cases of incorrect installation of the heater, inappropriate use or neglect of the heater.

CE Declaration Of Conformity

The manufacturer declares that the herewith products or ranges

ELECTRIC AQUATIC HEATER RANGE

Are in conformity with the provisions:
of the ELECTROMAGNETIC COMPATIBILITY directive 89/336/EEC, as amended 93/068/EEC. Controlled by AEMC Measures laboratory technical report no P96045T
The harmonised standards have been applied: EN 55014 - EN 55104

EN 55011
EN 55022
CEI 801-4
CEI 801-2
CEI 801-3

of the LOW VOLTAGE directive 73/23/EEC.
The harmonised standards have been applied

EN 60335-2

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