Chillers & Titanium Heat Exchangers

ALB-84 thru 335 HEATER INSTALLATION INSTRUCTIONS

5-26



IMPORTANT SAFETY AND OPERATING INSTRUCTIONS

WARNING

THIS HEATING DEVICE USES LP OR NATURAL GAS FOR OPERATION. SAFETY PRECAUTIONS MUST BE OBSERVED. REFER TO THE ATTACHED "RAYPAK INSTALLATION MANUAL" FOR GAS PRECAUTIONS AND WARINGS.

THE FOLLOWING TO AVOID ELECTRICAL SHOCK OR SERVERE DAMAGE TO THE HEATER.

1. **DO NOT ALLOW WATER TO DRIP, SPRAY OR ALLOW ROOF RAIN WATER TO FALL ON TO UNIT.**
2. **TURN OFF THE POWER IMMEDIATELY AT THE SOURCE (CIRCUIT BREAKER) IF: THERE IS AN ELECTRICAL PROBLEM, HEATER HAS BEEN SUBMERGED OR INTERNAL WATER LEAK IN HEATER.**
3. **DO NOT ATTEMPT TO TURN OFF THE POWER AT THE HEATER IF PROBLEM OCCURS.**
4. **ALWAYS BE SURE THAT WATER IS FLOWING THROUGH HEATER AT THE REQUIRED FLOW RATE. INSUFFICIENT WATER FLOW MAY DAMAGE UNIT.**
5. **DO NOT ATTEMPT TO REPAIR HEATER. CALL *AQUA LOGIC* FOR INSTRUCTIONS.**

BEFORE INSTALLING THE HEATER, READ BOTH WARRANTY AND INSTALLATION INSTRUCTIONS.

SHIPPING INSPECTION:
Inspect the heater for shipping damage. If damaged, contact *AQUA LOGIC* or from whom you purchased.

Choosing Installation Site:

This heater is designed to be mounted outdoor only.

- Install the heater in a location at least 36 inches where it's free from obstacles and stagnant air.
- Do not install the heater in a closed in room.
- Do not install the heater near staircases or emergency exits.
- Do not install heater where the exhaust will blow on outer walls or material not resistant to heat. Also consider the surrounding trees and animals.
- Do not install heater where direct rain can fall into unit.



Gas piping:

- Refer to the "Raypak Installation Manual"

Electrical

- Install electrical to unit "Refer to Raypak Instruction Manual"

CPVC Pool Heat exchanger water connections:

- Connect water connections to the heat exchanger.
- Turn on water pump.
- Open the air valve on top of the heat exchanger to bleed off any air trapped in the unit.
- Check for water leaks.

Charging the heater with water:

- Install exspansion tank on bottom of brass air separator.
- Connect hose to freshwater inlet by the pump port heater (see picture)
- Open brass air relief cap on top air separator.
- Press the stem of bleed valve to release air from bottom of heat exchanger. (on some models)
- Slowly fill until the pressure gauge reads approximately 35-40 PSI.
- Continue to fill the heater with water until all the air is released from the copper lines. The running pressure should be above 35 PSIG.
- Close air relief cap.

Note: Add glycol to boiler water if located in regions where the weather reaches below freezing.









IMPORTANT NOTE:
Always establish water flow through the pool heat exchanger BEFORE applying electrical power.

Starting heater:

- After checking the gas source for proper pressure and leak test, open gas valve to heater.
- To test the heater, adjust the pool temperature controller set point higher than the water temperature. The heater will automatically turn on and heat to the set point.
- The boiler is preset to 160 °F.
- After test, adjust cycle control to the desired water temperature you want to maintain.

Pool Water Temperature Control Operation and Programming





POOL TEMPERATURE CONTROLLER

The digital pool thermostat fitted to your heater, has been pre-programmed with all the necessary parameters to ensure reliable service & operation. The digital thermostat is pre-set with a temperature range from 0 ˚F to 104 ˚F. with a resolution of 1/10 of a degree °F.

All you need to do is set the temperature you would like to maintain in your system (This is called the set point*).

To display / modify the set point* temperature, press and release the "**P**" button (1) The pre-programmed set point temperature will be displayed. Press the up arrow ▲ (3) to increase or the down arrow ▼(2) to decrease the set point.

Once the desired set point value has been selected, do not touch any of the keys for **15** seconds. The unit will then revert to displaying the current water temperature, but will now control the water temperature to a maximum of the selected set point*.



1	P Button	Used to display / modify the set point temperature
2	Down Button	Used to decrease the value
3	Up Button	Used to increase the value
4	Not Used	NOT USED
5	LED - OUT	Indicates that the water temperature has fallen below the set point

***Set Point (Note)** The set point is the maximum temperature that the digital thermostat will allow the water to be heated to. Upon reaching the set point temperature the digital thermostat will switch the heater off, it does not increase or decrease the power output of the heater.

To prevent overheating of the switch components within the heater caused by frequent on and off switching (cycling), the digital thermostat has been pre-programmed with a time delay function. This prevents rapid fluctuations in water temperature from switching the heater on and off more than once in a two minute period.

The time delay mode is indicated by the flashing of red indicator "**5"** on the digital thermostat (see the above picture).

Differential (Hysteresis):

When the water has reached the set point temperature the heater will switch off and will not switch back on until the water temperature has dropped by 2˚F. This value is known as the differential between off and on cycle.

To change the differential press and hold the "**P**" button for **5** seconds, the parameter "**S.L.S**" will show on the display. Scoll down with the arrow button until you see the menu parameter "**r.d**". Press the "**P**" button one time. The display will show "**F1**". Press the up or down arrows to adjust to the setting to "**C1"**. Once you have set the correct setting, press "**P**" one time and then wait seconds.

Controller Display Calibration

If the displayed water temperate on the heater is different from the system water temperature, than an adjustment to the heater control can be done. The easiest way to calibrate the control is to first power down the heater, then while pressing and holding the "**P**" button, power up the heater. The parameter "**S.L.S**" will show on the display. Use the down arrow until you see the menu parameter "**i.C1**". Press the "**P**" button one time. The display will show "**0**". Press the up or down arrows to adjust to the temperature offset. Once you have set the correct temperature offset, press "**P**" one time and then wait 15 seconds.

Changing Fahrenheit to Celsisus

Press and hold the "**P**" button for **5** seconds, the parameter "**S.L.S**" will show on the display. Scoll down with the arrow button until you see the menu parameter "**i.uP**". Press the "**P**" button one time. The display will show "**F1**". Press the up or down arrows to adjust to the setting to "**C1"**. Once you have set the correct setting, press "**P**" one time and then wait **15** seconds.

To adjust other parameters in the control contact Aqua Logic, Inc. for help.
PH: 858.292.4773 email: info@aqualogicinc.com

The Raypak boiler has an built-in diagnostic display's that will help in determining any problems.



NO POOL WATER FLOW TO HEAT EXCHANGER



Chillers & Titanium Heat Exchangers

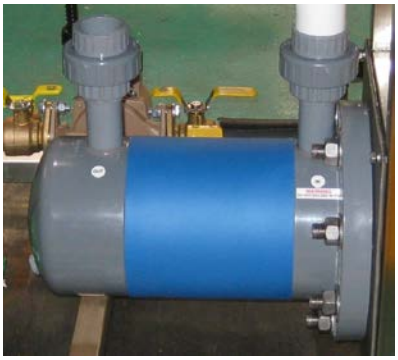
HEAT EXCHANGER CLEANING
IMPORTANT SAFETY INSTRUCTIONS

WARNING:

SAVE THESE INSTRUCTIONS!!!

To guard against injury, basic safety precautions **MUST** be observed including the following:

- **DO** read and follow all safety instructions.
- **DO** read and observe all the notices in this instruction sheet.
- **DO** make sure unit is mounted securely before operating.
- **DO** carefully examine this unit after installation.
- **DO NOT** allow water to freeze in unit. Severe damage may result.
- **DO NOT** store unit in extremely hot or cold areas. Damage may result.
- **DO NOT** exceed the maximum rating of 40-psi for this unit or serious damage may result.
- **DO NOT** perform bleach [organic removal] flush with muriatic acid [mineral removal] at the same time. The resultant poisonous gas can be extremely dangerous or deadly.



Heat Exchanger Cleaning:

NOTE:

The heat exchanger should be cleaned approximately every 12 months or as needed to allow proper performance. On some models this process may be done without removal of the heat exchanger shell. i.e., water flushing system. (See page 7 for by-pass set-up)

WARNING:

When using bleach and acid special care should be observed.
Always wear hand, eye and body protection. Use rubber gloves.

DO pour acid or bleach into the water. **DO NOT** pour water into acid or bleach solution.
DO NOT perform acid and bleach flushing at the same time. The gas generated by the mixture is poisonous and can result in serious injury or death.

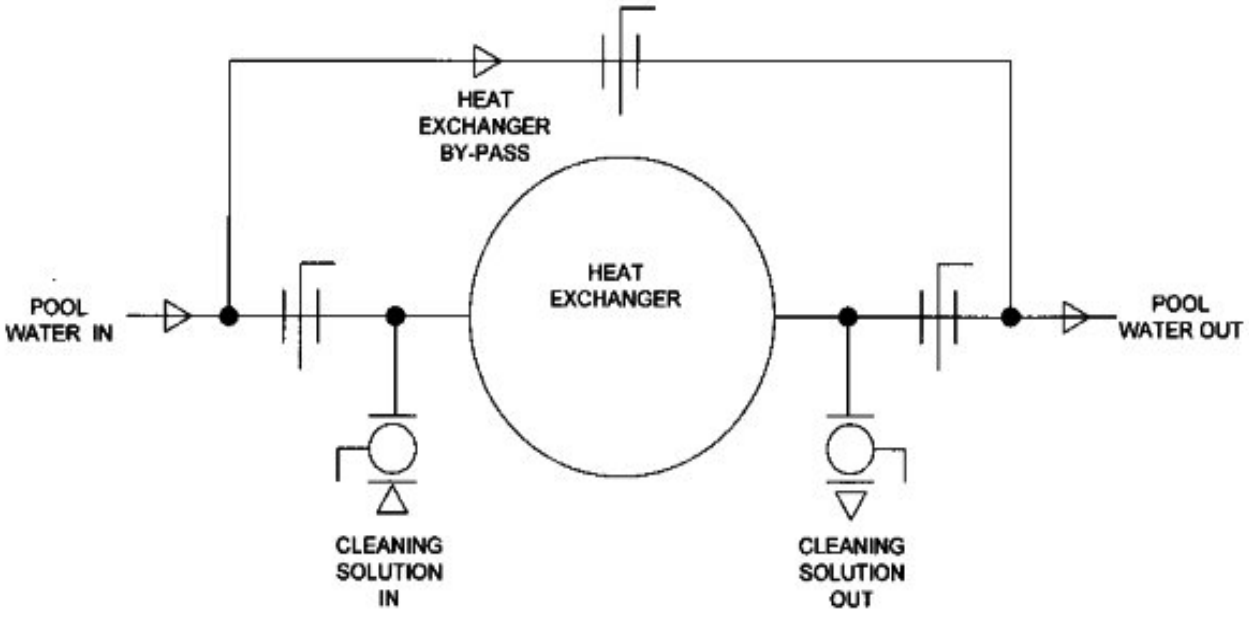
To remove organic deposits from titanium tube bundle without removing the shell:

- Isolate the heat exchanger. (see page 7)
- Mix 1 part bleach to 3 parts distilled water in five gallon bucket or larger container.
- Circulate via pump the solution through heat exchanger for approximately one to two hours or as needed.
- Thoroughly rinse heat exchanger with clean water.

To remove mineral deposits from titanium tube bundle:

Use the same steps as above, but use muriatic acid instead of bleach. Be sure to follow the muriatic acid manufacturer's instructions for use and safety.

POOL WATER HEAT EXCHANGER ISOLATION PLUMBING BYPASS



Heater Troubleshooting

Initial Operation

Unit does not attempt to ignite when temperature control is calling for heat.	● Check boiler remote water temperature control. ● Check water flow rate through pool heat exchanger. Pool heat exchanger flow switch may be deactivated. ● Check gas pressure and or flow. ● Are the gas and water supply lines fully open.
Unit attempts to ignite but fails	● Reset unit try again. There may be air in the gas line. ● Check gas pressure and or flow.

Temperature Problems

Amount of boiler hot water has decreased over time.	● Check boiler remote water temperature control for activation. It should read 160° F ● Check for scale build-up. Descale heater (Refer to the maintenance section)
Amount of heating the pool water has decreased over time	● Check boiler water temperature. ● Check CPVC heat exchanger for bio-fouling. Clean heat exchanger by flushing solution through unit. (See page 6)

LIMITED WARRANTY TERMS

(PLEASE READ CAREFULLY)**:**

All Aqua Logic ALB Heaters are warranted against defects and workmanship for a period of one (1) year from the date of original end-user purchase. The limited one year warranty covers only the parts and labor based upon Aqua Logic service cost and Aqua Logic is not liable for field repair work without prior written or verbal agreement with Repair Authorization (RA) number with a fixed maximum charge.

The warranty applies only to the original purchaser and is not transferable.

The warranty covers only the repair or replacement of Aqua Logic products and is limited to Aqua Logic's cost of defective parts.

Once Aqua Logic determines that the defect is due to parts or workmanship and that the product is under warranty, Aqua logic will repair or replace the product solely at their discretion.

International Warranty:
When ALB Heaters that are shipped out side of the United States of America there is **NO** warranty.

Our warranty does not include the following:

- Damage caused by freezing, inadequate or no water flow.
- Damage caused by improper installation or maintenance by user or their agent.
- Damage caused due to misapplication of the product.
- Damage caused by corrosion, abuse, accident, alteration or improper use.
- Damage caused by flood, fire, earthquake, tornado or other acts of God.
- Damage caused by electrical spikes, surges, brownouts or improper voltage or amperage.
- Damage caused by failure of any third party equipment (i.e., controller, pump, etc.)
- Incidental damage to other equipment, property or livestock.
- Damage caused by a technician in the field with poor installation techniques.

In the event of a defect or failure of the product, immediately contact Aqua logic for assistance. Aqua Logic will at their discretion:

- Provide user-replaceable parts to restore the unit to proper operation.
- Provide a Repair Authorization (RA) number with a specified dollar limit for a qualified technician to provide a field repair.
- Provide a Return Authorization (RA) number to return the unit with original packaging to Aqua Logic, Inc.,2806 Gray Fox Rd. Monroe, NC 28110 by prepaid freight. You need to include the serial number as well as proof of purchase and /or a copy of the original bill of sale along with the RMA number. COD shipments will be refused