
OWNER'S MANUAL

This manual is for Classic Black models:
ACT110, ACT125, ACT150,
ACT165, ACT125HC, & ACT165HC



Manufacturing High Quality, High Efficiency
Heat Pump Pool Heaters

5005001B
Version 3.0_dl

ACT Series

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INTRODUCTION



WARNING:



Non-authorized service will void the warranty.

SERVICE

All warranty service must be handled by an Authorized Service Center. Warranty may be void if a non-authorized service representative does service. Do not return the heater to your dealer, as they do not provide service. Before calling for assistance or service, please check the Troubleshooting section of this manual or call your dealer. This may save you the cost of a service call. If you still need help, follow the instructions below.

Service can be obtained by calling us at: 888-475-7443

When asking for help or service please provide a detailed description of the problem, your heater's complete serial number, the purchase date and dealer purchased from. This information will help us respond properly to your request.

Attention, Warning, and Caution boxes have been placed throughout manual to help point out important information to look out for.



Attention- this will point out important information to be aware of



Warning- this will point out action that might void warranty



Caution- this will point out any safety issue for owners

INTRODUCTION

Congratulations on purchasing the most advanced high efficiency, microprocessor-controlled pool and spa heat pump available. Your heater has been manufactured with the best state-of-the-art quality control equipment available today to ensure the highest quality product delivered to your door. A heat pump pool heater is a highly efficient, cost effective method of pool heating. Proper operation and care will result in many years of swimming enjoyment and pleasure.

Your new pool heater is a self-contained unit designed specifically for swimming pool and spa heating. It utilizes the sun's free energy by extracting heat from the sun-warmed air and transferring it efficiently to the pool water. Because your pool heater moves the free heat from the outside air to the pool, rather than create heat, as a fossil fuel or electric resistance heater does, it can heat your swimming pool or spa for up to 80% less cost than these other less efficient methods.

As with all pool heating methods, you are advised to utilize a pool cover at night and when the pool is not in use. The pool cover should be used if the Night temperature is 15°F (8°C) less than the desired pool temperature. This will keep evaporation, the greatest source of heat loss, to a minimum, greatly reducing the overall pool heating costs. During warmer weather, the pool cover may not be required.

Your pool and spa heater combines simplicity with trouble-free performance. As with most appliances, an understanding of proper operation of the heater is important. Proper installation and operation increases efficiency and reduces heating costs. Your pool heater is designed with features that make it simple to operate, maintain and service. This manual will provide you with the information needed to properly operate and maintain your heater.



ATTENTION:



Please be sure to complete and mail in the Warranty Registration Card that is provided in the package with your heater.

This card provides us with your information in case you need service.

Also, please take a moment and jot down the following information. If you should ever need to call us for service or a question, we will need this information:

Serial Number: _____

Purchase Date: _____

Dealer Name/Address/Phone #: _____

WATER CHEMISTRY MAINTENANCE

Not only is the water chemistry of your pool or spa important to the health of you and your family, it also directly affects the life of your heater. This is the most important item in the maintenance of the heater. If the water chemistry is improperly maintained or if the chemicals are improperly introduced into the water, this will damage the heater's internal components and could eventually cause a leak, rendering the heater inoperable.



WARNING:



Damage to the heater due to improper water chemistry is not covered under the warranty.

Following is the table for essential water quality readings, which must be constantly maintained:

Description	Normal Range	Verify
PH Level	7.4 to 7.8	1 time per week
Chlorine Concentration	1.0 to 3 PPM	1 time every 2 to 3 days
Total Alkalinity	80 to 120 PPM	1 time every 2 to 3 weeks
Total Dissolved Solids	Below 2400 PPM	1 time per month
Calcium Hardness	200 to 300 PPM	1 time per month

The location of the chemicals' introduction to your system is also critical to the heater's life. If an automatic in-line Chlorinator or Brominator is used, it must be located downstream of the heater. A Trap/ Check Valve must also be installed between the chlorinator and the heater to prevent chlorine return into the heater.



WARNING:



Never leave any type of solid chlorine in the pool skimmer. This will cause a high concentration of Chlorine to enter the heater, causing premature corrosion. Never add chemicals into skimmer, this will cause warranty to be voided

HEAT PUMP FEATURES

CABINET

Your heat pump's cabinet is made from a maintenance-free, rust-free plastic that is UV resistant. It will last for years and any dirt or dust may simply be wiped away with a cloth or sprayed off with a water hose. Use only cleaner designed for plastic.



CAUTION:



DO NOT USE CLEANERS THAT CONTAIN ALCOHOL.

CONTROL

State-of-the-art LCD readout control. Displays mode and temperature of the water for ease of operation. No programming to learn. Dual thermostats allow user to set pool and spa temperatures. The control is self-diagnostic and will display a fault if there is a problem. Other features include: lockout, spa timer, automatic low temperature defrost, remote control capabilities, even-heat, and solar control.

ULTRA-QUIET

The unit is equipped with a low RPM fan motor in combination with a deep draw venturi to ensure whisper quiet operation.

HIGH EFFICIENCY

The heat pump utilizes the latest in compressor technology to produce the highest efficiency available when coupled with the oversized enhanced fin evaporator coil and rifled titanium tube heat exchanger.

EASE OF INSTALLATION

The unit is equipped with easy-to-install, hand-tightened unions for a quick and trouble-free installation. The unions will accept 2" PVC piping. The electrical connection is made with one entry directly into

Heat Pump Features Continued

EASY ACCESS

The heater was designed for quick and easy access for installation and diagnosis. The service panel is removed with two screws and access to all service connections is right up front and easy to reach. This allows the installation and service to be done quickly and

efficiently, so valuable time is not wasted.

EVEN-HEAT *(Additional wiring required)*

This feature allows the heater to periodically turn pool circulation pump on and test water temp, if temp is below the set point programmed on board, the heater will run pool pump until it reaches

set point, then it will shut unit and circulation pump back off. Feature can be set to run in one hour increments.

SOLAR CONTROL *(Additional wiring required)*

the board can be set to run and monitor your pool solar systems. There is no need to have a second and separate control system.

CONTROL ON/OFF

When the unit is powered up, but in the OFF mode, temperature will not be displayed. To turn the unit on, press the Up arrow button until desired temperature is reached. To turn the unit off press and hold the Down arrow button until the display shows off. This point will be

one level below 50 degrees. This is convenient for shutting the unit



CAUTION:



When the control is in the "OFF" mode, there is still high voltage to the unit. If you want to turn the unit off for long periods of time, shut the main power off to the unit at the main or service disconnect.

POOL/SPA MODES

The control is equipped with two independent thermostats, one for pool temperature and one for spa temperature. This is to allow user to preset a temperature of their choice and switch between the two settings with the MODE button located on the control. When power is applied to the control it will turn on in the previous mode, whether it is Pool Heat or Spa Heat. When water is flowing through the unit and the water temperature meets the specified set point condition, the control will initiate a heat cycle.

If you do not have a spa, you can use the spa thermostat as a second temperature setting if you do not want to maintain full temperature all the time. For instance, if you swim on the weekends only, you can set the temperature back during the week to save costs



ATTENTION:



There is a 5-minute time delay upon initiation of a heating cycle. This is to ensure that the critical components do not fail due to short cycling of the heater.

but maintain a warmer temperature for a shorter recovery time for the weekend.

The display on the control will show the thermostat being used and

the operating mode on the top line and the current water temperature on the bottom line. The possible mode displays are:

“POOL – HEAT”, “SPA – HEAT”.

CHANGING SET POINT TEMPERATURE

To change the set point temperature, press either the Up or Down arrow buttons on the control. The display will then show “POOL TEMPERATURE” on the top line and the current set point temperature in numbers on the bottom line. After adjusting to the desired temperature setting, the display will revert to “POOL – HEAT” (or whichever mode you are in) on the top line and the pool temperature

HEATER RUNNING TIME

The owner is responsible for determining the necessary length of operating time for the pump and heater based upon users particular requirements. Most units are sized to operate during the pool filtering cycle time of 8 to 12 hours daily, providing an even, steady flow of heat. On warmer days the heater will run less because there will be less heat loss from your pool. The heater is capable of running 24 hours per day if necessary. When you first run your heater, it may need to run continuously for 24 to 48 hours to get the pool up to the desired temperature.

KEYPAD LOCKOUT

While in any mode the user can lockout the keypad by pressing and holding the MODE button for 6 seconds. When the keypad lockout has been enabled all buttons are disabled and the control will operate in whatever mode it was in when the lockout occurred. Any button push while in lockout will cause the display to show LOCKOUT for 5 seconds. To unlock the Keypad, press and hold the MODE button for 6 seconds. The display will show UNLOCKED for 5 seconds.

DEFROST CYCLE

The heater is designed to enter the defrost cycle at ambient air temperatures below 48° Fahrenheit. During this cycle, the unit may shut down and the control will display "Defrosting" until the ambient air temperature rises above frosting conditions.

CONDENSATE DRAINAGE

It is normal for water to be draining from your heater. This occurs because the evaporator coil condenses the water from the air. The water drains into the base of the unit and out the holes that are located on each side of the heater at the bottom. Your heater can produce 1 to 3 gallons of water per hour. The water created from the condensation will dry up when the heater shuts off.

POOL SOLAR HEAT OPERATION

Once the Solar Control is enabled in the Hidden Menu, and 20 seconds of inactivity, the Screen will return to display Pool-Heat

Press Mode button to display POOL-SOLAR HEAT on the front screen, the display will show as follows in illustration 1

P	O	O	L		S	O	L	A	R		H	E	A	T	
					8	0	°	F			d	e	l	a	y

(Illustration 1)

By pressing either UP or DOWN the screen will show POOL TEMPERATURE SET POINT, as follows on illustration 2. The user can adjust the set point by pressing Up and Down buttons until the desired set point is reached.

P	O	O	L		T	E	M	P	E	R	A	T	U	R	E
S	E	T	P	O	I	N	T				8	5	°	F	

(Illustration 2)

By pressing the mode button once your pool temp set point has been set, you will see POOL- SOLAR HEAT SETPOINT on display as in illustration 3

P	O	O	L		-	S	O	L	A	R		H	E	A	T
S	E	T	P	O	I	N	T				8	5	°	F	

(Illustration 3)

Using the up or down arrow to adjust the desired Solar set point, the board will display POOL-SOLAR HEAT after 5 seconds of

inactivity.

The Heat Pump will be engaged only when water temperature falls



ATTENTION:



Solar set point can only be equal or higher than the Heat Pump set point. For energy efficiency Solar heat will take precedence over the Heat Pump when respective set points are equal.

CARE & MAINTENANCE

CLEANING

There is not much maintenance that needs to be done on your heater. Making sure there is good airflow through the evaporator and proper drainage are the two main tasks. A garden hose with low-pressure water flow can be used to clean the evaporator coil. Keep



CAUTION:



Make sure all power is disconnected to the heater prior to washing.

all shrubs trimmed back away from the unit to allow sufficient airflow. Clean the coil as needed. If located near the ocean, cleaning will need to be done regularly to remove salt and sand. Use a very soft brush so as not to bend the coil fins with soapy water to remove any build up.

Keep the drain holes in the base free of debris to assure proper condensation drainage.

Your heat pump's cabinet is made from a maintenance-free, rust-free plastic that is UV-resistant. It will last for years and any dirt or dust may simply be wiped away with a cloth or sprayed off with a water hose. Only use products designed for cleaning plastics.



WARNING:



**DO NOT USE CLEANERS THAT CONTAIN ALCOHOL.
Alcohol based cleaners may damage the plastic.**

WINTERIZING

In areas where freezing condition is not prevalent and winterizing of pools is not common, allow water to flow through the heater even when not in use.



ATTENTION:



In freezing areas, it is mandatory that the water be completely drained from the heater and disconnected from the piping. The heat exchanger must be blown out with air to ensure no water in the heat exchanger.

TROUBLESHOOTING

A simple test to verify that your heater is functioning is to place your hand above the unit. There should be cool air blowing out the top after time delay has expired. The return water to the pool should be a few degrees warmer than water entering the heater. After about 15 minutes of run time, there should be water draining out of the base of the unit. If you have reason to believe your heater is not functioning properly, follow the troubleshooting guide below or call the service department for service.

CONDITION	POSSIBLE CAUSE	SOLUTION
Control Display Blank	<ul style="list-style-type: none"> • No power supply to heater. • Tripped breaker or blown fuse. • Control failure. 	<ul style="list-style-type: none"> • Reset breaker. • Replace fuse. <p>If problem persists, call Service department for service.</p>
Control Displays "Low Flow"	<ul style="list-style-type: none"> • The pool pump is not on. • A valve is turned, bypassing the water past the heater. • Clogged water line, filter or pump impeller. Internal water pressure switch failure. 	<ul style="list-style-type: none"> • Turn pool pump on. • Clean pump basket and filter. • Adjust water valves; allow as much water to go through Heater (up to 90 GPM). <p>If problem persists, call service department for service.</p>
Control Displays "Defrosting"	<ul style="list-style-type: none"> • Ambient air is too low for heater to function. 	<ul style="list-style-type: none"> • Unit will turn back on once ambient air rises to appropriate level
Control Displays "Low Refrigerant Pressure"	<ul style="list-style-type: none"> • Refrigerant leak 	<p>Call service department for service.</p>
Control Displays "Water Flow Lockout"	<ul style="list-style-type: none"> • Water flow restriction • Dirty filter • Valve is turned restricting flow 	<ul style="list-style-type: none"> • Clean pump and filter. • Adjust water valves.

Display shows "Even Heat Lockout"	<ul style="list-style-type: none"> • Low or restricted water flow • Not wired for feature 	<ul style="list-style-type: none"> • Reset board by shutting breaker off and on <p>If problem persists, call Service department for service.</p>
Display shows "High Water Temperature"	<ul style="list-style-type: none"> • Heater control malfunction • Secondary source of heat 	Call Service department for service.
Display shows "Evap Sensor Malfunction"	<ul style="list-style-type: none"> • Defrost sensor malfunction or not connected 	Call Service department for service.
Display shows "Water Sensor Malfunction"	<ul style="list-style-type: none"> • Water sensor malfunction or not connected 	Call Service department for service.
Pool is heating slowly or not getting up to temperature	<ul style="list-style-type: none"> • Low or restricted water flow through the heater. • Leak in plumbing allowing air into the water flow • Pool pump timer not set for a long enough run time. • Pool has no cover • Direct wind gust over water surface • Pool is located in direct shade 	<ul style="list-style-type: none"> • Clean or replace filter • Inspect and clean pool pump • Adjust water valves to allow flow through heat (up to 90 GPM) • Repair any air leaks in plumbing • Construct a wind break around pool area • Set pool pump timer for longer time <p>If problem persists, call Service department for service.</p>
Water is running out of bottom of the heater	<p>Warning: The heater produces up to 3 gallons of condensation per hour the unit is running.</p> <ul style="list-style-type: none"> • Internal water leak 	<ul style="list-style-type: none"> • Shut the heater off for several hours, and leave the pool pump running. • After few hours if still leaking. <p>Call service department for service.</p>
Display shows Solar Sensor Malfunction	<ul style="list-style-type: none"> • Solar sensor malfunction or not connected 	<ul style="list-style-type: none"> • Only shows if solar control is enabled <p>Call Service department for service.</p>

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