Installation &Operation Manual

MiniPool Heat Pump

Model: YC-005TB1

Thank you very much for purchasing our product, please keep this installation manual carefully and read this manual carefully before you install heat pump.

⚠Please keep installation manual properlyand read itcarefully before using.

- The unit must be installed by professional personnel, and install it based on this manual as possible.

- If the unit would be installed where is vulnerable to lightningstroke, lightning protectionmeasurements must be carried out.

- Themanufacturerdeclinesanyresponsibilityforthedamagecausedwiththepeople,objectsandoftheerrorsduetothe installation that disobey the manual guideline.Anyuse that is without conformityattheoriginofitsmanufacturingwill be regardedasdangerous.

- Please always keep the heat pump in the ventilation place and away from anything which could cause fire.

- Don't weld the pipe if there is refrigerant inside machine. Please keep the machine out of the confined space when make gas filling.

- Please always empty the water in heat pump during winter time or when the ambient temperature drops below 32° F, or else the Titanium exchanger will be damaged because of being frozen, in such case, it will be out of warranty for this machine.

- Please always cut the power supply if you want to open the cabinet to reach inside the heat pump, because there is high voltage electricity inside.

- Please well keep the display controller in a dry area to protect the display controller from being damaged by humidity.

- Action of filling gas must be conducted by professional with R410A operating license.

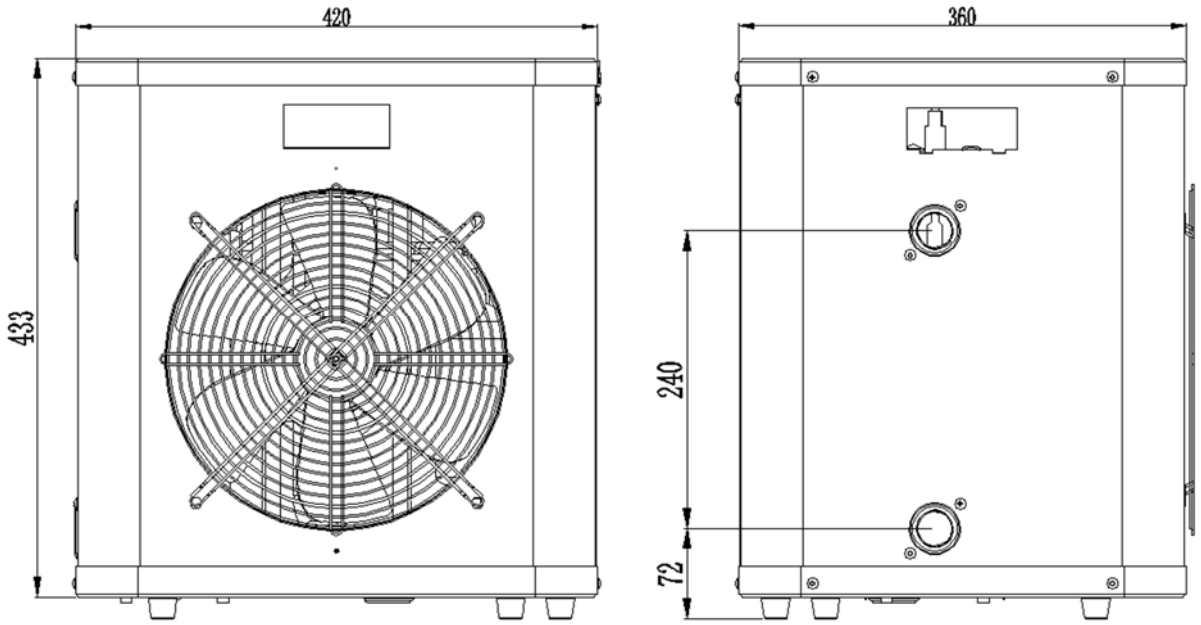
*** INDEX**

1. Specifications

1.1 Technical data pool heat pumps

Air-source Swimming Pool Heat Pump		
Model		YC-005TB1
80'F Air 80'F Water 63% RH	Heating capacity (Btu/h)	16036
	Power input (Btu/h)	3599
	COP	4.45
50'F Air 80'F Water 63% RH	Heating capacity (Btu/h)	10747
	Power input (Btu/h)	3070
	COP	3.50
Power supply		110-120V/60Hz
Max power input (Btu/h)		4623
Max current (A)		7.1
Setting temperature range (Heating)		59°F~104°F
Setting temperature range (Cooling)		46°F~82°F
Running (Air) temperature range		23°F~109.4°F
Refrigerant type/quantity (Oz)		R410A/15.90 Ozs
Air side heat exchanger		Hydrophilic fin exchanger
Water side heat exchanger		Titanium tube heat exchanger
Water flow (gpm)		9.3
Net dimension L×W×H (inch)		17×14×17
Packing dimension L×W×H (inch)		19×17×19
Net weight (lbs)		59
Packing weight (lbs)		66
Maximum working pressure of heat exchanger		4.4 MPa
Maximum working pressure of exhaust side		4.4 MPa
Maximum working pressure of suction side		2.5 MPa
Noise		50dB(A)

2. Dimension（mm）



3.Installation and connection

Attention:

Please observe the following rules when installing the heat pump:

1. Any addition of chemicals must take place in the piping located **downstream** from the heat pump.
2. Always hold the heat pump upright. If the unit has been held at an angle, wait at least 24 hours before starting the heat pump.

3.1 Heat pump location

The unit will work properly in any desired location as long as the following three items are present:

1. Fresh air – 2. Electricity – 3. Swimming pool filters

The unit may be installed in virtually any **outdoor** location as long as the specified minimum distances to other objects are maintained. Please consult your installer for installation with an indoor pool.

ATTENTION: Never install the unit in a closed room with a limited air volume in which the air expelled from the unit will be reused, or close to shrubbery that could block the air inlet. Such locations impair the continuous supply of fresh air, resulting in reduced efficiency and possibly preventing sufficient heat output.

3.2 Initial operation

Note: In order to heat the water in the pool (or hot tub), the filter pump must be running to cause the water

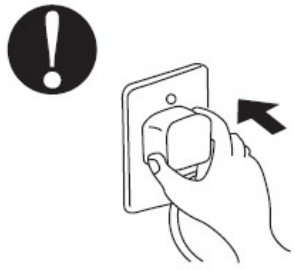
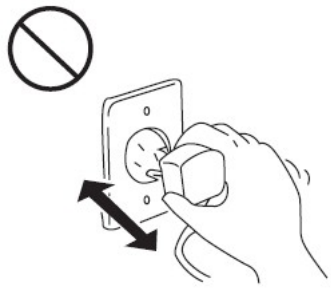
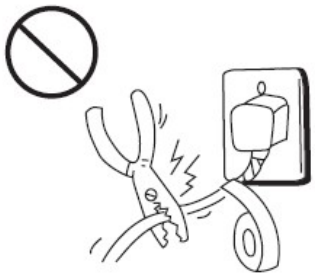
to circulate through the heat pump. The heat pump will not start up if the water is not circulating.

3.3 Electrical connection

Before connecting the unit, verify that the supply voltage matches the operating voltage of the heat pump.

The RCD plug has been included with power cable, which can offer electrical protection.

Attention:

Ensure the power plug is secure	**Never pull out the power plug during operation**	**Never use damaged electric wires or unspecified electric wires.**
If the plug is not secure, it may cause an electric shock, over-heating or fire	Otherwise, it may cause an electric shock or a fire due to over-heating.	Otherwise it may cause an electric shock or a fire.
		

After all connections have been made and checked, carry out the following procedure:

1. Switch on the filter pump. Check for leaks and verify that water is flowing from and to the swimming pool.
2. Connect power to the heat pump and press the On/Off button ⏻ on the electronic control panel. The unit will start up after the time delay expires (see below).
3. After a few minutes, check whether the air blowing out of the unit is cooler.
4. When turn off the filter pump, the unit should also turn off automatically.

Depending on the initial temperature of the water in the swimming pool and the air temperature, it may take some time to heat the water to the desired temperature. A good swimming pool cover can dramatically reduce the required length of time.

Time delay - The heat pump has a built-in 3-minute start-up delay to protect the circuitry and avoid excessive contact wear. The unit will restart automatically after this time delay expires.

If first power on or additional power interruptions, the heat pump starts 10s later after pressing 'ON/OFF' button.

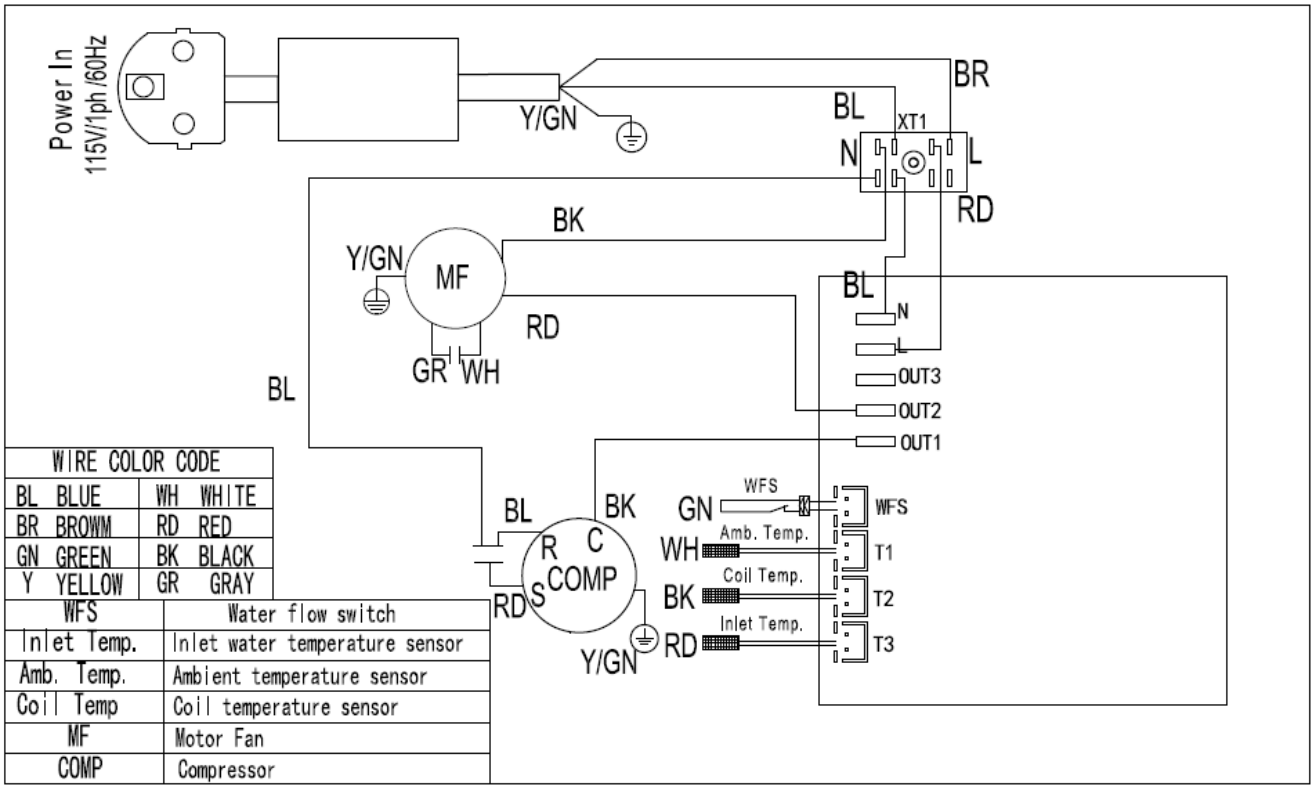
3.4 Condensation

The air drawn into the heat pump is strongly cooled by the operation of the heat pump for heating the pool

water, which may cause condensation on the fins of the evaporator. The amount of condensation may be as much as several litters per hour at high relative humidity. This is sometimes mistakenly regarded as a water leak.

4.Electrical wiring

4.1 Swimming pool heat pump wiring diagram



WIRE COLOR CODE			
BL	BLUE	WH	WHITE
BR	BROWM	RD	RED
GN	GREEN	BK	BLACK
Y	YELLOW	GR	GRAY

WFS	Water flow switch
Inlet Temp.	Inlet water temperature sensor
Amb. Temp.	Ambient temperature sensor
Coil Temp	Coil temperature sensor
MF	Motor Fan
COMP	Compressor

NOTE:

(1) Above electrical wiring diagram only for your reference, please subject machine posted the wiring diagram.

(2) The swimming pool heat pump must be connected ground wire well, although the unit heat exchanger is electrically isolated from the rest of the unit. Grounding the unit is still required to protect you against short circuits inside the unit. Bonding is also required.

Disconnect: A disconnect means (circuit breaker, fused or un-fused switch) should be located within sight of and readily accessible from the unit. This is common practice on commercial and residential heat pumps. It prevents remotely-energizing unattended equipment and permits turning off power at the unit while the unit is being serviced.

5. Display controller operation

5.1 The interface of controller

When the heat pump is running or standby, the display shows the water inlet temperature.

When the heat pump is Power-on, the display shows ‘OFF’

will light on when you turn on the machine.

When defrosting, will be lighting on, will flash.

Turn on/off the heat pump

Press to turn on the heat pump, the LED display shows the water setting temperature for 3s, then show water inlet temperature.

press again to turn off the heat pump, it will show ‘OFF’ on the display.

NOTE: There is 3 mini of time delay protection for the compressor.

5.3 Set the desired water temperature

Press or directly to adjust the desired water temperature, the data will be saved in 3 seconds.

NOTE: The heat pump can be operating only if the water circle/ filtration system is running.

5.4 Switch Celsius (℃) and Fahrenheit (℉)

Hold  for 3 seconds to switch Celsius (℃) and Fahrenheit (℉)

6. Trouble shooting

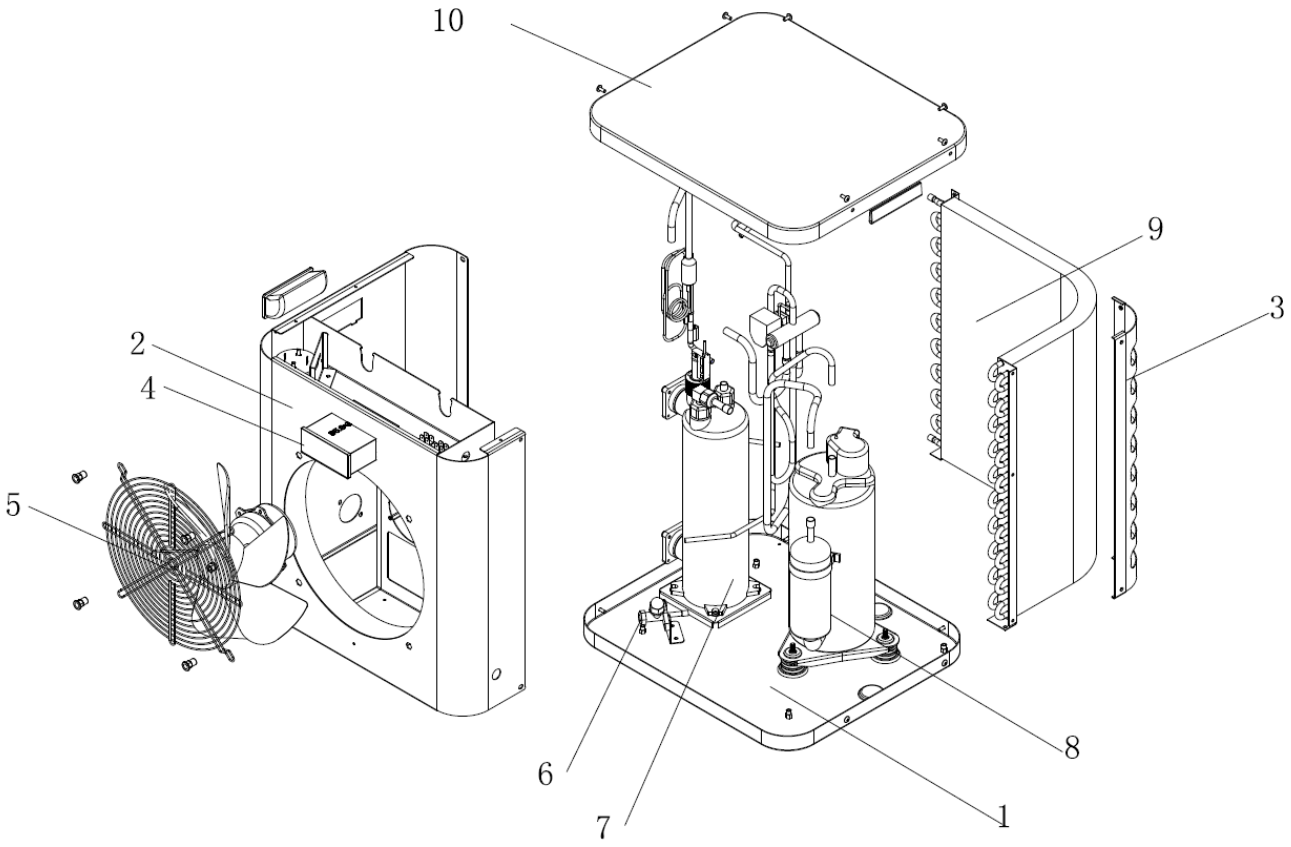
6.1 Error code on the LED controller

Malfunction	Code	Reason	Solution
Water temperature sensor failure	P1	Water temperature sensor open circuit or short circuit.	1. Check the sensor wiring. 2.Replace the new water temperature sensor.
Piping temperature sensor failure	P3	Piping temperature sensor open circuit or short circuit.	1. Check the sensor wiring. 2.Replace the new piping temperature sensor.
Ambient temperature sensor failure	P5	Ambient temperature sensor open circuit or short circuit.	1. Check the sensor wiring. 2.Replace the new water temperature sensor.
Too low or too high ambient temperature protection	E0	1. Ambient temperature is out of operating range: 23°F~109.4°F. 2. Controller failure.	1. Wait the ambient temperature recover the operation range. 2. Replace the new controller.
Water flow failure	E3	1. Insufficient or no water flow. 2. The wiring for water flow switch is in loose situation. 3. Malfunction of water flow switch	1. Check the water pump or water piping system. 2. Check the wiring of water flow switch. 3. Replace a new water flow switch

6.2 Other Malfunctions and Solutions (No display on LED wire controller)

Malfunctions	Observing	Reason	Solution
Heat pump is not running	LED wire controller no display.	No power supply.	Check cable and circuit breaker if it is connected.
	LED wire controller displays the actual water temperature.	1. Water temperature is reaching to setting value, HP under constant temperature status. 2. Heat pump just starts to run.	1. Verify water temperature setting. 2. Start up heat pump after a few minutes.
Short running	LED displays actual water temperature, no error code displays.	1. Fan NO running. 2. Air ventilation is not enough.	1. Check the cable connections between the motor and fan, if necessary, it should be replaced. 2. Check the location of heat pump unit and eliminate all obstacles to make good air ventilation.
Water stains	Water stains on heat pump unit.	1. Concreting. 2. Water leakage.	1. No action. 2. Check the titanium heat exchanger carefully if it is any defect.

7. Exploded diagram



No.	Name	No.	Name
1	Base tray	6	refrigerant valve
2	Front panel	7	Titanium heat exchanger
3	Back pillar	8	Evaporator
4	Controller	9	compressor
5	Fan grill	10	Top cover

8. Maintenance

(1) You should check the water supply system regularly to avoid the air entering the system and occurrence of low water flow, because it would reduce the performance and reliability of HP unit.

(2) Clean your pools and filtration system regularly to avoid the damage of the unit as a result of the dirty of clogged filter.

(3) You should discharge the water from heat pump if it will stop running for a long time (especially during the winter season).

(4) In another way, you should check the unit is water fully before the unit start to run again.

(5) When the unit is running, there is all the time a little water discharge under th