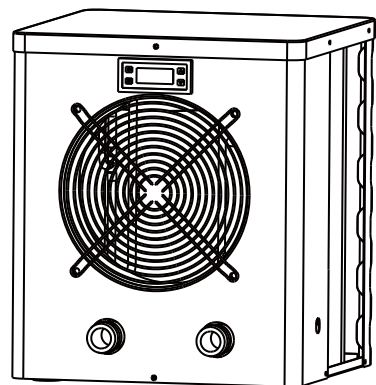


Installation and User Manual

Swimming Pool Heat Pump

Mini Pac



Thank you for using Mini Pac heat pump for your swimming pool heating, this unit will heat water in swimming pool and keep the temperature constant when the ambient temperature is above 12°C.

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1. Safety Information

ATTENTION:

This manual includes all the necessary information with the installation and use of the unit. To prevent injury to the installer or user or other people and property damage, the following instructions must be followed. Incorrect installation and operation due to ignoring of instructions may cause harm or damage.

The installer must read the manual and attentively follow the instructions in implementation and maintenance.

The installer is responsible for the installation of the product and should follow all the instructions of the regulations and manufacturer in application. Incorrect installation against the manual implies the exclusion of the entire guarantees.

The manufacturer declines any responsibility for the damage caused with the people, objects and of the errors due to the installation that disobey the manual guideline. Any use that is without conformity at the origin of its manufacturing will be regarded as dangerous.

WARNING:

Please always empty the water in the product during winter time or the ambient temperature below 0°C, or else the Titanium heat-exchanger will be damaged because of being frozen, in such case, the warranty will be lost.

WARNING:

Please always cut the power supply if open the cabinet to reach inside the product because of high voltage electricity inside.

WARNING:

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

WARNING:

The product must be earthed effectively. The earthing pole of socket must be grounded well, make sure that power supply socket and plug are dry enough and connected tightly. If the power supply cord is damaged, it must be replaced by the qualified person.

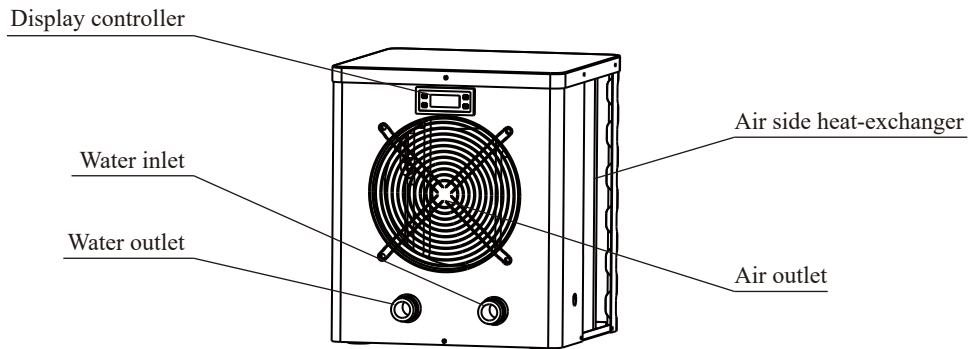
Ask qualified person for repairing and maintaining the unit. Improper methods may result in water leakage, electric shock or fire.

Do not insert fingers, rods or other objects into the air inlet. When the fan is rotating at high speed, it will cause injury. In order to avoid injury, do not remove the fan guard of the product.

Never use a flammable spray such as hair spray, lacquer paint near the unit. It may cause a fire.

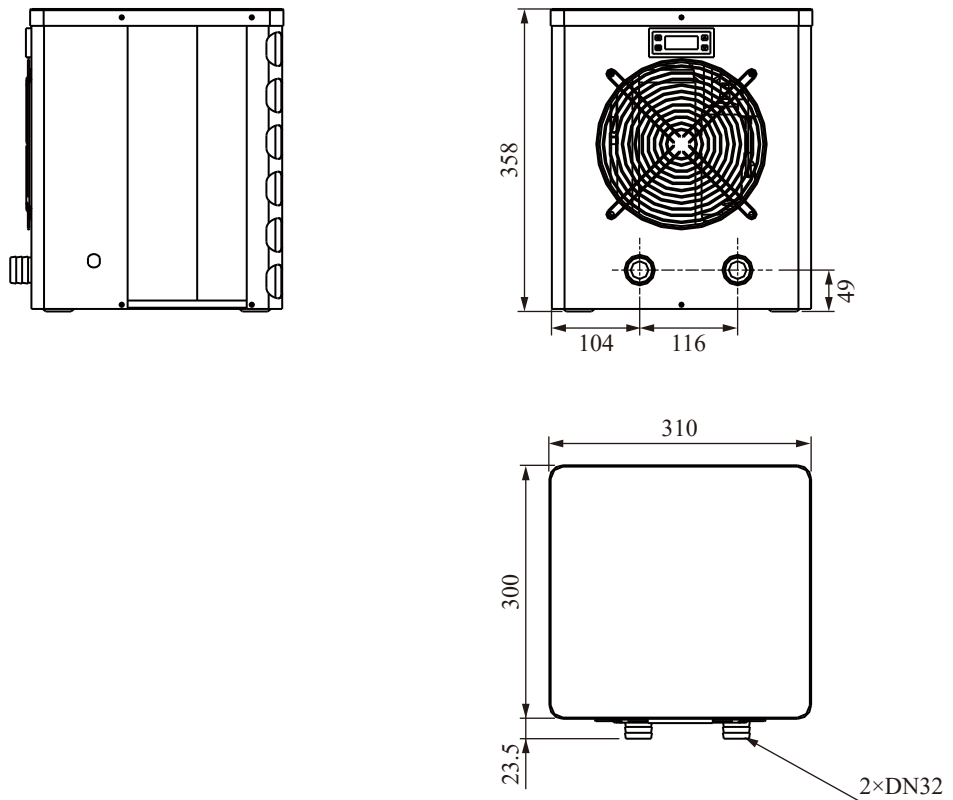
2. Unit Appearance

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3. Dimensions

(Unit: mm)



The manufacturer only supplies the product. All the other components must be provided by site. Install a bypass if the water flow from the swimming pool pump is more than 20% greater than the allowable flow through the heat-exchanger of the product.

Always place the product on a solid foundation and use the included rubber mounts to avoid vibration and noise.

Always hold the product upright. If the unit has been held at an angle, wait for at least 24 hours before running the product.

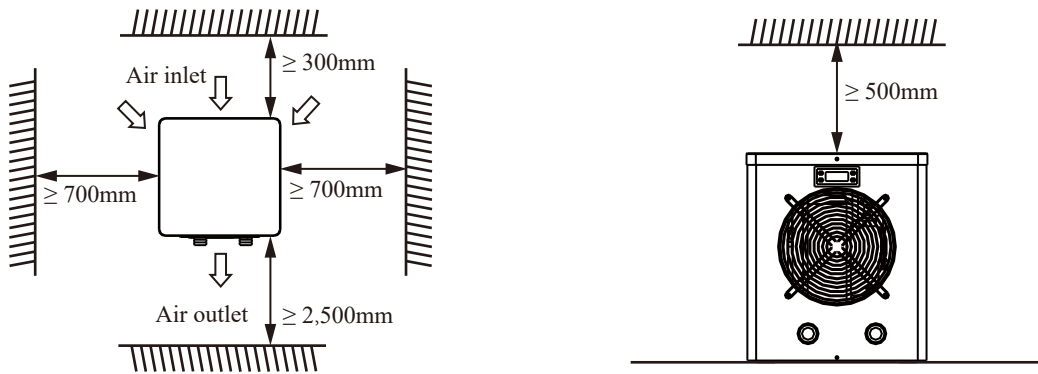
4.1 Location

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

- a. Fresh air
- b. Electricity

c. Swimming pool filters

The unit may be installed in virtually any outdoor location as long as the specified minimum distance to other objects are maintained (See the following figure). Please consult your installer for installation with an indoor pool. Installation in a windy location does not present any problem at all, unlike the situation with a gas heater (including pilot flame problems).



ATTENTION:

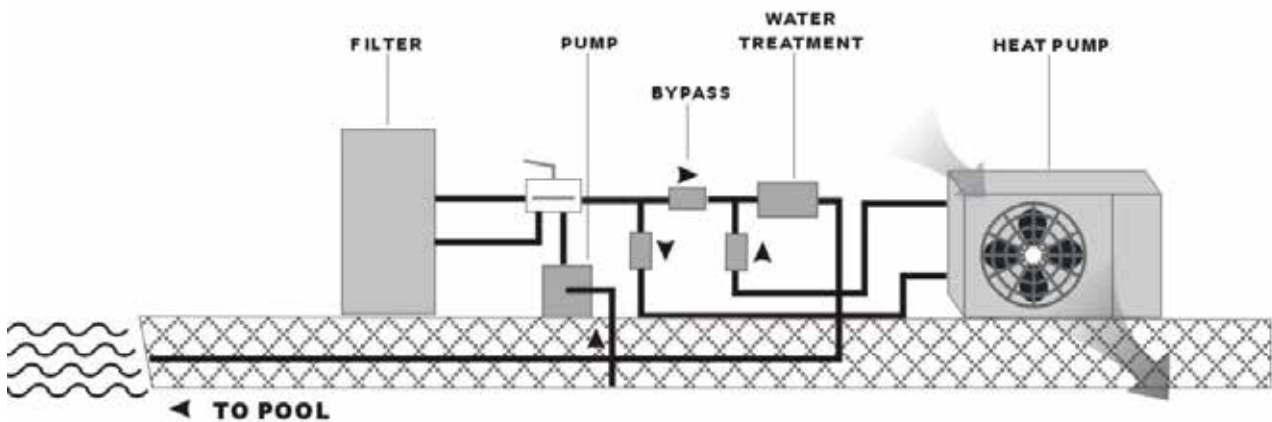
Never install the unit in a closed space with a limited air volume in which the air expelled from the unit will be reused, or close to shrubbery that could block the air inlet. Such location impair the continuous supply of fresh air, resulting in reduced efficiency and possibly preventing sufficient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

4.2 Distance from the swimming pool

The heat pump product is normally installed within a perimeter area extending 7.5m from the swimming pool. The longer the distance from the pool, the more loss in the pipes. As the pipes are mostly underground, the heat loss is lower for distances up to 30m (15m is from and to the pump; 30m is total) unless the ground is wet or the groundwater level is high. A rough estimate of the heat loss per 30m is 0.6kWh for every 5°C difference between the water temperature in the pool and the temperature of the soil surrounding the pipe. This increases the operating time by 3% to 5%.

4.3 Water Connection

The heat pump is connected to a filtration circuit with a by-pass. It is imperative that the by-pass is placed after the pump and the filter. The by-pass generally consists of 3 valves. This makes it possible to regulate the water flow which passes through the heat pump and to isolate the heat pump completely for any maintenance work, without cutting the flow of filtered water. If your installation is equipped of a water treatment with product adductions (chlorine, brominates, salt...) the by-pass must be installed before the water treatment, with a non-return valve between the by-pass and water treatment.



4.4 Electrical connection

Before connecting the unit, verify that the supply voltage matches the rated voltage of the product.

Note:

Although the product is electrically isolated from the rest of the swimming pool system, this only prevents the flow of electrical current to or from the water in the pool. Earthing is still required for protection against short-circuits inside the unit. Always provide a good earth connection.

4.5 Initial operation

Note:

In order to heat the water in the pool, the filter pump must be running to cause the water to circulate through the product. The unit will not start up if the water is not circulating.

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

- a. Switch on the filter pump. Check for leaks and verify that water is flowing from and to the swimming pool.
- b. Connect power to the unit, the unit will start up after the time delay expires.
- c. After a few minutes, check whether the air blowing out of the unit is cooler.
- d. When turn off the filter pump, the unit should also turn off automatically, if not then adjust the flow switch.

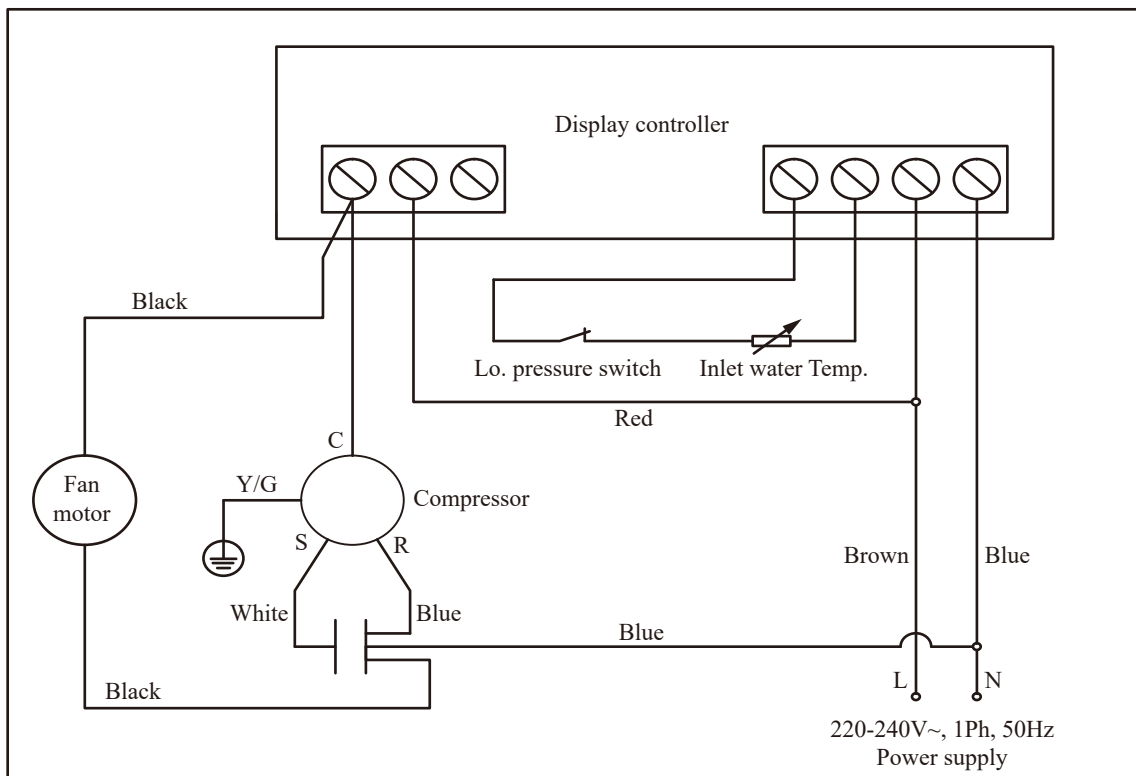
Time delay

The product has a built-in 3-minute delay to protect the circuitry and avoid excessive contact wear. The unit will restart automatically after this time delay expires. Even a brief power interruption will trigger this time delay and prevent the unit from restarting immediately. Additional power interruptions during this delay period do not affect the 3-minute duration of the delay.

4.6 Condensation

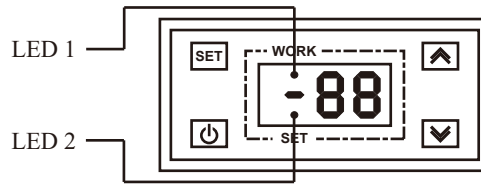
The air drawn into the unit is strongly cooled by the unit running to heat the water in swimming pool, which may cause condensation on the evaporator. The amount of condensation may be as much as several litres per hour at high relative humidity. This is sometimes mistakenly regarded as a water leak.

5. Wiring Diagram



6. Operation


6.1 LED display panel





LED	Means	Running status		
		Display	No display	Flash
1	Load status	Running	No running	Delay time
2	Setting status	-----	Non-setting status	In setting status

6.2 Operation

Turn on/off the product

In off status, press once the button  turn on the unit. In normal working status, press and hold this button for 5 seconds, turn off the unit. When the unit is running, the LED display shows the inlet water temperature.

Setting water temperature

Press once *SET* button in normal working status to set the water temperature, then setting indicator will flash. Use  and  button to adjust the water setting temperature. Press *SET* button to save and exit, or no any button operation for 15 seconds to save and exit.

6.3 Trouble shooting

Error code	Malfunction	Solution
HH	- Temperature sensor short circuit or exceed the highest measuring temperature	- Check the temperature of water. - Check whether the sensor is short circuit, and replace it.
LL	- Temperature sensor open circuit	- Check the temperature of environment where the sensor is located. - Check whether the sensor is open circuit, and replace it. - Check whether the wires connection of temperature sensor.
	- Low pressure protection	- Check whether low pressure switch is failed, and replace the it. - Check whether the wires connection of switch is losing. - Check whether the refrigerant system is leaked.

7. Maintenance

- It is necessary to 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 the product.
- Clean the pools and filtration system regularly to avoid the damage of the unit as a result of the dirty of clogged filter.
- Discharge the water from bottom of water pump if the unit will stop running for a long time (Specially during the winter season).
- In another way, check the unit is water fully before starting to run again.

8. Specifications

Model			DTSP-025mini
Power supply			220-240V, 1Ph, 50Hz
Heating capacity	Cond. 1	kW	3.1
	Cond. 2	kW	2.2
Input	Cond. 1	kW	0.68
	Cond. 2	kW	0.61
Current	Cond. 1	A	3.1
	Cond. 2	A	2.8
COP	Cond. 1		4.41
	Cond. 2		3.61
Max. input		kW	0.95
Max. current		A	4.7
Water flow		m ³ /h	2
Water pressure drop		kPa	16
Running temperature range			7°C - 35°C
Swimming pool size (Advised, with pool cover)			7m ³ - 10m ³
Refrigerant type / Charged			R32 / 0.3kg
GWP value			675
Equivalent CO2		Ton	0.2
Compressor	Brand		GMCC
	Type		Rotary, Fixed
Air side heat-exchanger			Hydrophilic aluminum & Inner groove copper tube
Fan			Axial
Throttling type			Capillary
Water side heat-exchanger			Titanium heat-exchanger, Titanium tube with PVC casing
Sound pressure level	@1m	dB(A)	43
	@10m	dB(A)	23
Water pipe connection			DN32
Dimension (L×W×H)		mm	310×300×358
Weight		kg	24

Notes:

1. Cond. 1 -

Outdoor ambient temperature is 26°C; inlet / outlet water temperature is 26°C/28°C.

2. Cond. 2 -

Outdoor ambient temperature is 15°C; inlet / outlet water temperature is 26°C/28°C.

3. The specification may be changed for product improvement, please refer to the nameplate of product.