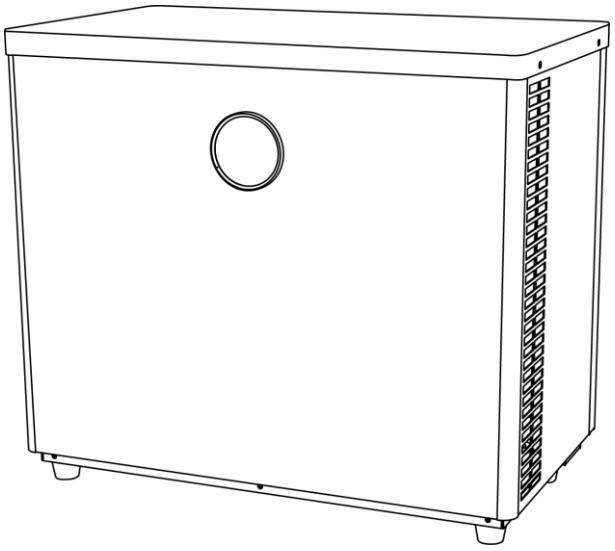
AQUAMINI

POOL HEAT PUMP



USER MANUAL

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A. Foreword

Thank you for choosing our pool heat pump, which is designed for more silent and energy saving user experience. It is an ideal way for green pool heating.

We hope you'll enjoy using our heat pumps.

Thank you!

B. Safety precautions

We have provided important safety messages in this manual and on your heat pump.
Please always read and obey all safety messages.

This heat pump use eco-friendly R32 refrigerant gas

1. Warning

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury or injury to a third party. These signs are rare, but are extremely important.

	a. Keep the heat pump away from fire source.
	b. It must be placed in well ventilated area, indoor or closed area is not allowed.
	c. Repair and disposal must be carried out by trained service personnel
	d. Vacuumize completely before welding. Welding can only be carried out by professional personnel in service center.

2. Attention

a. Please read the following instructions before installation, use and maintenance.

b. Installation must be done by professional staff only in accordance with this manual.

c. A leakage test must be performed after installation.

d. Except for the methods recommended by the manufacturer, do not use any methods to accelerate the defrosting process or clean the frosted parts.

e. If a repair is required, please contact the nearest after-sales service center. The repair process must be strictly in accordance with manual. All repair practice by non-professional is prohibited.

f. Set proper temperature in order to get comfortable water temperature to avoid overheating or overcooling.

g. Please don't stack substances, which will block air flow near inlet or outlet area, otherwise the efficiency of the heater will be reduced or even stopped.

h. Don't use or stock combustible gas or liquid such as thinners, paint and fuel to avoid fire.

i. In order to optimize the heating effect, please install heat preservation insulation on pipes between swimming pool and the heat pump, and please use a recommended cover on the swimming pool.

j. Connecting pipes of the swimming pool and the heater should be ≤10m.

3. Safety

a. Please keep the main power supply switch far away from the children.

b. When a power cut happens during operating, and later the power is restored, the heater will start up.

c. Please switch off the main power supply in lightening and storm weather to prevent from machine damage that caused by lightning;

d. Any repairing should be conducted in the area with good ventilation. The ignition source is prohibited during the inspection.

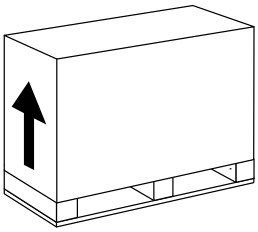
e. To reduce the safety risk, a safety check should be done before maintenance or repair.

f. If a leakage of refrigerant gas happens, all operation must be stop and call for emergency service immediately.

C. About your heat pump

1. Transportation

a. Always keep upright



b. Do not lift the water union
(If so, the titanium heat exchanger
inside the heat pump may be damaged)

2. Operating condition and range:

Heating temperature setting range: 18℃～40℃
The heat pump will have ideal performance in the operation range Air 10℃～43℃

3. Technical parameter

Model	AMS04	AMS06
PERFORMANCE CONDITION: Air 27°C/ Water 27°C/ Humid. 80%		
Heating capacity (kW)	3.5	5.6
COP	5.0	5.1
PERFORMANCE CONDITION: Air 15°C/ Water 26°C/ Humid. 70%		
Heating capacity (kW)	2.3	4.0
COP	4.0	4.1
TECHNICAL SPECIFICATIONS		
Advised pool volume (m^3) *	0~12	5~20
Operating air temperature (℃)	10℃~43℃	
Rated input power (kW)	0.58	0.98
Rated input current (A)	2.5	4.2
Sound level at 10m dB(A)	26	27
Advised water flux (m^3/h)	1~2	2~2.5
Water connection (mm)	32/38	

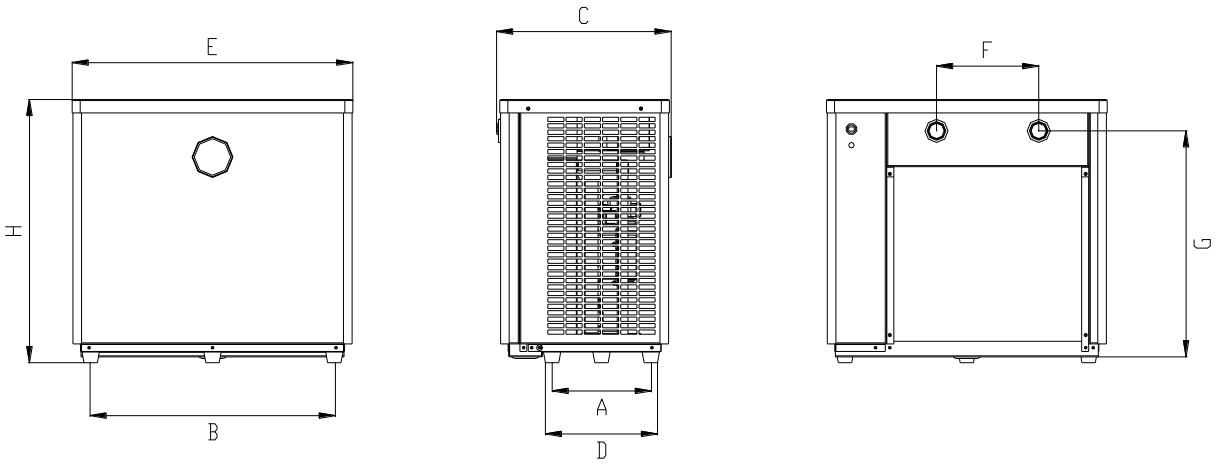
Remarks:

This heat pump is able to perform normal within air temp 10℃～+43℃, efficiency will not be guaranteed

out of this range. Please take into consideration that the pool heat pump performance and parameters are different under various conditions.

Related parameters are subject to adjustment periodically for technical improvement without further notice. For details please refer to nameplate.

5. Dimension



Size (mm) / Name / Model	A	B	C	D	E	F	G	H
AMS04	184	457	316	209	523	190	421	490
AMS06	184	634	316	209	703	280	421	490

※ Above data is subject to modification without notice.

Note: The picture above is the specification diagram of the pool heater, for technician's installation and layout reference only. The product is subject to adjustment periodically for improvement without further notice.

D. Installation guidance

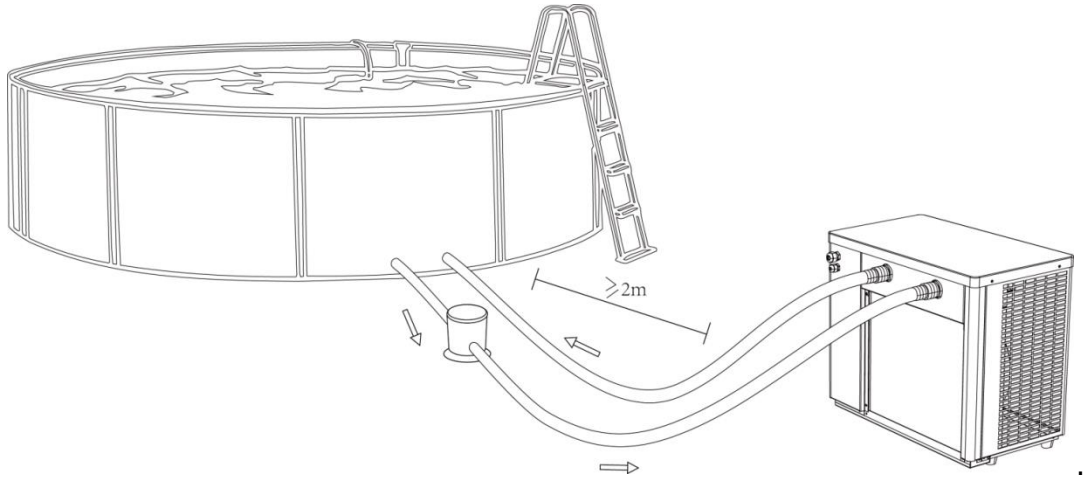
1. Installation reminder

Attention:

1. Any chemical products should be added in outlet tube of heat pump, even it doesn't entry the heat pump.
2. Always keeps upright.

a. Location and dimension

The pool heat pump should be installed in a good ventilation place, with stable power supply and filter. The distance between heat pump and other objects like wall, bush or devices should be at least **50 cm**, the distance between heat pump and the pool should be atleast **2 meters**.



b. Test machine

Attention: please make sure follow the order: Open water pump → Open heat pump; Close heat pump → Close water pump

1) The frame must be fixed by bolts (M10) to concrete foundation or brackets. The concrete foundation must be solid and fastened; the bracket must be strong enough and antirust treated;

2) Please don't stack substances that will block air flow near inlet or outlet area, and there is no barrier within 50 cm behind the main machine, or the efficiency of the heater will be reduced or even stopped;

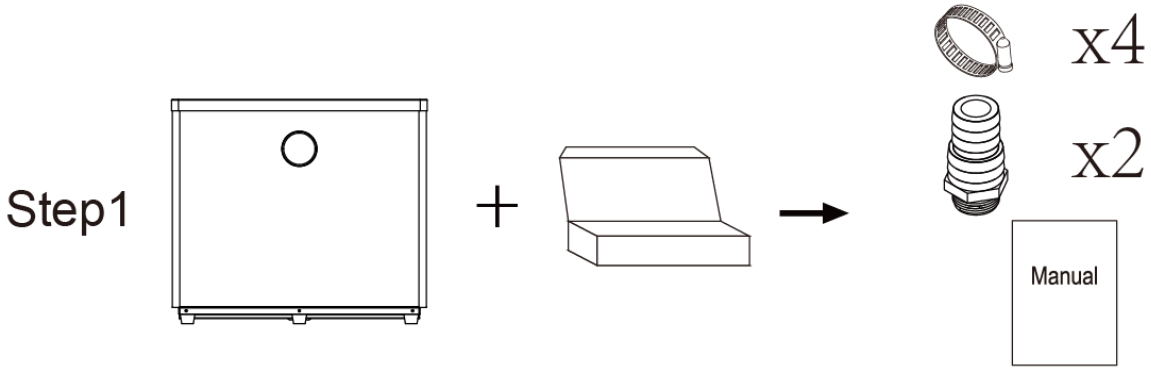
3) The machine needs an appended pump (Supplied by the user). The recommended pump specification-flux: refer to Technical Parameter, Max. lift ≥10m;

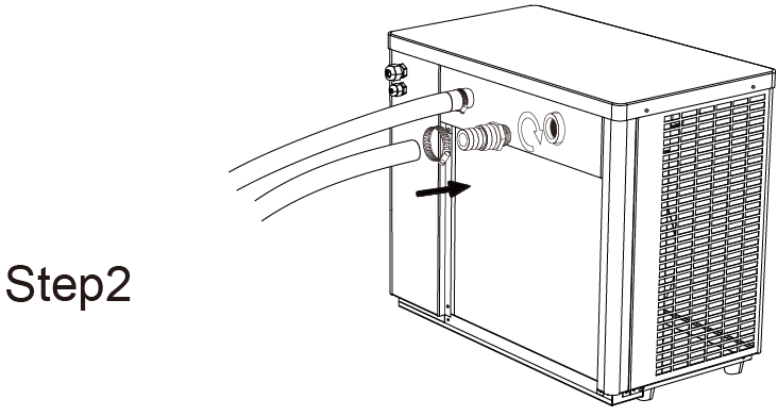
4) Please follow the order to use the machine:

Open water pump → Open heat pump;

Close heat pump → Close water pump

5) When the machine is running, there will be condensation water discharged from the bottom, please pay attention to it. Please hold the drainage nozzle (accessory) into the hole and clip it well, and then connect a pipe to drain the condensation water out.





2. Wiring

a. Connect to appropriate power supply, the voltage should comply with the rated voltage of the products.
b. Earth the machine well.
c. Wiring must be handled by a professional technician according to the circuit diagram.
d. Set leakage protector according to the local code for wiring (leakage operating current ≤ 30mA).
e. The layout of power cable and signal cable should be orderly and not affecting each other.

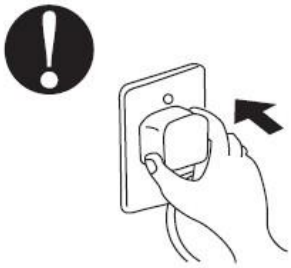
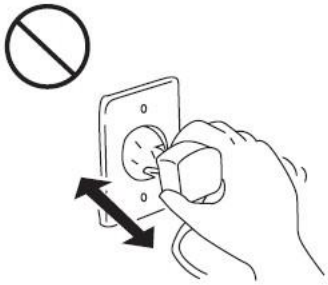
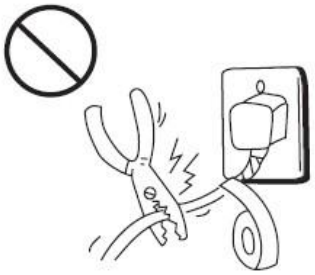
3. Reference for protecting devices and cable specification

MODEL		AMS04	AMS06
Breaker	Rated Current (A)	10	10
	Rated Residual Action Current (mA)	30	30
Fuse (A)		10	10
Power Cord (mm^2)		3 x 0.75	3 x 0.75
Signal Cable (mm^2)		3 x 0.5	3 x 0.5
R32 Gas Weight (g)		250	250

※ Above data is subject to modification without notice.

Note: The above data is adapted to power cord ≤ 10m. If power cord is＞10m, wire diameter must be increased.

Attention:

Make sure the plug is not damaged If the plug is not safe, it might cause electric attack, over heat, or fire 	**Do not pull out the plug when it's functioning** It might cause electric attack, over heat, or fire 	**Do not use damaged or inappropriate wire** It might cause electric attack, over heat, or fire 

E. Testing

1. Inspect heat pump before use

a. The ventilating device and outlets are operating adequately and are not obstructed.

b. It's prohibited to install refrigeration pipe or components in corrosive environment.

c. Inspect the electric wiring on basis of the electric wiring diagram and earthing connection.

d. Double check the main machine power switch should be off.

e. Inspect the temperature setting.

f. Inspect the air inlet and outlet.

2. Leakage detection notice and method

a. Leakage checking is prohibited in closed area.

b. The ignition source is prohibited during the leakage inspection. A halide torch (or any other detector using a naked flame) shall not be used.

c. Leakage detection fluids can be applied with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe.

d. Vacuumize completely before welding. Welding can only be carried out by professional personnel in service center.

e. Please stop using while gas leakage occur, and contact professional personnel in service center.

3. Trial

a. The user must "Start the Pump before the Machine, and Turn off the Machine before the Pump", or the machine will be damaged.

b. Before start the heat pump, please check for any leakage of water; and set suitable temperature in the thermostat, and then switch on power supply.

c. In order to protect the swimming pool heater, the machine is equipped with a time lag starting function, the fan will run 3 minute earlier than the compressor when starting the machine, and it will stop running 3 minute later than the compressor when power off the machine.

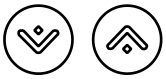
d. After the swimming pool heater start up, please kindly checking for any abnormal noise from the machine.

4. Condensate water

It might have condensate water on evaporator, especially in an humid environment, it could have liters of water, sometimes it will be misunderstand as a leakage.

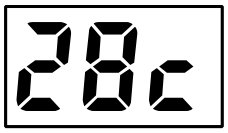
F. Operation guidance

1. Key function

Symbol	Designation	Function
	ON/OFF	Power On/Off
	UP/DOWN	Temperature Setting Mode Select

2. Temperature display

1). Celsius degree display:



means 28℃

3. Operation instruction

1). Turn on/off

Press  to turn on/off the machine

2). Temperature Setting

When the machine is on, press  and  to set temperature.

3). Defrosting

a. Automatic defrosting: When machine is auto defrosting, "☼" will flash, and return to previous working mode when it finishes.

(Remarks: the interval between forced defrosting should be more than 30 minutes.)

G. Maintenance

“CUT OFF” power supply of the heat pump before cleaning, examination and repairing

1. In winter season when you don’t swim:
   a. Cut off power supply to prevent any machine damage.
   b. Drain water clear of the machine.
   c. Cover the machine body when not in use.

!!Important:
Unscrew the water nozzle of inlet pipe to let the water flow out.
When the water in machine freezes in winter season, the titanium heat exchanger may be damaged.

2. Please clean this machine with household detergents or clean water, NEVER use gasoline, thinners or any similar fuel.
3. Check bolts, cables and connections regularly.
4. If repair or scrap is required, please contact authorized service center nearby.
5. Do not attempt to work on the equipment by yourself. Improper operation may cause danger.

H. Trouble shooting for common faults

1, Repairing Guidance

WARNING:
a. If repair or scrap is required, please contact authorized service center nearby.

b. Requirements for Service Personnel

c. Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.

d. Do not attempt to work on the equipment by yourself. Improper operation may cause danger.

e. Vacuumize completely before welding. Welding can only be carried out by professional personnel in service center.

2. Failure solution and code

Failure	Reason	Solution
Heat pump doesn't run	No power	Wait until the power recovers
	Power switch is off	Switch on the power
	Fuse burned	Check and change the fuse
	The breaker is off	Check and turn on the breaker
Fan running but with insufficient heating	evaporator blocked	Remove the obstacles
	Air outlet blocked	Remove the obstacles
	3 minutes start delay	Wait patiently
Display normal, but no heating	Set temp. too low	Set proper heating temp.
	3 minutes start delay	Wait patiently
If above solutions don't work, please contact your installer with detailed information and your model number. Don't try to repair it yourself.		

Note: If the following conditions happen, please stop the machine immediately, and cut off the power supply immediately, then contact your dealer:

1. Inaccurate switch action.
2. The fuse is frequently broken or leakage circuit breaker jumped.

3. Error code

Error code	Description
PP1	Inlet water temperature sensor malfunction
PP2	AIN2 connected temperature sensor malfunction
PP3	AIN3 connected temperature sensor malfunction
PP4	Gas return temp sensor malfunction
PP5	Environment temperature sensor malfunction
PP7	Environment temperature too low
EE1	System pressure too high
EE2	System pressure too low
EE3	Water flux switch malfunction

AQ00AMS-R32