USER AND INSTALLATION MANUAL

HEAT PUMP WATER HEATER



VA1

HTW-AT-O-200VA1 / HTW-ATS-O-200VA1

Thanks for choose our product.
Please, read carefully this manual
before use the product

HTW
HIGH TECHNOLOGY WORLD

ENGLISH

Dear Users,

Hello! We sincerely thank you for choosing our air source heat pump water heater. Please note that only the fourth part of this manual can be operated by users, the rest must be done by professionals. Or it will affect the machine's normal use and performance.

Before you install and use this product, please read this manual carefully, since it will be great help for installation and operation, and to avoid damage or accident caused by incorrect use. Thanks in advance for your cooperation.

The information is subject to change without prior notice.

WARNING:

1. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
2. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
3. In order to avoid a hazard due to inadvertent resetting of the thermal cut-out, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.
4. The product's installation and maintenance must be done by professionals and users cannot install and maintain by themselves.
5. When the environment temperature is below 0ºC, please drain the water out of all the pipes if the machine is not working or no power supply.
6. Clean the water evaporator fins regularly, otherwise it will affect the machine's normal operation. Turn off the power when cleaning.
7. Do not use the machine to heat groundwater, seawater and other hard water, otherwise it will affect the heat transfer performance and damage the heat exchanger and compressor assembly.
8. Details of type and rating of fuses; (see main report).

ATTENTION

The damages caused by the above operations are not covered by warranty.

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PART 1. The Characteristics and Operational Principles

Heat pump water heater is one of the most modern water heater machines with the highest energy efficiency ratio in the world. The operational principle of heating is to absorb heat from the air based on the changing status of the refrigerant in the pipe system, and then release heat into the water so the storage water's temperature increases, so as to heat the hot water.

This product is suitable for domestic use, enterprises and institutions, service business and other industries, providing hot water for shower and washing.

Characteristics

High-Efficiency, Energy-Saving

This product consumes little electric power. It absorbs a large number of free thermal energy from the air with high heat-collecting efficiency and low operational cost. Compared with the traditional electric water heater, the machine can save energy by 70% or above.

Environmental Friendly

This product consumes natural energy, with no air pollution, no smoke emissions and no harmful gas emissions. It has zero-pollutions and is absolutely environmental friendly.

Safe and Reliable

This product's operation separates the water and the electricity, excluding any potential safety problems of explosion, combustion, electric shock, poisoning etc.

Convenient-To-Use

This product has the electricity-assistant function, so it is not influenced by cloudy, rainy or snowy weather, no matter day or night. It can produce hot water efficiently in the environment ranging –15ºC~-43ºC.

Intelligent Control

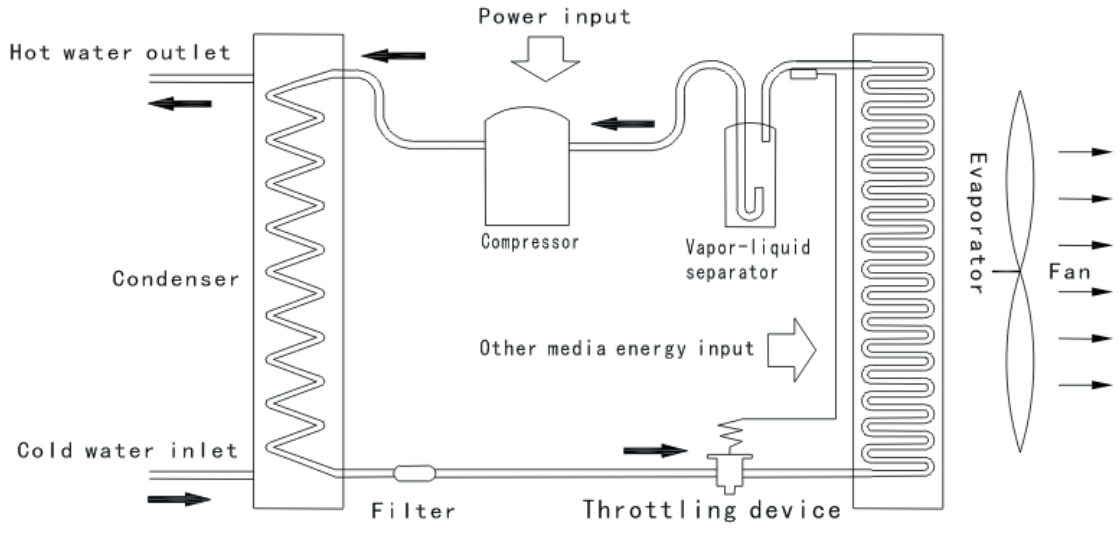
This product has micro-computer unit to control, easy to operate and with automatic memory function when power supply interrupts. It is no need to operate specially by person. Besides, the electricity-assistant function is together with anti-dry and anti-over-high-water-temperature protection.

Stand Wear and Tear

The compressor's core part is of high-quality with strong reliable performance and long service life.

Operational Principle

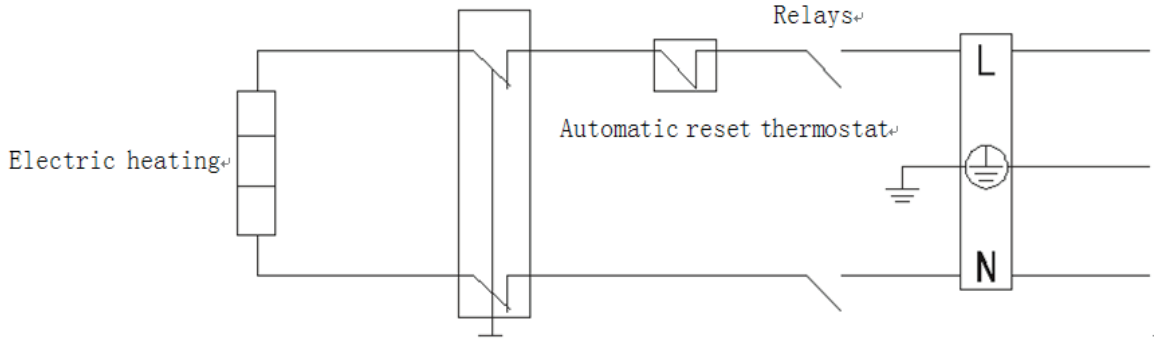
1. Air Source Heat Pump Water Heater's Operational Principles and Instructions



Air source heat pump water heater working principle

The refrigerant which is low temperature and low pressure should be breathed into the compressor to become high temperature and high pressure gas. Then it will exchange heat with water in the condenser and become liquid. The water keeps absorbing the heat and the temperature is rising. The high pressure liquid will go through throttling device and evaporator to become the low pressure gas again. Then the refrigerant will run again and again the above way so as to heat water.

2. The Principle and Instruction of Electricity-Assistant Heating Pipe



Electric heating operating principle

Electricity-assistant heating pipe transfers the electrical energy into the thermal energy, from which water will absorb constantly and the temperature rises. When the temperature reaches the setting temperature, the temperature control devices (which is on the PCB board) will shut off alternatively, then the heating pipe stops working. If the heater occurs dry-burning and over-high-temperature phenomenon, the protection devices will shut off immediately for protection.

PART 2: Cautions of Using the Heat Pump Water Heater

- Make sure to install Y filter at the water inlet entrance during the installation.
- Remove the plug of condensed water outlet exit and keep it unblocked before using the heat pump.
- When finished the installation, please check again before filling in water and supplying power.
- Before using the heat pump, make sure that one PPR connecting pipe no shorter than 1.5 m has been installed to the inlet water entrance.

■ **Please check if the following accessories are complete.**

Part Name	Qty	Pic (Just for reference.)	Descriptions
User Manual	1		Please use this part during the installation and using.
Y-Type Filter	1		Please use this part during the installation.
Safety Valve	1		Please use this part during the installation.
Electricity Guard	2		Please use this part during the installation.

Note: If the accessories list updates as products improve, there will not be further notice. So please refer to the actual accessories list.

■ Power Supply Requirement

- Wiring work should be done by official qualified electrician, and all works should meet the electric appliances safety requirements.
- The supplying wires for the water heater must have earth wire, which should be connected to the reliable outside earth wire. Besides, the outside earth wire must be effective.
- It must provide the power in line with rated parameters for the heat pump water heater.
- According to the national requirements for electric appliances, there should be an electrical leakage protector for the heat pump.
- The installation should be in line with the national rules of the wiring.
- When connecting to the power supply, there should be a at least 3 mm all-pole disconnect device away from the all-pole electric shock.
- If the power wiring is broken, it should be replaced by the manufacturer, the maintenance department or other professionals. During the replacement, the zero wire and the fire wire should be corresponded with the zero wire terminal (N) and the fire wire terminal (L), make sure that the connecting is reliable.
- Note: It is not allowed to disconnect or take apart the ground wire of power supply under any circumstances; it is prevented to use damaged wires and switches. You should replace it immediately once it is damaged.

■ Safety Instruction

- The heat pump is designed to offer suitable hot water to the users, only applying to the described usage.
- Do not use or store gasoline or other flammable, explosive gases or liquids near the heat pump water heater, otherwise it may cause dangers.
- For your personal and other people's safety, please do not put anything near the wind–outlet mouth of the heat pump.
- Children are not allowed to play with the heat pump in order to avoid dangers.
- Please turn off the power when maintain in order to avoid accidents.
- Be sure that refrigerant in the refrigeration system has been drained completely before taking the welding maintenance, because the refrigerant will produce harmful gases if meets fire and could easily cause fire.
- Install the anti-electric wall manufactured by our company to the water outlet exit if necessary

■ To Change the Installation Site

If you need to change the installation site of heat pump, please contact your dealer or our local customer service department.

PART 3: The Installation of Heat Pump

■ Basic Installation Tools and Materials Needed

NAME	QTY	Usage
Pipe wrench	2 pcs	To connect the water pipes.
Straight screwdriver Phillips screwdriver	1 pc per each	To disassemble the battery box and connecting wires.
Wire scissor / stripper	1pc	To trim thread and strip wire.
Percussive drill/wrench	1/2 pcs	To fix the machine's anchor bolt.
Ball valve	1 pc	To install the tank inlet water pipes.
Water pipe, flexible joint	Depends on the actual need.	PPR pipes, PAP pipes.
Hot water pipe insulation material	Depends on the length of the heat pipe.	To insulate.

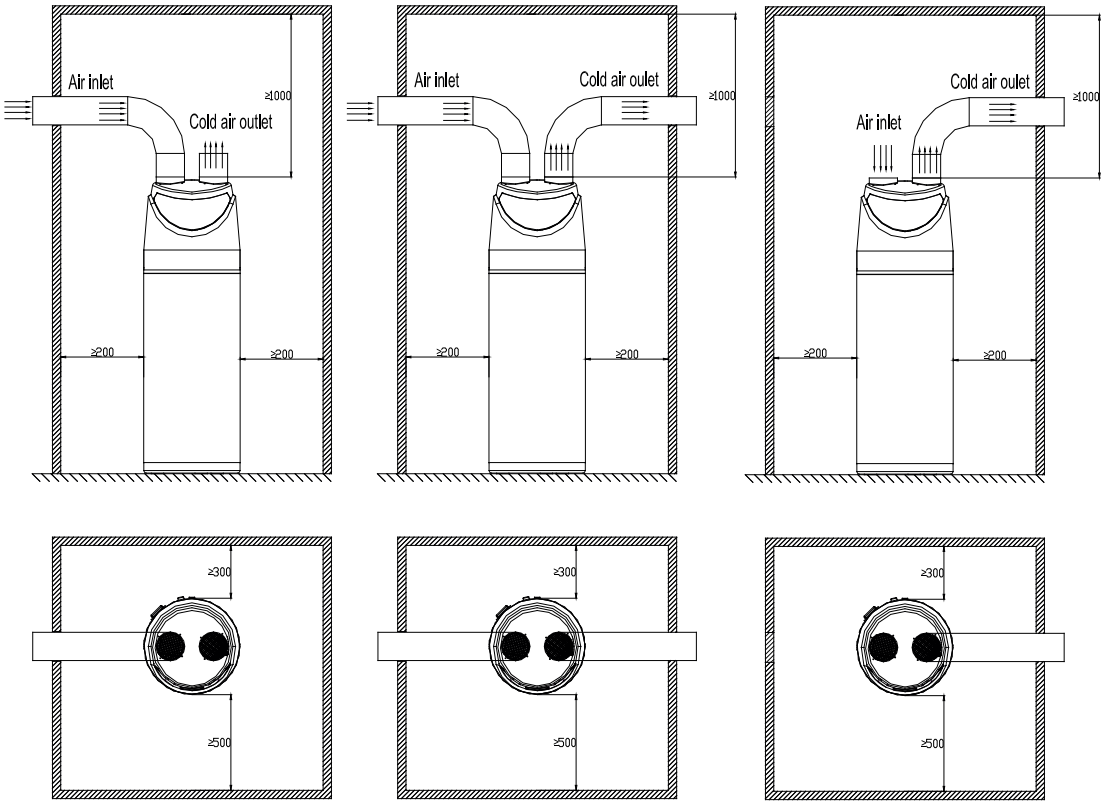
■ Installation Instructions

1. Machine Moving

- This machine is quite heavy so that it requires two or more people to move and install, or it may cause in personal injury or other accidents.
- Please transfer the machine as its delivery status, do not disassemble it by yourself.
- In order to avoid scratches and deformation on the surface, please add protection board over the surface of the machine which may contact hard objects directly.
- Be careful not to touch the wind vane with your hands or other objects.
- Do not transfer the machine as the inclination is over 45°. Do not lay down the machine recumbently on the floor.

2. Installation Location Selection

- The machine should be installed in the room.
- Please choose the location which can bear the heat pump's weight, will not cause much vibration and noise when hanging on it, and have good ventilation. The air outlet place should avoid facing the wind direction and remain the horizontal line place. If the machined is installed in the place vulnerable to rain, it is essential to take the necessary measures to prevent rain and avoid rain erosion.
- Please select the place where easily connecting to the water pipes and electric power suply.
- Please select the place where water can successfully exhaust out of the relief valve when it works.
- Please select the place where water exhausted out of the relief valve will not splash on the wood floor or furniture.
- When installing, please leave space for installation and maintenance shown as the below drawings. There should be no obstacles at the machine's wind outlet within the range of 600mm.
- When install the heater, the inclination should not more than 5°.



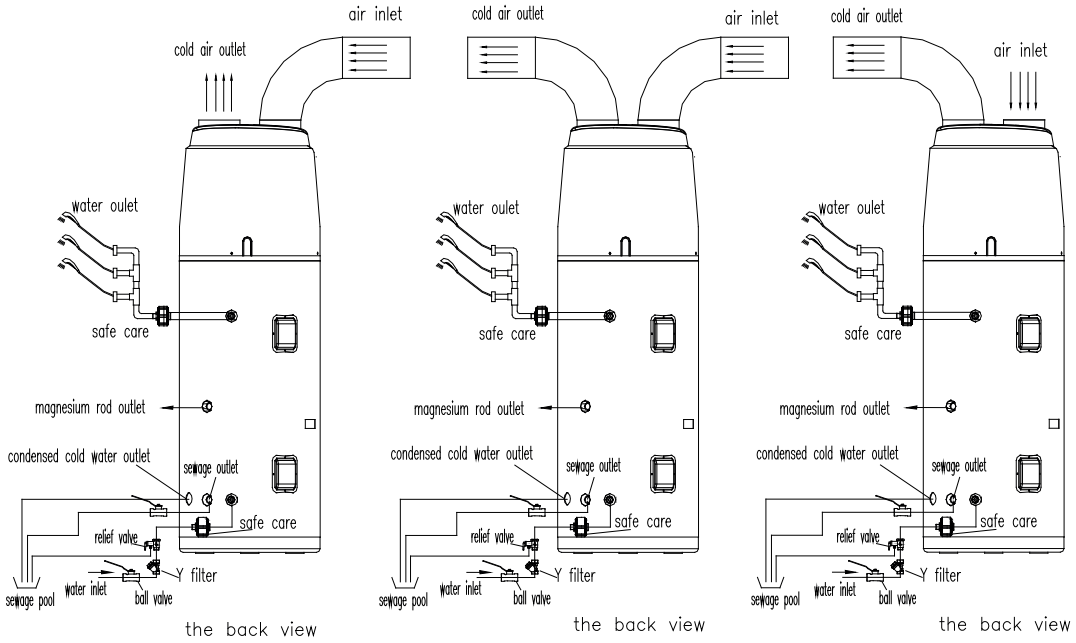
Install Method 1 Install Method 2 Install Method 3

3. Installation/Usage Requirements (Please refer to the installation diagrams)

- The heat pump should be placed stably (horizontal), and water pipes, water filters, safe care and one-way relief valve should be installed accordance with the national standards.
- Water injection: Turn on one of the water outlet and water inlet valve. It means injection finished when there is water comes out of the outlet. You can switch on the heater after that.
- The water quality should meet the following standards: Hardness (CaCO3) ≤200milliliter/liter, Chloride ions ≤50 milliliter/liter, PH value 6.5~8.5, and you should clean the inner water tank regularly.
- If you remove the sediment dirt of the inner water tank regularly, it will improve the working efficiency. Sewerage/drainage method: turn off the power and inlet water valve, open one of the water outlet and sewage valve, and then the sewage and sediment will come out. Turn off the sewage valve until discharge of the water finishes.

4. The Connection of Pipe System

- Connection Figure of Pipe System



ATTENTION

- Do not use iron pipe to install the heater. The water system should adopt new pipes which meet drinking water standards, such as CPVC/PPR pipe or PB, Please do not use smelly PVC pipe.
- Install the water pipes, connectors and other parts as the above figure. If the installation environment is under 0°C, all pipes should be with insulation treatment.
- Please keep the condensed water outlet and safety valve outlet clean and unblocked.

5. Pipes Connection Instructions

(1) Installation requirements of water inlet pipes
Screw threads are G3/4" (nipple). The lifetime of pipes and pipe components cannot be shorter than the lifetime of the machine, and they should be able to withstand high temperature of 80°C, so as to avoid damage.

(2) Installation requirements of safety valve connection pipes
Screw threads are G1/2'' (internal), make sure the water can flow out of the safety valve and the water outlet part should be installed straight downwards. After finishing installation, please make sure that all the connecting drain-pipes should be connected to each other one by one downwards in frost-free environment.

(3) Installation requirements of Y-filter
Screw threads are G1/2''. The direction of installation should be consistent with the water inlet direction, while the drain outlet of the filter should be downwards.

(4) The tank's supply water pressure ranges 0.15MPa ~ 0.5MPa. If the water inlet pressure is always lower than 0.15MPa and much water quantity required, you need to add a booster pump at the water inlet so as to keep the water pressure no lower than 0.15MPa; if the water inlet pressure is always higher than 0.5MPa, you need to add a reducing valve of 0.5MPa at water inlet pipe so as to make sure the safety use of the tank.

6. Electrical Wiring

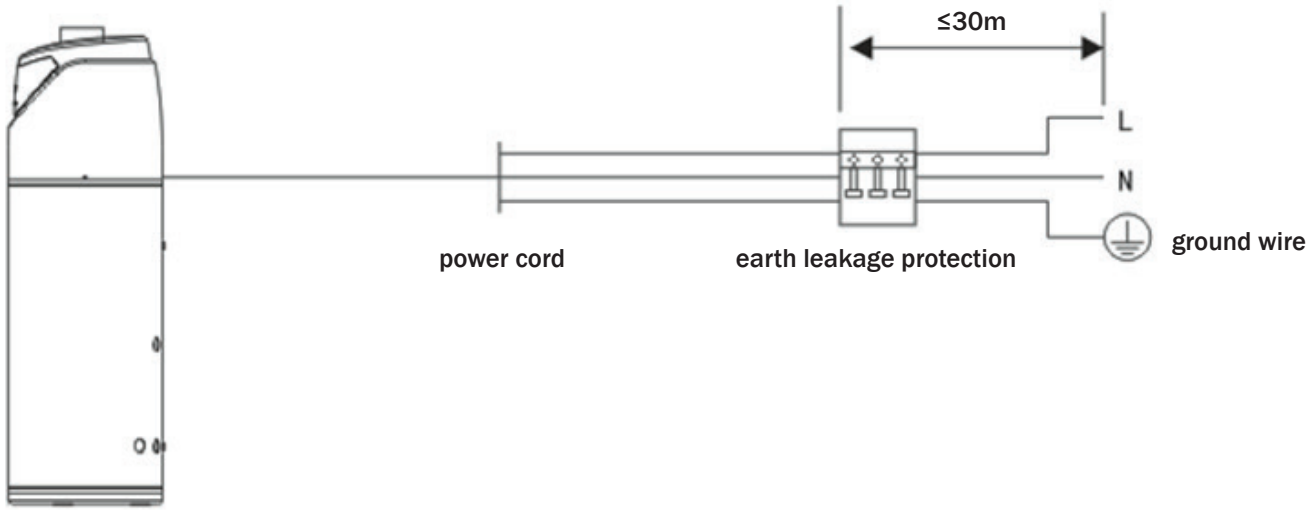
ATTENTION

- The water heater should use special power cord, which should be required as the below table. The voltage of power should also be suitable with the rate voltage requirement.
- The power supply circuit should have ground wire, which should be connected with outside ground reliable device effectively.
- Cable connection must be done by professional technical person strictly according to the electrical diagram.
- It should set up earth leakage protection according to the relevant national electrical equipment standards.
- It should use all-pole disconnection device which has at least 3 mm contact separation when connecting the power.
- It needs double-check the electrical circuit before connecting to the power supply.
- It should not disconnect or disassemble the ground wire, nor use broken cables and switches under any circumstances. If you find out any breakage, you must replace it as soon as possible.

(1) Power Specifications

Items / Model	Power	Power Cord Diameter (mm^2)		Manual Switch (A)		Earth Leakage Protection
		Naught Wire Length ≤30m	Ground Wire	Capacity	Fuse	
HTW-AT-O-200VA1 **HTW-ATS-O-200VA1**	230V~50Hz	≥1.5	≥1.5	20	15	30mA Below 0.1 sec

(2) Earth Leakage Protection



Power Connection Diagram

7. Trial Operation

(1) Precautions required before trial operation

- The water heater should be installed and completed correctly.
- Piping and wiring should be correct.
- Power supply voltage should match with the rated voltage the water heater requires.
- Drainage should work smoothly.
- The insulation should be improved.
- The ground wire should be properly connected.
- There should not be any obstacles at the air inlet place.
- Make sure all the pipes are drained and empty and all the valves have been turned on.

(2) Operation with power

- Make sure all the control switches are normal as well as all function buttons are good.
- Observe if the hot water system works properly and the temperature of outlet water is normal or not.
- When the safety valve is working, please check if it can drain out water successfully.
- There isn't any abnormal vibration or sound during the machine's operation.

8. Technical Parameters

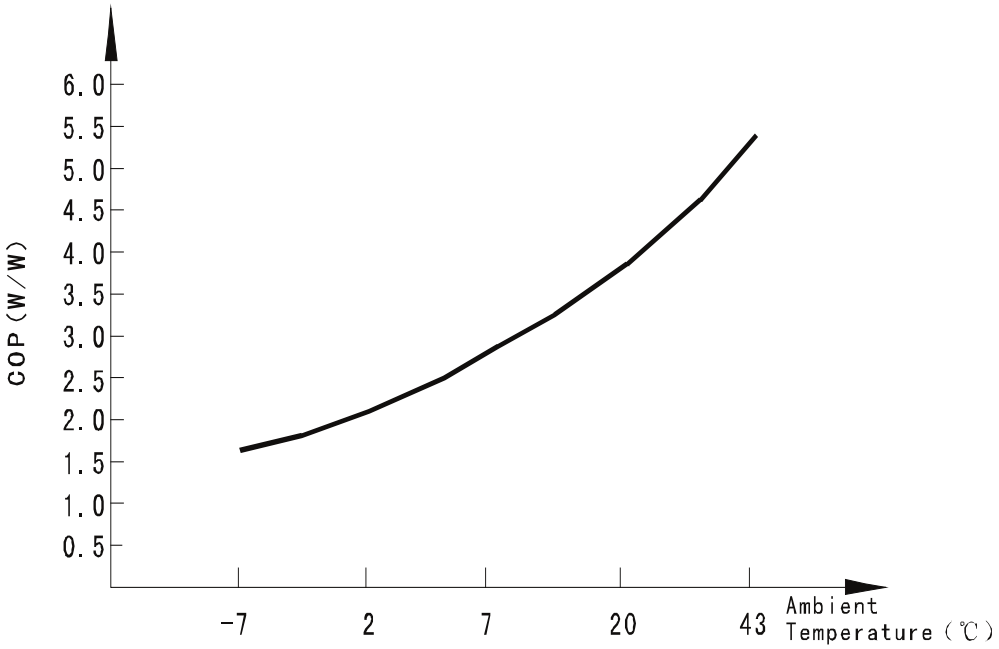
Air source heat pump water heater	
Model	HTW-AT-O-200VA1 / HTW-ATS-O-200VA1
Rated Voltage/Frequency	230V~50Hz
Electric heating rated power	2000W
Heat pump rated power	610W
Rated Capacity	200L
Waterproof rating	IPX4
Net weight	95kg
Noise	≤60dB(A)
Dimension	Φ580x1860
Refrigerant	R410A/900g

Refrigeration system allows working overpressure	Exhaust side	4.4MPa
	Suction side	1.6MPa
Water pipeline system	Outlet water temp	DN20
	Inlet pipe Dia	DN20
	Outlet pipe Dia	DN20
	Drain pipe Dia	DN20
	Rated.pressure	0.7MPa
	Max.pressure	0.7MPa
Noted: The test conditions for rated parameters are dry bulb temperature of 20 degrees, Wet-bulb temperature of 15 degrees, inlet water temperature of 10 degrees, outlet water temperature of 52degrees.		

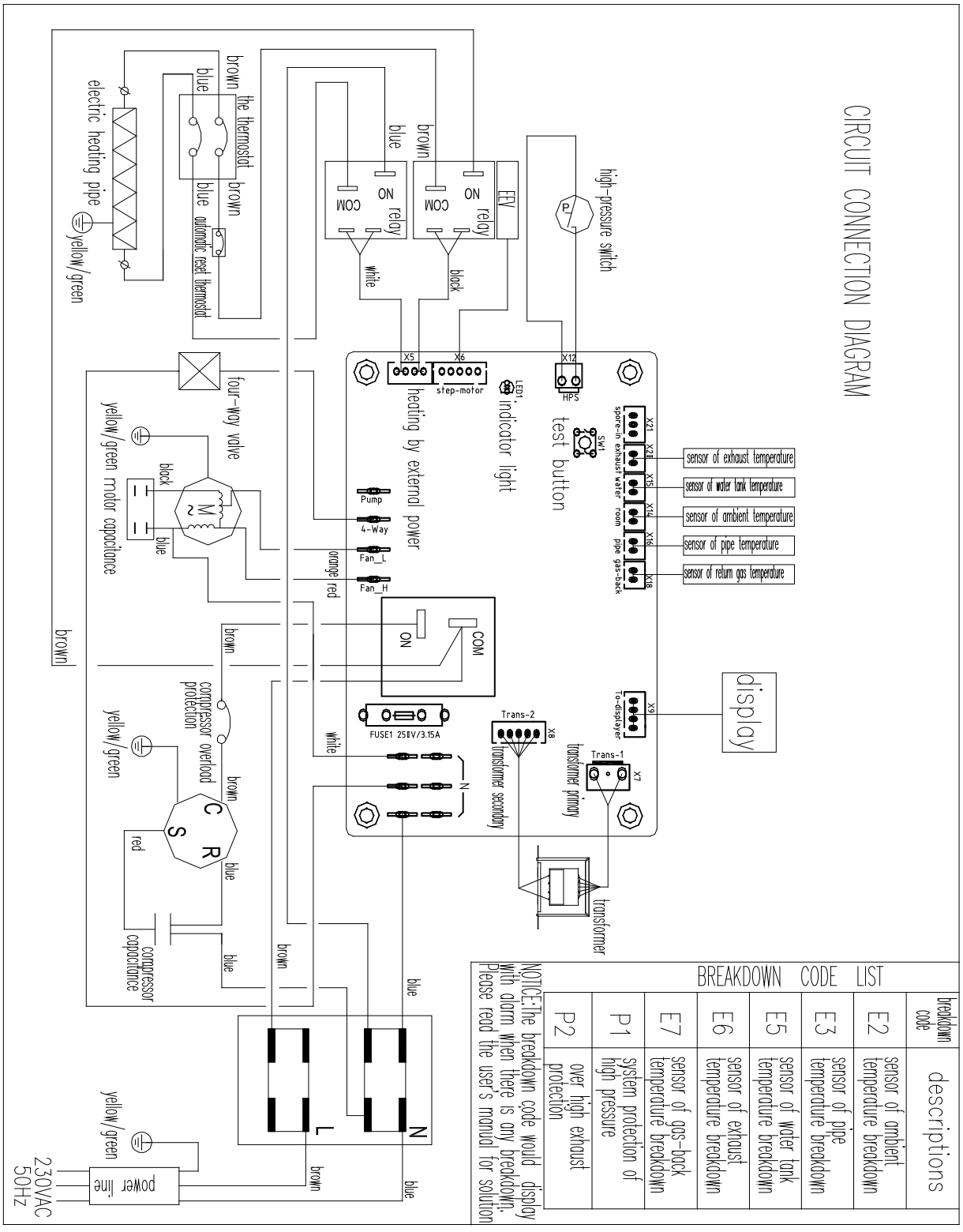
ATTENTION

The parameters in the above table are only for reference. When the contents of this table differ from those of the nameplate on the machine, please refer to the nameplate.

■ The Relations of the Parts COP and the Ambient Temperature



■ Electrical Diagram



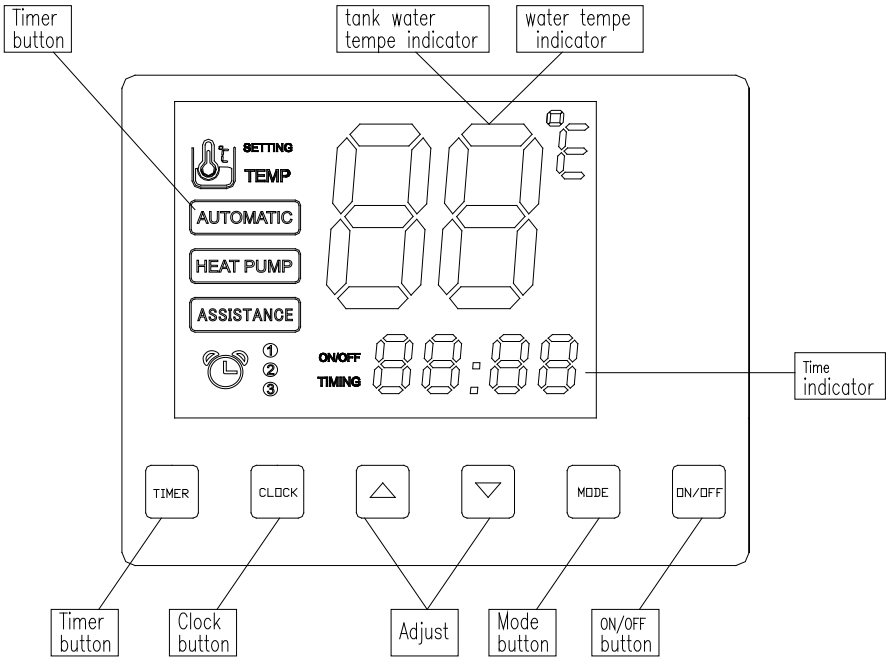
Electrical and Gas Connecting Explanation Diagram for Model HTW-AT-O-200VA1 / HTW-ATS-O-200VA1

ATTENTION

This diagram is for reference only. When the content of the above diagram differs from that on the machine, please refer to the electrical diagram within the machine.

PART 4: Instructions of Usage and Daily Operations of Heat Pump

■ Instruction of Buttons



Note: It shows the temperature of tank water in unattended operation, while it shows no value in stand-by status. When the tank water temperature indicator flashes, it means the machine's disinfection function is on.

■ Operation Instruction

(1) Turn on / off the Machine
With the power connection, press the button "On/Off", then the heat pump will turn on. Press the button "On/Off" again, the heat pump will turn off.

(2) Mode Selection
When the machine is on, you can select the mode "automatic", "heat pump" or "assistance" (electrical assistance).

Note: heat pump mode and assistant mode cannot be used at the same time.

- When under "automatic" or "heat pump" mode, the compressor has 3-minute starting delay protection function.
- In order to avoid starting frequently, when it reaches the setting temperature and stops, the heat pump will restart when the temperature of tank water 4°C lower than the setting temperature.
- When under "automatic" mode, turn on the heap pump and let it heating until the tank water temperature reaches 52°C and stop, then select the "assistant" mode to increase the water temperature to 70°C.
- When the display is on, press the mode button for at least 3 seconds, and then press ▲ or ▼ button referring to the follows:
  F1: the temperature of discharge;
  F2: the temperature of environment;
  F3: the temperature of pipes;

F4: the temperature of suction;
F5: the status of compressor; 0 means compressor off, 1 means compressor on.
F6: the status of fan motor; 0 means motor off, 1 means motor runs at low speed, 2 means motor runs at high speed;
F7: the status of four-way valve; 0 means four-way valve off, 1 means four-way valve on.

(3) Temperature Setting of Water Tank
When the machine is on, you can adjust the temperature of water tank by pressing ▲ or ▼ button, which makes the temperature increasing or decreasing by 1ºCThe highest temperature of "heat pump" mode is 52ºC, while the one of "automatic" mode and "assistance" mode is both 70ºC.

(4) Clock Setting.
When the power is on, press the clock button for a long time and enter into the clock setting status. You can adjust the current data by pressing ▲ or ▼ button. Press the timer to choose the one you want to adjust and "minutes" and "hours" will flash in the time zone by returns. You can adjust the "minutes" with pressing ▲ or ▼ button. After finishing setting, you can press the clock button again or wait for 30 seconds, and then the clock setting will switch to home page.

In the process of setting time, if you don't press ▲ or ▼ button when the data flashing for more than 30 seconds, then the machine will automatically exit and maintain the current setting time.

(5)Timer Function
In the home page, press the timer button once, then it will enter the timer setting status. You can adjust the glittery data on the display by pressing ▲ or ▼ button. The setting order will be as follows: the first timer→the second timer→the third timer→finish. For each timer setting, it is required to set the turn-on time first (the timer indicator will be on). During the setting, please press the timer button to choose the data you want to adjust, and it will show on the display as hours→minutes→temperature→hours. Press the timer button to set the turn-off time and temperature (the timer indicator will be off). Press the mode button one more time to confirm the data and finish the setting (only when the third timer is finished setting).

If you press the mode button for a long time during the setting, the data will not be kept and it will go back to the home automatically.

(6) Delete the Timer Records
During the setting, press the timer button for a long time until it goes back to the home page automatically, and then all the timer records will be deleted.

(7) Trace the Timer Records
Activate the display and press the timer button, and then enter the status to trace the timer records. Press mode buttons to change over different records.

Kindly reminder:

◊ You can select the time slot from 12 a.m. to 5 p.m. as the turn-on time to warm up the machine, because the temperature will be higher and can absorb much heat, which guarantees good working efficiency.

◊ It is suggested to choose off-peak power consumption and use the pump in the evening, because most of the regions have cheaper electric charge for night.

◊ Choose the heating time and water temperature as needed, because there will be heat loss though the heat pump has heat insulation function. Besides, long-time insulation will make the machine keep running and consume more electricity.

◊ In normal use, open any one of water outlet exits will come out hot water, and cold water will be refilled automatically.

◊ When the machine will not be used for a long time, it is suggested to turn off the controller switch, and disconnect the power plug. Please note that the current timer setting may fail (because it needs working with battery). Reset it when you use the pump next time.

◊ Control board are not allowed to install in high-temperature places such as bathroom, so as to prevent moisture from affecting the normal work .

◊ The temperature of water tank is set at 52ºC in factory. The higher water temperature you set the lower energy efficiency ratio (cop value) it runs.

◊ If the first one or two timers are set and you want to set more, you need to delete them and reset all of the timers.

◊ This machine has auto-self-sterilized function. This function will be activated when reaches certain circumstances, even the machine is in stand-by status. The target water temperature on the display will keep glittery during this function is on.

WARNING

◊ During the operation, when the evaporator coil's temperature is lower to a certain extent, the evaporator may be frost. At this time, the system will automatically defrost. After that, it will recover and run automatically.

◊ The water produced by heat pump shall not be used as drinking water. Please add cool water to the hot water before using, so as get the proper water temperature and avoid scalding.

ATTENTION

Please stop operation and unplug the machine if occurs the following circumstances. Contact our dealers or maintenance personnel and do not repair the heat pump water heater on your own, because wrong repair may cause casualties or fire.

- Fuses and protectors often disconnect.
- Power cord and power switch heat abnormally.
- Bad smell during operation.
- Leakage of the heat pump water heater.

PART 5: Repair and Maintenance of the Heat Pump Water Heater

When using the heat pump water heater, please check the unit's operation regularly. If it can provide long-term and effective maintenance to the heater, the unit's operation reliability and service span will be improved.

1. Clean the water filter regularly and make sure that the water within the system is clean, avoid damages due to the water filter's blocking.
2. All safety protection devices have been set correctly and completely in the factory, so please do not adjust on your own.
3. The heat pump should be kept in clean and dry places with good ventilation so as to achieve good heat exchange. Please clean the filter regularly according to different extent of the environmental pollution.
4. To ensure the long-term work efficiency of the water heater, it is recommended to drain the inner water out totally and clean one time every six months, remove accumulative sediment during the operation.

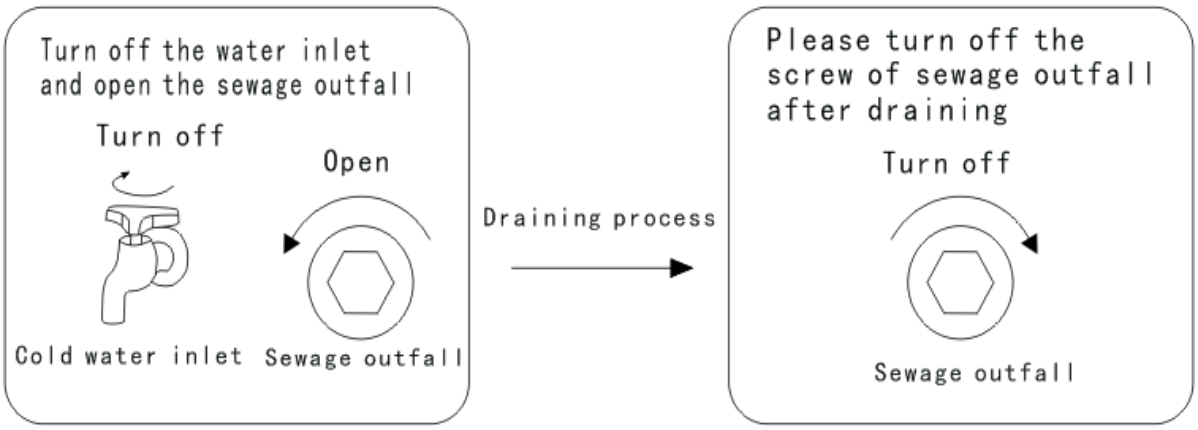
Operation steps are as follows:

(1) Turn off the power.

(2) Turn off the cold-water inlet valve, and then turn on the hot-water faucet (as the below picture shows).

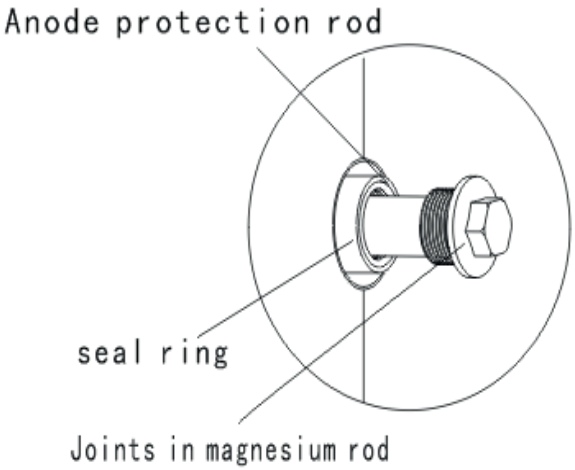
(3) Connect the drain mouth to an appropriate outfall with a hose, (The minimum durable temperature of the host should not be lower than 80℃, if the host does not meet these requirements, please open the cold-water inlet valve and the hot-water outlet faucet until the water is not hot).

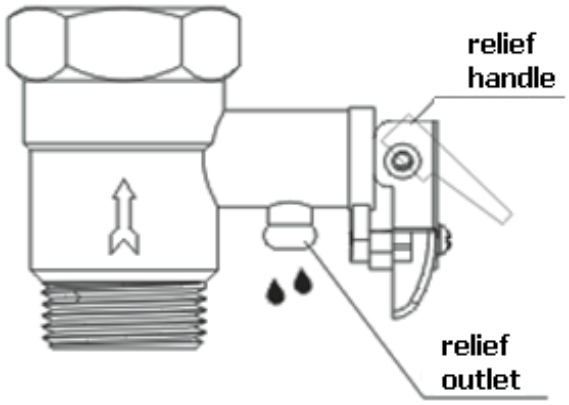
(4) Open the water outlet and drain all the tank water out. If needed, clean the inner tank several times to remove all sediment (it depends on the cleanliness of the water outlet).



(5) Turn off the water outlet, then refill the tank and reconnect to the power.

5. Please check regularly whether the unit's power supply and the wiring of electrical systems are firm or not, whether the electrical components have any abnormal phenomenon or not. If yes, please ask your local dealer or contact us to replace and repair the machine.
6. Please check whether the safety valve of water system is working properly or not, so as not to affect the unit's heating capacity and the reliability of the unit's operation.
7. If you shut down the heat pump for a long time, please remove the water of pipes system and the tank, then cut off the power and put a protection cover. Before re-operating the machine, please conduct a comprehensive examination of the system first, fill with water and then restart the machine.
8. Each water heater is equipped with an anode rod to protect the water tank from corrosion, but the anode rod will also be corroded slowly. The corrosion rate depends on the local water quality. We recommend that you check the anode rod every six months and change a new one if the anode rod runs out. Please contact the dealer or special technical center about detailed information.

ATTENTION	
	Guidelines for replacing the anode protection rod: 1. Turn off the power and the water inlet valve. 2. Turn on the hot water valve or faucet, so as to decrease the pressure of inner tank. 3. Open the water outlet; drain the water until it is lower than the magnesium rod position. 4. Follow the instructions of the left diagram, remove the magnesium rod with a socket or wrench. 5. Replace the new anode protection rod: new anode rod threads need to be coated with suitable screw sealant and place the groove joints in magnesium rod with original seals or new specification seals. Finally, assemble magnesium rod. 6. When finished the installation, heat the water to 52°C, check whether there is leakage around the installation position of magnesium rod during the process.

● It needs to pull the handle of drain valve once every six months to remove the deposit calcium and confirm the device is not clogged. Its outlet water temperature may be high, so be careful to avoid scolding. ● The water may drip from the discharge pipe of the pressure-relief device and that this pipe must be left open to the atmosphere. ● The pressure-relief device is to be operated regularly to remove lime deposits and to verifythat it is not blocked. ● In case of that drain pipes are freezing in winter, which causes accidents, please handle the outlet pipes with insulation protection.	 Safety Valve Schematic Diagram

9. To the regions whose temperature is below 0°C, please be sure to insulate the water inlet and outlet pipes. If necessary, install pipe heating device to avoid pipes freezing.
10. When the machine is breakdown and the user cannot solve the problem, please contact the local service center or dealer to send servicemen to repair the machine promptly.

PART 6: COMMON MALFUNCTIONS AND SOLUTIONS

Form 1 Malfunction Code Table

Malfunction Code	Malfunction Name	Reason	Solution
P1	High pressure switch failure	1. High pressure switch is broken 2. The system is blocking and water tank sensor is fallen off, resulting in water temperature over-high. 3. Refrigerant is too much. 4. There is non-condensable gas in the refrigerant system.	1. Replace the high pressure switch. 2. Check and fix the system with replacing the water tank temperature sensor correctly. 3. Eliminate excess refrigerant. 4. Eliminate non-condensable gas.
P2	Protection for high discharge temperature	1. Refrigerant is not enough. 2. There is non-condensable gas in the refrigerant system.	1.Increase the amount of refrigerant. 2. Eliminate non-condensable gas.
E0	Communication data transmission failure	A open or short circuit between circuit board and display.	1.Fix the connection line. 2.Replace the connection line or display.
E2	Ambient temperature sensor fault (open or short circuit)	1. The sensor's connecting wire is open circuit. 2. The sensor's probe is fallen off. 3. The sensor's wire is short circuit.	1. Repair the wire. 2. Fix the sensor probe again. 3. Repair the wire, and then rule out the breakdown.
E3	Coil temperature sensor failure (open or short circuit)	1. The sensor's connecting wire is open circuit. 2. The sensor's probe is fallen off. 3. The sensor's wire is short circuit.	1. Repair the wire. 2. Fix the sensor probe again. 3. Repair the wire, and then rule out the breakdown.
E5	Water tank temperature sensor failure (open or short circuit)	1. The sensor's connecting wire is open circuit. 2. The sensor's probe is fall off. 3. The sensor's wire is short circuit.	1. Repair the wire. 2. Fix the sensor probe again. 3. Repair the wire, and then rule out the breakdown.
E6	Discharge temperature sensor failure (open or short circuit)	1. The sensor's connecting wire is open circuit. 2. The sensor's probe is fall off. 3. The sensor's wire is short circuit.	1. Repair the wire. 2. Fix the sensor probe again. 3. Repair the wire, and then rule out the breakdown.
E7	Protection for high temperature of return gas	1. The sensor's connecting wire is open circuit. 2. The sensor's probe is fall off. 3. The sensor's wire is short circuit.	1. Repair the wire. 2. Fix the sensor probe again. 3. Repair the wire, and then rule out the breakdown.

Form 2 Common Malfunctions

Malfunction Description	Reason	Solution
The machine does not work.	1. Power failure 2. Power cord is loose. 3. Control power fuse is broken.	1. Turn off the power switch and check the power. 2. Find out the problem and fix it. 3. Replace the fuse.
The machine has low Heating capacity	1. Refrigerant is insufficient. 2. Water pipe's thermal insulation performance is poor. 3. Dry filter is clogging. 4. The heat exchanger with air has poor cooling.	1. Check if there is leakage and note the standard quantity of refrigerant. 2. Strengthen water system insulation function. 3. Replace the dry filter. 4. Clean heat exchanger with air.
The compressor does not work	1. Power supply or the controller is broken. 2. The compressor's contactor fails. 3. The wire is loose 4. The compressor's overheating protection works.	1. Find out the reason and solve it accordingly. 2. Replace the contractor. 3. Find out the loose point and fix it. 4. Identify the reason of overheating and then turn on the machine after trouble shooting.
The compressor works noisily	1. Internal components are damaged. 2. Frozen oil is not enough.	1. Replace the compressor. 2. Add enough frozen oil.
The fan does not work	1. The capacitor is broken. 2. The screw is loose. 3. The motor is broken.	1. Replace the capacitor. 2. Tighten the screw. 3. Replace the motor.
The machine does not produce heat, while the compressor is working.	1. Refrigerant spreads out totally. 2. The compressor is broken.	1. Check if there is leakage and fulfill the standard quantity of refrigerant. 2. Replace the compressor.
Exhaust flue pressure is too high.	1. Refrigerant is too much. 2.Fluorine-way system contains non-condensable gas.	1. Expel excessive refrigerant. 2. Exclude non-condensable gas.
Suction pressure is too low.	1. Dry filter is blocked. 2. Refrigerant is too little.	1. Replace the dry filter. 2. Check if there is leakage and fix it.

Before maintenance, please check the following matters:	
Non-Unit Failure	1) There is water flow out of the pressure relief opening of the drain valve: When producing hot water, the cold water within the heat pump is heated and expands, so there is water flow out of the pressure relief opening of the drain valve, which is normal case. However, if there is water extruding continuously, that means the drain valve loses efficacy. You should stop using the heat pump and replace the drain valve as soon as possible. 2) The duration for heating a whole tank's water becomes longer: When the temperature is quite low in winter (e.g. 0ºC), the heat pump's performance of producing hot water will not be as good as usual, so the duration for heating a whole tank's water becomes longer.
Please check again.	1) The machine operates or stops automatically: a) Please check if you have set a timer. 2) The machine does not work: a) To check if the power is on; b) To check if the machine is turned off; c) To check if the fuse is broken; d) To check if the machine's protection function is working (the indicating light keeps glittery) 3) Performance of producing heat is not good: a) To check if the air inlet and outlet are blocked..

ATTENTION

If the machine remains abnormal after you check as above, please contact the local service center or dealer to send servicemen to repair the machine promptly. Try to avoid the fuse fusing or the leakage protector turning on and off back and forth.

PART 7: AFTER-SALES SERVICE

Dear User:

We sincerely express our gratitude to you for using our brand products. Our company follows the theory that “quality first, customer top”. For the purpose of serving you the best in a long term, please fill the user information in the custom info card, and thanks for your cooperation. If some exceptional conditions happen to the heat pump water heater, please check and solve it according to “table 1 of malfunction code” and “table 2 of common malfunctions”. If you still cannot solve it, please contact our company’s special maintenance center.

You can also directly contact the after-sales service center and inform us the following information:

(1) Product’s name, model number and purchase date;

(2) Detailed information about the malfunction;

(3) Your contact information including address and name.

According to the national regulations, our company offers after-sales service for the manufacturing and selling products through regulated channels. The warranty is two years, the water tank is also two years, and counts from the date of purchase (subject to the purchase invoice).

If the product’s malfunction belongs to one of the following circumstances, we offer charged after-sales service:

A. Damage because of improper installation, usage, maintenance or storage.

B. Damage because of disassemble and maintenance designated not by our company’s maintenance center.

C. There is no warranty card or product’s model does not comply with the maintenance model or has been altered.

D. Damage caused by force majeure.

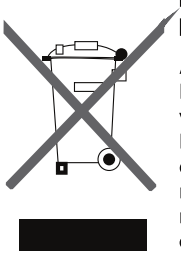
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GIA GROUP



IMPORTANT INFORMATION FOR CORRECT DISPOSAL OF THE PRODUCT
IN ACCORDANCEWITH EC DIRECTIVE 2002/96/EC.

At the end of its working life, the product must not be disposed of as urban waste.
It must be taken to a special local authority differentiated waste collection centre or to a dealer pro viding this service.
Disposing of a household appliance separately avoids possible negative consequences for the environment and health deriving from inappropriate disposal and enables the constituent mate-rials to be recovered to obtain significant savings in energy and resources.As a reminder of the need to dispose of household appliances separately, the product is marked with a crossed-outwheeled dustbin.