



Domestic Split Heat Pump

OPERATING INSTRUCTION MANUAL



MIMICO JOINT STOCK COMPANY

Before operating this product, please read the instructions carefully and save this manual for future use.

To users:

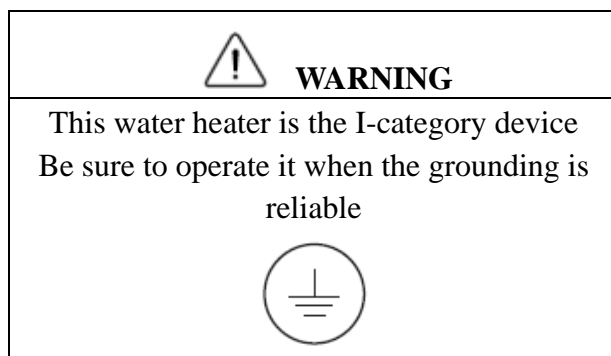
Thanks for selecting the air source heat pump water heater unit! We not only provide quality products and services as well. Please read this manual carefully prior to the installation and operation and properly store it in case of reference in the future.

This unit is a very special household water heater. An improper installation and operation will severely impact the energy-saving efficiency and duration. It is necessary to arrange specialists to make installation and repair in order to achieve the optimum operation efficiency and better services.

This unit is a type-new highly efficient and energy-saving device. We apologize that as the constant upgrading of the product, illustrations in the manual might be different from the water heater you are using.

This manual includes essential information on proper installation, commissioning, startup and repair.

Please read this manual carefully prior to the startup or repair.

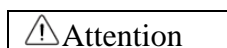


You and your family's safety are of the most importance!

This manual provides many important precautions to operate the water heater.

Please read this manual carefully prior to the operation of this water heater.

All precautions are reminded by safety warnings. The meanings of marks are indicated as follows:



Potential danger to damage you and other people's body.



Failure to follow relevant instruction might lead to life danger or severe injury.



Failure to follow relevant instructions might lead to immediate life danger or severe injury.

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I. Safety precautions



Warning

- Household electricity must be equipped with a reliable grounding.
- An electric leakage protection device must be installed for household electricity.
- Don't remove any permanent explanation, tag or parameters plates on the cover of water heater or inside of plates.



Warning

- Please authorize agents or specialists to install the machine.
Assemblers must possess relevant professional knowledge. A wrong operation will lead to fire, electricity shock, injury or water leakage, etc.
- Products designated by our company must be used for locally purchased products.
- Connecting power should follow local electrical company's regulations.
- When moving or re-installing the water heater, please authorize the agent or specialists to do it.
- An improper installation will lead to fire, electricity shock, injury and water leakage, etc.
- In no event should non-specialists repair or modify the machine.
- An improper repair will lead to fire, electricity shock, injury and water leakage, etc. Be sure to authorize agents or specialists to repair it.



Attention

- Grounding electrode of the socket should be reliable with the rated current no lower than 16 ampere. Keep the socket and power plug dry to avoid the electricity leakage. Please check the connecting of plug and socket regularly. The check method is: insert the power plug into the socket. Switch off the machine and unplug the plug after the machine runs 30 minutes to check whether the plug foot scalds your hand. If it is (over 50°C approximately), please replace it with a qualified socket with proper contacting so as to prevent the improper connecting from burning the plug due to high temperature of socket, or leading to fire and damaging other persons.
- For places and walls which might be splashed by water, power socket must be installed high than 1.8 meters and water must not splash on the socket. It cannot be installed within children's reach. Due to the extra high temperature of water heater tank (hot water whose temperature is over 50°C will burn people), don't spatter the inlet water directly to a person during the initial use of water. Adjust the water temperature to prevent the burning.
- In case the power line is damaged, be sure to use special power lines provided by the manufacturer and replace it by the manufacturer, service center of manufacturer or other similar qualified special repairmen.
- Please deliver damaged spare parts of this machine to special repairmen and use special repair components provided by the company.

II. Selection of installation site

Selection of unit installation site

- 1) This water heater can be installed indoor or outdoor. It is recommended to install it at the balcony. It will generate slight noise and reduction of indoor temperature if installed indoor. Please prepare for the lightning protection if installed on the roof.
- 2) Install the water tank where it is free from direct sunshine and other heating radiation. If it cannot be avoided, please install a covering so as to prevent sunshine directly shining the water tank.
- 3) The air inlet and outlet of the machine is free from malfunction.
- 4) Could provide sufficient dry and ventilation installation and maintenance space.
- 5) Flat supporting surface (horizontal obliquity no greater than 2 degree), can bear the weight of main machine or water tank. Main machine or water tank can be placed vertically and not make a noise or vibration.
- 6) The operation noise and emitted air do not impact residents.
- 7) No leakage of inflammable gas.
- 8) Can install the connecting pipe and electrical connection easily.
- 9) Electrical insulation must be properly carried out if the water heater is installed on a metal piece of building and conformance with relevant technical standards of electrical equipment.





Attention

- Installation at the following places might lead to malfunction of the machine.
- At places where mineral oil, like cutting machine oil, exists.
- At places along the coastal side, where many salt contents exist.
- At hot spring areas, where corrosive gases, like sulfur exist.
- At factories where power and voltage fluctuate drastically.
- In the car or driving cab.
- In the kitchen where oil exists.
- At places where high electromagnetic wave exists.
- At places where inflammable gas or material exists.
- At places where acid or alkali gas are evaporated.
- At places where other special environment conditions exist.

III. Safety precautions




Safety precautions:




In order to prevent the body and fortune of user and others from damaged, please use this water heater properly and safely. Please read all important contents specified in this manual. Please read the content and follow the following precautions after fully understanding the following contents (tags and marks).

Mark	Meaning
 Warning	A wrong operation (application) might lead to severe injury or death of operators.
 Attention	A wrong operation (application) might lead to injury of operators and damage to materials.



1. Injury means the hurt, burning and electricity shock, which need a long-term treatment whereas staying in hospital is not required.
2. Material loss means loss to capital and materials.






Warning




Installation warning	 Authorize specialist to install it	Please authorize specialists to install it. Installation by others might lead to improper installation and result in water leakage, electricity shock or fire.
	 Check the grounding wire	Check whether grounding wire is properly connected. In case of improper connecting, it might lead to electric shock.
	 Measure that it does not exceeding limit concentration	When installed in a small room, some measures should be implemented (adopted) to prevent the leaked coolant exceeding the limited concentration from suffocating the people. For specific measures, please contact agents.

Installation precautions	 Confirm the installation site	Installation at an inflammable gas and leakage area is not allowed. Once inflammable gas leaks and accumulates outdoor or surrounding, it might lead to a fire.
	 Confirm the fixed method	Confirm whether the installed unit is tight.
	 Confirm the electricity leakage protection	Confirm whether the electricity leakage protection switch is installed. Failure to install it might lead to electricity shock or fire.

III. Safety precautions

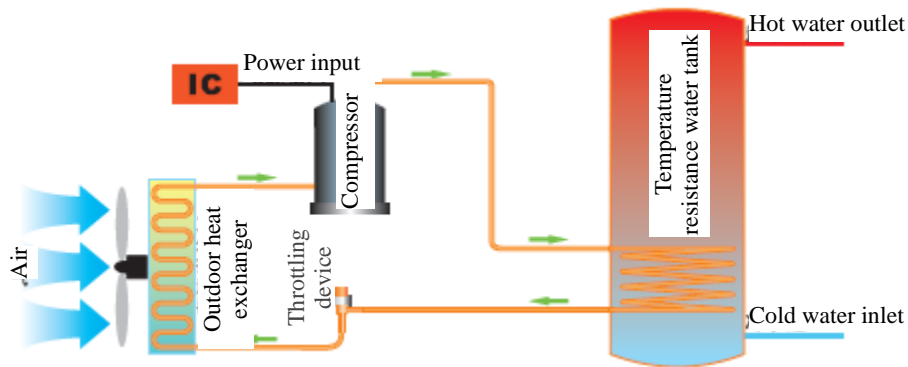
Operation warning	 Prohibition	Don't insert the finger, stick or rod to a rotating wheel Minors must use the machine with the instruction and supervision of adults.
	 Switch off manual switch of power	Switch off the manual switch of power: switch off the manual switch of power and stop the operation immediately in case of abnormality (empyreumatic taste). Contact the agent. Constant abnormal operation might result in electricity shock or fire.

Operation precaution	 Warning	Please read this manual carefully prior to the operation. Children must use it with the instruction and supervision of parents.
	 Check the installation platform	If it is idle for a long time and ambient temperature is below 0°C, please disconnect the power and completely drain the water in the tank to avoid damaging the unit.
	 Switch off the manual switch of power	Stop the operation during the cleaning. Switch off the manual switch of power. Failure to stop the operation might lead to injury due to the high rotation of internal wheel.
	 Prohibition	Please use the fume with same specifications. The use of copper wire or wire might lead to fault or fire.
	 Prohibition	Don't spray inflammable spraying agent to the unit, otherwise it will lead to fire.

Handling and repair warning	 Authorization	When moving or re-installing the water heater, please authorize the agent or specialists to do it. Improper installation might lead to the electricity shock, fire, injury and water leakage.
	 Prohibition	Don't modify or repair it without permission, otherwise it will lead to electricity shock or fire.
	 Authorization	Please authorize the agent or specialists to clean it. Improper repair might lead to the electricity shock, fire, injury and water leakage.

IV. Performance and specification of heat pump

1. Working principle of heat pump



System principle:

1. A few motor-driven units operate. The electric energy in a unit time is Q_1 ;
2. The unit begins to operate, absorb numerous heat energies Q_2 in the air by the frequency-change of refrigerant
3. Domestic water enters the temperature resistance water tank, and is heated to the hot water. The absorbed heat energy is Q_3 ;
4. According to the law of conservation of energy:

Total input energy = total output energy i.e. $Q_1 + Q_2 = Q_3$

At normal cases, the absorbed heat energy from the air by the heat pump is around 3.2 times of unit's wasted energy, i.e. $Q_2 = 3.2Q_1$

Therefore $Q_3 = Q_1 + Q_2 = Q_1 + 3.2Q_1 = 4.2Q_1$

I.e. consumption of heat energy of Q_1 obtains the heat energy of $4.2Q_1$

That is to say: the heat energy generated by air source heat pump which consumes one kilowatt-hour is equal to the heat energy generated by electric water heater which consumes 4.2 kilowatt-hour, so the heat pump heater is one of the most energy-saving devices.

2. Features of heat pump

- Safe and environmental protection
- High efficiency and energy-saving
- Luxurious enjoyment with constant-pressure water supply at any time

IV. Performance and specification of heat pump

- Fully automatic intelligent control

It is an intelligent display. The water temperature, startup and shutdown time can be set freely. The memory will restore automatically after the power off. Fully automatic intelligent operation, so on duty by dedicated persons is not required.

- Multiple protections with delicate production

The machine is selected from top-grade compressors in the world. Each delivered machine passes the strict performance test by the authentication of ISO9001 and delicate production by the factory. The machine is equipped with multiple protections, such as high pressure protection, low pressure protection, over-current protection, over-loading protection and super high temperature protection, etc. The quality is highly reliable and the use is safe.







- Simple installation and convenient maintenance

It can be installed and operated at a balcony, floor, basement, especially at high-rise buildings and apartments, so there is no limit on the installation place.

- Long duration with low maintenance expense

This product can be used for over 10 years. The equipment performance is stable and operation is safe and reliable.

3. Comparison to features of different water heaters

 <p>Fuel heater Direct heating mode, so the water temperature fluctuation is severe. The comfort is poor. The central hot water system cannot be achieved; it discharges exhaust gas and pollutes the environment. It is possible to suffer toxicosis.</p>	VS	 <p>Air source heat pump A heat reservation type, so the water temperature fluctuates slightly with good comfort. The central hot water system can be achieved; it discharges no exhaust gas and no danger of toxicosis.</p>
 <p>Electric water heater It consumes high power and energy. The annual operation cost exceeds 1,200* Yuan. Store the energy with a little volume. Normally a 40~80 water tank is provided, so the use of water by several persons cannot be satisfied.</p>	VS	 <p>VS air source heat pump It consumes low power and energy. The annual operation cost is less than 300* Yuan. Store the energy with a large volume, so the use of water by several persons can be satisfied.</p>
 <p>Solar energy heater It relies on the sunshine, can be used at rainy, cloudy days and at nights. The heat source is not stable. The duration is 3~5 years. System is complicated and operation is not easy.</p>	VS	 <p>VS air source heat pump It obtains the energy directly from the air. Rainy and cloudy days will not impact it. Sufficient hot water is available at any time. Duration lasts 10~15 years with the system fully automatic control so that manual operation is not required.</p>

V. Introduction to the functions of heat pump

Function briefing

About the protection for 3 minutes

- ▲ The unit will not operate in three minutes when re-operating the unit or opening the manual switch immediately after the operation stops.

About the defrosting during operation

- ▲ During the heat supply operation, in order to improve the heating efficiency, the unit will automatically start the defrosting if the unit is frosted (around 2~10 minutes).
- ▲ The air feeding fan operates while compressor stops operating during the defrosting.

Operation conditions of water heater

- ▲ Please operate the heater with the ambient temperature between -5°C and 40°C in order to use the heater properly.
- ▲ The unit can only use domestic water. It is not allowed to use lake water, river water and untreated underground water!

About the power off

- ▲ Stop all the operations if the power is off during the operation.
- ▲ If a wrong operation is caused by lightning, wireless and grid fluctuation during the operation, please shutdown the manual power switch. Press the “switch” key to start it.

About the electricity-leakage protector

- ▲ The electricity-leakage protector should be connected to the unit at the externally-connected grid.

About the pressure relief protection

- ▲ The safety pressure relief valve must be installed at the water inlet system. The valve opens when the water pressure is above or equal to 0.3MPa. The pressure relief opening begins to relieve the pressure when the water pressure is above or equal to 0.7MPa.
- ▲ Type of single-direction safety valve: A3J 0.7MPa
- ▲ Inside pressure relief: 0.1-0.2MPa
- ▲ Startup pressure: ≤ 0.04 MPa
- ▲ This safety valve is the standard delivered configuration.

VI. Installation and pipe connecting



Warning

- Only specialists can install and commission this machine.

1. Preparation prior to the installation

1) Acceptance

▲ Carefully check the machine prior to accepting the machine so as to check if there is damage during the transportation. Count the main machine and attachments whether there is missing parts.

▲ Sufficient refrigerant for the outdoor machine were pre-loaded prior to the delivery. Check whether there is pressure inside the machine prior to the installation. Check if there is leakage during the handling.

2. Installation precautions

The outdoor machine can be installed at a balcony, floor and basement. Pay attention to the following aspects in order to operate the machine safely:

▲ The machine is to be installed by specialists according to relevant regulations of local government and all departments.

▲ Sufficient space shall be reserved to connect the water pipe and wire. In addition, the space for maintenance should also be considered.

▲ Check whether the machine is properly fixed after the installation. Check whether the vibration reducer or vibration reducing pad is installed at the bottom.

▲ The machine should be installed at an outdoor and ventilation place and keep a certain distance to adjacent walls in order not to block the ventilation. In addition, it is convenient for repair. The sheltering materials at the ventilation shall keep at least 1.8m distance from the machine.

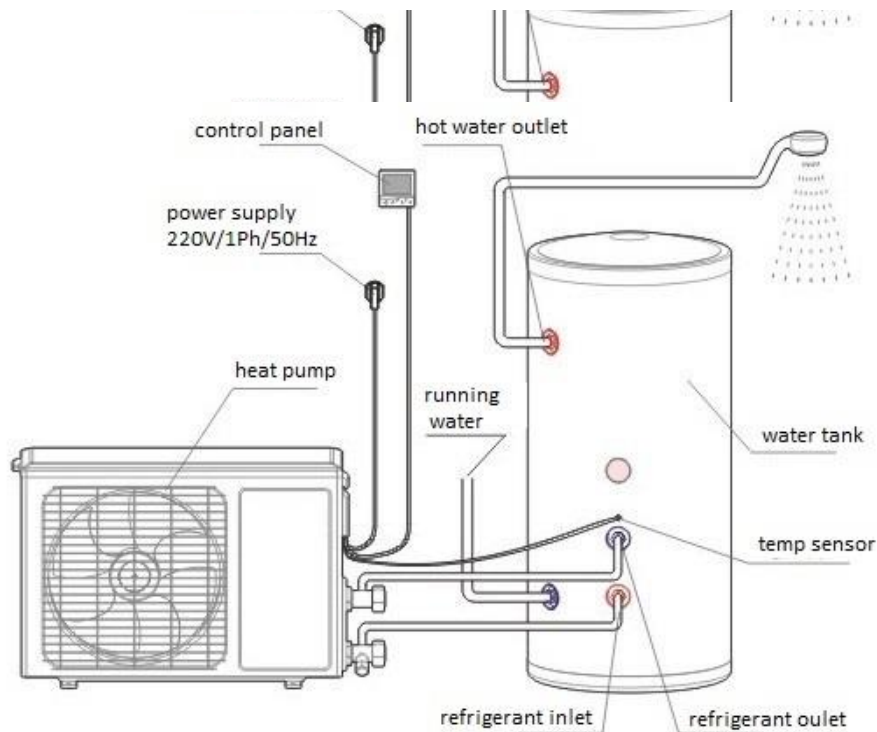
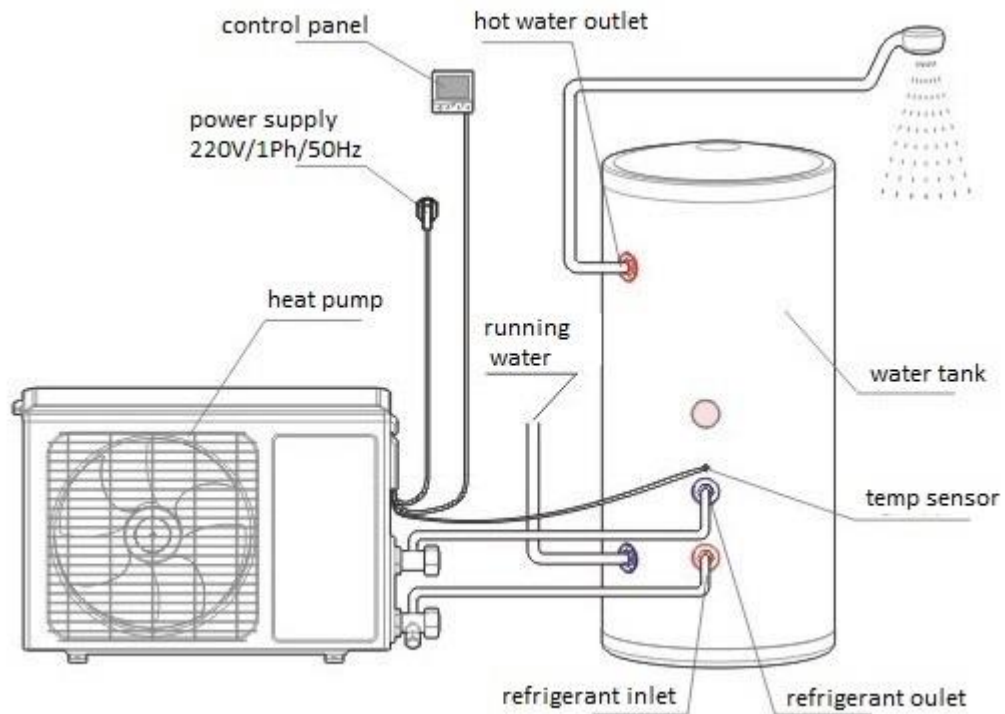


Attention

- Try to avoid the air discharge direction facing the prevailing strong wind direction. In addition, the air discharge will not flow back;
- The installation site shall be rigid enough. Vibration reducer or reduction pad should be installed at the bottom of machine to reduce the vibration;
- Don't install the machine at the leaf and insect gathering area to prevent it blocking the heat exchanger;
- Clean the heat exchanger regularly to ensure the heating exchanging efficiency;
- Be sure not to install the machine at an accumulated water area. The water and condensed water at the installed area can be drained easily;
- Don't run the machine in an oily, salty and corrosive gas area. These materials will corrode the machine and results in faults or shortening the duration.
- Angle bars can be used to support the machine with vibration reducer or rubber pad to place it on the floor or the surface of ceiling. A small machine can be installed on a wall or on an angle bar support. The support is fixed on the wall. The supporting capacity shall be 4 times greater than the machine weight. The surface of machine bottom shall be flat.
- If the unit is installed on a metal part of building, the electric insulation shall be properly carried out and relevant technical standards of electrical equipment must be followed.

VI. Installation and pipe connecting

3. Installation chart for heat pump



VI. Installation and pipe connecting

4. Installation of water tank

▲ The distance between water tank and outdoor machine shall less than 5 meter (standard distance is 3meter). The water tank can be installed outdoor or indoor as well;

▲ Floor-type water tank can be installed directly on a flat and rigid floor, ceiling and balcony;

▲ Wall mounted water tank shall be installed at a rigid wall. Installation on a column is the best choice. When the loading capacity of wall is two times less than the water tank with full water, a supporting bracket must be installed under the water tank;

5. Installation of water pipe

▲ Connect the dirt drainage of water tank to the discharge and install a check valve at the pipe.

▲ Connect the domestic water to the water inlet of water tank. Install a check valve, Y-type filter and single-direction valve prior to the water inlet;

▲ Connect the hot water outlet to the hot water system. Install the delivered single-direction valve at the water outlet;

▲ The discharge pipe connected to the pressure relief should be installed downward and tilted and ensure it connects to the air;

▲ A pressure relief valve must be installed at the water inlet pipe if the domestic water pressure used by the user is greater than 0.7MPa (i.e. the single-direction valve relieve the pressure and discharges water frequently);

▲ Fill water to the water tank: open the water inlet valve of cold water and hot water tap to inject the water. Water coming from the tap means the water tank is fully watered. Close the hot water tap and check if there is water leakage of the pipe.

6. Electrical installation

▲ All conducting wires must be tightly connected and not contact any moving component after the machine is installed. All conducting wires must comply with requirements in this manual. Grounding methods must be provided for the machine. It is forbidden to operate this machine if there is no reliable grounding. All electric devices and the installation must follow national and local safety regulations.

VI. Installation and pipe connecting

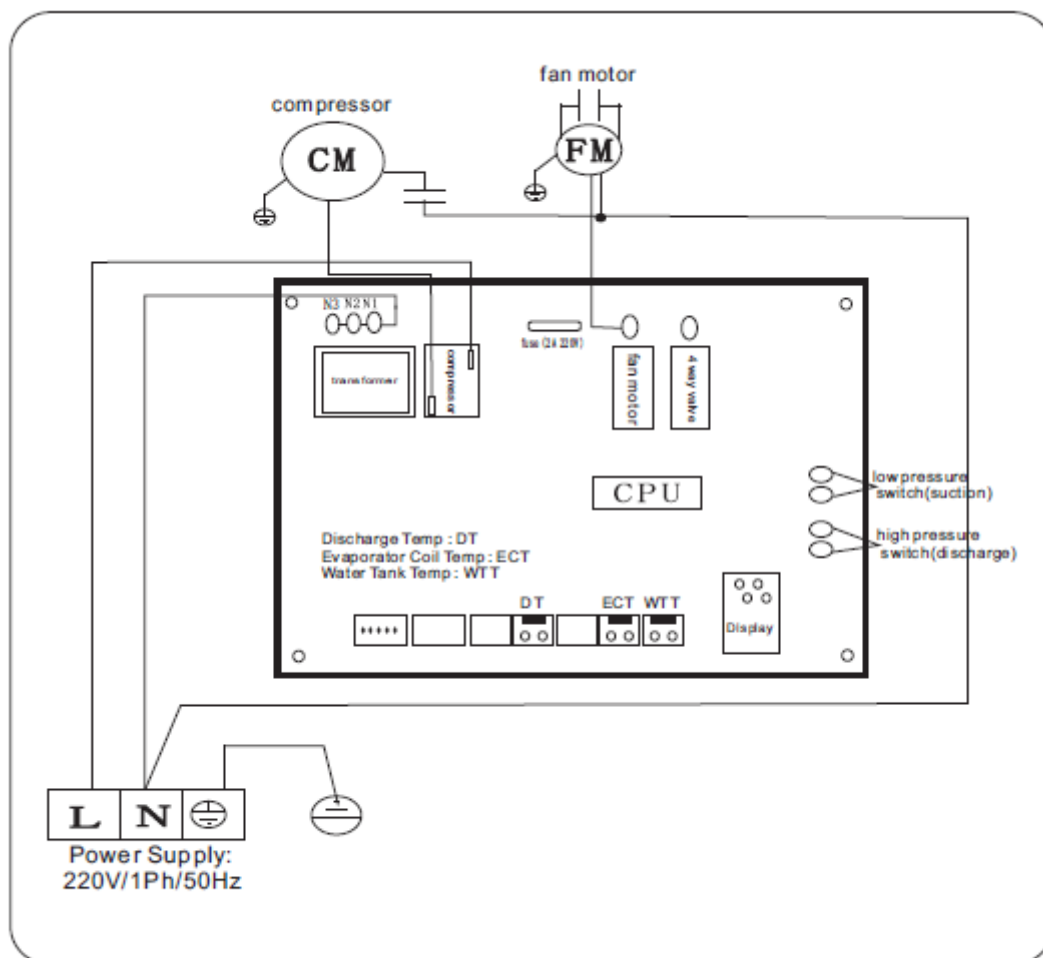
- ▲ Install the controller on the wall where it is free from vibration, wet and high temperature;
- ▲ For power socket whose capacity is over 16A, the socket must be equipped with a grounding wire.
- ▲ The power plug delivered is 1.8 meter long. Unscrew the screws on the machine box of outdoor machine, dismantle the cover plate and connect the power line to connecting terminal.
- ▲ Connect the live wire to L, neutral wire to N, yellow/green wires to the ground. Use a crimp terminal to fix the power wire. Connect the plug to the socket after the cover plate is installed;
- Insert the signal control wire of outdoor machine to the back side of controller and fix the controller on the wall properly.



Attention

- All protection and locking devices must be installed and connected to the relevant terminals in the control panel, otherwise faults and damages thus incurred is not in the scope of warranty.
- Please install the machine according to the GB Cabling Code.

Circuit diagram



VI. Installation and pipe connecting

7. Trial operation

1) Inspection prior to the trial operation:

▲ Check whether water in the water tank is full and pipe installation is good;

▲ Check the distribution system: check whether voltage is in a good condition, wire connecting and grounding are good;

▲ Check the unit: check whether the indicating lamp and fault-indicating lamp of the controller are good after the power is on.

2) Trial operation

▲ Use the wire-controlling switch. The set hot water temperature of controller shall be at least 5°C higher than the hot water temperature before the compressor starts.

▲ Start the compressor. Hear if there is an abnormal sound from the unit. In case of any abnormal sound, please shutdown the power and check it immediately;

▲ Check the water temperature of water tank. Check whether the water temperature fluctuation is acceptable;

▲ To reach the set temperature during the first trial operation, it may take several hours according to the water temperature and ambient temperature. It is normal.

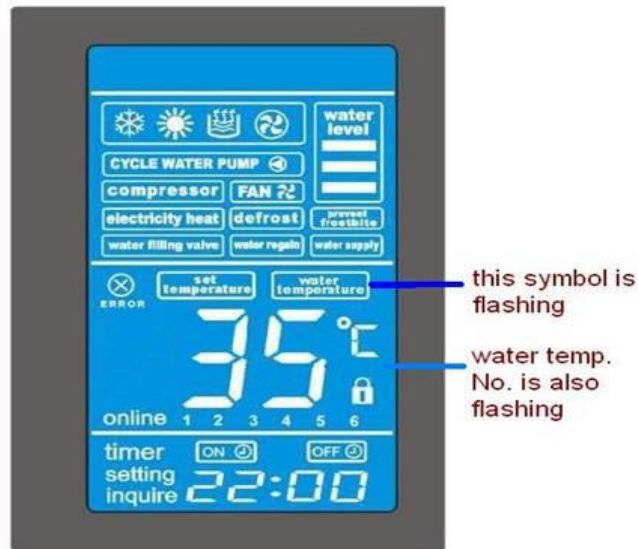


Warning

- In case of abnormality (such as smell of burning and flash fire) during the operation, please stop the machine, shut down the power immediately and contact the agent for help. Specialists will repair it. Constant operation in such case will lead to the damage to the machine and fire.

VII. Operation and application

1. Schematic drawing of wire remote



Attention

- The wire remote is touchable. Touch the key gently to avoid damaging the keys.
- Please keep your finger dry and clean during operating the wire remote.

2. Application of wire remote

1) Unlocking:

- ◇ Use the finger to touch “power” key for over 8 seconds. Move the finger after hearing a sound like “honk”, now the back-light begins to light and touch the key to unlock it.
- ◇ The key will automatically lock it if there is no operation around 60 seconds in the unlocking status.

2) Switch on/off

- ◇ Use the finger to touch “power” key, the wire remote will switch off if it is switched off before. The wire remote will switch on if it is switched off before.
- ◇ Keys will be automatically locked if there no operation around 60 seconds at the unlocking status.

VII. Operation and application

3) Set the water tank temperature:

◇ Use the finger to touch “up” key, the water tank setting temperature begins to flash, then use the finger to touch “up” key. The water tank setting temperature will increase.

◇ Use the finger to touch “down” key, the water tank setting temperature begins to flash, then use the finger to touch “down” key, the water tank setting temperature will decrease.



Flashing of temperature set mark

Water temperature set

4) Check the temperature and fault codes

◇ Use the finger to touch “setting” key and access the check status, then use the finger to touch “setting” key so that check codes can be changed from “A1” to “Er”.

◇ Meanings of check codes:

A1-coil temperature

A2-outlet water temperature/standby

A3-refrigerant discharge temperature

A4-ambient temperature

A9-opening gap of electronic expansion valve

Er-fault code



Searched data

Check code

Access the check

5) Set the clock:

◇ Use the finger to touch “timer” key for over 8 seconds. Move the finger after hearing a sound like “honk” and access the clock setting type, Use the finger to touch “up” or “down” key to adjust the real-time.

◇ Firstly, adjust the “hour” of real-time. Secondly use the finger to touch “timer” key, and it will adjust the “minute” of real-time. Thirdly Use the finger to touch “timer” key, then the setting is completed and exist the setting type.



Flashing indication

Access the clock set mode

VII. Operation and application

6) Set the timing

Use the hand to touch “**timer**” key and access the timing set. Use the finger to touch “**up**” or “**down**” key to adjust the timing.

- ◇ The first adjustment is the timing startup “hour” timed in the first section, then use finger to touch “**timer**” key, then it adjusts the timing startup “minute” timed in the first section. And then use the finger to touch “**timer**” key, then it adjusts the timing shutdown “hour” timed in the first section. Use the finger to touch “**timer**” key, it adjusts the timing shutdown “minute” timed in the first section.



- ◇ Use the finger to touch “**timer**” key, it adjusts the timing in the second section. The timing set of second section is the same as above. Exit the setting till all timings are set.
- ◇ Exit the set type after all timings are set and it indicates the startup and shutdown icon.

7) Set the timing cancels:

Use finger to touch “**timer**” key for over 3 seconds, move the finger after hearing a sound like “honk”, then it cancels the timing.

8) Set the function parameters:

- ◇ During the startup period, use the finger to touch “**setting**” key for over 3 seconds. Move the finger after hearing a sound like “honk”; it accesses the parameter setting type. Touch the “**up**” or “**down**” key to adjust parameters.
- ◇ After the parameters are set, touch the “**setting**” key. It will access the set for next parameters. The setting method is the same as above one.
- ◇ Touch the “**setting**” key to exit the parameter setting type after all parameters are set.



VII. Operation and application

Comparison chart for codes and parameters:

Code set	Parameter names	Adjustment range	Initial value
/ / /	Set of water tank temperature	30°C—99°C	55°C
L1	Reserve	0°C—15°C	0°C
L2	Deviation set between compressor startup and set temperature	3°C—18°C	5°C
L4	Up limit of water tank temperature	30°C—99°C	55°C
L5	Allow the heater to start ambient temperature	0°C—35°C	15(0 is free from electric heat)
L9	Fan start or stop temperature point	10°C-45°C	45°C
h1	Defrosting period	20minutes—99 minutes	45 minutes
h2	Set the defrosting temperature	-15°C—1°C	-3°C
h3	Set the defrosting operation temperature	5-20 minutes	5 minutes
h4	Set the defrosting stop temperature	1°C—40°C	25°C
p1	Adjustment period for electronic expansion valve	20-180 seconds	60 seconds
p2	Degree of superheat	-8—15	-2
p3	Allow the temperature protection for gas discharge	70°C—135°C	115°C
p4	Opening of electronic expansion valve during defrosting	6°C-55°C	50°C
p5	Minimum opening of expansion valve	6°C-30°C	15°C
p6	Reimbursement for degree of overheat	0°C-12°C	4°C



Attention:

- Each unit is equipped with a delivery fault parameter. Don't amend the parameter without permission apart from specialists.

3. Fault code

1) chart of fault code:

Code	Fault	Code	Fault	Code	Fault
5	High pressure switch	12	Extra high gas discharge temperature	18	Sensor of gas discharge temperature
6	Low pressure switch	15	Sensor of water tank temperature	21	Sensor of ambient temperature
9	Communication	16	Sensor of coil temperature	28	Sensor of gas loop temperature

2) Reset the fault

- ◇ Common faults: shutdown the unit. The system resets automatically or the fault disappears automatically after it is manually solved.
- ◇ Locking fault: shutdown the unit. It will disappear after manually solved. Disconnect the power.

VIII. Maintenance and repair

1. Daily maintenance and repair

▲ Check the water filling equipment of water system and air discharge equipment on a regular basis to avoid the water supply being cut off or air entering the system; otherwise it will impact the performance and reliability of the unit. Rinse the water filter installed outside the machine on a regular basis to ensure the clean water in the system in order to avoid the damage to unit due to dirt and blockage of filter.

▲ Keep the surroundings of unit dry, clean and good ventilation. Clean the heat exchanger at the air side on a regular basis (1-2 months) to maintain a good heat exchanging effect and save energy.

▲ Please use the dirt cleaning agent to rinse the water system in the unit on a regular basis (6 months) in order to ensure the efficiency and safety of unit.

▲ Check all components' operation of the unit regularly (recommended for every year). Check the working pressure of unit system is acceptable. In case of abnormality, repair and replace it promptly.

▲ Check the grounding of power and electrical system of the unit is fixed or not regularly (recommended for every year), whether abnormal operations and odors exist at the electrical components. In case of any abnormality, please repair and replace it promptly.

▲ It is forbidden to switch off the power when the unit is not constantly operated, otherwise it will lead to the frost splitting of some components. The company is not responsible for any damage thus incurred.

▲ Check the power plug and socket are connected properly and reliably regularly, also the grounding is acceptable without overheating.

▲ If the machine is idle for a long time, drain the water in the water heater out to avoid the damage to water heater due to the freezing of water in the liner, especially for areas where temperature is low (lower than 0°C).

▲ It is recommended to completely drain and rinse the water heater liner on a half-year basis in order to ensure a long-term high efficiency of the water heater, and remove the accumulated sediments during the operation. Please drain the liner water following the steps as follows:

A. Switch off the power of water heater.

B. Switch off the cold water inlet valve and open the hot water tap.

C. Use a hose to connect the drainage outlet to a proper dirt drainage outlet. (the minimum temperature resistant of drain pipe shall not lower than 93°C. If the drain pipe fails to meet requirements, please open the cold water inlet valve, open the hot water tap till the water is not hot)

D. Open the drain pipe of water heater and drains all water in the liner. If necessary, rinse the liner with water for several times to clean the sediment.

E. Switch off the water outlet. Re-fill the water in the liner and restore the power.

It is recommended the user reduce the setting temperature if enough hot water is available.

▲ In such a case, it will reduce the heat loss and scale, save the electricity and prolong the duration of water heater as well.

▲ It is recommended to clean the filter net on a monthly basis in order to prevent dusts blocking the filter net and impacting the heating.

2. Common non-unit malfunctions

▲ Why does the compressor not operate after the startup?

Answer: the operation will immediately start after the pause when the power light is switched on.

The water heater cannot operate in 3 minutes, for compressor cannot start during the compressor stops for 3 minutes. It is the self-protection of the machine.

▲ Why is the outlet water temperature higher than the set temperature?

Answer: the tank temperature sensor is at the bottom of water tank. After some water is used, the water temperature is reduced due to the cold water injected at the tank bottom, although the top water of the tank is still very high. This is the reason.

▲ Why does it indicate the water temperature raise slowly?

Answer: because the top water temperature in the tank is high, water temperature in the middle and bottom tank is low. The accelerated speed for water temperature will increase after the water temperature in the entire tank is almost same.

VIII. Maintenance and repair

▲ Why it is indicated that the machine doesn't start heating when the water temperature is reduced?

Answer: due to the natural radiating, the temperature of hot water in the tank which is idle for a long time will gradually reduce. To avoid the frequent startup and shutdown of the unit, the unit sets a regulation on the water temperature, i.e. in case of water is not used, the unit will start heating after it is indicated the water temperature is reduced over 5°C.

▲ Why does the compressor stop operating while the air fan doesn't during the heating?

Answer: when the ambient temperature is low, the evaporator might frost leading to a poor heat exchange, so the unit starts to defrost. The compressor will stop operating whereas the air fan operates during the defrosting process.

▲ Why does the water drain from the outdoor unit?

Answer: the outdoor room of heat pump house absorbs the heat in the air, leading to the reduction of air temperature and generating condensed water. Hence, the drained water is condensed water. It is normal.

3. Common malfunctions and solutions

Malfunction	Possible reason of the malfunction	Solution
Non-operation of unit	Power	Switch off the power and check the power
	Power line of unit is loose	Check the reason and repair
	Poor communication	Check the communication wire
	Broken fuse of control panel of unit	Replace a new fuse
Insufficient heat energy of unit	Insufficient refrigerant	Check the system and load the refrigerant
	Blockage of filter	Rinse or replace the filter
	The air and water heat exchanger are dirty	Clean the heat exchanger
Non-operation of compressor	Power	Check the power voltage
	Malfunction of connector of compressor	Replace the connector
	Connecting wire is loose	Find the loose part and repair it
	Over-heat protection of compressor	Find the reason of overheating and solve it
	Extra high outlet water temperature	Re-set the outlet water temperature
	Damage to the compressor fuse	Replace the fuse
High noise of compressor operation	Anchor bolts are loose	Tight the bolts
	Parts inside the compressor are damaged	Replace the compressor
Non-operation of air fan	Air fan fuse fails	Replace the air fan fuse
	The air fan control relay is damaged	Replace the relay
Compressor operates but fails to generate heat	Leakage of refrigerant	Check the system leakage and load the refrigerant
	Compressor is defective	Replace the compressor
	Four-way valve is damaged	Check the four-way valve and repair it
Extra high discharge pressure	Too many refrigerants	Emit excessive refrigerants
	Air exists in the fluorine system	Emit the non-condensed air
	Extra high water temperature	Reduce the set water temperature
Too low air suction pressure	Blockage of filter	Replace the filter
	Insufficient refrigerant	Check whether leakage point exists. Load refrigerant.
Abnormal communication	Wire connecting is loose	Double-check the connecting of wire
	Electric control panel is broken	Replace the electric control panel
Temperature is defective	Poor connecting of temperature sensor	Check and restore the temperature sensor
	Temperature probe is broken	Replace the temperature probe

Air Source Heat Pump Water Heater Unit

Appendix 1

Warranty card

Warranty Card

Warranty period: ____ year ____ month ____ date to ____ year ____ moth ____ date (To be completed by the company's agent. Any amendment is invalid)	
User name:	Telephone:
Contact address:	Post Code:
Purchase Date:	Sales company:
Product type:	Product No.:
Installation date:	Assembler:
User's signature:	Agent's signature (stamp):
Agent address:	Agent telephone:
User's comments:	
Remarks: This card is in duplicate The first page is for the user, second for filing of customer service center of the company.	

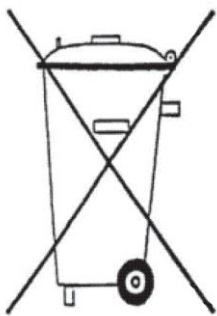
Page 1 (Customer)

Cut along the dotted line

Warranty Card

Warranty period: ____ year ____ month ____ date to ____ year ____ moth ____ date (To be completed by the company's agent. Any amendment is invalid)	
User name:	Telephone:
Contact address:	Post Code:
Purchase Date:	Sales company:
Product type:	Product No.:
Installation date:	Assembler:
User's signature:	Agent's signature (stamp):
Agent address:	Agent telephone:
User's comments:	
Remarks: This card is in duplicate The first page is for the user, second for filing of customer service center of the company.	

Page 1 (Customer service center)





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