



Owner's Manual

Free Match-Air Source Heat Pump Water Tank

Model:

S200L GA

Thank you for choosing our product.

Please read this Owner's Manual carefully before operation and retain it for future reference.

If you have lost the Owner's Manual, please contact the local agent or visit www.niponcomfort.com or send email to geral@nipon-coolair.com for the electronic version.

NOTE:

Actual product may be different from graphics, please refer to actual products.

To Users

Thank you for selecting our product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

- (1) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- (2) In order to ensure reliability of product, the product may consume some power under stand-by status for maintaining normal communication of system and preheating refrigerant and lubricant. If the product is not to be used for long, cut off the power supply; please energize and preheat the unit in advance before reusing it.
- (3) Please properly select the model according to actual the using environment, otherwise it may impact the using convenience.
- (4) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.
- (5) All the illustrations and information in the instruction manual are only for reference. In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.

Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons:

- (1) Damage the product due to improper use or misuse of the product;
- (2) Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer;
- (3) After verification, the defect of product is directly caused by corrosive gas;
- (4) After verification, defects are due to improper operation during transportation of product;
- (5) Operate, repair, maintain the unit without abiding by instruction manual or related regulations;
- (6) After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers;
- (7) The damage is caused by natural calamities, bad using environment or force majeure.

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1 Safety Notices (Please be sure to abide them)



WARNING: If not abide them strictly, it may cause severe damage to the unit or the people.



NOTICE: If not abide them strictly, it may cause slight or medium damage to the unit or the people.



This sign indicates that the items must be prohibited. Improper operation may cause severe damage or death to people.



This sign indicates that the items must be observed. Improper operation may cause damage to people or property.



WARNING!

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for the above special places, please adopt special product with anti-corrosive or anti-explosion function.

Air source heat pump water heater is a thermal storage water heater. The user shall open the cold water valve first, then adjusting cold and hot water flow to proper water temperature gradually to avoid scald injury. If not using the unit in winter in short time, please ensure that it is energized for the whole 24h, if not unit using the unit for a long period, discharge water in water tank and pipeline in case the system is frosted. If you think the discharge operation is inconvenient, please directly contact designated dealer or local service center, we will appoint special staff to provide inspection, debug, cleaning and maintenance services.

This manual is the usage and installation manual for unitary air source heat pump water heater.



Water tank must install safety valve as required;












Try to use tap water, avoid not using well water or river water;

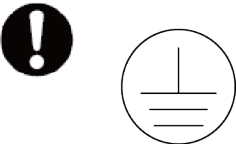
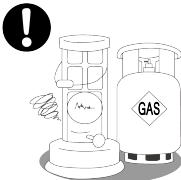
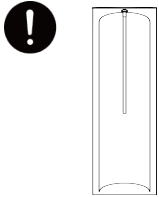
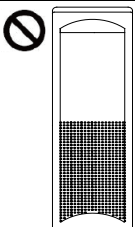

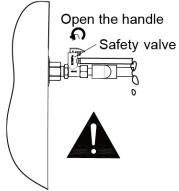
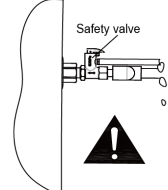


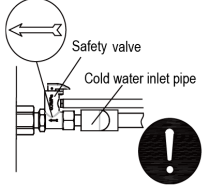
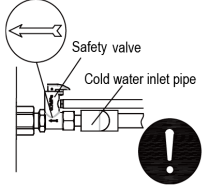
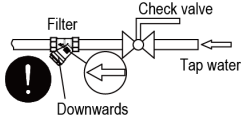
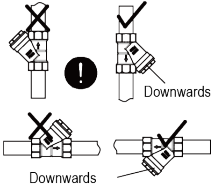
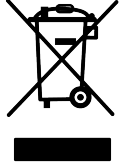

To guarantee water quality, clean the water tank periodically as required;



Water tank shall be installed in places without rainwater. If not, take rain-proof measures.

NO.	Safety Notices	Graphic symbol
1	★ Once abnormality like burning smell occurs, please cut off the power supply immediately.	
2	★ Don't operate water heater with wet hand.	
3	★ Before installation, please see if the voltage of local place accords with that on nameplate of unit and capacity of power supply, power cord or socket is suitable for input power of this unit.	
4	★ Special circuit must be adopted for power supply to prevent fire. Do not use octopus multipurpose plug or mobile terminal board for wire connection.	
5	★ Be sure to pull out the power plug and drain the water tank when the water heater is not in use for a long time.	
6	★ Never damage the electric wire or use the one which is not specified.	
7	★ Before to clean, please cut off the power supply.	
8	★ The power supply must adopt special circuit with leakage switch and enough capacity.	
9	★ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.	

NO.	Safety Notices	Graphic symbol
10	<p>★ Earthing: the unit must be earthed reliably! The earthing wire should connect with special device of buildings.</p> <p>Don't connect earth wire to gas pipe, water pipe, drainage pipe or any other improper places which professional does not recognize.</p>	
11	<p>★ Keep the chemical spray, gas tank or others similar at least 1m away from the unit.</p>	
12	<p>★ To improve durability of the water tank, a Magnesium rod is installed inside the water tank. The Magnesium rod has a lifespan of two to three years, and must be replaced by professional maintenance personnel if a replacement is required.</p>	
13	<p>★ If water tank has no water or water is not full, please do not energize the unit for startup.</p>	
14	<p>★ It is highly recommended to place the unit where good ventilation is available.</p>	
15	<p>★ Check the safety valve for blockage periodically (about one month) by removing the hand grip and operate it periodically (about one year).</p>	
16	<p>★ It is a normal phenomenon that the safety valve drips.</p>	

NO.	Safety Notices	Graphic symbol
17	★ The safety valve shall be got through to the floor drain through a flexible tube.	
18	★ The safety valve shall be installed properly with the direction arrow indicated the same direction as the cold water flow.	
19	★ It is recommended to install horizontally the filter downstream of the main check valve of the user's water pipe. Please note that the direction arrow on the filter shall indicate the direction the same as the water flow. When it is required to remove impurity inside the water circuit, open the end cover of this filter.	
20	★ When the filter is installed vertically, the direction arrow can not be upward and the end cover shall be placed slantwise downwards.	
21	★ This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it possibly to promote the sustainable reuse of material resources. To return you used device, please use the return and collection systems or our designated dealer or local service center. They can take this product for environmental safe recycling.	
22	★ The fuse model and rated value are in accordance with the corresponding controller or the silk screen attached on the protective tube.	

2 Installation Precautions

2.1 Importance Notes

- (1) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.
- (2) If the user installs the air source heat pump water heater using self-prepared installation materials, our company will bear no responsibilities for any loss caused by improper running and use of the air source heat pump water heater due to pipe leakage, fall-off, or insecure installation.
- (3) The water quality for the air source water heater should comply with the local sanitation standard for the domestic drinking water and refer to the following water quality requirements. If well water, groundwater, and seawater are used, the depletion of the Mg-Stick in the water tank may be accelerated, thereby shortening the lifespan of the unit.

pH (25℃)	6.8~8.0	Turbidity (scattering turbidity unit)/NTU	<1
Chloride/(mg/L)	<50	Iron/(mg/L)	<0.3
Sulfate/(mg/L)	<50	Silica (SiO ₂)/(mg/L)	<30
Total hardness (calculated in CaCO ₃)/(mg/L)	<70	Nitrate (calculated in N)/(mg/L)	<10
Conductivity (25℃)/(μs/cm)	<300	Ammonia nitrogen (calculated in N)/(mg/L)	<1.0
Total alkalinity (calculated in CaCO ₃)/(mg/L)	<50	Sulfide/(mg/L)	Shall not to be detected

- (4) The water processed by the ion exchange water softener accelerates the depletion of the magnesium rod in the water tank. Therefore, you are advised not to connect the water inlet of the air source heat pump water heater to a water softener.

2.2 Basic Requirements for Installation Sites

The following sites for installing the air source heat pump water heater may be prone to become faulty. If the following sites cannot be avoided, please adopt special product.

- (1) Environments that are exposed to strong heat sources, steam, flammable gases, or volatile substances.
- (2) Places where there are high-frequency facilities, such as welding machines or medical equipment.
- (3) Seaside saline areas.
- (4) Places where the air contains oil (such as machine oil).
- (5) Places where the air contains sulfide gases (such as sulfide hot springs).
- (6) Other special environments.

3 Installation of the Water Tank

- (1) The water tank should be installed in a place with rain and sun shading devices. If it is installed outdoors or in a place where it cannot be sheltered from rain, it must be equipped with a rain shed to avoid being drenched by rain, and avoid installing it in low-lying places where water is easy to accumulate. Try to install it in an environment where the temperature is higher than 0°C. The hot water outlet should not be too far away from the locations for use. Lay out the pipes in a centralized manner, and take thermal insulation measures on hot water piping to reduce heat loss.
- (2) The water tank must be placed upright with all feet touching the ground. It must be installed on a solid foundation. During water tank installation, consider the weight bearing capability of the foundation.

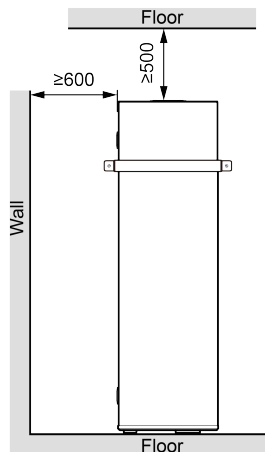


Figure 3-1 Installation diagram of the water tank (Unit: mm)

NOTE: The water tank must also be fastened to the wall using a tank mounting hoop or plate to prevent fall-off the water tank due to exceptions.

- (3) There should be water pipes, hot water interfaces, and floor drains to facilitate water replenishment for the water tank, hot water supply, and drainage. And the pressure of the tap water should not higher than 0.5MPa, else, a stabilizing valve should be installed in the water inlet pipe.

4 Water Pipe Connection

- (1) Pipe preparation

The hot water outlet shall select hot water pipe, PPR pipe is recommended, with fast heat dissipation, e.g. aluminum plastic tube is not suggested.

- (2) Cold water inlet and outlet pipe installation

Cold water inlet pipe shall install safety valve, filter and cut off valve, installation sequence shall accord with unit installation diagram. Water outlet pipe shall have at least one cut off valve.

To drain or clean the water tank, add a three-way tube and a cut off valve in water outlet of water tank; If the water tank is far away from user water use site (hot water pipe is longer than 20 meters), or water use site of all hot water is lower than water inlet of the water tank, installation is needed.

- (3) Drainage pipe installation

As Figure 5-1 is shown, add a three-way valve in cold water inlet pipe, then connect the three-way valve and floor drain with pipeline, meanwhile the connection side of drainage pipeline and floor drain shall be lower than water tank bottom, otherwise, water cannot be discharged completely. A cut off valve must be installed in drainage pipeline, and the cut off valve must be installed in places where the user is accessible.

- (4) Safety valve installation

The safety valve (“→” indicates the direction to the water tank) supplied with the unit shall be connected to the inlet of the water tank via a stub of PPR as Figure 4-1 is shown. The other end of the safety valve is connected with running water pipe. To ensure usage safety, sequence in Figure 5-1 shall be strictly obeyed.

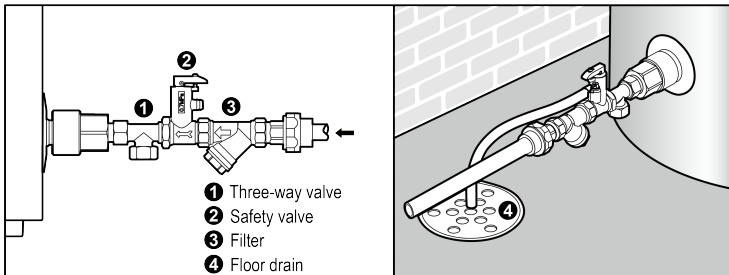
Cut off valve or check valve (one-way valve) shall not be installed between safety valve and the water tank, otherwise, safety valve shall not work normally, water tank error might occur.

During heating operation process, safety valve dripping water is a normal phenomenon of pressure relief. Under standby status, if the safety valve keeps

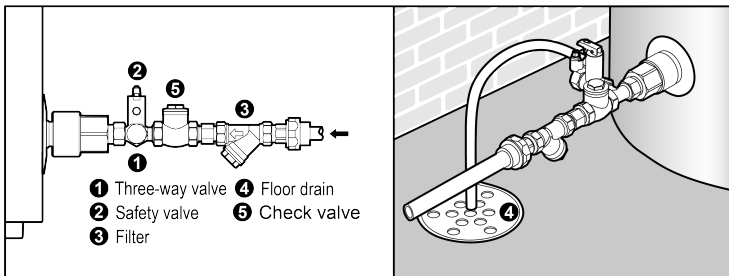
dripping water, please check if water pressure is too high (not over 0.5MPa). If water pressure is higher than 0.5MPa, install stabilizing valve correctly according to “(6) Stabilizing valve installation”; if water pressure is below 0.5MPa, please check and replace safety valve.

Safety valve must install diversion tube and be reliably fixed to prevent falling off; lead the drainage hose to floor drain downward naturally and properly without bending or any twine. After that, the surplus hose must be cut to avoid water in drainage hose getting frozen due to blocking of drainage or low temperature.

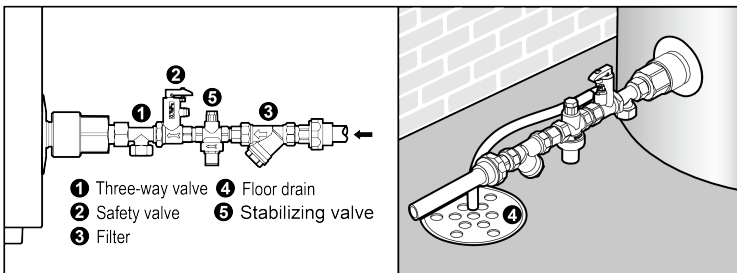
To avoid any inconveniences or property losses due to water leakage or safety valve discharging water which is resulted from improper connection of water pipe, water tank and safety valve shall not be installed inside the room or balcony which is without discharge floor drain.



(a) Installation method 1



(b) Installation method 2



(c) Installation method 3

Figure 4-1 Safety valve installation diagram of cold water inlet pipe

Name	Specification	pressure	Quantity
Safety valve	G1/2	0.7MPa	1

(5) Antifreezing tracing belt installation

If the water tank shall inevitably be installed in places with temperature below 0°C, to avoid the pipeline getting frozen due to bad insulation of water system pipeline, antifreezing tracing belt for pipeline shall be installed in water inlet pipe of water tank, our pipeline antifreezing tracing belt and its accessories is recommended, detailed list is as follows:

Name	Quantity
Antifreezing tracing belt	1
Frame	1
Aluminum-foil paper	1
Pipeline antifreezing tracing belt installation statement sheet	1

(6) Stabilizing valve installation

Before connecting water pipe, measure water supply pressure of running water first, if water pressure is over 0.5MPa, add stabilizing valve in waterway, otherwise, pressure relief on safety valve might occur when the unit is not heated. Stabilizing valve (“→” direction shall accord with the water tank direction) shall be installed between safety valve and filter.



NOTICE!

- ① To ensure water safety, the PPR pipe length at the water inlet and outlet is determined as per the formula: $L \geq 70 \times R^2$, wherein L indicate the pipe length, and R indicates the inner diameter of the pipe (unit: cm). The pipe should be insulated properly. No metal pipe is allowed.
- ② To ensure safety and reliability, special accessory equipped with this unit must be adopted (PPR water pipe joint, safety valve and filter etc.). Don't use the accessory of any third party and replace the accessory by yourself, any losses thereof for normal operation and usage of heat pump water heater result from personal injury and improper installation, our company will bear no responsibilities.

5 Installation Diagram

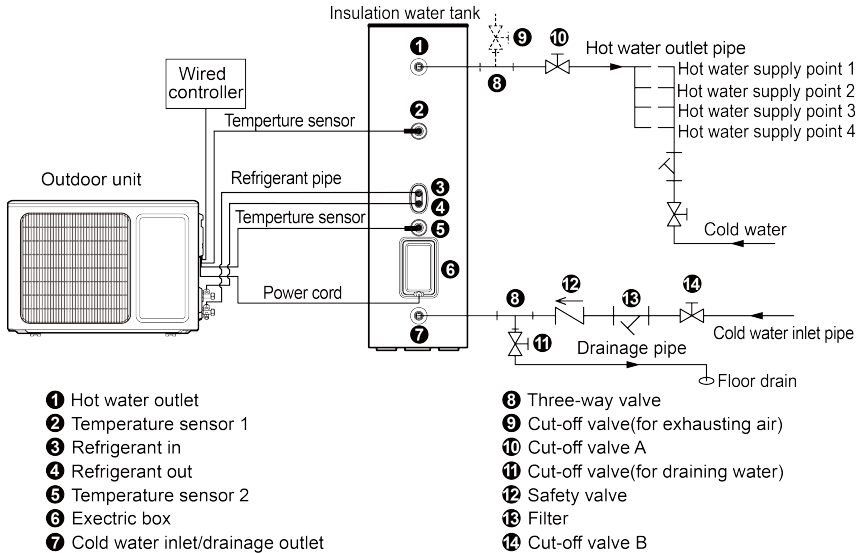


Figure 5-1 Installation diagram

Table 5-1 Dimensions and specifications

Name	Interfacing Pipe Screw Thread
Hot water outlet of the water tank	G1/2
Cold water inlet of the water tank	G1/2



NOTICE!

- ① Prepare materials according to the preceding dimensions and specifications. If the cut-off valve is installed outdoors, PPR pipes are recommended to prevent freezing caused by low temperature.
- ② Install the piping system only after the unit is fastened. Prevent dust and other foreign matters from entering the piping system during pipe connection or installation.
- ③ After all pipes required are installed, check leakage first, and then take thermal insulation measures on the waterway system. Particularly, note the following: Take thermal insulation measures on the valves and pipe joints. A thickness of not less than 15mm is recommended for the thermal insulation cotton.
- ④ The thermal insulation and pressure-bearing water tank can supply hot water only when the tap water is available.
- ⑤ When using hot water, ensure that cut-off valve of the cold water inlet of the water tank is open.

6 Operation Notices in Winter

- (1) Before starting the unit which has not been used for a long period or in quite low temperature in winter, energize it at least 8h ahead.
- (2) Do not disconnect the power supply when the outdoor temperature is quite low in winter, otherwise the automatic antifreeze protection will fail to work. Under low ambient temperature, anti-freezing operation function of the unit will conduct heating for anti-freezing before water temperature of the water tank come near to freezing point, and it stops if water temperature of the water tank rises to safe temperature. But the auto anti-freezing operation function of the water tank is invalid for water inlet/outlet pipe of the water tank. If ambient temperature of unit installation location is below 0°C, pipeline anti-freezing tracing belt must be installed and ensure the aforementioned belt is energized. If the water tank is installed outdoor inevitably, shorten outdoor piping length as much as possible, including refrigerant connection pipe and water inlet pipe of the water tank, otherwise, heat dissipation loss of the unit is big, power consumptive and water system is easy to be frozen. Special attention shall be paid to thermal insulation blind spot on local valve connection location and water pipe curve, strengthen the thermal insulation, otherwise, local pipe will be frozen.
- (3) When the unit is not to be used for a long period, drain the water tank and pipe according to discharge operation, otherwise, water system will be damaged. After draining water and to reuse the unit again, pours water to the water tank fully before starting up. Please refer to water input and drainage operation of the water tank.

Warm hint:

If it's not convenient for operation or there's hazard, please contact our designated dealer or local service center directly. We will appoint profession persons to check, debug and clean the unit, and discharge water and fill the water tank with water for you.

7 Maintenance

In the process of produce maintenance, please contact our designated dealer or local service center when maintaining or replacing related components.

7.1 Water Input, Drainage and Cleaning of Water Tank

The water input and drainage of the unit shall be followed up throughout the whole process to avoid water leakage accidents caused by wrong operation.

- (1) Operation steps of water input and water drainage

Please refer to the installation tips label on the water tank.

- (2) Cleaning of water tank

Repeat the water drainage and input operations until the water discharged from the water tank is clear. Please clean the water tank periodically to get good-quality water.

7.2 Mg-Stick Replacement

To improve durability of the water tank, a Mg-Stick is installed inside the water tank. Generally, the Mg-Stick has a lifespan of two to three years. However, if the quality of water used by the water heater is poor, the Mg-Stick lifespan will be shortened. For Mg-Stick replacement, perform the following steps:

- (1) Before removing the Mg-Stick, drain the water tank by following drainage operations.
- (2) Open the cap on the mounting mouth for the Mg-Stick in the water tank.
- (3) Use a hex key to unscrew the Mg-Stick component, and then steadily removed the magnesium to prevent it from falling into the inner container of the water tank.
- (4) Install a new Mg-Stick component into the mounting mouth of the Mg-Stick, and then tighten it using a hex key.
- (5) Close the cap, and replenish water by following water replenishment operations.

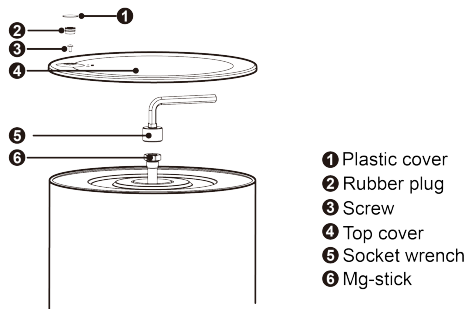


Figure 7-1 Mg-Stick replacement



NOTICE!

The Mg-Stick must be replaced by professional maintenance personnel.

7.3 Safety Valve Maintenance

In the heating process, when the inner container of water tank is in

overpressure, a small amount of water may be discharged through the safety valve, which is a normal phenomenon. However, if a large amount of water is discharged through the safety valve or even pipe vibration occurs and abnormal noise is caused, please apply for inspection. The possible causes of this problem are as follows: The safety valve is damaged; the water replenishment pressure is higher than the maximum working pressure (0.7MPa) of the water tank, which occurs generally when pressure reduction is not performed on the tap water. In normal conditions, the tap water pressure is around 0.3MPa. If a booster pump is used to replenish water, the water replenishment pressure may exceed 0.5MPa. In this case, a stabilizing valve needs to be added to the tap water replenishment pipe to reduce water replenishment pressure.

Open the safety valve's handle to check whether it is blocked on a regular (about once a month) basis. If it is blocked, please apply for check or replacement. Perform sewage disposal by following the guide on a regular (about once a year) basis.

7.4 Maintenance of the Unit

- (1) Check the water inlet and outlet for blockage periodically. If so, eliminate it.
- (2) Check the water circuits, pipe connectors and valves for blockage, damage or leakage, and if the filter has been blocked by impurities.

8 Precautions for Safety Usage

- (1) For comfort usage, it's suggested to use shower head with flow rate of 6~7L/min.
- (2) User should have regular check and maintenance for heat pump water heater.
- (3) Regular check and replace the magnesium rod is necessary. Recommended replace period is 1~3 years.
- (4) Cut off the power supply prior to any maintenance or services. An unprofessional personnel is not allowed to adjust or service the heat pump water heater.
- (5) Improper operation might cause scald due to hot water. Water heating without enough water might produce high-temperature steam or hot water, which might cause serious scald. Hence, guarantee the water tank is filled with water.
- (6) The water heater is equipped with safety valve for reliable operation, please don't change its location and never block its outlet. The pipe should be directly connected to floor drain.

- (7) Children bath should be supervised by adults.
- (8) 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.
- (9) In order to prevent the hazard due to the invalidation if electric heating of water tank, the electric heating circuit is equipped with thermostat. If the water temperature is higher than 95°C, the thermostat will be activated to cut off the electric heating power. However, if the electric heating is abnormal, it needs to apply for maintain.
- (10) The water inlet pressure for the water tank is 0.3MPa~0.5MPa. Before installation, please confirm the water pressure range. And the hose-sets should not be reused.

9 Malfunction Analysis



WARNING!

Do not repair the unit by yourself, otherwise it would lead to electric shocks or fire hazards.

Normal phenomena	Analysis of causes
The unit won't operate immediately once immediate re-startup of the unit after stop.	In order to protect the unit, the control of the unit will delay the turn-on command for five minutes.
There is water flowing sound during operation of the unit.	During operation of unit, there will be swoosh or fizzle, which is flowing sound of refrigerant and is normal.
There is condensate drained from outdoor unit.	It is normal. Do not worry about it.
There is water drained from safety valve.	During heating, if pressure of inner tank of the water tank is too high, it will discharge little water to release pressure through safety valve, which is a normal phenomenon. However, if water of big outflow occur in safety valve obviously, even result in vibration of pipeline and give out abnormal noise, please apply for inspection.
The controller tells that the unit is under antifreeze protection.	The unit will automatically activate the antifreeze function in winter, which is normal.
The nozzle provides water flow for quite a short period.	It is because the nozzle is oversized. Please replace it. The nozzle with the flow rate of 6~7L/min is preferred.
After-sales service	
If there's quality or other problems for the products, please contact our designated dealer or local service center.	



NIPON techforcomfort
www.niponcomfort.com