Air Source Heat Pump Water Heater
Domestic Series

Instruction Manual
Model: GT-SKR010B
GT-SKR015B
GT-SKR020B
GT-SKR030B

◆ The instructions in this manual are for the use of qualified individuals specially trained and experienced in the installation and maintenance of this type of equipment.
◆ Persons not qualified shall not attempt to install, service, or maintain this equipment.
◆ Please read the manual carefully before installation.
◆ Please keep this manual well for future reference.
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Part I: General Information

1.1 Function description
Air source heat pump water heater is used to heat water for domestic hot water or commercial hot water, etc.

1.2 Important Information

⚠️ For your own security, and to ensure proper operation of the unit, this heat pump unit must be installed and repaired by qualified technician, not consumer himself.

⚠️ A leakage protection switch must be installed near the heat pump in an accessible place.

⚠️ Do not use any damaged wires and switches, if found (to be damaged), replace it immediately.

⚠️ Do not open the electrical box without shutting off all power sources to the heat pump.

⚠️ When transporting the heat pump, ensure that it is not upside down and not tilted more than 45° in any direction.

⚠️ Before performing any maintenance on the unit you must turn it off first and shut off the power to the unit.

⚠️ This unit is designed for outdoor installation, do not install it in an closed area.

⚠️ Do not install the unit in places where there are any inflammable or explosive materials.

⚠️ Do not restrict or block the air intake or outlet of the unit.

⚠️ When the unit is not used for a long time, please switch it off and disconnect the power supply. Drain the unit when ambient temperature is lower than 0°C

⚠️ When power failure occurs and lasts for more than 5 hours with the ambient temperature lower than 2°C, please drain the unit to prevent the formulation of ice in it.

⚠️ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

⚠️ Respect safety distance between the unit and other equipment or structures. Guarantee adequate space for access to the unit for maintenance and/or service operations.

⚠️ Power supply: the cross section of the electrical cables must be adequate for the power of the unit
and the power supply voltage must correspond with the value indicated on the respective units. All units must be earthed in conformity with legislation in force in the country concerned.

1.3 About heat pump

Heat Pump unit is a new technology and is regarded as the lastest generation among the various water heating/cooling methods. It surpasses coal, electrical, gas and solar water heating, offering a better solution for energy saving and environmental protection.

With the advantage of high energy efficiency ratio and pollution-free, heat pump is widely used all over the world. Compared to electrical heating, consuming the same quantity of electricity, heat pump water heater makes as 3~5 times of hot water as the former does.

1.4 Working principle

The basic principle of how a heat pump works is simple. Take air source heat pump for example, it works just like air conditioner in cooling mode, however, in heating mode, the refrigerant flow is reversed and heat is extracted from the outside air to heat your home. So the purpose of a heat pump is to absorb heat in one place where it is plentiful, then to transport and release it in another location where it can be used for space or water heating.

In order to absorb and release the heat into and from the refrigerant, we exploit the ability of the refrigerant fluid to boil from a liquid to a vapor and then to condense back into a liquid. This is a continual process while the compressor is running and circulating the refrigerant.

![Working Principle for Heat Pump Water Heater](image)

1. The refrigerant in system extracts free heat energy from outside air through fin-coil evaporator.
2. The refrigerant is compressed to a high-temp. & high-pressure gas by compressor.
3. Heat energy transferred to water through tube-in-shell heat exchanger.
4. The refrigerant in system restores to low-energy condition.
5. The cycle is repeated.
1.5 Features of heat pump water heater

1) **Wide application**
   It can be widely used in villas, factories, schools, hospitals, hotels, restaurant, swimming pools and spas, bath centers, laundries, etc.

2) **More Safety**
   Water and electricity are completely isolated, No electric shock problem, more secure than traditional electrical water heaters.
   No fuel tubes and storage, no potential danger from oil leakage, fire, explosion, etc.
   A full range of protection including compressor delay protection, water-pressure check switch, high & low pressure protection, supper heating protection, Anti-phase and open-phase protection, high temperature protection, etc.

3) **Energy-saving**
   It provides the same amount of hot water at 1/4 cost of electrical water heaters, heat pump water heater can save your bill every day.

4) **Super-Sized evaporator coil**
   Hydrophilic aluminum fin and rifled copper coil, it has higher performance in cold weather.

5) **High efficiency heat exchanger**

6) **World famous Compressor**
   It adopts the world famous brand compressor—“Copeland”, “Panasonic”, “Sanyo”, unmatched reliability, quiet operation, energy-saving and environmental-friendly.

7) **Monoblock design, convenient installation, nice appearance.**

8) **All-weather running**
   It supplies hot water no matter in a rainy day, snowy day or at night.

9) **Running automatically**
   It is microcomputer controlled, with timer function, it can automatically start up and stop according to the water temperature and other running conditions you set, no need for a supervisor.

10) **Environmental friendly**
    Environment-friendly, free of pollutions, it reduces the global green house effect.
## Part II Unit Exploded View

<table>
<thead>
<tr>
<th></th>
<th>Part Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Protection grid</td>
<td>10</td>
</tr>
<tr>
<td>19</td>
<td>Wind circulation grid</td>
<td>9</td>
</tr>
<tr>
<td>18</td>
<td>Evaporator</td>
<td>8</td>
</tr>
<tr>
<td>17</td>
<td>Fan motor</td>
<td>7</td>
</tr>
<tr>
<td>16</td>
<td>Fan</td>
<td>6</td>
</tr>
<tr>
<td>15</td>
<td>Front panel</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>Tube-in-shell heat exchanger</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>filter</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Bottom sheet</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Electric box</td>
<td>1</td>
</tr>
</tbody>
</table>
Part III Installation & Application

3.1 Transportation

⚠️ When transporting the heat pump, ensure that it is not tilted more than 45° in any direction.

3.2 Installation Location Requirement

⚠️ This unit is designed for outdoor installation, do not install it in an enclosed area.

It is very important to select a proper position for the unit, you should consider the followings:

- The space for installation should be large enough and well ventilated
- The installation position should be close to drainage channel or vent to facilitate water discharge.
- Choose a smooth, horizontal position where it can stand the weight of the unit, and it won’t increase noise and vibration as well, or you can use bracket to fix it on the wall, if necessary.
- Do not install the unit in place where there is pollution, accumulation of dirt or fallen leaves.
- There should not be inflammable or explosive materials close to the unit.

3.3 Installation

3.3.1 Install the outdoor unit

a. Mount the unit on the selected base and install the 4 black shockproof rubber pads under the 4 sheet of the unit to reduce vibration and sound transmission to the base. (Fig 1.1). For GT-SKR010B, GT-SKR015B, GT-SKR020B, users may use brackets to install the unit on wall (Fig 1.2)
b. Connect the condensate connector to the draining hole on the bottom sheet. (Fig 2)

### 3.3.2 Accessories

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Instruction Manual</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Condensate connector</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Shockproof rubber pads or Brackets</td>
<td>1 set</td>
</tr>
</tbody>
</table>

### 3.3.3 Piping Systems for pressurized type water tank

(circulating water pump inside the unit)

Remark:
1. The vertical distance between heat pump unit and water tank should be less than 3m, and the total pipe run between them should be less than 6m.
2. Make sure to install a **wye strainer** before water inlet of the unit to avoid clogging of the system. For pressurized type water tank, it’s an essential requirement to install a **relief valve** on water tank.
3. Fix the temperature sensor of the water tank well into the connection to avoid falling down as the failure may cause overheating protection or system halted.
4. In case the wire for the temperature sensor is not long enough, it is suggested to use screening wire and bind it with electrical adhesive type in order to avoid oxidation or loose connection as it may affect the transfer of data.

5. The circulation pipes and valves must be well insulated, otherwise it’ll loose heat or cause frozen problem.

6. Wire the power of the heat pump water heater (refer to wiring diagram), make sure the voltage is stable when give a trial run to the unit.

### 3.3.4 Electrical Connection

- For your own security, and to ensure proper operation of the unit, this heat pump unit must be installed and repaired by qualified technician, not consumer himself.

- A leakage protection switch must be installed near the heat pump in an accessible place.

- Do not use any damaged wires and switches, if found (to be damaged), replace it immediately.

- Do not open the electrical box without shutting off all power sources to the heat pump.

- All the wiring must meet the electrical safety requirement and conducted by qualified electricians.

- Ensure that there is a good earth connection for the power. Do not disconnect the earth connection of the power in any condition.

- Ensure that the heat pump water heater is well connected to the earth.

- Offer an separate power which meets rated requirements for the heat pump water heater

- When the water heater connects to the electricity network, there must be a short-circuit protection.

- Choose the suited type of wires when use the power outdoor.

- Do not use the main power switch to control the start/stop of the unit.

- After installation, double check before connect it to the power.

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Open the control panel when relocate it. Make sure to install a waterproof box to guarantee safety.
### The Specification of Power

<table>
<thead>
<tr>
<th>Type</th>
<th>GT-SKR010B/015B</th>
<th>GT-SKR020B</th>
<th>GT-SKR030B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>220-240V~ 50Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit Breaker/Fuse(A)</td>
<td>25/20</td>
<td>30/25</td>
<td>40/35</td>
</tr>
<tr>
<td>Power wiring (mm²)</td>
<td>3×2.5</td>
<td>3×2.5</td>
<td>3×4.0</td>
</tr>
<tr>
<td>Ground wiring (mm²)</td>
<td>2.5</td>
<td>2.5</td>
<td>4.0</td>
</tr>
</tbody>
</table>

### 3.3.5 How to install the water tank temperature sensor

a. Opening the front sheet to find the water tank temperature sensor (fig 3)
b. Install it to the water tank (fig 4)
3.4 Trial Operation

- To ensure that start-up is performed correctly, it should only be operated by qualified technician.
- The heat pump water heater is designed according to the conditions as follows: the range of ambient temperature is -10~43℃ and the range of water pressure is 0.15~0.8Mpa. The range of water outlet temp. is 28~60℃
- Make sure the piping system and water tank is filled up with water before commissioning.

3.4.1 Preparation

The following items need to be checked prior to start-up:

a. The heat pump must be fully connected.
b. All valves that could impair the proper flow of the heating water in the heating circuit must be open.
c. The air intake and air outlet paths must be clear.
d. The ventilator must turn in the direction indicated by the arrow.
e. Ensure the condensate outflow functions.
f. Open the gate valve to fill the piping system and water tank, then discharge air in piping system and water tank (refer to the following instruction)

![Image](image.png)

- It’s very important to discharge air!

**To discharge air in water pump and piping system:**

Step1: loosen the screw on the water pump through the hole,
Step2: Connect heat pump to power supply, then start it by pressing on controller,
Step3: Discharge air for about 15 minutes, then fasten the screw.

**To discharge air out of water tank**
The water tank is pressured type, after opening water refilling gate valve, it will be filled up automatically and air in it will be discharged automatically through relief valve on hot water outlet.

3.4.2 Trial run

- Make sure the piping system and water tank is filled up with water before commissioning and air is discharged out of the system.
- The water outlet temperature is set by the controller. When the water temperature of tank is higher than it is set, the unit will stop running, but if lower by 5℃ (default temperature difference), it may start up automatically.
- The heat pump is started up via the heat pump control panel. After the water pump has been running for 30 seconds, the unit starts to work, and then observe whether it works normally.
- When you restart the unit, the compressor won’t start to work until three minutes later, and this function is designed to protect the compressor.
3.4.3 Caution

If something happen as follows, please stop it immediately and cut the power off. You should contact with our authorized agent or maintenance personnel, don’t repair it by yourselves. Without professional technology, it may cause fire and you may get hurt.

- Fuse blown or protection activated frequently
- The wire and switches are heated abnormally
- Abnormal sounds coming from the unit
- Abnormal smell comes out of the unit.
- Electricity leakage
Part IV Control System

4.1 Description of Icons

4.2 Operation Instruction

A. Lock/Unlock the buttons
1. **Lock the buttons**: Under ON or OFF status, extended press ▲ ▼ button simultaneously for 5 seconds, buttons are locked, and ▶ icon is shown on the screen.
2. **Unlock the buttons**: Repeat the above step to unlock the buttons

B. On/Off the unit
1. Connect power to the unit, press ◆ button to turn on the unit, When compressor starts working, ▲ icon flashes on screen.
2. When the unit is on, press ◆ button, you can turn it off.

C. Set the clock (Note: it will exit the interface when no operation for 10 seconds)
Under ON or OFF status, extended press SET button for 5 seconds, then press ▲ ▼ button to set the hour, press SET button, then press ▲ ▼ button to set the minute, press SET button to exit.
D. Set water temperature
When the unit is on, press button to set desired water tank temperature. The setting will be saved automatically when no further operation on it for 10 seconds. The range is 28℃-60℃.

Note:
· Heat pump unit will stop running automatically when water temperature in water tank reaches desired water temperature you set.
· The unit will start running automatically when water temperature drops to a certain temperature. (according to temperature difference you set, refer to item 05 in table 4.1)

E. Set/Cancel the timer of On/Off (Note: it will exit the interface when no operation for 10 seconds)

Note:
You can set totally three period of time for the unit to start/stop automatically. Under ON or OFF status, press button once, “1 ” flashing; Press button twice, “2 ” flashing; Press button thrice, “3 ” flashing.

1. Set timer: (Take “1” for example)
   when “1 ” is flashing, Press button, ON flashing on the screen, then press button to set hour, Press button then press button to set minute; press button, OFF flashing on the screen, then press button to set hour, Press button then press button to set minute, press button to finish setting.

2. Cancel timer: To cancel timer, just set the unit to turning-on & turning-off at the similar time, then icon disappeared.

F. Set/Review the parameters (for technician only)
When the unit is on, extended press button to enter the interface. press button, select item (01-08), press button, then press button to set, press button to confirm.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Range</th>
<th>Default Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Coil temp. to start defrosting</td>
<td>-1~9℃</td>
<td>-3℃</td>
<td>flashing</td>
</tr>
<tr>
<td>02</td>
<td>Coil temp. to stop defrosting</td>
<td>5~25℃</td>
<td>12℃</td>
<td>flashing</td>
</tr>
<tr>
<td>03</td>
<td>Time interval for defrosting</td>
<td>10~90 Min</td>
<td>45 Min</td>
<td>flashing</td>
</tr>
<tr>
<td>04</td>
<td>Running time of defrosting</td>
<td>5-17 Min</td>
<td>10 Min</td>
<td>flashing</td>
</tr>
<tr>
<td>05</td>
<td>Temperature difference set</td>
<td>2-30</td>
<td>9</td>
<td>Refer to note 1,2,3 as below</td>
</tr>
<tr>
<td>06</td>
<td>Temp. compensation</td>
<td>0-30</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>Return water temperature</td>
<td>28~60℃</td>
<td>40℃</td>
<td>flashing, it’s for commercial unit.</td>
</tr>
<tr>
<td>08</td>
<td>Ambient temp. for starting electrical heating (unused)</td>
<td>0~35℃</td>
<td>5℃</td>
<td>flashing, when ambient temp. is lower than set temp. , electrical heating functions.</td>
</tr>
</tbody>
</table>

Note:
1. Set the temperature difference between measured water temperature and purpose water temperature
2. By setting the temperature difference to control the unit to start up/stop automatically.
3. For example, the default value is 9 (that represents 5°C), when the measured temperature is lower than desired water temperature by 5°C, the unit will start automatically. The unit will not stop until the measured temperature reaches the desired water temperature you set. 1 equals 0.5°C, the range is 2-30.

G. Review Data

When the unit is on, shortly press M button, then press ▲ button, review the actual measured data as below:

Table 4.2

<table>
<thead>
<tr>
<th>Name</th>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code of recoverable fault</td>
<td>01</td>
<td>It shows “28” when it works normally, others please refer to Table 4.3</td>
</tr>
<tr>
<td>&quot;Mode Selection&quot; Code Name</td>
<td>02</td>
<td>“0” circulation heating mode</td>
</tr>
<tr>
<td>Unit type</td>
<td>03</td>
<td>“0” single compressor, without phase detection</td>
</tr>
<tr>
<td>Unused</td>
<td>04</td>
<td>Spare</td>
</tr>
<tr>
<td>Coil temperature</td>
<td>05</td>
<td>Monitoring point of Defrosting temp. for compressor</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>06</td>
<td>Opening measurement of the electric expansion valve, and the anti-freeze temperature</td>
</tr>
<tr>
<td>Water outlet temperature</td>
<td>07</td>
<td>overheating protection (70°C)</td>
</tr>
<tr>
<td>Unused</td>
<td>08</td>
<td>Spare</td>
</tr>
<tr>
<td>Water temperature in tank</td>
<td>09</td>
<td>The unit stops working automatically when temp. reaches desired value.</td>
</tr>
<tr>
<td>Unused</td>
<td>10</td>
<td>Spare</td>
</tr>
<tr>
<td>Unused</td>
<td>11</td>
<td>Spare</td>
</tr>
</tbody>
</table>

Table 4.3: Recoverable faults

<table>
<thead>
<tr>
<th>Fault Name</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>“01E” Overheat protection</td>
<td>Hydraulic pressure switch protection</td>
</tr>
<tr>
<td>“05E” Overheat protection</td>
<td>If the water outlet temperature is higher than 70°C and lasts for 20 seconds, the unit may stop. And when the temperature cools down, it will restart in three minutes.</td>
</tr>
</tbody>
</table>

4.3 Protection

◆ Compressor delay protection: the delay for the compressor to start/stop is three minutes. The first time when it is power on, it starts up in one minute.

◆ High pressure protection: After compressor starts running and the high pressure switch interrupts for 10 seconds, the unit stops, “03E” flashing on the screen, and alarm sounds.

◆ Low pressure protection: After compressor starts running for 3 minutes and the low pressure switch interrupts for 10 seconds, the unit stops, “04E” flashing on the screen, and alarm sounds.

◆ When hydraulic pressure switch interrupts, the unit stops, “01E” fault code is shown on the screen and it won’t alarm. When the pressure recovers, the unit restarts automatically.

◆ Overheating protection: when water outlet temperature is higher than 70°C for 20 seconds, the
compressor stops, and when the temperature cools down to where it is set and the unit meets the condition of stopping for three minutes, the unit restarts automatically.

◆ Sensor fault: if the sensors fail, all parts stop working.

◆ Auto-antifreeze: To prevent the pipes and pumps from being frozen, the unit will defrost automatically when it meets the condition as follows: the ambient temperature is lower than 2°C and the water outlet temperature is lower than 10°C and the circulating pump has been powered off for more than 30 minutes. The circulation pump start up for 60 seconds, then turn off. This action repeats periodically.

Part V Maintenance

⚠️ Before performing any maintenance on the heat pump you must switch it off first and shut off the power to the unit.

A well-maintained heat pump could save your energy costs. When installed and tested by a qualified technician, heat pumps can deliver many years of dependable service and comfort. Below are some tips you can follow to ensure that your heat pump gives you optimum performance.

1. Turn the power off when the unit is being maintained.
2. Do not use petrol, naphtha, dissolvent and any other chemicals on the unit, otherwise, it may damage the surface. External heat pump parts can be wiped with a damp cloth and domestic cleaner.
3. Avoid leaning or putting objects on the device.
4. Keep it dry and drafty round the unit. Clean the heat exchanger regularly (usually once per 1～2 months) to keep a good heat exchange efficiency.
5. If the unit will be shut down for a long time, you should drain the water in the pipe, turn the power off and cover it with protective cover, Check it roundly before you start it again.
6. It is advised to use the phosphoric acid whose temperature is about 50～60°C and consistency is 15% to clean the heat exchanger of the unit. First start the circulation pump to clean it for 3 hours, and then flush it with tap water for three times. Do not use any amyctic detergent to clean the heat exchanger and the tank.
7. Change the installation site
   If the customer wants to change the site, please contact with the dealer or the local Customer Service for help.
Table 6.1

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Fault Description</th>
<th>Possible Causes</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>01E</td>
<td>Hydraulic pressure switch protection (protect when interrupts)</td>
<td>◇Hydraulic switch destroyed ◇Inadequate water-flow ◇There is air in the circulating water inlet tube ◇Circulating pump destroyed ◇Water tank lack of water</td>
<td>◇Replace the hydraulic switch ◇Clean the wye strainer, increase the water-flow ◇Discharge the air ◇Check and repair the pump and the capacitor ◇Ensure the tank is fully filled and the water pressure is over 0.15Mpa</td>
</tr>
<tr>
<td>02E</td>
<td>Current protection</td>
<td>◇Over-current</td>
<td>◇Check the power supply</td>
</tr>
<tr>
<td>03E</td>
<td>High pressure switch fault (protect when interrupts)</td>
<td>◇High pressure switch destroyed ◇Inadequate water-flow ◇The system is jammed, the probe of sensor falls down ◇Circulating pump damaged ◇Excessive refrigerant ◇Some un-condensable gas in the refrigerant system</td>
<td>◇Replace high pressure switch ◇Increase the flow ◇Check and clean the system, retighten the probe ◇Check and repair the circulating pump and the capacitor ◇Drain out the superfluous refrigerant ◇Drain out the un-condensable gas</td>
</tr>
<tr>
<td>04E</td>
<td>Low pressure switch fault (protect when interrupts)</td>
<td>◇Low pressure switch destroyed ◇Inadequate refrigerant ◇The fins of the evaporator are dirty</td>
<td>◇Replace low pressure switch ◇Leak hunting and fill in standard quantity of refrigerant ◇Clean the fins</td>
</tr>
<tr>
<td>05E</td>
<td>Overheating of the outlet water</td>
<td>◇Clogged water line ◇water outlet temperature sensor fault</td>
<td>◇Check the water system and the pump ◇Check the electric resistance of the sensor</td>
</tr>
<tr>
<td>09E</td>
<td>Communication error (the control panel can’t receive information from the PCB)</td>
<td>◇Open circuit or short circuit between the operation panel and PCB</td>
<td>◇Renovate or Replace the wire between control panel and PCB</td>
</tr>
<tr>
<td>11E</td>
<td>Coil sensor fault (open circuit or short circuit)</td>
<td>◇The sensor open circuit ◇The probe of the sensor falls down ◇the sensor short circuit</td>
<td>◇Reconnect the wirings of the sensor ◇Retighten the probe ◇Renovate wirings and remove faults</td>
</tr>
<tr>
<td>12E</td>
<td>Environment sensor fault (open circuit or short circuit)</td>
<td>◇The sensor open circuit ◇The probe of the sensor falls down ◇the sensor short circuit</td>
<td>◇Reconnect the wirings of the sensor ◇Retighten the probe ◇Renovate wirings and remove faults</td>
</tr>
<tr>
<td>13E</td>
<td>Water outlet sensor fault (open circuit or short circuit)</td>
<td>◇The sensor open circuit ◇The probe of the sensor falls down ◇the sensor short circuit</td>
<td>◇Reconnect the wirings of the sensor ◇Retighten the probe ◇Renovate wirings and remove faults</td>
</tr>
<tr>
<td>15E</td>
<td>Water-tank sensor fault (open circuit or short circuit)</td>
<td>◇The sensor open circuit ◇The probe of the sensor falls down ◇the sensor short circuit</td>
<td>◇Reconnect the wirings of the sensor ◇Retighten the probe ◇Renovate wirings and remove faults</td>
</tr>
</tbody>
</table>

Note: when the fault arises, the correspondent fault code will be flashing on the screen and alarm sounds.
<table>
<thead>
<tr>
<th>Fault Condition</th>
<th>Possible Causes</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The unit doesn’t work</td>
<td>◇ Power failure ◇ Bad connection to the power ◇ Fuse blow</td>
<td>◇ Turn off the switch, check the Power source ◇ Find the causes and renovate them ◇ Replace the fuse</td>
</tr>
<tr>
<td>The pump is working but too noisy and the water is not cycled</td>
<td>◇ Lack water In the system ◇ There is air in the water circulation ◇ Any valve in the system is not open ◇ Filter stoppage</td>
<td>◇ Check the water make-up device and fill in with water ◇ Discharge the air in the water system ◇ Open all the valves ◇ Clean the filter</td>
</tr>
<tr>
<td>Low heating capacity</td>
<td>◇ Inadequate refrigerant ◇ Bad insulation of the water system ◇ Drying filter stoppage ◇ Air side heat exchanger is un-efficient ◇ Inadequate water-flow</td>
<td>◇ Leak hunting and fill in standard quantity of refrigerant ◇ Improve the heat insulation ◇ Replace the drying filter ◇ Clean the heat exchanger ◇ Clean the water filter</td>
</tr>
<tr>
<td>The compressor doesn’t work</td>
<td>◇ Power failure ◇ Compressor contactor destroyed ◇ Poor connection ◇ Overheating protection ◇ Water outlet temperature is too high ◇ Inadequate water-flow</td>
<td>◇ Check it and solve the problems ◇ Replace contactor ◇ Check and renovate it ◇ Check and solve the problems ◇ Reset a proper temperature ◇ Clean the water filter and discharge the air in the water system</td>
</tr>
<tr>
<td>The compressor works but too noisy</td>
<td>◇ Liquid refrigerant goes into the compressor ◇ Interior components destroyed ◇ Inadequate refrigeration oil</td>
<td>◇ Check the expansion valve ◇ Replace the compressor ◇ Add in adequate refrigeration oil</td>
</tr>
<tr>
<td>The fan doesn’t work</td>
<td>◇ Capacitor damaged ◇ The fans are not fixed well ◇ The electromotor burned out ◇ Contactor destroyed</td>
<td>◇ Replace it ◇ Fix it well again ◇ Replace the electromotor ◇ Replace the Contactor</td>
</tr>
<tr>
<td>Compressor works but not heating</td>
<td>◇ Refrigerant leakage ◇ Compressor fault</td>
<td>◇ Leak hunting and fill in standard quantity of refrigerant ◇ Replace the compressor</td>
</tr>
<tr>
<td>Low water-flow protection</td>
<td>◇ Hydraulic switch destroyed ◇ Inadequate water-flow</td>
<td>◇ Replace the switch ◇ Clean the filter and discharge the air</td>
</tr>
<tr>
<td>Excessive discharge pressure</td>
<td>◇ Too much refrigerant ◇ Non-condensable gas in the Refrigeration cycle ◇ Inadequate water-flow</td>
<td>◇ Draw off the superfluous refrigerant ◇ Drive the gas out ◇ Check the circulation and increase the flow</td>
</tr>
<tr>
<td>Low suction pressure</td>
<td>◇ Drying filter stoppage ◇ Lack of refrigerant ◇ Excessive pressure drop in the heat exchanger</td>
<td>◇ Replace the filter ◇ Leak hunting and fill in standard quantity of refrigerant ◇ Check the opening of electronic expansion valve</td>
</tr>
</tbody>
</table>
Disposal

Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.

Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging you health and well-being.

There won’t be a further notice if anything changes as the unit improved.