



## Owner's Manual

## **Original Instructions**

Hot water converter of GMV5 Home

Models:

NRZ16G/A-S

Thank you for choosing air conditioners. 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.gree.com or send an email to global@cn.gree.com for the electronic version.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

## To Users

Thank you for selecting Gree's 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 responsibility 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 using environment, otherwise it may impact the using convenience.
- (4) This product has gone through strict inspection and operational test before leaving the factory. In order to avoid damage due to improper disassembly and inspection, which may impact the normal operation of unit, please do not disassemble the unit by yourself. You can contact with the special maintenance center of our company if necessary.
- (5) When the product is faulted and cannot be operated, please contact with our maintenance center as soon as possible by providing the following information.
  - 1) Contents of nameplate of product (model, cooling/heating capacity, product No., ex-factory date).
  - 2) Malfunction status (specify the situations before and after the error occurs).
- (6) 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. We have the right to make necessary revision to the product from time to time due to the reason of sales or production, and reserve the right to revise the contents without further notice.
- (7) The final right to interpret for this instruction manual belongs to Gree Electric Appliances, Inc. of Zhuhai.

## **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.



**NOTE:** 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.

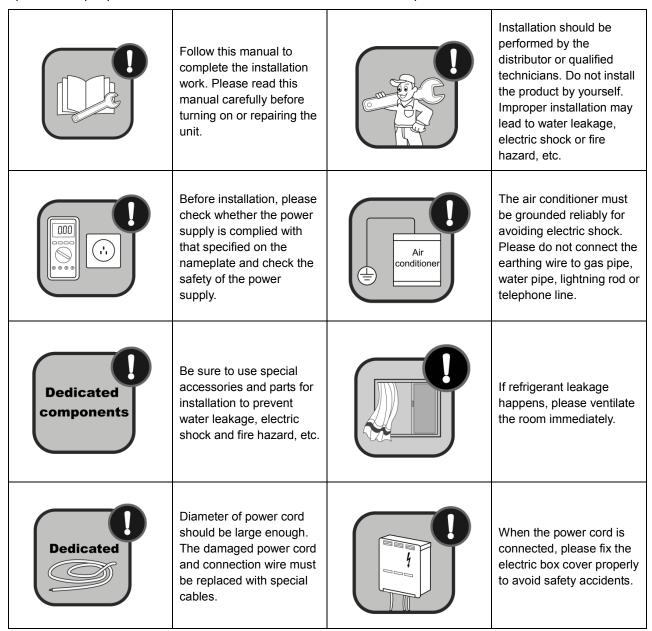


This sign indicates that the items must be observed. Improper operation may cause damage to people or property.

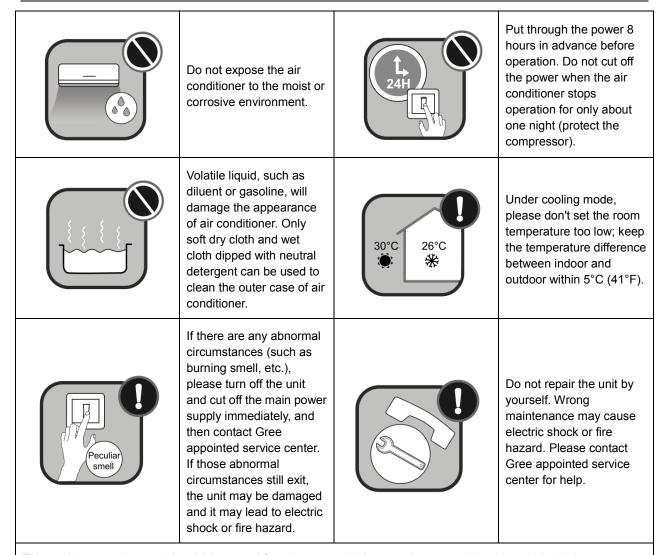


#### **WARNING!**

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 air conditioner with anti-corrosive or anti-explosion function.



N <sub>2</sub>	Never fail to comply with the nitrogen-charging welding process. Do charge nitrogen when welding the pipes.		Never short circuit or cancel the pressure switch to prevent unit damage.
	As for the unit controlled by the wired controller, connect the wired controller well firstly and then energize the unit; otherwise, the unit can't operate normally.	1	When installation is finished, please check whether the drainage pipes, pipelines and electric wires are connected correctly to avoid water leakage, refrigerant leakage, electric shock or fire, etc.
	Do not insert fingers or objects into air outlet or air return grille.		Open the door and window frequently to keep good ventilation for avoiding oxygen deficit when gas heater or oil heater is used in the room.
	Never plug in or unplug the power plug directly to turn on or turn off the air conditioner.	<5Min	Once the air conditioner is turned on, it can be turned off only after it has operated for 5min at least; otherwise, it will affect the oil return of compressor.
	Do not allow children to operate this air conditioner.		Do not operate this air conditioner with wet hands.
	The air conditioner can be cleaned only when it has been turned off and the power has been cut off; otherwise, it may cause electric shock or injury.		Never spray or flush water towards the air conditioner; otherwise, malfunction or electric shock may happen.



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.

Install units according to national wiring codes.

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

An all-pole disconnection device which has at least 3mm clearances in all poles, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

Gree Electric Appliances, Inc. of Zhuhai will not assume responsibility for any personal injury or property loss caused by improper installation, improper debugging, unnecessary repair or not following the instructions of this manual.

#### 2 Introduction to Users

- (1) Before conducting any maintenance and repair for the converter, please cut off the power first; the converter is not allowed to be adjusted or maintained by nonprofessional personnel.
- (2) Please make sure that the power socket is in conformity with the national standard and be reliably grounded. It is not allowed to use the converter without reliable grounding.
- (3) Make sure that the water tank has been filled with water before energizing the unit, otherwise the unit may be damaged.
- (4) Hot water of over 50°C may cause scald, please make sure that the hot water is mixed with cold water before using the water. When the ambient temperature is below 0°C, and no

people in the room for long, and the converter is de-energized, please drain the water tank.

- (5) After draining the water inside the water tank, please cut off the power of hot water converter.
- (6) Hot water inside the water tank cannot be drunk. Because long-term using of water tank may generate water scale, and water quality is bad. So please use clean water to wash the food again after using the water inside the water tank to wash the food.
- (7) The default setting water temperature of converter is 50°C. If water temperature is too high, the COP of unit will decrease accordingly.
- (8) The most energy-saving mode is water heating under cooling mode; the unit will automatically estimate to exert the heat recovery effect to the most.
- (9) This unit has fast water heating function.

#### 3 Product Features

(1) Energy-saving and Eco-friendly.

Heat the water with waste heat from the operation of air conditioner and affluent heat source in the air, the COP can be up to 7.0. In water heating under cooling mode, the heat recovery can be optimized and controlled, which is equal to heating the water for free.

(2) Safe and Reliable.

This series of unit adopts hot water converter, so that the heat can be transferred from outdoor unit to the water tank with internal coil; the inner pot and outer pot of water tank with internal coil are thermal insulating design for safe operation. Moreover, the unit adopts waterway-free design for better frost resistance, less loss in hot water pipeline, and lower energy consumption. In this way can avoid hidden danger and ensure safety of users.

(3) Convenient to use.

Water heating temperature can be set within 35~55°C. The hot water can be supplied to washroom, kitchen, and other places at the same time.

(4) Convenient to operate.

User can select standard water heating mode, nighttime operating mode, or advanced preset mode to set the water temperature at will, and turn on or turn off the unit according to water temperature and water using situations, so as to ensure instant heating and instant use of hot water in 24 hours. Furthermore, user can set to operate the unit by avoiding the peak time for electricity using, so as to reduce electricity charge and tripping operation phenomenon.

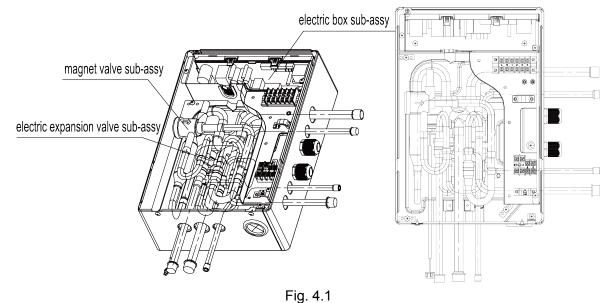
(5) Convenient to install.

The unit adopts water tank with external coil, the hot water is supplied by the water pressure via tap water network. There is no need to add water pump or related fittings, therefore installation procedures are simplified.

#### 4 Structure and Performance Parameter of Unit

#### 4.1 Internal Structure of Hot Water Converter

Hot water converter mainly consists of electric box sub-assay, magnet valve sub- assay, electric expansion valve sub- assay, electric controller, etc., and the internal structure is shown as below.



# 4.2 Introduction to Outline Dimension and Appearance of Hot Water Converter

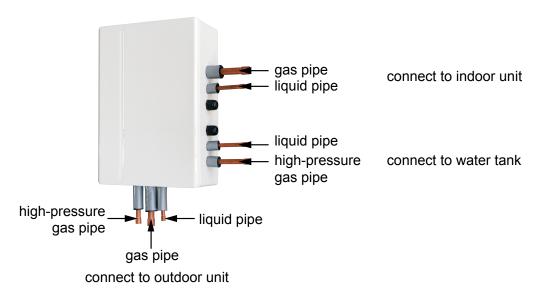


Fig. 4.2

#### 4.3 Model Selection for ODU, Hot Water Converter, Water Tank

Type of ODU	ODU Model	Hot Water Converter	Water Tank Model	Remarks
Side discharge ODU	GMV-S120W/A-S GMV-S140W/A-S GMV-S160W/A-S	NRZ16G/A-S	SXTD200LCJW/A-K	Air conditioner +hot water

### 4.4 Model and Specification of Pressure Bearing Water Tank

Water Tank Model	Volume	Dimension (external diameter×height)	Power of auxiliary heating	Cooling water inlet tube	Hot water outlet tube
	L	mm	W	mm	mm
SXTD200LCJW/A-K	200	Ф462×2000	1500	G1/2	G1/2

#### 5 Installation of Unit

#### 5.1 Installation of Product

#### 5.1.1 Pipeline Connection for Hot Water System

Preparation of pipeline: cooling water inlet tube and hot water outlet tube for water tank must adopt hot water tube. It is recommended to use the PPR tube with nominal external diameter of G1/2, and should adopt S2.5 (3.4mm wall thickness) series.

Installation for inlet and outlet tube of water tank: inlet water tube must be installed with check valve (note the installing direction of check valve, the "→" arrow directs to the heat insulating water tank), filter, cut-off valve, and the installing order must be the same as the installing sketch map of unit. At least one check valve should be installed in the water outlet tube.

Installation for blow-off pipe in bottom of water tank: lead the drain outlet with PPR tube to the floor drain, one check valve must be installed in the blow-off pipe and it should be installed in the position that is convenience for operation.

After all the pipelines are well connected, conduct leak detection first (for specific leak detection operation, please refer to debugging part of the unit). After confirming there is no leakage, conduct thermal insulation for all the water pipeline system, especially for the joints such as valves and pipe joints. It is recommended to use the thermal insulating cotton with thickness not less than 15mm. After covering the cotton, use the tie line to truss the water pipe, water temperature sensor, and electric wire.

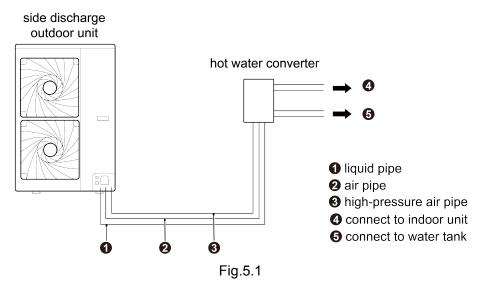
#### 5.1.2 Pipeline Connection for Refrigerant System

The pipeline for hot water converter to connect to indoor unit has been sealed by welding before leaving the factory. The copper tube for refrigerant of indoor unit is led out from hot water converter; the sealed tube of indoor unit should be unsoldered. Sketch map for installation is as below. Conduct thermal insulation for the refrigerant copper tube, and thickness of thermal insulating material should not be less than 8mm. Make sure that the refrigerant copper tube is firmly sealed and connected without leakage.

Size of the air pipe and liquid pipe for hot water converter used for connecting to water tank is  $\Phi12.7/\Phi9.52$ ; size of the air pipe and liquid pipe for water tank is  $\Phi9.52/\Phi6.35$ . When hot water converter connects to water tank, it requires connecting tube with size of  $\Phi9.52$  to  $\Phi12.7$ , and  $\Phi6.35$  to  $\Phi9.52$  (hot water converter has been equipped with connecting tube, the connecting tube should

be installed in water tank side).

Sketch map for installation of connection of side discharge outdoor unit, hot water converter and water tank:





- The hot water converter is equipped with upper and lower temperature sensor; they are connected in the air, the upper temperature sensor corresponds to red terminal, the lower temperature sensor corresponds to white terminal.
- 2 Lead the upper water temperature sensor from water tank sensor outlet 1 to the upper water temperature sensor terminal for hot water converter.
- 3 Lead the lower water temperature sensor from water tank sensor outlet 2 to the lower water temperature sensor terminal for hot water converter.
- ④ Distance between hot water converter and water tank should not be over 6 meters.



Horizontal distance between hot water converter and thermal insulating water tank should not be over 6 meters, and vertical fall should not be over 3 meters. It is recommended to install the thermal insulating water tank in lower position, and hot water converter in the upper position, or install them in the same level.

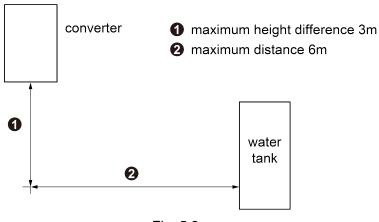


Fig. 5.2



- ① Prepare materials according to the above dimension and specification of terminals. If the cut off valve is installed outdoors, it is recommended to use PPR pipe to avoid freezing.
- ② Install the water pipelines only after well fixing the hot water converter. During connecting the pips, prevent dust or other sundries from entering into the pipeline system.
- 3 Hot water is supplied by thermal insulating pressure bearing water tank through the pressure of tap water, thus hot water can be acquired only there is tap water.
- (4) Keep the cut-off valve in cooling water inlet of water tank open when using the unit.
- (5) When user won't use the unit for a long time, the unit should be de-energized and the water inside water tank should be drained to avoid freeze of unit in cold weather.

## 5.1.3 Requirements for Refrigerant Connecting Pipe between ODU and Hot Water Converter

Outdoor unit and hot water converter are connected via refrigerant pipe.

Refrigerant pipe	Diameter(mm)	Length≤d(m)	Connecting method
Air pipe	15.9	30	Horn mouth
Liquid pipe	9.52	30	Horn mouth
High-pressure air pipe	12.7	30	Horn mouth

#### 5.1.4 Specification for Interface of Water Tank

Hot water converter and water tank are connected via copper tube.

Specification of Interface				
Model	Name Thread of Interface		Remarks	
List water conventor	High pressure air pipe	12.7mm		
Hot water converter	Liquid pipe	9.52mm	Connected via	
Water tank	High pressure air pipe	9.52mm	copper tube with different diameters	
	Liquid pipe	6.35mm		
	Cooling water inlet of water tank	G1/2	_	
	Hot water inlet of water tank	G1/2	_	
	Drain outlet of water tank	G1/2	_	



- ① Conduct thermal insulation for refrigerant copper tube; in order to ensure the using effect, thickness of thermal insulating material should not be less than 8mm.
- ② Make sure that the refrigerant copper tube is sealed up without leakage.

#### 5.1.5 Installation Requirements for Water System

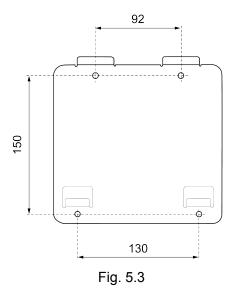
- (1) Connect cooling water inlet of pressure bearing water tank to tap water pipe, connect hot water outlet to terminal water using outlet.
- (2) Tap water inlet should connect to one-way valve and filter.
- (3) For easy maintenance, water inlet and water outlet should be installed with manual cut-off valve.
- (4) Install air release valve in the highest point of water pipe.

#### 5.1.6 Installation Method of Hot Water Converter

Wall-mounted installation:

(1) Install wall-mounted board.

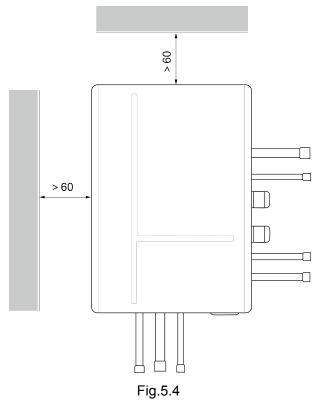
Unit: mm



## NOTES:

- ① Use line aligning method or leveling instrument to find the level position.
- ② Use screws to fix the wall-mounted board on the wall after being processed (such as be embedded with plastic particles).
- ③ After installing the board, check if it is firmly installed.
- (2) Hang the hot water converter on the wall-mounted board.

Unit: mm



9



After installation, distance from upper side of hot water converter to the ceiling or related obstacles should be over 60mm, and distance from left side of hot water converter to the left wall or related obstacles should be over 60mm.

#### 5.1.7 Install Protection for Hot Water Converter

Installing pipeline welding protection for hot water converter is to use magnet to fix the baffle on the hot water converter to separate the welding pipe and the wall, so as to avoid burning hot water converter and the wall. Baffle and magnet belongs to fitting materials of hot water converter. Pipeline welding protection is as below.

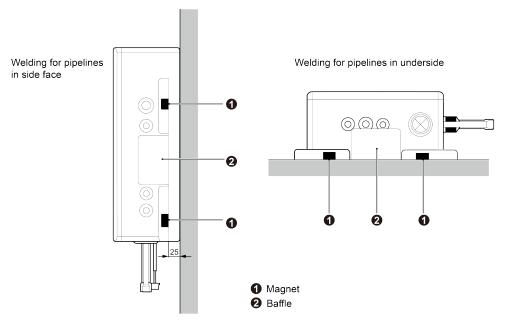


Fig. 5.5

## NOTES:

- ① Before the welding, use wet cloth to wrap the thermal insulating bushing.
- ② Put the baffle between the pipeline and the wall, use two magnets to fix on the case. When welding pipelines in the side face, the baffle should ward off the cable cross loop to prevent the fire from burning the wall and the cable cross loop during welding.

#### 5.1.8 Install Water Storage Tank

- (1) Thermal insulating water tank should be installed within the range of 6 meters horizontal distance and 3 meters vertical fall to the hot water converter. The water tank can be installed outdoors with the converter, such as balcony, roof, ground, or indoors.
- (2) Vertical thermal insulating water tank must be placed vertically with the feet grounded; it is not allowed to hang in the air. The place for installation must be firm enough, and use screw and bolt to fix the tank on the wall, for details please see Fig. 5.6. Take the bearing capacity of installing position into consideration when installing the water tank.

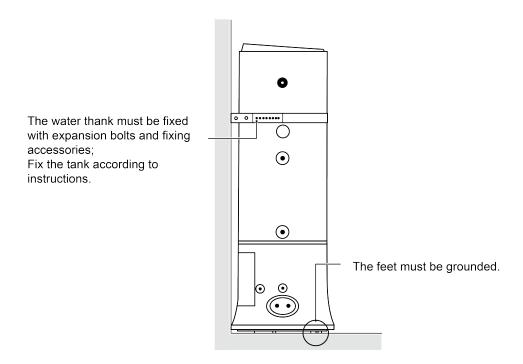
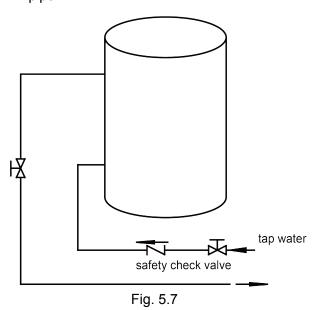


Fig. 5.6

(3) There should be tap water pipe, hot water interface and floor drain around the thermal insulating water tank for easily adding water, supplying water and draining water.

(4) Connection of inlet and outlet water pipelines: connect the safety check valve (note that the arrow "→" points at the thermal insulating water tank) to water inlet of water tank with PPR pipe, and seal with raw material belt; connect another end of safety check valve to water adding end of tap water. Connect the hot water pipe to water outlet of thermal insulating water tank with PPR pipe.



NOTE:

In order to ensure water using safety, water inlet and outlet of thermal insulating water tank must adopt insulating pipeline (such as PPR plastic pipe); make sure that each section of pipe should not be less than the following length: L≥70×R2, L is the pipe length (Unit: cm), R is inside radius of pipe (Unit: cm). Conduct thermal insulating measures; it is not allowed to use metal pipe. In the first time using, make sure that the thermal insulating water tank has been filled with water before energizing the unit; the thermal insulating water tank should not be operated without water.

#### 5.1.9 Electric Wire Connection Requirement

- (1) Layout of Electric Wire.
  - The GMV5 Home belongs to I class home appliance, please take reliable grounded measures. Grounded measure must be connected to special grounded device, and should be operated by professional personnel.
  - 2) Cree page protection switch and air switch with enough capacity must be installed in the circuit.
  - 3) The power source must meet the specified specification of power source or special circuit for air conditioner.
  - 4) Wire diameter of power cord must be large enough; please refer to the specification in the following chart.
  - 5) Install according to national layout rules.

6) Please do not forcibly draw the power cord.

Model	Time of Dower Course	Minimum Sectional Area of Power Cord (mm²)			
Model	Type of Power Source	Live Wire	Zero Line	Ground Wire	Capacity of Air Switch (A)
NRZ16G/A-S	220-240V ~ 50/60Hz	1	1	1	10

## NOTES:

- ① Power cord of unit must be copper core cable, and working temperature should not be over its specified value.
- ② If the length of power cord is over 15 meters, please increase the sectional area of power cord accordingly to avoid overload.
- Specification of power cord means the specification selected when BV single core wire (2~4 pieces) penetrating plastic tube under the ambient temperature of 40°C. Operate the air switch when ambient temperature is 40°C and the air switch is type "D".
- ④ If the actual installation condition is changed, please consider to reduce the capacity of power cord and switch provided by the manufacturer.
- (2) Electric Wiring and Connection.
  - 1) Twist off the screw on the wiring box cover of the hot water converter, and then open the wiring box cover.
  - 2) Connect one end of auxiliary electric heating power cord equipped on the water tank to wiring board 1, connect black end to 1, blue end to 2 and yellow-green end to the ground. The control output terminals of back water pump are terminal 3 and terminal 4 of power wiring board. Connect the coil of control contactor of water pump to this position.
  - 3) Smear some heat-conducting silica gel on the water temperature sensor led out from the hot water converter. Insert the upper water temperature sensor into the upper temperature-sensing outlet 1 of water tank; insert the lower water temperature sensor into the upper temperature-sensing outlet 2 of water tank.
  - 4) Fix the heavy-current wire with wire-fixing clamp and then reinstall the wiring box cover.
  - 5) Install and fix the wired controller, and then connect the wired controller with the communication wire led from the hot water converter.

**Electrical Box** 

Water Tank

Water return temperature CN49 >> sensor of water tank X1 Red Upper Temperature Main Sensor of Water Tank Board White Lower Temperature CN48 > Sensor of Water Tank Power XT1 N N Cycle Pump KM AC Contactor (1) PΕ PΕ Electrical

6) Please note that the heavy current and weak current should be separated.

Fig. 5.8 External wiring diagram between hot water converter and outdoor unit & water tank

Indoor/Outdoor

Communication

Wired Controller



Above wiring diagram is only for reference. Please refer to the circuit diagram in the electric box of unit for details.

### 5.2 Debugging

Notices for debugging:

Box

(1) Check whether the unit is installed correctly.

XT2

D1 D2

H1

Hot Water Converter

- (2) Check whether the piping for water system and wiring for electricity system is reasonable.
- (3) Check whether the heat preservation for the refrigerant copper pipe is good.
- (4) Check whether it connected the earthling wire.
- (5) Check whether the voltage is the rated voltage of the unit.
- (6) Check whether the check valve and the safety valve at the water inlet are installed correctly.
- (7) The water inlet pressure should be no less than 0.15MPa.

#### 5.3 Notices

- (1) Do not put the unit at the place where will be frozen easily. Otherwise, container and water pipe will broke and it will cause scalding and water leaking.
- (2) Do not operate the unit at the place where the water can't be drained out. The blow-off pipe should be connected to the sewer.
- (3) The water tank should be installed at the place where is convenient for operation and maintenance. Moreover, there should be flow drain at the installation place for the water tank.
- (4) The installation position for the water tank should be beyond the children.
- (5) The installation position of the water tank should be close to the water-getting point as much

as possible to prevent heat loss.

- (6) The installation position for the water tank should be close to the outdoor unit as much as possible.
- (7) The power switch of water heater should be installed at the dry place to avoid normal operation (you'd better install a water-proof box).
- (8) When the temperature is too low in winter or the unit hasn't been used for a long time, supply power for the unit at least for 8 hours before turning on the unit.
- (9) When the outdoor temperature is too low in winter, do not cut off the power after stop operation. Otherwise, the freeze prevention protection will be invalid.
- (10) When the unit hasn't been used for a long time, please drain out the water inside the unit, the water tank and the pipeline through draw off valve after cutting off the power.
- (11) Water compensation operation and water drainage operation may be difference for different models. Please refer to the related installation manual.
- (12) Before the water tank is filled up with water, please cut off the power to prevent malfunction.
- (13) Before using water, please adjust the water to the proper temperature to prevent scalding.
- (14) When there's enough water for use, please try to decrease the set temperature to reduce heat loss. Meanwhile, it can also reduce corrosion and scale to prolong the service life of converter and water tank.

### 6 Error Display

When error occurs during system operation, the temperature display zone of the wired controller will show the error code, and show the error codes in cycle when there are several errors.

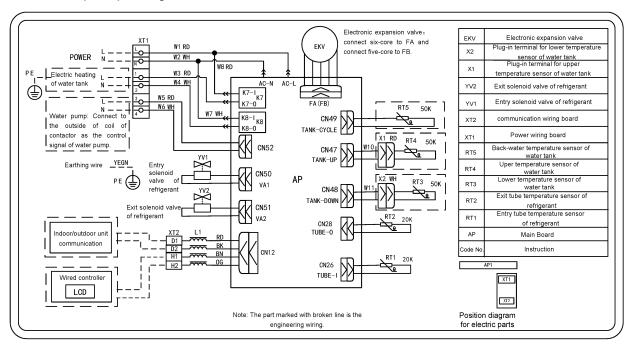




When error occurs, please power off and ask professionals for maintenance.

#### 7 Electric Control Instruction

Electric principle diagram for NRZ16G/A-S.





The above circuit diagram is only for reference. Please refer to the wiring circuit inside the electric box for the detailed content.

## 8 Troubleshooting

#### 8.1 Error Code for Hot Water Converter

Display code	Content	Display code	Content
L4	Wired controller power supply error	d4	Malfunction of entry temperature sensor
L5	Freeze prevention protection	d6	Malfunction of exit temperature sensor
L6	Mode shock	dC	Setting of capacity DIP switch is abnormal
L8	Insufficient power supply	dH	Circuit board of wired controller is abnormal
dF	Malfunction of upper water temperature sensor	d2	Malfunction of lower water temperature sensor



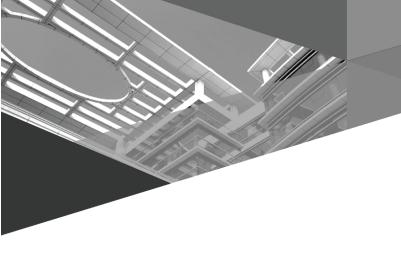
When there's malfunction for the outdoor unit, the unit can generate hot water (start up the hot water generation function when there's water inside the water tank).

#### 8.2 Common Malfunctions

Malfunction phenomenon	Causes	Troubleshooting	
	Water is stopped or water pressure is too low.		
No water.	Water pipe is blocked.	Check it.	
	Valve of water inlet pipe is not open.		
	Water temperature is set too low.	Set it again.	
No hot water or the water temperature is not high.	Wired controller is invalid.	Contact with local maintenance center.	
temperature is not night.	Heating time is too short.	Heat it successively.	
Hot water volume is not stable.	Tap water pressure is not stable.	Check it.	
Freeze prevention.	Water temperature is too low.	Energize the unit or keep the heating status for 30min above.	

### 8.3 After-sales Service

The guarantee period for the complete unit is 21 months (started from the purchased date on the invoice). The unit can be repaired freely within the guarantee period. User can take the guarantee and invoice to the appointed maintenance center. When the unit has been used for three years, please contact local maintenance center for door-to-door service (maintenance should be charged).





## GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

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