GMV5 HOME Owner's Manual

Models:
GMV-S120WL/A-S
GMV-S140WL/A-S
GMV-S160WL/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 email to global@gree.com.cn or electronic version.
- GREE reserves the right to interpret this manual which will be subject to any change due to product improvement without further notice.
- GREE Electric Appliances, Inc. of Zhuhai reserves the final right to interpret this manual.

Preface

Gree GMV5 HOME, with the most advanced design and manufacturing technologies in the world, uses eco-friendly refrigerant R410A as its cooling medium. For correct installation and operation, please read this manual carefully. Before reading the manual, please note that:

(1) To ensure safety when operating this system, please strictly follow the instructions in this manual.

(2) The total capacity of running indoor units must not exceed 100% of the capacity of outdoor units. Otherwise, cooling (heating) effect of each indoor unit would be poor.

(3) Make sure that this manual is kept by direct operators and maintainers.

(4) In case of malfunction, please examine the following items and contact our authorized service centers as soon as possible.

1) Nameplate (model, cooling capacity, product code, ex-factory date)

2) Malfunction status (detailed description of conditions before and after malfunction occurs)

(5) All units have been strictly tested and proved to be qualified before ex-factory. To avoid damage or operation failure which may be caused by improper disassembly, please do not disassemble units by yourself. If disassembly is needed, please contact our authorized service centers.

(6) All graphics and information in this manual are only for reference. Manufacturer reserves the right for changes in terms of sales or production at any time and without prior notice.

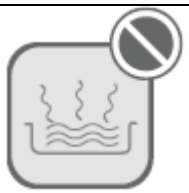
This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

	Correct Disposal of this product
 R410A:2087.5	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 responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

Contents

1 Safety Precautions

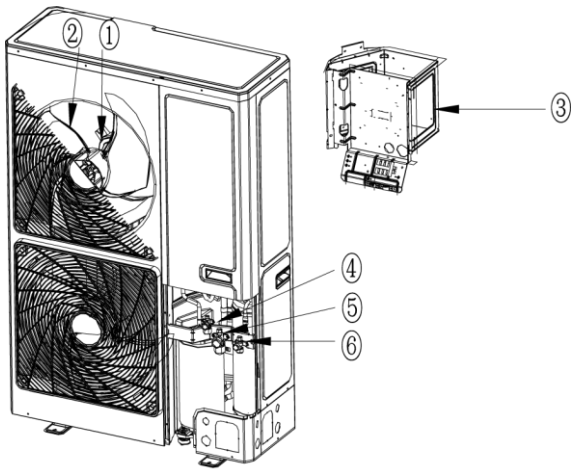
Never attempt! Improper operation may result in death or serious injury.			
Be sure to observe! Improper operation may lead to personal injury or property damage.			
	Please install the unit according to instructions in this manual. Read this manual carefully before starting up or checking the machine.		Installation should be performed by distributor or qualified technicians. Do not install the product by yourself. Improper installation may result in water leakage, electric shock or fire hazard.
	Before installation, please check the power supply if it complies with the requirement stated on nameplate. Make sure that power is safe.		Air conditioner must be properly grounded through the receptacle to avoid electric shock. The ground wire should not be connected with gas pipe, water pipe, lightening arrester or telephone line.
	When installing, specialized parts and accessories must be used. Otherwise, it may result in water leakage, electric shock or fire hazard.		Refrigerant R410A can produce poisonous gas once it meets fire, so please ventilate the room immediately if refrigerant leaks out during installation.
	Diameter of power cord must be large enough. Damaged power cord or connecting wire must be replaced by specialized electric cable.		After the power cord is connected, please install the cover of electric box to avoid danger.
	Nitrogen must be charged according to technical requirements.		Short circuit is forbidden. Do not cancel the pressure switch, otherwise unit may be damaged.
	For units with wired controllers, do not connect power supply until the wired controller is well installed. Otherwise, wired controller cannot be used.		When installation is finished, please check and make sure the drain pipe, pipeline and electric wire are all well connected so as to avoid water leakage, refrigerant leakage, electric shock and fire hazard.
	Do not extend fingers or objects into air outlet or return air grille.		If you use gas heater or petroleum heater in the same room, please open the door or window to maintain good air circulation, otherwise the room may become lack of oxygen.
	Never start or stop the air conditioner by inserting or removing the power cord.		Do not turn off the air conditioner until it runs for at least 5 minutes. Otherwise, compressor oil return will be affected.
	Children are not allowed to operate the air conditioner.		Do not operate the air conditioner with wet hands.

	Please turn off and unplug your air conditioner before cleaning. Otherwise, it may cause electric shock or personal injury.		Do not spray water on the air conditioner, otherwise wire, malfunction or electric shock will occur.
	Do not expose the air conditioner directly under damp or corrosive surroundings.		Connect power 8 hours before operation. Do not disconnect power when you want to stop the unit in short period of time, e.g. on one night. (This is for protecting the compressor.)
	Volatile liquid such as thinner or gasoline will damage the appearance of air conditioner. (Please use soft dry cloth and wet cloth with mild detergent to clean the outer case.)		Under cool mode, do not set the indoor temperature too low.
	If abnormal condition occurs (e.g. unpleasant smell), please turn off the unit at once and disconnect power supply. Then contact Gree authorized service center. If the air conditioner continues to operate despite of abnormal condition, it may be damaged and cause electric shock or fire hazard.		Do not repair the air conditioner by yourself. Improper repair will cause electric shock or fire hazard. Please contact Gree authorized service center and ask professional technicians to repair it.
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 Product Introduction

Gree GMV5 HOME adopts inverter compressor technology. By changing the displacement of compressor, stepless capacity regulation within range of 10%~100% can be realized. Various product lineups are provided with capacity range from 12kW to 16kW, which can be widely used in residential, commercial and working area and especially applicable to places with big load change. Gree GMV5 HOME is absolutely your best choice.

2.1 Names of Main Parts



GMV-S120WL/A-S
GMV-S140WL/A-S
GMV-S160WL/A-S

Fig.1

No.	①	②	③	④	⑤	⑥
Name	Motor	Fan blade	Electric box assembly	High pressure gas pipe valve	Gas pipe valve	Liquid pipe valve

2.2 Combinations of Indoor and Outdoor Units

(1) The total capacity of indoor units should be within 50%~100% of that of outdoor units. See below the number of indoor units that can be connected to one outdoor unit:

Model	Sets of connectable indoor units	Remark
GMV-S120WL/A-S	2～6	
GMV-S140WL/A-S	2～7	
GMV-S160WL/A-S	2～8	

(2) Select outdoor unit, hydro box and water tank:

Outdoor unit	Hydro box	Applicable water tank	Function
GMV-S120WL/A-S GMV-S140WL/A-S GMV-S160WL/A-S	Hydro box NRQD16G/A-S	SXVD200LCJ/A-K SXVD300LCJ/A-K SXVD350LCJ/A-K SXVD400LCJ/A-K	Air conditioning + Water heating + Floor heating

(3) GMV5 HOME can perform air conditioning function only or perform air conditioning with water heating or floor heating function. Water heating and floor heating functions are realized through the hydro box. Indoor unit can be a high-efficiency duct type unit, wall-mounted type unit, one-way cassette type unit, residential standard static pressure duct type unit, etc. If indoor unit or hydro box receives operation command, then outdoor unit will operate according to capacity demand. If indoor unit and hydro box both stop operation, outdoor unit will stop as well.

2.3 Operating Range

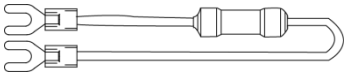
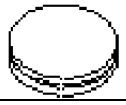
Cooling	Outdoor temperature: -5℃～48℃
Heating	Outdoor temperature: -20℃～27℃
Water heating	Outdoor temperature: -15～45℃
Floor heating	Outdoor temperature: -7～21℃
Cooling + Water heating	Outdoor temperature: -5～48℃
Heating + Water heating	Outdoor temperature: -15～27℃
Heating + Floor heating	Outdoor temperature: -7～21℃

3 Preparation before Installation

⚠ Note: Graphics here are only for reference. Please refer to actual products. Unspecified dimensions are all in mm.

3.1 Standard Parts

Please use the supplied standard parts as required.

Parts for Outdoor Unit				
No.	Name	Appearance	Qty	Remark
1	User Manual		1	
2	Wiring (match with resistance)		1	Must be connected to the last indoor unit of communication connection
3	Corrugated pipe		2	
4	Chassis plug		3	
5	Drain connector		1	

3.2 Select Installation Location

Never attempt! Improper operation may result in death or serious injury.			
Be sure to observe! Improper operation may lead to personal injury or property damage.			
	Select a location which is strong enough to hold unit's weight so that unit can stand still and erect.		Make sure the unit is not exposed to sun and rain. And the location can resist dust, typhoon and earthquake.
	Please keep the unit away from inflammable, explosive and corrosive gas or waste gas.		Make sure the location has space for heat exchange and maintenance so that unit can operate reliably with good ventilation.
	Outdoor unit and indoor unit should stay as close as possible to shorten the length of refrigerant pipe and reduce bend angles.		Select a location which is out of children's reach. Keep the unit away from children.

If the outdoor unit is totally surrounded by walls, please refer to the following figures for space dimension:

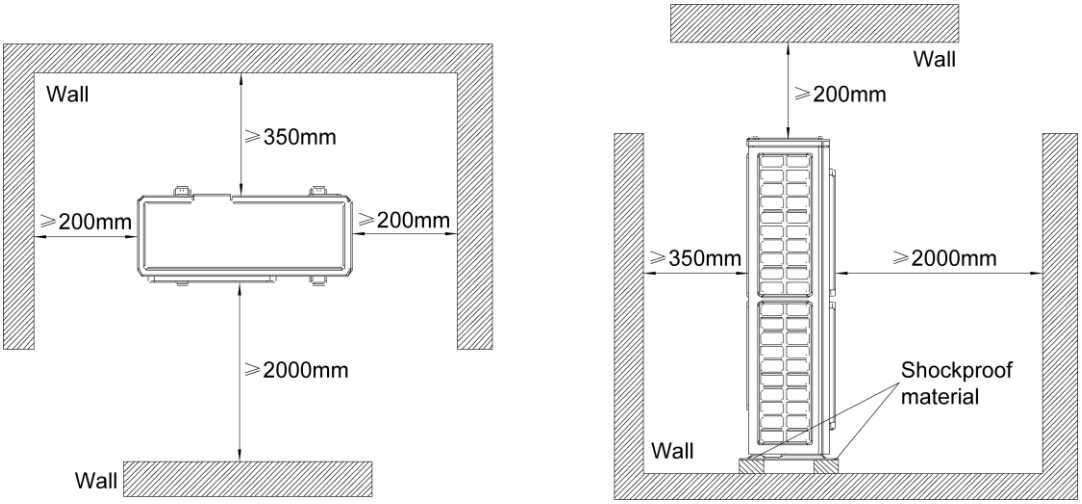


Fig.2

3.3 Piping Work Requirements

Height difference between outdoor unit should be 0m. Please refer to the table below for piping work requirements:

R410A Refrigerant System	
Outer diameter (mm/inch)	Wall thickness (mm)
Φ6.35(1/4)	≥0.8
Φ9.52(3/8)	≥0.8
Φ12.70(1/2)	≥0.8
Φ15.9(5/8)	≥1.0
Φ19.05(3/4)	≥1.0

4 Installation Instruction

Note: Graphics here are only for reference. Please refer to actual products. Unspecified dimensions are all in mm.

4.1 Dimension of Outdoor Unit and Mounting Hole

Unit Outline and Installation Dimension:

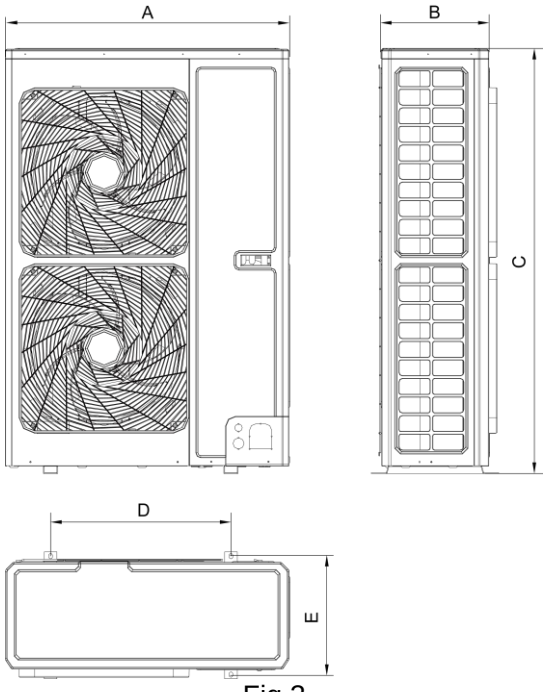


Fig.3

Unit: mm

Model	A	B	C	D	E
GMV-S120WL/A-S GMV-S140WL/A-S GMV-S160WL/A-S	900	340	1345	572	378

4.2 Connection Pipe

4.2.1 Schematic Diagram of Piping Connection

Piping Connection of indoor unit, outdoor unit and hydro box

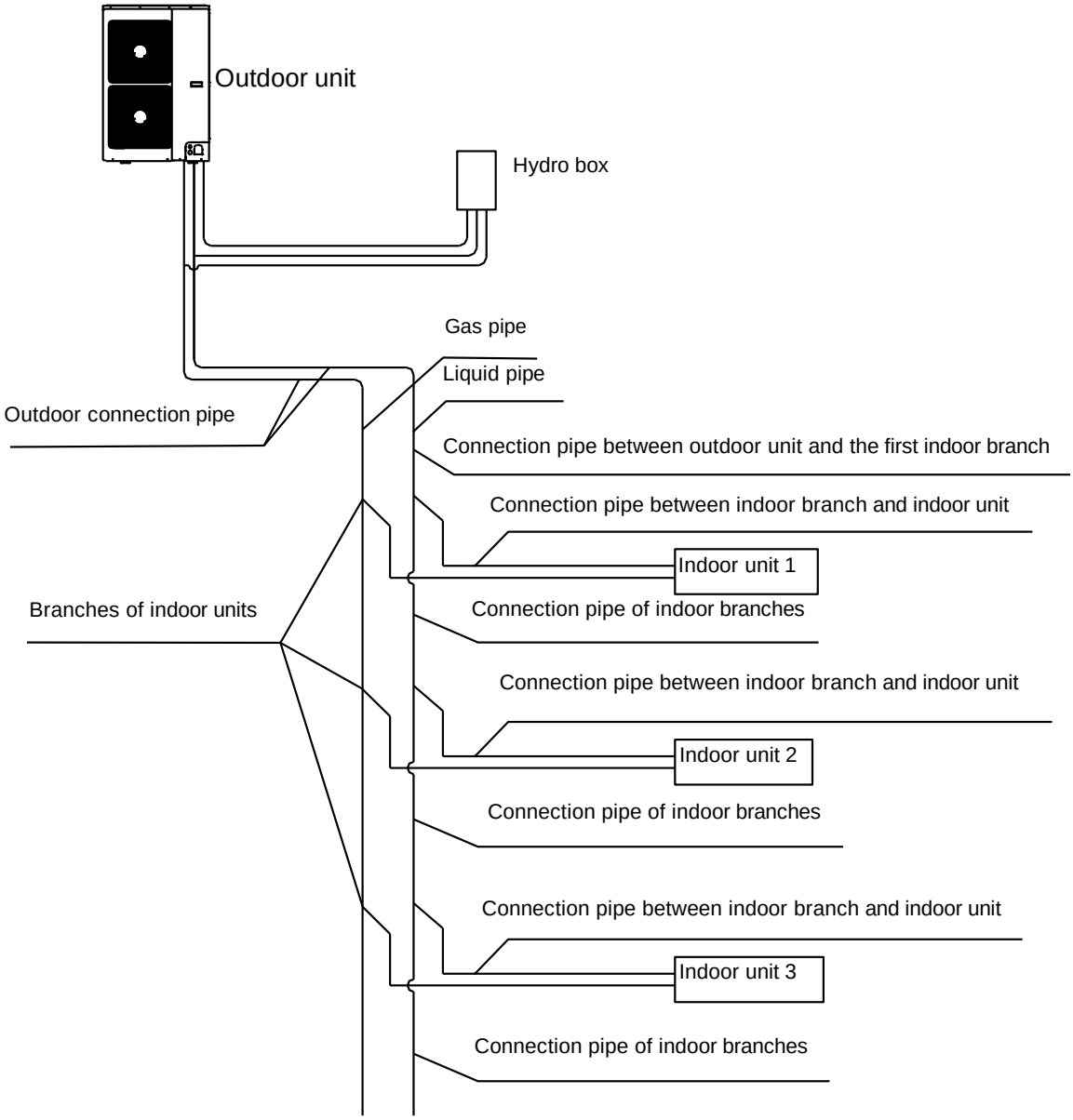


Fig.4

4.2.2 Allowable Length and Height Difference of Connection Pipe

Y-type branch joint is adopted to connect outdoor unit, indoor unit and hydro box. Connecting method is shown below.

Note: Equivalent length of one Y-type branch is 0.5m.

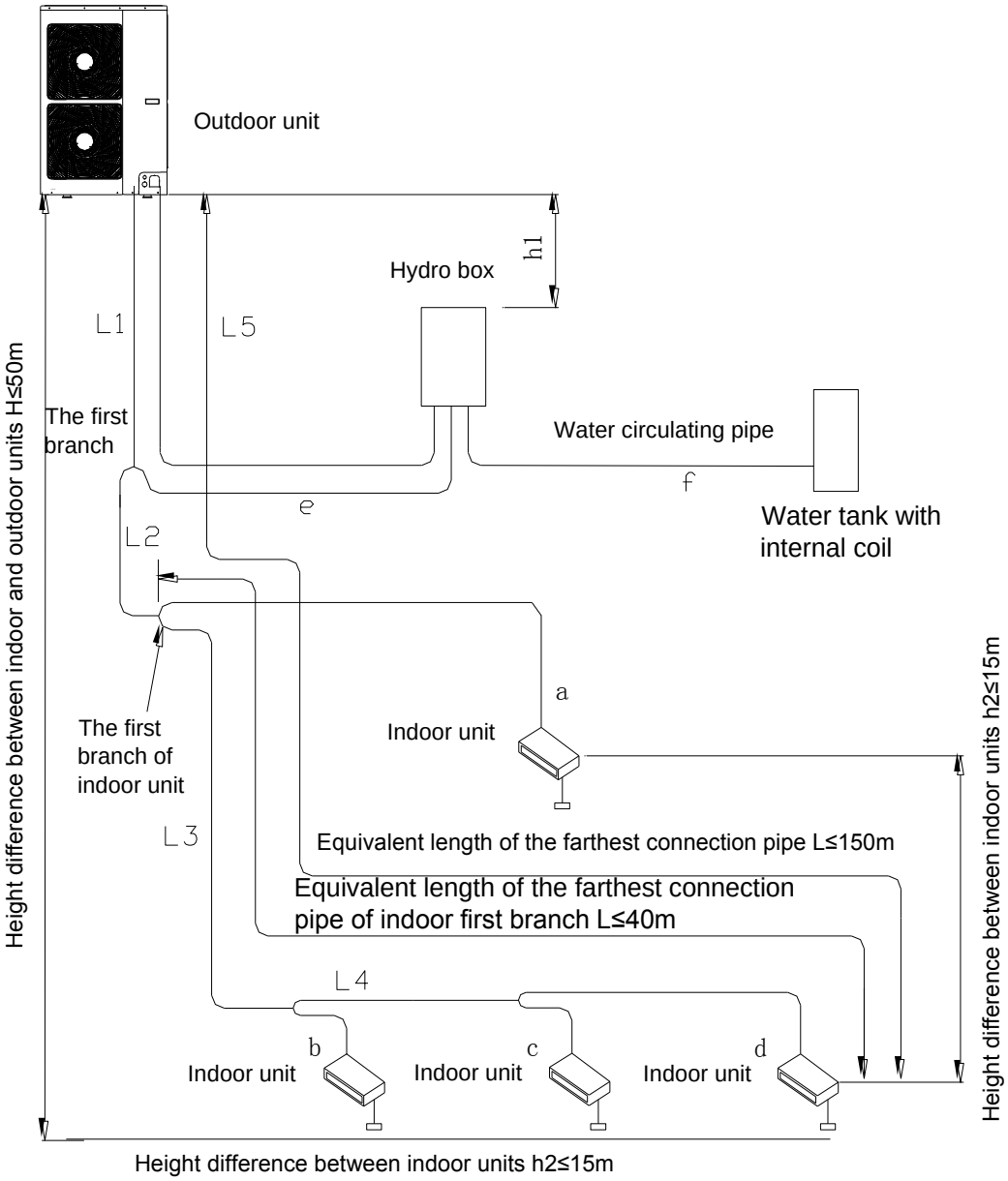


Fig.5

Note: Hydro box must be connected to the first branch

Piping parameters of GMV-S120WL/A-S, GMV-S140WL/A-S and GMV-S160WL/A-S:

		Allowable value	Connecting pipe
Total length (actual length) of connecting pipe		300m	L1+L2+L3+L4+L5+a+b+c+d+e
Length of the farthest connecting pipe (m)	Actual length	120m	L1+L2+L3+L4+d
	Equivalent length	150m	
From the first indoor branch to the farthest indoor pipe		40m	L3+L4+d
Height difference between indoor and outdoor units	Outdoor unit at upper side	50m	——
	Outdoor unit at lower side	40m	——
Height difference between indoor units (including hydro box)		15m	h2
Height difference between outdoor unit and hydro box		10m	h1
Height difference between hydro box and water tank		3m	——
Distance between hydro box and the farthest connecting pipe of outdoor unit		30m	L5
Horizontal distance between hydro box and water tank		10m	f
Distance between hydro box and the first branch		5m	e

4.2.3 Dimension of Connecting Pipe (Main Pipe) between Outdoor Unit and the First Branch

Dimension of connecting pipe from outdoor unit to the first branch is determined by the dimension of outdoor connecting pipe.

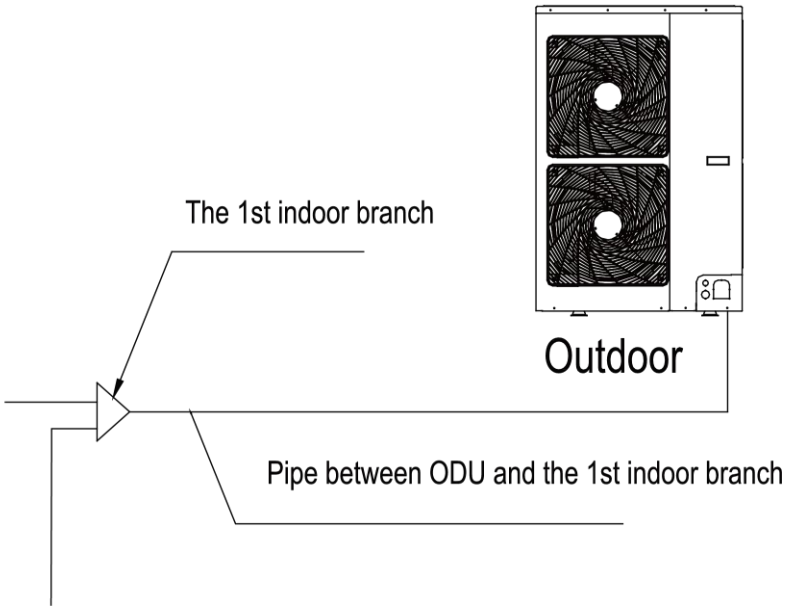


Fig.6

Dimension of outdoor connection pipe:

Basic module	Pipe dimension			Connecting method
	Gas pipe (mm)	Liquid pipe (mm)	High pressure gas pipe (mm)	
GMV-S120WL/A-S	φ15.9	φ9.52	φ12.7	Flared joint
GMV-S140WL/A-S	φ15.9	φ9.52	φ12.7	
GMV-S160WL/A-S	φ19.05	φ9.52	φ12.7	

4.2.4 Selection of Indoor Branches

Select indoor branches according to the total capacity of downstream indoor units.

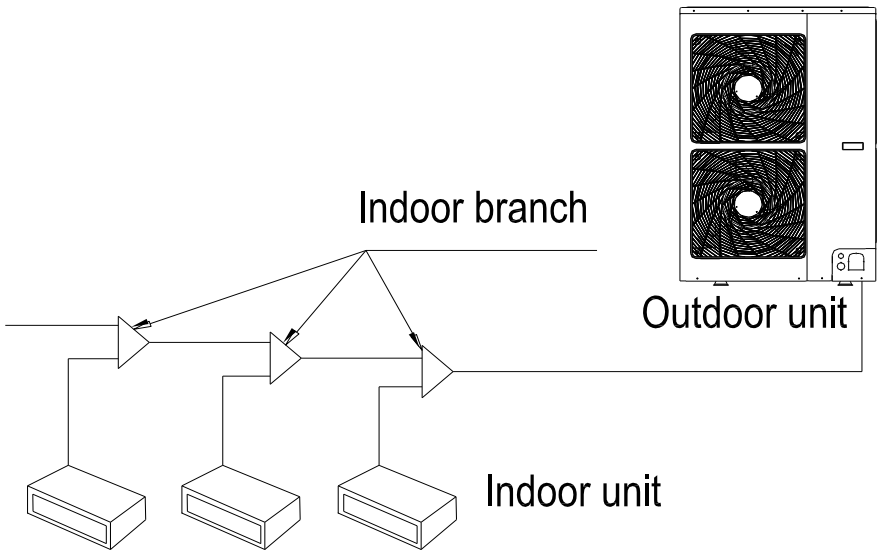


Fig.7

R410A Refrigerant system	Total capacity of downstream indoor units X (kW)	Model
Y-type branch	X＜20	FQ01A
	20≤X≤30	FQ01B
	30＜X≤70	FQ02
	70＜X≤135	FQ03
	135＜X	FQ04

4.2.5 Dimension of Pipe between Indoor Branches

Select pipe between indoor branches according to the capacity of downstream indoor units; if the capacity exceeds that of the outdoor unit, please select according to the capacity of outdoor units.

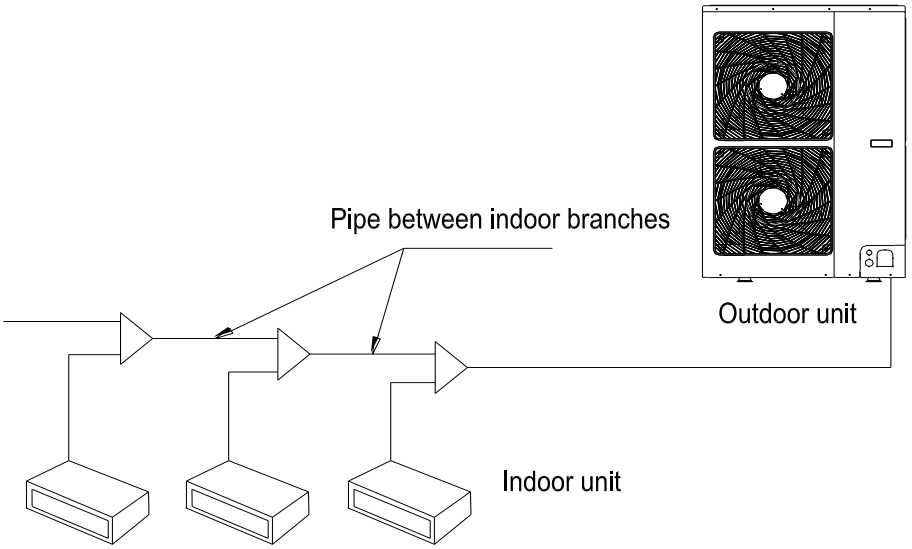


Fig.8

Total capacity of downstream indoor unit C(kW)	Gas pipe (mm)	Liquid pipe (mm)
C ≤5.6	Φ12.7	Φ6.35
5.6＜C≤14.2	Φ15.9	Φ9.52
14.2＜C≤22.0	Φ19.05	Φ9.52

4.2.6 Dimension of Pipe between Indoor Branch and Indoor Unit

Dimension of pipe between indoor branch and indoor unit should be consistent with the dimension of indoor pipe.

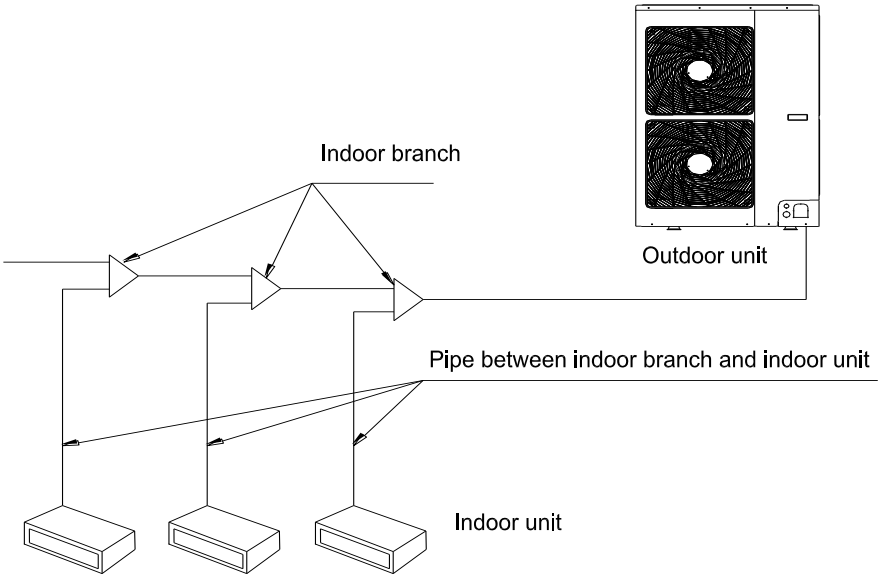


Fig.9

Rated capacity of indoor unit C(kW)	Gas pipe (mm)	Liquid pipe (mm)
C≤2.8	Φ9.52	Φ6.35
2.8＜C≤5.0	Φ12.7	Φ6.35
5.0＜C≤14.0	Φ15.9	Φ9.52
14.0＜C≤16.0	Φ19.05	Φ9.52
16.0＜C≤28.0	Φ22.2	Φ9.52

⚠ Note: If the distance between indoor unit and its nearest branch is over 10m, then for the indoor unit whose rated capacity is equal to or below 5.0kW, its liquid pipe shall be enlarged to a bigger size.

4.3 Installation of Connection Pipe

4.3.1 Precautions for the Installation of Connection Pipe

(1) Conform to the following principles during pipe connection: Connection pipe should be as short as possible, so is the height difference between indoor unit, outdoor unit and hydro box. Keep the number of bends as little as possible. Radius of curvature should be as large as possible.

(2) Install the connection pipe by braze welding. Please strictly follow the requirements for welding process. Rosin joint or pin hole is not allowed.

(3) When laying the pipe, be careful not to distort it. Radius of bending parts should be over 200mm. Note that pipes cannot be repeatedly bent or stretched; otherwise the material will get harder. Do not bend or stretch the pipe for more than 3 times at the same position.

4.3.2 Flaring Process

(1) Cut the connection pipe with a pipe cutter to prevent it from being unshaped.

(2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.

(3) Remove the flare nuts that are connecting indoor connection pipe, hydro box connection pipe and outdoor unit. Then use flaring tool to put the flare nut onto the pipe (as shown in Fig.10).

(4) Check if the flare part is flaring evenly and if there is any crack.

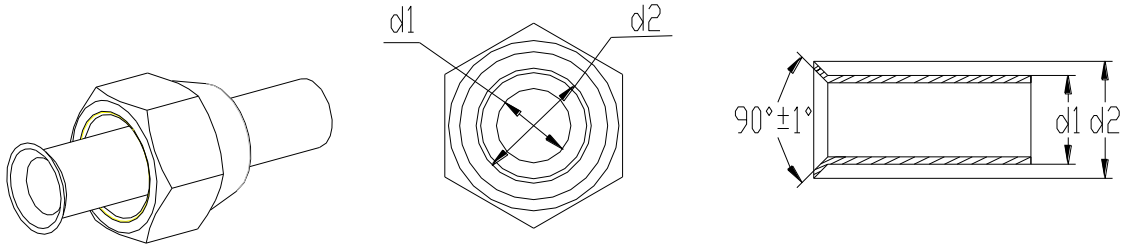


Fig.10

4.3.3 Pipe Bending

(1) Reshape the pipe by hand. Be careful not to damage the pipe.

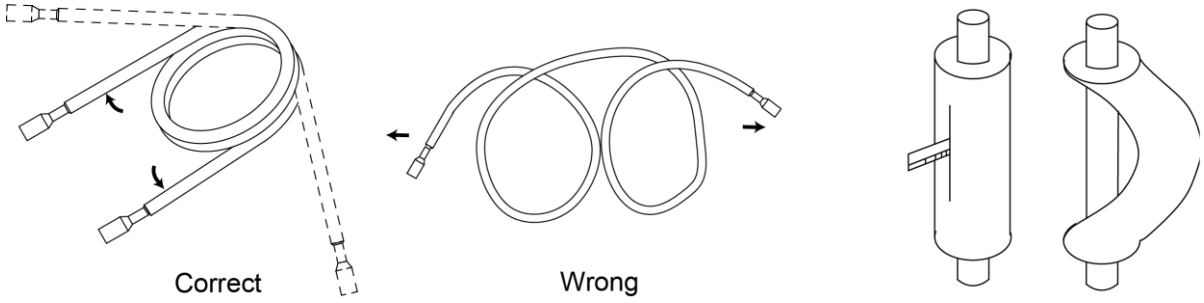


Fig.11

(2) Do not bend the pipe at over 90°.

(3) If pipe is repeatedly bent or stretched, it will get hard and difficult to be bent and stretched again. Therefore, do not bend or stretch the bend for over 3 times.

(4) In case that direct bending will open cracks to the pipe, first use sharp cutter to cut the insulating layer, as shown in Fig.11. Bend the pipe after it is exposed. When bending is done, wrap the pipe with insulating layer and then secure it with adhesive tape.

4.3.4 Pipe Connection of Indoor Unit

(1) Remove pipe cover and pipe plug.

(2) Direct the flare part of copper pipe to the center of screwed joint. Twist on the flare nut tightly by hand, as in Fig.12. (Make sure indoor pipe is correctly connected. Improper location of the center will prevent flare nut from being securely twisted. Thread of nut will get damaged if the flare nut is twisted forcibly.)

(3) Use torque wrench to twist on the flare nut tightly until the wrench gives out a click sound. (Hold the handle of wrench and make it at right angle to the pipe, as in Fig.13.)

(4) Use sponge to wrap the un-insulated connection pipe and joint. Then tie the sponge tightly with plastic tape.

(5) Connection pipe should be supported by a bearer rather than the unit.

(6) The bending angle of connection pipe should not be too small; otherwise the pipe might be cracked. Please use a pipe bender to bend the pipe.

(7) When connecting indoor unit with connection pipe, do not pull the big and small joints of indoor unit with force in case the capillary tube or other tubes be cracked and cause leakage.

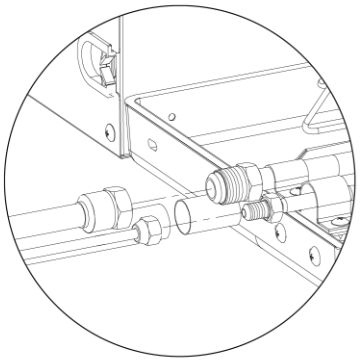


Fig.12

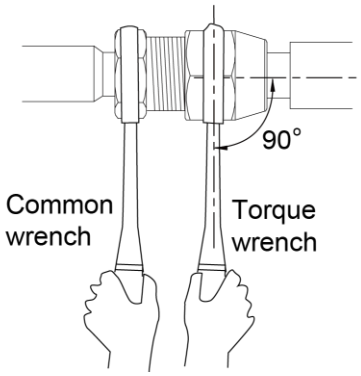


Fig.13

Pipe dimension	Tightening torque
Φ6mm	15 ～ 30 (N • m)
Φ9.52mm	35 ～ 40 (N • m)
Φ12mm	45 ～ 50 (N • m)
Φ16mm	60 ～ 65 (N • m)

4.3.5 Pipe Connection of Outdoor Unit

Twist the flare nut on the connection pipe of outdoor valves. Twisting method is the same as for indoor pipe connection.

Below is the piping diagram of GMV-S120WL/A-S, GMV-S140WL/A-S and GMV-S160WL/A-S. According to customer requirement or space limit, outlet pipe can be installed from the front, right, rear or bottom side.

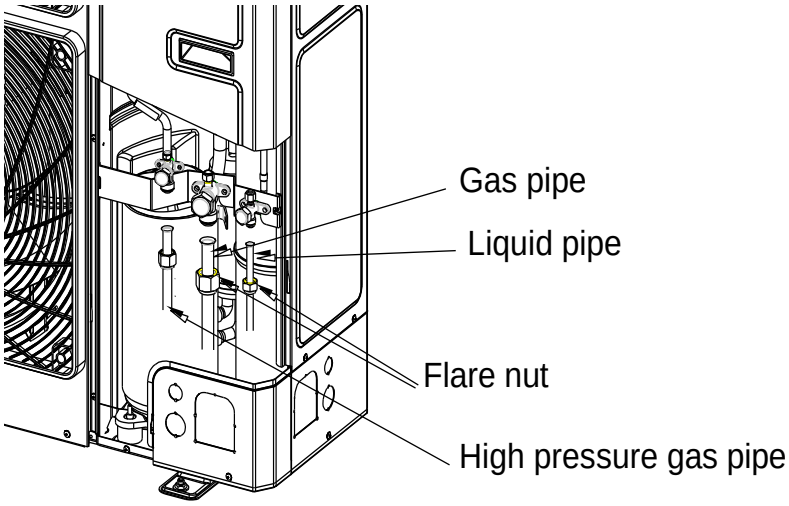


Fig.14

4.3.6 Pipe Connection of Outdoor Unit, Hydro box and Water Tank

Piping diagram of outdoor unit, hydro box and water tank:

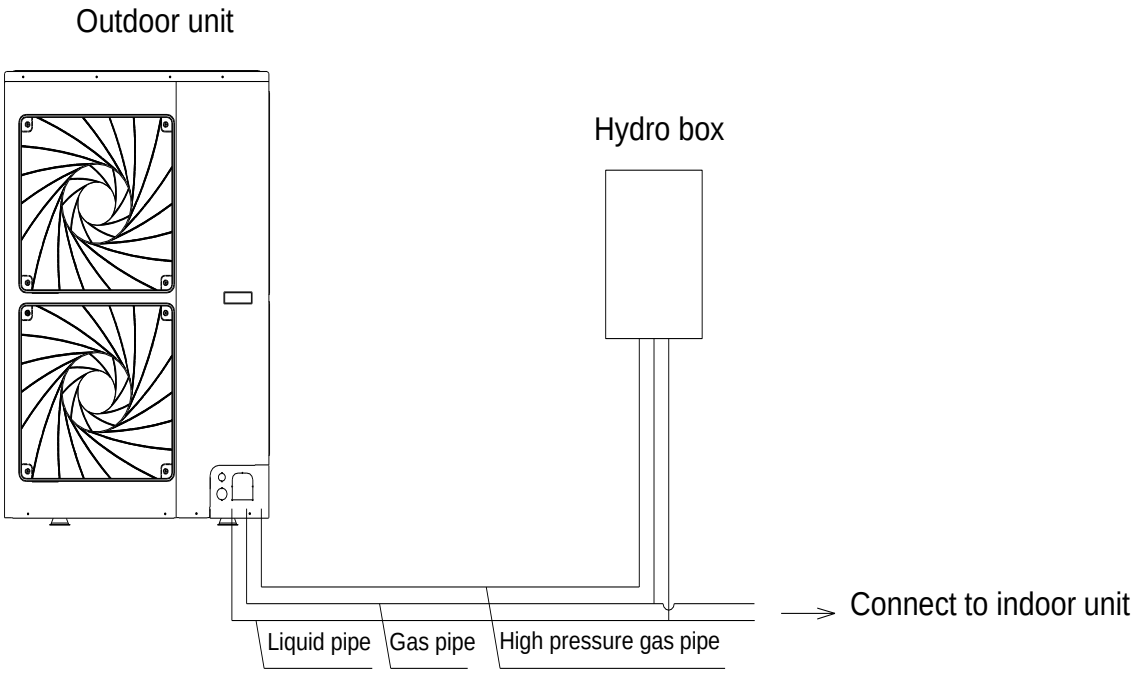


Fig.15

4.3.7 Installation of Y-type Branch

(1) Y-type branch

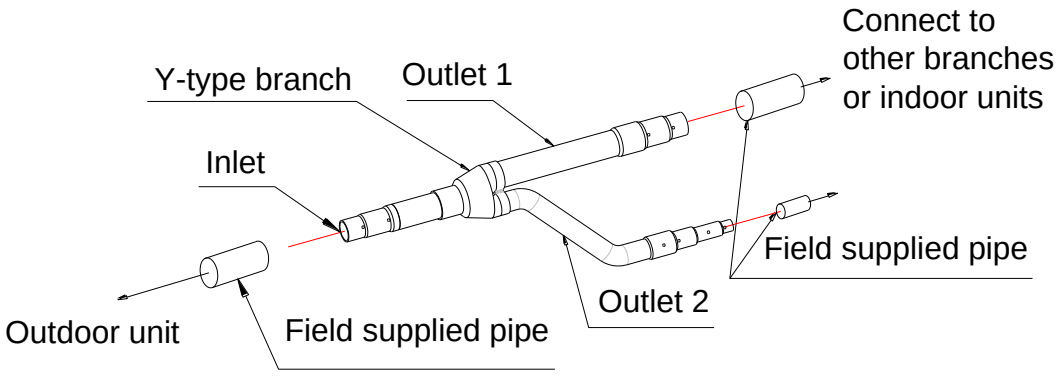


Fig.16

(2) Y-type branch has several pipe sections with different dimension, which facilitates to match with various copper pipes. Use pipe cutter to cut in the middle of the pipe section that is of proper dimension and remove burrs as well. See Fig.16.

(3) Y-type branch must be installed vertically or horizontally.

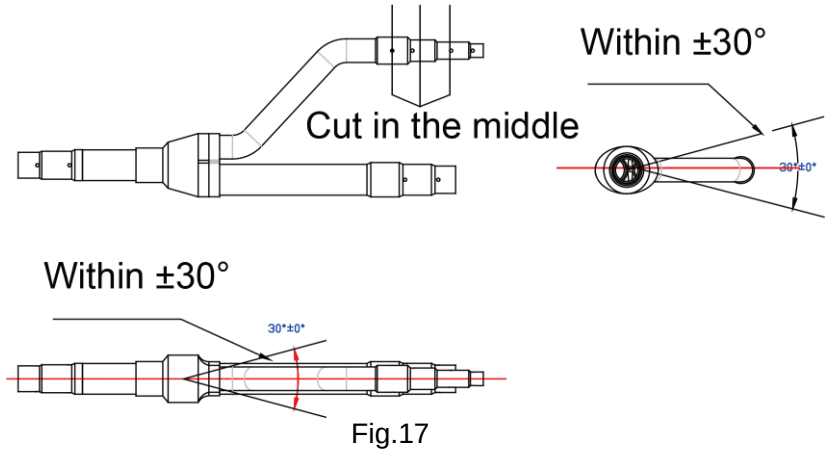


Fig.17

(4) Branch shall be isolated by insulating material that can bear 120°or even higher temperature. The attached foam of branch cannot be taken as insulating material.

4.3.8 Thermal Insulation and Wrapping for Pipeline

(1) For multi VRF system, every copper pipe should be labeled so as to avoid misconnection.

(2) At the branch inlet, leave at least 500mm straight pipe section.

(3) Thermal insulation for pipeline

1) To avoid condensate or water leakage on the connection pipe, the gas pipe and liquid pipe must be wrapped with thermal insulating material and adhesive tape for insulation from the air.

2) Thermal insulating material shall be able to bear the pipe temperature. For heat pump unit, liquid pipe should bear 70℃ or above and gas pipe should bear 120℃ or above. For cooling only unit, both liquid pipe and gas pipe should bear 70℃ or above.

Example: Polyethylene foam (bear 120℃ or above); foaming polyethylene (bear 100℃ or above)

3) Joints of indoor unit, outdoor unit and hydro box should be wrapped with insulating material and contact directly with the wall of indoor unit, outdoor unit and hydro box. See Fig.18.

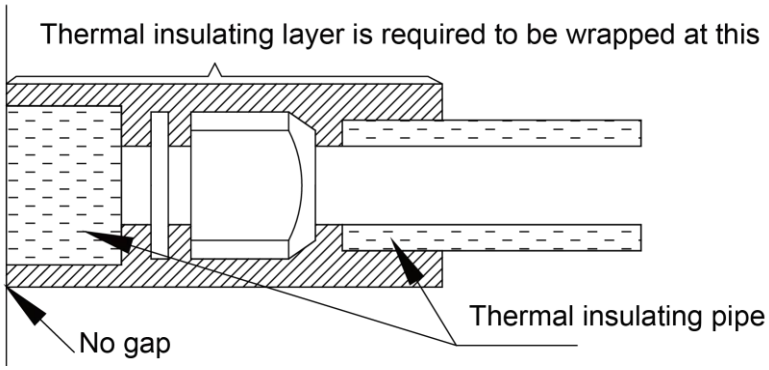


Fig.18

4) Thermal insulating material of branches should be the same as that of the pipeline. The attached foam of branches cannot be taken as insulating material.

5) When wrapping the tape, the later circle should cover half of the former one. Don’t wrap the tape too tight, otherwise the insulation effect will be weakened.

6) After wrapping the pipe, apply sealing material to completely seal the hole on the wall.

4.3.9 Support and Protection of Pipeline

(1) Support should be made for hanging connection pipe. Distance between each support cannot be over 1m.

(2) Protection against accidental damage should be made for outdoor pipeline. When pipeline exceeds 1m, a pinch board should be added for protection.

4.4 Disassembly of Compressor Feet

In order to prevent unit from damage during transportation, 2 metal pieces are fitted to outdoor unit’s compressor feet before unit leaves factory. See fig.19.

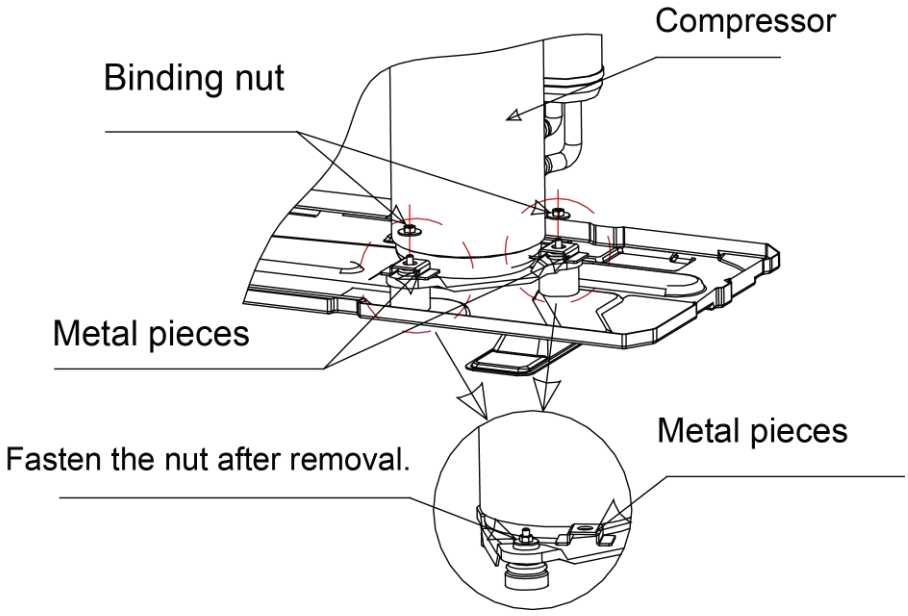


Fig.19

When installing the unit, metal pieces for transportation must be removed. Then fasten the binding nuts again and wrap back soundproofing cotton.

Note: If unit runs with metal pieces fitting on, compressor will shake abnormally and unit’s operating life will be shortened.

4.5 Vacuum Pumping, Refrigerant Adding

4.5.1 Vacuum Pumping

(1) Outdoor unit has been charged with refrigerant before delivery. Field-installed connection pipe needs to be charged with additional quantity of refrigerant.

(2) Confirm whether outdoor liquid and gas valves are closed.

(3) Use vacuum pump to withdraw the air inside indoor unit and connection pipe from the outdoor valve, as shown below.

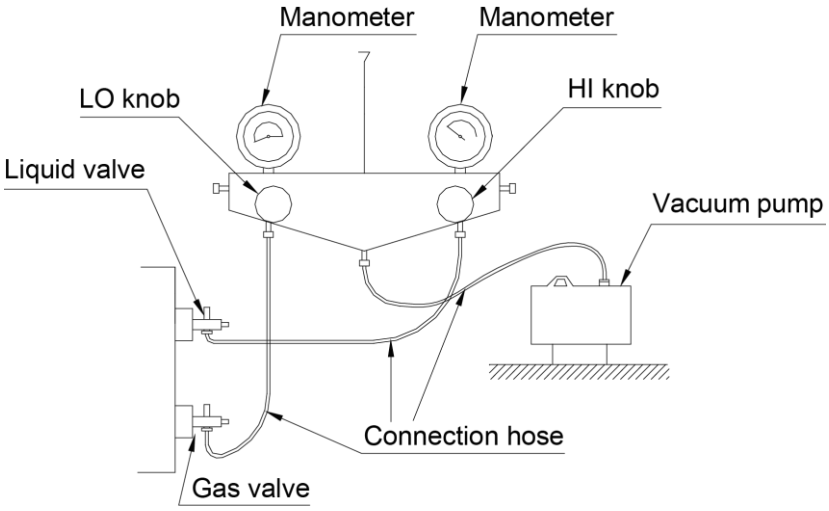


Fig.20

4.5.2 Refrigerant Adding

(1) Refrigerant quantity of outdoor unit before delivery:

Model	GMV-S120WL/A-S	GMV-S140WL/A-S	GMV-S160WL/A-S
Refrigerant quantity (kg)	5.0	5.0	5.0

Note:

①The refrigerant quantity charged before delivery doesn't include the quantity that needs to be added to indoor units and the connection pipeline.

②Length of connection pipe is decided on site. Therefore the additional quantity of refrigerant shall be decided on site according to the dimension and length of field-installed liquid pipe.

③Record the additional quantity of refrigerant for convenience of after-sales service.

（2）Calculation of the additional quantity of refrigerant

Additional quantity of refrigerant = additional quantity for liquid pipe + additional quantity for hydro box + additional quantity for high pressure gas pipe

1）Calculation method of the additional quantity of refrigerant (based on liquid pipe)

Additional quantity of refrigerant for liquid pipe (kg) = ∑length of liquid pipe X additional quantity of refrigerant per meter

Additional quantity of refrigerant for liquid pipe (kg/m)							
φ28.6	φ25.4	φ22.2	φ19	φ16	φ12.7	φ9.52	φ6.35
0.680	0.520	0.350	0.250	0.170	0.110	0.054	0.022

Note:

Liquid pipe includes "liquid pipe connecting outdoor unit with indoor unit and hydro box".

If the liquid pipe of side discharge unit is within 20m, there is no need to add refrigerant.

2）Additional quantity of refrigerant for hydro box (kg):

Additional quantity of refrigerant for hydro box = 0.3*number of hydro box

3）Additional quantity of refrigerant for high pressure gas pipe (kg):

Additional quantity of refrigerant for high pressure gas = length of high pressure gas pipe × additional quantity of refrigerant for high pressure gas pipe per meter

Additional quantity for high pressure gas pipe (kg/m)			
φ19	φ16	φ12.7	φ9.52
0.15	0.12	0.09	0.05

First confirm that there is no leakage from the system. When compressor is not working, charge additional R410a with specific quantity to the unit through the filling opening of the liquid pipe valve of the outdoor unit. If required quantity cannot be quickly filled due to pressure increase of the pipe, then set the unit in cooling startup status and fill refrigerant from the low pressure check valve of the outdoor unit.

(3) Calculation example

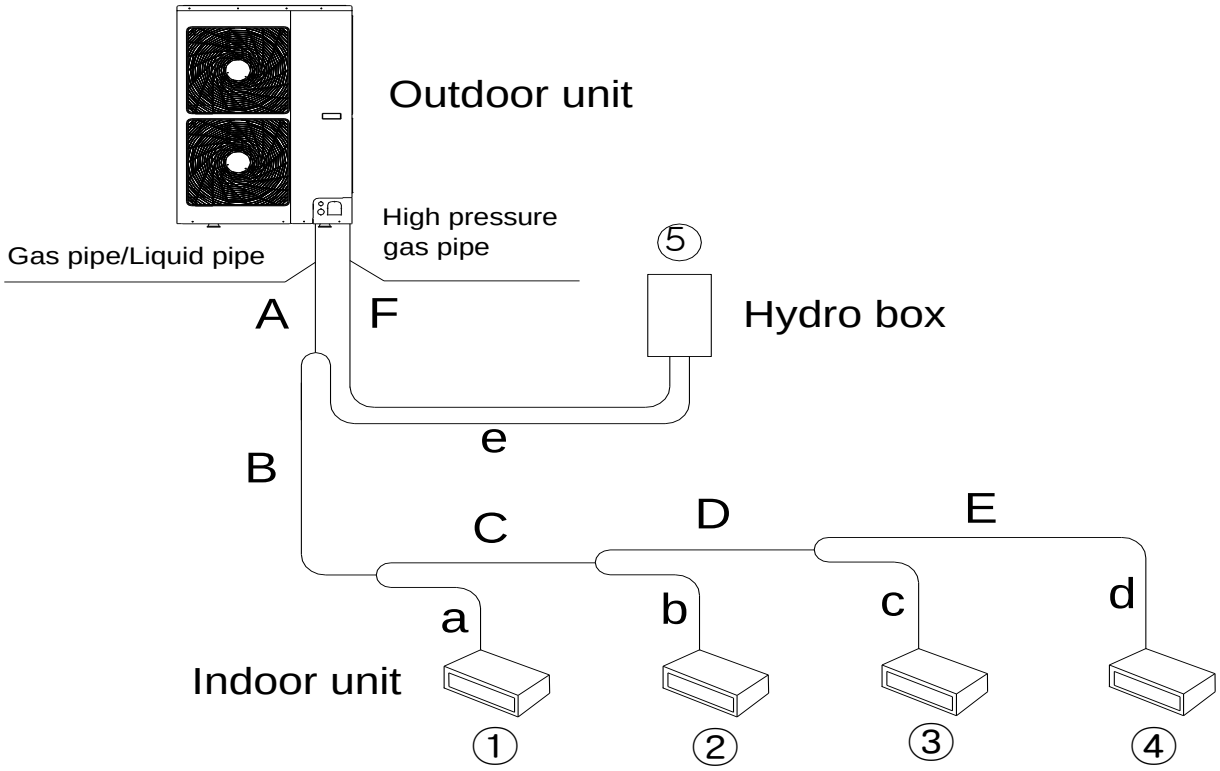


Fig.21

No.	Indoor unit 1	Indoor unit 2	Indoor unit 3	Indoor unit 1	Hydro box 5
Model	Duct type GMV-ND72PLS/A-T	Duct type GMV-ND50PLS/A-T	Duct type GMV-ND36PLS/A-T	Duct type GMV-ND25PLS/A-T	NRQD16G/A-S

Liquid pipe:

No.	A	B	C	D	E
Pipe size	φ9.52	φ9.52	φ9.52	φ9.52	φ6.35
Length	5m	30m	10m	5m	5m
No.	a	b	c	d	e
Pipe size	φ9.52	φ6.35	φ6.35	φ6.35	φ9.52
Length	10m	10m	10m	10m	5m

High pressure gas pipe:

No.	F
Pipe size	φ12.7
Length	10m

1）Additional quantity of refrigerant for liquid pipe (kg)

φ9.52：A+B+C+D+e=5+30+10+5+5=55m

φ6.35: E+b+c+d=5+10+10+10=35m

Note: If liquid pipe is within 20m, there is no need to add refrigerant.

Additional quantity of refrigerant for liquid pipe =（55-20）×0.054+35×0.022=2.66kg

2）Additional quantity of refrigerant for hydro box (kg)

Additional quantity of refrigerant for hydro box =0.3×1=0.3kg

3）Additional quantity of refrigerant for high pressure gas pipe (kg):

Φ12.7：F=10m

Additional quantity of refrigerant for high pressure gas pipe =10×0.09=0.9kg

Therefore, the minimum additional quantity of refrigerant ＝2.66 + 0.3 + 0.9＝3.86kg.

4.6 Electric Wiring

4.6.1 Notices for Wiring

☆Install units according to national wiring codes.

☆Use air conditioner specialized power supply and make sure that it is consistent with system's rated voltage.

☆Do not pull the power cord with force.Disconnect the power supply before cleaning and maintenance.

☆All electrical installation must be performed by qualified technicians in accordance with local laws, regulations and this user manual.

☆Caliber of the power cord must be large enough. A damaged power cord or connection wire must be replaced by specialized electrical cords.

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

Connect the unit to specialized grounding device and make sure it is securely grounded. It's a must to install air switch and current circuit breaker that can cut off the power of the entire system. The air switch should include magnetic trip function and thermal trip function so that system can be protected from short circuit and overload.

●Grounding Requirements

☆Air conditioner belongs to class I electrical appliance, so it must be securely grounded.

☆The yellow-green wire inside the unit is a ground wire. Do not cut it off or secure it with tapping screws, otherwise it will lead to electric shock.

☆Grounding resistance must be in accord with national standard.

☆Power supply must include secure grounding terminal. Do not connect the ground wire to the following:

①Water pipe； ②Gas pipe； ③Drain pipe； ④Other places that are considered as insecure by professional technicians

4.6.2 Wiring Diagram

(1) Connection of power cord and communication wire

Separate power supply of indoor unit, outdoor unit and hydro box

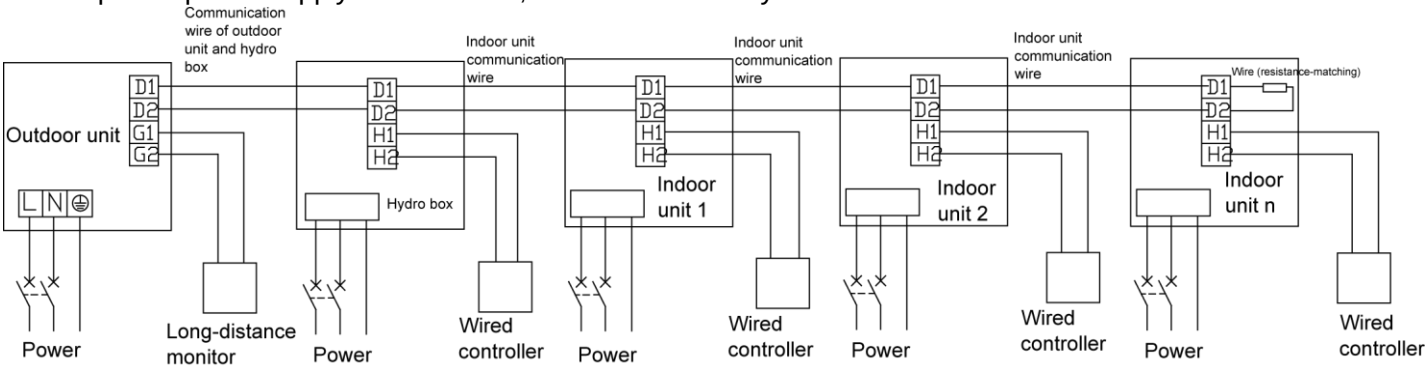


Fig.22 Connection of power cord and communication wire for indoor unit and outdoor unit

(2) Selection of circuit breaker and power cord:

Model	Power	Circuit breaker capacity (A)	Number of ground wire×Min sectional area (mm^2)	Number of power cord×Min sectional area (mm^2)
GMV-S120WL/A-S	220V~ 50HZ	32	1×4.0	2×4.0
GMV-S140WL/A-S	220V~ 50HZ	32	1×4.0	2×4.0
GMV-S160WL/A-S	220V~ 50HZ	40	1×6.0	2×6.0

Note:

① Selection of circuit breaker and power cord in the above table is based upon unit's maximum power (maximum current). Power cord should be wire of H05RN-F or above.

② Specification of power cord is based on the working condition where ambient temperature is 40℃ and multi-core copper cable (working temperature is 90℃, e.g. power cable with YJV cross-linked copper, insulated PE and PVC sheath) is lying on the surface of slot. If working condition changes, please adjust the specification according to national standard.

③ Specification of circuit breaker is based on the working condition where ambient temperature of circuit breaker is 40℃. If working condition changes, please adjust the specification according to national standard.

5 Check Items after Installation and Test Operation

5.1 Check Items after Installation

Check items	Possible conditions due to improper installation	Check record
Each part of the unit is installed securely?	Unit may drop, shake or emit noise	
Gas leakage test is taken or not?	Insufficient cooling (heating) capacity	
Unit gets proper thermal insulation or not?	There may be condensate water.	
Drainage is smooth or not?	There may be condensate water.	
Is the voltage in accordance with the rated voltage specified on the nameplate?	Unit may have malfunction or components may get damaged.	
Is the electric wiring and pipe connection installed correctly?	Unit may have malfunction or components may get damaged.	
Unit is securely grounded or not?	Electrical leakage	
Power cord meets the required specification?	Unit may have malfunction or components may get damaged.	
Is the air inlet/outlet blocked?	Insufficient cooling (heating) capacity	
Length of refrigerant pipe and the charging amount of refrigerant are recorded or not?	The refrigerant charging amount is not accurate.	
Whether the fixing loop at the foot of compressor for transportation is removed?	It may damage the compressor.	

5.2 Test Run

Note:

① When the unit is installed for the first time and main board of outdoor unit is replaced, please conduct test run. Otherwise, the unit can't operate.

② Test run must be conducted by professional person or under the guidance of professional person.

5.2.1 Preparation for test run

(1) Power can be turned on only after all installation work is finished.

(2) All wired controller wires and electric wires must be connected correctly and firmly. Gas valve, liquid valve and high pressure gas valve should be open completely.

(3) Check whether all fixing loop at the foot of compressor for transportation is removed.

(4) All other objects, such as metal scraps, joints, should be removed from the unit.

(5) Check whether the appearance and pipeline system is damaged during the transportation.

(6) Calculated the refrigerant-charging volume according to the length of pipe and then pre-charge the refrigerant. If refrigerant can't be added when it hasn't reached to the required refrigerant-charging volume, record the refrigerant-charging volume which still needs to be added, add refrigerant during the test turn operation.

(7) After adding refrigerant, please make sure all valves of outdoor unit are open completely.

(8) In order for the troubleshooting during debugging process, the unit should be connect the computer installed with corresponding debugging software to make sure the data of unit at real time can be detected by computer. Please refer to the Service Manual for the installation and connection of debugging software.

(9) Before test run, please make sure the unit is energized and the compressor is pre-heated for above 8 hours. Touch is with hand to ensure whether the preheated is normal. The unit can be started up for test run only when the preheating is normal. Otherwise, the compressor may be damaged.

5.2.2 Test run debugging

Please refer to below instruction for test run debugging process, indicator display on main board of outdoor and operation method:

<table>
<tr><th colspan="8">Progress instruction for all debugging stages</th></tr>
<tr><td>——</td><td colspan="2">Debugging code</td><td colspan="2">Progress code</td><td colspan="2">Status code</td><td rowspan="2">Code instruction and operation method</td></tr>
<tr><td rowspan="2">Progress</td><td colspan="2">LED1</td><td colspan="2">LED2</td><td colspan="2">LED3</td></tr>
<tr><td>Code</td><td>Display status</td><td>Code</td><td>Display status</td><td>Code</td><td>Display status</td><td></td></tr>
<tr><td rowspan="2">01_Master unit setting</td><td>db</td><td>ON</td><td>01</td><td>ON</td><td>AO</td><td>ON</td><td>The system hasn't enter into debugging status.</td></tr>
<tr><td>db</td><td>ON</td><td>01</td><td>ON</td><td>OC</td><td>ON</td><td>Press SW7 button on main board for 5s to start debugging. The indicator on main board is displayed as left side. 2s later, it will enter into the next step automatically.</td></tr>
<tr><td rowspan="3">02_address distribution</td><td>db</td><td>ON</td><td>02</td><td>ON</td><td>Ad</td><td>Flash</td><td>The system is conduct address distribution. 10s later, the display is as below:</td></tr>
<tr><td>db</td><td>ON</td><td>02</td><td>ON</td><td>L7</td><td>Flash</td><td>No master indoor unit. Display will be kept for 1min. Within 1min, set master indoor unit through debugging software. If master indoor unit hasn't been set with hand within 1min, the system will set the indoor unit with the minimum IP address as the master indoor unit.</td></tr>
<tr><td>db</td><td>ON</td><td>02</td><td>ON</td><td>OC</td><td>ON</td><td>Address distribution of system is finished. 2s later, it will enter into the next step.</td></tr>
<tr><td rowspan="2">03_confirmation of quantity of outdoor unit</td><td>db</td><td>ON</td><td>03</td><td>ON</td><td>01</td><td>Flash</td><td>Confirmation process for the system. 1s later, it will enter into the next step.</td></tr>
<tr><td>db</td><td>ON</td><td>03</td><td>ON</td><td>OC</td><td>ON</td><td>System confirmation is finished. 2s later, it will enter into the next step.</td></tr>
<tr><td>04_confirmation of quantity of indoor unit</td><td>db</td><td>ON</td><td>04</td><td>ON</td><td>01~80</td><td>Flash</td><td>LED3 displays the quantity of indoor unit. The quantity of indoor unit should be confirmed by person. If the actual quantity of indoor unit is inconsistent with the displayed number, indoor unit and outdoor unit should be de-energized. Please check whether the connection of communication wire of indoor unit is in good</td></tr>
</table>

							condition. After that, energize it and conduct debugging from the step 01. If the quantity of indoor unit is correct, press SW7 button on main board to confirm it and then display is as below:
	db	ON	04	ON	OC	ON	The quantity of indoor units is confirmed. 2s later, it will enter into the next step.
05_inspection of internal communication for outdoor unit and capacity ratio	db	ON	05	ON	C2	ON	Abnormal communication between outdoor unit main control board and driven board. Please check whether the connection of communication wire between main board of outdoor unit and driven board is in good condition. After troubleshooting, it will enter into the next operation. If it needs to cut off the power during the process of troubleshooting, conduct debugging again from step 01 after energization.
	db	ON	05	ON	OC	ON	The communication between outdoor unit main control board and driven board is normal. It will display as indicated on the left for 2s, and it will detect capacity ratio status of indoor unit and outdoor unit automatically within this 2s. 2s later, it will enter into the next step. If it exceeds the capacity ratio, the display is as below:
	db	ON	05	ON	CH	ON	The rated capacity ratio for indoor unit is too high. Change the combination of indoor unit and outdoor unit to let the capacity ratio of indoor unit and outdoor unit is within the reasonable range. Conduct the debugging again from step 01.
	db	ON	05	ON	CL	ON	The rated capacity ratio for indoor unit is too low. Change the combination of indoor unit and outdoor unit to let the capacity ratio of indoor unit and outdoor unit is within the reasonable range. Conduct the debugging again from step 01.
06_ inspection of parts of outdoor unit	db	ON	06	ON	Corresponding error code	ON	Malfunction of parts of outdoor unit. LED3 displays the corresponding error code. After troubleshooting, it will enter into the next step automatically. If it needs to cut off the power during the process of troubleshooting, conduct debugging again from step 01 after energization.
	db	ON	06	ON	OC	ON	When the system detects that there's no malfunction for the parts of outdoor unit, it will enter into the next step automatically 10s later.
07_ inspection of parts of indoor unit	db	ON	07	ON	XXXX / corresponding error code	ON	The system detects that there's malfunction for the parts of indoor unit. XXXX indicates the engineering series number for the indoor unit with malfunction. 3s later, the corresponding error code will be displayed. Eg: when there's d5 and d6 malfunction for #1 unit , and d6 and d7 malfunction for #792 indoor unit, LED3 nixie tube will display 00, 01, d5, d6, 07, 92, d6 and d7 circularly every 2s. After troubleshooting, it will enter into the next step. If it needs to cut off the power for outdoor unit during process of troubleshooting, conduct debugging again from step 01 after energization.
	db	ON	07	ON	OC	ON	There's no malfunction for parts of indoor unit. 2s later, it will enter into the next step.
08_ preheat confirmation for compressor	db	ON	08	ON	UO	ON	The preheat time for compressor is less than 8 hours. Indicator displays as left side until the preheat time for compressor reaches 8 hours. Or short press SW7 button on main board to confirm the preset time reaches 8hours and then enter into the next step. (Note: if start up the unit when the preheat tie for compressor is less than 8 hours, it may damage the compressor).
	db	ON	08	ON	OC	ON	The preset time for compressor reaches 8 hours. 2s later, it will enter into the next step.

09_refrigerant determination before startup	db	ON	09	ON	U4	ON	The refrigerant of system is insufficient. The indicator displays as left side. Please cut off the power for indoor unit and outdoor unit and check whether the pipeline is leaking. After solving the problem of leakage, re-charge the refrigerant for the unit according to original volume. After that, conduct debugging again from step 01 after energization. (Note: Cut off the power before charging the refrigerant)
	db	ON	09	ON	OC	ON	The refrigerant volume of system is normal. After display as left side for 2s, it will enter into the next step automatically.
10_outdoor unit's valve status determination before startup	db	ON	10	ON	ON	ON	Valve of outdoor unit is under determination status. Compressor will operate for about 2min and then stop operation. Determine the ON status of big valve and small valve of outdoor unit. The determination result is as below:
	db	ON	10	ON	U6	ON	The valve of outdoor unit is not opened completely. Short press SW6 button on main board and indicator will display "db 09 OC". Then check whether big valve and small valve of outdoor unit are opened completely. After that, short press SW6 button on main board again. When the compressor operates for about 2mins, determine the status of valve again.
	db	ON	10	ON	OC	ON	Status of valve is normal. If it displays as left side for 2s, it will enter into the next step automatically.
12_startup debugging confirmation of unit	db	ON	11	ON	AP	Flash	Wait and confirm the debugging command of unit. Short press SW7 button on main board to confirm the debugging of unit. 2s later, the display of indicator of main board is as below：
	db	ON	11	ON	AE	ON	The startup of the unit is confirmed. 2s later, the system will automatically select "15_debugging operation for cooling) or "16_debugging operation of heating) for operation according to the ambient temperature. If it needs to add refrigerant while the refrigerant hasn't been added before debugging, the refrigerant can be added through low-pressure inspection valve.
15_cooling debugging operation	db	ON	15	ON	AC	ON	Debugging operation in cooling mode. When the compressor is started up for 20 mins, if there's no malfunction, it will enter into step 17 for debugging. If there's malfunction during operation process, the display is as below:
	db	ON	15	ON	Corresponding error code	ON	There's malfunction during debugging operation under cooling mode. After troubleshooting, it will enter into the next step.
16_ heating debugging operation	db	ON	16	ON	AH	ON	Debugging operation in heating mode. When compressor is started up for 20min, if there is no malfunction, it will enter into step 17 for debugging. If there is malfunction during operation, it will display as below:
	db	ON	16	ON	Corresponding error code	ON	There's malfunction during debugging operation under heating mode.
17_ finished status of debugging	00	ON	AC/AH	ON	OFF	ON	Debugging for the complete unit is finished and the system is at standby status.

5.2.3 Appendix: Reference of normal operation parameters

No.	Debugging item		Parameters name	Unit	Reference value
1	System parameters	Parameters of outdoor unit	Outdoor ambient temperature	℃	——
2			Discharge temperature of compressor	℃	●When compressor is operating, the normal discharge temperature for cooling is 70~105℃, which is 10℃ above higher than high pressure saturation temperature; ●The normal temperature for heating is 65℃~90℃, which is 10℃ above higher than high pressure saturation temperature.
3			Defrosting temperature	℃	●When the unit is cooling, the defrosting temperature is 4~10℃ lower than high pressure value of system; ●When the unit is heating, the defrosting temperature is 2℃different from the low pressure value of system
4			High pressure of system	℃	●Under cooling mode, the normal high pressure value is 20℃～55℃. With the change of ambient temperature and operation capacity of system, the high pressure value of system is 10℃～30℃ higher than ambient temperature. The higher the ambient temperature, the temperature difference between them is smaller. When the unit is cooling when the ambient temperature is 25~35℃, the high pressure value of system is 44~53℃; ●Under heating mode, when the ambient temperature is -5℃ above, the high pressure value of system is 40~52℃. When the ambient temperature is low and there are many indoor units which is turned on, the high pressure valve will be lower.
5			Low pressure of system	℃	● When the unit is cooling under the ambient temperature 25~35℃, low pressure value of system is 0~8℃; ●When the unit is heating under the ambient temperature -5 above, the low pressure valve of system is -15~8℃.
6			Opening angle of heating EXV	PLS	● In cooling mode, the heating EXV remains 480PLS; ● In heating mode, the adjustable opening angle of EXV is 40~480PLS.
7			Operation frequency of compressor	HZ	Changes in18HZ~80HZ
8			Operation current of compressor	A	The current can't be more than 18.4A when the compressor operates normally.
9			Temperature of IPM module of compressor	℃	When the ambient temperature is lower than 35℃, IPM temperature is lower than 80℃. The highest temperature will not exceed 95℃.
10			Operation frequency of fan	HZ	Adjust the frequency of fan within 0~49HZ according to the system pressure.
11		Parameter of indoor unit	Ambient temperature of indoor unit	℃	——
12			Inlet tube temperature of indoor heat exchanger	℃	●According to the ambient temperature, under the cooling mode, the inlet tube temperature for the same indoor unit is 1℃~7℃ lower than outlet tube temperature; 4~9℃ higher than low pressure. ●Under the heating ode, the inlet tube temperature for the same indoor unit is 10℃~20℃ lower than the outlet tube temperature.
13					
14			Opening angle of indoor EXV	PLS	Under cooling mode, the opening angle of indoor EXV is adjusted within 70~480PLS. Under heating mode, the opening angle of indoor unit is adjusted within 40~480PLS.
15		Parameters of hydro box	Upper water temperature of water tank	℃	●The temperature under hot water mode is 10~70℃.
16			Low water temperature of water tank	℃	●The temperature under hog water is 10~70℃.
17			Opening angle of EXV for hot water generation and floor	PLS	●The opening angle of EXV for hot water generation under hot water mode is 480~2000PLS.

		heating		
18	Communication parameters	Communication data	—	When the quantity of indoor units is same with that of actual indoor units after inspection by the debugging software, there's no communication malfunction.
19	Drainage system	——	—	Water drainage for indoor unit can be drained out smoothly. Condensate water pipe is in good condition. Water for the outdoor unit can't be drained from the drainage hose completely.
20	Other	——	—	There's no abnormal sound when compressor, indoor unit and outdoor fan are operating. The unit can operate normally.

6 Common Malfunction and Troubleshooting

⚠ Warning:

① If there's abnormal phenomenon （such as smell）, please turn off the unit and power supply immediately and then contact Gree appointed maintenance center. Otherwise, it may cause damage, electric shock or fire accident.

② Do not repair the unit by yourself. Wrong repair may cause electric shock or fire accidents. Please contact Gree appointed maintenance center for maintenance.

●Before asking for maintenance, please check below items

Phenomenon	Causes	Troubleshooting
Air conditioner can't operate	Fuse is broken or circuit breaker is open	Replace fuse or close the circuit breaker
	Power failure	Restart up the unit and then the unit will operate
	No connect to power supply	Connect the power supply
	The power for batteries of remote controller is insufficient	Replace the batteries
	Remote controller is not within the remote control range	Remote control range is within 8m
Air conditioner operates, while it stops operation immediately	Ai inlet or air outlet of indoor unit/outdoor unit is blocked	Eliminate the obstacles
Cooling or heating is abnormal	Ai inlet or air outlet of indoor unit/outdoor unit is blocked	Eliminate the obstacles
	Temperature setting is improper	Adjust temperature setting by remote controller or wired controller
	Fan speed is set too low	Adjust fan speed setting by remote controller or wired controller
	Fan direction is not correct	Adjust fan direction setting by remote controller or wired controller
	Door or window is open	Close door and window
	Direct sunshine	Hang curtains or window shade at the window
	Too many persons in the room	
	Too many thermal source in the room	Reduce the thermal source
	Filter is dirty and is blocked	Clean the filter
Can't generate hot water normally	No hot water inside the water tank	Check whether water replenishing is normal?
	There's air inside the water tank	Use the annual discharge valve at the hot water outlet of water tank to discharge the air inside the water tank
Floor heating is abnormal	There's air inside the hydro box	Use the manual discharge valve at the top of generator to discharge the air inside the hydro box

●Instruction

Note: If problem cannot be solved after checking above items, please contact Gree service center and indicate phenomena and models.

● Following circumstance are not malfunction.

" Malfunction"		Causes
Unit doesn't run	When unit is started immediately after it is just turned off	Overload protection switch makes it run after 3 minutes delay
	When power is turned on	Standby operating for about 1 minute
Mist comes from the unit	Under cooling	Indoor high humidity air is cooled rapidly
Noise is emitted	Slight cracking sound is heard when just starts operation	It is noise when electronic expansion valve initialization
	There is consecutive sound when cooling	That's sound for gas refrigerant flowing in unit
	There is sound when unit starts or stops	That's sound for gas refrigerant stops to flow
	There is slight and consecutive sound when unit is running or after running	That's sound for operation of drainage system
	Cracking sound is heard when unit is operating and after operating	That's sound caused by expansion of panel and other parts due to temperature change
The unit blows out duct	When unit runs after no operation for a long period	Dust in indoor unit is blew out
The unit emits odor	Operating	The room odor absorbed by the unit is blew out again

7 Malfunction Display

Inquiry method of malfunction display: combine division symbol and content symbol to check the corresponding error.

For example, division symbol L and content symbol 4 together means over-current protection.

content symbol / division symbol		0	1	2	3	4	5
Indoor	L	Malfunction of indoor unit (unified)	Indoor fan protection	Auxiliary heating protection	Water overflow protection	Abnormal power supply for wired controller	Freeze prevention protection
	d		Indoor PCB is poor	Malfunction of lower water temperature sensor inside the water tank	Malfunction of ambient temperature sensor	Malfunction inlet pipe temperature sensor	Malfunction of middle temperature sensor
Outdoor	E	Malfunction of outdoor unit (unified)	High pressure protection	Low discharge temperature protection	Low pressure protection	High discharge protection of compressor	
	F	Main board of outdoor unit is poor	Malfunction of high pressure sensor		Malfunction of low pressure sensor		Malfunction of discharge temperature sensor for compressor 1
	J	Other module protection	Overcurrent protection of compressor 1	Overcurrent protection of compressor 2	Overcurrent protection of compressor 3	Overcurrent protection of compressor 3	Overcurrent protection of compressor 5
	b		Malfunction of outdoor ambient temperature	Malfunction of defrosting temperature sensor 1	Malfunction of defrosting temperature sensor 2	Malfunction of liquid outlet temperature sensor for	Malfunction of gas outlet temperature sensor for

			sensor			subcooler	subcooler
	P	Malfunction driven board of compressor (unified)	Abnormal operation of driven board of compressor (unified)	Voltage protection of driven board of compressor (unified)	Reset protection of driven module of compressor	Driven PFC protection of compressor	Overcurrent protection for inverter compressor
	H	Malfunction of driven board of fan (unified)	Abnormal operation of driven board of fan (unified)	Voltage protection of driven board of fan (unified)	Reset protection of driven board of fan	Driven PFC protection for fan	Overcurrent protection of inverter fan
Debugging type	U	Preheat time for compressor is insufficient		Wrong setting for capacity code of outdoor unit/jumper cap	Power phase protection	Refrigerant-lacking protection	Wrong addressing for driven board of compressor
	C	Communication malfunction for indoor unit, outdoor unit and wired controller of indoor unit		Communication malfunction between master unit and driven board of inverter compressor	Communication malfunction between master unit and driven board of inverter fan	Malfunction of indoor unit-lacking	Alarm because of engineering code shock of indoor unit
Status	A	Standby debugging of unit	Operation parameters inquiry for compressor	Refrigerant recovery operation	Defrosting	Oil return	On-line test
	n	SE operation setting for system	Defrosting period K1 setting	Upper limit for capacity collocation ratio of indoor unit and outdoor unit setting	Compulsory defrosting	Maximum output capacity limit setting	Compulsory deviation for indoor unit's engineering series number

Content symbol / Division symbol		6	7	8	9	A	H
Indoor	L	Mode shock	No master indoor unit	Power supply is insufficient	Quantity of indoor units for one-to-more units is not uniform (HB net work)	Series of indoor units for one-to-more units is not uniform (HB net work)	Air quality is bad
	d	Malfunction of outlet tube temperature sensor	Malfunction of humidity temperature sensor	Malfunction water temperature sensor	Malfunction of jumper cap	Abnormal network address for indoor unit	PCB board of wired controller is abnormal
Outdoor	E						
	F	Malfunction of discharge temperature sensor for compressor 2	Malfunction of discharge temperature sensor for compressor 3	Malfunction of discharge temperature sensor for compressor 4	Malfunction of discharge temperature sensor for compressor 5	Malfunction of discharge temperature sensor for compressor 6	Current sensor for compressor 1 is abnormal
	J	Overcurrent protection for compressor 6	Gas-mixing protection for 4-way valve	High pressure ratio protection	Low pressure ratio protection	Abnormal pressure protection	—
	b	Malfunction of inlet temperature sensor 1 for gas-liquid separator	Malfunction of inlet temperature sensor for gas-liquid separator	Malfunction of outdoor humidity sensor	Malfunction of gas outlet temperature sensor of heat exchanger	Malfunction of oil return temperature sensor	Clock time of system is abnormal
	P	Driven IPM module of compressor protection	Malfunction of driven temperature sensor of compressor	High temperature protection for driven IPM of compressor	Desynchronizing protection of inverter compressor	Malfunction of driven storage chip for compressor	High voltage protection for driven DC bus bar of compressor
	H	Driven IPM	Malfunction of	High	Desynchronizing	Malfunction of	High voltage

		module protection for fan	driven temperature sensor of fan	temperature protection for driven IPM of fan	protection of inverter fan	driven storage chip of fan	protection for driven DC bus bar of fan
Debugging type	U	Alarm because of abnormal valve	—	Malfunction of pipeline of indoor unit	Malfunction of pipeline of outdoor unit	—	—
	C	Alarm due to the quantity of outdoor unit is inconsistent	—	Emergency status of compressor	Emergency status of fan	Emergency status of module is not displayed by indoor unit	Rated capacity ratio is too high
Status	A	Heat pump function setting	Quiet mode setting	Vacuum pump mode	IPLV test	Euro class AA energy efficiency test mode	Heating
	n	Malfunction inquiry of unit	Parameters inquiry of unit	Inquiry of Indoor unit's engineering series number	Inquiry of quantity of on-line indoor unit	Heat pump unit	When inquiring and setting parameters for heating only unit: correction of target high pressure
	H	Driven IPM module protection for fan	Malfunction of driven temperature sensor of fan	High temperature protection for driven IPM of fan	Desynchronizing protection of inverter fan	Malfunction of driven storage chip of fan	High voltage protection for driven DC bus bar of fan
Debugging type	U	Alarm due to abnormal valve	—	Malfunction of pipeline of indoor unit	Malfunction of pipeline of outdoor unit	—	—
	C	Alarm because the quantity of outdoor unit is inconsistent	—	Emergency status of compressor	Emergency status of fan	Emergency status of module is not display by indoor unit	Rated capacity ratio is too high
Status	A	Heat pump function setting	Quiet mode setting	Vacuum pump mode	IPLV test	Euro class AA energy efficiency test mode	Heating
	n	Malfunction inquiry of unit	Parameters inquiry of unit	Inquiry of engineering series number of indoor unit	Inquiry of quantity of on-line indoor unit	Heat pump model	When inquiring and setting parameters for heating only unit: correction of target high pressure

Content symbol / Division symbol		C	L	E	F	J	P
Indoor	L	Indoor unit and outdoor unit can't be matched with each other	Malfunction of water flow switch	Rotation speed of EC DC water pump is abnormal	Malfunction of shunt valve setting	Setting of function DIP switch code is wrong	Zero crossing malfunction of PG motor
	d	Setting of capacity DIP switch code is abnormal	Malfunction of air outlet temperature sensor	Malfunction of indoor CO2 sensor	Malfunction of upper water temperature sensor	Malfunction of backwater temperature sensor	Malfunction of floor heating water inlet pipe temperature sensor
Outdoor	E						
	F	Current sensor of compressor 2 is abnormal	Current sensor of compressor 3 is abnormal	Current sensor of compressor 4 is abnormal	Current sensor of compressor 5 is abnormal	Current sensor of compressor 6 is abnormal	Malfunction of DC motor

	J	Water flow switch protection	Protection because high pressure is too low	Oil return pipe is blocked	Oil return pipe is leaking		
	b	Drop protection for top temperature sensor of compressor 1	Drop protection for top temperature sensor of compressor 2	Malfunction of inlet tube temperature sensor of condenser	Malfunction of outlet tube temperature sensor of condenser	High pressure and low pressure sensor are connected reversely	
	P	Malfunction of driven current inspection circuit of compressor	Protection because the voltage of driven DC bus bar of compressor is too low	Inverter compressor is phase-lacking	Malfunction of driven charging loop of compressor	Failure startup of inverter compressor	AC current protection for inverter compressor
	H	Malfunction of driven current inspection circuit of fan	Protection because the voltage for driven DC bus bar of fan	Inverter fan is phase-lacking	Malfunction of driven charging loop of fan	Failure startup of inverter fan	AC current protection for inverter fan
Debugging type	U	Master indoor unit setting is succeeded	Emergency operation DIP switch code is wrong	Invalid of refrigerant charging			
	C	Malfunction of no master unit, which is not displayed by indoor unit	Rated capacity ratio is too low		Malfunction because there's multiple master units	Address DIP switch code of system is shocking	Malfunction because there's multiple master wired controller
Status	A	Cooling	Auto refrigerant-charging	Manual refrigerant-charging	Air supply	Alarm for cleaning the filter	Startup debugging confirmation of unit
	n	Cooling only unit	Target low pressure correction	Negative code	Fan type	High temperature prevention when heating	Defrosting temperature adjustment value

Division symbol \ Content symbol		U	b	d	n	y
Indoor	L					
	d	Malfunction of floor heating outlet water pipe temperature sensor	Special code: debugging status of unit	Malfunction of solar power temperature sensor		
Outdoor	E					
	F	Malfunction of top temperature sensor of compressor 1	Malfunction of top temperature sensor of compressor 2			
	J					
	b					
	P					
	H	Protection because the driven AC input voltage for inverter compressor is abnormal				
Debugging status	U					
	C	Communication malfunction between indoor unit and receiving lamp plate	Ip address distribution is overflowing			

Status	A	Long-distance emergency stop	Emergency stop operation	Limit operation		
	n	Eliminate the long-distance shielding command of indoor unit	Bar code inquiry			

8 Maintenance and Care

Regular check, maintenance and care should be performed by professional personnel, which will prolong the unit life span.

8.1 Outdoor Heat Exchanger

Outdoor heat exchanger is required to be cleaned once every two months. Use vacuum cleaner with nylon brush to clean up dust and sundries on the surface of heat exchanger. Blow away dust by compressed air if it is available. Never use water to wash the heat exchanger.

8.2 Drain Pipe

Regularly check if the drain pipe is clogged in order to drain condensate smoothly.

8.3 Water Tank

Please check whether there’s water leakage for the water tank periodically to prevent heat loss at the water tank side.

8.4 Notice before Seasonal Use

(1) Check if the inlet/outlet of the indoor/outdoor unit is blocked

(2) Please check whether there’s enough water volume inside the water tank and whether the water pressure for the water heater sufficient (2bar).

(3) Check if the ground wire is earthed reliably.

(4) Check if battery of remote wireless controller has been replaced.

(5) Check if the filter has been set soundly.

(6) After long period of shutdown, open the main power switch 8 hours before reoperating the unit so as to preheat the compressor crankcase.

(7) Check if the outdoor unit is installed firmly. If there is something abnormal, please contact the GREE appointed service center.

8.5 Maintenance after Seasonal Use

（1）Cut off main power supply of the unit.

（2）Clean filter and indoor and outdoor units.

（3）Clean the dust and sundries on the indoor and outdoor units.

（4）In the event of rusting, use the anti-rust paint to stop spreading of rust.

（5）Open the water drain valve to release the water inside the water system to prevent it to be frozen.

8.6 Parts Replacement

Purchase parts from Gree appointed service center or dealer if necessary.

Note:

During airtight and leakage test, never mix oxygen, ethyne and other dangerous gas into refrigeration circuit. In case of hazard, it's better to use nitrogen or refrigerant to accomplish such test.

9 After-sales Service

In case the air-conditioning unit you bought has any quality problems or you have any inquiry, please contact the local after-sales service agency designated by Gree.

Warranty should meet the following requirements:

（1）First run of the unit should be operated by professional personnel from Gree appointed service center.

（2）Only Gree manufactured accessories can be used on the machine.

（3）All the instructions listed in this manual should be followed.

（4）Warranty will be automatically invalid if fails to obey any items mentioned above.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

Add: West Jinji Rd, Qianshan, Zhuhai, Guangdong, China, 519070
Tel: (+86-756) 8522218 Fax: (+86-756) 8669426
E-mail: gree@gree.com.cn www.gree.com

66170050071