GREE
Change for life

Owner's Manual

Original Instructions

Commercial Air Conditioners

ERV+DX coil

Models:

GMV-VDR5PH/SA-S

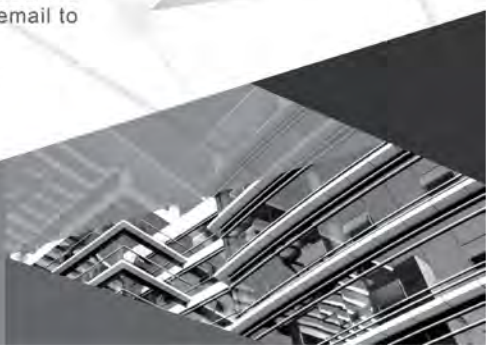
GMV-VDR8PH/SA-S

GMV-VDR10PH/SA-S

Thank you for choosing commercial 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 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 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.

(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) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.

(5) All the illustrations and information in the instruction manual are only for reference. In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.

Exception Clauses

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

(1) Damage the product due to improper use or misuse of the product.

(2) Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer.

(3) After verification, the defect of product is directly caused by corrosive gas.

(4) After verification, defects are due to improper operation during transportation of product.

(5) Operate, repair, maintain the unit without abiding by instruction manual or related regulations.

(6) After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers.

(7) The damage is caused by natural calamities, bad using environment or force majeure.

Contents

1 Safety Notices (Please Be Sure to Abide Them)

SPECIAL WARNING:

(1) Do not pierce or burn.

(2) Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

(3) Be aware that refrigerants may not contain an odor.

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

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

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

OBSERVED: 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 above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

	Please install the unit according to the instructions in this manual. Read this manual carefully before starting up or checking the machine.		Installation should be performed by the 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 cord if it is in accordance with the specifications on the nameplate. Make sure the power is safe.		The air conditioner must be properly grounded through a power receptacle to avoid electric shock. The grounding wire shouldn't be connected with a gas pipe, water pipe, lightning arrester or a telephone line.
	When installing, specialized accessories and parts must be used; otherwise water leakage, electric shock, fire hazard may occur.		R410A refrigerant can produce poisonous gas once it meets fire, so please ventilate the room immediately if refrigerant leaks out during installation.
	A damaged power cord or connecting wire must be replaced with a specialized electric cable by a professional technician.		If the power cord is to be connected, please put back the cover of electric box after connecting the cord to avoid danger.
	Nitrogen must be charged according to technical requirements.		Connect power 8 hours before operation. Do not disconnect power if you want to stop the unit in a short period of time, e.g. in one night. (This is for protecting the compressor.)
	For units that adopt wired control, do not connect power until the wired controller is well installed. Otherwise, the wired controller cannot be used.		When installation is finished, please check and make sure the drain pipe, pipeline and electric wires are all well connected so as to avoid water leakage, refrigerant leakage, electric shock and fire hazard.

	Never start or stop the air conditioner by inserting or removing the power cord.		Never put your finger or any object into the air outlet or air grille.
	Children under the age of 12 and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge shall not operate this appliance.		Do not operate the machine with wet hands.
	Please turn the unit off and unplug the unit before cleaning. Otherwise, it may cause electric shock or personal injury.		Do not spray water on this product or wash the inside of the unit with water; otherwise, it will cause malfunction or electric shock.
	Do not expose this product directly to water or place it in a damp or corrosive environment.		Do not repair this product by yourself. Incorrect work will cause electric shocks or fire. Please contact GREE service center for repairs.
	During cooling mode, indoor temperature should not be set too low. Keep the difference between indoor temp and outdoor temp within 5°C.		Do not turn off the unit until it runs for at least 5 minutes. Otherwise, oil return of the compressor will be affected.

	Volatile liquid like thinner or gasoline will damage the appearance of this product. (Please use soft dry cloth and wet cloth with mild detergent to clean the outer case of the machine.)		For non-professionals, never touch the fan volute or other movable parts, as it may result in injury.
	When an abnormality (such as a bad smell) occurs, stop the unit at once and disconnect power. Then contact GREE service center. If the unit continues to operate despite abnormal condition, it may be damaged and cause electric shocks or fire.		For safety concern, if the unit is not used for a long time, please remove the power plug.
	Please clean the air filter regularly. Keep the air filter clean.		Install a bird screen or a similar device at the external air vent.
	The outdoor air inlet must be far away from the exhaust port of flammable gas.		The air inlet must be located in a place where backflow of exhaust air will not occur.
	A service port of specific size must be reserved according to the instructions of installation.		In order to avoid incomplete combustion, which may lead to intoxication, keep heating appliances away from the air flow of the unit.

	For pipe fan and partition wall fan, mind the air from the open air duct or other appliances that produce open fire flowing back into the indoor side.		Please verify completely before using the appliance in special places (for example, places where there are precision instruments, food and art works).
	Due to the limitation of the detection principle of air quality detector, in places where humidifiers or aroma diffusers are used, the air quality detector will inevitably produce different deviations. This is a normal phenomenon.		

2 Product Introduction

2.1 Function Introduction

This series of fresh air unit is a ventilation device that can continuously filter fresh air for 24 hours and replace the installation of indoor air to meet user comfort requirements. The built-in heat exchange core of the unit can efficiently recover the exhaust energy during operation and reduce the additional indoor load brought about fresh air. The inside of the unit is also equipped with an evaporator which has the function of cooling and heating, further processing the fresh air after heat exchange. It will not increase AC capacity load additionally during the process of enjoying fresh air, avoiding indoor temperature fluctuation brought about fresh air, thus reducing comfort. This series of units also adopts constant air volume technology and a combination of various operating modes to greatly expand the applicable location of the unit.

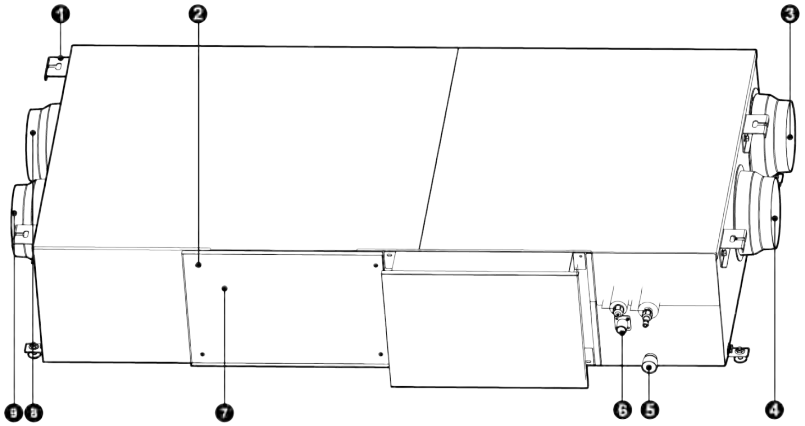
The product accords with Rule (EU) 1253–2014.

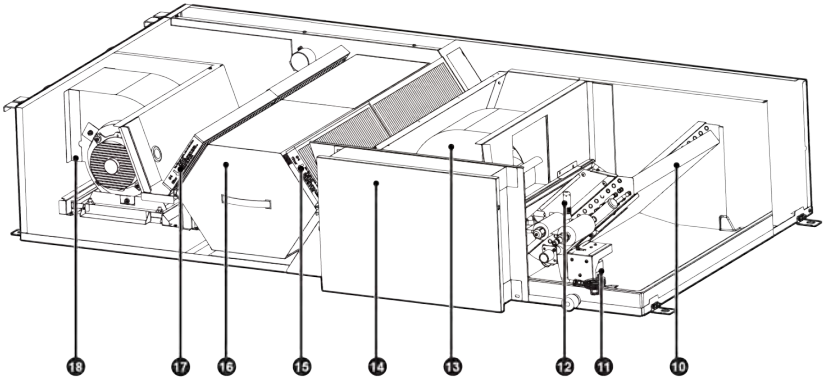
Table 2-1 Function list

Function	Model	Remarks
	GMV-VDR5PH/SA-S GMV-VDR8PH/SA-S GMV-VDR10PH/SA-S	
Operation control	√	
Linkage control	√	Used with multi VRF unit
Fan speed	√	
Heat exchange operation mode	√	
Bypass operation mode	√	
Auto operation mode	√	
Cooling mode	√	
Heating mode	√	
Dehumidification mode	√	
Supply air mode	√	
Positive pressure mode	√	
Negative pressure mode	√	
Air filter	√	
Filter clean/replacement alarm	√	
Timer	√	
Group control	√	
Free cooling	√	
Free cooling at night	√	
Centralized control	○	The function is available when used with Gree centralized controller
Remote control	○	The function is available when used with Gree remote monitoring system

Remark: √-Standard function, ○-Optional function, ×-Not available.

2.2 Major Structure





1	Hook	7	Side access panel	13	Fresh air fan component
2	Access panel bolt	8	Air inlet of fresh air	14	Electrical box
3	Air inlet of discharge	9	Air outlet of discharge	15	Side discharge filter
4	Air outlet of fresh air	10	Evaporator	16	Heat exchanger core
5	Natural outlet	11	Water pump	17	Side fresh air filter
6	Water pump outlet	12	Electronic expansion valve	18	Discharge fan component

2.3 Outline Dimensions

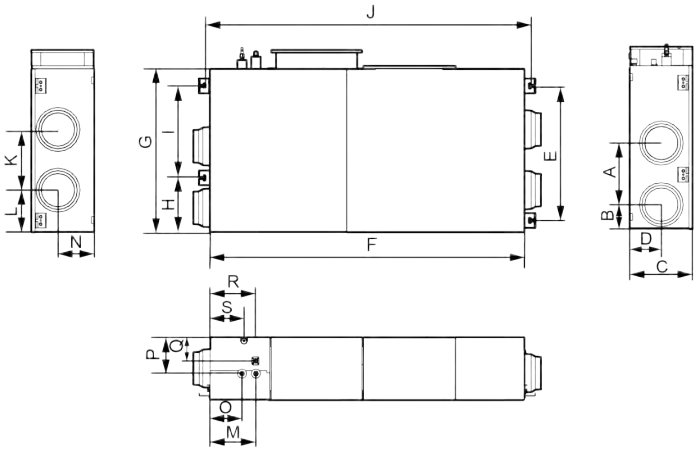


Figure 2-1 GMV-VDR5PH/SA-S

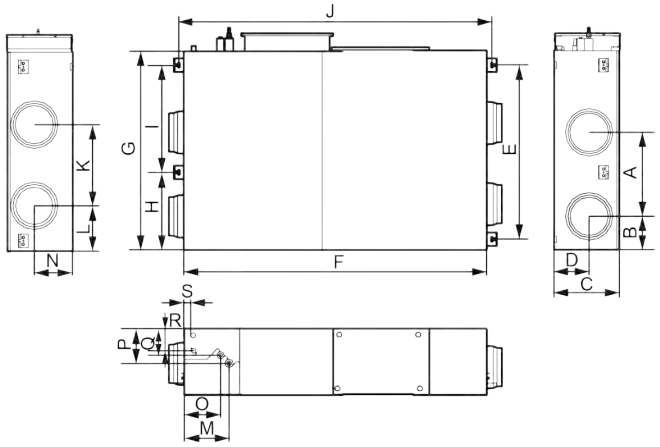


Figure 2-2 GMV-VDR10PH/SA-S and GMV-VDR8PH/SA-S

Table 2-2 Outline dimensions

Measuring unit: mm

Model	A	B	C	D	E	F	G	H	I	J
GMV-VDR5PH/SA-S	333	130	340	170	727	1700	880	292	498	1762
GMV-VDR8PH/SA-S	498	197	390	210	1033	1800	1185	458	637	1861
GMV-VDR10PH/SA-S										

Measuring unit: mm

Model	K	L	N	M	O	P	Q	R	S	
GMV-VDR5PH/SA-S	328	226	196	250	175	200	130	247	185	
GMV-VDR8PH/SA-S	482	268	230	268	217	207	159	123	53	
GMV-VDR10PH/SA-S										

NOTE!

Due to individual differences in production assembly, above figures may vary from those of the present products. Please refer to the actual dimensions of your product.

2.4 Performance Parameters

Table 2-3 Performance parameters

Model			GMV-VDR5PH/SA-S	GMV-VDR8PH/SA-S	GMV-VDR10PH/SA-S
Power supply		V	220–240		
Rated frequency		Hz	50/60		
Power input		W	270	440	640
Cooling capacity		W	8500	12000	14500
Heating capacity		W	4000	10600	12000
Fresh air conditioning load	Cooling	W	3600	6300	8000
	Heating	W	2000	8040	8400
Fresh air volume		m^3/h	500	800	1000
External static pressure		Pa	150	150	150
Thermal efficiency		%	73	74	73
Noise		dB	55	59	62
Weight		kg	120	158	158
Connection pipe size of duct type		mm	200	250	250

NOTES!

(1) Airflow volume data is the value tested under the condition of rated static pressure in high fan speed, subject to actual installation condition, there might be certain deviation.

(2) The nominal static pressure is the static pressure tested acquiescently when leaving the factory, other high-level filter might affect unit performance parameter.

(3) Please use Fresh Air Conditioning Load (Cooling) to do capacity calculation or selection.

(4) Thermal efficiency is test result that refer to the heating working conditions of the EU1253 instruction.

(5) The nominal cooling and heating capacity is the combined capacity of the outdoor and indoor units of the system with the following operating conditions:

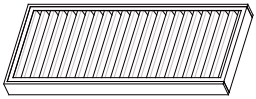
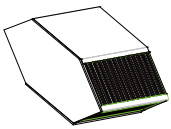
—	Cooling	Heating
Indoor Air Inlet Temperature	27˚C DB/ 19.5˚C WB	20˚C DB/ 12˚C WB
Outdoor Air Inlet Temperature	35˚C DB/ 28˚CWB	7˚C DB/ 6˚C WB

2.5 Parameters of Filter and Heat Exchange Core

Table 2-4 Parameters of filter and heat exchange core

Measuring unit: mm

Model	GMV-VDR5PH/SA-S	GMV-VDR8PH/SA-S	GMV-VDR10PH/SA-S	Washable	Recyclable	Suggested replacement time
Rough filter	155×382×28	184×530×35		Yes	No	Refer to the tips of wired controller after cleaning for 3 times
Heat exchange core	268×386×382	330×450×522		No	No	2 years

Rough filter (standard configuration)

Heat exchange core


NOTE!

Conduct cleaning and maintenance periodically for the fresh air side of filter and discharge side of filter.

2.6 List of Accessories

Table 2-5 List of accessories

Measuring Unit: pc

No.	Name	GMV-VDR5PH/ SA-S	GMV-VDR8PH/ SA-S	GMV-VDR10PH/ SA-S	Remarks
1	Nut with washer M10×8	4	4	4	
2	Nut M10	4	4	4	
3	Washer 10(spring washer M10×2.6)	4	4	4	
4	Washer 10(big washer M10×Φ30×2.5)	4	4	4	
5	Union nut	2	2	2	
6	Insulating sleeve of gas collecting pipe	1	1	1	
7	Insulating sleeve of liquid inlet pipe	1	1	1	
8	Drain pipe sponge	2	2	2	
9	Drain hose	1	1	1	
10	Drain hose sponge	1	1	1	
11	Clamp	1	1	1	
12	Wired controller	1	1	1	
13	Rubber ring	2	2	2	
14	Cable tie	8	8	8	

NOTE!

The package base can be used to locate the unit during installation.

2.7 Dimension of Connection Pipe

Model	Gas pipe (mm)	Liquid pipe (mm)
GMV-VDR5PH/ SA-S	Φ12	Φ6
GMV-VDR8PH/ SA-S	Φ16	Φ9.52
GMV-VDR10PH/ SA-S	Φ16	Φ9.52

3 Production Installation

3.1 General Specification

The user shall entrust professional HVAC engineer to conduct equipment model selection and engineering design, hire experienced construction company to complete the construction. The design and construction shall be consistent with related national stipulations and regulations.

This series of unit shall be used with multi VRF unit. It can be connected to the system by means of mixed connection. To avoid affecting the performance of indoor unit, the capacity sum of the connected fresh air unit and normal indoor unit shall between 50%～100% of the capacity of outdoor unit. Among which, the capacity of the connected fresh air unit shall not exceed 30% of the capacity of outdoor unit; otherwise, it will affect user comfort, or even damage the unit.

3.2 Electricity Connecting

3.2.1 Requirements for Electric Installation

(1) Install units according to national wiring codes.
(2) Power cord must be reliably secured to avoid stress on wire terminal.
(3) Please connect wire according to the standard and make sure the unit operate normally. The connection wire between indoor unit and outdoor unit must apply the required electric wire and avoid stress on wire terminal, otherwise fire hazard may be caused.
(4) If the power cord and connection wire are damaged, it shall be replaced by the professionals with specialized wire.
(5) The wire shall not touch the refrigerant pipe, the fan or other parts.
(6) All electric installation must be performed by qualified personnel in accordance with local laws, regulations and this manual.
(7) Units must be properly grounded to specialized grounding device in the building. Please ask professionals to install.
(8) Air switch and circuit breaker that can disconnect power of the whole system must be installed.
(9) During installation, please install all-pole disconnection device with contact separation not less than 3mm in the power supply circuit.

(10) The circuit breaker should have both magnetic trip and thermal trip functions so as to protect the unit when short circuit or overload occurs.

3.2.2 Requirements for Electric Installation

(1) Reliable grounding must be ensured. The yellow-green wire inside the unit is a ground wire, so it shall not be used for other purposes nor shall it be cut. Do not tighten it with tapping screws; otherwise it will cause risk of electric shock.

(2) Power supply must provide reliable grounding terminal. Do not connect the ground wire to the following:

1. Water pipe; 2. Gas pipe; 3. Drain pipe; 4. Other places that are deemed as not reliable by professional personnel.

WARNING!
Before installation and maintenance, please cut off power supply to avoid electric shock. Please use the wire according to related configuration requirement. Otherwise it may lead to unit malfunction and hazards such as electric shock and fire hazard.
Special statement
If the users alter the electric control system by themselves without prior consent of our company, our company will not bear any responsibility for the abnormal results caused by this.

3.2.3 Requirements for Electric Installation

Dimension of power cord and capacity of air switch:

Table 3-1 Wiring requirement

Model	Power specification	Circuit breaker capacity (A)	Wire diameter (mm²)	
			Ground wire	Ground wire
GMV-VDR5PH/SA-S	220–240V～ 50/60Hz	6	3x1.0	3x1.0
GMV-VDR8PH/SA-S				
GMV-VDR10PH/SA-S				

NOTES!

(1) Selection of circuit breaker and power cord in the above table is based upon unit's maximum power (maximum current).

(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 (IEC 60364-5-52). If working condition is changed, 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 is changed, please adjust the specification accordingly.

(4) Install cut-off device near the unit. The minimum distance between each stage of cut-off device should be 3mm.

3.3 Wiring Work

3.3.1 Requirements for Wiring Work

(1) The unit must be grounded securely, or it may cause electric shock.

(2) The capacity of power supply must be sufficient. The sectional area of wires in the room should comply with relevant selection requirements and be installed with circuit breaker for branch circuit.

(3) The unit should be powered by independent circuit and specific socket.

(4) Install circuit breaker for branch circuit according to related regulations and electrical standards.

(5) All wiring must use pressure terminal or single wire. Multi-twisted wire that connects directly to the wiring board may cause fire hazard.

(6) Keep cable away from fan and other motional parts.

(7) Do not alter the inner wires of unit. Manufacturer does not assume responsibility for damage or abnormal operation due to this reason.

(8) If the unit is installed in places with strong electromagnetic interference, it's recommended to use twin-twisted shield wire. During wire connection, please pay attention that the metal shield layer of the twin-twisted wire must be grounded (outer case) in order to prevent the unit from electromagnetic interference.

(9) The communication wires should be separated from power cord and connection wire between indoor unit and outdoor unit.

3.3.2 Connection of Wires and Wiring Board Terminals

(1) Connection of single branch wires

1) Use a stripper to strip away about 25mm of the insulation layer at the end of

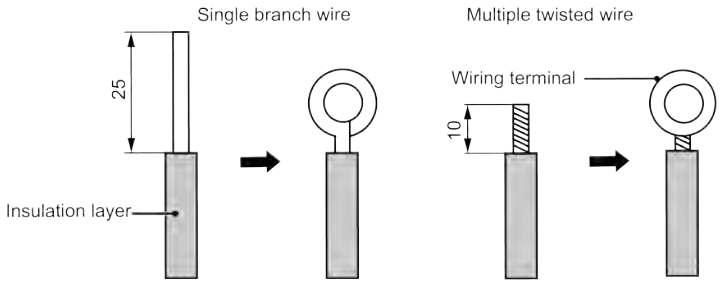
single branch line so that the single-core wire can be exposed.

2) Remove the wiring screws on the patch board.
3) Shape the tail of wire into ring by needle nose pliers, and keep the gauge of ring in accordance with screw.
4) Lead the screw across the circle of the single branch line and fix it on the wiring board.

(2) Connection of multi-twisted wires

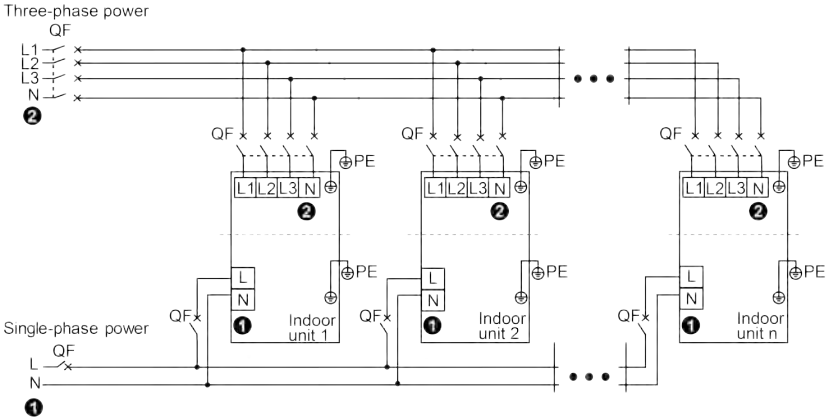
1) Use a wired stripper to strip away about 10mm of the insulation layer at the end of multi-twisted wire.
2) Remove the screws on wiring board.
3) Use a round terminal fastener or pliers to securely fasten the round terminal with each core wire of the multi-core wire.
4) Confirm the position of each core wire on the round terminal and then use a screwdriver to tighten the terminal screw.

Unit: mm



Connection of Power Cord:

1) The unit must be installed with circuit breaker independently which is used for short circuit protection and overload protection. The circuit breaker shall be closed in normal times.
2) During operation, all outdoor units, fresh air units and outdoor units in the same system must be kept energized. Otherwise, the system cannot operate normally.



Note: (1) Connect wires for single phase unit according to figure ❶ and connect wires for three-phase unit according to figure ❷.

(2) The maximum connection quantity "n" for indoor unit is decided by the capacity of outdoor unit. Please refer to the unit capacity of unit for details.

Figure 3-1 Diagram for system electric wiring

NOTE!

Max indoor unit quantity n is according to the outdoor unit capacity. For more details, please refer to the unit capacity configuration.

3.3.3 Selection of Communication Wire

(1) Selection of wired controller communication wire

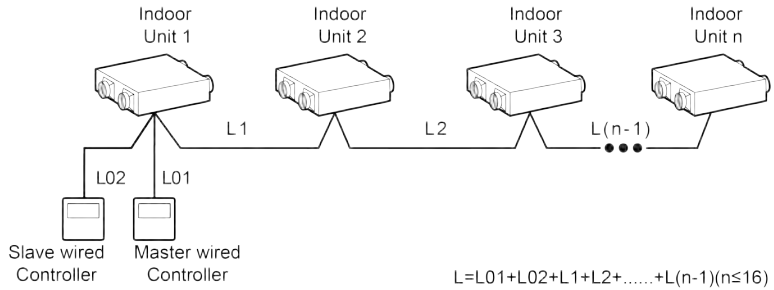


Figure 3-2 Diagram of wired controller control connection

Table 3-2 Selection of wired controller communication wire

Wire material type	Total length of communication line between indoor unit and wired controller L (m)	Wire size (mm^2)	Material standard	Remarks
Light/Ordinary Polyvinyl chloride sheathed cord.	L≤250m	2×0.75~2×1.25	IEC 60227-5:2007	1) Total length of communication line can't exceed 250m. 2) The cord shall be Circular cord (the cores shall be twisted together). 3) If unit is installed in places with intense magnetic field or strong interference, it is necessary to use shielded wire.

(2) Selection of communication wire between unit and VRF ODU

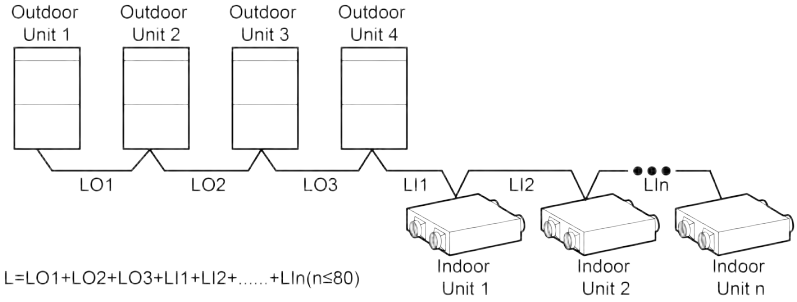


Figure 3-3 Diagram of IDU and ODU control connection

Table 3-3 Selection of communication wire between unit and VRF ODU

Material Type	Total Length L (m) of Communication Cable between Indoor Unit and Indoor (Outdoor) Unit	Wire size (mm^2)	Material Standard	Remarks
Light/Ordinary polyvinyl chloride sheathed cord.	L≤1000m	≥2×0.75	IEC 60227-5:2007	1) If the wire diameter is enlarged to 2×1 mm^2, the total communication line length can reach 1500 m. 2) The cord shall be Circular cord (the cores shall be twisted together). 3) If unit is installed in places with intense magnetic field or strong interference, it is necessary to use shielded wire.

3.3.4 Selection of Communication Wire

Remark: When installing electrical, you need to replace the rubber ring on the electrical box with the over-the-line rubber ring in the packaged parts.

(1) Connection of communication wire between indoor unit and outdoor unit.

1) Detach the electric box cover of indoor unit.
2) Pass the communication wire through the rubber ring and tie it tightly with the wire.

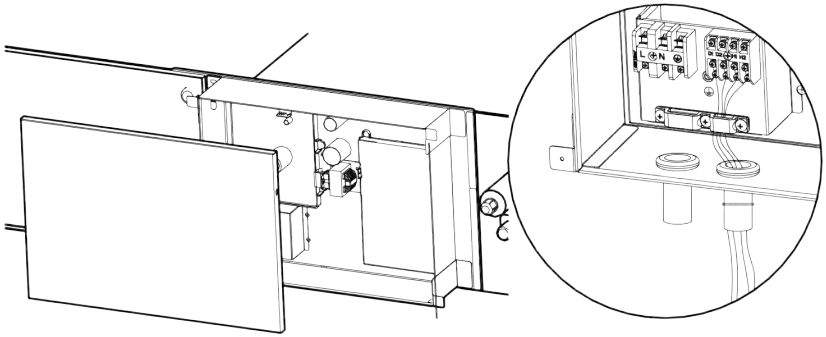


Figure 3-4 Diagram of electric box wiring

3) Connect the communication wire to terminal D1 and D2 of indoor 4-bit wiring board, as shown in the following figure.

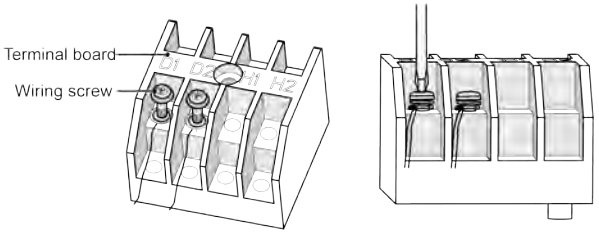
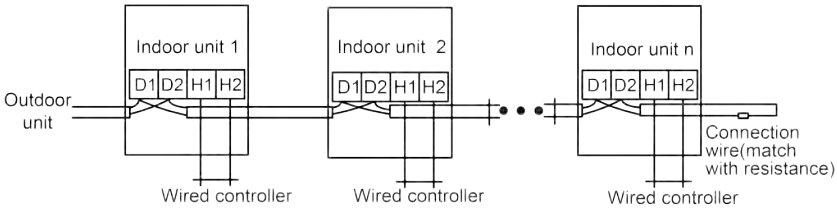


Figure 3-5 Diagram 1 of wiring board

4) Fix the communication cable with clamp of electric box.
5) In order to ensure the reliability of communication between IDU and ODU and the communication among each IDU, add a matched resistance(-supplied in a package before ex-factory) on the wiring board of the last indoor unit in a series connection. The matched resistance should be connected in parallel between terminal screw D1 and D2, as shown in the following diagram.



Note:Indoor unit quantity n is according to the outdoor unit capacity.

Figure 3-6 Diagram 2 of wiring board

(2) Connection of communication wire of wired controller

1) Detach the electric box cover of indoor unit.
2) The communication between IDU and wired controller shall connect with H1 and H2.
3) One indoor unit can connect two wired controllers (master wired controller and slave wired controller).
4) One wired controller can control 16 indoor units in maximum at the same time

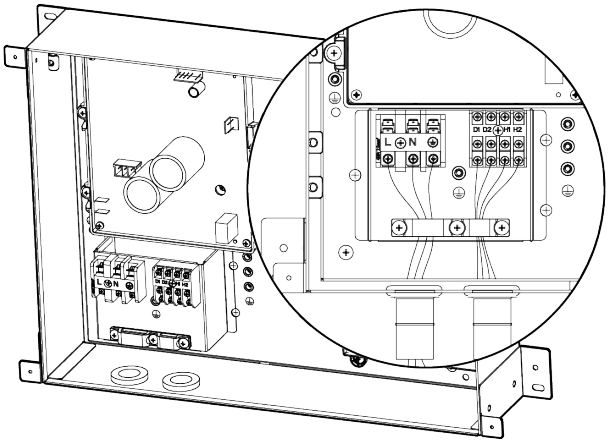


Figure 3-7 Diagram 3 of wiring board

NOTES!

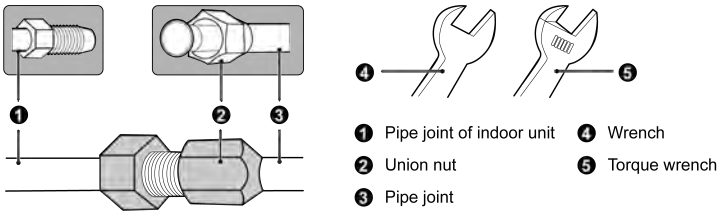
(1) When a wired controller controls multiple units, the ERV + DX Coil series can share a wired controller with normal VRF IDUs, and cannot share a wire control with other ERV series.

(2) When the indoor unit is controlled by two wired controllers, the addresses of the two wired controllers should be different through address setting. Address 1 is for master wired controller; Address 2 is for slave wired controller. Detailed setting please refer to the owner's manual of wired controller.

3.4 Installation for Pipeline

3.4.1 Installation for Copper Pipeline

(1) Direct the flared part of a copper pipe to the center of a screwed joint. Twist on the flared nut tightly by hand. See the diagram below.



Torque required for twisting a screw nut	
Pipe gauge (mm)	Twisting torque (N×M)
Φ6.35	15～30
Φ9.52	35～40
Φ12.7	45～50
Φ15.9	60～65

(2) Use a torque wrench to twist on the flared nut until the wrench gives out a click sound.

(3) The curvature of a pipe should not be too small; otherwise, the pipe may be cracked. Installers should use pipe benders to bend the pipes.

(4) Use sponge to wrap the non-insulated connecting pipes and joints. Then tie them well with plastic tape.

3.4.2 Installation for Drain Pipes

(1) Installation Requirement for Drain Pipes.

1) Never connect the condensate drainage pipe with waste water pipes or other pipes that produce corrosive matters and peculiar smell; otherwise, the peculiar smell will enter into the room and the unit will be corroded.

2) Never connect the condensate drainage pipe with rainwater pipes; otherwise, the rainwater will flow back, resulting in property loss and

personal injury.

3) he condensate drainage pipe must be connected to the drainage system specialized for the air conditioner.
4) The shorter the drainage pipe, the better it is. Keep it downward with an inclination of 1°～ 2° or more so that the condensate can be easily drained away.
5) Apply thermal insulation for the drainage pipe. The insulation cotton used for thermal insulation of the drainage pipe is already provided in the package of accessories.

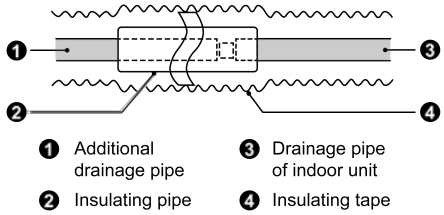
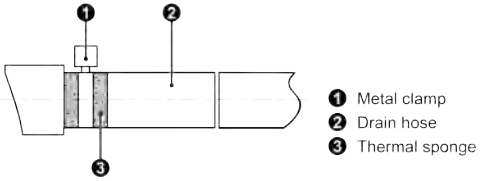


Figure 3-8 Thermal insulation of drain pipes

6) If the drainage pipe is used for several appliances, the location of the drainage pipe should be 100mm lower than the drainage port of each appliance. In this case, use a thicker pipe.
7) Drain pipes are hard PVC types which can be bought locally. When connecting the pipes, insert the end of the PVC pipe into the drainage port and then use drainage hose and wire tie to tie them well. Do not use glue to fasten the drainage port and drainage hose.

(2) Installation of Drainage Pipe

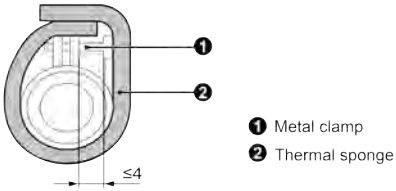
1) Insert the drainage hose into the drainage port and tie them with adhesive tape, as shown below.



2) Twist on the pipe clamp. The distance between the nut and the hose is less than 4mm.

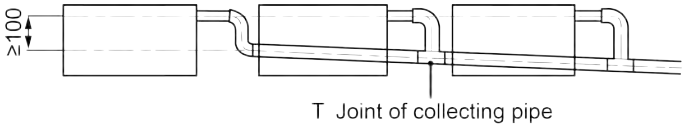
3) Gasket should be used for the thermal insulation of the pipe clamp and hose. (Thermal insulation should be done after the drainage test.) See the diagram below.

Unit: mm

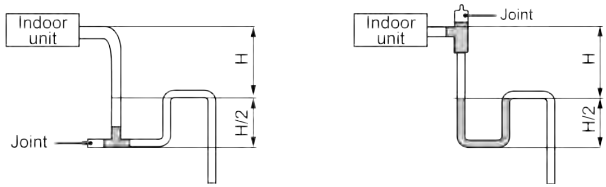


4) If multiple drainage pipes are connected within a system, as show below, please select a drainage header that matches the capacity of the unit.

Unit: mm



5) Please install water traps according to the following drawings.

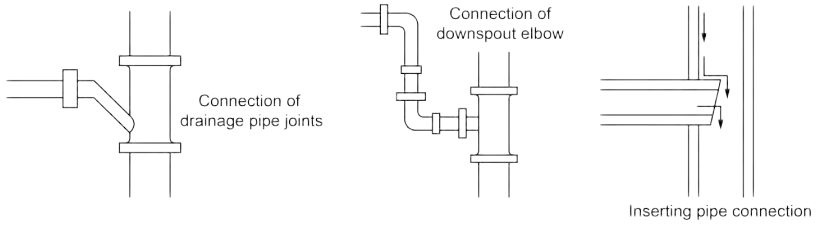


6) Each unit should have one water trap.
7) Water traps should be installed in a way that is easy for cleaning.
8) Horizontal pipes must not be connected with vertical pipes of the same level. Connect them in the following way:

   a) Below is the 3-way connection of drainage pipes.

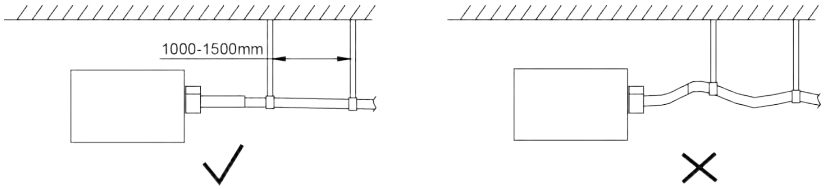
   b) Below is the connection of water bends.

   c) Below is the connection of a horizontal pipe.



a. b. c.

9) Keep the drain pipe downward with an inclination of 1°～ 2° or more. Therefore, install a supporter every 1000-1500mm.



10)Make sure the weight of drain pipes won't be borne by the unit.

3.4.3 Drainage Test

After completing the installation of the entire drainage pipeline (without insulation cotton), perform a drainage test.

(1) The method of adding certain quantity of water to the water tray of the unit is as follow:

1) Open the side panel of the unit, as shown below. Use hose to infuse 1.5~2L of water to the water tray of the unit to observe if there's leakage of drainage system. The guide hose shall be inserted to the bottom of water tray for watering operation. When infusing water, please observe if water flows out from the drain pipe normally and make sure no water leakage in the connection location of pipeline.

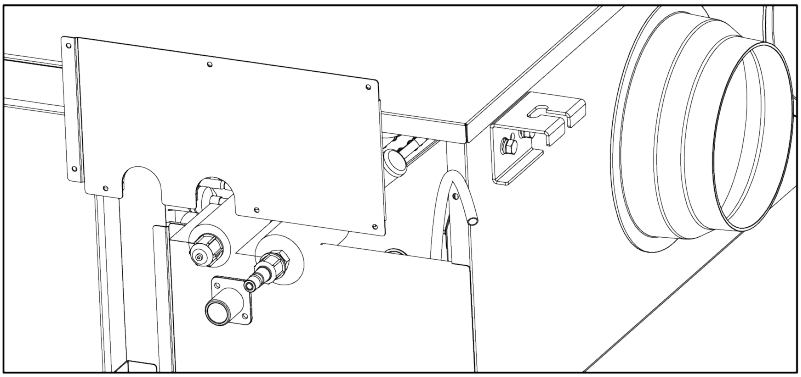


Figure 3-9 Drainage test

2) Then use a sprayer to spray about 1L of water into the evaporator of the unit through the fresh air opening. Observe from the service panel whether the unit can drain water smoothly. Make sure there is no leakage.

(2) Start the water pump of the unit and test if drainage of water pump is smooth. Startup method of water pump is as follow.

1) If the unit has completed project debugging, switch the indoor unit to cooling or dehumidification mode, at this time, water pump will operate automatically.

2) Confirm if water flows out from drainage pipeline correctly and observe the connection pipe carefully to see if there's no leakage. After the test, remove the temporary drainage hose and stuff the water tray stuff (if natural drainage hole is not used).

(3) After the drainage system is checked OK, perform thermal insulation for the drainage hose and pipe clamp.

3.5 Engineering Design

3.5.1 Engineering Design

(1) The inner filter and heat exchange filter core of the unit should be replaced periodically. To facilitate the maintenance of the key parts of the unit, please reserve some space for maintenance according to the following diagram. Dimensions of the maintenance space are as below.

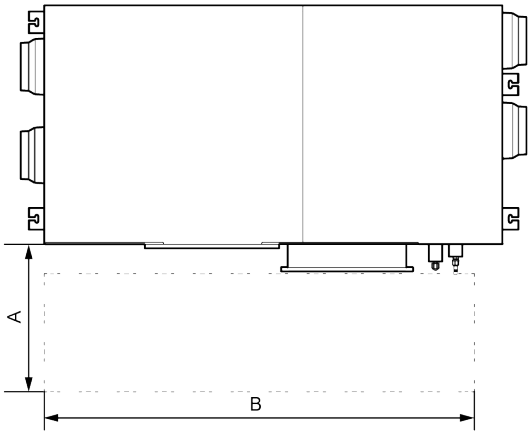


Figure 3-10 Maintenance space

Table 3-4 Maintenance space

Measuring unit: mm

Model	A	B	Pipe gauge
GMV-VDR5PH/SA-S	550	1725	200
GMV-VDR8PH/SA-S	680	1620	250
GMV-VDR10PH/SA-S	680	1620	250

NOTE!

Some parts of the unit may get loose during transport, so please check the screws of each part of the unit carefully before hoisting the unit, especially the movable parts.

(2) Positioning and Installation

1) You may place the package base (mounting cardboard) flat against the installation position. Install the unit according to the hole positions on the cardboard, as shown below.

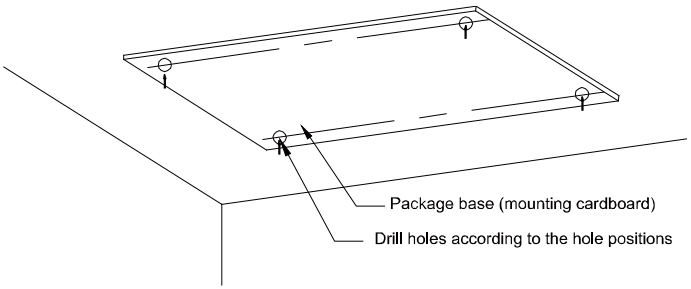


Figure 3-11 Hole positions

2) When the unit is installed in place, use a level bar to adjust the levelness of the unit. Make sure the unit is horizontal from front to back and has an inclination of 0.5~1° from side to side so that water can be drained through the drainage port.

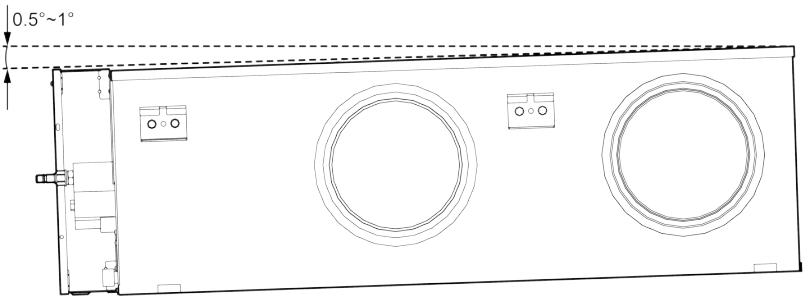


Figure 3-12 Inclination of the unit

NOTES!

(1) Make sure the installation location is strong enough to withstand the weight of the unit.

(2) Add a spring rubber damping cushion if necessary.

(3) The selected installation location won't affect water drainage and pipe connection.

(4) If the unit is installed in a place where there is oil mist, oil gas or risk of leakage of inflammable gas, such as a kitchen, fire hazard may occur.

(5) If the unit is installed in a humid place or near a bathroom, electric leakage or electric shocks may occur.

(6) If radioactive or electromagnetic equipment is placed near the installation location, the unit may fail to work.

(7) If the unit is installed in a place with high pH value or large voltage fluctuation, it may be damaged.

(8) Power cables of indoor and outdoor units as well as connecting wires should be at least 1m away from TV and radios. This is to prevent the electric appliances from having image interference and noise. (If interference still occurs at a distance of 1m, please increase the distance or ask for professional help.).

(9) After-sales installers must be equipped with gloves to protect them from sharp objects.

3.5.2 Installation Requirement for Air Ducts

This product requires the user to prepare PVC ventilating ducts for outdoor air suction and indoor air discharge. Our unit adopts constant air volume control to ensure constant air volume within a certain range of pipe resistance. If the pipe resistance is beyond the designed value, air supply volume will be insufficient. Therefore, in order to prevent performance degrading due to improper pipeline design, please follow the principles recommended below during installation design.

(1) The total length of air ducts should be based on the features of the using environment. The resistance of air ducts should not exceed the requirement for static pressure. Use non-flammable or in-combustible material.

(2) Set as few bends as possible in the pipeline. For each pipeline, try to limit the number of bends under 3. Each bend should have a round curve instead of a right angle of 90°.

(3) The inner surface of the pipeline is smooth, free of dust and wrinkles. The outdoor air inlet should be set in a place that is convenient for maintenance.

(4) If you want the indoor noise to be as low as possible, you may add a silencer in the air ducts. The type of silencer should be selected based on actual requirements. Please consult professionals to select an applicable silencer. If the air ducts are equipped with a silencer, the air outlet noise will be lowered by 4~6 decibels.

(5) When the unit is used in winter, the outside of the pipeline will be frosted after the dry and cold air enters the ducts; on the other hand, the inside of the pipeline will get easily frosted after the wet and warm air of the exhaust outlet enters the ducts.

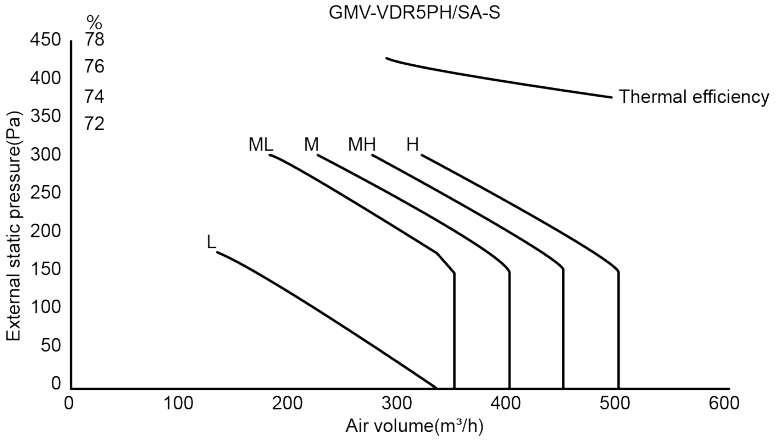
(6) The connecting ducts should be set with an inclination of not less than 0.03. The ducts should slant down to the outdoor side so that condensate and rainwater will not enter the unit.

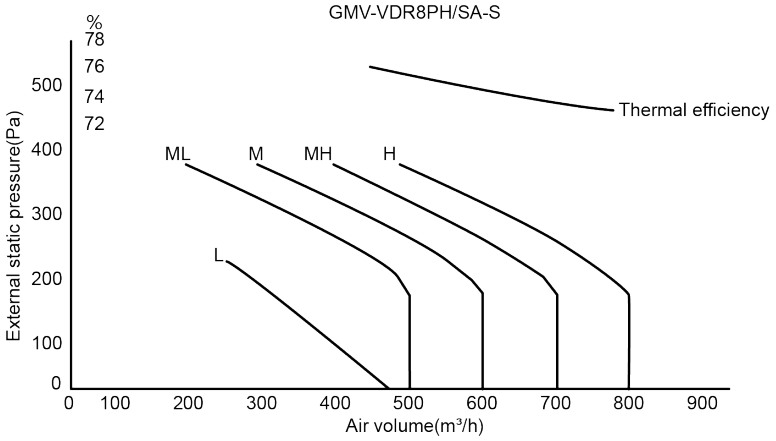
(7) If the unit is used in alpine regions or the air outlet is set in a place that faces the wind, please add an air damper to prevent the cold air from entering into the room.

(8) Make sure the weight of air ducts will not be borne by the unit.

(9) If necessary, use an air hose to connect the air suction duct and air discharge duct during engineering installation. When installing the hose, be sure it is smooth with no folds or sharp turns. The installation drawing is shown below.

(10) Try to avoid using it if the resistance difference of pipeline at both sides of air outlet of fresh air unit is big.





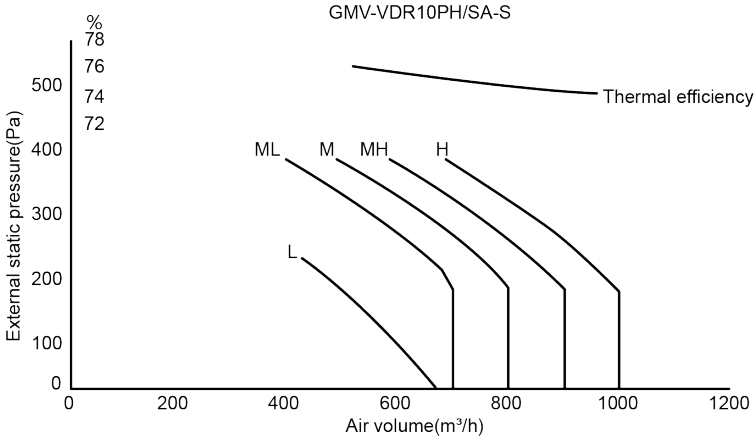


Figure 3-13 The flow/pressure diagram

NOTE!

Before connecting air ducts, please finish the installation of the drainage system and test whether the drainage is normal.

4 Inspection, Pilot Run and Daily Setting

4.1 Check Before Startup

After finish installation, please arrange running test to the unit before start operation. Check before startup:

(1) Check if the arrangement of ducts is correct according to this owner's manual.

(2) Check if the equipment is hung reliably; if the hanging frame is coated with anti-rust paint.

(3) Check if there is sufficient space in the unit for replacing filter; if the installation location of duct mufflers complies with the instructions besides this manual.

(4) Check if there is foreign objects or installation tools inside the duct or unit or at the top of the duct or unit; check if the air ports are insulated completely or if the duct connection is reliable.

(5) Check the drainage water trap of unit to ensure it is properly installed and drainage is good.

(6) Check the integrity of refrigerant system pipeline again and check if the external insulation layer of pipeline has apparent abrasion.

(7) According to the electric wiring diagram in this manual, check if the power cord complies with related requirements, if the wiring way is correct, if the joint is secured, if the power voltage is normal.

4.2 Pilot Run and Debugging Test

Running test:

(1) Turn on the unit for running test after connecting power. Please pay attention that if there is abnormal noise in the pipeline during actual operation and if the unit has abnormal vibration or abnormal noise.

(2) Make sure if the unit installation floor, hanging rod and box iron, etc. can withstand unit's weight during normal operation. Spring shock absorber can be installed in the hanging rod if necessary, in order to prevent shock transmitting to the floor.

(3) If there is abnormal situation, please cut off power immediately and refer to the troubleshooting.

NOTE!

Please refer to the above-mentioned drainage test chapter to conduct drainage test preferentially.

4.3 Daily Setting

(1) Pollution level setting and filter replacement reminder.

1) During equipment operation process, the unit will calculate the accumulative operation time automatically according to the set outdoor pollution level and remind the user to replace the consumable items. However, the ambient condition of actual usage is complex, to enable the user to obtain correct replacement and cleaning reminder, the user shall conduct setting for the outdoor pollution level under actual usage condition.

2) Under startup or shutdown status, enter "Project setting" from the "Setting" interface of wired controller menu directly, inquire "Outdoor pollution level setting" in project setting to conduct setting for outdoor pollution level of the unit.

Parameter setting of outdoor pollution level [default-02]	01：Excellent 02：Good 03：Mild pollution 04：Moderate pollution 05：Severe pollution 06：Serious pollution	It is used to calculate the time for cleaning and replacement reminder.

NOTE!

If need to clean or replace the filter at fresh air side or discharge side of filter, the wired controller will display the corresponding cleaning replacement hint in text.

(2) Defrosting setting

Fresh air temperature will decrease suddenly due to defrosting when the unit is conducting heating. If the user requires constant indoor temperature, please reduce the operating fan speed in project parameter setting when conducting defrosting, to enhance usage comfort. Users can set the fan status during defrosting through the wired controller to the lowest fan, current fan or stop the fan:

1) If set wiring controller operate fan speed, the unit air outlet temperature will be lower, it will influence the comfort.
2) If set lower fan speed, the unit air outlet temperature will be a little higher, it will enhance usage comfort.
3) If set stop the unit, the unit will stop to operate.

(3) Positive and negative setting

If the user has special requirement on indoor supply air, conduct pertinent setting in project parameter for different supply air mode.

Positive and negative setting	Balanced (defaulted)	Under this mode, the fan speed setting of fresh air and discharge is consistent with wired controller
	Positive pressure	Under this mode, the fan speed setting of wired controller is fresh air, the fan speed of fresh air is higher than that of discharge
	Negative pressure	Under this mode, the fan speed setting of wired controller is discharge, the fan speed of discharge is higher than that of fresh air

NOTE!

Detailed setting method shall refer to the specification of wired controller.

5 Daily Error Inquiry and Maintenance

5.1 Error Diagnosis

After device debugging and pilot run, the user can use the unit normally. If the

following errors occur, before contacting the after-sales service department of Gree, please conduct troubleshooting on your own according to the following table.

Table 5-1 General error diagnosis

Abnormality	Possible reason	Solution
Airflow of supply air outlet is decreased obviously after a period of time	Too much dust accumulated in air filter	Replace or clean the filter
Wind noise occur at the air outlet	The installation of air outlet is loose	Re-tighten the installation location of air outlet
The device cannot be started	Power off	Check the circuit or to see if the reset switch of protective plug for electric leakage is abnormal
	Transformer terminal on main board is loose	Insert and connect the transformer terminal
	No cooling or heating	Check if refrigerant pipeline is leaked or if the valve of outdoor unit is opened
	Communication error (C0)	Check the connection wire of wired controller and main board, or the connection wire of the unit and outdoor unit

5.2 Error Code Table

During operation, if errors occur, error code will be displayed. Error code is as follow:

Table 5-2 General error diagnosis

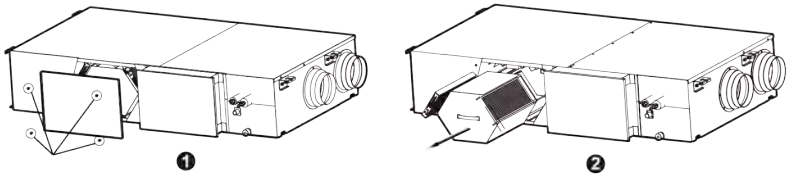
Displayed code	Content	Displayed code	Content
d1	Circuit board of indoor unit is poor	L0	Indoor unit error
d3	Ambient temperature sensor error	L1	Motor protection for fresh air
d4	inlet pipe temperature sensor error	L3	Water overflow protection
d6	outlet pipe temperature sensor error	L4	Abnormal power supply for wired controller
d9	Jumper cap error	L5	Anti-frozen protection
dL	Fresh air outlet temperature sensor error	L9	The number of indoor unit of multi-split is inconsistent
LA	The series of indoor unit of multi-split is inconsistent	yC	Return air and temperature air inlet sensor error
Ld	Air exhaust motor protection	y7	Fresh air and air inlet humidity sensor error

NOTE!

Please immediately contact local Gree after-sales company if the above codes are displayed on wired controller, don't handle it by yourself.

5.3 Maintenance of Key Components

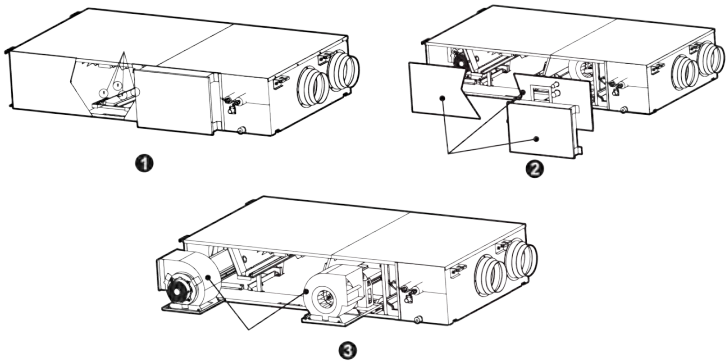
(1) Overhaul and replacement of heat exchange core and filter.



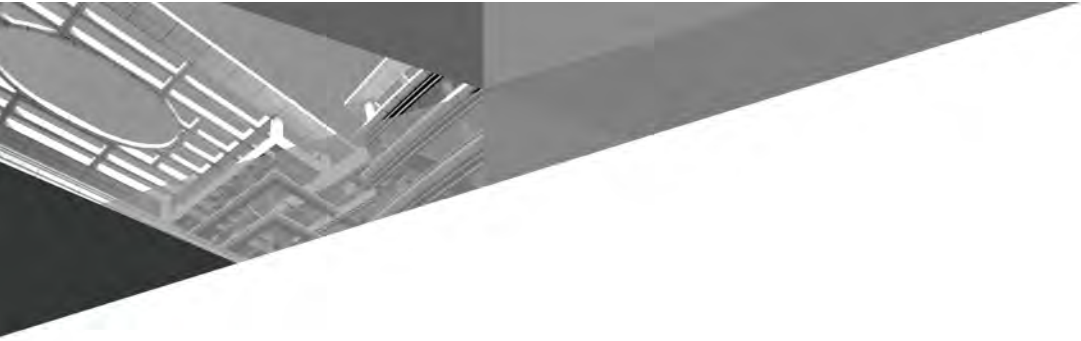
1) Unscrew the four bolts of access panel and disassemble the side access panel.
2) Dismantle the heat exchange core and filter.

(2) Repair and replace of motor

1) Remove the core filter of unit according to the way of removing the core filter.



2) Remove the 4 screws of wire-pressed cover plate of unit, draw out the wire-pressed cover plate.
3) Remove the wires of electric box and the front and rear maintenance boards as shown above.
4) After removing the fixing sheet metal of motor, the motor can be slid out from the rail.



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