Greenair INTERNATIONAL

DC INVERTER VRF

GAV-6+ SERIES

-30 C

Strong Cooling and heating

High efficiency energy saving

Stable reliable performance

Comfortable healthy environment

Intelligent operation control

Convenient installation Maintenance

Enhance Vapor Injection DC Inverter Air Conditioning System

green appliances (Pvt) Ltd.

CONTENTS

* : Suitable for some models

COMPANY
PROFILE

"Green Appliances (Pvt) Ltd." was founded in 2015. The HVAC sector is one of the most dynamic industries globally, requiring constant adaptation and innovation. At Green Appliances, we embrace this challenge as it drives us to excel, enabling us to deliver high-quality, life-enhancing HVAC equipment to our valued customers. Our ambition is to emerge as a market leader, exceeding customer expectations with superior products and services, while also uplifting the communities we serve.

Introduction

Throughout history, consumers have never been more demanding in terms of quality and cost effectiveness. This presents a significant challenge for today's entrepreneurs. It is with great pleasure that we introduce "Green Air," one of the most advanced HVAC solutions in Pakistan. We offer OEM equipment from distinguished origins, including Europe, Malaysia, and China. The result is Green Air—innovative, high-tech, and state-of-the-art equipment designed for heating, ventilation, and air conditioning. With optimal component configuration and high performance, our Eurovent and AI-compliant products are paving the way for us to capture a significant market share.

Green Air boasts a diverse range of products, including DC inverter single splits and large-scale air conditioning solutions like inverter VRF systems, rooftop package units, FCUs, AHUs, and chillers. Our equipment is tailored to meet the needs of all market sectors, including made-to-order HVAC solutions that cater to the unique requirements of our customers. As we expand our product lineup, we are committed to incorporating the latest technologies, innovative designs, and competitive pricing.

Our mission is to address the ever-evolving challenges in the air-conditioning industry by providing environmentally friendly, energy-efficient, and sustainable solutions. We utilize cutting-edge, revolutionary
technology to offer a remarkable range of "Green Air" equipment, including Single Split DC Inverters, DC Inverter VRF Systems, Rooftop Package Units, FCUs, AHUs, and Chillers for residential, commercial, and industrial applications. Our energy-efficient solutions are designed to deliver peak performance and long-term benefits.

Our vision is to deliver groundbreaking energy-saving solutions that meet the challenges posed by Pakistan's current energy crisis. To achieve this, we have assembled a team of skilled and experienced professionals across engineering, sales, and marketing. Our values center on environmental stewardship and energy conservation. We are committed to preserving energy and reducing costs for our customers in an eco-friendly manner. By applying our expertise in sustainable technology and energy-saving solutions, we aim to enhance energy efficiency.

Recognizing the critical importance of environmental sustainability, we have introduced equipment that uses CFC-free refrigerants to fulfill our social responsibility. Whether you need a Rooftop Package System for your home or chillers for your facility, we guarantee outstanding, energy-efficient air conditioning solutions.

POWERFUL
COOLING AND HEATING

GAV-6+ full DC Inverter VRF system, use international famous compressor, DC motor, high-precision EXV and so on, thanks to all these high-technology, GAV-6+has the best cooling and heating performance.

- DC inverter compressor*
- DC inverter fan motor
- 36°C Three-stage supercooling technology*
- Intelligent inverter technology
- Double C high efficiency condenser
- High efficiency axial fan
- Air-cooled & refrigenant-cooled technology for main control board

* Note: Applicable to partial models

1.1 High-efficiency scroll DC inverter compressor with EVI*

Using new asymmetric scroll profile, reduce leakage loss, reduce ineffective suction overheating, more suitable for APF conditions, improving compressor efficiency.

1 *Enhanced vapor injection technology*

injecting part of the gaseous refrigerant into the compression chamber can greatly improve the low-temperature heating capacity and effectively reduce the exhaust temperature.

2 *Axial flexible design*

through the back pressure adjustment to achieve the axial floating of the moving disc, improve the overall reliability and performance of the compressor;

3 *High-reliability two-stage oil supply*

combined with centrifugal oil supply and differential pressure oil supply, to ensure the full lubrication of each friction under different speeds and different controls;

4 *Asymmetric vortex line*

select asymmetric line to effectively reduce overheating losses and leakage losses, and improve the efficiency of the unit;

5 *High efficiency centralized coil motor*

excellent groove design, to ensure the energy efficiency of each frequency;

6 *exhaust anti-reverse design*

exhaust valve adopts check valve to effectively prevent liquid compression and improve the reliability of working conditions with liquid;

7 *Multi-stage pressure relief pump*

dynamically adjust the intermediate pressure according to the operating conditions to prevent over-compression under low compression ratio and improve the operating efficiency of low load;

8 *High reliability bearing design*

all three bearings are PTFE coated plain bearings with low noise and vibration to ensure long-term reliability;

13 *Foreign body prevention technology*

oil pool filter, suction filter, enthalpy increase filter, all-round protection compressor, improve reliability.

12 *low fuel discharge and reduction design*

internal optimization of oil circuit circulation, local oil blocking design, to achieve low oil discharge rate;

11 *Select the material of the high-strengthpump body*

combined with the product design and use range, the strongest material is QT400 to ensure the reliability of the monomer;

10 *efficient oil film sealing design*

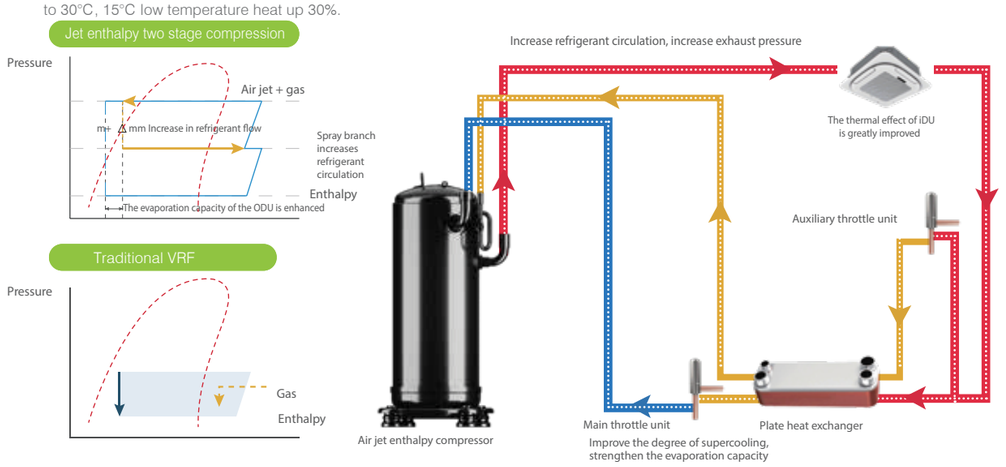
hydrodynamic lubrication, oil film sealing of the compression chamber, effectively reduce friction, improve performance and reliability;

9 *Large displacement combined with wide frequency range*

speed range 14~160rps, displacement up to 96cc, strong power, expand the scope of usage.

>> Double enthalpy of cooling and heating *

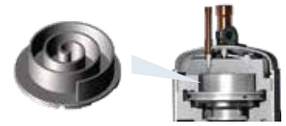
Through the double enthalpy increasing technology of refrigeration and heating, 56°C high temperature strong cooling and -30 °C low temperature strong heating are effectively realized.During refrigeration, when refrigerant enters indoor unit after long piping, the undercooling degree is low, and it is easy to produce refrigerant noise through the electronic expansion valve throttling. By opening the auxiliary valve and the plate to change the branch road, the refrigerant circulation quantity is increased, the system undercooling degree is improved, and the refrigerant flow sound is effectively suppressed.During heating, the outdoor environment temperature is lower, refrigerant low density, gas compressor suction side back to reduce, reduce the refrigerant circulation and heating performance. By spraying branch added gaseous refrigerant compressor middle pressure, thus increasing overall system refrigerant circulation, effectively improve the low temperature heating ability, realize stable run to 30°C, 15°C low temperature heat up 30%.



>> Asymmetric vortices

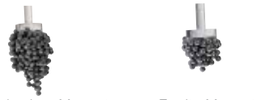
In view of the high pressure characteristics of R410A refrigerant, the compressor strengthens the bearing structure and adopts the design of asymmetric scroll disk, which has the following advantages over the symmetrical scroll disk:

Reduce refrigerant leakage and improve efficiency;
Two adjacent chambers have small pressure difference, small vibration and more mute;
Prevent over compression, prolong the service life of the compressor.



>> Motor rotor with neodymium magnetic material

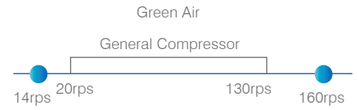
Neodymium, an artificial permanent magnet, is one of the strongest magnetic materials to date. The magnetic force of neodymium magnet is 10 times that of common ferrite magnet. Under the same volume, the electromagnetic field intensity is stronger, the starting torque is larger, and the operation efficiency is higher.



>> Large-displacement and ultra-wideband operation technology

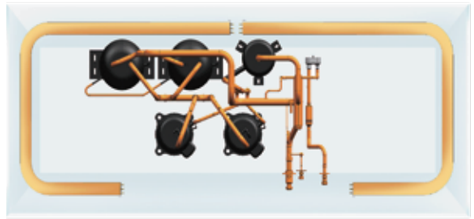
Displacement up to 96cc, far more than the ordinary compressor (displacement <96cc), the operation frequency of 14RPs-160rps, far more than the ordinary compressor 14rps-160rps, strong power, realizing fast refrigeration and heating.

* Note: Applicable to some models

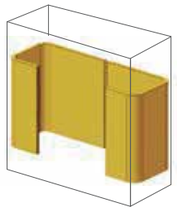


1.2 Double 'C' type heat exchanger

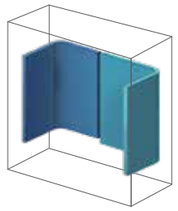
Double C-type compact super-large area heat exchanger, makes the heat exchange area larger, reduces the pressure loss of the heat exchanger, improves the efficiency of heat exchanger, and has higher efficiency when running under heavy load.



Note: The heat exchanger structure and fan diameter are determined by the specific model.



Double C Compact Large Area Heat Exchanger

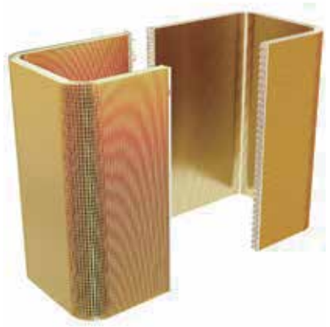


Common heat exchanger Ordinary Heat Exchanger

The new structural design further improves the matching of system partial load and reduces the floor area of the whole machine.

36HP occupies only 1.6055 ㎡, which is 21.4% less than the previous generation

Heat exchanger adopts the perfect combination of multi-coated hydrophilic aluminum foil heat exchange fins and high-efficiency internally threaded heat exchange copper tubes, which greatly improves the heat exchange efficiency and enhances the corrosion resistance and oxidation resistance of the heat exchanger.

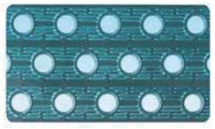


Φ7 Heat Exchange Copper Tube

Multiple rows of small-diameter heat exchange tubes, the tube spacing is smaller, and the number of copper tubes used in the same lengthis more, which effectively increases the heat exchange area of the heat exchanger and improves the heat exchange efficiency of the heat exchanger

Internally threaded copper tubes

The inner surface of the internally threaded copper pipe is designed with a groove, which increases the contact area with the refrigerant, so that the heat exchange performance and thermal conductivity of the heat exchanger are better



Hydrophilic aluminum fin

The condensed water will spread out quickly on the hydrophilic aluminum foil without condensing into water droplets, increasing the heat exchange area, speeding up the cooling and heating speed, and effectively avoiding the noise caused by the condensed water obstructing the air flow

Lubricating layer
Destroy the surface tension of water droplets, accelerate the downstream speed of condensed water or defrosting water, and improve the air conditioning capacity

Hydrophilic coating
Ensure that the air conditioner is not easy to form frost when heating

Corrosion resistant coating
Slow down the corrosion of corrosive gas to the heat exchanger

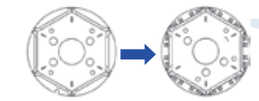
Fins

1.3 High voltage (concentrated coil) DC motor

The outdoor unit fan motor adopts a high-voltage centralized winding DC motor, which has a more stable and reliable output, effectively reduces losses and improves operating efficiency.

Concentrated coil motor

Reduced coil height, reduced copper loss, higher efficiency in low and medium speed zones, and higher APF energy efficiency.



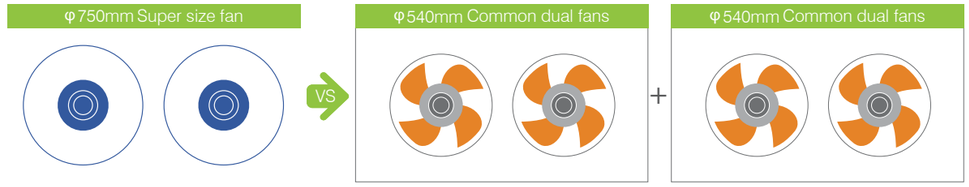
The original rotor The new rotor

Neodymium magneto rotor

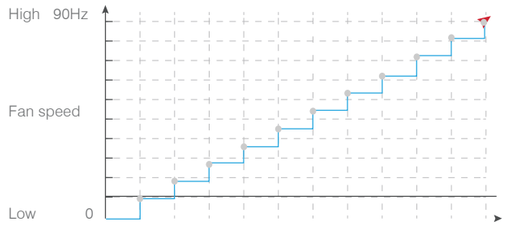
Improve motor efficiency
And reduce motor noise

1.4 750mm Large size axial fow fan

The outdoor unit fan adopts φ750mm super-size wind wheel, compared with ordinary air conditioner φ540mm dual fans, it has sufficient air volume, higher heat exchange efficiency and lower noise.



The fan is steplessly adjusted according to environmental conditions and air-conditioning load conditions, and is matched with the compressor's stepless frequency conversion technology, so that the system runs more stable and reliable.



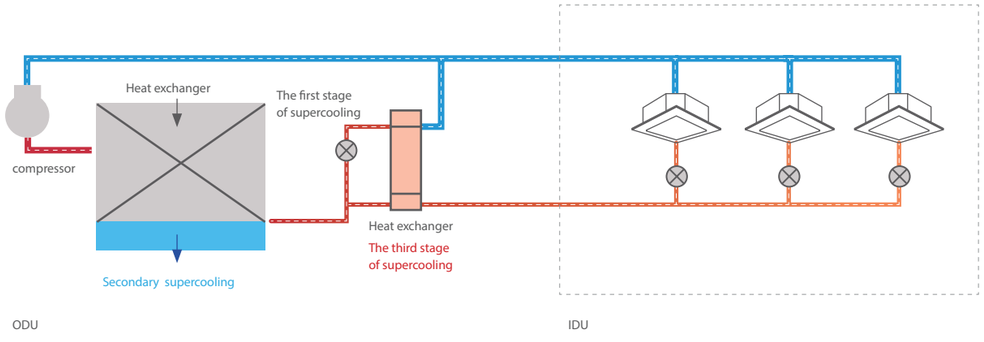
Stepless speed regulation Average speed

1.Accurately adjust the refrigerant pressure to improve the reliability of the unit;

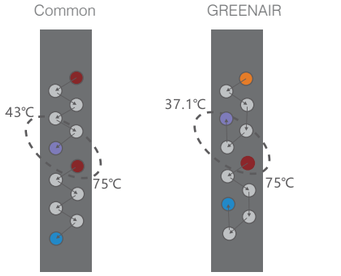
2. The motor speed is adjusted quickly to better adapt to the rapid changes in air-conditioning load.

1.5 3-Stage sub-cooling technology to achieve 36 °C sub-cooling

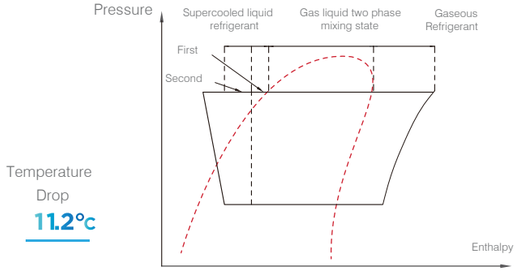
Optimize the design of heat exchanger and flow path to improve heat exchange effect.The 3-stage sub-cooling cycle increases the refrigeration capacity of the unit mass refrigerant , reduces the flow resistance of the refrigerant in the pipe; the electronic expansion valve has more precise control and more stable operation.



When the outdoor environment is 35 °C, the outlet refrigerant of the heat exchanger is cooled to 37.1 and the primary and secondary supercooling can achieve degree of 11.2 °C .



Refrigerant cooling temperature at 35 °C

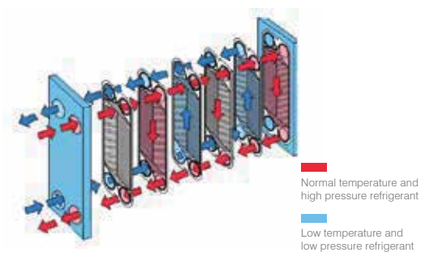


Condenser ＋ supercooler

The high-efficiency plate heat exchanger is selected as the secondary subcooler to further cool the refrigerant at 37.1°C to achieve subcooling at 36°C, further reducing the flow resistance of the refrigerant, which is conducive to improving the energy efficiency of the system and increasing the lengthof piping, while improving the cooling and heating effects And system reliability.

* Note: Applicable to some models

Plate heat exchanger



Schematic diagram of plate heat exchangercirculation

1.6 Intelligent Inverter

The unit uses multiple sets of high-precision, high-efficiency and high-reliability intelligent inverters to control the compressor and fan motors, making the control more flexible, efficient and intelligent.

Intelligent inverter

1) It can effectively reduce high-order harmonic components, motor vibration, torque fluctuation and noise;

2) It can ensure the smooth start of the compressor, reduce the starting current of the compressor, and reduce the impact on the power grid; increase the operating frequency range of the compressor;

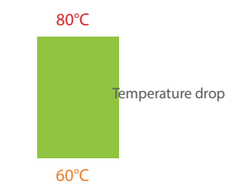
3) Ultra-wide voltage operating range, stable operation within the three-phase 243V-460V voltage range;

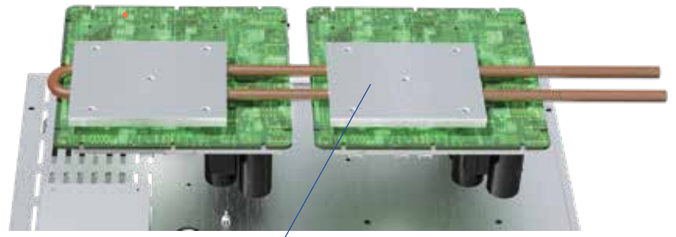
4) It has multiple protection functions such as undervoltage, overvoltage, overcurrent, and overtemperature to ensure the efficient and reliable operation of the system.

1.7 Surrounding refrigerant cooling technology

The outdoor unit's inverter module is cooled by refrigerant to ensure that the inverter module can be effectively cooled in a high-temperature environment, reduce the working temperature of the frequency conversion module, and improve the reliability and service life of the electronic control system. It also prevents poor heat dissipation under extreme conditions, such as due to the periodic stop of the fan.

Electric control system



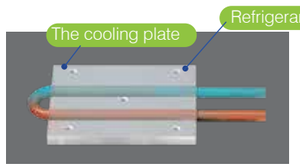


Air cooling heat dissipation

Through the fan (fan) to strengthen the ventilation, strengthen the cooling effect, to maintain stable and reliable system operation.

Refrigerant radiator

The wraparound refrigerant radiator can stably and efficiently take away the heat in the frequency conversion module of outdoor unit, improve the electrical reliability of the unit when working in high temperature environment, and ensure stable and safe operation.



The heat dissipation plate is fitted 360° tightly with the refrigerant tube, effectively reducing the contact thermal resistance between the copper tube and the heat dissipation plate, and the heat dissipation performance is superior.

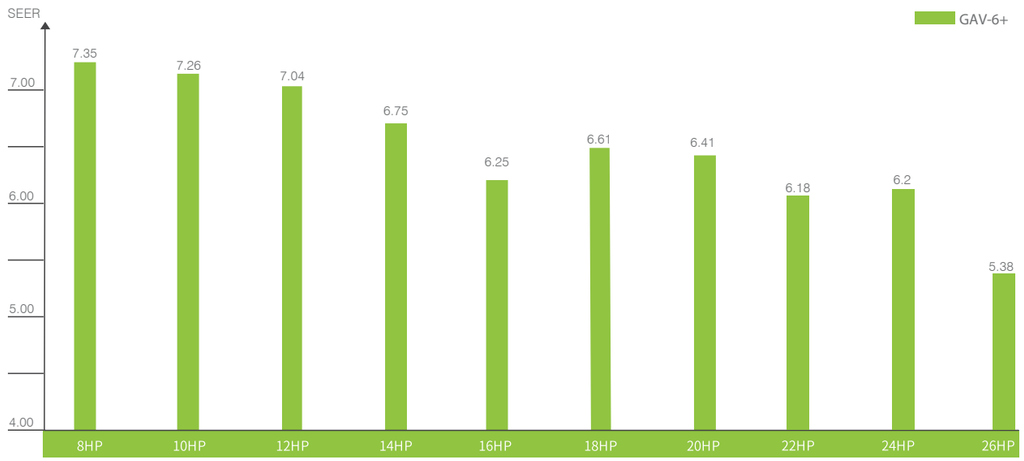
HIGH EFFICIENT ENERGY-SAVING AND ENVIRONMENTAL FRIENDLY

The global climate is facing severe challenges, in order to achieve the "dual carbon" goal, it has become an urgent issue for enterprises to control carbon emissions effectively, improve energy efficiency and reduce energy consumption. GAV-6+ CAC follows the product design concept of high efficiency, energy saving and low carbon, use high-quality components of efficient refrigeration and leading refrigerating technology, to achieve building air-conditioning systems Integrate the goal of green, reliable and efficient energy management.

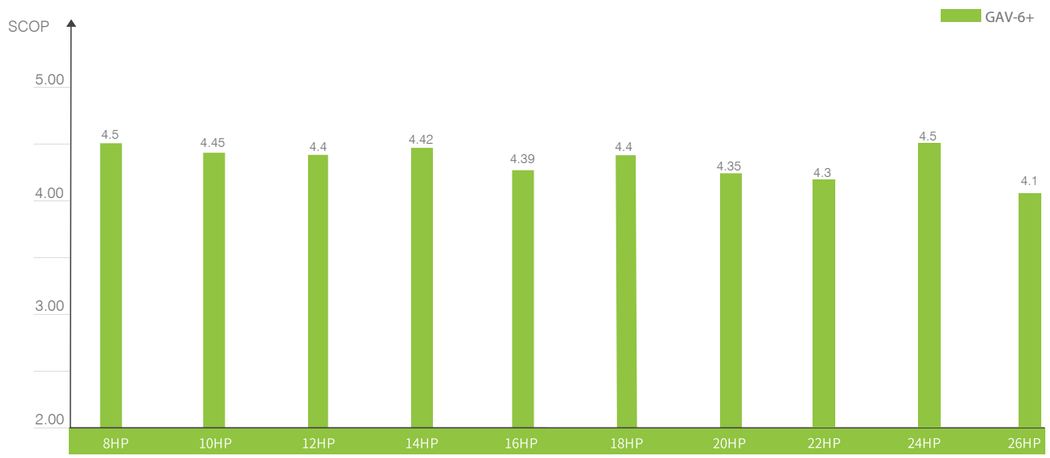
- ODU standby mode
- "DISO" loop design
- Stepless inverter technology
- RoHS certification
- High energy-efficient compressor
- R410A refrigerant
- Variable evaporating/condensing temperature adjustment technology

2.1 SEER

GAV-6+ full DC inverter intelligent VRF product, its seasonal energy efficiency ratio is up to 7.35, seasonal coefficient of energy is up to 4.5



2.2 SCOP



2.3 Authoritative attestation

The GAV-6+ series full inverter VRF units, through the compressor core frequency conversion technology upgrade, the overall optimization of the refrigeration system and the control system, makes the unit energy-saving performance even better, and has passed the national first-level energy efficiency standard certification.

2.4 DC inverter scroll compressor*

The DC variable frequency compressor adopts an asymmetric scroll structure to effectively reduce the leakage loss of refrigerant gas during suction and inside the compression chamber, to improve the efficiency and reliability of compressor operation.

Optimized asymmetric vortex line

Using new type of asymmetric scroll profile can reduce leakage loss and ineffective suction overheating, which is more suitable for APF conditions and improves compressor efficiency.

Concentrated winding motor

The coil height of the concentrated winding motor is reduced, the copper loss is less the efficiency is higher in the middle and low speed areas, and it is more suitable for APF conditions.

Suction directly

Small suction preheating, high volume efficiency

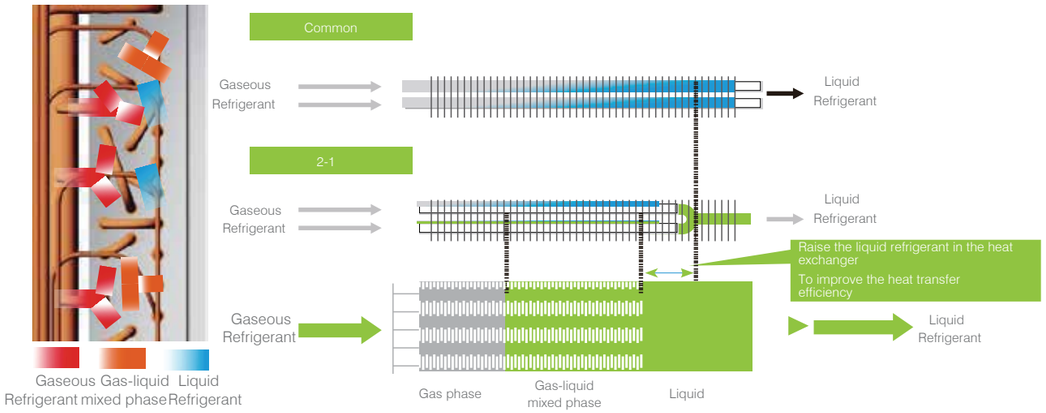
Intermediate pressure servo mechanism

The intermediate pressure is dynamically adjusted according to the operating pressure to achieve axial flexibility, optimize the orbiting and fixed scroll teeth, and improve product performance.

*Note: EVI compressor is optional

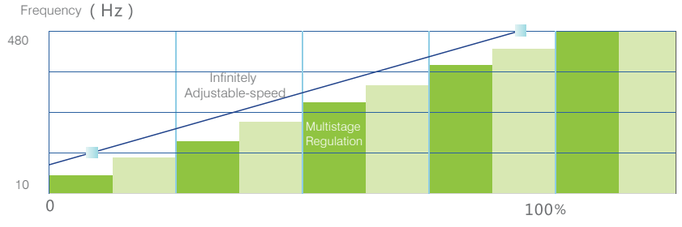
2.5 High efficiency "2-1" refrigerant flow

Compared with gaseous refrigerant and liquid refrigerant, gas-liquid mixed phase refrigerant has higher heat exchange efficiency. This circuit can not only increase the amount of liquid refrigerant but also increase the flow rate of the refrigerant and increase the heat exchange efficiency.

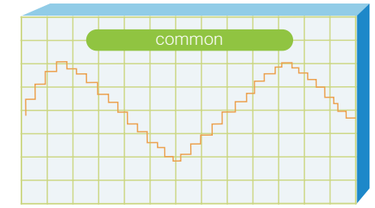


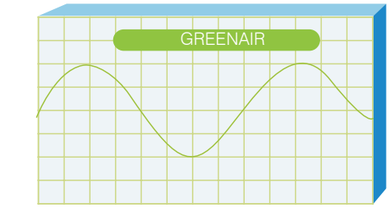
2.6 0 ～ 480Hz stepless frequency adjustment

- The operating speed of the DC inverter compressor can be adjusted continuously and freely according to the change of the system capacity. The accuracy is higher, the stepless frequency conversion is realized, and the sub-adaptive control technology is combined, and the capacity output is automatically adjusted according to the actual control load to ensure a higher level of accuracy. Smooth change curve to meet higher demands for comfort. Greenair 's GAV-6+ can only use broadband compressors and powerful inverter control motherboards for multiple connections. The compressors operate at 0-480Hz broadband, which has more capacity and can better cope with various complex and harsh extreme conditions.
- The unit has industry-leading EER and Integrated Part Load Value IPLV (C)



- The compressor adopts 180° sine wave vector drive technology, which can obtain an ideal smooth sine wave curve, so that the motor runs smoothly, the electric energy efficiency is higher, and the harsh sound is reduced.
- Vector control technology effectively suppresses high magnetic harmonic current and electromagnetic noise, and has passed the national EMC electromagnetic interference test





2.7 Four seasons energy-saving mode

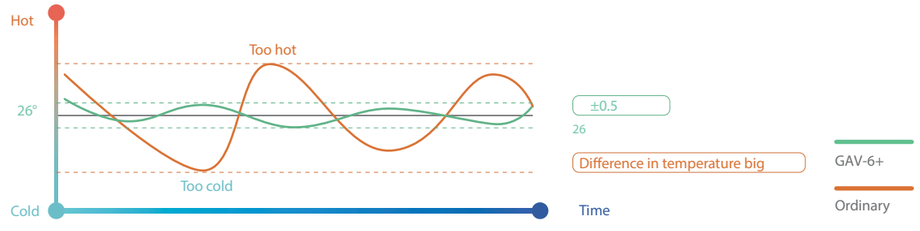
- Select the automatic energy-saving mode, the system optimizes output according to changes in ambient temperature, realizes automatic control of energy-saving in all seasons, and improves the overall energy efficiency of the unit's all-season operation.

2.8 ODU standby mode

- When there is no need for cooling and heating indoors, the control system issues a command to cut off the power supply of the outdoor heating and power devices of the electric control module. The standby power of the outdoor unit is as low , which is low-consumption and energy-saving.

2.9 Variable evaporating/condensing temperature regulation technology

- The self-adaptive adjustment of evaporating and condensing temperature can ensure that when the air conditioner is running, the refrigerant flow can be accurately controlled according to the demand, and the evaporating/condensing temperature can be automatically adjusted to reduce temperature fluctuation, to achieve the effect of energy saving and constant temperature.



2.10 Multi-priority modes, VIP priority service

- The GAV-6+ system can be set with a variety of operating modes, cooling only/heating only/cooling priority/heating priority/VIP priority/first opening priority to prevent mode conflict.

Response only coolong | Respond only heating | Cooling priority | Heating priority | VIP priority

2.11 R410A High-efficiency environmentally friendly refrigerant

- R410A is an HFC refrigerant that does not damage the ozone layer. Using R410A can increase the COP and protect the ozone layer. It is an efficient and environmental- friendly refrigerant.
- R410A is non-toxic and is a "non-flammable refrigerant".

2.12 RoHS Certification

- GAV-6+ full inverter VRF unit is highly efficient and environmentally friendly. Seiko builds global quality and has passed EU RoHS certification.

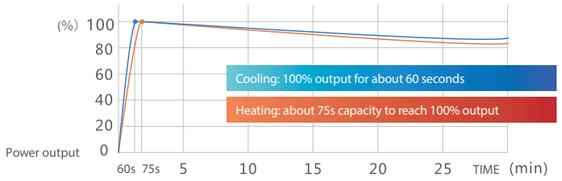
COMFORTABLE AND HEALTHY ENVIRONMENT

People's demand for a healthy air environment is constantly escalating. The improvement of air quality in buildings is more and more important. Greenair intelligent VRF has been seeking technical innovation to provide people with a comfortable and clean, healthy air environment to build people's high-quality life.

- Extreme fast cooling and heating
- Constant temperature
- Silent-mode
- Comfortable soft wind
- Fresh air
- Auto restart function
- Intelligent defrost technology

3.1 Fast cooling and heating

GAV-6+ VRF adopts a large-capacity DC inverter compressor which can start the unit quickly and achieve a super cooling and heating capacity output, to provide a comfortable room environment.



3.2 Constant temperature

Multiple sensors detect the real time temperature of the system to make sure the indoor temperature fluctuation within ±0.5°C.

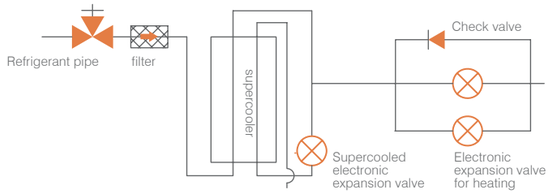
Multi-electronic expansion valves

The outdoor unit has multiple electronic expansion valves with a control accuracy up to 3000 level, which can adjust the refrigerant circulation and control the compressor overheat accurately to get a precise temperature control.

Electronic expansion valve

High control accuracy

3000 Level



High-precision temperature sensor

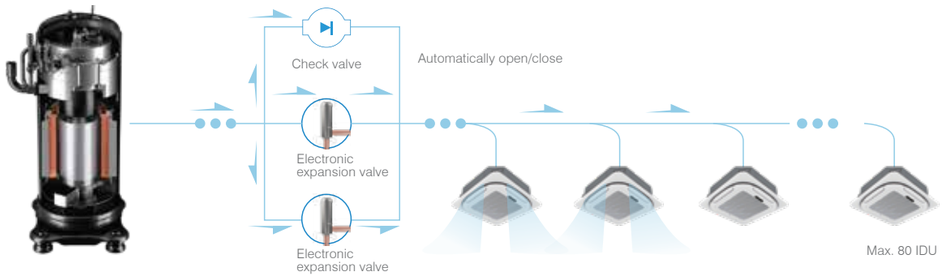
Can detect accurate temperature with precision 0.5°C

Dual pressure sensors

High precision and sensitivity can detect the temperature fluctuation quickly and accurately.

Refrigerant liquid by-pass technology

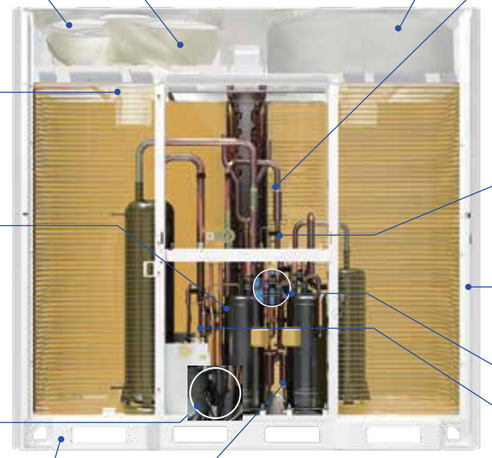
This technology is mainly used to increase the refrigerant flow and improve the cooling effect when the indoor side refrigerant flow is insufficient.



3.3 Multiple silence technology

13 items of silent improvments

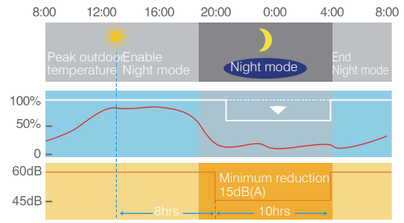
The structure of each component is involved in optimized airflow analysis, which can not only operate with low noise, but also ensure the air volume and operation effect of the outdoor unit.



1. **Air outlet grill**
   Higher air volume, less noise and vibration
2. **Inverter fan motor**
   Stepless fan speed control with less vibration design.
3. **Lower noise scroll** compressor
   New designed compressor with less vibration and low noise.
4. **Double-layer insulation** for compressor.
5. **3D simulation chassis design**
   3D simulation design with less noise and vibration.
6. **3D simulation pipe design**
   The upgraded pipe system design reduce pipe system vibration at most.
7. **Refrigerant flow noise silencing treatment**
8. **Jet silencer design**
9. **The metal panels have stronger strengthto reduce noise**
10. **Rubber pads fix the pipes**
    Reduce pipeline structure noise and vibration
11. **Sub-cooling technology**
    Sub cooling design can reach to 36°Cof the refrigerant temperature to reduce the noise of the piping system
12. **New design of wind guide**
    Built-in air guide design reduce air resistance and reduce noise effectively
13. **Fan blade design**
    Adopt 4 biger size fan blades and CFD simulation design to get bigger air volume, reduce the noise.

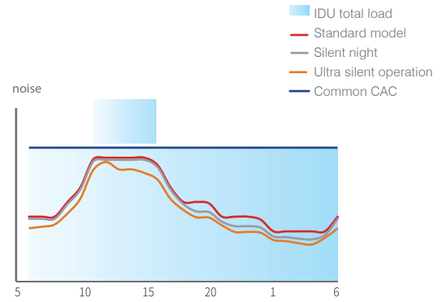
Night silent mode

The ODU can automatically check the highest ambient temperature and record the time,then to start the silent operation mode after 8 hours, system returns to the normal mode after running for 10 hours. To make the ODU running noise to as low as 45dB(A).



Super silent mode

In this mode, the running noise of the system will be reduced to be 40dB(A).



3.4 Fresh air solution

- Greenair VRF can supply the multiple fresh air solutions such as fresh air processing units , ERV and air handing units etc.

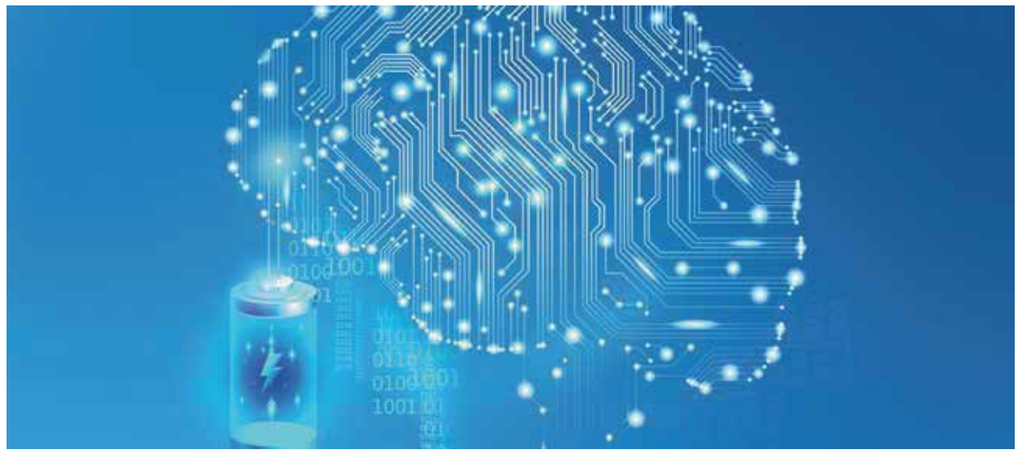
3.4 Comfortable soft wind panel

- The upgraded panels have a beautiful apperance and provide comfortable air supply .

3.6 Intelligent auto-restart function

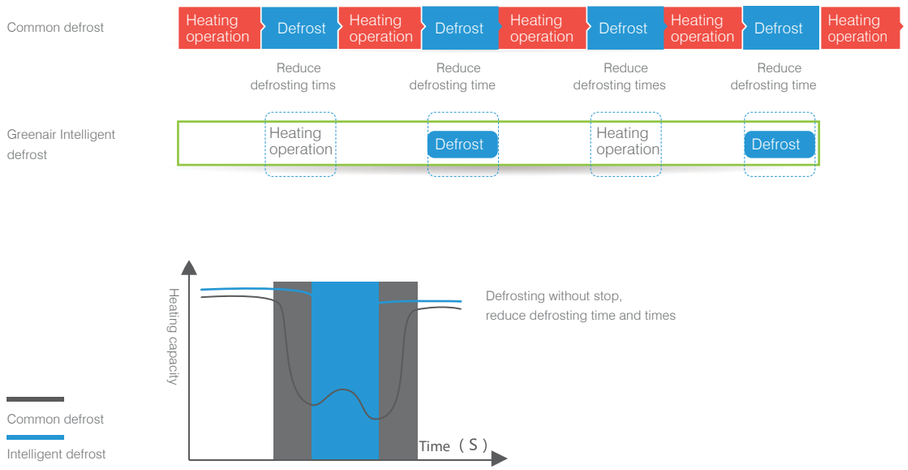
- When a sudden power failure occurs, system will automatically store the state of the machine before the power failure. When the machine is restarted, the system will automatically restart with the settings before the power failure (operation mode, set temperature, fan speed, etc.

Note: This function can also start manually



3.7 Intelligent defrost technology

- The system can automatically decide the time to defrost according to the operation data and heating capacity.
- Under high humidity condition, the system will defrost in advance to keep the room comfortable.
- During defrosting, the system will close the indoor to avoid the cold air .



INTELLIGENT - OPERATION AND MAINTENANCE CONTROL

Greenair full DC inverter VRF systems can provide the intelligent operation and maintenance functions, which provides an efficient solution for the intelligent operation and maintenance of buildings, It ensures energy-saving and high-efficient operation and intelligent management.

- Non-polar CAN bus communication technology
- Multiple control solutions
- Greenair remote intelligent service center
- Greenair CAC management system
- BMS gateways
- AHU connection kit

4.1 Intelligent Control

Smart commissioning

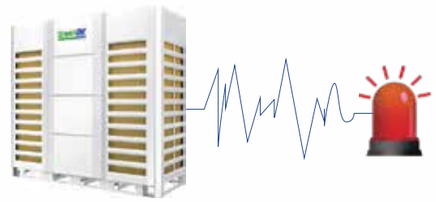
During installation, the system automatically detects the number of indoor and outdoor units, communication link status, and real-time feedback of installation abnormalities, making installation simple and easy.

Intelligent detection

When the equipment is running, the system record the best running status intelligently . And it will adjust the compressor frequency and the step of the EXV for next time automatically .

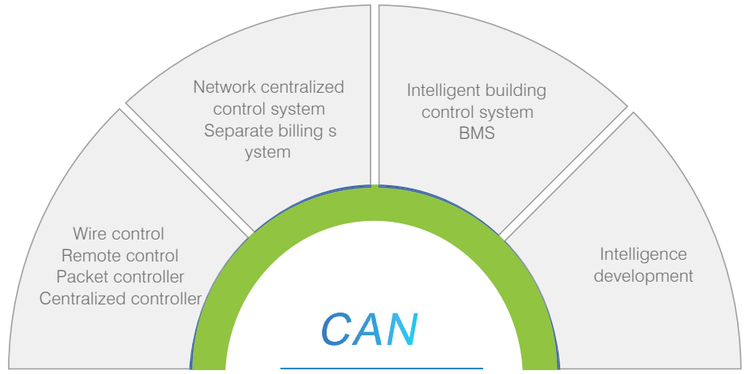
Smart detection

During system operation, data will be recorded , abnormalities will be automatically detected and raised.



4.2 Non-polar CAN bus communication technology

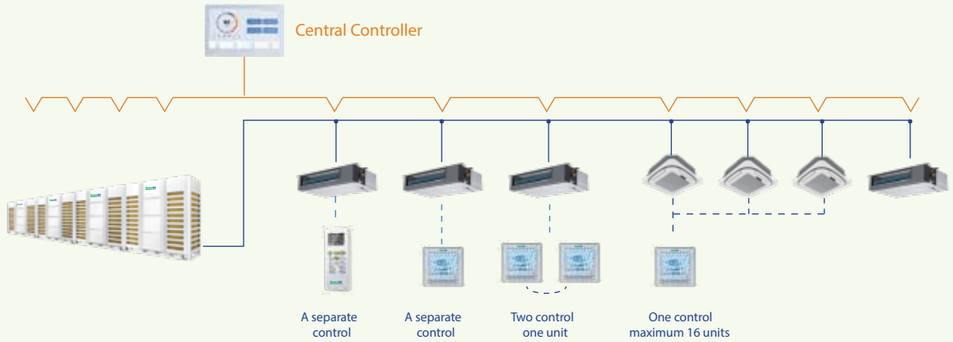
GAV-6+ adopts CAN bus communication technology, which is a communication technology applied in the field of automobile and military industry.



	GAV-6+ VRF(CAN communication)	Other similar products in the industry(RS 485 communication)
Reliability	High reliability and stable network	The reliability is unstable and easy to be paralyzed
Communication efficiency	Up to 100kbs	About 10kbs
Communication distance	About 2000m	About 1000m
Communication line polarity	No polarity, easy to debug	Polarities need to be distinguished for installation
Scalability	Easy to plug and play	To add new device, the software must be changed, and the scalability is poor

4.3 Multiple control solutions

GAV-6+ provides a variety control solutions for customers to choose .



Remote Controller

· Cooling / dehumidification / fan / heating / automatic and other operation settings
· Temperature / fan speed setting
· Sleep/timer/swing/turbo and other functions

Wired Controller

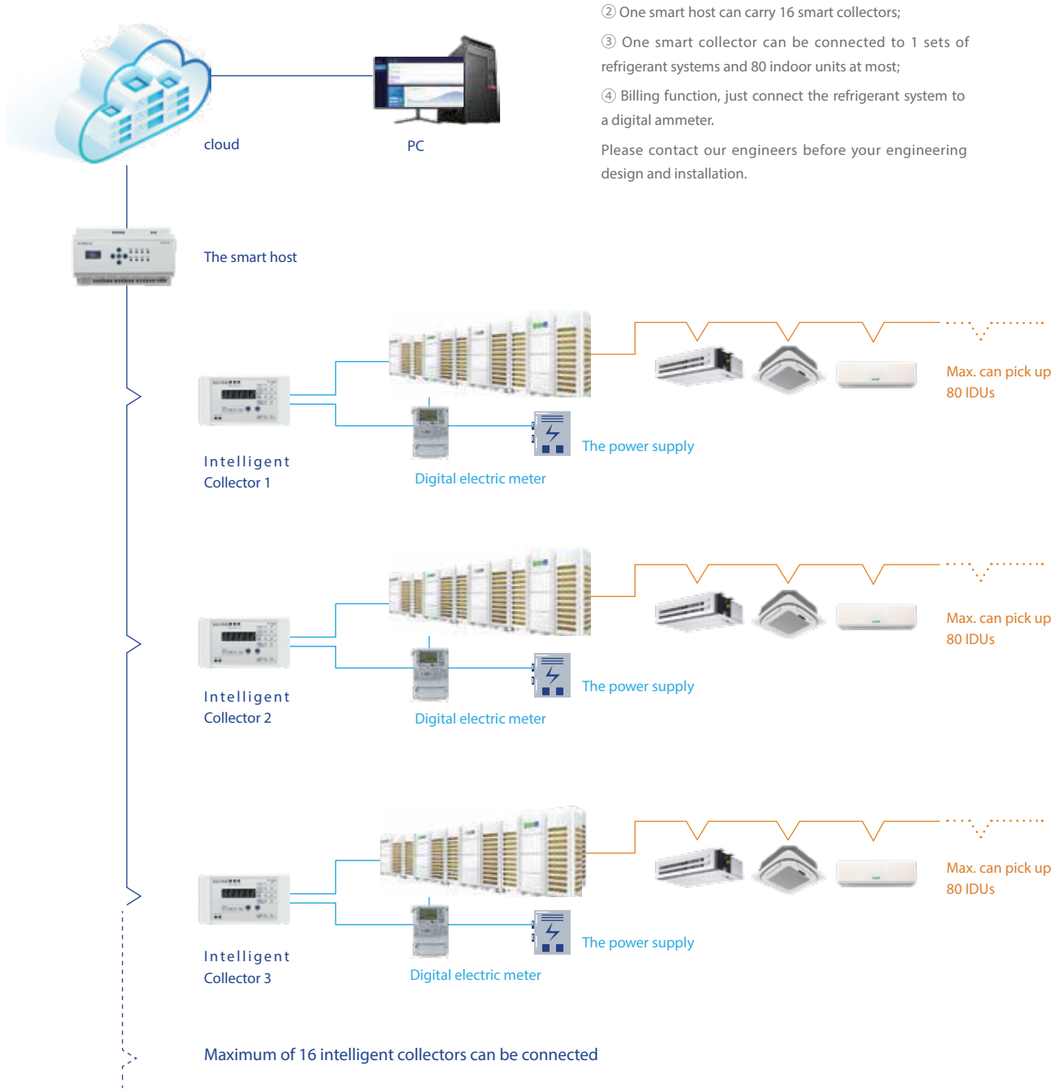
· Cooling / dehumidification / fan / heating / automatic and other operation settings
· Temperature / fan speed setting
· Sleep/timer/swing/turbo and other function settings
· Monitoring function, big LCD screen displays the operation status of the unit
· Remote control signal available

Central Controller

· 7 inches and colorful screen display, beautiful appearance, touch screem, easy operation.
· A variety of combinations, single or multiple machines can be operated simultaneously.
· Up to 16 systems and 180 indoor units can be connected, easy to set indoor units parameters.
· It also has the schedule setting and historical fault query function.

4.4 Green Air Management System

GreenAir VRF system adopts the CAN bus communication technology. It connects indoor units with the computer through a network converter, to provide centralized and smart control of the whole systems.



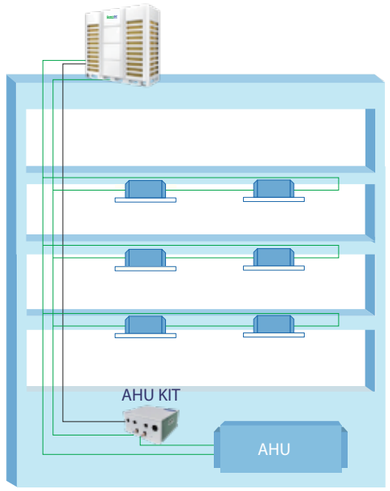
① One software can connect up to 1280 indoor units;
② One smart host can carry 16 smart collectors;
③ One smart collector can be connected to 1 sets of refrigerant systems and 80 indoor units at most;
④ Billing function, just connect the refrigerant system to a digital ammeter.

Please contact our engineers before your engineering design and installation.

Maximum of 16 intelligent collectors can be connected

Solution to extend Greenair VRF technology to third party Air Handling Units.

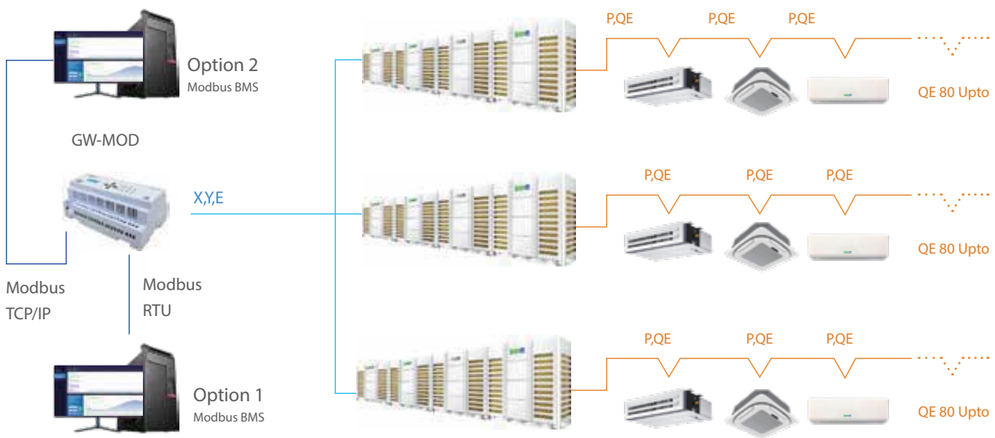
√ Easy for connecting to third party AHU
√ Setting capacity by DIP
√ Remoter or wire controller can be chosen
√ 3 steps fan motor speed, Low/Mid/High
√ Error status: No error or error occurred



Communication wire

Refrigerant pipe

Type	Model Name	Capacity	Pipe dimension	Combination				Description
				ODU	Motor	Pump	Warning signal	
Communication Kit	GAV-6+AK1	8-20Kw	Φ7.94	GAV-6+	√	√	√	Room air supply by remote controller or wiring controller
	GAV-6+AK2	20-40Kw	Φ12.7		√	√	√	
	GAV-6+AK2	40-65Kw	Φ15.88		√	√	√	



① It can store six-month household billing datas, electricity bill query and other functions, users can check and print the bills of each indoor unit.

② Maximum 16 refrigerant systems, 32 ammeters, 1280 indoor units can be connected.

③ Auto searching indoor and outdoor units in the system.

④ Users can set billing parameters for different time periods according to the peaks and valleys.

⑤ The air-conditioning system of the arrear user can be locked.

① Real-time monitor the operating conditions of indoor and outdoor units.

② It can monitor and control up to 1280 indoor units, with single, group, and central control.

③ The indoor and outdoor units can be configured according to the actual requirement.

① With monthly/weekly/daily timer and exception date (specified by the user) , the user can control the indoor unit according to personal plans.

② Single or group IDUs can be controlled according to the final user requirement.

① System operation data and system failure can be recorded and analized;

② Operation log will record the user operations.

Connected and controlled with hotel key card, the air conditioner can be automatically powered on/off when guests inserts or pulls out the key card.

When insert the key card, air conditioner will start automatically.

When power off, the air conditioners in other rooms can continue to work, even under same system.

STABLE AND RELIABLE PERFORMANCE

Greenair has always insisted on making high-quality products relying on advanced manufacturing equipments and deep technical accumulation. Excellent performance guarantees the stability operation.

GreenAir VRF can make sure stable and high-efficient operation facing the complex and changeable working conditions.

- Inverter module cooling protection technology
- Six levels oil return technology
- High precision refrigerant control technology
- - 30 ° C ~ 56 ° C Ultra wide operating temperature range
- Pressure self-regulating technology
- 3 Triple backup function
- Rotation function
- Multiple protections

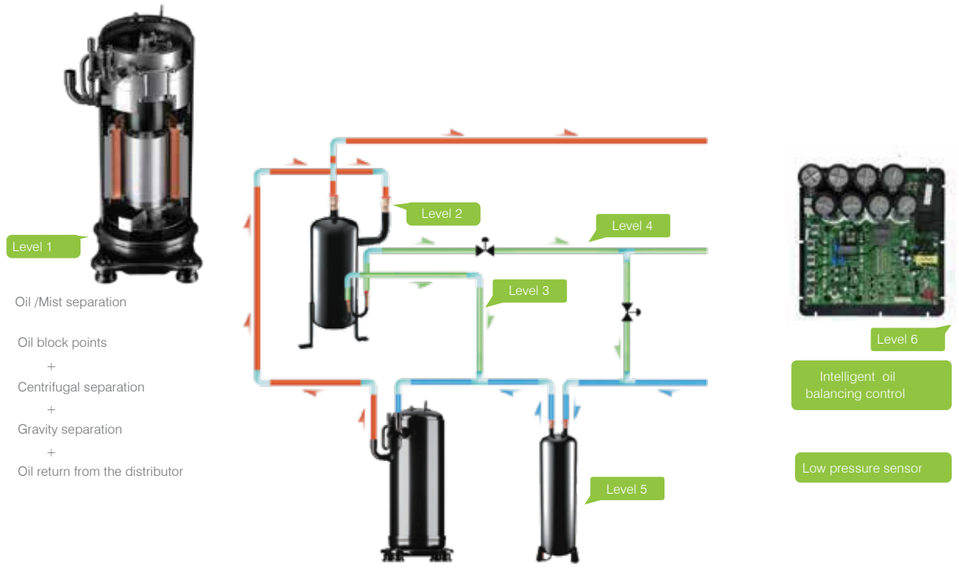
5.1 6- Stage oil return technology

GAV-6+ is at the leading position on the oil separate, oil return, oil balance and storage technology. The oil system equipped with precise 6 grade management to make sure compressor safety, stability and reliability.

Multistage Oil Control Technology

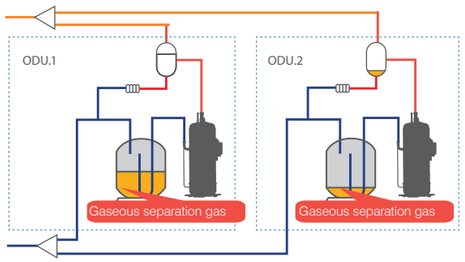
The VRF system have sufficient and balanced oil in working condition to ensure safety and avoid potential oil shortages.

Level 1: Compressor internal oil separate
Level 2: Compressor external oil separate
Level 3: High-efficiency centrifugal oil separator
Level 4: Oil balance pipes between compressors to ensure compressors running normally
Level 5: Automatic oil balance system improves the compressor reliability
Level 6: Smart oil return program to ensure the oil return completely



Automatic oil balancing

Oil balancing system improves compressor oil storage and reliability, which also ensures the unit in good performance in cooling / heating mode.



5.2 Inverter module cooling protection

When the outdoor units are running,high temperature will decrease the compressor frequency, reduce the cooling capacity, and shorten the life time.
Traditional air-cooled method can make high thermal conductivity and worse heat dissipation performance, but Greenair module cooling technology can eliminate the heat of PCB, reduce the working temperature of inverter module and improve the PCB system reliability.

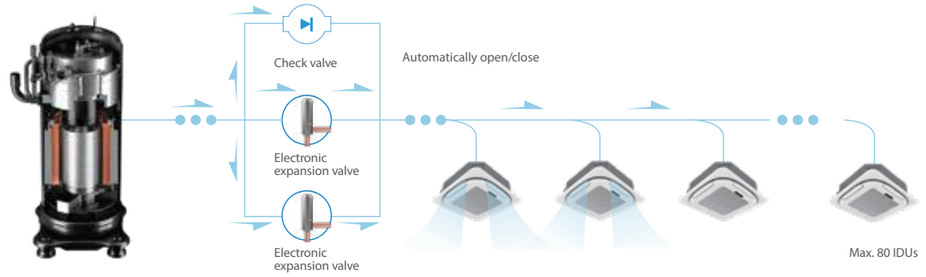
It can help take away the heat of the electric control box, improve the electrical component's reliability when working in a high-temperature environment, and ensure the system stable and safe.

Good structure design between radiator and refrigerant tube, help to reduce the heat resistance very well, to ensure better cooling for PCB.

5.3 High precision refrigerant control function

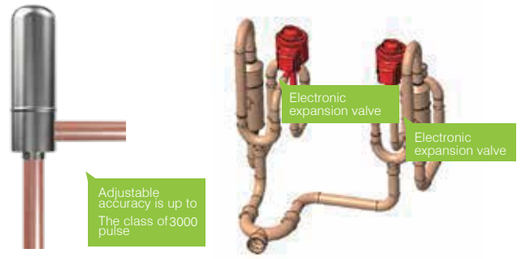
The upgraded technology allows the system to manage the volume of refrigerant,and also reduct the refrigerant in entire system and increase efficiency.

Liquid bypass control technology use multi-electronic expansion valve, it can adjust the refrigerant flow and control the overheating degree of the compressor, ensure the compressor to be highly efficient, safety and reliable.



Dual electronic expansion valve used for outdoor unit, adjust accuracy can reach 3000 pulses, can adjust the refrigerant flow for the whole system.

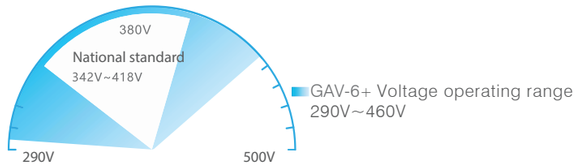
Silent electronic expansion valve used for indoor unit, precisely control refrigerant flow, improve the comfort and reliability.



* Note: General adjustment is 480 level, can be customized to 3000 level adjustment

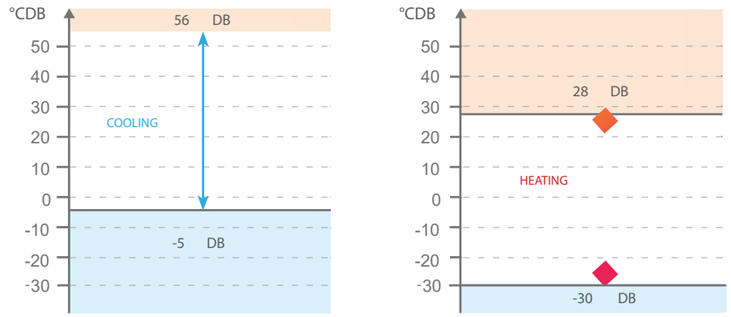
5.4 Wide voltage range

The unit can operate in the range of voltage 290V～460V (International standard voltage 380V±10%),satisfy all kinds of voltage conditions.



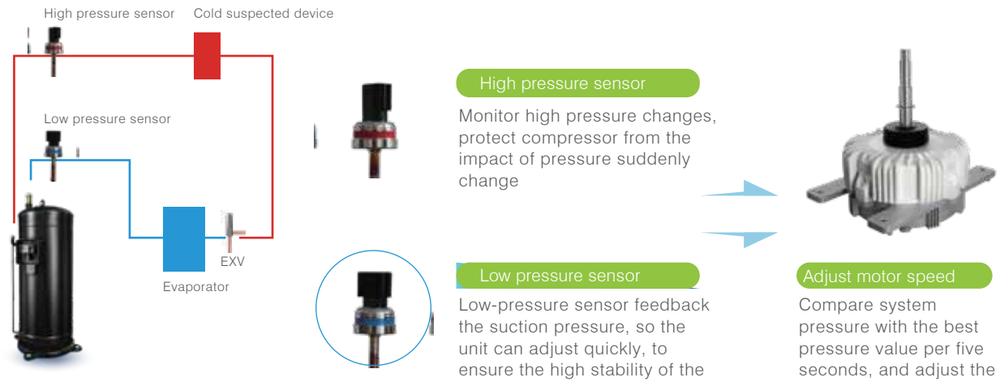
5.5 Wide operation temperature range -30

Wide operation range, cooling:-5℃ ～56℃ heating: -30℃ ～28℃



5.6 Pressure self-adjustment technology

Pressure sensor is used to check system pressure, and adjust compressor operation frequency, fan speed, electronic expansion valve, to ensure the system with the best performance



High pressure sensor

Monitor high pressure changes, protect compressor from the impact of pressure suddenly change

Low pressure sensor

Low-pressure sensor feedback the suction pressure, so the unit can adjust quickly, to ensure the high stability of the system.

Adjust motor speed

Compare system pressure with the best pressure value per five seconds, and adjust the motor speed in time.

5.7 Triple back-up operation technology

Compressor backup operation

In units with two compressors, if one compressor fails, the other compressor can run on its own, to ensure the air conditioning system can work stably.

Running state
Standby
Failure or shutdown status

Running state

Emergency operation

Emergency operation of fan motor

Some outdoor units are designed with dual fan, if the one fan motor fails, the other motor also can work normally, to avoid impact consumer's work and life.

The normal operation
The fault

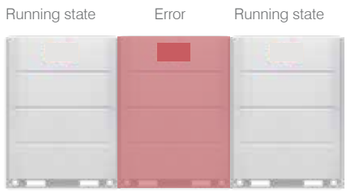
The normal operation

Emergency operation

ODU backup operation

In a multi-unit system, if one outdoor unit fails, the other modules provide backup so that the system can continue operating.

Running state



Emergency operation

5.8 Rotation operation technology

If the system is connected to multiple modules, in order to ensure the balance of compressor operation, the automatic control of the microprocessor on the host can realize the automatic rotation operation function between the modules, effectively extend the service life of the unit.

5.9 Multiple protection functions

Multiple protection functions to ensure the safe operation of the system.

Anti-adversity function

The external force blows the outdoor unit fan to rotate in reverse. At this time, start and stop the rotation of the fan, and then restart the fan motor in a forward rotation according to the normal procedure, so as not to damage the fan blades due to excessive starting current.

Often gauge

An external force causes the fan to rotate in the opposite direction

Instant reverse rotation, torque suddenly increased, easy to cause fan blade damage

Against the wind

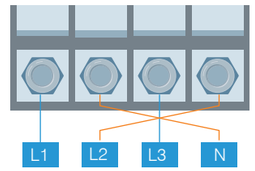
An external force causes the fan to rotate in the opposite direction

Start the unit and stop running

Positive rotation, low starting torque, protect the fan blade

Phase sequence protection

When the power cord of the outdoor unit is connected incorrectly, the circuit will start self-protection to avoid impact and damage to the main control board, inverter module and compressor. Ensure the normal operation of the air conditioner, without accidental electrical damage, fire, etc.



Low voltage recognition function

Automatically recognize the working voltage, when the voltage is too low, give an early warning in time, and control the power consumption and capacity output of the multi-line system through the corresponding limit frequency.

Lightning protection

The outdoor unit has a built-in anti-seismic module, which has anti-seismic and anti-interference functions to ensure the safe and stable operation of the system in bad weather.

Compressor overload protection

When the compressor casing or motor temperature is too high, the circuit will automatically cut off to prevent the compressor from overloading and cause electrical damage, fire, etc.

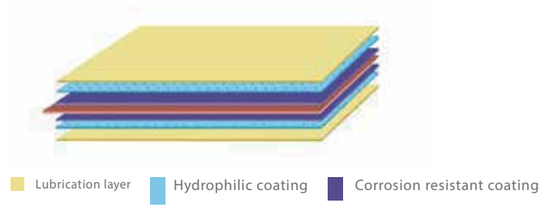
Motor overheating protection

When the current exceeds the set value, the temperature will rise, and the motor will be cut off in time during overcurrent operation to protect the motor from burning due to overload.

5.10 Anticorrosion design

Hydrophilic aluminum fin

It adopts anti-corrosion and anti-oxidation hydrophilic aluminum foil heat exchange fins, which have multiple protections of lubricating coating, hydrophilic coating and corrosion-resistant coating.



Thick sheet metal design

The surface of the sheet metal parts is phosphated and coated with special anti-corrosion materials. It improves the salt spray resistance and heat and humidity resistance, and greatly improves the anti-corrosion ability of the sheet metal.

Special corrosion-resistant coil

Use special anti-corrosion coils. The base layer of ordinary galvanized sheet is increased with electrophoretic layer to achieve anti-corrosion effect. The coil fixing screws are stainless steel screws.

Motor protection upgrade

Improve the protection level of the motor. The motor shaft is made of stainless steel. During the installation process, the motor shaft, nuts, gaskets and exposed motor shaft are coated with anti-rust grease, and the motor body screws and top cover screws are coated with silicone grease.

Electric control anti-corrosion

The main board is equipped with moisture-proof glue, the sheet metal surface of the electric control box is treated with anti-corrosion spray, and the top of the metal casing fan capacitor is sprayed with anti-corrosion paint separately.

Fastener

The nails, nuts and washers are made of stainless steel or high anti-corrosion materials, and the screw heads inside the machine and outside the electric control box are coated with silicone grease for anti-corrosion.

Pressure vessel

It adopts surface phosphating treatment with good anti-corrosion performance.

Copper pipe weld

Anticorrosive paint is sprayed on the welded joints of copper pipes.

5.11 Electronic control board SMT placement technology

The electronic control main board adopts SMT patch sealing technology to improve the anti-clutter interference, to ensure that the main board is not affected by wind, sand, high temperature and high humidity, and to make the main control board longer.

5.12 Automatic anti-snow function *

In the snowy weather conditions in winter, in order to prevent the snow from adversely affecting the top of the outdoor unit fan, the unit will automatically turn on the fan to clear the snow to ensure the normal operation of the unit.

5.13 Fan reverse dust removal function

The DC fan reverse operation technology can effectively automatically remove dust and clean the inside of the heat exchanger, improve the cleanliness of the heat exchanger, increase the heat exchange efficiency, and prolong the service life of the product.

5.14 High-altitude adaptive technology

In high-altitude areas where the air is thin, the unit is prone to insufficient capacity. The GATM6+ outdoor unit can automatically recognize the altitude position. When the altitude is too high and the capacity is insufficient, the high altitude adaptive mode will be activated for automatic compensation, which will greatly increase the fan speed and increase the air volume.

5.15 Circuit auto-repair function

The GAV-6+ has the automatic repair function of the electronic control circuit, which can promptly alarm and realize the automatic repair of the circuit in the event of an accident, improve system reliability, and ensure stable system operation.

5.16 Black box function

The unit is equipped with a "black box" data storage device, which records operating parameters before failure, quickly finds failure information, provides effective information for maintenance, and improves maintenance efficiency.

* Note: This function needs to be customized

CONVENIENT INSTALLATION AND MAINTENANCE

For different application scenarios, different installation environments should be taken into consideration. The GAV-6+ takes every detail into consideration, in the product appearance design and function, which greatly improves the convenience of installation, speeds up the installation speed, and also improves the convenience of maintenance.

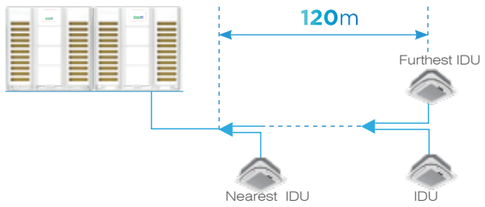
- 15 basic modules, satisfy all kind of requirement
- Big-capacity module design, easy installation and space saving
- 1100 — Super long refrigerant pipeline design, flexible structure
- AUTO — Auto-refrigerant detecting and autoharging function
- (PA) — 130Pa The highest static pressure for outdoor unit
- Convenient for the transportation, installation and commissioning
- Auto-addressing function
- ODU without oil balance pipe, compact design
- Emergency power-off function for indoor unit maintenance
- Commissioning software

6.1 Intelligent multi-connection, easy to cope with the spatial layout

In order to meet the needs of different building types for air conditioning equipment, 15 basic outdoor unit modules are provided. The modules of 8-36HP can be combined freely, and the maximum combination can reach 128HP. There are 9 categories of indoor units, with more than 100 models to choose . The maximum internal unit capacity is 56kW. Outdoor units and indoor units can be freely matched and multi-connected.A system can connect up to 80 indoor units to meet the needs of different buildings.

6.2 1100m Super long piping design

- The industry-leading piping length, with a total lengthof 1100m, makes floor design more flexible.
- The max distance between the IDU and the ODU (the higher ODU) is 100m.
- The max distance between the IDU and the ODU (the lower ODU) is 110m.
- The maximum distance between indoor units is 40m.
- The maximum actual single pipe length is 220m.
- The maximum equivalent single tube length is 240m.
- The equivalent length from first indoor distributor to last indoor unit 120m.

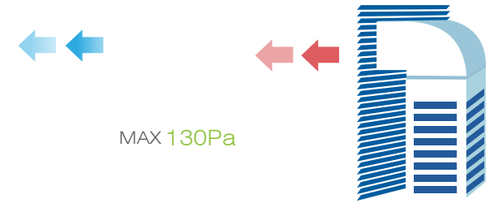


6.3 Single system can connect 80 IDUs

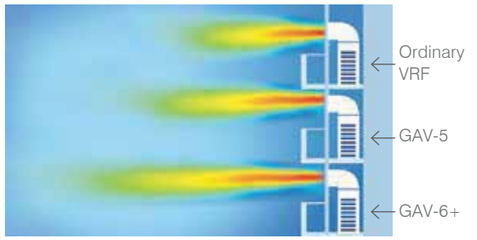
GAV-6+ adopts the international advanced CAN bus communication technology, and one system can connect up to 80 indoor units, ensure stable and reliable in operation, realizes a large-capacity configuration of a single system, and is more flexible in engineering applications.

6.4 130Pa external static pressure

The system achieves a higher external static pressure, up to 130Pa* blades through the joint action of new fan blades and fans with larger air volume. Inverter fan motor. 85Pa) to ensure the layered or concentrated heat dissipation effect of the outdoor unit.



Better heat dissipation, better refrigeration effect



VRF static pressure contrast diagram

* Note: 130Pa static pressure needs to be customized

6.5 Automatic refrigerant judgment and charging

Automatic refrigerant judgment

According to the operating status of the system, it will ensure real-time monitor of the amount of refrigerant, intelligent judgment, stable operation of the system.

Automatic refrigerant charging

During the installation and maintenance process, the refrigerant can be charged automatically according to the system status.

Smart refrigerant recovery function*

When the system is maintained, the refrigerant is recovered intelligently, which is convenient and quick.

Refrigerant automatic judgment

Refrigerant is automatically charged

Refrigerant intelligent recovery

6.6 Compact design and convenient transport

- The outdoor unit module has only 4 basic structures with the same height, which simplifies the design process and improves the flexibility of the system.
- Elevator transportation is convenient, no need large equipment such as hoisting, which effectively simplifies the transportation work and saves construction time and manpower.

6.7 One-button commissioning function

- You can choose to perform a one-button trial running on the outdoor unit side, or perform a one-button trial running on any indoor unit side to achieve cooling and heating trial operation, no need turning on the indoor units one by one, facilitating on-site commissioning and improving the quality of project site construction.

6.8 Non-polarity communication connection

- CAN bus communication mode is applied between indoor and outdoor unit, no need to distinguish between positive and negative poles, and the installation is simpler and more efficient.

6.9 360°pipe connection design

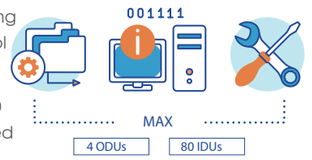
- The units can connect the pipes in multiple directions freely, such as the front side, the left side, and the right side, to make the installation more convenient.

6.10 Emergency power-off function for IDU maintenance

- If an indoor unit needs to be powered off for maintenance due to failure, in order not to affect the operation of the entire system, the indoor unit can be powered off separately for maintenance, and other indoor units in the system can operate normally.

6.11 Commissioning software

- The commissioning software is specially developed for Greenair-conditioning system, which can carry out real-time status monitoring and loading control of the air-conditioning system.
- It can monitor the real-time operation parameters of 4 outdoor units and 80 indoor units in parallel system; And the operating parameters can be showed in Curve; It contains the function of saving the original data of operation, which is convenient for the R & D Engineers to remotely analyze the cause of failure; It also contains the forced load control function of the equipment, which is convenient for loading maintenance verification on the project site.



6.12 Auto-addressing function

- The system can realize the automatic allocation of indoor unit address. There is no need to dial code during commissioning, which avoids the trouble of manual setting one by one. It is more intelligent and convenient.

ODU lineup

8 to 12 HP

14 to 24 HP

26to 32 HP

34 to 36 HP

ODU parameters(8-36HP)

Capacity			8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP	34HP	36HP
Model: GAV-6+***-DR5			252	280	335	400	450	504	560	615	680	730	785	850	900	950	1010
Capacity	Cooling	kW	25.2	28.0	33.5	40.0	45.0	50.4	56.0	61.5	68.5	73.0	78.5	85.0	90.0	95.2	101.0
	Heating	kW	27.0	31.5	37.5	45.0	50.0	56.5	63.0	69.0	75.0	81.5	87.5	95.0	100.0	106.0	112.0
Power	Cooling	kW	5.4	6.8	8.1	10.2	12.1	13.5	15.7	17.7	18.5	18.5	20.6	22.8	24.5	25.7	27.7
	Heating	kW	5.5	6.7	8.2	10.3	11.8	13.5	15.3	16.9	17.6	19.2	20.8	22.9	23.8	25.3	27.2
Current	Cooling	A	8.6	10.8	12.9	16.3	19.3	21.5	25.0	28.2	29.4	29.5	32.8	36.3	39.1	44.2	44.2
	Heating	A	8.7	10.7	13.1	16.4	18.8	21.6	24.5	27.0	28.0	30.6	33.1	36.5	37.9	43.4	43.4
Outdoor unit power supply			380V 3N~/50Hz														
Air volume		m^3/h	11000	11000	11500	13500	14000	15500	19000	19000	20000	26000	26000	27000	27000	29000	29000
Dimension(W×L×H)		mm	925×845×1780			1340×845×1780						1760×845×1780				1900×845×1780	
Weight	（Net ）	kg	215	215	215	270	270	270	315	315	320	380	380	420	420	455	455
Refrigerant	Type	/	R410A														
	Amount	kg	9	9	9	11	11	12	14	14	16	18	18	25	25	28	28
Pipe size	Gas	mm	φ19.1	φ22.2	φ25.4	φ25.4	φ28.6	φ28.6	φ28.6	φ28.6	φ28.6	φ31.8	φ31.8	φ34.9	φ34.9	φ38.1	φ38.1
	Liquid	mm	φ9.52	φ9.52	φ12.7	φ12.7	φ12.7	φ15.9	φ15.9	φ15.9	φ15.9	φ19.1	φ19.1	φ19.1	φ19.1	φ22.2	φ22.2
Noise		dB(A)	56	57	58	59	60	61	61	62	63	63	64	65	65	66	66
Mini Current		A	20	22	24	29	33	38	42	46	53	56	59	59	61	70	73
Max Current		A	25	32	32	40	50	50	63	63	63	63	80	80	80	80	100

Notes: 1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27 °C DB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Notes: 1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27 °C DB/19 WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20 °C DB/15 °C WB,and outdoor temperature 7 °C DB/6 °C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

VRF systems, various combinations

In response to the different needs of building types for air-conditioning equipment, GreenAir provides four basic outdoor unit modules, which can be freely combined in 2HP increments, and the maximum combination can reach 144HP, which can meet the high level design capacity differentiation, installation and transportation requirements of large and medium-sized air-conditioning projects .

Recommended combination table

HP	Combination	Connected Indoor Unit Qty	HP	Combination	Connected Indoor Unit Qty	HP	Combination	Connected Indoor Unit Qty
8	8	13	54	26+28	80	100	32+32+36	80
10	10	16	56	28+28	80	102	30+36+36	80
12	12	19	58	26+32	80	104	32+36+36	80
14	14	23	60	28+32	80	106	34+36+36	80
16	16	26	62	30+32	80	108	36+36+36	80
18	18	29	64	32+32	80	110	26+28+28+28	80
20	20	33	66	30+36	80	112	28+28+28+28	80
22	22	36	68	32+36	80	114	26+28+28+32	80
24	24	39	70	34+36	80	116	28+28+28+32	80
26	26	43	72	36+36	80	118	26+28+32+32	80
28	28	46	74	22+24+28	80	120	28+28+32+32	80
30	30	50	76	24+24+28	80	122	26+32+32+32	80
32	32	53	78	22+28+28	80	124	28+32+32+32	80
34	16+18	56	80	24+28+28	80	126	30+32+32+32	80
36	18+18	59	82	26+28+28	80	128	32+32+32+32	80
38	16+22	63	84	28+28+28	80	130	30+32+32+36	80
40	18+22	66	86	26+28+32	80	132	32+32+32+36	80
42	20+22	69	88	28+28+32	80	134	30+32+36+36	80
44	22+24	72	90	26+32+32	80	136	32+32+36+36	80
46	22+24	75	92	28+32+32	80	138	30+36+36+36	80
48	24+24	78	94	30+32+32	80	140	32+36+36+36	80
50	22+28	80	96	32+32+32	80	142	34+36+36+36	80
52	24+28	80	98	30+32+36	80	144	36+36+36+36	80

IDU lineup

Series	Type	Model	Capacity range(x100w)																									
			18	22	25	28	32	36	40	45	50	56	63	71	80	90	100	112	125	140	160	220	224	280	335	450	560
 360° air outlet cassette	Cooling &Heating	GAV-**-CK4-D5				●		●		●	●	●	●	●	●	●	●	●	●	●	●						
 DC inverter duct	Cooling &Heating	GAV-**-CC3-D5	●	●		●		●		●	●	●	●	●	●	●	●	●	●	●							
 Middle static pressure	Cooling &Heating	GAV-**-CC2-D5									●	●	●	●	●	●	●	●	●	●	●	●					
 High static pressure	Cooling &Heating	GAV-**-CC1-D5												●	●	●	●	●		●		●		●		●	●
Wall-mounted	Cooling &Heating	GAV-**-WM-D5		●		●		●		●	●	●		●													
 Celilling & Floor	Cooling &Heating	GAV-**-CF-D5												●	●	●	●		●	●							
 One-way cassette	Cooling &Heating	GAV-**-CK1-D5	●	●		●		●		●	●	●															
 Two-way cassette	Cooling &Heating	GAV-**-CK2-D5		●		●		●		●	●	●	●	●													
 Fresh air duct	Cooling &Heating	GAV-**-FA-D5																		●				●		●	●

Air Volume （m^3/h）																					
 ERV	Cooling &Heating	GAV-**-ERV-D5	200	300	400	500	600	1000	1500	2000	2500	3000	4000	5000	6000	8000	10000	12000	16000

Outdoor Unit Parameters of Tropical DC Variable Frequency Direct Expansion Unit

KMRV–*WX	150	250	280	335	400	450	500	560	615	670	730	785	850	900
	6	9	10	12	14	16	18	20	22	24	26	28	30	32
V/Hz/P	380/50/3													
kW	15	25.2	28	33.5	40	45	50.4	56	61.5	67	73	78.5	85	90
kW	6	8.7	10.2	11.9	13.9	16	18.2	20.3	22	23.2	26.4	28.5	30	32.9
A	10.7	14.5	16.3	19.4	21.7	27	28.8	31.2	34.5	36.2	41.2	44.3	46.3	50.9
kW	16	28	31.5	37.5	45	50	55.5	63	68.5	75	81	88.5	98	100
kW	6.3	9	9.8	12	13.7	15.3	18.1	20	21.7	22.7	26.1	28.1	29.6	32.5
A	11.3	15.1	15.5	19.5	21.6	24.5	28.6	30.8	34	35..8	40.5	43.6	45.9	50.3
kW	8.5	13.1	14	15	17.1	18.2	20.6	23.6	28.1	30	32.2	33.2	35.4	36.9
A	15.1	24.8	26.2	27.5	31.1	34.5	38.5	44.8	55.7	57.2	58.7	62.3	68.1	70.4
	VG74	FV68D												
	1	3	3	3	4	4	4	5	6	6	7	7	8	8
kW	0.32	0.75	0.75	0.75	0.82	0.82	1.5	1.5	1.5	1.5	2.25	2.25	2.25	2.25
m^3/h	7000	11000	11000	11000	14000	14000	21000	21000	22000	22000	32000	32000	32000	32000
dB (A)	68	68	68	69	69	69	71	71	73	73	74	74	75	75
mm	1018*410*1246	930*765*1662			1340*765*1662		1590*765*1662				2350*765*1662			
kg	105	210	210	225	310	330	360	380	380	380	495	495	502	502
	R410a													
kg	5	8.5	8.5	9	13	13	16	16	17	19	24	24	25	25
mm	Φ9.525/Φ19.05	Φ12.7/Φ22.2			Φ12.7/Φ28.6		Φ15.88/Φ28.6				Φ19.05/Φ35			
MPa	4.2													

360° Air outlet cassette

Recommended places

Office, restaurant, supermarket, shopping mall, lobby, etc

New panel design

Adopt the new design of "porcelain white" color, beautiful and generous, so that the indoor machine panel and the ceiling color more easily integrated, more noble, surround type air supply panel, air supply more comfortable.

360° wide-angle air supply

Comfortable air supply does not leave dead corner, every corner can enjoy cool; Uniform air supply, reduce the temperature difference, keep the indoor temperature comfortable; Air supply is no longer directed single, keep air circulation, air more fresh and healthy.

Large Air Outlet Volume

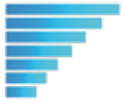
Through the new DC inverter fan motor, achieve 2100m³/h air outlet volume, and improve the air Exchange efficiency by 30%

50Pa Static Pressure Adjustment

Build-in 4 gear static pressure, 0~50Pa can be adjusted,to achieve the 4m long air outlet distance

7-level Fan Speed Volume

Thin fuselage, the installation space required is small, the unit can be easily installed in a fairly narrow ceiling.



Standard condensate pump, easy to install

Equipped with advanced high-lift condensate drainage pump, the maximum head up to 1200mm, easy to install drainpipes.

Clean sterilization, healthy life

Standard health filter screen, effectively remove large particles in the air, optional silver ion purification module, adsorption of formaldehyde and odor, eliminate germs.

DC inverter fan motor technology

Adoption DC inverter motor technology, to improve the running efficiency by 15% and reduce the operation noise (min 31dB)

Ultra low noise

Using the advanced technology of three-dimensional spiral blade design, can reduce the air resistance, realize the machine low noise operation, "quiet" enjoy a comfortable life.

Standard float switch, timely warning

Standard float switch, when the condensate pump is faulty or the drainpipe is blocked, timely warning, prevent the water tray inside the machine overflow.

360° Air outlet cassette

Specification

Model			GAV-28-CK4-D5	GAV-36-CK4-D5	GAV-45-CK4-D5	GAV-50-CK4-D5	GAV-56-CK4-D5	GAV-63-CK4-D5	GAV-71-CK4-D5
Capacity	Cooling capacity	kW	2.8	3.6	4.5	5.0	5.6	6.3	7.1
	Heating capacity	kW	3.2	4.0	5.0	5.6	6.3	7.1	8.0
Power	Cooling power	kW	0.020	0.020	0.025	0.025	0.025	0.035	0.035
	Heating power	kW	0.020	0.020	0.025	0.025	0.025	0.035	0.035
Power supply			220V ~ 1N 50Hz						
Current	Cooling current	A	0.09	0.09	0.11	0.11	0.11	0.16	0.16
	Heating current	A	0.09	0.09	0.11	0.11	0.11	0.16	0.16
Fan	air volume	m^3/h	800	800	900	900	900	1100	1100
External static pressure		Pa	0	0	0	0	0	0	0
Noise		dB(A)	31	31	33	33	33	35	37
Connecting pipe diameter	gas pipe	mm	12.7					15.88	
	liquid tube	mm	6.35					9.52	
	Connection mode	/	Threaded connection						
Net dimension(L×W×H)		mm	840×840×245						
Weight	Net weight	kg	21.5	21.5	21.5	21.5	21.5	22.0	22.0
Panel	Panel size	mm	950×950×50						
	Net weight	kg	6						
Panel	Unit (WxHxD)	mm	950 × 45 × 950						
	Packing (WxHxD)	mm	1035 × 90 × 1035						
	Net/Gross	kg	6/9						
Drainage pipe diameter			DN32						
Electric control mode			Remote Controller & Wired controller						

Model			GAV-80-CK4-D5	GAV-90-CK4-D5	GAV-100-CK4-D5	GAV-112-CK4-D5	GAV-125-CK4-D5	GAV-140-CK4-D5	GAV-160-CK4-D5
Capacity	Cooling capacity	kW	8.0	9.0	10.0	11.2	12.5	14.0	16.0
	Heating capacity	kW	9.0	10.0	11.2	12.5	14.0	16.0	18.0
Power	Cooling power	kW	0.040	0.060	0.060	0.060	0.070	0.085	0.132
	Heating power	kW	0.040	0.060	0.060	0.060	0.070	0.085	0.132
Power supply									
Current	Cooling current	A	0.18	0.27	0.27	0.27	0.32	0.39	0.60
	Heating current	A	0.18	0.27	0.27	0.27	0.32	0.39	0.60
Fan	air volume	m^3/h	1300	1500	1600	1600	1800	1800	2100
External static pressure		Pa	0	0	0	0	0	0	0
Noise		dB(A)	38	39	40	41	43	43	47
Connecting pipe diameter	gas pipe	mm	15.88						
	liquid tube	mm	9.52						
	Connection mode	/	Threaded connection						
Net dimension(L×W×H)		mm	840×840×245				840×840×290		
Weight	Net weight	kg	22	22.5	25	25	25	27.5	27.5
Panel	Panel size	mm	950×950×50						
	Net weight	kg	6						
Panel	Unit (WxHxD)	mm	950 × 45 × 950						
	Packing (WxHxD)	mm	1035 × 90 × 1035						
	Net/Gross	kg	6/9						
Drainage pipe diameter			DN32						
Electric control mode			Remote Controller & Wired controller						

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27 °C DB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

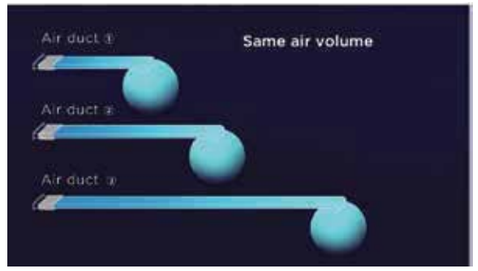
DC Series Slim Duct

Recommended places

Office, conference room, hotel room, restaurant, living room, etc

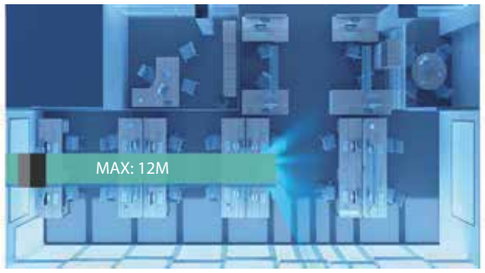
Constant air volume

Fan motor automatically adjusts speed according to real-time wind resistance. To provide stable air volume to rooms.



High ESP

ESP up to 80Pa supports longer air duct and fits with more installation scenario.



Ultra-thin body design, fashion and beautiful

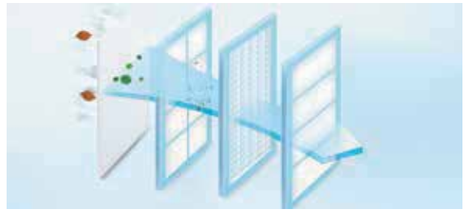
The minimum height of the body is only 200mm, saving space. The drain pump can lift the condensing water up to 1200mm.

Dc seven speed wind speed Energy-saving silent operation

DC motor, 7-speed air volume, energy-saving and silent operation. The lowest noise is 20 d B(A).

Health filter (optional)

The duct can be equipped with silver ion and activated carbon health filter.

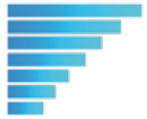


Standard float switch, timely warning

Standard float switch, when the condensate pump is faulty or the drainpipe is blocked, timely warning, prevent the water tray inside the machine overflow.

7-level Fan Speed Volume

Thin fuselage, the installation space required is small, the unit can be easily installed in a fairly narrow ceiling.



Specification

Model			GAV-18-CC3-D5	GAV-22-CC3-D5	GAV-25-CC3-D5	GAV-28-CC3-D5	GAV-32-CC3-D5	GAV-36-CC3-D5	GAV-40-CC3-D5	GAV-45-CC3-D5	GAV-50-CC3-D5	GAV-56-CC3-D5
Capacity	Cooling capacity	kW	1.8	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6
	Heating capacity	kW	2.2	2.5	2.8	3.2	3.6	4.0	4.5	5.0	5.6	6.3
Power	Cooling power	kW	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.05	0.05	0.05
	Heating power	kW	0.02	0.02	0.02	0.02	0.03	0.03	0.05	0.05	0.05	0.05
Power supply			220V 1N~50Hz									
Current	Cooling current	A	0.09	0.09	0.09	0.09	0.14	0.14	0.23	0.23	0.23	0.23
	Heating current	A	0.09	0.09	0.09	0.09	0.14	0.14	0.23	0.23	0.23	0.23
Fan	air volume	m^3/h	500	500	500	500	550	550	850	850	850	850
External static pressure		Pa	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)	20(0 ～ 50)
Noise H/M/L		dB(A)	30/26/20	30/26/20	30/26/20	30/26/20	30/26/22	30/26/22	34/29/24	34/29/24	34/29/24	34/29/24
Net dimension (L×W×H)	Net dimensions	mm	700×450×200						920×450×200			
	Size of return air inlet	mm	570×172						790×172			
	Air outlet size	mm	510×140						730×140			
Net weight		kg	14.5	14.5	14.5	14.5	14.5	14.5	17.0	17.0	17.0	17.0
Connecting pipe diameter	gas pipe	mm	9.52	9.52	9.52	9.52	12.70	12.70	12.70	12.70	12.70	12.70
	liquid tube	mm	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35	6.35
	Connection mode	/	Threaded connection									
Drainage pipe diameter		mm	DN25									
Electric control mode		/	Remote Controller & Wired controller									

Model			GAV-63-CC3-D5	GAV-71-CC3-D5	GAV-80-CC3-D5	GAV-90-CC3-D5	GAV-100-CC3-D5	GAV-112-CC3-D5	GAV-125-CC3-D5	GAV-140-CC3-D5
Capacity	Cooling capacity	kW	6.3	7.1	8.0	9.0	10.0	11.2	12.5	14.0
	Heating capacity	kW	7.1	8.0	9.0	10.0	11.2	12.5	14.0	16.0
Power	Cooling power	kW	0.054	0.054	0.054	0.180	0.180	0.180	0.250	0.250
	Heating power	kW	0.054	0.054	0.054	0.180	0.180	0.180	0.250	0.250
Power supply			220V 1N~50Hz							
Current	Cooling current	A	0.25	0.25	0.25	0.90	0.90	0.90	1.20	1.20
	Heating current	A	0.25	0.25	0.25	0.90	0.90	0.90	1.20	1.20
Fan	air volume	m^3/h	1100	1100	1100	1800	1800	1800	2000	2000
External static pressure		Pa	20(0 ～ 80)	20(0 ～ 80)	20(0 ～ 80)	60(30 ～ 80)	60(30 ～ 80)	60(30 ～ 80)	60(30 ～ 80)	60(30 ～ 80)
Noise H/M/L		dB(A)	37/31/27	37/31/27	37/31/27	43/37/33	43/37/33	43/37/33	44/41/37	44/41/37
Net dimension (L×W×H)	Net dimensions	mm	1100×450×200			1400×700×250				
	Size of return air inlet	mm	1004×165			1365×220				
	Air outlet size	mm	930×140			1365×175				
Net weight		kg	21.5	21.5	21.5	35.5	35.5	35.5	37.5	37.5
Connecting pipe diameter	gas pipe	mm	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
	liquid tube	mm	9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52
	Connection mode	/	Threaded connection							
Drainage pipe diameter		mm	DN25							
Electric control mode		/	Remote Controller & Wired controller							

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°C DB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Medium static pressure duct

Recommended places

Office, conference room, exhibition hall, restaurant, etc

Technical characteristics

Flexible to adapt to a variety of room structure

It is optional to have air inlet form back or bottom with the same size of plate ,which will be very flexible and convenient for installation.

Built-in drain pump(optional).

The drain pump can lift the condensing water up to 1200mm.

Ultra-thin body design, fashion and beautiful

The minimum height of the body is only 200mm, saving space.

Personalized tuyere

Suitable tuyere can be assembled to make the air conditioning decoration style perfect integration, highlighting the taste of the room.

Flexible installation

The factory standard bellows, according to the installation needs, can be adjusted on site under or after the return air, to meet the needs of different installation sites.

Specification

Model			GAV-45-CC2-D5	GAV-50-CC2-D5	GAV-56-CC2-D5	GAV-63-CC2-D5	GAV-71-CC2-D5	GAV-80-CC2-D5	GAV-90-CC2-D5	GAV-100-CC2-D5	GAV-112-CC2-D5	GAV-125-CC2-D5	GAV-140-CC2-D5
Cooling capacity	Capacity	Btu/h(W)	15000(4500)	17000(5000)	19000(5600)	21000(6300)	24000(7100)	27000(8000)	30000(9000)	34000(10000)	38000(11200)	42000(12500)	48000(14000)
	Input	W	110	110	110	160	160	160	330	330	330	390	390
	Current	A	0.49	0.49	0.49	0.74	0.74	0.74	1.5	1.5	1.5	1.78	1.78
Heating capacity	Capacity	Btu/h(W)	17000(5000)	19000(5600)	21000(6300)	24000(7100)	27000(8000)	30000(9000)	34000(10000)	38000(11200)	42000(12500)	48000(14000)	55000(16000)
	Input	W	110	110	110	160	160	160	330	330	330	390	390
	Current	A	0.49	0.49	0.49	0.74	0.74	0.74	1.5	1.5	1.5	1.78	1.78
Power supply			220-240V~/50Hz/1PH										
Outlet size of indoor airflow		mm	713×119	713×119	713×119	713×119	713×119	713×119	933×179	933×179	933×179	968×204	968×204
Returning vent size of indoor airflow		mm	814×150	814×150	814×150	814×150	814×150	814×150	1036×256	1036×256	1036×256	1096×286	1096×286
Indoor air circulation (Cooling/Heating)		L/S	250	250	250	306	306	306	472	472	472	611	611
		m^3/h	900	900	900	1100	1100	1100	1700	1700	1700	2200	2200
Connecting Pipe	Liquid	Inches	1/4''	1/4''	1/4''	3/8''	3/8''	3/8''	3/8''	3/8''	3/8''	3/8''	3/8''
	Gas	Inches	1/2''	1/2''	1/2''	5/8''	5/8''	5/8''	5/8''	5/8''	5/8''	5/8''	5/8''
Net dimensions (W x H x D)	Indoor	mm	920×210×570			920×270×570			1140×270×710			1200×300×800	
Net weight	Indoor	kg	23	23	23	26	26	26	36	36	36	46	46
Packing dimensions (W x H x D)	Indoor	mm	1115×280×6			1115×340×690			1345×360×830			1405×390×925	
Gross weight	Indoor	kg	27	27	27	31	31	31	41	41	41	51	51

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°CDB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

High static pressure Duct

Recommended places

Workshop, hotel, restaurant, shopping mall, ballroom, bar and other large space places

Technical characteristics

Healthy new wind, forest breathing

Easy introduction of outdoor fresh air heating refrigeration and indoor air exchange, keep indoor air fresh, bring you comfortable fresh air.

Ultra-thin body design, fashion and beautiful

The minimum thickness of the fuselage is only 380mm, which does not occupy indoor space.

Ultra-high static pressure design to meet various space requirements

Maximum static pressure 300Pa, can be long distance multi-point air supply, fully meet the air conditioning needs of different Spaces.

Clean sterilization, healthy life

Built-in coarse filter, PP filter screen, optional silver ion purification module, effectively remove large particles in the air, absorb formaldehyde and odor, eliminate germs.

Various forms of air outlets,matching with decoration

The indoor unit adopts a hoiden installation mode, which can be equipped with appropriate air outlets to perfectly combine the air conditioning.

Model			GAV-71-CC1-D5	GAV-112-CC1-D5	GAV-140-CC1-D5	GAV-220-CC1-D5	GAV-280-CC1-D5	GAV-450-CC1-D5	GAV-560-CC1-D5
Static pressure	Standard	Pa	100	100	130	200	200	200	200
	Range		50 ～ 130	50 ～ 130	50 ～ 130	100~300	100~300	100~300	100~300
Cooling capacity	Capacity	W	7100	11200	14000	22000	28000	45000	56000
	Input	W	280	420	420	1750	1750	2250	2250
	Current	A	1.4	2	2	8.85	8.85	11.36	11.36
Heating capacity	Capacity	W	8000	12500	16000	25000	31000	50000	61000
	Input	W	280	420	420	1750	1750	2250	2250
	Current	A	1.4	2	2	8.85	8.85	11.36	11.36
Indoor noise level at cooling (sound pressure level)	High	dB(A)	50	53	53	55	55	61	61
	Med.	dB(A)	48	51	51	53	53	58	58
	Low	dB(A)	46	49	49	51	51	56	56
Refrigerant type/Quantity	Type		R410A						
Design pressure		MPa	4.5						
Power supply			220-240V~/50Hz/						
Outlet size of indoor airflow		mm	430×220	850×220	850×220	1025×300		1470×330	
Returning vent size of indoor airflow		mm	710×310	1100×310	1100×310	1240×460		1645×638	
Indoor air circulation(Cooling/ Heating)		L/S	350	561	639	1250	1250	2083	2083
		m^3/h	1260	2020	2300	4500	4500	7500	7500
Connecting Pipe	Liquid	Inches	3/8"			12.7mm			
	Gas	Inches	5/8"			22.2mm		28.6mm	
Drainage Pipe		mm	25(ID20,OD25)			DN25			
Net dimensions (W x H x D)	Indoor	mm	850×380×590	1200×380×590		1366×758×470		1770×758×650	
Net weight	Indoor	kg	49	58	58	120		220	
Gross weight	Indoor	kg	55	64	64	145		245	

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°CDB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Wall mounted

Recommended places
Living room, study, reference room, negotiation room and other places

Technical characteristics

Ultra-low silent operation
Adopt large-diameter blade, high-quality plastic-encapsulated motor, and the noise is as low as 27dB(A)

Ultra-thin body design, smart and beautiful
The minimum thickness of the unit is only 380mm, which makes installation more convenient

Easy maintenance
The horizontal baffle of the unit is easy to remove for easy cleaning and maintenance

Long-lasting filter design
The long-term filter design makes the air more heathy ， reduces the difficulty of maintenance

Wide-angle air supply, more comfortable
The upper and lower wind guide vanes make the airflow comfortable

Specification

Model			GAV-22-WM-D5	GAV-28-WM-D5	GAV-36-WM-D5	GAV-45-WM-D5	GAV-50-WM-D5	GAV-56-WM-D5	GAV-71-WM-D5	GAV-80-WM-D5
Cooling capacity	Capacity	Btu/h(W)	2,200	2,800	3,600	4500	5000	5600	7100	8000
	Input	W	40	40	40	45	45	70	70	70
	Current	A	0.19	0.19	0.19	0.2	0.2	0.32	0.32	0.32
Heating capacity	Capacity	Btu/h(W)	2500	3200	4000	5000	5600	6300	8000	9000
	Input	W	40	40	40	45	45	70	70	70
	Current	A	0.19	0.19	0.19	0.2	0.2	0.32	0.32	0.32
Indoor noise level at cooling(sound pressure level)	High	dB(A)	38	38	38	42	42	44	44	44
	Med.	dB(A)	33	33	33	37	37	39	39	39
	Low	dB(A)	27	27	27	33	33	35	35	35
Refrigerant type/Quantity	Type		R410A							
Design pressure		MPa	4.5							
Power supply			220-240V 1N ~ 50HZ							
Indoor air circulation (Cooling/Heating)		L/S	153	153	153	181	181	222	0	0
		m^3/h	550	550	550	650	650	800		
Connecting Pipe	Liquid	Inches	1/4"					3/8"		
	Gas	Inches	1/2"					5/8"		
Drainage Pipe		mm	16							
Net dimensions (W x H x D)	Indoor	mm	910×294×206					1010×315×220		
Net weight	Indoor	kg	10	10	10	10	10	13	13	13
Gross weight	Indoor	kg	12.5	12.5	12.5	12.5	12.5	16	16	16

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Ceiling & floor

Recommended places
Living room, study, reference room, negotiation room and other places

Technical characteristics

Ultra-thin Design
Compact design which fits for various room styles.

Detachable Plastic Blowers
Universal desig ned parts and assemblies applied,which is easy for maintenance

Wide Range of Air Flow
The air supply angle is from 0 to 110°, making the indoor temperature more uniform and more comfortable.

Flexible Installation
Two ways of installation available, ceiling suspended and floor standing.

Dual Direction of Drainage
Condensing water can be drained both from left and right side.

Wire Control （optional ）
Wire control is available,especially for hotel rooms, offices,etc.

Specification

Model			GAV-45-CF-D5	GAV-50-CF-D5	GAV-56-CF-D5	GAV-63-CF-D5	GAV-71-CF-D5	GAV-80-CF-D5	GAV-90-CF-D5	GAV-100-CF-D5	GAV-112-CF-D5	GAV-125-CF-D5	GAV-140-CF-D5
Cooling capacity	Capacity	Btu/h (W)	15000 (4500)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000(11200)	42000 (12500)	48000 (14000)
	Input	W	102	102	102	149	149	149	158	158	235	235	235
Heating capacity	Capacity	Btu/h (W)	17000 (5000)	19000 (5600)	21000 (6300)	24000 (7100)	27000 (8000)	30000 (9000)	34000 (10000)	38000 (11200)	42000 (12500)	48000 (14000)	55000 (16000)
	Input	W	102	102	102	149	149	149	158	158	235	235	235
Noise	H/M/L	dB(A)	44/42/39	44/42/39	44/42/39	46/44/41	46/44/41	46/44/41	50/48/45	50/48/45	52/50/47	52/50/47	52/50/47
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/										
Indoor air circulation (Cooling/Heating)		L/S	267	267	267	333	333	333	444	444	556	556	556
		m^3/h	960	960	960	1200	1200	1200	1600	1600	2000	2000	2000
Connecting Pipe	Liquid	Inches	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Gas	Inches	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Drainage Pipe		mm	25(ID20,OD25)										
Net dimensions	W x H x D	mm	1055×675×235						1275×675×235		1635×675×235		
Net weight		kg	24	24	24	25	25	25	29	29	38	38	38
Packing dimensions	W x H x D	mm	1131×753×313						1351×753×313		1711×753×313		
Gross weight		kg	27	27	27	28	28	28	35	35	46	46	46
Loading Capacity			1.5HP	1.8HP	2.0HP	2.2HP	2.5HP	3.0HP	3.2HP	3.6HP	4.0HP	4.5HP	5.0HP
Controller			Remote Controller & Wired controller										

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

One-way Cassette

Recommended places

Living room, dining room, office, lobby, etc

Technical characteristics

High-lift Drain Pump
The drain pump with a 700mm lifting head which is as standard, simplifying installation of the drain pipes.

Standard float switch, real-time monitor water level
Equipped with float switch, which will automatically monitor the water level and send alarm when malfunction of drain pump or stuck of drain pipe occurs.

Wide-angle air flow
Adopting new type of swing motor, which largely increases the angle of air flow.

High ceiling design
Reserves a super high fan speed for high ceiling installation, unit can provide powerful cooling and heating under a more than 3 meters floor height.

Slim body
Super slim body with 235mm thickness, less installation area required, capable to match multiple decoration styles.

Suitable for corner installation, comfortable air flow
Well-designed shape, suitable for corner installation, make sure the air flow and temperature distribution well.

Three level fan speeds
High,Mid,Low three fan speed options, can meet the needs of different indoor condition.

IDU parameters

Model			GAV-18-CK1-D5	GAV-22-CK1-D5	GAV-28-CK1-D5	GAV-36-CK1-D5	GAV-45-CK1-D5	GAV-50-CK1-D5	GAV-56-CK1-D5
Cooling capacity	Capacity	Btu/h(W)	6000(1800)	7500(2200)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)
	Input	W	50			60	70		
	Current	A	0.24			0.28	0.31		
Heating capacity	Capacity	Btu/h(W)	7500(2200)	9000(2500)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)
	Input	W	50			60	70		
	Current	A	0.24			0.28	0.31		
Indoor noise level at cooling (sound pressure level)	High	dB(A)	39			40	42		
	Med.	dB(A)	34				36		
	Low	dB(A)	31				33		
Refrigerant type/Quantity	Type		R410A						
Design pressure		MPa	4.5						
Power supply			220-240V~/50Hz						
Indoor air circulation(Cooling/Heating)		L/S	142			189	222		
		m^3/h	510			680	800		
Connecting Pipe	Liquid	Inches	1/4"						
	Gas	Inches	1/2"						
Drainage Pipe		mm	25(ID25,OD32)						
Net dimensions (W x H x D)	Indoor	mm	850×480×235						
Net weight	Indoor	kg	23						
Gross weight	Indoor	kg	28						

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°CDB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Two-way Cassette

Recommended places

Sitting room, study, dining room, small meeting room, etc

Technical characteristics

High-lift Drain Pump
A drain pump with a 700mm raise height is fitted as standard,
simplifying installation of the drain piping.

Standard float switch, water level monitor
Equipped with float switch, which will automatically send alarm when malfunction of drain pump or stuck of drain pipe occur.

Three - speed adjustment
New winding motor, with scroll fan technology, wider air volume regulation, quieter operation, unique intimate wind gear design. High, medium and low three speed adjustment, strong refrigeration and heating, to create a quiet and comfortable temperature.

Ultra-thin body, lightweight design
Ultra-thin body (290mm), requires less installation space, even in the narrow low ceiling, still can be easily installed, more flexible collocation decoration style.

Super wide Angle air supply
Panel swing motor system adopts high-precision stepper motor, panel up and down risk control system is more intelligent, to achieve ultra-wide Angle and large range of air supply.

Quiet design, quiet and comfortable
Centrifugal wind wheel, axial air inlet, through rotation to form a certain wind pressure, small blade area, large number, uniform air, noise greatly reduced, for you to create a quiet and comfortable environment.

High ceiling design, direct air flow to the ground
High ceiling design, suitable for ceiling height up to 3m space.

IDU parameters

Model			GAV-22-CK2-D5	GAV-28-CK2-D5	GAV-36-CK2-D5	GAV-45-CK2-D5	GAV-50-CK2-D5	GAV-56-CK2-D5	GAV-63-CK2-D5	GAV-71-CK2-D5
Cooling capacity	Capacity	Btu/h(W)	7500(2200)	10000(2800)	12000(3600)	15000(4500)	17000(5000)	19000(5600)	21000(6300)	24000(7100)
	Input	W	64		70				110	
	Current	A	0.27		0.31				0.49	
Heating capacity	Capacity	Btu/h(W)	9000(2500)	11000(3200)	14000(4000)	17000(5000)	19000(5600)	21000(6300)	24000(7100)	27000(8000)
	Input	W	64		70				110	
	Current	A	0.27		0.31				0.49	
Indoor noise level at cooling Low×Med×High		dB(A)	32×35×40	33×36×42	35×38×43				36×39×46	
Refrigerant type/ Quantity	Type		R410A							
Design pressure		MPa	4.5							
Power supply			220-240V~/50Hz							
Indoor air circulation (Cooling/Heating)		L/S	161	161	189	189	236	236	378	378
		m^3/h	580	580	680	680	850	850	1360	
Connecting Pipe	Liquid	Inches	1/4"						3/8"	
	Gas	Inches	1/2"						5/8"	
Drainage Pipe		mm	25(ID25,OD32)							
Net dimensions (W x H x D)	Indoor	mm	1140×575×290							
Net weight	Indoor	kg	32		33				34	
Gross weight	Indoor	kg	38		39				40	

Notes:
1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°CDB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Fresh Air Processing Unit

Recommended places

Cinemas, hotels, lobbies, dance halls, bars and other places

Technical characteristics

Healthy Fresh Air

Through the fresh air unit, the outdoor healthy air can be introduced into the room to keep the indoor healthy.

Ultra-high static pressure design

The maximum static pressure is 300pa, which can meet long-distance air supply and different space requirements.

Control Smart and Lower Cost

The fresh air unit can be controlled independently or connected to the same outdoor unit system with the AC indoor unit, reducing costs and installation space.

Simplify air exhaust system

Simplified air supply and exhaust system, stable and reliable.

Note: The sum of the capacity of the processing unit and the indoorsshould be 50%~100% of the ODU capacity,and the capacity of the fresh air units does not exceed 30%

Model			GAV-140-FA-D5	GAV-224-FA-D5	GAV-280-FA-D5	GAV-450-FA-D5	GAV-560-FA-D5
Static pressure	Standard	Pa	196	200	200	300	300
Cooling capacity	Capacity	Btu/h(W)	48000(14000)	75000 （22400 ）	95500(28000)	153000(45000)	191000(56000)
	Input	W	420	1100	1100	1550	2250
Heating capacity	Capacity	Btu/h(W)	34000(10000)	54000 （16000 ）	68000(20000)	95500(28000)	133000(39000)
	Input	W	420	1100	1100	1550	2250
Noise	H/M/L	dB(A)	45	53	53	56	60
Design pressure		MPa	4.1	4.1	4.1	4.1	4.1
Power supply			220-240V~/50Hz/60Hz				
Indoor air circulation (Cooling/Heating)		L/S	569	833	833	1111	1667
		m^3/h	2050	3000	3000	4000	6000
Connecting Pipe	Liquid	Inches	3/8"	1/2"	1/2"	1/2"	1/2"
	Gas	Inches	5/8"	1"	1"	9/8"	9/8"
Drainage Pipe		mm	25(ID20,OD25)				
Net dimensions	W x H x D	mm	1200×380×590	1366×470×758	1366×470×758	1770×650×758	1770×650×758
Net weight		kg	58	120	120	220	220
Packing dimensions	W x H x D	mm	1410×435×695	1620×930×975	1620×930×975	2035×1170×975	2035×1170×975
Gross weight		kg	60	145	145	245	245
Loading Capacity			5HP	8HP	10HP	15HP	20HP
Controller			Remote Controller & Wired controller				

Notes: 1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Energy Recovery Ventilation

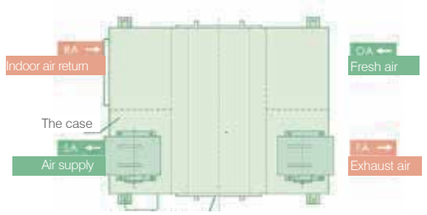
Recommended places

Cinemas, hotels, lobbies, dance halls, bars and other places

Technical characteristics

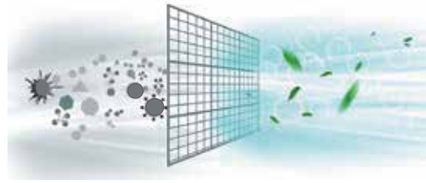
Healthy Fresh Air

Two-way heat exchange technology solves the problem of indoor exhaust air, independent circulation, without any pollution.



Health

The unit is equipped with a professional fresh air filter to ensure that the air is dust-free, and customers can choose a high-efficiency filter.



Big air volume and low energy consumption

Using high-efficiency heat exchangers, the energy exchange recovery rate is more than 70%.

Easy Maintenance

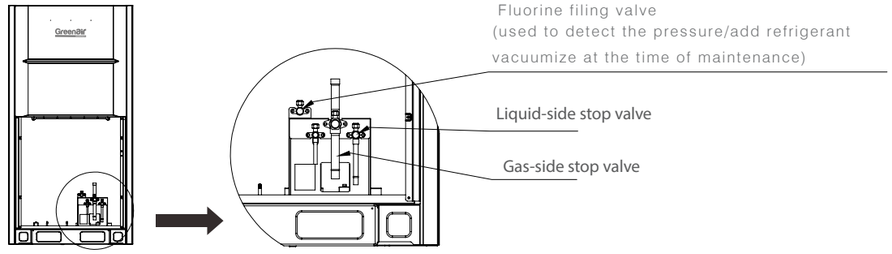
The filter chip can be repaired by opening the access door, which is simple and efficient.

Specification

Model	Air volume (m^3/h)	ESP(Pa)	Power supply	Motor power input		Summer		Winter		Air volume range (m^3/h)	Noise dB(A)	Dimension WXDXH(mm)
				input(KW)	Qty. (Pers)	T.E.(%)	E.E.(%)	T.E.(%)	E.E.(%)			
GAV-ERV-2Q-D	200	75	220V ~1N 50Hz	0.05	2	70	60	70	63	150~200	42	850×900×400
GAV-ERV-3Q-D	300	75		0.065	2	70	62	70	65	200~300	42	850×900×400
GAV-ERV-4Q-D	400	75		0.1	2	70	62	70	65	350~400	44	850×900×400
GAV-ERV-5Q-D	500	75		0.12	2	70	62	70	65	450~500	46	850×900×400
GAV-ERV-6Q-D	600	75		0.15	2	70	63	70	67	500~600	46	850×900×400
GAV-ERV-8Q-D	800	80	380V ~3N 50Hz	0.18	2	70	60	70	63	700~800	52	1040×1200×500
GAV-ERV-10Q-D	1000	80		0.18	2	70	60	70	64	900~1000	52	1040×1200×500
GAV-ERV-15Q-D	1500	120		0.25	2	70	62	70	67	1000~1500	55	1200×1200×500
GAV-ERV-20Q-D	2000	220		0.32	2	70	62	70	69	1600~2000	57	1200×1200×500
GAV-ERV-25Q-D	2500	200		0.45	2	70	62	70	67	2100~2500	57	1300×1500×600
GAV-ERV-30Q-D	3000	200		0.55	2	70	61	70	65	2600~3000	57	1400×1600×620
GAV-ERV-40Q-D/S	4000	200		0.8	2	70	62	70	69	3100~4000	58	1600×1700×700
GAV-ERV-50Q-D/S	5000	210		1.1	2	70	61	70	64	4100~5000	60	1600×1700×700
GAV-ERV-60Q-D/S	6000	320		1.8	2	70	60	70	62	5100~6000	61	1700×1400×1600
GAV-ERV-80Q-D/S	8000	500		2.2	2	70	64	70	69	7100~8000	64	2000×1600×1800
GAV-ERV-100Q-D/S	10000	480		3.0	2	70	63	70	69	9100~10000	66	2200×1600×1800
GAV-ERV-120Q-D/S	12000	580		4.0	2	70	64	70	67	11000~12000	68	2500×1600×1900
GAV-ERV-160Q-D/S	16000	500		5.5	2	70	64	70	67	15000~16000	68	2800×1800×2000

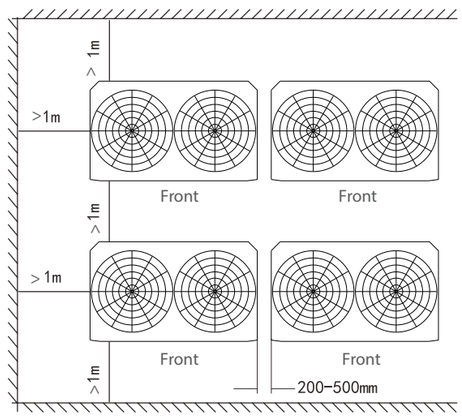
Notes: 1. Specifications are based on the following conditions:
2. Cooling: Indoor temperature 27°CDB/19°C WB,and outdoor temperature 35°C DB/24°C WB.
3. Heating: Indoor temperature 20°C DB/15°C WB,and outdoor temperature 7°C DB/6°C WB.
4. Equivalent piping length:5m; Level difference:0m; Voltage:230V.
5. Sound Level: Indoor unit sound pressure level,measured at a point 1.5m downward from the unit center.
6. Outdoor unit sound pressure level,measured at a point 1.0m in front of the unit.
7. Optional simple wired controller; Universal remote controller; auto-restart(optional); Timer:only one circle.
8. Due to ongoing product development, specifications are subject to change without notice.

Location of refrigerant pipes

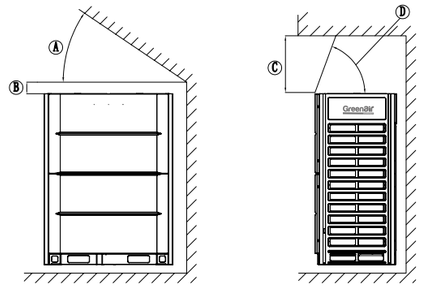


Installation space for ODU

- The space shown in the figure needs to be reserved for the installation of the ODU, and the power supply equipment should be installed separately.



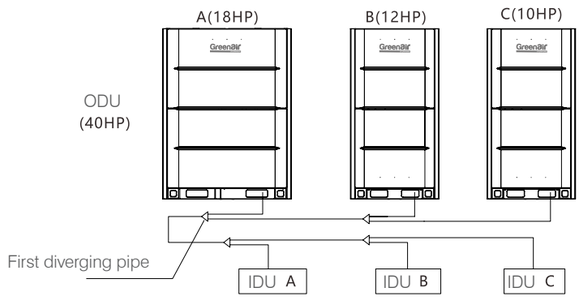
- To ensure the heat dissipation of the outdoor unit, there should be no obstacles above the outdoor unit. If it cannot be avoided, a deflector should be installed.



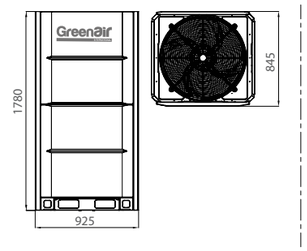
Ⓐ More than 45°
Ⓑ More than 300mm
Ⓒ More than 1000mm
Ⓓ Guide plate

- If there are stacks around the outdoor unit, the height should be less than 800mm from the top of the outdoor unit. If it is less than the size,a mechanical exhaust device must be installed.

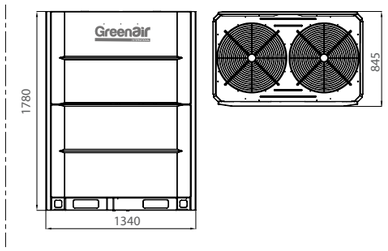
- When a system has more than two outdoor units, it is necessary to install the units as the followings:
The outdoor units are arranged in descending order(for example, in the right picture, ODU capacity A ≥ ODU capacity B ≥ ODU capacity C) and the ODU A should install at the brance pipe.



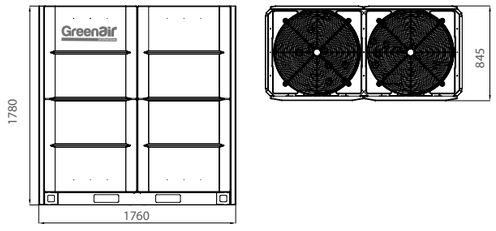
Dimension of ODU



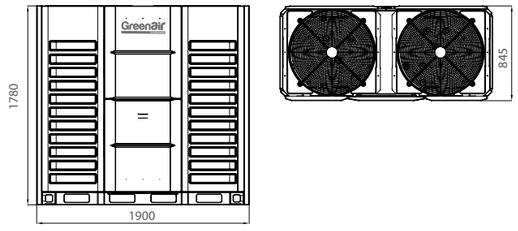
GAV(280/335)DR5



GAV(400/450/504/560/615/680)DR5



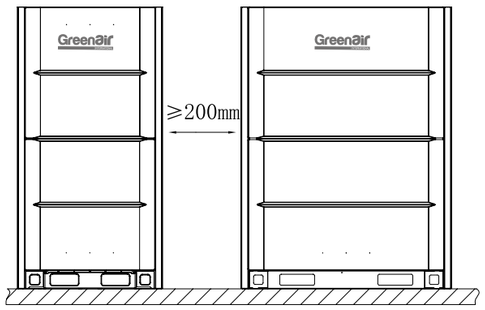
GAV(730/900) DR5

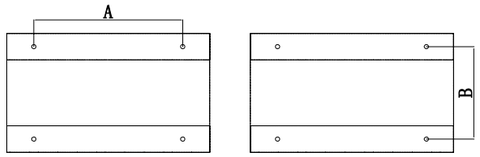


GAV(950/1010DR5

Requirements for ODU installation

- A shock absorber or shock pad should be installed between the unit and the foundation.
- The unit and the foundation should be released tightly, otherwise there will be a lot of noise and vibration.
- The outdoor unit must be grounded reliably.
- It is forbidden to open the valves of the liquid pipe, gas pipe and oil balance pipe of the unit before commission.
- The installation should ensure that there is enough space for maintenance.





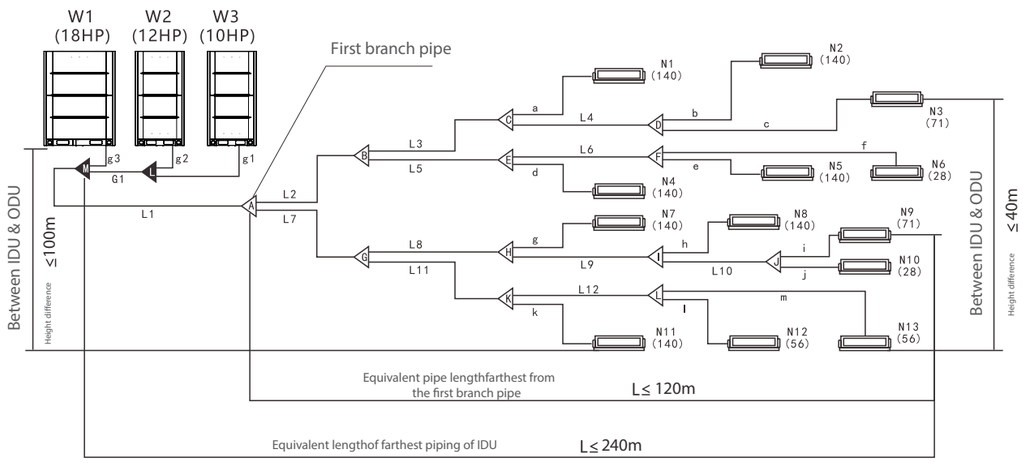
Model	A	B
GAV+252(280/335)DR5	724	725
GAV+400(400/450/504/560/615/680)DR5	1141	725
GAV+730/900 DR5	1561	725
GAV+950/1010DR5	1700	725

Design of refrigerant piping

Refrigerant pipe lengthand height

			Admissible value	Pipes
Lengthof supporting pipe	Total lengthof Refrigerant pipes (Total extended length)		1100m	L1+(L2+L3+L4+L5+L6+L7+L8+L9+L10+L11 +L12)×2+a+b+c+d+e+f+g+h+i+j+k+l+m
	Lengthof the farthest supporting pipe(L)	True length	220m	L1+L7+L8+L9+L10+i
		Equivalent length	240m	
	Lengthof the supporting pipe furthest from the first branch pipe(L)*		120m	L7+L8+L9+L10+i
Height	Height difference between indoor and outdoor units (H)	ODU up	100m	
		ODU down	110m	
	Height between indoor units (h)		40m	

* Note: Refer to relevant technical documents or consult technical person

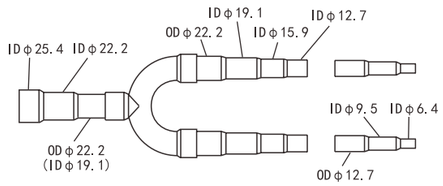


Branch pipe specifications

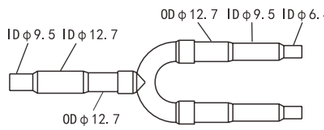
Assembly	Include parts	Assembly	Include parts
BY01 Branch pipe parts	G01、L01	BY05 Branch pipe parts	G04 、L03
BY02 Branch pipe parts	G02 、L01	BY06 Branch pipe parts	L01、L01
BY03 Branch pipe parts	G02 、L02	BY07 Branch pipe parts	L01、L02
BY04 Branch pipe parts	G03 、L02	BY08 Branch pipe parts	G05 、G02

Branch pipe specifications

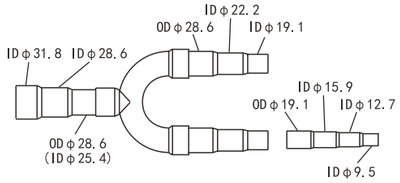
G01：（φ25.4−φ19.1）——2×（φ22.2−φ6.4）



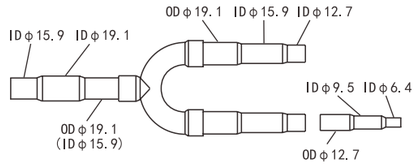
L01：（φ9.5−φ12.7）——2×（φ12.7−φ6.4）



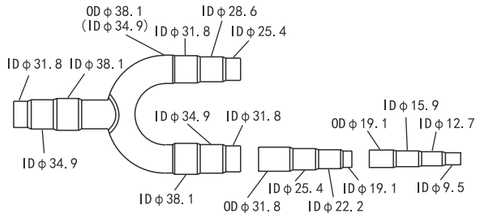
G02：（φ31.8−φ25.4）——
（φ28.6−φ19.1）+（φ28.6−φ9.5）



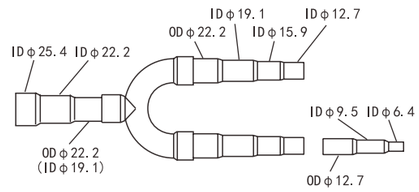
L02：（φ15.9−φ19.1）——
（φ19.1−φ12.7）+（φ19.1−φ6.4）



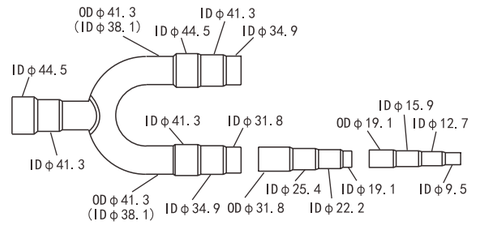
G03：（φ31.8−φ38.1）——
（φ34.9−φ25.4）+（φ38.1−φ9.5）



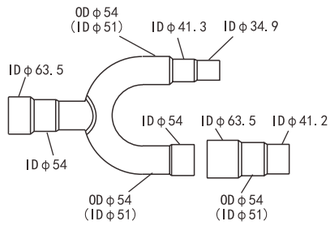
L03：（φ19.1−φ25.4）——
（φ22.2−φ12.7）+（φ22.2−φ6.4）



G04：（φ41.3−φ44.5）——
（φ44.5−φ34.9）+（φ41.3−φ9.5）



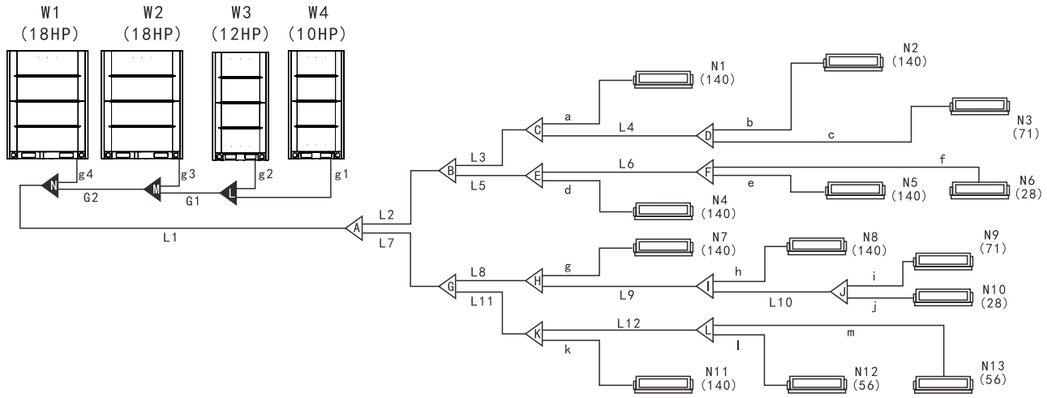
G05：（φ54−φ63.5）——
（φ41.3−φ34.9）+（φ63.5−φ41.3）



Piping classification

Allowable lengthand height difference of refrigerant piping

Name of supporting pipe	Connection position of supporting pipe	Assembly
Main pipe	Pipe between the outdoor unit and the first branch	L1
Main pipe of indoor unit	Pipe behind the first indoor branch which do not connect to indoor unit	L2,L3,L4,... L12
Slave pipe of indoor unit	Pipes between the branch and indoor unit	a,b, c, d,... m
Indoor unit branch assembly	Pipes to the master pipe and slave pipes	A, B, C,D,E,F,G,H, I,J,K,L
Outdoor unit branch assembly	Pipes to the outdoor unit and main pipe	L,Mg
Outdoor unit connecting pipe	Pipe between outdoor and outdoor branch	1,g2, g3, g4, G1, G2



Pipe dimension of indoor unit(NO: a,b,c,d,… m)

Indoor Unit Model	Gas side	Liquid side
Capacity: 1800~2200W	φ9.52 （flared nut ）	φ6.35 （flared nut ）
Capacity: 2800~5600W	φ12.7 （flared nut ）	φ6.35 （flared nut ）
Capacity: 6300~14000W	φ15.9 （flared nut ）	φ9.52 （flared nut ）

IDU main piping and branch pipe assembly(Number: L2,L3,L4...L12,A,B,C...L)

Capacity of downstream Indoor unit A(×100w)	Dimension of Master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)	A(×100w)	Dimension of master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)
A ＜ 63	φ12.7/φ6.35	BY06(L01/L01)	63 ≤ A ＜ 168	φ15.9/φ9.52	BY07(L02/L01)
168 ≤ A ＜ 224	φ19.1/φ9.5	BY07(L02/L01)	224 ≤ A ＜ 330	φ22.2/φ12.7	BY01(G01/L01)
330 ≤ A ＜ 470	φ25.4/φ12.7	BY01(G01/L01)	470 ≤ A ＜ 710	φ28.6/φ15.9	BY03(G02/L02)
710 ≤ A ＜ 1040	φ31.8/φ19.1	BY03(G02/L02)	1040 ≤ A ＜ 1540	φ38.1/φ19.1	BY04(G03/L02)
1540 ≤ A ＜ 1800	φ41.2/φ22.2	BY05(G04/L02)	1800 ≤ A ＜ 2500	φ44.5/φ25.4	BY05(G04/L03)
2500 ≤ A	φ54.0/φ28.6	BY08(G05/G02)			

Diameter of outer connecting pipe

ODU stop valve port diameter(Number: g1,g2,g3,g4)

Model	Gas	Liquid
GAV＋252(280/335/400)DR5	φ25.4 （welding）	φ12.7 （welding ）
GAV＋450(504/560/615/680)DR5	φ28.6 （welding）	φ15.8 （welding ）
GAV＋730(785/850/900/)DR5	φ31.8 （welding ）	φ19.1 （welding ）
GAV＋950(1000)DR5	φ34.9 （welding ）	φ19.1 （welding ）

ODU Main pipe and branch pipes

Capacity of Outdoor unit	Main equivalent lengthof all piping less than 90m		Main equivalent pipe lengthmore than 90m	
	Gas pipe/Liquid pipe	First branch of indoor unit (Gas side/liquid side)	Gas pipe/liquide pipe	First branch of indoor unit (Gas side/Liquid side)
8 ～ 12HP	φ25.4/φ12.7	BY01 Prats (G01/L01)	φ28.6/φ12.7	BY02 Prats (G02/L01)
14 ～ 16HP	φ28.6/φ12.7	BY02 Prats (G02/L01)	φ28.6/φ15.9	BY03 Prats (G02/L02)
18 ～ 24HP	φ28.6/φ15.9	BY03 Prats (G02/L02)	φ31.8/φ19.1	BY03 Prats (G02/L02)
26 ～ 32HP	φ31.8/φ19.1	BY03 Prats (G02/L02)	φ34.9/φ19.1	BY04 Prats (G03/L02)
34 ～ 36HP	φ34.9/φ19.1	BY04 Prats (G03/L02)	φ38.1/φ22.2	BY04 Prats (G03/L02)
38 ～ 42HP	φ34.9/φ19.1	BY04 Prats (G03/L02)	φ38.1/φ22.2	BY04 Prats (G03/L02)
44 ～ 48HP	φ38.1/φ19.1	BY04 Prats (G03/L02)	φ41.2/φ22.2	BY05 Prats (G04/L03)
50 ～ 54HP	φ38.1/φ19.1	BY04 Prats (G03/L02)	φ41.2/φ22.2	BY05 Prats (G04/L03)
56 ～ 66HP	φ41.2/φ22.2	BY05 Prats (G04/L03)	φ44.5/φ22.2	BY05 Prats (G04/L03)
68 ～ 72HP	φ41.2/φ22.2	BY05 Prats (G04/L03)	φ44.5/φ25.4	BY05 Prats (G04/L03)
74 ～ 84HP	φ44.5/φ22.2	BY05 Prats (G04/L03)	φ50.8/φ25.4	BY08 Prats (G05/G02)
86 ～ 96HP	φ50.8/φ25.4	BY08 Prats (G05/G02)	φ54.0/φ28.6	BY08 Prats (G05/G02)
98 ～ 108HP	φ54.0/φ28.6	BY08 Prats (G05/G02)	φ63.0/φ28.6	BY08 Prats (G05/G02)

Remark:

1. Please select the main pipe diameter of the outdoor unitfollow the above table. If the main pipe is larger , choose the main pipe according to larger one.
2. If the system is more than 108HP,please consult technical personnel.

Piping classification

Allowable lengthand height difference of refrigerant piping

Name of supporting pipe	Connection position of supporting pipe	Assembly
Main pipe	Pipe between the outdoor unit and the first branch	L1
Main pipe of indoor unit	Pipe behind the first indoor branch which do not connect to indoor unit	L2,L3,L4,... L12
Slave pipe of indoor unit	Pipes between the branch and indoor unit	a,b, c, d,... m
Indoor unit branch assembly	Pipes to the master pipe and slave pipes	A, B, C,D,E,F,G,H, I,J,K,L
Outdoor unit branch assembly	Pipes to the outdoor unit and main pipe	L,Mg
Outdoor unit connecting pipe	Pipe between outdoor and outdoor branch	1,g2, g3, g4, G1, G2

Pipe dimension of indoor unit(NO: a,b,c,d,… m)

Indoor Unit Model	Gas side	Liquid side
Capacity: 1800~2200W	φ9.52 （flared nut ）	φ6.35 （flared nut ）
Capacity: 2800~5600W	φ12.7 （flared nut ）	φ6.35 （flared nut ）
Capacity: 6300~14000W	φ15.9 （flared nut ）	φ9.52 （flared nut ）

IDU main piping and branch pipe assembly(Number: L2,L3,L4...L12,A,B,C...L)

Capacity of downstream Indoor unit A(×100w)	Dimension of Master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)	A(×100w)	Dimension of master pipe (Gas/Liquid)	Applicable brance pipe (Gas/Liquid)
A ＜ 63	φ12.7/φ6.35	BY06(L01/L01)	63 ≤ A ＜ 168	φ15.9/φ9.52	BY07(L02/L01)
168 ≤ A ＜ 224	φ19.1/φ9.5	BY07(L02/L01)	224 ≤ A ＜ 330	φ22.2/φ12.7	BY01(G01/L01)
330 ≤ A ＜ 470	φ25.4/φ12.7	BY01(G01/L01)	470 ≤ A ＜ 710	φ28.6/φ15.9	BY03(G02/L02)
710 ≤ A ＜ 1040	φ31.8/φ19.1	BY03(G02/L02)	1040 ≤ A ＜ 1540	φ38.1/φ19.1	BY04(G03/L02)
1540 ≤ A ＜ 1800	φ41.2/φ22.2	BY05(G04/L02)	1800 ≤ A ＜ 2500	φ44.5/φ25.4	BY05(G04/L03)
2500 ≤ A	φ54.0/φ28.6	BY08(G05/G02)			

Diameter of outer connecting pipe

ODU stop valve port diameter(Number: g1,g2,g3,g4)

Model	Gas	Liquid
GAV＋252(280/335/400)DR5	φ25.4 （welding）	φ12.7 （welding ）
GAV＋450(504/560/615/680)DR5	φ28.6 （welding）	φ15.8 （welding ）
GAV＋730(785/850/900/)DR5	φ31.8 （welding ）	φ19.1 （welding ）
GAV＋950(1000)DR5	φ34.9 （welding ）	φ19.1 （welding ）

ODU Main pipe and branch pipes

Capacity of Outdoor unit	Main equivalent lengthof all piping less than 90m		Main equivalent pipe lengthmore than 90m	
	Gas pipe/Liquid pipe	First branch of indoor unit (Gas side/liquid side)	Gas pipe/liquide pipe	First branch of indoor unit (Gas side/Liquid side)
8 ～ 12HP	φ25.4/φ12.7	BY01 Prats (G01/L01)	φ28.6/φ12.7	BY02 Prats (G02/L01)
14 ～ 16HP	φ28.6/φ12.7	BY02 Prats (G02/L01)	φ28.6/φ15.9	BY03 Prats (G02/L02)
18 ～ 24HP	φ28.6/φ15.9	BY03 Prats (G02/L02)	φ31.8/φ19.1	BY03 Prats (G02/L02)
26 ～ 32HP	φ31.8/φ19.1	BY03 Prats (G02/L02)	φ34.9/φ19.1	BY04 Prats (G03/L02)
34 ～ 36HP	φ34.9/φ19.1	BY04 Prats (G03/L02)	φ38.1/φ22.2	BY04 Prats (G03/L02)
38 ～ 42HP	φ34.9/φ19.1	BY04 Prats (G03/L02)	φ38.1/φ22.2	BY04 Prats (G03/L02)
44 ～ 48HP	φ38.1/φ19.1	BY04 Prats (G03/L02)	φ41.2/φ22.2	BY05 Prats (G04/L03)
50 ～ 54HP	φ38.1/φ19.1	BY04 Prats (G03/L02)	φ41.2/φ22.2	BY05 Prats (G04/L03)
56 ～ 66HP	φ41.2/φ22.2	BY05 Prats (G04/L03)	φ44.5/φ22.2	BY05 Prats (G04/L03)
68 ～ 72HP	φ41.2/φ22.2	BY05 Prats (G04/L03)	φ44.5/φ25.4	BY05 Prats (G04/L03)
74 ～ 84HP	φ44.5/φ22.2	BY05 Prats (G04/L03)	φ50.8/φ25.4	BY08 Prats (G05/G02)
86 ～ 96HP	φ50.8/φ25.4	BY08 Prats (G05/G02)	φ54.0/φ28.6	BY08 Prats (G05/G02)
98 ～ 108HP	φ54.0/φ28.6	BY08 Prats (G05/G02)	φ63.0/φ28.6	BY08 Prats (G05/G02)

Remark:

1. Please select the main pipe diameter of the outdoor unitfollow the above table. If the main pipe is larger , choose the main pipe according to larger one.
2. If the system is more than 108HP,please consult technical personnel.

Electrical system

Electrical wiring

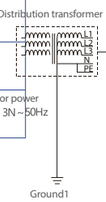
- Please design the dedicate
- The power supply should b
- The power supply, leakag universal. (Please use the the same time, otherwise it
- Please integrate the IDU ar
- In order to reduce interfere ODU. Please do not use m
- During installation, the cor and the minimum distance
- Power wiring must be entru

ODU power wir

Model	Pow
GAV+252 DR5	380V
GAV+280 DR5	380V
GAV+335 DR5	380V
GAV+400 DR5	380V
GAV+450 DR5	380V
GAV+504 DR5	380V
GAV+560 DR5	380V
GAV+615 DR5	380V
GAV+680 DR5	380V
GAV+730 DR5	380V
GAV+785 DR5	380V
GAV+850 DR5	380V
GAV+900 DR5	380V
GAV+950 DR5	380V
GAV+1010 DR5	380V

Remark :1.The wire diameter and c
20 meters and the voltag
2.The selection of the pow
3.The wire current carryin
varies depending on the t
factor is different.

ODU power co



installation

cautions

r supply for IDU and ODU separately.

ped with a leakage protector and a manual switch.

ctor and manual switch of the IDU connected to the same ODU are required to be rcuit for the IDU power supply of the same system. And it must be turned on and off at ously affect the service life of the system, and unpredictable situations may occur.)

connection wiring system and refrigerant piping system into the same system.

is recommended to use two-core shielded cables for the signal cables of the IDU and cables without shielding.

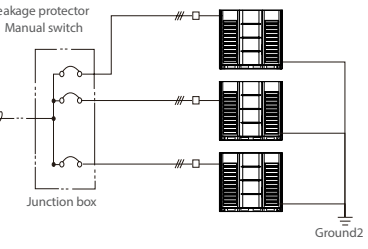
ation line and the power line must not be intertwined, and must be routed separately, be greater than 20CM, otherwise the communication of the unit may be abnormal.

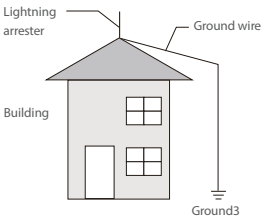
professional electricians.

	Minimum wire diameter current (A)	Copper core PVC insulated wire BVV(mm²)	Copper core XLPE insulated wire YJV(mm²)	Manual switch (A) capacity	Leakage protector
Hz	19.5	4.0X5	4.0X5	32	
Hz	21.6	4.0X5	4.0X5	32	
Hz	24.9	6.0X5	4.0X5	32	
Hz	26.5	6.0X5	4.0X5	32	
Hz	32.2	10.0X5	6.0X5	40	
Hz	34.0	10.0X5	6.0X5	40	
Hz	41.8	16.0X5	10.0X5	50	
Hz	42.9	16.0X5	10.0X5	50	< 100mA 0.1sec
Hz	45.5	16.0X5	10.0X5	50	
Hz	46.0	16.0X5	10.0X5	50	
Hz	48.0	16.0X5	10.0X5	50	
Hz	56.8	25.0X3+16.0X2	16.0X5	63	
Hz	57.0	25.0X3+16.0X2	16.0X5	63	
Hz	63.8	25.0X3+16.0X2	16.0X5	80	
Hz	64.0	25.0X3+16.0X2	16.0X5	80	

s lengthin the table are applicable to a maximum distance of 20 meters. If the power wiring exceeds ceeds the range of 2%, please choose a wire diameter with a larger cross-sectional area.
based on the ambient temperature of 40℃.
y in the attached table is only for the user's reference. The actual interception capacity of the wire engthof the cable, the way of pipe penetration, and the actual laying environment, and the correction

ion

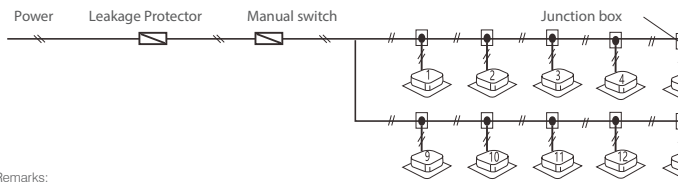




IDU power wiring

Model		Power supply	Minimum wire diameter(mm²)		
			Dimensions (Continuous Length)	Dimensions (Continuous Length)	Ground wire
All IDU Model	90-140Q8 125-140F2 125-140F5	380V ~ 3N50Hz	2.5 (30m)	4.0 (50m)	φ1.6mm
	Other model	220V ~1N 50Hz			

Remarks: The wiring diameter and continuous lengthin the table indicate that the voltage drop is within 2%. When the lengthexceeds the value in the table, please follow the relevant regulations to select the wire diameter.



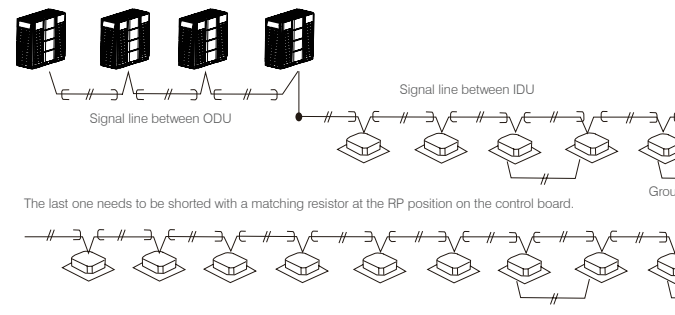
Remarks:
1. Please use the refrigerant piping system, the indoor unit-indoor unit room, and the indoor unit-outdoor unit connection same system.
2. All the internal units in the same system must be powered in a unified manner, and some internal units cannot be cu unit will fail.
3. When the power cable and the signal cable are parallel, please put the wires into their respective wire ducts, and leave between the wires. (Distance between power cables: 300mm below 10A, 500mm below 50A)
4. When multiple outdoor units are connected in parallel, the main outdoor unit must be set. (Refer to the settings of the D

Control system and installation

- Signal lines must be shielded. Using other wires may cause signal interference and cause malfunction
- The shielding nets of all shielded wires are connected to each other and finally connected to the sheet one point.
- It is forbidden to bundle signal wires, refrigerant pipes, power wires, etc. together. When the power line line are laid in parallel, they should be kept at a distance of more than 300mm to prevent the sign being disturbed.
- Signal lines cannot form a closed loop.
- The signal line has no polarity, and there is no need to distinguish it when wiring.

IDU and ODU signal line wiring

- Please use two-core shielded wire (≥ 0.75mm²) for the signal cable of indoor and outdoor u signal cable of indoor and outdoor units should be connected as far as possible from the end of the o



The last one needs to be shorted with a matching resistor at the RP position on the control board.