

# GMV 6 HR

Multi VRF Unit

03-05-2021

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GMV6 HR with a wide range of 22.4kW~246 kW can realize "cooling, heating, water heating" at the same time, which provides comprehensive solution for the multiple demands of customer for air conditioning, DHW and floor heating. The units adopts multiple leading technologies such as All new high efficiency enthalpy adding system, CAN+ communication technology, Energy saving technology and Intelligent Control technology. In addition, the new generation intelligent management control system and healthy fresh air solution ensures the excellent energy saving, comfort and reliability of the unit. The unit can achieve a wide operation range of -25°C~55°C, which can be applicable to villas, office building, hotels etc.



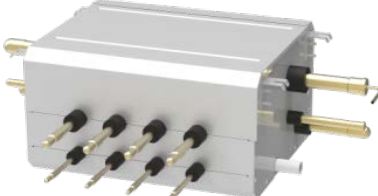



# 1. PRODUCT INTRODUCTION



Capacity HP	8, 10, 12	14, 16	18, 20, 22,	24	.....	88
Model	GMV-VQ224WM/C-X GMV-VQ280WM/C-X GMV-VQ335WM/C-X	GMV-VQ400WM/C-X GMV-VQ450WM/C-X	GMV-VQ504WM/C-X GMV-VQ560WM/C-X GMV-VQ615WM/C-X	GMV-VQ280WM/C-X + GMV-VQ400WM/C-X	.....	GMV-VQ615WM/C-X*4
External look				.....		
Core features	Excellent performance	Intelligent control and management	Clean and healthy fresh air	Stable, reliable		Adaptable, flexible
	<ul style="list-style-type: none"> <li>① Multiple functions in one unit</li> <li>② SCHE up to 9.0</li> <li>③ High-efficiency low-temp enthalpy-adding technology</li> <li>④ New type heat exchanger design</li> <li>⑤ Intelligent control</li> <li>⑥ New generation intelligent defrosting</li> </ul>	<ul style="list-style-type: none"> <li>① GREE Remote Monitoring System</li> <li>② GREE Wireless Remote Monitoring System</li> <li>③ GREE Intelligent Billing System</li> <li>④ Multiple protocol gateways</li> <li>⑤ Local centralized control solution</li> </ul>	<ul style="list-style-type: none"> <li>① Fresh Air system</li> <li>② ERV system</li> <li>③ ERV + DX coil</li> <li>④ High-efficiency Filter</li> </ul>	<ul style="list-style-type: none"> <li>① CAN+ communication technology</li> <li>② Self-adapting drive control technology</li> <li>③ Oil quality control technology</li> <li>④ Oil circuit management technology</li> <li>⑤ Compact structure</li> <li>⑥ Super wide operating range</li> </ul>		<ul style="list-style-type: none"> <li>① Large capacity, compact design</li> <li>② Super high static pressure</li> <li>③ Long connection pipe, large drop difference</li> <li>④ Quick installation design</li> <li>⑤ High degree of installation adaptability</li> </ul>
Operating range	Ambient temperature	Cooling : -10°C~55°C DB      Heating : -25°C~24°C DB Water heating : -20°C~35°C DB      Floor heating : -20°C~24°C DB				

# 1. PRODUCT INTRODUCTION

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Model	NCHS1D	NCHS2D	NCHS4D	NCHS8D
External look				
Core features	<p>① Mode exchange unit in total <b>four</b> models. Model <u>NCHS1/2/4/8D</u>.</p> <p>② The volume is reduced by <u>15%</u>, and the loading capacity is increased by <u>25%</u>.(Some models)</p> <p>③ Variable tube diameter design and Available in various pipe diameters</p> <p>④ New Sub Cooling design, the noise under heat recovery mode can be reduced.</p>			

# 1. PRODUCT INTRODUCTION

Hydro-Box	5HP	10HP
Model	NRQR16L/A-T	NRQR30L/A-T
External look		
Core features	<p>①High-capacity design: 16kW and 30kW for different project requirements.</p> <p>②Dual functions design: available to connect with water tank and floor coils and meet the multiple demands of customer for air conditioning, DHW and floor heating.</p> <p>③Flexible project selection: water tank from Gree or local market is acceptable, only required inner coil water tank.</p> <p>④Automatic Recovery in cooling mode: when the indoor unit is set in cooling mode, the additional heat can be used for water heating to improve the efficiency.</p> <p>⑤New Wired Controller: Touch button, Weekly timer function.</p>	

# 1. PRODUCT INTRODUCTION

## Collocation instructions

1. Indoor unit series of GMV6 HR and GMV5 HR are the same;
2. GMV6 HR can only be used with a new-generation Mode Exchange Box and a new-generation Hydro Box. As following table:

Outdoor unit	Mode Exchange Box	Hydro Box ( Optional )
GMV-VQ224WM/C-X		
GMV-VQ280WM/C-X		
GMV-VQ335WM/C-X		
GMV-VQ400WM/C-X	NCHS1D	
GMV-VQ450WM/C-X	NCHS2D	NRQR16L/A-T
GMV-VQ504WM/C-X	NCHS4D	NRQR30L/A-T
GMV-VQ560WM/C-X	NCHS8D	
GMV-VQ615WM/C-X		
.....		
GMV-VQ2460WM/C-X		

## Excellent performance

- Multiple functions in one unit
- SCHE up to 9.0
- High-efficiency low-temp enthalpy-adding technology
- New type heat exchanger design
- Intelligent control
- New generation intelligent defrosting
- Noise control technology

## Stable and reliable

- CAN+ communication technology
- Self-adapting drive control technology
- Oil quality control technology
- Oil circuit management technology
- Compact structure
- Super wide operating range



## Intelligent control & management

- Distributed remote central system
- Multiple gateway protocols (MODBUS\KNS\BACNET\MODBUS mini)
- Intelligent billing calculation system
- Local centralized control solution

## Clean & healthy fresh air

- Fresh Air system
- ERV system
- ERV + DX coil
- High-efficiency filter

Excellent performance

1

**Multiple  
functions in one  
unit**

2

**High  
efficiency  
& energy  
saving**

3

**Efficient &  
powerful**

4

**Efficient heat  
exchange**

5

**Intelligent  
& efficient  
control**

6

**New  
generation  
intelligent  
defrosting**

7

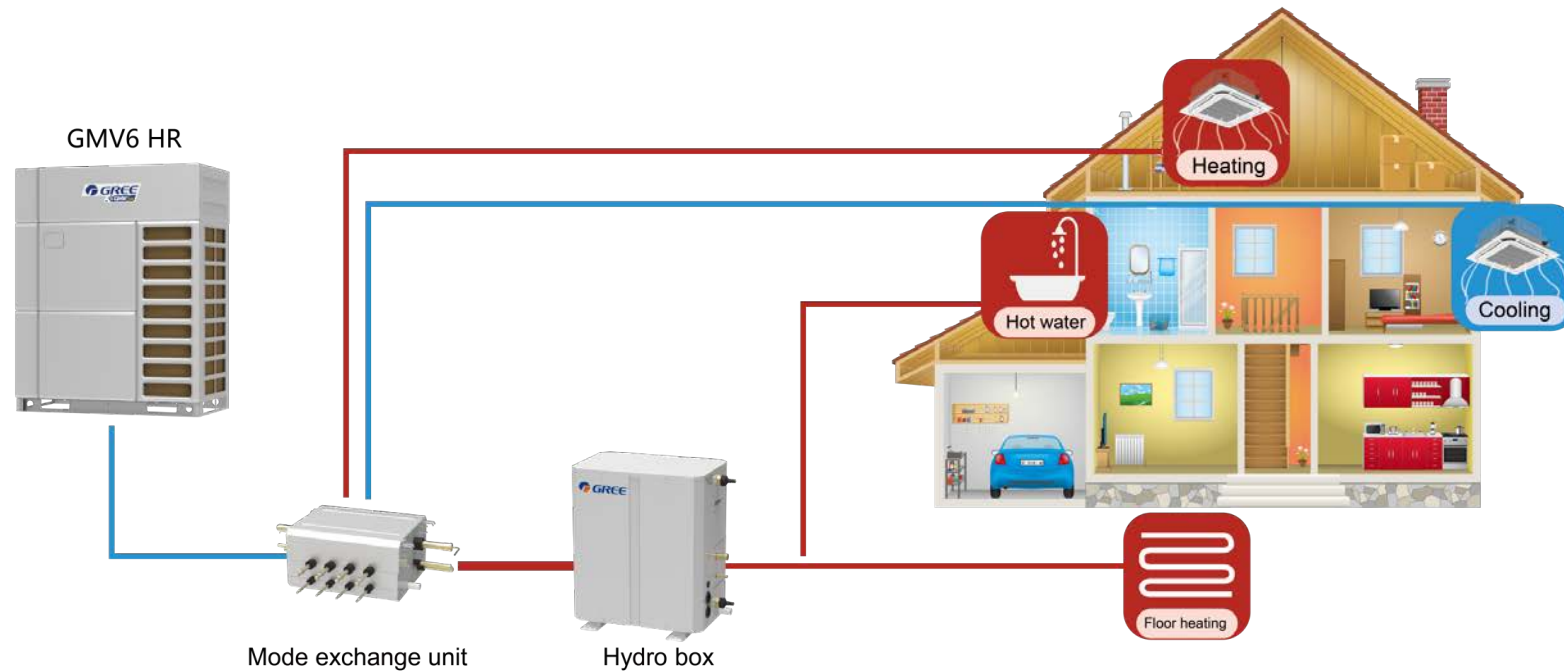
**Noise  
control  
technology**

## 2. FEATURES

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## Excellent performance – 1. Multiple functions in one unit

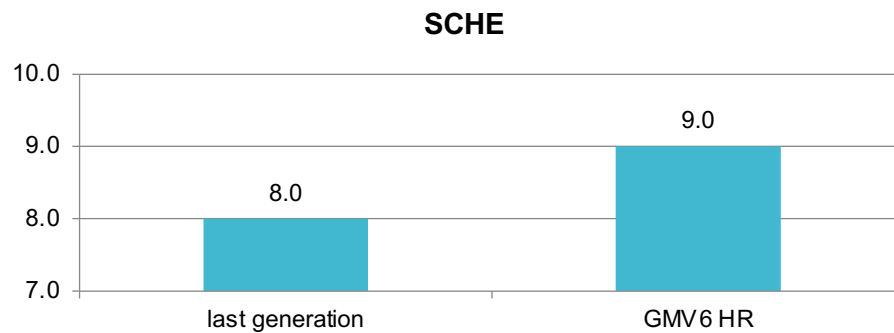
The unit can realize “cooling, heating, water heating” at the same time, which provides comprehensive solution for the multiple demands of customer for air conditioning, DHW and floor heating.



## 2. FEATURES

## Excellent performance – 2.High efficiency and energy saving–SCHE up to 9.0

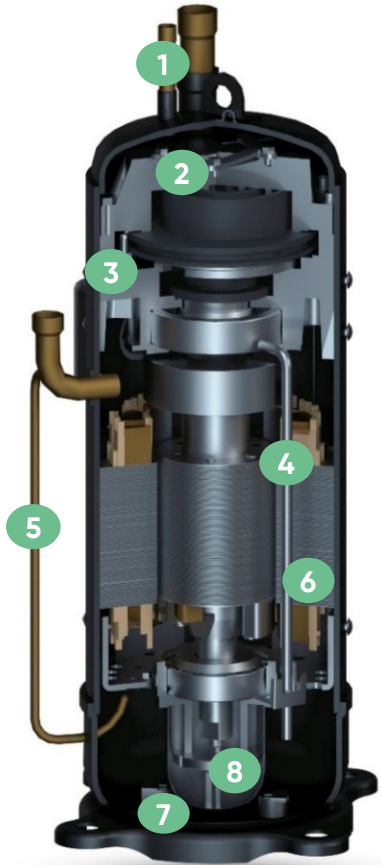
The unit performance can be maximized thanks to heat recovery energy control technology, high efficiency enthalpy adding DC inverter compressor and DC inverter. Under heat recovery mode, the SCHE can be up to 9.0.



SCHE  
↑  
12.5%

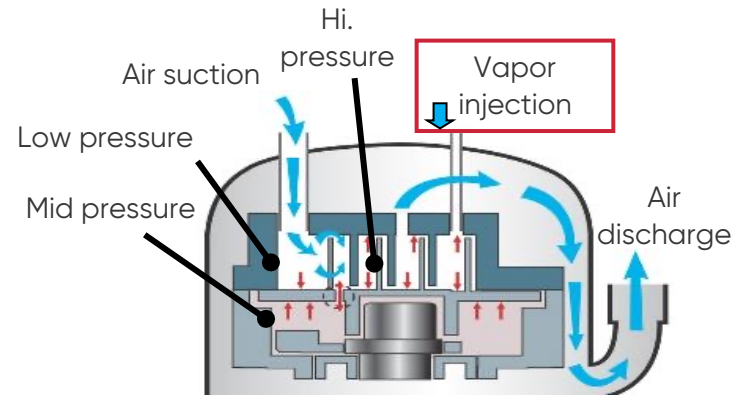
**SCHE:** Under the specified testing condition for heat recovery capacity, the ratio of the sum of total cooling capacity of all cooling IDUs and total heating capacity of all heating IDUs to the power consumption of units.

# Excellent performance – 3. Efficient low-temp enthalpy-adding system New type compressor



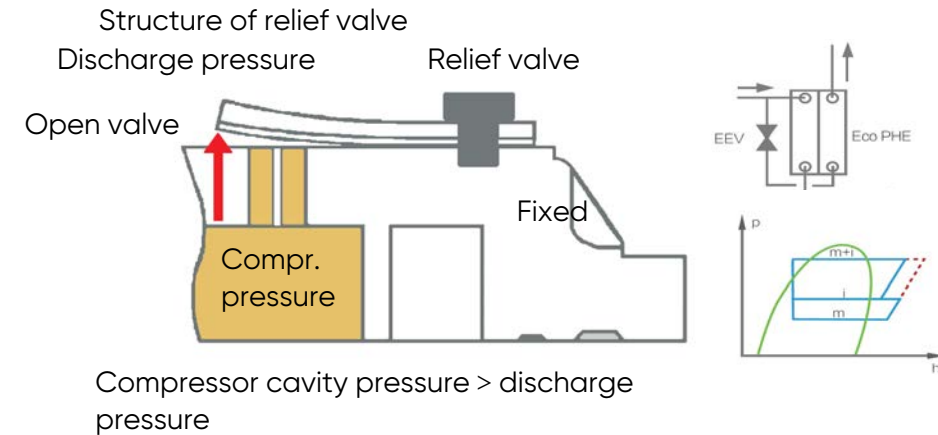
## 1 Enhanced vapor injection(EVI)

Improve system capacity, expand operating range, increase heating speed



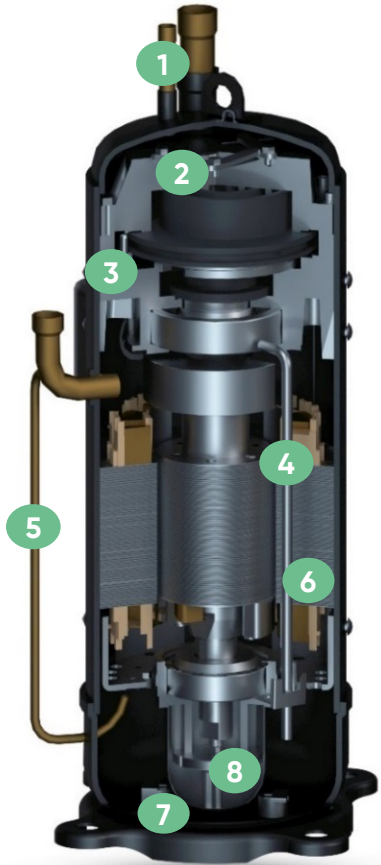
## 2 Pressure relief valve

Improve partial load efficiency, adapt to transformer ratio, improve product performance



*Specially designed for VRF units, it can improve cooling capacity and energy efficiency.*

## Excellent performance – 3.Efficient low-temp enthalpy-adding system New type compressor



### 3 Optimized asymmetric vortex line

New asymmetric vortex line to reduce leakage loss, reduce inhalation and overheating. It is more suitable for APF conditions and improves system efficiency.

### 4 Internal oil circulation

Internal oil circulation to reduce heat loss, reduce fuel injection rate, improve efficiency and reliability.

### 5 Dynamic oil balance

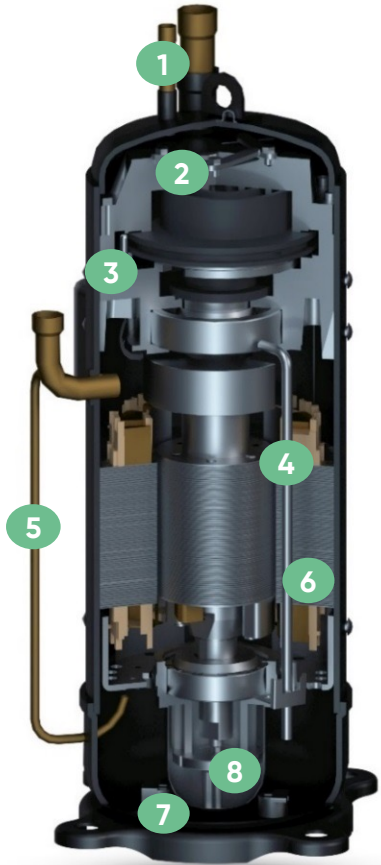
Patented oil balance technology, highly reliable, flexible, no installation restrictions. It can be used in parallel with compressors of different displacement and speed.

### 6 High speed

0~140rps variable speed, a wide range of capabilities

*Specially designed for VRF units, it can improve cooling capacity and energy efficiency.*

## Excellent performance – 3.Efficient low-temp enthalpy-adding system New type compressor



**7 Oil pump filter**  
Filter impurities to ensure clean oil supply.



**8 Volumetric gear pump**  
Ensure necessary oil supply at variable speed and improve compressor reliability

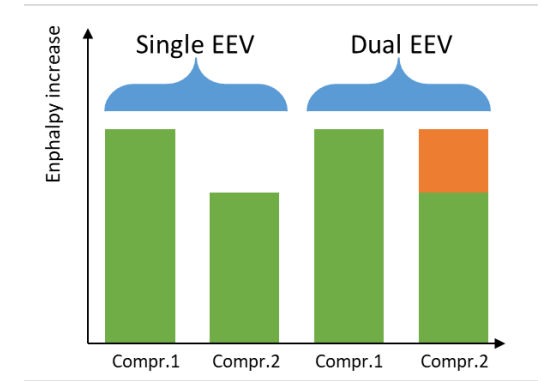
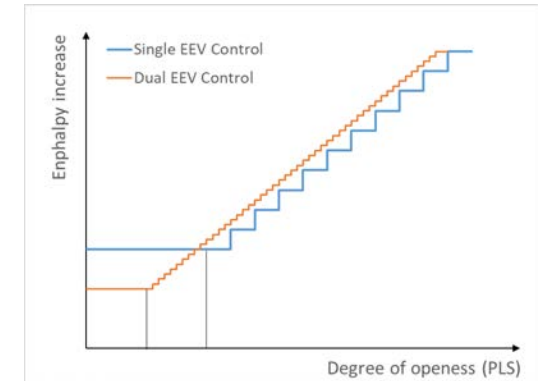
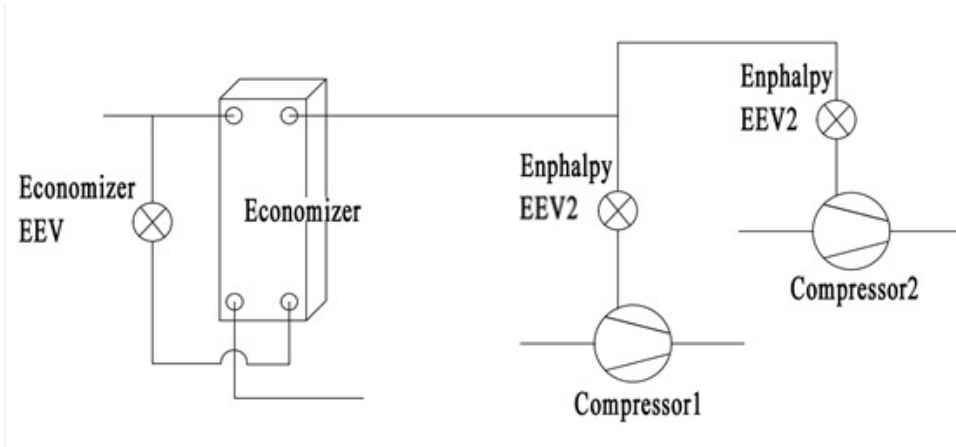
*Specially designed for VRF units, it can improve cooling capacity and energy efficiency .*

# 2. FEATURES

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## Excellent performance – 3. Efficient low-temp enthalpy-adding system Dual EEV enthalpy-adding control

- 2400-step precise adjustment, wider adjustment range, more stable;
- Dual-compressor system to flexibly adjust the amount of enthalpy increase between compressors, to maximize enthalpy increase;
- Plate type economizer, higher heat exchange efficiency



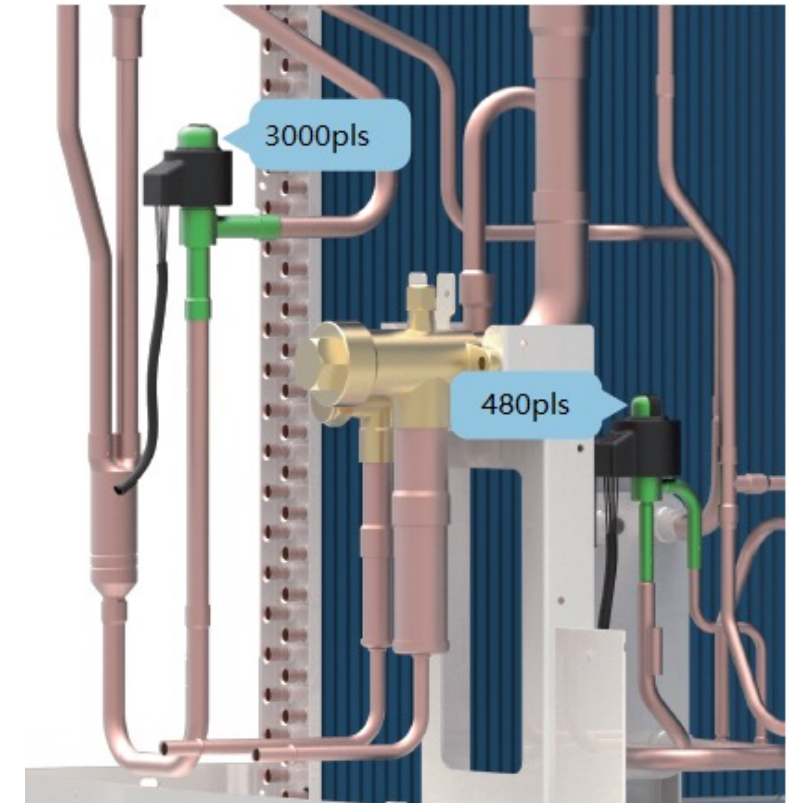


## Excellent performance – 3. Efficient low-temp enthalpy-adding system Multy EEV flow control

### Multi ERV control technology

EXV is one of the 4 basic parts of the air conditioner. It is not only a throttle but also a device to adjust the flow rate of refrigerant entering the evaporator. The wider the adjustment range, the higher the accuracy.

- ODU adopts dual EXV control. The main EXV is a 3000-step EXV whilst the sub-cooling EXV is a 480-step EXV. They can precisely control the flow between IDU and ODU.
- IDU adopts silent type EXV control. It can precisely control the flow of refrigerant. The adjustment is smooth and stable, improving comfort and system reliability.

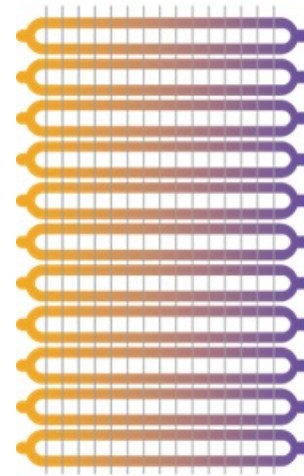


## Excellent performance – 4.Efficient heat exchange

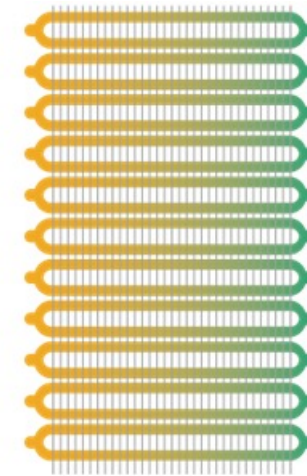
### Efficient heat exchanger

#### Corrugated small pitch heat exchanger fins

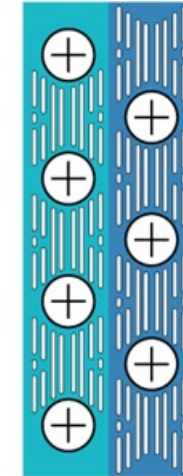
- The overall heat exchange efficiency is higher;
- Less fin section, stronger corrosion resistance;
- Corrugated hydrophilic design, easier defrosting;



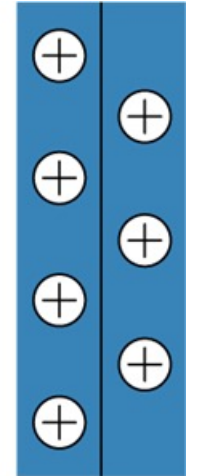
Others



GMV6 HR



Others

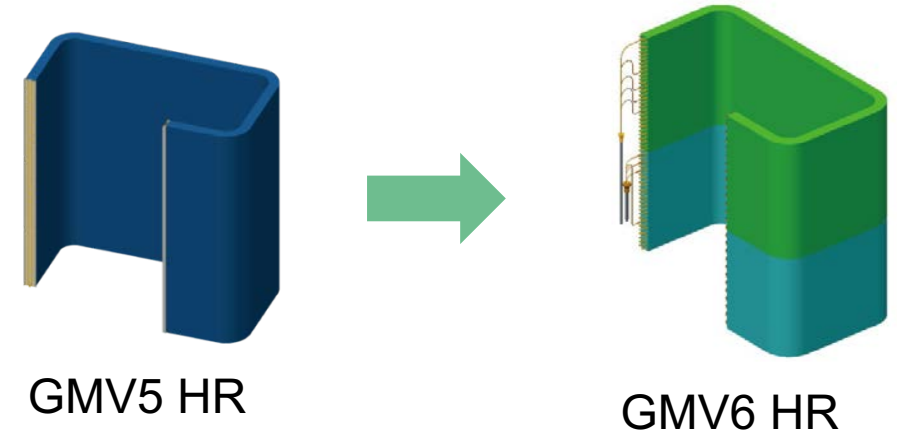
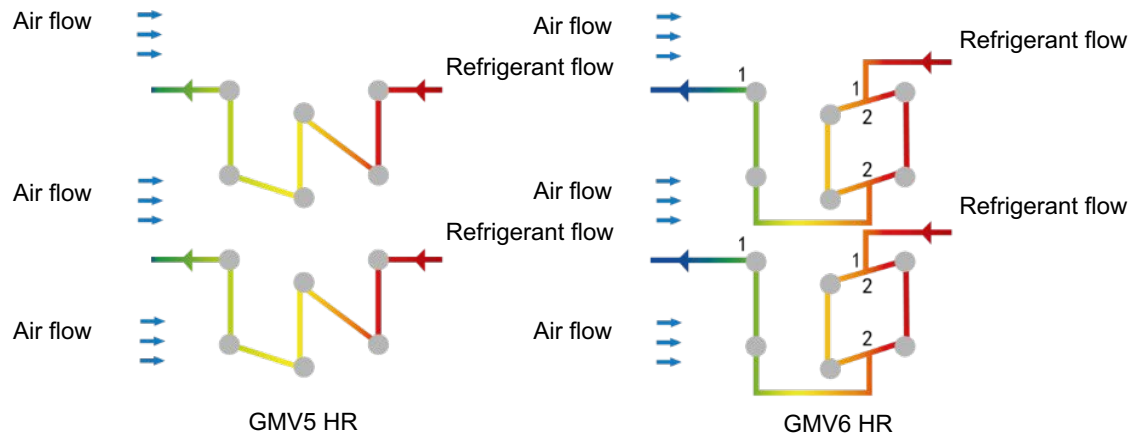


GMV6 HR

## Excellent performance – 4.Efficient heat exchange

### Layered dual-zone heat exchange

According to the characteristics of the wind field, the heat exchanger is divided into different zones. The upper and lower levels adopt different capillary tubes. With the 1-2-2-1 flow path design, the efficiency is higher.

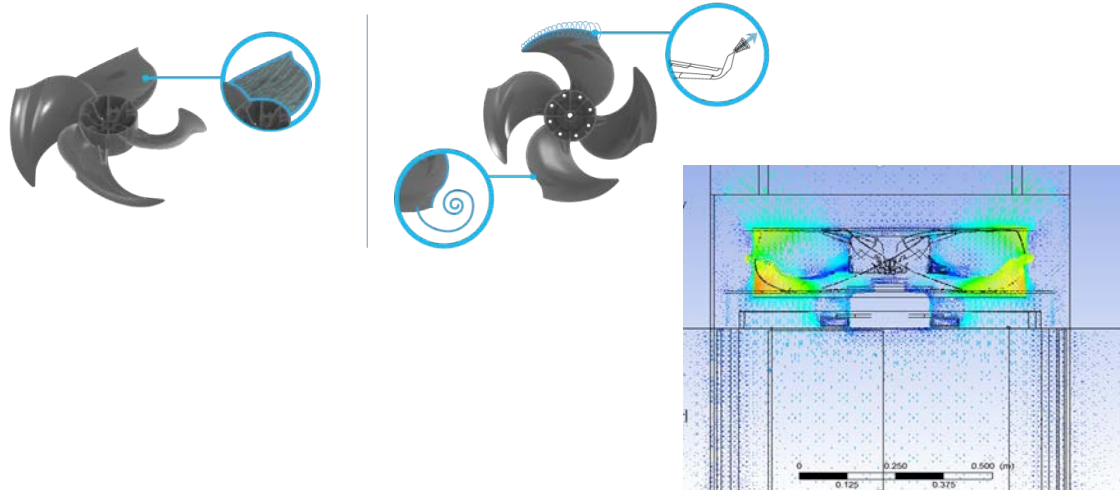


## Excellent performance – 4. Efficient heat exchange

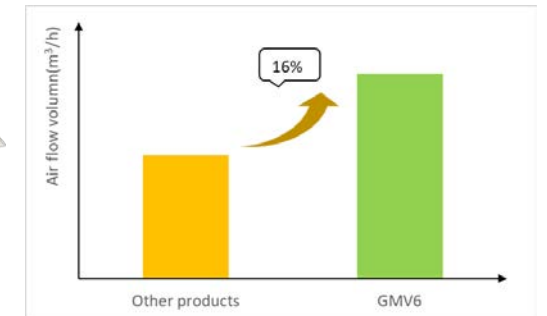
### Large flow air duct

Optimized fan blade design to increase blade forward curve, suppress eddy current and reduce leakage.

The reversed S-shaped tail design effectively increases the work area of the blades and greatly increases the air volume.



New type air grille, with air output area up by 7.8%



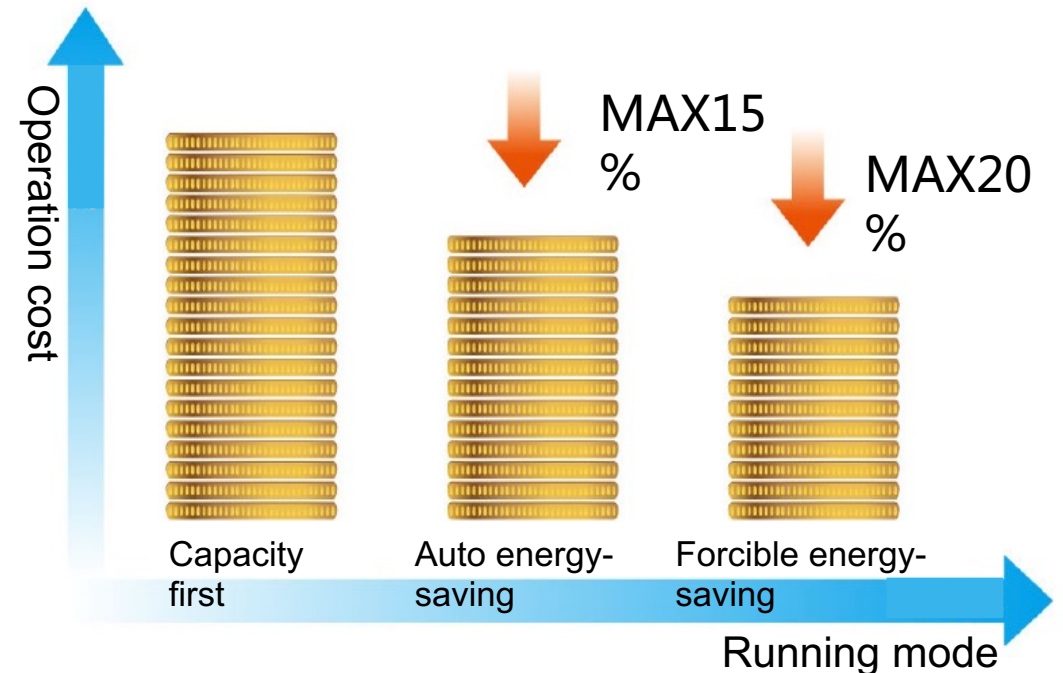
Compared to other conventional units, the air volume of GMV6 HR is up by 16%.

## Excellent performance – 5.Intelligent efficient control

### Double energy-saving modes

GMV6 HR offer a variety of operating modes for users to meet the requirements for power supply in peak time.

- Capacity first: If there is sufficient power supply, priority is given to meeting the capacity needs. This mode is default factory setting.
- Auto energy-saving: System will automatically adjust parameters and balance the capacity and energy consumption according to the running state.
- Forcible energy-saving: Capacity output of ODU is limited. Depending on power consumption and user needs, a 90% or 80% capacity ratio can be selected.



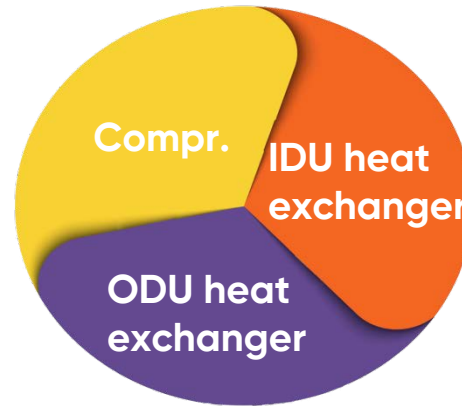


## Excellent performance – 5. Efficient intelligent control

### HPAC efficient modular control

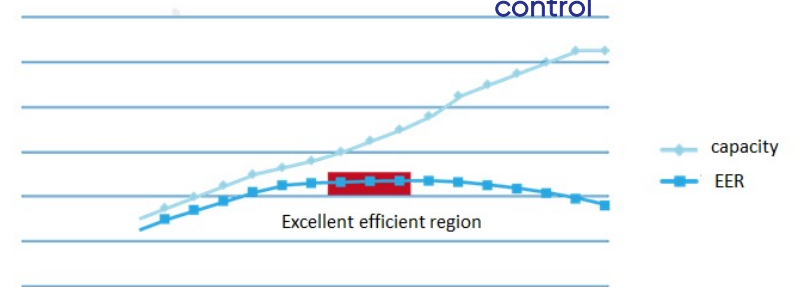
GMV6 HR adopts HPAC new modular control to adjust the distribution method according to the indoor load demand, to ensure maximum energy efficiency.

There is optimum matching between the compressor, indoor heat exchanger and outdoor heat exchanger. The indoor and outdoor heat exchanger capacity are automatically matched and adjusted in real time according to system operating conditions.



Conventional control

GMV6 HR-HPAC control



*HPAC: high performance alternate control.*

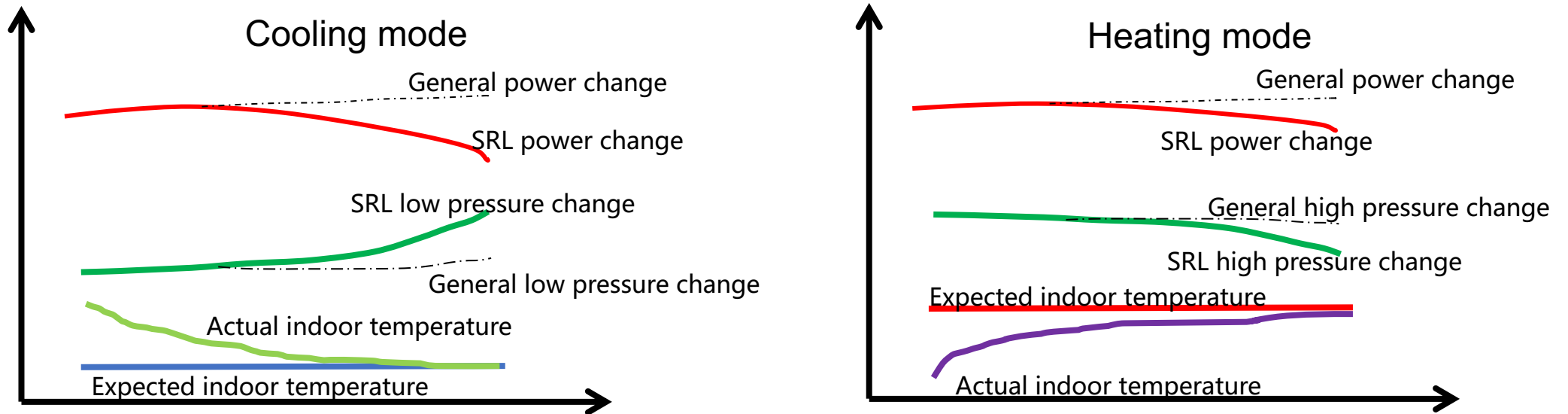
# 2. FEATURES

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## Excellent performance – 5.Efficient intelligent control

### SRL load self-adapting control

SRL(Self-Reaction Load): intelligently detect and control refrigerant pressure and temperature according to user status and indoor temperature changes, automatically adapt to indoor cooling and heating load and achieve energy-saving balance control.

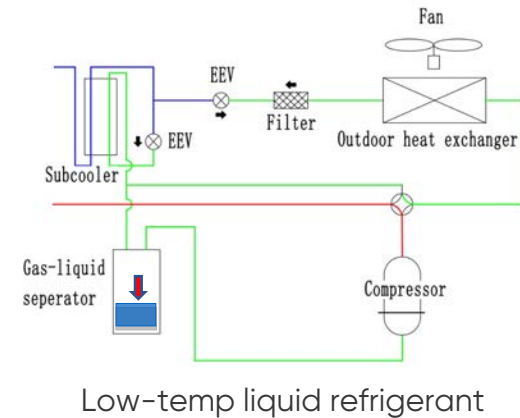
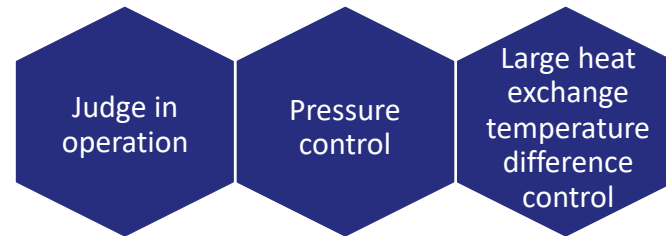
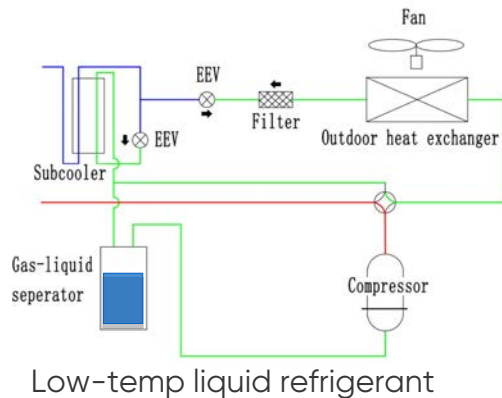


## Excellent performance – 5.Efficient intelligent control

### Intelligent refrigerant circuit control

#### Low-temp refrigerant transfer technology

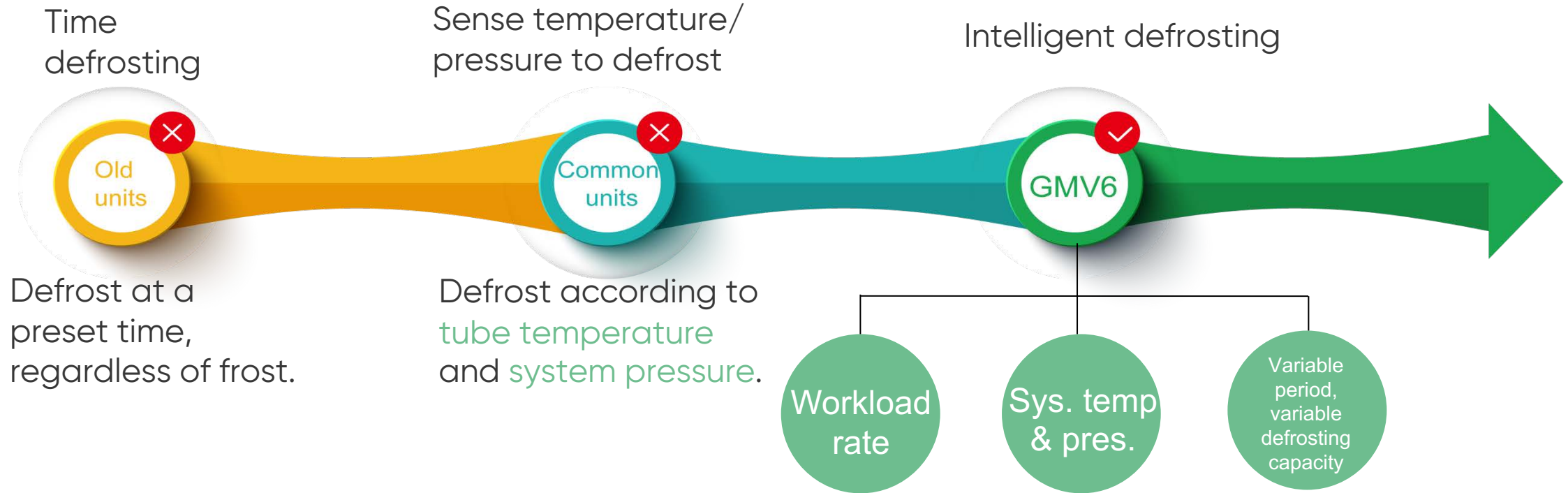
Intelligently judge whether the amount of refrigerant circulation is sufficient according to system parameters (pressure, temperature, speed, etc.). Refrigerant transfer is performed automatically. The heating capacity during the start-up process is increased by 15%.





## Excellent performance – 6.New generation intelligent defrosting

### Advancement of defrosting technology



## 2. FEATURES

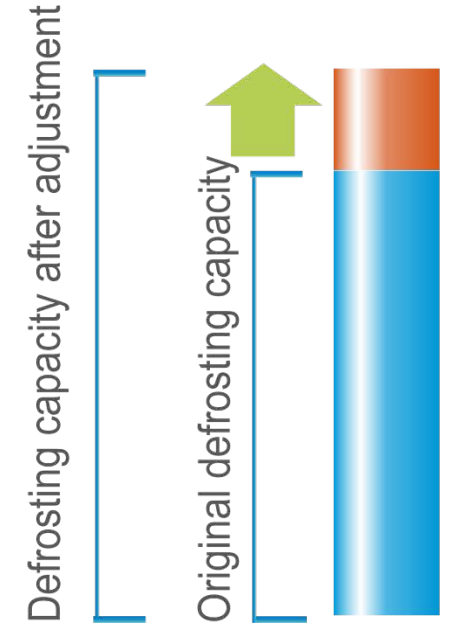
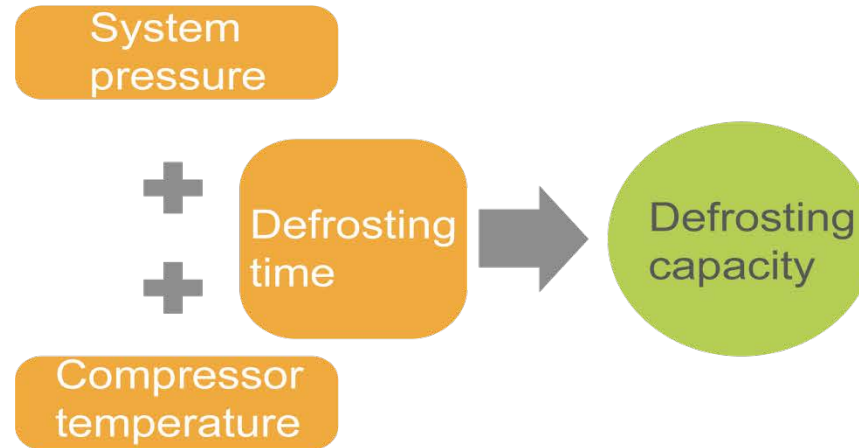
## Excellent performance – 7.Strong cooling and heating technology

### New generation intelligent defrosting

Engineering self-adapting control

Variable defrosting capacity

- Defrosting speed is closely related to compressor output. In general, the unit will limit the output capacity of compressor during defrosting, which would lead to long defrosting time or abnormal defrosting.
- GMV6 can automatically change the output capacity during defrosting by real-time parameter learning and judgment, to achieve stable or fast defrosting.

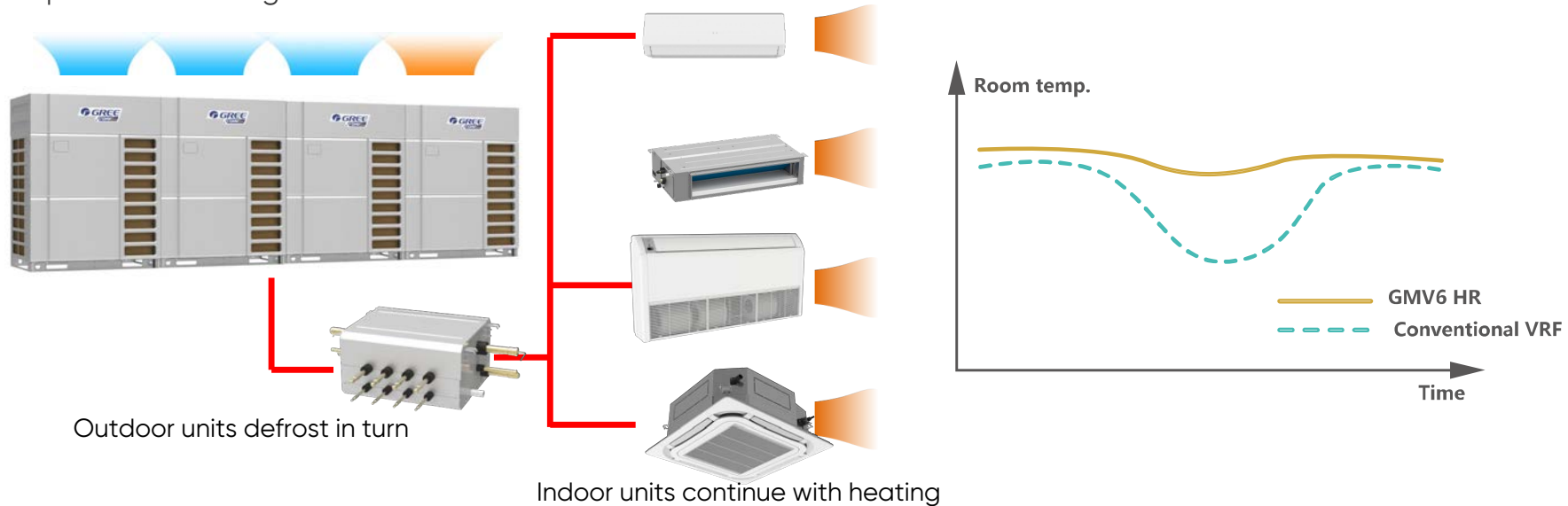


## Excellent performance – 7.Strong cooling and heating technology

### New generation intelligent defrosting

Continuous heating\*, more comfortable

GMV6 HR adopts continuous heating design. For a modularized system, achieve to rotate defrost among modules, lower the fluctuation of indoor ambient temperature, further improve the heating comfort.



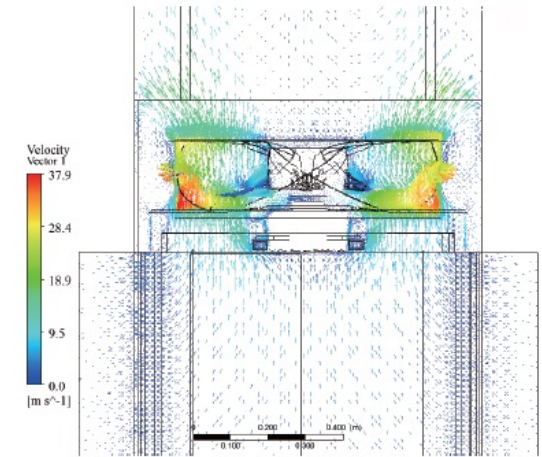
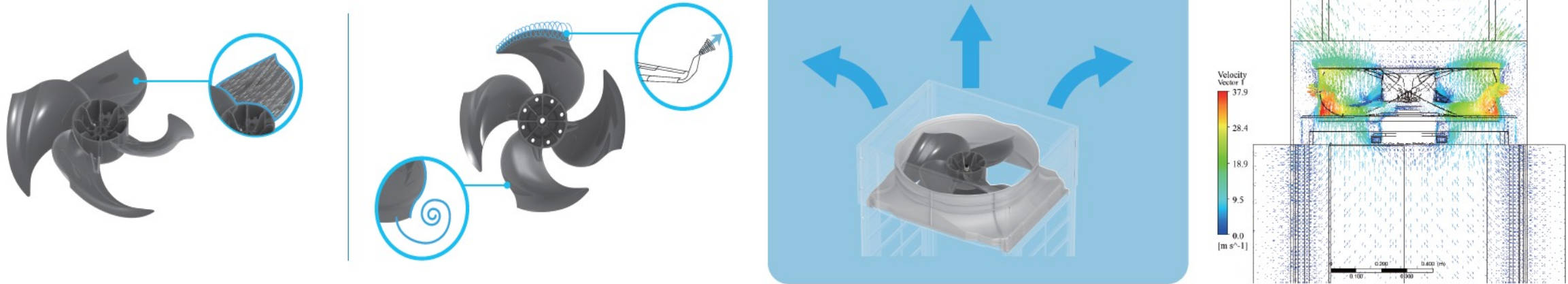
\*This function requires customization and engineering site settings. After this function is set to be effective, continuous heating can be achieved under certain conditions.

## Excellent performance – 8.Noise control technology

### Large-flow and low-noise air duct

Large air volume and low noise fan: The reversed S-shaped tail design effectively increases the work area of the blades and greatly increases the air volume. Tail of the blade is designed from the winglet of the aircraft, which can effectively suppress the tip vortex generated by the wing tip pressure difference and reduce noise.

Immersed layout for the air duct: The whole air duct system is sunk and the whole structure is an immersed structure, which can effectively reduce wind noise and improve the convenience of transportation.



## 2. FEATURES

## Excellent performance – 8.Noise control technology

### Sound absorption & sound insulation enthalpy-adding pulse control

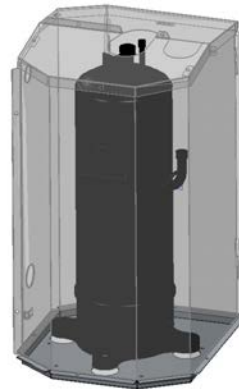
We use the new sound absorption material and the new sound absorption material. The structure is an integrated structure and cooperates well with the compressor.

According to the sound intensity cloud and the pulsation characteristics of the unit, we develop the enthalpy-adding pulse buffer silencer.

Integrated type sound absorber

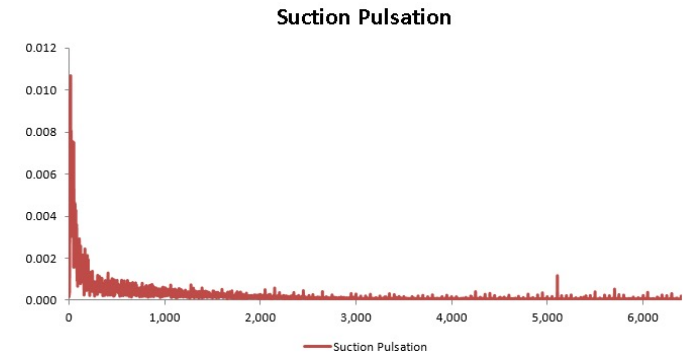


Metal sound-proof enclosure



\*Some models have

New type silencer



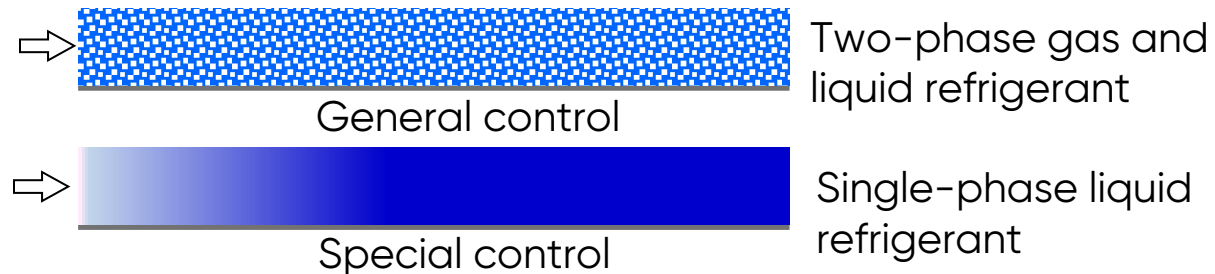
## Excellent performance – 8.Noise control technology

### Refrigerant flow noise reduction

GMV6 uses three major refrigerant flow noise reduction technologies for further improving user experience.

#### Refrigerant status control

- According to the mechanism of refrigerant flow noise, we adopt efficient sub-cooling and overheating technology to effectively prevent the two-phase refrigerant from generating throttling noise and eddy current noise.



## Excellent performance – 8.Noise control technology

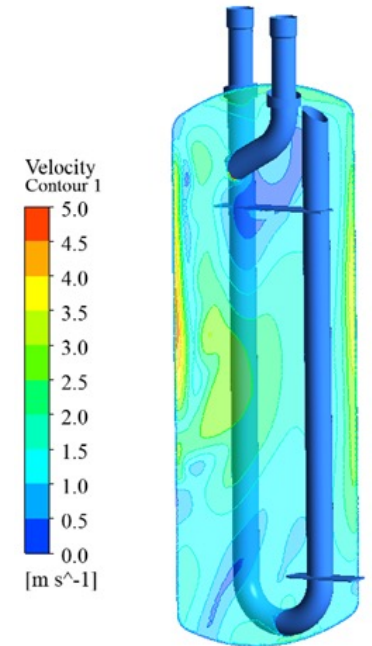
### Refrigerant flow noise reduction

#### Use silent throttle unit

- The indoor unit adopts a specially-designed silent throttle unit and a silent expansion valve, which can satisfy step-down flow distribution and reduce throttling noise to the max.

#### Use silent gas separator

- This is a specialized low-noise large-volume gas liquid separator. The shape and angle of the inlet and outlet pipes are specially designed for variable load conditions. It can effectively reduce the impact and airflow noise of gas and liquid separation.



## 2. FEATURES

## Excellent performance – 8.Noise control technology

### Intelligent quiet control

It can learn, define and remember user habits.

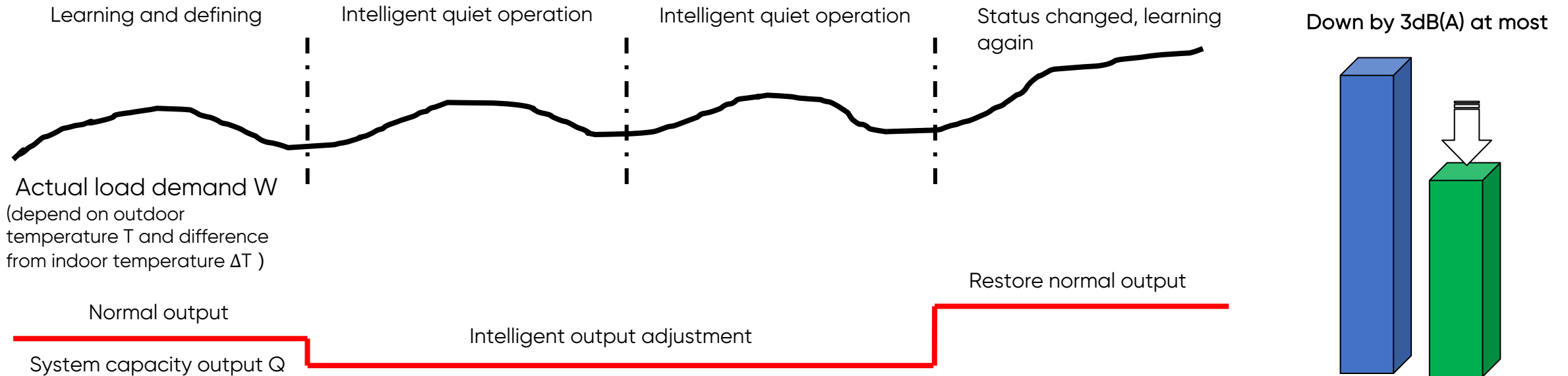
Define user habits	User startup repetition rate	User startup quantity rate
Habit 1	$\geq 90\%$	User startup quantity rate for a days $\geq X\%$
Habit 2	$\geq 90\%$	$X >$ User startup quantity rate for b days $\geq Y$
.....	.....	.....



## Excellent performance – 8.Noise control technology

### Intelligent quiet control

It can automatically determine the output capacity of the system in the next 24 hours to achieve auto quiet operation.



## 2. FEATURES

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## Intelligent control and management

1

**Overview of  
intelligent  
control**

2

**Gree remote  
monitoring  
system**

3

**Gree wireless  
remote  
monitoring  
system**

4

**Gree  
intelligent  
billing system**

5

**Multiple  
protocol  
gateways**

6

**Local  
centralized  
control  
solution**

## Intelligent control management – 1. Overview of intelligent control

Centralized management of equipment is currently the mainstream demand. Gree can provide multiple solutions to meet the needs of different scenarios

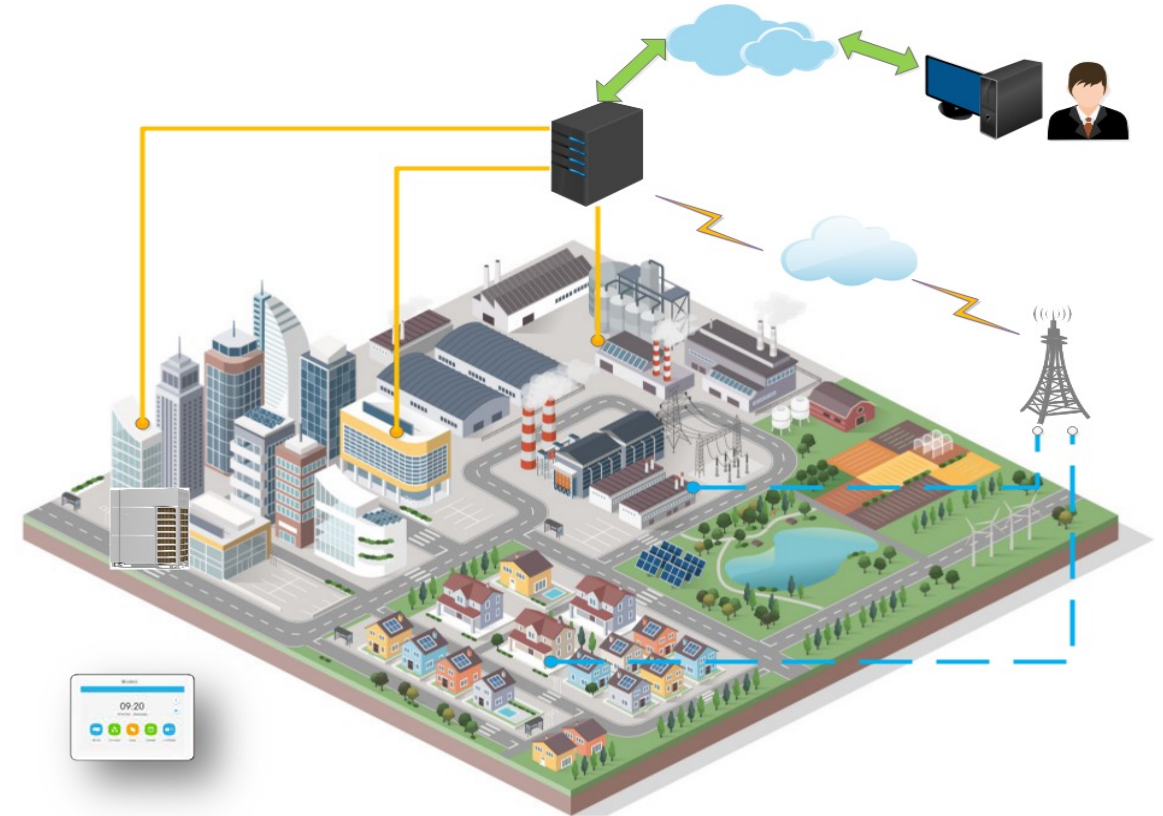
### Wired solution

Provide wired solutions to solve the monitoring of many centralized air conditioning equipment.

### Wireless solution

Provide wireless solutions for fast and agile monitoring, suitable for difficult wiring situations, and for distributed monitoring.

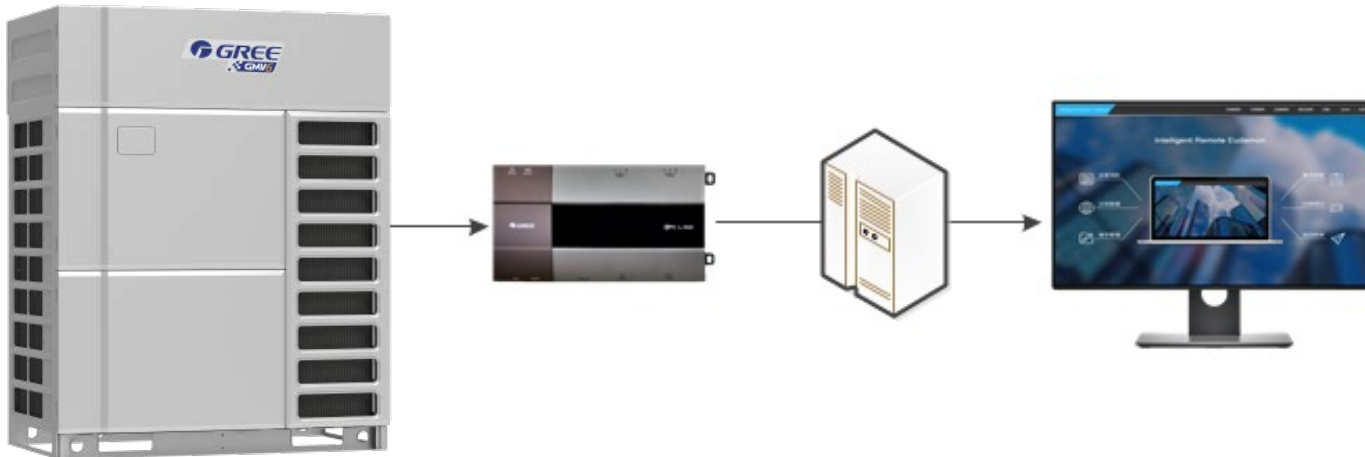
\*Due to the influence of local network system, the wireless monitoring scheme needs to be customized and developed.



# 2. FEATURES

## Intelligent control management – 2.Gree remote monitoring system

Gree remote monitoring system provides wired monitoring solution for centralized management and monitoring of HVAC equipment; This solution meets the air conditioning monitoring needs in multiple scenarios and facilitates property management.



### **Large-scale group control**

The system can access 8160 internal machines

### **Responsive**

Achieve second level control

### **Distributed networking**

Distributed networking, meeting LAN and WAN

### **Multi-model support**

Support multi-line roof machine, u-match, hot water machine, large air duct

## Intelligent control management – 2.Gree remote monitoring system

System composition:

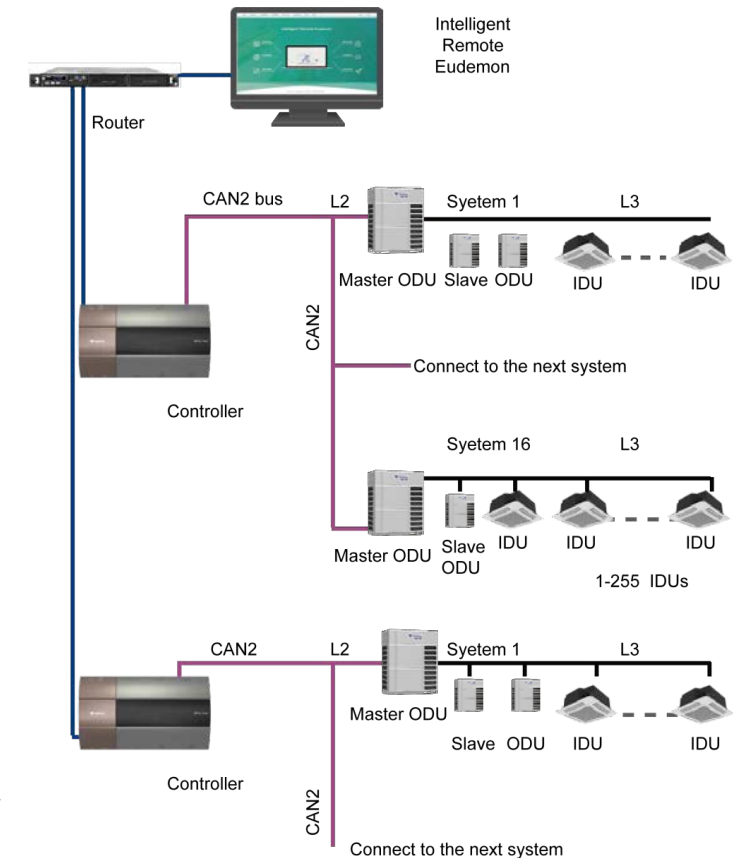
1. Computer: Install Intelligent Remote Eudemon software;
2. Remote monitoring controller
3. Router (switch)
4. Wires

1) Network wire: used to connect remote monitoring controllers and routers, as well as computers and routers;

2) shielded twisted pair: used to connect remote monitoring controller and air conditioning unit.

**Note:**

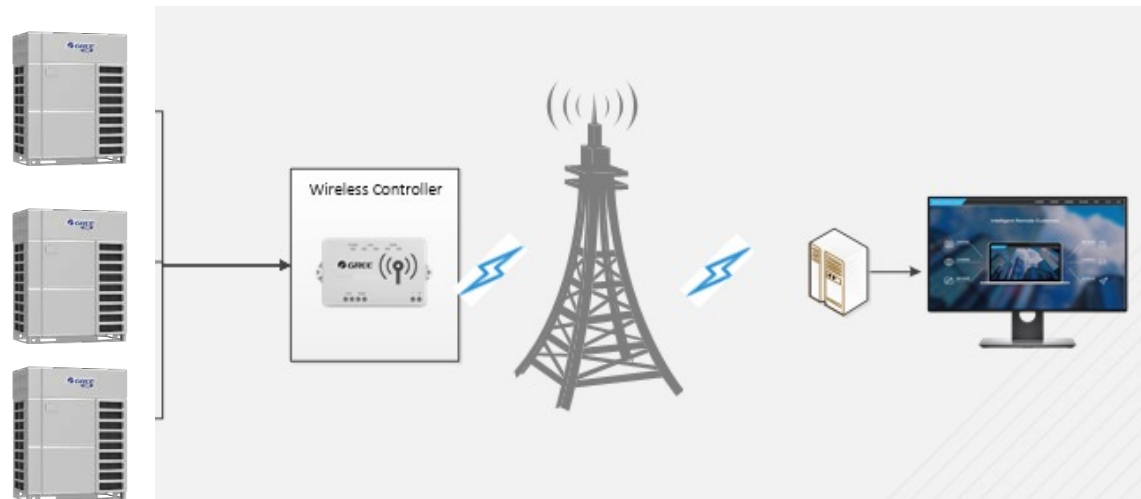
- CAN1 bus: CAN1 bus is the communication bus between outdoor unit and indoor unit
- .CAN2 Bus: The communication bus between units is CAN2 bus.
- Unit system: A unit system consists of a set of outdoor unit(a set of outdoor units is a module group, which can be composed of 1-4 modules, i.e., 1-4 outdoor units) and its indoor units.



# 2. FEATURES

## Intelligent control management – 3.Gree Wireless remote monitoring system

The wireless solution is suitable for the accurate monitoring of HVAC equipment. This solution meets the air conditioning monitoring requirements in special scenarios. The installation is simple, especially suitable for scenes that cannot be wired in a large amount. Wireless monitoring can also be combined with Gree HVAC big data to achieve more convenient service.



\*Due to the influence of local network system, the wireless monitoring scheme needs to be customized and developed

### Wireless monitoring

Wireless HVAC data acquisition and monitoring via wireless

### Agile debugging

No wiring required; installation can be used, and the use of the scene is wide

### Distributed management

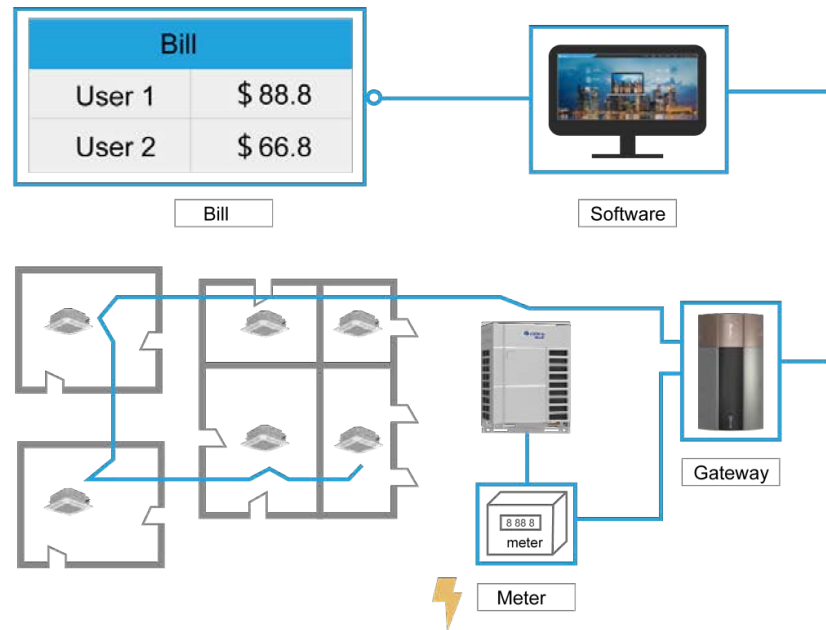
If there is a wireless signal, it can be connected to the system to achieve unified management across the country.

### Fault warning

Realize early warning of air conditioning failure and detailed data monitoring

## Intelligent control management – 4.Gree intelligent billing system

Gree has launched GREE Intelligent Billing System to solve the problems of multi VRF power consumption statistics and user electricity bill distribution, which provide accurate and reasonable charging basis for property management.



### Accurate billing

- 1) The administrator can obtain the power consumption of each indoor unit.
- 2) User can set the billing time period and its electricity price as needed.
- 3) Provide detailed billing, operation details and other reports.

### Remote control and management

- 1) One-button control device.
- 2) Monitor the fault condition in real time and report the fault information immediately.

### Multi-meter compatibility

- 1) Compatible with 5 types of ammeters to meet the requirements of global customers.

# Intelligent control management – 4.Gree intelligent billing system

A set of GREE Intelligent Billing System includes:

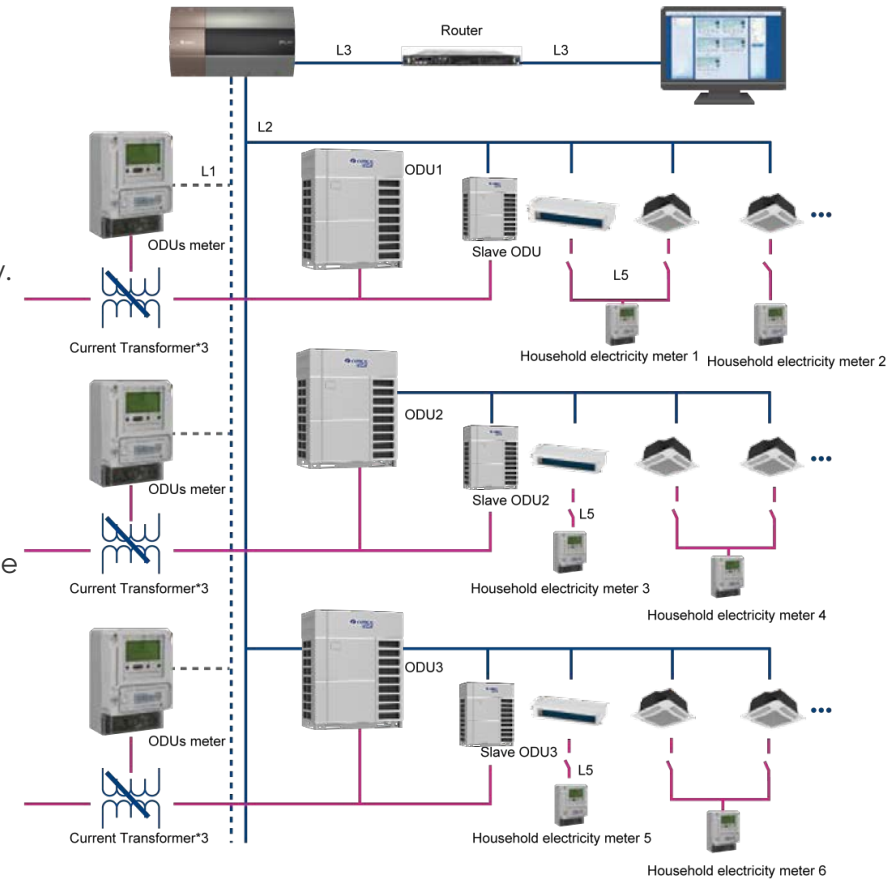
1. **Computer:** Install Intelligent Billing Eudemon software;
2. **Power Billing Gateway**
3. **Router:** Support the DHCP function (can automatically assign IP addresses); ensure the computer and the gateway in the same network segment; ensure the normal communication between the computer and the gateway.
4. **Ammeter:**Measuring the electricity for the outdoor unit of air conditioner.

**5. Wires:**

- 1) Network cable: Use for connecting the Power Billing Gateway and the router, and connect the computer and the router;
- 2) Shielded twisted pair: used to connect the Power Billing Gateway and the air conditioning unit and connect the Power Billing Gateway and the ammeter.

**Note:**

- CAN1 bus: the communication bus between the outdoor unit and the indoor unit is CAN1 bus;
- CAN2 bus: the communication bus among the units is CAN2 bus;
- Unit system: A unit system is composed by a set of external units ( a unit system is composed by a set of outdoor unit ( a set of outdoor unit is a module group, which consists of 1-4 modules, that's 1-4 outdoor units) and its indoor units.



# 2. FEATURES

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## Intelligent control management – 5. Multiple protocol gateways

Provide multiple protocol gateways

product type	product	model
BACnet gateway	BACnet Gateway(IP)	ME30-24/D4(B)
Modbus gateway	H2M Gateway	ME31-33/EH1(M)
	Modbus Gateway(TCP)	ME30-24/E5(M)
	Modbus Gateway(RTU)	ME30-24/E6(M)
KNX gateway	S2S KNX Gateway	ME30-24/F1(K)

### Multi-model support

Support multi-line, roof machine, Umach, hot water machine, large air duct

### Multi machine protocol support

Support modbus, Bacnet, KNX and other protocols

### Third party BMS system docking

Dockable smart home and BMS system



Modbus Gateway TCP  
BACnet Gateway



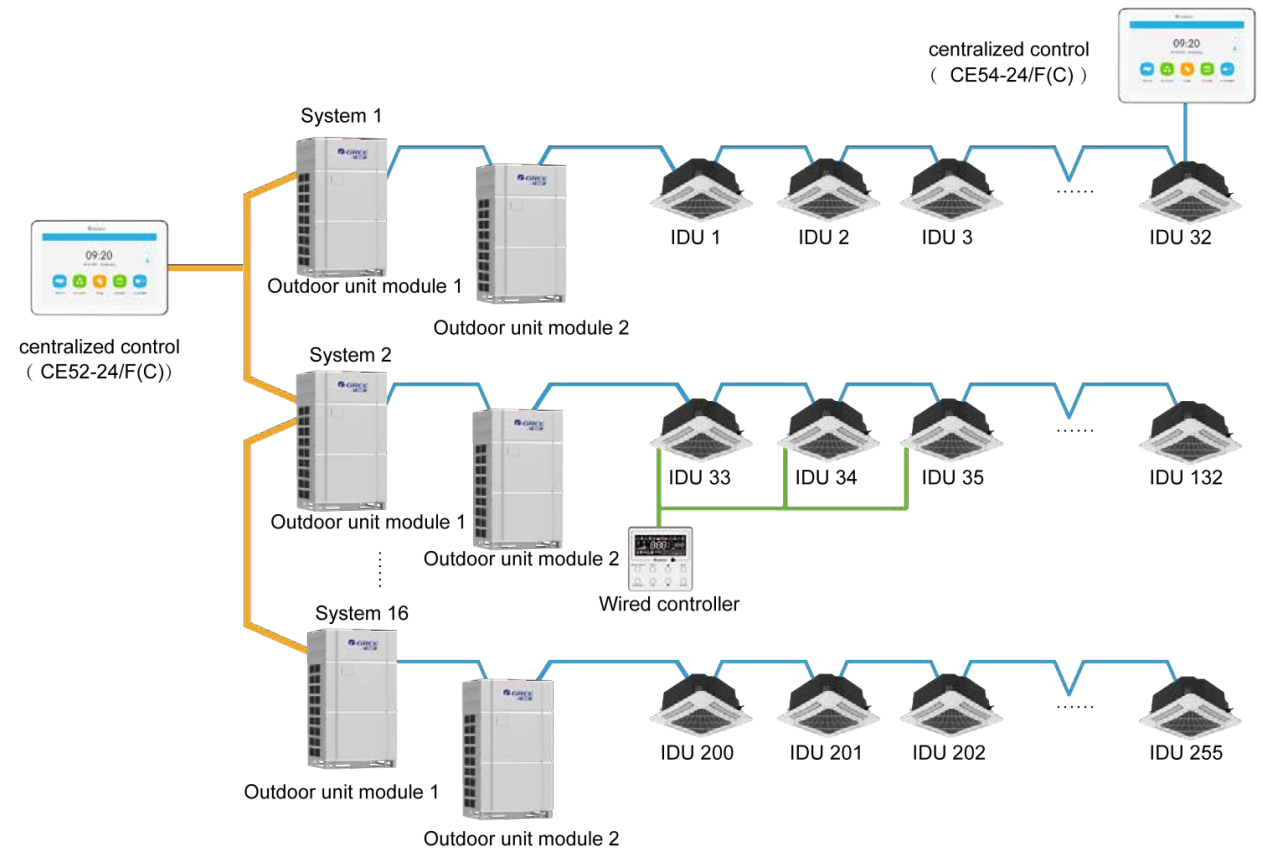
Modbus Gateway RTU  
H2M Gateway



S2S KNX Gateway

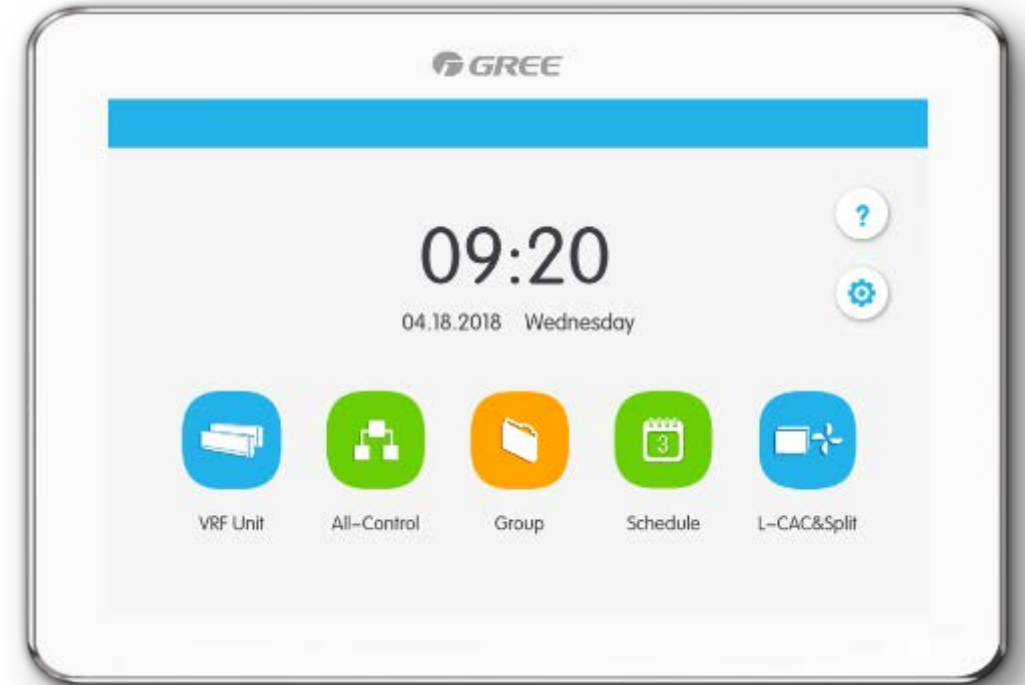
## Intelligent control management – 6. Local centralized control solution

- Support single system and multi-system centralized management
- Support both CAN and modbus networks, covering VRF, U-Match, Free-Match, Mini-Split models
- CAN network supports up to 16 systems and 255 indoor units
- Modbus network supports up to 36 indoor units



## Intelligent control management – 6. Local centralized control solution

- 7" high resolution color LCD display, full capacitive touch control
- One button all open / all off
- Single/centralized management, group management, schedule management
- Indoor unit sorting, energy saving setting, real-time display of indoor and outdoor units
- Supported languages: Chinese Simplified, Chinese Traditional, English, Spanish, French, Portuguese, German, Turkish
- Support VRF, U-Match, Free-Match, Mini-Split models at the same time
- up to 255 GMV+36 other LCAC Units



Clean and healthy fresh air

1

Fresh air system

2

ERV system

3

ERV + DX coil

4

High-efficiency Filter

## 2. FEATURES

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## Clean and healthy fresh air– 1.Fresh air system

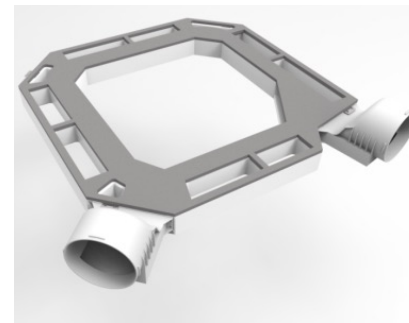
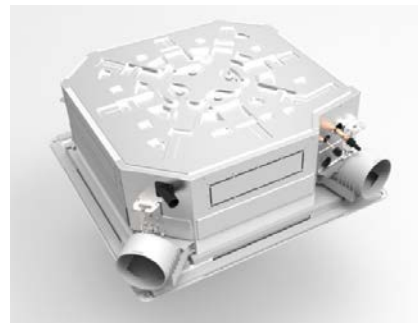
**Fresh Air Processing Indoor Unit:** 1200 ~ 4000m<sup>3</sup> / h air volume, widely used in villas, high-end communities, commercial places, and large public places.



**Completely fresh, comfortable and natural**

50-300Pa Capacity 14-45kW

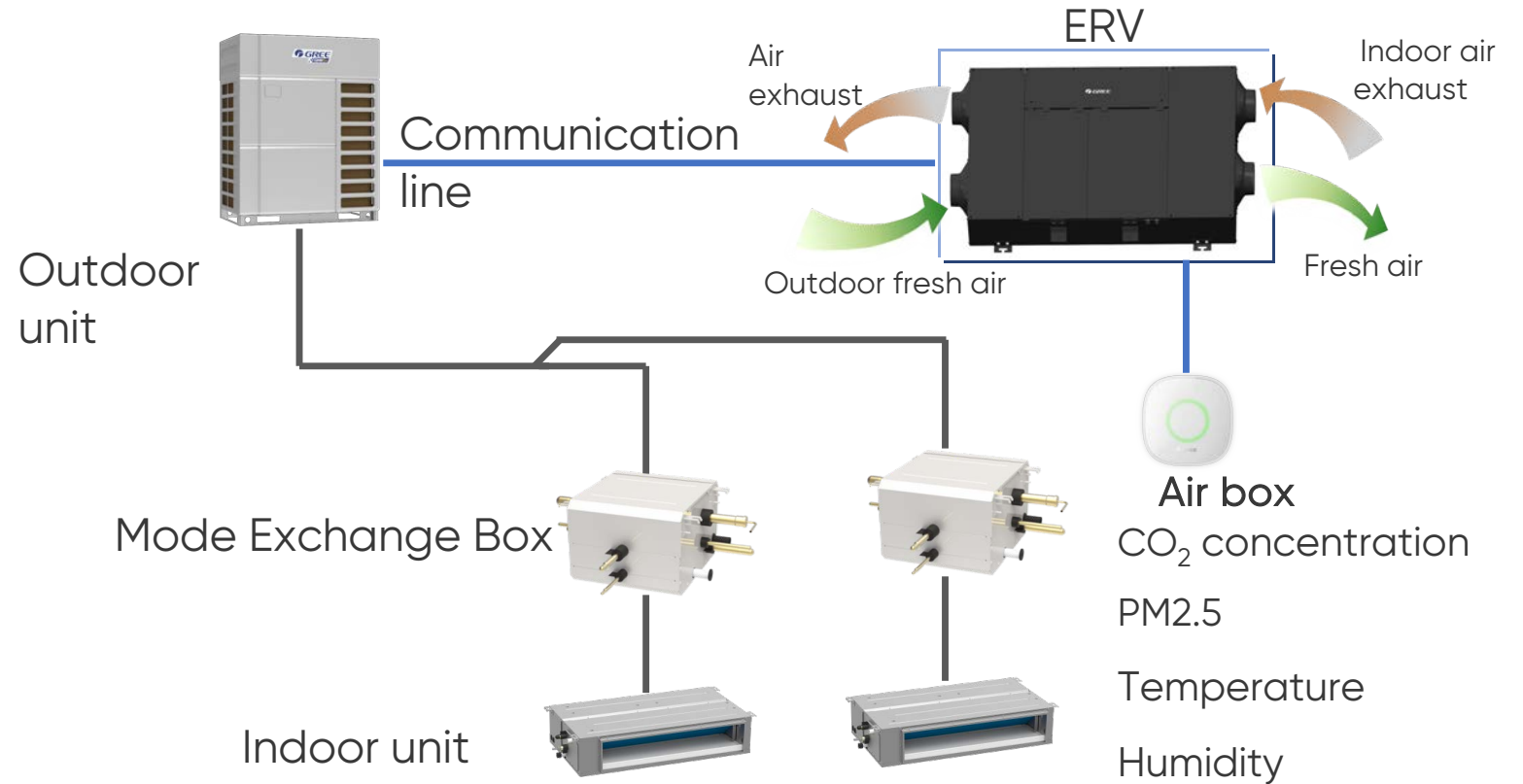
**Cassette indoor unit:** Optional fresh air fitting can effectively introduce 8~10% of outdoor fresh air and improve indoor comfort.



# 2. FEATURES

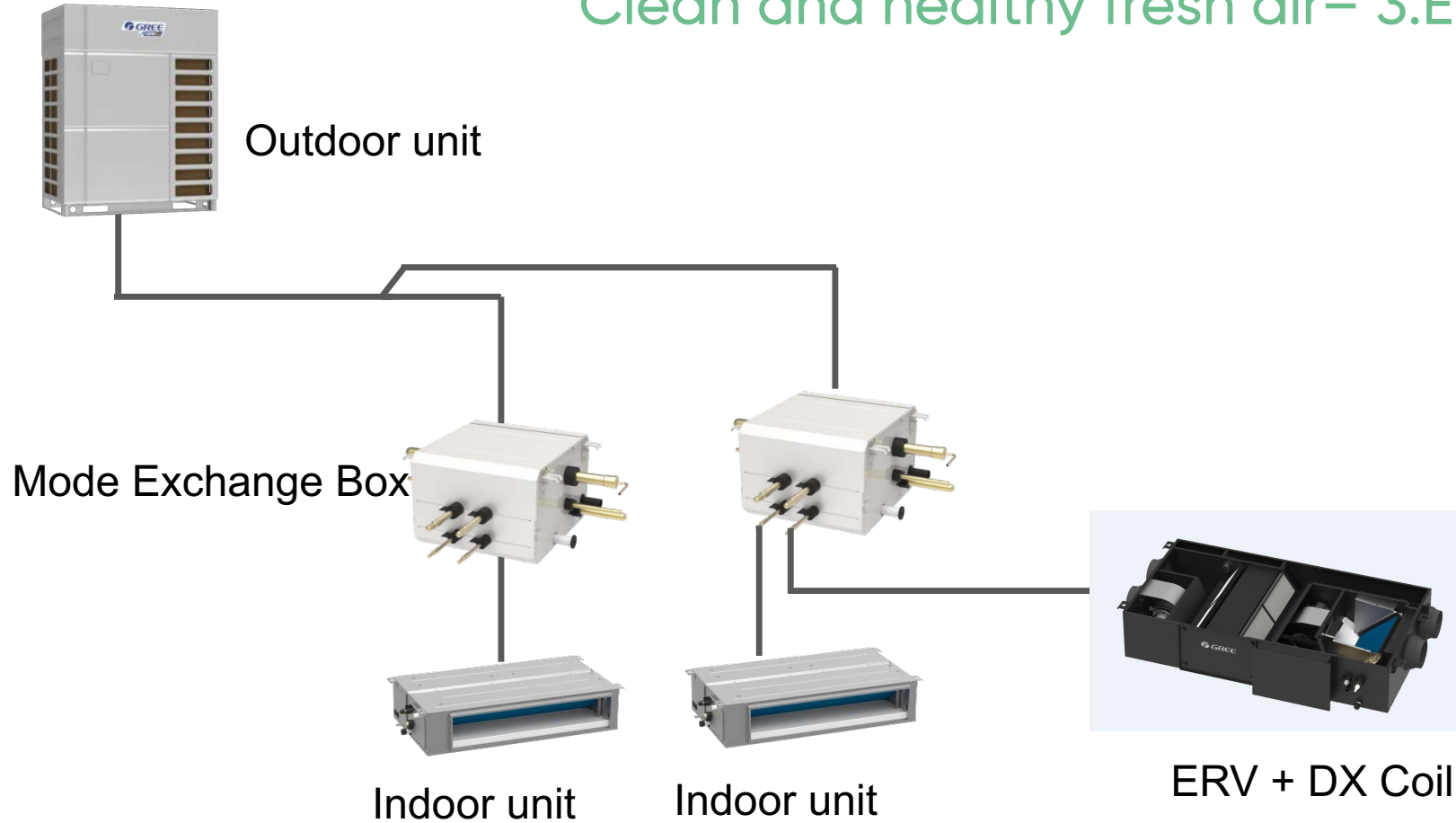
## Clean and healthy fresh air – 2.ERV system

- Constant air volume control to ensure that the air volume does not decay within a certain range of external static pressure
- Multiple control method: manual control; VRF unit linkage control; automatic detection control
- Air volume: 150-500m<sup>3</sup>/h
- Five modes, switch freely



# 2. FEATURES

Clean and healthy fresh air – 3.ERV + DX coil

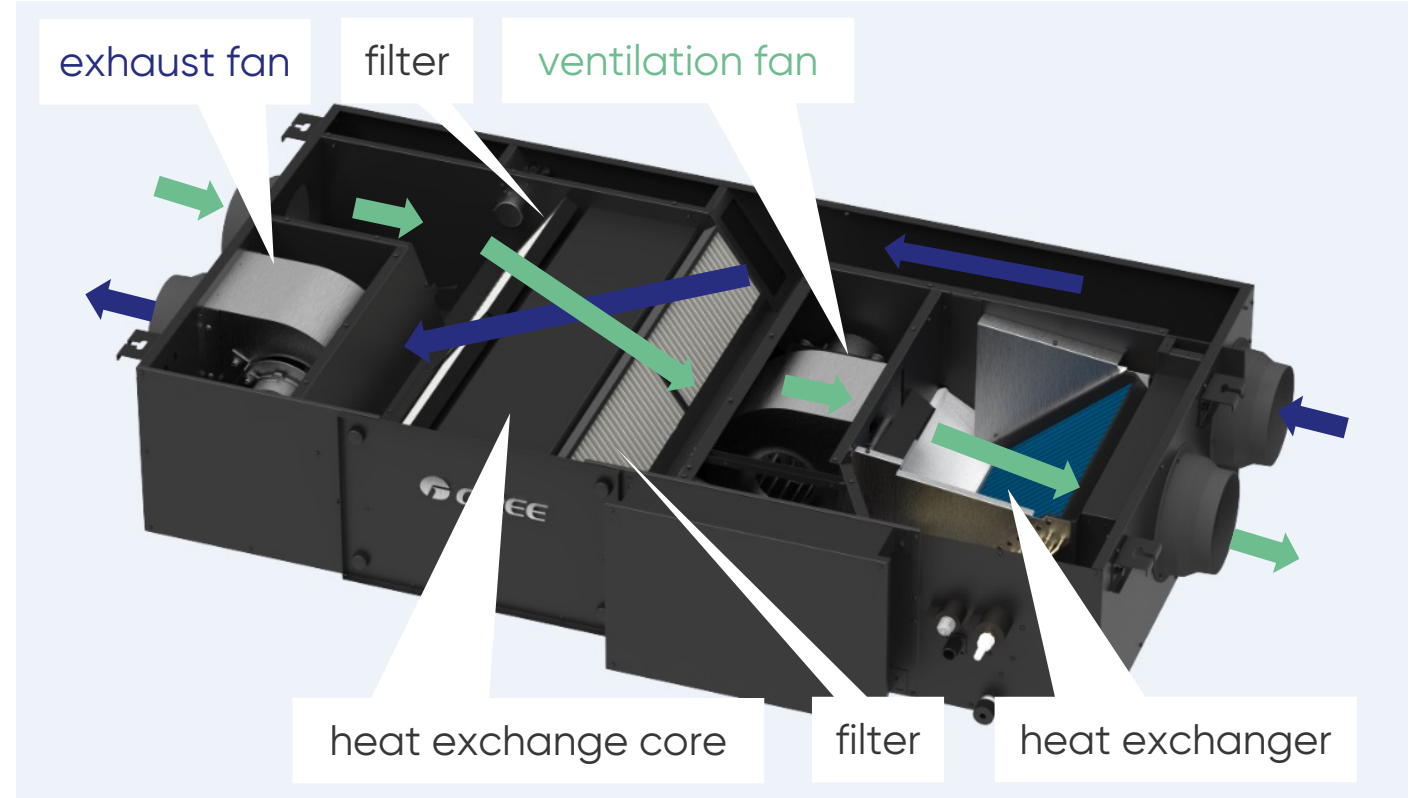


## 2. FEATURES

## Clean and healthy fresh air – 3.ERV + DX coil

After the indoor exhaust (blue exhaust) enters the unit, it will enter the filter, then enter the heat exchange core for heat exchange, and then send it out through the exhaust fan.

After the indoor air supply (green fresh air) enters the unit, it will also enter the filter, and then enter the heat exchange core for heat exchange. The fresh air is blown into the heat exchanger for further processing and then sent to the room.



## 2. FEATURES



## Clean and healthy fresh air– 3.ERV + DX coil

### high-efficiency heat exchange

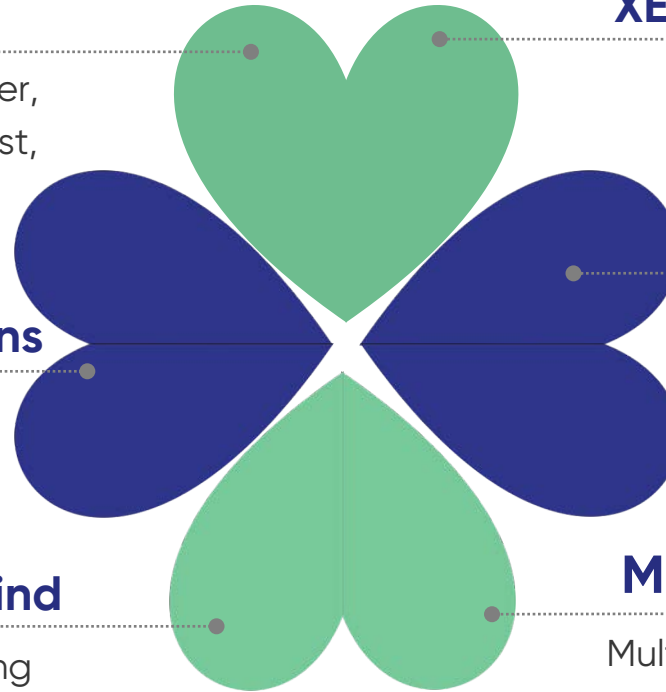
Built-in high-efficiency hexagon heat exchanger, which can recover the energy from indoor exhaust, reducing the energy efficiency of fresh air, eco-friendly and energy-saving.

### With both cooling and heating functions

Built-in integrated heat exchanger, which can realize temperature control of air supply without external equipment, simple and energy-saving.

### filter auto replacing and washing remind

The system can automatically calculate the using period of filter and remind the user to replace and wash the filter.



### XE70-33/H dot matrix wired controller

The dot matrix wired controller is compatible with both the indoor unit and the new, which can realize both IDU control and ERV control.

### Air volume without attenuation

The unit adopts constant air volume control, which can keep constant air volume within the range of rated static pressure without attenuation of air volume, to achieve high-efficiency ventilation.

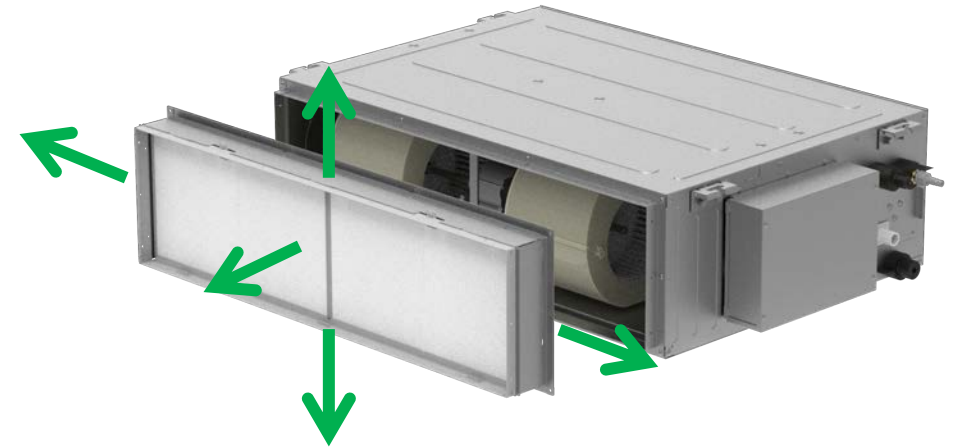
### Multiple operating control modes

Multiple operating control modes are designed for the unit, including linkage, free cooling, group control, etc., greatly improving the applicable locations.

## Clean and healthy fresh air – 4. High efficiency filter

High-efficiency purification filter can effectively filter PM2.5 and meet the national standard high and medium efficiency level (70% ~ 95%).

1. Small air resistance and less volume attenuation.
2. Use flame retardant materials to meet fire protection requirements;
3. With 5 disassembly directions for convenient replace and installation.



\*It should be customized, optional fitting for SDB series indoor units.

Stable, reliable

1

Advanced  
CAN+  
communication  
technology

2

Self-adapting  
drive control

3

Oil system  
control

4

Rotation  
control

5

Compact  
structure

6

Cooling system  
high  
adaptability

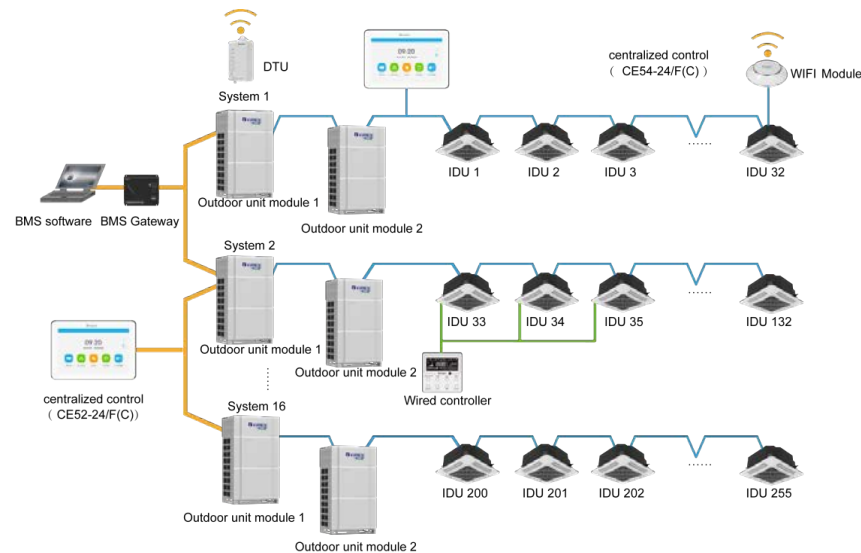
## 2. FEATURES

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## Stable, reliable – 1. Advanced CAN+ communication technology

### Innovated stratification CAN+ multiple master network structure

For the application features of air conditioner that with multiple nodes, multistep control and intelligent expansion, innovative stratification CAN+ multiple master network structure, to realize relative improvement of nodes number of single system by 56%, and response time for centralized control system is shortened by over hundreds of times.



Technical Effect		CAN+ Network Structure	Traditional Network Structure
Real-time capability of interaction	Communication cycle of single system	<500ms	About 5s
	Preferential response	ms class	second class
	Centralized control response time	6s	10min
Reliability of interaction	Error isolation	Automatic	No
	Impact of node malfunction	Not rely on any node	Totally rely on master unit
	Sub-net scale	100*	64
Expansibility	Intelligent equipment	Free access	Require bridge connection

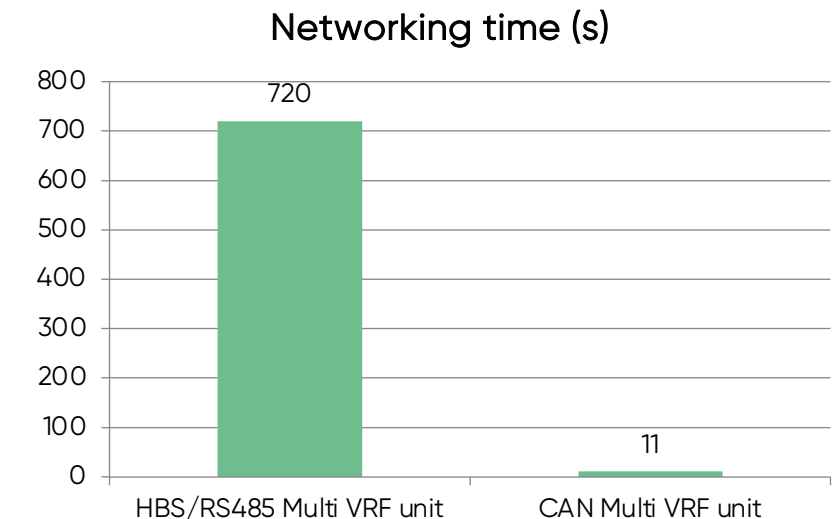
## 2. FEATURES

## Stable, reliable– 1.Advanced CAN+ communication technology

### First formulated CAN+ communication protocol

It is the first time to formulate and standardize CAN+ communication protocol: two-stage network universal design, data can be directly transferred; functional code, network address, data field and related core concepts are developed, realizing grading, classification and real-time transfer of communication data, satisfying the demand of intelligent expansion.

ID section (arbitration section in CAN protocol)						Data section (DATA)
11bits			18bits			8*N bits
4bits	4bits	3bits	4bits	7bits	7bits	8*N bits
Function code		CAN2 network addr.		CAN1 network addr.	Data type	Data section
Function extensibility: support 256 function types and priority levels		The number of devices is expandable: 128*128=16384 devices			Business data extensible: 128*256=32768 bytes	



## 2. FEATURES

## Stable, reliable– 1.Advanced CAN+ communication technology

### The first nonpolarity CAN+ communication chip

#### Good expansibility

Network scale: single system can control up to 100\* indoor units, reducing equipment investment and management costs;

Instant use: new device can be accessed freely, with flexible engineering configuration;

Centralized control: two-stage CAN+ communication network structure, no bridge device is needed between the systems, and the centralized control equipment can control up to 16 systems.

\* Require engineering customization

#### High-efficiency and reliable

Innovatively integrate the air conditioning control business with the bus arbitration mechanism to achieve second-level response of large centralized control system; with fault isolation function, the faulty node quits actively, and the network is not affected by the faulty node.

#### Convenient installation commissioning

With automatic addressing function, the system automatically assigns addresses without manual dialing and networking, saving time and effort;

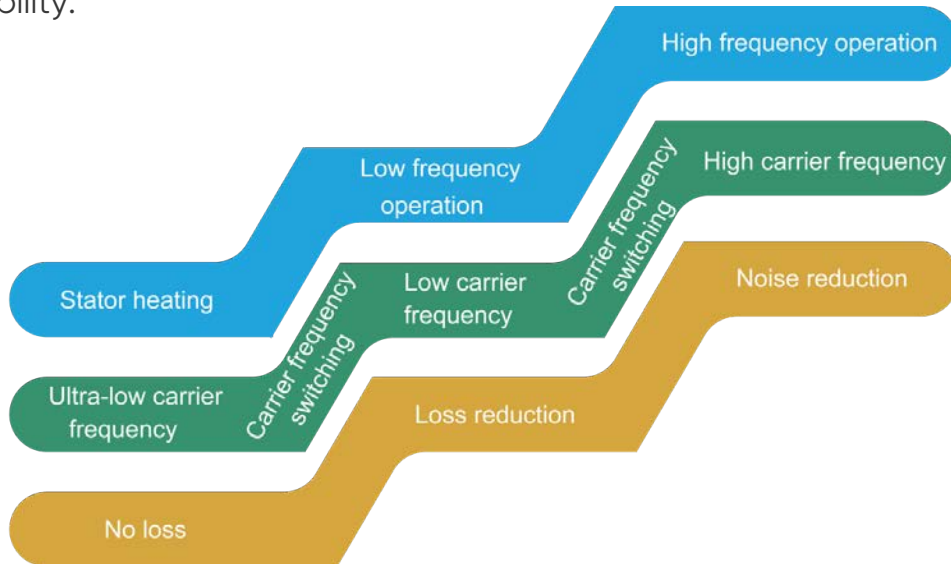
The interface is non-polar design, engineering wiring does not need to consider the positive and negative side, which is safe and reliable.

## 2. FEATURES

## Stable, reliable – 2. Self-adapting drive control

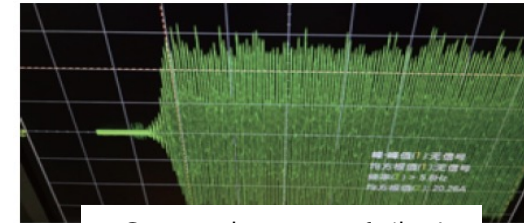
### Variable load and frequency control

Based on the operating characteristics of the compressor, the load frequency is automatically switched to maximize efficiency and reliability.

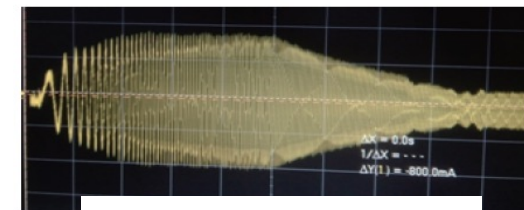


### Strong torque start control

No need for external balancer. Compressor torque self-feedback and adjustment control are adopted. The compressor can start under high pressure difference, ensuring system continuity and stability.



General startup failed



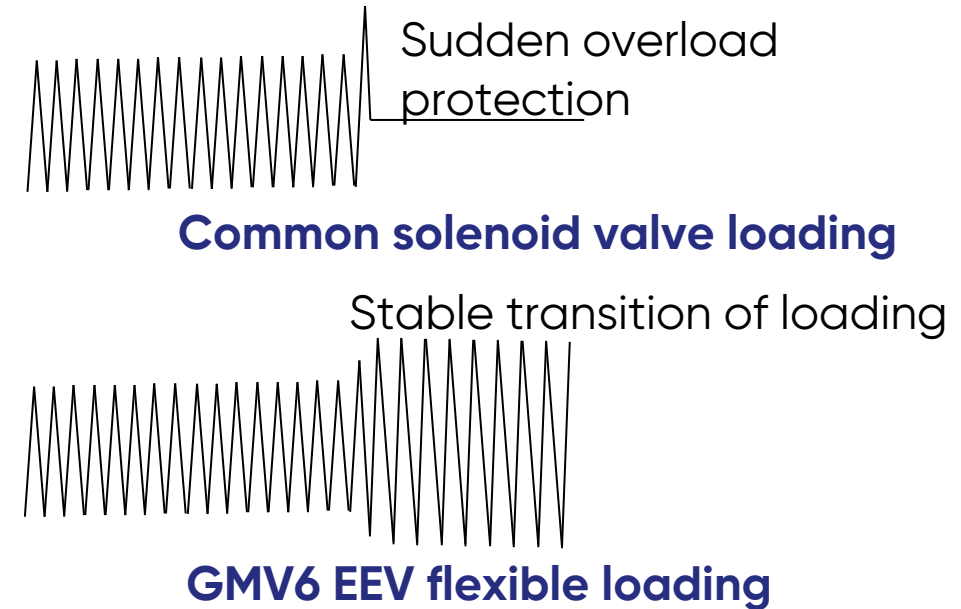
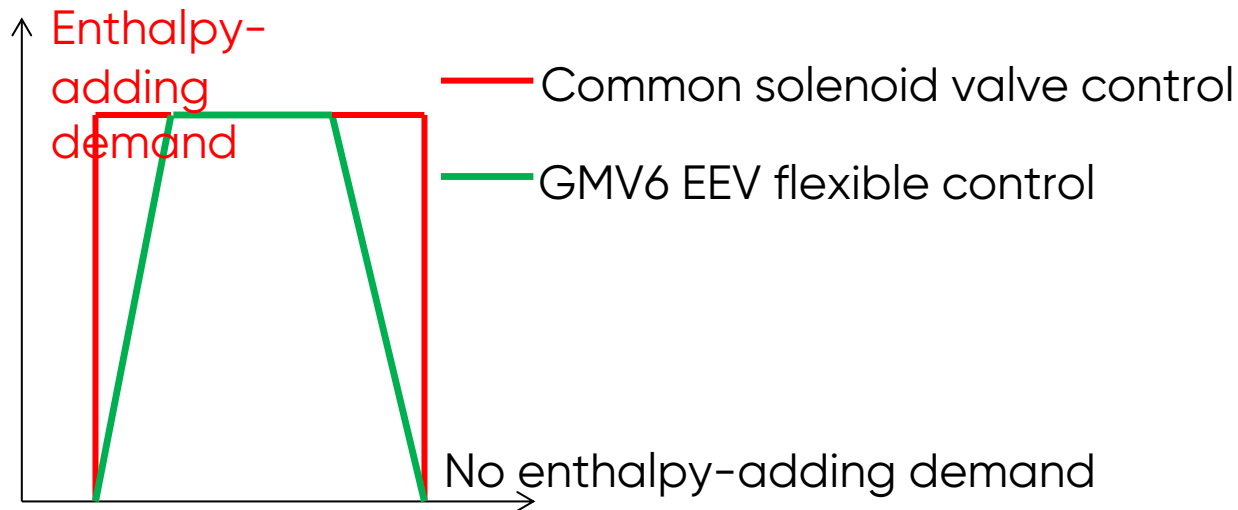
GMV6 startup

# 2. FEATURES

## Stable, reliable – 2. Self-adapting drive control

### Flexible enthalpy-adding control

Generally, system adopts “0 $\leftrightarrow$ 1” switching mode to switch between the increase and non-increase of enthalpy, which may lead to dramatic load change of the compressor, shutdown or even damage to the compressor. GMV6 utilizes the linear flow variation features of EEV to gradually increase the load during enthalpy increase and achieve stable and continuous operation.





## Stable, reliable – 2. Self-adapting drive control

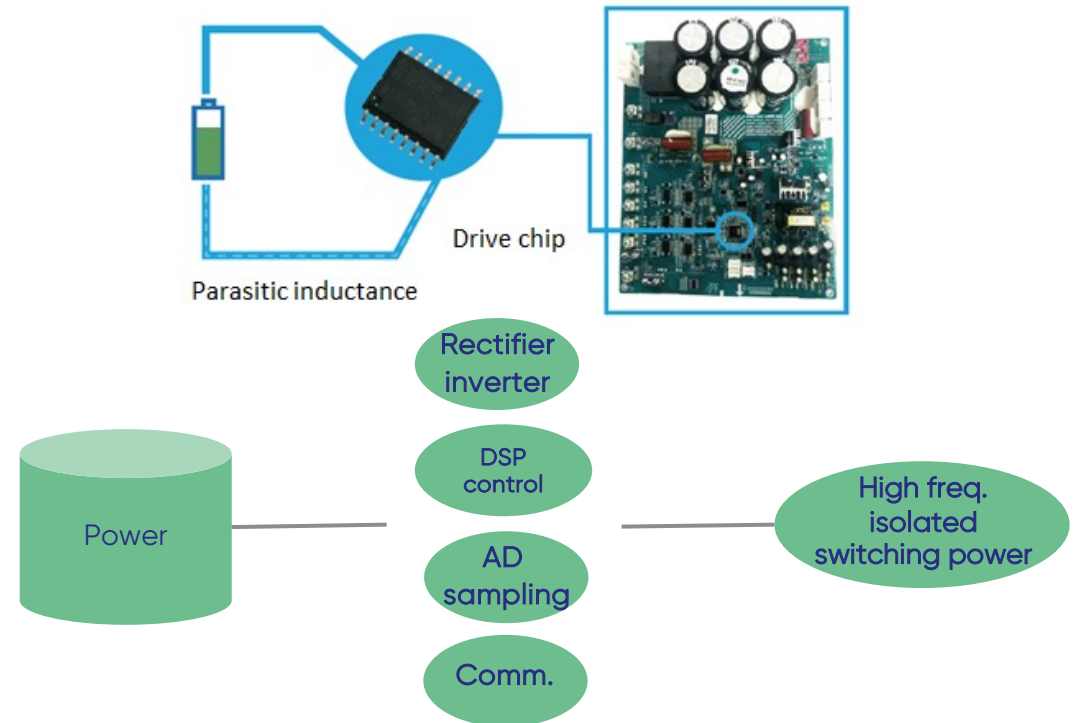
### High Voltage shock prevention technology

The larger the compressor capacity, the larger the current and the influence of the parasitic inductance. It may lead to lower stability and damage to components.

High voltage switching power + fully isolated drive technology, multi-channel output of electromagnetic isolation to avoid interference.

Circuit protection function is synchronously isolated and the desat setting suppresses transient spike currents.

Industrial performance and large-power drive, more secure and reliable.



# 2. FEATURES

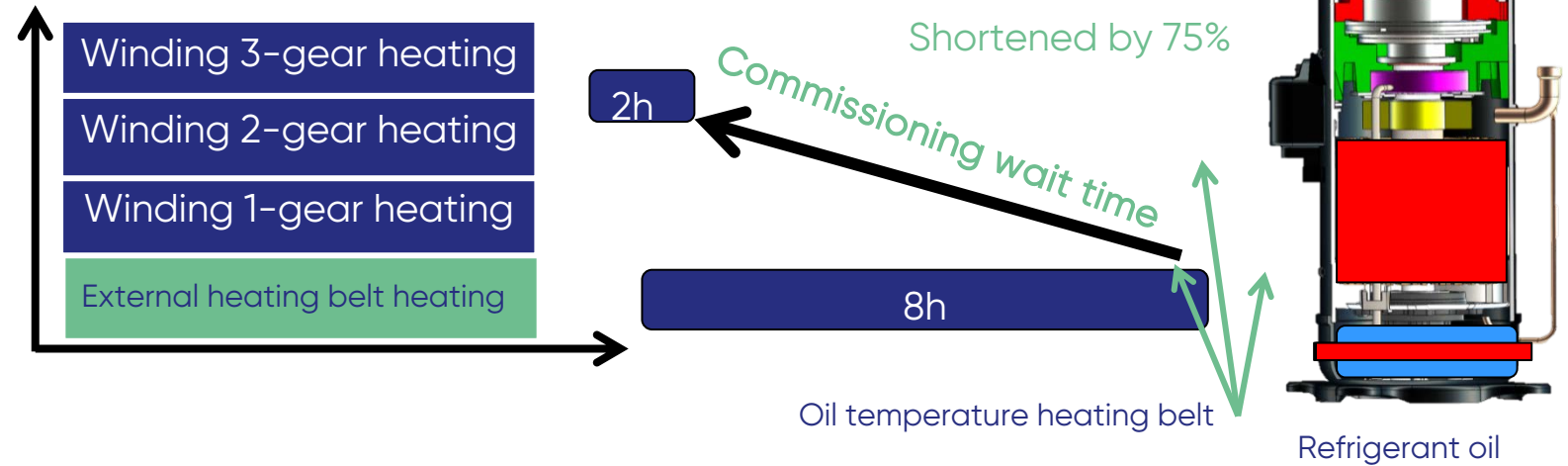
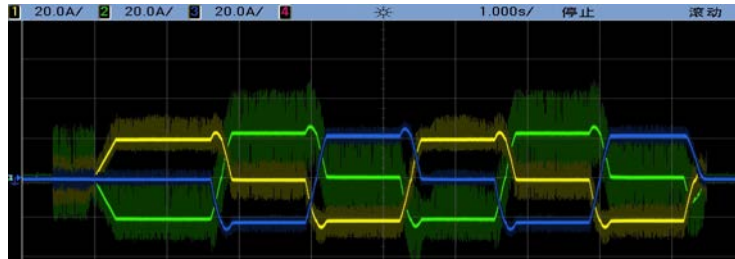
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## Stable, reliable – 3.Oil system management

### Double heating source oil temperature control technology

Under standby status, the compressor winding and external electric heating belt can independently or simultaneously conduct heating control of the refrigerant oil.

Variable control of motor winding heating power enables fast and safe start-up under different environmental conditions, and the preheating time is shortened from 8 hours to 2 hours.

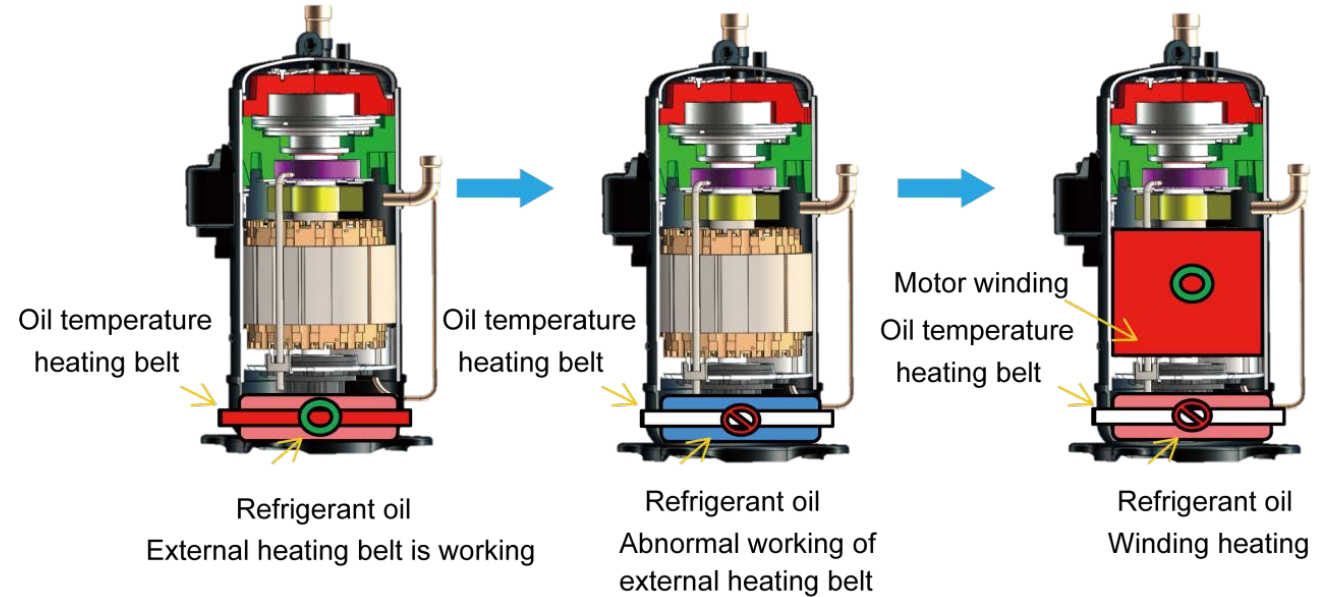


## Stable, reliable – 3.Oil system management

### Double backup heating

Under the condition that the external heating belt works abnormally in the GMV6 unit, the winding heating can also work normally to ensure the reliability of compressor.

Ordinary units only have external electric heating control. Once the electric heating is faulted, the probability of damage to the compressor is greatly increased.

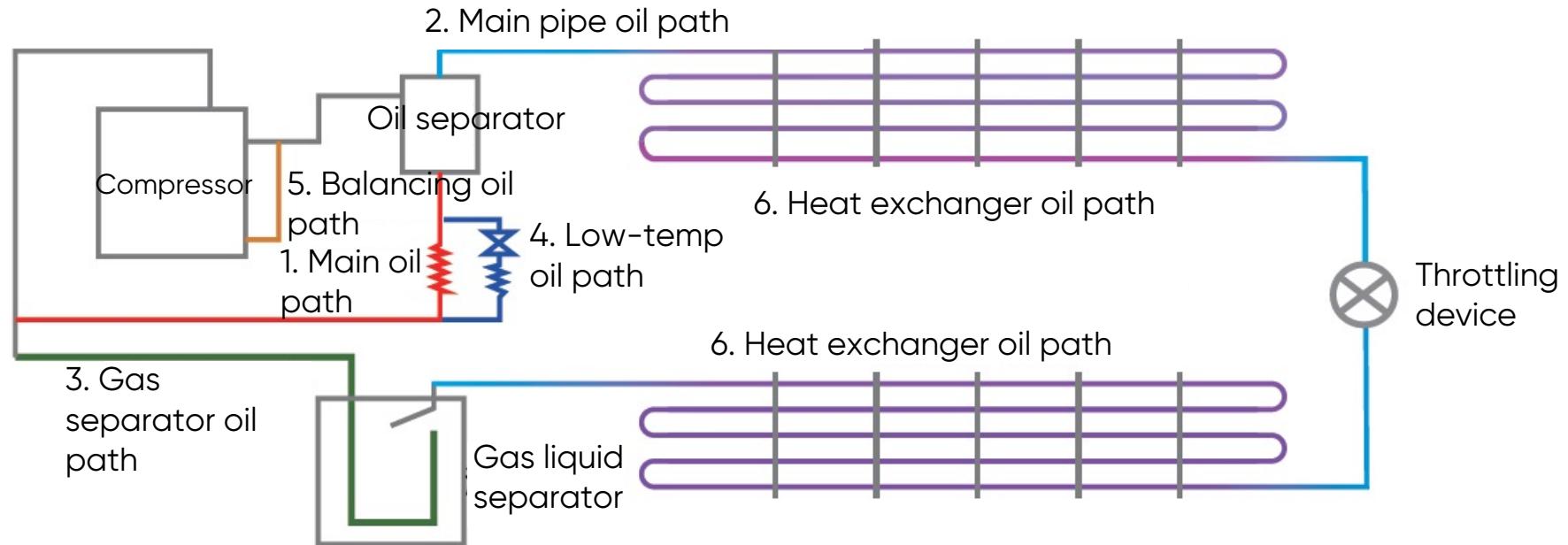


## 2. FEATURES

## Stable, reliable – 3. Oil system management

### Low-temp multi oil circuit management

6 major paths ensure the smooth and reliable oil circuit

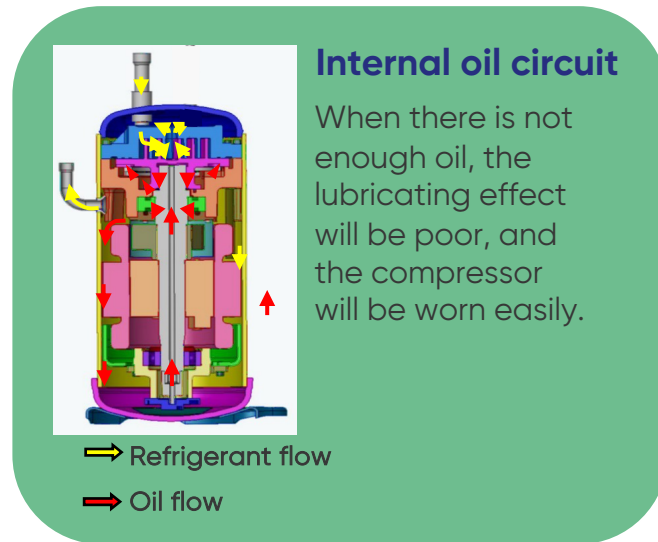


## 2. FEATURES

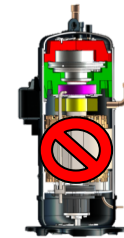
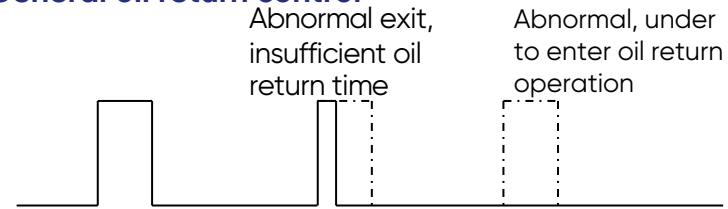
## Stable, reliable – 3.Oil system management

### Differential pressure variable flow oil return

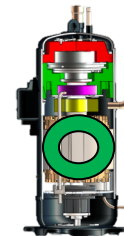
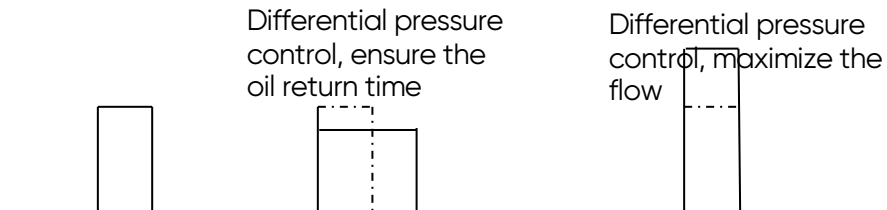
According to the different working conditions, differential pressure control factor is introduced. Based on the real-time operating parameters, system can achieve intelligent variable flow oil return to ensure maximum flow rate and duration of oil return and improve reliability.



#### General oil return control



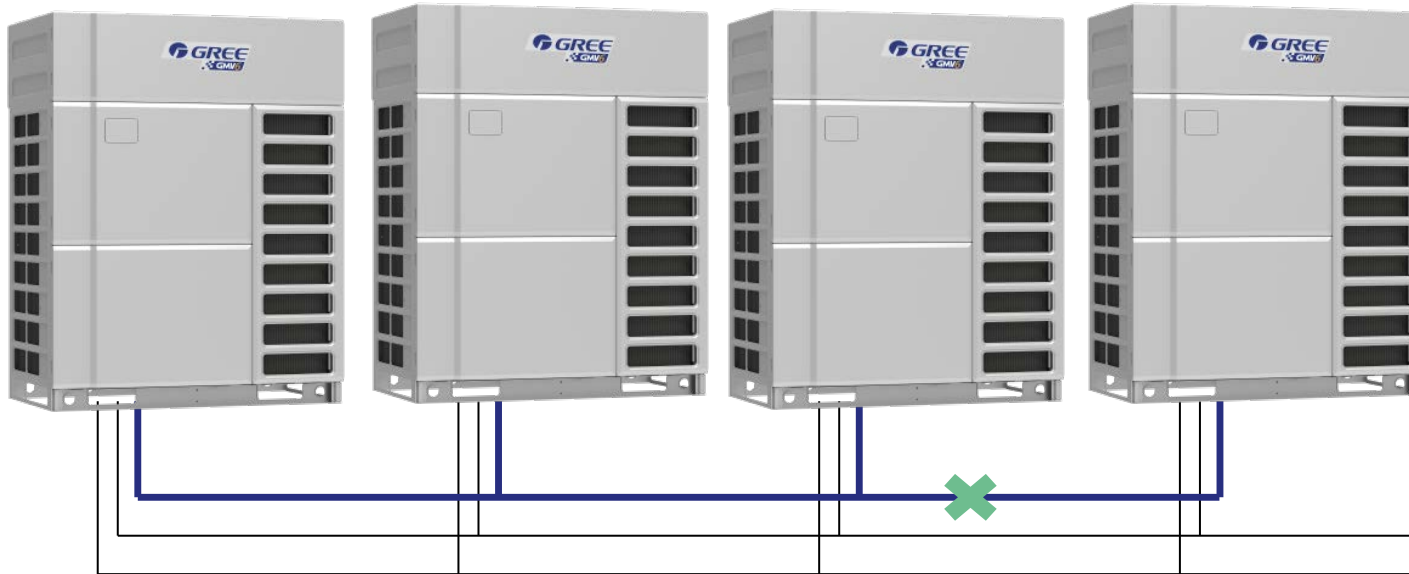
#### Differential pressure variable flow oil return control



Stable, reliable – 3. Oil system management

## Self balancing control without oil balance pipe

There is no need for external oil balance pipe. By collecting and calculating the capacity output and threshold of each module, the distribution of refrigerating oil is automatically controlled to ensure stable operation of the system.



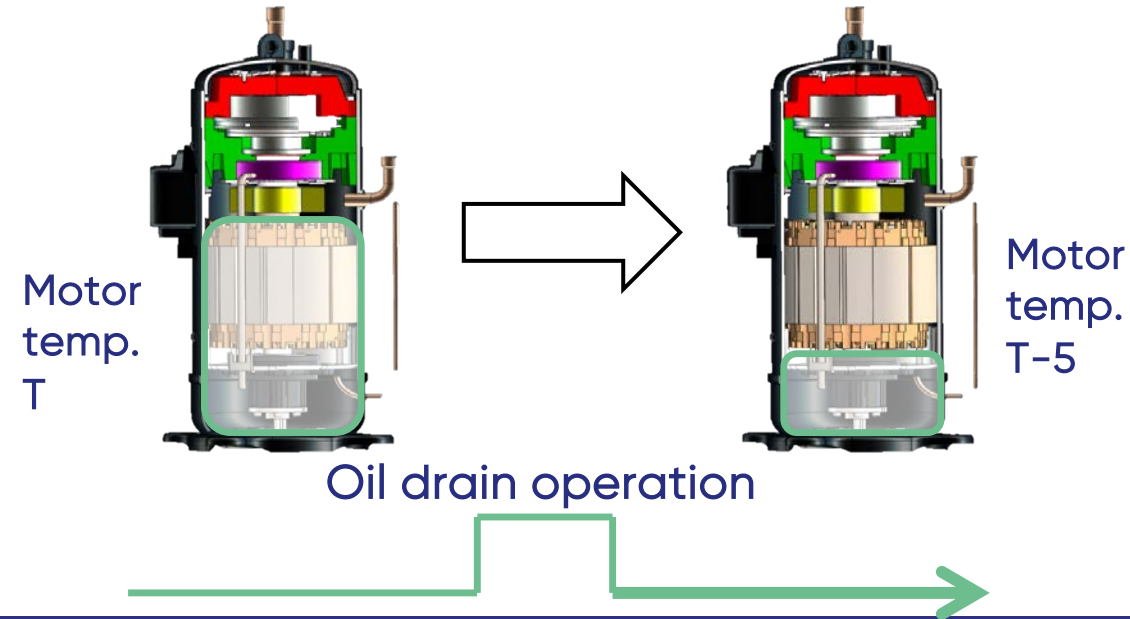
**GMV6**

## 2. FEATURES

## Stable, reliable– 3.Oil system management

### Active compressor oil drain control

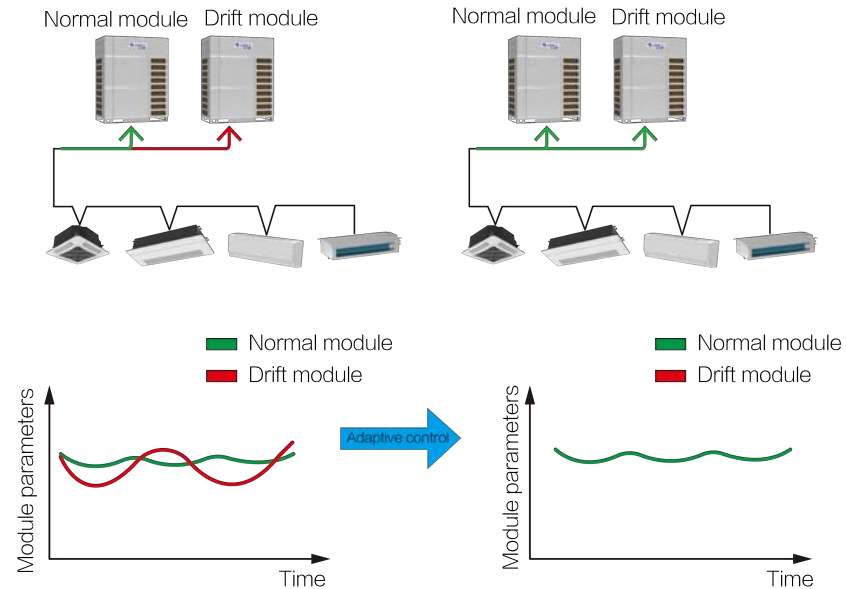
When the system is running at low load, the compressor will actively raise the frequency to discharge the excessive refrigerating oil and store it in the oil separator. This will effectively ensure the heat dissipation of the compressor.



## Stable, reliable – 3.Oil system management

### Module piping adaptive control

In terms of modular design, the ODU detects the parameters of each module, and the system defines the drift module, memorizes the operating features of the drift module. Each module adjusts the control mode and control threshold of key components according to the difference in characteristics. They can memorize and quickly achieve efficient operation when being restarted the next time.



## 2. FEATURES



Stable, reliable – 4.Rotation control

## Compressor rotation

In system control, the overall life of the modular units is considered. When there is more than one compressor, the internal compressors will work in turn to balance the service life of each compressor.



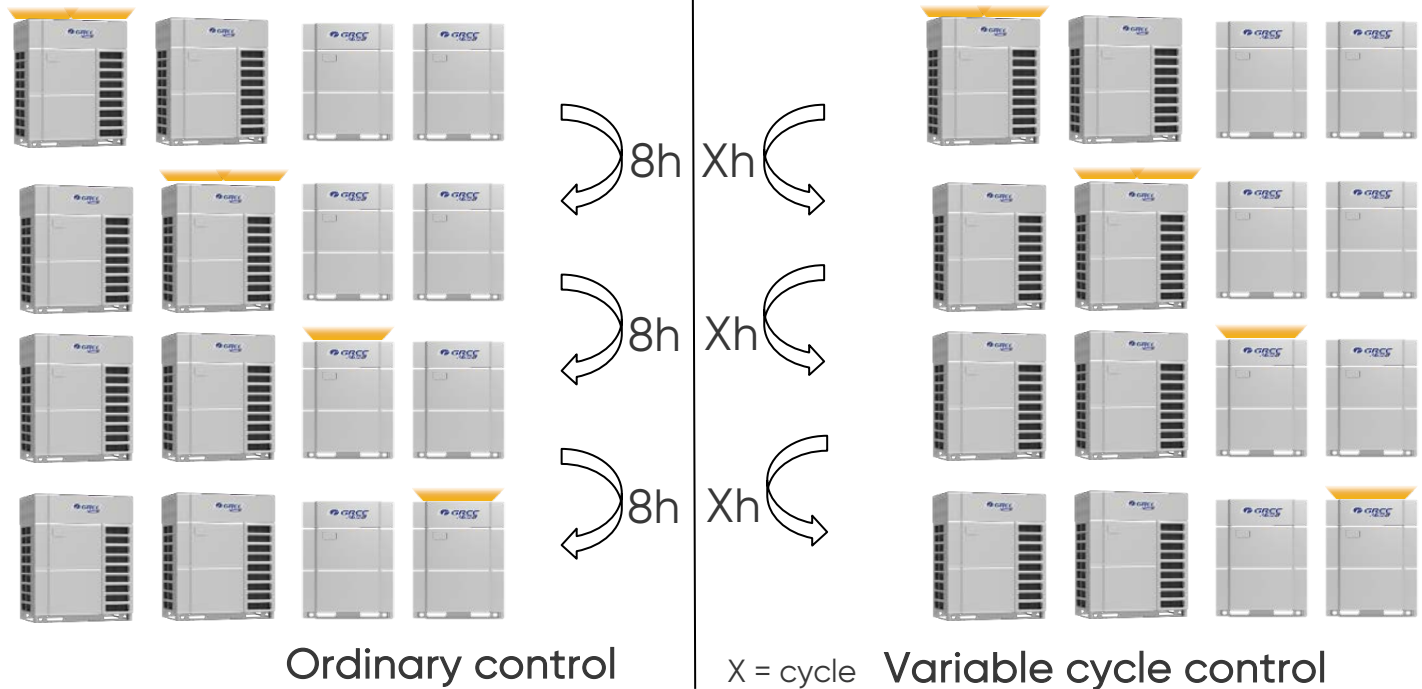
# 2. FEATURES

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Stable, reliable – 4. Rotation control

## HPAC high-efficiency modularized control

GMV6 adopts brand new modularized control method to not only ensure the operating service life of whole unit, but also improve the overall operating energy efficiency.



HPAC: high performance alternate control.

# 2. FEATURES

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## Stable, reliable– 5.Compact structure

### Integrated intelligent PBC

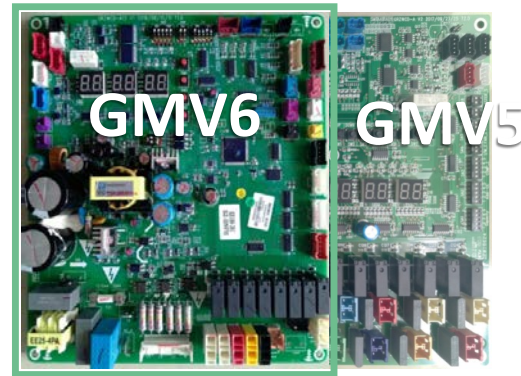
- Compact design and efficient processing technique to reduce space, increase the power density of the inverter, enrich functions.

Intelligent design: low power control, auto address allocation, auto debugging, fault memory and query;

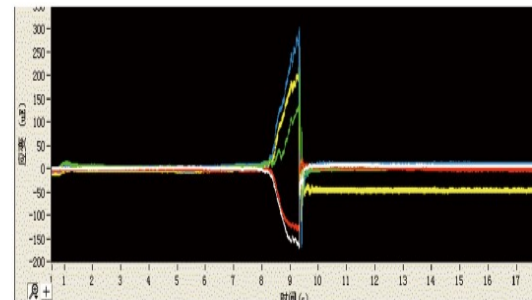
High reliability: wide voltage range, multiple protections against lack of phase, reversed phase, overload, surge, static electricity; moisture-proof, dust-proof, corrosion-proof;

- Advanced production and inspection technology

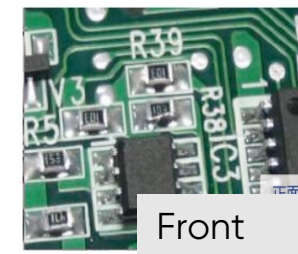
The controller board receives SMT processing–AOI optical inspection–ICT online inspection–FCI functional test–DCT test and vibration+ stress test, etc. the strict manufacturing and inspection process ensures that the control board can withstand high temperature, high humidity, wear and tear and drop and other adverse conditions.



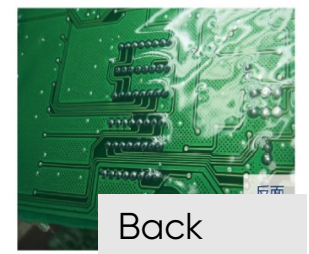
SMT workshop with constant temp and hum.



Stress test simulation curve



Front



Back

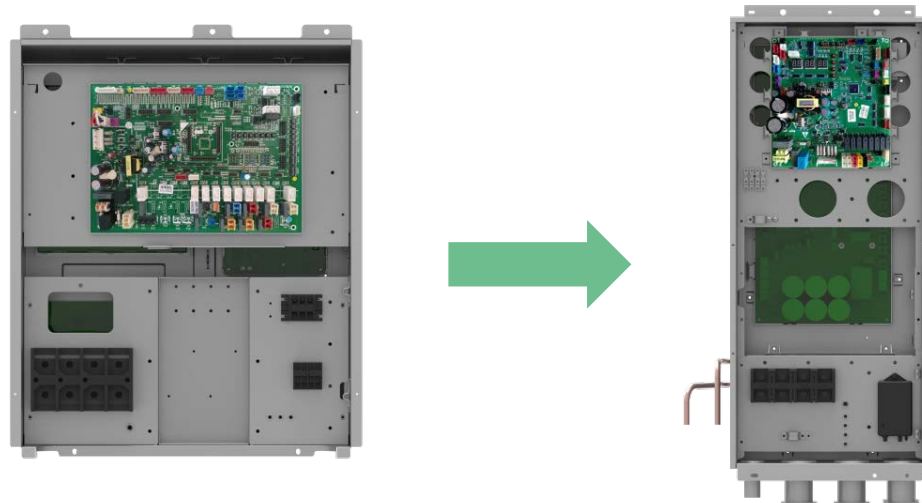
The board receives SMT processing

# 2. FEATURES

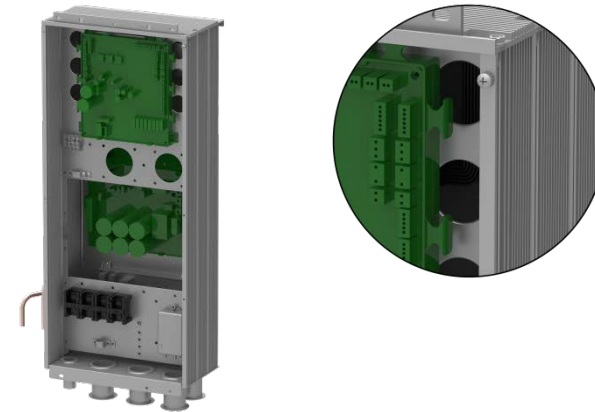
Stable, reliable– 5.Compact structure

## New electrical components

With the integral design, the overall size is reduced by **35%**. Installation is more convenient.



The electric control structure adopts **Al. alloy with high thermal conductivity**. The reinforced heat transfer improves the internal heat dissipation and guarantees the reliable operation of the high-speed inverter compressor.

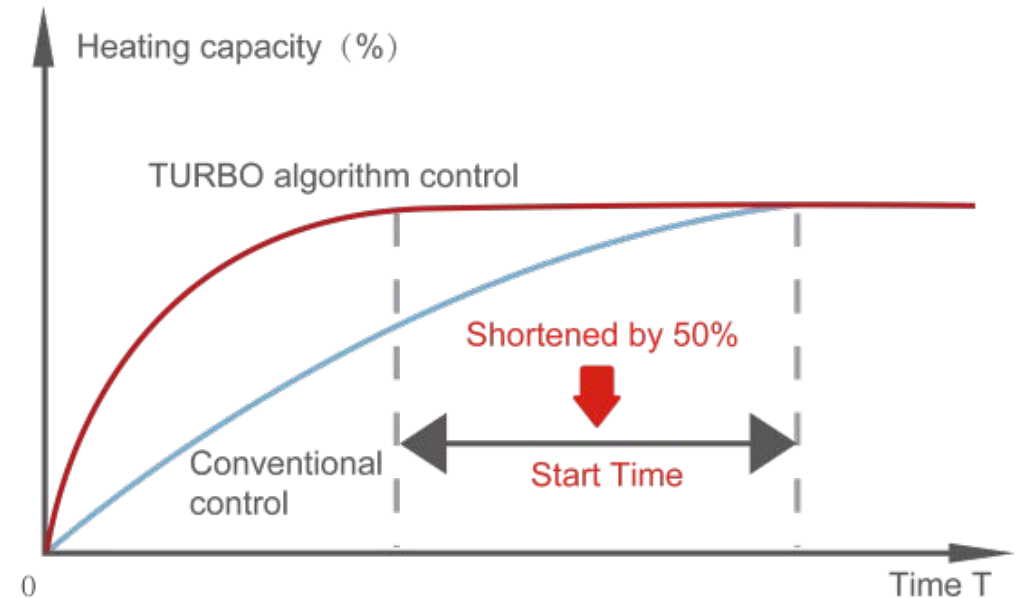


# 2. FEATURES

## Stable, reliable – 6. Cooling system high adaptability

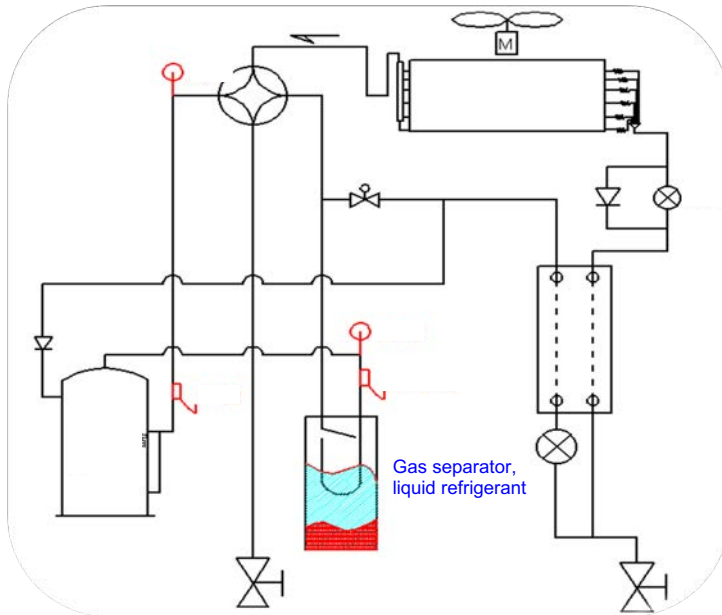
### Ultra-low temp startup control

TURBO low-temp flow prediction algorithm is based on the control of intermediate pressure. The compressor, fan and EEV components accelerate refrigerant circulation according to the features of low-temp refrigerant.



## Stable, reliable – 6. Cooling system high adaptability

### Ultra-low temp running control



Low-temp  
low-pres.  
liquid  
refrigerant  
circulation  
control



-40°C  
evaporation  
temp.  
control



Low-temp.  
large  
temperature  
difference  
heat  
exchange  
control

EVI gas and  
liquid mixed  
control



Pres. ratio  
load  
dynamic  
control



High-speed  
and stable  
operation  
of  
compressor

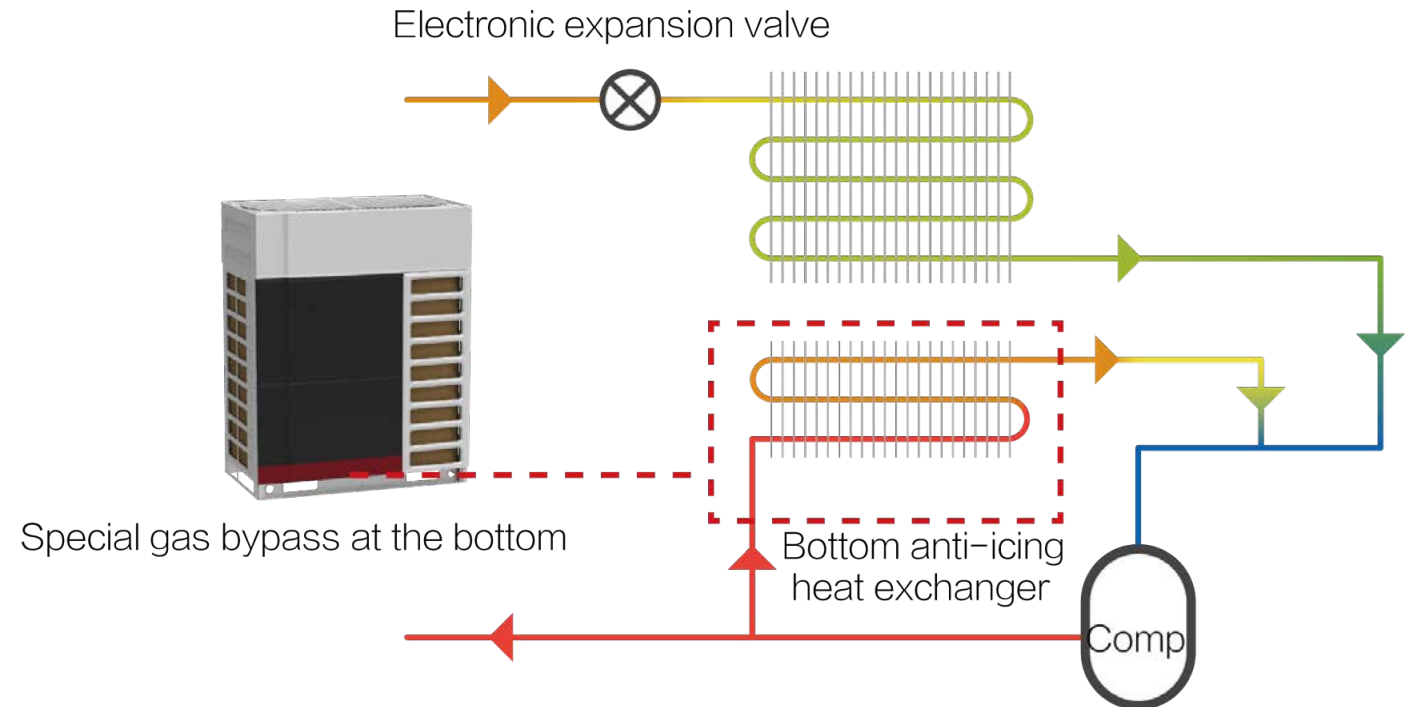
# 2. FEATURES

LIFE  
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## Stable, reliable – 6. Cooling system high adaptability

### Low-temp anti-freezing control

The hot gas bypass at the bottom of the heat exchanger adopts anti-freezing design to achieve effective drainage and stable operation under low temperature.

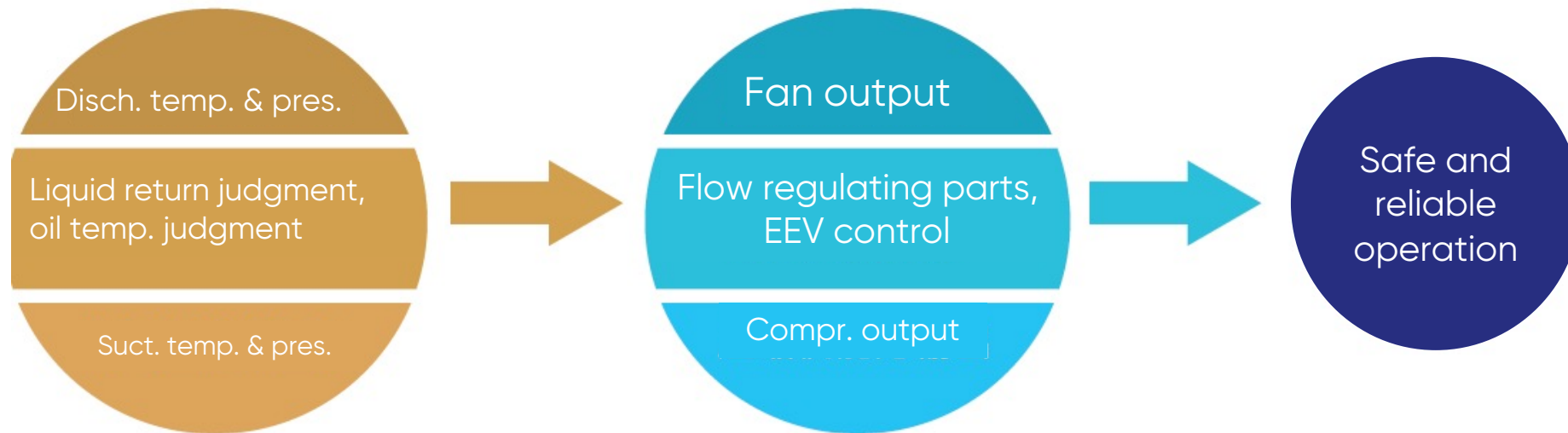




## Stable, reliable – 6. Cooling system high adaptability

### Advanced liquid strike prevention tech

The high-efficiency and large-capacity gas liquid separator can effectively separate gas and liquid refrigerant and avoid a large amount of refrigerant being directly sucked into the compressor. By judging liquid return based on the suction and discharge temperatures, the compressor and EEV will adjust in time to prevent liquid strike.

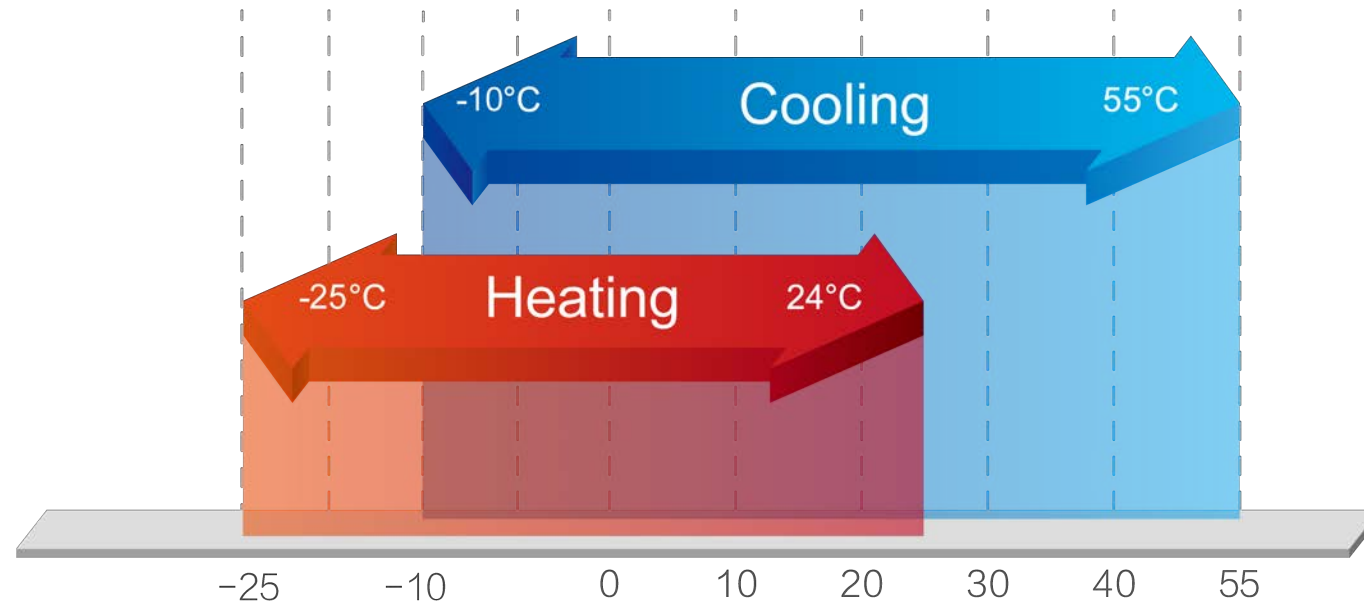




Stable, reliable – 7. Super-wide working range

## Wide operation range

-25°C-55°C stable operation to provide users with comfortable environment in both cold and hot weather.



## 2. FEATURES

## Flexible engineering design

1

Large capacity  
configuration

2

Highly adaptable  
fan systems

3

High piping  
adaptability

4

High installation  
adaptability

## 2. FEATURES

## Flexible engineering design- 1.Large capacity configuration

### Wide capacity design

The maximum capacity is increased, which can better adapt to the needs of the project and improve the construction efficiency.

#### GMV5 HR



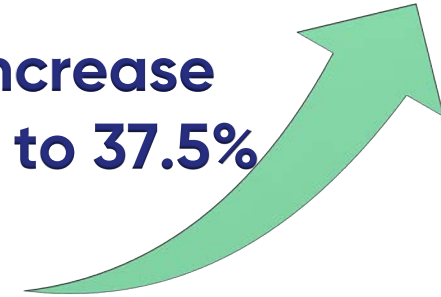
8~12HP

14~16HP



18~64HP

Increase  
Up to 37.5%



#### GMV6 HR



8~12HP

14~22HP







24~88HP

## 2. FEATURES

## Flexible engineering design- 1.Large Capacity configuration

### Compact size

--	GMV5 HR	GMV6 HR	Floor space	Result
335			29%↓	Lower the requirements for engineering applications; save more space
615			40% ↓	

The whole series range from 8HP to 24HP. They can enter residential elevators easily, reducing engineering cost.



## 2. FEATURES

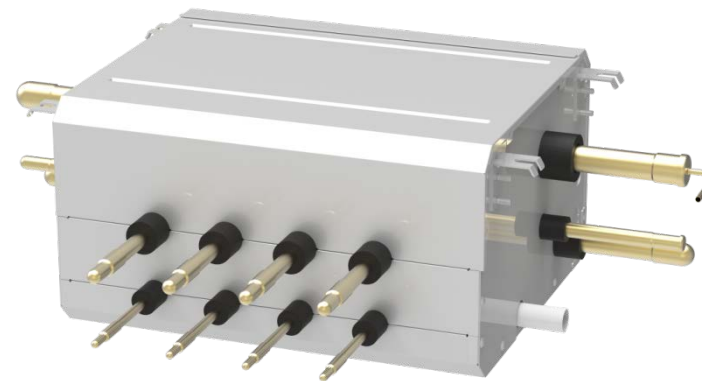
## Flexible engineering design- 1.Large Capacity configuration

### Mode exchange unit

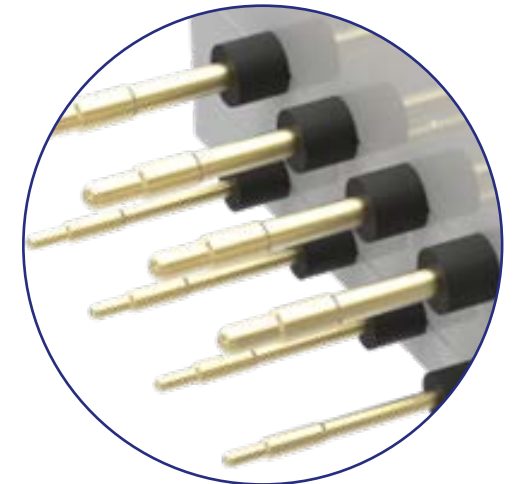
- 4 models: NCHS1/2/4/8D
- The size is reduced by 15%\*, and the loading capacity is increased by 25%.
- Variable tube diameter design and available in various pipe diameters.



Last generation



New generation



\*Some model

## 2. FEATURES

## Flexible engineering design- 1.Large Capacity configuration

### Hydro box



Original Hydro Box

- 2 models: NRQR16L/A-T  
NRQR30L/A-T

Capacity  87.5%

Size  30%



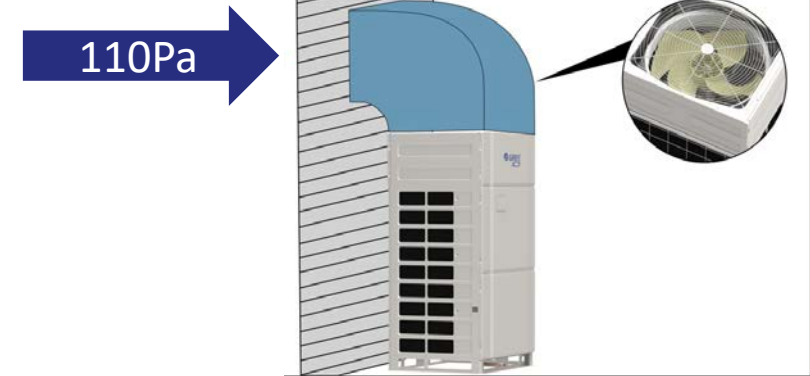
New generation

## 2. FEATURES

## Flexible engineering design- 2.Highly adaptable fan system

### Super-high static pressure design

- (1) New type of guide casing: effective coupling with the fan, for more balanced flow;
- (2) The air grill adopts vortex streamlined distribution to reduce wind resistance;
- (3) High-efficiency motor with strong output;



--	GMV5	GMV6	Increase of static pressure	Result
External static pressure	82Pa	110Pa	34%	Lower the requirements for engineering applications; more convenient for equipment layer design

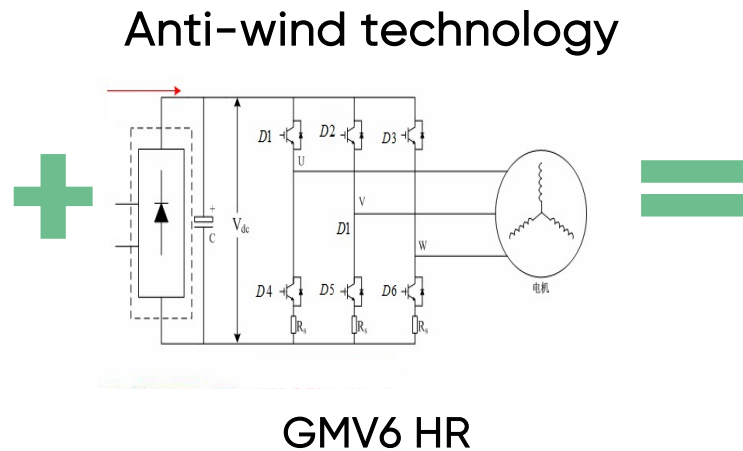
# 2. FEATURES

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## Flexible engineering design- 2.Highly adaptable fan system

### Fan anti-wind design

Before the unit is turn on, if the fan conducts backward operation due to adverse wind, it will adopt dynamic braking to stop the backward fan, and then turn on the unit according to normal program.





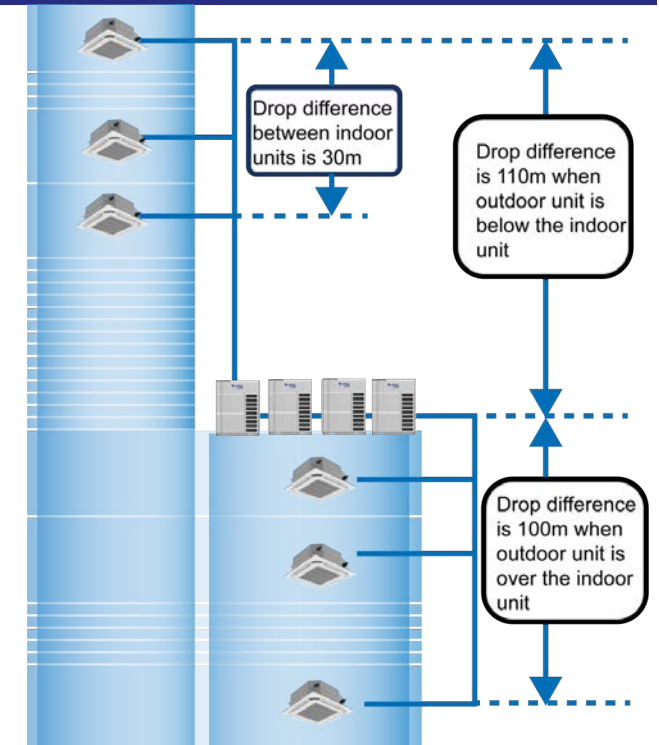
## Flexible engineering design- 3.High piping adaptability

### Super long refrigerant pipe for flexibe design and construction

GMV6 HR combines high drop pressure control technology, indoor unit drop identification technology, intermediate pressure adjustment technology, tube length self-correction technology, and deep sub-cooling technology to increase the length of piping and improve the air conditioning effect.

- The maximum actual single pipe length is 200m, the maximum equivalent single pipe length is 240m, and the maximum piping length is 1,000m
- The maximum length after the first branch pipe is 120m
- The maximum drop of indoor and outdoor units is 110m \* (100m when the outdoor unit is in upper position) \*
- The maximum drop between indoor units is 30m

\*Please consult technical staff for details



## Flexible engineering design- 4.High installation adaptability

### Highly compatible

GMV6 HR and GMV5 HR indoor units are fully compatible. The installation size of GMV6 HR outdoor unit is the same with that of GMV5 HR outdoor unit.



Note: The GMV6 HR can only be matched with the new-generation mode exchange box NCHS\*D and the new-generation Hydro box NRQR\*\*L/A-T.

Convenient installation

1

**Convenient  
installation**

2

**Intelligent  
debugging**

3

**Convenient  
maintenance**

4

**Efficient  
management**

## 2. FEATURES

## Convenient installation-1. Convenient installation

### Quick installation design

#### Auto address allocation

The system automatically assigns an address to each indoor unit. No button operation for debugging, convenient and worry-free.

#### No external oil balance pipe

Patented oil balance control, no need for external oil balance pipe, convenient for installation.



#### Five-way pipe outlet connection

Pipe outlets at the front, left and right, back, and bottom, suitable for different installation places.

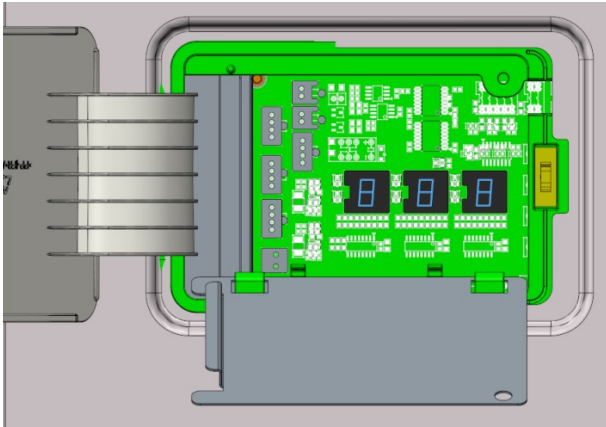
#### High compatibility

GMV6 and GMV5 indoor units are compatible;  
General installation holes for outdoor units;  
General supporting controllers;  
General debugging;

## 2. FEATURES

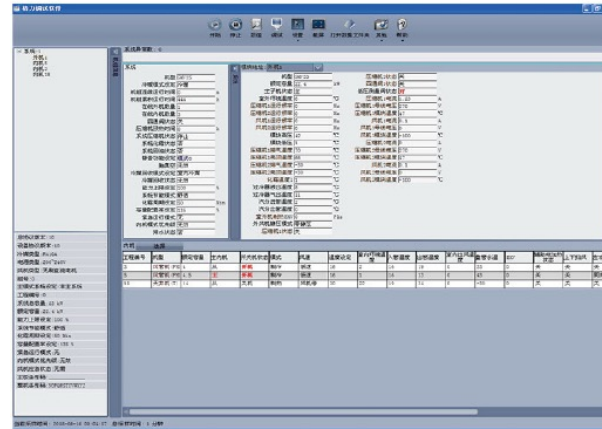
## Convenient installation - 2.Intelligent debugging

### Various debugging routes



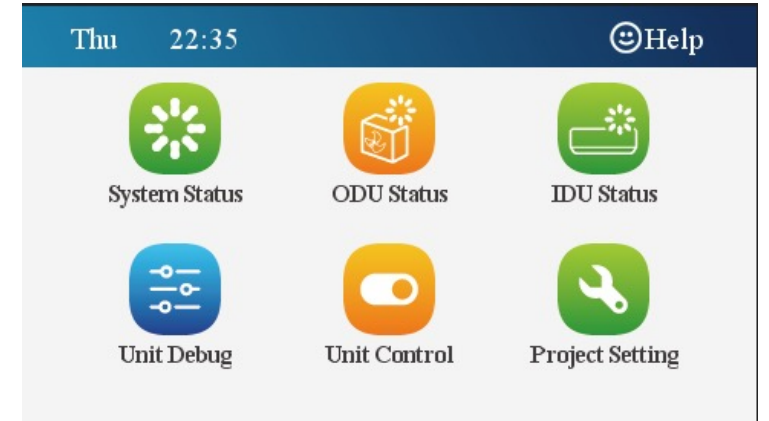
#### One-button debugging

Press one button to start debugging



#### GMV debugging system

Clear display, detailed data, professional analysis



#### 2<sup>nd</sup> generation commissioning tool

Quick connection, no need for PC, data automatically saved (4G)

# 2. FEATURES

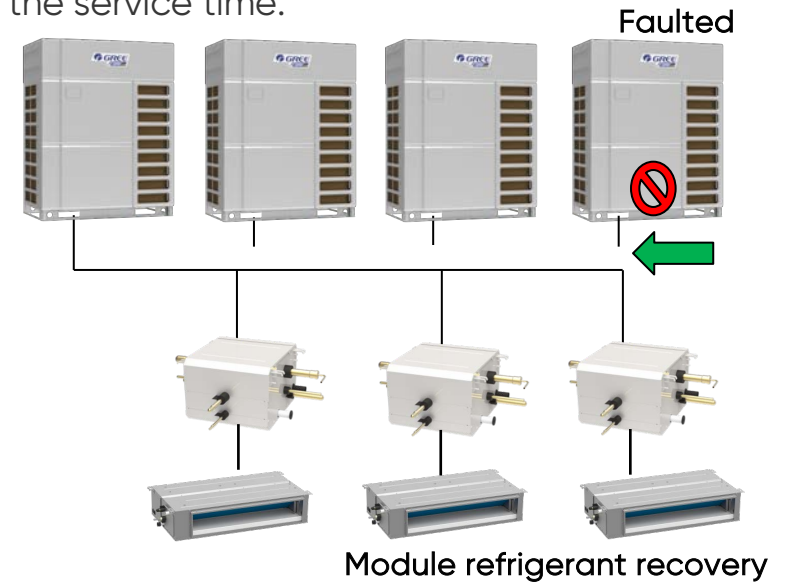
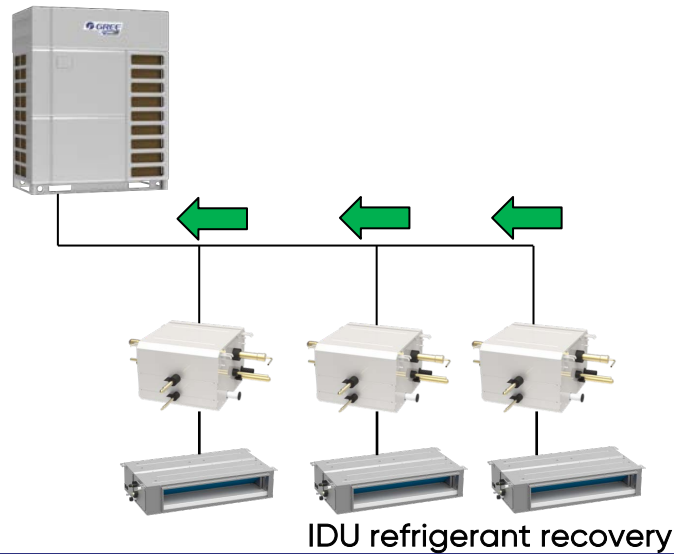
LIFE  
WORTH  
LIVING.

## Convenient installation – 3. Convenient maintenance

### Refrigerant auto recovery

#### New generation refrigerant auto recovery

The new generation IDU and module refrigerant recovery function is designed to facilitate after-sales service. It can effectively recover the refrigerant of the indoor unit or faulted outdoor unit to save refrigerant and reduce the service time.



## Convenient installation – 3. Convenient maintenance

### Backup operation

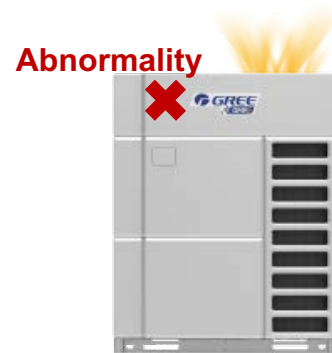
The application scenario for multi VRF units is complicated. When a unit is abnormal, it can enter backup mode to minimize the impact of the abnormality. There are four backup operation functions, respectively for the module, compressor, fan and sensor. It will start backup operation according to the actual needs.



Module emergency operation



Compressor emergency operation



Fan emergency operation



Sensor emergency operation



## Convenient installation – 3. Convenient maintenance

### IDU emergency function

When an IDU needs to be shut down for maintenance, it can be powered off separately while other IDUs remain normal operation.



Note: No more than 3 indoor units of the same refrigerating system should be powered off at the same time.

## 2. FEATURES

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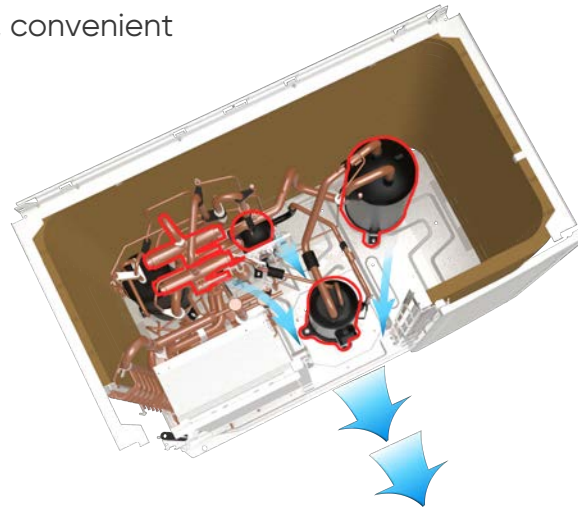


## Convenient installation – 3. Convenient maintenance

### Integral electric control box

GMV6 is designed with integrated electric control and reserved maintenance space, to facilitate after-sales service.

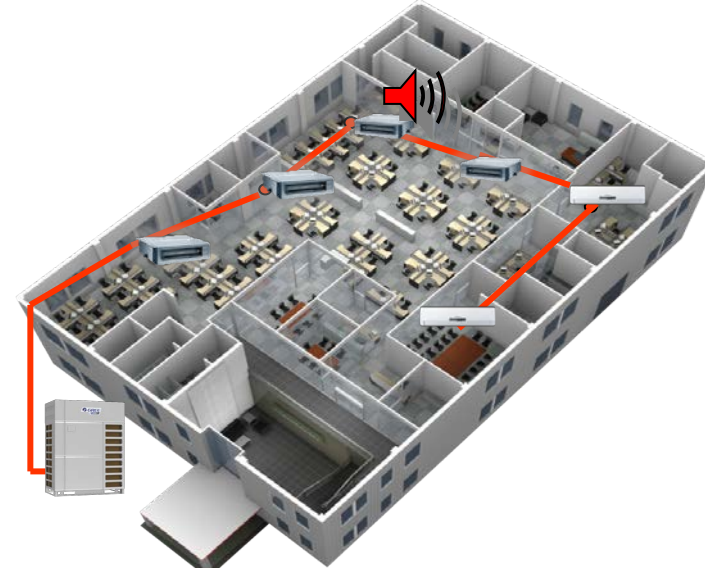
Large front maintenance space, convenient for component maintenance



\*The above pictures are for reference, the actual installation shall prevail

### IDU self-positioning

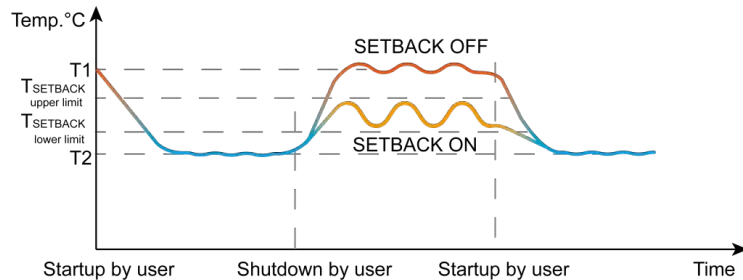
If multiple IDUs are installed in large spaces such as exhibition halls, conference rooms and offices, the self-positioning function can enable the buzzers of indoor units to ring so that you can quickly locate the indoor units to realize efficient maintenance.



## Convenient installation – 4.Efficient management

### SETBACK function

In places that require high degree of comfort, such as a star-rated hotel or a high-end office area, you can start the SETBACK function. Even if the unit is turned off, it can automatically judge room temperature and start running accordingly, ensuring temperature control in unmanned areas and improving the degree of comfort.



Note: Applicable to XK79 wired controller. In addition, the total rated capacity of the indoor units should not exceed 100% of the rated capacity of the outdoor unit.

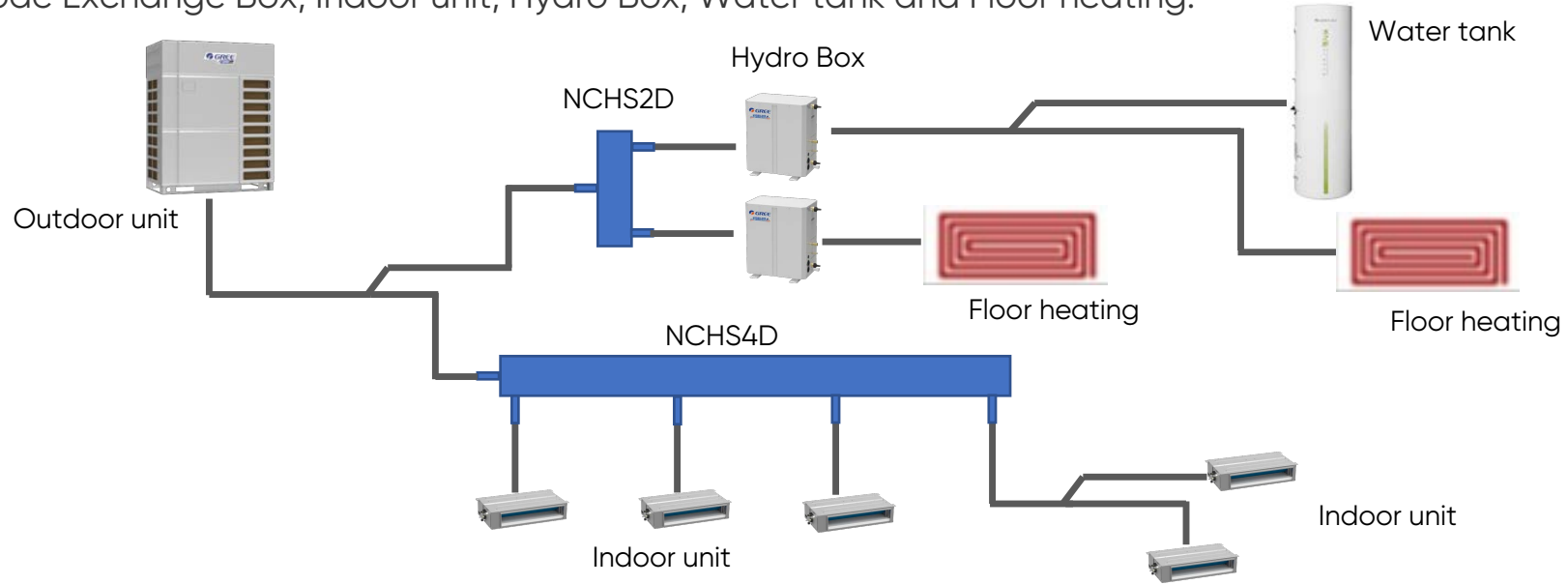
### 4-seasons operation

No additional accessories are needed. By operating on the outdoor unit, you can set the overall operation mode to realize centralized management and save energy.



## Connection diagram

Outdoor unit, Mode Exchange Box, Indoor unit, Hydro Box, Water tank and Floor heating.



1. One branch of Mode Exchange Box can only connect one hydro box.
2. Hydro box and IDU cannot be connected in the same branch.
3. There must be IDU connected in the system; Hydro box is optional.

# 3. SELECTION GUIDE

## Selection steps – Air conditioning

If the customer's demand is:

- Air Conditioning—–the selection is same as GMV5 HR
  1. IDU selection —–select the IDU according to the actual air conditioning load
  2. ODU Selection —–Select the ODU according to the IDUs
  3. Mode Exchanger Selection —–Select 1 to 1/2/4/8 according actual requirements.

## Selection steps – Air conditioning + DWH

If the customer's demand is:

- Air Conditioning + DWH—–the selection steps are as below:

1. IDU selection —–select the IDU according to the actual air conditioning load
2. ODU Selection —–Select the ODU according to the IDUs
3. Hydro box, Water Tank Selection —–

Input DWH volume —–Input directly the total DWH demand (L)

Hydro Box Model and Quantity—–Manually select the model and quantity of hydro box according to DWH volume

Water Tank Selection —–Select one water tank for each hydro box; one hydro box can connect only one water tank.

4. Mode Exchanger Selection —–Select 1 to 1/2/4/8 according actual requirements.

# 3. SELECTION GUIDE

## Selection steps – Air conditioning + DWH + Floor heating

If the customer's demand is:

- Air Conditioning + DHW—–the selection steps are as below:

1. IDU selection —–select the IDU according to the actual air conditioning load
2. ODU Selection —–Select the ODU according to the IDUs
3. Hydro box, Water Tank Selection —–

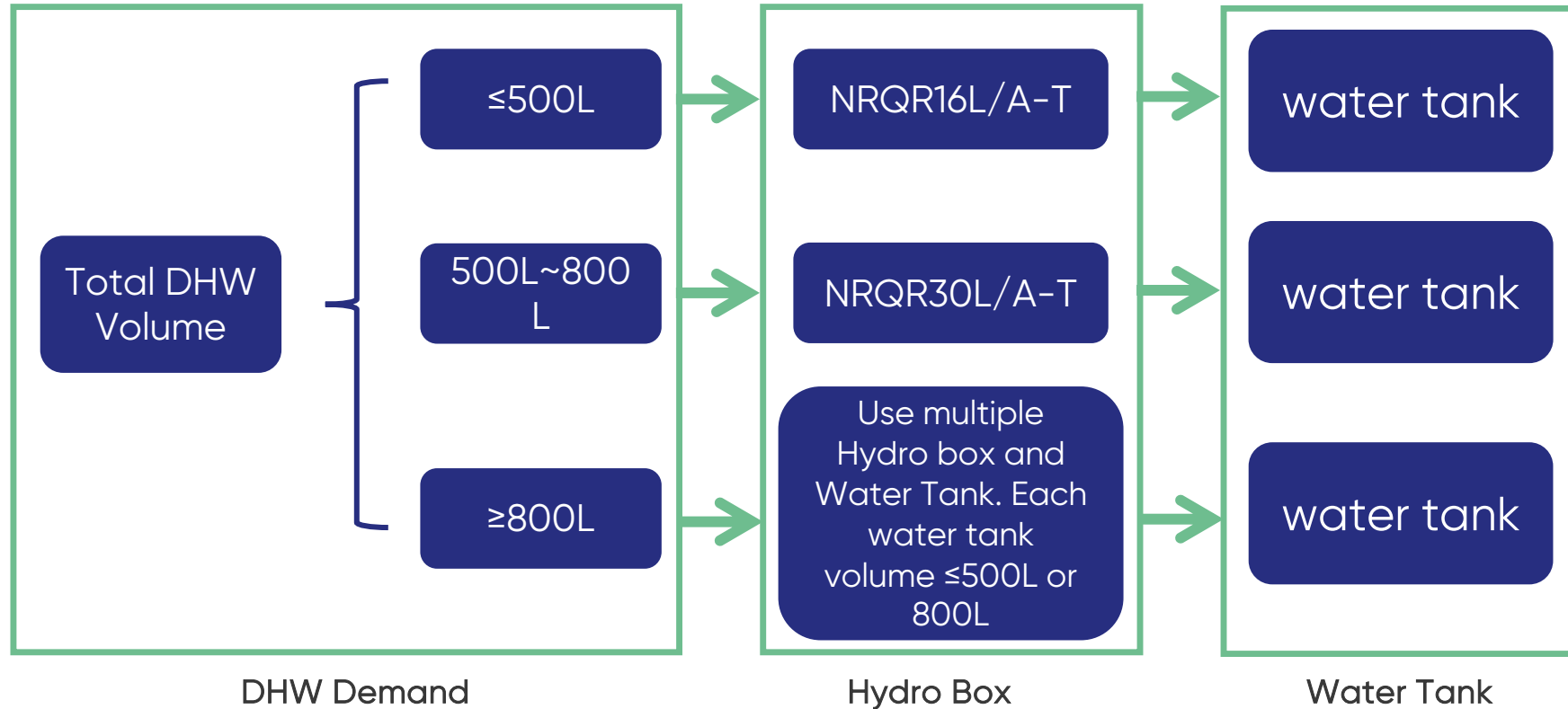
Input DWH volume —–Input directly the total DWH demand (L)

Hydro Box Model and Quantity—–Manually select the model and quantity of hydro box according to DWH volume

Water Tank Selection —–Select one water tank for each hydro box; one hydro box can connect only one water tank.

4. Mode Exchanger Selection —–Select 1 to 1/2/4/8 according actual requirements.

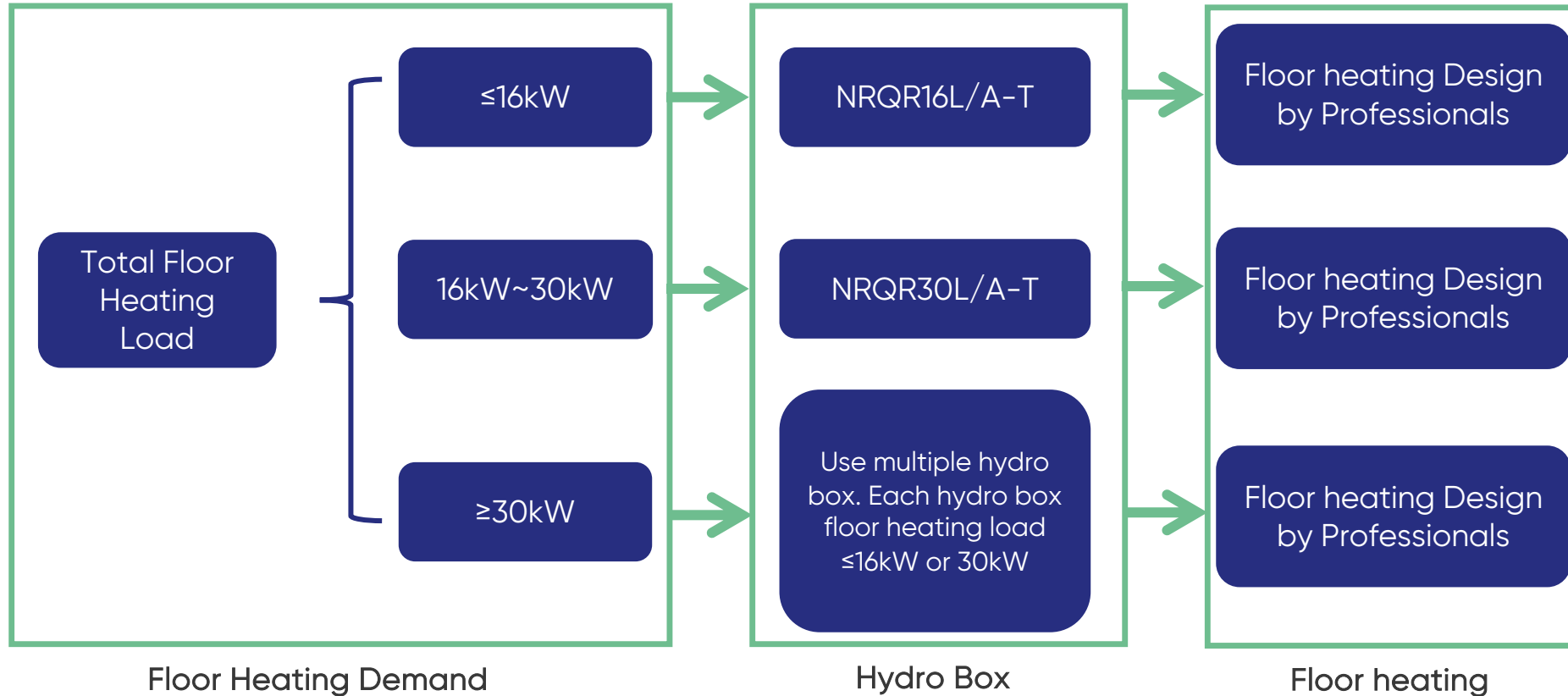
DWH Selection



\*Water tank selection: water tank from Gree or local market is acceptable, only required inner coil water tank.

# 3. SELECTION GUIDE

DWH Selection



# 3. SELECTION GUIDE



## Hydro box selection

Quantity and capacity requirements of Hydro box

Series	Model	Maximum Hydro box quantity and Capacity requirement	Remarks
GMV6 HR	GMV-VQ224WM/C-X	≤2 sets, Total hydro box capacity≤32kW	If the hydro box quantity and capacity has exceeded the requirement, please split it to multiple systems.
	GMV-VQ280WM/C-X	≤2 sets, Total hydro box capacity ≤32kW	
	GMV-VQ335WM/C-X	≤2 sets, Total hydro box capacity ≤33.5kW	
	GMV-VQ400WM/C-X	≤2 sets, Total hydro box capacity ≤40kW	
	GMV-VQ450WM/C-X	≤2 sets, Total hydro box capacity ≤46kW	
	GMV-VQ504WM/C-X	≤2 sets, Total hydro box capacity ≤50.4kW	
	GMV-VQ560WM/C-X	≤2 sets, Total hydro box capacity ≤56kW	
	GMV-VQ615WM/C-X	≤2 sets, Total hydro box capacity ≤61.5kW	
	Two modules	≤4sets, Total hydro box capacity≤Total rated ODU capacity 100%	
	3 or 4 modules	≤6sets, Total hydro box capacity≤Total rated ODU capacity 100%	

# 3. SELECTION GUIDE

## Hydro box selection

Quantity and capacity requirements of Water Tank

Series	Model	Maximum DHW Volume(L)	Maximum Water Tank Quantity	Remarks
New Hydro Box	NRQR16L/A	≤500	≤1set	If the water tank volume has exceeded the requirement, please split it to multiple systems.
	NRQR30L/A	≤800	≤1 set	

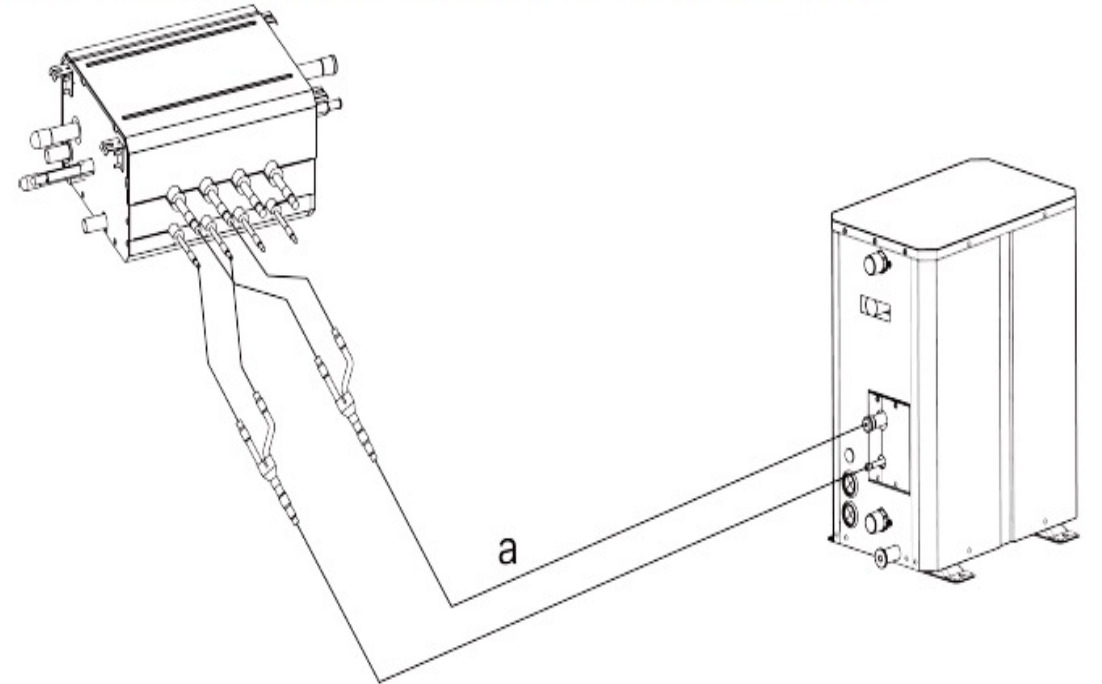
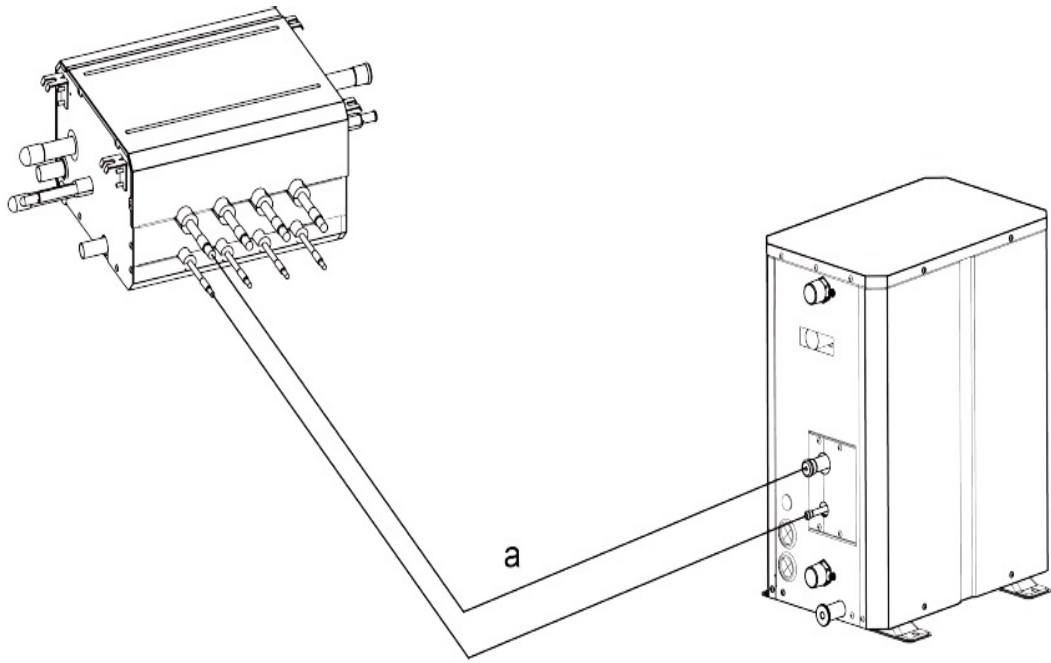
# 3. SELECTION GUIDE

## Hydro box selection

Connection Diagram of 16/30kW Hydro box and Mode Exchange Box

Mode exchange box and 16kW hydro box

Mode exchange box and 30kW hydro box: add FQ01B/A



# 3. SELECTION GUIDE

- One hydro box can connect only one water tank;
- The maximum water tank volume for 16/30kW hydro box is 500/800L respectively;
- If the DHW demand is over 800L, it is required to split to multiple hydro box and water tank. Each water tank volume  $\leq 500L$  or;
- Each ODU system can connect maximum 2~6 hydro boxes;
- One branch of Mode Exchanger can only connect one hydro box;
- Hydro box and IDU cannot be connected in the same branch;
- If there is both DHW and floor heating in one system, and the required hydro box quantity and capacity is different; The quantity and capacity of hydro box shall be subject to the bigger one.
- The selection and design of floor heating shall be conducted by professional designers. For multi-story building, it is suggested to install different hydro box for each floor.

## 3. SELECTION GUIDE

Dimension		GMV6	Remarks
Efficient low-temp enthalpy-adding system	Compressor	Low-temp enthalpy-adding efficient compressor	
	EEV control	Dual EEV enthalpy-adding control	
Efficient heat exchange tech.	Plate type heat exchanger	Two-stage sub-cooling; max. sub-cooling degree: 35°C	Gree's has a higher sub-cooling degree
Intelligent and efficient control	Module rotation	Brand new efficient modular control	Gree has a new module rotation tech.
	SRL load self-adapting control	Yes	Gree has the unique SRL control
Strong cooling and heating tech.	Defrosting mode	New generation intelligent defrosting	GMV6 can automatically change the output capacity during defrosting by real-time parameter learning and judgment, so as to achieve stable or fast defrosting.
	100% capacity output time	75S	Gree's startup is faster
Platform design	CAN comm.	World-leading CAN+ comm.	Gree's CAN+ comm. is faster.

## 4. COMPARE TO COMPETATIVE PRODUCTS

Dimension		GMV6	Remarks
Self-adapting drive tech.	Strong torque start control	Yes	The compressor can start under high pressure difference, ensuring system continuity and stability
	Variable load and freq. control	Yes	Available in Gree only
Oil control tech.	Motor winding heating function	Yes	Available in Gree only
	Compressor preheating time	2	Gree's preheating time is the shortest.
	Oil return control	Low-temp multiple oil paths (6 oil paths)	Gree's 6 major oil paths ensure the smooth and reliable oil circuit.
	Compressor oil drain control	Active oil drainage	Available in Gree only
Compact design	PCB design	New generation compact design	
	Electric box design	Integral electric box	Available in Gree only
Wide operating range	Ultra-low temp. startup	Yes	Available in Gree only
	Ultra-low temp. operation	Yes	Available in Gree only
	Bottom low-temp. anti-freezing	Yes	

## 4. COMPARE TO COMPETATIVE PRODUCTS

Dimension		GMV6	Remarks
Wide operating range	Operating range	Cooling: -5°C-55 °C Heating: -25°C-24°C	Gree has a wider operating range for cooling and heating.
Large capacity configuration	Number of connectable IDUs	80 sets	Gree's number is the most.
	Max. capacity of combined modules	88HP	
	Max. number of combined modules	4	
Highly adaptable fan system	High static pressure design	110Pa	
	Anti-wind design	Yes	
Convenient installation	Auto address allocation	Yes	
	Five-way pipe outlet	Yes	
	Debugging mode	3 modes	Gree has multiple debugging modes.
Convenient maintenance	Refrigerant auto recovery	Yes	
	Fault emergency function	3 types of backup operation	
	ODU fault memory	Yes	

## 4. COMPARE TO COMPETATIVE PRODUCTS

### GMV 6 HR Modular VRF Outdoor Unit

TECHNICAL SPECIFICATIONS		UNIT	GMV-Q224WM/C-X	GMV-Q280WM/C-X	GMV-Q335WM/C-X	GMV-Q400WM/C-X	GMV-Q450WM/C-X
RATED COOLING CAPACITY	kW		22.40	28.00	33.50	40.00	45.00
	Btu/h		76432	95540	114307	136486	153546
RATED HEATING CAPACITY	kW		25.00	31.50	37.50	45.00	50.00
	Btu/h		85304	107482	127955	153546	170607
EER	kW/kW		4.09	3.44	4.04	3.36	3.04
COP	kW/kW		4.75	4.32	4.87	4.5	3.94
POWER SUPPLY	V-Ph-Hz		380-415/3/50-60	380-415/3/50-60	380-415/3/50-60	380-415/3/50-60	380-415/3/50-60
CIRCUIT BREAKER	A		20	25	32	40	40
POWER CONSUMPTION	COOLING	kW	5.48	8.15	8.30	11.90	14.80
	HEATING		5.26	7.30	7.70	10.00	12.70
MAX NO. OF SUPPORTED INDOOR UNITS	/		13	16	19	23	26
REFRIGERANT	/		R410A	R410A	R410A	R410A	R410A
REFRIGERANT CHARGE VOLUME	kg		6.2	7.1	9.6	11.1	11.6
SOUND PRESSURE LEVEL	dB(A)		60	61	63	63	63
CONNECTING PIPE	LIQUID	Inch	3/8	3/8	1/2	1/2	1/2
	GAS		3/4	7/8	1/1	1/1	11/8
DIMENSIONS (WxDxH)	OUTLINE	mm	5/8	3/4	3/4	7/8	7/8
	PACKAGE	mm	930/765/1605	930/765/1605	1340/765/1605	1340/765/1605	1340/765/1605
NET WEIGHT	kg		1010/840/1775	1010/840/1775	1420/840/1775	1420/840/1775	1420/840/1775
GROSS WEIGHT			233	233	302	346	346

# 5. SPECIFICATIONS