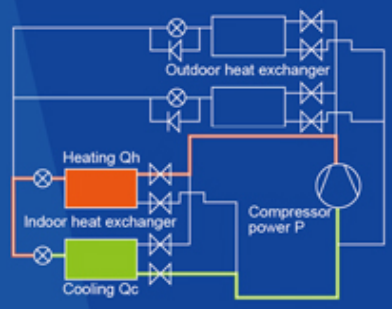
GMV5
Mini & Slim

GMV5 Heat Recovery

Key Features

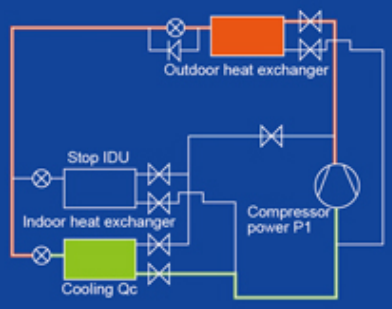
High Efficiency

GMV5 Heat Recovery System embodies the excellent features of GMV5 (DC inverter technology, DC fan linkage control, precise control of capacity output, balancing control of refrigerant, original oil balancing technology with high pressure chamber, high-efficiency output control, low-temperature operation control technology, super heating technology, high adaptability for project, environmental refrigerant). Its energy efficiency is improved by 78% compared with conventional multi VRF.



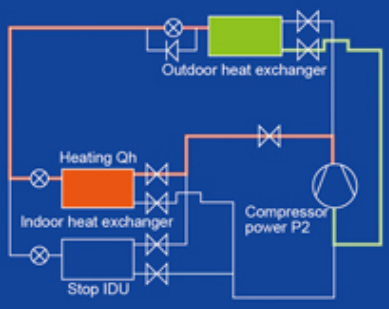
ECOP of heat recovery system

ξ=(13.0＋17.0)/4.5=6.67



EER of common system

ξ1=13.0/3.0=4.33



COP of common system

ξ2=17.0/5.0=3.4

When the cooling capacity and heating capacity of common system are equivalent to the capacity of heat recovery system, its energy efficiency ratio is:

ξ2=(13.0+17.0)/(3.0+5.0)=30.0/8.0=3.75

The energy efficiency ratio of heat recovery system is higher than common system:

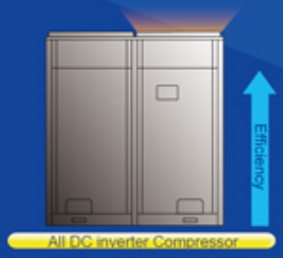
(6.67-3.75)x100%/3.75=78%

Note: Working conditions of above-mentioned test: outdoor temperature 7℃/6℃, indoor temperature in cooling 27℃/19℃, indoor temperature in heating 20℃/15℃.

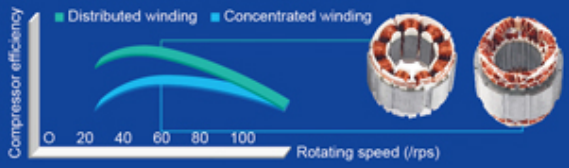
• Five Efficient Operation Modes

All DC Inverter Technology to Improve Compression Efficiency

- All DC inverter compressor is used in this system. It can directly intake gas to reduce loss of overheat and improve efficiency.



- High-efficient permasyn motor is adopted to provide better performance than traditional DC inverter compressor.



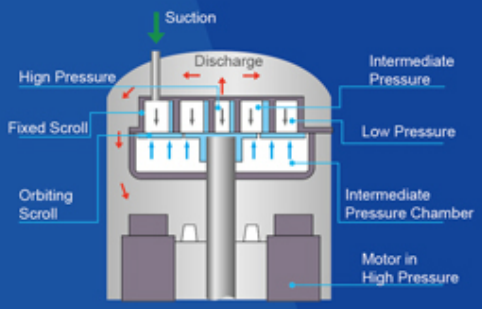
- **High Pressure Chamber Design**

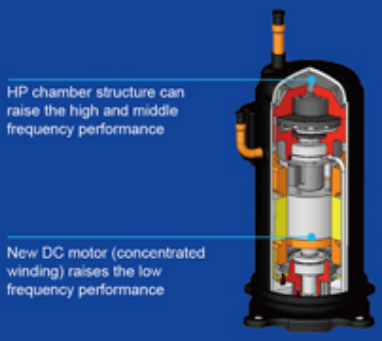
What's high pressure chamber?

The low-temperature and low-pressure refrigerant gas inhaled from the suction inlet of compressor will change to high-temperature and high-pressure gas after compression by scroll plate. Then the gas will go out from the exhaust at the center of fixed scroll and get into the lower chamber of compressor, so that the chamber of compressor is in high temperature and high pressure.

What's the benefits of high pressure chamber?

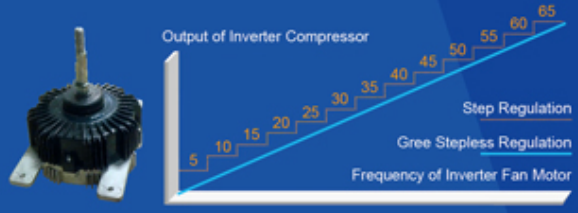
High pressure chamber compressor inhales directly to reduce overheat suction loss and improve compression efficiency.





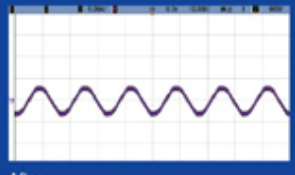
- **Sensorless DC Inverter Fan Motor**

Stepless speed regulation ranges from **5Hz** to **65Hz**.Compared with traditional inverter motors, the operation is more energy-saving.



Sensorless control technology guarantees lower noise, less vibration and steadier operation.

Before



After

Wide Range of Voltage to Ensure a Steady System Running

Working voltage range of GMV5 system has been improved to **320V-460V**, which surpasses the national standard of 342V-420V. For places with unsteady voltage, this system can still be running well.

Wider Applicable Location

GMV5 can realize a combination of 4 outdoor unit modules connecting with as many as **80** indoor units. It's especially applicable for business building or hotels.

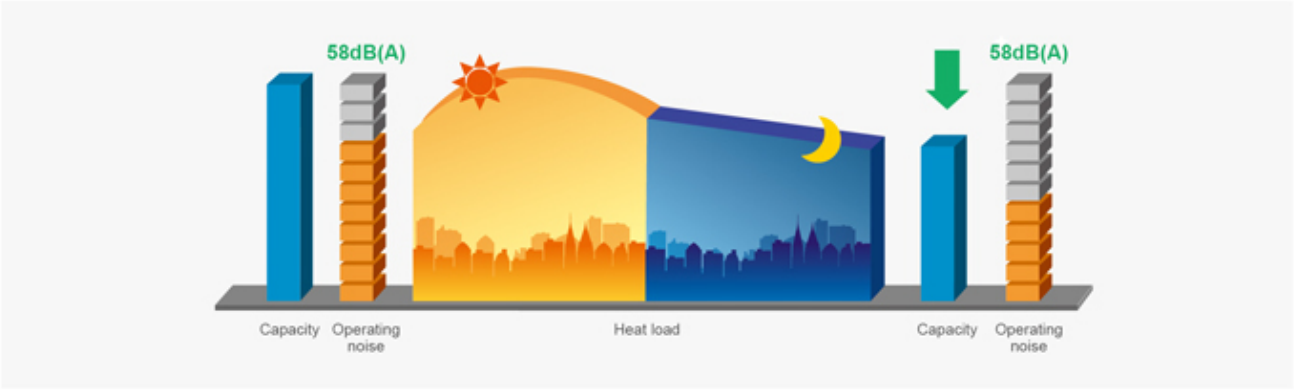
Max. IDU Connection: **80** sets

Comfortable Design for A Better Life

Intelligent Quiet Function at Night

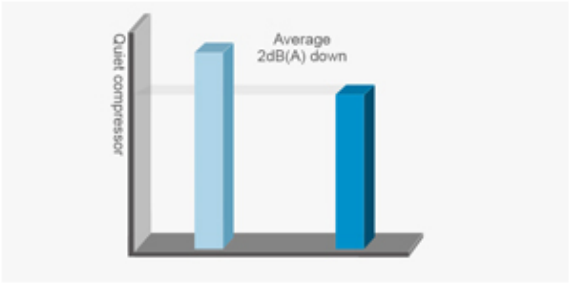
- **Quiet at night**

  Intelligently adjustment of outdoor fan control can minimize the noise during night time. Up to 8dB(A) can be reduced and operation noise at night is as low as 50dB(A).



- **Low noise design**

  HP Chamber compressor has lower exhaust pressure fluctuation so that noise is lower.



The optimized design of condensing fan blade reduces the air flow turbulence among blades, so that the noise is lower.

Individual Control for More Energy Saving

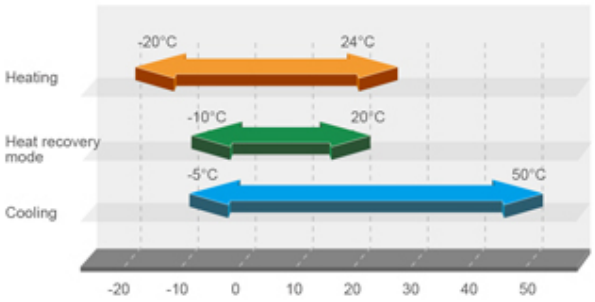
The set temperature of each room may vary by the individual thermostat control of each indoor unit.
The cooling and heating operation can be performed at the same time.

Wide Operation Range

The unit can operates in wide range, greatly reducing the ambient temperature limitation.

Note:
If the required capacity of indoor units is 50% higher than outdoor unit,cooling range may be lower to -15°C.

If the required capacity of indoor units is 50% higher than outdoor unit,cooling range may be up to -5°C



Comfortable Heating

Advanced intelligent defrosting mode is adopted. Gree advanced intelligent defrosting mode will choose the best defrosting way according to outdoor temperature and operation status to realize intelligent defrosting, effectively improving heating effect and performance. While in traditional defrosting mode, timing defrosting is adopted, which not only affects comfort but also reduces energy efficiency.

Excellent Performance Ensured by Advanced Technologyn

Modules Rotation Operating to Maximize Lifespan

Modules 8h rotation operating

The operating priority sequence of the outdoor unit modules will be changed without restart when the system accumulatively operates for 8 hours, which can maximize the service life of the system.

Excellent Emergency Operation Function to Ensure Reliable Operation

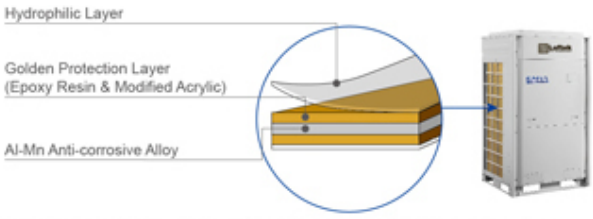
- **Emergency Function**
  The GMV 5 system can realize a combination of 4 outdoor unit modules. When error is occurred to one of the modules, the others will perform the emergency operation to sustain the air conditioning.

- **Emergency Operation of Compressor**
  All the compressors in each single module are DC Inverter based, when one compressor has error, others will perform the emergency operation.

- **Emergency Operation of Fan**
  Double-fan design ensures that one fan can still work even if the other one has error.

Highly Anticorrosive Golden Fins

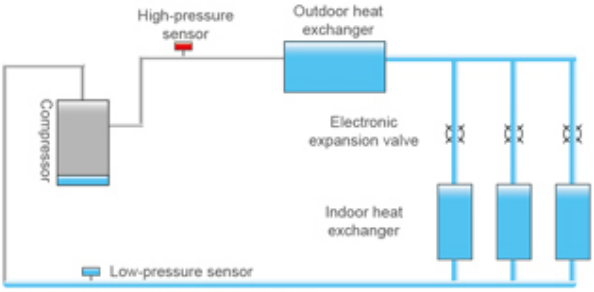
The primary material of Golden Fin is Al-Mn(Alumium-Manganese) anti-rust alloy, which is coated with the Golden Protection Layer(Components: Exoxy Resin & Modified Acrylic, Sillcon free), the anti-corrosice performance in salt-spray testing is 200%~300% higher than normal Blue Fin*.



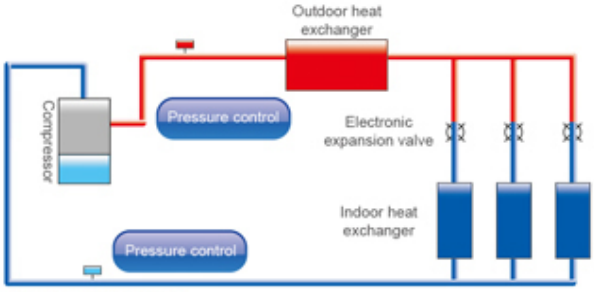
Note: Satt-spary testing result is from GREE materials chemistry testing laboratory.

Oil Return Control Technology

- **New Oil Return Control**
  Gree new oil return control technology effectively controls system oil return and oil storage status of each compressor, which greatly improves the operation lifespan of compressor.

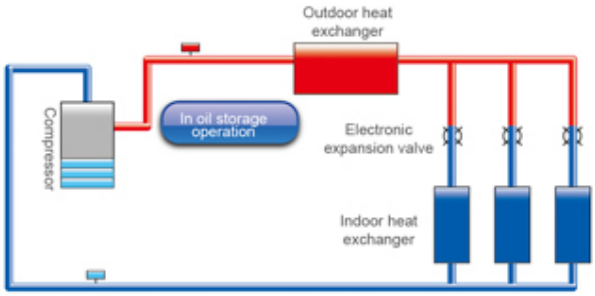


Oil storage status before oil return



Oil return operation

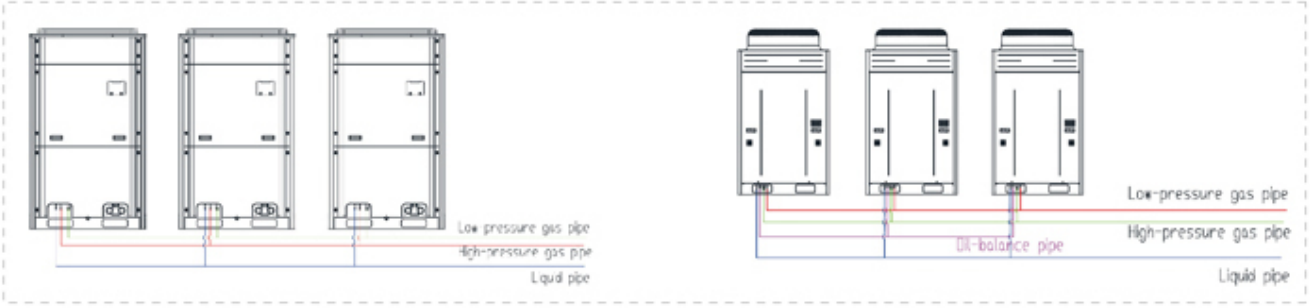
- **Specialized Compressor Oil Storage Control**
  The system applies specialized compressor oil storage technology, which can control the lowest oil level for compressor operation.



Oil storage operation

Without External Oil-balanced Pipe Design

The unit is without external oil-balanced pipe design, reducing system pipeline connection and easy for engineering installation. The system will allocate lubricating oil of each module according to its demand, which is more intelligent, more efficient and more equal.



Easy Installation and Maintenance

Compact Design

With compact design, the outdoor unit can be carried to the roof of building through elevator, with no need of crane. It is easier for delivery and installation.

Company A

GMV 5

Easy Transportation

- **Optimized base frame**

  Optimized base frame, the locating and fixing of the outdoor unit during installation is more convenient and reliable.

- **Transportable by forklift**

- **Five-way piping connection**

  Piping and wiring are availiable to the front and back, left and right, and bottom.

  The five-way piping connection reduces installation difficulty and cost, improves the installation efficiency.

Easy Maintenance

- Inspection window is available for quick checking of system operation status. No need to open panel for checking, which will be more time-saving and easier for maintenance.

COMPANY A

VS

GMV5

- **Error Display & Self-diagnostic Function**
  Through LED display(different combinations of ON, OFF, or BLINK) on the main board, the malfunction can be judged.

GMV5 HR Line Up

HR Line up

HP	Model	Product Outlook
8HP	GMV-Q224WM/B-X	
10HP	GMV-Q280WM/B-X	
12HP	GMV-Q335WM/B-X	
14HP	GMV-Q400WM/B-X	
16HP	GMV-Q450WM/B-X	

Model	Product Outlook
NCHS1B	
NCHS4B	
NCHS8B	

Specifications and Parameters

50/60 Hz

Model			GMV-Q224WM/B-X	GMV-Q280WM/B-X	GMV-Q335WM/B-X	GMV-Q400WM/B-X	GMV-Q450WM/B-X
Capacity range		HP	8	10	12	14	16
Capacity	Cooling	kW	22.4	28	33.5	40	45
	Heating	kW	25	31.5	37.5	45	50
EER		W/W	4.07	3.73	3.76	3.54	3.33
COP		W/W	4.17	3.89	3.68	3.85	3.62
IPLV	Cooling	kW/kW	/	/	/	/	/
Power Supply		V/Ph/Hz	380~415V-3Ph-50/60Hz				
Max. circuit/fuse current		A	15.7/20	20.9/25	24.7/32	28.8/40	33.2/40
Power comsumption	Cooling	kW	5.5	7.5	8.9	11.3	13.5
	Heating	kW	6	8.1	10.2	11.7	13.8
Maximum drive IDU NO.		unit	13	16	19	23	26
Refrigerant Charge volume		kg	6.2	7.1	8.6	10.2	10.5
Sound pressure level		dB(A)	60	61	63	63	63
Connecting pipe	Liquid	mm	Φ9.52		Φ12.7		
	Gas(Low pressure)	mm	Φ19.05	Φ22.2	Φ25.4		Φ28.6
	Gas(High pressure)	mm	Φ19.05			Φ22.2	
Dimension (W*D*H)	Outline	mm	930*765*1605		1340*765*1605		
	Package	mm	1010*840*1775		1420*840*1775		
Net weight/Gross weight		kg	233/243	233/243	303/318	360/375	360/375
Loading quantity	40' GP	set	24	24	16	16	16
	40' HQ	set	24	24	16	16	16

50 Hz

Model			NCHS1B	NCHS4B	NCHS8B
Max.IDU Branches		unit	1	4	8
No. of connectable IDU of each branch		unit	8	8	8
Total Connectable IDU		unit	8	32	64
Max. Capacity of each branch		kW/kW	14	14	14
Max. Capacity of connectable IDU		kW/kW	14	45	65
Power supply		V/Ph/Hz	220-240V-1Ph-50Hz		
Power comsumption		W	20	30	30
Maximum drive IDU NO.		unit	1	4	8
Outdoor Unit Piping Connection	Liquid	mm	Φ9.52	Φ12.7	Φ15.9
	Gas(Low pressure)	mm	Φ15.9	Φ22.2	Φ22.2
	Gas(High pressure)	mm	Φ19.05	Φ28.6	Φ28.6
Indoor Unit Piping Connection	Liquid	mm	Φ9.5	Φ9.5	Φ9.5
	Gas	mm	Φ15.9	Φ15.9	Φ15.9