DC INVERTER MULTI VRF SYSTEM TECHNICAL SALES GUIDE

(GC201407)

BETTER CONDITIONERS GREE MAKING BETTER CONDITIONERS GREE MAKING BETTER CONDITIONERS GREE MAKING BETTER CONDITION

TECHNICAL SALES GUIDE-50Hz

CAPACITY RANGE:12.1~14kW

SUPER HIGH AMBIENT OPERATION TO 43 ℃

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R410A

GREE ELECTRIC APPLIANCES INC.OF ZHUHAI

CONTENTS

1 OUTLINE OF MULTI VRF

1.1 Product List

Model	GMV-120WL/A-T
	GMV-140WL/A-T
	GMV-160WL/A-T

1.2 Product Features

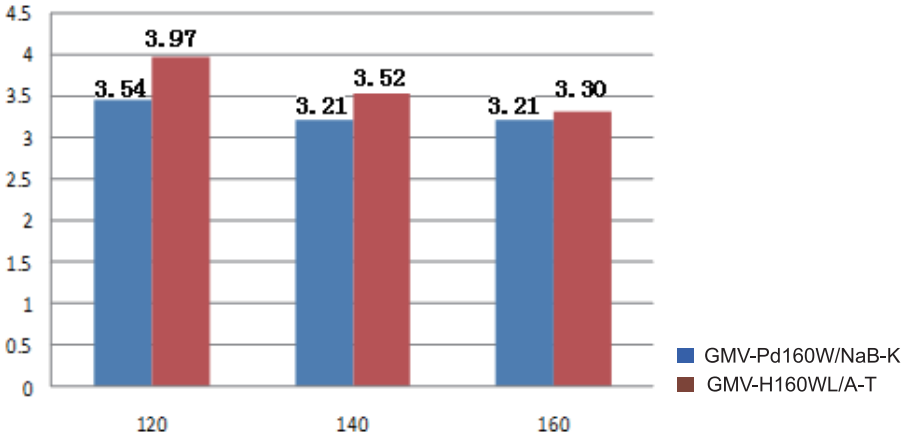
1.2.1 Summary of Features

GMV Star DC Inverter Multi VRF System is the new generation of DC inverter multi VRF system that Gree developed independently. It is a single refrigeration system that made up of one air cooled outdoor unit connected with several direct evaporative indoor units of identical or different series or capacity. It provides processed air directly to an area or several areas, which is mainly applicable for household or light commercial facilities. This product is endowed with the features of high efficiency, high anti-interference ability, long connection pipe, wide operation range, good acoustic, intelligent capacity adjustment, all-around protection.

1.2.2 Introduction of Features

(1) High Efficiency

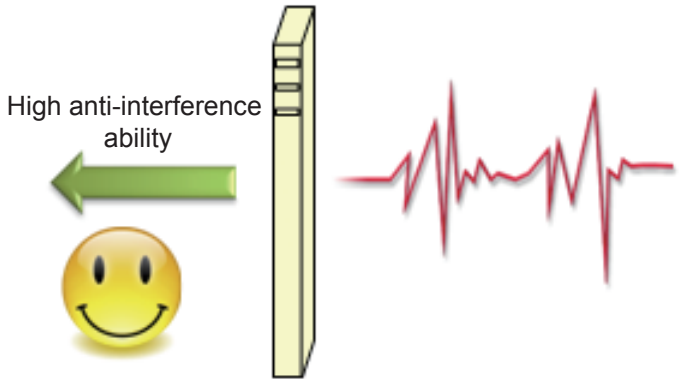
The system adopts all DC motor, which greatly improves efficiency. The highest EER reaches 3.97, which is increased greatly compared with last generation.



EER comparison between new generation and last generation

(2) Latest CAN Bus Communication

The latest communication way-CAN bus communication is adopted, which greatly improves anti-interference ability, precisely controls the indoor units and improves the reliability of system. Meanwhile, specialized shielded wire is not longer needed, while conventional communication wire can be used to increase the flexibility of project installation.



(3) Long Connection Pipe and Big Height Difference

The max length of connection reaches 300m(total length). The connection pipe between indoor unit and outdoor unit can be as long as 120m. Project installation condition is wider while the limitation of installation distance is smaller. Branching joint and branching manifold can also be used.

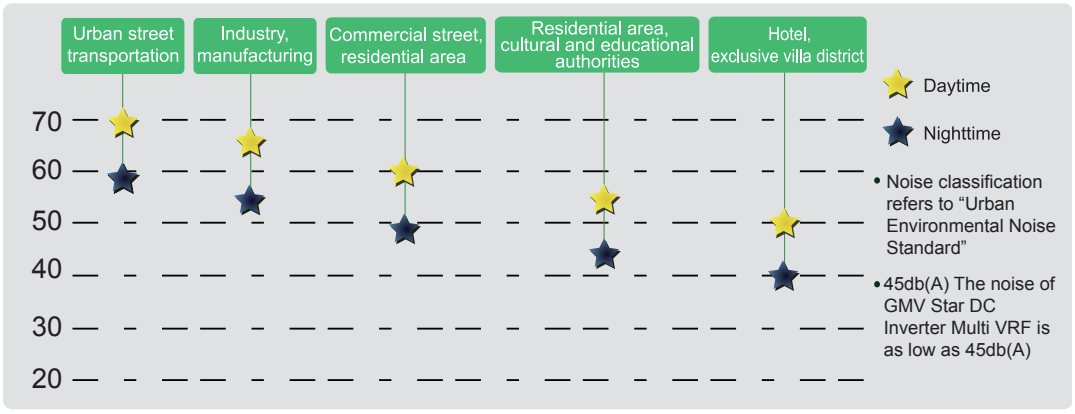
The max allowable height difference between indoor unit and outdoor unit is 50m and that between indoor unit and indoor unit is 15m.

(4) Wide Operation Range

The system can operate constantly and reliably in a wide temperature range(cooling: -5~48 ℃ , heating: -20~27℃), which is not affected by atrocious environment.

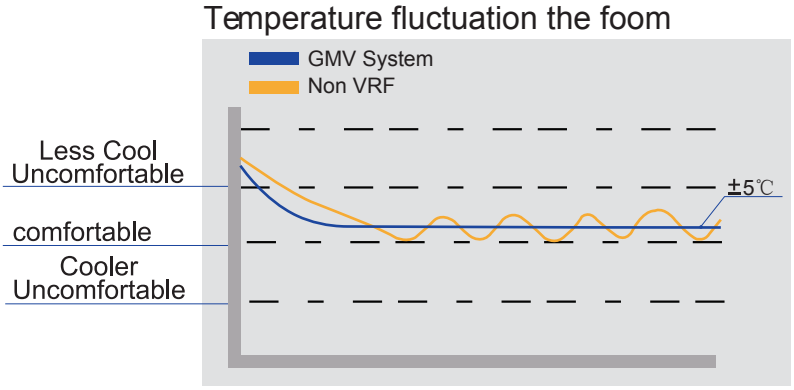
(5) Good Acoustic

A series of optimized measures are taken to solve the problem of indoor unit's throttling sound, indoor unit's oil return noise, gas bypass noise during start-up, which improves the comfort of system.



(6) PID Intelligent Capacity Adjustment

The system applies the original technology of PID intelligent capacity adjustment, which quickly and precisely controls indoor ambient temperature according to set temperature, with small temperature fluctuation and great comfort.



(7) Intelligent Control

1) Advanced DC inverter technology

① High-efficient magnetic reluctance inverter compressor: High-efficient magnetic reluctance compressor is adopted to take advantage of the magnetic reluctance torque of compressor. Under the same output capacity, the efficiency can be improved by 5%.

② Advanced torque control technology: minimum current and maximum torque control technology adopts the most optimized control principle to realize maximum torque output with minimum current and reduce loss of motor winding and intelligent power module for higher energy efficiency.

③ Closed-loop start-up technology of compressor: Self-innovative closed-loop start-up control is applied to enable output torque follow with load torque, whose start-up current is small and start-up is more reliable.

④ High-efficient numerical PFC control: High-efficient PFC control technology is applied to improve efficiency by approx. 1% compared with traditional PFC; for an air condition with rated power of 5KW, 50W can be saved per hour and 1.2kWh electricity can be saved per day.

⑤ 180º sine wave DC variable speed technology: 180º current output waveform is smooth sine wave with small harmonic wave content, small torque pulsation, wide adjustable range and stable operation of motor, which can satisfy the temperature requirement in various occasion, save electricity greatly and ensure user's comfort in maximum.

2) Beautiful humanized controller design

① 24h timer on or timer off can be preset (countdown timer and clock timer); Detect ambient temperature precisely; 7 kinds of fan speed can be set;

② Auto, cool, dry, fan or heat mode can be set;

③ Master wired controller and sub-master wired controller can be set; several indoor units can be controlled simultaneously;

④ Various functions can be set: sleep, ventilation, quiet (auto quiet), light, absence, energy-saving, clean, e-heater, x-fan, memory, etc.

3) High anti-interference ability

The latest communication way-CAN bus communication(non-polar communication) is adopted, which greatly improves anti-interference ability. Specialized shielded wire is not longer needed for communication wire between units, while conventional communication wire can be used to increase the flexibility of project installation.

4) Intelligent temperature control technology and intelligent defrosting mode are adopted

The system is with strong quick cooling/heating function, which can increase indoor temperature rapidly to set temperature and perform defrosting according to frosting situation.

(8) Independent remote control, wired control, zone control, centralized control, long-distance monitoring and weekly timer control of indoor units are available.

2 SUMMARY OF SYSTEM EQUIPMENTS

2.1 Outdoor Unit

Model	Code	Ref.	Power Supply	Appearance
GMV-120WL/A-T	CF021W0012	R410a	220-240~,1,50	
	CF021W0013			
GMV-140WL/A-T	CF021W0022	R410a	220-240~,1,50	
	CF021W0023			
GMV-160WL/A-T	CF021W0052	R410a	220-240~,1,50	
	CF021W0053			

2.1.1 Nomenclature

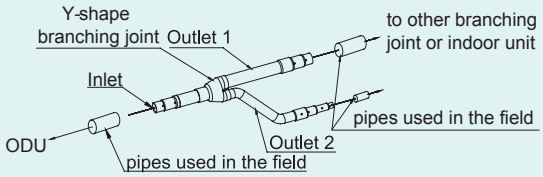
GMV	□	-	□	□	□	□	W	□	/	□	□	□	□
1	2		3	4	5	6	7	8		9	10	11	12

No.	Description	Options
1	Code for type	GMV – Gree Multi Variable
2	Climate type	Default – T1 condition
3	Units series	DC inverter (Na)
4	Function code	Q – Heat recovery unit; S – Water heater; W – Water-cooled unit; X – Fresh air unit The code is defaulted when the above-mentioned function is not available
5	Cooling capacity	Nominal cooling capacity/100(W)
6	Outdoor unit	
7	Construction	L – Non-modular side discharge
8	Refrigerant	R410A: Na
9	Series number	Product serial number: A, B, C... or 1, 2, 3...
10	Power supply	Within 7000~18000W; Single phase power supply: Na
11	Export	T

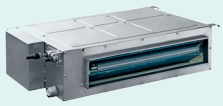
2.1.2 Rated Conditions

	Indoor side inlet air status		Outdoor side inlet air status	
	Dry bulb temperature	Wet bulb temperature	Dry bulb temperature	Wet bulb temperature[a]
Cooling	27	19	35	24
Heating	20	—	7	6

2.1.3 Branching joints

	Model name	Usage	Appearance
Y-shape branching joint	GMV-120WL/A-T	FQ01A	
	GMV-140WL/A-T		
	GMV-160WL/A-T		

2.2 Indoor Unit

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Duct type indoor unit		GMV-ND22PL/B-T	22	2.2	2.5
		GMV-ND25PL/B-T	25	2.5	2.8
		GMV-ND28PL/B-T	28	2.8	3.2
		GMV-ND32PL/B-T	32	3.2	3.6
		GMV-ND36PL/B-T	36	3.6	4.0
		GMV-ND40PL/B-T	40	4.0	4.5
		GMV-ND45PL/B-T	45	4.5	5.0
		GMV-ND50PL/B-T	50	5.0	5.6
		GMV-ND56PL/B-T	56	5.6	6.3
		GMV-ND63PL/B-T	63	6.3	7.0
		GMV-ND72PL/B-T	72	7.2	8.0

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Wall Mounted Type		GMV-N22G/A3A-K GMV-N22G/A3A-D	22	2.2	2.5
		GMV-N28G/A3A-K GMV-N28G/A3A-D	28	2.8	3.2
		GMV-N36G/A3A-K GMV-N36G/A3A-D	36	3.6	4.0
		GMV-N45G/A3A-K GMV-N45G/A3A-D	45	4.5	5.0
		GMV-N50G/A3A-K GMV-N50G/A3A-D	50	5.0	5.6
		GMV-N56G/A3A-K GMV-N56G/A3A-D	56	5.6	6.3
		GMV-N63G/A3A-K GMV-N56G/A3A-D	63	6.3	7.0
		GMV-N71G/A3A-K GMV-N71G/A3A-D	71	7.1	7.5

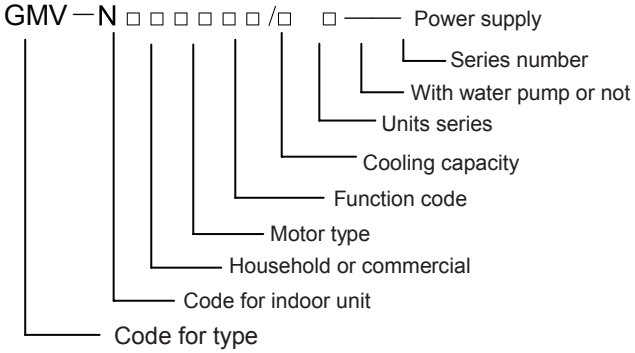
Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Wall Mounted Type		GMV-N22G/A2A-K GMV-N22G/A2A-D	22	2.2	2.5
		GMV-N28G/A2A-K GMV-N28G/A2A-D	28	2.8	3.2
		GMV-N36G/A2A-K GMV-N36G/A2A-D	36	3.6	4.0
		GMV-N45G/A2A-K GMV-N45G/A2A-D	45	4.5	5.0
		GMV-N50G/A2A-K GMV-N50G/A2A-D	50	5.0	5.6
		GMV-N56G/A2A-K GMV-N56G/A2A-D	56	5.6	6.3
		GMV-N63G/A2A-K GMV-N56G/A2A-D	63	6.3	7.0
		GMV-N71G/A2A-K GMV-N71G/A2A-D	71	7.1	7.5

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Wall Mounted Type		GMV-N22G/A4A-K GMV-N22G/A4A-D	22	2.2	2.5
		GMV-N28G/A4A-K GMV-N28G/A4A-D	28	2.8	3.2
		GMV-N36G/A4A-K GMV-N36G/A4A-D	36	3.6	4.0
		GMV-N45G/A4A-K GMV-N45G/A4A-D	45	4.5	5.0
		GMV-N50G/A4A-K GMV-N50G/A4A-D	50	5.0	5.6
		GMV-N56G/A4A-K GMV-N56G/A4A-D	56	5.6	6.3
		GMV-N63G/A4A-K GMV-N56G/A4A-D	63	6.3	7.0
		GMV-N71G/A4A-K GMV-N71G/A4A-D	71	7.1	7.5

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Wall Mounted Type		GMV-N22G/A8A-K GMV-N22G/A8A-D	22	2.2	2.5
		GMV-N28G/A8A-K GMV-N28G/A8A-D	28	2.8	3.2
		GMV-N36G/A8A-K GMV-N36G/A8A-D	36	3.6	4.0
		GMV-N45G/A8A-K GMV-N45G/A8A-D	45	4.5	5.0
		GMV-N50G/A8A-K GMV-N50G/A8A-D	50	5.0	5.6
		GMV-N56G/A8A-K GMV-N56G/A8A-D	56	5.6	6.3
		GMV-N63G/A8A-K GMV-N56G/A8A-D	63	6.3	7.0
		GMV-N71G/A8A-K GMV-N71G/A8A-D	71	7.1	7.5

Type	Appearance	Model Name	Capacity Code	Cooling Capacity(kW)	Heating Capacity(kW)
Wall Mounted Type		GMV-N22G/C9A-K GMV-N22G/C9A-D	22	2.2	2.5
		GMV-N28G/C9A-K GMV-N28G/C9A-D	28	2.8	3.2
		GMV-N36G/C9A-K GMV-N36G/C9A-D	36	3.6	4.0
		GMV-N45G/C9A-K GMV-N45G/C9A-D	45	4.5	5.0
		GMV-N50G/C9A-K GMV-N50G/C9A-D	50	5.0	5.6
		GMV-N56G/C9A-K GMV-N56G/C9A-D	56	5.6	6.3
		GMV-N63G/C9A-K GMV-N56G/C9A-D	63	6.3	7.0
		GMV-N71G/C9A-K GMV-N71G/C9A-D	71	7.1	7.5

2.2.1 Nomenclature



Code for multi VRF	—	Code for indoor unit	Motor type	Function code	Cooling capacity
GMV	—	N	D-DC motor Default-AC motor	R-heat pump L-cooling only X-fresh air W-dual heat sources Q-heat recovery Default-electric heating	Nominal cooling capacity/100(W)

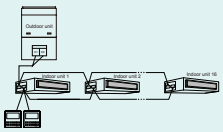
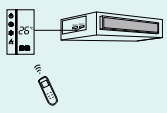
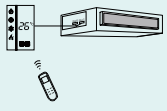
Classification	With water pump or not	Series number	Power supply
PL-Low static pressure duct type indoor unit; P-Standard static pressure duct type indoor; PH-High static pressure duct type indoor unit; PB-Thin duct type indoor unit; T-Four-way cassette; TD-Single-way cassette; TS-Two-way cassette; C-Floor mounting unit; ZD-Floor ceiling unit; G-Wall-mounted unit	With water pump-S(All cassette indoor units are with water pump, S is not presented in the model same)	A, B, C... or 1, 2, 3...	Select power supply code according to power supply specification

Power supply specification	Code
220V ~ ,60Hz; 208-230V ~ ,60Hz; 220-240V ~ ,60HZ; 208/230V ~, 60Hz	D
220V ~ ,50Hz; 230V ~ ,50Hz; 220-230V ~ ,50Hz	E
240V ~ ,50HZ	J
220-240V ~ ,50Hz; 230-240V ~ ,50Hz	K
208-230V ~ ,60Hz and 220-240V ~ ,50Hz General	T

2.2.2 Rated Conditions

Cooling	Indoor air temperature	27℃ (80.6 ℉)DB/19℃ (66.2 ℉)WB
	Outdoor air temperature	35℃ (95 ℉)DB/24℃ (75.2 ℉)WB
Heating	Indoor air temperature	20℃ (68 ℉)DB/15℃ (59 ℉)WB
	Outdoor air temperature	7℃ (44.6 ℉)DB/6℃ (42.8 ℉)WB

3 CONTROLLER

Name	Model name	Appearance	Application	Function
Wired controller	XK42			1）Elegant appearance and adopts big LCD screen with back light; 2） Ten touch buttons to avoid complicated combination buttons, which is convenient for operation; 3） Optional modes: Auto, cool, dry, fan, heat mode or floor heating, 3D heat supply(heating + floor heating) mode; 4）7 kinds of fan speed; 5） Clock can be displayed and set; 24h preset ON or OFF is available (countdown, clock timer function); 6） Dual wired controllers can be equipped. The two wired controllers can control the same indoor unit simultaneously. Or one wired controller can control several indoor units simultaneously; 7）Settable functions: sleep, air, quiet(auto quiet), light, energy saving, E-heater, X-fan, memory, low ambient temperature drying, heating in absence, controllable drying and E-heater, filter cleaning reminding; 8）With project parameter viewing and setting functions, which is convenient for project installation and debugging; 9）Adopts dual wire power carrier communication technology, which means power supply and communication share the same two-core wire. Users can purchase the wire by themselves, flexible for project installation and wiring.
Remote controller	YAD1F			Besides the common functions, the following functions are also available: up&down swing, timer on, timer off, I-feel, sleep and 8℃ heating operation, etc.
	YV1L1			Besides the common functions, the following functions are also available: up&down swing, left&right swing, quiet, timer on, timer off, sleep, I-feel, low ambient temperature drying and 8℃ heating operation, etc.

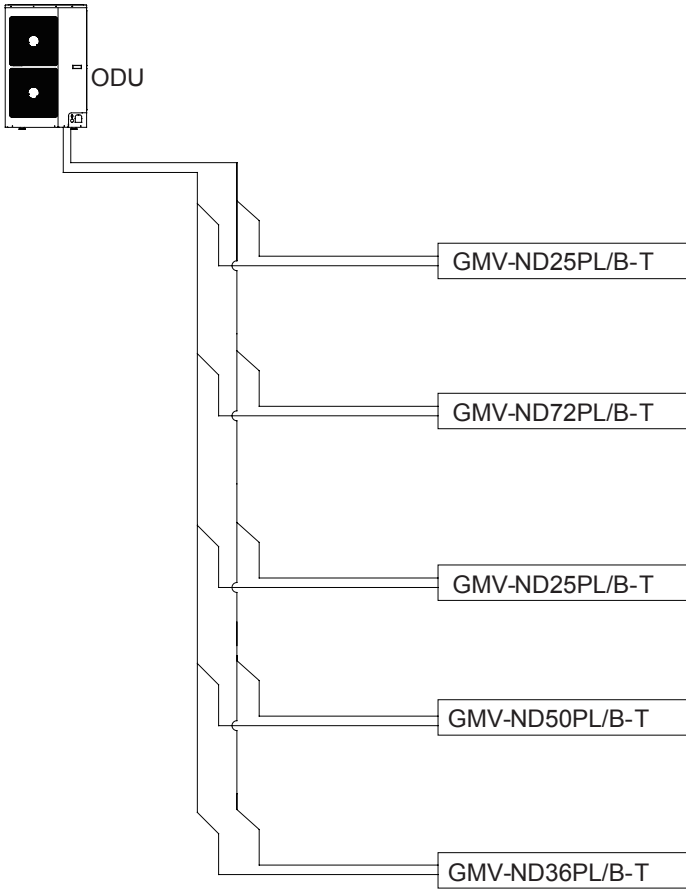
4 BASIC SYSTEM CONFIGURATION

4.1 System legend(ex.)

Model name of outdoor unit: GMV-160WL/A-T

Allowed capacity code of indoor unit: Min:8000W Max: 21600W。

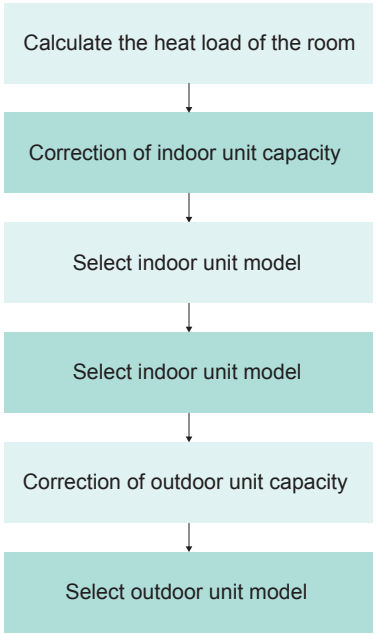
Note: The total capacity code of indoor units shall be within 50%~135% of the capacity code of selected outdoor unit.



GMV-160WL/A-T Total capacity code of indoor units is 25×2+72+36+50=208, so the selected outdoor unit is GMV-160WL/A-T.

5 EQUIPMENT SELECTION PROCEDURE

5.1 Selection flow chart



5.2 Combination conditions for indoor unit and outdoor unit

1) The capacity code of indoor units = The capacity code of indoor units = total capacity code of outdoor unit × (50%~135%)
2) For outdoor unit, maximum No. of connectable indoor units and total capacity code of indoor units are decided.

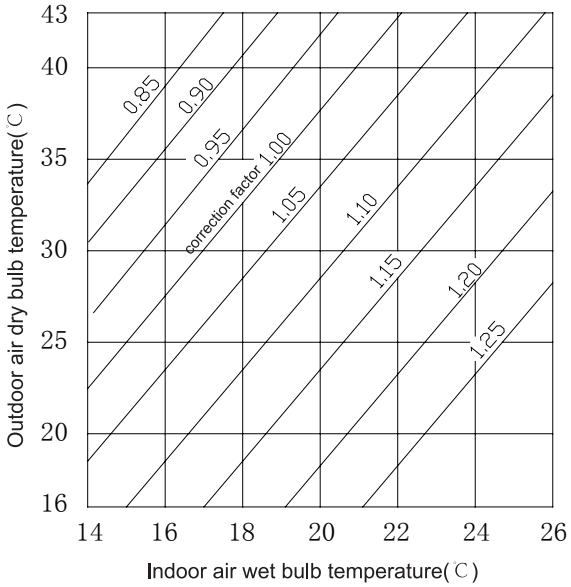
Model name of outdoor unit	Capacity code of outdoor unit	Max. No. of indoor units
GMV-120WL/A-T	12KW	7
GMV-140WL/A-T	14KW	8
GMV-160WL/A-T	16KW	9

5.3 Cooling/Heating capacity characteristics

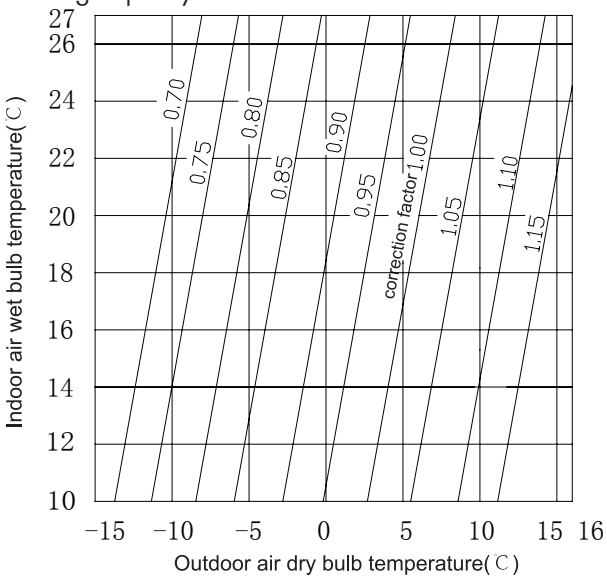
(1) Cooling capacity calculation method.
(2) Heating capacity calculation method.
Cooling or heating capacity calculation method:
R410A outdoor unit capacity = outdoor unit capacity in rated condition × correction factor of indoor and outdoor temperature condition × connection pipe distance, correction factor of height difference between indoor unit and outdoor unit.

① If the total capacity code of indoor units is smaller than the capacity code of outdoor unit, the capacity of outdoor unit in rated condition equals to the total capacity code of indoor units;
② If the total capacity code of indoor units is bigger than the capacity code of outdoor unit, the capacity of outdoor unit in rated condition equals to its rated cooling capacity;
③ Correction factor of indoor and outdoor temperature condition.

1) Correction factor of cooling capacity



2) Correction factor of heating capacity



④ Correction factor of connection pipe distance and height difference

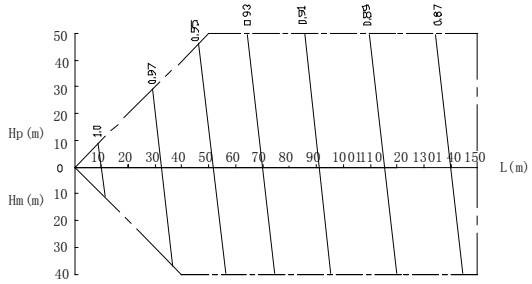
◆ Symbol instruction:

Hp: Height difference (m) between indoor unit and outdoor unit when indoor unit is lower than outdoor unit;

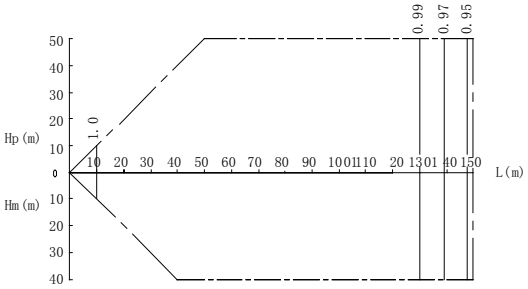
Hm: Height difference (m) between indoor unit and outdoor unit when indoor unit is higher than outdoor unit;

L: Single-pass equivalent connection pipe length L

◆ The following chart is the capacity change rate in 100% load under standard condition (thermostat is set in 16℃ in cooling and set in 30℃ in heating).



Change rate of cooling capacity



Change rate of heating capacity

(3) Capacity of each indoor unit=Capacity of outdoor unit × Total capacity of indoor units/Total capacity of synchronously operating indoor units.

(4) Operating temperature rang.

	Temperature range
Cooling	-5~48℃
Heating	-20~27℃

5.4 Example of equipment selection

(1) Overview of building model

a. Temperature condition

b. Outdoor temperature: 35℃ DB; Indoor temperature: 17℃ WB

c. Load in cooling

	Room A	Room B	Room C	Room D	Room E
Load	2	7	2	4.7	3.2

(2) Selection Criteria for each floor

Pipe length: 55m; Height difference between indoor unit and outdoor unit: 25m (indoor unit is higher than outdoor unit).

(3) Procedure and result of equipment selection

a. Procedure of equipment selection

Introduce the equipment selection procedure step by step.

b. Equipment selection and capacity check

① Selection of indoor unit.

Select suitable indoor unit according to the corrected load of indoor unit capacity.Corrected load of indoor unit capacity=Load/Corrected ratio of cooling capacity related to temperature condition. Referring to the corrected ratio chart of cooling capacity related to temperature condition, under outdoor temperature of 35℃ DB and indoor temperature of 17℃ WB, the corrected ratio of cooling capacity is 0.94.

Selection result is as below:

	Room A	Room B	Room C	Room D	Room E
Load (KW)	2	7	2	4.7	3.2
Corrected load of capacity (KW)	2.12	7.45	2.12	5	3.40
Unit size	25 unit	72 unit	25 unit	50 unit	36 unit
Capacity code	25	72	25	50	36

② Selection of outdoor unit

The total capacity code of indoor units is 208. Please select suitable outdoor unit according to the total capacity of indoor units and corrected situation.Capacity of outdoor unit=Total capacity of indoor units/(Corrected ratio of cooling capacity related to temperature condition × Correction of connection pipe length and height difference) .After calculating the capacity of outdoor unit, select suitable outdoor unit according to 50%~135% of the capacity of outdoor unit.

In the example, capacity of outdoor unit=208/(0.94×0.95)=233

Select the outdoor unit with capacity code of 160 and nominal cooling capacity of 16KW.

The capacity code ratio between indoor unit and outdoor unit is 208/160×100%=130%, which is within 50%~135% and accords with the equipment selection standard.

③ Correction of outdoor unit capacity

Suppose the combination situation between indoor unit and outdoor unit is as below.

Indoor unit: GMV-ND25PL/B-T×2, GMV-ND72PL/B-T×1, GMV-ND50PL/B-T×1, GMV-ND36PL/B-T×1

If the total capacity code of indoor units is bigger than the capacity code of outdoor unit, the capacity of outdoor unit in rated condition equals to its rated cooling capacity. So the capacity of outdoor unit under rated condition is 16KW.

④ Referring to the corrected ratio chart of cooling capacity related to temperature condition, under outdoor temperature of 35℃ DB and indoor temperature of 17℃ WB, the corrected ratio of cooling capacity is 0.94.

⑤ Referring to the corrected ratio of connection pipe of 55m long and height difference between indoor unit and outdoor unit of 25m (outdoor unit is lower than indoor unit), the corrected ratio is 0.95.

⑥ Correction of indoor unit capacity

Capacity of each indoor unit=Capacity of outdoor unit × Total capacity of indoor units/Total capacity of synchronously operating indoor units.

GMV-ND25PL/B-T：16×25/208=1.92KW

GMV-ND72PL/B -T：16×72/208=5.54KW

GMV-ND50PL/B -T：16×50/208=3.85KW

GMV-ND36PL/B -T：16×36/208=2.77KW

The result is as below:

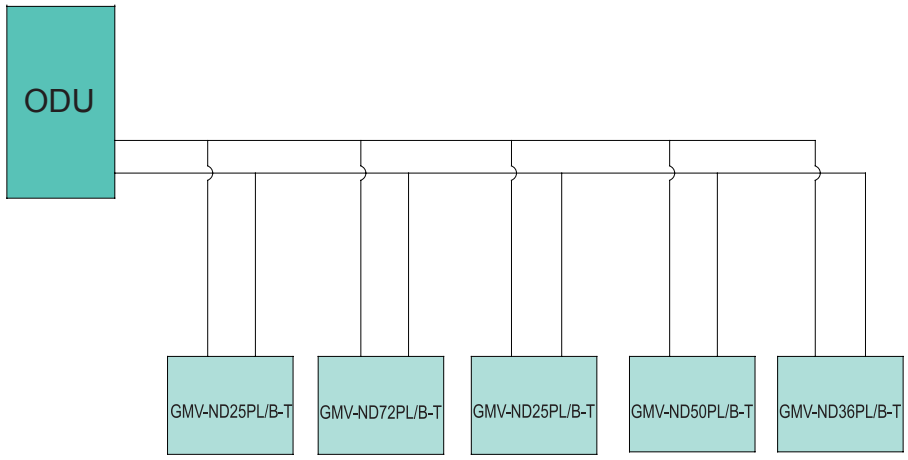
Air conditioning load			Equipment selection			
Floor	RoomNo	Indoor air conditioning load	Indoor unit		Outdoor unit	
		Cooling	Model	Capacity(kW) Cooling	Model	Capacity(kW) Cooling
1	A	2	GMV-ND25PL/B-T	2.5	GMV-160WL/A-T	16
	B	7	GMV-ND72PL/B-T	7.2		
	C	2	GMV-ND25PL/B-T	2.5		
	D	4.7	GMV-ND50PL/B-T	5.0		
	E	3.2	GMV-ND36PL/B-T	3.6		

Piping distance	Capacity correction	Capacity check after correction

Floor	Room No.	Equivalent length(m)	Height difference(m)	Pipe correction × temp. correction	Capacity Capacity(kW)	Judgment
				Cooling	Cooling Heating	
1	A	85	25m(ODU is lower than IDU)	14.29	1.92KW	The selection should accord with the standard
	B				5.54KW	
	C				1.92KW	
	D				3.85KW	
	E				2.77KW	

c.Schematic diagram

Explain the location of units in each room and connection way of indoor unit and outdoor unit with single-line chart.



6 REFRIGERANT PIPING DESIGN

6.1 Warning on refrigerant leakage

(1) Introduction of leakage detection method

Procedures of leakage detection.Before ex-factory, the cut-off valves of gap pipe and liquid pipe of outdoor unit are closed. Please confirm it before installation.Before testing, apply some suitable lubricant on the joint of cap and pipe. Use two wrenches when fixing the cap.Connecting outdoor pipeline for testing is not allowed during leakage detection. The testing pressure of R410A system is 4.15MPa (for R22 system, it is 3.0Mpa). The medium of airproof test must be dry nitrogen. Increase the pressure slowly in three steps:

Step one: Slowly increase pressure to 0.5MPa and maintain pressure for 5min. Big leakage may be found during leakage detection;

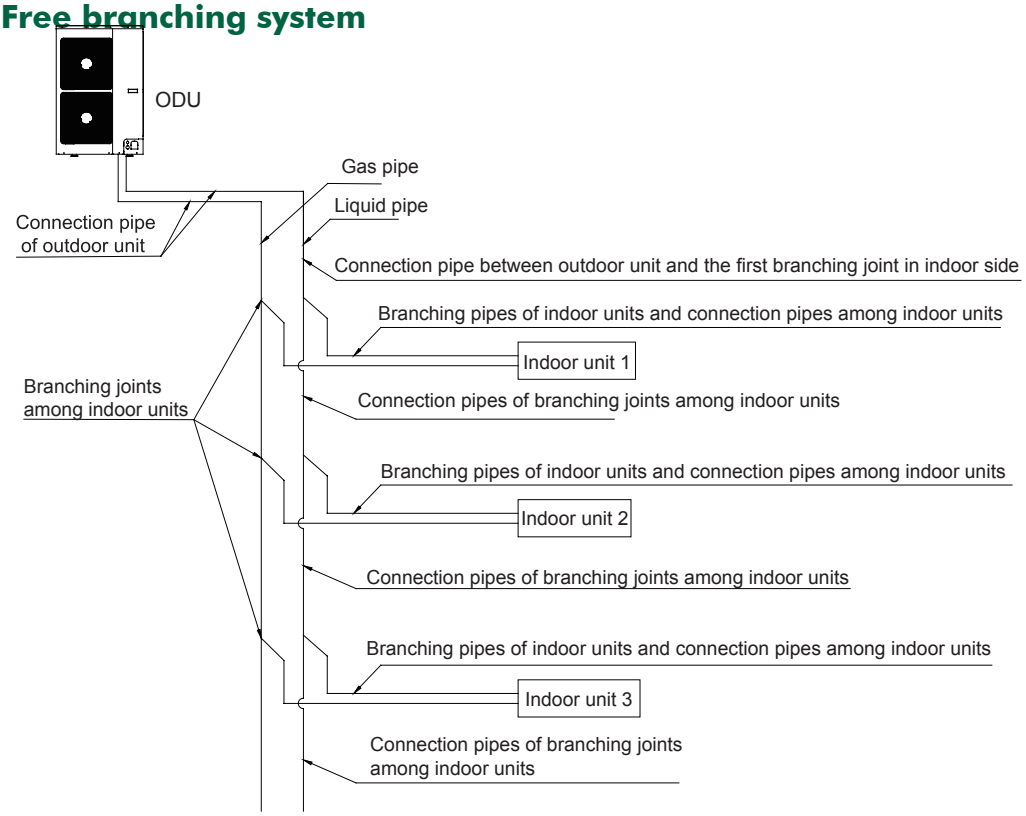
Step two: Slowly increase pressure to 1.5MPa and maintain pressure for 5min. Small leakage may be found during airproof test;

Step three: For R410A system, slowly increase pressure to 4.15MPa(for R22 system, it is 3.0Mpa) and maintain pressure for 5min. Tiny leakage may be found during strength test. Increase pressure to testing pressure and maintain pressure for 24h. Check if the pressure decreases. The test is passed if pressure doesn't decrease.

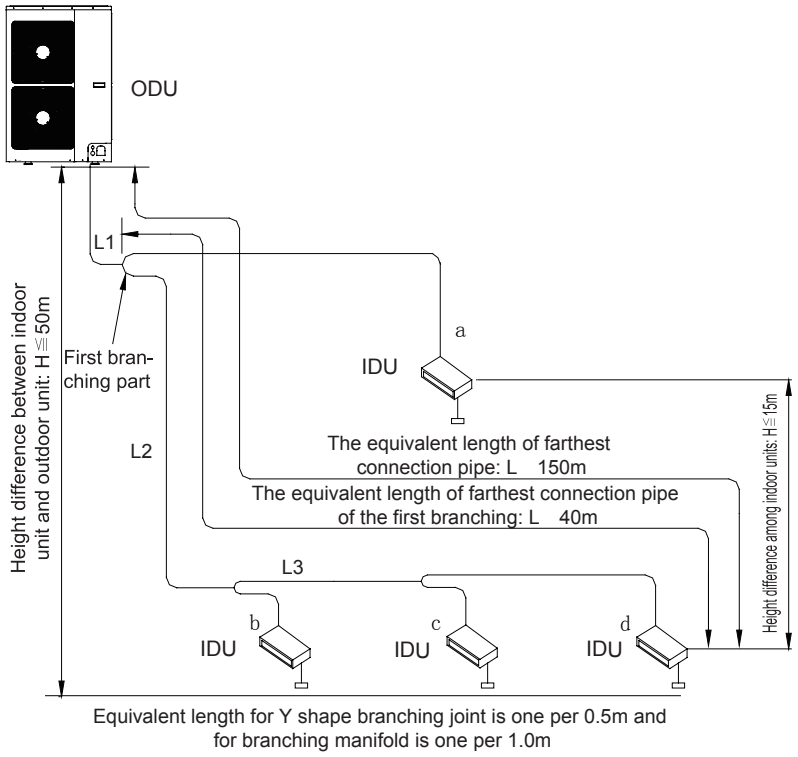
(2) Introduction of handling method of leakage

Firstly, discharge the refrigerant and then charge nitrogen for leakage welding. The nitrogen charging way is the same as that in airproof test. Blow away the impurities and clean the pipeline after finishing welding. Finally, rearrange airproof test for leakage detection until there is no leakage.

6.2 Free branching system



6.3 Allowable length/height difference of refrigerant piping



Note: The equivalent length of one Y shape branching joint is 0.5m.

			Allowable value	Piping section
Pipe length	Total extension of pipe (Liquid pipe, real length)		300	L1+L2+L3+a+b++c+d
	Farthest piping length	Real length	120	L1+L2+L3+d
		Equivalent length	150	
	Equivalent length of farthest piping from 1st branching		40	L2+L3+d
Height difference	Height between indoor and outdoor units	Upper outdoor unit	50	——
		Lower outdoor unit	40	——
	Height between indoor units	Upper outdoor unit	15	——
		Lower outdoor unit	15	——

6.4 Selection of refrigerant piping

(1) Size of main pipe

Model	Gas pipe	Liquid pipe
GMV-120WL/A-T	Ø15.9	Ø9.52
GMV-140WL/A-T	Ø15.9	Ø9.52
GMV-160WL/A-T	Ø19.05	Ø9.52

(2) Pipe size between branching joints

Total capacity code of indoor units at downstream side	Gas pipe	Liquid pipe
C ≤5.6	Ø12.7	Ø6.35
5.6 < C≤14.2	Ø15.9	Ø9.52
14.2 < C≤22.0	Ø19.05	Ø9.52

(3) Piping of indoor unit

Capacity rank of indoor unit	Gas pipe	Liquid pipe
C≤2.8	Ø9.52	Ø6.35
2.8 < C≤5.0	Ø12.7	Ø6.35
5.0 < C≤14.0	Ø15.9	Ø9.52
14.0 < C≤16.0	Ø19.05	Ø9.52
16.0 < C≤28.0	Ø22.2	Ø9.52

(4) Selection for branching section

	Total capacity code of indoor unit	Model name
Y-shape branching joint	C≤20.0	FQ01A

6.5 Charging requirement with additional refrigerant

(1) Refrigerant in the system when shipped from the factory

Model name	GMV-120WL/A-T	GMV-140WL/A-T	GMV-160WL/A-T
Refrigerant amount charged in factory (kg)	5.0	5.0	5.0

(2) Additional refrigerant charge amount =∑Length of liquid pipe × refrigerant charge amount per meter

Note:

① The refrigerant amount inside the system before ex-factory doesn't include the required additional refrigerant charge amount inside the pipeline system of indoor units and the pipeline system connecting indoor unit and outdoor unit.

② For the length of connection pipe in field, the required additional refrigerant charge amount shall be confirmed according to liquid pipe size in field and its length.

③ Record additional refrigerant charge amount for future reference.

Note: If the total length of liquid pipe is within 20m, no additional refrigerant is needed.
When the compressor is not working after ensuring there is no leakage, charge the required additional refrigerant amount to the unit from the valve of liquid pipe of outdoor unit. When the pipe pressure increases and the additional refrigerant can't be charged to the required amount quickly, please set the unit in cooling operation status and charge refrigerant from the low pressure maintenance port of outdoor unit.

7 WIRING DESIGN

7.1 General wiring principle

(1) All electrical work shall be done by professionals according to national and local laws and regulations.
(2) The unit must be grounded reliably according to the related requirement of GB 50169.
(3) Connect wire according to the wiring diagram stuck on the unit.

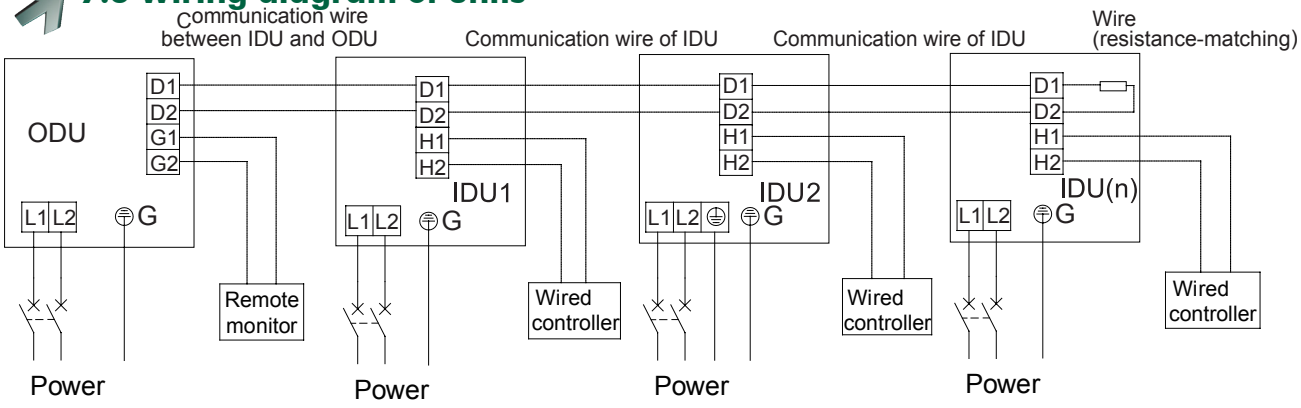
7.2 Electrical wiring design

(1) Wiring drawing
(2) Selection of power supply cord and fuse of units

Model		Power supply wiring			
		Outdoor Unit		Indoor Unit	
		Wire size	Field fuse	Wire size	Field fuse
Outdoor Unit	GMV-120WL/A-T	4.00mm²	32A	/	/
	GMV-140WL/A-T	4.00mm²	32A	/	/
	GMV-160WL/A-T	6.00mm²	40A	/	/
Indoor Unit	GMV-ND22PL/B-T	/	/	1mm²	6A
	GMV-ND25PL/B-T	/	/	1mm²	6A
	GMV-ND28PL/B-T	/	/	1mm²	6A
	GMV-ND32PL/B-T	/	/	1mm²	6A
	GMV-ND36PL/B-T	/	/	1mm²	6A
	GMV-ND40PL/B-T	/	/	1mm²	6A
	GMV-ND45PL/B-T	/	/	1mm²	6A
	GMV-ND50PL/B-T	/	/	1mm²	6A
	GMV-ND56PL/B-T	/	/	1mm²	6A
	GMV-ND63PL/B-T	/	/	1mm²	6A
	GMV-ND72PL/B-T	/	/	1mm²	6A
Indoor Unit	GMV-N22G/A3A-K	/	/	1mm²	6A
	GMV-N28G/A3A-K	/	/	1mm²	6A
	GMV-N36G/A3A-K	/	/	1mm²	6A
	GMV-N45G/A3A-K	/	/	1mm²	6A
	GMV-N50G/A3A-K	/	/	1mm²	6A
	GMV-N56G/A3A-K	/	/	1mm²	6A
	GMV-N63G/A3A-K	/	/	1mm²	6A
	GMV-N71G/A3A-K	/	/	1mm²	6A
Indoor Unit	GMV-N22G/A3A-D	/	/	1mm²	6A
	GMV-N28G/A3A-D	/	/	1mm²	6A
	GMV-N36G/A3A-D	/	/	1mm²	6A
	GMV-N45G/A3A-D	/	/	1mm²	6A
	GMV-N50G/A3A-D	/	/	1mm²	6A
	GMV-N56G/A3A-D	/	/	1mm²	6A
	GMV-N63G/A3A-D	/	/	1mm²	6A
	GMV-N71G/A3A-D	/	/	1mm²	6A

Indoor Unit	GMV-N22G/A2A-K	/	/	1mm²	6A
	GMV-N28G/A2A-K	/	/	1mm²	6A
	GMV-N36G/A2A-K	/	/	1mm²	6A
	GMV-N45G/A2A-K	/	/	1mm²	6A
	GMV-N50G/A2A-K	/	/	1mm²	6A
	GMV-N56G/A2A-K	/	/	1mm²	6A
	GMV-N63G/A2A-K	/	/	1mm²	6A
	GMV-N71G/A2A-K	/	/	1mm²	6A
Indoor Unit	GMV-N22G/A2A-D	/	/	1mm²	6A
	GMV-N28G/A2A-D	/	/	1mm²	6A
	GMV-N36G/A2A-D	/	/	1mm²	6A
	GMV-N45G/A2A-D	/	/	1mm²	6A
	GMV-N50G/A2A-D	/	/	1mm²	6A
	GMV-N56G/A2A-D	/	/	1mm²	6A
	GMV-N63G/A2A-D	/	/	1mm²	6A
	GMV-N71G/A2A-D	/	/	1mm²	6A
	GMV-N22G/A4A-K	/	/	1mm²	6A
	GMV-N28G/A4A-K	/	/	1mm²	6A
	GMV-N36G/A4A-K	/	/	1mm²	6A
	GMV-N45G/A4A-K	/	/	1mm²	6A
	GMV-N50G/A4A-K	/	/	1mm²	6A
	GMV-N56G/A4A-K	/	/	1mm²	6A
	GMV-N63G/A4A-K	/	/	1mm²	6A
	GMV-N71G/A4A-K	/	/	1mm²	6A
	GMV-N22G/A4A-D	/	/	1mm²	6A
	GMV-N28G/A4A-D	/	/	1mm²	6A
	GMV-N36G/A4A-D	/	/	1mm²	6A
	GMV-N45G/A4A-D	/	/	1mm²	6A
	GMV-N50G/A4A-D	/	/	1mm²	6A
	GMV-N56G/A4A-D	/	/	1mm²	6A
	GMV-N63G/A4A-D	/	/	1mm²	6A
	GMV-N71G/A4A-D	/	/	1mm²	6A
	GMV-N22G/A8A-K	/	/	1mm²	6A
	GMV-N28G/A8A-K	/	/	1mm²	6A
	GMV-N36G/A8A-K	/	/	1mm²	6A
	GMV-N45G/A8A-K	/	/	1mm²	6A
	GMV-N50G/A8A-K	/	/	1mm²	6A
	GMV-N56G/A8A-K	/	/	1mm²	6A
	GMV-N63G/A8A-K	/	/	1mm²	6A
	GMV-N71G/A8A-K	/	/	1mm²	6A
	GMV-N22G/A8A-D	/	/	1mm²	6A
	GMV-N28G/A8A-D	/	/	1mm²	6A
	GMV-N36G/A8A-D	/	/	1mm²	6A
	GMV-N45G/A8A-D	/	/	1mm²	6A
	GMV-N50G/A8A-D	/	/	1mm²	6A
	GMV-N56G/A8A-D	/	/	1mm²	6A
	GMV-N63G/A8A-D	/	/	1mm²	6A
	GMV-N71G/A8A-D	/	/	1mm²	6A
	GMV-N22G/C9A-K	/	/	1mm²	6A
	GMV-N28G/C9A-K	/	/	1mm²	6A
	GMV-N36G/C9A-K	/	/	1mm²	6A
	GMV-N45G/C9A-K	/	/	1mm²	6A
	GMV-N50G/C9A-K	/	/	1mm²	6A
	GMV-N56G/C9A-K	/	/	1mm²	6A
	GMV-N63G/C9A-K	/	/	1mm²	6A
	GMV-N71G/C9A-K	/	/	1mm²	6A
	GMV-N22G/C9A-D	/	/	1mm²	6A
	GMV-N28G/C9A-D	/	/	1mm²	6A
	GMV-N36G/C9A-D	/	/	1mm²	6A
	GMV-N45G/C9A-D	/	/	1mm²	6A
	GMV-N50G/C9A-D	/	/	1mm²	6A
	GMV-N56G/C9A-D	/	/	1mm²	6A
	GMV-N63G/C9A-D	/	/	1mm²	6A
	GMV-N71G/C9A-D	/	/	1mm²	6A

7.3 Wiring diagram of units



7.4 Parameters

(1) Outdoor unit

Model name	Voltage Range		Compressor		Fan Motor		Power Supply		
	Min	Max	RLA	LRA	kW	FLA	MCA	MOCP	ICF
GMV-120WL/A-T	208	240	21	/	0.12	0.5A	28.1	32	/
GMV-140WL/A-T	208	240	21	/	0.12	0.5A	31.8	32	/
GMV-160WL/A-T	208	240	21	/	0.12	0.5A	33.6	40	/

LEGEND:

MCA: Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection(Amps)
ICF: Maximum Instantaneous Current Flow Star
RLA: Rated Load Amps
LRA: Locked Rotor Amps
FLA: Full Load Amps
kW: Fan Motor Rated Output(kW)

(2) Indoor unit

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Duct type	GMV-ND22PL/B-T	220~240V-1ph-50Hz 208~230V-1ph-60Hz	177	264	0.025	0.5	0.625	6
Duct type	GMV-ND25PL/B-T		177	264	0.025	0.5	0.625	6
Duct type	GMV-ND28PL/B-T		177	264	0.025	0.5	0.625	6
Duct type	GMV-ND32PL/B-T		177	264	0.030	0.5	0.625	6
Duct type	GMV-ND36PL/B-T		177	264	0.030	0.5	0.625	6
Duct type	GMV-ND40PL/B-T		177	264	0.035	0.5	0.625	6
Duct type	GMV-ND45PL/B-T		177	264	0.035	0.5	0.625	6
Duct type	GMV-ND50PL/B-T		177	264	0.035	0.5	0.625	6
Duct type	GMV-ND56PL/B-T		177	264	0.045	0.5	0.625	6
Duct type	GMV-ND63PL/B-T		177	264	0.045	0.5	0.625	6
Duct type	GMV-ND72PL/B-T		177	264	0.05	0.5	0.625	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A3A-K	220~240V-1ph-50Hz	187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A3A-K		187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A3A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N45G/A3A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N50G/A3A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N56G/A3A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N63G/A3A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N71G/A3A-K		187	264	0.07	0.43	0.5	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A2A-K	220~240V-1ph-50Hz	187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A2A-K		187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A2A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N45G/A2A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N50G/A2A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N56G/A2A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N63G/A2A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N71G/A2A-K		187	264	0.07	0.43	0.5	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A4A-K	220~240V-1ph-50Hz	187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A4A-K		187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A4A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N45G/A4A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N50G/A4A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N56G/A4A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N63G/A4A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N71G/A4A-K		187	264	0.07	0.43	0.5	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A8A-K	220~240V-1ph-50Hz	187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A8A-K		187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A8A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N45G/A8A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N50G/A8A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N56G/A8A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N63G/A8A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N71G/A8A-K		187	264	0.07	0.43	0.5	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/C9A-K	220~240V-1ph-50Hz	187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/C9A-K		187	264	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/C9A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N45G/C9A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N50G/C9A-K		187	264	0.06	0.45	0.38	6
Wall Mounted type	GMV-N56G/C9A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N63G/C9A-K		187	264	0.07	0.43	0.5	6
Wall Mounted type	GMV-N71G/C9A-K		187	264	0.07	0.43	0.5	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A3A-D	208~230V-1ph-60Hz	177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A3A-D		177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A3A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N45G/A3A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N50G/A3A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N56G/A3A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N63G/A3A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N71G/A3A-D		177	253	0.07	0.43	0.39	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A2A-D	208~230V-1ph-60Hz	177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A2A-D		177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A2A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N45G/A2A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N50G/A2A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N56G/A2A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N63G/A2A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N71G/A2A-D		177	253	0.07	0.43	0.39	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A4A-D	208~230V-1ph-60Hz	177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A4A-D		177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A4A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N45G/A4A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N50G/A4A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N56G/A4A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N63G/A4A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N71G/A4A-D		177	253	0.07	0.43	0.39	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/A8A-D	208~230V-1ph-60Hz	177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/A8A-D		177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/A8A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N45G/A8A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N50G/A8A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N56G/A8A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N63G/A8A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N71G/A8A-D		177	253	0.07	0.43	0.39	6

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Powr Supply	
			Min	Max	kW	FLA	MCA	MOCP
Wall Mounted type	GMV-N22G/C9A-D	208~230V-1ph-60Hz	177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N28G/C9A-D		177	253	0.05	0.32	0.25	6
Wall Mounted type	GMV-N36G/C9A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N45G/C9A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N50G/C9A-D		177	253	0.06	0.45	0.26	6
Wall Mounted type	GMV-N56G/C9A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N63G/C9A-D		177	253	0.07	0.43	0.39	6
Wall Mounted type	GMV-N71G/C9A-D		177	253	0.07	0.43	0.39	6

Legend:
MCA: Minimum Circuit Amps
MOCP: Maximum Overcurrent Protection(Amps)
FLA: Full Load Amps
kW: Fan Motor Rated Output(kW)

8 ACCESSORIES

(1) Outdoor unit

Model name	Standard	Option	Provide for oneself
GMV-120WL/A-T	√		
GMV-120WL/A-T	√		
GMV-120WL/A-T	√		
FQ01A Y FQ01A Y shape branching joint		√	
Condensate pipe			√
Power cord			√
Filter		√	
Oil return elbow		√	
Signal wires among units	√		

(2) Indoor unit

Model name	Standard	Option	Provide for oneself
XK46 Wired Controller	√		
YV1L1 remote controller		√	
YAD1F remote controller		√	
Screw M4X25 (Cross recessed small pan head screw)	√		
Drain Hose Assembly	√		
Union Nut Assembly	√		
Nut with Washer	√		
Nut M10 (Type 1 Hex Nut)	√		
Nut 10 (Type 1 Hex Nut)	√		
Heating Jacket of Header	√		
Heating Jacket of Liquid-in Pipe	√		
Sponge of Drain Pipe	√		
Cable Tie	√		

(3) Controller

Model name	Standard	Option	Provide for oneself
Wired controller XK62	√		
Central controller CE53-24/F(C)		√	

9 TECHNICAL SPECIFICATIONS

(1) Indoor unit

◆ Duct Type

Model		GMV-ND22PL/B-T	GMV-ND25PL/B-T	GMV-ND28PL/B-T	GMV-ND32PL/B-T
Cooling Capacity	kW	2.2	2.5	2.8	3.2
	Btu	7.51	8.53	9.55	10.92
Heating Capacity	kW	2.5	2.8	3.2	3.6
	Btu	8.53	9.55	10.92	12.28

Air Flow Rate		m^3/h	450	450	450	550
Sound Level (H/L)		dB(A)	30	30	30	31
Power Supply			220~240V-50HZ / 208~230V-60HZ			
Fan Motor	Output	kW	0.025	0.025	0.025	0.025
	Running Current	A	0.19	0.19	0.19	0.25
Connect-ing Pipes	Gas Pipe	mm	Ø9.52		Ø9.52	
		inch	3/8"		3/8"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø26×2.5		Ø26×2.5	
Dimensions (W×D×H)		mm	710×450×200		710×450×200	
Net. Weight (Main Body/Panel)		kg	18.5		18.5	19.5

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of

② Refer to the product nameplate for parameters and specification of the unit;

③ The model with GMVL code is cooling only unit; while the model with GMV code is heat pump unit; the cooling only units dose not have any parameters of performing heating;

④ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation.

Model			GMV-ND36PL/B-T	GMV-ND40PL/B-T	GMV-ND45PL/B-T	GMV-ND50PL/B-T
Cooling Capacity		kW	3.6	4.0	4.5	5.0
		Btu	12.28	13.65	15.35	17.06
Heating Capacity		kW	4.0	4.5	5.0	5.6
		Btu	13.65	15.35	17.06	19.11
Air Flow Rate		m^3/h	550	750	750	750
Sound Level (H/L)		dB(A)	31	33	33	33
Power Supply			220~240V-50HZ / 208~230V-60HZ			
Fan Motor	Output	kW	0.03	0.035	0.035	0.035
	Running Current	A	0.25	0.28	0.28	0.28
Connect-ing Pipes	Gas Pipe	mm	Ø12.7		Ø12.7	
		inch	1/2"		1/2"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø26×2.5		Ø26×2.5	
Dimensions (W×D×H)		mm	710×450×200	1010×450×200	1010×450×200	1010×450×200
Net. Weight (Main Body/Panel)		kg	19.5	23.5	23.5	23.5

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of

② Refer to the product nameplate for parameters and specification of the unit;

③ The model with GMVL code is cooling only unit; while the model with GMV code is heat pump unit; the cooling only units dose not have any parameters of performing heating;

④ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation.

Model			GMV-ND56PL/B-T	GMV-ND63PL/B-T	GMV-ND72PL/B-T
Cooling Capacity		kW	5.6	6.3	7.2
		Btu	19.11	21.50	24.57
Heating Capacity		kW	6.3	7.0	8.0
		Btu	21.50	23.88	27.30
Air Flow Rate		m^3/h	850	850	1100
Sound Level (H/L)		dB(A)	35	35	37
Power Supply			220~240V-50HZ / 208~230V-60HZ		
Fan Motor	Output	kW	0.045	0.045	0.05
	Running Current	A	0.28	0.28	047
Connecting Pipes	Gas Pipe	mm	15.9		15.9
		inch	5/8"		5/8"
	Liquid Pipe	mm	9.52		9.52
		inch	3/8"		3/8"
	Connection Method		Flaring connection		Flaring connection
Drain Pipes (External Dia.×Thickness)		mm	Ø26×2.5		Ø26×2.5
Dimensions (W×D×H)		mm	1010×450×200		1310×450×200
Net. Weight (Main Body/Panel)		kg	24.5		30.5

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of

② Refer to the product nameplate for parameters and specification of the unit;

③ The model with GMVL code is cooling only unit; while the model with GMV code is heat pump unit; the cooling only units dose not have any parameters of performing heating;

④ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation.

◆ Wall Mounted Type

Model			GMV-N22G/ A*A-K	GMV-N28G/ A*A-K	GMV-N36G/ A*A-K	GMV-N45G/ A*A-K
Cooling Capacity		kW	2.2	2.8	3.6	4.5
		Btu	7.51	9.55	12.28	15.35
Heating Capacity		kW	2.5	3.2	4.0	5.0
		Btu	8.53	10.92	13.65	17.06
Air Flow Rate		m^3/h	500	500	630	630
Sound Level (H/L)		dB(A)	38/30	38/30	44/38	44/38
Power Supply			220~240V-50HZ			
Fan Motor	Output	kW	0.05	0.05	0.06	0.06
	Running Current	A	0.2	0.2	0.31	0.31
Connecting Pipes	Gas Pipe	mm	Ø9.52		Ø12.7	
		inch	3/8"		1/2"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5		Ø20×1.5	

Dimensions (W×D×H)	mm	843×180×275	940×200×298
Net. Weight (Main Body/Panel)	kg	10.0	12.5

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;
④ The parameters of foregoing models include Cozy Series-A2 Panel, Cozy Series-A4 Panel, Cozy Series-A8 Panel and Cozy Series-A3 Panel.

Model			GMV-N50G/A*A-K	GMV-N56G/A*A-K	GMV-N63G/A*A-K	GMV-N71G/A*A-K
Cooling Capacity		kW	5.0	5.6	6.3	7.1
		Btu	17.06	19.11	21.50	24.23
Heating Capacity		kW	5.8	6.3	7.0	7.5
		Btu	19.79	21.50	23.88	25.60
Air Flow Rate		m^3/h	630	750	750	750
Sound Level (H/L)		dB(A)	44/38	44/38	44/38	44/38
Power Supply			220~240V-50HZ			
Fan Motor	Output	kW	0.06	0.07	0.07	0.07
	Running Current	A	0.31	0.31	0.31	0.31
Connecting Pipes	Gas Pipe	mm	Ø12.7	Ø15.87	Ø15.87	
		inch	1/2"	5/8"	5/8"	
	Liquid Pipe	mm	Ø6.35	Ø9.52	Ø9.52	
		inch	1/4"	3/8"	3/8"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5	Ø30×1.5	Ø30×1.5	
Dimensions (W×D×H)		mm	940×200×298	1008×221×319	1008×221×319	1008×221×319
Net. Weight (Main Body/Panel)		kg	12.5	15.0	15.0	15.0

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;
④ The parameters of foregoing models include Cozy Series-A2 Panel, Cozy Series-A4 Panel, Cozy Series-A8 Panel and Cozy Series-A3 Panel.

Model		GMV-N22G/C9A-K	GMV-N28G/C9A-K	GMV-N36G/C9A-K	GMV-N45G/C9A-K
Cooling Capacity	kW	2.2	2.8	3.6	4.5
	Btu	7.51	9.55	12.28	15.35
Heating Capacity	kW	2.5	3.2	4.0	5.0
	Btu	8.53	10.92	13.65	17.06
Air Flow Rate	m^3/h	500	500	630	630
Sound Level (H/L)	dB(A)	38/30	38/30	44/38	44/38
Power Supply		220~240V-50HZ			

Fan Motor	Output	kW	0.05	0.05	0.06	0.06
	Running Current	A	0.2	0.2	0.31	0.31
Connect-ing Pipes	Gas Pipe	mm	Ø9.52		Ø12.7	
		inch	3/8"		1/2"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5		Ø20×1.5	
Dimensions (W×D×H)		mm	843×180×275		940×200×298	
Net. Weight (Main Body/Panel)		kg	10.0		12.5	

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;

Model			GMV-N50G/C9A-K	GMV-N56G/C9A-K	GMV-N63G/C9A-K	GMV-N71G/C9A-K
Cooling Capacity		kW	5.0	5.6	6.3	7.1
		Btu	17.06	19.11	21.50	24.23
Heating Capacity		kW	5.8	6.3	7.0	7.5
		Btu	19.79	21.50	23.88	25.60
Air Flow Rate		m^3/h	630	750	750	750
Sound Level (H/L)		dB(A)	44/38	44/38	44/38	44/38
Power Supply			220~240V-50HZ			
Fan Motor	Output	kW	0.06	0.07	0.07	0.07
	Running Current	A	0.31	0.31	0.31	0.31
Connect-ing Pipes	Gas Pipe	mm	Ø12.7	Ø15.87	Ø15.87	
		Pipes	1/2"	5/8"	5/8"	
	Liquid Pipe	mm	Ø6.35	Ø9.52	Ø9.52	
		inch	1/4"	3/8"	3/8"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5	Ø30×1.5	Ø30×1.5	
Dimensions (W×D×H)		mm	940×200×298	1008×221×319	1008×221×319	1008×221×319
Net. Weight (Main Body/Panel)		kg	12.5	15.0	15.0	15.0

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;

Model			GMV-N22G/A*A-D	GMV-N28G/A*A-D	GMV-N36G/A*A-D	GMV-N45G/A*A-D
Cooling Capacity		kW	2.2	2.8	3.6	4.5
		Btu	7.51	9.55	12.28	15.35
Heating Capacity		kW	2.5	3.2	4.0	5.0
		Btu	8.53	10.92	13.65	17.06
Air Flow Rate		m^3/h	500	500	630	630
Sound Level (H/L)		dB(A)	38/30	38/30	44/38	44/38
Power Supply			208~230V-60HZ			
Fan Motor	Output	kW	0.05	0.05	0.06	0.06
	Running Current	A	0.2	0.2	0.21	0.21
Connect-ing Pipes	Gas Pipe	mm	Ø9.52		Ø12.7	
		inch	3/8"		1/2"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5		Ø20×1.5	
Dimensions (W×D×H)		mm	843×180×275		940×200×298	
Net. Weight (Main Body/Panel)		kg	10.0		12.5	

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;

② Refer to the product nameplate for parameters and specification of the unit;

③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;

④ The parameters of foregoing models include Cozy Series-A2 Panel, Cozy Series-A4 Panel, Cozy Series-A8 Panel and Cozy Series-A3 Panel.

Model			GMV-N50G/A*A-D	GMV-N56G/A*A-D	GMV-N63G/A*A-D	GMV-N71G/A*A-D
Cooling Capacity		kW	5.0	5.6	6.3	7.1
		Btu	17.06	19.11	21.50	24.23
Heating Capacity		kW	5.8	6.3	7.0	7.5
		Btu	19.79	21.50	23.88	25.60
Air Flow Rate		m^3/h	630	750	750	750
Sound Level (H/L)		dB(A)	44/38	44/38	44/38	44/38
Power Supply			220~240V-50HZ			
Fan Motor	Output	kW	0.06	0.07	0.07	0.07
	Running Current	A	0.21	0.31	0.31	0.31
Connect-ing Pipes	Gas Pipe	mm	Ø12.7	Ø15.87	Ø15.87	
		inch	1/2"	5/8"	5/8"	
	Liquid Pipe	mm	Ø6.35	Ø9.52	Ø9.52	
		inch	1/4"	3/8"	3/8"	
	Connection Method		Flaring connection		Flaring connection	

Drain Pipes (External Dia.×Thickness)	mm	Ø20×1.5	Ø30×1.5	Ø30×1.5	
Dimensions (W×D×H)	mm	940×200×298	1008×221×319	1008×221×319	1008×221×319
Net. Weight (Main Body/Panel)	kg	12.5	15.0	15.0	15.0

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;
④ The parameters of foregoing models include Cozy Series-A2 Panel, Cozy Series-A4 Panel, Cozy Series-A8 Panel and Cozy Series-A3 Panel.

Model			GMV-N22G/C9A-D	GMV-N28G/C9A-D	GMV-N36G/C9A-D	GMV-N45G/C9A-D
Cooling Capacity		kW	2.2	2.8	3.6	4.5
		Btu	7.51	9.55	12.28	15.35
Heating Capacity		kW	2.5	3.2	4.0	5.0
		Btu	8.53	10.92	13.65	17.06
Air Flow Rate		m^3/h	500	500	630	630
Sound Level (H/L)		dB(A)	38/30	38/30	44/38	44/38
Power Supply			208~230V-60HZ			
Fan Motor	Output	kW	0.05	0.05	0.06	0.06
	Running Current	A	0.2	0.2	0.21	0.21
Connecting Pipes	Gas Pipe	mm	Ø9.52		Ø12.7	
		inch	3/8"		1/2"	
	Liquid Pipe	mm	Ø6.35		Ø6.35	
		inch	1/4"		1/4"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5		Ø20×1.5	
Dimensions (W×D×H)		mm	843×180×275		940×200×298	
Net. Weight (Main Body/Panel)		kg	10.0		12.5	

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;
② Refer to the product nameplate for parameters and specification of the unit;
③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;

Model		GMV-N50G/C9A-D	GMV-N56G/C9A-D	GMV-N63G/C9A-D	GMV-N71G/C9A-D
Cooling Capacity	kW	5.0	5.6	6.3	7.1
	Btu	17.06	19.11	21.50	24.23
Heating Capacity	kW	5.8	6.3	7.0	7.5
	Btu	19.79	21.50	23.88	25.60
Air Flow Rate	m^3/h	630	750	750	750
Sound Level (H/L)	dB(A)	44/38	44/38	44/38	44/38

Power Supply			220~240V-50HZ			
Fan Motor	Output	kW	0.06	0.07	0.07	0.07
	Running Current	A	0.21	0.31	0.31	0.31
Connecting Pipes	Gas Pipe	mm	Ø12.7	Ø15.87	Ø15.87	
		inch	1/2"	5/8"	5/8"	
	Liquid Pipe	mm	Ø6.35	Ø9.52	Ø9.52	
		inch	1/4"	3/8"	3/8"	
	Connection Method		Flaring connection		Flaring connection	
Drain Pipes (External Dia.×Thickness)		mm	Ø20×1.5	Ø30×1.5	Ø30×1.5	
Dimensions (W×D×H)		mm	940×200×298	1008×221×319	1008×221×319	1008×221×319
Net. Weight (Main Body/Panel)		kg	12.5	15.0	15.0	15.0

Conversion Formala: Btu/h=kW×3412

Notes:

① The design of this unit comply with the national executing standard of ;

② Refer to the product nameplate for parameters and specification of the unit;

③ The sound level is tested under circumstance of semi-anechoic chamber; the value of noise could be a little higher in actual operation;

(2)Outdoor unit

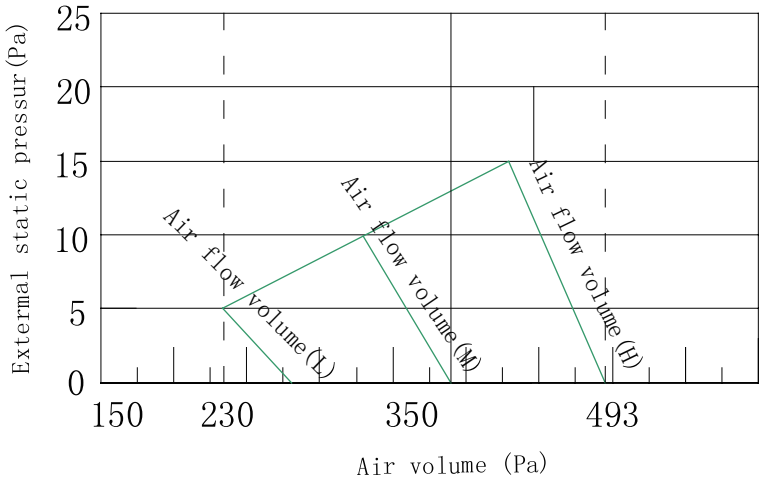
Model			GMV-120WL/A-T	GMV-140WL/A-T	GMV-160WL/A-T
Capacity	Cooling ①	kW	12	14	16
	Heating ②	kW	14	16.5	18.5
Noise		dB(A)	53	54	56
R410A Filling Amount		kg	5	5	5
Power Supply			220V ~ 50Hz	220V ~ 50Hz	220V ~ 50Hz
Power input	Cooling	kW	3.0	3.8	4.5
	Heating	kW	3.0	4.0	4.6
Rated current	Cooling	A	15	19.2	23.4
	Heating	A	15.8	19.3	23
Dimensions	Width	mm	900	900	900
	Depth	mm	340	340	340
	Height	mm	1345	1345	1345
Compressor			QXAS-F428zX050A		
Moisture protection			53	54	56
Climate Type			T1	T1	T1
Connection Pipes	Gas Pipe	mm	Ø15.9	Ø15.9	Ø19.05
	Liquid Pipe	mm	Ø9.52	Ø9.52	Ø9.52
	Connection Method		Flaring connection	Flaring connection	Flaring connection
Weight		kg	110	110	110
Recommended Power Lines	mm^2×Number of Lines		2×4.0	2×4.0	2×4.0
Dimensions of Installation		mm	900×340×1345	900×340×1345	900×340×1345

Dimensions of Package	Width	mm	998	998	998
	Depth	mm	458	458	458
	Height	mm	1515	1515	1515
Loading Quantity (20′ Container) ③		unit	28	28	28
Loading Quantity (40′ Container) ④		unit	57	57	57
Loading Quantity (40′ High Cube Container) ⑤		unit	57	57	57
Circuit breaker		A	32	32	32

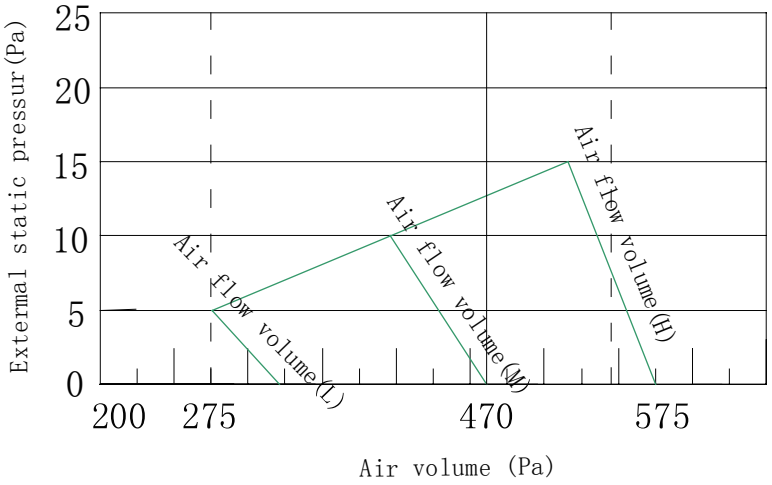
①. Cooling :Indoor air temperature 27°C(80.6°F)DB/19°C(66.2°F)WB
Outdoor air temperature 35°C(95°F)DB/24°C(75.2°F)WB
②. Heating: Indoor air temperature 20°C(68°F)DB/15°C(59°F)WB
Outdoor air temperature 7°C(44.6°F)DB/6°C(42.8°F)WB
③. Interior Dimensions L×W×H：5898×2352×2393，Door Opening W×H：2343×2280;
④. Interior Dimensions L×W×H：12032×2350×2390，Door Opening W×H：2343*2280;
⑤. Interior Dimensions L×W×H：12032×2350×2697，Door Opening W×H：2338*2585.

10 FAN CHARACTERISTICS

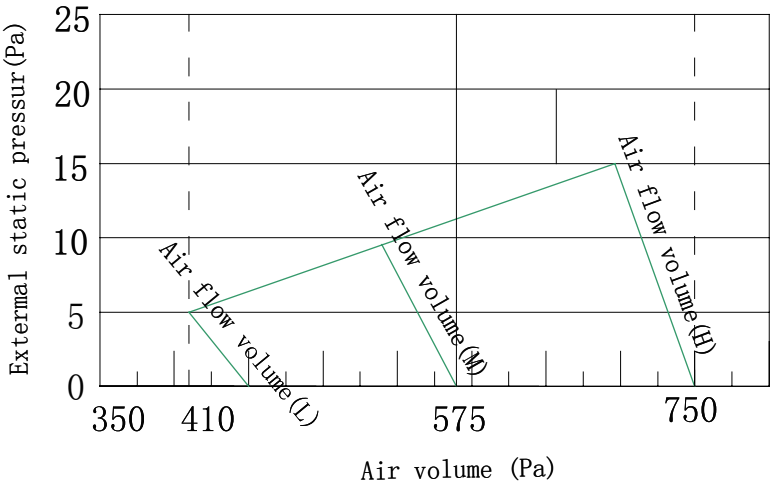
GMV-ND22~28PL/B-T



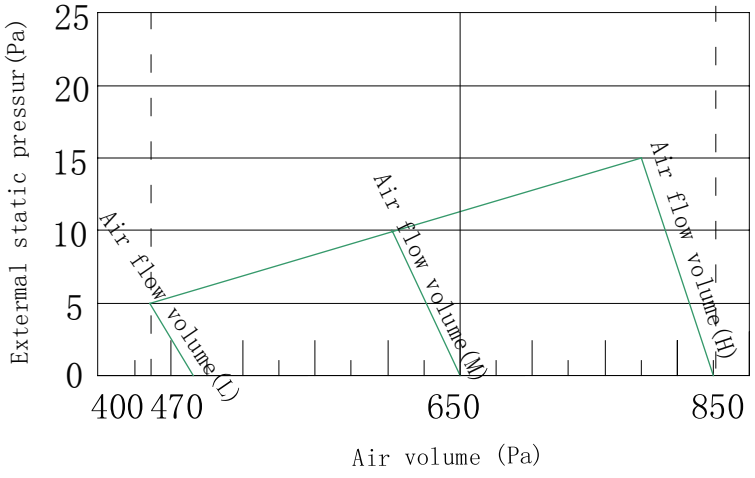
GMV-ND32~36PL/B-T

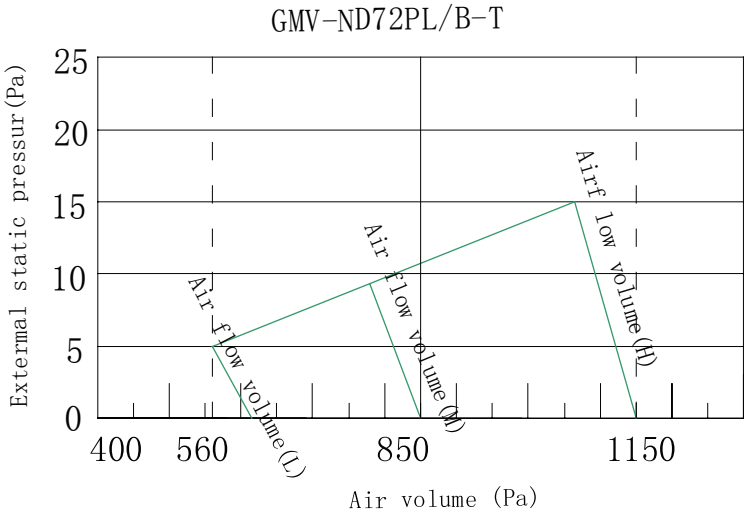


GMV-ND40~50PL/B-T



GMV-ND56~63PL/B-T



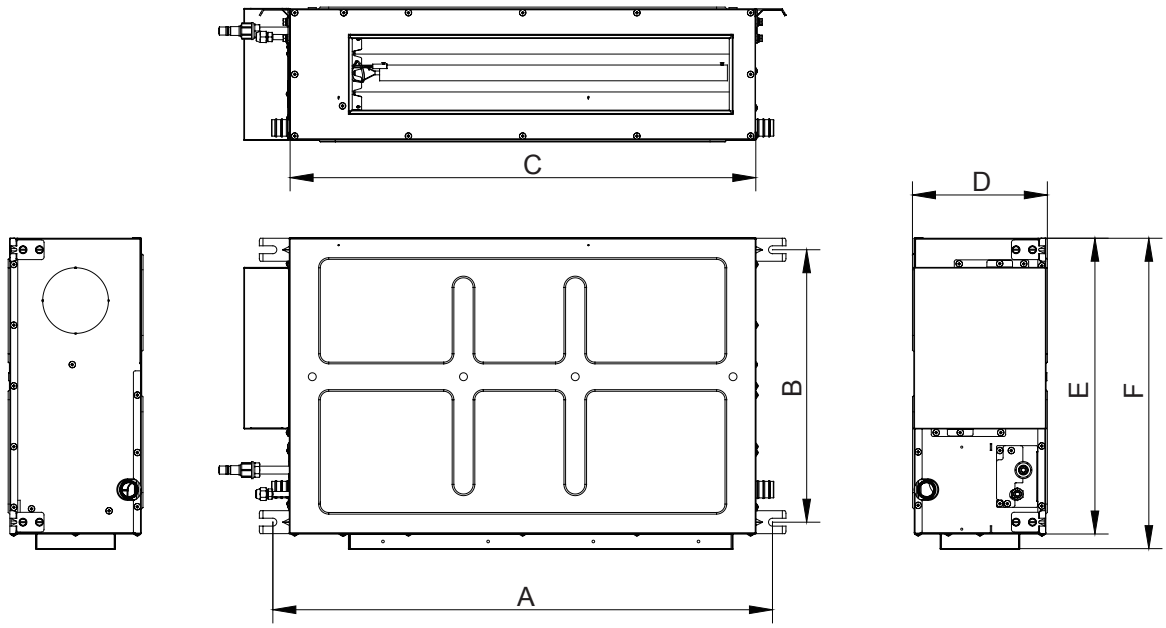


11 DIMENSIONAL DRAWINGS

(1) Indoor unit

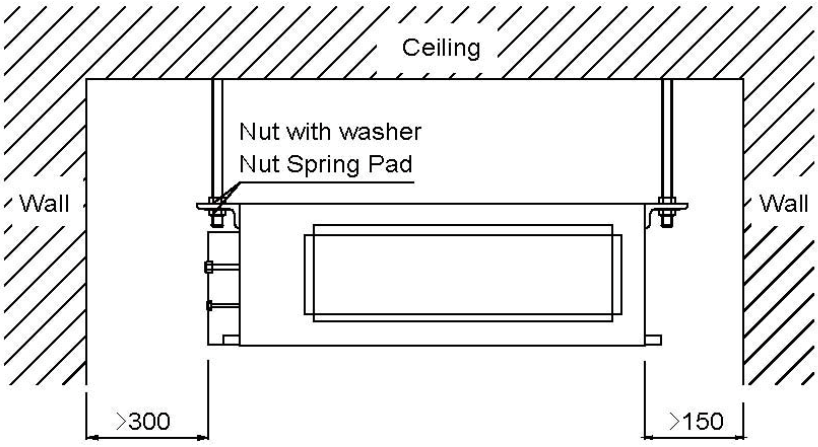
◆ Duct Type (include the dimension of main unit, air return case and suspension hole)

Unit outline and installation dimension



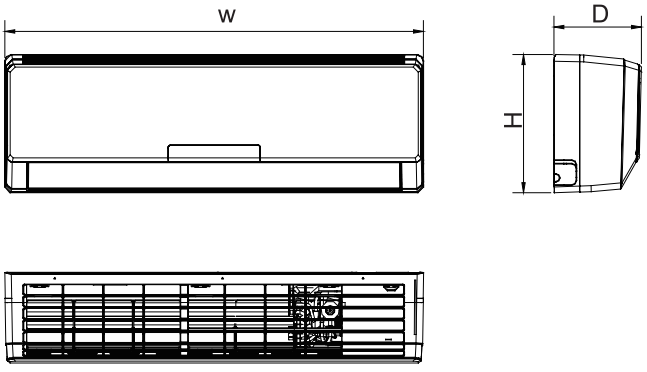
Item / Model	A	B	C	D	E	F
GMV-ND22~36PL/B-T	760	415	710	200	450	475
GMV-ND40~63PL/B-T	1060	415	1010	200	450	475
GMV-ND72PL/B-T	1360	415	1310	200	450	475

Unit installation space



◆ Wall Mounted Type

1) Unit outline and installation dimension

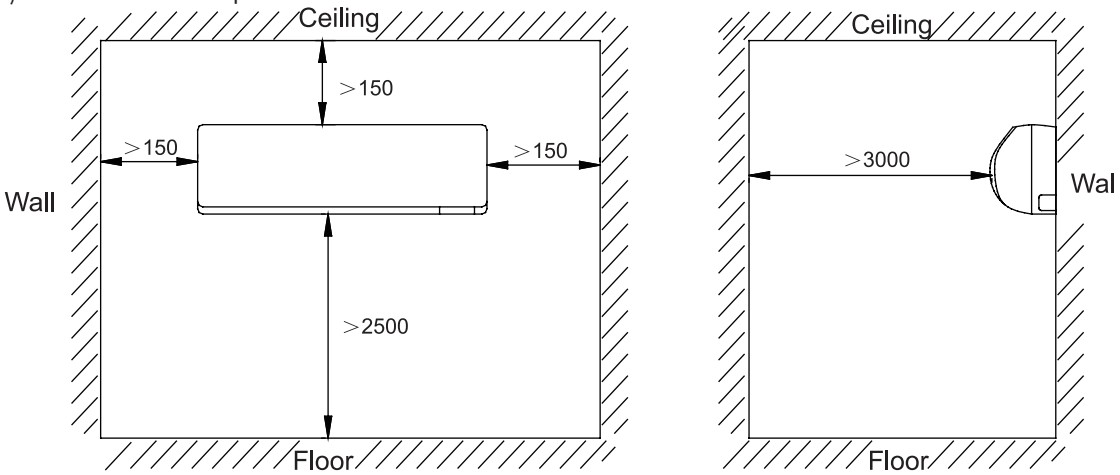


Model	W	H	D
GMV-N22G/A3A-K GMV-N28G/A3A-K GMV-N22G/A3A-D GMV-N28G/A3A-D GMV-N22G/A2A-K GMV-N28G/A2A-K GMV-N22G/A2A-D GMV-N28G/A2A-D GMV-N22G/A4A-K GMV-N28G/A4A-K GMV-N22G/A4A-D GMV-N28G/A4A-D GMV-N22G/A8A-K GMV-N28G/A8A-K GMV-N22G/A8A-D GMV-N28G/A8A-D GMV-N22G/C9A-K GMV-N28G/C9A-K GMV-N22G/C9A-D GMV-N28G/C9A-D	843	275	180

Model	W	H	D
GMV-N36G/A3A-K GMV-N45G/A3A-K GMV-N50G/A3A-K GMV-N36G/A3A-D GMV-N45G/A3A-D GMV-N50G/A3A-D GMV-N36G/A2A-K GMV-N45G/A2A-K GMV-N50G/A2A-K GMV-N36G/A2A-D GMV-N45G/A2A-D GMV-N50G/A2A-D GMV-N36G/A4A-K GMV-N45G/A4A-K GMV-N50G/A4A-K GMV-N36G/A4A-D GMV-N45G/A4A-D GMV-N50G/A4A-D GMV-N36G/A8A-K GMV-N45G/A8A-K GMV-N50G/A8A-K GMV-N36G/A8A-D GMV-N45G/A8A-D GMV-N50G/A8A-D GMV-N36G/C9A-K GMV-N45G/C9A-K GMV-N50G/C9A-K GMV-N36G/C9A-D GMV-N45G/C9A-D GMV-N50G/C9A-D	940	298	200

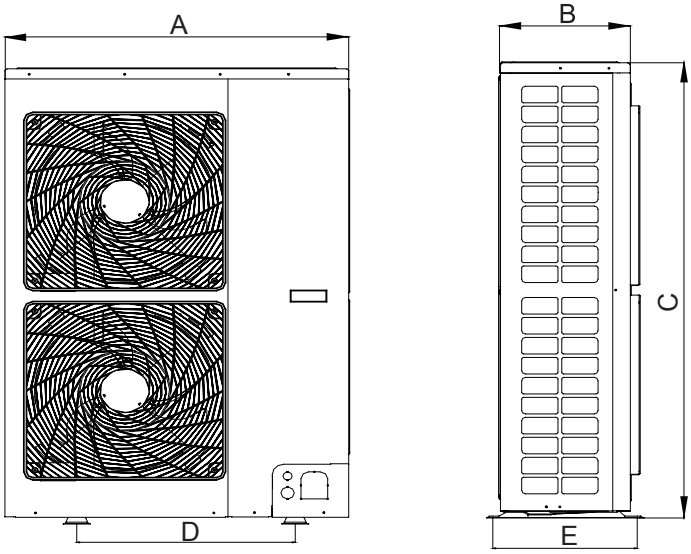
Model	W	H	D
GMV-N56G/A3A-K GMV-N63G/A3A-K GMV-N71G/A3A-K GMV-N56G/A3A-D GMV-N63G/A3A-D GMV-N71G/A3A-D GMV-N56G/A2A-K GMV-N63G/A2A-K GMV-N71G/A2A-K GMV-N56G/A2A-D GMV-N63G/A2A-D GMV-N71G/A2A-D GMV-N56G/A4A-K GMV-N63G/A4A-K GMV-N71G/A4A-K GMV-N56G/A4A-D GMV-N63G/A4A-D GMV-N71G/A4A-D GMV-N56G/A8A-K GMV-N63G/A8A-K GMV-N71G/A8A-K GMV-N56G/A8A-D GMV-N63G/A8A-D GMV-N71G/A8A-D GMV-N56G/C9A-K GMV-N63G/C9A-K GMV-N71G/C9A-K GMV-N56G/C9A-D GMV-N63G/C9A-D GMV-N71G/C9A-D	1008	319	221

2) Unit installation space

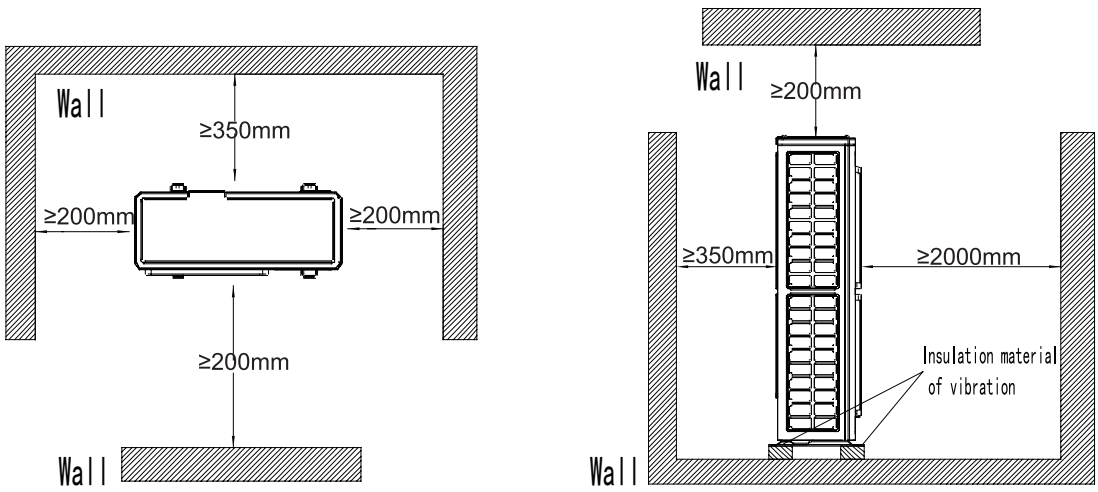


(2) Outdoor unit

◆ Include the required dimension of installation space of main unit and single unit.



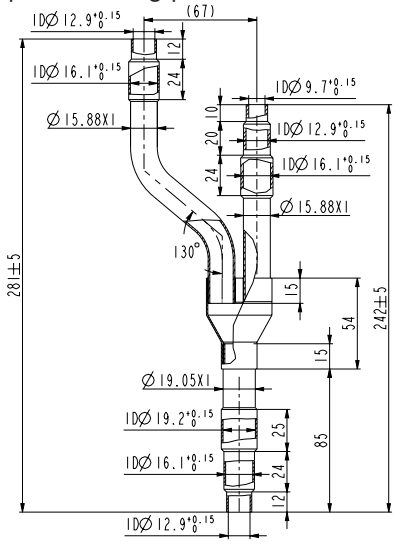
◆ Installation dimension:



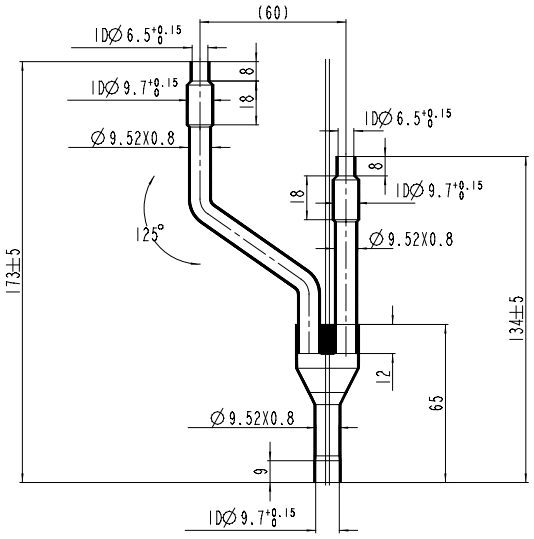
(3) ranching join

Length of each kind of Y-shape branching joint and the dimension of connection pipe port.

Y-shape branching joint：FQ01A



Gas pipe



Liquid pipe

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