

GREE

SUPER FREE MATCH SERIES

GREE MAKING BETTER AIR CONDITIONERS GREE MAKING BETTER AIR CONDITIONERS GREE MAKING BETTER AIR CONDITIONERS

TECHNICAL SALES GUIDE-50Hz
CAPACITY RANGE:12~16kW

GREE MAKING BETTER AIR CONDITIONERS GREE MAKING BETTER AIR CONDITIONERS GREE MAKING BETTER AIR CONDITIONERS



R410A



GREE ELECTRIC APPLIANCES INC.OF ZHUHAI

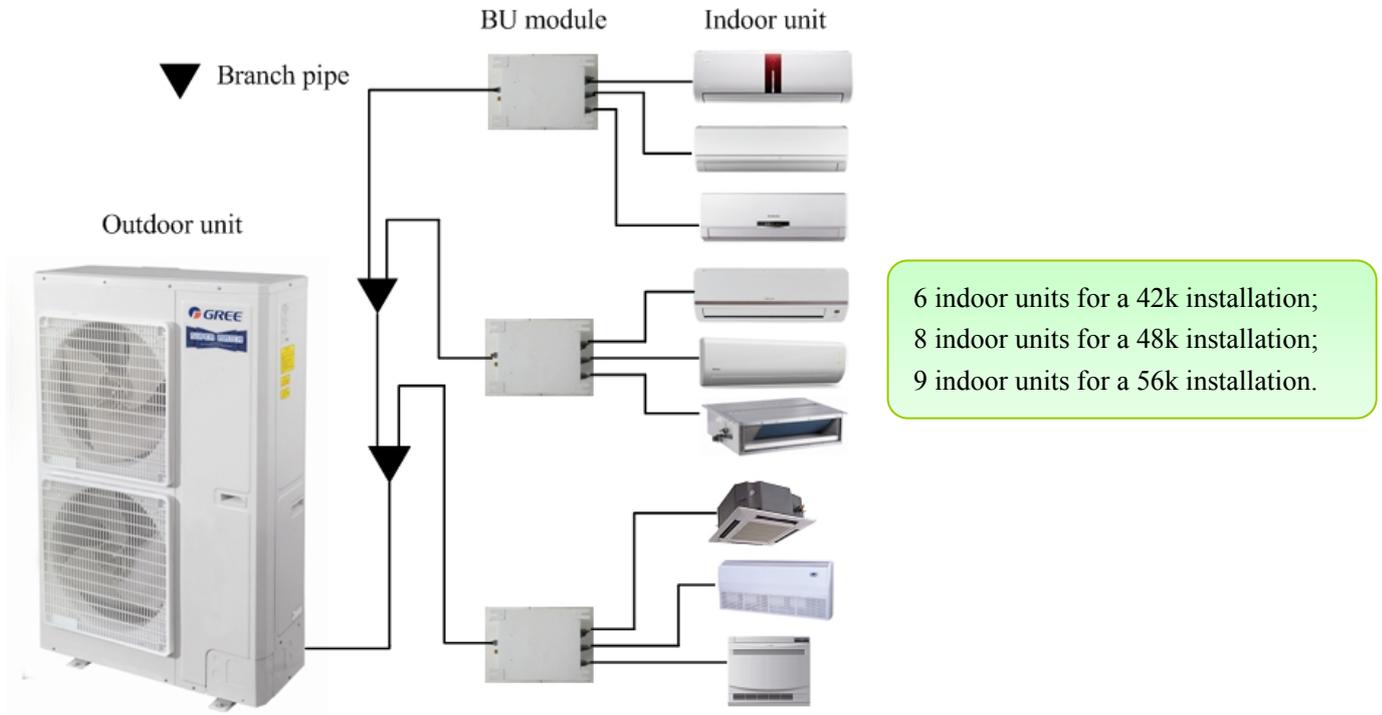
CONTENTS

1	OUTLINE OF SUPER FREE MATCH	1
2	SPECIFICATION OF INDOOR UNIT.....	5
3	SPECIFICATION OF OUTDOOR UNIT.....	20
4	SPECIFICATION OF BU MODULE.....	24
5	CONTROLLER.....	28
6	EQUIPMENT SELECTION PROCEDURE	38
7	REFRIGERANT PIPING DESIGN	43
8	ELECTRICAL WIRING DESIGN	50
9	ACCESSORIES	56
10	FAN CHARACTERISTICS.....	57
11	DIMENSIONAL DRAWINGS	59

1 OUTLINE OF SUPER FREE MATCH

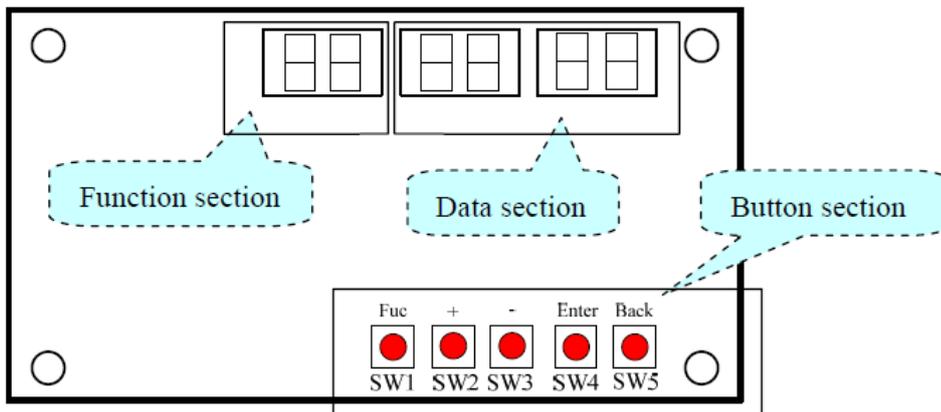
➤ 1.1 No Sweating

The BU module simplifies the piping work, so thin refrigerant piping makes handling and connecting easier, resulting in significantly reduced installation time.



➤ 1.2 Self Diagnostics System

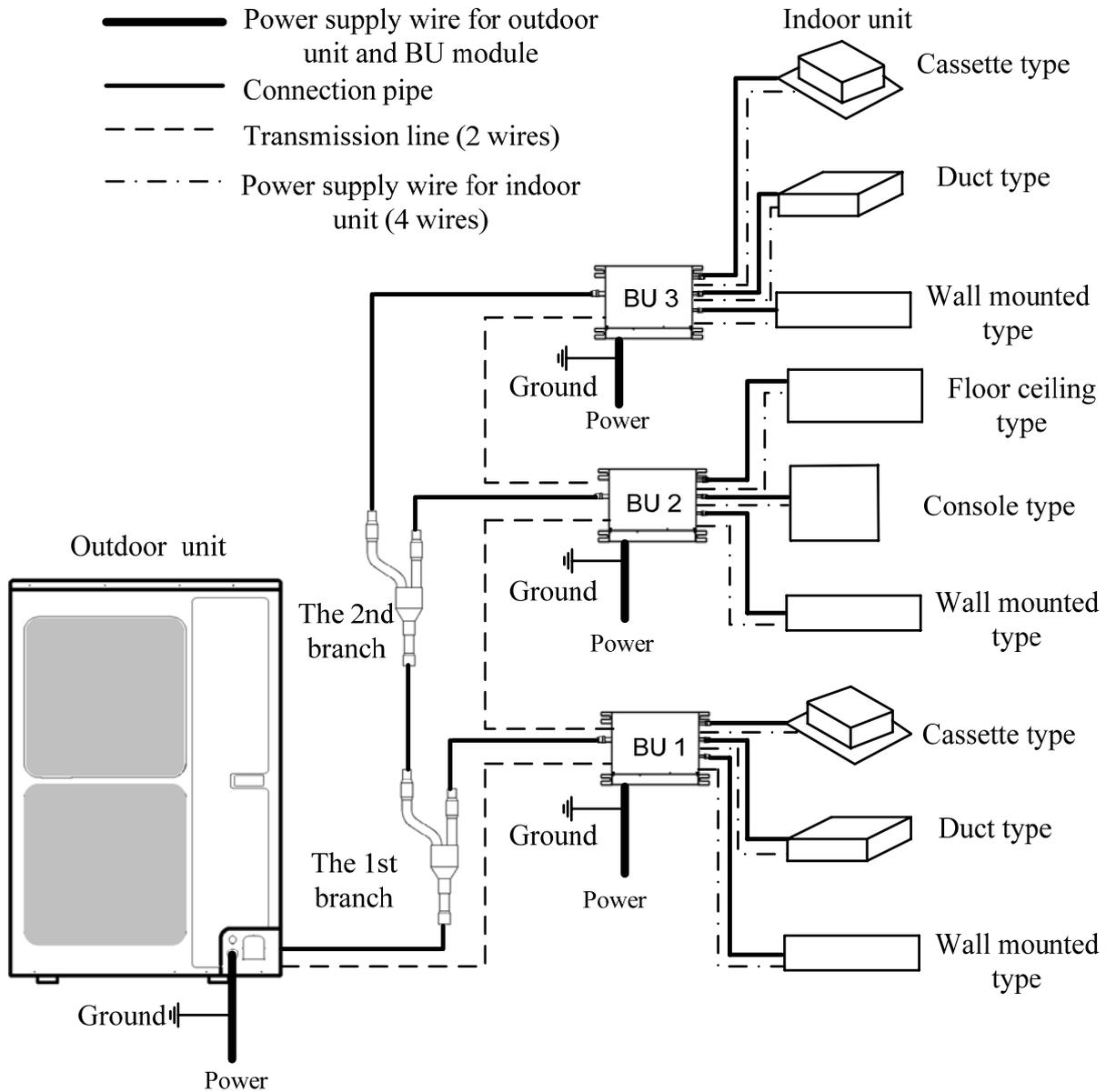
The testing board is in the front of electrical box and can be observed well.



- ◆ Automatically detect indoor unit numbers
- ◆ Automatically assign indoor unit addresses
- ◆ Automatically display real running function and error code
- ◆ Option settings to suit the demand of the customer

➤ 1.3 Simple Wiring

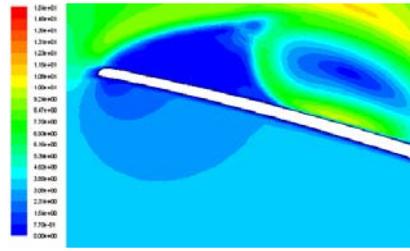
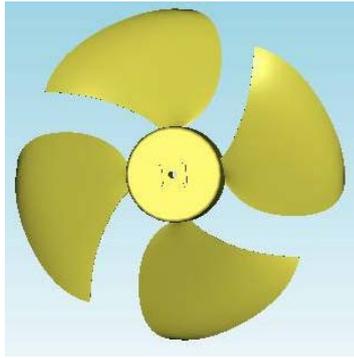
The power supply of the outdoor unit and all the BU modules could be separately. As a consequence no power supply wiring is needed between the outdoor unit and BU modules, making installation easier and the installation cost lower.



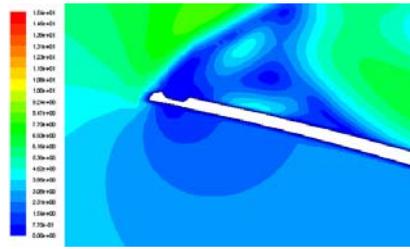
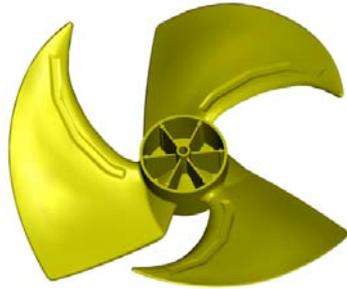
➤ 1.4 Low Noise

The electronic expansion valves which coordinate the flow of refrigerant of indoor units and tend to produce a certain amount of noise are placed in the BU module, not in the indoor unit. For the BU module can be placed in the ceiling of parlor, corridor, balcony, storeroom and etc, it keeps the noise inevitably generated by the valve away from the bedroom or workroom, allowing a comforting silence to prevail.

In order to reduce operating noise, the improved fan blades have been adopted, which reduce operating noise by 2dB.



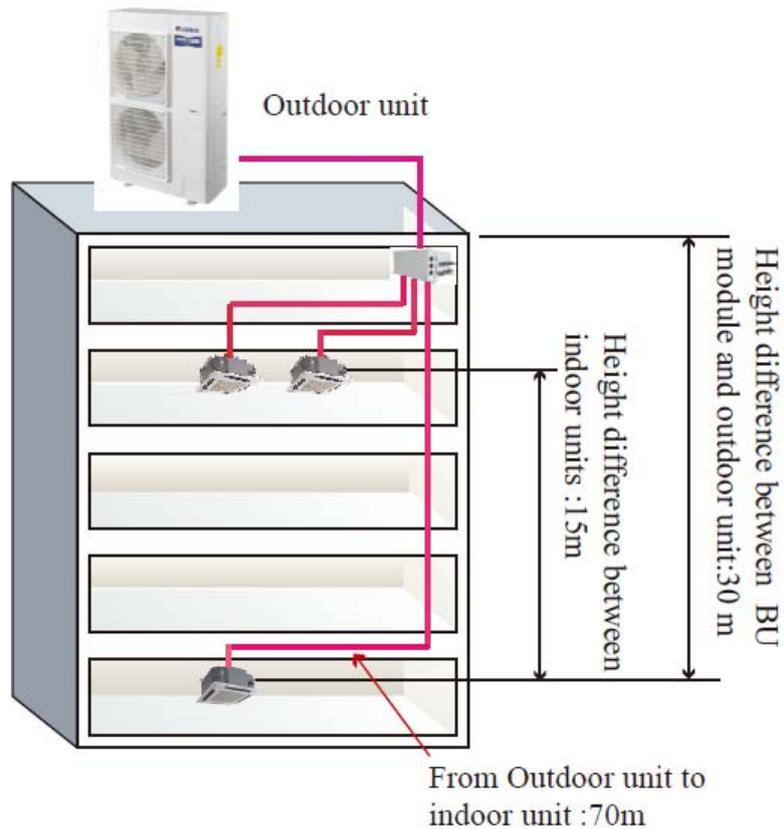
Conventional



Super Free Match

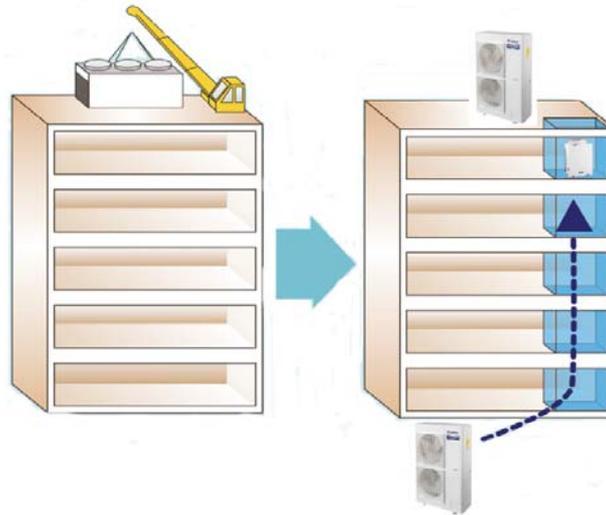
➤ 1.5 High Lift Design

A maximum total piping length of 145m, offers much more flexibility in the choice of installation position for the outdoor units and greatly simplifies system planning.



➤ 1.6 Compact Design

We offer a wide lineup of outdoor and indoor units to adapt the needs of building size and interior design. The length of refrigerant pipes is laid without narrow on design, thus it allowing of flexibility much greater in planning. Indoor units are so lightweight and compact that they can be installed in any ceiling space. Outdoor unit does not require the special cranes or conveyors to move them. They can even be hauled in a building elevator.



➤ 1.7 Intelligent Control

GREE Super Free Match Series intelligent controls and modulating valves could deliver the required capacity, according to the load variation from 10% to 100%. The intelligent controls and modulating valves limit or increase the cooling modulating valves limit or increase the cooling capacity, so humidity and temperature are kept in the comfort range.

Electronic expansion valves respond to the changes in load of indoor units and continually control the flow rate of refrigerant. In this way, we can get a nearly constant room temperature with the system without the typical temperature changes that occurs with a conventional ON/OFF control system. The extremely refined PID controls to maintain the room temperature within $\pm 0.5^{\circ}\text{C}$ of the set temperature.

➤ 1.8 Refrigerant Recovery

The Super Free Match System is able to recover the refrigerant automatically, which simplifies the refrigerant recovery operation and also is highly safe.

➤ 1.9 Environmental protection

To help protect the global environment, the air conditioners use R410A, a new refrigerant with zero ODP (ozone depletion potential).

2 SPECIFICATION OF INDOOR UNIT



➤ 2.1 Range of Indoor Unit

Various series of indoor units can satisfy different kinds of requirements. It is not only an air conditioner but also a perfect indoor decoration.



Duct type



Cassette type

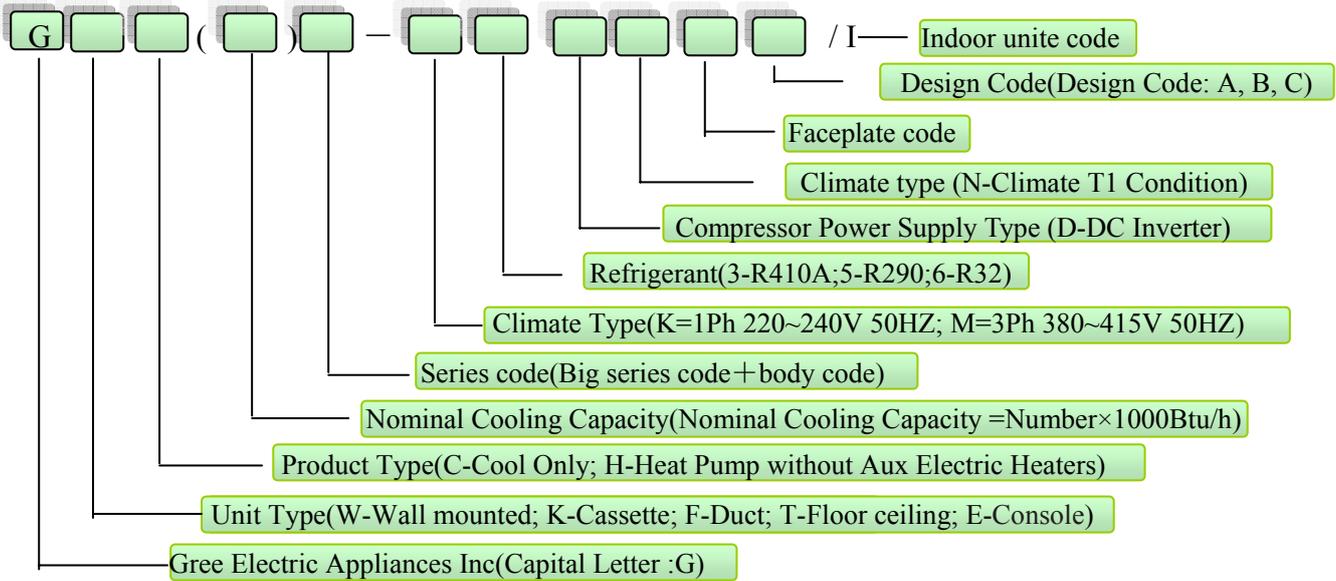


Wall-mounted type

➤ 2.2 Flexible Choice of Indoor Unit

Capacity Index(Btu/h)			7000	9000	12000	18000	21000	24000
Wall-mounted type	U-Cool		●	●	●	●		
	Hansol		●	●	●	●		
	Cozy		●	●	●	●		
	Change		●	●	●	●		
	Viola		●	●	●	●		●
Duct type			●	●	●	●	●	●
Cassette type					●	●		
					●	●		●
Floor ceiling type			●	●	●			●
Console type				●	●	●		

➤ 2.3 Nomenclature



Example:

GWH(09)EA-K3DNA1A/I: A ducted type indoor unit of GREE, and the nominal cooling capacity is 2.5kW. It's the R410A product. The power supply is 220V-240V-1Ph~50Hz.

NOTES:

- ◆ The technical parameters are changed along with the products improvement; please refer to the nameplate of the unit for actual data.
- ◆ The Heating capacity of the heat pump type is the capacity of heat pump.
- ◆ Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- ◆ Rated conditions:

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.

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.

➤ 2.4 Technical Specifications of Wall Mounted Type

➤ 2.4.1 U-cool



- ◆ Fad and top grade, the appearance is concise and generous
- ◆ Seamless evaporator; 153mm ultra-thin body design
- ◆ 3D airing for utmost comfort
- ◆ 7 kinds of fan speeds and 3 kinds of humanized sleep modes
- ◆ Anti-freezing protection and Cold air prevention etc.

Model			GWH(07)UA-K3 DNA1B/I	GWH(09)UA-K3 DNA1B/I	GWH(12)UB-K3 DNA1B/I	GWH(18)UC-K3 DNA1B/I
Capacity	Cooling	kW	2.1	2.6	3.5	5.3
	Heating	kW	2.6	2.8	3.8	5.8
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.03	0.03	0.04	0.06
Airflow Volume		m ³ /h	450	450	560	850
Sound pressure level (SH/H/MH/M/ML/L/SL)		dB/A	37/35/32/30/28/2 6/24	38/35/32/30/28/2 6/25	39/37/34/31/29/2 7/26	44/40/37/35/33/3 1/28
Fan motor	Output	kW	0.01	0.01	0.02	0.025
	Running current	A	0.136	0.136	0.2	0.31
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare connection	Flare connection	Flare connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5	1.5
Dimension (W×D×H)	Outline	mm	860×153×299	860×153×299	896×159×320	998×178×340
	Package	mm	944×247×386	944×247×386	973×255×403	1083×283×428
Net weight/Gross weight		kg	9.5/12.5	9.5/12.5	10/13	14/17
Loading quantity		20'GP	324	324	279	216
		40'GP	666	666	585	440
		40'HQ	740	740	650	495

➤ 2.4.2 Hansol



- ◆ Fad and top grade, the appearance is concise and generous
- ◆ Concealed dual guide louver
- ◆ 7 kinds of fan speeds and 3 kinds of humanized sleep modes
- ◆ Electrostatic de-dusting by silver ion
- ◆ DC motors: energy saving up to 20%
- ◆ Anti-freezing protection and Cold air prevention etc

Model			GWH(07)TA-K3 DNA1E/I	GWH(09)TA-K3 DNA1E/I	GWH(12)TB-K3 DNA1E/I	GWH(18)TC-K3 DNA1E/I
Capacity	Cooling	kW	2.10	2.5	3.50	5.30
	Heating	kW	2.60	2.75	3.65	5.60
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.029	0.029	0.029	0.045
Airflow Volume		m ³ /h	550	550	770	950
Sound pressure level (SH/H/MH/M/ML/L/SL)		dB/A	41/36/34/32/28/2 4/21	41/36/34/32/28/2 4/21	43/36/34/32/28/2 4/21	49/44/41/39/36/3 3/30
Fan motor	Output	kW	0.015	0.015	0.015	0.025
	Running current	A	0.07	0.07	0.07	0.1
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)	5/8"(Φ15.9mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5	1.5
Dimension (W×D×H)	Outline	mm	806×209×292	806×209×292	866×209×292	1018×230×319
	Package	mm	888×297×377	888×297×377	945×297×377	1097×397×340
Net weight/Gross weight		kg	10.5/13.0	10.5/13.0	11.0/13.5	15.0/18.5
Loading quantity		20'GP	266	266	252	174
		40'GP	553	553	518	366
		40'HQ	632	632	592	427

➤ 2.4.3 Cozy



- ◆ Fad and top grade, the appearance is concise and generous
- ◆ Anti-bacteria and defend mildewed/catechin filter
- ◆ 3D airing for utmost comfort
- ◆ Humanized sleep modes
- ◆ Anti-freezing protection and Cold air prevention etc

Model			GWH(07)MA-K 3DNA3E/I	GWH(09)MA-K 3DNA3E/I	GWH(12)MB-K 3DNA3E/I	GWH(18)MC-K3 DNA3E/I
Capacity	Cooling	kW	2.1	2.6	3.5	5.3
	Heating	kW	2.6	2.8	3.8	5.8
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.03	0.03	0.04	0.045
Air flow volume		m ³ /h	450	500	630	850
Sound pressure level (SH/H/M/L)		dB(A)	36/34/31/28/-	37/34/31/28/-	38/34/32/30/-	46/43/40/36/-
Fan motor	Output	kW	0.01	0.01	0.02	0.02
	Running current	A	0.14	0.14	0.22	0.31
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5	1.5
Dimension (W×D×H)	Outline	mm	790×170×265	790×170×265	845×180×275	940×200×298
	Package	mm	873×251×370	873×251×370	918×258×370	1013×288×395
Net Weight/ Gross weight		kg	9/11	9/11	10/12.5	13/16
Loading quantity		20'GP	348	348	336	254
		40' GP	732	732	684	541
		40' HQ	852	852	798	609

➤ 2.4.4 Change



- ◆ Fad and top grade, the appearance is concise and generous
- ◆ Anti-bacteria and defend mildewed/catechin filter
- ◆ Humanized sleep modes
- ◆ Multiple fan blow methods
- ◆ Anti-freezing protection and Cold air prevention etc

Model			GWH(07)KF-K3 DNA6E/I	GWH(09)KF-K3 DNA6E/I	GWH(12)KF-K3 DNA6E/I	GWH(18)KG-K3 DNA6E/I
Capacity	Cooling	kW	2.1	2.6	3.5	5.3
	Heating	kW	2.6	2.8	3.8	5.8
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.03	0.03	0.03	0.06
Air flow volume		m ³ /h	550	600	680	800
Sound pressure level (SH/H/M/L)		dB(A)	40/38/30/24/-	41/38/30/24/-	42/39/31/25/-	45/40/37/32/-
Fan motor	Output	kW	0.01	0.01	0.01	0.02
	Running current	A	0.16	0.16	0.16	0.31
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5	1.5
Dimension (W×D×H)	Outline	mm	770×201×283	770×201×283	770×201×283	865×215×305
	Package	mm	847×264×357	847×264×357	847×264×357	948×298×395
Net Weight/ Gross weight		kg	8/10	8/10	9/11	12/15
Loading quantity		20'GP	328	328	328	264
		40' GP	688	688	688	542
		40' HQ	774	774	774	616

➤ 2.4.5 Wall mounted type— Viola



- ◆ Beautiful and elegant appearance; incorporated with a smile on the front panel.
- ◆ Cold plasma
- ◆ Multiple fan blow methods
- ◆ Anti-freezing protection and Cold air prevention etc

Model			GWH(07)RA-K3DNA3E/I	GWH(09)RA-K3DNA3E/I
Capacity	Cooling	kW	2.1	2.6
	Heating	kW	2.6	2.8
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50
Motor power input		kW	0.03	0.03
Air flow volume		m ³ /h	500	500
Sound pressure level (SH/H/M/L)		dB(A)	40/37/35/32/-	40/37/35/32/-
Fan motor	Output	kW	0.01	0.01
	Running current	A	0.14	0.14
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20
	Thickness	mm	1.5	1.5
Dimension (W×D×H)	Outline	mm	794×186×265	794×186×265
	Package	mm	873×270×353	873×270×353
Net Weight/ Gross weight		kg	9/11.5	9/11.5
Loading quantity		20'GP	348	348
		40' GP	720	720
		40' HQ	840	840

Model			GWH(12)RB-K3DNA 3E/I	GWH(18)RC-K3DNA 3E/I	GWH(24)RC-K3DNA 1A/I
Capacity	Cooling	kW	3.5	5.3	6.45
	Heating	kW	3.8	5.8	7.1
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.05	0.06	0.065
Air flow volume		m ³ /h	630	850	1000
Sound pressure level (SH/H/M/L)		dB(A)	42/39/36/33/-	45/42/37/33/-	48/46/44/42/-
Fan motor	Output	kW	0.02	0.02	0.035
	Running current	A	0.22	0.31	0.31
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)	5/8"(Φ15.9mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	3/8"(Φ9.52mm)
	Connection method			Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5
Dimension (W×D×H)	Outline	mm	848×189×274	945×208×298	1018×223×315
	Package	mm	926×279×359	1013×300×383	1086×328×398
Net Weight/ Gross weight		kg	10/12.5	13/16	15.5/20.5
Loading quantity		20'GP	306	254	174
		40' GP	636	541	366
		40' HQ	742	609	427

➤ 2.5 Technical Specifications of Duct Type



- ◆ A common static-pressure design, small airflow volume, low sound pressure level.
- ◆ No electronic expansion valve assembly in the indoor unit.
- ◆ Anti-freezing protection

Model			GFH(09)EA-K3DNA1A/I	GFH(12)EA-K3DNA1A/I	GFH(18)EA-K3DNA1A/I	GFH(21)EA-K3DNA1A/I	GFH(24)EA-K3DNA1A/I
Capacity	Cooling	kW	2.5	3.5	5.0	6.0	7.1
	Heating	kW	2.8	3.85	5.5	6.6	8.0
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.065	0.075	0.08	0.11	0.11
Airflow Volume		m ³ /h	450	500	700	1000	1000
Sound pressure level (H/L)		dB/A	37/31	39/32	41/33	42/34	42/34
Fan motor	Output	kW	0.03	0.04	0.05	0.061	0.061
	Running current	A	0.28	0.31	0.41	0.5	0.5
Connecting pipe	Gas	inch	3/8" (Φ9.52mm)	3/8" (Φ9.52mm)	1/2" (Φ12.7mm)	5/8" (Φ15.9mm)	5/8" (Φ15.9mm)
	Liquid	inch	1/4" (Φ6.35mm)	1/4" (Φ6.35mm)	1/4" (Φ6.35mm)	3/8" (Φ9.52mm)	3/8" (Φ9.52mm)
	Connection method			Flare Connection	Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ31	Φ31	Φ31	Φ31	Φ31
	Thickness	mm	3	3	3	3	3
Dimension (W×H×D)	Outline	mm	700×200×615	700×200×615	900×200×615	1100×200×615	1100×200×615
	Package	mm	893×305×743	893×305×743	1123×305×743	1323×305×743	1323×305×743
Net weight/Gross weight		kg	22/27	23/29	27/36	31/41	31/41
Loading quantity		20'GP	108	108	90	72	72
		40'GP	234	234	180	162	162
		40'HQ	234	234	180	162	162

➤ 2.6 Technical Specifications of Cassette Type

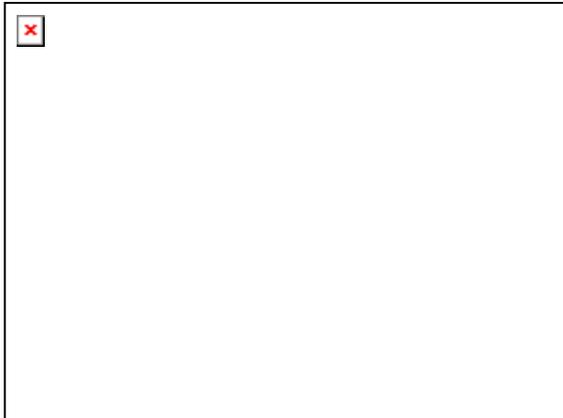


- ◆ A great deal use of nonmetallic material has a compact and deft body.
- ◆ Breeze sends equality and driving.
- ◆ Portable design makes maintenance easy and convenient.
- ◆ Built-in install, cozy and ornamental.
- ◆ Anti-freezing protection.

Model	Heat pump		GKH(12)BA-K3DNA2A/I	GKH(18)BA-K3DNA2A/I	
Capacity	Cooling	KW	3.5	4.5	
	Heating	KW	4.0	5.0	
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	
Motor power input		kW	0.05	0.05	
Air flow volume		m ³ /h	600	600	
Sound pressure level (H/M/L)		dB(A)	46/44/42	46/44/42	
Fan motor	Output	kW	0.011	0.011	
	Running current	A	0.23	0.23	
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)	
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	
	Connection method			Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ31	Φ31	
	Thickness	mm	3	3	
Dimension (W×D×H)	Outline	Body	mm	570×570×230	570×570×230
		Panel	mm	650×650×50	650×650×50
	Package	Body	mm	851×731×325	851×731×325
		Panel	mm	733×673×117	733×673×117
Net Weight/Gross weight	Body	kg	18.0/23.0	18.0/23.0	
	Panel	kg	2.5/3.5	2.5/3.5	
Loading quantity		20'GP	102	102	
		40'GP	209	209	
		40'HQ	246	246	

Model	Heat pump		GKH(12)BA-K3 DNA1A/I	GKH(18)BA-K3 DNA1A/I	GKH(24)BA-K3 DNA1A/I	
Capacity	Cooling	KW	3.5	5.0	7.1	
	Heating	KW	3.85	5.5	8.0	
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	
Motor power input		kW	0.07	0.07	0.10	
Air flow volume		m ³ /h	680	680	1180	
		CFM	400	400	694	
Sound pressure level (H/M/L)		dB(A)	37/35/33	37/35/33	39/37/35	
Fan motor	Output	kW	0.035	0.035	0.035	
	Running current	A	0.3	0.3	0.4	
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)	5/8"(Φ15.9mm)	
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	3/8"(Φ9.52mm)	
	Connection method			Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ31	Φ31	Φ31	
	Thickness	mm	3	3	3	
Dimension (W×D×H)	Outline	Body	mm	840×840×190	840×840×190	840×840×240
		Panel	mm	950×950×60	950×950×60	950×950×60
	Package	Body	mm	963×963×273	963×963×273	963×963×325
		Panel	mm	1043×1028×130	1043×1028×130	1043×1028×130
Net Weight/Gross weight		Body	kg	25.0/33.0	25.0/33.0	28.0/35.0
		Panel	kg	6.5/10	6.5/10	6.5/10
Loading quantity		20'GP		48	48	40
		40' GP		128	128	108
		40' HQ		144	144	128

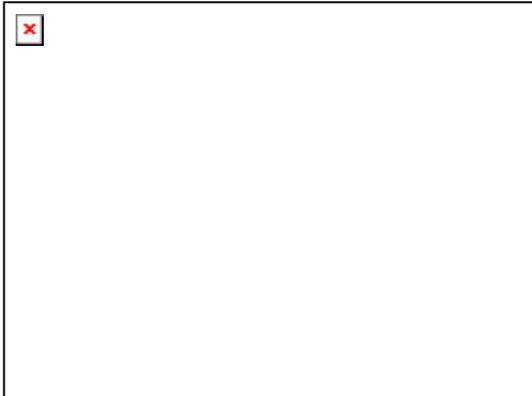
➤ 2.7 Technical Specifications of Floor Ceiling Type



- ◆ Compact and sophisticated design
- ◆ Easy installation
- ◆ Vertical airflow and broaden the range of airflow
- ◆ Double filter
- ◆ Anti-freezing protection

Model			GTH(09)BA-K3 DNA1A/I	GTH(12)BA-K3 DNA1A/I	GTH(18)BA-K3 DNA1A/I	GTH(24)BA-K3 DNA1A/I
Capacity	Cooling	kW	2.5	3.5	5.0	7.1
	Heating	kW	2.8	3.85	5.5	8.0
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.055	0.055	0.11	0.11
Airflow Volume		m ³ /h	650	650	950	1250
Sound pressure level (H/M/L)		dB/A	40/38/36	40/38/36	45/42/40	48/46/44
Fan motor	Output	kW	0.015	0.015	0.02	0.05
	Running current	A	0.3	0.3	0.5	0.5
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)	5/8"(Φ15.9mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	3/8"(Φ9.52mm)
	Connection method			Flare Connection	Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ17	Φ17	Φ17	Φ17
	Thickness	mm	1.75	1.75	1.75	1.75
Dimension (W×D×H)	Outline	mm	1220×700×225	1220×700×225	1220×700×225	1220×700×225
	Package	mm	1343×823×315	1343×823×315	1343×823×315	1343×823×315
Net weight/Gross weight		kg	40/50	40/50	40/50	45/54
Loading quantity		20'GP	66	66	66	66
		40'GP	132	132	132	132
		40'HQ	132	132	132	132

➤ 2.8 Technical Specifications of Console Type



- ◆ Super strong model, makes the cooling/heating more quickly
- ◆ Variety methods of sending breeze, comfort exists everywhere
- ◆ Easy installation
- ◆ Vertical & bidirectional airflow, broaden the range of airflow
- ◆ Double filter
- ◆ Anti-freezing protection and Cold air prevention etc

Model			GEH(09)AA-K3DNA	GEH(12)AA-K3DNA	GEH(18)AA-K3DNA
			1C/I	1C/I	1C/I
Capacity	Cooling	kW	2.6	3.5	5.3
	Heating	kW	2.8	3.8	5.8
Power supply		V-Ph-Hz	220~240-1-50	220~240-1-50	220~240-1-50
Motor power input		kW	0.05	0.05	0.05
Airflow Volume		m ³ /h	500	600	650
Sound pressure level (SH/H/MH/M/ML/L/SL)		dB/A	40/38/36/33/30/27/25	42/40/38/37/35/32/25	48/46/44/41/37/35/32
Fan motor	Output	kW	0.03	0.03	0.03
	Running current	A	0.14	0.14	0.14
Connecting pipe	Gas	inch	3/8"(Φ9.52mm)	3/8"(Φ9.52mm)	1/2"(Φ12.7mm)
	Liquid	inch	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)	1/4"(Φ6.35mm)
	Connection method			Flare Connection	Flare Connection
Drain pipe	External dia.	mm	Φ20	Φ20	Φ20
	Thickness	mm	1.5	1.5	1.5
Dimension (W×H×D)	Outline	mm	700×600×215	700×600×215	700×600×215
	Package	mm	791×710×286	791×710×286	791×710×286
Net weight/Gross weight		kg	15/18	15/18	15/18
Loading quantity		20'GP	168	168	168
		40'GP	348	348	348
		40'HQ	440	440	440

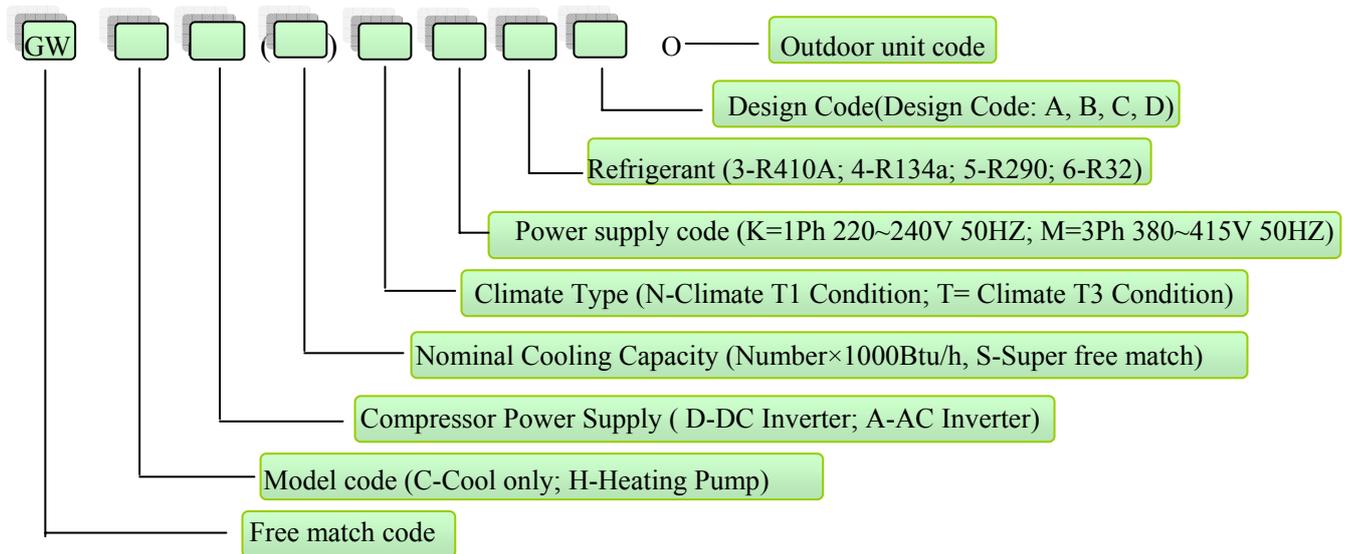
3 SPECIFICATION OF OUTDOOR UNIT



➤ 3.1 Range of Outdoor Unit

Model	Capacity		Power supply	Refrigerant	Appearance
	Cooling(kW)	Heating(kW)	V-Ph-Hz		
GWHD(42S)NK3CO	12.1	12.5	220~240-1-50	R410A	
GWHD(48S)NK3CO	14.0	15.5			
GWHD(56S)NK3CO	15.5	17.5			
GWHD(48S)NM3CO	14.0	16.0	380~415-3-50		
GWHD(56S)NM3CO	16.0	18.0			

➤ 3.2 Nomenclature



Example:

GWHD(56S)NK3CO: outdoor unit of GREE, with Heating pump and the nominal cooling capacity is 56K. The power supply is 220V~240V-1Ph-50Hz.

NOTES:

- ◆ The technical parameters are changed along with the products, improvement; please refer to the nameplate of the unit for actual data.
- ◆ The Heating capacity of the heat pump type is the capacity of heat pump.
- ◆ Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.
- ◆ Rated conditions:

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.

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.

➤ 3.3 Technical Specifications

Model	Heat pump		GWHD(42S)NK3C O	GWHD(48S)NK3C O	GWHD(56S)NK3C O	
Cooling capacity		KW	12.1	14	15.5	
Heating capacity		KW	12.5	15.5	17.5	
Nominal input	Cooling	KW	4.1	4.9	5.3	
	Heating	KW	3.7	4.3	4.8	
EER/COP			2.95/3.37	2.85/3.60	2.92/3.64	
Minimum NO. of connectable indoor units			2	2	2	
Maximum NO. of connectable indoor units			6	8	9	
Total capacity index of to be connected indoor units		Min	50	50	50	
		Max	135	135	135	
Power supply			1Ph, 220~240V, 50Hz			
Dimensions (W×H×D)	Outline	mm	900×1345×340	900×1345×340	900×1345×340	
	Package		983×1398×443	983×1398×443	983×1398×443	
Net weight/Gross weight		kg	116/125	116/125	116/125	
Sound pressure level	cooling/heating	dB(A)	55	55	58	
Fan	Type		Axial-flow			
	Air Flow Volume	m ³ /h	6400	6400	7000	
Refrigerant	Name		R410A			
	Charge	kg	4.95	4.95	4.95	
	Control		Electronic expansion valve			
Refrigerant oil	Type		FV50S	FV50S	FV50S	
	Charge	L	1.35	1.35	1.35	
Compressor	Type		Inverter Rotary			
	Quantity		1			
Piping connections	Gas	mm	Φ15.9	Φ15.9	Φ15.9	
	Liquid	mm	Φ9.52	Φ9.52	Φ9.52	
Piping length	System total		m	115	135	145
	total	OU-BU	m	55		
		BU-IN	m	60	80	90
	1 room	BU-IN	m	15		
Height	OU-BU	m	30			
	OU-IN	m	30			
	BU-BU/ IN-IN	m	15			
Operation range	Cooling	°CDB	18~48			
	Heating	°CWB	-10~24			

Model	Heat pump		GWHD(48S)NM3CO	GWHD(56S)NM3CO	
Cooling capacity		KW	14.0	16.0	
Heating capacity		KW	16.0	18.0	
Nominal input	Cooling	KW	4.40	5.0	
	Heating	KW	4.25	4.7	
EER/COP			2.9/3.2	2.8/3.5	
Maximum NO. of connectable indoor units			8	9	
Total capacity index of to be connected indoor units		Min	50	50	
		Max	135	135	
Power supply			3Ph,380~415V, 50Hz		
Dimensions (W×H×D)	Outline	mm	900×1345×340	900×1345×340	
	Package	mm	983×1398×443	983×1398×443	
Net weight/Gross weight		kg	116/125	116/125	
Sound pressure level	cooling/heating	dB(A)	58	58	
Fan	Type		Axial-flow		
	Air Flow Volume	m ³ /h	7000	7000	
Refrigerant	Name		R410A		
	Charge	kg	4.95	4.95	
	Control		Electronic expansion valve		
Refrigerant oil	Type		FV50S	FV50S	
	Charge	L	1.35	1.35	
Compressor	Type		Inverter Rotary		
	Quantity		1		
Piping connections	Gas	mm	Φ15.9	Φ19.05	
	Liquid	mm	Φ9.52	Φ9.52	
Piping length	System total		135	145	
	total	OU-BU	m	55	
		BU-IN	m	80	90
	1 room	BU-IN	m	15	
Height	OU-BU	m	30		
	OU-IN	m	30		
	BU-BU/ IN-IN	m	15		
Operation range	Cooling	°CDB	18~48		
	Heating	°CDB	-10~24		

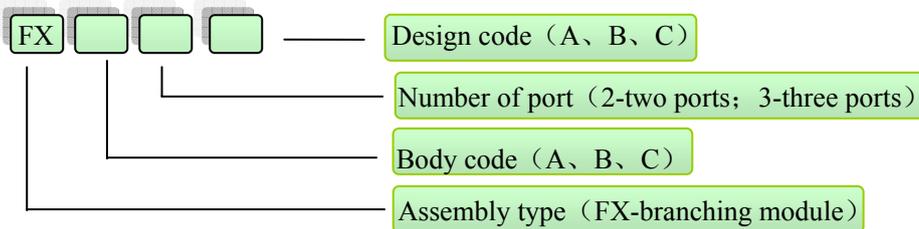
4 SPECIFICATION OF BU MODULE



➤ 4.1 Flexible Choice of BU Module

Sorts	Appearance
FXA2A-K	
FXA2B-K	
FXA3A-K	
FXA3B-K	
FXB3A-K	
FXB5A-K	

➤ 4.2 Nomenclature



NOTES:

- ◆ The technical parameters are changed along with the products, improvement.
- ◆ Noise is tested in the semi-anechoic room, so it should be slightly higher in the actual operation due to the environmental change.

➤ 4.3 Technical Specifications of BU Module

BU module is a kind of new branch equipment which is independent designed by GREE. It is installed between the indoor unit and outdoor unit. The BU module varies the refrigerant volume to meet the cooling or heating requirements of a room. It optimizes the refrigeration system, making installation and debugging more simple.

◆ Varies refrigerant volume intelligent

BU module monitors and calculates the cooling/heating load of each room in real time. It can exact vary the refrigerant volume of each room.

◆ Compact body and easy installation

The BU module is used to coordinates the flow of refrigerant of indoor units, can farthest reduce the request of installation space.

◆ Extremely quiet

The electronic expansion valves are setting in the BU module. For the BU module can be placed in the ceiling of parlor, corridor, balcony, storeroom and etc, it keeps the noise inevitably generated by the valve away from the bedroom and workroom, allowing a comforting silence to prevail.

4.3.1 FXA2A-K, FXA2B-K, FXA3A-K and FXA3B-K

The outdoor unit of GWHD(42S)NK3CO, GWHD(48S)NK3CO and GWHD(56S)NK3CO must only adopt the BU modules in the following table.

Model			FXA2A-K	FXA2B-K	FXA3A-K	FXA3B-K
Maximum numbers of connectable indoor units			2	2	3	3
Power supply		V-Ph-Hz	220~240-1-50			
Connection port to outdoor unit	Gas pipe(inner diameter)	mm	Φ15.9	Φ19.3	Φ15.9	Φ19.3
	Liquid pipe(inner diameter)	mm	Φ9.52	Φ9.7	Φ9.52	Φ9.7
	Connection Method		Flare	Braze	Flare	Braze
Connection port to indoor unit	Gas pipe(inner diameter)	mm	Φ9.52	Φ16.3	Φ9.52	Φ16.3
	Liquid pipe(inner diameter)	mm	Φ6.35	Φ6.5	Φ6.35	Φ6.5
	Connection Method		Flare	Braze	Flare	Braze
Drain pipe	External dia.	mm	Φ31	Φ31	Φ31	Φ31
	Thickness	mm	3	3	3	3
Dimension (W×D×H)	Outline	mm	532×313×182			
	Package	mm	683×392×270			
Net weight/Gross weight		kg	5.5/7.5	5.5/7.5	6/8	6/8

4.3.2 FXB3A-K and FXB5A-K

The outdoor unit of GWHD(48S)NM3CO and GWHD(56S)NM3CO must only adopt the BU modules in the following table.

Model			FXB3A-K	FXB5A-K
Maximum numbers of connectable indoor units			3	5
Power Supply		V-Ph-Hz	220~240-1-50	
Connection port to outdoor unit	Gas pipe(inner diameter)	mm	Φ15.9	Φ15.9
	Liquid pipe(inner diameter)	mm	Φ9.52	Φ9.52
	Connection Method		Flare	Flare
Connection port to indoor unit	Gas pipe(inner diameter)	mm	Φ9.52	Φ9.52
	Liquid pipe(inner diameter)	mm	Φ6.35	Φ6.35
	Connection Method		Flare	Flare
Drainage pipe	External dia.	mm	Φ31	Φ31
	Thickness	mm	3	3
Dimension (W×D×H)	Outline	mm	617×410×193	
	Package	mm	676×473×275	
Net weight/Gross weight		kg	8/10	9/11

5 CONTROLLER

Name	Wired controller		Wireless Remote Controller	
Model name	Z63351L		YAA1FB1	YT1F(MOTO)
Appearance				
			YAG1FB	YB1F2 (XFAN)
				
Name	Smart zone controller			
Model name	CE50-24/E			
Appearance				

➔ 5.1 Wireless Remote Controller YAA1FB1

Appearance	Function
	<p>1 ON/OFF Press it to start or stop operation.</p> <p>2 - : Press it to decrease temperature setting.</p> <p>3 + : Press it to increase temperature setting.</p> <p>4 MODE Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).</p> <p>5 FAN Press it set swing angle.</p> <p>6 SWING Press it set swing angle.</p> <p>7 I FEEL</p> <p>8 : Press it to set HEALTH or AIR function.</p> <p>9 SLEEP Press this button, can select sleep mode.</p> <p>10 TEMP</p> <p>11 QUIET Press it to set QUIET function.</p> <p>12 CLOCK Press it set clock.</p> <p>13 T-ON/T-OFF Press it to set auto-off/auto-on timer.</p> <p>14 TURBO</p> <p>15 LIGHT Press it to turn on/off the light.</p> <p>16 X-FAN</p>

➤ 5.2 Wireless Remote Controller YT1F(MOTO)

Appearance	Function
	<p>1 ON/OFF Press it to start or stop operation.</p> <p>2 - : Press it to decrease temperature setting.</p> <p>3 + : Press it to increase temperature setting.</p> <p>4 FAN Press it set swing angle.</p> <p>5 MODE Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).</p> <p>6 IFEEL</p> <p>7 HEALTH Press it to set HEALTH function(This function is only available for some models)</p> <p>8 AIR Press it to set AIR function.</p> <p>9 CLOCK Press it set clock.</p> <p>10 TIMER ON Press it to set auto-on timer.</p> <p>11 SWING UP and DOWN Press it set swing angle.</p> <p>12 X-FAN Note: X-FAN is the alternative expression of BLOW for the purpose of understanding.</p> <p>13 TEMP Press it to set auto-off/auto-on timer.</p> <p>14 TIMER OFF Press it to set auto-off timer</p> <p>15 TURBO</p> <p>16 SLEEP</p> <p>17 LIGHT Press it to turn on/off the light.</p>

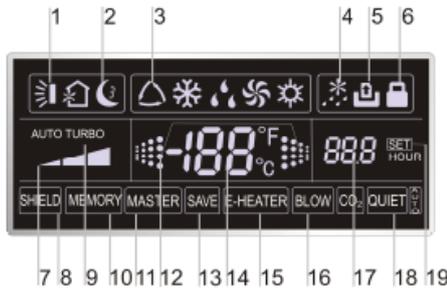
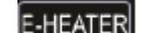
➤ 5.3 Wireless Remote Controller YAG1FB

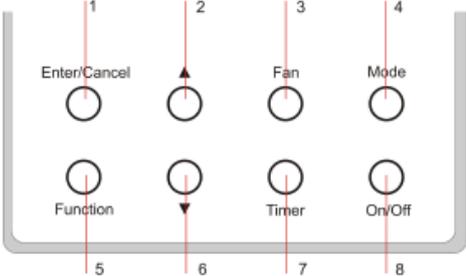
Appearance	Function
	<p>1 ON/OFF Press it to start or stop operation.</p> <p>2 MODE Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).</p> <p>3 FAN Press it set swing angle.</p> <p>4 TEMP Press it to set auto-off/auto-on timer.</p> <p>5 CLOCK Press it set clock.</p> <p>6 LIGHT Press it to turn on/off the light.</p> <p>7 TURBO</p> <p>8 X-FAN Note: X-FAN is the alternative expression of BLOW for the purpose of understanding.</p> <p>9 + : Press it to increase temperature setting.</p> <p>10 - : Press it to decrease temperature setting.</p> <p>11 QUIET Press it to set QUIET function.</p> <p>12 SWING UP and DOWN Press it set swing angle.</p> <p>13 SWING LEFT and RIGHT Press it set swing angle.</p> <p>14 TIMER OFF Press it to set auto-off timer</p> <p>15 TIMER ON Press it to set auto-on timer.</p> <p>16 IFEEL</p> <p>17 HEALTHY AND SCAVENGING</p> <p>18 SLEEP Press this button, can select sleep mode.</p>

➤ 5.4 Wireless Remote Controller YB1F2 (XFAN)

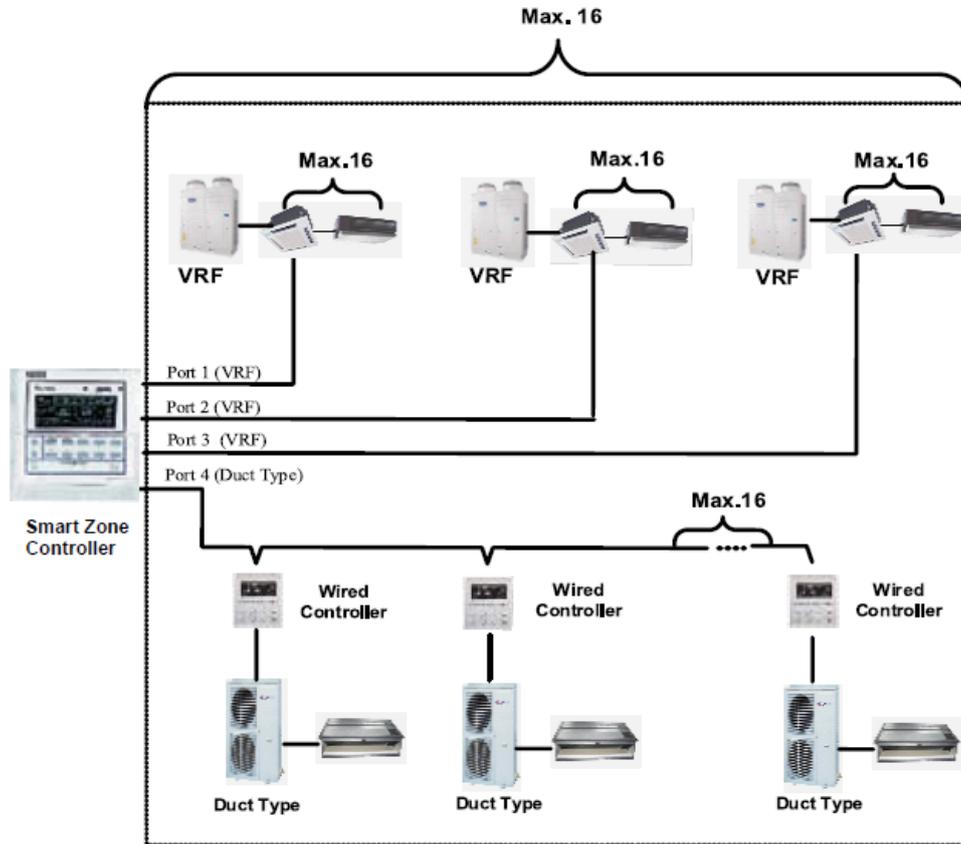
Appearance	Function
	<p>1 ON/OFF Press it to start or stop operation.</p> <p>2 MODE Press it to select operation mode (AUTO/COOL/DRY/FAN/HEAT).</p> <p>3. — : Press it to decrease or decrease temperature setting.</p> <p>4. + : Press it to increase or decrease temperature setting.</p> <p>5 FAN Press it set swing angle.</p> <p>6 SWING UP and DOWN Press it set swing angle.</p> <p>7 SWING LEFT and RIGHT Press it set swing angle.</p> <p>8 HEALTHY/SAVE</p> <p>9 X-FAN Note: X-FAN is the alternative expression of BLOW for the purpose of understanding.</p> <p>10 TEMP Press it to set auto-off/auto-on timer.</p> <p>11 TIMER</p> <p>12 TURBO</p> <p>13 SLEEP Press this button, can select sleep mode.</p> <p>14 LIGHT Press it to turn on/off the light.</p>

➤ 5.5 Wired Remote Controller XK19

Appearance	Function
 	<p>1  Swing function.</p> <p>2  Sleep function (Only sleep 1).</p> <p>3  Running modes of the indoor unit (Cooling, Dry, Fan and Heating).</p> <p>4  Defrosting function for the outdoor unit.</p> <p>5  Gate-control function (this function is yet unavailable for this unit).</p> <p>6  Lock function.</p> <p>7  High, middle, low or auto fan speed of the indoor unit.</p> <p>8  Shield functions (buttons, temperature, On/Off or Mode is shielded by the remote monitor).</p> <p>9  Turbo function.</p> <p>10  Memory function (The indoor unit resumes the original setting state after power failure and then power recovery).</p> <p>11  Master wired remote controller (this function is yet unavailable for this unit).</p> <p>12  It blinks under on state of the unit without operation of any button.</p> <p>13  Energy-saving function (this function is yet unavailable for this unit).</p> <p>14  Ambient/preset temperature value.</p> <p>15  Electric auxiliary heating function.</p> <p>16  Blow function.</p> <p>17  Timing value.</p> <p>18  Quiet function (two types: quiet and auto quiet)(this function is yet unavailable for this unit).</p> <p>19 SET It will be displayed under the debugging mode.</p>

Appearance	Function
	<p>1 Enter/Cancel Function selection and cancellation.</p> <p>2 ▲、6 ▼: ① Running temperature setting of the indoor unit, range:16~30°C. ② Timer setting, range:0.5-24 hr.</p> <p>3 Fan Setting of the high/middle/low/auto fan speed.</p> <p>4 Mode Setting of the Cooling/Heating/Fan/Dry/Auto mode of the indoor unit.</p> <p>5 Function Switchover among the functions of Turbo/Save/E-heater/Blow etc..</p> <p>7 Timer Timer setting.</p> <p>8 On/Off Turn on/off the indoor unit.</p> <p>4+2: ▲+Mode Press them for 5s under off state of the unit to Enter/Cancel the Memory function (If memory is set, indoor unit after power failure and then power recovery will resume the original setting state. If not, the indoor unit is defaulted to be off after power recovery. Memory off is default before delivery.).</p> <p>3+6: Fan+▼ By pressing them at the same time under off state of the unit, ❄ will be displayed on the wired remote controller for the cooling only unit, while ⚙ will be displayed on the wired remote controller for the cooling and heating unit.</p> <p>2+6: ▲+▼ Upon startup of the unit without malfunction or under off state of the unit, press them at the same time for 5s to enter the lock state, in which case, any other buttons won't respond the press. Repress them for 5s to quit this state.</p>

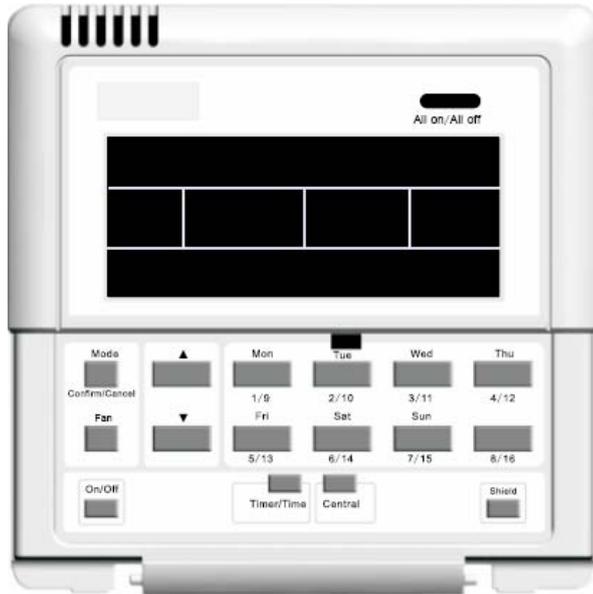
➤ 5.6 Smart Zone Controller



NOTES:

The smart zone controller can connect with maximum up to 16 indoor units.

Appearance	Function
	<p>1 Fan speed It displays the fan speed of the indoor unit, high, medium, low and auto.</p> <p>2 Running mode It displays the running mode of the indoor unit, auto, cool, dry, fan and heat.</p> <p>3 System clock It displays the current time (hour and minute) in 24-hour time system and also the week day.</p> <p>4 Shield It displays the shielded status, “ALL”, “TEMP”, “MODE” and “ON/OFF”.</p> <p>5 Weekly timer It displays the timing period (unit: 0.5 hour) which will circulate every week.</p> <p>6 Set temperature/Indoor unit code It displays the set temperature, indoor unit code (01-16), and symbols of Celsius and Fahrenheit scale.</p> <p>7 Control mode It displays “CENTER” under the centralized control mode and no display under the single control mode.</p> <p>8 Ambient temperature/Serial port It displays the ambient temperature, serial port as well as symbols of Celsius and Fahrenheit scale.</p> <p>9 Indoor unit code/on/off status Numbers indicate the indoor unit codes which will be displayed when the corresponding indoor unit is online; “” indicates the on/off status of the indoor unit, that is, when it is bright, it means the unit is “ON”; when it is gone out, it means the unit is “Off”.</p> <p>10 Error , Child lock It displays the error codes when some error(s) arises and also “CHILD LOCK” when this function is activated.</p>
	<p>1 Mode It is used for the switchover among different modes.</p> <p>2 Fan It is used to set the fan speed, high, medium, low or auto.</p> <p>3 On/Off It is used to set the on/off status of the indoor unit.</p>



4 ▲、▼

① Under the single/centralized control status: It is used to set the running temperature of the indoor unit with max.30°C and min.16°C ;

② Under the timing setting status: It is used to set the timing period with max.24 hours and min.0 hour;

③ Under the clock setting status: it is used to set the hour (max.:23, min.: 0) and minute (max.:59, min.: 0) of the clock.

5 Mon 1/9

It is used for the switchover between unit 1 and unit 9;
Under the timing or clock setting status, it indicates Monday.

6 Tue 2/10

It is used for the switchover between unit 2 and unit 10;
Under the timing or clock setting status, it indicates Tuesday.

7 Wed 3/11

It is used for the switchover between unit 3 and unit 11;
Under the timing or clock setting status, it indicates Wednesday.

8 Thu 4/12

It is used for the switchover between unit 4 and unit 12;
Under the timing or clock setting status, it indicates Thursday.

9 Fri 5/13

It is used for the switchover between unit 5 and unit 13;
Under the timing or clock setting status, it indicates Friday.

10 Sat 6/14

It is used for the switchover between unit 6 and unit 14;
Under the timing or clock setting status, it indicates Saturday.

11 Sun 7/15

It is used for the switchover between unit 7 and unit 15;
Under the timing or clock setting status, it indicates Sunday.

12 8/16

It is used for the switchover between unit 8 and unit 16.

13 Timer/Time

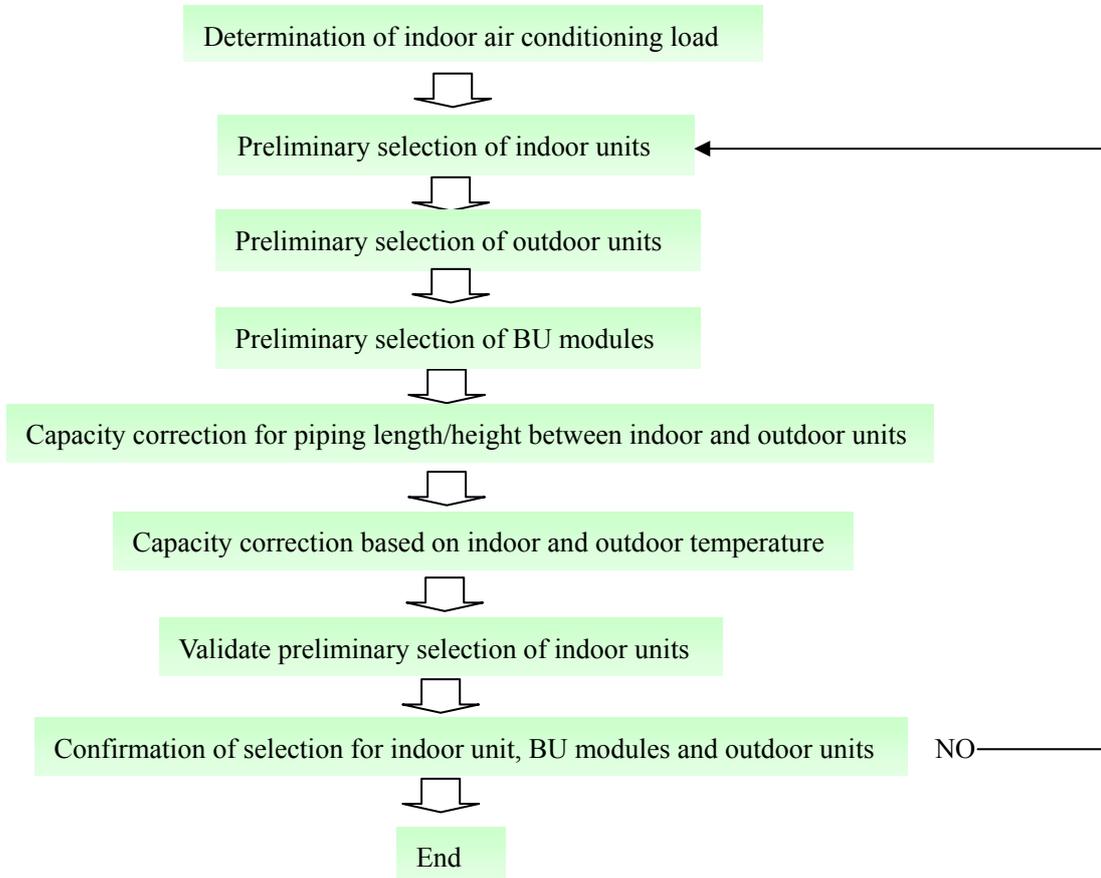
It is used to set the timing or on/off time of the selected indoor unit as well as to set the clock of the system.

14 Central

It is used for the switchover between single and centralized control modes.

6 EQUIPMENT SELECTION PROCEDURE

➤ 6.1 Selection Flow Chart



➤ 6.2 Combination Conditions for Indoor Unit and Outdoor Unit

- (1) The capacity code of indoor units = the nominal cooling capacity (Btu/h) × 1000.
- (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	Total capacity code of indoor units
GWHD(42S)NK3CO	42	6	21 to 56
GWHD(48S)NK3CO	48	8	24 to 64
GWHD(56S)NK3CO	56	9	28 to 72
GWHD(48S)NM3CO	48	8	24 to 64
GWHD(56S)NM3CO	56	9	28 to 72

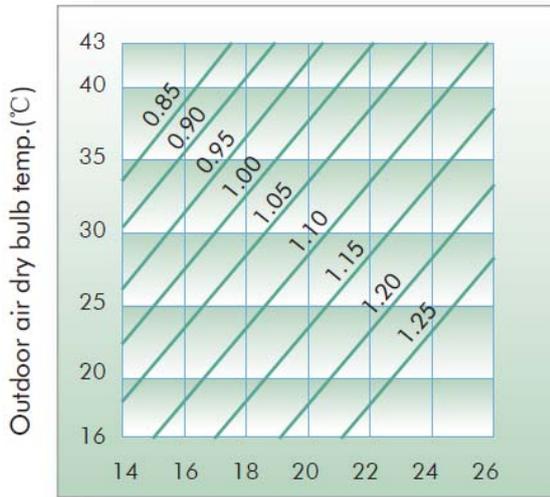
Sorts		FXA2A-K and FXA2B-K	FXA3A-K and FXA3B-K	FXB3A-K	FXB3A-K
No. of connectable BU modules for each outdoor unit	Min	1	1	1	1
	Max	3	3	3	3
No. of connectable indoor units	Min	1	1	1	1
	Max	2	3	3	5

➤ 6.3 Cooling/Heating Capacity Characteristics

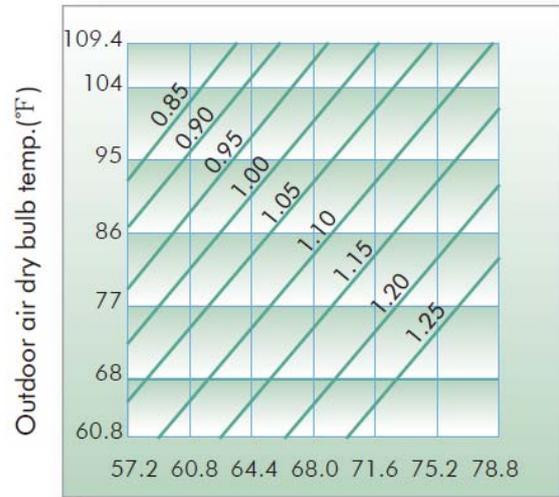
6.3.1 Cooling Capacity Calculation Method

Required cooling capacity = cooling capacity × Factor① × Factor② kW

① Ambient Temperature vs. Capacity Correction Value



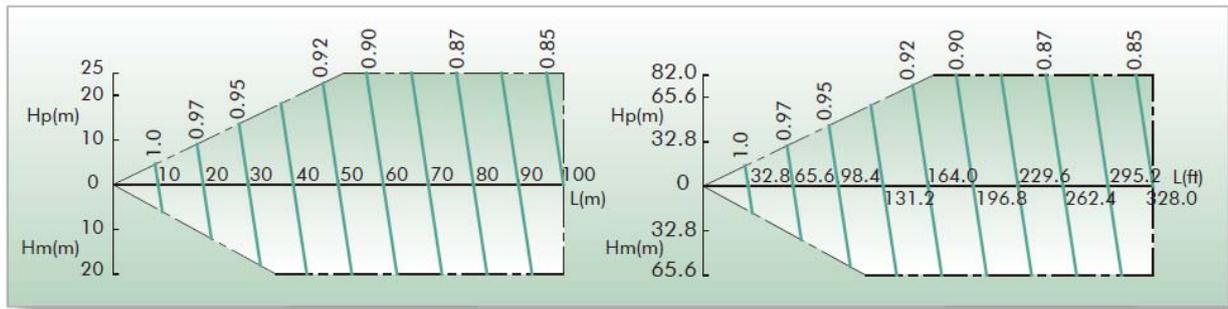
Indoor air wet bulb temp.(°C)



Indoor air wet bulb temp.(°F)

② Connecting Pipe Length and Height Difference Between Indoor and Outdoor Units vs. Capacity Correction Value

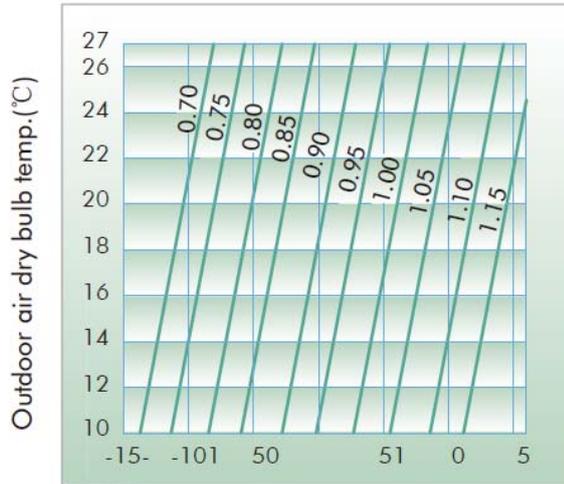
- ◆ Hp: Height Difference Between Indoor and Outdoor Units(Outdoor unit higher)
- ◆ Hm: Height Difference Between Indoor and Outdoor Units(Outdoor unit lower)
- ◆ L: Equivalent pipe length



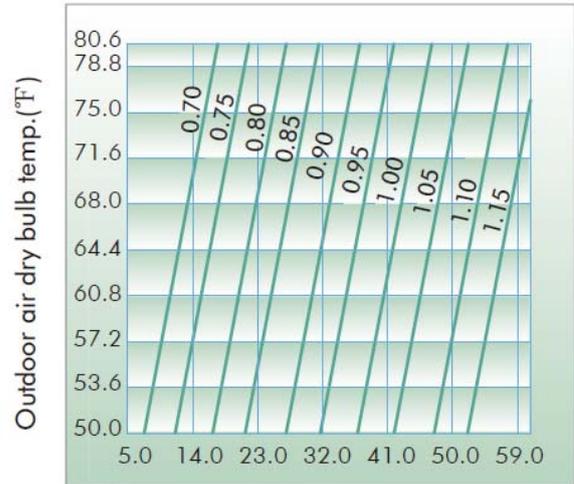
6.3.2 Heating Capacity Calculation Method

$$\text{Required Heating capacity} = \text{Heating capacity} \times \text{Factor①} \times \text{Factor②} \text{ kW}$$

① Ambient Temperature vs. Capacity Correction Value



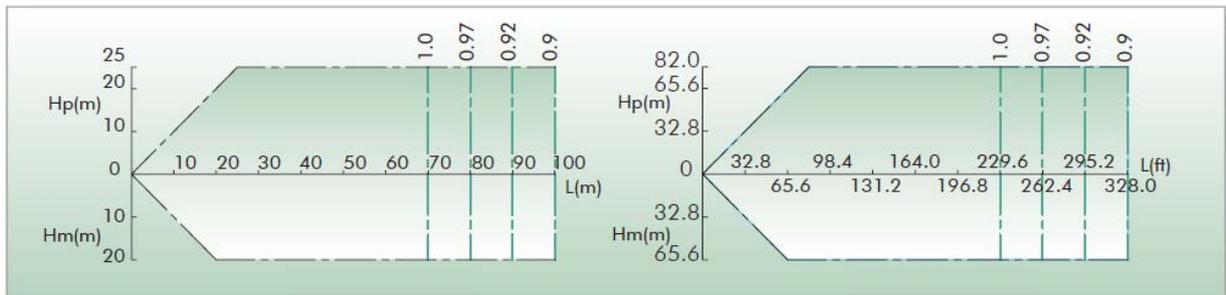
Indoor air wet bulb temp.(°C)



Indoor air wet bulb temp.(°F)

② Connecting Pipe Length Between Indoor and Outdoor Units vs. Capacity Correction Value

- ◆ Hp: Height Difference Between Indoor and Outdoor Units(Outdoor unit higher)
- ◆ Hm: Height Difference Between Indoor and Outdoor Units(Outdoor unit lower)
- ◆ L: Equivalent pipe length



6.3.3 Capacity Calculation for Each Indoor Unit

$$\text{Capacity for each indoor unit} = \text{Capacity after correction of outdoor unit} \times \frac{\text{Required standard capacity of indoor unit}}{\text{Total value of standard indoor unit capacity}}$$

➤ 6.4 Example of Equipment Selection

6.4.1 Overview of Building Model



An apartment area: 76 m²

Outdoor unit is installed on the balcony.

Design indoor conditions:

Cooling : 27.0°C (80.6°F) / 19.0°C (66.2°F) DB/WB

Design outdoor conditions:

Cooling : 35°C (95°F) DB (Standard condition)

6.4.2 Procedure and Result of Equipment Selection

a. Procedure of Equipment Selection

- ① Calculate cooling for every rooms.
- ② Select an indoor unit to match the cooling load for every room.
- ③ Choose a tentative outdoor that will match with the indoor units. Perform capacity correction based on the pipe length, system lift, indoor set temperature, outdoor temperature. Then, make sure the corrected system cooling capacity satisfies the cooling load.

b. Equipment Selection and Capacity Check

Air conditioning load			Equipment selection					
Floor	Room	Indoor cooling load(kw)	Indoor unit			Outdoor unit		
			Model	Capacity(kw)		model	Capacity(kw)	
				Cooling	Heating		Cooling	Heating
5F	Living room	5.8	GFH(21)EA-K3DNA1A/I	6.0	6.6	GWHD(56S)NK3CO	15.5	17.5
	Dining room	3.45	GKH(12)BA-K3DNA1A/I	3.5	3.85			
	Bedroom 1	2.45	GWH(09)TA-K3DNA1E/I	2.5	2.75			
	Bedroom 2	2.5	GWH(09)UA-K3DNA1A/I	2.6	2.8			
	Bedroom 3	3.5	GWH(12)TB-K3DNA1E/I	3.5	3.65			

Conversion Formula: 1kW=3412Btu/h

Piping distance				Capacity correction		Capacity check after correction		
Floor	Room	Equivalent length(m)	High pipe difference (m)	Correction × temp. correction		Capacity		Judgment
				cooling	heating	cooling	heating	
5F	Living room	50	10	0.92	1	5.85	6.0	good
	Dining room					3.35	3.75	
	Bedroom 1					2.375	2.5	
	Bedroom 2					2.4	2.6	
	Bedroom 3					3.4	3.5	

Conversion Formula: 1kW=3412Btu/h

c. Schematic Diagram



7 REFRIGERANT PIPING DESIGN

➤ 7.1 Warning on Refrigerant Leakage

- ◆ The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.
- ◆ The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.
- ◆ Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).
- ◆ In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device.

7.1.1 The Concentration Limit of R410A Which is Used in Multi Air Conditioner

The concentration limit of R410A which means the concentration limit of R410A that can be control by emergency measures to prevent human body from harming. The refrigerant concentration unit is kg/m³ (Which means the weight of refrigerant per m³ air).

7.1.2 Check of Refrigerant Leakage

Calculate the refrigerant concentration as follows:

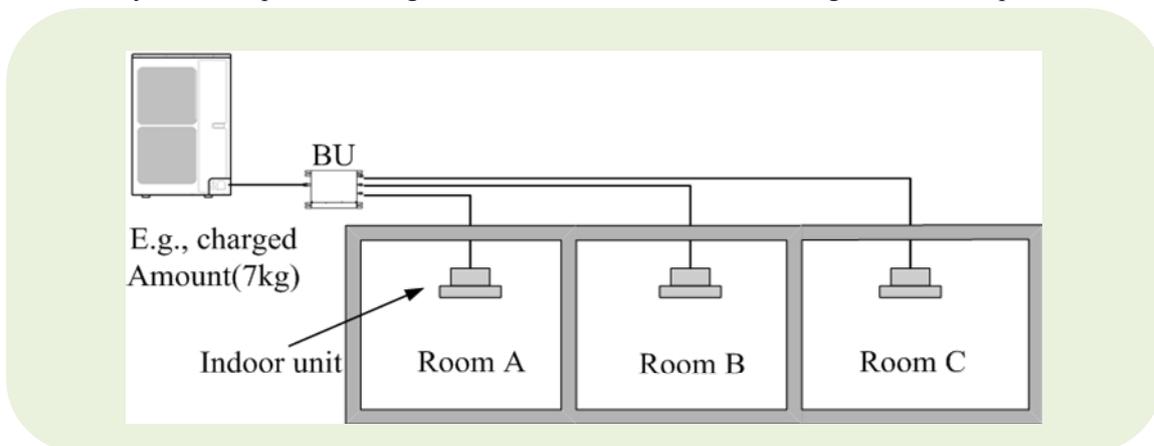
① Calculate the Amount of Refrigerant of Each Refrigeration System

[The amount of refrigerant of each system of outdoor unit] + [Additional charged amount at field installation]

Refrigerant amount of the outdoor unit at ex-factory According to the liquid tube length and diameter
 = **System total amount of refrigerant (kg)**

NOTES:

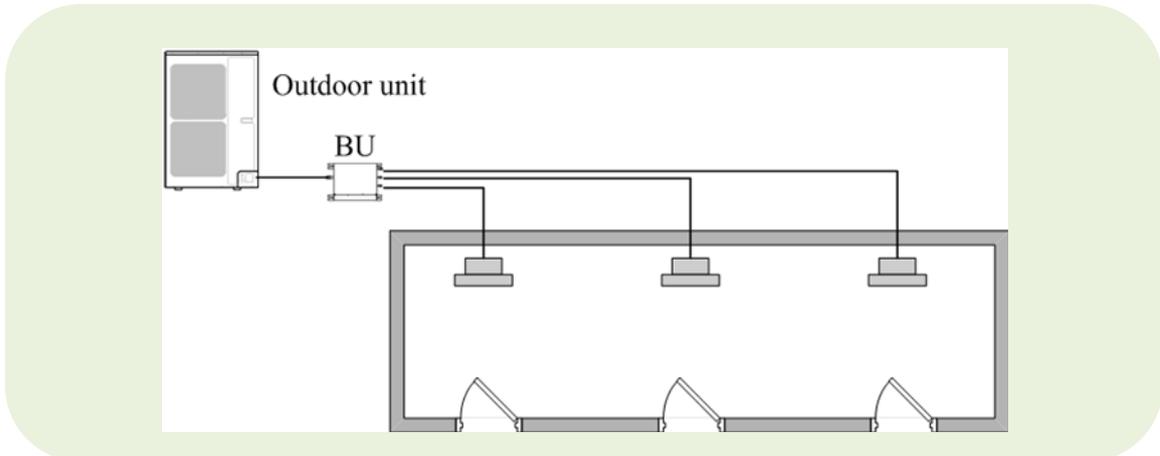
When single refrigeration system is consists of several independent refrigeration circuits, figure out the total refrigerant amount by each independent refrigerant circuit. For the amount of charge in this example:



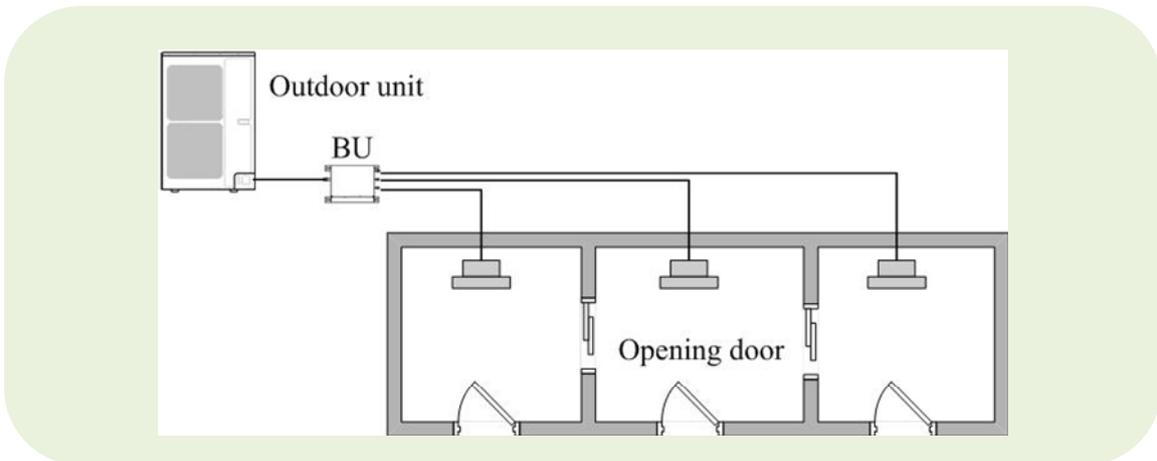
The possible amount of leaked refrigerant gas in rooms A, B and C is 7kg.

② Calculate the Minimum Room Volume are as Follows

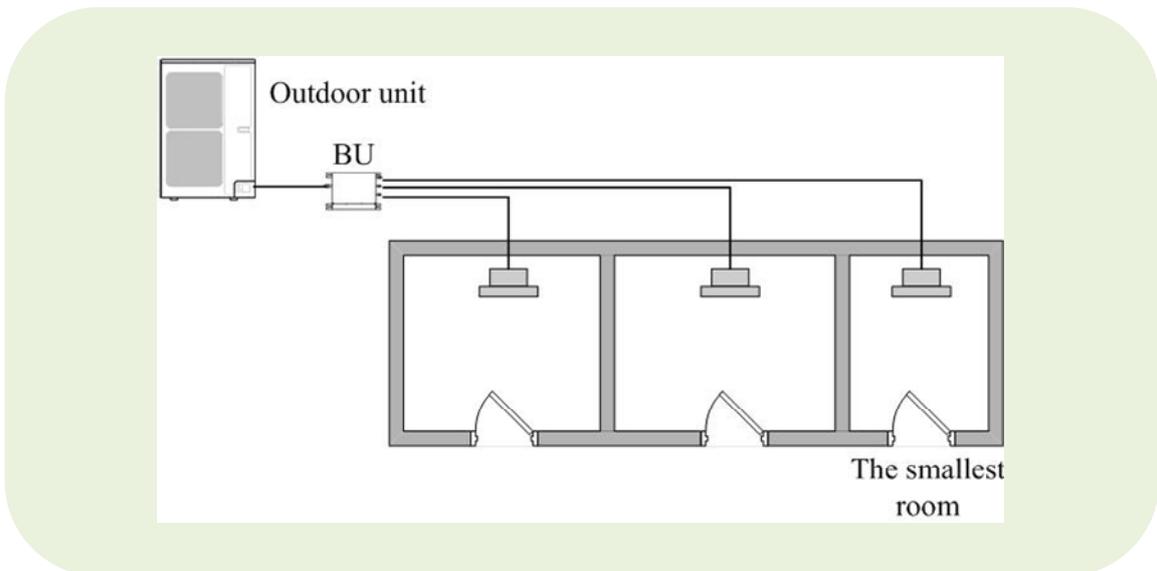
- ◆ No partition (shaded portion)



- ◆ When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening with a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).



- ◆ If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object.



The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m^3 .

③Use the results of calculations ① and ② to calculate the refrigerant concentration:

The concentration is as given below:

$$\frac{\text{Total amount of refrigerant(kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Concentration limit (kg/m}^3\text{)}$$

7.1.3 Measures When the Refrigerant Concentration Limit is exceeded (JRA-GL 13-1998)

When the refrigerant concentration exceeds the density limit value relative to indoor volume, take proper actions according to following key points:

◆ **Method 1:** Set up an opening for efficient air exchange

Open a door, or an opening 0.1% or larger than the respective floor space at the top or bottom of the door.

◆ **Method 2:** Decrease the total amount of refrigerant in refrigerant equipment.

Shorten the Length of Refrigerant Pipe

Install the outdoor unit closer to the indoor unit and shorten the length of refrigerant pipe, hence to decrease the total amount of refrigerant in refrigerant equipment.

Decrease the Capacity of Outdoor Unit

Split the outdoor unit into multiple sets, thus decreasing the capacity of each outdoor unit to which one refrigerant system corresponds and hence to decrease the filling amount of refrigerant.

For example:

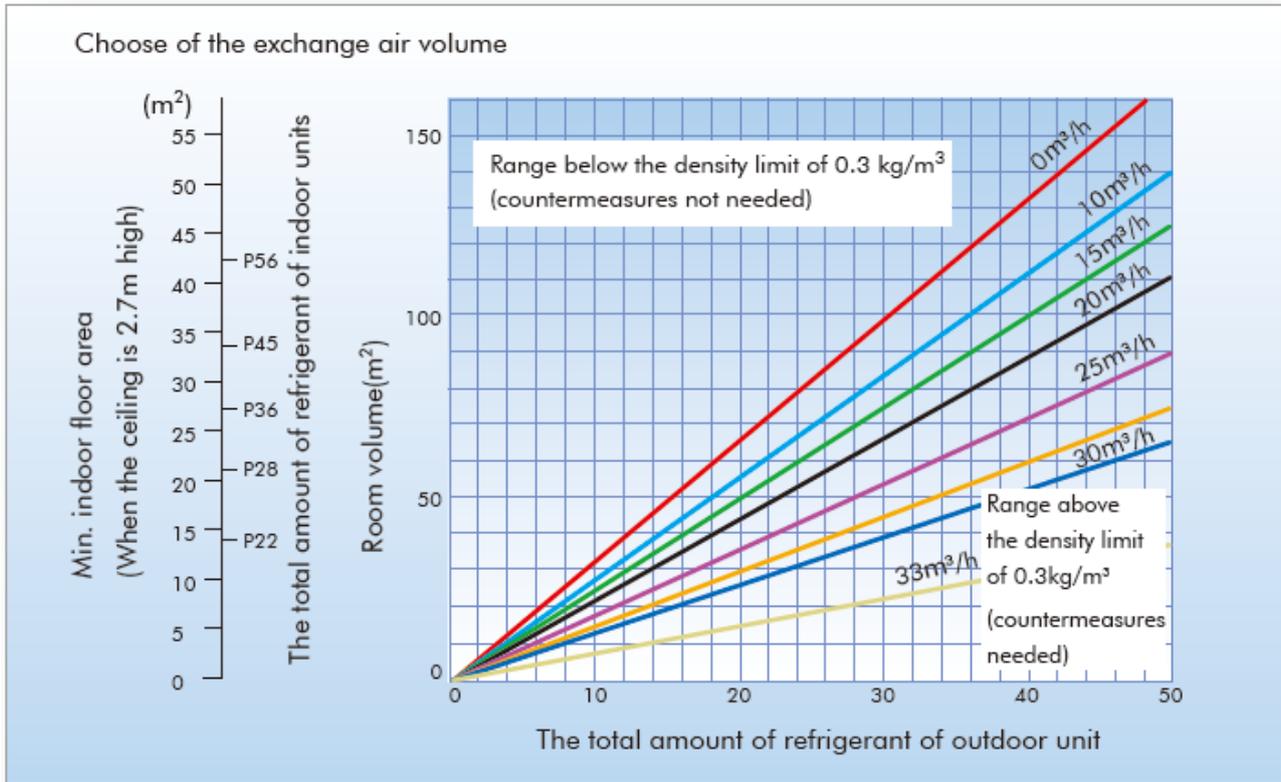
If one 10HP system is split into 2 sets of 5HP systems, the amount of refrigerant in one refrigerant system may be half decreased approximately.

◆ **Method 3:** Set up an air exchange system

An air exchange system can be set to avoid too high concentration of refrigerant in event of refrigerant leakage. The air exchange system includes two types, i.e. external air import and air discharge. From the property of refrigerant, it is recommended to adopt the external air import.

Exchanging Air Volume

According to the total amount of refrigerant of refrigerant equipment and the room volume, air exchange volume should be greater than the volume showed in the following figure.



Detector and Interlink

In principle, the air exchange system shall always work normally no matter the air conditioner is used or any person stays in the room. If it is impossible to realize long-term working, please use a detector system to activate the air exchange system upon leakage of refrigerant.

NOTES:

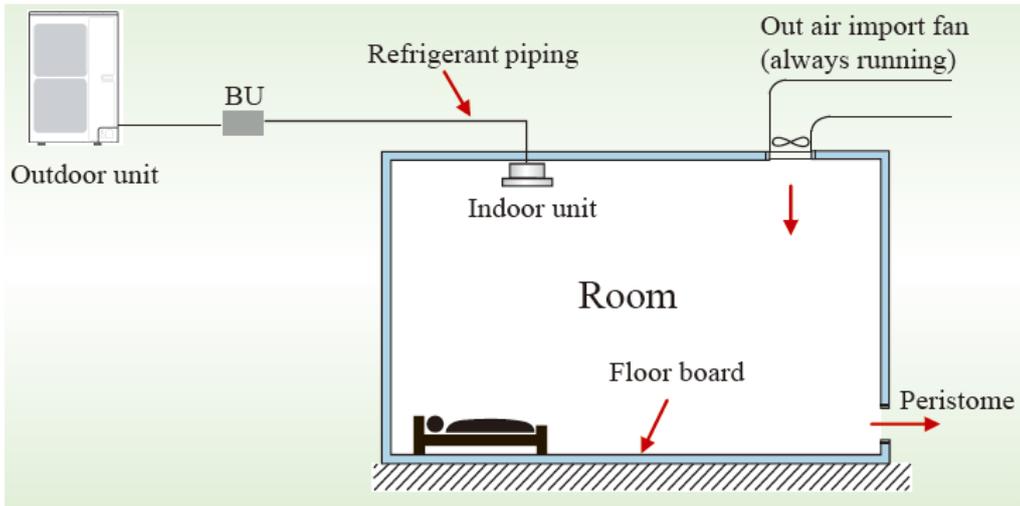
(a) In order to avoid malfunction of air exchange system, please do not choose the range showed in oblique line as shown in the figure above, even though equipped with air exchange system. If entering into this range, should set effective air exchange port, expand room volume or decrease the amount of outdoor unit, change the piping length in order to decrease total refrigerant amount, in principle according to method 1 and 2.

(b) Where an air exchange system is provided but it is impossible to take Method 1 or Method 2 when the refrigerant concentration is within the range indicated by the oblique line as shown in the figure above, please use other means independent from air exchange system to ensure safety. In detail, we can set a refrigerant cutoff valve that can be activated by the detector upon refrigerant leakage and as well, set an alarm system that can notify the indoor person. The detector here is different from the detector in aforementioned air exchange system.

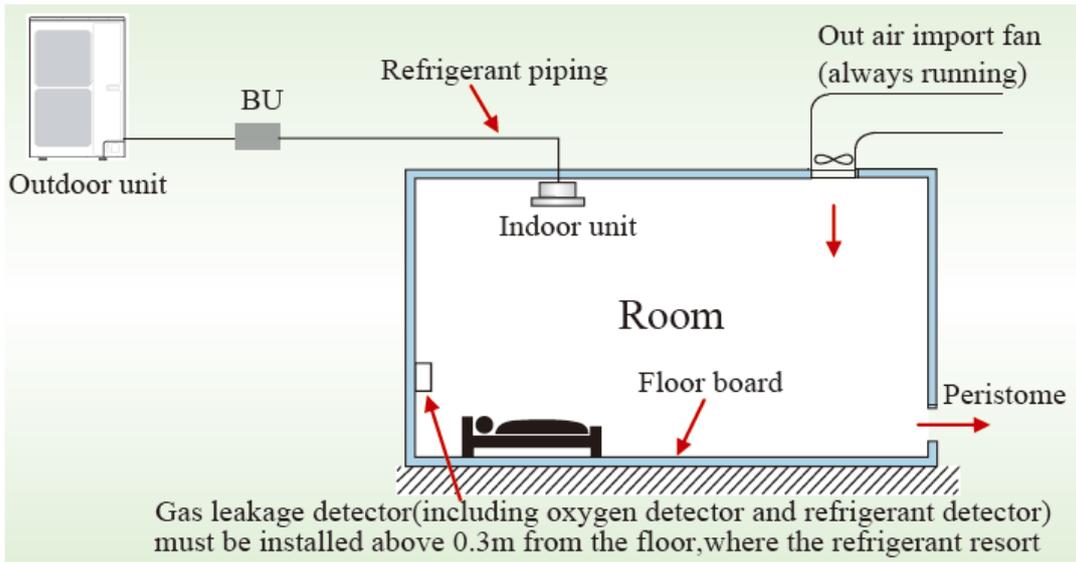
(c) To set an air exchange system, please ensure to leave an efficient air exchange gap (e.g. gap below the door) at the lowest part of the room.

(d) For connection of pipes within living area, please make sure to comply with JIS specification and perform thorough airtight test after the work is completed. Additionally, please ensure that the pipe is installed with shockproof device to avoid damage due to earthquake or the other external forces. (But on axial direction, a leeway shall be left to eliminate the stress caused by temperature variation).

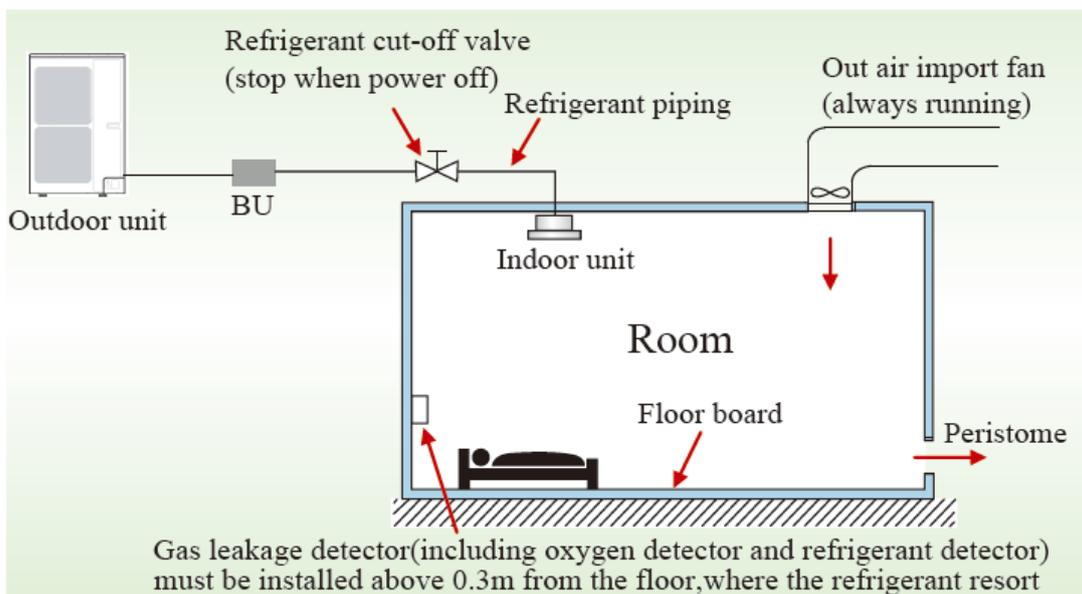
◆ Long Term Working Air Exchange System



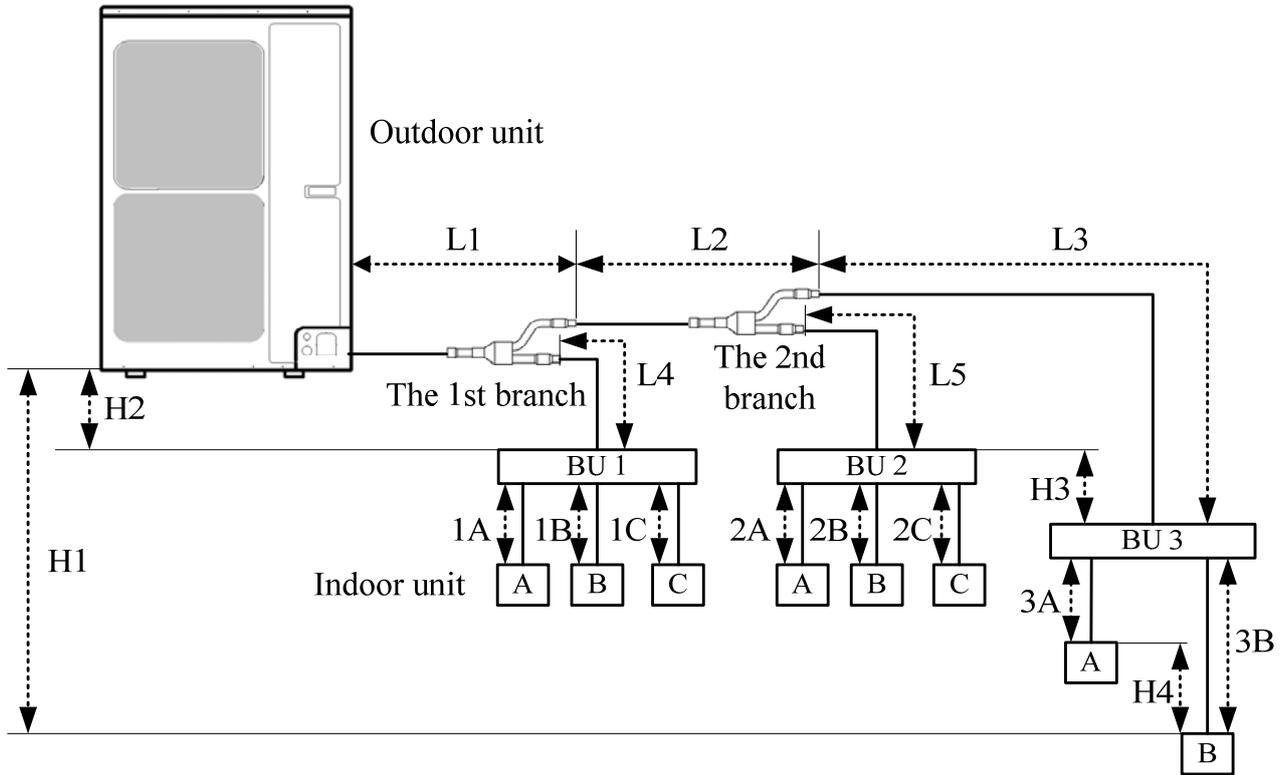
◆ Detector Interlink System



◆ Position of Long Term Running Ventilation System and Refrigerant Cut-off Valve



➤ 7.2 Allowable Length/Height Difference of Refrigerant Piping



The sorts		The pipes	Length (m)	
Maximum allowable length	Between outdoor unit and BU	$L1+L2+L3+L4+L5$	≤ 55	
	Total length between indoor unit and BU	$1A+1B+1C+2A+2B+2C+3A+3B$	GWHD(42S)NK3CO	≤ 60
			GWHD(48S)NK3CO; GWHD(48S)NM3CO	≤ 80
			GWHD(56S)NK3CO; GWHD(56S)NM3CO	≤ 90
	Between indoor unit and BU module	$1A;1B;1C;2A;2B;2C;3A;3B$	≤ 15	
Between indoor unit and the 1st branch	$L4+1B;L2+L5+2A;L2+L3+3B$	≤ 40		
Maximum allowable length	Between outdoor and indoor units	H1	≤ 30	
	Between outdoor units and BU	H2	≤ 30	
	Between BU and BU modules	H3	≤ 15	
	Between indoor and indoor units	H4	≤ 15	
Minimum allowable length	Between outdoor and the 1st branch	L1	≥ 5	
	Between BU and the branch	$L3;L4;L5$	as possible as short	

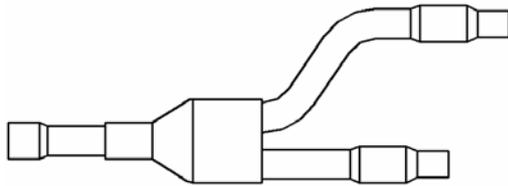
➤ 7.3 Selection of Refrigerant Piping

7.3.1 Size of Main Pipe

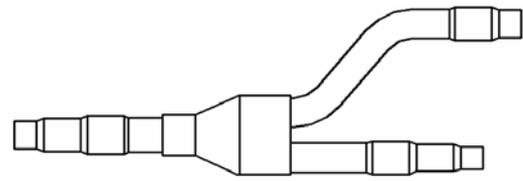
Sorts		Gas Pipe(mm)	Liquid Pipe(mm)
Indoor unit (Btu/h)	7000/9000/12000	Φ9.52	Φ6.35
	18000	Φ12.7	Φ6.35
	21000/24000	Φ15.9	Φ9.52
Outdoor unit	GWHD(42S)NK3CO	Φ15.9	Φ9.52
	GWHD(48S)NK3CO		
	GWHD(56S)NK3CO		
	GWHD(48S)NM3CO	Φ15.9	Φ9.52
	GWHD(48S)NK3CO	Φ19.05	Φ9.52
Between outdoor unit and the 1st branch	The pipe L1	Φ19.05	Φ9.52
Between the 1st and 2nd branch	The pipe L2	Φ15.9	Φ9.52

7.3.2 Selection for Branching Section

If two or three BU modules used, Y-type branch pipe of FQ01A/A will be chosen.



FQ01A/A (Liquid pipe)



FQ01A/A (Gas pipe)

➤ 7.4 Charging Requirement with Additional Refrigerant

7.4.1 Refrigerant in the System when shipped from the Factory

Model Name	GWHD(42S)NK3CO	GWHD(48S)NK3CO; GWHD(48S)NM3CO	GWHD(56S)NK3CO; GWHD(56S)NM3CO
Refrigerant amount charged in factory	4.95kg		

7.4.2 Refrigerant Charging

Calculating the Mass of Additional Refrigerant

Additional Refrigerant Charge (kg) = Σ the Liquid Pipe Length of $\Phi 6.35 \times 0.022\text{kg/m} + \Sigma$ the Liquid Pipe Length of $\Phi 9.52 \times 0.054\text{kg/m} - 1.47(\text{kg})$

◆ If the additional refrigerant charge is negative, it does not need to add the refrigerant.

NOTES:

- The refrigerant charge mentioned in the table above is not included those charged additionally in the indoor unit and the refrigerant pipe.
- The amount of the additional refrigerant charge is dependent on the diameter and length of the liquid refrigerant pipe which is decided by the actual yield installation requirement.
- Record the additional refrigerant charge for future maintenance.
- It does not need to add refrigerant if the total length of liquid pipe is within 30m.

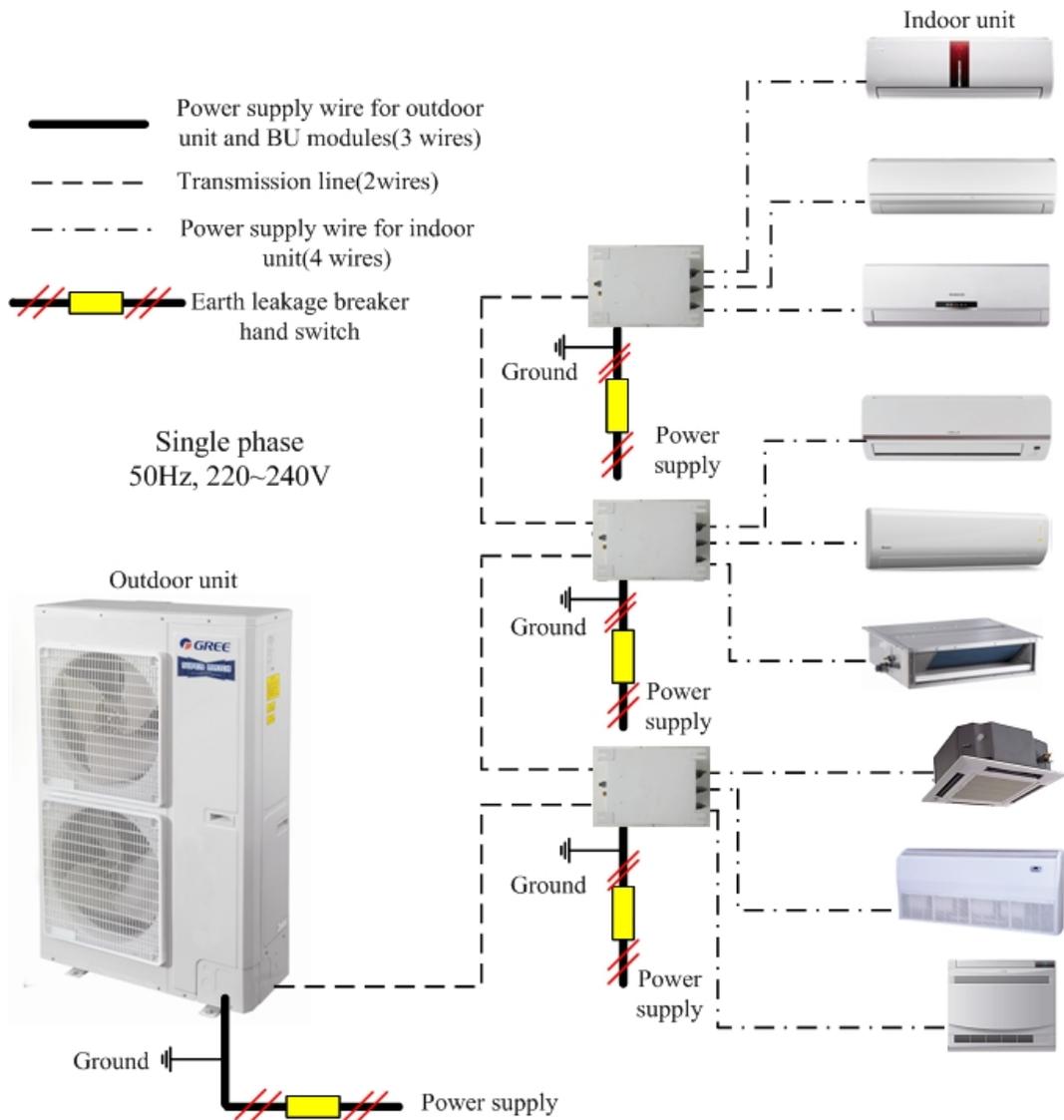
8 ELECTRICAL WIRING DESIGN

➤ 8.1 General

- (1) The electric installation should be carried out by the professional as instructed by the local laws, regulations and also this manual.
- (2) The air switch coupled with the leakage current protection switch must be equipped in the circuits, which is of enough capacity and of both magnetic and thermal tripping functions in case of the short circuit and overload.
- (3) The ground connection should be reliable and the ground wire should be connected to the dedicated device of the building by the professional.
- (4) The electrical work should use a cable length enough to cover the entire distance with no connection. If it is unavoidable, please make sure the connection should be reliable and the external forces will not act on the wires. Otherwise it will cause electrical shock or fire etc.
- (5) The power cable with the rated voltage and exclusive circuit for the air conditioner should be used.
- (6) The diameter of the power cable should be large enough and once it is damaged, it must be replaced by the dedicated one.
- (7) Arrange the cables so that the electric wires do not contact with high-temperature part of the pipe; otherwise coating melts and an accident may be caused.
- (8) Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe finish.

➤ 8.2 Wiring Connection

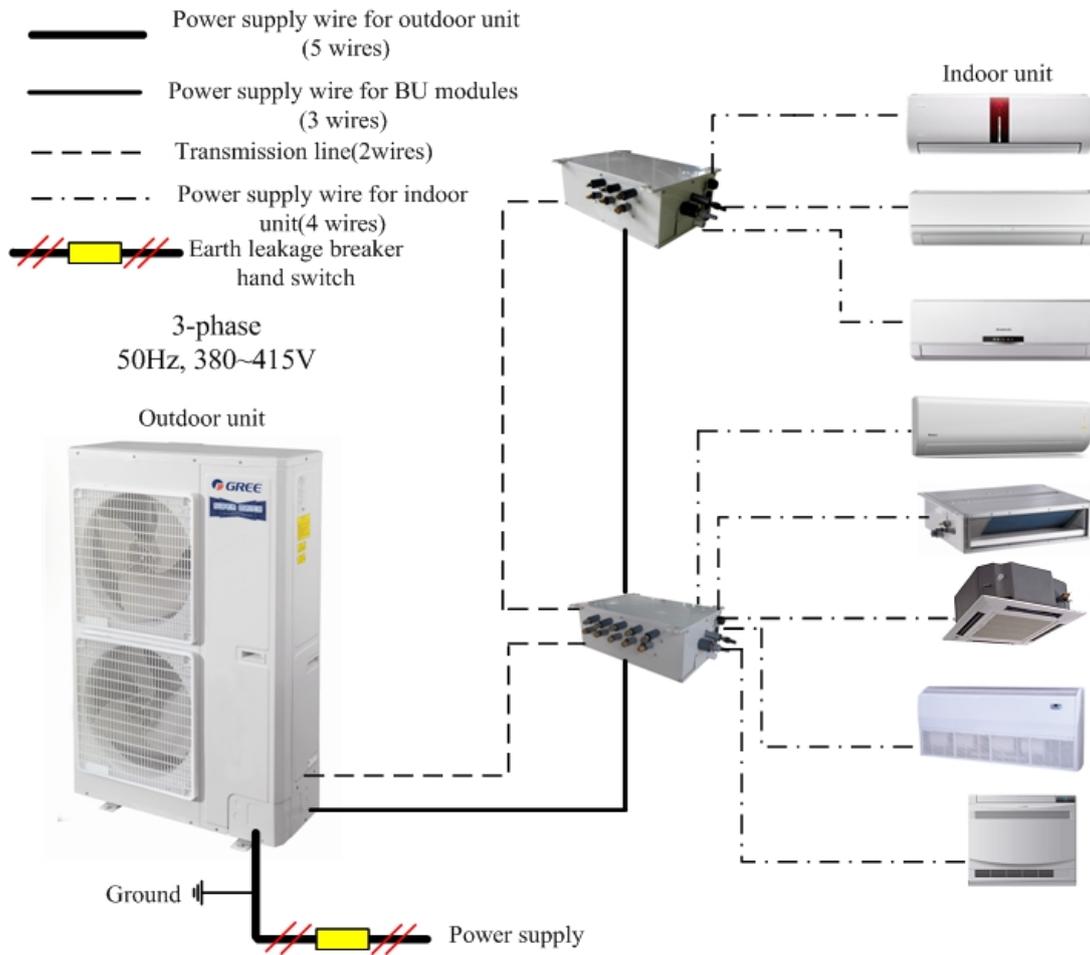
GWHD(42S)NK3CO; GWHD(48S)NK3CO; GWHD(56S)NK3CO



Requirements of Power Circuit and Cable

Phase and frequency		1Ph,50Hz
Voltage		220~240V
Recommended cable of outdoor unit (Pieces × Sectional area)	GWHD(42S)NK3CO	3×6.0 mm ²
	GWHD(48S)NK3CO	
	GWHD(56S)NK3CO	
Recommended cable of BU module (Pieces × Sectional area)		3×0.75 mm ²
Transmission line (Pieces × Sectional area)		2×1.5 mm ²
Recommended cable of indoor unit (Pieces × Sectional area)		4×0.75mm ²
Capacity of the air switch	GWHD(42S)NK3CO	32A
	GWHD(48S)NK3CO	40A
	GWHD(56S)NK3CO	40A
	BU module	10A

GWHD(48S)NM3CO; GWHD(56S)NM3CO



Requirements of Power Circuit and Cable

Phase and frequency		3Ph,50Hz
Voltage		380~415V
Recommended cable of outdoor unit (Pieces × Sectional area)	GWHD(48S)NM3CO	5×2.5 mm ²
	GWHD(56S)NM3CO	
Recommended cable of BU module (Pieces × Sectional area)		3×0.75 mm ²
Transmission line (Pieces × Sectional area)		2×1.5 mm ²
Recommended cable of indoor unit (Pieces × Sectional area)		4×0.75mm ²
Capacity of the air switch	GWHD(48S)NM3CO	25A
	GWHD(56S)NM3CO	25A

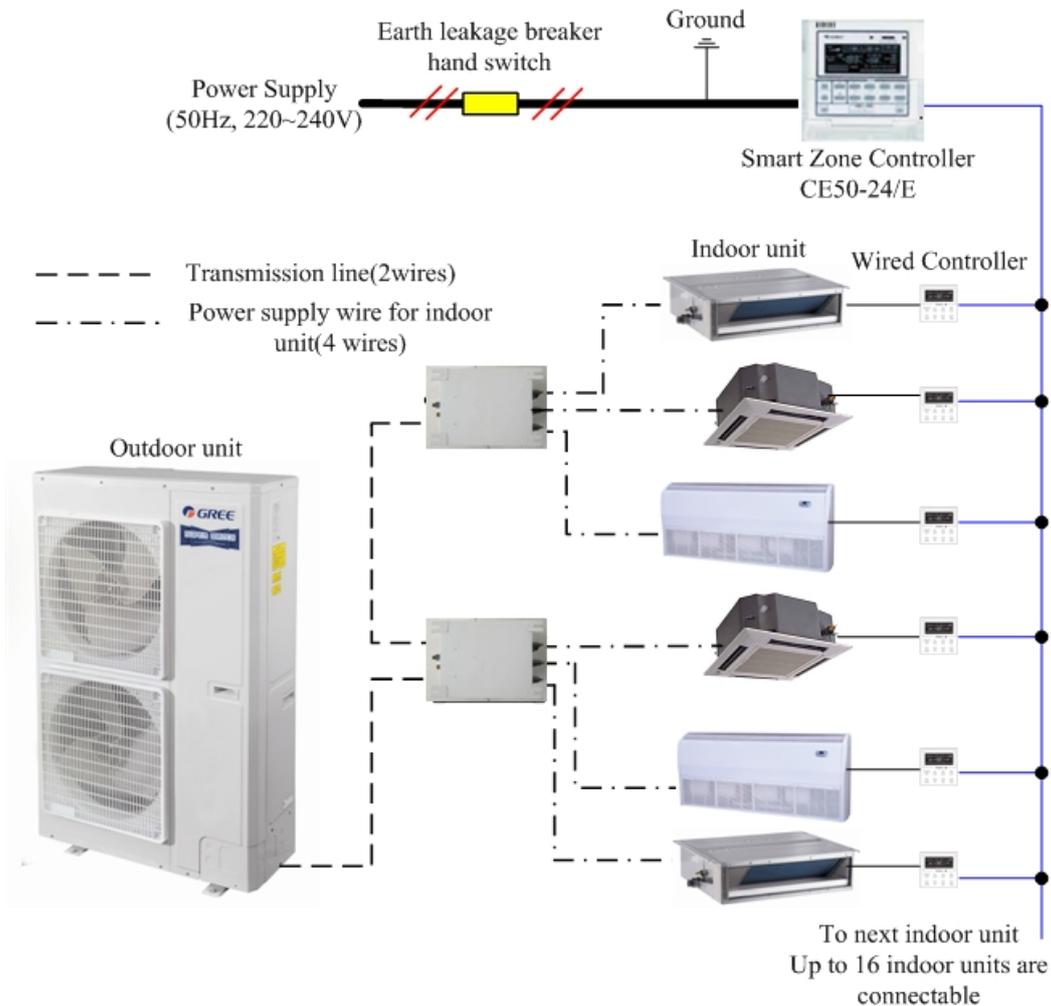
NOTES:

- ◆ The total length of the transmission line between the outdoor unit and the furthest BU module is not more than 55m. Otherwise, the system cannot work possibility.
- ◆ The specifications of the power cable and transmission line listed in the table above are determined based on the maximum power (maximum amps) of the unit.
- ◆ The specifications of the power cable listed in the table above are applied to the conduit-guarded multi-wire copper cable (like, YJV copper cable, consisting of PE insulated wires and a PVC cable jacket) used at 40°C

and resistible to 90°C, and shall be at least those of ordinary polychloroprene sheathed cords (code designation 60245 IEC 57). If the working condition changes, they should be modified according to the related national standard.

- ◆ The specifications of the air switch listed in the table above are applied to the breaker with the working temperature at 40°C. If the working condition changes, they should be modified according to the related national standard.
- ◆ The length of the recommended power cable should be less than 15 meters; otherwise, the diameter of the power cable is not enough.
- ◆ Mentioned power cable and transmission line length is just a reference value. It may be different depending on the condition of installation, humidity or materials, etc.
- ◆ An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

➤ 8.3 Design of Control Wiring



➤ 8.4 Parameters

8.4.1 Outdoor unit

Model name	Voltage range		Compressor	Fan motor		Power Supply	
	Min	Max		RLA	kW	FLA	MCA
GWHD(42S)NK3CO	198	264	23	0.1×2	0.6×2	25	50
GWHD(48S)NK3CO	198	264	23	0.1×2	0.6×2	25	50
GWHD(56S)NK3CO	198	264	23	0.12×2	0.7×2	25	50
GWHD(48S)NM3CO	342	456	24	0.09×2	1.0×2	15	/
GWHD(56S)NM3CO	342	456	24	0.09×2	1.0×2	15	/

Legend:

MCA: Minimum Circuit Amps

FLA: Full Load Amps

RLA: Rated Load Amps

MOCP: Maximum Overcurrent Protection (Amps)

kW: Fan Motor Rated Output (kW)

Note: RLA is based on the following conditions.

Indoor temperature: 29°C (84.2F)DB/19°C (66.6F)WB Outdoor temperature: 46°C (114.8F) DB

8.4.2 Indoor unit

Type	Model name	Nominal voltage (V/Ph/Hz)	Voltage range		Fan motor	
			Min	Max	kW	FLA
Hansol	GWH(07)TA-K3DNA1E/I	220~240/1/50	198	264	0.015	0.07
	GWH(09)TA-K3DNA1E/I				0.015	0.07
	GWH(12)TB-K3DNA1E/I				0.015	0.07
	GWH(18)TC-K3DNA1E/I				0.025	0.1
U-Cool	GWH(07)UA-K3DNA1B/I	220~240/1/50	198	264	0.01	0.136
	GWH(09)UA-K3DNA1B/I				0.01	0.136
	GWH(12)UB-K3DNA1B/I				0.02	0.2
	GWH(18)UC-K3DNA1B/I				0.025	0.31
Cozy	GWH(07)MA-K3DNA3E/I	220~240/1/50	198	264	0.01	0.14
	GWH(09)MA-K3DNA3E/I				0.01	0.14
	GWH(12)MB-K3DNA3E/I				0.02	0.22
	GWH(18)MC-K3DNA3E/I				0.02	0.31
Change	GWH(07)KF-K3DNA6E/I	220~240/1/50	198	264	0.01	0.16
	GWH(09)KF-K3DNA6E/I				0.01	0.16
	GWH(12)KF-K3DNA6E/I				0.01	0.16
	GWH(18)KG-K3DNA6E/I				0.02	0.31
Viola	GWH(07)RA-K3DNA3E/I	220~240/1/50	198	264	0.01	0.14
	GWH(09)RA-K3DNA3E/I				0.01	0.14
	GWH(12)RB-K3DNA3E/I				0.02	0.22
	GWH(18)RC-K3DNA3E/I				0.02	0.31
	GWH(24)RC-K3DNA1A/I				0.035	0.31

Type	Model name	Nominal voltage (V/Ph/Hz)	Voltage range		Fan motor	
			Min	Max	kW	FLA
Duct type	GFH(09)EA-K3DNA1A/I	220~240/1/50	198	264	0.03	0.28
	GFH(12)EA-K3DNA1A/I				0.04	0.31
	GFH(18)EA-K3DNA1A/I				0.05	0.41
	GFH(21)EA-K3DNA1A/I				0.061	0.5
	GFH(24)EA-K3DNA1A/I				0.061	0.5
Cassette type	GKH(12)BA-K3DNA2A/I	220~240/1/50	198	264	0.011	0.23
	GKH(18)BA-K3DNA2A/I				0.011	0.23
	GKH(12)BA-K3DNA1A/I				0.035	0.3
	GKH(18)BA-K3DNA1A/I				0.035	0.3
	GKH(24)BA-K3DNA1A/I				0.035	0.4
Floor ceiling type	GTH(09)BA-K3DNA1A/I	220~240/1/50	198	264	0.015	0.3
	GTH(12)BA-K3DNA1A/I				0.015	0.3
	GTH(18)BA-K3DNA1A/I				0.02	0.5
	GTH(24)BA-K3DNA1A/I				0.02	0.5
Console type	GEH(09)AA-K3DNA1C/I	220~240/1/50	198	264	0.03	0.14
	GEH(12)AA-K3DNA1C/I				0.03	0.14
	GEH(18)AA-K3DNA1C/I				0.03	0.14

Legend:

kW: Fan Motor Rated Output (kW)

FLA: Full Load Amps

8.4.3 BU module

Type	Model name	Nominal voltage (V/Ph/Hz)	Voltage range		Power supply	
			Min	Max	MCA	MOCP
Only for the outdoor unit: GWHD(42S)NK3CO; GWHD(48S)NK3CO; GWHD(56S)NK3CO	FXA2A-K	220~240/1/50	198	264	1.1	3.15
	FXA2B-K				1.1	3.15
	FXA3A-K				1.6	3.15
	FXA3B-K				1.6	3.15
Only for the outdoor unit: GWHD(48S)NM3CO; GWHD(56S)NM3CO;	FXB3A-K	220~240/1/50	198	264	1.6	3.15
	FXB5A-K				2.6	3.15

Legend:

MCA: Minimum Circuit Amps

MOCP: Maximum Overcurrent Protection (Amps)

9 ACCESSORIES

➤ 9.1 Outdoor Unit

Accessories name	Standard	Option	Field supplied
Power cable			√
Transmission line			√
Y-shape Branching Joint and Collecting Pipe		√	
Flexible pipe	√		

➤ 9.2 Indoor Unit

Accessories name	Standard	Option	Field supplied
Power cable			√
Wired remote controller	√		
Wireless remote controller	√		
Connecting cable for wired remote controller (8m)	√		
Drain pipe	√		

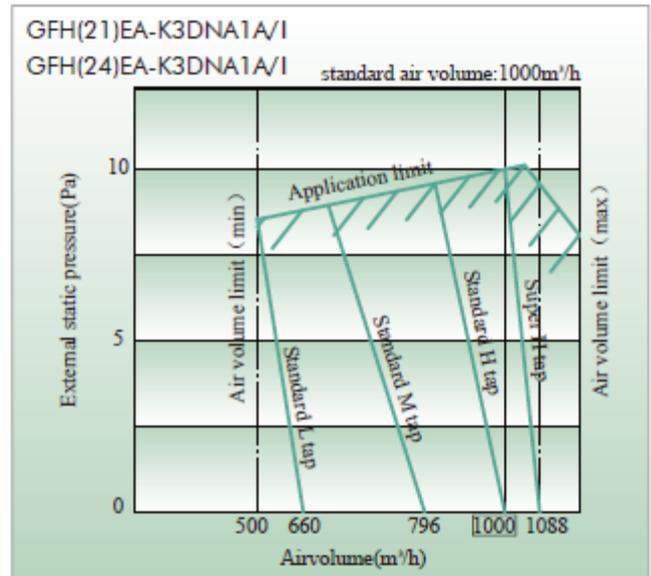
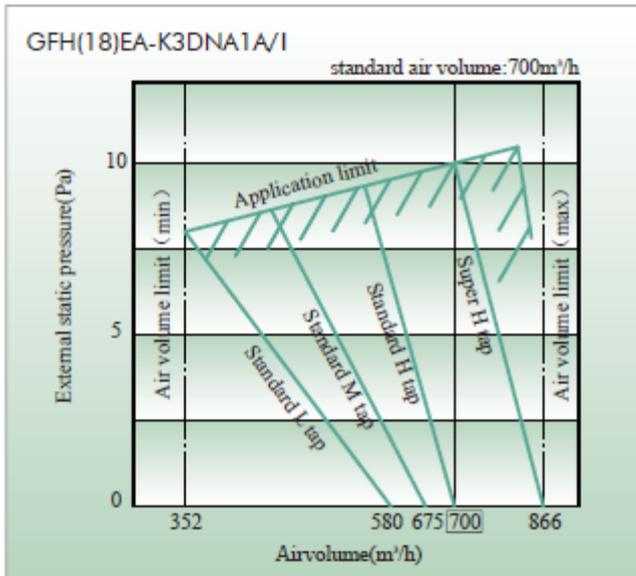
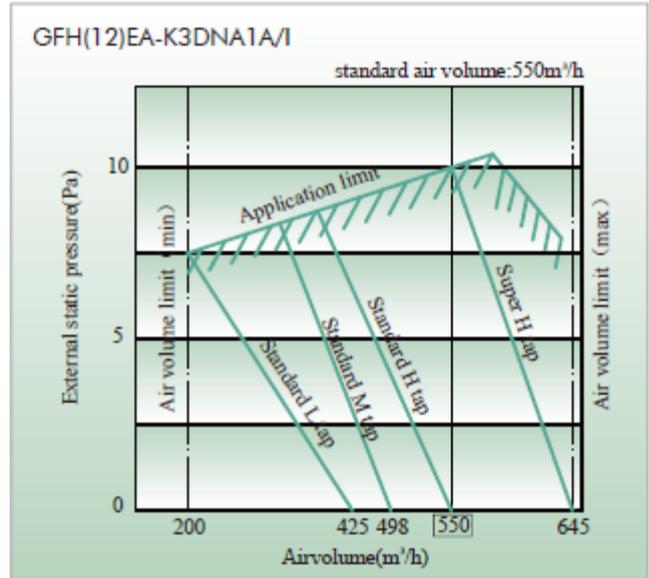
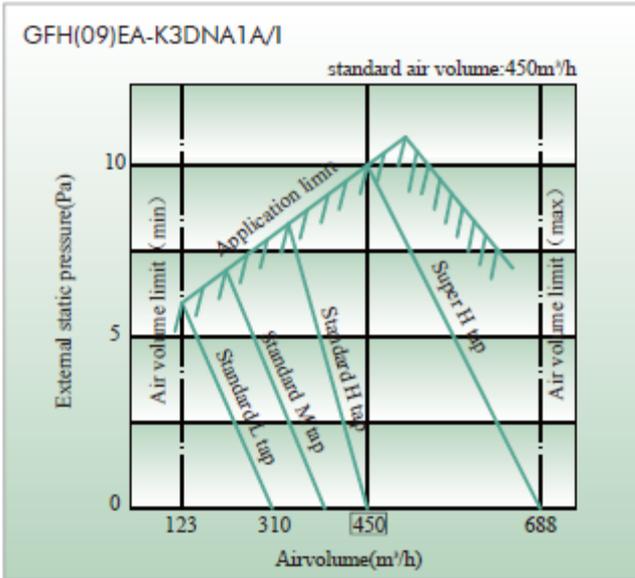
➤ 9.3 BU Module

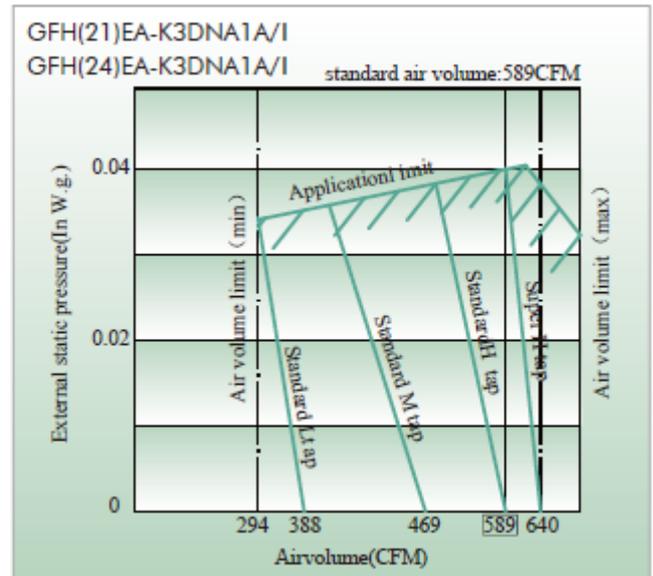
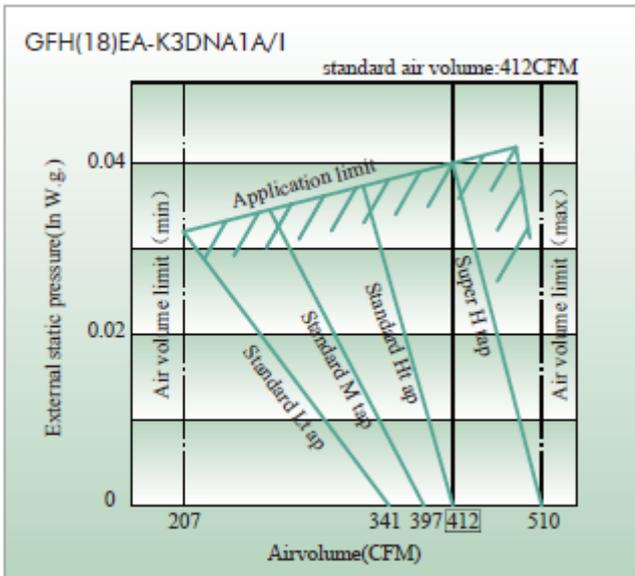
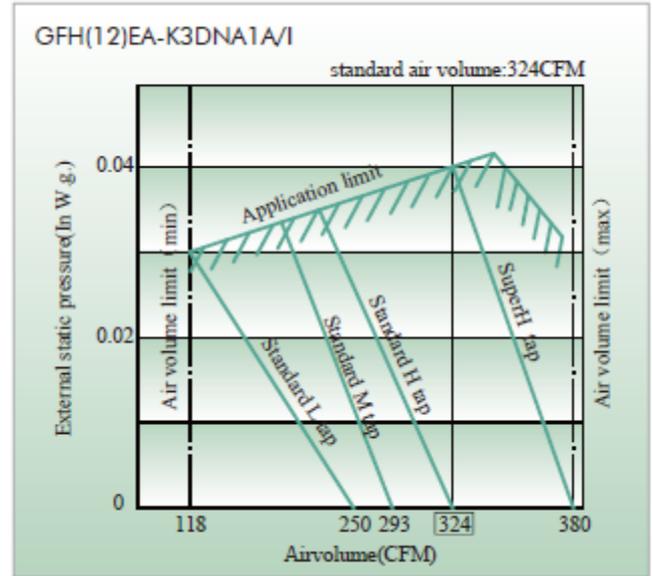
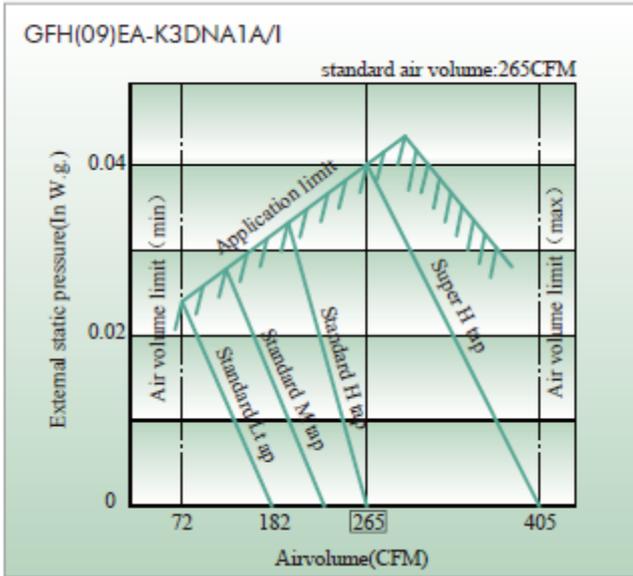
Accessories name	Standard	Option	Field supplied
Power cable			√
Transmission line			√
Drain pipe	√		
Pipe adapter(FXA2A-K and FXA3A-K)		√	
Pipe adapter(FXA2B-K and FXA3B-K)	√		
Pipe adapter(FXB3A-K and FXB5A-K)		√	

➤ 9.4 Controller

Accessories name	Model name	Standard	Option	Remark
Wired remote controller	Z63351L(30296317)	√		
Wireless remote controller	YT1F (MOTO)(305100491)	√		Cozy/Viola/Duct type/Cassette type/Floor ceiling type
	YAA1FB1(30510134)	√		U-Cool/Console type
	YAG1FB(30510137)	√		Hansol
	YB1F2 (XFAN)(305100611)	√		Change
Smart zone controller	CE50-24/E (MC207025)		√	Wired remote controller must be used in the indoor units

10 FAN CHARACTERISTICS



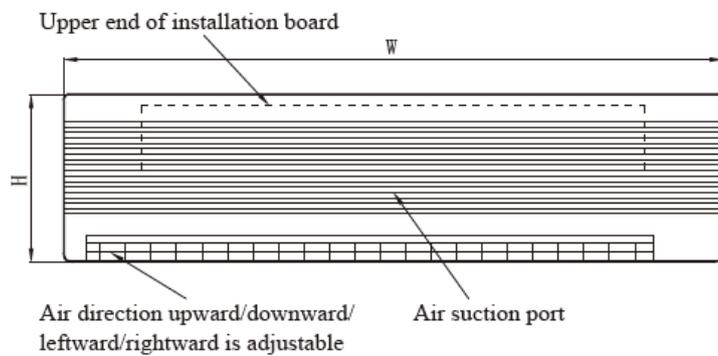
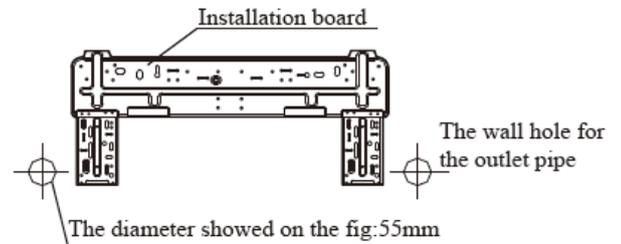
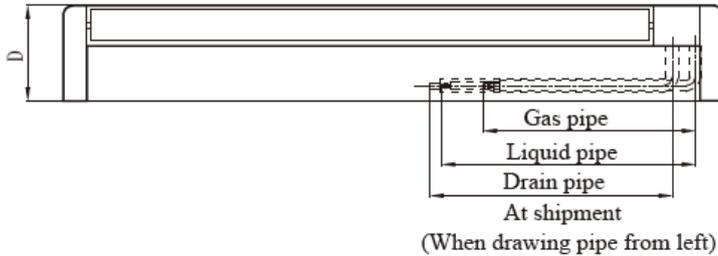


11 DIMENSIONAL DRAWINGS

➤ 11.1 Indoor Unit

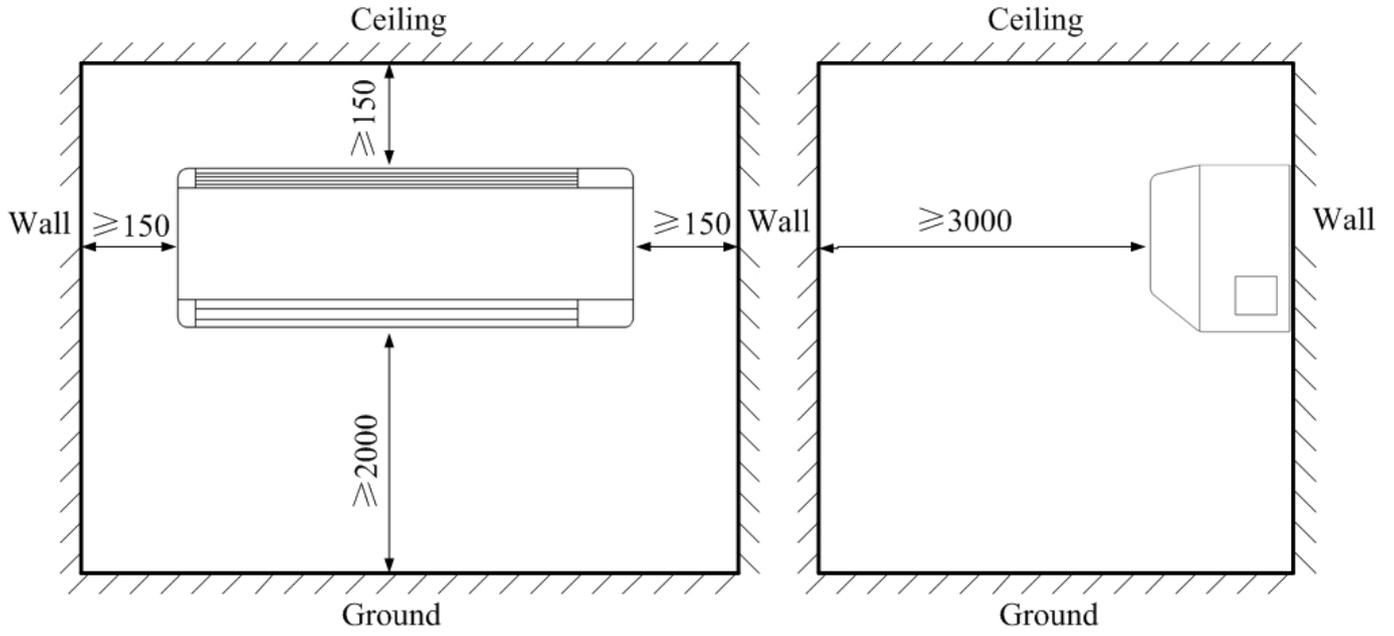
11.1.1 Wall-mounted type

1) Outline dimension



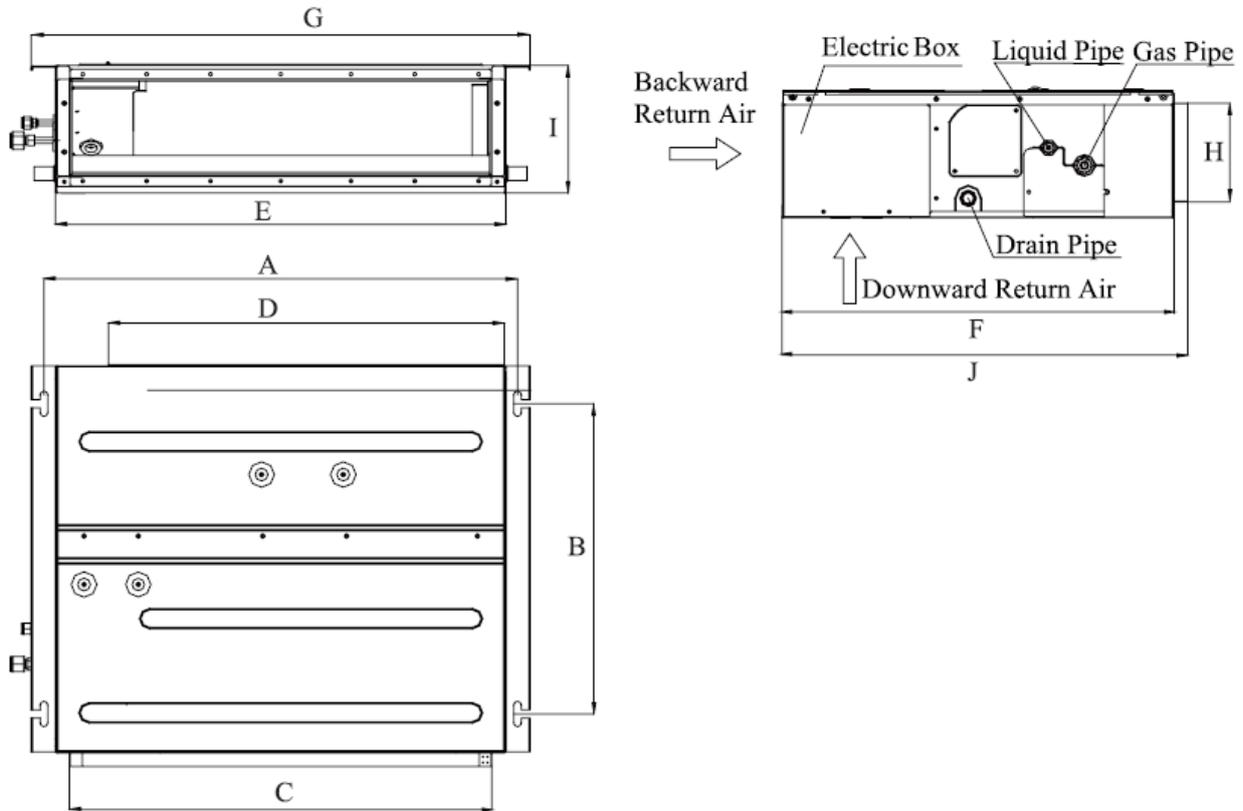
Type	Model name	W	H	D
Hansol	GWH(07)TA-K3DNA1E/I	806	292	209
	GWH(09)TA-K3DNA1E/I	806	292	209
	GWH(12)TB-K3DNA1E/I	866	292	209
	GWH(18)TC-K3DNA1E/I	1018	319	230
U-Cool	GWH(07)UA-K3DNA1B/I	860	299	153
	GWH(09)UA-K3DNA1B/I	860	299	153
	GWH(12)UB-K3DNA1B/I	896	320	159
	GWH(18)UC-K3DNA1B/I	998	340	178
Cozy	GWH(07)MA-K3DNA3E/I	790	265	170
	GWH(09)MA-K3DNA3E/I	790	265	170
	GWH(12)MB-K3DNA3E/I	845	275	180
	GWH(18)MC-K3DNA3E/I	940	298	200
Change	GWH(07)KF-K3DNA6E/I	770	283	201
	GWH(09)KF-K3DNA6E/I	770	283	201
	GWH(12)KF-K3DNA6E/I	770	283	201
	GWH(18)KG-K3DNA6E/I	865	305	215
Viola	GWH(07)RA-K3DNA3E/I	794	265	186
	GWH(09)RA-K3DNA3E/I	794	265	186
	GWH(12)RB-K3DNA3E/I	848	274	189
	GWH(18)RC-K3DNA3E/I	945	298	208
	GWH(24)RC-K3DNA1A/I	1018	315	223

2) Installation and service space



11.1.2 Duct Type

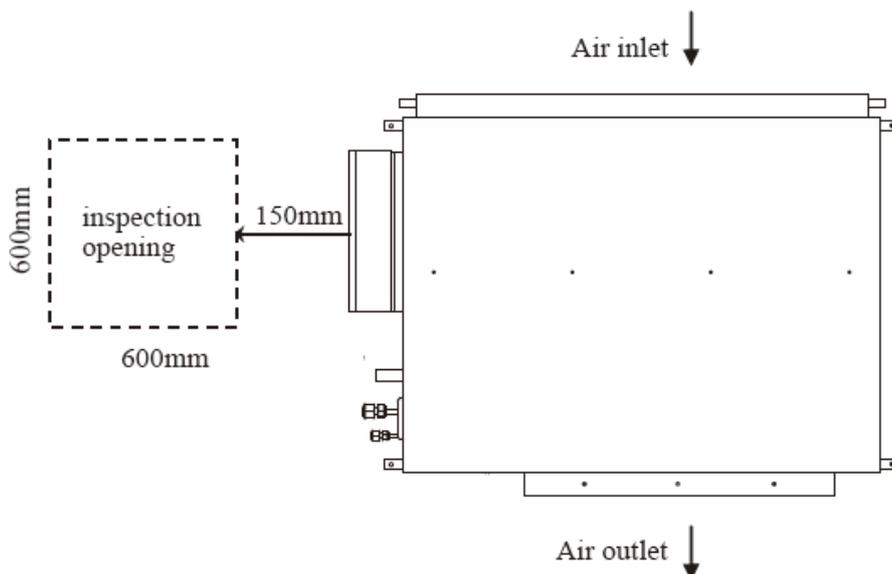
1) Outline dimension



Model	A	B	C	D	E	F	G	H	I	J
GFH(09)EA-K3DNA1A/I	742	491	662	620	700	615	782	156	200	635
GFH(12)EA-K3DNA1A/I										
GFH(18)EA-K3DNA1A/I	942	491	862	820	900	615	982	156	200	635
GFH(21)EA-K3DNA1A/I	1142	491	1062	1020	1100	615	1182	156	200	635
GFH(24)EA-K3DNA1A/I										

2) Installation and service space

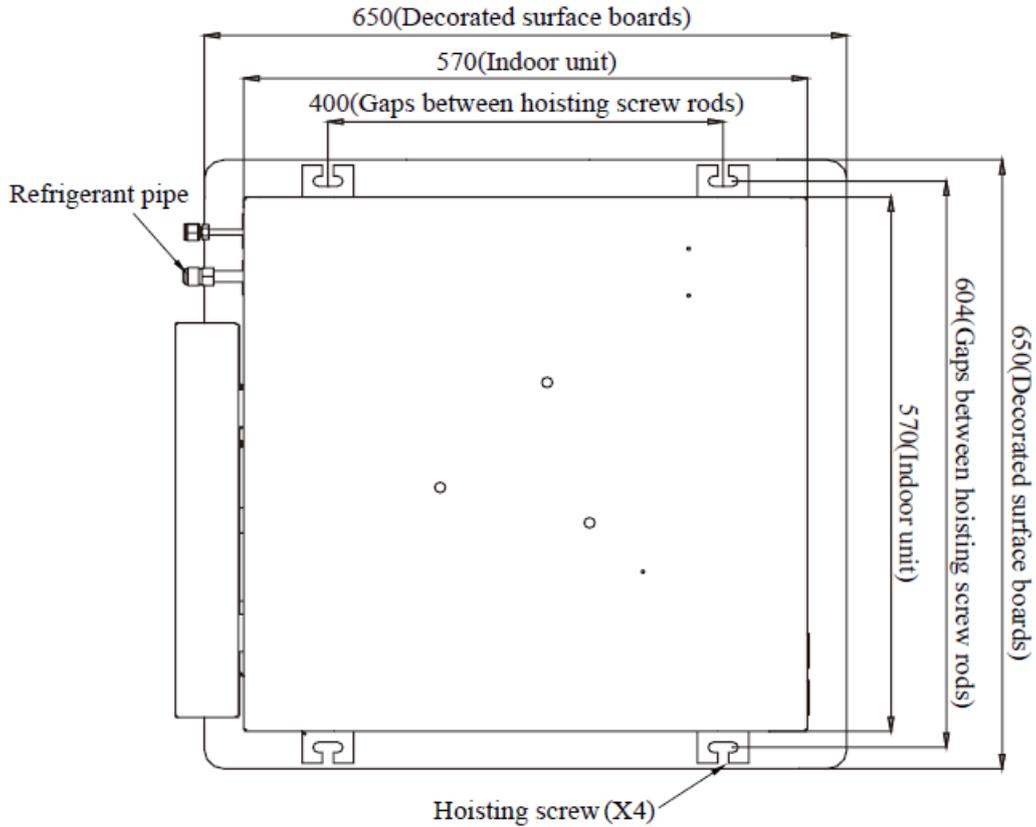
Be sure to place an inspection opening at the position indicated in the following figure for maintenance of the equipment.



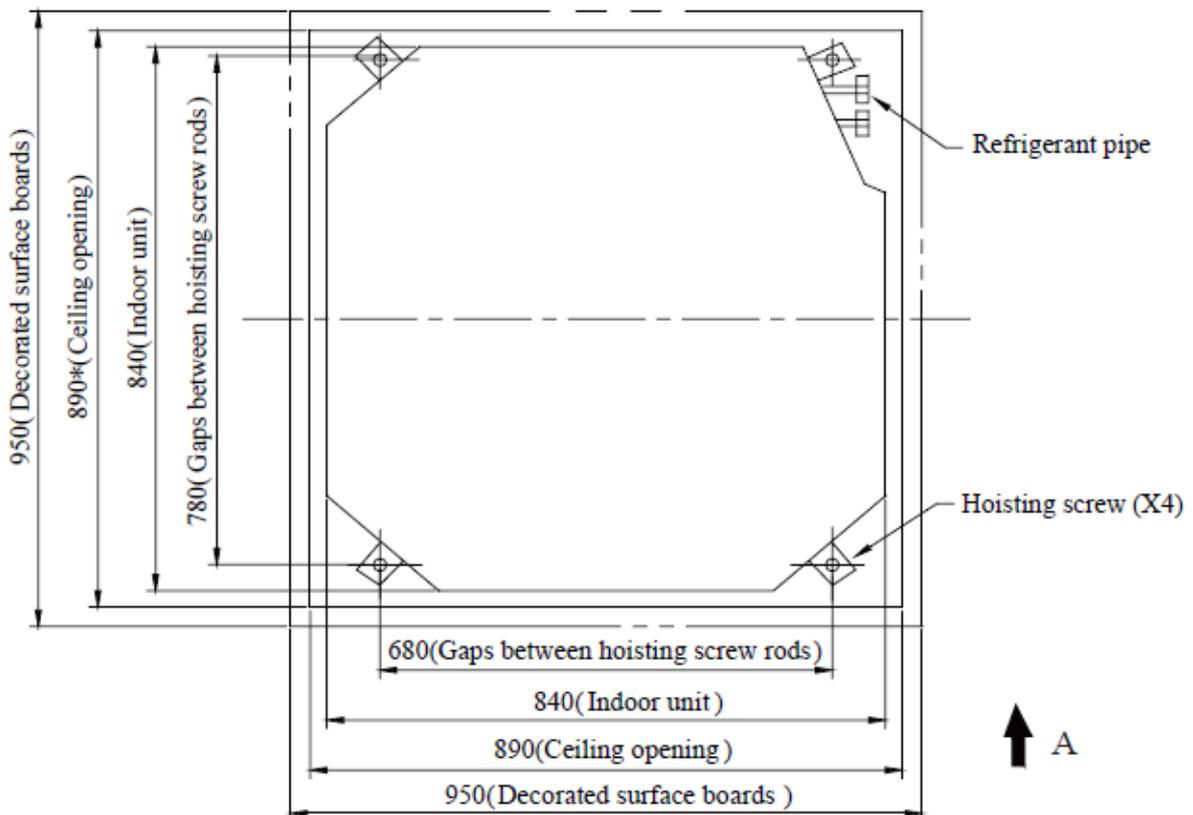
11.1.3 Cassette Type

1) Outline dimension

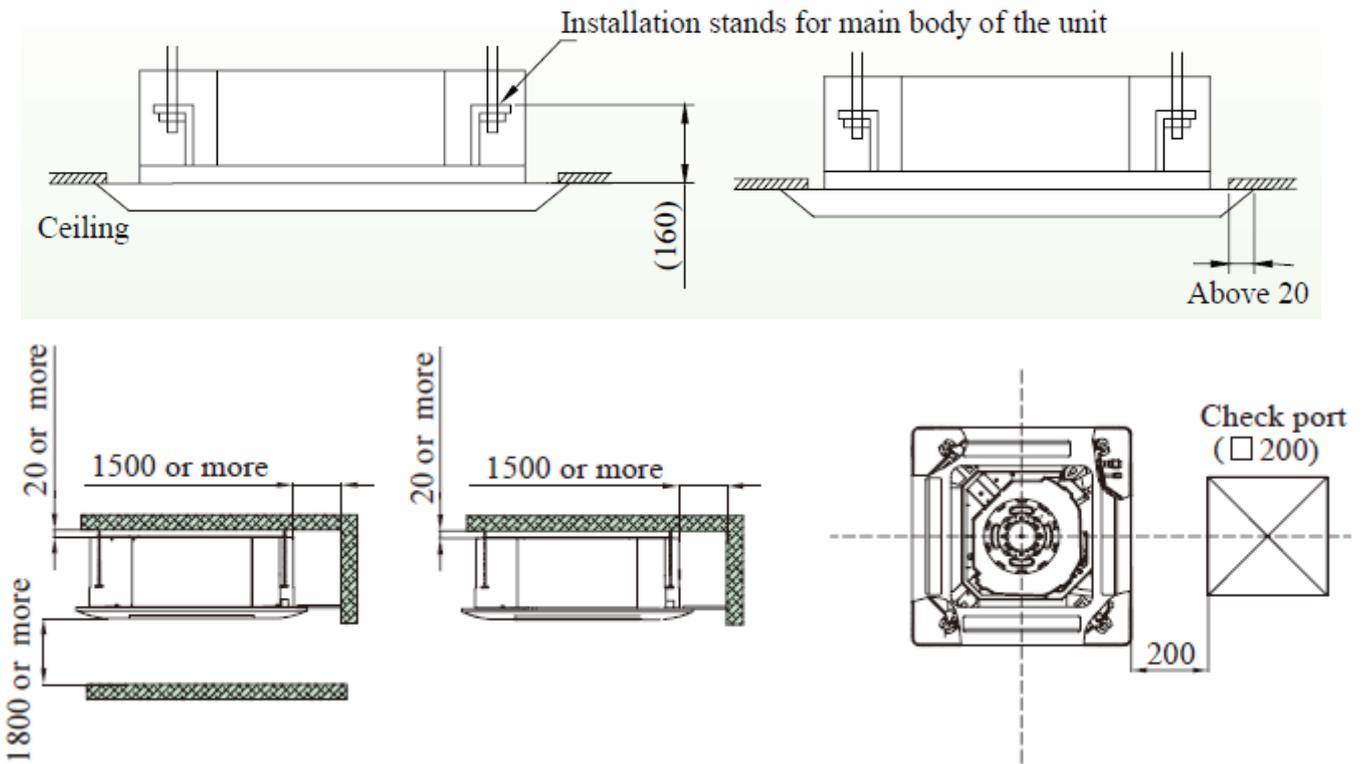
Dimensions for: GKH(12)BA-K3DNA2A/I; GKH(18)BA-K3DNA2A/I



Dimensions for: GKH(12)BA-K3DNA1A/I; GKH(18)BA-K3DNA1A/I; GKH(24)BA-K3DNA1A/I

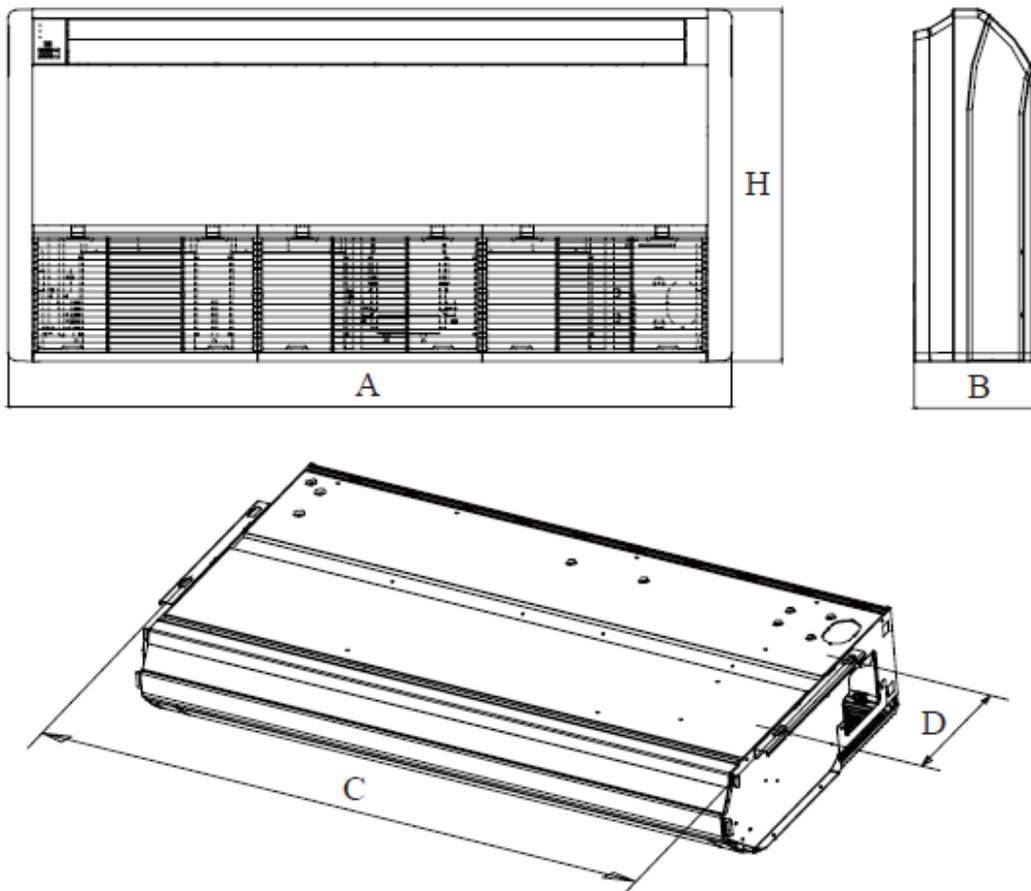


2) Installation and service space



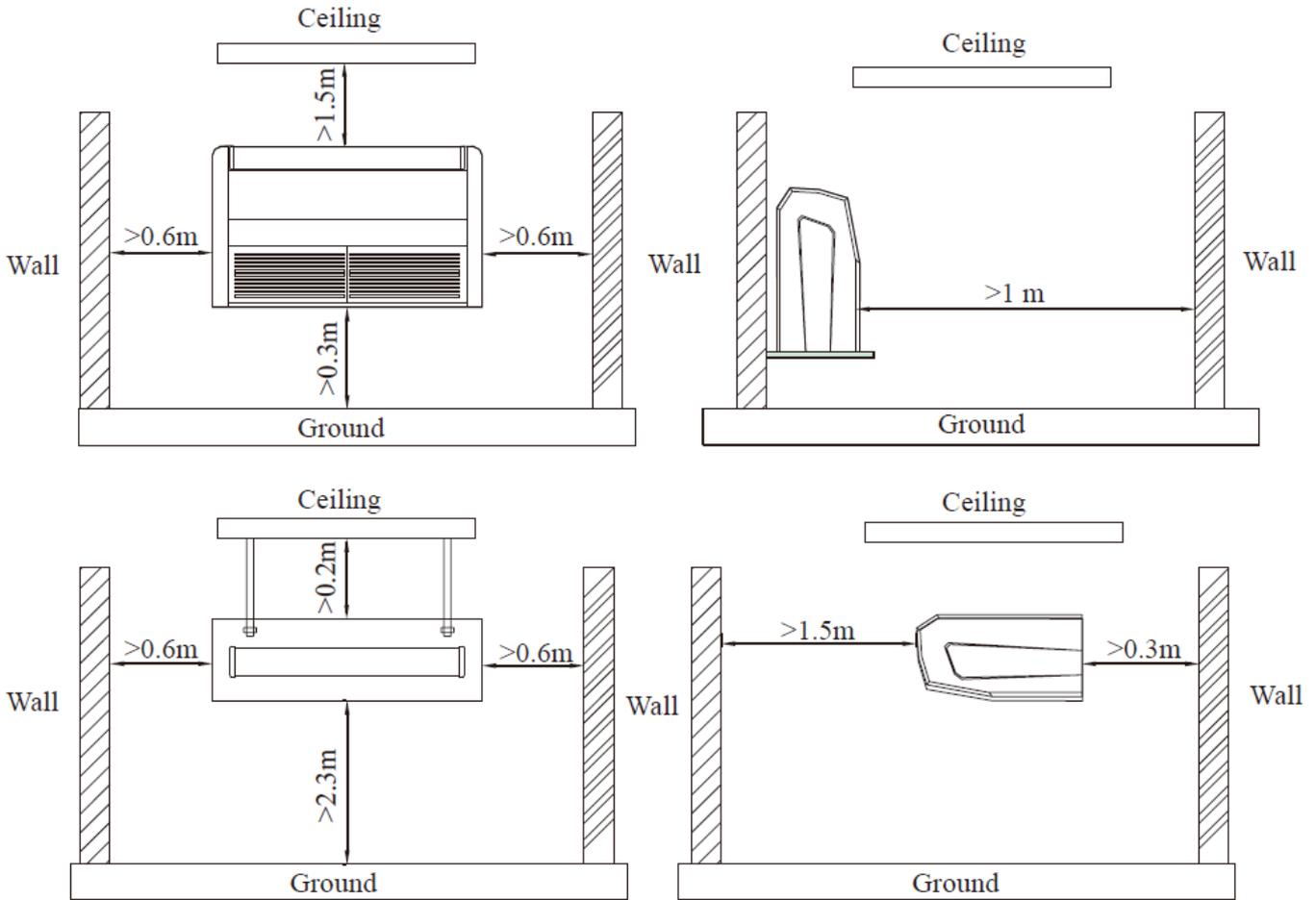
11.1.4 Floor ceiling type

1) Outline dimension



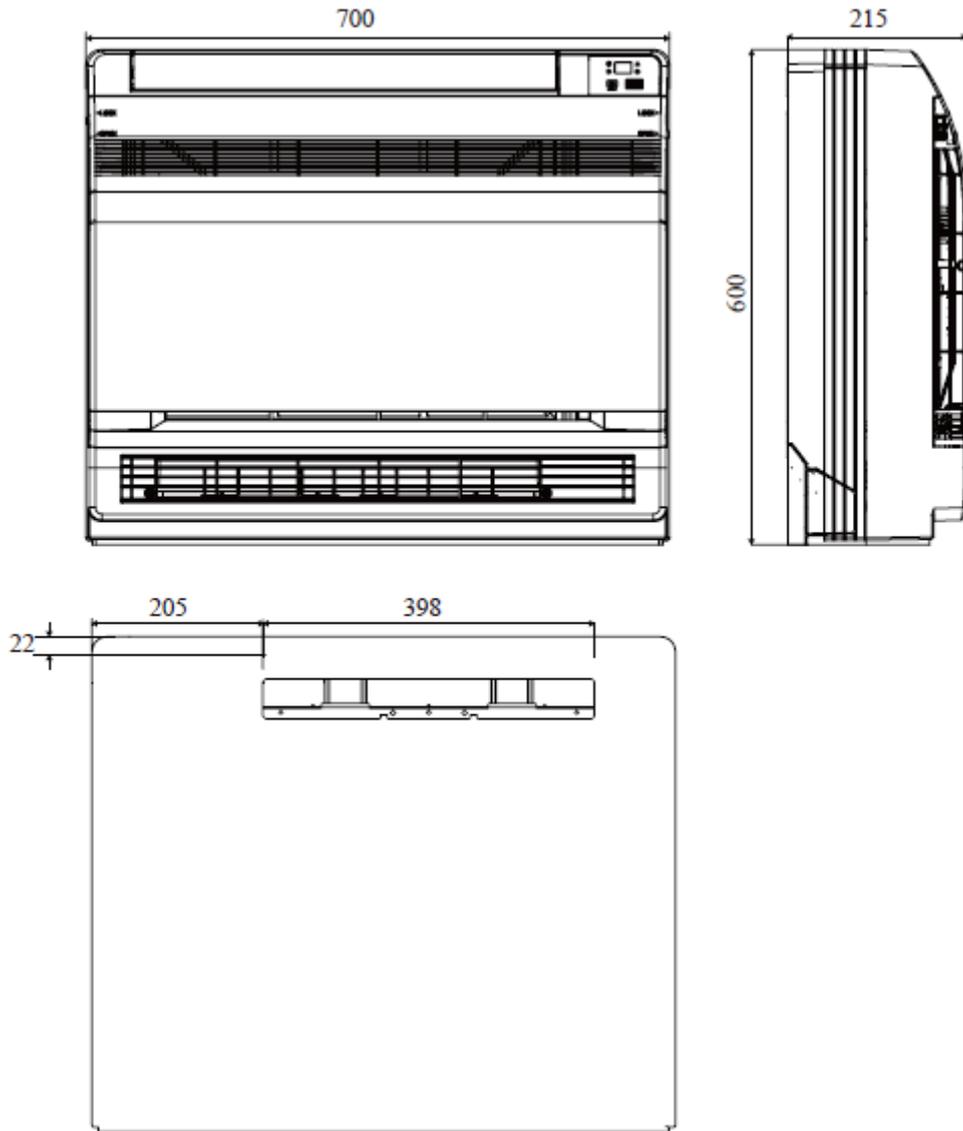
Model	A	B	H	C	D
GTH(09)BA-K3DNA1A/I	1220	225	700	1158	280
GTH(12)BA-K3DNA1A/I					
GTH(18)BA-K3DNA1A/I					
GTH(24)BA-K3DNA1A/I					

2) Installation and service space

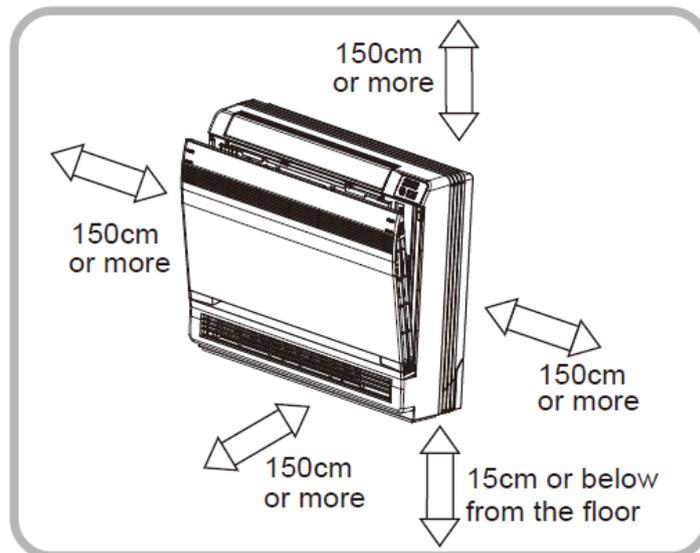


11.1.5 Console type

1) Outline dimension

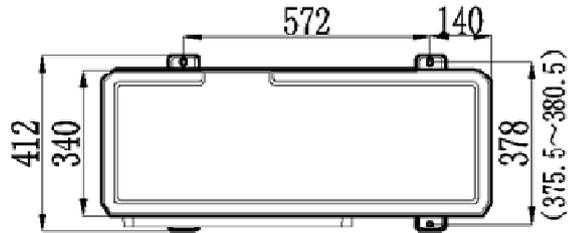
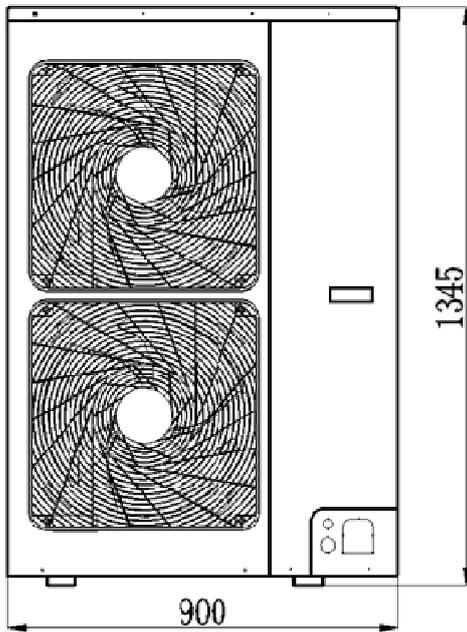


2) Installation and service space



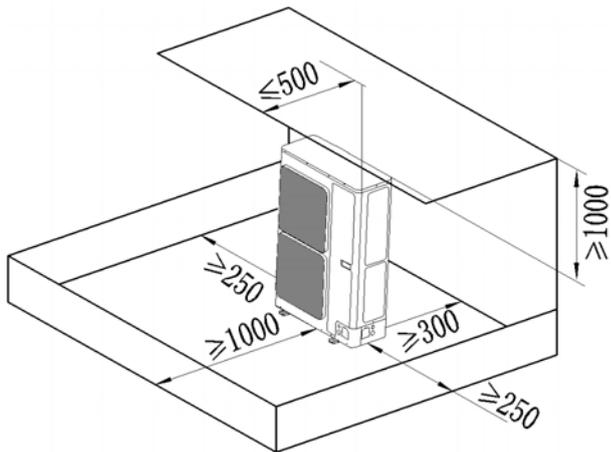
➤ 11.2 Outdoor Unit

1) Outline dimensions (unit:mm)

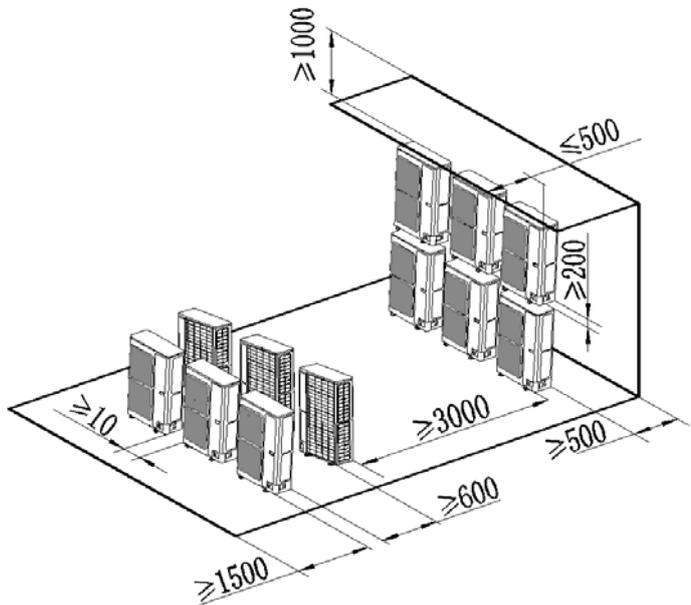


2) Installation space dimension diagram (unit: mm)

a) Installation space dimension for stand-alone



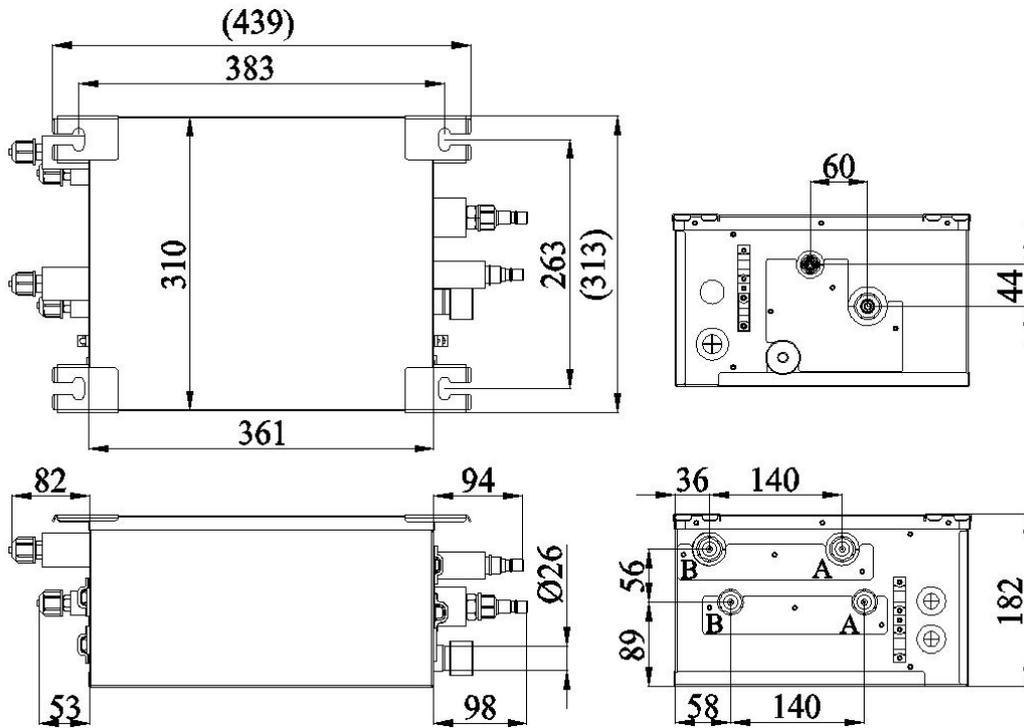
b) Installation space dimension for several units



➤ 11.3 BU Module

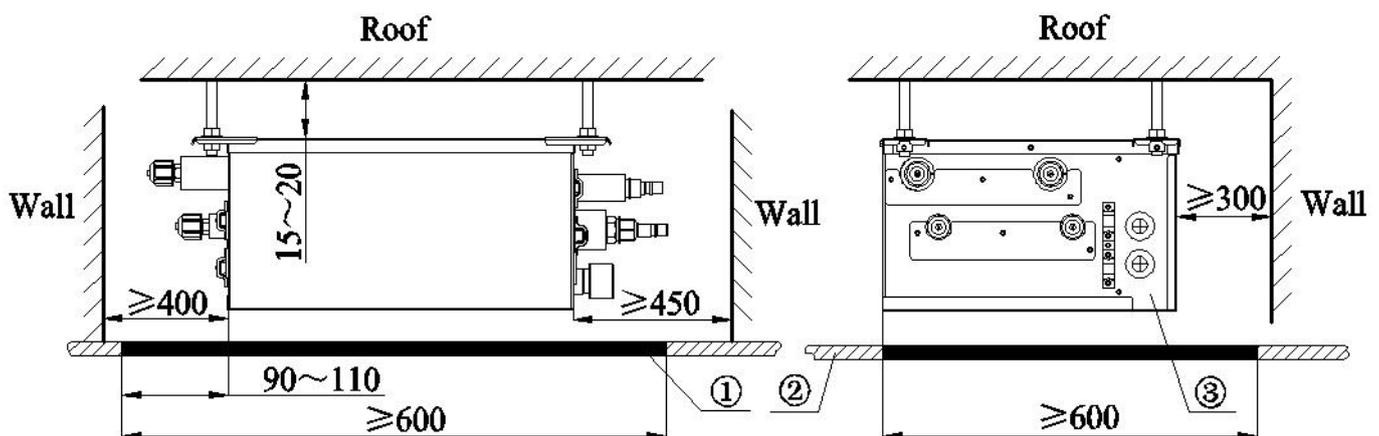
11.3.1 FXA2A-K

1) Outline dimension



Sorts	Indoor unit side (mm)		Outdoor unit side (mm)
	Port A	Port B	
Liquid pipe	Φ6.35	Φ6.35	Φ9.52
Gas pipe	Φ9.52	Φ9.52	Φ15.9

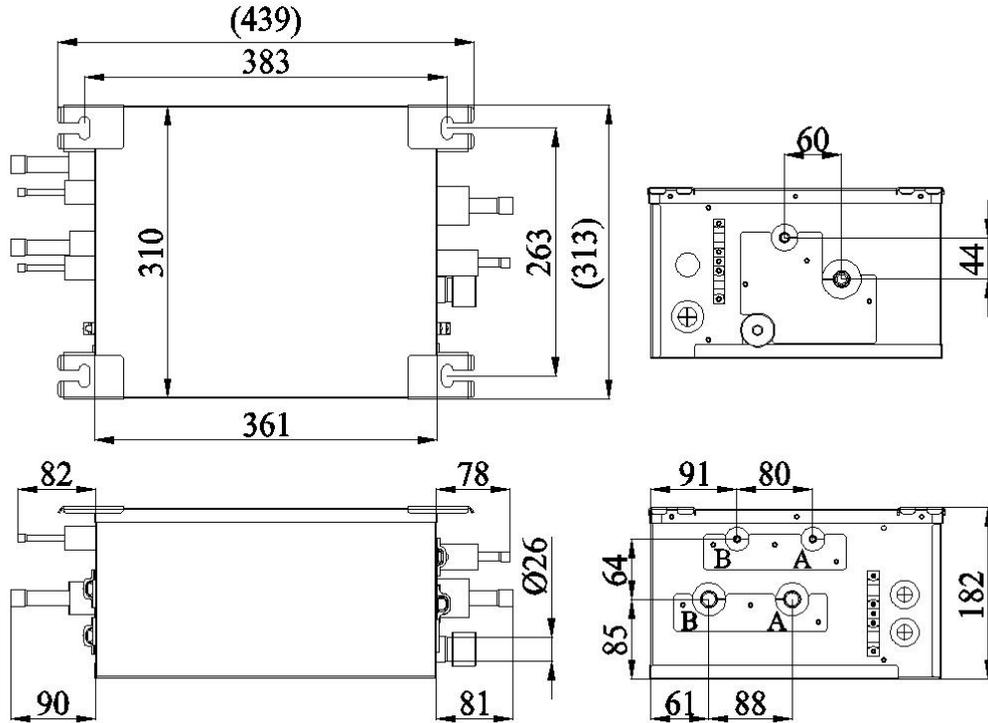
2) Installation and service space



NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

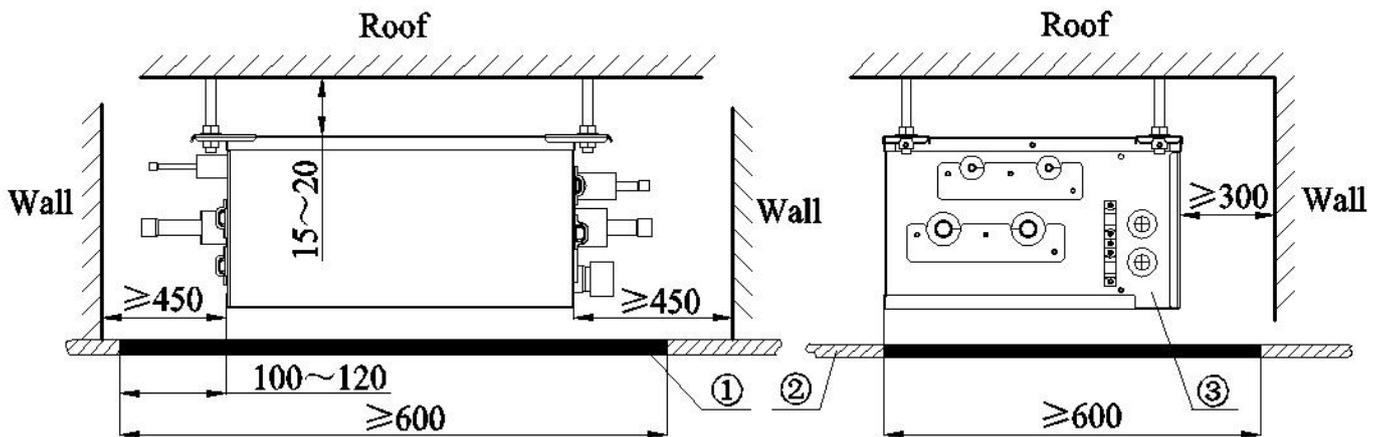
11.3.2 FXA2B-K

1) Outline dimension



Sorts	Indoor unit side (mm)		Outdoor unit side (mm)
	Port A	Port B	
Liquid pipe	Φ6.5	Φ6.5	Φ9.7
Gas pipe	Φ16.3	Φ16.3	Φ19.3

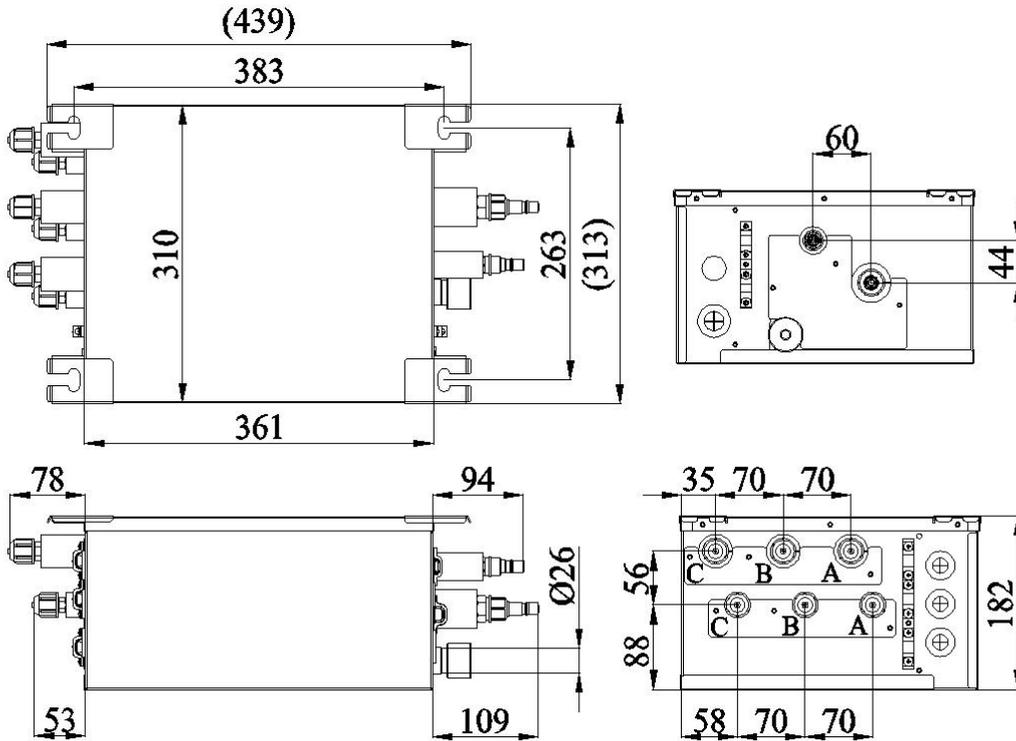
2) Installation and service space



NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

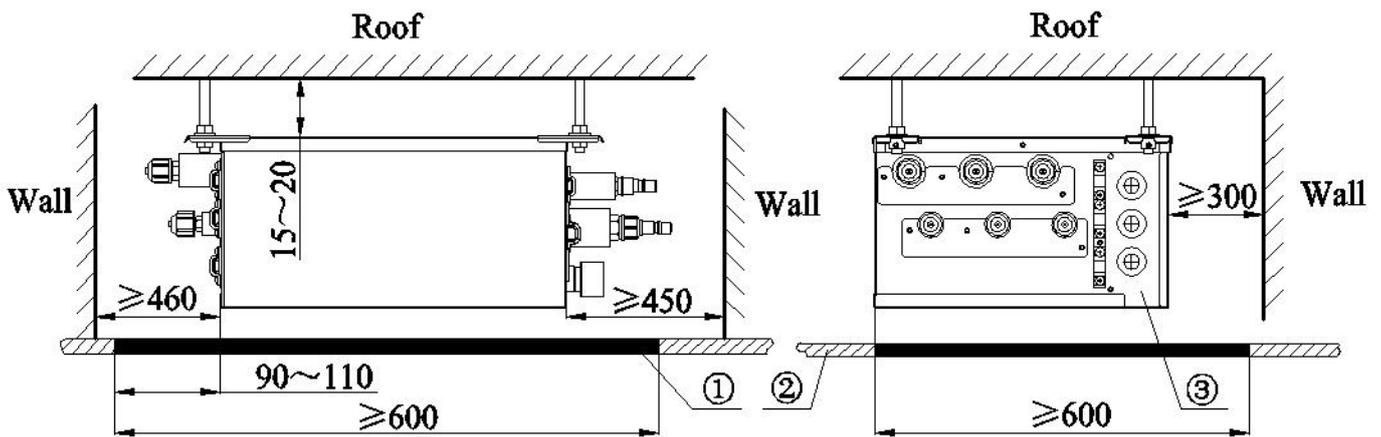
11.3.3 FXA3A-K

① Outline dimension



Sorts	Indoor unit side (mm)			Outdoor unit side (mm)
	Port A	Port B	Port C	
Liquid pipe	Φ6.35	Φ6.35	Φ6.35	Φ9.52
Gas liquid	Φ9.52	Φ9.52	Φ9.52	Φ15.9

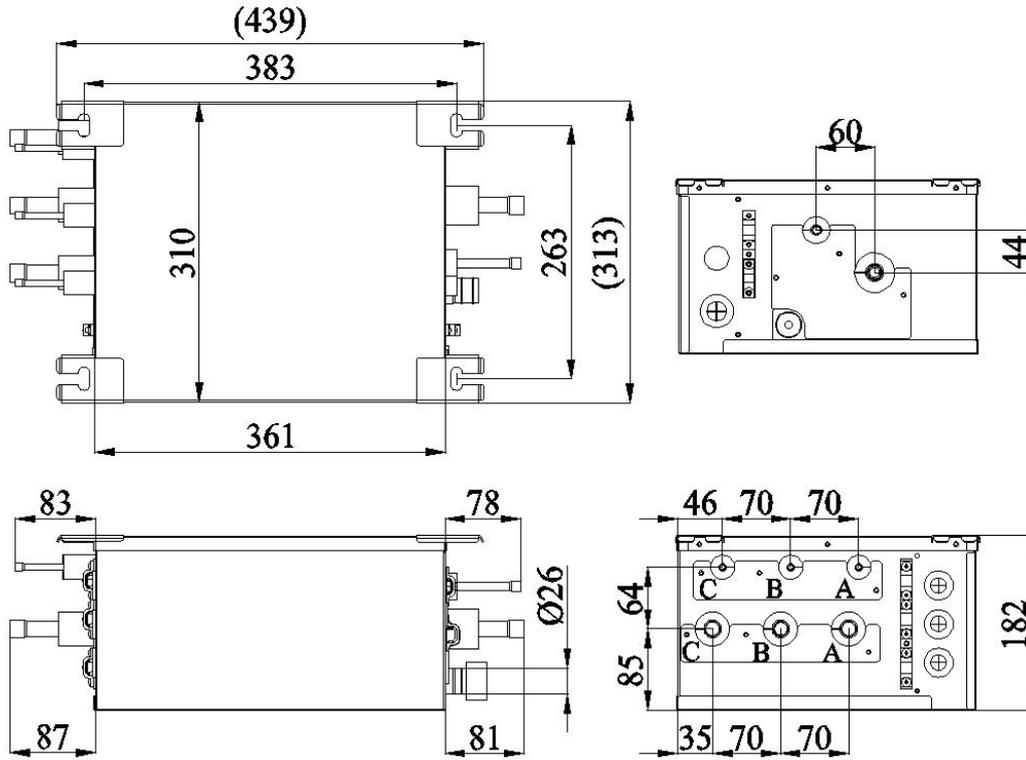
② Installation and service space



NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

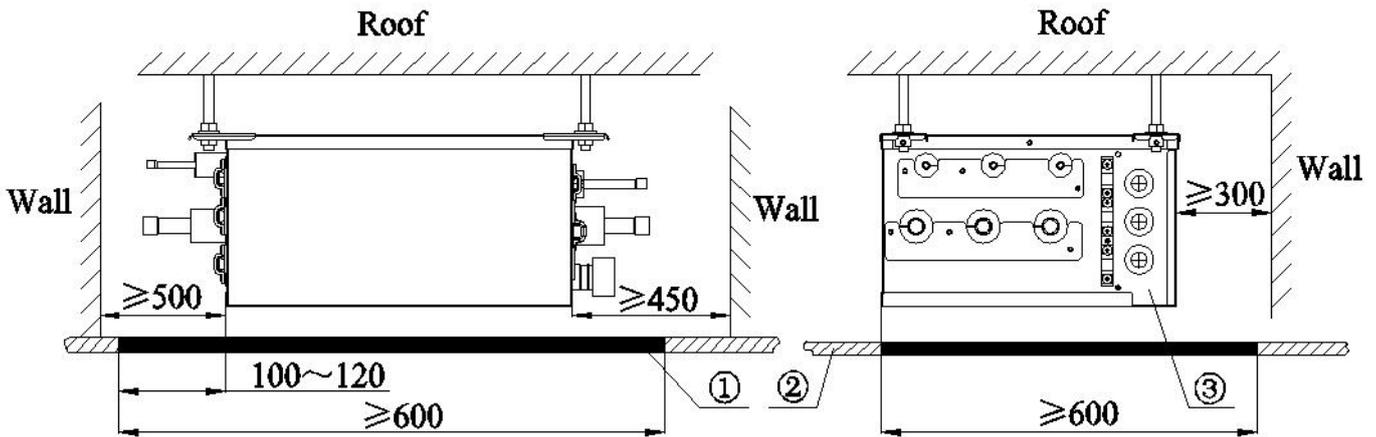
11.3.4 FXA3B-K

1) Outline dimension



Sorts	Indoor unit side (mm)			Outdoor unit side (mm)
	Port A	Port B	Port C	
Liquid pipe	Φ6.5	Φ6.5	Φ6.5	Φ9.7
Gas liquid	Φ16.3	Φ16.3	Φ16.3	Φ19.3

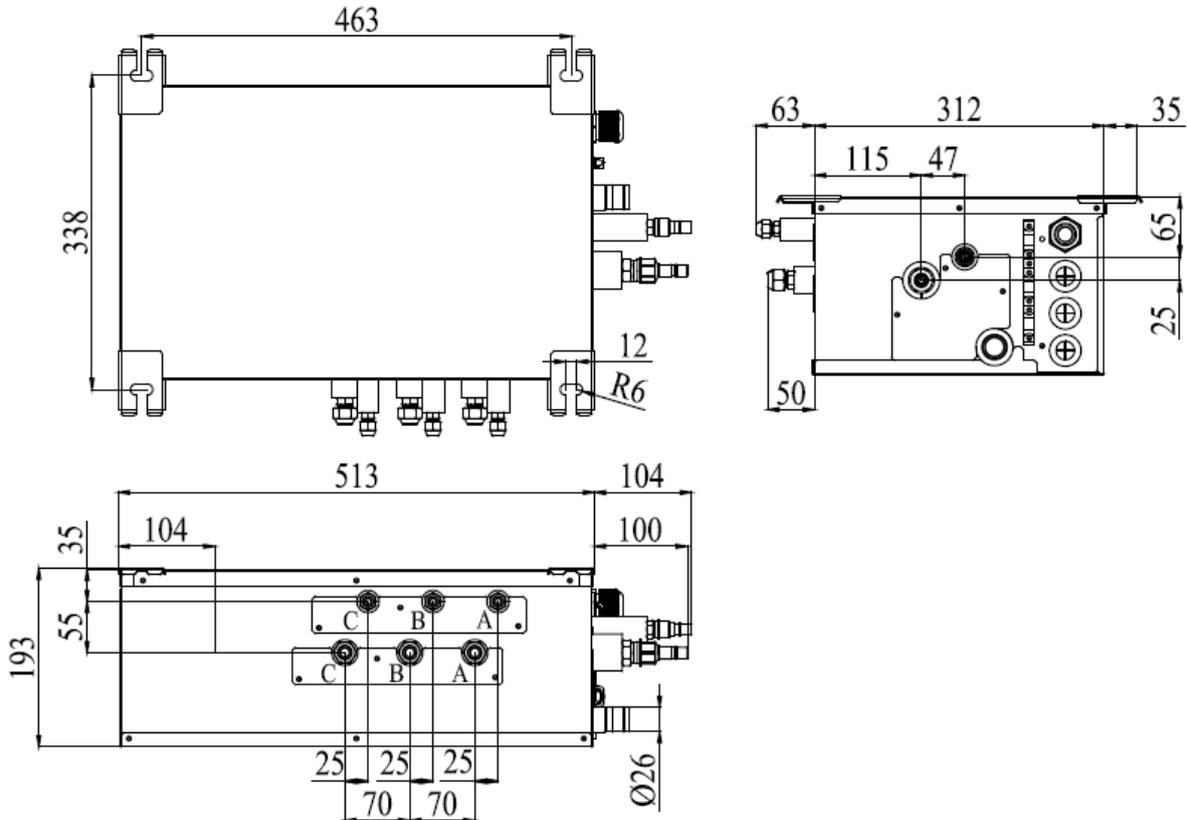
2) Installation and service space



NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

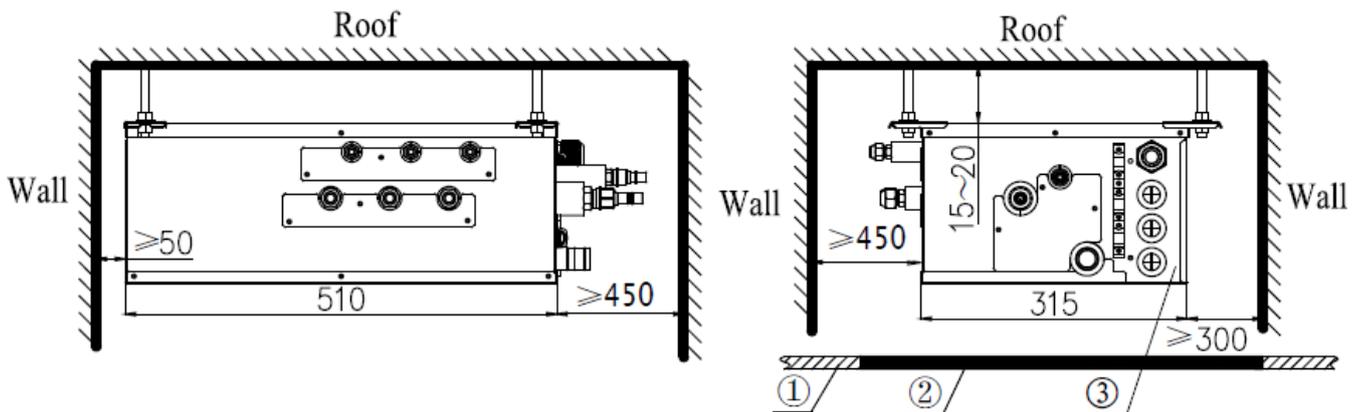
11.3.5 FXB3A-K

1) Outline dimension



Sorts	Indoor unit side (mm)			Outdoor unit side (mm)
	Port A	Port B	Port C	
Liquid pipe	$\text{Ø}6.35$	$\text{Ø}6.35$	$\text{Ø}6.35$	$\text{Ø}9.52$
Gas liquid	$\text{Ø}9.52$	$\text{Ø}9.52$	$\text{Ø}9.52$	$\text{Ø}15.9$

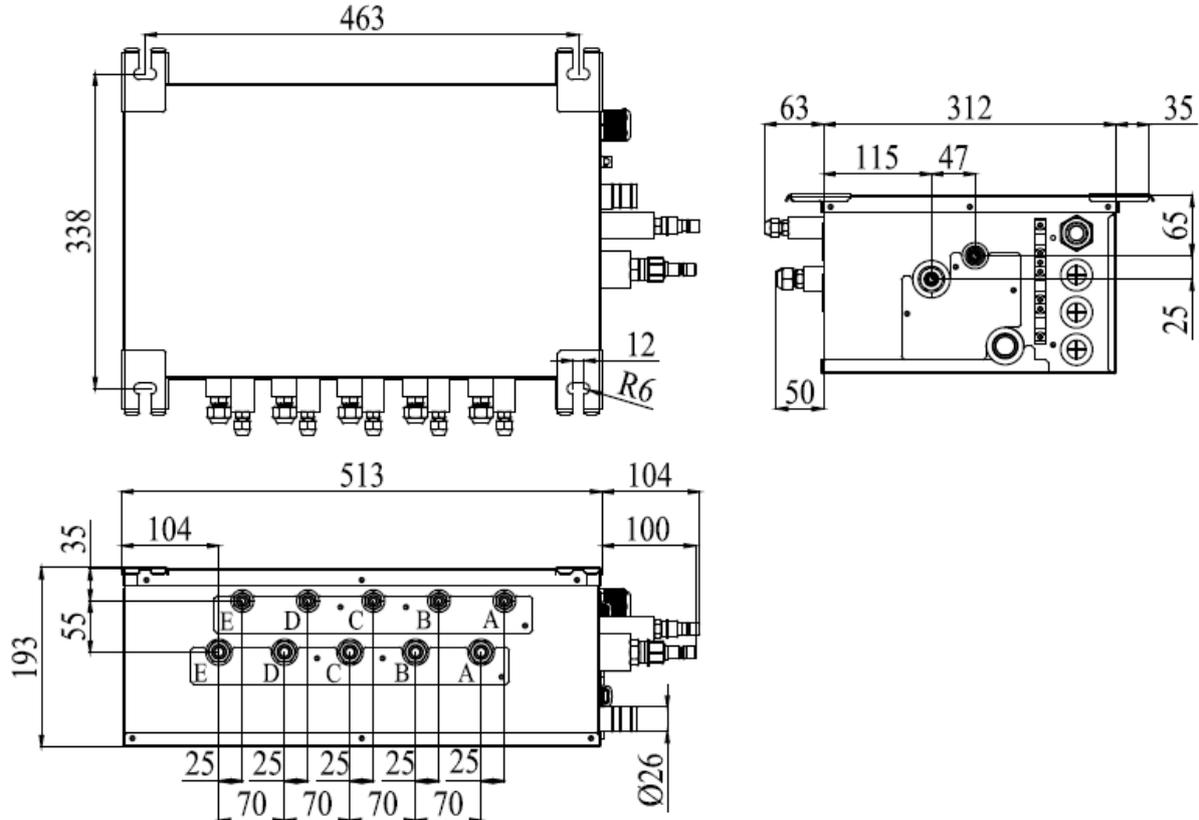
2) Installation and service space



NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

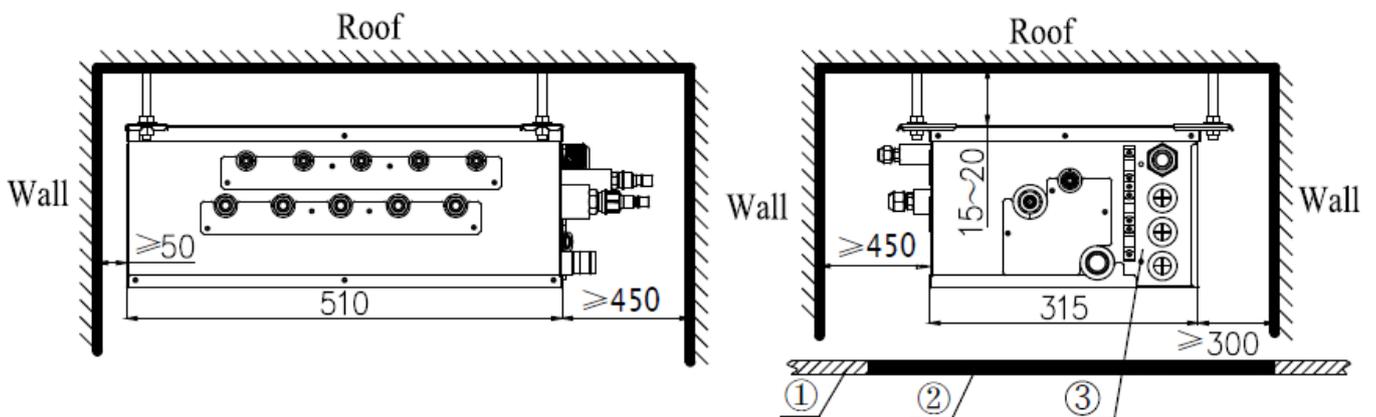
11.3.6 FXB5A-K

1) Outline dimension



Sorts	Indoor unit side (mm)					Outdoor unit side (mm)
	Port A	Port B	Port C	Port D	Port E	
Liquid pipe	Φ6.35	Φ6.35	Φ6.35	Φ6.35	Φ6.35	Φ9.52
Gas liquid	Φ9.52	Φ9.52	Φ9.52	Φ9.52	Φ9.52	Φ15.9

2) Installation and service space



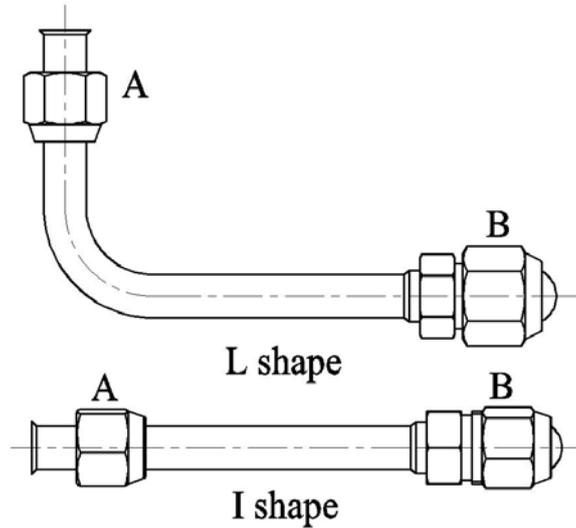
NO.	①	②	③
Name	Servicing space	Ceiling	Electrical box side

➤ 11.4 Piping adapter

If the piping connection size of BU module does not match with that of the outdoor unit and indoor units, it should prevail with the piping connection size of the outdoor unit and indoor units. Install the optional piping adapters to the BU module, so that the piping connection size of BU module can match with that of the outdoor unit and indoor units.

1) Piping adapter(Optional)

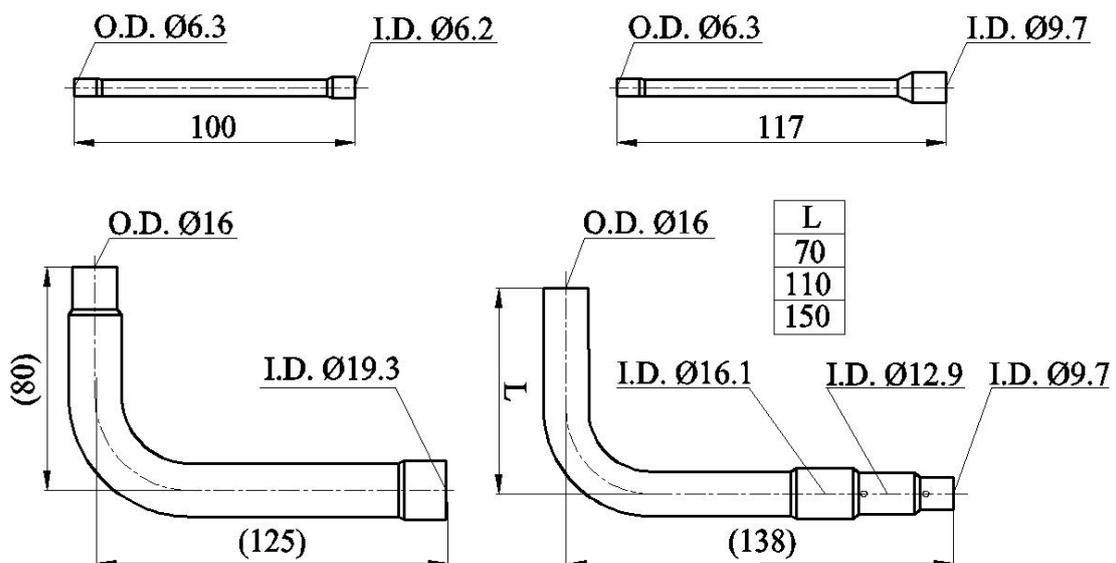
The following piping adapters are only use for FXA2A-K; FXA3A-K; FXB3A-K and FXB5A-K.



NO.	Name	Port A (mm)	Port B (mm)
1	$\Phi 15.9 \rightarrow \Phi 19.05$	$\Phi 15.9$	$\Phi 19.05$
2	$\Phi 9.52 \rightarrow \Phi 12.7$	$\Phi 9.52$	$\Phi 12.7$
3	$\Phi 9.52 \rightarrow \Phi 15.9$	$\Phi 9.52$	$\Phi 15.9$
4	$\Phi 6.35 \rightarrow \Phi 9.52$	$\Phi 6.35$	$\Phi 9.52$

2) Piping adapter(Standard)

The following piping adapters are only use for FXA2B-K and FXA3B-K.

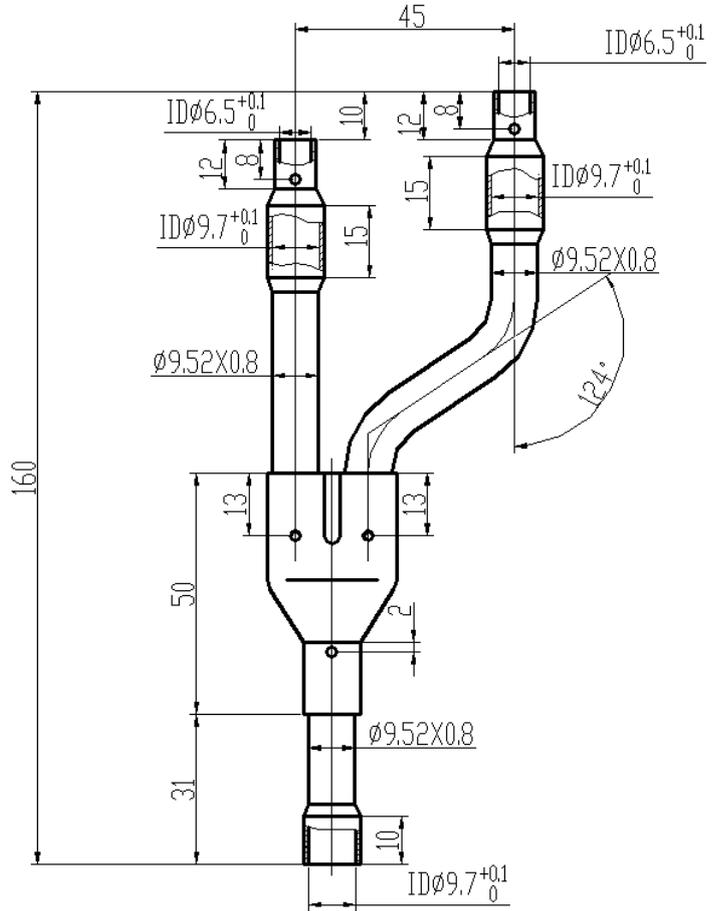
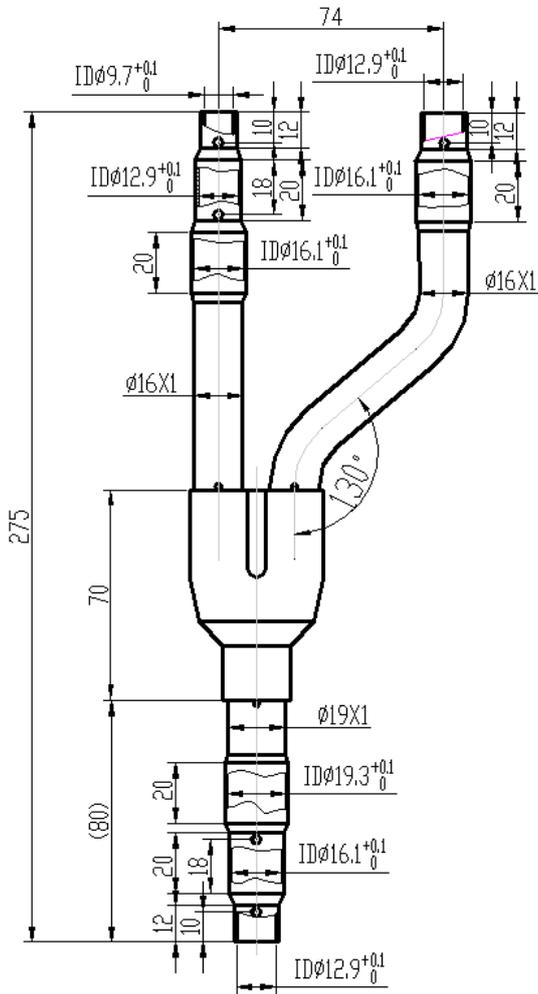


➤ 11.5 Branching pipe

FQ01A/A (LN01300110)

Gas side

Liquid side



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Add: West Jinji Rd, Qianshan Zhuhai, Guangdong, China 519070

Tel: (+86-756)8614883 Fax: (+86-756)8614998

Http://www.gree.com Email: gree@gree.com.cn

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