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Part 1 General Information

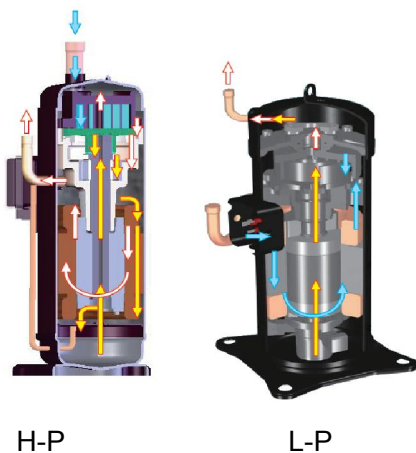
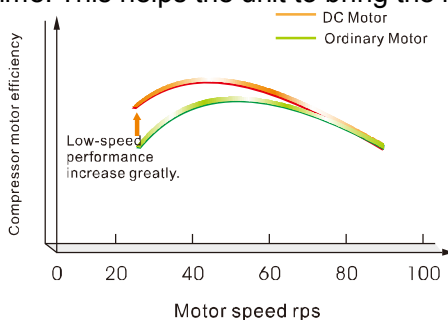
HAVC system has advantages such as intelligent and energy-saving operation, convenient design & installation, flexible & diversified placement, small occupation space in building, convenient usage, low operation cost, free of A/C room, non-water system and simple maintenance, which is popularized rapidly with the economic development in recent years. It is not only extensively applied in household, villa, small office, restaurant, beauty saloon, but also gradually applied in office building, complex building and large entertainment place where conventional HVAC system dominates. The unit uses R410A environment-friendly refrigerant, which is more efficient, more energy-saving, more environment-friendly and enjoys more and more promising market prospect.

ARV Characteristics

Energy Saving Technology

◇ **Innovation technique for full DC inverter compressor**

High-performance, low-sound DC inverter compressor operates at a faster frequency, reducing start-up time. This helps the unit to bring the room temperature up to the set level quickly.



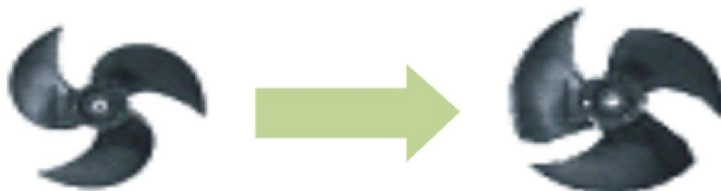
H-P: High pressure chamber compressor
L-P: Low pressure chamber compressor



- H-P compressor assures sufficient oil at low frequency condition
- L-P compressor with higher super-heating because the suction side refrigerant go through the motor and absorb heating, resulting in low enthalpy per unit refrigerant.
- H-P compressor adopt high pressure chamber as a damper to reduce the noise level.

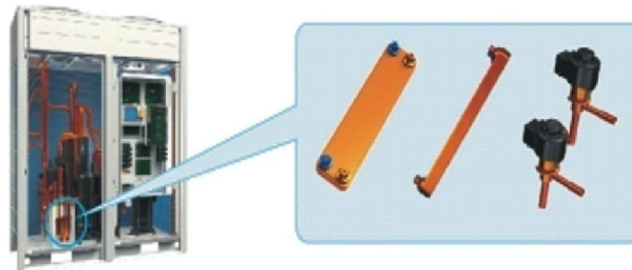
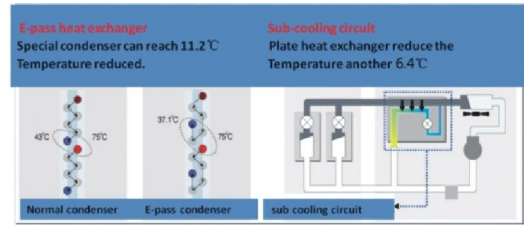
◇ **DC brushless fan motor**

DC brushless motor adjust the fan speed according to the stem pressure, enhance the efficiency by 45%. The Super Aero fan provide a large air volume and high static pressure , and at the same time it produces low level of noise.



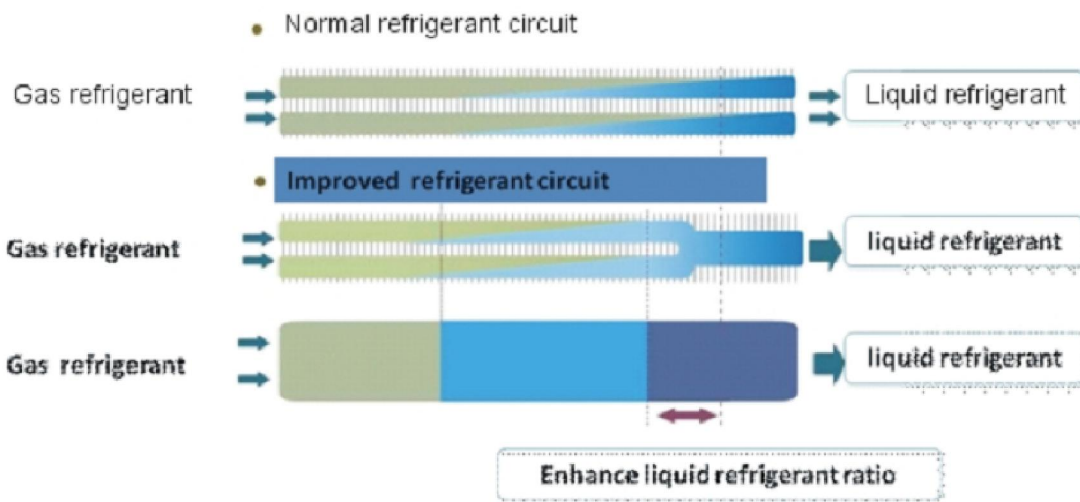
◇ **Sub-cooling technology**

- Prevent heat exchange between outlet and inlet
- Enhance degree of sub cooling
- Reduce the pressure resistance
- 17.6°C sub-cooling
- Enhance cooling capacity
- Extend longer pipe length



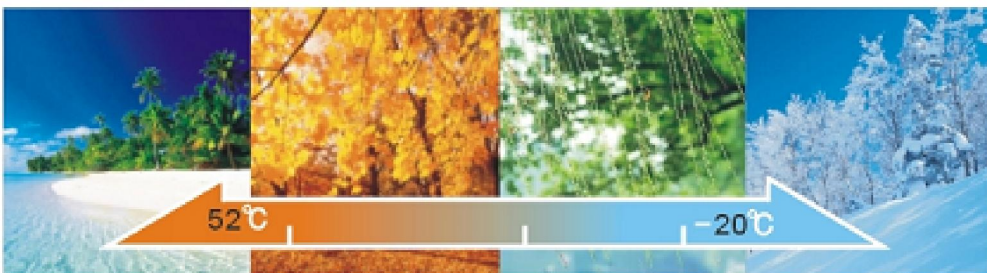
◇ **Improved refrigerant circuit**

Refrigerant circuit design increase the heat exchanging efficiency, and enhance the ratio of liquid refrigerant which flow to the evaporator.



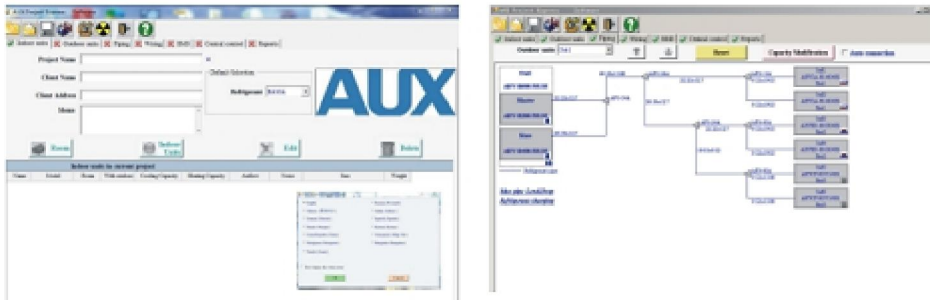
◇ **Wide operation range**

No matter when it is as high as 52°C in hot summer or -20°C in cold winter, the unit could operate perfectly, making you feel like spring all year around. Advanced system design and strict system matching and test.



◇ **Convenient piping design**

corresponding selection software can easily select the outdoor and indoor units, and automatically calculate the piping size, also the branch model. Finally it can output the report which list the material of the designed system.

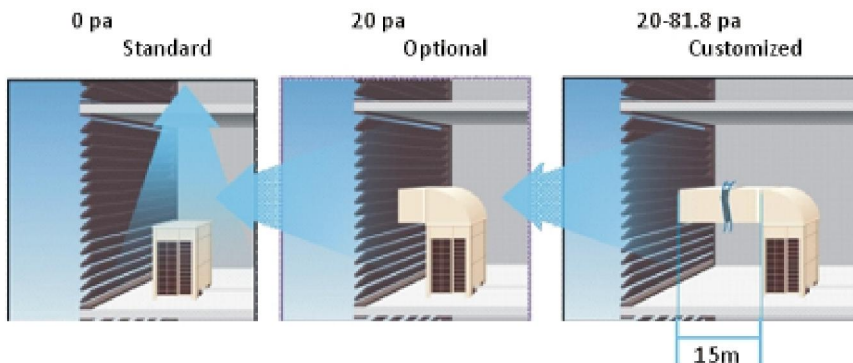


◇ **Non-polar communication**

Signal wire connect no polarity required, the installation of ARV-III is simple and reliable.

◇ **Changeable ESP**

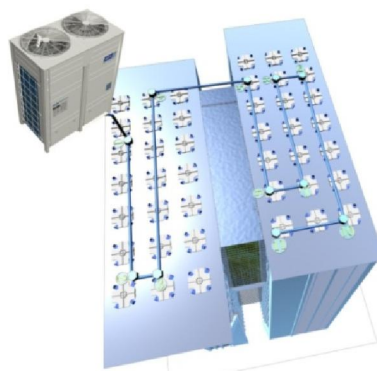
Advanced fan and high static pressure fan, provide outdoor unit up to 82Pa Static pressure. External static pressure by field setting to meet the requirements for installation on each floor, often requested for large-sized buildings



◇ **Auto address**

After System installation and turn to commissioning, through debugging buttons, the outdoor units distribute indoor system address automatically.

No need manually setting. More convenient and saving the installation time, system also check connected indoor unit quantity real time, automatic alarm when an error occurs.



◇ **Non- oil balance pipe**

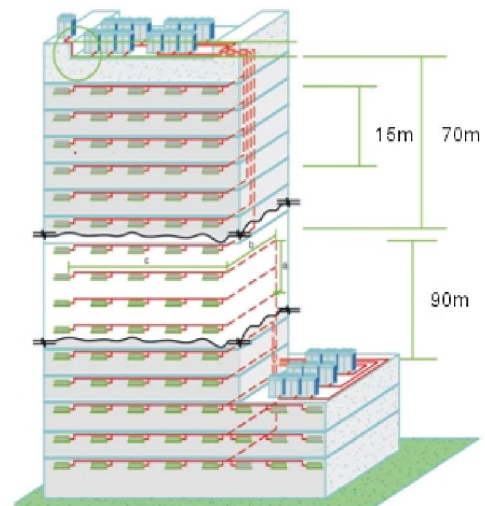
Patented oil return technique, with oil separator and gas separator, no need install oil balance pipe among modules, oil throwing technique, high efficiency oil separator, ensure no oil insufficient, reduce installation cost.



◇ **Extend pipe length and height**

Because of using DC inverter control technology and sub-cooling control circuit technology, it is possible to design a system with longer piping length and world-class elevation difference. The designer's working time is reduced and allowing more efficient design.

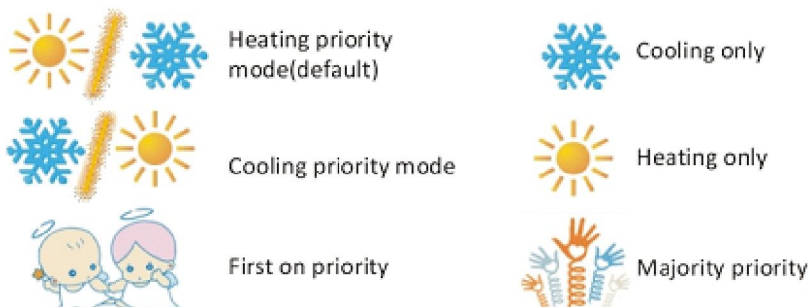
- * Total piping length-----1000m
- * Longest piping length after 1st branch-----40m
- * Level difference between ODU(upper)~IDU-----70m
- * Level difference between ODU(lower)~IDU-----90m
- * Level difference between IDU~IDU-----15m



Convenience And Comfortable

◇ **Different operation modes**

Add more operation mode for various applications. Through outdoor PCB switch easy change system operation mode.



Heating priority : System will work in heating mode only.Other mode demand will no response

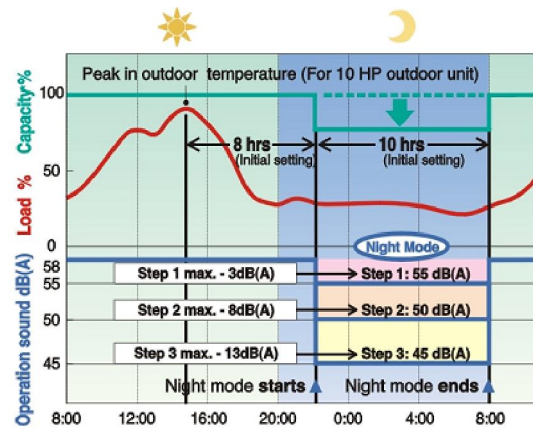
Cooling priority: System will work in cooling mode only.Other mode demand will no response

First on priority: The first start indoor unit operation mode will Decide system operation , others different demand will no response.

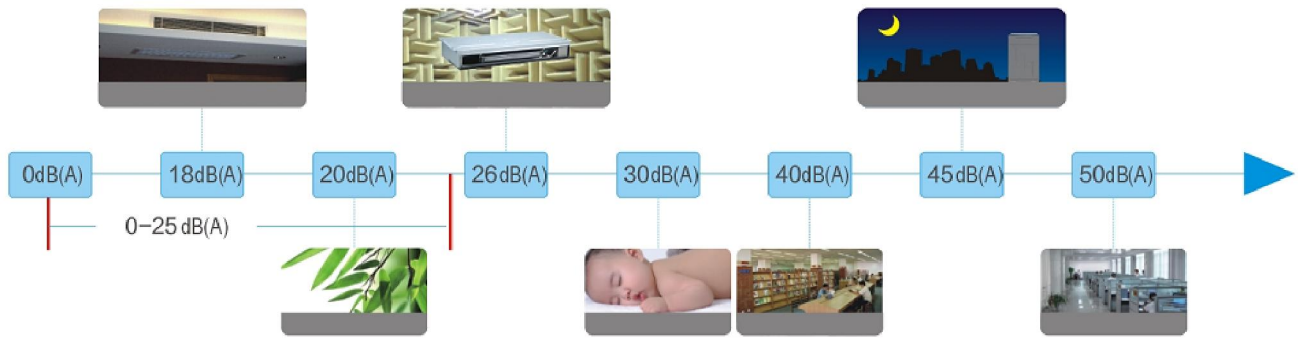
Majority priority: System operation mode is decided by majority demand.

◇ **Silent operation**

By using optimized fan blades and the computational Fluid Dynamics technology, the product is equipped with the night low-noise operation function. Provide more quiet operation during the night. Minimum operation noise only 45dB(A)



Night silent operation (Compare with normal operation, silent operation noise reduce 12dB(A))



◇ **Economic lock function**

Special designed economic locking function, through outdoorPCB switch setting. If work in economic lock, AC lowest work cooling temperature will keep in 26°C and highest heating temperature keep 20°C.

Save energy and keep provide comfortable, friend environment Economic locking mode is superior to heating priority, cooling priority, cooling only, heating only, first on priority and majority priority mode.

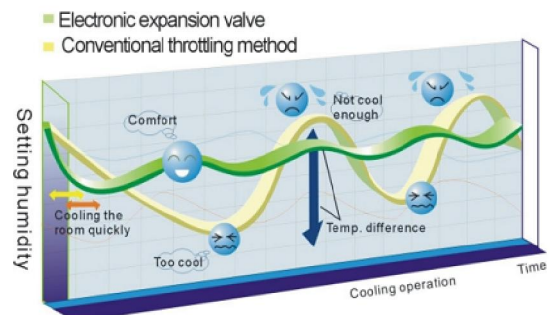


◇ **VIP design**

Special VIP control function, the VIP room will decide the whole system operation mode, prior to other mode or economic locking function, ensure the priority of the important room.

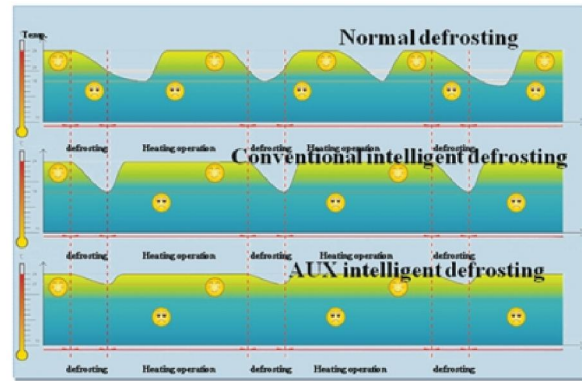
◇ **Precise temperature control**

The unit uses PI calculation principle to calculate the percentage of indoor capacity demand according to indoor temperature fluctuations, to perform real-time control to the compressor operating frequency and achieve precision control to the indoor temperature.



◇ **Intelligent defrosting**

AUX intelligent defrosting technique extend the heating operation and decrease the frequency of defrosting. Result in stable room temperature, offer comfort life.



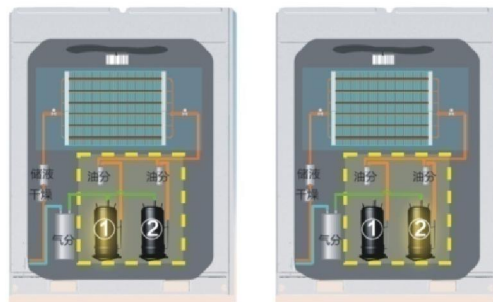
Reliable & Stable

◇ **Module and compressor sequence operation**

The operation priority sequence of the outdoor unit modules will be changed when start up, maximize the life span of each outdoor unit.



The operation sequence of the compressors in one module will be different when each start up, even the operation time and longer the life span.



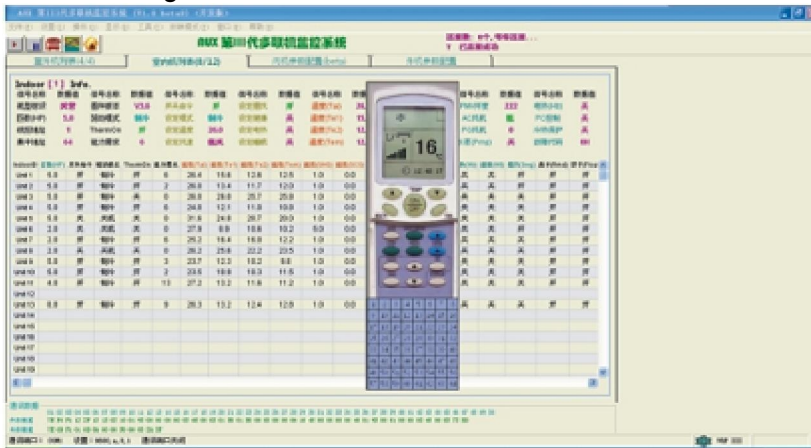
◇ **Black box function**



Intelligent Control

◇ Remote control

Self diagnosis software can be used as remote controller, it is recommended for commissioning. It can monitor the running state of the outdoor and indoor units real time. And display the malfunction, be convenient to do the commissioning and trouble shooting work.



◇ Net work control

AUX do have the independent central control software and the central control software with the billing function. Can be combined with the BMS adapter ,such as the Lonworks,BACnet and Modbus protocol adapter.

Control System of ARV ,Selection Software of ARV, Centralized Control Software of ARV, Monitoring Software of ARV, Billing System, BMS System








◇Flexible and Diversified Matching of Indoor and Outdoor Unit

Indoor unit series, specifications and models can be selected freely according to applicable place. Indoor unit series that are available include four-way cassette series, slim-duct series, low ESP duct series, middle ESP duct series, ceiling & floor series and wall-mounted series.



2 External Appearance

Indoor units

Indoor unit series	Cassette	Ceiling & Floor	Low ESP Duct	Middle ESP Duct	High ESP Duct	Wall-mounted	HRV
Outline drawing of indoor unit							
Cooling capacity range of indoor unit (kW)	2.2		●			●	200
	2.8	●		●		●	300
	3.6	●		●		●	400
	4.5	●	●	●	●	●	500
	5.6	●	●	●	●	●	800
	7.1	●	●	●	●	●	1000
	8.0	●	●		●		1500
	9.0	●	●		●		2000
	10.0	●	●		●		2500
	11.2	●	●		●	●	3000
	12.5	●	●		●	●	4000
	14.0	●	●		●	●	5000
	15.0				●	●	200
	22.0					●	/
	28.0					●	/
45.0					●	/	
56.0					●	/	
							Fresh air volume (m ³ /h)

Outdoor Units

8, 10, 12 HP	14, 16, 18 HP
	
20, 22, 24, 26, 28, 30, 32 HP	34, 36, 38, 40, 42, 44, 46, 48 HP
	
50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72 HP	
	

3 Combinations of Outdoor Units

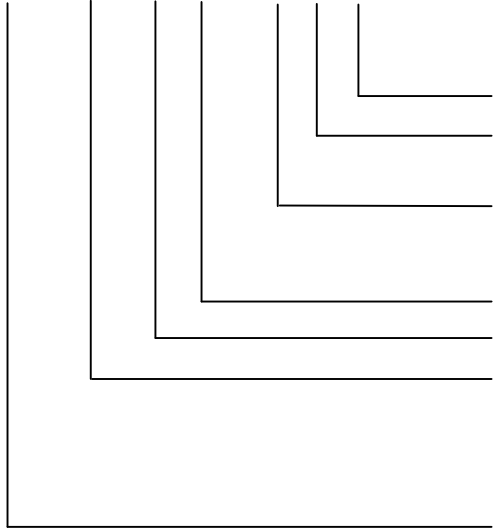
Capacity (HP)	Model	Recommend combination						Max. connection indoor units
		8(HP)	10(HP)	12(HP)	14(HP)	16(HP)	18(HP)	
8	ARV-H220/5R1MA	●						13
10	ARV-H280/5R1MA		●					16
12	ARV-H330/5R1MA			●				16
14	ARV-H400/5R1MA				●			16
16	ARV-H450/5R1MA					●		20
18	ARV-H500 /5R1MA	●	●					20
20	ARV-H560 /5R1MA		●●					24
22	ARV-H610/5R1MA		●	●				24
24	ARV-H680/5R1MA		●		●			28
26	ARV-H730/5R1MA		●			●		28
28	ARV-H780/5R1MA			●		●		28
30	ARV-H850/5R1MA				●	●		32
32	ARV-H900/5R1MA					●●		32
34	ARV-H960/5R1MA		●●		●			36
36	ARV-H1010/5R1MA		●●			●		36
38	ARV-H1080/5R1MA		●	●		●		36
40	ARV-H1130/5R1MA		●		●	●		42
42	ARV-H1180/5R1MA		●			●●		42
44	ARV-H1250/5R1MA			●		●●		42
46	ARV-H1300/5R1MA				●	●●		48
48	ARV-H1350/5R1MA					●●●		48
50	ARV-H1410/5R1MA	●	●			●●		54
52	ARV-H1460/5R1MA		●●			●●		54
54	ARV-H1510/5R1MA		●	●		●●		54
56	ARV-H1580/5R1MA		●		●	●●		58
58	ARV-H1630/5R1MA		●			●●●		58
60	ARV-H1700/5R1MA			●		●●●		58
62	ARV-H1750/5R1MA				●	●●●		64
64	ARV-H1800/5R1MA					●●●●		64
66	ARV-H1850/5R1MA					●●●	●	64
68	ARV-H1900/5R1MA					●●	●●	64
70	ARV-H1960/5R1MA					●	●●●	64
72	ARV-H2010/5R1MA						●●●●	64

**Notice: **

The system enables the connection of indoor units with a total capacity of between 50 % to 130% of that of the corresponding outdoor unit but when this capacity ratio exceeds 100% then the actual capacity of each indoor unit will decrease compared to rated capacity when all the units operated simultaneously.

4 Nomenclatures

ARV CA - H 028 / 4 R1 A



Design Series Code

Refrigerant Type:

R1: R410a.

Power Supply:

2:208-230V~, 1Ph, 60Hz

5:380-415V~, 3Ph, 50Hz

Cooling Capacity (×100W)

H: Cooling & Heating

Indoor Unit Type:

CA: Four-Way Cassette

LD: Low ESP Duct

HD: High ESP Duct

AUX VRF AC

R22 Omitted

4:220-240V~, 1Ph, 50Hz

9:208-230V~, 3Ph, 60Hz.

C:Cooling Only

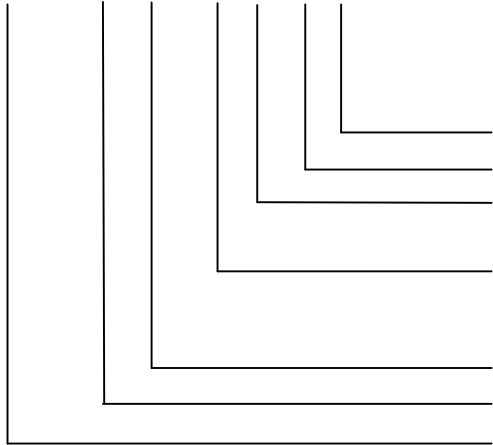
CF: Ceiling & Floor

MD: Mid ESP Duct

WM: Wall Mounted

Outdoor Unit

ARV - H 280 / 5 R1 M A



Design Series Code

M: Modular Outdoor Unit

Refrigerant Type:

R1: R410a.

Power Supply:

2:208-230V~, 1Ph, 60Hz

5:380-415V~, 3Ph, 50Hz

Cooling Capacity (×100W)

H: Cooling & Heating

AUX VRF AC

Non- Modular One Omitted

R22 Omitted

4:220-240V~, 1Ph, 50Hz

9:208-230V~, 3Ph, 60Hz.

C: Cooling Only

Part 2 Indoor unit

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Four-way cassette

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1. Features

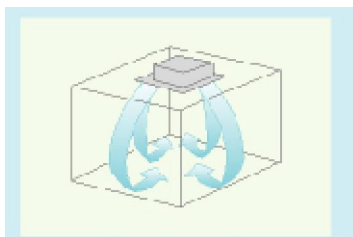
(1) Concealed design

—ceiling installation, room space saving, very suitable for family or office occasion.

(2) With Setting or Auto two operation modes

—Four-way blowing, strong circulating wind, multi wind speed

—the cooling or heating capacity can reach to each corner of the room



(3) One-step formed shell by mold

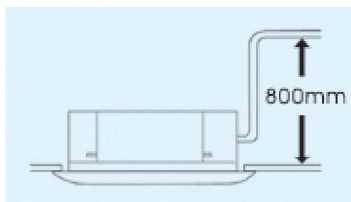
The appearance is elegant

(4) Special insulation design

—achieves high heat insulation efficiency, and no condensation water on shell

(5) Built-in drain pump

—Drain-head height is up to 0.8 meters, creating the ideal solution for perfect water drainage, also construction and installation is much easier and more convenient;



(6) Long term air filter

—Wash period is two times longer than normal filter, and maintenance is free

(7) 3D helix air blade ensures the air flow sufficiently

—reduces the unit thickness

—reduces the operation noise greatly



(8) Plastic drip tray adopts innovative foam combined with plastic technical

—The thickness of plastic reaches 1mm, avoid any leakage;

(9) 6 segments heat exchanger

—Increase exchanging area

—the efficiency of heat exchanging increased by 10%~15%



(10) Ingenious hook design

—the panel is convenient to install or remove

(11) Fresh air intake design

—Leading in fresh air to improve indoor air quality anytime



Fresh Air Intake



(12) All the units have low ambient temperature cooling function

—makes the unit can run normally on the condition that the ambient temperature falls down to -15°C;

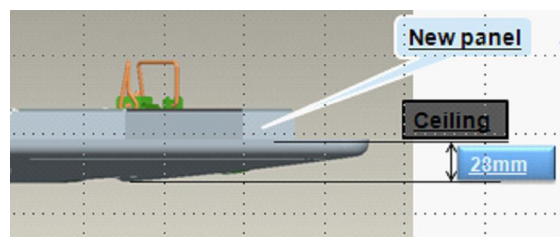
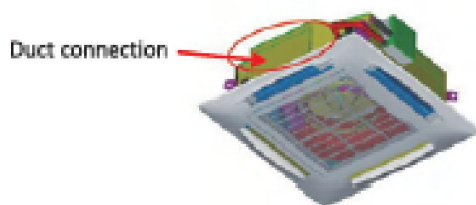
(13) Failure automatic detection

—The indicator will flash and the error code will display on the display board or remote controller, the failure code is easier to be found and make the malfunction checking easier. (C7 panel)



(14) Reserve spaces for air side-outlet

—Air duct can be connected from the four sides to nearby rooms



(15) Slimmer body

—The exposed height only has 18mm for small panel

(16) Two panels for choose: C5, C7



2. Specifications

Model	Indoor		ARVCA-H028/4R1A	ARVCA-H036/4R1A	ARVCA-H045/4R1A
	Panel		MB13	MB13	MB13
Factory Model	Indoor		ALCa-H09B4/R1DI CA	ALCa-H12B4/R1DI CA	ALCa-H16B4/R1DI CA
	Panel		MB13	MB13	MB13
Code	Indoor		16104001000006	16104002000010	16104003000010
	Panel		16108004000004	16108004000004	16108004000004
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	2.8	3.6	4.5
	Heating	kW	3.0	4.3	5.0
Fan Motor	Model		YDK30-6E1	YDK30-6E1	YDK30-6E1
	Brand		SINJUN	SINJUN	SINJUN
	Output Power	W	30	30	30
	Capacitor	uF	2.5	2.5	2.5
	Speed (Hi/Mi/Lo)	r/min	870/830/785	870/830/785	870/830/785
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b))	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.5	1.5	1.5
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	1160×164×25.4	1160×164×25.4	1160×164×25.4
	Heat Exchanging Area	m ²	4.34	4.34	5.76
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	620/496/434	620/496/434	850/680/595
	Noise Level(Hi/Mi/Lo)	dB(A)	38/35/32	38/35/32	39/36/33
	Net Dimension (W×D×H)	mm	615x615x263	615x615x263	615x615x263
	Packing Dimension (W×D×H)	mm	700x700x330	700x700x330	700x700x330
	Net Weight	Kg	20	20	20
	Gross Weight	Kg	25	25	25
Panel	Net Dimension (W×D×H)	mm	650x650x55	650x650x55	650x650x55
	Packing Dimension (W×D×H)	mm	710x710x80	710x710x80	710x710x80
	Net Weight	Kg	3	3	3
	Gross Weight	Kg	5	5	5
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	6.35
	Gas Side	mm	12.7	12.7	12.7
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24

Application Area	m ²	10~25	15~30	20~35
Stuffing Quantity	20/40/40H	Unit	140/299/345	140/299/345

Notes:

1. Cooling Capacity: Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m, level difference : 0 m.
2. Heating Capacity: Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value, measured in test room. During actual operation. These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model	Indoor		ARVCA-H056/4R1A	ARVCA-H071/4R1A	ARVCA-H080/4R1A
	Panel		MB13	MB12	MB12
Factory Model	Indoor		ALCa-H18B4/R1DI CA	ALCa-H24B4/R1DI CA	ALCa-H30A4/R1DI CA
	Panel		MB13	MB12	MB12
Code	Indoor		16104005000010	16104007000013	16104008000014
	Panel		16108004000004	16108002000007	16108002000007
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	5.6	7.1	8.0
	Heating	kW	6.3	8.0	10.0
Fan Motor	Model		YDK30-6E1	YDK30-6 Q	YDK35-6 Q
	Brand		SINJUN	HUATE	HUATE
	Output Power	W	30	30	35
	Capacitor	uF	2.5	3	4
	Speed (Hi/Mi/Lo)	r/min	870/830/785	500/400/320	570/480/400
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.5	1.6	1.4
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	1160×164×25.4	2142×205×25.4	2142×205×25.4
	Heat Exchanging Area	m ²	5.76	10.02	10.02
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	850/680/595	1100/880/770	1500/1200/1050
	Noise Level(Hi/Mi/Lo)	dB(A)	39/36/33	40/37/33	41/38/35
	Net Dimension (W×D×H)	mm	615x615x263	835x835x240	835x835x240
	Packing Dimension (W×D×H)	mm	700x700x330	910x910x320	910x910x320
	Net Weight	Kg	20	27	27

	Gross Weight	Kg	25	34	34
Panel	Net Dimension (W×D×H)	mm	650x650x55	950x950x55	950x950x55
	Packing Dimension (W×D×H)	mm	710x710x80	1000x1000x100	1000x1000x100
	Net Weight	Kg	3	5	5
	Gross Weight	Kg	5	7	7
Refrigerant Pipe	Liquid Side	mm	6.35	9.52	9.52
	Gas Side	mm	12.7	15.88	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	25~45	30~50	35~55
Stuffing Quantity	20/40/40H	Unit	140/299/345	77/164/175	77/164/175

Notes:

1. Cooling Capacity: Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m, level difference: 0 m.
2. Heating Capacity: Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m, level difference: 0 m.
3. Anechoic chamber conversion value, measured in test room. During actual operation. These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model	Indoor		ARVCA-H090/4R1A	ARVCA-H100/4R1A	ARVCA-H112/4R1A
	Panel		MB12	MB12	MB12
Factory Model	Indoor		ALCa-H30B4/R1DIC A	ALCa-H36A4/R1DIC A	ALCa-H36B4/R1DIC A
	Panel		MB12	MB12	MB12
Code	Indoor		16104009000010	16104010000009	16104011000012
	Panel		16108002000007	16108002000007	16108002000007
Power Supply		V~,Hz,P h	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	9.0	10.0	11.2
	Heating	kW	11.0	12.0	12.8
Fan Motor	Model		YDK45-6 Q	YDK45-6 Q	YDK80-6-50 Q
	Brand		HUATE	HUATE	HUATE
	Output Power	W	45	45	80
	Capacitor	uF	4	4	6
	Speed (Hi/Mi/Lo)	r/min	650/520/450	650/520/450	685/540/450
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7

	Fin Pitch	mm	1.4	1.4	1.4
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	2142×205×25.4	2142×205×25.4	2142×205×25.4
	Heat Exchanging Area	m ²	10.02	12.76	15.60
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	1500/1200/1050	1500/1200/1050	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	41/38/35	41/38/35	41/38/35
	Net Dimension (W×D×H)	mm	835x835x240	835x835x240	835x835x280
	Packing Dimension (W×D×H)	mm	910x910x320	910x910x320	910x910x360
	Net Weight	Kg	27	27	30
	Gross Weight	Kg	34	34	37
Panel	Net Dimension (W×D×H)	mm	950x950x55	950x950x55	950x950x55
	Packing Dimension (W×D×H)	mm	1000x1000x100	1000x1000x100	1000x1000x100
	Net Weight	Kg	5	5	5
	Gross Weight	Kg	7	7	7
Refrigerant Pipe	Liquid Side	mm	9.52	9.52	9.52
	Gas Side	mm	15.88	15.88	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		°C	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		°C	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	40~60	45~65	50~75
Stuffing Quantity	20/40/40H	Unit	77/164/175	77/164/175	77/164/175

Notes:

1. Cooling Capacity: Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m, level difference : 0 m.
2. Heating Capacity: Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value, measured in test room. During actual operation. These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

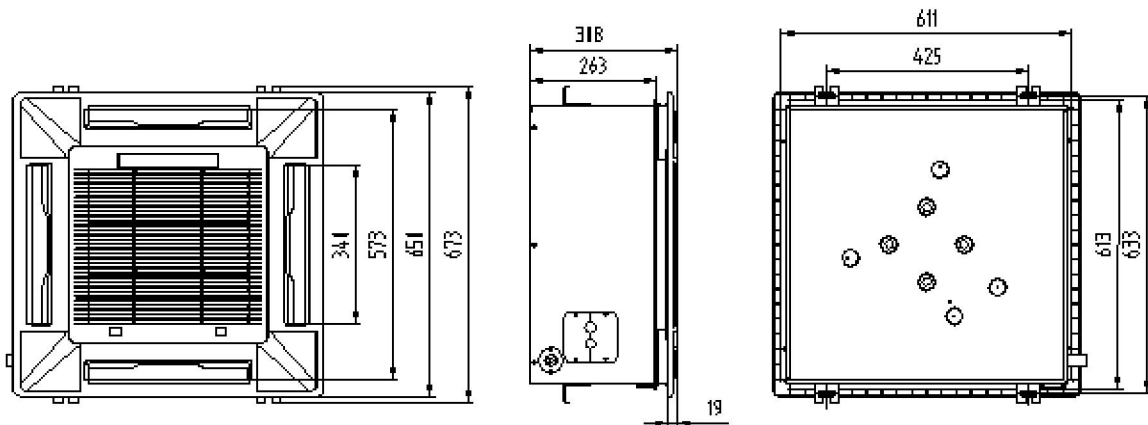
Model	Indoor		ARVCA-H125/4R1A	ARVCA-H140/4R1A
	Panel		MB12	MB12
Factory Model	Indoor		ALCa-H42A4/R1DICA	ALCa-H48A4/R1DICA
	Panel		MB12	MB12
Code	Indoor		16104012000010	16104013000010
	Panel		16108002000007	16108002000007
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	12.5	14.0
	Heating	kW	13.3	15.0
Fan Motor	Model		YDK80-6-50 Q	YDK80-6-50 Q
	Brand		HUATE	HUATE
	Output Power	W	80	80
	Capacitor	uF	6	6
	Speed (Hi/Mi/Lo)	r/min	685/540/450	685/540/450
Coil	Number Of Row		2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.4	1.4
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	2142×246×25.4	2142×246×25.4
	Heat Exchanging Area	m ²	15.60	15.60
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	1800/1440/1260	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	41/38/35	41/38/35
	Net Dimension (W×D×H)	mm	835x835x280	835x835x280
	Packing Dimension (W×D×H)	mm	910x910x360	910x910x360
	Net Weight	Kg	30	30
	Gross Weight	Kg	37	37
Panel	Net Dimension (W×D×H)	mm	950x950x55	950x950x55
	Packing Dimension (W×D×H)	mm	1000x1000x100	1000x1000x100
	Net Weight	Kg	5	5
	Gross Weight	Kg	7	7
Refrigerant Pipe	Liquid Side	mm	9.52	9.52
	Gas Side	mm	19.05	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		°C	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		°C	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	50~90	60~100
Stuffing Quantity	20/40/40H	Unit	77/164/175	77/164/175

Notes:

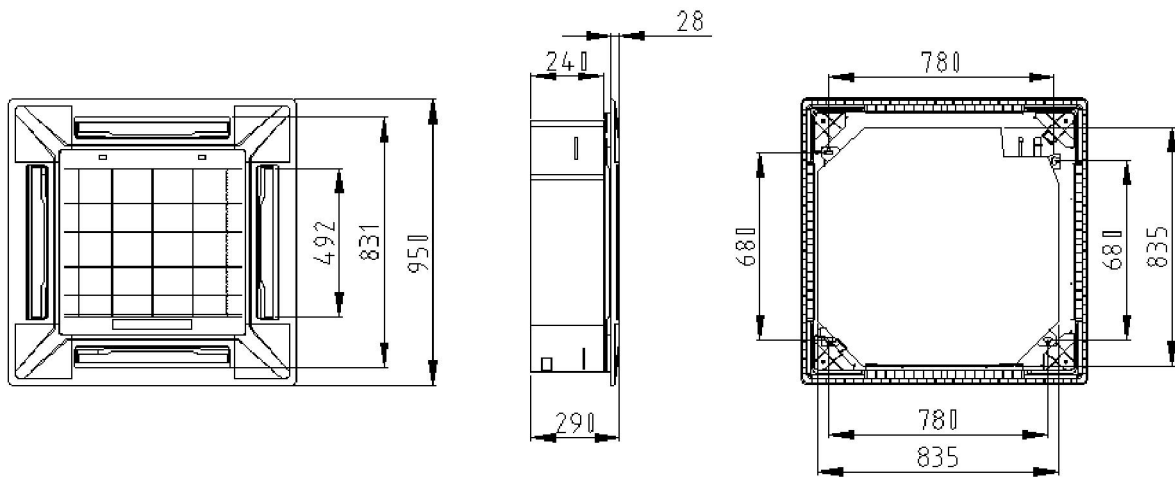
1. Cooling Capacity: Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m, level difference: 0 m.
2. Heating Capacity: Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m, level difference: 0 m.
3. Anechoic chamber conversion value, measured in test room. During actual operation. These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

3. Dimensions

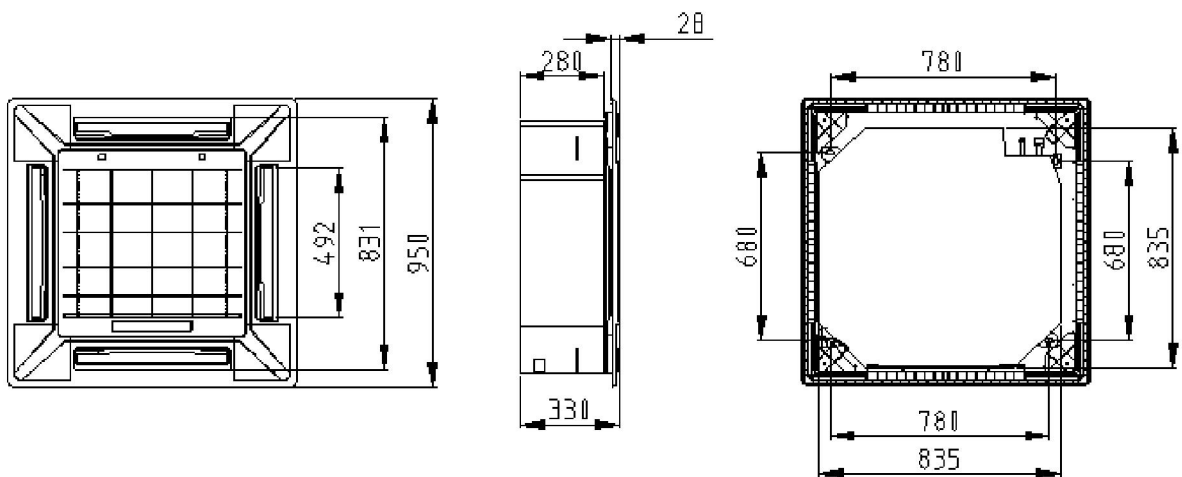
ARVCA-H028/4R1A; ARVCA-H036/4R1A; ARVCA-H045/4R1A; ARVCA-H056/4R1A



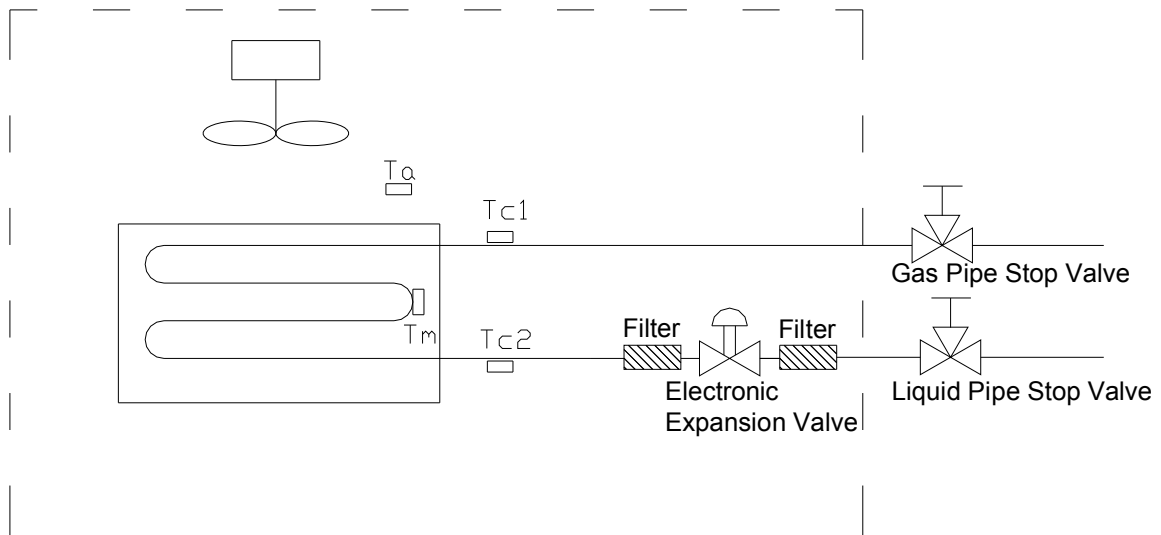
ARVCA-H071/4R1A; ARVCA-H080/4R1A; ARVCA-H090/4R1A; ARVCA-H100/4R1A;
ARVCA-H112/4R1A



ARVCA-H125/4R1A; ARVCA-H140/4R1A



4. Piping Diagrams

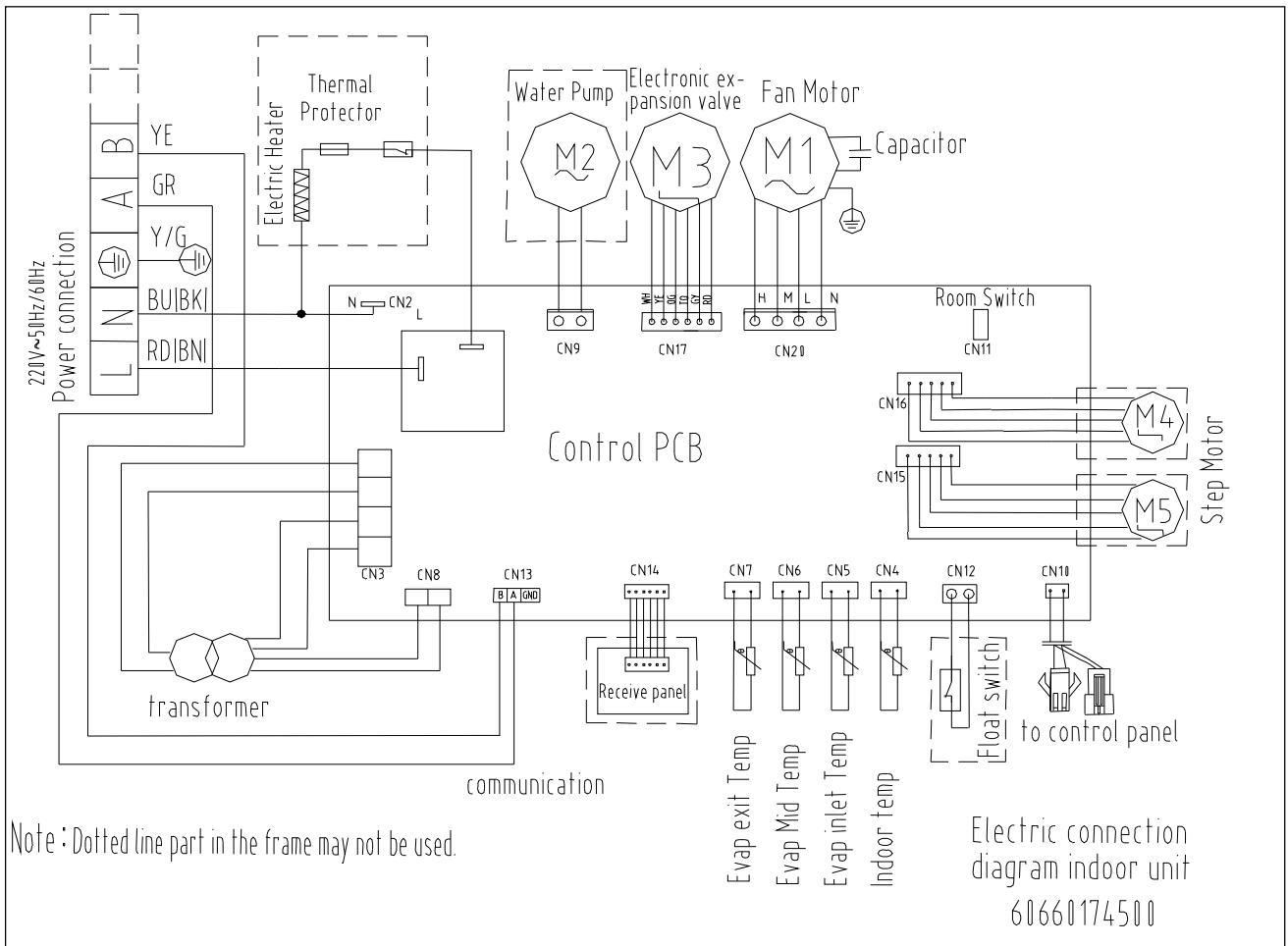


Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
ARVCA-H028/036/045/056/4R1A	Φ12.7	Φ6.35
ARVCA-H071/080/090/100/4R1A	Φ15.88	Φ9.52
ARVCA-H112/125/140/4R1A	Φ19.05	Φ9.52

5. Wiring Diagram



6. Electric characteristics

Model	Indoor Unit				Power supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
ARVCA-H028/4R1A	50	220-240	198	264	0.34	10	0.03	0.27
ARVCA-H036/4R1A	50	220-240	198	264	0.34	10	0.03	0.27
ARVCA-H045/4R1A	50	220-240	198	264	0.34	10	0.03	0.27
ARVCA-H056/4R1A	50	220-240	198	264	0.34	10	0.03	0.27
ARVCA-H071/4R1A	50	220-240	198	264	0.35	10	0.03	0.28
ARVCA-H080/4R1A	50	220-240	198	264	0.4	10	0.035	0.32
ARVCA-H090/4R1A	50	220-240	198	264	0.53	16	0.045	0.42
ARVCA-H100/4R1A	50	220-240	198	264	0.53	16	0.045	0.42
ARVCA-H112/4R1A	50	220-240	198	264	1.16	16	0.08	0.93
ARVCA-H125/4R1A	50	220-240	198	264	1.16	16	0.08	0.93
ARVCA-H140/4R1A	50	220-240	198	264	1.16	16	0.08	0.93

Symbols:

MCA: Min. Circuit Amps.(A)

MFA: Max. Circuit Breaker Amps.

kW : Fan Motor Rated Output(kW)

FLA: Full Load Amps.(A)

IFM:Indoor Fan Motor

Note:

1. Min. and Max. Voltage :Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed rang limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. $MCA = 1.25 \times FLA$
4. Select wire size based on the MCA.

7. Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.1	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1	1.06	1.13
	Power	0.96	0.97	1	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.9	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.8	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

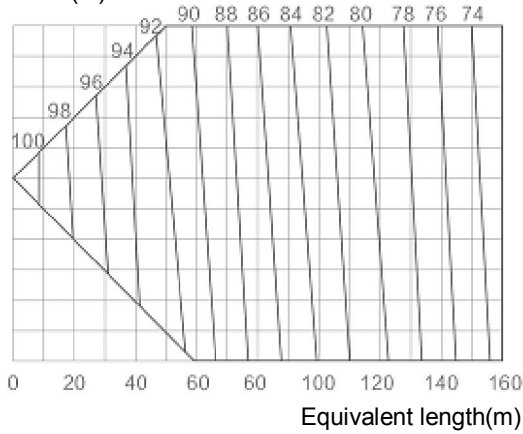
Outdoor ambient temperature of dry/wet bulb[°C]	capacity/power correction	Indoor back temperature of dry bulb [°C]		
	coefficient	15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.7
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1	0.96
	Power	0.94	1	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17

15-24	Heating capacity	0.85 – 1.05 of nominal
	Power	0.80 – 1.20 of nominal

Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube

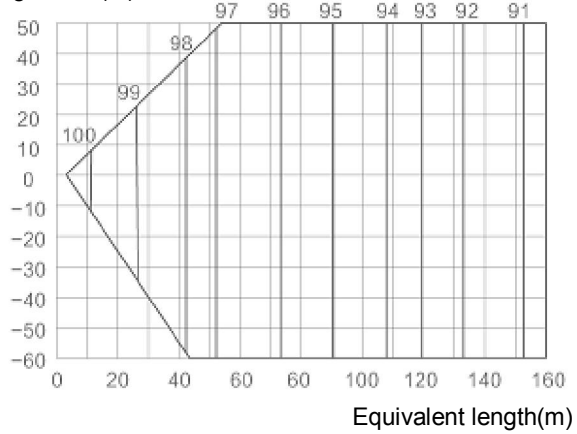
(Cooling)change ratio basic capacity%

High head(m)



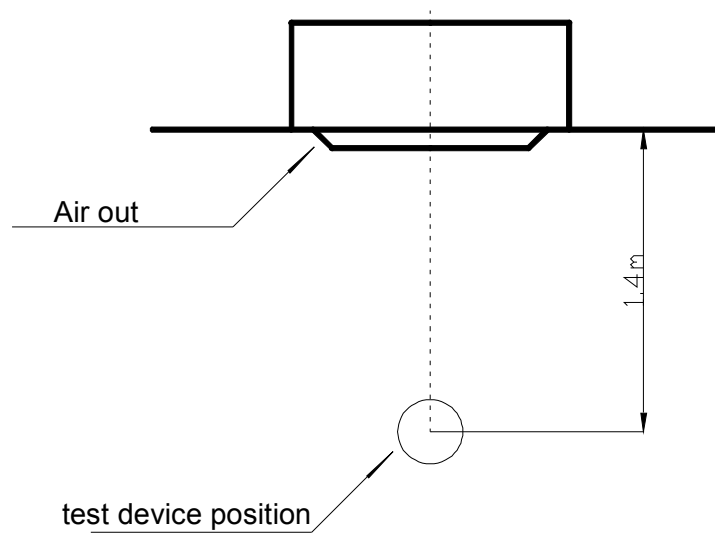
(Heating)change ratio basic capacity%

High head(m)



Positive side of high head means installation height of outdoor unit should be higher than indoor unit;
 negative side of high head means installation height of outdoor unit should be lower than indoor unit;
 (change ratio of basic capacity)

8. Sound levels



Model	220~240V 50Hz		
	H	M	L
ARVCA-H028/4R1A	38	35	32
ARVCA-H036/4R1A	38	35	32
ARVCA-H045/4R1A	39	36	33
ARVCA-H056/4R1A	39	36	33
ARVCA-H071/4R1A	40	37	33
ARVCA-H080/4R1A	41	38	35
ARVCA-H090/4R1A	41	38	35
ARVCA-H100/4R1A	41	38	35
ARVCA-H112/4R1A	41	38	35
ARVCA-H125/4R1A	41	38	35
ARVCA-H140/4R1A	41	38	35

Note:

1. The operating condition are assumed to be a standard (JIS Condition).
2. These operating values were obtained in a dead room (conversion values). Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

9. Installation

9.1 Preparation and Tools before Installation

◇ Please buy the following parts from the market before installation

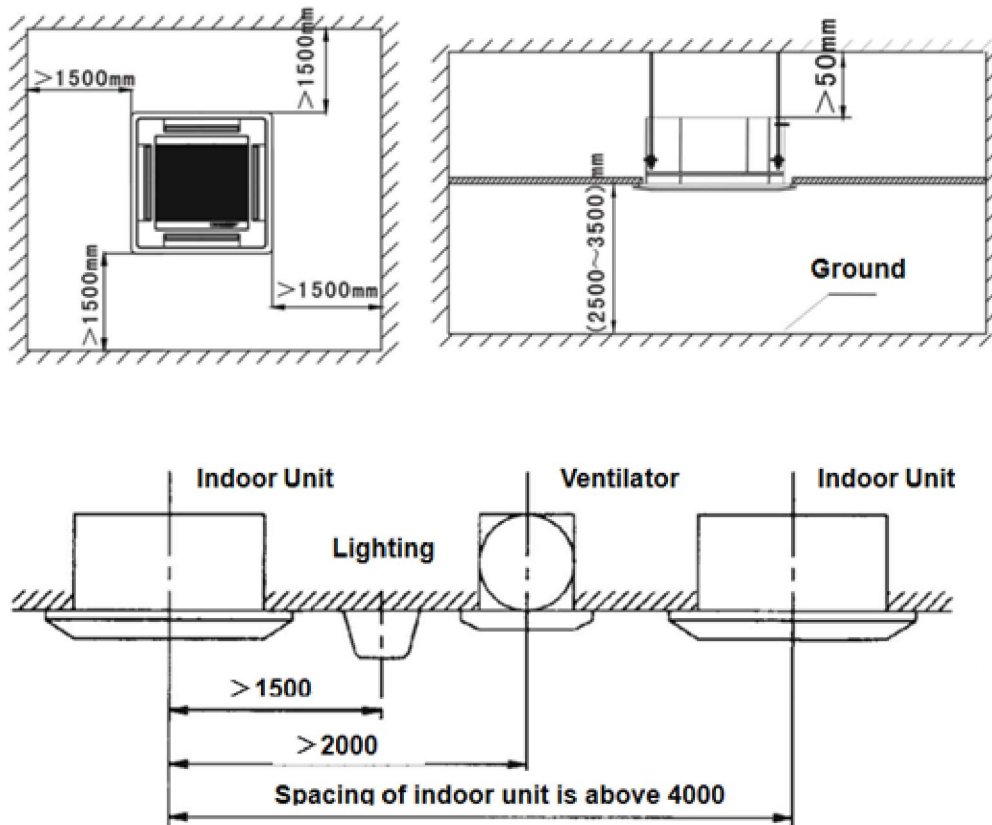
Hanging bolt (4 per unit)
PVC drain pipe
Some cable ties
Connecting copper tube
Branch manifold (choose according to actual installation situation)
Thermal insulation materials for connecting copper tube (PEF foaming materials with thickness above 8mm)
Power cord and power connection line (it's required to wire according to requirement for line diameter in wiring diagram)

Note:

Due to the difference between the characteristics of R410A and R22 refrigerant, it's necessary to use dedicated tools of R410A for some tools during installation.

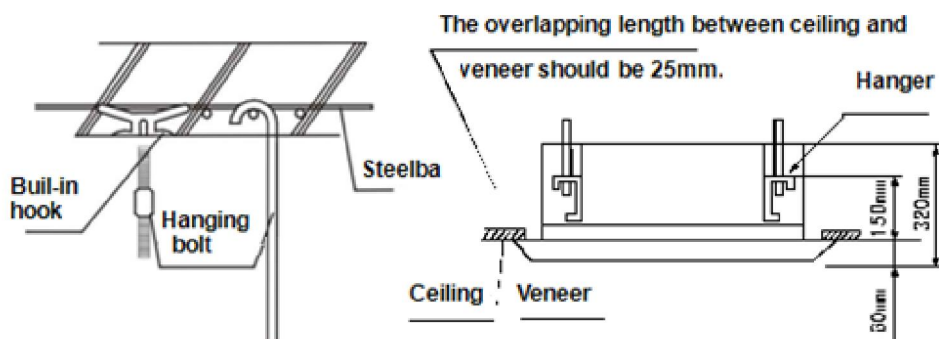
- ◇ The selected position hanging indoor unit should be able to support the weight of unit without noise and additional vibration. It's necessary to reinforce before installation if reinforcement is required;
- ◇ The space of selected ceiling should be enough for holding indoor unit;
- ◇ The installation location should be easy for drainage;
- ◇ It shouldn't be installed in places (such as kitchen, laundry and mechanical workshop, etc.) of heat source, vapor source and more oil mist to prevent degradation of heat exchanger, electric shock and unit damage caused by plastic parts corrosion;
- ◇ Install in the place at least one meter away from TV and radio to prevent interfering TV and radio.
- ◇ There is no barrier blocking ventilation nearby and cold air should be able to evenly distribute to each indoor corner;
- ◇ There should be certain spacing between the surrounding and barrier of indoor unit to ease maintenance;
- ◇ The unit uses R410A environment-friendly refrigerant that is a kind of nonflammable and nontoxic gas. Since the refrigerant has larger specific gravity than air, it will suffuse on the ground in case of leakage. Therefore, the unit must be well ventilated if installed in closed room to prevent suffocation. In case of refrigerant leakage, immediately stop unit operation, timely contact maintenance personnel and avoid any open fire on site because refrigerant will decompose hazardous gas when exposed to open fire.

9.2 Space to be reserved between the Surrounding of Indoor Unit and Barrie

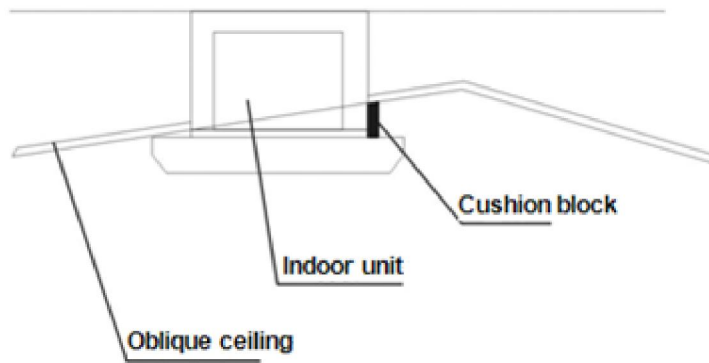


9.3 Hoisting of indoor unit

- ◇ Selection of hanging foundation: the foundation must be wooden frame and reinforced concrete structure, which is firm and reliable, able to stand a weight four times of the unit’s weight and stand a certain vibration for a long time.
- ◇ Fixing of hanging foundation: fix hanging bolt as shown in the diagram or fix it with iron bracket and wooden bracket.

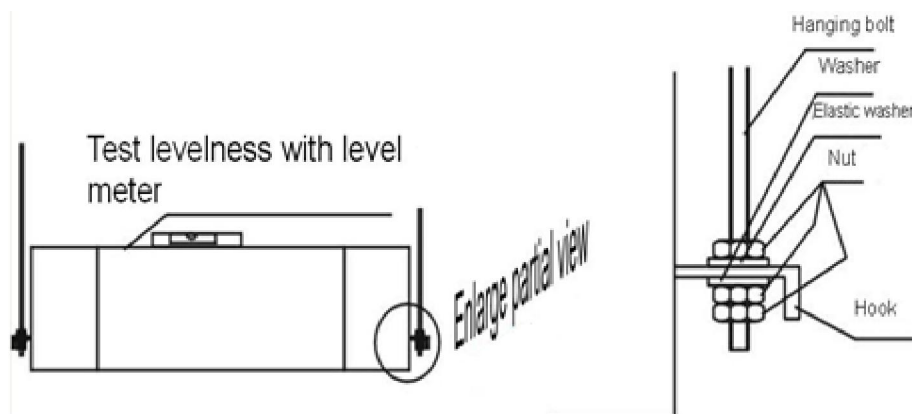


- ◇ If the unit body is installed on oblique ceiling, it’s necessary to put cushion block between ceiling and air outlet panel to ensure the unit body is installed on horizontal position.



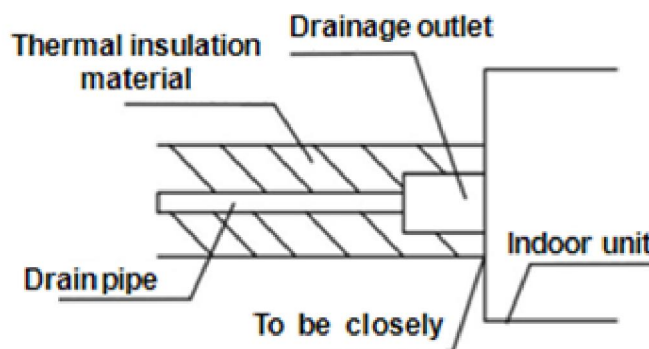
- ◇ Dual nuts should be adopted to fix the indoor unit under the ceiling.
- ◇ Adjust the relative position of hook on hanging bolt to keep the main unit horizontal in each direction. Check with level meter after installation to ensure horizontal indoor main unit and prevent possible failures such as water leakage and air leakage.
- ◇ Tighten nut to ensure tight contact among nut, washer and four mounting hooks without loose hanging;
- ◇ Ensure there is no loose positioning such as shaking of main unit after installation;
- ◇ Ensure rough alignment between the center of indoor main unit and the opening of ceiling;

9.4 Schematic Diagram of Hanging



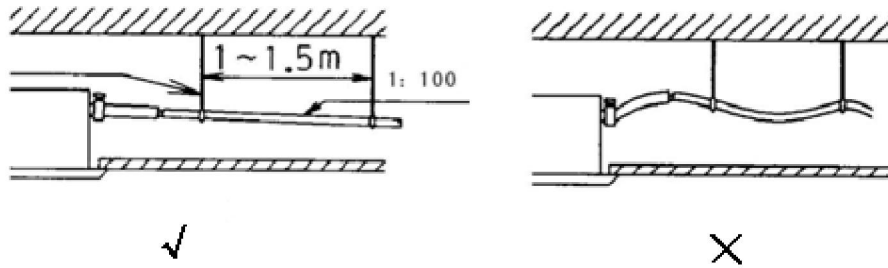
9.5 Installation of drain pipe

- ◇ Drain pipe must be wrapped with thermal insulation material as follows to prevent condensation or dripping.

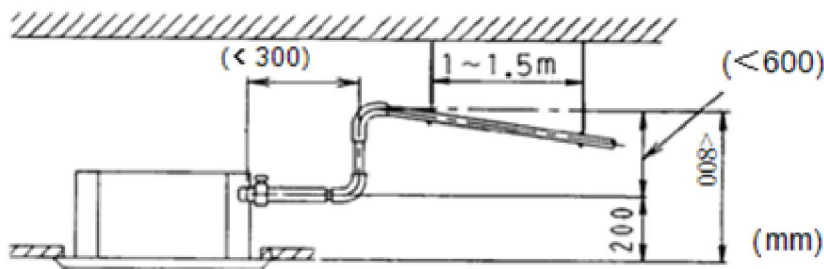


- ◇ Thermal insulation material should be rubber & plastic thermal insulation pipe with thickness above 8mm.

- ◇ Drain pipe should incline downwards with gradient of 1/50-1/100, which will subject to failure such as back flow or water leakage in case of up-and-down fluctuation or upward inclination.



- ◇ Although draining pump of unit has a lift of 1200mm, considering the protective shutdown of float switch will be caused due to the back flow of condensed water after shutdown, please arrange drain pipe according to the following diagram where possible.



- ◇ When install drain pipes for multiple units, it's necessary to install utility piping at 100mm under the drainage outlet of each unit as shown in the following diagram.

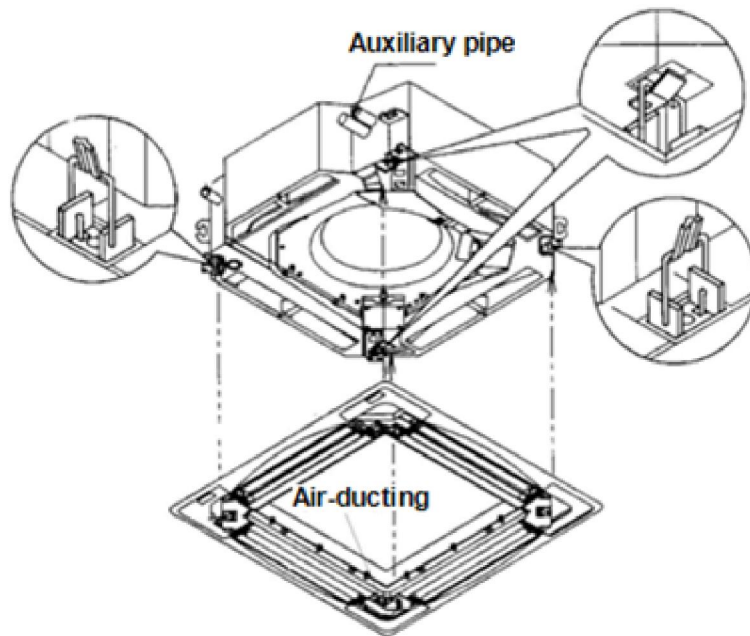


- ◇ After installation, conduct drainage test to determine if water correctly flows through pipeline and carefully observe the connection to ensure there is no leakage. If the unit is installed in new house, it's recommended to test before decorating ceiling. Conduct drainage test for the unit used for heating only.

9.6 Installation of Panel

- ◇ Installation of Panel:

Refer to the following diagram for MB06, buckle four hooks of panel on corresponding hooks of main unit and tighten adjusting bolt.



Note:

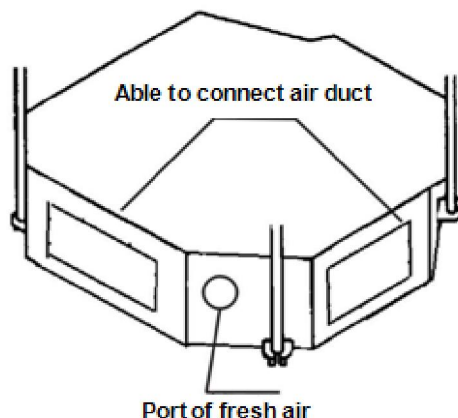
Please ensure the position of air-ducting motor of panel corresponds to the auxiliary pipe side of main unit

9.7 Connection of Air Duct and Ventilation of Fresh Air

Note:

- 1) It's allowed to connect air duct only under special installation environment and the length shouldn't be over five meters;
- 2) Please use air duct that can prevent condensation and absorb sound.
- 3) Wrap air duct and the connection between air duct and main unit for thermal insulation and sealing.

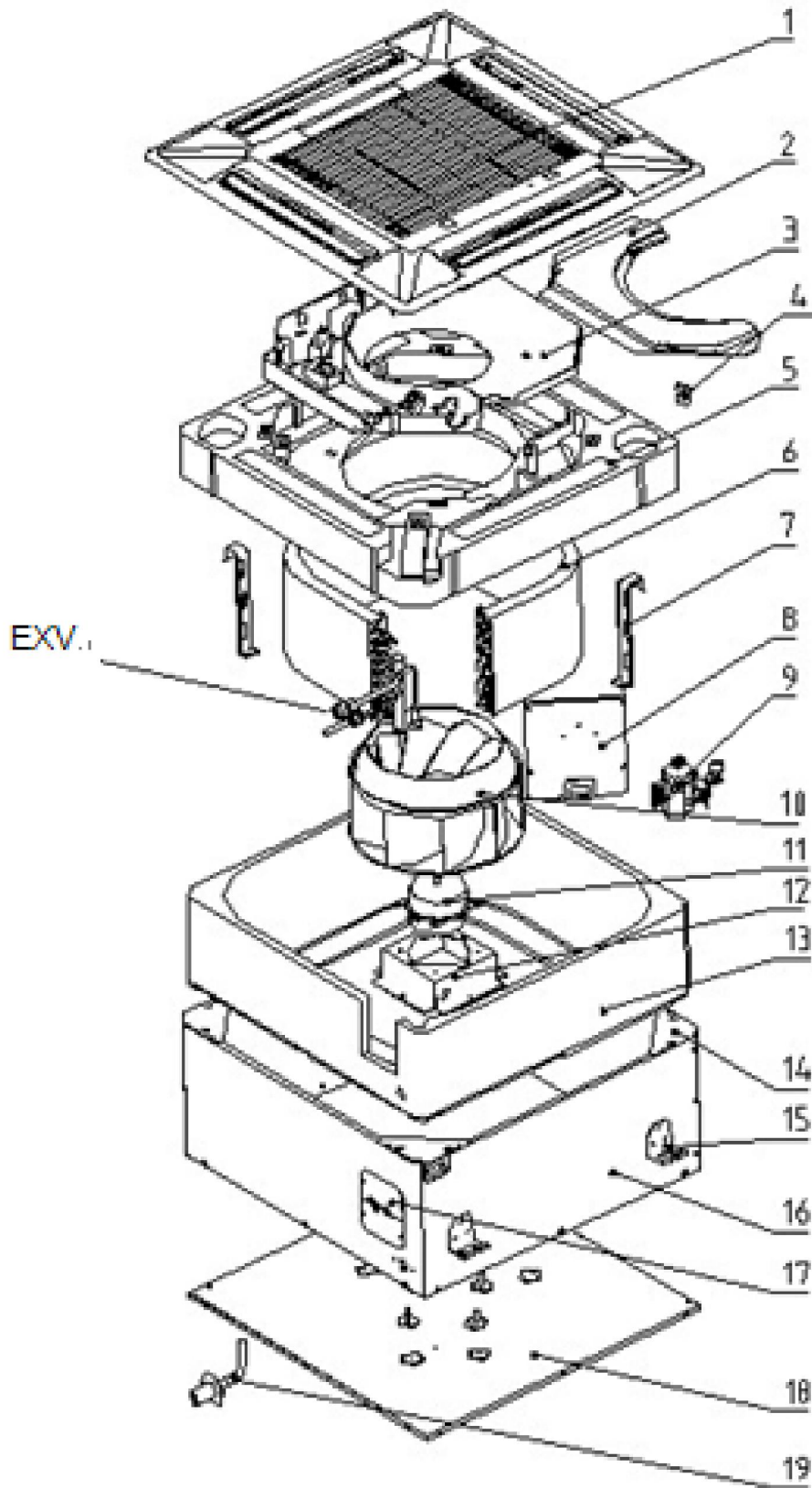
To meet user's different using requirements and environments, reserve an interface for ventilating fresh air and four air duct interfaces for indoor unit of 3HP and 5HP or connect air duct on unit.



- ◇ Ventilation of fresh air: a round interface for ventilating fresh air is reserved at edge angle of unit. User can cut off the round sheet metal and lead it to outdoors after connecting air duct if user needs this function. Interface for ventilating fresh air is connected with air return inlet of indoor unit, which can introduce fresh air from outdoors due to the action of negative pressure during unit operation.
- ◇ Connection of air duct: four square interfaces are reserved on four sides of unit, among which, air outlet on the side for connecting air duct can be blocked. Cut off sheet metal of square interface.

10. Exploded View

ARVCA-H028/4R1A, ARVCA-H036/4R1A, ARVCA-H045/4R1A, ARVCA-H056/4R1A

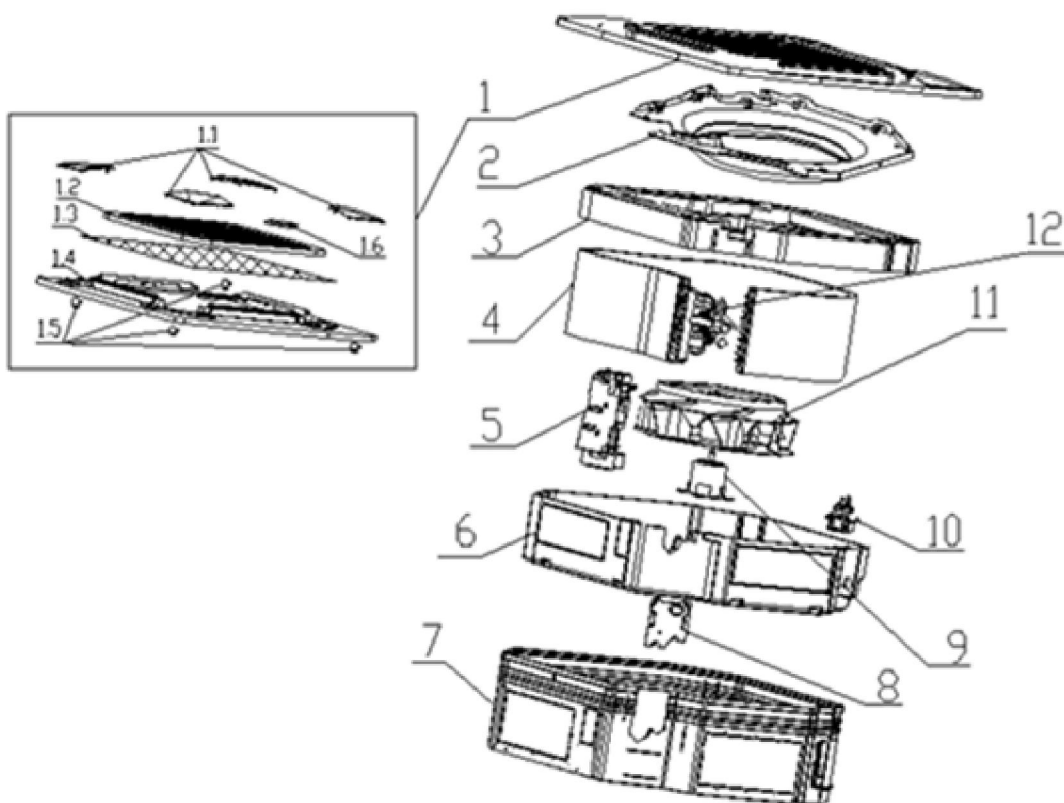


ARVCA-H028/4R1A, ARVCA-H036/4R1A, ARVCA-H045/4R1A, ARVCA-H056/4R1A

NO.	AUX Code	Part Name (Chinese)	Part Name	Quantity	Unit
1	16108004000004	面板 MB13(英文)	Panel MB13	1	Pc
1.1	16420010000015	回风格栅组件	Return-air grille assembly	1	Set
1.2	16420012000004	空气过滤网	Air filter net	1	Pc
1.3	16420007000023	导风叶片	guide wind vane	4	Pcs
1.4	16430001000133	步进电机	Step motor	4	Pcs
1.5	16422015000007	显示灯板	Display board	1	Set
1.6	16420014000019	面板围框组件	Panel frame assembly	1	Set
2	16420016000005	电控盒盖	Cover for electric components	1	Pc
3	16322001000038	电控盒总成	Electric assembly	1	Set
3.1	16430015000031	电容	Capacitance 2.0 μ F/450V a.c	1	Pc
3.2	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	Pc
3.3	16422005000009	变压器	Transformer	1	Pc
3.4	16427001000008	端子板 7 位	Terminal board	1	Pc
3.5	16430007000004	传感器 15K3950 XH2(白) 0.7m(塑封)	Sensor 1 White 15K	1	Pc
3.6	16430007000018	传感器 20K3950 XH2(蓝) 1.2m(铜)	Sensor 2 Blue 20K	1	Pc
3.7	16430007000016	传感器 20K3950 XH2(黄) 1.2m(铜)	Sensor 3 Yellow 20K	1	Pc
3.8	16430007000021	传感器 20K3950 XH2(绿) 1.2m(铜)	Sensor 4 Green 20K	1	Pc
4	16432016000037	橡胶塞	Rubber plug	1	Pc
5	16320005000018	接水盘组件	Water pan	1	Set
6	16324001000063	蒸发器总成	Evaporator assembly	1	Set
6.1	16324005000025	蒸发器组件	Evaporator part	1	Set
6.2	16325005000033	蒸发器出气管组件	Evaporator outlet tube assembly	1	Set
6.3	16325001000103	蒸发器进液管组件	Evaporator inlet tube assembly	1	Set
7	16421040000020	蒸发器挂钩	Evaporator Pothook	2	Pcs
8	16421007000035	蒸发器连接板	Evaporator connect board	1	Pc
9	16440001000004	排水泵	Drain pump	1	Pc
9.1	16445034000003	浮子开关	Bodder switch	1	Pc
9.2	16421026000129	排水泵支架	Drain pump support	1	Pc
10	16444001000006	风轮	Wind wheel Φ 283 \times 166	1	Pc
11	16430001000135	电机	Fan motor YSK30-6E1	1	Pc
12	16421035000014	电机支架	motor holder	1	Pc
13	16421999000052	风道	Air passage	1	Pc
14	16421002000192	接水盘固定板	Water pan holder	4	Pcs
15	16421040000019	挂钩	Pothook	4	Pcs
16	16421010000022	围板 A	Boarding A	1	Pc

16.1	16421010000023	围板 B	Boarding B	1	Pc
17	16421014000037	阀板 A	Valve board A	1	Pc
17.1	16421014000038	阀板 B	Valve board B	1	Pc
18	16321005000011	底盘组件	Chassis	1	Pc
19	16432019000008	塑料排水接管	Plastic drainage pipe	1	Set
19.1	16432019000009	塑料排水软管	Plastic drain hose	1	Pc
20	16441015000002	电子膨胀阀	EXV coil	1	Pc

ARVCA-H071/4R1A, ARVCA-H080/4R1A, ARVCA-H090/4R1A, ARVCA-H100/4R1A, ARVCA-H112/4R1A, ARVCA-H125/4R1A , ARVCA-H140/4R1A



ARVCA-H071/4R1A

N0.	AUX code	Part Name (Chinese)	Part Name	Quantity	Unit
1	16108002000007	面板 MB12(英文)	Panel MB12	1	Pc
1.1	16420014000011	面板边角盖板	Panel cover board	2	Pcs
1.2	16420010000004	回风格栅组件	Return-air grille assembly	2	Sets
1.3	16420012000001	空气过滤网	Air filter	1	Pc
1.4	16420014000010	面板围框组件	Panel frame assembly	1	Set
1.4.1	16434099000356	面板围框密封海面	Panel frame	1	Pc
1.4.2	16420007000009	导风叶片	Wind-guiding blade	4	Pcs
1.5	16430001000133	步进电机	Step motor	1	Pc
1.6	16422015000007	显示灯板	Display board	1	Pc
2	16421025000015	导风圈总成	Guide wind loop assembly	1	Set
2.1	16420004000002	导风圈	Guide wind loop	1	Pc
2.2	16420014000022	导风圈配板	Guide wind board	1	Pc
2.3	16427001000008	端子板 7 位	Terminal board	1	Pc
3	16320005000010	接水盘组件	Defrosting pan	1	Set
4	16324001000041	蒸发器总成	Evaporator assembly	1	Set
4.1	16324005000005	蒸发器组件	Evaporator part	1	Set
4.2	16325005000019	蒸发器出气管组件	Evaporator outlet tube	1	Set

			assembly		
4.3	16325001000058	蒸发器进液管组件	Evaporator inlet tube assembly	1	Set
5	16322001000053	电控盒总成	Electric box assembly	1	Set
5.1	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	Pc
5.2	16422005000009	变压器	Transformer	1	Pc
5.3	16430015000002	电容	capacitance 4 μ F/450V a.c	1	Pc
5.4	16430007000005	传感器 15K3950 XH2(白) 0.9m(塑封)	Sensor 1 White 15K	1	Pc
5.5	16430007000018	传感器 20K3950 XH2(蓝) 1.2m(铜)	Sensor 2 Blue 20K	1	Pc
5.6	16430007000016	传感器 20K3950 XH2(黄) 1.2m(铜)	Sensor 3 Yellow 20K		Pc
5.7	16430007000021	传感器 20K3950 XH2(绿) 1.2m(铜)	Sensor 4 Green 20K		Pc
6	16320005000015	底盘泡沫组件	Chassis foam assembly	1	Set
7	16321005000002	底盘组件	Chassis assembly	1	Set
8	16421005000181	配管盖板	Piping cover board	1	Pc
9	16430001000310	电机	Fan motor YDK45-6 Q	1	Pc
10	16330005000006	排水泵总成	Drain pump assembly	1	Set
10.1	16421026000010	排水泵支架	Drain pump support	1	Pc
10.2	16432016000035	水泵减振橡胶	Pump damping rubber	3	Pcs
10.3	16440001000009	排水泵	Drain pump PLD-1200	1	Pc
10.4	16432019000006	排水软管(水泵用)	Drain flexible pipe (for drain pump)	1	Pc
10.5	16432019000007	排水接管	Drain pipe	1	Pc
10.6	16445034000001	浮子开关 GMF-31	Float switch	1	Pc
11	16444001000015	风轮 $\Phi 462 \times 147$	Wind wheel (3P)	1	Set
12	16441015000002	电子膨胀阀线圈	EXV wire	1	Set

ARVCA-H080/4R1A

N0.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16108002000007	面板 MB12(英文)	Panel MB12	1	Pc
1.1	16420014000011	面板边角盖板	Panel cover board	2	Pcs
1.2	16420010000004	回风格栅组件	Return-air grille assembly	2	Sets
1.3	16420012000001	空气过滤网	Air filter	1	Pc
1.4	16420014000010	面板围框组件	Panel frame assembly	1	Set
1.4.1	16434099000356	面板围框	Panel frame	1	Pc
1.4.2	16420007000009	导风叶片	Wind-guiding blade	4	Pcs
1.5	16430001000133	步进电机	Step motor	1	Pc
1.6	16422015000007	显示灯板	Display board	1	Pc
2	16421025000015	导风圈总成	Guide wind loop assembly	1	Set
2.1	16420004000002	导风圈	Guide wind loop	1	Pc
2.2	16420014000022	导风圈配板	Guide wind board	1	Pc
2.3	16427001000008	端子板 7 位	Terminal board	1	Pc
3	16320005000010	接水盘组件	Defrosting pan	1	Set

4	16324001000060	蒸发器总成	Evaporator assembly	1	Set
4.1	16324001000060	蒸发器组件	Evaporator part	1	Set
4.2	16325005000011	蒸发器出气管组件	Evaporator outlet tube assembly	1	Set
4.3	16325001000083	蒸发器进液管组件	Evaporator inlet tube assembly	1	Set
5	16322001000050	电控盒总成	Electric box assembly	1	Set
5.1	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	Pc
5.2	16422005000009	变压器	Transformer	1	Pc
5.3	16430015000016	电容	Capacitance	1	Pc
5.4	16430007000005	传感器 15K3950 XH2(白) 0.9m(塑封)	Sensor 1 White 15K	1	Pc
5.5	16430007000018	传感器 20K3950 XH2(蓝) 1.2m(铜)	Sensor 2 Blue 20K	1	Pc
5.6	16430007000016	传感器 20K3950 XH2(黄) 1.2m(铜)	Sensor 3 Yellow 20K	1	Pc
5.7	16430007000021	传感器 20K3950 XH2(绿) 1.2m(铜)	Sensor 4 Green 20K	1	Pc
6	16320005000015	底盘泡沫组件	Chassis foam assembly	1	Set
7	16321005000002	底盘组件	Chassis assembly	1	Set
8	16421005000181	配管盖板	Piping cover board	1	Pc
9	16430001000059	电机	Fan motor	1	Pc
10	16330005000006	排水泵总成	Drain pump assembly	1	Set
10.1	16421026000010	排水泵支架	Drain pump support	1	Pc
10.2	16432016000035	水泵减振橡胶	Pump damping rubber	3	Pcs
10.3	16440001000009	排水泵	Drain pump	1	Pc
10.4	16432019000006	排水软管(水泵用)	Drain flexible pipe (Drain pump)	1	Pc
10.5	16432019000007	排水接管	Drain pipe	1	Pc
10.6	16445034000001	浮子开关 GMF-31	Float switch	1	Pc
11	16444001000001	风轮	Wind wheel	1	Set
12	16441015000002	电子膨胀阀线圈	EXV wire	1	Pc

ARVCA-H090/4R1A, ARVCA-H100/4R1A

NO.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16108002000007	面板 MB12(英文)	Panel MB12	1	Pc
1.1	16420014000011	面板边角盖板	Panel cover board	2	Pcs
1.2	16420010000004	回风格栅组件	Return-air grille assembly	2	Sets
1.3	16420012000001	空气过滤网	Air filter	1	Pc
1.4	16420014000010	面板围框组件	Panel frame assembly	1	Set
1.4.1	16434099000356	面板围框	Panel frame	1	Pc
1.4.2	16420007000009	导风叶片	Wind-guiding blade	4	Pcs
1.5	16430001000133	步进电机	Step motor	1	Pc
1.6	16422015000007	显示灯板	Display board	1	Pc
2	16421025000015	导风圈总成	Guide wind loop assembly	1	Set

2.1	16420004000002	导风圈	Guide wind loop	1	Pc
2.2	16420014000022	导风圈配板	Guide wind board	1	Pc
2.3	16427001000008	端子板 7 位	Terminal board	1	Pc
3	16320005000010	接水盘组件	Defrosting pan	1	Set
4	16324001000060	蒸发器总成	Evaporator assembly	1	Set
4.1	16324005000016	蒸发器组件	Evaporator part	1	Set
4.2	16325005000011	蒸发器出气管组件	Evaporator outlet tube assembly	1	Set
4.3	16325001000083	蒸发器进液管组件	Evaporator inlet tube assembly	1	Set
5	16322001000050	电控盒总成	Electric box assembly	1	Set
5.1	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	Pc
5.2	16422005000009	变压器	Transformer	1	Pc
5.3	16430015000016	电容	capacitance	1	Pc
5.4	16430007000005	传感器 15K3950XH2(白)0.9m(塑封)	Sensor 1 White 15K	1	Pc
5.5	16430007000018	传感器 20K3950 XH2(蓝) 1.2m(铜)	Sensor 2 Blue 20K	1	Pc
5.6	16430007000016	传感器 20K3950 XH2(黄) 1.2m(铜)	Sensor 3 Yellow 20K	1	Pc
5.7	16430007000021	传感器 20K3950 XH2(绿) 1.2m(铜)	Sensor 4 Green 20K	1	Pc
6	16320005000015	底盘泡沫组件	Chassis foam assembly	1	Set
7	16321005000002	底盘组件	Chassis assembly	1	Set
8	16421005000181	配管盖板	Piping cover board	1	Pc
9	16430001000062	电机	Fan motor	1	Pc
10	16330005000006	排水泵总成	Drain pump assembly	1	Set
10.1	16421026000010	排水泵支架	Drain pump support	1	Pc
10.2	16432016000035	水泵减振橡胶	Pump damping rubber	3	Pcs
10.3	16432019000006	排水泵	Drain pump	1	Pc
10.4	16432019000007	排水软管(水泵用)	Drain flexible pipe (Drain pump)	1	Pc
10.5	16445034000001	排水接管	Drain pipe	1	Pc
10.6	16440001000009	浮子开关 GMF-31	Float switch	1	Pc
11	16444001000001	风轮	Wind wheel	1	Set
12	16441015000002	电子膨胀阀线圈	EXV wire	1	Pc

ARVCA-H112/4R1A, ARVCA-H125/4R1A, ARVCA-H140/4R1A

N0.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16108002000007	面板 MB12(英文)	Panel MB12	1	Pc
1.1	16420014000011	面板边角盖板	Panel cover board	2	Pcs
1.2	16420010000004	回风格栅组件	Return-air grille assembly	2	Sets
1.3	16420012000001	空气过滤网	Air filter	1	Pc
1.4	16420014000010	面板围框组件	Panel frame assembly	1	Set
1.4.1	16434099000356	面板围框	Panel frame	1	Pc

1.4.2	16420007000009	导风叶片	Wind-guiding blade	4	Pcs
1.5	16430001000133	步进电机	Step motor	1	Pc
1.6	16422015000007	显示灯板	Display board	1	Pc
2	16322001000001	导风圈总成	Guide wind loop assembly	1	Set
2.1	16420004000002	导风圈	Guide wind loop	1	Pc
2.2	16420014000022	导风圈配板	Guide wind board	1	Pc
2.3	16427001000008	端子板 7 位	Terminal board	1	Pc
3	16320005000010	接水盘组件	Defrosting pan	1	Set
4	16324001000001	蒸发器总成	Evaporator assembly	1	Set
4.1	16324005000003	蒸发器组件	Evaporator part	1	Set
4.2	16325005000010	蒸发器出气管组件	Evaporator outlet tube assembly	1	Set
4.3	16325001000001	蒸发器进液管组件	Evaporator inlet tube assembly	1	Set
5	16322001000051	电控盒总成	Electric box assembly	1	Set
5.1	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	Pc
5.2	16422005000009	变压器	Transformer	1	Pc
5.3	16430015000034	电容	capacitance	1	Pc
5.4	16430007000005	传感器 15K3950XH2(白)0.9m(塑封)	Sensor 1 White 15K	1	Pc
5.5	16430007000018	传感器 20K3950 XH2(蓝)1.2m(铜)	Sensor 2 Blue 20K	1	Pc
5.6	16430007000016	传感器 20K3950 XH2(黄)1.2m(铜)	Sensor 3 Yellow 20K	1	Pc
5.7	16430007000021	传感器 20K3950 XH2(绿)1.2m(铜)	Sensor 4 Green 20K	1	Pc
6	16320005000012	底盘泡沫组件	Chassis foam assembly	1	Set
7	16321005000001	底盘组件	Chassis assembly	1	Set
8	16421005000181	配管盖板	Piping cover board	1	Pc
9	16430001000209	电机	Fan motor	1	Pc
10	16330005000006	排水泵总成	Drain pump assembly	1	Set
10.1	16421026000010	排水泵支架	Drain pump support	1	Pc
10.2	16432016000035	水泵减振橡胶	Pump damping rubber	3	Pcs
10.3	16432019000006	排水泵	Drain pump	1	Pc
10.4	16432019000007	排水软管(水泵用)	Drain flexible pipe (Drain pump)	1	Pc
10.5	16445034000001	排水接管	Drain pipe	1	Pc
10.6	16440001000009	浮子开关 GMF-31	Float switch	1	Pc
11	16444001000017	风轮	Wind wheel	1	Set
12	16441015000002	电子膨胀阀线圈	EXV wire	1	Pc

Ceiling&floor Type

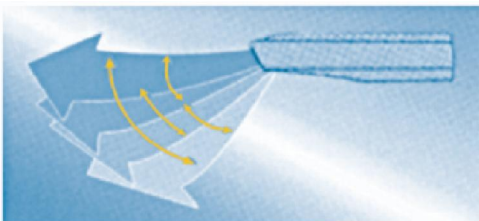
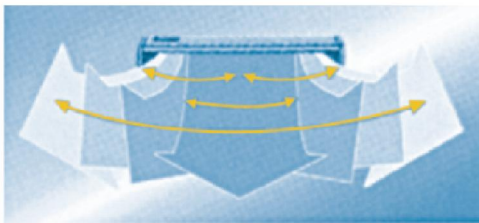
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1.Feature

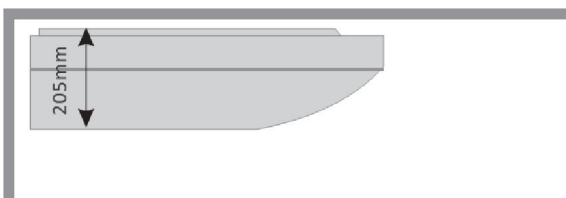
ARVCF-H045/4R1A ARVCF-H056/4R1A ARVCF-H071/4R1A
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 ARVCF-H112/4R1A ARVCF-H125/4R1A ARVCF-H140/4R1A



- Dual-direction swing, wide swing angle
Vertical and horizontal swing function make it possible to blow air to every corner of the room.



- Ultra slim design
Thinner and Lighter, Only 250mm.



- Adjustable fan speed
All units are equipped with 3 speed controlled fan mode, adjust the air flow rate in accordance with the ceiling height.



- Flexible installation
Can be vertically installed against the wall or horizontally installed under the ceiling.



2.Specifications

Model			ARVCF-H045/4R1A	ARVCF-H056/4R1A	ARVCF-H071/4R1A
Factory Model			ALCe-H16B4/R1DI CA	ALCe-H18B4/R1DI CA	ALCe-H24B4/R1DI CA
Code			16104086000007	16104088000006	16104090000007
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	4.5	3.6	5.6
	Heating	kW	5.0	4.3	6.0
Fan Motor	Model		YSK-40W-4	YSK-40W-4	YSK-40W-4
	Brand		HUATE	HUATE	HUATE
	Output Power	W	40	40	40
	Capacitor	uF	2.5	2.5	2.5
	Speed (Hi/Mi/Lo)	r/min	1250/1010/900	1250/1010/900	1250/1010/900
Coil	Number Of Row		3	3	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.6	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	570×246×38.1	570×246×38.1	570×246×38.1
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	850/680/595	630/504/441	850/680/595
	Noise Level(Hi/Mi/Lo)	dB(A)	42/39/36	39/36/33	42/39/36
	Net Dimension (W×D×H)	mm	929×660×205	929×660×205	929×660×205
	Packing Dimension (W×D×H)	mm	1010×720×290	1010×720×290	1010×720×290
	Net Weight	Kg	25	24	26
	Gross Weight	Kg	29	28	29
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	6.35
	Gas Side	mm	12.7	12.7	12.7
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		°C	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		°C	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	20~35	15~30	25~45
Stuffing Quantity	20/40/40H	Unit	149/300/350	149/300/350	104/222/246

Note:.

1. Cooling Capacity:Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVCF-H080/4R1A	ARVCF-H090/4R1A	ARVCF-H100/4R1A
Factory Model			ALCe-H30A4/R1DI CA	ALCe-H30B4/R1DI CA	ALCe-H36A4/R1DI CA
Code			16104091000006	16104092000006	16104093000005
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	8.0	9.0	10.0
	Heating	kW	10.0	11.0	12.0
Fan Motor	Model		YSK-70W-4	YSK-70W-4	YSK-70W-4
	Brand		HUATE	HUATE	HUATE
	Output Power	W	70	70	70
	Capacitor	uF	4	4	4
	Speed (Hi/Mi/Lo)	r/min	1386/1100/970	1386/1100/970	1386/1100/970
Coil	Number Of Row		3	3	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	22×19.05	22×19.05
	Fin Pitch	mm	1.6	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7.94 , Inner grooved	φ7.94 , Inner grooved
	Coil Length x Height x Width	mm	950*246*38.1	950X264X57.15	950X264X57.15
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	1200/960/840	1500/1200/1050	1500/1200/1050
	Noise Level(Hi/Mi/Lo)	dB(A)	47/44/41	47/44/41	47/44/41
	Net Dimension (W×D×H)	mm	1280×660×205	1280×660×205	1280×660×205
	Packing Dimension (W×D×H)	mm	1360×720×290	1360×720×290	1360×720×290
	Net Weight	Kg	35	35	35
	Gross Weight	Kg	39	39	39
Refrigerant Pipe	Liquid Side	mm	9.52	9.52	9.52
	Gas Side	mm	15.88	15.88	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	35~55	40~60	45~65
Stuffing Quantity	20/40/40H	Unit	104/222/246	104/222/246	104/222/246

Note.:

- Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally

somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVCF-H112/4R1A	ARVCF-H125/4R1A	ARVCF-H140/4R1A
Factory Model			ALCe-H36B4/R1DI CA	ALCe-H42B4/R1DI CA	ALCe-H48A4/R1DI CA
Code			16104094000005	16104095000006	16104096000005
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	11.2	12.5	14.0
	Heating	kW	12.8	13.3	15.0
Fan Motor	Model		YSK-105W-4	YSK-105W-4	YSK-105W-4
	Brand		HUATE	HUATE	HUATE
	Output Power	W	105	105	105
	Capacitor	uF	5	5	5
	Speed (Hi/Mi/Lo)	r/min	1386/1100/970	1386/1100/970	1386/1100/970
Coil	Number Of Row		3	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	22×19.05	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.6	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7.94 , Inner grooved	φ7.94 , Inner grooved	φ7.94 , Inner grooved
	Coil Length x Height x Width	mm	1300×242×57.15	1300×242×57.15	1300×242×57.15
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	1800/1440/1260	1800/1440/1260	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	48/45/42	48/45/42	48/45/42
	Net Dimension (W×D×H)	mm	1631×660×205	1631×660×205	1631×660×205
	Packing Dimension (W×D×H)	mm	1710×720×290	1710×720×290	1710×720×290
	Net Weight	Kg	45	45	45
	Gross Weight	Kg	51	51	51
Refrigerant Pipe	Liquid Side	mm	9.52	9.52	9.52
	Gas Side	mm	19.05	19.05	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	50~75	50~90	60~100
Stuffing Quantity	20/40/40H	Unit	86/173/202	86/173/202	86/173/202

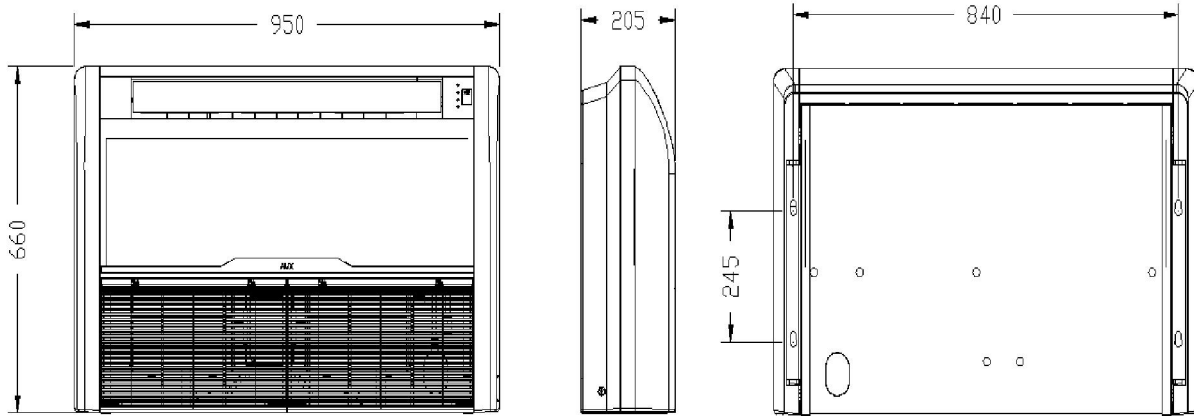
Note:

- Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.

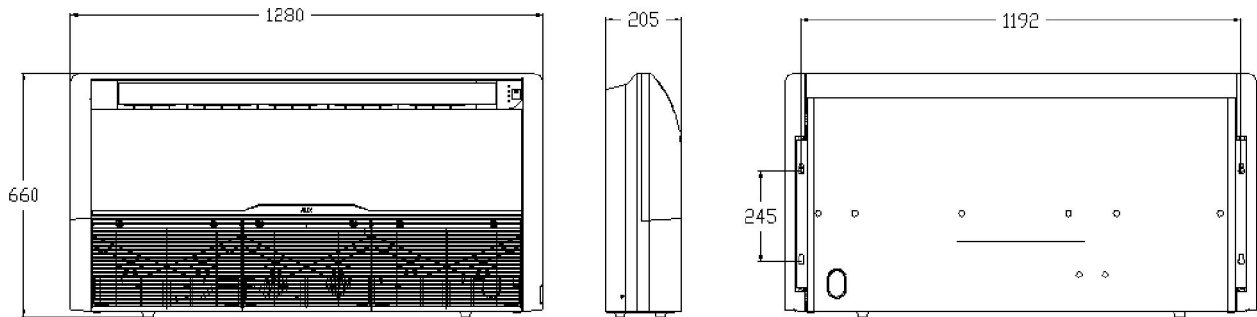
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

3.Dimension

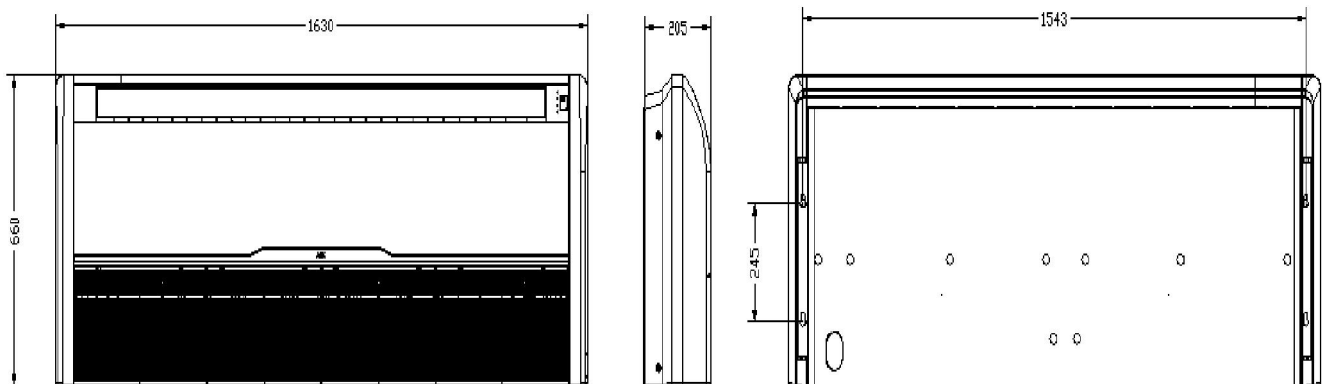
ARVCF-H045/4R1, ARVCF-H056/4R1A



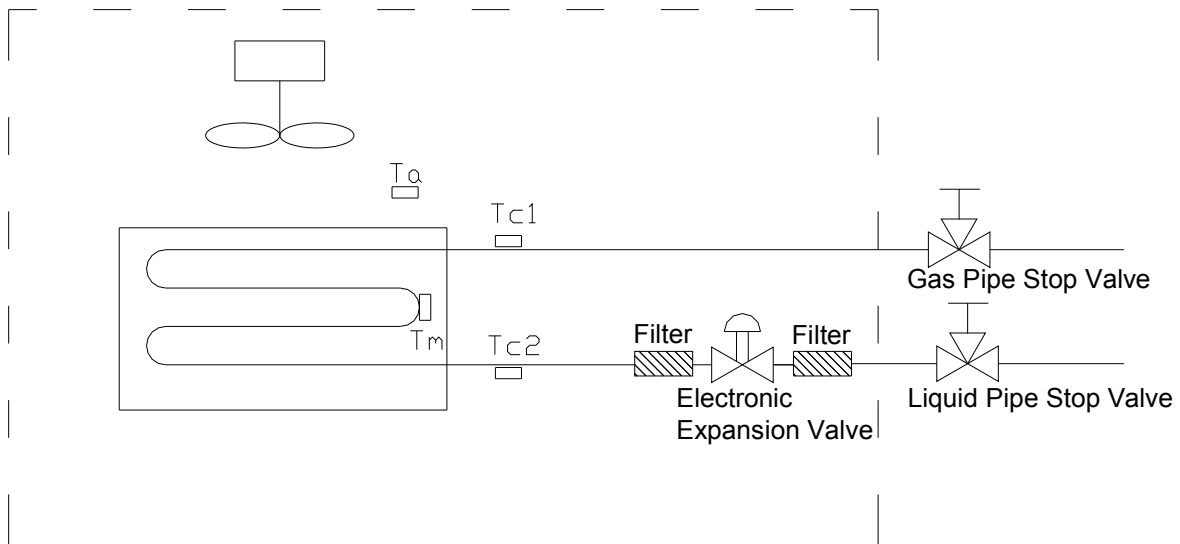
ARVCF-H071/4R1A, ARVCF-H080/4R1A, ARVCF-H090/4R1A, ARVCF-H100/4R1A



ARVCF-H112/4R1A, ARVCF-H125/4R1A, ARVCF-H140/4R1A



4.Piping Diagram

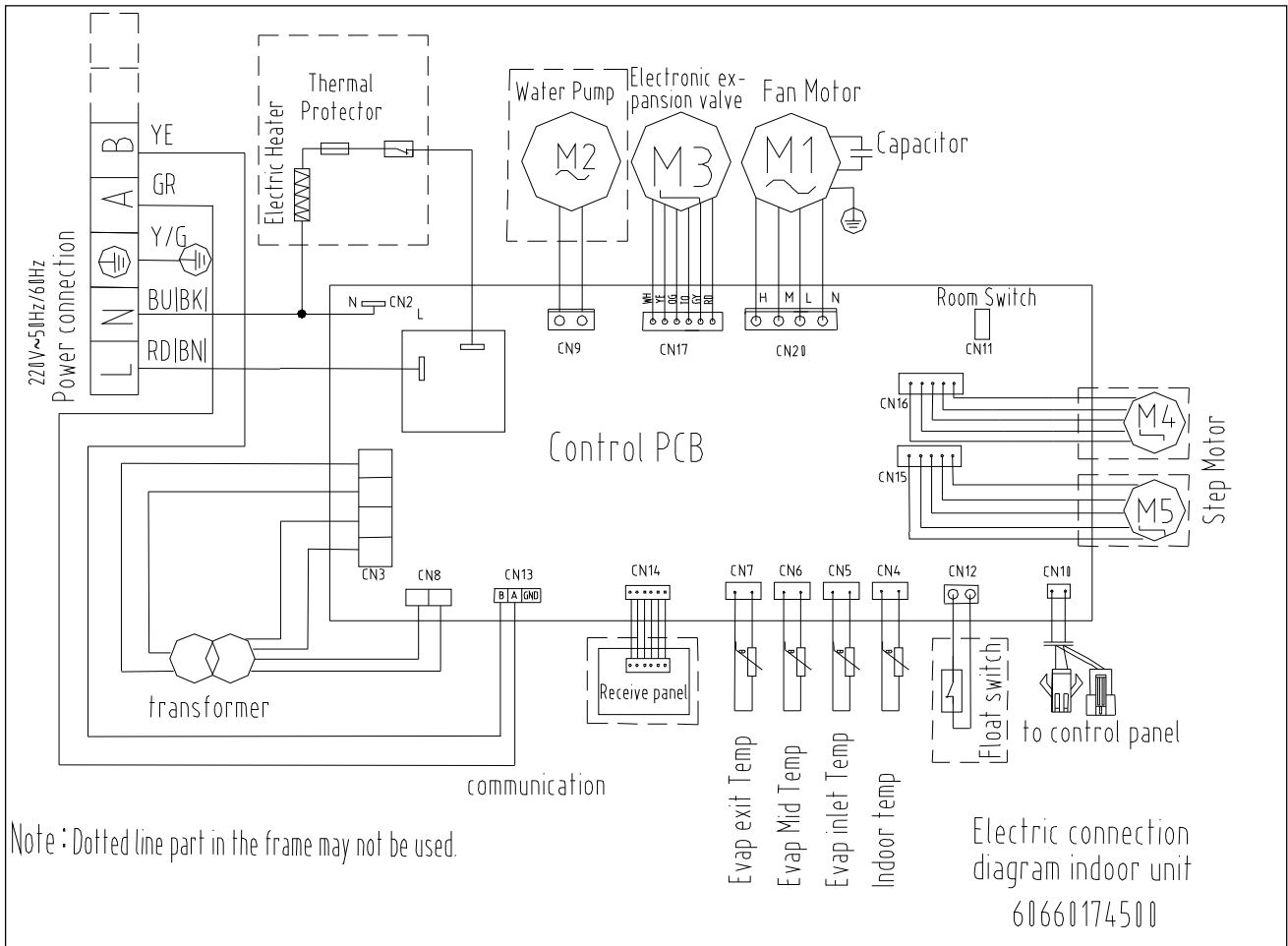


Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
ARVCF-H045/4R1A	12.7	6.35
ARVCF-H056/4R1A		
ARVCF-H071/4R1A	15.88	9.52
ARVCF-H080/4R1A		
ARVCF-H090/4R1A		
ARVCF-H100/4R1A		
ARVCF-H112/4R1A	19.05	9.52
ARVCF-H125/4R1A		
ARVCF-H140/4R1A		

5.Wiring Diagram



6.Electric Characteristics

Model	Indoor Unit				Supply Power		IFW	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
ARVCF-H045/4R1A	50	220-240	198	264	0.51	10	0.04	0.41
ARVCF-H056/4R1A	50	220-240	198	264	0.51	10	0.04	0.41
ARVCF-H071/4R1A	50	220-240	198	264	1.13	10	0.07	0.90
ARVCF-H080/4R1A	50	220-240	198	264	1.13	10	0.07	0.90
ARVCF-H090/4R1A	50	220-240	198	264	1.13	16	0.07	0.90
ARVCF-H100/4R1A	50	220-240	198	264	1.13	16	0.07	0.90
ARVCF-H112/4R1A	50	220-240	198	264	1.50	16	0.105	1.20
ARVCF-H125/4R1A	50	220-240	198	264	1.50	16	0.105	1.20
ARVCF-H140/4R1A	50	220-240	198	264	1.50	16	0.105	1.20

Symbols:

MCA: Min. Circuit Amps.(A)

MFA: Max. Circuit Breaker Amps.

kW : Fan Motor Rated Output(kW)

FLA: Full Load Amps.(A)

IFM:Indoor Fan Motor

Note:

1.Min. and Max. Voltage :Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed rang limits.

2.Maximum allowable voltage unbalance between phases is 2%.

3.MCA/MFA

$$MCA = 1.25 \times FLA$$

4.Select wire size based on the MCA.

7.Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.10	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1.0	1.06	1.13
	Power	0.96	0.97	1.0	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.90	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.80	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

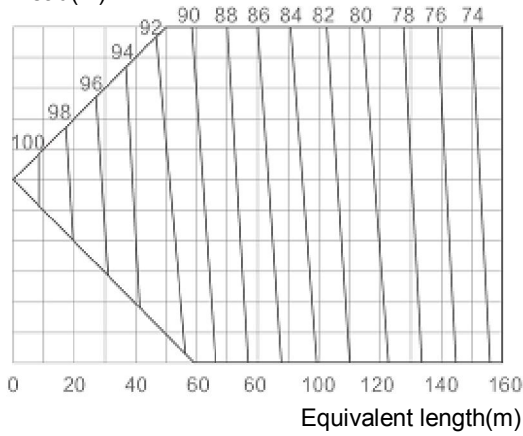
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction coefficient	Indoor back temperature of dry bulb [°C]		
		15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.70
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1.0	0.96
	Power	0.94	1.0	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17

15-24	Heating capacity	0.85 – 1.05 of nominal
	Power	0.80 – 1.20 of nominal

Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube

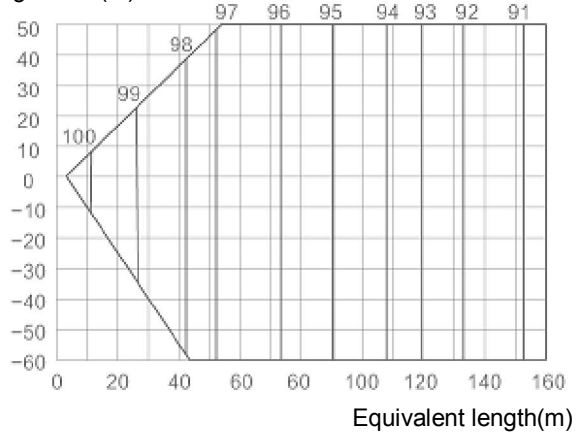
(Cooling)change ratio basic capacity%

High head(m)



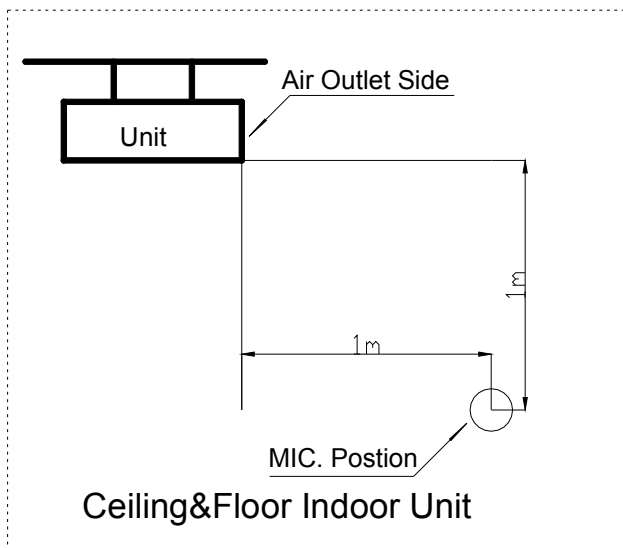
(Heating)change ratio basic capacity%

High head(m)



Positive side of high head means installation height of outdoor unit should be higher than indoor unit;
 negative side of high head means installation height of outdoor unit should be lower than indoor unit;
 (change ratio of basic capacity)

8.Sound Levels



Note:

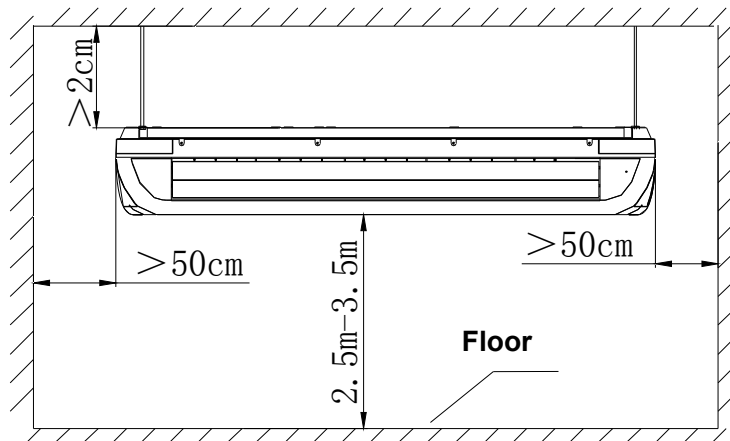
1. The operating condition are assumed to be atandard(JIS Condition).
2. These operating values were obtained in a dead room (conversion values).
3. Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220-240V 50Hz		
	High (dB)	Medium (dB)	Low (dB)
ARVCF-H045/4R1A	42	39	36
ARVCF-H056/4R1A			
ARVCF-H071/4R1A	45	42	39
ARVCF-H080/4R1A	47	44	41
ARVCF-H090/4R1A			
ARVCF-H100/4R1A			
ARVCF-H112/4R1A	48	45	42
ARVCF-H125/4R1A			
ARVCF-H140/4R1A			

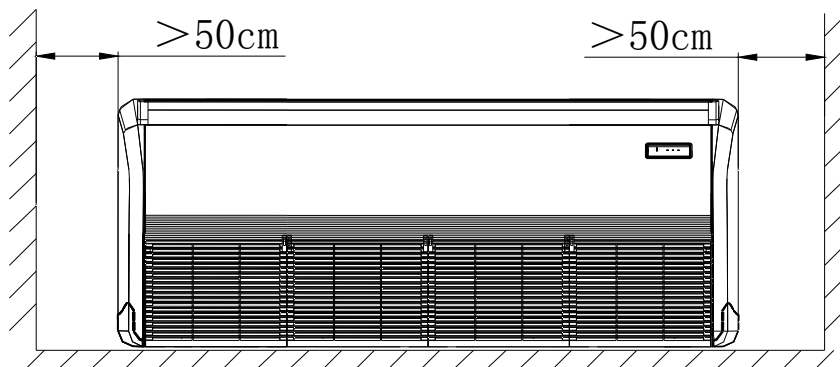
9.Installation

9.1Service Space

◇ Hoisting Installation

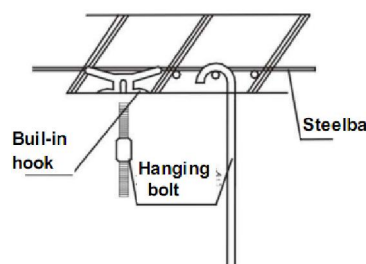


◇ Floor-standing Installation



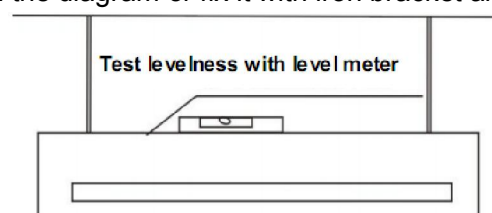
9.2 Hoisting of Indoor Unit

◇ Selection of hanging foundation: the foundation must be wooden frame and reinforced concrete structure, which is firm and reliable, able to stand a weight four times of the unit's weight and stand a certain vibration for a long time.



◇ Fixing of hanging foundation: fix hanging bolt as shown in the diagram or fix it with iron bracket and wooden bracket.

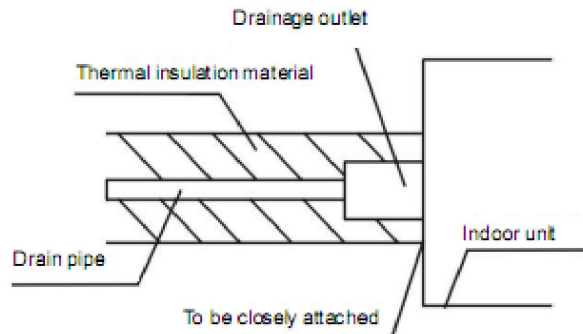
◇ Adjust the relative position of hook on hanging bolt to keep the main unit horizontal in each direction. Check with level meter after installation to ensure horizontal indoor main unit and prevent possible failures such as water leakage and air leakage.



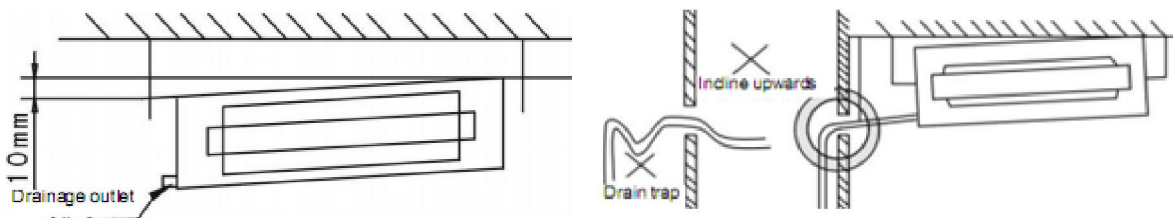
- ◇ Tighten nut to ensure tight contact among nut, washer and four mounting hooks without loose hanging;
- ◇ Ensure there is no loose positioning such as shaking of main unit after installation;

Installation of Drain Pipe

- ◇ Drain pipe must be wrapped with thermal insulation material as follows to prevent condensation or dripping. Thermal insulation material should be rubber & plastic thermal insulation pipe with thickness above 8mm.



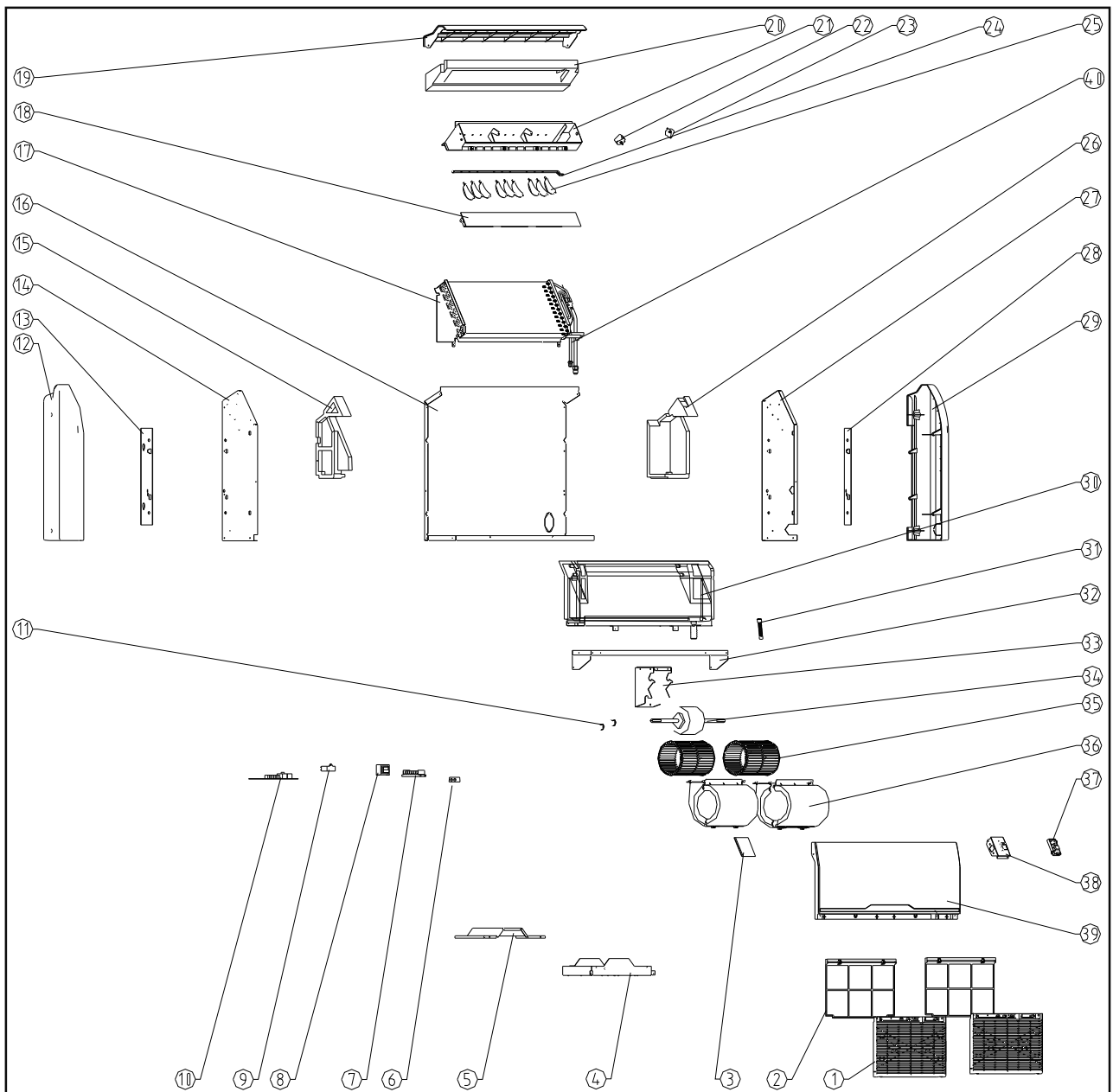
- ◇ Drain pipe should incline downwards with gradient of 1/50-1/100, which will subject to failure such as back flow or water leakage in case of up-and-down fluctuation or upward inclination.



- ◇ After installation, conduct drainage test to determine if water correctly flows through pipeline and carefully observe the connection to ensure there is no leakage. If the unit is installed in new house, it's recommended to test before decorating ceiling. Conduct drainage test for the unit used for heating only.

10.Exploded View

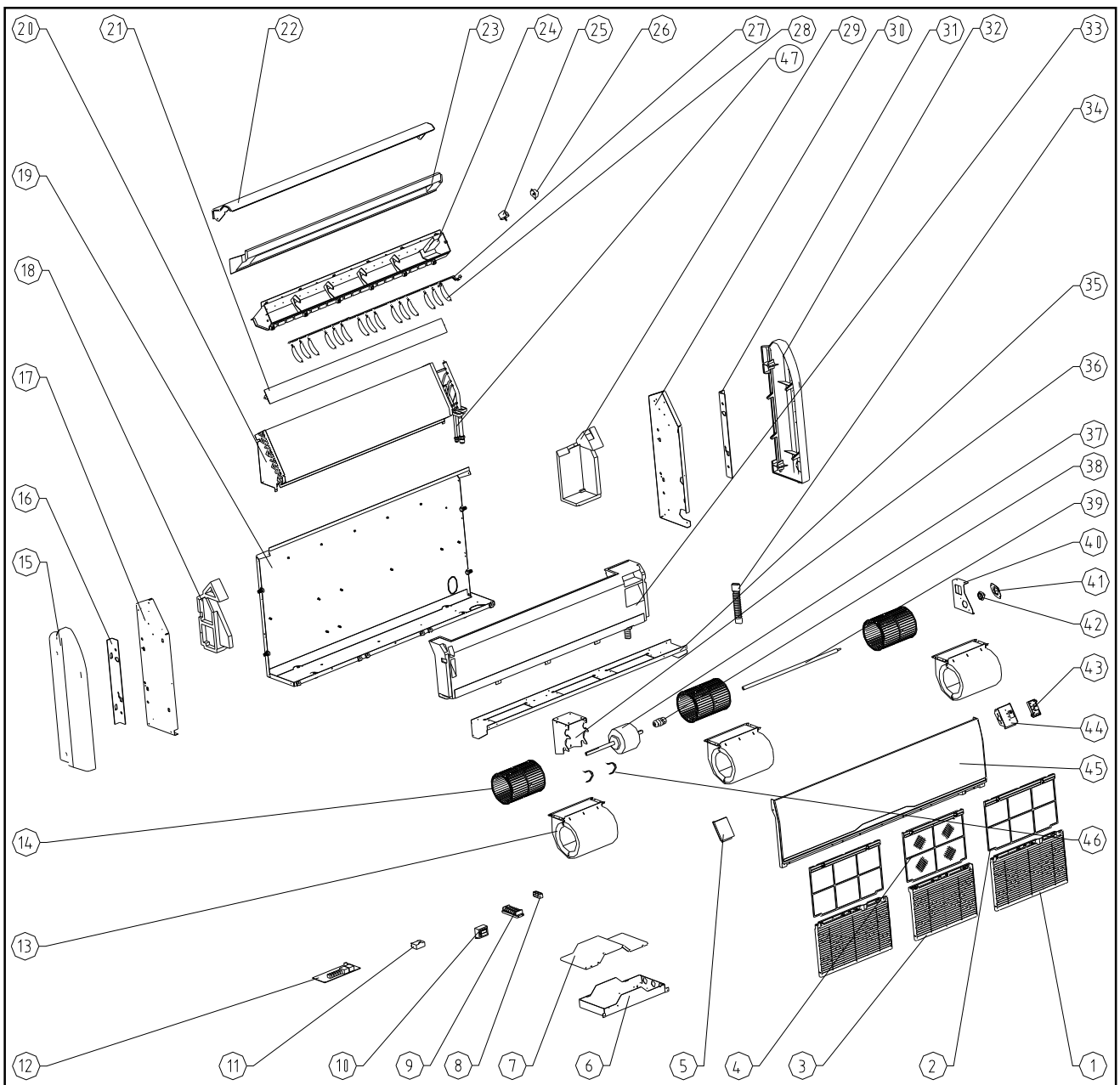
ARVCF-H045/4R1A, ARVCF-H056/4R1A



ARVCF-H045/4R1A, ARVCF-H056/4R1A

N0.	BOM Number	Chinese name	Part Name	Quantity	Unit
1	16420012000002	ALCe-H24B4/C5 滤网	Filter net	2	PCS
2	16420010000002	ALCe-H24B4/C5 格栅	Grille	2	PCS
3	16420015000002	ALCe-H24B4/C5 左装饰板	Left decorative plate	1	PC
4	16421038000009	ALCe-H24B4/C5 电控盒	Electrical assembly	1	PC
5	16421005000205	ALCe-H24B4/C5 电控盒盖	Electrical control box	1	PC
6	11220544000008	R51L/C(5)双联压线座组件	Double line pressing seat assembly	1	Set
7	16427001000010	端子板 5位(600V 4mm2)AB	Terminal board	1	PC
8	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
9	16430015000003	(ROHS)电容 2.5μF/450V a.c	Capacitor 2.5μF/450V a.c	1	PC
10	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	PC
11,33,34	16430001000196	电机 YSK-40W-4	Motor YSK-40W-4	1	PC
12	16420014000007	ALCe-H24B4/C5 左盖板	Left covers plate	1	PC
13	16421001000029	ALCe-H24B4/C5 左挂架	Left suspend plate	1	PC
14	16321006000005	ALCe-H24B4/C5 左侧板组件	Left side plate assembly	1	Set
15	16428001000017	ALCe-H24B4/C5 左泡沫	Left foam	1	PC
16	16321006000023	ALCe-H18A4/C5 背板组件	Back plate assembly	1	Set
17	16324001000066	DLR-45D/DCZC5 蒸发器总成	Evaporator assembly	1	Set
40	16441014000012	电子膨胀阀阀体 CAM-BD18FKS-1	EXV body CAM-BD18FKS-1	1	PC
18	16420005000005	ALCe-H18A4/C5 导风门	Guide throttle	1	PC
19	16420014000016	ALCe-H18A4/C5 顶盖板	Top covers plate	1	PC
20	16428001000023	ALCe-H18A4/C5 顶泡沫	Top foam	1	PC
21	16420006000007	ALCe-H18A4/C5 导风架	Guide wind frame	1	PC
22	16430001000018	步进电机 35BYJ46-QC120	Step motor 35BYJ46-QC120	1	PC
23	16430001000022	(ROHS)步进电机 35BYJ46-QC50	(ROHS)Step motor 35BYJ46-QC50	1	PC
24	16420008000003	ALCe-H24B4/C5 垂直叶片连杆 A	Vertical blade connecting rod A	1	PC
25	16420007000008	ALCe-H24B4/C5 垂直叶片	Vertical blade	9	PCS
26	16428001000018	ALCe-H24B4/C5 右泡沫	Right foam	1	PC
27	16321006000006	ALCe-H24B4/C5 右侧板组件	Right side plate assembly	1	Set
28	16421001000030	ALCe-H24B4/C5 右挂架	Right suspend plate	1	PC
29	16420014000008	ALCe-H24B4/C5 右盖板	Right covers plate	1	PC
30	16321006000008	ALCe-H18A4/C5 集水盘组件	Draining tray assembly	1	Set
31	16432019000004	排水保温管 QR-120N/A	Drainage insulation tube	1	PC
32	16421002000190	ALCe-H18A4/C5 电机固定板	Motor fixed plate	1	PC
35	16444001000013	风轮 Φ145×190(Φ12)	Wind wheel	2	PCS
36	16444002000003	ALCe-H24B4/C5 上蜗壳	Top plastics	2	PCS
	16444002000004	ALCe-H24B4/C5 下蜗壳	Under plastics	2	PCS
37	11222023000333	R 显示灯板 SX-DISP(ZDJ)-02-SYE1	Display board	1	PC
38	16420017000002	ALCe-H24B4/C5 显示盒	Display board cover	1	PC
39	16420013000019	ALCe-H18A4/C5 面板	Front panel	1	PC

ARVCF-H071/4R1A, ARVCF-H080/4R1A, ARVCF-H090/4R1A, ARVCF-H100/4R1A



ARVCF-H071/4R1A, ARVCF-H080/4R1A

N0.	BOM Number	Chinese name	Part Name	Quantity	Unit
1	16420012000002	ALCe-H24B4/C5 滤网	Filter net	2	PCS
2	16420010000002	ALCe-H24B4/C5 格栅	Grille	2	PCS
3	16420012000003	ALCe-H24B4/C5 中滤网	Middle filter net	1	PC
4	16420010000003	ALCe-H24B4/C5 中格栅	Middle grille	1	PC
5	16420015000002	ALCe-H24B4/C5 左装饰板	Left decorative plate	1	PC
6	16421038000009	ALCe-H24B4/C5 电控盒	Electrical assembly	1	PC
7	16421005000205	ALCe-H24B4/C5 电控盒盖	Electrical control box	1	PC
8	11220544000008	R51L/C(5)双联压线座组件	Double line pressing seat assembly	1	Set

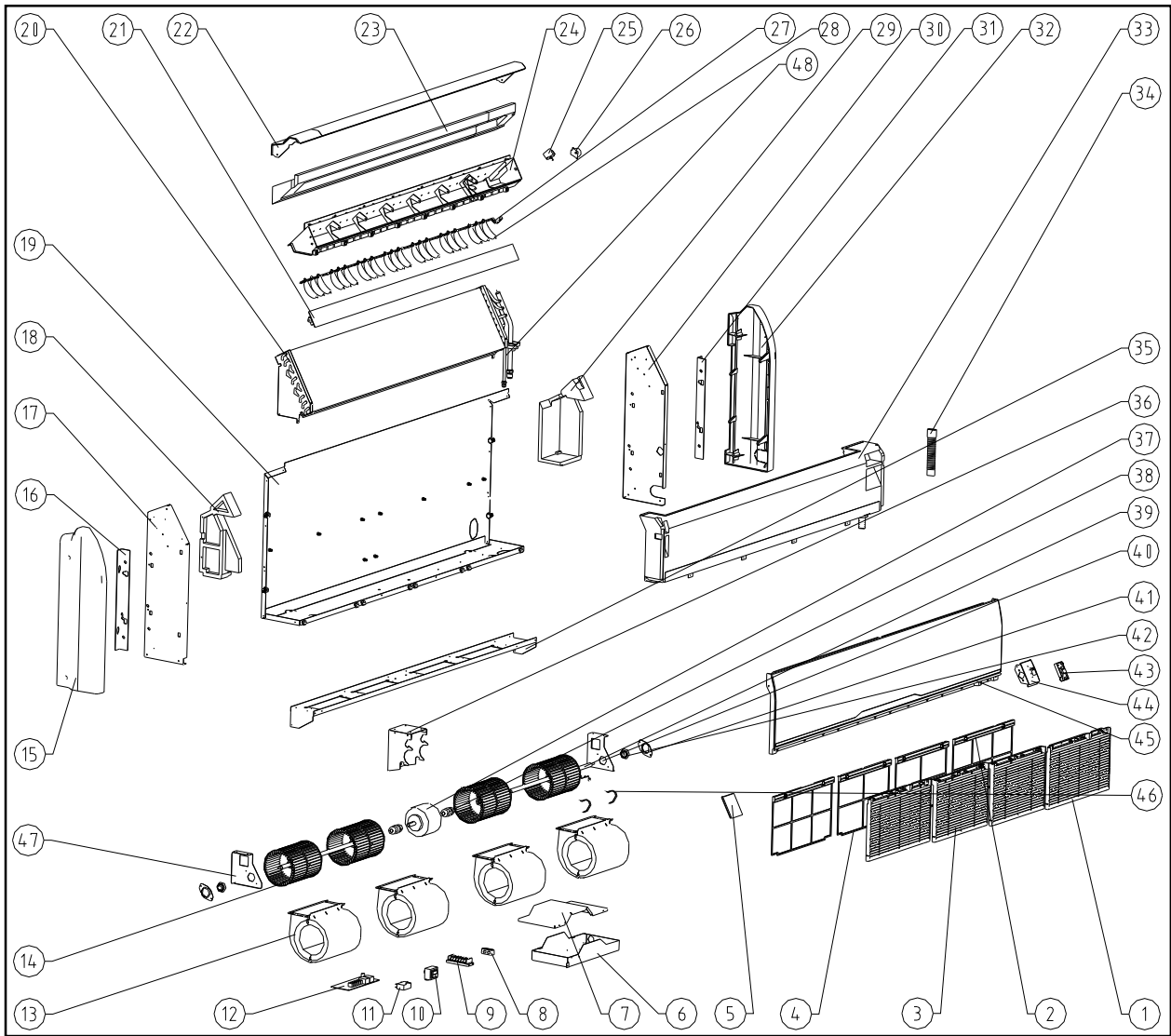
9	16427001000010	端子板 5位(600V 4mm2)AB	Terminal board	1	PC
10	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
11	16430015000016	(ROHS)电容 4μF/450V a.c	Capacitor 4μF/450V a.c	1	PC
12	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	PC
13	16444002000003	ALCe-H24B4/C5 上蜗壳	Top plastics	3	PCS
	16444002000004	ALCe-H24B4/C5 下蜗壳	Under plastics	3	PCS
14	16444001000004	风轮 Φ145×190(Φ15)	Wind wheel	3	PCS
15	16420014000007	ALCe-H24B4/C5 左盖板	Left covers plate	1	PC
16	16421001000029	ALCe-H24B4/C5 左挂架	Left suspend plate	1	PC
17	16321006000005	ALCe-H24B4/C5 左侧板组件	Left side plate assembly	1	Set
18	16428001000017	ALCe-H24B4/C5 左泡沫	Left foam	1	PC
19	16321006000003	ALCe-H24B4/C5 背板组件	Back plate assembly	1	Set
20	16324001000064	DLR-63D/DCZC5 蒸发器总成	Evaporator assembly	1	Set
47	16441014000013	电子膨胀阀阀体 CAM-BD22FKS-1	EXV body CAM-BD22FKS-1	1	PC
21	16420005000003	ALCe-H24B4/C5 导风门	Guide throttle	1	PC
22	16420014000009	ALCe-H24B4/C5 顶盖板	Top covers plate	1	PC
23	16428001000019	ALCe-H24B4/C5 顶泡沫	Top foam	1	PC
24	16420006000004	ALCe-H24B4/C5 导风架	Guide wind frame	1	PC
25	16430001000018	步进电机 35BYJ46-QC120	Step motor 35BYJ46-QC120	1	PC
26	16430001000022	(ROHS)步进电机 35BYJ46-QC50	(ROHS)Step motor 35BYJ46-QC50	1	PC
27	16420008000003	ALCe-H24B4/C5 垂直叶片连杆 A	Vertical blade connecting rod A	1	PC
	16420008000004	ALCe-H24B4/C5 垂直叶片连杆 B	Vertical blade connecting rod B	1	PC
28	16420007000008	ALCe-H24B4/C5 垂直叶片	Vertical blade	15	PCS
29	16428001000018	ALCe-H24B4/C5 右泡沫	Right foam	1	PC
30	16321006000006	ALCe-H24B4/C5 右侧板组件	Right side plate assembly	1	Set
31	16421001000030	ALCe-H24B4/C5 右挂架	Right suspend plate	1	PC
32	16420014000008	ALCe-H24B4/C5 右盖板	Right covers plate	1	PC
33	16321006000002	ALCe-H24B4/C5 集水盘组件	Draining tray assembly	1	Set
34	16432019000004	排水保温管 QR-120N/A	Drainage insulation tube	1	PC
35	16421002000185	ALCe-H24B4/C5 电机固定板	Motor fixed plate	1	PC
36,37,46	16430001000019	电机 YSK-70W-4	Motor YSK-70W-4	1	PC
38	16444007000001	联轴器 Φ15	Coupling	1	PC
39	16444007000003	加长轴 Φ15×565	Lengthening shaft	1	PC
40	16421002000011	ALCe-H24B4/C5 轴承固定座	Bearing permanent seat	1	PC
41	16421002000219	GR-50D/DC2 橡胶轴承压板	Rubber bearing holder	1	PC
42	16432016000033	GR-50D/DC2 橡胶轴承	Rubber bearing	1	PC
43	11222023000333	R 显示灯板 SX-DISP(ZDJ)-02-SYE1	Display board	1	PC
44	16420017000002	ALCe-H24B4/C5 显示盒	Display board cover	1	PC
45	16420013000016	ALCe-H24B4/C5 面板	Panel	1	PC

ARVCF-H090/4R1A , ARVCF-H100/4R1A

N0.	BOM Number	Chinese name	Part Name	Quantity	Unit
1	16420012000002	ALCe-H24B4/C5 滤网	Filter net	2	PCS
2	16420010000002	ALCe-H24B4/C5 格栅	Grille	2	PCS
3	16420012000003	ALCe-H24B4/C5 中滤网	Middle filter net	1	PC
4	16420010000003	ALCe-H24B4/C5 中格栅	Middle grille	1	PC
5	16420015000002	ALCe-H24B4/C5 左装饰板	Left decorative plate	1	PC
6	16421038000009	ALCe-H24B4/C5 电控盒	Electrical assembly	1	PC
7	16421005000205	ALCe-H24B4/C5 电控盒盖	Electrical control box	1	PC
8	11220544000008	R51L/C(5)双联压线座组件	Double line pressing seat assembly	1	Set
9	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
10	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
11	16430015000016	(ROHS)电容 4μF/450V a.c	Capacitor 4μF/450V a.c	1	PC
12	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	PC
13	16444002000003	ALCe-H24B4/C5 上蜗壳	Top plastics	3	PCS
	16444002000004	ALCe-H24B4/C5 下蜗壳	Under plastics	3	PCS
14	16444001000004	风轮 Φ145×190(Φ15)	Wind wheel	3	PCS
15	16420014000007	ALCe-H24B4/C5 左盖板	Left covers plate	1	PC
16	16421001000029	ALCe-H24B4/C5 左挂架	Left suspend plate	1	PC
17	16321006000005	ALCe-H24B4/C5 左侧板组件	Left side plate assembly	1	Set
18	16428001000017	ALCe-H24B4/C5 左泡沫	Left foam	1	PC
19	16321006000003	ALCe-H24B4/C5 背板组件	Back plate assembly	1	Set
20	16324001000065	DLR-90D/DCZC5 蒸发器总成	Evaporator assembly	1	Set
47	16441014000013	电子膨胀阀阀体 CAM-BD22FKS-1	EXV body CAM-BD22FKS-1	1	PC
21	16420005000003	ALCe-H24B4/C5 导风门	Guide throttle	1	PC
22	16420014000009	ALCe-H24B4/C5 顶盖板	Top covers plate	1	PC
23	16428001000019	ALCe-H24B4/C5 顶泡沫	Top foam	1	PC
24	16420006000004	ALCe-H24B4/C5 导风架	Guide wind frame	1	PC
25	16430001000018	步进电机 35BYJ46-QC120	Step motor 35BYJ46-QC120	1	PC
26	16430001000022	(ROHS)步进电机 35BYJ46-QC50	(ROHS)Step motor 35BYJ46-QC50	1	PC
27	16420008000003	ALCe-H24B4/C5 垂直叶片连杆 A	Vertical blade connecting rod A	1	PC
	16420008000004	ALCe-H24B4/C5 垂直叶片连杆 B	Vertical blade connecting rod B	1	PC
28	16420007000008	ALCe-H24B4/C5 垂直叶片	Vertical blade	15	PCS
29	16428001000018	ALCe-H24B4/C5 右泡沫	Right foam	1	PC
30	16321006000006	ALCe-H24B4/C5 右侧板组件	Right side plate assembly	1	Set
31	16421001000030	ALCe-H24B4/C5 右挂架	Right suspend plate	1	PC
32	16420014000008	ALCe-H24B4/C5 右盖板	Right covers plate	1	PC
33	16321006000002	ALCe-H24B4/C5 集水盘组件	Draining tray assembly	1	Set
34	16432019000004	排水保温管 QR-120N/A	Drainage insulation tube	1	PC
35	16421002000185	ALCe-H24B4/C5 电机固定板	Motor fixed plate	1	PC
36,37,46	16430001000019	电机 YSK-70W-4	Motor YSK-70W-4	1	PC
38	16444007000001	联轴器 Φ15	Coupling	1	PC
39	16444007000003	加长轴 Φ15×565	Lengthening shaft	1	PC

40	16421002000011	ALCe-H24B4/C5 轴承固定座	Bearing permanent seat	1	PC
41	16421002000219	GR-50D/DC2 橡胶轴承压板	Rubber bearing holder	1	PC
42	16432016000033	GR-50D/DC2 橡胶轴承	Rubber bearing	1	PC
43	11222023000333	R 显示灯板 SX-DISP(ZDJ)-02-SYE1	Display board	1	PC
44	16420017000002	ALCe-H24B4/C5 显示盒	Display board cover	1	PC
45	16420013000016	ALCe-H24B4/C5 面板	Panel	1	PC

ARVCF-H112/4R1A, ARVCF-H125/4R1A, ARVCF-H140/4R1A



ARVCF-H112/4R1A, ARVCF-H125/4R1A, ARVCF-H140/4R1A

N0.	BOM Number	Chinese name	Part Name	Quantity	Unit
1	16420012000002	ALCe-H24B4/C5 滤网	Filter net	2	PCS
2	16420010000002	ALCe-H24B4/C5 格栅	Grille	2	PCS
3	16420012000003	ALCe-H24B4/C5 中滤网	Middle filter net	2	PCS
4	16420010000003	ALCe-H24B4/C5 中格栅	Middle grille	2	PCS
5	16420015000002	ALCe-H24B4/C5 左装饰板	Left decorative plate	1	PC
6	16421038000009	ALCe-H24B4/C5 电控盒	Electrical assembly	1	PC
7	16421005000205	ALCe-H24B4/C5 电控盒盖	Electrical control box	1	PC
8	11220544000008	R51L/C(5)双联压线座组件	Double line pressing seat assembly	1	Set
9	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
10	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
11	16430015000005	(ROHS)电容 5μF/450V a.c	Capacitor 4μF/450V a.c	1	PC
12	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board	1	PC

13	16444002000003	ALCe-H24B4/C5 上蜗壳	Top plastics	4	PCS
	16444002000004	ALCe-H24B4/C5 下蜗壳	Under plastics	4	PCS
14	16444001000004	风轮 $\Phi 145 \times 190(\Phi 15)$	Wind wheel	4	PCS
15	16420014000007	ALCe-H24B4/C5 左盖板	Left covers plate	1	PC
16	16421001000029	ALCe-H24B4/C5 左挂架	Left suspend plate	1	PC
17	16321006000005	ALCe-H24B4/C5 左侧板组件	Left side plate assembly	1	Set
18	16428001000017	ALCe-H24B4/C5 左泡沫	Left foam	1	PC
19	16321006000020	ALCe-H42A5/C5 背板组件	Back plate assembly	1	Set
20	16324001000062	DLR-112D/DCZC5 蒸发器总成	Evaporator assembly	1	Set
47	16441014000003	电子膨胀阀阀体 CAM-BD24FKS-1	EXV body CAM-BD24FKS-1	1	PC
21	16420005000004	ALCe-H42A5/C5 导风门	Guide throttle	1	PC
22	16420014000015	ALCe-H42A5/C5 顶盖板	Top covers plate	1	PC
23	16428001000022	ALCe-H42A5/C5 顶泡沫	Top foam	1	PC
24	16420006000006	ALCe-H42A5/C5 导风架	Guide wind frame	1	PC
25	16430001000018	步进电机 35BYJ46-QC120	Step motor 35BYJ46-QC120	1	PC
26	16430001000022	(ROHS)步进电机 35BYJ46-QC50	(ROHS)Step motor 35BYJ46-QC50	1	PC
27	16420008000003	ALCe-H24B4/C5 垂直叶片连杆 A	Vertical blade connecting rod A	1	PC
	16420008000005	ALCe-H42A5/C5 垂直叶片连杆	Vertical blade connecting rod B	1	PC
28	16420007000008	ALCe-H24B4/C5 垂直叶片	Vertical blade	21	PCS
29	16428001000018	ALCe-H24B4/C5 右泡沫	Right foam	1	PC
30	16321006000006	ALCe-H24B4/C5 右侧板组件	Right side plate assembly	1	Set
31	16421001000030	ALCe-H24B4/C5 右挂架	Right suspend plate	1	PC
32	16420014000008	ALCe-H24B4/C5 右盖板	Right covers plate	1	PC
33	16321006000007	ALCe-H42A5/C5 集水盘组件	Draining tray assembly	1	Set
34	16432019000004	排水保温管 QR-120N/A	Drainage insulation tube	1	PC
35	16421002000187	ALCe-H42A5/C5 电机固定板	Motor fixed plate	1	PC
36,37,46	16430001000026	电机 YSK-105W-4	Motor YSK-70W-4	1	PC
38	16444007000001	联轴器 $\Phi 15$	Coupling	2	PCS
39	16444007000003	加长轴 $\Phi 15 \times 565$	Lengthening shaft	2	PCS
40	16421002000011	ALCe-H24B4/C5 轴承固定座	Bearing permanent seat	1	PC
41	16421002000219	GR-50D/DC2 橡胶轴承压板	Rubber bearing holder	2	PCS
42	16432016000033	GR-50D/DC2 橡胶轴承	Rubber bearing	2	PCS
43	11222023000333	R 显示灯板 SX-DISP(ZDJ)-02-SYE1	Display board	1	PC
44	16420017000002	ALCe-H24B4/C5 显示盒	Display board cover	1	PC
45	16420013000017	ALCe-H42A5/C5 面板	Panel	1	PC
47	16421002000189	ALCe-H42A5/C5 轴承固定座	Display board cover	1	PC

Wall-mounted Type

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1. Features



Anti-cold-air (Heat pump only)

When starting the heating operation, the fan speed is regulated automatically from the lowest grade to the preset level, according to the temperature rising of evaporator. The function can prevent cold air blowing out at the beginning of the operation, which avoids the discomfort to the user.



24-hour timer

User can set on the timer to turn on or off the air conditioner any time within 24 hours.



Low ambient cooling

The air conditioner with a special built-in low ambient cooling component can be used in temperature as low as -15C for cooling operation.



Sleep Mode

User can select mode after pressing time-off button, this function will adjust temperature automatically, which makes a comfortable sleep environment and save energy.



Self-diagnosis function

Monitoring some abnormal operations or parts failures, which happens microcomputer of the air conditioner which switch off and protect the system automatically. Meanwhile, the error or protection code will be displayed on the indoor unit.



Force cooling

This function is convenient when user can't find the remote controller.



Auto restart

If the machine is suddenly shut down during operation, the unit will record the operating



Intelligent defrosting

Normal defrost function can only be operated in certain time, but AUX commercial air conditioner's intelligent defrost can start automatically according to the surrounding condition.

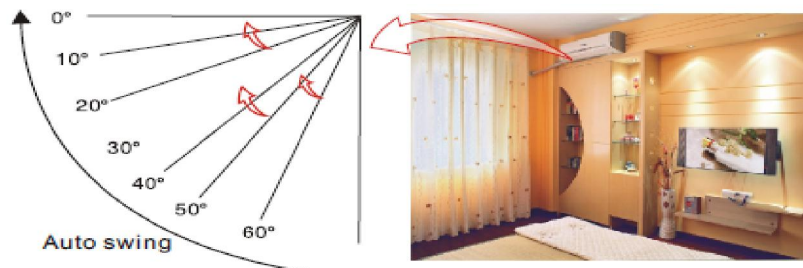
SA



SF



- ◇ EXV inside type have two kind panels choose : SF/SA
- ◇ Easy and flexible installation, which can satisfy the different space demands
- ◇ Low noise, creates quite and comfortable environment.
- ◇ Adopt cross fan and optimization wind path design, supply air is strong and quiet.



2.Specifications

Model Model	Indoor		ARVWM-H022/4R1 B	ARVWM-H028/4R1 B	ARVWM-H036/4R1 B
Factory Model	SA Type		ALW-H07A4/R1DIS A-A	ALW-H09B4/R1DIS A-A	ALW-H12B4/R1DIS A-A
	SF Type		ALW-H07A4/R1DIS F-A	ALW-H09B4/R1DIS F-A	ALW-H12B4/R1DIS F-A
Code	SA Type		16104111000009	16104113000010	16104115000011
	SF Type		16104111000010	16104113000011	16104115000012
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	2.2	2.8	3.6
	Heating	kW	2.5	3.0	4.3
Fan Motor	Model		YYK19-4	YYK19-4	YYK19-4
	Brand		Dongfang Motor	Dongfang Motor	Dongfang Motor
	Output Power	W	19	19	19
	Capacitor	uF	1.5	1.5	1.5
	Speed (Hi/Mi/Lo)	r/min	1130/900/850	1130/900/850	1130/900/850
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.5	1.5	1.5
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	639x266x25.4	639x266x25.4	639x266x25.4
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	620/496/434	620/496/434	620/496/434
	Noise Level(Hi/Mi/Lo)	dB(A)	38/35/31	38/35/31	38/35/31
	External Static Pressure	Pa	0	0	0
	Net Dimension (W×D×H)	mm	880x286x203	880x286x203	880x286x203
	Packing Dimension (W×D×H)	mm	950x350x270	950x350x270	950x350x270
	Net Weight	Kg	12	12	12
	Gross Weight	Kg	14	14	14
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	6.35
	Gas Side	mm	9.52	9.52	9.52
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32

Ambient Temperature Range(Cooling/Heating)		°C	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	10~20	10~25	15~30
Stuffing Quantity	20/40/40H	Unit	320/656/732	320/656/732	320/656/732

Notes:

1. Cooling Capacity:Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

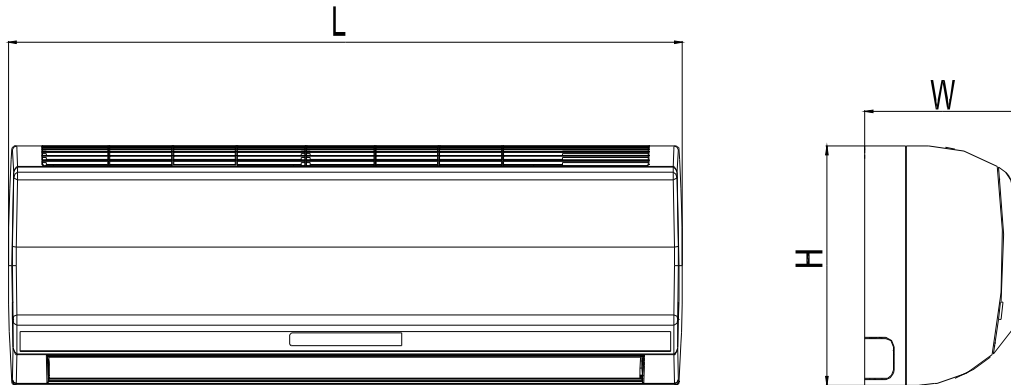
Model	Indoor		ARVWM-H045/4R1 B	ARVWM-H056/4R1 B	ARVWM-H071/4R1 B
Factory Model	SA Type		ALW-H16B4/R1DIS A-A	ALW-H18B4/R1DIS A-A	ALW-H24B4/R1DIS A-A
	SF Type		ALW-H16B4/R1DIS F-A	ALW-H18B4/R1DIS F-A	ALW-H24B4/R1DIS F-A
Code	SA Type		16104117000009	16104119000009	16104121000008
	SF Type		16104117000010	16104119000010	16104121000009
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	4.5	5.6	7.1
	Heating	kW	5.0	6.0	8.0
Fan Motor	Model		YYS20-4-5A	YYS20-4-5A	YYS60-4
	Brand		Dongfang Motor	Dongfang Motor	Dongfang Motor
	Output Power	W	20	20	60
	Capacitor	uF	2	2	2
	Speed (Hi/Mi/Lo)	r/min	1150/1050/950	1150/1050/950	1350/1250/1150
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.5	1.5	1.5
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	800x267x25.4	800x267x25.4	1130.5x411x25.4
Indoor Unit	Indoor Air Flow	m ³ /h	950/760/665	950/760/665	1100/880/770

	(Hi/Mi/Lo)				
	Noise Level(Hi/Mi/Lo)	dB(A)	41/38/34	41/38/34	45/42/37
	External Static Pressure	Pa	0	0	0
	Net Dimension (W×D×H)	mm	1095x312x215	1095x312x215	1310x322x235
	Packing Dimension (W×D×H)	mm	1175x375x275	1175x375x275	1420x440x380
	Net Weight	Kg	14	14	20
	Gross Weight	Kg	17	17	23
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	9.52
	Gas Side	mm	12.7	12.7	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	20~35	25~45	30~50
Stuffing Quantity	20/40/40H	Unit	240/496/558	240/496/558	240/496/558

Notes:

1. Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping, length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,leve difference l : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

3.Dimensions

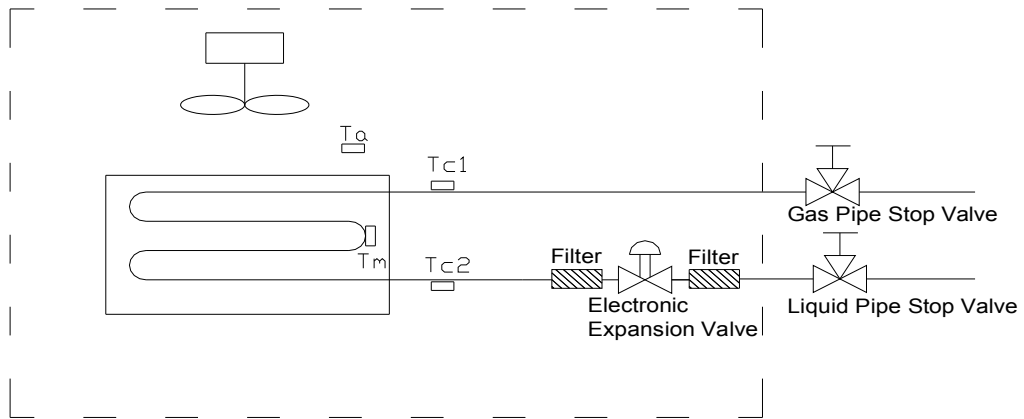


Physical Dimension		ARVWM-H022/4R1B	ARVWM-H028/4R1B	ARVWM-H036/4R1B
Length	mm	880	880	880
Height	mm	286	286	286
Width	mm	203	203	203

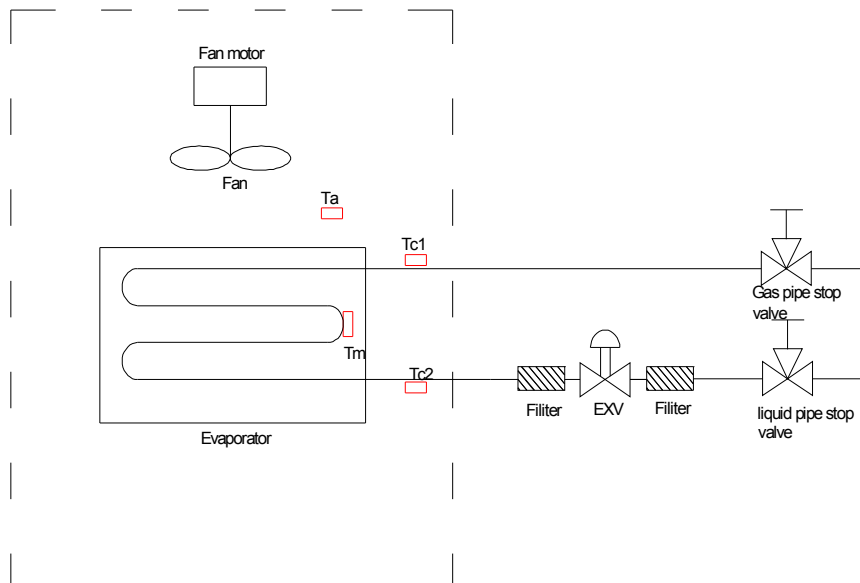
Physical Dimension		ARVWM-H045/4R1B	ARVWM-H056/4R1B	ARVWM-H071/4R1B
Length	mm	1095	1095	1310
Height	mm	312	312	322
Width	mm	215	215	235

4.Piping Diagrams

EXV Built-in type



EXV separate type



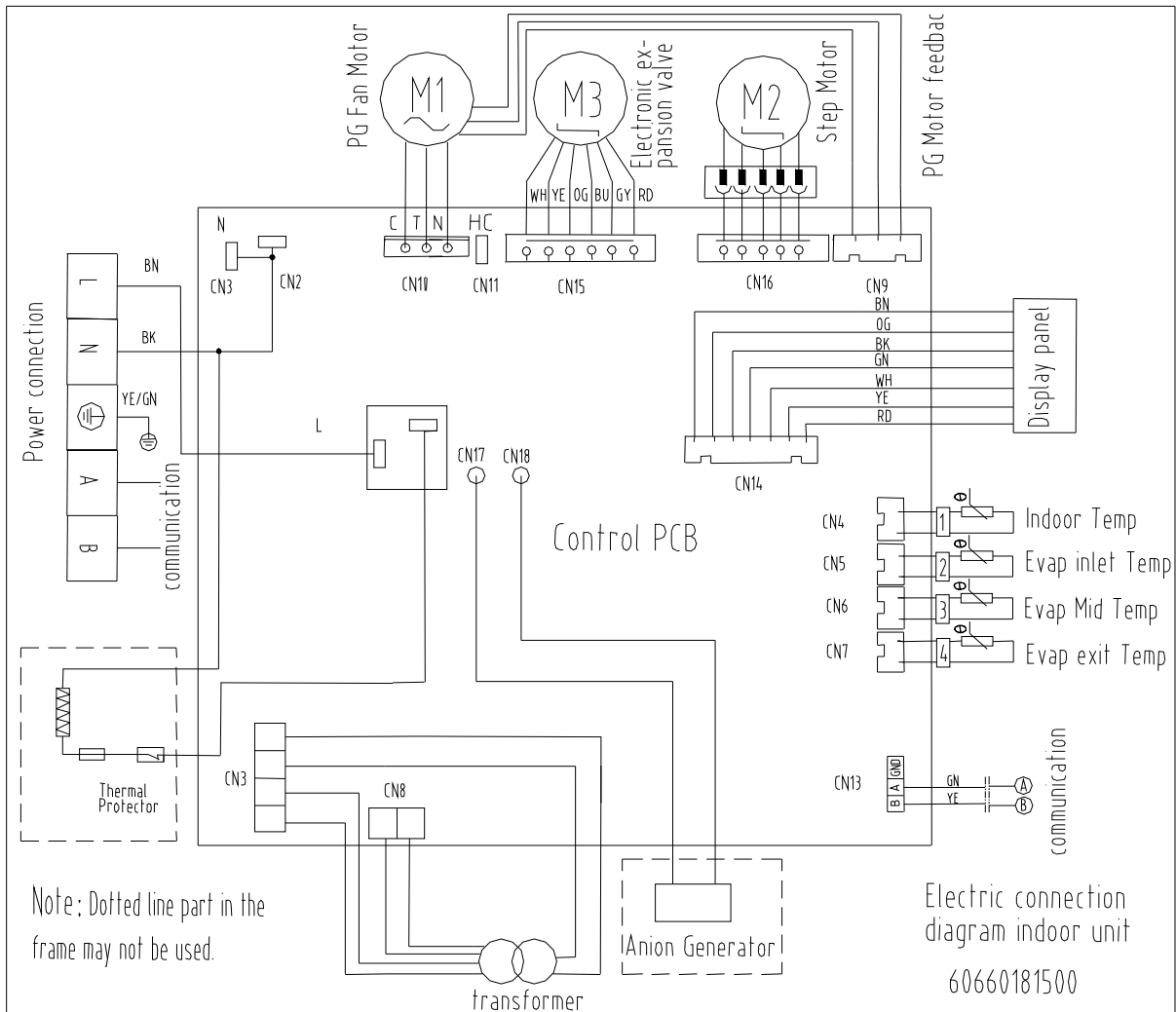
Refrigerant pipe connection port diameters

(mm)

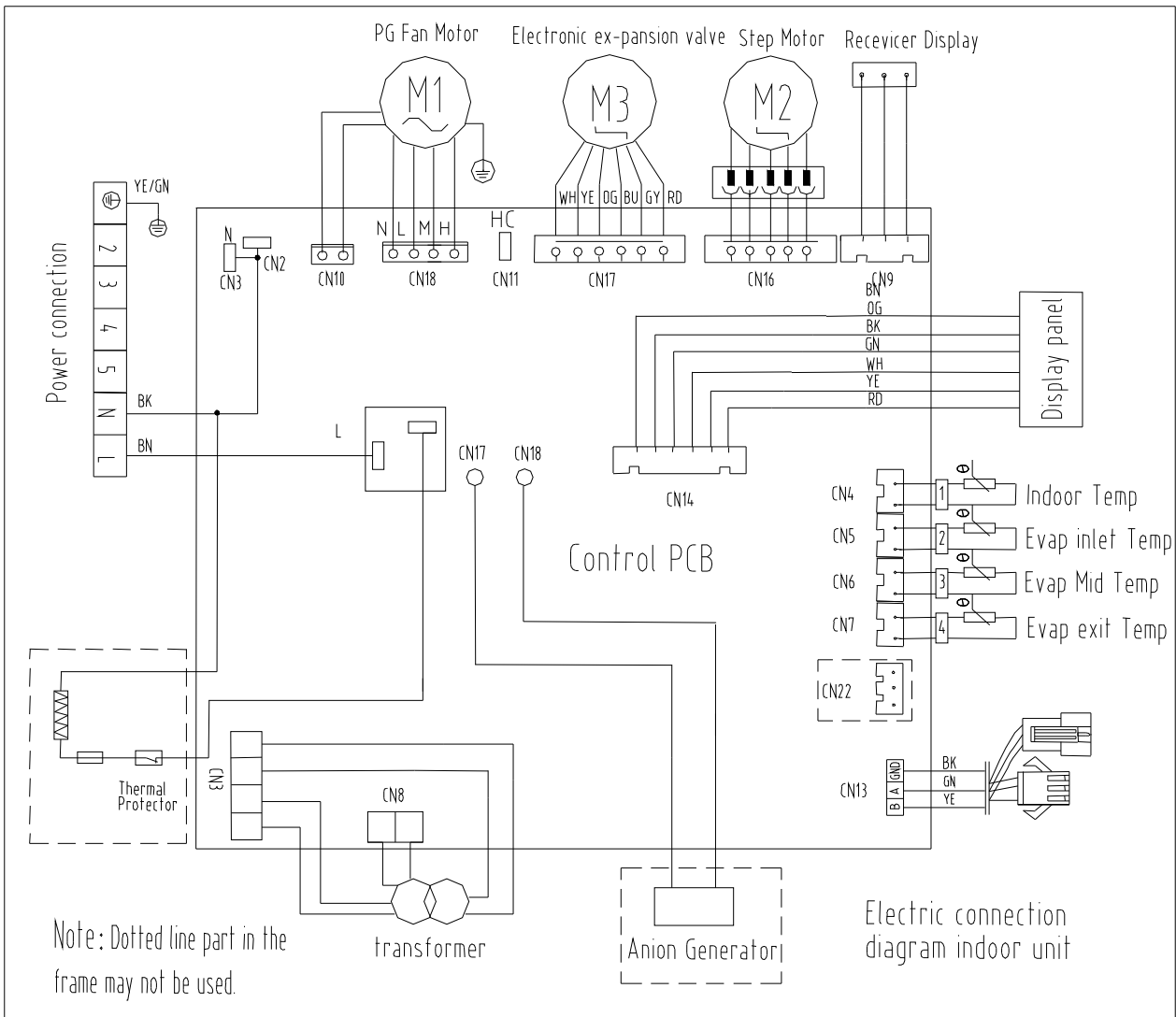
Model	Gas	Liquid
ARVWM-H022/28/364R1B	Φ9.52	Φ6.35
ARVWM-H045/56/4R1B	Φ12.7	Φ6.35
ARVWM-H071/4R1B	Φ15.88	Φ6.35

5.Wiring Diagrams

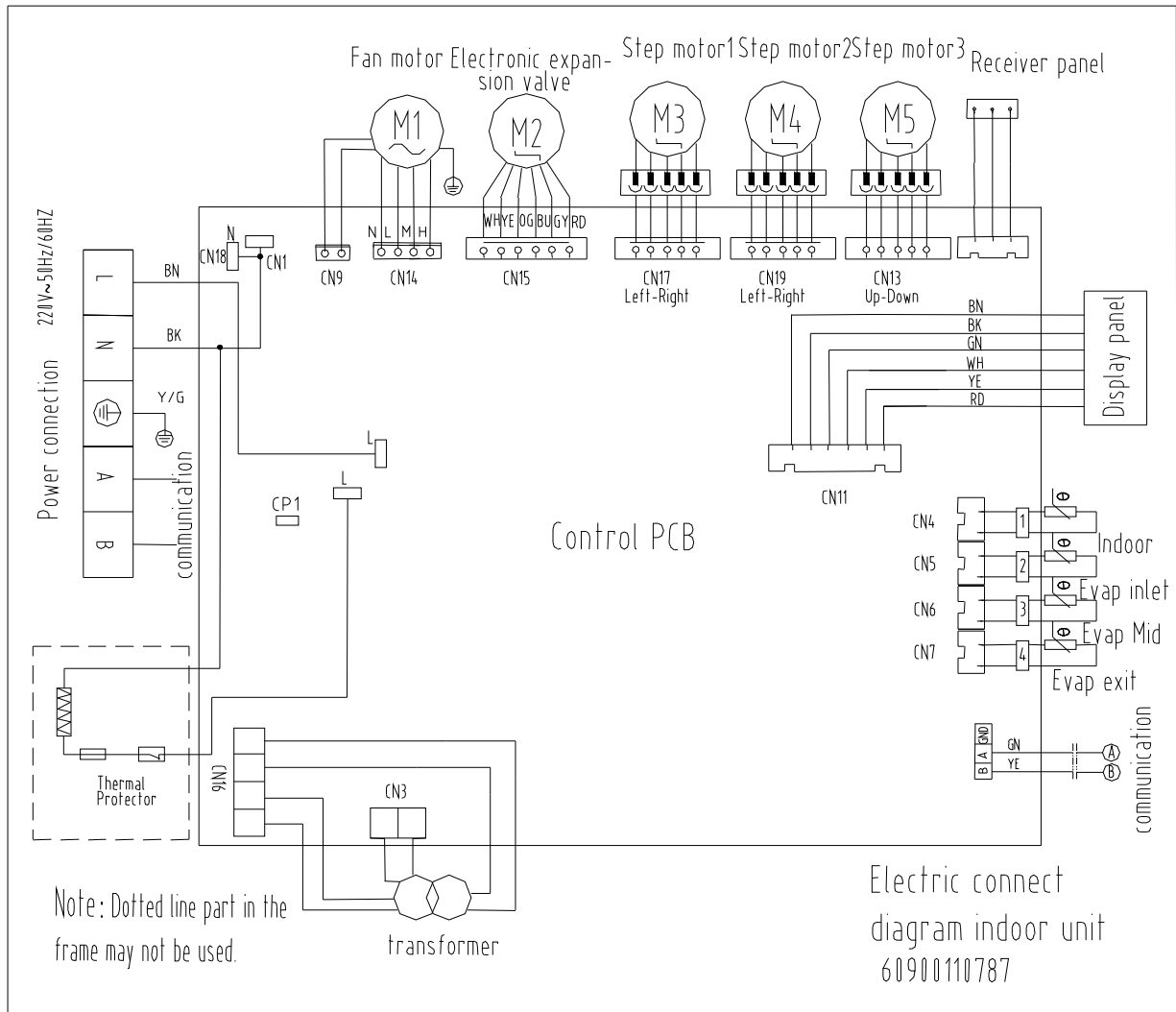
ARVWM-H022/4R1B; ARVWM-H028/4R1B; ARVWM-H036/4R1B



ARVWM-H045/4R1B; ARVWM-H056/4R1B



ARVWM-H071/4R1B



6 Electrical Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
ARVWM-H022/4R1B	50	220-240V	198	254	0.25	10	0.019	0.20
ARVWM-H028/4R1B	50	220-240V	198	254	0.25	10	0.019	0.20
ARVWM-H036/4R1B	50	220-240V	198	254	0.25	10	0.019	0.20
ARVWM-H045/4R1B	50	220-240V	198	254	0.28	10	0.02	0.22
ARVWM-H056/4R1B	50	220-240V	198	254	0.28	16	0.02	0.22
ARVWM-H071/4R1B	50	220-240V	198	254	0.58	16	0.06	0.46

Symbols:

MCA: Min. Circuit Amps.(A)
MFA: Max. Breaker Amps.
kW : Fan Motor Rated Output(kW)
FLA: Full Load Amps.(A)
IFM:Indoor Fan Motor

Note:

1. Min. and Max. Voltage :Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed rang limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. $MCA=1.25 \times FLA$
4. Select wire size based on the MCA.

7.Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

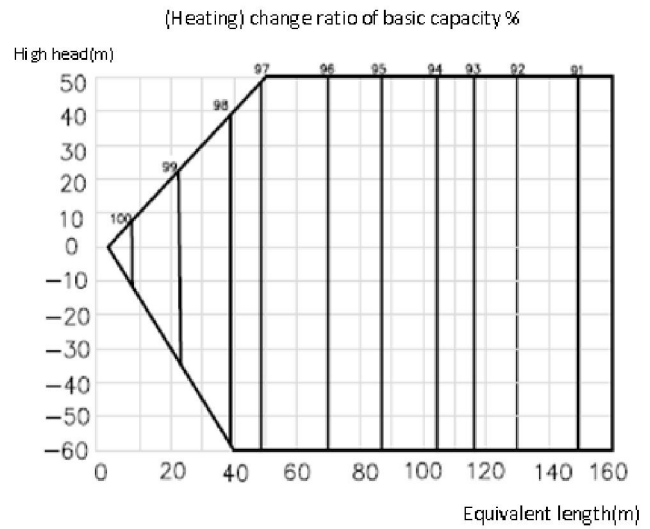
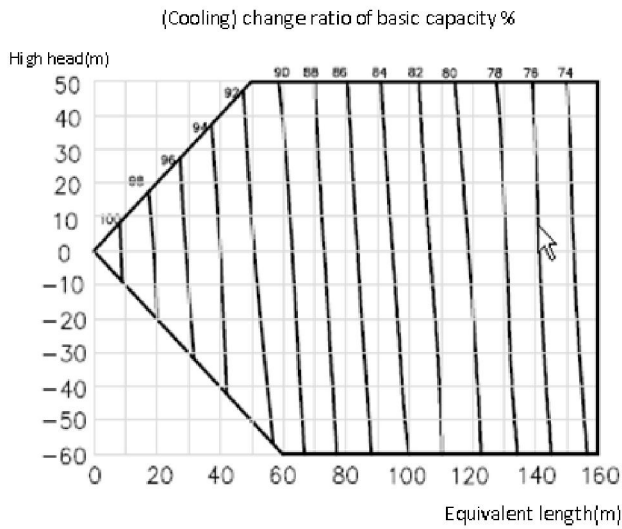
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.10	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1.0	1.06	1.13
	Power	0.96	0.97	1.0	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.90	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.80	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction coefficient	Indoor back temperature of dry bulb [°C]		
		15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.70
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1.0	0.96
	Power	0.94	1.0	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17

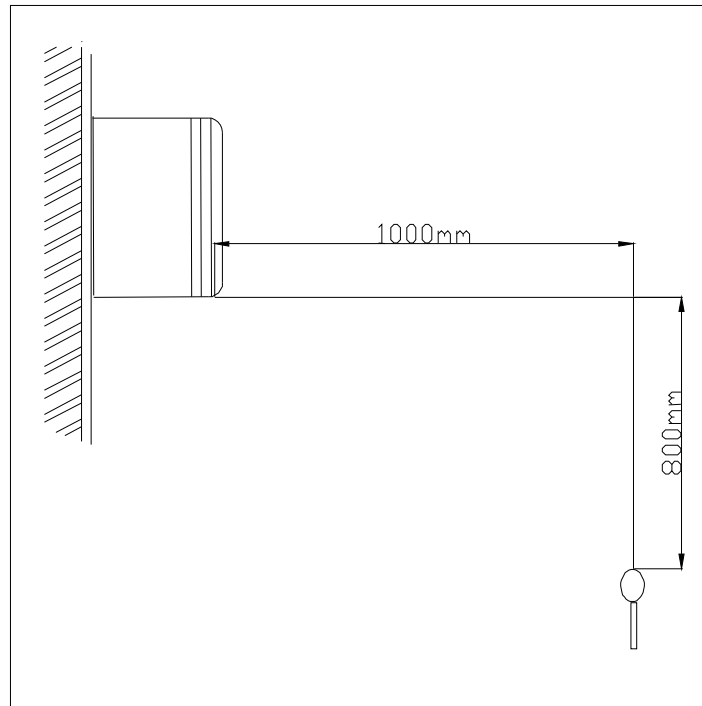
15-24	Heating capacity	0.85 – 1.05 of nominal
	Power	0.80 – 1.20 of nominal

Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube



Positive side of high head means installation height of outdoor unit should be higher than indoor unit; negative side of high head means installation height of outdoor unit should be lower than indoor unit; (change ratio of basic capacity)

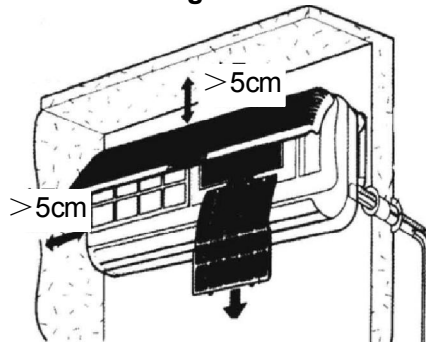
8.Sound levels



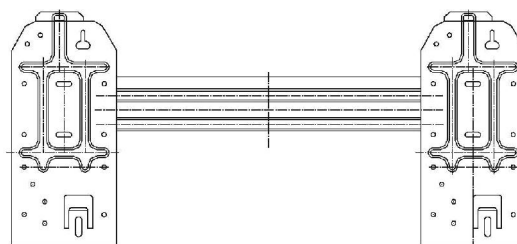
Model (EXV Built-in)	Noise level under three speeds of fan (dB(A))		
	H	M	L
ARVWM-H022/4R1B	37	34	29
ARVWM-H028/4R1B	37	34	29
ARVWM-H036/4R1B	38	35	31
ARVWM-H045/4R1B	41	38	34
ARVWM-H056/4R1B	41	38	34
ARVWM-H071/4R1B	45	42	37

9 Installation

9.1 Spacing Reserved Between the Surrounding of Indoor Unit and Barrier



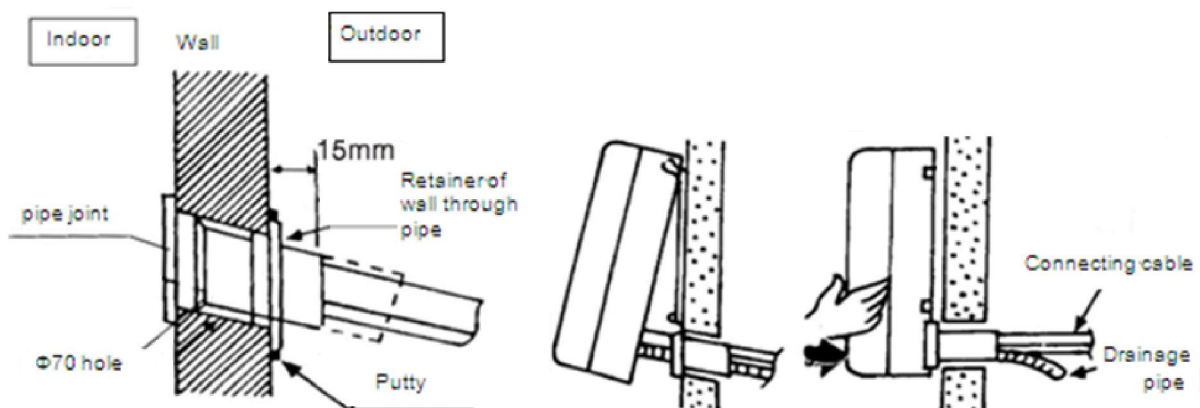
9.2 Hoisting of Indoor Unit



- ◇ The wall for installing indoor unit should be firm to prevent vibration. Horizontally install hanging plate on the wall with four cruciform screws to keep laterally horizontal and longitudinally vertical.
- ◇ Drill a $\Phi 70$ Auxiliary pipeline hole on lower left side or lower right side of hanging plate. The position of hole should slightly incline downwards.
- ◇ Hang indoor unit on hanging plate and move the unit to left or right to ensure hanging hook is correctly positioned on the hanging plate.

9.3 Installation of Sterilization Net

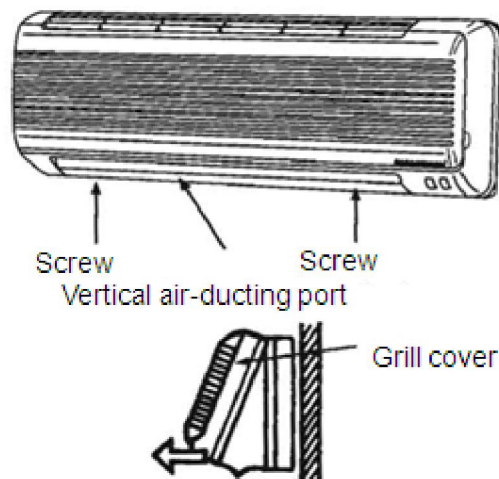
- ◇ Uplift panel of indoor unit, pull out the bulge in the middle of air filter downwards after uplifting;
- ◇ Completely snap sterilization net inside accessory bag into sterilization mounting support on air filter;
- ◇ Put back air filter in the original way, close the panel of indoor unit and tightly clamp;
- ◇ Push the lower left side and lower right side of indoor unit towards hanging plate until hanging hook inserts into groove and sends click sound.



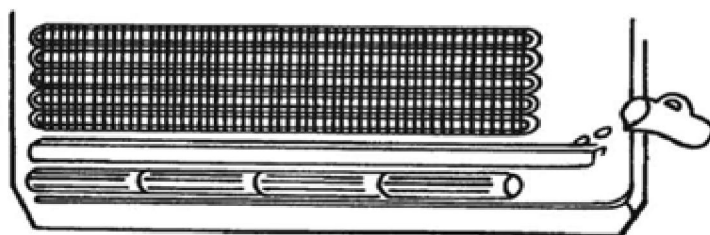
9.4 Drainage Checking

In case of maintenance, remove grille from casing of the unit according to the following procedures:

- ◇ As shown in right diagram, remove two screw caps on both sides of the front grille and then screw down two fixing screws.
- ◇ Pull the lower end of grille cover towards oneself to remove it.
- ◇ Reinstall grille cover, then install the grille cover to proper position according to the reverse sequence of the above.
- ◇ Pour a glass of water into plastic drainage groove;
- ◇ Confirm if the water flows through the drainage outlet of indoor unit.

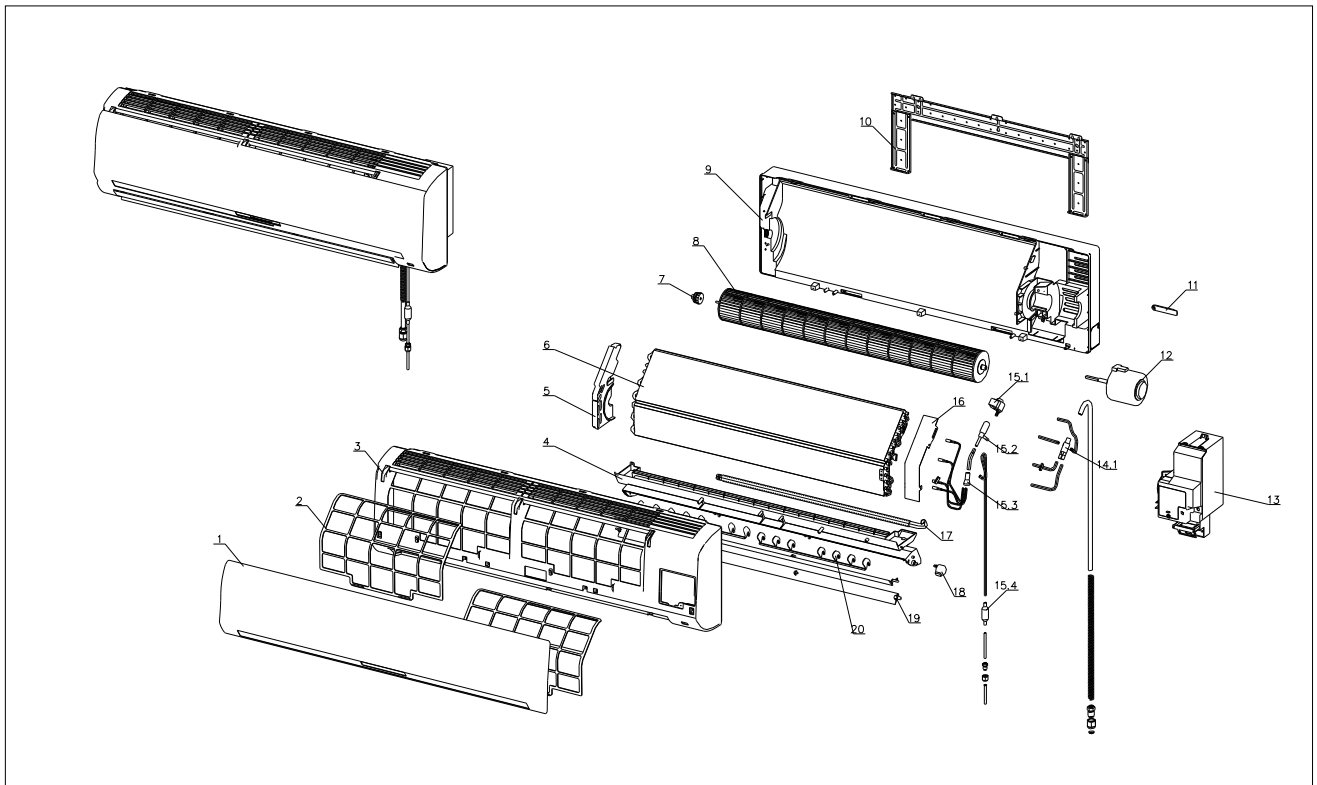


Pull the lower end of front grille towards oneself to remove the front grille



10. Explode view

ARVWM-H022/4R1B; ARVWM-H028/4R1B; ARVWM-H036/4R1B

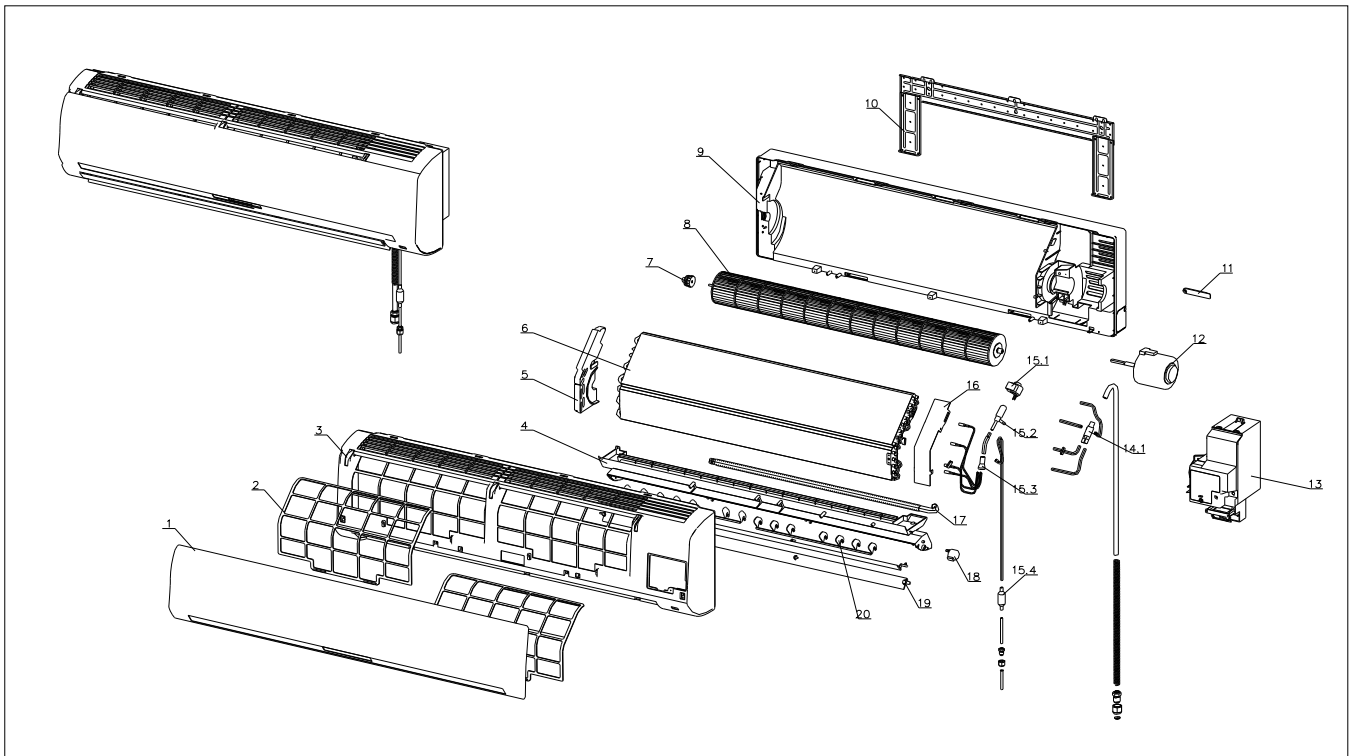


ARVWM-H022/4R1B; ARVWM-H028/4R1B; ARVWM-H036/4R1B

NO	AUX code	Components description	Components description	Quantity	Unit
1	11220502000935	ASW-H12A4/SA1 面板组件	Panel assembly	1	Set
2	1122050800000 8	R25G/SA 过滤网组件(三折黑色)	Air filter assembly (triple fold, black)	2	Sets
3	1500R000251A	ASW-H12A4/SAR2 中框组件(二折)	Middle of frame assembly	1	Set
4	11220503000032	R32G/SA(2)导风架组件	Wind guide frame assembly	1	Set
5	1632400100005 4	DLR-36G/DCZDSA 蒸发器组件(内置)	Evaporator assembly (built-in)	1	Set
6	11320015000045	R32G/SA(2)蒸发器左支架	Evaporator left bracket	1	PC
7	11320105000002	R32G/SA(2)风叶轴承座	Fan bearing	1	PC
8	11220513000033	R32G/H 室内风叶(贯流)(ROHS)	Cross-flow fan	1	Set
9	11220500000045	R32G/SA(2)底座组件	Bottom assembly	1	Set
10	11221500000013	R32G/SA 挂板组件	Cladding assembly	1	Set
11	11320084000010	R25G/H1 管路压攀 A(ROHS)	Pipe cover (ROHS)	1	PC
12	11230003000056	室内电机(塑封)(YYK19-4)(出口)	Fan motor YYK19-4	1	PC
13	11320052000011	R32G/SA 电机压盖	Fan motor cover	1	PC
14	1642100100037 8	蒸发器侧板(内置)	Evaporator sideboard (built-in)	1	PC
15	1632200100002 5	电控总成	Electrical assembly	1	Set
15.1	11320057000037	R32G/SA 电控盒	Electrical box	1	PC

15.2	11320087000013	R35W/E6 电源连接线压板(ROHS)	Power connection terminal cover	1	PC
15.3	1642200100007 6	控制板 DCZDSA-28G-SN1F-SYE1	Electrical PCB	1	PC
15.4	1643000700005 8	传感器 15K3950 XH2(白)(塑封)1	Sensor 15K3950 XH2 (White 0.5m)	1	PC
15.5	1643000700005 9	传感器 20K3950 XH2(蓝)(铜)2	Sensor 20K3950 XH2 (Blue 0.5m)	1	PC
15.6	1643000700006 0	传感器 20K3950 XH2(黄)(铜)3	Sensor 20K3950 XH2 (Yellow 0.5m)	1	PC
15.7	1643000700006 1	传感器 20K3950 XH2(绿)(铜)4	Sensor 20K3950 XH2 (Green 0.5m)	1	PC
15.8	1642700100002 7	端子板 5位(600V 4MM2)挂机	5 terminal board (600V 4MM2)	1	PC
15.9	1643001900028 1	(ROHS)连接线 6芯0.4m I	Connect wire 6 core 0.4m	1	PC
15.1	1643001900012 5	接地线 1.5×300	Earth connection wire 1.5mm×300mm	1	PC
15.11	1642200500000 9	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer TDB-14-B2B(PTC)	1	PC
15.12	1642200800002 5	通讯线 2芯0.3m(XH3Y-U)	Signal wire (Two core 0.3mXH3Y-U)	1	PC
16	1632500100007 8	蒸发器出气管组件(内置)	Evaporator outlet pipe assembly (built-in)	1	Set
16.1	16442007000011	三通接头 9.52/7×7-40	Tee union 9.52/7×7-40	1	PC
17	1632500100010 1	蒸发器进液管组件	Evaporator inlet pipe assembly (built-in)	1	Set
17.1	1644101500000 2	EXV 线圈 CAM-MD12FKS-5 L=1500	EXV coil (CAM-MD12FKS-5 L=1500)	1	PC
17.2	1644101400000 2	电子膨胀阀阀体 CAM-BD15FKS-2	EXV (CAM-BD15FKS-2)	1	PC
17.3	1644200100000 5	过滤器 DLR-25F/BPZ 冻结	Filter DLR-25F/BPZ	1	PC
18	11230002000019	R 步进电机 24BYJ48*150*EH	Step motor 24BYJ48*150*EH	1	PC
19	11320020000005	R32G/H 保温排水软管	Insulation drain hose	1	Set
20	18430000503	R25G/H1 导风叶片 A(PP/黑色)	Wind guide blade (Black)	2	PCS
21	11220534000019	R32G/SA(2)导风门组件	Wind guide assembly	1	Set

ARVWM-H045/4R1B; ARVWM-H056/4R1B;

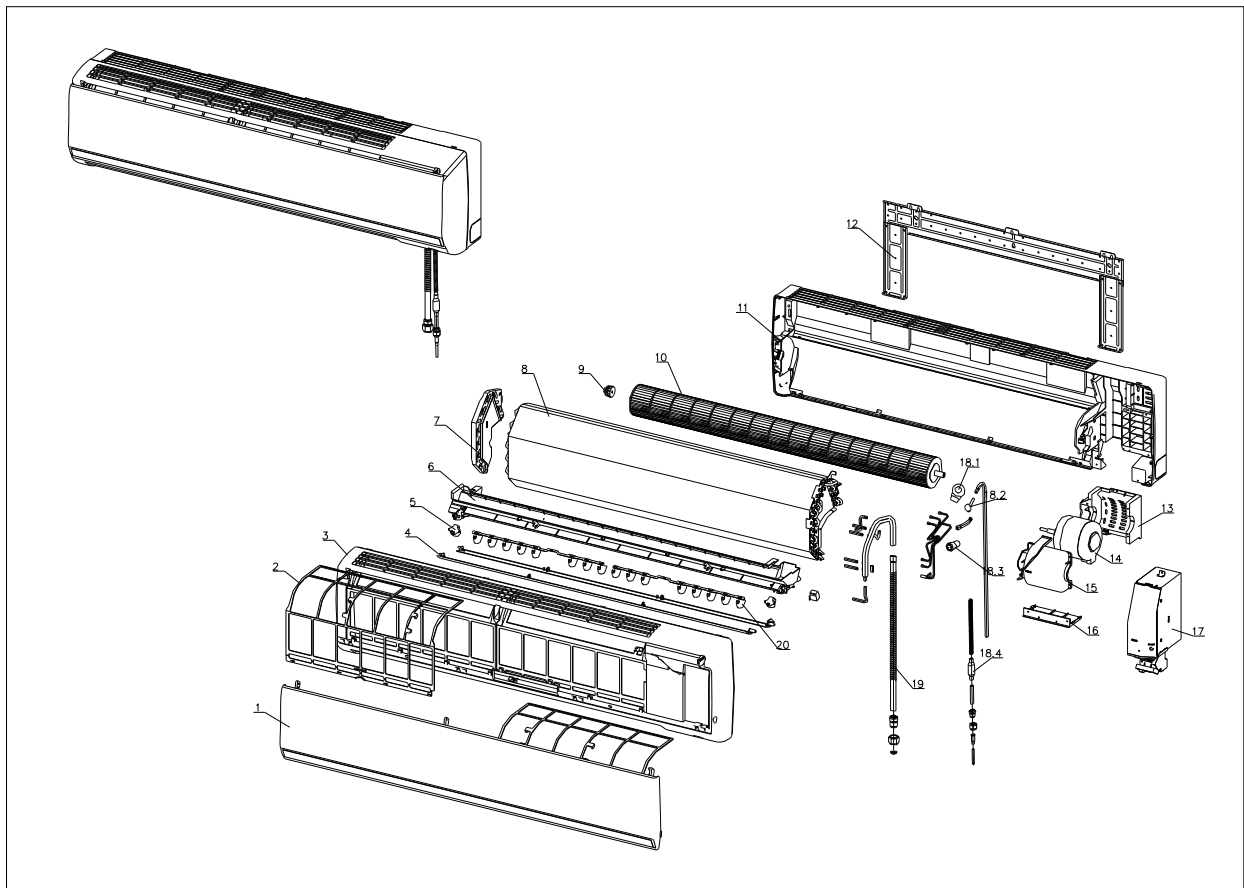


ARVWM-H045/4R1B; ARVWM-H056/4R1B;

NO	AUX code	Components description	Components description	Quantity	Unit
1	11220502000937	ASW-H18B4/SA1 面板组件	Panel assembly	1	Set
2	1843R000178	ASW-H18B4/ET 过滤网(ROHS)	Air filter assembly (ROHS)	2	PCS
3	11220501000106	ASW-H18B4/ET 中框组件(ROHS)	Middle of frame assembly	1	Set
4	11220503000045	导风架组件(ROHS)	Wind guide frame assembly	1	Set
5	11320015000055	ASW-H24B4/EN 蒸发器左支架	Evaporator left bracket	1	PC
6	16324001000044	A 蒸发器组件(内置)	Evaporator assembly (built-in)	1	Set
7	11220551000003	70G 贯流风叶轴承组合件	Cross-flow fan bearing assembly	1	PC
8	11220513000013	室内风叶组件(贯流)	Cross-flow fan (ROHS)	1	Set
9	11220500000065	R53G/ET 底座组件(新)	Bottom assembly	1	Set
10	11221500000020	ASW-H18B4/ET(RoHS)挂板组件	Cladding assembly	1	PC
11	11320087000012	管路压板(ROHS)	Pipe cover (ROHS)	1	PC
12	11230003000052	电机(YYS20-4-5A)ROHS	Fan motor (YYS20-4-5A) ROHS	1	PC
13	16322001000024	DLR-45G/DCZDSA 电控总成	Electrical assembly	1	Set
13.1	11320057000006	ASW-H18B4/ET 电控盒(ROHS)	Electrical control box	1	PC
13.2	16422001000089	辅 PCB 板接线板 ROHS	Assistance connection board (ROHS)	1	PC
13.3	16422001000075	控制板 DCZDSA-45G-SN3F-SYE1	Electrical PCB	1	PC

13.4	16430007000058	传感器 15K3950 XH2(白)(塑封)1	Sensor 15K3950 XH2(White 0.5m)	1	PC
13.5	16430007000059	传感器 20K3950 XH2(蓝)(铜)2	Sensor 20K3950 XH2(Blue 0.5m)	1	PC
13.6	16430007000060	传感器 20K3950 XH2(黄)(铜)3	Sensor 20K3950 XH2(Yellow 0.5m)	1	PC
13.7	16430007000061	传感器 20K3950 XH2(绿)(铜)4	Sensor 20K3950 XH2(Green 0.5m)	1	PC
13.8	11320087000013	R35W/E6 电源连接线压板 (ROHS)	Power supply terminal protection board	1	PC
13.9	16430019000281	(ROHS)连接线 6 芯 0.4m I	Connect wire 6 core 0.4m	1	PC
13.1	16430019000125	接地线 1.5×300	Earth connection wire 1.5mm×300mm	1	PC
13.11	16427001000022	端子板 7 位(600V 4mm ²) II	7 terminal board (600V 4MM ²)	1	PC
13.12	16427018000003	压线板 (R)53E	Wire protection board	1	PC
13.13	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	TransformerTDB-14-B2B(PTC)	1	PC
13.14	16422008000025	通讯线 2 芯 0.3m(XH3Y-U)	Signal wire (Two core 0.3mXH3Y-U)	1	PC
14	16325001000064	蒸发器出气管组件(内置)	Evaporator outlet pipe assembly(built-in)	1	Set
14.1	11325011000093	ASW-H18B4/EN 出气集管(翻边孔)	Outlet collecting pipe (ROHS)	1	PC
15	16325001000079	蒸发器进液管组件_(内置)	Evaporator inlet pipe assembly(built-in)	1	Set
15.1	16441015000002	EXV 线圈 CAM-MD12FKS-5 L=1500	EXV coil(CAM-MD12FKS-5 L=1500)	1	PC
15.2	16441014000012	EXV 阀体 CAM-BD18FKS-1	EXV (CAM-BD15FKS-2)	1	PC
15.3	16442013000005	分路接头 9.52/4×3.5 四路删	Branch union	1	PC
15.4	16442001000016	过滤器 Φ6×Φ6.35-70(R410A)	Filter Φ6×Φ6.35-70(R410A)	1	PC
16	16421001000377	蒸发器侧板(内置)	Evaporator sideboard (built-in)	1	PC
17	11320020000005	R32G/H 保温排水软管	Insulation drain hose	1	Set
18	11230002000017	R 步进电机 28BYJ48*280*EH	Step motor 28BYJ48*280*EH	1	PC
19	18320000178	ASW-H18B4/ET 导风门 A	Wind guide entrance board	2	PCS
20	1800R000018A	ASW-H18B4/ET 导风架(配分体叶片)	Wind guide frame	2	PCS

ARVWM-H071/4R1B



ARVWM-H071/4R1B

NO	AUX code	Components description	Components description	Quantity	Unit
1	13220502000023	ASW-H30A4/SA-5 面板组件(未喷涂)	Panel assembly	1	Set
2	1843R000033	ASW-H30A4/SA-5 左过滤网(ROHS)	Left air filter(ROHS)	2	PCS
3	11220501000108	ASW-H30A4/SA-5 中框组件(ROHS)	Middle of frame assembly	1	PC
4	1832R000058	ASW-H30A4/SA-5 导风门 A (ROHS)	Wind guide entrance board	2	PCS
5	11230002000023	R 步进电机 24BYJ48*300*XH 双电机	Step motor 24BYJ48*300*XH	3	PCS
6	11220503000047	ASW-H30A4/SA-5 导风架组件(双电机)	Wind guide frame assembly	1	Set
7	11320015000080	蒸发器左支架 (HIPS)	Evaporator left bracket	1	PC
8	11224005000227	ASW-H30A4/SA-5 蒸发器组(ROHS)	Evaporator assembly (built-in)	1	Set
9	11220551000003	70G 贯流风叶轴承组合件	Cross-flow fan bearing assembly	1	PC
10	11220513000003	80G 贯流风叶组件(ROHS)	Cross-flow fan (ROHS)	1	Set
11	11220500000049	ASW-H30A4/SA-5 底座组件(ROHS)	Bottom assembly (ROHS)	1	Set
12	11221500000010	ASW-H30A4/SA-5 挂板组件(ROHS)	Cladding assembly (ROHS)	1	Set
13	11320062000016	ASW-H30A4/SA-5 电机固定(ROHS)	Fan motor foundation	1	PC
14	11230003000079	塑封电机 YYS60-4 220-240V/50Hz	Fan motor (YYS60-4)	1	PC
15	11320052000024	ASW-H30A4/SA-5 电机压盖(ROHS)	Fan motor cover board	1	PC
16	11320104000005	ASW-H30A4/SA-5 底座镶块(ROHS)	Fan motor foundation insert	1	PC

			component		
17	16322001000036	DLR-71G/DCZSA+电控总成	Electrical assembly	1	Set
17.1	11221512000006	ASW-H30A4/SA-5 电控盒组件 (ROHS)	Electrical control box	1	Set
17.2	16422001000084	控制板 DCZD-71G-SN3F-SYE1	Electrical PCB	1	PC
17.3	16430007000058	传感器 15K3950 XH2(白)(塑封)1	Sensor 15K3950 XH2 (White 0.5m)	1	PC
17.4	16430007000059	传感器 20K3950 XH2(蓝)(铜)2	Sensor 20K3950 XH2 (Blue 0.5m)	1	PC
17.5	16430007000060	传感器 20K3950 XH2(黄)(铜)3	Sensor 20K3950 XH2 (Yellow 0.5m)	1	PC
17.6	16430007000061	传感器 20K3950 XH2(绿)(铜)4	Sensor 20K3950 XH2 (Green 0.5m)	1	PC
17.7	16430019000125	接地线 1.5×300 mm	Earth connection wire1.5*300mm	1	PC
17.8	16427001000027	端子板 5位(600V 4MM2)挂机	5 terminal board (600V 4MM2)	1	PC
17.9	16427018000003	压线板 (R)53E	Wire cover board	1	PC
17.1	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	TransformerTDB-14-B2B(PTC)	1	PC
17.1 1	16422008000026	(ROHS)通讯线 2芯 0.35m(XH3Y-U)	Signal wire (Two core 0.35mXH3Y-U)	1	PC
17.1 2	11320129000001	PCB 板固定盒(ROHS)	PCB fix frame	1	PC
17.1 3	11320074000002	ASW-H30A4/SA-5 电控盒固定座 ROHS	Electrical box foundation ROHS	1	PC
17.1 4	11320012000001	ASW-H30A4/SA-5 遥控接收座 ROHS	Signal receiver foundation ROHS	1	PC
17.1 5	16427007000006	尼龙扎带 L100	Nylon cable ties L=100mm	1	PC
17.1 7	11320087000013	R35W/E6 电源连接线压板(ROHS)	Power wire protection board	1	PC
17.1 8	11320010000032	ASW-12B3/EV 压线板	Wire protection board	1	PC
18	16325001000081	DLR-71G/DCZSA+进液管组件(内 置)	Evaporator inlet pipe assembly (built-in)	1	Set
18.1	16441015000002	EXV 线圈 CAM-MD12FKS-5 L=1500	EXV coil (CAM-MD12FKS-5 L=1500)	1	PC
18.2	16441014000013	电子膨胀阀阀体 CAM-BD22FKS-1	EXV (CAM-BD22FKS-1)	1	PC
18.3	16442013000036	分路接头 12/7×4 七路	Branch union	1	PC
18.4	16442001000013	过滤器 9.52×9.52-70	Filter 9.52×9.52-70	1	PC
19	16325001000080	DLR-71G/DCZSA+出气管组件	Evaporator outlet pipe assembly	1	Set
20	1843R000032	ASW-H30A4/SA-5 导风叶片(ROHS)	Wind guide fan (ROHS)	2	PCS

Low Static Pressure Duct

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1.Features

- **Compact unit body**

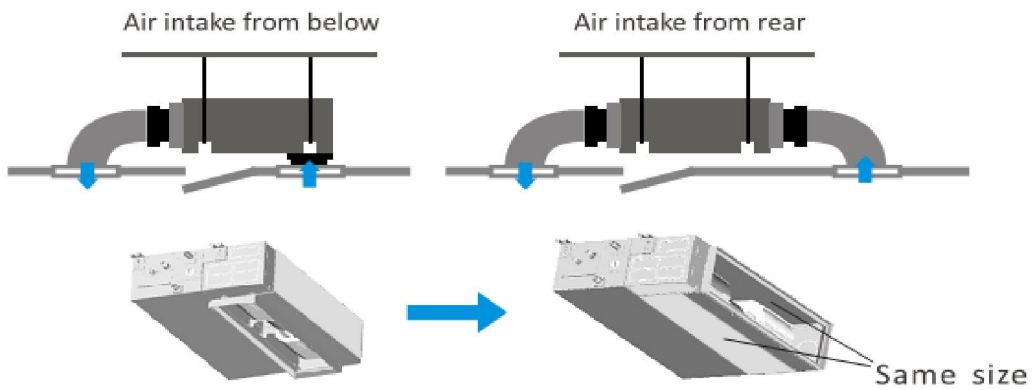
Duct body designed thin and compact. The EXV is fixed inside of the indoor unit, Compact unit body. Concealed installation ,combined with indoor decoration perfectly



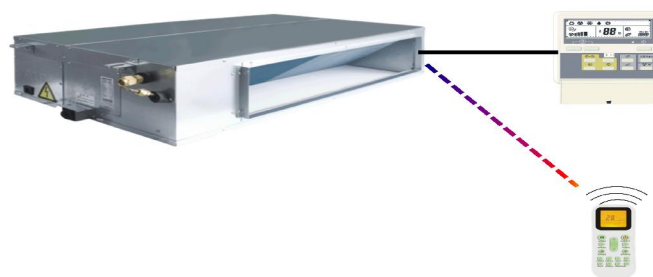
- **Air intake**

The size c
change in

nt to



- **Built-in**



2.Specifications

Model			ARVLD-H022/4R1 A	ARVLD-H028/4R1 A	ARVLD-H036/4R1 A
Factory Model			ALDu-H07A4/R1DI SA	ALDu-H09B4/R1DI SA	ALDu-H12B4/R1DI SA
Code			16104020000008	16104022000010	16104024000012
Power Supply		V~,Hz,P h	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	2.2	2.8	3.6
	Heating	kW	2.5	3.0	4.3
Fan motor	Model		YSK15-4	YSK15-4	YSK22-4(φ12)
	Brand		HUATE	HUATE	AIMUTE
	Output Power	W	15	15	22.0
	Capacitor	uF	1.5	1.5	1.5
	Speed (Hi/Mi/Lo)	r/min	870/820/800	870/820/800	973/910/873
Coil	Number Of Row		2	2	2
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Spacing	mm	1.4	1.4	1.4
	Fin Material		Hydrophilic	Hydrophilic	Hydrophilic
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	685*205*25.4	685*205*25.4	685*205*25.4
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	420/336/294	420/336/294	630/504/441
	Noise Level(Hi/Mi/Lo)	dB(A)	36/33/30	36/33/30	38/35/32
	External Static Pressure	Pa	12/30	12/30	12/30
	Unit Dimension (W*H*D)	mm	880x547x240	880x547x240	880x547x240
	Packing (W*H*D)	mm	980x620x280	980x620x280	980x620x280
	Net Weight	Kg	22.5	22.5	22.5
	Gross Weight	Kg	26	26	26
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	6.35
	Gas Side	mm	9.52	9.52	12.7
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	10~20	10~25	10~35
Qty'per 20'& 40'&40HQ(Only For Reference)		Set	168/344/387	168/344/387	168/344/387

Notes:

1. Cooling Capacity:Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate

Model			ARVLD-H045/4R1 A	ARVLD-H056/4R1 A	ARVLD-H071/4R1 A
Factory Model			ALDu-H16B4/R1DI SA	ALDu-H18B4/R1DI SA	ALDu-H24B4/R1DI SA
Code			16104026000010	16104028000009	16104030000012
Power Supply		V~,Hz,P h	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	4.5	5.6	7.1
	Heating	kW	5.0	6.0	8.0
Fan motor	Model		YSK30-4(φ12)	YSK30-4(φ12)	YSK50-4
	Brand		HUATE	HUATE	HUATE
	Output Power	W	30	30	50
	Capacitor	uF	1.5	1.5	3
	Speed (Hi/Mi/Lo)	r/min	950/865/835	950/865/835	1070/960/800
Coil	Number Of Row		3	3	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Spacing	mm	1.6	1.6	1.6
	Fin Material		Hydrophilic	Hydrophilic	Hydrophilic
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	920*205*38.1	920*205*38.1	1110*205*38.1
Unit	Indoor Air Flow (Hi/Mi/Lo)	m3/h	860/688/602	860/688/602	1200/960/840
	Noise Level(Hi/Mi/Lo)	dB(A)	40/37/34	40/37/34	42/39/36
	External Static Pressure	Pa	12/30	12/30	12/30
	Unit Dimension (W*H*D)	mm	1110x547x240	1110x547x240	1305x547x240
	Packing (W*H*D)	mm	1210x620x280	1210x620x280	1400x620x280
	Net Weight	Kg	31	31	35.5
	Gross Weight	Kg	35	35	40.5
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	9.52
	Gas Side	mm	12.7	12.7	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)

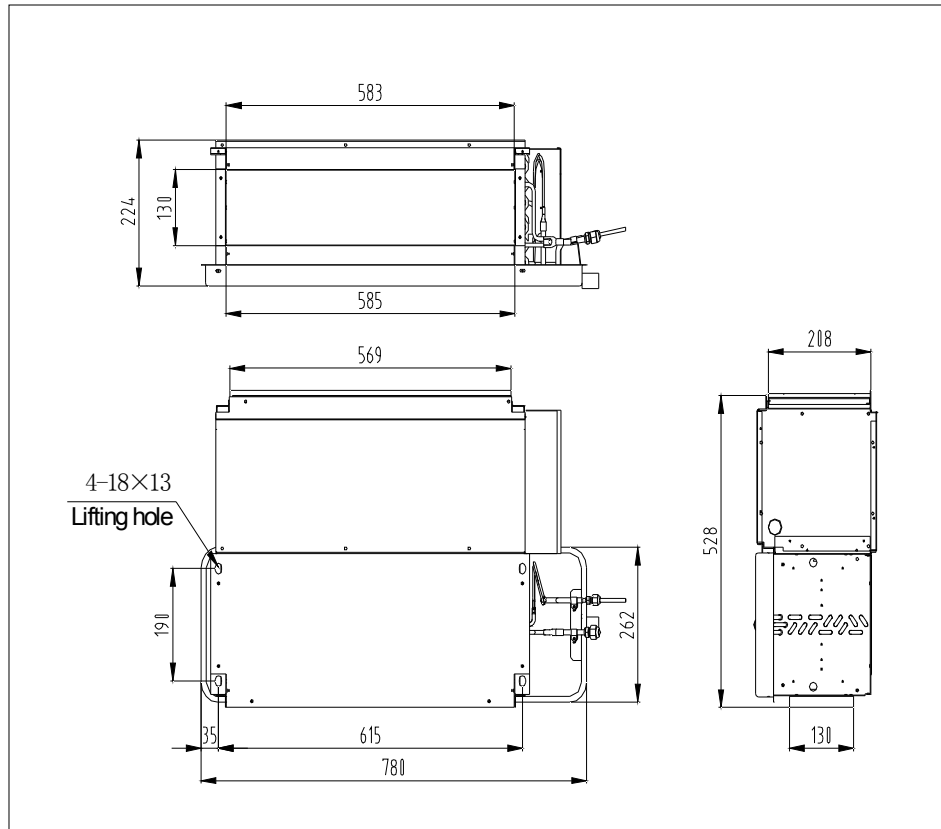
Operation Temperature Range	°C	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)	°C	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area	m ²	20~50	30~60	40~70
Qty'per 20'& 40'&40HQ(Only For Reference)	Set	104/224/252	104/224/252	104/216/243

Notes:

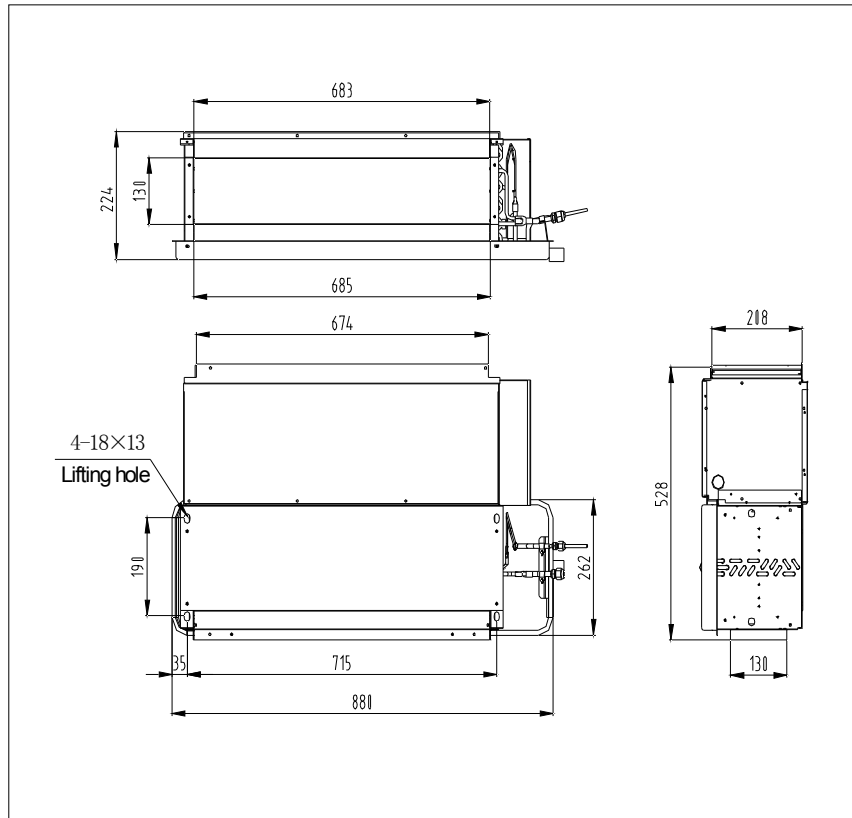
1. Cooling Capacity:Indoor temp.27°CDB,19°CWB,outdoor temp.35°CDB,24°CWB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20°CDB, outdoor temp.7°CDB,6°CWB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate

3.Dimensions

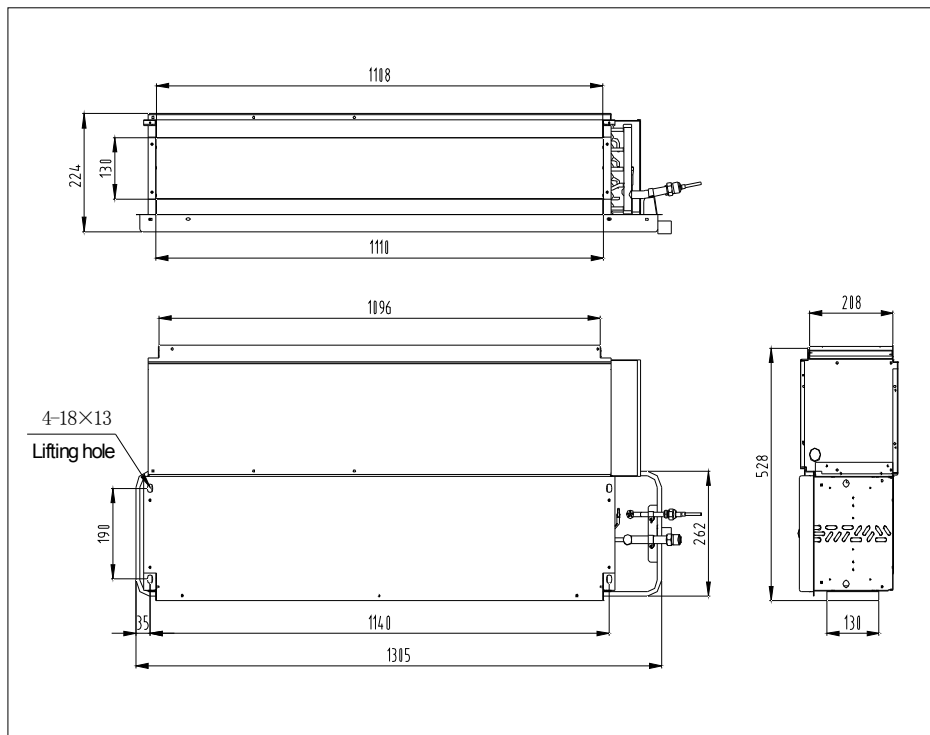
ARVLD-H022/4R1A, ARVLD-H028/4R1A, ARVLD-H036/4R1A



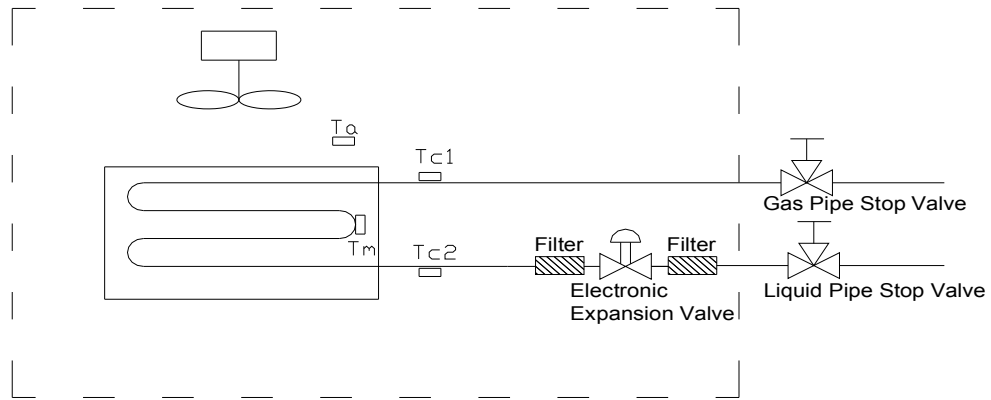
ARVLD-H045/4R1A, ARVLD-H056/4R1A



ARVLD-H071/4R1A



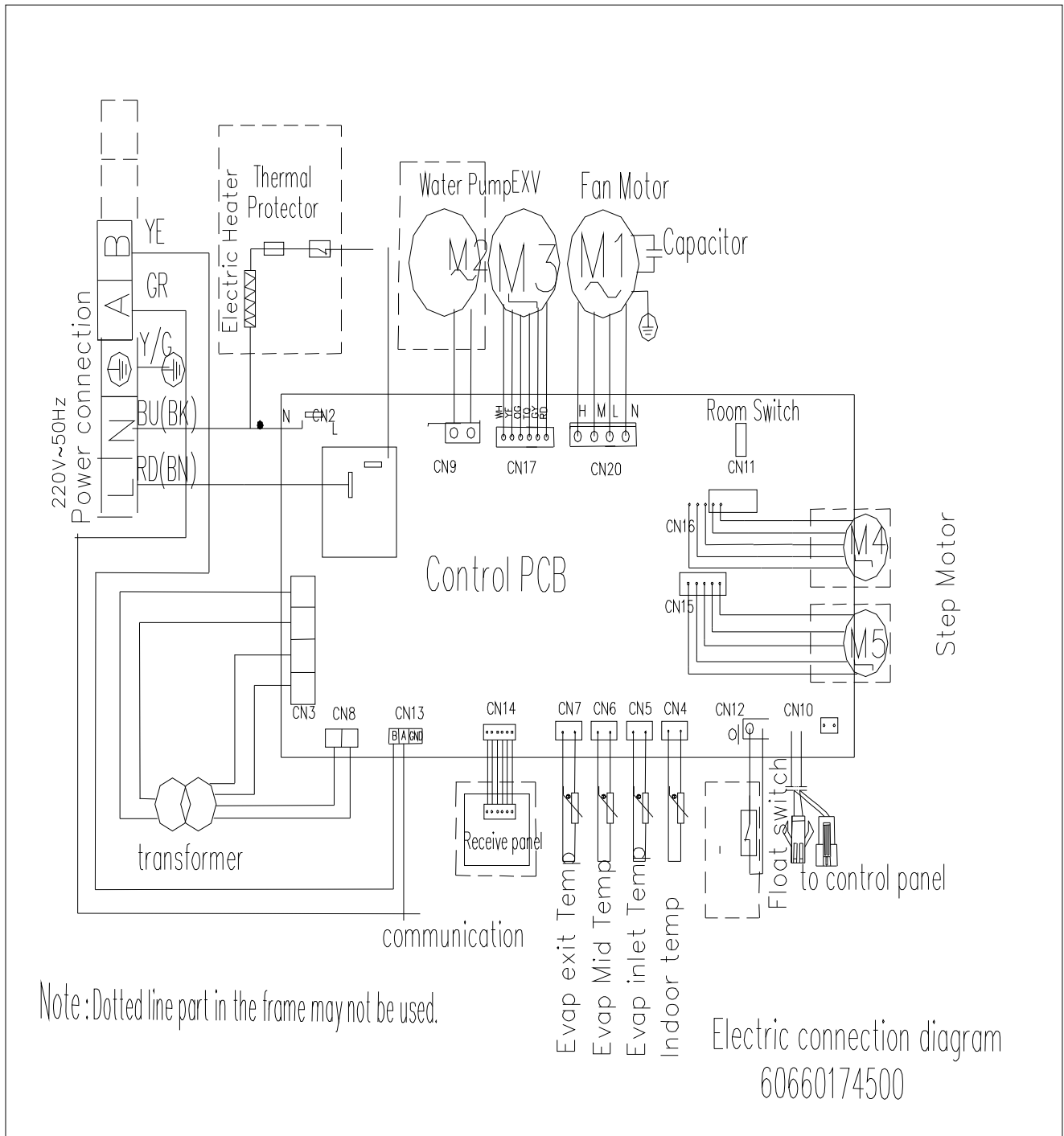
4.Piping Diagrams



Refrigerant pipe connection port diameters

Model	Gas	Liquid
ARVLD-H22/28/4R1A	Φ9.52	Φ6.35
ARVLD-H36/45/564R1A	Φ12.7	Φ6.35
ARVLD-H714/R1A	Φ15.88	Φ6.35

5.Wiring Diagrams



6 Electrical Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
ARVLD-H022/4R1A	50	220-240V	198	254	0.25	10	0.015	0.20
ARVLD-H028/4R1A	50	220-240V	198	254	0.25	10	0.015	0.20
ARVLD-H036/4R1A	50	220-240V	198	254	0.34	10	0.022	0.27
ARVLD-H045/4R1A	50	220-240V	198	254	0.60	10	0.03	0.48
ARVLD-H056/4R1A	50	220-240V	198	254	0.60	10	0.03	0.48
ARVLD-H071/4R1A	50	220-240V	198	254	0.73	10	0.05	0.58

Symbols:

MCA: Min. Circuit Amps.(A)

MFA: Max.Breaker Amps.

kW : Fan Motor Rated Output(kW)

FLA: Full Load Amps.(A)

IFM:Indoor Fan Motor

Note:

1.Min. and Max. Voltage :Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed rang limits.

2.Maximum allowable voltage unbalance between phases is 2%.

3.MCA =1.25 x FLA

7.Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

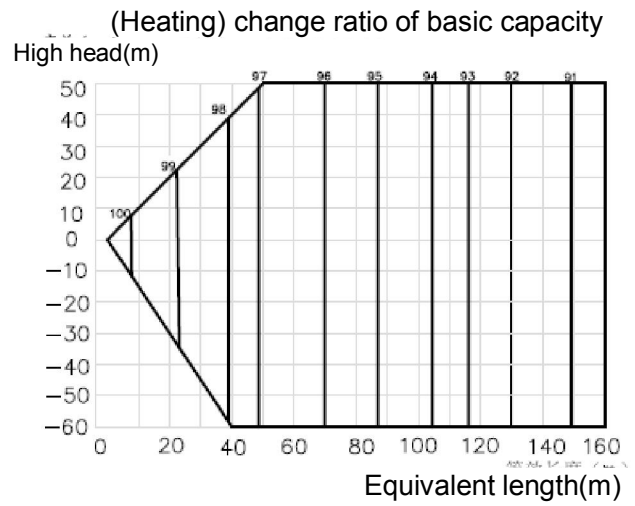
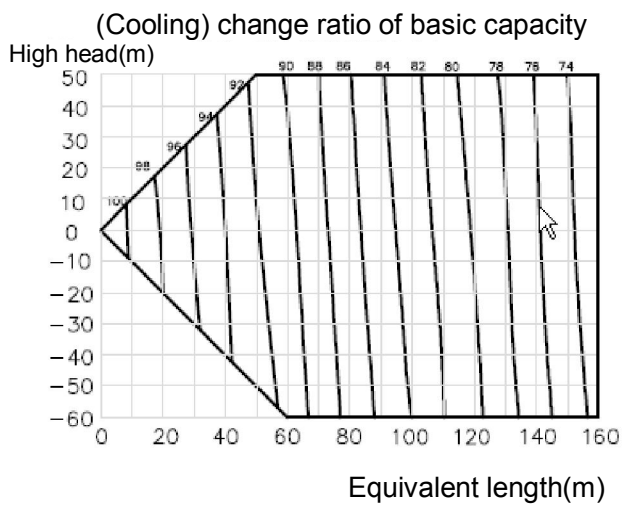
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.10	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1.0	1.06	1.13
	Power	0.96	0.97	1.0	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.90	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.80	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction coefficient	Indoor back temperature of dry bulb [°C]		
		15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.70
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1.0	0.96
	Power	0.94	1.0	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17

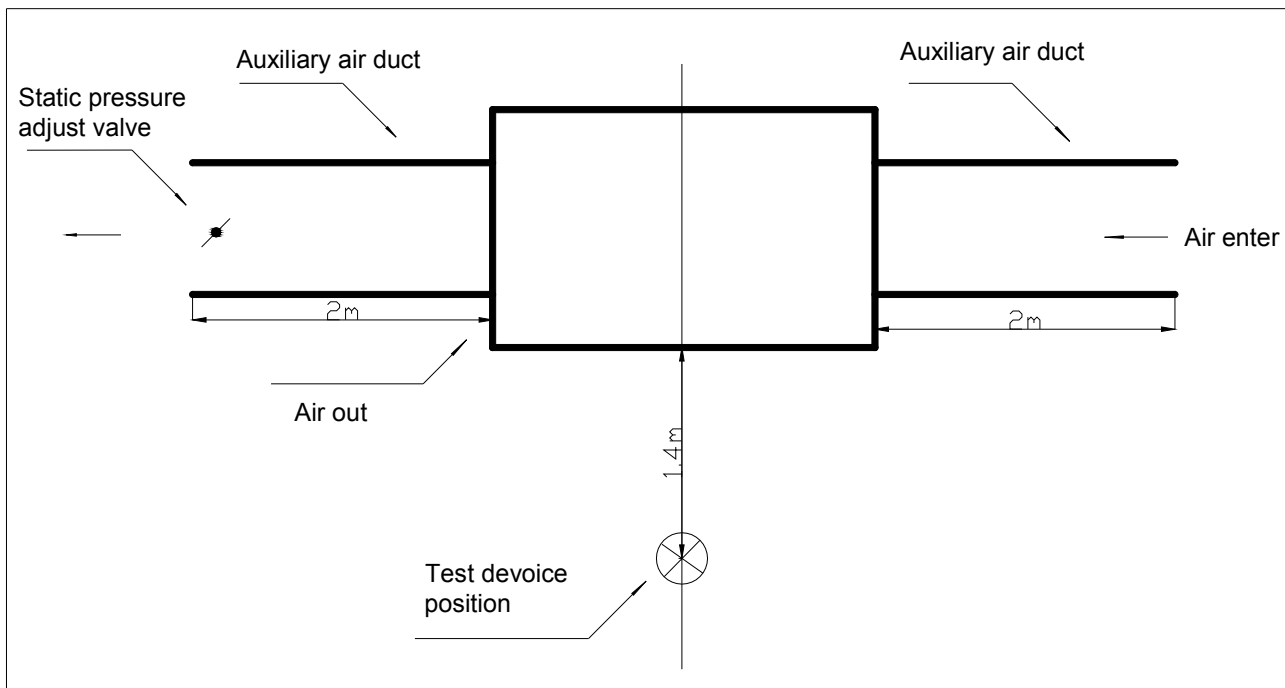
15-24	Heating capacity	0.85 – 1.05 of nominal
	Power	0.80 – 1.20 of nominal

Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube



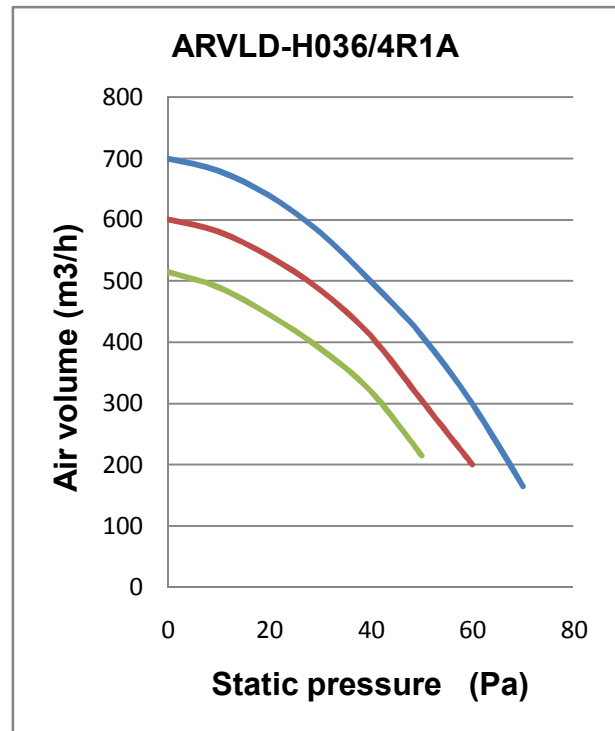
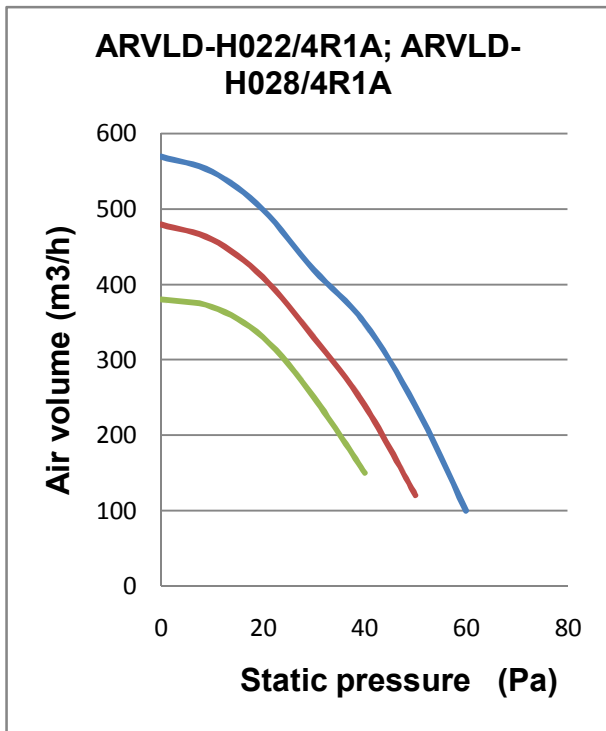
Positive side of high head means installation height of outdoor unit should be higher than indoor unit;
 negative side of high head means installation height of outdoor unit should be lower than indoor unit;
 (change ratio of basic capacity)

8.Sound levels



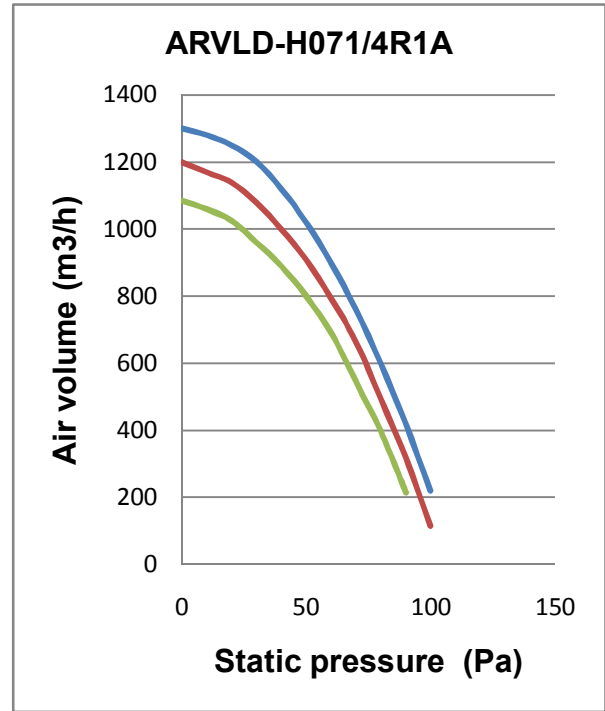
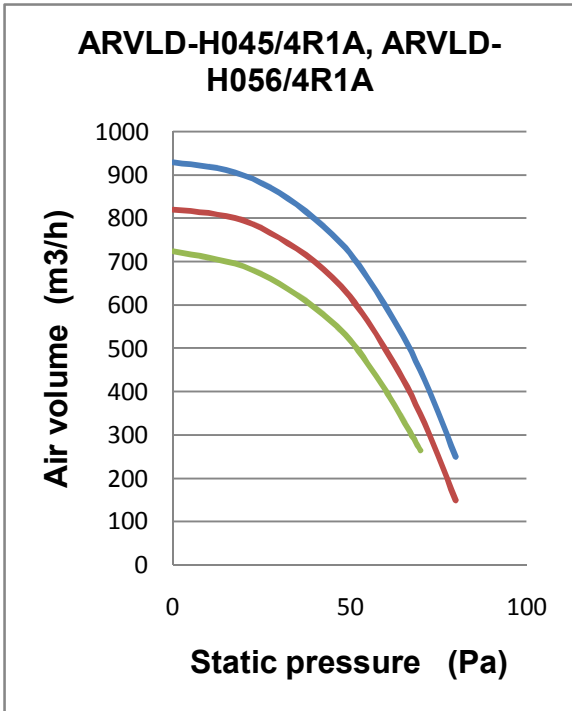
Model	Noise level under three speeds of fan (dB(A))		
	H	M	L
ARVLD-H022/4R1	36	33	30
ARVLD-H028/4R1	36	33	30
ARVLD-H036/4R1	38	35	32
ARVLD-H045/4R1	40	37	34
ARVLD-H056/4R1	40	37	34
ARVLD-H071/4R1	42	39	36

9.Fan performance



ARVLD-H022/4R1A; ARVLD-H028/4R1A			
Static (Pa)	Air volume m3/h		
	High speed	Middle speed	Low speed
0	570	480	380
10	550	460	370
20	500	410	330
30	420	330	250
40	350	240	150
50	240	120	/
60	100	/	/

ARVLD-H036/4R1A			
Static (Pa)	Air volume m3/h		
	High speed	Middle speed	Low speed
0	700	600	515
10	680	580	490
20	640	540	445
30	580	485	390
40	500	410	320
50	412	305	215
60	300	200	/
70	165	/	/

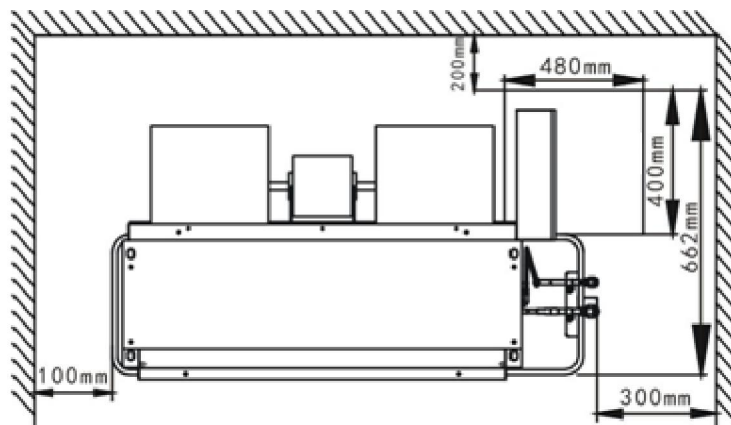


ARVLD-H045/4R1A, ARVLD-H056/4R1A			
Static (Pa)	Air volume m ³ /h		
	High speed	Middle speed	Low speed
0	930	820	725
10	920	812	710
20	900	795	690
30	860	755	650
40	800	700	595
50	720	620	520
60	600	500	405
70	450	350	265
80	250	150	/
90	/	/	/
100	/	/	/

ARVLD-H071/4R1A			
Static (Pa)	Air volume m ³ /h		
	High speed	Middle speed	Low speed
0	1300	1200	1085
10	1280	1170	1060
20	1250	1140	1025
30	1200	1080	960
40	1120	1000	890
50	1020	910	800
60	900	795	690
70	760	665	545
80	600	495	395
90	420	320	215
100	220	115	/

10. Installation

10.1 Spacing Reserved Between the Surrounding of Indoor Unit and Barrier

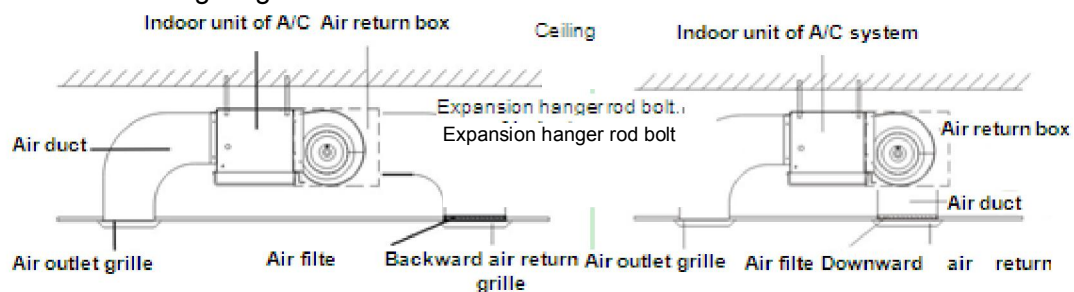


10.2 Hoisting of Indoor Unit

- ◇ Selection of hanging foundation: the foundation must be wooden frame and reinforced concrete structure, which is firm and reliable, able to stand a weight four times of the unit's weight and stand a certain vibration for a long time.
- ◇ Fixing of hanging foundation: fix hanging with bolt or iron frame or wooden frame as shown in the diagram.
- ◇ Adjust the relative position of hook on hanging bolt to make the main unit incline towards drainage outlet to facilitate draining.
- ◇ Tighten nut to ensure tight contact among nut, washer and four mounting hooks without loose hanging;
- ◇ Ensure there is no loose positioning such as shaking of main unit after installation.

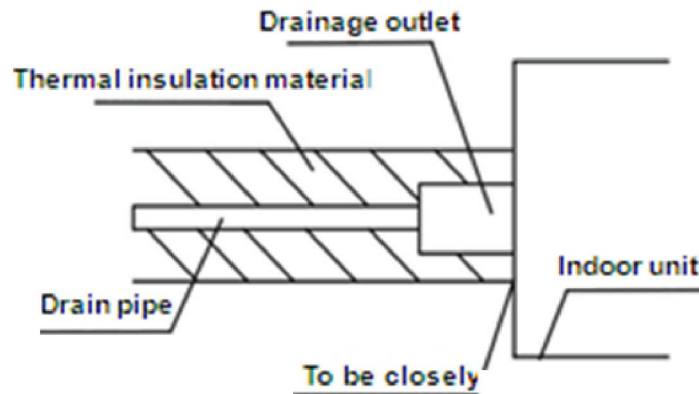
10.3 Installation of Ducting

- ◇ Connect indoor unit and ducting with canvas to reduce unnecessary vibration;
- ◇ Ducting installation includes two methods such as backward air return and downward air return as shown in the following diagram:



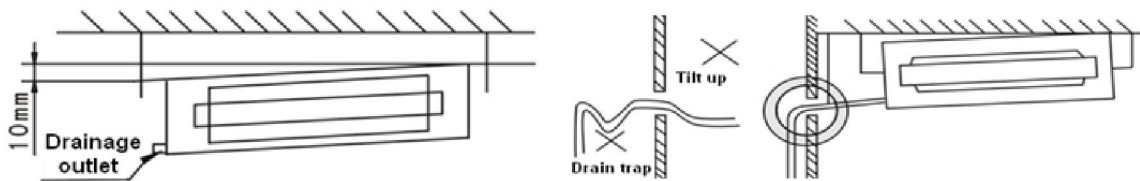
10.6 Installation of Drain Pipe

- ◇ Drain pipe must be wrapped with thermal insulation material as follows to prevent condensation or dripping.



Thermal insulation material should be rubber & plastic thermal insulation pipe with thickness above 8mm.

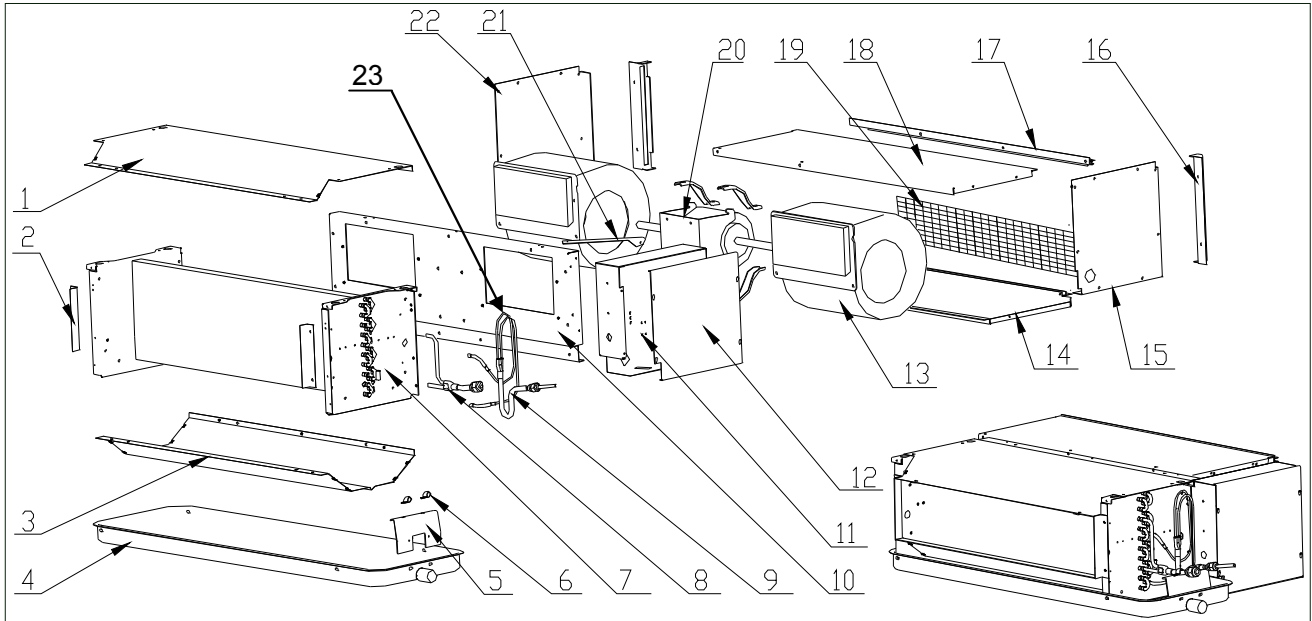
- ◇ Drain pipe should incline downwards with gradient of 1/50-1/100, which will subject to failure such as back flow or water leakage in case of up-and-down fluctuation or upward inclination.



- ◇ After installation, conduct drainage test to determine if water correctly flows through pipeline and carefully observe the connection to ensure there is no leakage. If the unit is installed in new house, it's recommended to test before decorating ceiling. Conduct drainage test for the unit used for heating only.

11. Explode view

ARVLD-H022/4R1A, ARVLD-H028/4R1A, ARVLD-H036/4R1A, ARVLD-H045/4R1A,
ARVLD-H056/4R1A

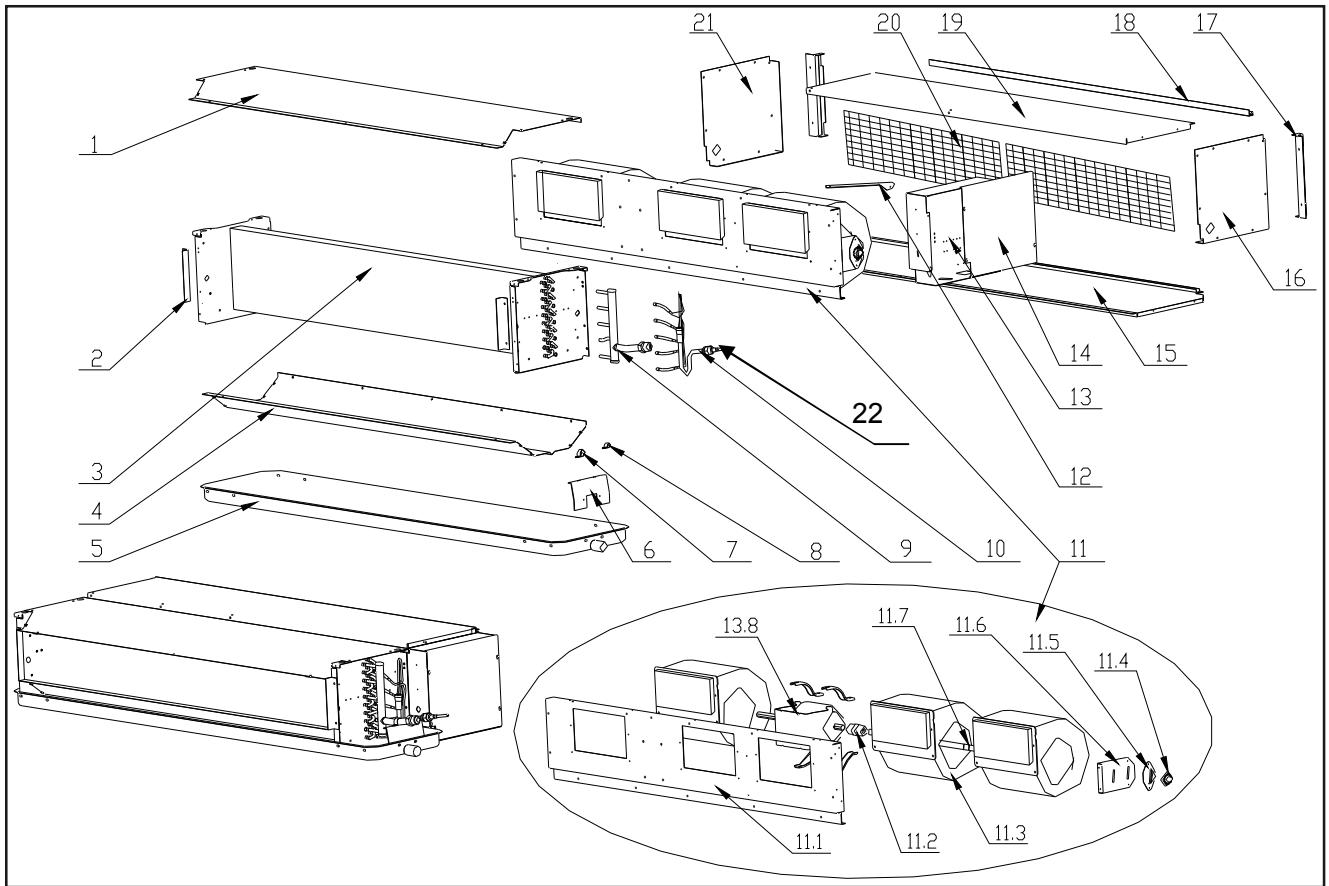


ARVLD-H022/4R1A, ARVLD-H028/4R1A, ARVLD-H036/4R1A, ARVLD-H045/4R1A,
ARVLD-H056/4R1A

N0.	AUX code	Component description	Component description	Quantity	Unit
1	16421005000013	顶盖板	Top cover board	1	Pc
2	16421030000002	出风法兰短条	Air outlet flange part	2	Pcs
3	16421028000009	底盘	Chassis	1	Pc
4	16432014000016	接水盘	Drip tray	1	Pc
5	16421014000004	阀板	Valve board	1	Pc
6	16432020000006	管夹 φ9.52	Pipe Clampφ9.52	1	Pc
7	16432020000007	管夹 φ12	Pipe Clampφ12	1	Pc
8	16324009000006	蒸发器组件	Evaporator assembly	1	Set
8.1	16325009000018	蒸发器出气管组件	Evaporator gas outlet pipe assembly	1	Set
9	16325001000022	蒸发器进液管组件	Evaporator liquid inlet pipe assembly	1	Set
10	16421002000056	蜗壳固定板	Volute fixing board	1	Pc
11	16421038000028	电控盒总成	Electric assembly	1	Set
11.1	16422001000092	控制板 DCZ-SN3F-SYE2(R8C)	PCB board DCZ-SN3F-SYE2(R8C)	1	Pc
11.2	16422005000009	变压器 TDB-14-B2B(PTC)	Transformer TDB-14-B2B(PTC)	1	Pc
11.3	16430007000003	传感器 XH2(白)15K3950 0.5M(塑)	Sensor 15K3950 0.5M white	1	Pc

		封)			
11.3	16430007000010	传感器 XH2(蓝)20K3950 0.5M(铜)	Sensor 20K3950 0.5M blue	1	Pc
11.4	16430007000008	传感器 XH2(黄)20K3950 0.5M(铜)	Sensor 20K3950 0.5M yellow	1	Pc
11.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Sensor 20K3950 0.5M green	1	Pc
11.5	16427001000010	端子板 5 位	Terminal board	1	Pc
11.6	16421038000028	电控盒	Electric components box	1	Set
12	16421005000104	电控盒盖	Cover for electric box	1	Pc
13	16444005000001	离心风轮组件 150/175(H115)	Centrifugal fan motor	2	Sets
14	16321012000014	回风箱下后板组件	Return-air box underside board	1	Set
15	16421001000420	回风箱右侧板	Return-air box right board	1	Pc
16	16421030000006	回风箱导风短条	Return-air box wind-guiding part	2	Pcs
17	16321012000009	回风箱滑道组件	Return-air box slide way assembly	1	Set
18	16421005000276	回风箱顶板	Return-air box top cover board	1	Pc
19	16444013000016	缝制过滤网	Air filter	1	Pc
20	16430001000023	室内风扇电机 YSK15-4 用于 ARVLD-H022/4R1A 及 ARVLD-H028/4R1A	Indoor fan motor YSK15-4 for ARVLD-H022/4R1A & ARVLD-H028/4R1A	1	Pc
	16430001000194	ARVLD-H036/4R1A YSK22-4	YSK22-4 for ARVLD-H036/4R1		Pc
	16430001000042	ARVLD-H045/4R1A 及 ARVLD-H056/4R1A YSK30-4 (φ12)	YSK30-4 (φ12) for ARVLD-H045/4R1 A& ARVLD-H056/4R1A		Pc
21	16421038000034	电控盒支撑板	Electric box bracket	1	Pc
22	16421001000419	回风箱左侧板	Return-air box left board	1	Pc
23	16441015000002	电子膨胀阀	EXV	1	Pc

ARVLD-H071/4R1A



ARVLD-H071/4R1A

N0.	AUX code	Component description	Component description	Quantity	Unit
1	16421005000015	FP-136WA/B 顶盖板斜 47°	Top cover board	1	Pc
2	16421030000002	出风法兰短条	Air outlet flange part	2	Pcs
3	16324009000005	GR-72D/DS3 蒸发器组件(片距 1.6)	Evaporator assembly	1	Set
4	16421028000007	底盘	Chassis	1	Pc
5	16432014000017	接水盘 GR-72D/DS3 242×1305	Drip tray	1	Pc
6	16421014000004	GR-26D/DS2 阀板	Valve board	1	Pc
7	16432020000006	管夹 φ9.52	Pipe Clampφ9.52	1	Pc
8	16432020000008	管夹 φ16	Pipe Clampφ16	1	Pc
9	16325009000007	蒸发器出气管组件	Evaporator liquid inlet pipe assembly	1	Set
10	16325001000025	蒸发器进液管组件	Evaporator gas outlet pipe assembly	1	Set
11	16321009000003	蜗壳固定板总成	Volute fixing board assembly	1	Set
11.1	16421002000058	FP-136WAZ/C 蜗壳固定板	Volute fixing board	1	Pc
11.2	16444007000001	联轴器 φ15	Motor coupling	1	Pc
11.3	16444005000001	离心风轮组件 150/175(H115)	Centrifugal fan motor	2	Set
11.4	16421002000219	橡胶轴承压板	Rubber bearing clamp	1	Pc
11.5	16432016000033	橡胶轴承	Rubber bearing	1	Pc

11.6	16421026000006	风机支撑架	Fan motor bracket	1	Set
11.7	16444007000002	加长轴 Φ15	Motor lengthen axes	1	Pc
11.8	16430001000017	室内风扇电机 YSK50-4 适用于 ARVLD-H071/4R1A	Fan motor YSK50-4 for ARVLD-H071/4R1)	1	Pc
12	16421038000034	GR-25D/S2 电控盒支撑板	Electric box bracket	1	Pc
13	16322001000009	DLR-71F/DCZDS3 控制器总成	Electric box assembly	1	Set
13.1	16422001000170	R 室内主控板 DCZ-SN3F-SYE1(R8C)	PCB board	1	Pc
13.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer (ROHS)	1	Pc
13.3	16430007000003	传感器 XH2(白)15K3950 0.5M(塑封)	Sensor 15K3950 0.5M white	1	Pc
13.3	16430007000010	传感器 XH2(蓝)20K3950 0.5M(铜)	Sensor 20K3950 0.5M blue	1	Pc
13.4	16430007000008	传感器 XH2(黄)20K3950 0.5M(铜)	Sensor 20K3950 0.5M yellow	1	Pc
13.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Sensor 20K3950 0.5M green	1	Pc
13.5	16427001000010	端子板 5 位(600V 4mm ²)AB	Terminal board	1	Pc
13.6	16421038000028	GR-26D/DS3 电控盒	Electric components box	1	Set
14	16421005000104	GR-26D/DS3 电控盒盖	Cover for electric components	1	Pc
15	16321012000005	FP-136WA 回风箱下后板组件 A	Return-air box underside board	1	Set
16	16421001000420	风机盘管回风箱右侧板	Return-air box right board	1	Pc
17	16421030000006	风机盘管回风箱导风短条 A	Return-air box flange	2	Pcs
18	16321012000004	FP-136WA 回风箱过滤滑道组件	Return-air box slide way assembly	1	Set
19	16421005000278	FP-136WA/B 回风箱顶板	Return-air box top cover board	1	Pc
20	16444013000002	缝制过滤网 545×204×6mm	Air filter	2	Pcs
21	16421001000419	风机盘管回风箱左侧板	Return-air box left board	1	Pc
22	16441015000002	电子膨胀阀线圈 CAM-MD12FKS-5 L=1500	EXV	1	Pc

Middle static pressure duct

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1.Feature

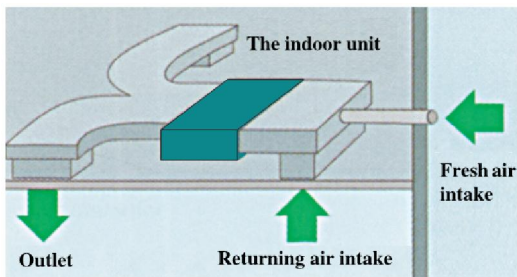
ARVMD-H045/4R1A ARVMD-H056/4R1A ARVMD-H071/4R1A
 ARVMD-H080/4R1A ARVMD-H090/4R1A ARVMD-H100/4R1A
 ARVMD-H112/4R1A ARVMD-H125/4R1A ARVMD-H140/4R1A
 ARVMD-H150/4R1A



Mid static pressure allows for flexible duct design

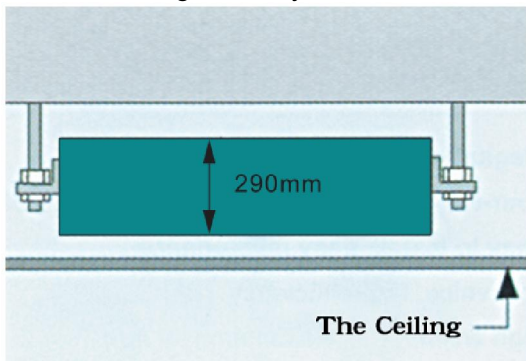
- **Fresh air intake**

Reversed fresh air intake hole, It's convenient to connect with air duct.



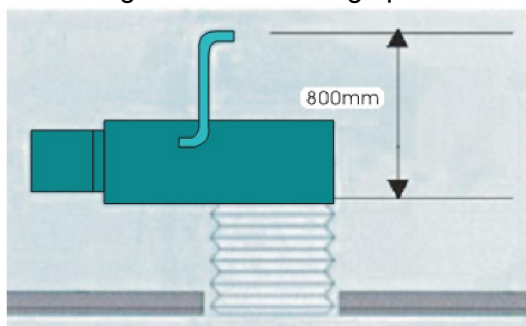
- **Ultra slim design**

Thinner and Lighter, Only 290mm.



- **Built-in water drainage pump(Optional)**

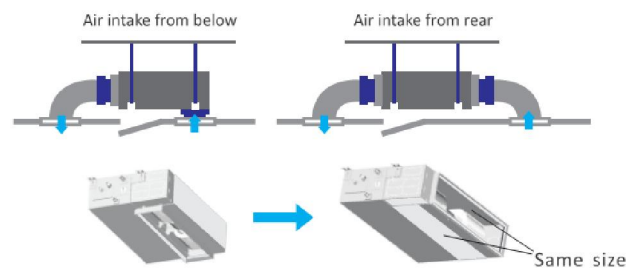
The built-in pump can lift condensing water up 800mm high from the drainage pan.



- **Flexible air intake options**

Air intake from rear as standard, from bottom as optional.

The size of the plate from bottom is the same as the flange from back, which makes it convenient to change installation style due to different decoration requirement.



2.Specification

Model			ARVMD-H045/4R1A	ARVMD-H056/4R1A	ARVMD-H071/4R1A
Factory Model			ALHi-H16B4/R1DIS A	ALHi-H18B4/R1DIS A	ALHi-H24B4/R1DIS A
Code			16104041000007	16104043000008	16104045000010
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	4.5	5.6	7.1
	Heating	kW	5.0	6.0	8.0
Fan Motor	Model		YSK100-4	YSK100-4	YSK160-4
	Brand		KANGBAO	KANGBAO	KANGBAO
	Output Power	W	100	100	160
	Capacitor	uF	4	4	3.5
	Speed (Hi/Mi/Lo)	r/min	960/860/840	960/860/840	1050/1000/910
Coil	Number Of Row		2	2	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.5	1.5	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	625×369×25.4	625×369×25.4	625×369×38.1
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	950/760/665	950/760/665	1200/960/840
	Noise Level(Hi/Mi/Lo)	dB(A)	42/39/37	42/59/37	45/42/39
	External Static Pressure	Pa	50/80	50/80	50/80
	Net Dimension (W×D×H)	mm	890x785x290	890x785x290	890x785x290
	Packing Dimension (W×D×H)	mm	1100x870x360	1100x870x360	1100x870x360
	Net Weight	Kg	35	35	37
	Gross Weight	Kg	41	41	43
Refrigerant Pipe	Liquid Side	mm	6.35	6.35	9.52
	Gas Side	mm	12.7	12.7	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	20~35	25~45	30~50
Stuffing Quantity	20/40/40H	Unit	83/175/204	83/175/204	83/175/204

Note:

1. Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVMD-H080/4R1A	ARVMD-H090/4R1A	ARVMD-H100/4R1A
Factory Model			ALHi-H30A4/R1DIS A	ALHi-H30B4/R1DIS A	ALHi-H36A4/R1DIS A
Code			16104046000007	16104047000009	16104048000008
Power Supply		V~,Hz, Ph	220~240,50,1	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	8.0	9.0	10.0
	Heating	kW	10.0	11.0	12.0
Fan Motor	Model		YSK160-4	YSK180-4	YSK180-4
	Brand		KANGBAO	KANGBAO	KANGBAO
	Output Power	W	160	180	180
	Capacitor	uF	8	8	8
	Speed (Hi/Mi/Lo)	r/min	1050/1000/910	1100/990/920	1100/990/920
Coil	Number Of Row		3	3	3
	Tube Pitch(a)x Row Pitch(b))	mm	20.5×12.7	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.6	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	625×369×38.1	625×369×38.1	625×369×38.1
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	1500/1200/1050	1500/1200/1050	1500/1200/1050
	Noise Level(Hi/Mi/Lo)	dB(A)	48/45/42	48/45/42	48/52/42
	External Static Pressure	Pa	50/80	50/80	50/80
	Net Dimension (W×D×H)	mm	890x785x290	890x785x290	890x785x290
	Packing Dimension (W×D×H)	mm	1100x870x360	1100x870x360	1100x870x360
	Net Weight	Kg	37	37	37
	Gross Weight	Kg	43	43	43
Refrigerant Pipe	Liquid Side	mm	9.52	9.52	9.52
	Gas Side	mm	15.88	15.88	15.88
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	35~55	40~60	45~65
Stuffing Quantity	20/40/40H	Unit	83/175/204	83/175/204	83/175/204

Note:

- Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally

somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVMD-H112/4R1A	ARVMD-H125/4R1A
Factory Model			ALHi-H36B4/R1DISA	ALHi-H42B4/R1DISA
Code			16104049000009	16104050000008
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	11.2	12.5
	Heating	kW	12.8	13.3
Fan Motor	Model		YSK180-4	YSK180-4
	Brand		KANGBAO	KANGBAO
	Output Power	W	180	180
	Capacitor	uF	8	8
	Speed (Hi/Mi/Lo)	r/min	1100/990/920	1100/990/920
Coil	Number Of Row		3	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	985×369×38.1	985×369×38.1
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	2000/1600/1400	2000/1600/1400
	Noise Level(Hi/Mi/Lo)	dB(A)	51/43/40	51/43/40
	External Static Pressure	Pa	50/80	50/80
	Net Dimension (W×D×H)	mm	1250x785x290	1250x785x290
	Packing Dimension (W×D×H)	mm	1460x870x360	1460x870x360
	Net Weight	Kg	53	53
	Gross Weight	Kg	60	60
Refrigerant Pipe	Liquid Side	mm	9.52	9.52
	Gas Side	mm	19.05	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	50~75	50~90
Stuffing Quantity	20/40/40H	Unit	63/133/155	63/133/155

Note:

1. Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVMD-H140/4R1A	ARVMD-H150/4R1A
Factory Model			ALHi-H48A4/R1DISA	ALHi-H60A4/R1DISA
Code			16104051000008	16104052000006
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	14.0	15.0
	Heating	kW	15.0	16.0
Indoor Fan Motor	Model		YSK180-4	YSK180-4
	Brand		KANGBAO	KANGBAO
	Output Power	W	180	180
	Capacitor	uF	8	8
	Speed (Hi/Mi/Lo)	r/min	1100/990/920	1100/990/920
Indoor Coil	Number Of Row		3	3
	Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	Fin Pitch	mm	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	φ7,Inner grooved	φ7,Inner grooved
	Coil Length x Height x Width	mm	985×369×38.1	985×369×38.1
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	2000/1600/1400	2000/1600/1400
	Noise Level(Hi/Mi/Lo)	dB(A)	51/43/40	51/43/40
	External Static Pressure	Pa	50/80	50/80
	Net Dimension (W×D×H)	mm	1250x785x290	1250x785x290
	Packing Dimension (W×D×H)	mm	1460x870x360	1460x870x360
	Net Weight	Kg	53	53
	Gross Weight	Kg	60	60
Refrigerant Pipe	Liquid Side	mm	9.52	9.52
	Gas Side	mm	19.05	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	60~100	65~110
Stuffing Quantity	20/40/40H	Unit	63/133/155	63/133/155

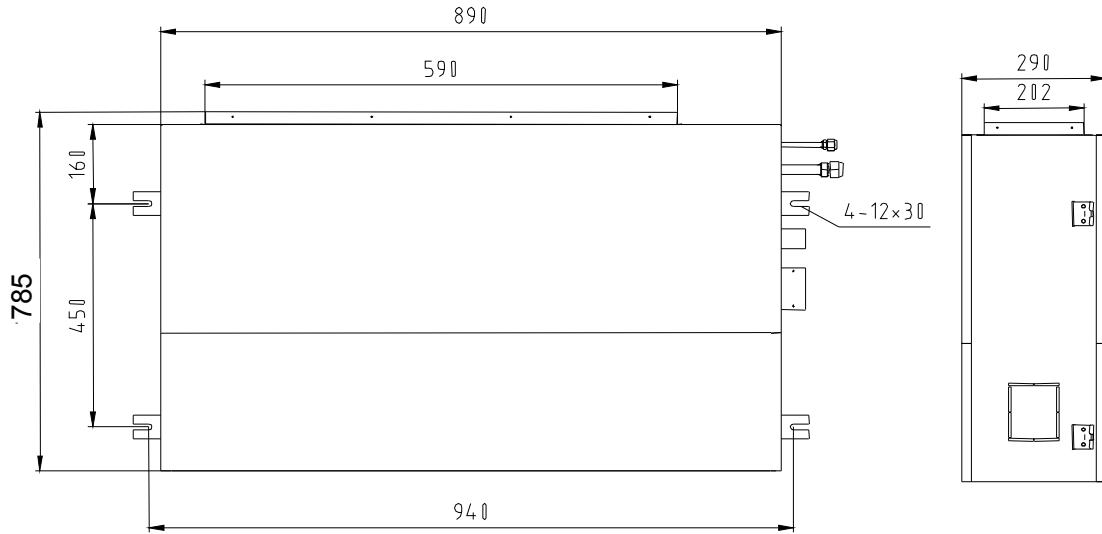
Note:

- Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally somewhat higher as a result of ambient conditions.
- All the above specification will be changed due to product performance improvement. AUX reserves the right to change

product design without prior notice, everything should subject to parameter on nameplate.

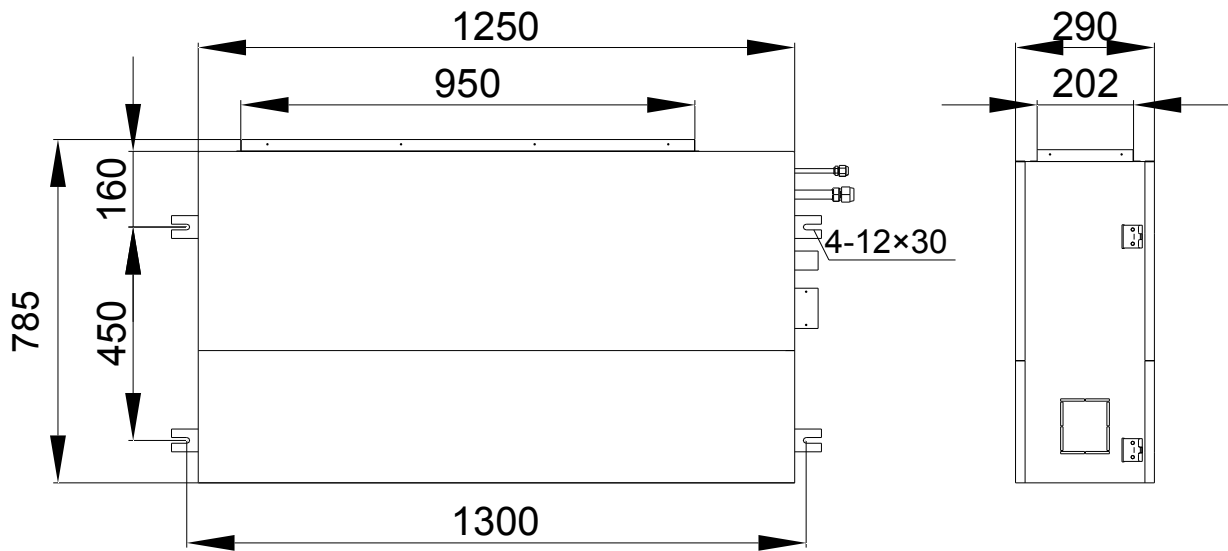
3.Dimension

ARVMD-H045/4R1A. ARVMD-H056/4R1A. ARVMD-H071/4R1A. ARVMD-H080/4R1A.
ARVMD-H090/4R1A. ARVMD-H100/4R1A



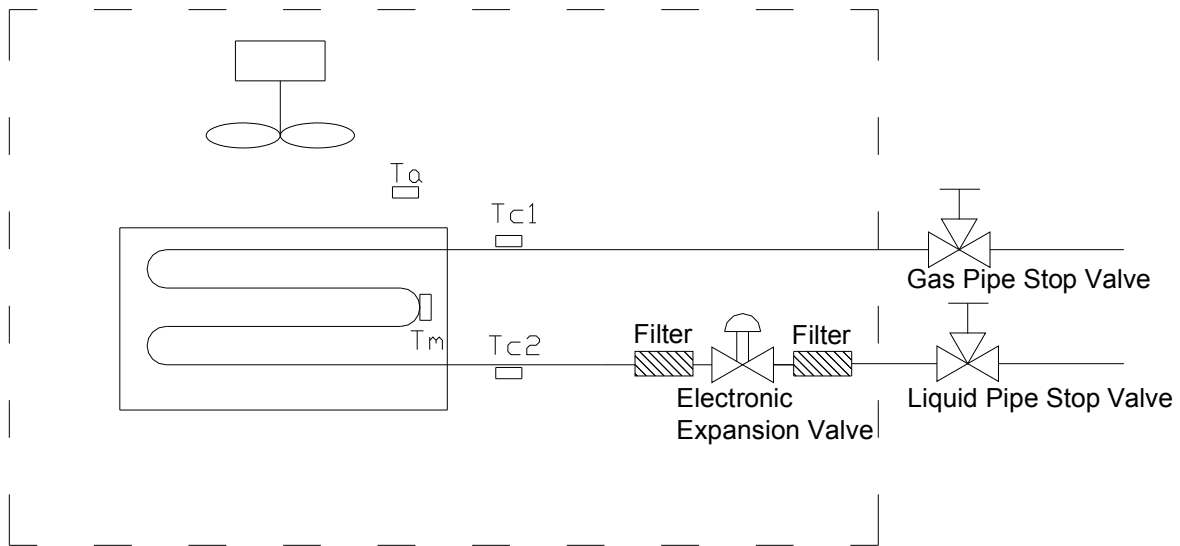
Unit: mm

ARVMD-H112/4R1A. ARVMD-H125/4R1A. ARVMD-H140/4R1A. ARVMD-H150/4R1A



Unit: mm

4.Piping Diagram

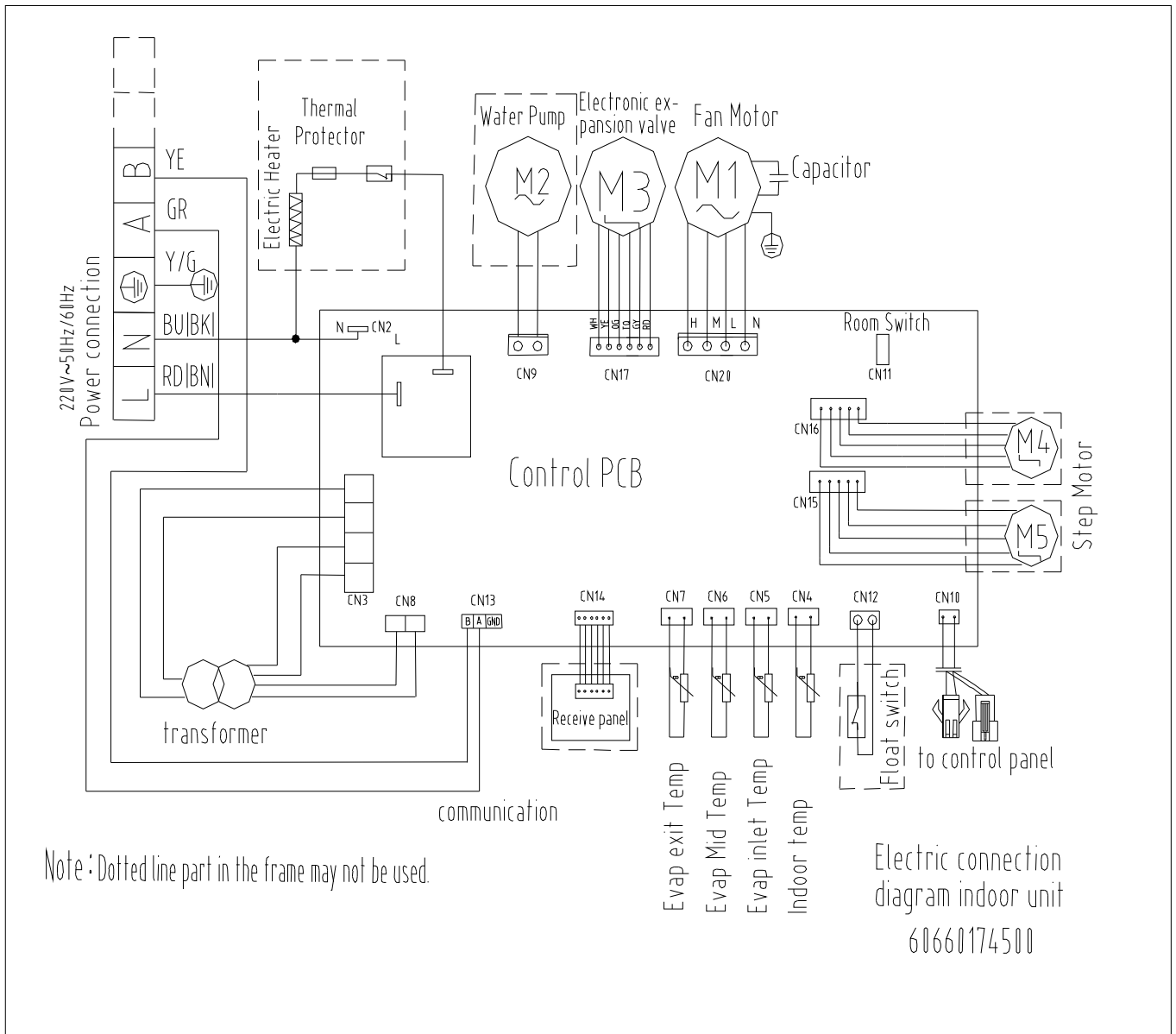


Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
ARVMD-H045/4R1A, ARVMD-H056/4R1A	12.7	6.35
ARVMD-H071/4R1A, ARVMD-H080/4R1A, ARVMD-H090/4R1A, ARVMD-H100/4R1A	15.88	9.52
ARVMD-H112/4R1A, ARVMD-H125/4R1A, ARVMD-H140/4R1A, ARVMD-H150/4R1A	19.05	9.52

5.Wiring Diagram



6. Electric Characteristics

Model	Indoor Unit				Supply Power		IFW	
	Hz	Voltage	Min.	Max.	MCA	MFA	kW	FLA
ARVMD-H045/4R1A	50	220-240	198	254	1.13	16	0.10	0.90
ARVMD-H056/4R1A	50	220-240	198	254	1.13	16	0.10	0.90
ARVMD-H071/4R1A	50	220-240	198	254	1.50	16	0.16	1.20
ARVMD-H080/4R1A	50	220-240	198	254	1.50	16	0.16	1.20
ARVMD-H090/4R1A	50	220-240	198	254	1.75	20	0.18	1.40
ARVMD-H100/4R1A	50	220-240	198	254	1.75	20	0.18	1.40
ARVMD-H112/4R1A	50	220-240	198	254	1.75	20	0.18	1.40
ARVMD-H125/4R1A	50	220-240	198	254	1.75	20	0.18	1.40
ARVMD-H140/4R1A	50	220-240	198	254	1.75	20	0.18	1.40
ARVMD-H150/4R1A	50	220-240	198	254	1.75	20	0.18	1.40

Symbols:

MCA: Min. Circuit Amps.(A)

MFA: Max. Breaker Amps.

kW : Fan Motor Rated Output(kW)

FLA: Full Load Amps.(A)

IFM: Indoor Fan Motor

Note:

1. Min. and Max. Voltage : Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed range limits.
2. Maximum allowable voltage unbalance between phases is 2%.
3. MCA = 1.25 x FLA

7.Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

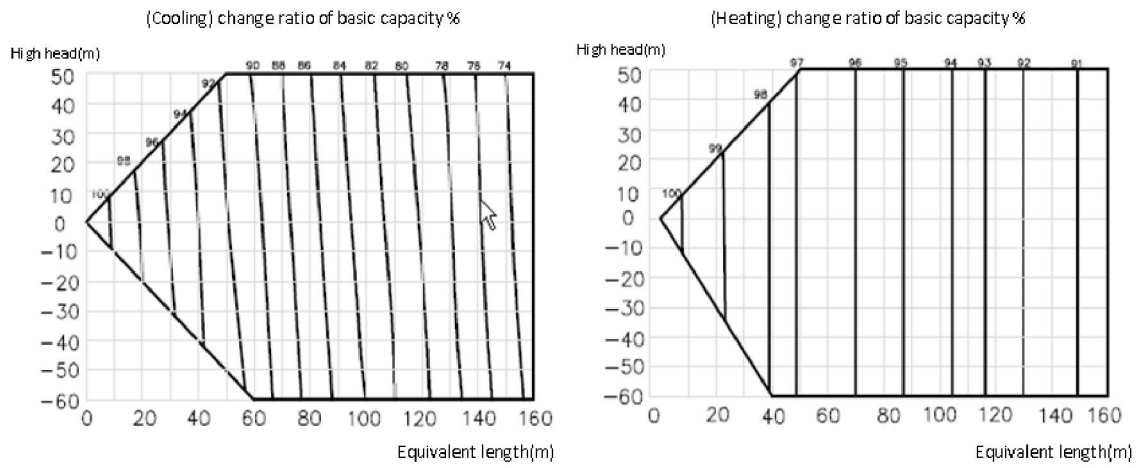
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.10	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1.0	1.06	1.13
	Power	0.96	0.97	1.0	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.90	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.80	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction coefficient	Indoor back temperature of dry bulb [°C]		
		15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.70
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1.0	0.96
	Power	0.94	1.0	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17
15-24	Heating capacity	0.85 – 1.05 of nominal		

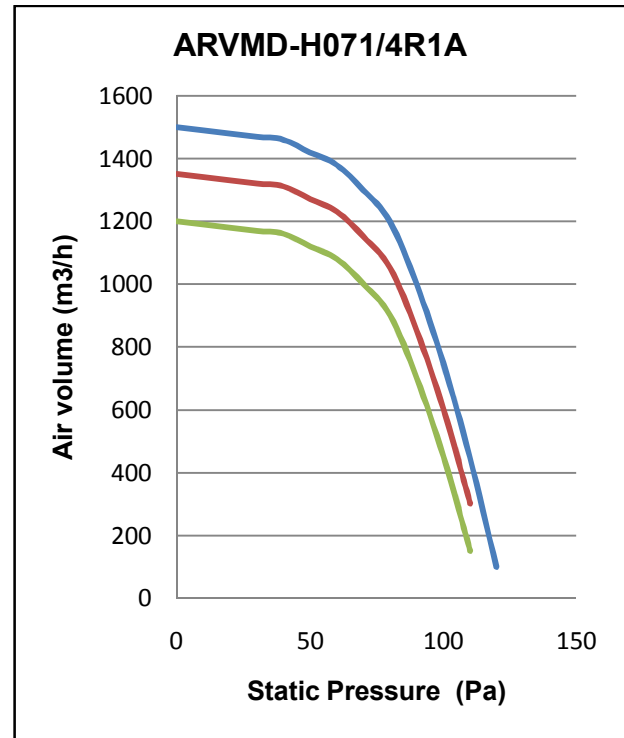
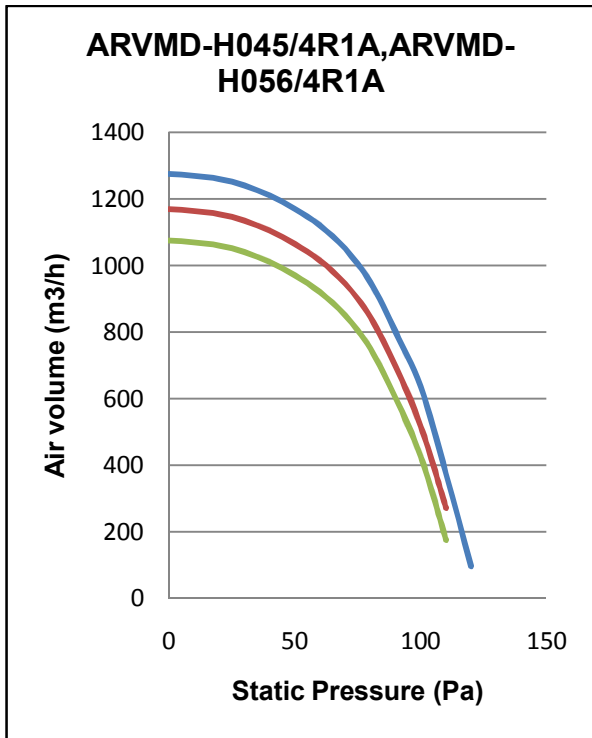
	Power	0.80 – 1.20 of nominal
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Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube



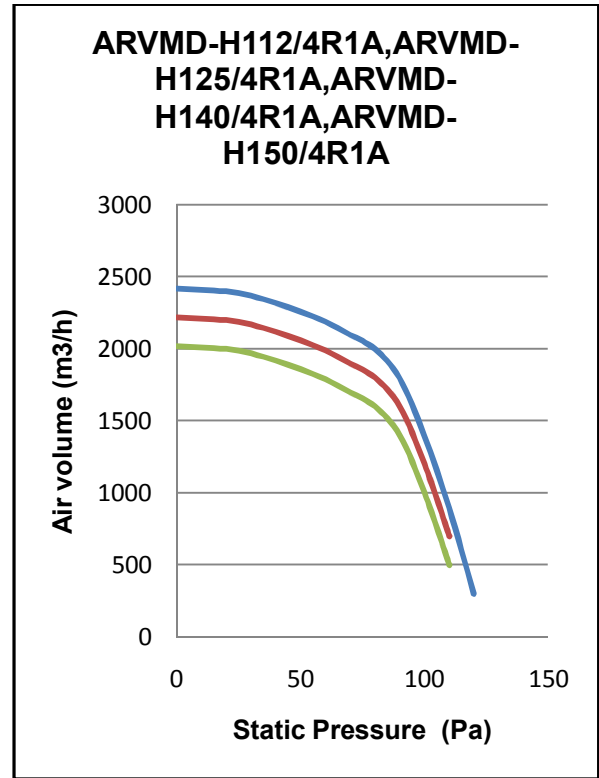
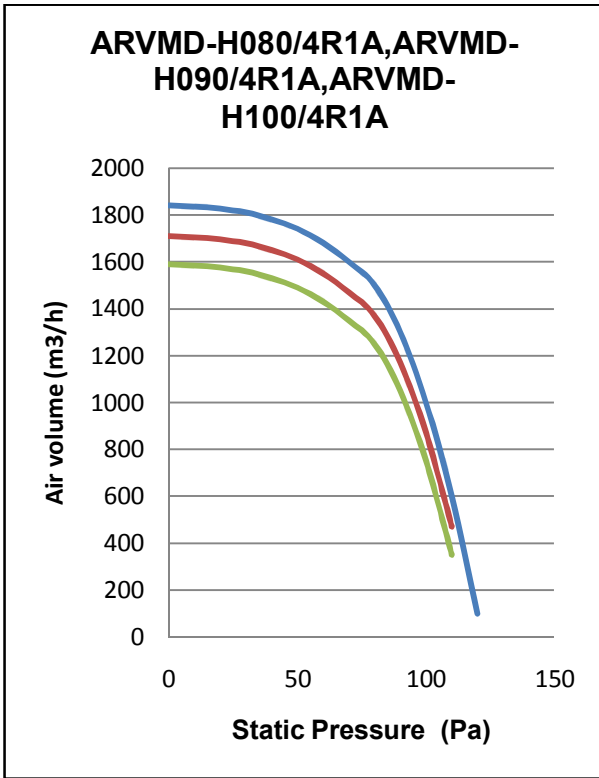
Positive side of high head means installation height of outdoor unit should be higher than indoor unit;
 negative side of high head means installation height of outdoor unit should be lower than indoor unit;
 (change ratio of basic capacity)

8.Fan Performance



ARVMD-H045/4R1A, ARVMD-H056/4R1A			
Static Pressure (Pa)	Air volume(m³/h)		
	High	Medium	Low
0	1275	1170	1075
10	1270	1165	1070
20	1260	1155	1060
30	1240	1135	1040
40	1210	1105	1010
50	1170	1065	970
60	1120	1015	920
70	1050	945	850
80	950	845	750
90	800	695	600
100	635	515	425
110	375	270	175
120	95	/	/

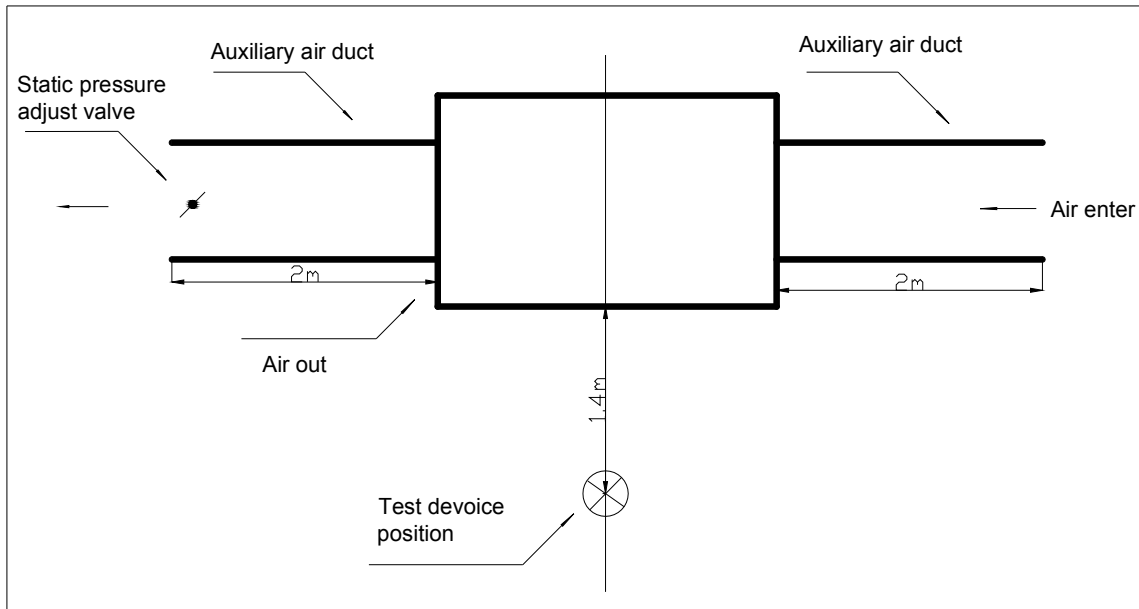
ARVMD-H071/4R1A			
Static Pressure (Pa)	Air volume(m³/h)		
	High	Medium	Low
0	1500	1350	1200
10	1490	1340	1190
20	1480	1330	1180
30	1470	1320	1170
40	1460	1310	1160
50	1420	1270	1120
60	1380	1230	1080
70	1300	1150	1000
80	1200	1050	900
90	1000	850	700
100	750	600	450
110	450	300	150
120	100	/	/



ARVMD-H080/4R1, ARVMD-H090/4R1A, ARVMD-H100/4R1A			
Static Pressure (Pa)	Air volume (m³/h)		
	High	Medium	Low
0	1840	1710	1590
10	1835	1705	1585
20	1825	1695	1575
30	1810	1680	1560
40	1780	1650	1530
50	1740	1610	1490
60	1680	1550	1430
70	1600	1470	1350
80	1500	1370	1250
90	1300	1170	1050
100	1000	870	750
110	600	470	350
120	100	/	/

ARVMD-H112/4R1A, ARVMD-H125/4R1A, ARVMD-H140/4R1A, ARVMD-H150/4R1A			
Static Pressure (Pa)	Air volume (m³/h)		
	High	Medium	Low
0	2420	2220	2020
10	2410	2210	2010
20	2400	2200	2000
30	2370	2170	1970
40	2320	2120	1920
50	2260	2060	1860
60	2190	1990	1790
70	2100	1900	1700
80	2000	1800	1600
90	1800	1600	1400
100	1400	1200	1000
110	900	700	500
120	300	/	/

9.Sound Levels



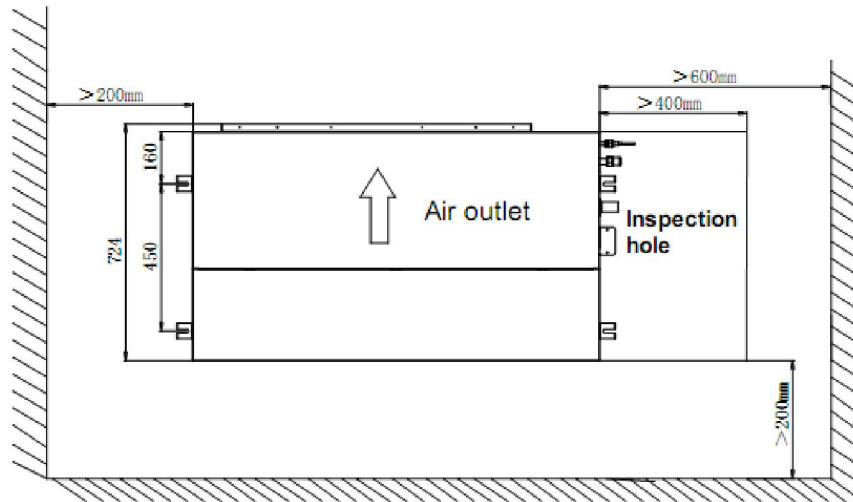
Note:

1. The operating condition are assumed to be standard(JIS Condition).
2. These operating values were obtained in a dead room (conversion values).
 Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220-240V 50Hz		
	High (dB)	Medium (dB)	Low (dB)
ARVMD-H045/4R1A, ARVMD-H056/4R1A	42	39	37
ARVMD-H071/4R1A	45	42	39
ARVMD-H080/4R1A, ARVMD-H090/4R1A, ARVMD-H100/4R1A	48	45	42
ARVMD-H112/4R1A, ARVMD-H125/4R1A, ARVMD-H140/4R1A ARVMD-H150/4R1A	51	48	45

10. Installation Manual

10.1 Service Space



10.2 Hoisting of Indoor Unit

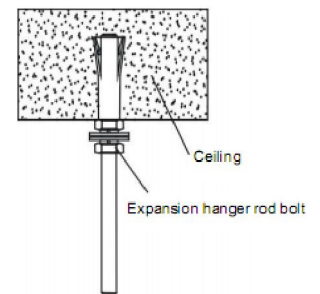
◇ Selection of hanging foundation: the foundation must be wooden frame and reinforced concrete structure, which is firm and reliable, able to stand a weight four times of the unit's weight and stand a certain vibration for a long time.

◇ Fixing of hanging foundation: fix hanging with bolt or iron frame or wooden frame as shown in the diagram.

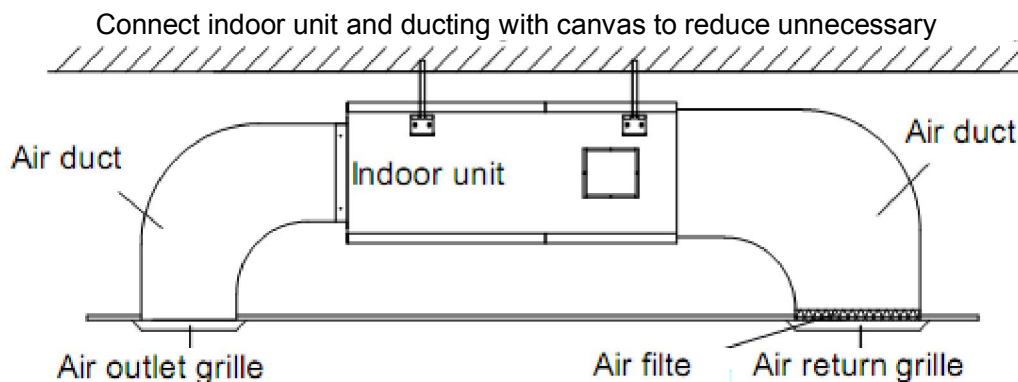
◇ Adjust the relative position of hook on hanging bolt to make the main unit incline towards drainage outlet to facilitate draining.

◇ Tighten nut to ensure tight contact among nut, washer and four mounting hooks without loose hanging;

◇ Ensure there is no loose positioning such as shaking of main unit after installation.

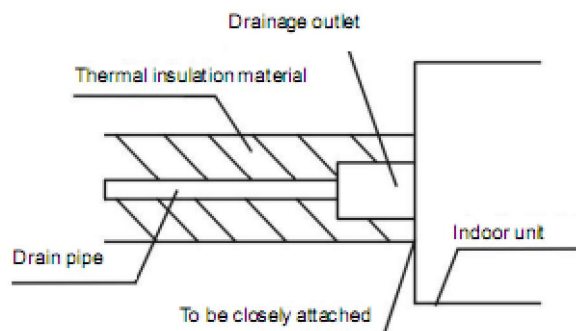


Installation of Ducting

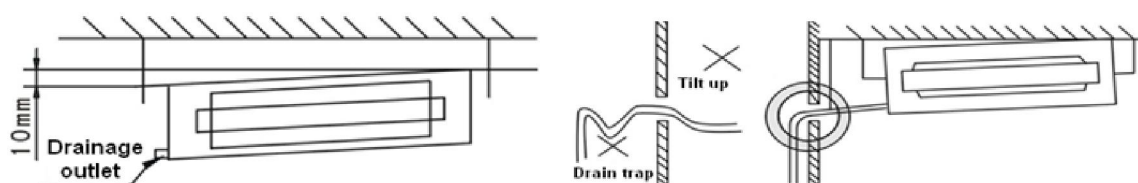


Installation of Drain Pipe

◇ Drain pipe must be wrapped with thermal insulation material as follows to prevent condensation or dripping.



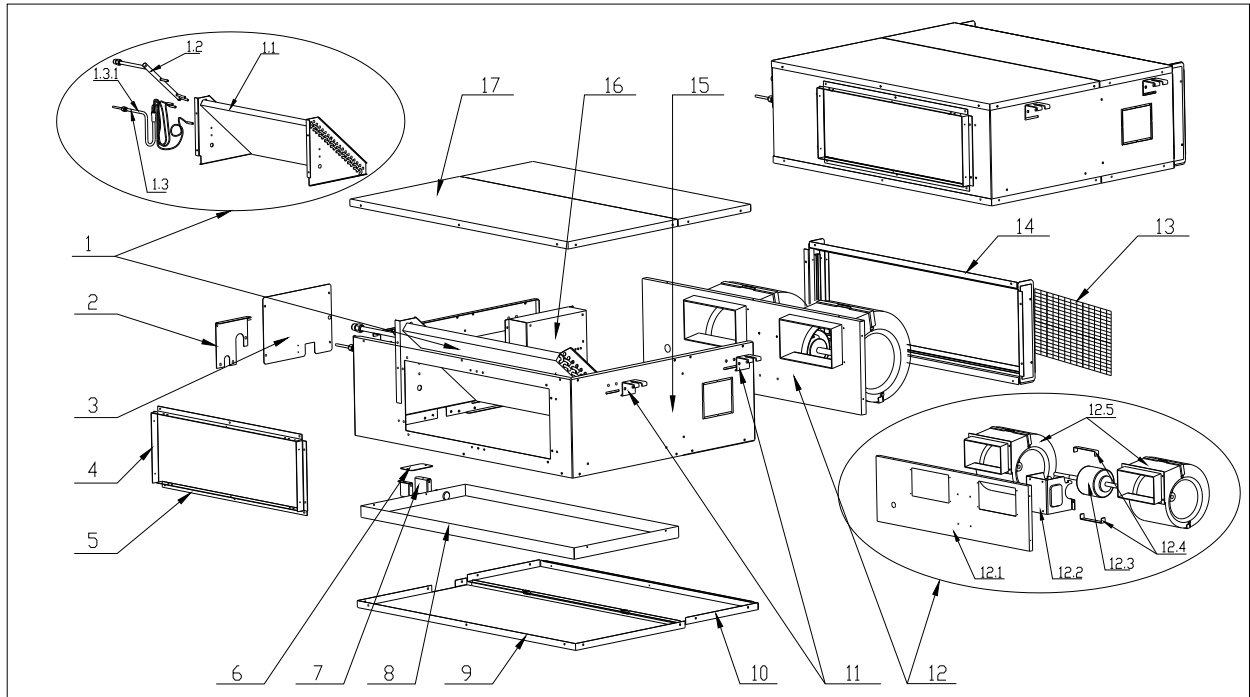
Thermal insulation material should be rubber & plastic thermal insulation pipe with thickness above 10mm
 ◇ Drain pipe should incline downwards with gradient of 1/50-1/100, which will subject to failure such as back flow or water leakage in case of up-and-down fluctuation or upward inclination.



◇ After installation, conduct drainage test to determine if water correctly flows through pipeline and carefully observe the connection to ensure there is no leakage. If the unit is installed in new house, it's recommended to test before decorating ceiling. Conduct drainage test for the unit used for heating only

11.Exploded View

ARVMD-H045/4R1A,ARVMD-H056/4R1A,ARVMD-H071/4R1A,RVMD-H080/4R1A,
ARVMD-H090/4R1A,ARVMD-H100/4R1A



ARVMD-H045/4R1A

N0.	AUX code	Component description	Component description	Quantity	Unit
1	16324001000047	DLR-56F/DCZDGS3 蒸发器总成 (内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000022	GR-51D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325009000022	GR-51D/DGS3 蒸发器出气管组件	Evaporator gas outlet pipe components	1	Set
1.3	16325001000061	DLR-56F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(built-in)	1	Set
1.31	16441014000012	电子膨胀阀阀体 CAM-BD18FKS-1	EXV body CAM-BD18FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000101	GR-51D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000102	GR-51D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321009000105	ALDu-H18A4/R1 凝水盘组件	Drip tray assembly	1	Set
9	16421005000318	ALDu-H18A4/R1 底板(新)	Chassis	1	PC
10	16421005000207	ALDu-H18A4/R1 回风盖板 A	Air return cover plate A	1	PC
	16421005000208	ALDu-H18A4/R1 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothead	4	PCS
12	16321009000128	(ROHS)GR-51D/DGS3 蜗壳固定	Volute fixed plate assembly	1	Set

		板组件			
12.1	16421002000173	ALDu-H18A4/R1 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000218	(ROHS)电机 YSK100-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16346001000004	(ROHS)离心风轮 185/170(塑料)	Centrifugal fan assembly	2	Sets
13	16442001000011	过滤器 $\Phi 6.35 \times \Phi 9.52-70(R410A)$	Air filter	2	Pcs
14	/	过滤网滑道组件	Filter slideway assembly	1	Set
14.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
14.2	16321009000107	ALDu-H18A4/R1 上下过滤滑道组件	Up&down slideway assembly	2	Sets
14.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
14.4	16421030000096	ALDu-H18A4/R1 上下过滤器法兰	Up&down filter flange	2	Pcs
15	16421010000025	ALDu-H18A4/R1 围板	Coaming	1	PC
16	16322001000033	DLR-56F/DCZDGS3-Y 控制器	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M(塑封)	Coil sensor 15K3950 0.9M(plastic) White	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K3950 1.2M(copper) Green	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper) Yellow	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper) Blue	1	PC
16.7	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16421038000081	ALDu-H42A4/R1DI 电控盒	Electrical control box	1	PC
17	16421005000192	ALDu-H18A4/R1 顶盖板	Top cover plate	1	PC

ARVMD-H056/4R1A

NO.	AUX code	Component description	Component description	Quantity	Unit
1	16324001000047	DLR-56F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000022	GR-51D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325009000022	GR-51D/DGS3 蒸发器出气管组件	Evaporator gas outlet pipe components	1	Set
1.3	16325001000061	DLR-56F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(build-in)	1	Set
1.31	16441014000012	电子膨胀阀阀体 CAM-BD18FKS-1	EXV body CAM-BD18FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000101	GR-51D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000102	GR-51D/DGS3 出风法兰 B	Air outlet flange B	1	PC

6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321009000105	ALDu-H18A4/R1 凝水盘组件	Drip tray assembly	1	Set
9	16421005000318	ALDu-H18A4/R1 底板(新)	Chassis	1	PC
10	16421005000207	ALDu-H18A4/R1 回风盖板 A	Air return cover plate A	1	PC
	16421005000208	ALDu-H18A4/R1 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothook	4	Pcs
12	16321009000128	(ROHS)GR-51D/DGS3 蜗壳固定板组件	Volute fixed plate assembly	1	Set
12.1	16421002000173	ALDu-H18A4/R1 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000218	(ROHS)电机 YSK100-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16346001000004	(ROHS)离心风轮组件 185/170(塑料)	Centrifugal fan assembly	2	Sets
13	16442001000011	过滤器 $\Phi 6.35 \times \Phi 9.52-70(R410A)$	Air filter	2	Pcs
14	/	过滤网滑道组件	Filter slideway assembly	1	Set
14.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
14.2	16321009000107	ALDu-H18A4/R1 上下过滤滑道组件	Up&down slideway assembly	2	Sets
14.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
14.4	16421030000096	ALDu-H18A4/R1 上下过滤器法兰	Up&down filter flange	2	Pcs
15	16421010000025	ALDu-H18A4/R1 围板(新)	Coaming	1	PC
16	16322001000010	DLR-56F/DCZDGS3 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M(塑封)	Coil sensor 15K3950 0.9M(plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.7	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16421038000081	ALDu-H42A4/R1DI 电控盒	Electrical control box	1	PC
17	16421005000192	ALDu-H18A4/R1 顶盖板	Top cover plate	1	PC

ARVMD-H071/4R1A,ARVMD-H080/4R1A

N0.	AUX code	Component description	Component description	Quantity	Unit
1	16324001000046	DLR-71F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000024	GR-72D/DGS3 蒸发器组件	Evaporator components	1	Set

1.2	16325009000024	GR-72D/DGS3 蒸发器出气管组件	Evaporator gas outlet pipe components	1	Set
1.3	16325001000060	DLR-71F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(built-in)	1	Set
1.31	16441014000013	电子膨胀阀阀体 CAM-BD22FKS-1	EXV body CAM-BD18FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000101	GR-51D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000102	GR-51D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321009000105	ALDu-H18A4/R1 凝水盘组件	Drip tray assembly	1	Set
9	16421005000318	ALDu-H18A4/R1 底板(新)	Chassis	1	PC
10	16421005000207	ALDu-H18A4/R1 回风盖板 A	Air return cover plate A	1	PC
	16421005000208	ALDu-H18A4/R1 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothook	4	Pcs
12	16321009000129	(ROHS)GR-72D/GS3 蜗壳固定板总成(改进)	Volute fixed plate assembly	1	Set
12.1	16421002000173	ALDu-H18A4/R1 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000216	(ROHS)电机 YSK160-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16346001000004	(ROHS)离心风轮组件 185/170	Centrifugal fan assembly	2	Sets
13	16442001000011	过滤器 $\Phi 6.35 \times \Phi 9.52-70(R410A)$	Air filter	2	Pcs
14	/	过滤网滑道组件	Filter slideway assembly	1	Set
14.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
14.2	16321009000107	ALDu-H18A4/R1 上下过滤滑道组件	Up&down slideway assembly	2	Sets
14.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filterflange	2	Pcs
14.4	16421030000096	ALDu-H18A4/R1 上下过滤器法兰	Up&down filter flange	2	Pcs
15	16421010000025	ALDu-H18A4/R1 围板(新)	Coaming	1	PC
16	16322001000010	DLR-56F/DCZDGS3 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M	Coil sensor 15K3950 plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K3950 (copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K3950 (copper)	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K3950 (copper)	1	PC
16.7	16427001000010	端子板 5 位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16421038000081	ALDu-H42A4/R1DI 电控盒	Electrical control box	1	PC
17	16421005000192	ALDu-H18A4/R1 顶盖板	Top cover plate	1	PC

ARVMD-H090/4R1A

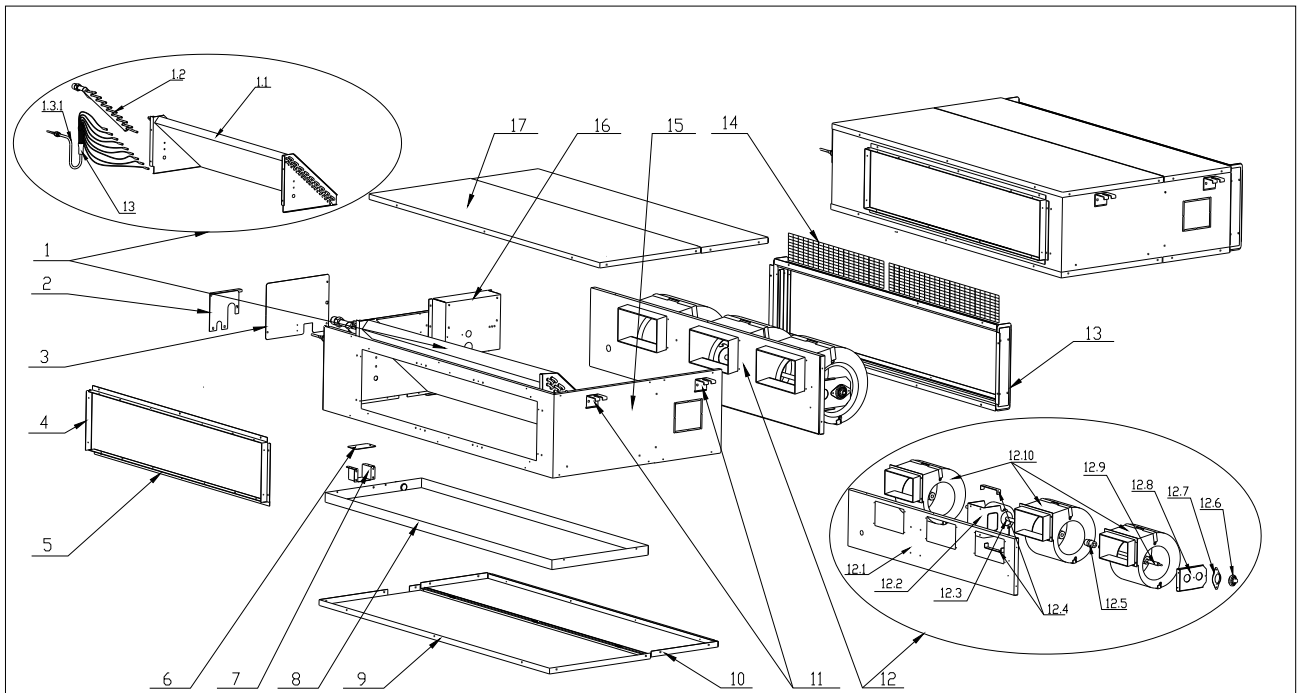
NO.	AUX code	Component description	Component description	Quantity	Unit
1	16324001000046	DLR-71F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000024	GR-72D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325009000024	GR-72D/DGS3 蒸发器出气管组件	Evaporator gas outlet pipe components	1	Set
1.3	16325001000060	DLR-71F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(build-in)	1	Set
1.31	16441014000013	电子膨胀阀阀体 CAM-BD22FKS-1	EXV body CAM-BD18FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000101	GR-51D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000102	GR-51D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321009000105	ALDu-H18A4/R1 凝水盘组件	Drip tray assembly	1	Set
9	16421005000318	ALDu-H18A4/R1 底板(新)	Chassis	1	PC
10	16421005000207	ALDu-H18A4/R1 回风盖板 A	Air return cover plate A	1	PC
	16421005000208	ALDu-H18A4/R1 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothead	4	Pcs
12	16321001000018	DLR-90F/DCZDGS3 蜗壳固定板总成	Volute fixed plate assembly	1	Set
12.1	16421002000173	ALDu-H18A4/R1 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000219	(ROHS)电机 YSK180-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16346001000004	(ROHS)离心风轮组件 185/170	Centrifugal fan assembly	2	Sets
13	16442001000011	过滤器 $\Phi 6.35 \times \Phi 9.52-70(R410A)$	Air filter	2	Pcs
14	/	过滤网滑道组件	Filter slideway assembly	1	Set
14.1	16321001000010	ALDu-H42A4/R1D 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
14.2	16321009000107	ALDu-H18A4/R 上下过滤滑道组件	Up&down slideway assembly	2	Sets
14.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
14.4	16421030000096	ALDu-H18A4/R1 上下过滤器法兰	Up&down filter flange	2	Pcs
15	16421010000025	ALDu-H18A4/R1 围板(新)	Coaming	1	PC
16	16322001000010	DLR-56F/DCZDGS3 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M(塑封)	Coil sensor 15K0.9M(plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K1.2M(copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K1.2M(copper)	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K1.2M(copper)	1	PC
16.7	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16421038000081	ALDu-H42A4/R1DI 电控盒	Electrical control box	1	PC
17	16421005000192	ALDu-H18A4/R1 顶盖板	Top cover plate	1	PC

ARVMD-H100/4R1A

NO.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16324001000051	DLR-100F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000024	GR-72D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325009000024	GR-72D/DGS3 蒸发器出气管组件	Evaporator gas outlet pipe components	1	Set
1.3	16325001000063	DLR-100F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(build-in)	1	Set
1.31	16441014000003	电子膨胀阀阀体 CAM-BD24FKS-1	EXV body CAM-BD18FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000101	GR-51D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000102	GR-51D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321009000105	ALDu-H18A4/R1 凝水盘组件	Drip tray assembly	1	Set
9	16421005000318	ALDu-H18A4/R1 底板(新)	Chassis	1	PC
10	16421005000207	ALDu-H18A4/R1 回风盖板 A	Air return cover plate A	1	PC
	16421005000208	ALDu-H18A4/R1 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothead	4	Pcs
12	16321009000133	(ROHS)ALHi-H36A5/S3 蜗壳固定板总成	Volute fixed plate assembly	1	Set
12.1	16421002000173	ALDu-H18A4/R1 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000219	(ROHS)电机 YSK180-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16346001000004	(ROHS)离心风轮组件 185/170	Centrifugal fan assembly	2	Sets
13	16442001000011	过滤器 $\phi 6.35 \times \phi 9.52-70(R410A)$	Air filter	2	Pcs
14	/	过滤网滑道组件	Filter slideway assembly	1	Set
14.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
14.2	16321009000107	ALDu-H18A4/R1 上下过滤滑道组件	Up&down slideway assembly	2	Sets
14.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
14.4	16421030000096	ALDu-H18A4/R1 上下过滤器法兰	Up&down filter flange	2	Pcs
15	16421010000025	ALDu-H18A4/R1 围板(新)	Coaming	1	PC
16	16322001000010	DLR-56F/DCZDGS3 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K 0.9M(塑封)	Coil sensor 15K3950 (plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K3950 (copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K3950 (copper)	1	PC

16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K3950 (copper)	1	PC
16.7	16427001000010	端子板 5 位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16421038000081	ALDu-H42A4/R1DI 电控盒	Electrical control box	1	PC
17	16421005000192	ALDu-H18A4/R1 顶盖板	Top cover plate	1	PC

ARVMD-H112/4R1A,ARVMD-H125/4R1A,ARVMD-H140/4R1A,ARVMD-H150/4R1A



ARVMD-H112/4R1A,ARVMD-H125/4R1A,ARVMD-H140/4R1A

N0.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16324001000048	DLR-112F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000026	GR-120D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325004000088	GR-120D/DGS3 集气管组件	Evaporator gas header components	1	Set
1.3	16325001000062	DLR-112F/DCZDGS3 蒸发器进液管组件(内置)	Evaporator liquid inlet pipe components(build-in)	1	Set
1.31	16441014000003	电子膨胀阀阀体 CAM-BD24FKS-1	EXV body CAM-BD24FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000103	GR-120D/DGS3 出风法兰 A	Air outlet flange A	1	PC
5	16421030000104	GR-120D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321001000008	ALDu-H42A4/R1DI 凝水盘组件	Drip tray assembly	1	Set
9	16421005000317	ALDu-H42A4/R1DI 底板(新)	Chassis	1	PC
10	16421005000206	ALDu-H42A4/R1DI 回风盖板 A	Air return cover plate A	1	PC
	16421005000213	ALDu-H42A4/R1DI 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	PoTHOOK	4	Pcs
12	16330009000016	GR-120D/GS2 风机总成	Fan assembly	1	Set
12.1	16421002000172	ALDu-H42A4/R1DI 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000219	(ROHS)电机 YSK180-4	Fan motor	1	PC

12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16444007000009	联轴器 Φ14	Coupling	1	PC
12.6	16432016000033	GR-50D/DC2 橡胶轴承	Rubber bearing	1	PC
12.7	16421002000219	GR-50D/DC2 橡胶轴承压板	Rubber bearing holder	1	PC
12.8	16432016000036	橡胶轴承支架 ALDu-H42A4/R1DI	Rubber bearing bracket	1	PC
12.9	16444007000006	加长轴 φ14×470	Lengthening shaft	1	PC
12.10	16346001000004	(ROHS)离心风轮组件 185/170(塑料)	Centrifugal fan assembly	3	Sets
13	16321001000011	过滤网滑道组件	Filter slideway assembly	1	Set
13.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
13.2	16321001000011	ALDu-H42A4/R1DI 上下过滤滑道组件	Up&down slideway assembly	2	Sets
13.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
13.4	16421030000092	ALDu-H42A4/R1DI 上下过滤器法兰	Up&down filter flange	2	Pcs
14	16442001000011	过滤器 Φ6.35×Φ9.52-70(R410A)	Air filter	2	Pcs
15	16421010000024	ALDu-H42A4/R1DI 围板(新)	Coaming	1	PC
16	16322001000033	DLR-56F/DCZDGS3-Y 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M(塑封)	Coil sensor 15K 3950 0.9M(plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K 3950 0.5M (copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K 3950 1.2M(copper)	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K 3950 1.2M(copper)	1	PC
16.7	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16321001000009	ALDu-H42A4/R1DI 电控盒组件	Electrical control box	1	Set
17	16421005000189	ALDu-H42A4/R1DI 顶盖板	Top cover plate	1	PC

ARVMD-H150/4R1A

NO.	BOM Number	Chinese name	Part Name	Quantity	Unit
1	16324001000018	DLR-140F/DCZDGS3 蒸发器总成(内置)	Evaporator assembly(build-in)	1	Set
1.1	16324009000026	GR-120D/DGS3 蒸发器组件	Evaporator components	1	Set
1.2	16325004000088	GR-120D/DGS3 集气管组件	Evaporator gas header components	1	Set
1.3	16325001000014	DLR-140F/DCZDGS3 进液管组件(内置)	Evaporator liquid inlet pipe components(build-in)	1	Set
1.31	16441014000003	电子膨胀阀阀体 CAM-BD24FKS-1	EXV body CAM-BD24FKS-1	1	PC
2	16421014000035	ALDu-H42A4/R1DI 阀板	Valve plate	1	PC
3	16421005000191	ALDu-H42A4/R1DI 电控盒盖	Electrical control box cover	1	PC
4	16421030000103	GR-120D/DGS3 出风法兰 A	Air outlet flange A	1	PC

5	16421030000104	GR-120D/DGS3 出风法兰 B	Air outlet flange B	1	PC
6	16421015000026	ALDu-H42A4/R1DI 排水管保护板 B	Drainpipe protection plate B	1	PC
7	16421015000025	ALDu-H42A4/R1DI 排水管保护板 A	Drainpipe protection plate A	1	PC
8	16321001000008	ALDu-H42A4/R1DI 凝水盘组件	Drip tray assembly	1	Set
9	16421005000317	ALDu-H42A4/R1DI 底板(新)	Chassis	1	PC
10	16421005000206	ALDu-H42A4/R1DI 回风盖板 A	Air return cover plate A	1	PC
	16421005000213	ALDu-H42A4/R1DI 回风盖板 B	Air return cover plate B	1	PC
11	16421040000024	ALDu-H42A4/R1DI 吊钩	Pothook	4	Pcs
12	16330009000016	GR-120D/GS2 风机总成	Fan assembly	1	Set
12.1	16421002000172	ALDu-H42A4/R1DI 蜗壳固定板	Volute fixed plate	1	PC
12.2	16321001000013	ALDu-H42A4/R1DI 电机架组件	Motor bracket assembly	1	Set
12.3	16430001000219	(ROHS)电机 YSK180-4	Fan motor	1	PC
12.4	16421029000010	GR-250D/G 电机抱攀	Fan motor fixity	2	Pcs
12.5	16444007000009	联轴器 Φ14	Coupling	1	PC
12.6	16432016000033	GR-50D/DC2 橡胶轴承	Rubber bearing	1	PC
12.7	16421002000219	GR-50D/DC2 橡胶轴承压板	Rubber bearing holder	1	PC
12.8	16432016000036	橡胶轴承支架 ALDu-H42A4/R1DI	Rubber bearing bracket	1	PC
12.9	16444007000006	加长轴 φ14×470	Lengthening shaft	1	PC
12.10	16346001000004	(ROHS)离心风轮组件 185/170(塑料)	Centrifugal fan assembly	3	Sets
13	16321001000011	过滤网滑道组件	Filter slideway assembly	1	Set
13.1	16321001000010	ALDu-H42A4/R1DI 左右过滤器滑道组件	Left&Right slideway assembly	2	Sets
13.2	16321001000011	ALDu-H42A4/R1DI 上下过滤滑道组件	Up&down slideway assembly	2	Sets
13.3	16421030000091	ALDu-H42A4/R1DI 左右过滤器法兰	Left&Right filter flange	2	Pcs
13.4	16421030000092	ALDu-H42A4/R1DI 上下过滤器法兰	Up&down filter flange	2	Pcs
14	16442001000013	过滤器 9.52×9.52-70	Air filter	2	Pcs
15	16421010000024	ALDu-H42A4/R1DI 围板(新)	Coaming	1	PC
16	16322001000010	DLR-56F/DCZDGS3 控制器总成	Electrical control assembly	1	Set
16.1	16422001000078	控制板 DCZ-SN3F-HCE1	PCB board	1	PC
16.2	16422005000009	(ROHS)变压器 TDB-14-B2B(PTC)	Transformer	1	PC
16.3	16430007000005	传感器 XH2(白)15K3950 0.9M(塑封)	Coil sensor 15K3950 0.9M(plastic)	1	PC
16.4	16430007000011	传感器 XH2(绿)20K3950 0.5M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.5	16430007000016	传感器 XH2(黄)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.6	16430007000018	传感器 XH2(蓝)20K3950 1.2M(铜)	Coil sensor 20K3950 1.2M(copper)	1	PC
16.7	16427001000010	端子板 5位(600V 4mm ²)AB	Terminal board	1	PC
16.8	16321001000009	ALDu-H42A4/R1DI 电控盒组件	Electrical control box	1	Set
17	16421005000189	ALDu-H42A4/R1DI 顶盖板	Top cover plate	1	PC

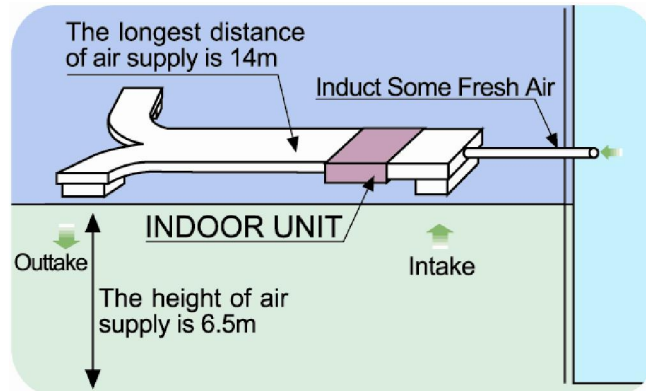
High Static Pressure Duct Type

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1.Features

(1) High External Static Pressure

External static pressure of Indoor Unit can be up to 196Pa, which allows extensive duct work for flexible applications. so the cool air can be delivered to every indoor corner even in a super-high ceiling. The max. distance of air supply is about 14m; the height of air supply is about 6.5m.



(2) Innovative air supply

The type of air supply and air return was set flexibly and appropriately. It provides homogeneous conditioning of the room temperature.

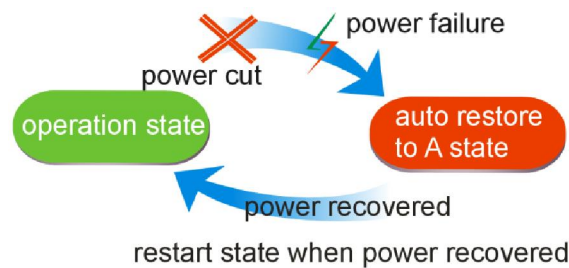
(3) Conceal design

The unit is installed inside of ceiling, doesn't take room space

(4) Setting or Auto two operation modes

Multi speed wind makes you feel more comfortable;

(5) Auto restart;



(6) Wired controller and remote controller and central controller can be available

(7) Special insulation design

Achieves high heat insulation efficiency and no condensation on shell

(8) with low ambient temperature cooling function

Makes the unit can run normally on the condition that the ambient temperature falls down to -15°C;



(9) Failure automatic detection

If there is a failure, the indicator will flash and the failure code will display on the wired controller, the failure cause is easier to be found.

(10) Fresh air supply

Fresh air can be drawn in by the Indoor Unit, which can improve the Indoor Air Quality greatly.

(11) High capacity of cooling/heating, efficient, and energy-saving.

(12) It is suitable be used for office, hospital, commercial place and home, the air conditioner will create the comfortable and elegance environment for you.

2.Specifications

Model			ARVHD-H112/4R1A	ARVHD-H125/4R1A
Factory Model			ALHi-H36B4/R1DIB-A	ALHi-H42B4/R1DIB-A
Code			/	/
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	11.2	12.5
	Heating	kW	12.8	13.3
Fan Motor	Model		YDK200-4	YDK200-4
	Brand		HUATE	HUATE
	Output Power	W	200	200
	Capacitor	uF	10	10
	Speed (Hi/Mi/Lo)	r/min	1230/1000/750	1230/1000/750
Coil	Number Of Row		3	3
	Tube Pitch(a)x Row Pitch(b)	mm	22.0×19.05	22.0×19.05
	Fin Pitch	mm	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	Φ7.94 Inner grooved	Φ7.94 Inner grooved
	Coil Length x Height x Width	mm	900×352×54.2	900×352×54.2
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	20.69	20.69
	Noise Level(Hi/Mi/Lo)	dB(A)	2000/1600/1400	2000/1600/1400
	External Static Pressure	Pa	60/57/51	60/57/51
	Net Dimension (W×D×H)	mm	196	196
	Packing Dimension (W×D×H)	mm	1200x719x380	1200x719x380
	Net Weight	Kg	1235x760x415	1235x760x415
	Gross Weight	Kg	56	56
Refrigerant Pipe	Liquid Side	mm	59	59
	Gas Side	mm	9.52	9.52
	Drainage	mm	19.05	19.05
Operation Temperature Range		℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	50~75	50~90
Stuffing Quantity	20/40/40H	Unit	68/147/168	68/147/168

Notes:

1. Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
2. Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.
3. Anechoic chamber conversion value,measured in test room.During actual operation.These values are normally

somewhat higher as a result of ambient conditions.

4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should subject to parameter on nameplate.

Model			ARVHD-H140/4R1A	ARVHD-H150/4R1A
Factory Model			ALHi-H48A4/R1DIB-A	ALHi-H60A4/R1DIB-A
Code			/	/
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	kW	14.0	15.0
	Heating	kW	15.0	16.0
Fan Motor	Model		YDK200-4	YDK200-4
	Brand		HUATE	HUATE
	Output Power	W	200	200
	Capacitor	uF	10	10
	Speed (Hi/Mi/Lo)	r/min	1230/1000/750	1230/1000/750
Coil	Number Of Row		3	3
	Tube Pitch(a)x Row Pitch(b)	mm	22.0×19.05	22.0×19.05
	Fin Pitch	mm	1.6	1.6
	Fin Material		Hydrophilic aluminum fin	Hydrophilic aluminum fin
	Tube Outside Dia.and Material	mm	Φ7.94 Inner grooved	Φ7.94 Inner grooved
	Coil Length x Height x Width	mm	900×352×54.2	900×352×54.2
Unit	Indoor Air Flow (Hi/Mi/Lo)	m ³ /h	2000/1600/1400	2000/1600/1400
	Noise Level(Hi/Mi/Lo)	dB(A)	60/57/51	60/57/51
	External Static Pressure	Pa	196	196
	Net Dimension (W×D×H)	mm	1200x719x380	1200x719x380
	Packing Dimension (W×D×H)	mm	1235x760x415	1235x760x415
	Net Weight	Kg	56	56
	Gross Weight	Kg	59	59
Refrigerant Pipe	Liquid Side	mm	9.52	9.52
	Gas Side	mm	19.05	19.05
	Drainage	mm	R3/4in(DN20)	R3/4in(DN20)
Operation Temperature Range		℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-5~52/-20~24	-5~52/-20~24
Application Area		m ²	60~100	65~110
Stuffing Quantity	20/40/40H	Unit	68/147/168	68/147/168

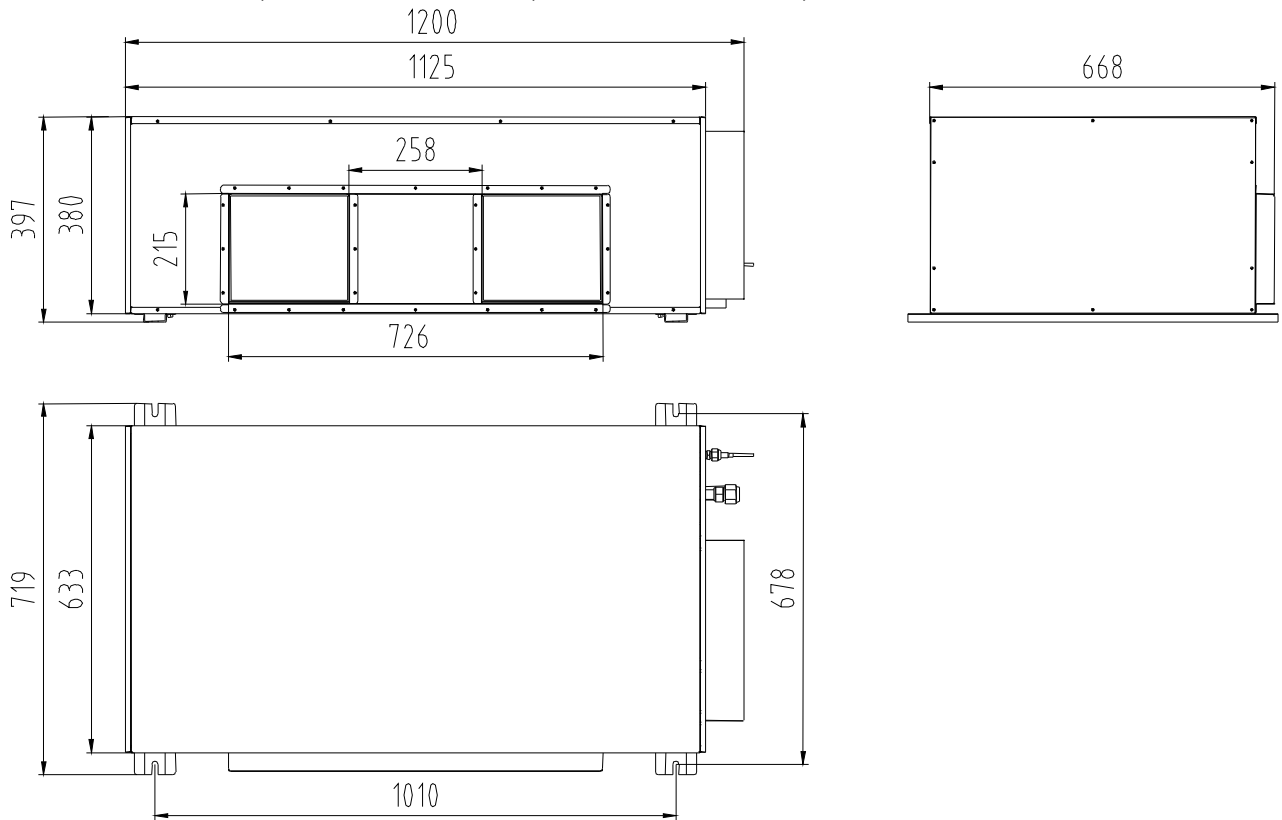
Notes:

- Cooling Capacity:Indoor temp.27℃DB,19℃WB,outdoor temp.35℃DB,24℃WB /Equivalent piping length :7.5m,level difference : 0 m.
- Heating Capacity:Indoor temp.20℃DB, outdoor temp.7℃DB,6℃WB /Equivalent piping length :7.5m,level difference : 0 m.

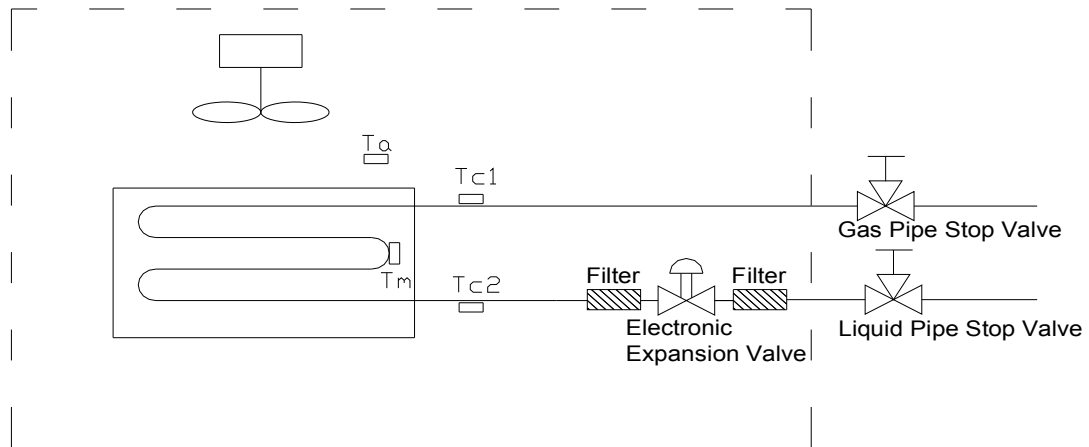
3. Anechoic chamber conversion value, measured in test room. During actual operation. These values are normally somewhat higher as a result of ambient conditions.
4. All the above specification will be changed due to product performance improvement. AUX reserves the right to change product design without prior notice, everything should be subject to parameter on nameplate.

3.Dimension

ARVHD-H112/4R1A, ARVHD-H125/4R1A, ARVHD-H140/4R1A, ARVHD-H150/4R1A



4.Piping Diagram

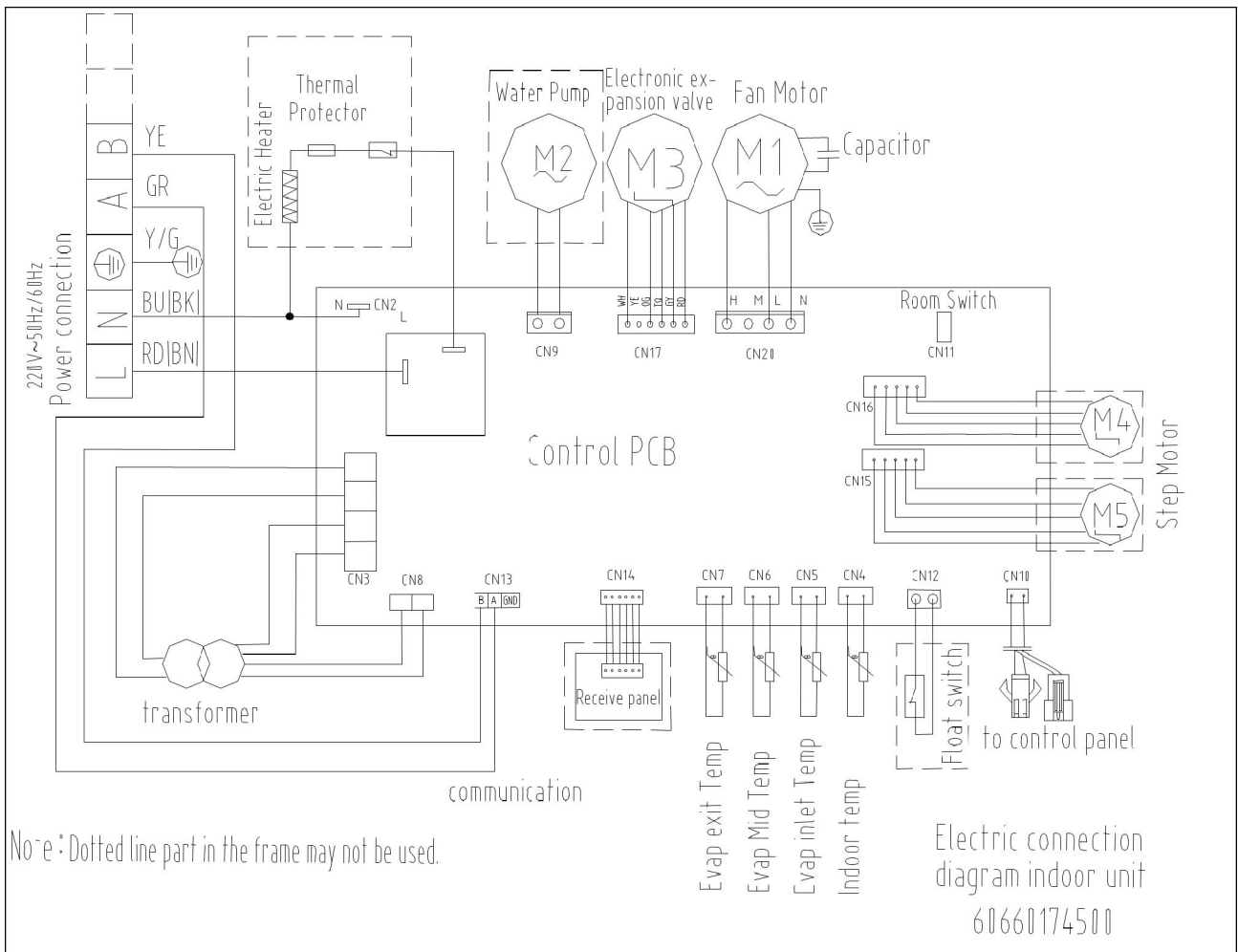


Refrigerant pipe connection port diameters

(mm)

model	Gas	Liquid
ARVHD-H112/125/140/150/4R1A	$\Phi 19.05$	$\Phi 9.52$

5.Wiring Diagram



6. Electric characteristics

Model	Units				Power supply		IFM	
	Hz	Volts	Min	Max	MCA	MFA	KW	FLA
ARVHD-H112/4R1A	50	220-240	198	264	5.5	30	0.4	4.4
ARVHD-H125/4R1A	50	220-240	198	264	5.5	30	0.4	4.4
ARVHD-H140/4R1A	50	220-240	198	264	5.5	30	0.4	4.4
ARVHD-H150/4R1A	50	220-240	198	264	5.5	30	0.4	4.4

Symbols:

MCA: Min. Circuit Amps.(A)

MFA: Max.Breaker Amps.

kW : Fan Motor Rated Output(kW)

FLA: Full Load Amps.(A)

IFM:Indoor Fan Motor

Note:

- 1.Min. and Max. Voltage :Units are suitable for use on electrical system where voltage supplied to unit terminals is not below or above listed rang limits.
- 2.Maximum allowable voltage unbalance between phases is 2%.
- 3.MCA =1.25 x FLA

7.Capacity Tables

Cooling Capacity of Outdoor Dry Bulb Temperature and Indoor Dry/Wet Bulb Temperature or Power Consumption Correction Coefficient

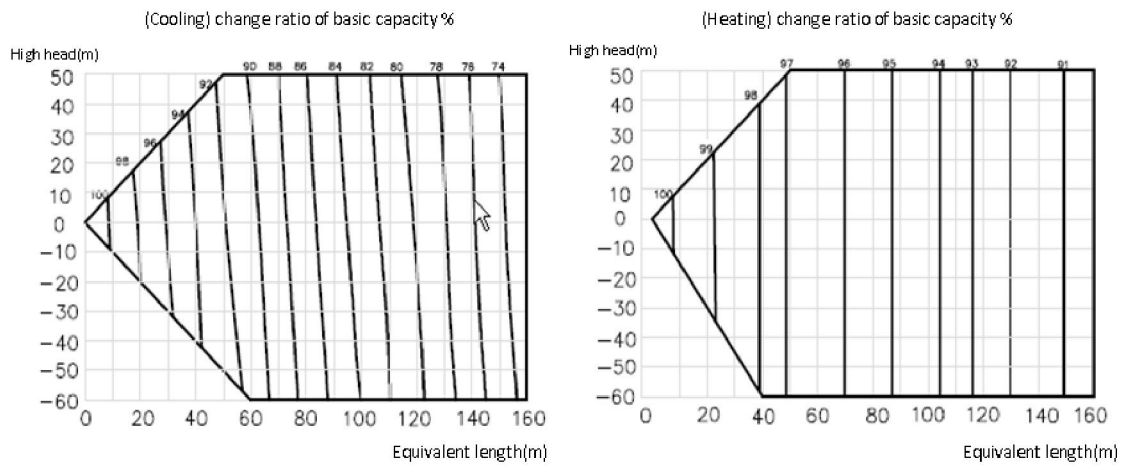
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
-15~20	Cooling capacity	80 - 110 % of nominal				
	Power	25 - 50 % of nominal				
25	Cooling capacity	0.97	1.03	1.10	1.16	1.22
	Power	0.78	0.79	0.81	0.82	0.84
30	Cooling capacity	0.92	0.98	1.05	1.11	1.17
	Power	0.88	0.89	0.91	0.92	0.93
35	Cooling capacity	0.87	0.94	1.0	1.06	1.13
	Power	0.96	0.97	1.0	1.01	1.03
40	Cooling capacity	0.96	0.89	0.95	1.02	1.08
	Power	1.05	1.07	1.08	1.09	1.11
45	Cooling capacity	0.77	0.84	0.90	0.96	1.02
	Power	1.16	1.18	1.19	1.2	1.23
50	Cooling capacity	0.75	0.80	0.86	0.91	0.98
	Power	1.24	1.27	1.28	1.3	1.32

Heating Capacity of Outdoor Dry/Wet Bulb Temperature and Indoor Dry Bulb Temperature or Power Consumption Correction Coefficient

Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor back temperature of dry bulb [°C]		
		15	20	25
-20/-21	Heating capacity	0.58	0.53	0.49
	Power	0.50	0.56	0.62
-15/-16	Heating capacity	0.64	0.59	0.55
	Power	0.60	0.66	0.72
-10/-12	Heating capacity	0.71	0.66	0.62
	Power	0.72	0.78	0.84
-7/-8	Heating capacity	0.76	0.72	0.67
	Power	0.81	0.87	0.93
-1/-2	Heating capacity	0.79	0.74	0.70
	Power	0.86	0.92	0.98
2/1	Heating capacity	0.81	0.76	0.72
	Power	0.89	0.95	1.01
7/6	Heating capacity	1.04	1.0	0.96
	Power	0.94	1.0	1.06
10/9	Heating capacity	1.1	1.06	1.01
	Power	0.99	1.05	1.11
15/12	Heating capacity	1.16	1.12	1.07
	Power	1.05	1.11	1.17

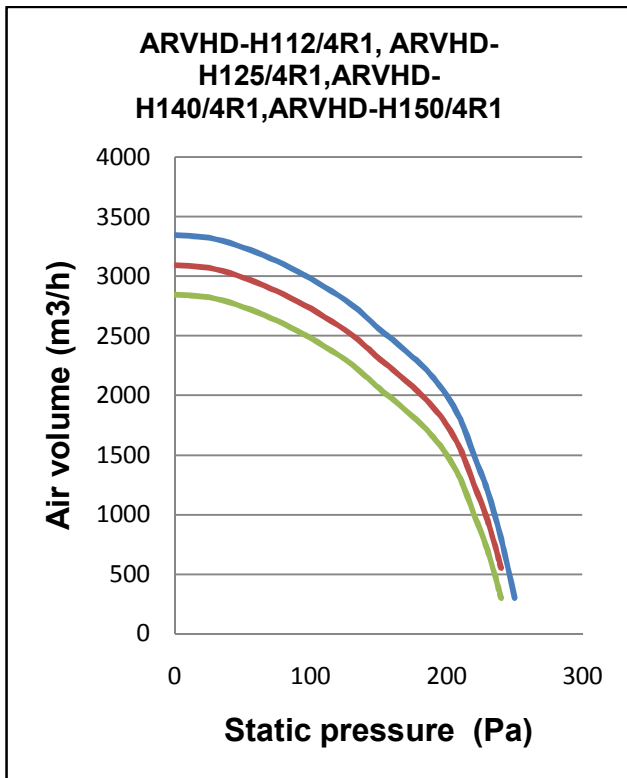
15-24	Heating capacity	0.85 – 1.05 of nominal
	Power	0.80 – 1.20 of nominal

Length Correction Coefficient of Indoor/Outdoor Unit Connecting Tube



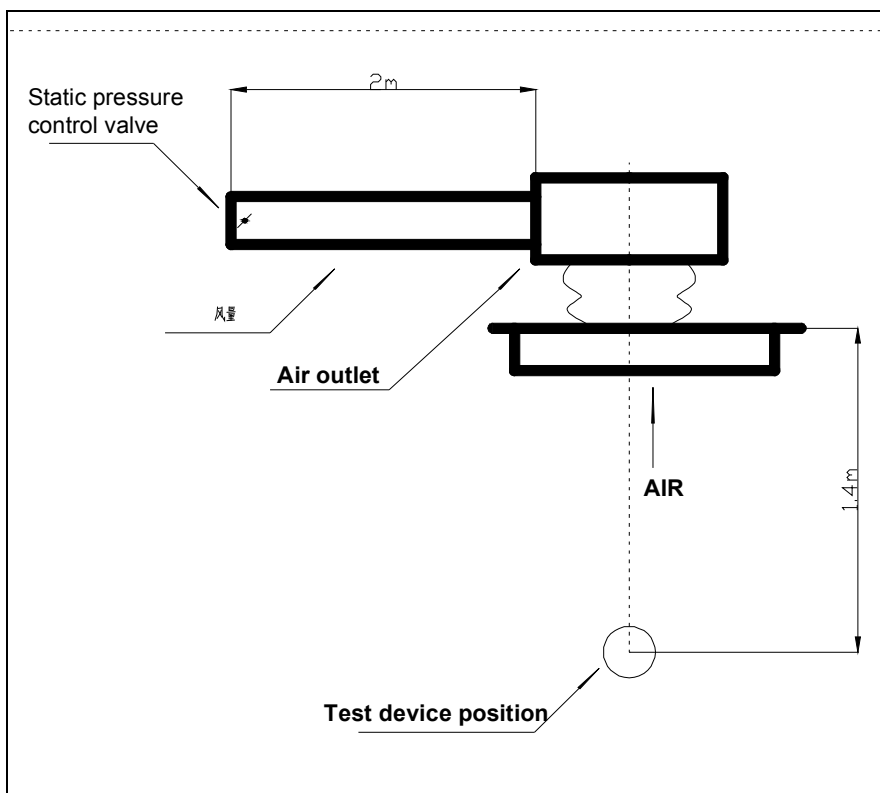
Positive side of high head means installation height of outdoor unit should be higher than indoor unit; negative side of high head means installation height of outdoor unit should be lower than indoor unit; (change ratio of basic capacity)

8.Fan performance



ARVHD-H112/4R1, ARVHD-H125/4R1, ARVHD-H140/4R1, ARVHD-H150/4R1			
Static Pressure (Pa)	Air Volumem ³ /h)		
	High	Mid	Low
0	3345	3095	2845
10	3340	3090	2840
20	3330	3080	2830
30	3310	3060	2810
40	3280	3030	2780
50	3240	2990	2740
60	3200	2950	2700
70	3150	2900	2650
80	3100	2850	2600
90	3040	2790	2540
100	2980	2730	2480
110	2910	2660	2410
120	2840	2590	2340
130	2760	2510	2260
140	2665	2415	2165
150	2560	2310	2060
160	2470	2220	1970
170	2370	2120	1870
180	2270	2020	1770
190	2150	1900	1650
200	2000	1750	1500
210	1800	1550	1300
220	1500	1250	1000
230	1200	950	700
240	800	550	300
250	300	/	/

9.Sound Levels



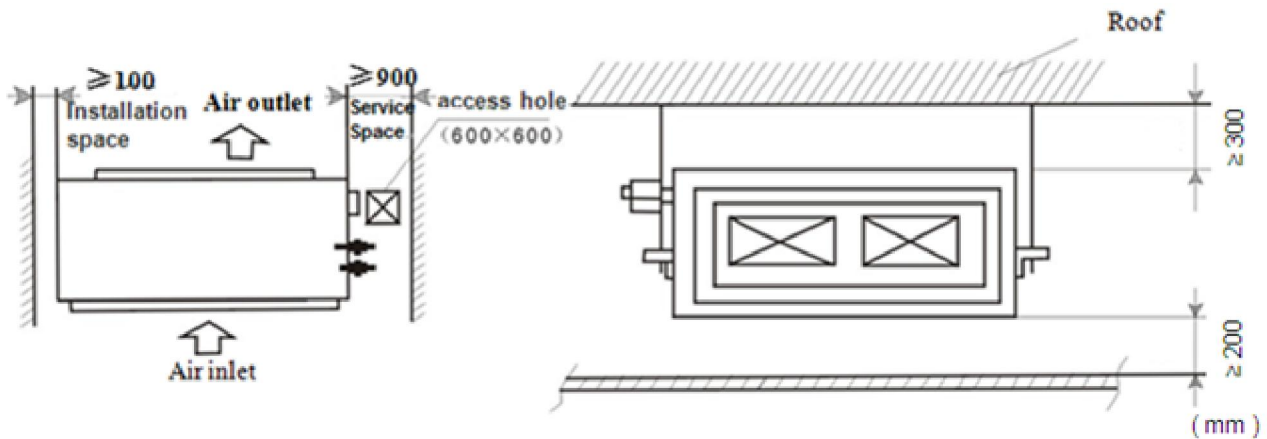
Note:

1. The operating condition are assumed to be atandard(JIS Condition).
 2. These operating values were obtained in a dead room (conversion values).
- Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220~240V 50Hz		
	H	M	L
ARVHD-H112/4R1	60	57	51
ARVHD-H125/4R1	60	57	51
ARVHD-H140/4R1	60	57	51
ARVHD-H150/4R1	60	57	51

10. Installation

10.1 The distance between indoor unit and obstacle



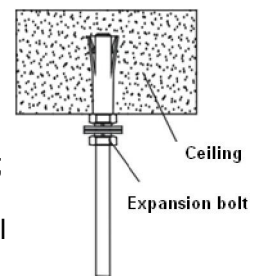
10.2 Suspension unit

◇ Select the suspension foundation

The suspension foundation is a structure of either wooden frame or reinforced concrete. It must be firm and reliable to bear at least 4 times weight of itself and capable of bearing vibration for long periods;

◇ Fixing of suspension foundation

Fix the suspension bolts either as shown in the picture or by a steel or wooden bracket;



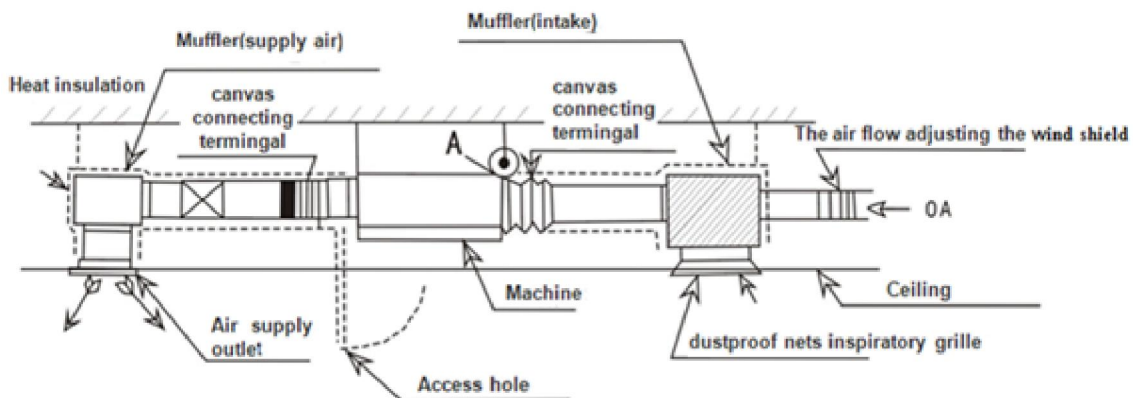
◇ Adjust the relative positions of the suspension hooks to ensure the indoor unit is level in all directions. Use a spirit level to ensure this, otherwise water leakage, air leakage etc. will be resulted;

◇ Tighten the nuts and ensure that the hooks are tightly connected to the nuts and shims, and there is no phenomenon of virtual hanging;

◇ After the unit is installed ensure it is secure and does not shake or sway.

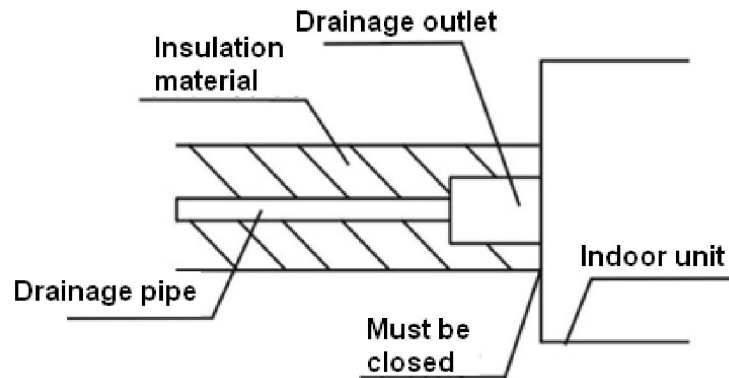
10.4 Duct pipeline installation

◇ Using canvas to connect between indoor unit and duct pipeline, in order to save unnecessary vibration, as to the detail connection method please refer to the following picture.



10.5 Drainage pipe installation

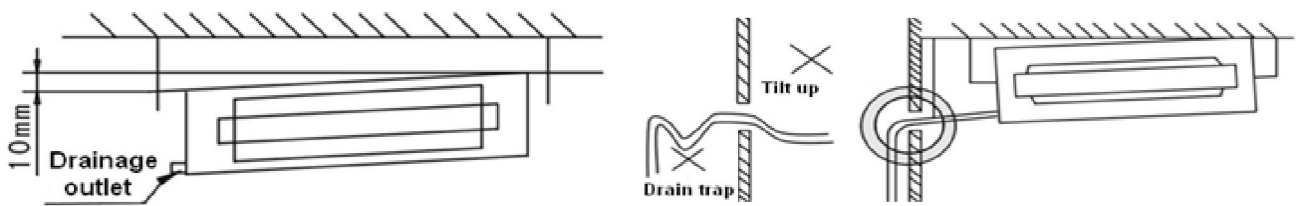
- ◇ Drainage pipes must be wrapped with heat insulation materials, otherwise it will cause frost or droplets, see picture as follows:



Notice:

Heat insulation material: rubber insulation pipe with the thickness of more than 8mm

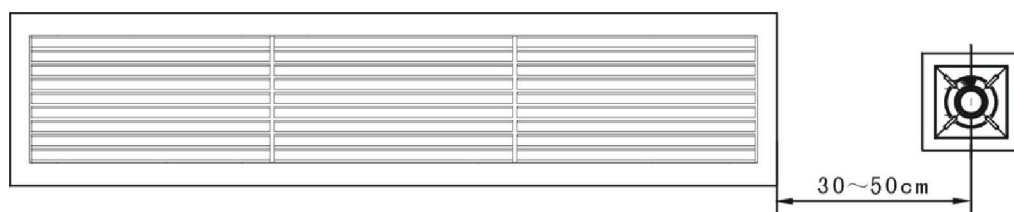
- ◇ Drainage pipe must have a downward gradient (1/50--1/100). If the drain pipe is installed ups and downs, it will cause water backflow or leakage etc.



- ◇ When finish installation please carry out the drainage test to ensure that the water flow through the pipeline fluently, and carefully observe the junction to ensure that there is no water leakage at the junction. If the unit is installed in the newly built house, strongly recommend that this test taken before the ceiling installation. Even it is the heating only unit, this test is unavoidable.

10.6 Remote controller receiver installation.

- ◇ Installation site: recommend that the receiver is mounted with the distance of 30~50 cm to the indoor unit air outlet (on your choice as well), while must ensure that the receiver can get the signal that the remote controller sends, please refer to the following installation picture:

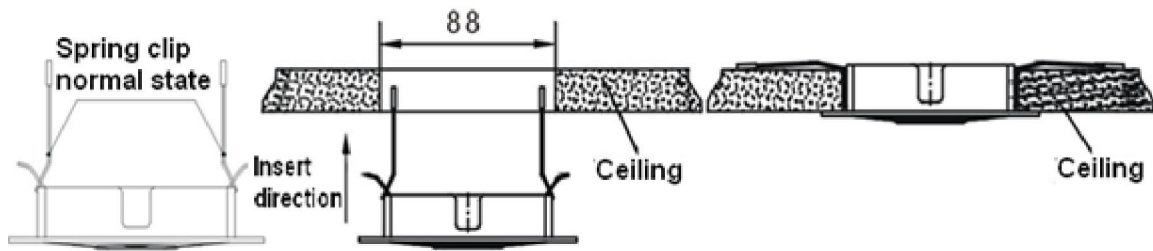


Notes:

The remote control signal effectively work for straight line from 8 meters, when the battery after the power consumption, effective work will shorten the distance.

- ◇ Mounting hole set up: please use certain instrument to dig a square hole with 88x88mm on the ceiling
- ◇ Remote controller receiver installation.

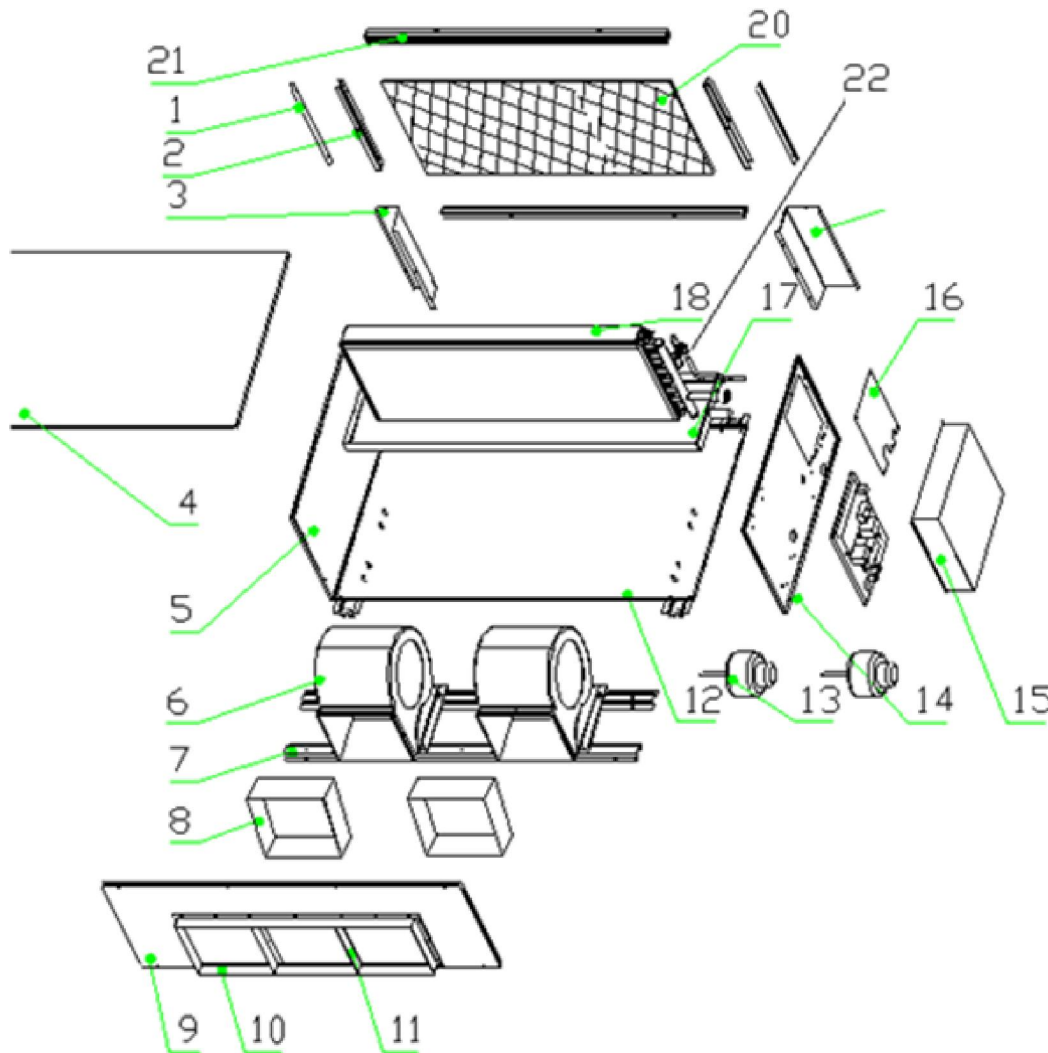
Hold the two sides (with clip sides) of the receiver, set the spring clip in the vertical way then put it into the mounting hole, if the two sides of the receiver is in the same level with the ceiling the installation is finished.



◇ Signal line connection: connect the wire of remote controller receiver to the CN-DISP terminal board on PCB of indoor unit wire box then fix it.

11.Exploded View

ARVHD-H112/4R1A, ARVHD-H125/4R1A, ARVHD-H140/4R1A, ARVHD-H150/4R1A



ARVHD-H112/4R1A, ARVHD-H125/4R1A, ARVHD-H140/4R1A, ARVHD-H150/4R1A

N0.	AUX code	Chinese name	Part Name	Quantity	Unit
1	16421032000042	空气过滤门 1	Air filtration door1	2	Pcs
2	16421023000032	进风框竖条	Into wind box erect bar	2	Pcs
3	16421001000186	侧板左连接板	Endplates left linking slab	1	Pc
4	16421005000120	顶盖板	Top cover	1	Pc
5	16421001000184	左侧板	Left board	1	Pc
6	16444005000003	离心风轮组件 SYZ7-71	Centrifugal rotor components SYZ7-71	2	Sets
7	16321009000091	风机固定架组件	Fan fixed frame components	2	Sets
7.1	16421002000094	风机固定条	Fan stents	2	Pcs
7.2	16445999000015	六角头螺栓(不锈钢)M6*20 GB5783	Hexagon bolts (stainless steel) M6*20 GB5783	8	Pcs
8	16432011000001	帆布软接	Canvas soft connect	2	Pcs

9	16421004000114	出风面板	The wind panel	1	Pc
10	16421030000085	出风法兰 A	Exhaust flange A	2	Pcs
11	16421030000087	出风法兰 B	Exhaust flange B	4	Pcs
12	16321009000097	底盘组件	Chassis components	1	Set
12.1	16421027000009	底脚	Bottom feet	4	Pcs
12.2	16421028000049	底盘	Chassis	1	Pc
12.3	16445999000015	六角头螺栓(不锈钢)M6*20 GB5783	Hexagon bolts (stainless steel) M6*20 GB5783	8	Pcs
13	16430001000126	电机 YDK200-4	Motor YDK200-4	2	Pcs
14	16421001000185	右侧板	Right board	1	Pc
15	16322009000035	电控盒总成	Electric control box assembly	1	Set
15.1	16421038000036	电控盒盖	Electric control box incautiously	1	Pc
15.2	16421005000122	电控盒底板	Electric control box floor	1	Pc
15.3	11222009001192	R控制板 FGJ(H)-RQD-3F-SYE2	R panel FGJ (H) - RQD - 3F - SYE2	1	Pc
15.4	16430007000046	传感器 5K3470 XH2 0.6m(铜壳)	Sensor 5K3470 XH2 0.6 m (copper)	1	Pc
15.5	16430007000102	传感器 5K3470 XH2 1.2m(塑封)	XH2 1.2 m (5K3470 encapsulation)	1	Pc
15.6	16427001000003	端子板 5位(600V 4mm2)IV	Terminal board 5 (600V 4mm2) IV	1	Pc
15.7	16430015000012	(ROHS)电容 10Uf/450V AC	(ROHS) 10Uf / 450V AC capacitance	2	Pcs
15.8	16422005000017	(ROHS)变压器 TDB-8-B(PTC)	(ROHS) transformer TDB-large - 8 - B (PTC)	2	Pcs
16	16421014000020	阀板	disc	1	Pc
17	16421034000047	接水盘	Wet pan	1	Pc
18	16324009000049	蒸发器总成	Evaporator assembly	1	Set
18.1	16324009000050	蒸发器组件	Evaporator components	1	Set
18.2	16325009000070	蒸发器铜管套件	Evaporator brass suite	1	Set
19	16421001000187	侧板右连接板	Endplates right linking slab	1	Pc
20	16444013000006	空气过滤器	Air filter	1	Pc
21	16321009000090	滑槽组件 1	Sliding channel component 1	2	Sets
21.1	16421032000054	滑槽	Sliding channel	2	Pcs
21.2	16421023000022	进风框横条	Into wind box stripes	2	Pcs
22	16421023000022	电子膨胀阀	EXV	1	Pc

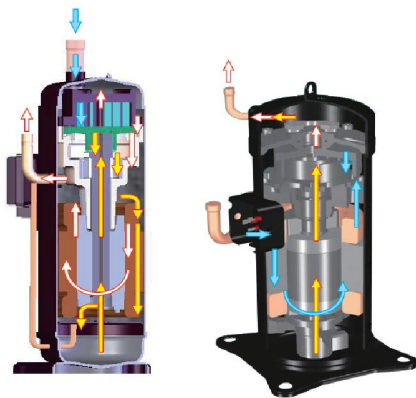
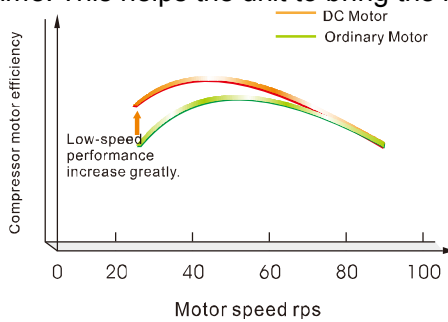
Part 3 Outdoor unit

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1.Features

◇ Innovation technique for full DC inverter compressor

High-performance, low-sound DC inverter compressor operates at a faster frequency, reducing start-up time. This helps the unit to bring the room temperature up to the set level quickly.



H-P

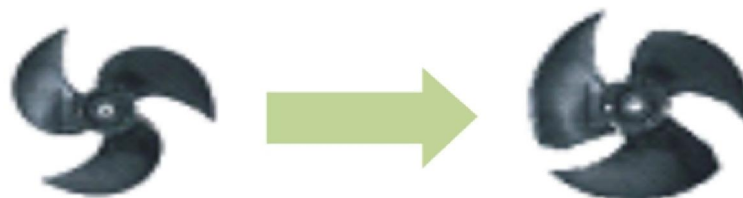
L-P

H-P: High pressure chamber compressor
L-P: Low pressure chamber compressor

- H-P compressor assures sufficient oil at low frequency condition
- L-P compressor with higher super-heating because the suction side refrigerant go through the motor and absorb heating, resulting in low enthalpy per unit refrigerant.
- H-P compressor adopt high pressure chamber as a damper to reduce the noise level.

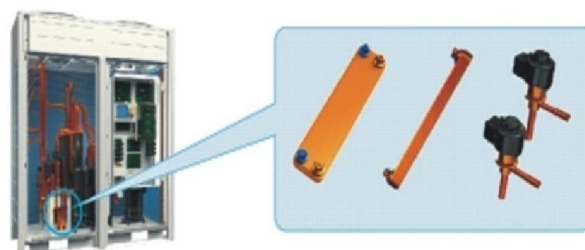
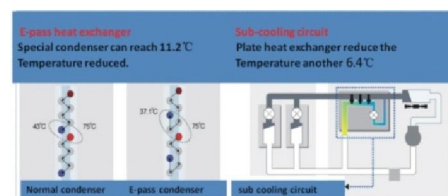
◇ DC brushless fan motor

DC brushless motor adjust the fan speed according to the stem pressure, enhance the efficiency by 45%. The Super Aero fan provide a large air volume and high static pressure , and at the same time it produces low level of noise.



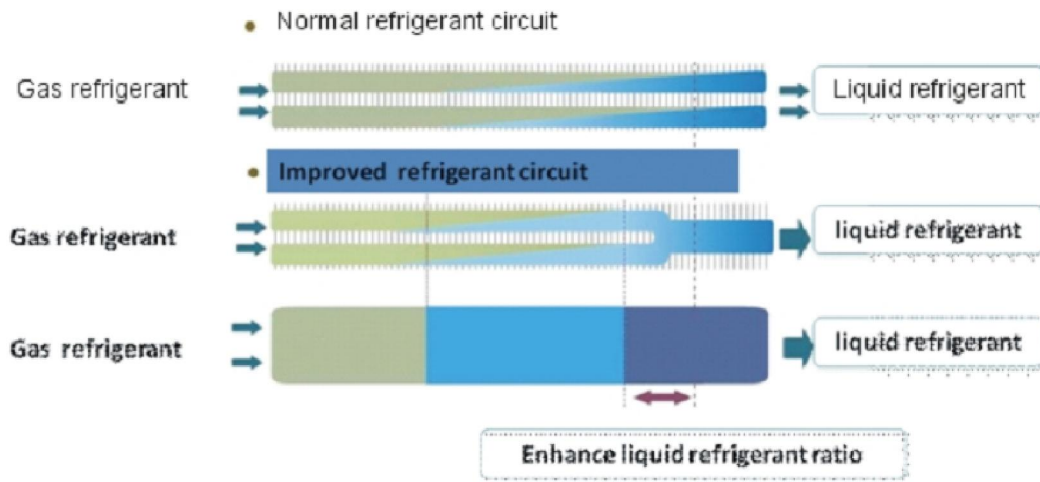
◇ Sub-cooling technology

- Prevent heat exchange between outlet and inlet
- Enhance degree of sub cooling
- Reduce the pressure resistance
- 17.6°C sub-cooling
- Enhance cooling capacity
- Extend longer pipe length



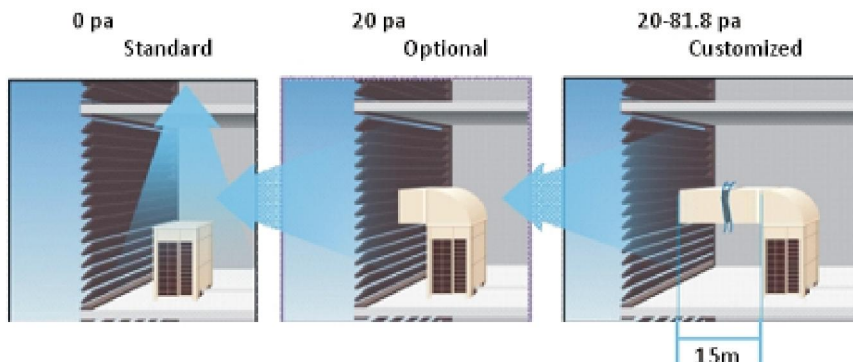
◇ **Improved refrigerant circuit**

Refrigerant circuit design increase the heat exchanging efficiency, and enhance the ratio of liquid refrigerant which flow to the evaporator.



◇ **Changeable ESP**

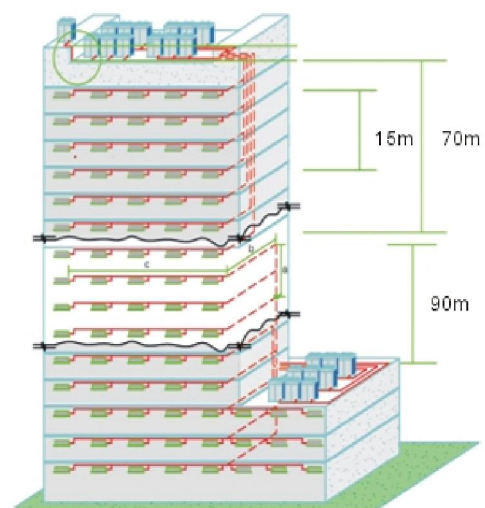
Advanced fan and high static pressure fan, provide outdoor unit up to 82Pa Static pressure. External static pressure by field setting to meet the requirements for installation on each floor, often requested for large-sized buildings



◇ **Extend pipe length and height**

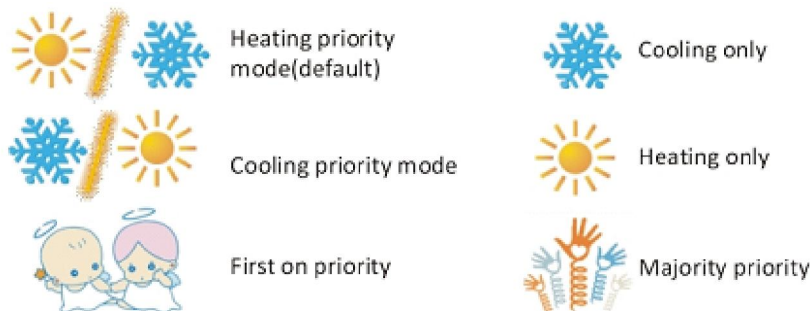
Because of using DC inverter control technology and sub-cooling control circuit technology, it is possible to design a system with longer piping length and world-class elevation difference. The designer's working time is reduced and allowing more efficient design.

- * Total piping length-----1000m
- * Longest piping length after 1st branch-----40m
- * Level difference between ODU(upper)~IDU-----70m
- * Level difference between ODU(lower)~IDU-----90m
- * Level difference between IDU~IDU-----15m



◇ **Different operation modes**

Add more operation mode for various applications. Through outdoor PCB switch easy change system operation mode.



Heating priority : System will work in heating mode only. Other mode demand will no response

Cooling priority: System will work in cooling mode only. Other mode demand will no response

First on priority: The first start indoor unit operation mode will Decide system operation , others different demand will no response.

Majority priority: System operation mode is decided by majority demand.

◇ **Economic lock function**

Special designed economic locking function, through outdoor PCB switch setting. If work in economic lock, AC lowest work cooling temperature will keep in 26°C and highest heating temperature keep 20°C.

Save energy and keep provide comfortable, friend environment
Economic locking mode is superior to heating priority, cooling priority, cooling only, heating only, first on priority and majority priority mode.



◇ **VIP design**

Special VIP control function, the VIP room will decide the whole system operation mode, prior to other mode or economic locking function, ensure the priority of the important room.

◇ **Module and compressor sequence operation**

The operation priority sequence of the outdoor unit modules will be changed when start up, maximize the life span of each outdoor unit.



The operation sequence of the compressors in one module will be different when each start up, even the operation time and longer the life span.



2.Specifications

Model	Outdoor		ARV-H250/5R1MA	ARV-H280/5R1MA	ARV-H330/5R1MA
Capacity	Cooling	kW	25.2	28.0	33.5
	Heating	kW	28.0	31.5	37.5
Electric Data	Power Supply	V~,Hz,Ph	380~415,50,3	380~415,50,3	380~415,50,3
	Cooling Power Input	kW	5.8	7.1	8.9
	Heating Power Input	kW	6.1	7.6	9.1
	Cooling Current	A	8.8	10.8	13.5
	Heating Current	A	9.3	11.5	13.8
Performance	Air Flow Volume	m ³ /h	12000	12000	11500
	Noise Level	dB(A)	≤58	≤58	≤58
Piping Limite	Vertical Pipe Length	m	Upper Outdoor: ≤70m; Lower Outdoor: ≤90m		
	Actual Pipe Length	m	165	165	165
	Equivalent Pipe Length	m	190	190	190
	Total Pipe length	m	1000	1000	1000
Max. No. of Indoor Units		unit	13	16	16
Connection Ratio		%	50~130	50~130	50~130
Dimension(WxDxH)	Net	mm	930x765x1680	930x765x1680	930x765x1680
	Packing	mm	980x810x1850	980x810x1850	980x810x1850
Weight	Net	kg	223	223	248
	Gross	kg	243	243	268
Refrigerant Type			R410a	R410a	R410a
Pipe Diameter	Liquid Side	mm	12.7	12.7	12.7
	Gas Side	mm	22.2	22.2	22.2
Operation Range	Cooling	°C	-5°C~52°C	-5°C~52°C	-5°C~52°C
	Heating	°C	-20°C~24°C	-20°C~24°C	-20°C~24°C
Stuffing Quantity	20/40/40H	unit	14/28/28	14/28/28	14/28/28

Notes:

- Nominal cooling capacities are based on the following conditions: return air temp.: 27°CDB, 19°CWB, and outdoor temp.: 35°CDB, 24°CWB;
- Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB, outdoor temp.: 7°CDB, 6°CWB;

Model	Outdoor		ARV-H400/5R1MA	ARV-H450/5R1MA	ARV-H500/5R1MA
Capacity	Cooling	kW	40.0	45.0	50.4
	Heating	kW	45.0	50.0	56.5
Electric Data	Power Supply	V~,Hz,Ph	380~415,50,3	380~415,50,3	380~415,50,4
	Cooling Power Input	kW	12.3	12.9	14.3
	Heating Power Input	kW	11.2	12.8	15.0
	Cooling Current	A	18.7	21.1	23.3
	Heating Current	A	16.9	19.5	22.8
Performance	Air Flow Volume	m ³ /h	15000	15000	13500
	Noise Level	dB(A)	≤61	≤61	≤63
Piping Limite	Vertical Pipe Length	m	Upper Outdoor: ≤70m; Lower Outdoor: ≤90m		
	Actual Pipe Length	m	165	165	165
	Equivalent Pipe Length	m	190	190	190
	Total Pipe length	m	1000	1000	1000
Max. No. of Indoor Units		unit	16	20	23
Connection Ratio		%	50~130	50~130	50~130
Dimension(WxDxH)	Net	mm	1340×765×1680	1340×765×1680	1340×765×1680
	Packing	mm	1400×810×1850	1400×810×1850	1400×810×1850
Weight	Net	kg	303	303	318
	Gross	kg	325	325	340
Refrigerant Type			R410a	R410a	R410a
Pipe Diameter	Liquid Side	mm	12.7	12.7	12.7
	Gas Side	mm	28.6	28.6	28.6
Operation Range	Cooling	°C	-5°C~52°C	-5°C~52°C	-5°C~52°C
	Heating	°C	-20°C~24°C	-20°C~24°C	-20°C~24°C
Stuffing Quantity	20/40/40H	unit	11/23/23	11/23/23	11/23/23

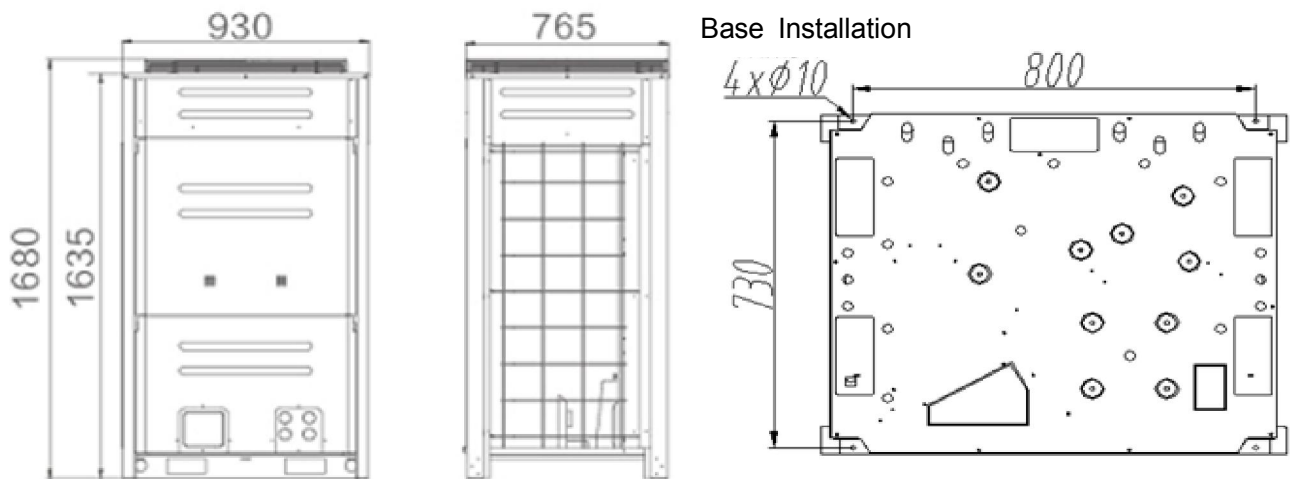
Notes:

- Nominal cooling capacities are based on the following conditions: return air temp.: 27°CDB, 19°CWB, and outdoor temp.: 35°CDB, 24°CWB;
- Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB, outdoor temp.: 7°CDB, 6°CWB;

3.Dimensions

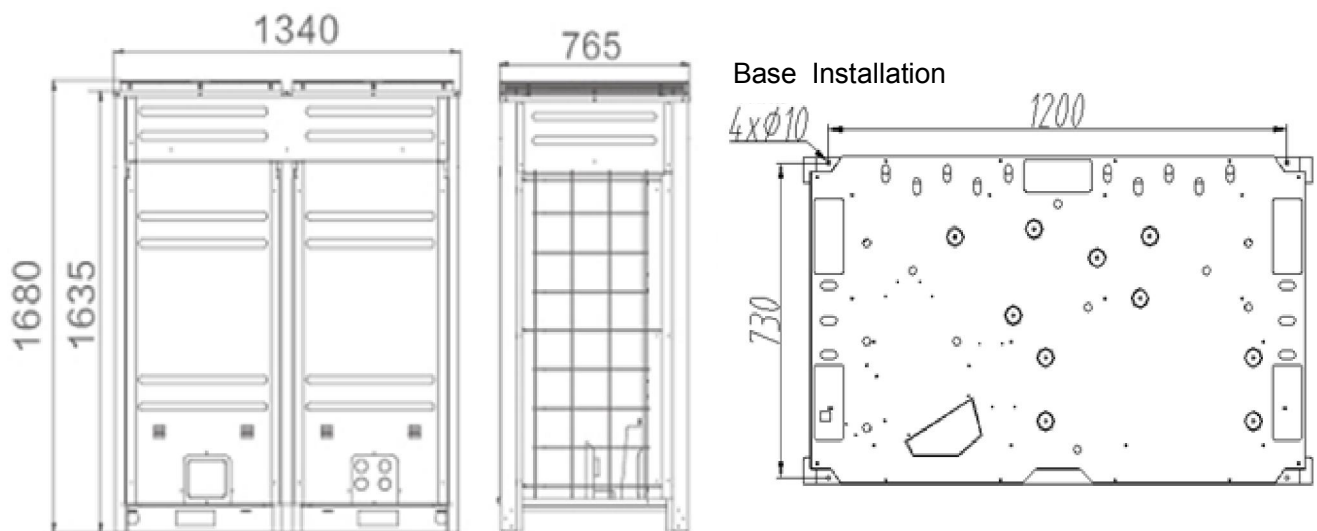
3.1 ARV-H250/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA

(Unit: mm)



3.2 ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA

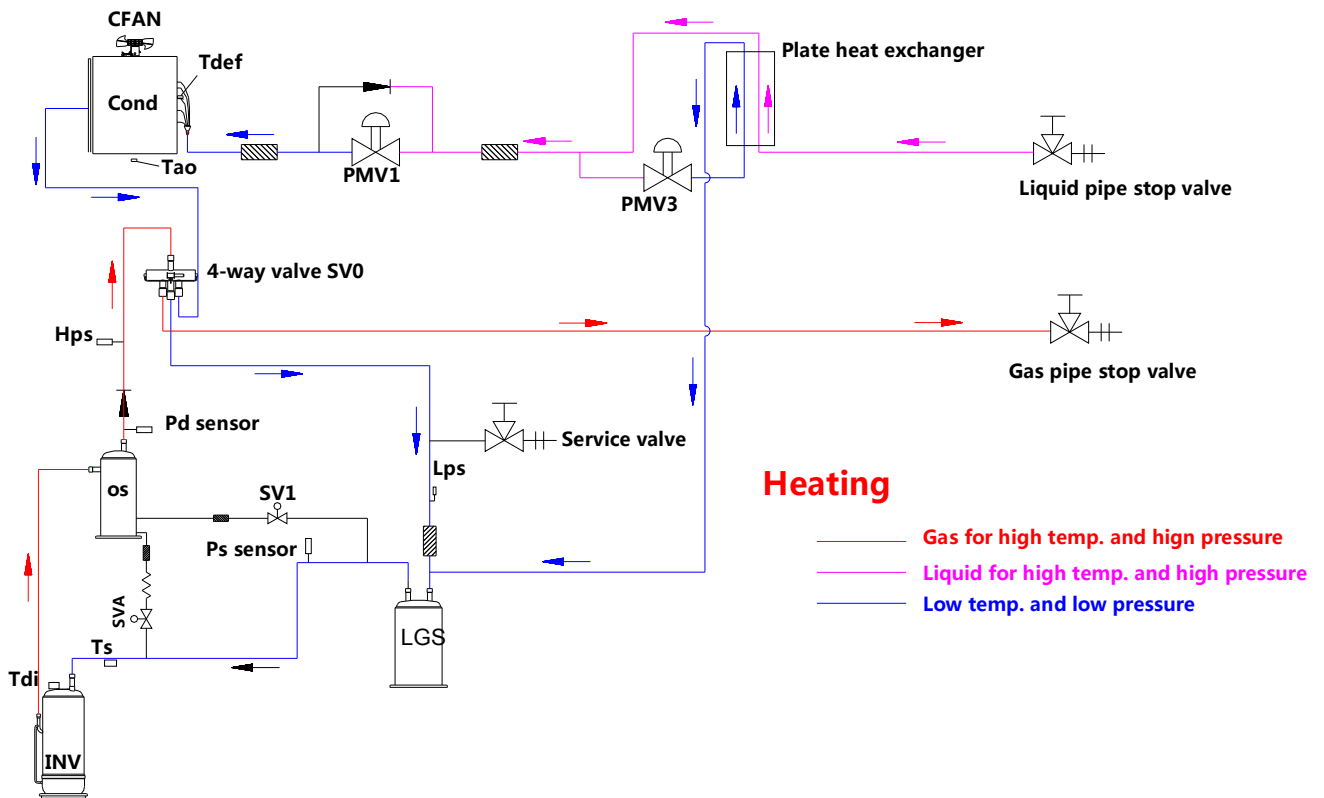
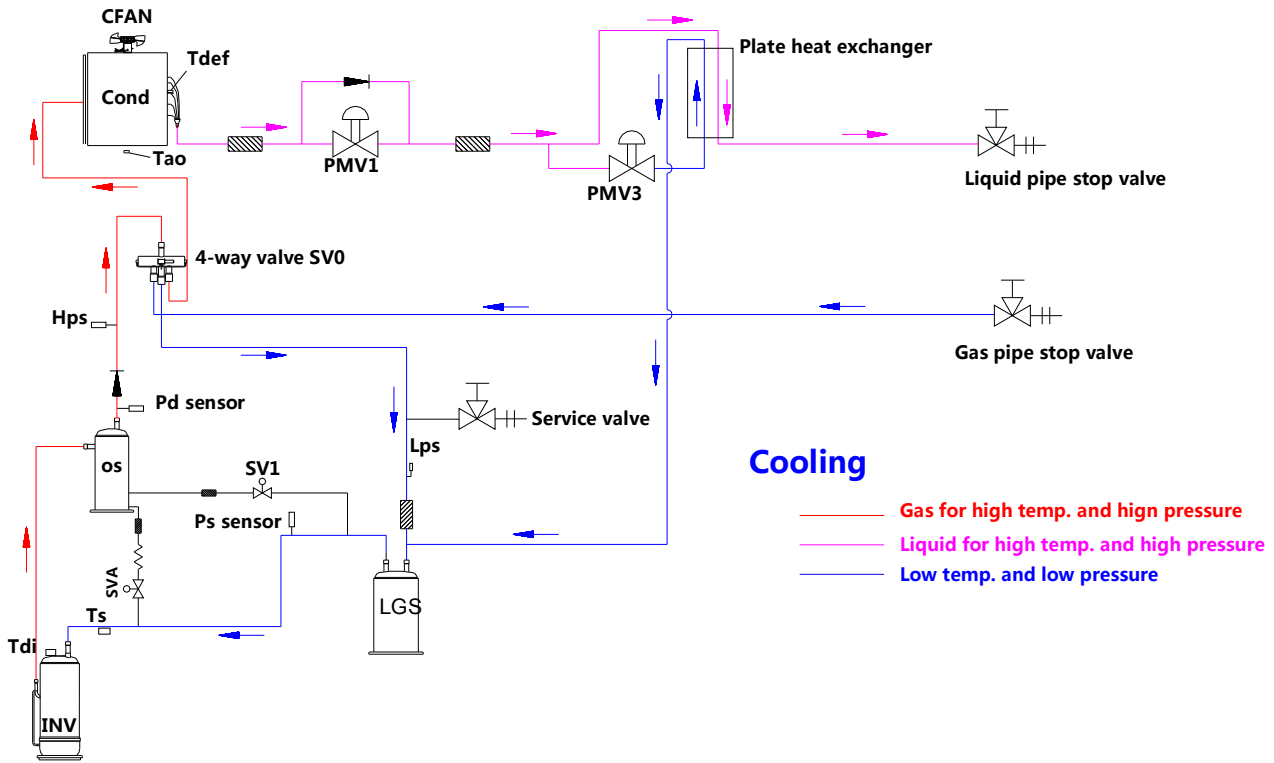
(Unit: mm)



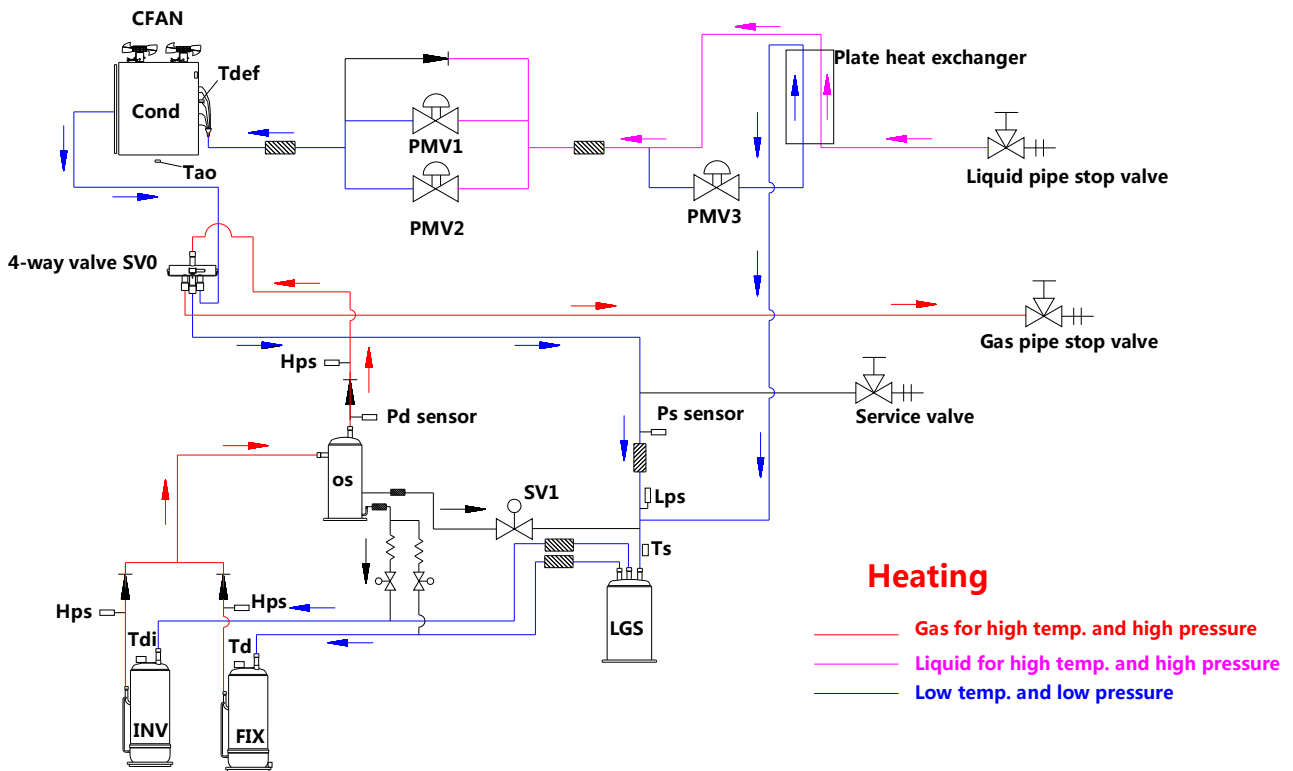
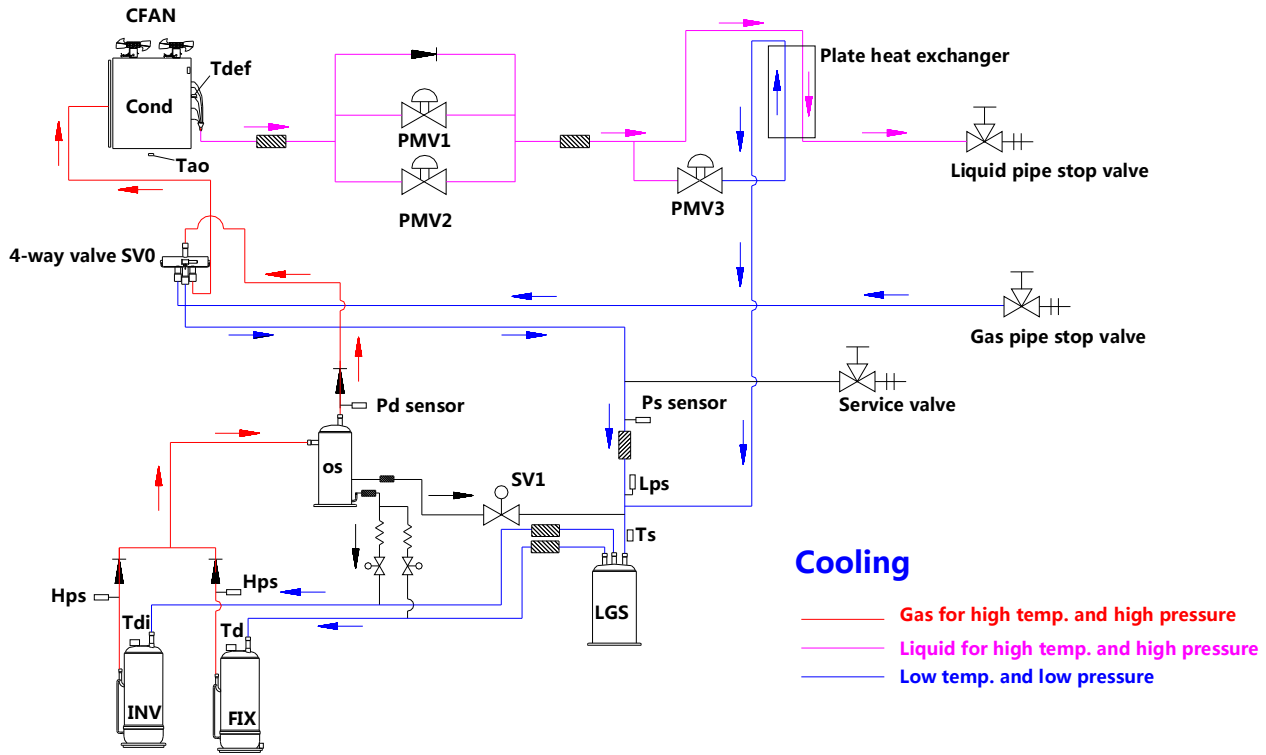
4 Refrigeration cycle diagram

4.1 Piping diagrams

ARV-H250/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA



ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA



4.2 Refrigerant circuit

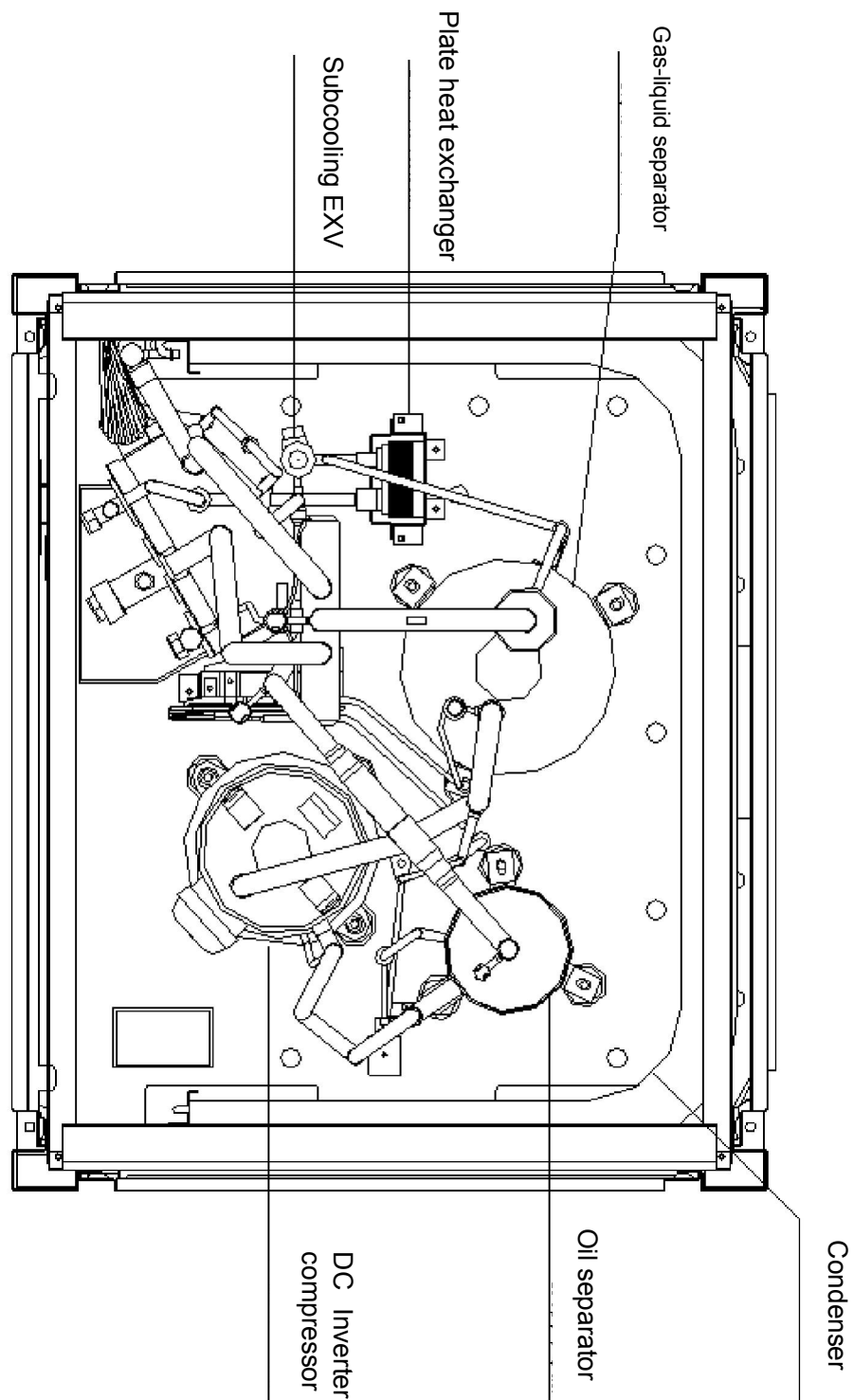
ARV-H220/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA		
Code	Component name	Main function
1	DC inverter compressor	Driving module from unit electrical box will control the DC inverter compressor operation, compressor work frequency range is 20~100Hz.
2	DC inverter compressor exhaust temperature sensor	Protect DC inverter compressor. Through check the DC inverter compressor exhaust air temperature to control compressor speed and bypass electromagnetic valve work.
3	DC inverter compressor separator (Gas, oil)	Separate lubricating oil from compressor exhaust air. The lubricating oil will remain in the separator bottom.
4	One-way valve	When the unit stop, avoid the exhaust air suck back to DC inverter compressor
5	Filter	Filter lubricating oil impurities , avoid oil return capillary block.
6	DC inverter compressor oil return electromagnetic valve	Start before DC inverter compressor work, take lubricating oil back to inverter compressor.
7	Oil return capillary	Take the oil which deposited in the bottom of oil-gas separator to DC inverter compressor gas return pipe and control the oil return speed.
8	Filter	Filter lubricating oil impurities.
9	Gas bypass electromagnetic valve	Start before model work and after model stop, balance high/low pressure; Start when the compressor with high exhaust air temperature to reduce it.
10	High pressure switch	When the system pressure exceed the switch setting value, the switch will stop unit for protect system.
11	4-way valve	When the heating/cooling mode switch, change the refrigerant flow direction.
12	Condenser	Heat exchange, made the high temperature, pressure refrigerant (gas state) to liquid in cooling mode and the low temperature, pressure refrigerant (gas, liquid complex state)
13	Outdoor unit fan and fan motor	Force outdoor room air blow to condenser , make heat exchange to cooling or heating refrigerant. Fan motor have high, middle , low, three speeds.
14	Defrost control temperature sensor	Control the defrosting mode.
15	Ambient temperature sensor	Check the ambient temperature, control the outdoor fan speed, defrost with other temperature sensor.
16	One way valve	Avoid the exhaust air return to fix speed compressor when the unit stop.
17	Heating mode EXV	Throttling in heating mode
18	Subcooling mode EXV	Step through the valve adjusting control super-cooling degree within target values
19	Plate heat exchanger	Improve the cooling liquid refrigerant super-cooling degree
20	Total fluid pipe temperature sensor	Check the condenser middle position temperature, avoid the condenser temperature overheat in cooling mode.
21	liquid pipe stop valve	Cut off indoor and outdoor side refrigerant flow.
22	Gas pipe stop valve	Cut off indoor and outdoor side refrigerant flow.
23	Fliter	Filter lubricating oil, avoid oil return capillary block.
24	Whole suction temperature sensor	Work with defrosting temperature sensor to adjust EXV opening degree.
25	gas-liquid separator	Separate the liquid refrigerant from return gas, avoid it flow back to compressor, take the remained lubricating oil return to DC inverter compressor.
26	Low pressure switch	When the system pressure less than switch setting value, the switch will stop unit for protect system.
27	High pressure sensor	Check system high pressure
28	Low pressure sensor	Check system low pressure

ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA		
Code	Component name	Main function
1	DC inverter compressor	Driving module from unit electrical box will control the DC inverter compressor operation, compressor work frequency range is 30~90Hz.
2	DC inverter compressor exhaust temperature sensor	Protect DC inverter compressor. Through check the DC inverter compressor exhaust air temperature to control compressor speed and bypass electromagnetic valve work.
3	DC inverter compressor separator (Gas, oil)	Separate lubricating oil from compressor exhaust air. The lubricating oil will remain in the separator bottom.
4	Filter	Filter lubricating oil impurities, avoid oil return capillary block.
5	DC inverter compressor oil return electromagnetic valve	Start before DC inverter compressor work, take lubricating oil back to inverter compressor.
6	Oil return capillary	Take the oil which deposited in the bottom of oil-gas separator to DC inverter compressor gas return pipe and control the oil return speed.
7	Filter	Filter lubricating oil, avoid oil return cross capillary block.
8	Gas bypass solenoid valve	The valve will open before unit start and after unit stop, to balance system pressure; When the DC inverter or fix compressor discharge overheat, the valve will open to reduce discharge temperature.
9	Fix speed compressor	When the DC inverter compressor capacity can't meet indoor units requirement increased, fix speed compressor will start to assist it, otherwise will not.
10	Fix speed compressor exhaust temperature sensor	Protect compressor. Through check the fix speed compressor exhaust air temperature to control compressor and bypass electromagnetic valve work.
11	Fix speed compressor oil return electromagnetic valve	Start before fix speed compressor work, take lubricating oil back to fix speed compressor.
12	Oil return cross capillary	Take the oil which deposited in the bottom of oil-gas separator to fix speed compressor gas return pipe and control the oil return speed.
13	High pressure switch	When the system pressure exceed the switch setting value, the switch will stop unit for protect system.
14	One-way valve	Avoid the exhaust air return to gas-liquid separator
15	4-way valve	When the heating/cooling mode switch, change the refrigerant flow direction.
16	Condenser	Heat exchange, made the high temperature, pressure refrigerant (gas state) to liquid in cooling mode and the low temperature, pressure refrigerant (gas, liquid complex state)
17	Outdoor unit fan and fan motor	Force outdoor room air blow to condenser, make heat exchange to cooling or heating refrigerant. Fan motor have high, middle, low, three speeds.
18	Defrost control temperature sensor	Control the defrosting mode.
19	Ambient temperature sensor	Check the ambient temperature, control the outdoor fan speed, defrost with other temperature sensor.
20	One-way valve	In heating mode, force the refrigerant flow to heating mode EXV
21	Heating mode EXV	Throttling in heating mode
22	Subcooling mode EXV	Step through the valve adjusting control super-cooling degree within target values
23	Plate heat exchanger	Improve the cooling liquid refrigerant super-cooling degree
24	Filter	Filter lubricating oil, avoid oil return cross capillary block.
25	Total fluid pipe temperature sensor	Check the condenser middle position temperature, avoid the condenser temperature overheat in cooling mode.
26	liquid pipe stop valve	Cut off indoor and outdoor side refrigerant flow.
27	Gas pipe stop valve	Cut off indoor and outdoor side refrigerant gas circulation.
28	Filter	Filter lubricating oil, avoid oil return cross capillary block.
29	Whole suction temperature sensor	Work with defrosting temperature sensor to adjust EXV opening degree.
30	Low pressure switch	When the system pressure less than switch setting value, the switch will stop unit for protect system.
31	gas-liquid separator	Separate lubricating oil from compressor exhaust air. The lubricating oil will remain in the separator bottom.
32	High pressure sensor	Check system high pressure
33	Low pressure sensor	Check system low pressure

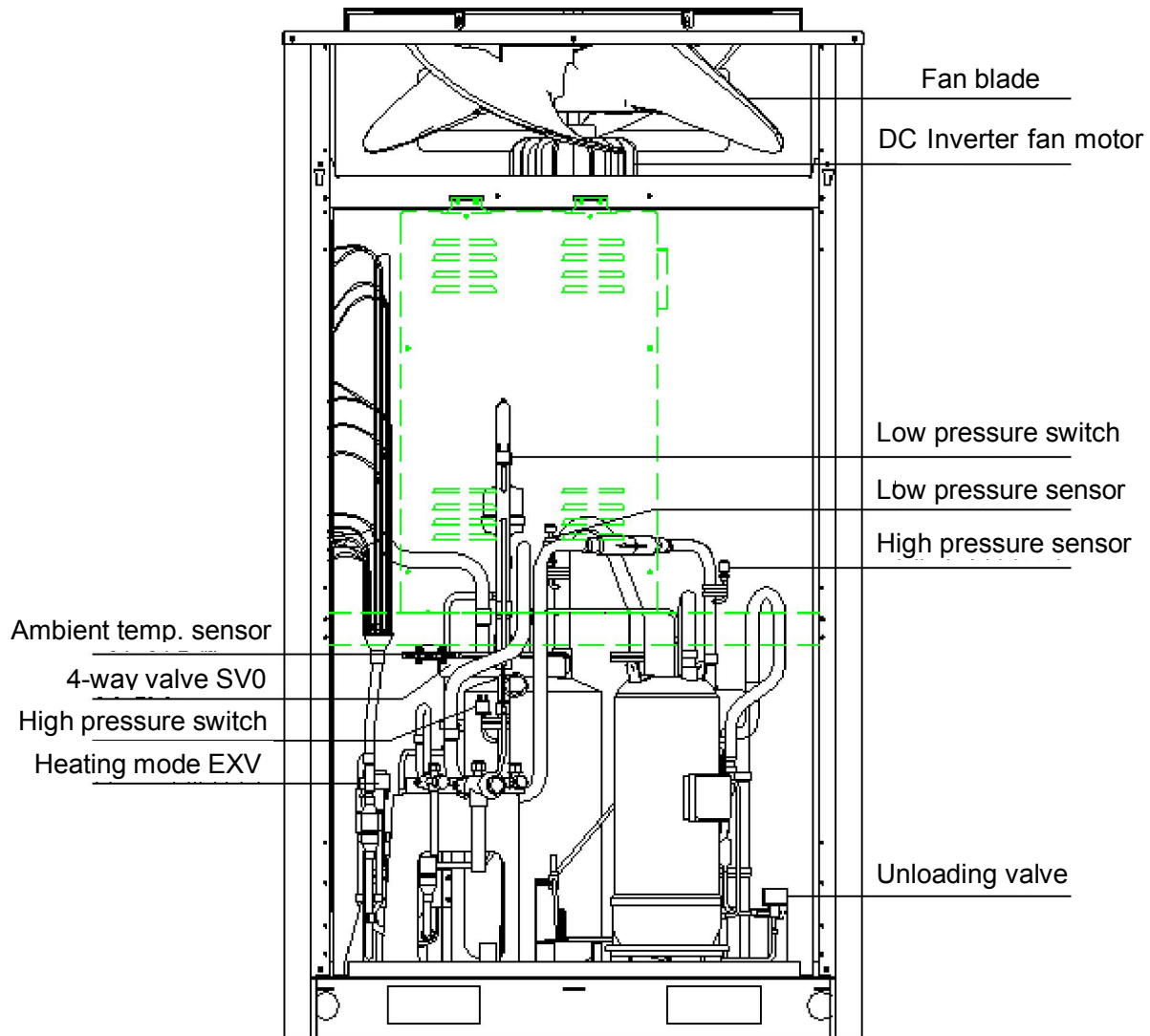
4.3 Function Layout

ARV-H250/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA

Plan

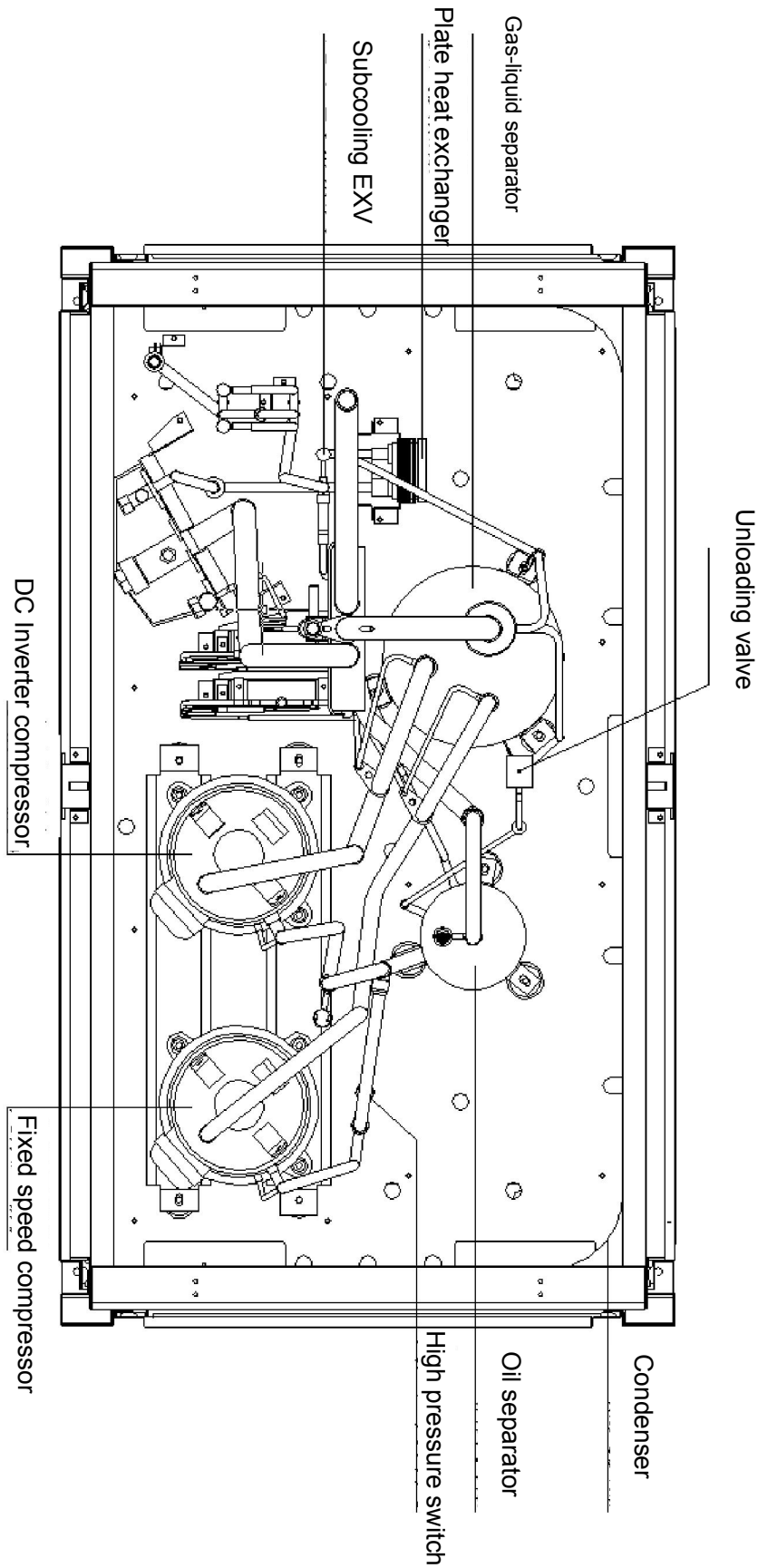


Front view

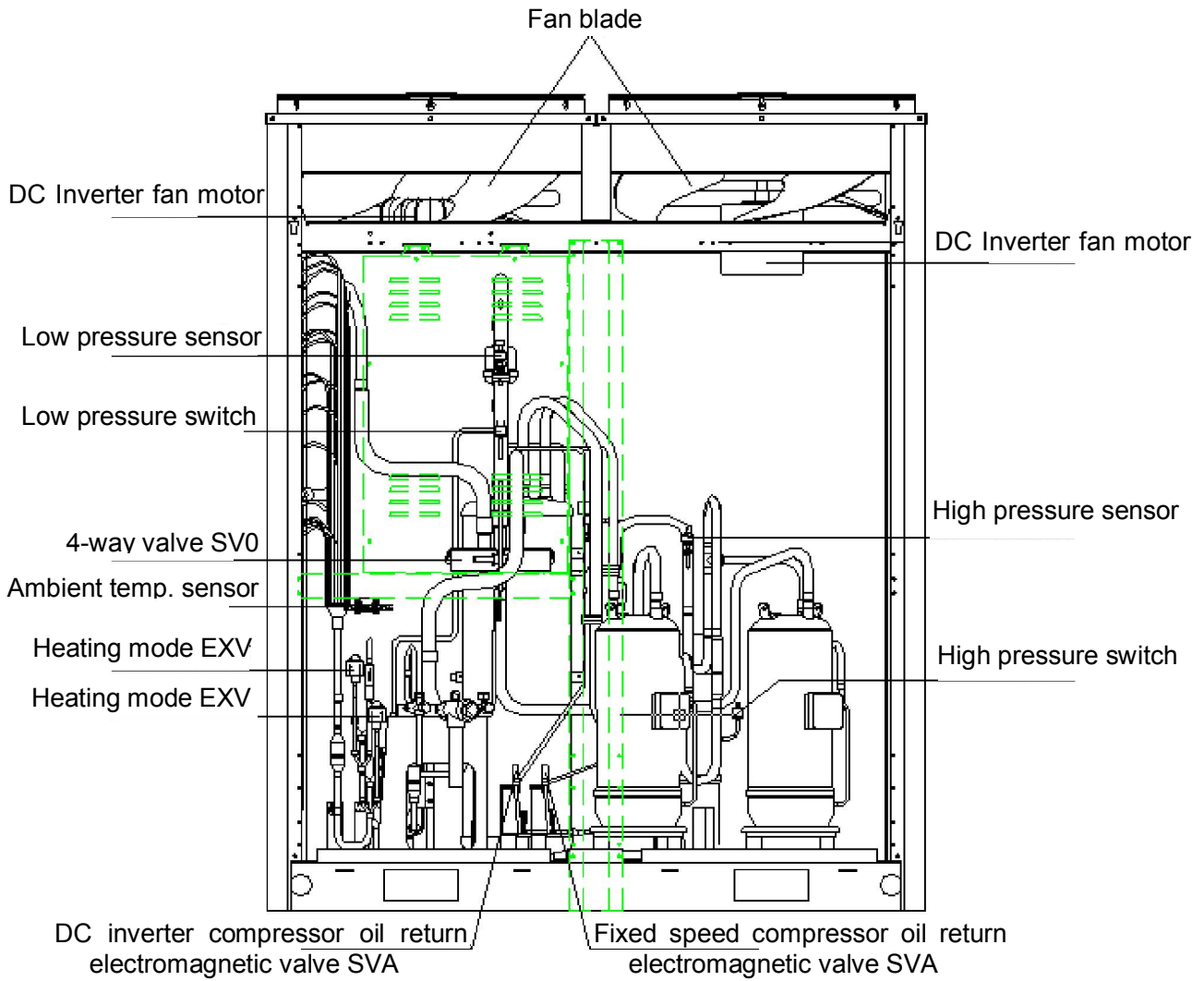


ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA

Plan



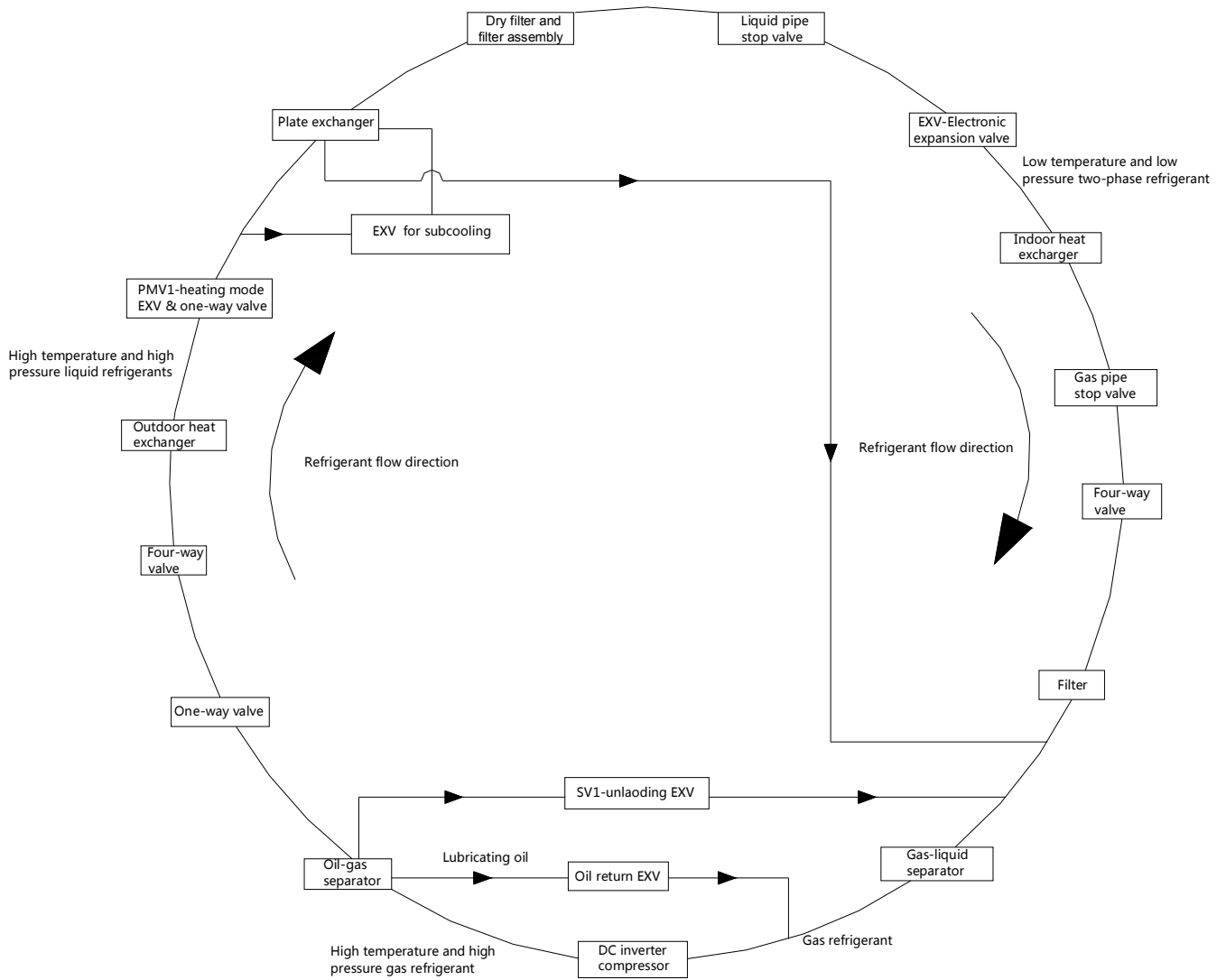
Front view



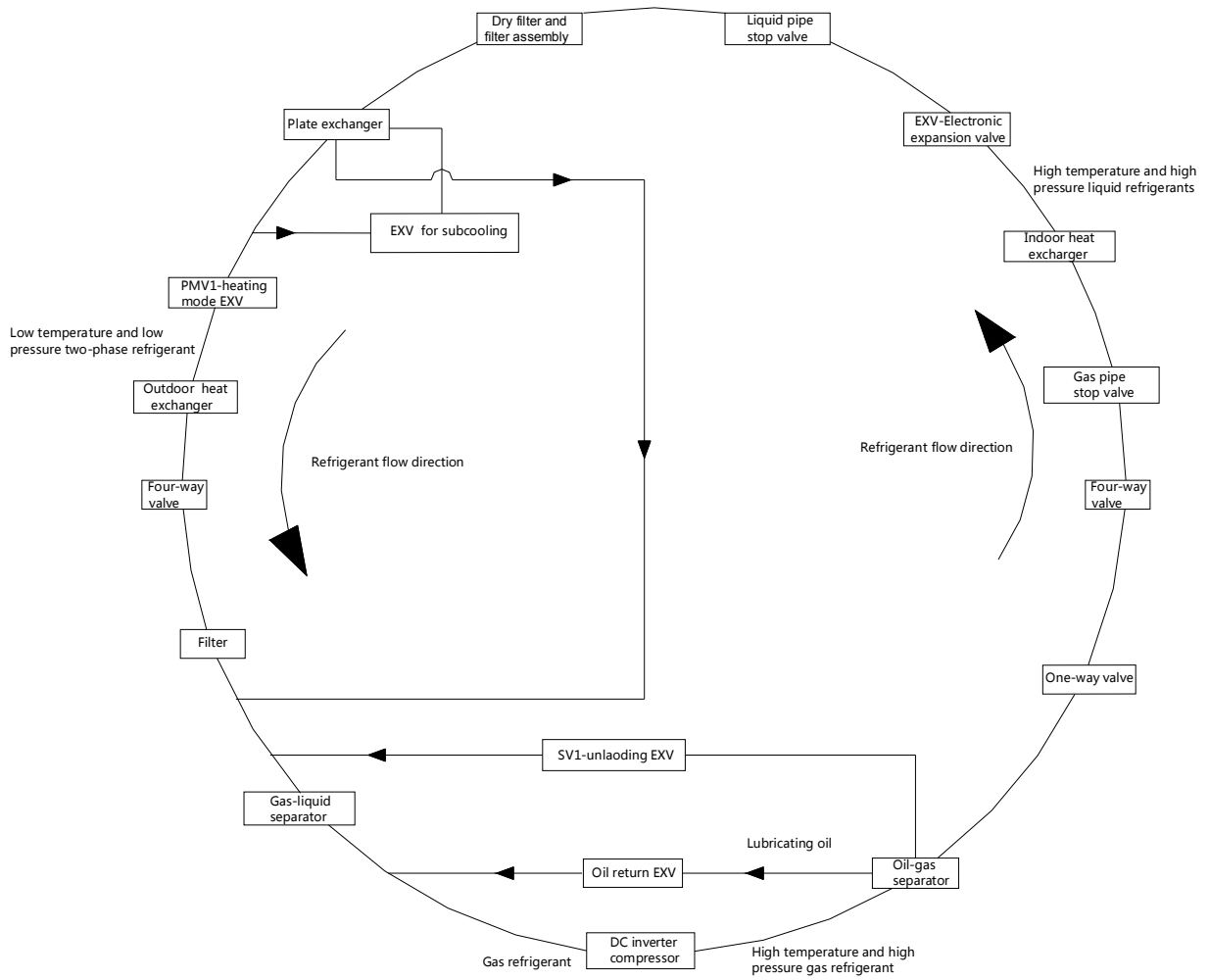
4.4 Piping diagrams Refrigerant flow direction for each operation mode

ARV-H250/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA

Cooling operation/refrigeration oil return operation /heating oil return operation/defrost operation

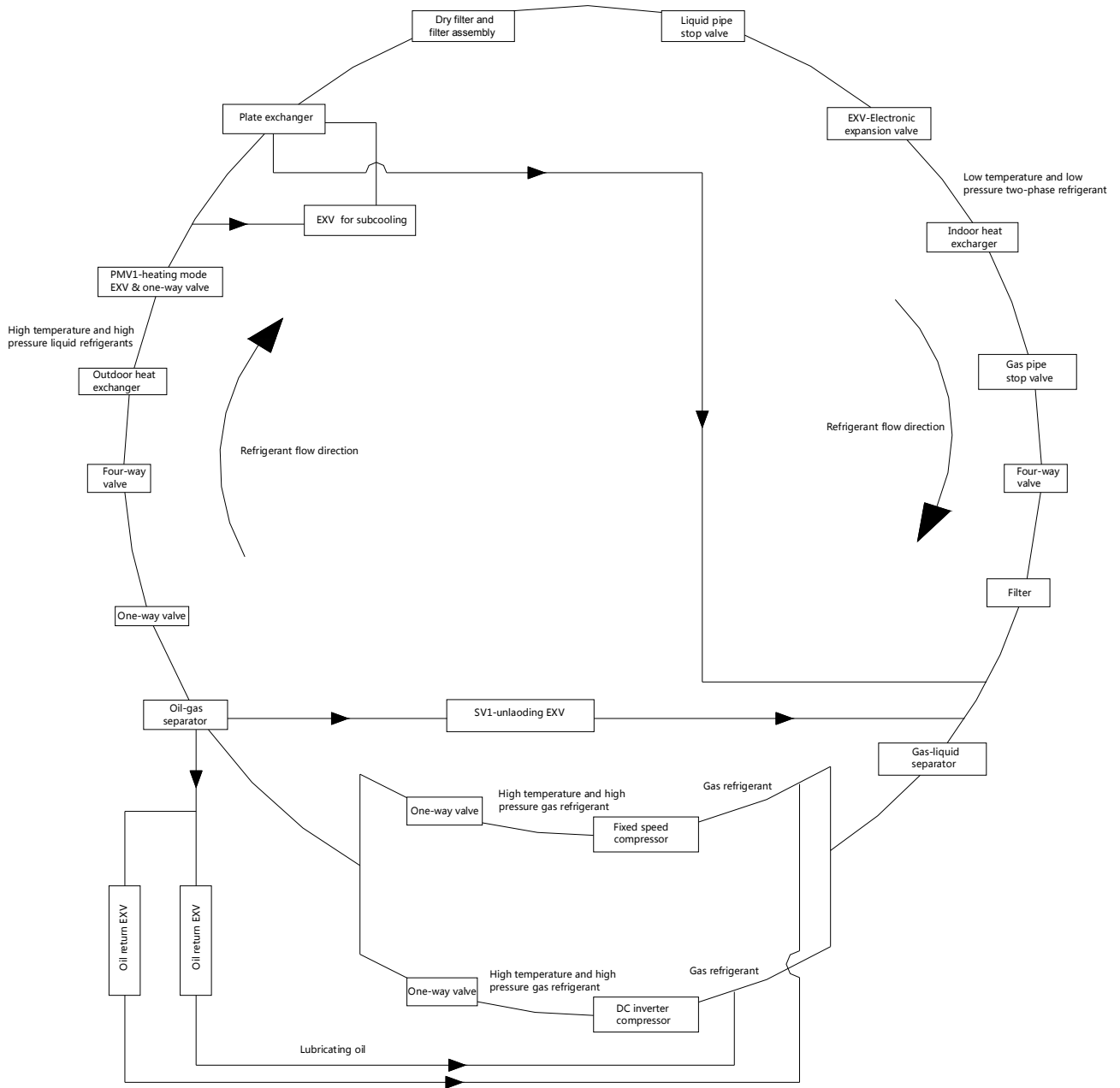


Heating operation

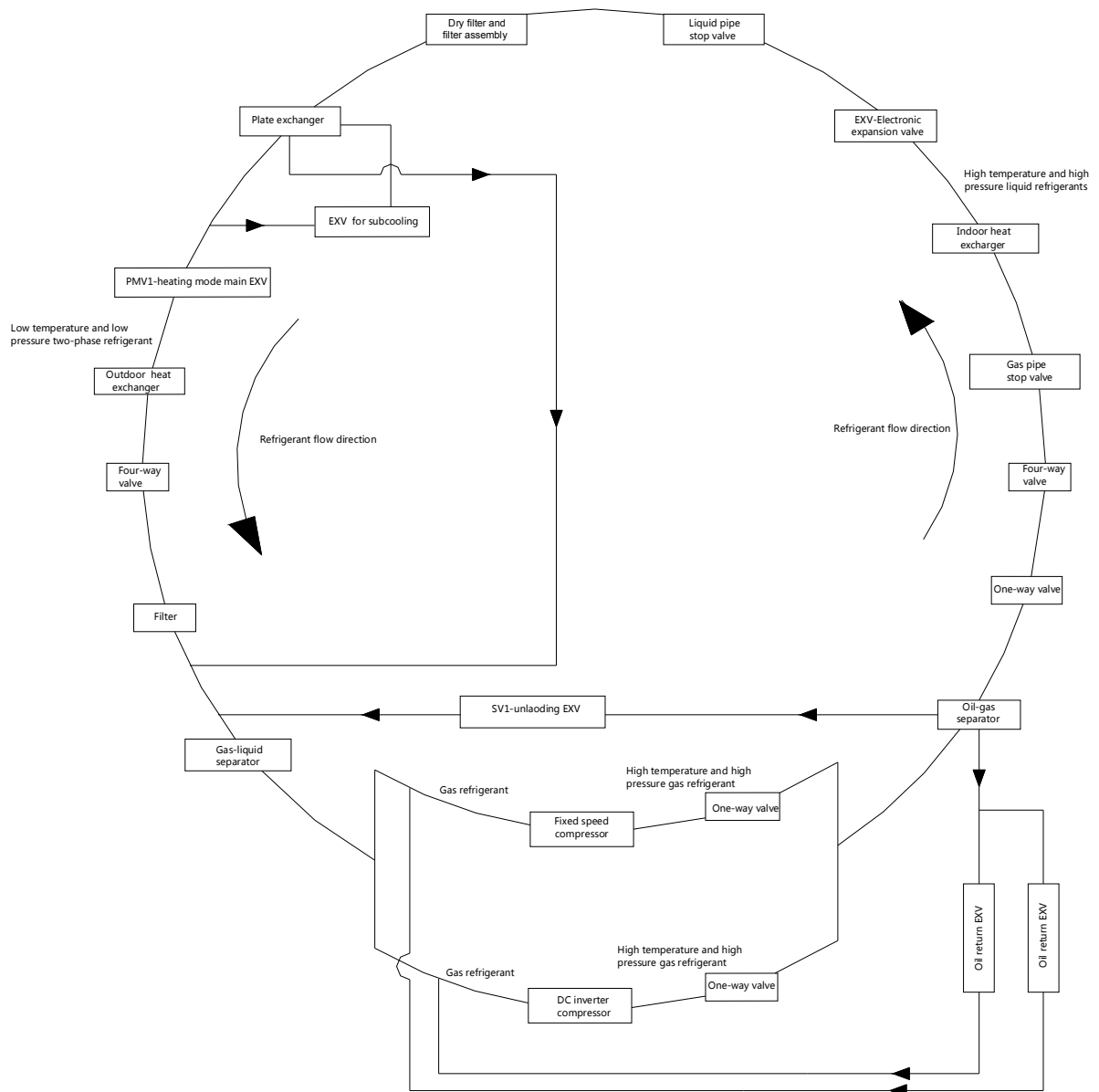


ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA

Cooling operation/refrigeration oil return operation /heating oil return operation

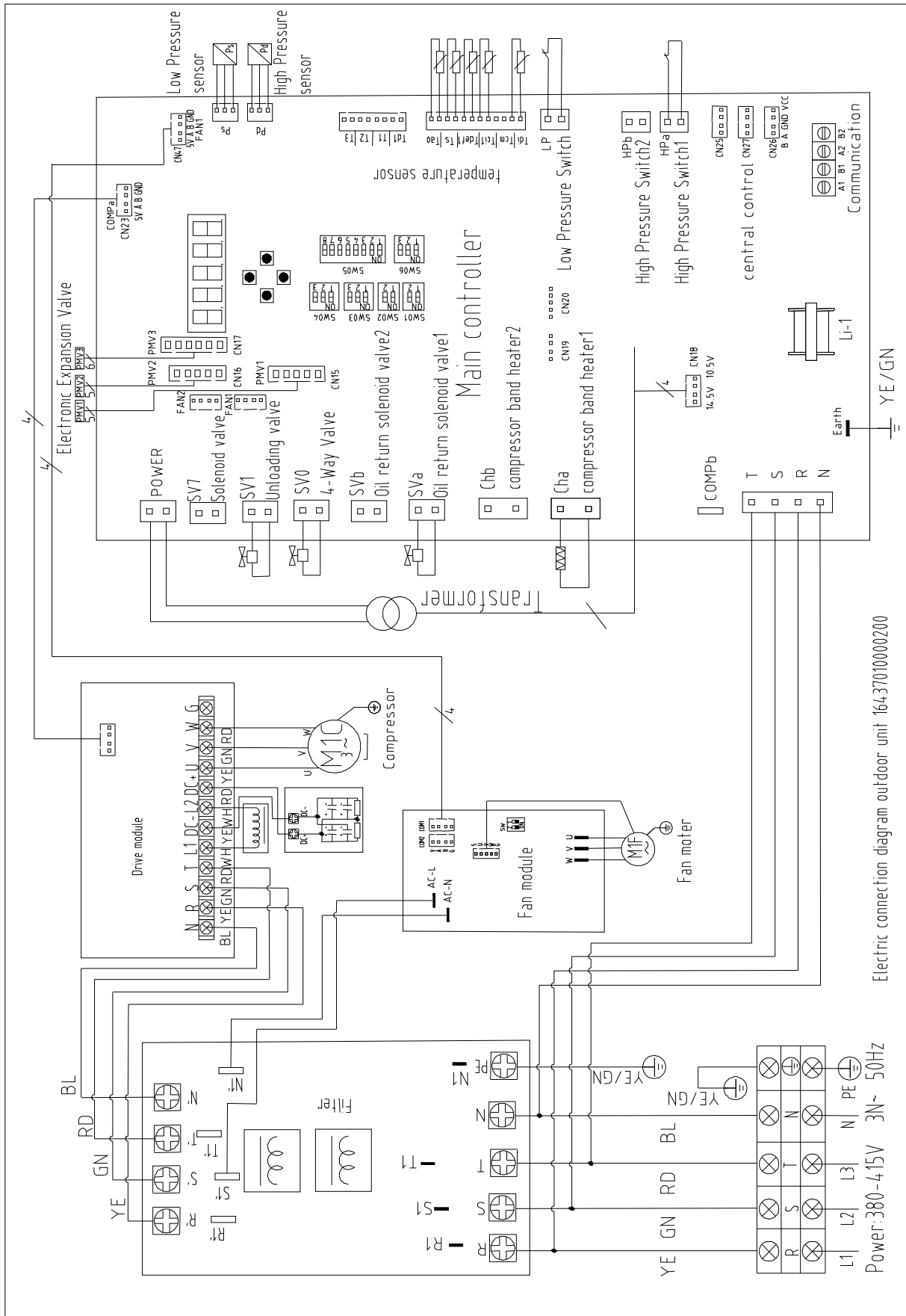


Heating operation/defrost operation



5 Wire Diagrams

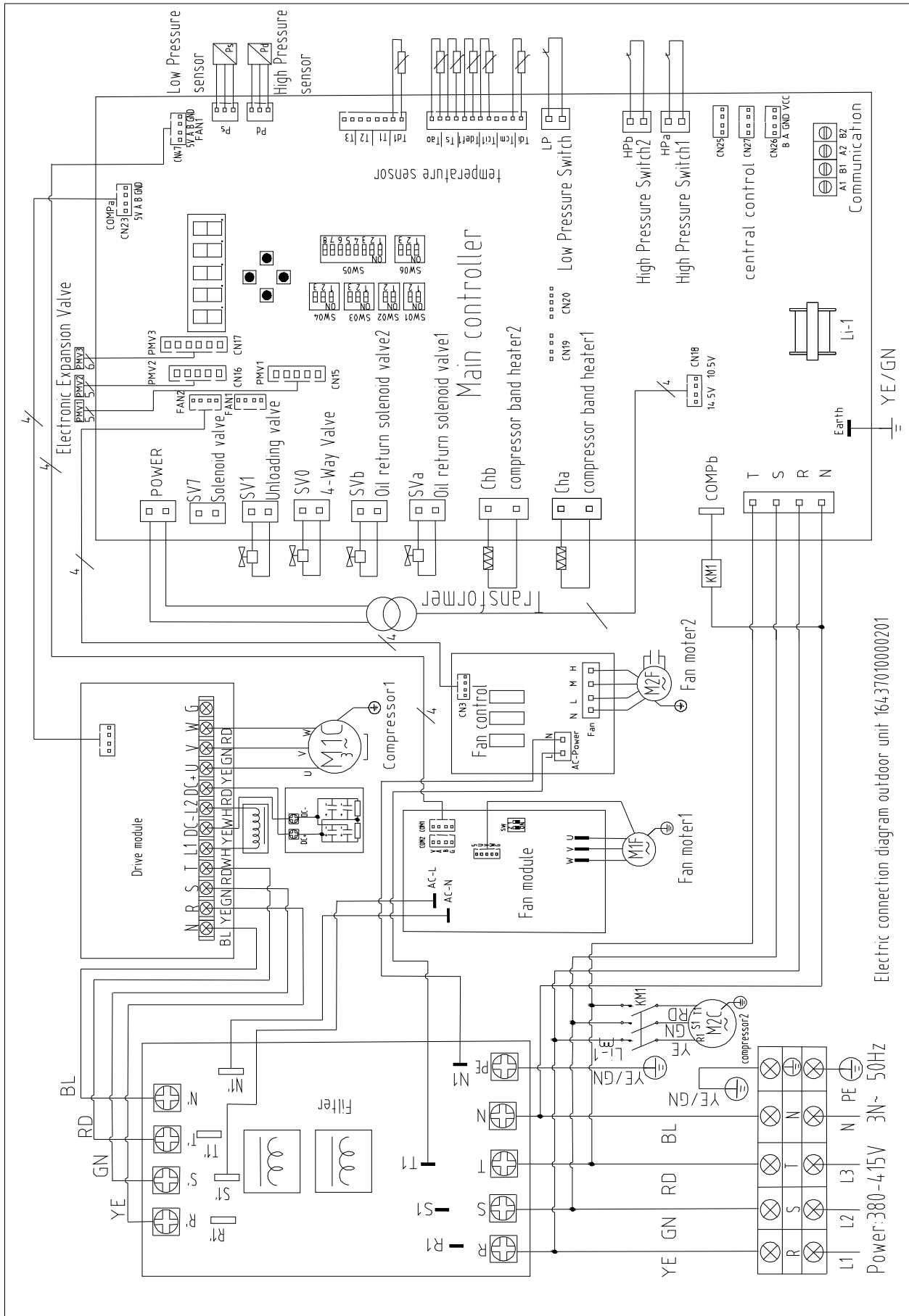
ARV-H250/5R1MA, ARV-H280/5R1MA, ARV-H330/5R1MA



Electric connection diagram outdoor unit 164.37010000200

Power: 380-415V 3N~50Hz

ARV-H400/5R1MA, ARV-H450/5R1MA, ARV-H500/5R1MA



Electric connection diagram outdoor unit 164.37010000201

Power: 380-415V 3N~ 50Hz

6 Capacity Tables

6.1 Operation condition

Power supply		380-415V 3N~/50Hz
Voltage range		342~420V
Ambient temperature range	Cooling mode	-5~52℃
	Heating mode	-20~24℃

6.2 Capacity index table

Allowable combinations are indicated in indoor unit combination total capacity index table.

In general, outdoor unit can be selected as follows though the location of the unit, zoning and usage of the rooms may be considered. The indoor and outdoor unit combination is determined that the sum of indoor unit capacity index is nearest to and smaller than the capacity index at 100% combination ratio of each outdoor unit. Up to 8~16 indoor units can be connected to one outdoor unit. It is recommended to choose a larger outdoor unit if the installation space is large enough.

If the combination ratio is greater than 100%, the indoor unit selection shall be reviewed by using actual capacity of each indoor unit.

INDOOR UNIT COMBINATION TOTAL CAPACITY INDEX TABLE

Outdoor Unit	Indoor Unit Combination Ratio (kW)								
	130%	120%	110%	100%	90%	80%	70%	60%	50%
8HP	32.8	30.2	27.7	25.2	22.7	20.1	17.6	15.1	12.6
10HP	36.4	33.6	30.8	28.0	25.2	22.4	19.6	16.8	14.0
12HP	43.6	40.2	36.9	33.5	30.2	26.8	23.5	20.2	16.8
14HP	52.0	48.0	44.0	40.0	36.0	32.0	28.0	24.0	20.0
16HP	58.5	54.0	49.5	45.0	40.5	36.0	31.5	27.0	22.5
18HP	69.2	63.8	58.5	53.2	47.9	42.6	37.2	31.9	26.6
20HP	72.8	67.2	61.6	56.0	50.4	44.8	39.2	33.6	28.0
22HP	80.0	73.8	67.7	61.5	55.4	49.2	43.1	36.9	30.8
24HP	88.4	81.6	74.8	68.0	61.2	54.4	47.6	40.8	34.0
26HP	94.9	87.6	80.3	73.0	65.7	58.4	51.1	43.8	36.5
28HP	102.1	94.2	86.4	78.5	70.7	62.8	55.0	47.1	39.3
30HP	110.5	102.0	93.5	85.0	76.5	68.0	59.5	51.0	42.5
32HP	117.0	108.0	99.0	90.0	81.0	72.0	63.0	54.0	45.0
34HP	124.8	115.2	105.6	96.0	86.4	76.8	67.2	57.6	48.0
36HP	131.3	121.2	111.1	101.0	90.9	80.8	70.7	60.6	50.5
38HP	138.5	127.8	117.2	106.5	95.9	85.2	74.6	63.9	53.3
40HP	146.9	135.6	124.3	113.0	101.7	90.4	79.1	67.8	56.5
42HP	153.4	141.6	129.8	118.0	106.2	94.4	82.6	70.8	59.0
44HP	160.6	148.2	135.9	123.5	111.2	98.8	86.5	74.1	61.8
46HP	169.0	156.0	143.0	130.0	117.0	104.0	91.0	78.0	65.0
48HP	175.5	162.0	148.5	135.0	121.5	108.0	94.5	81.0	67.5
50HP	186.2	171.8	157.5	143.2	128.9	114.6	100.2	85.9	71.6
52HP	189.8	175.2	160.6	146.0	131.4	116.8	102.2	87.6	73.0
54HP	197.0	181.8	166.7	151.5	136.4	121.2	106.1	90.9	75.8
56HP	205.4	189.6	173.8	158.0	142.2	126.4	110.6	94.8	79.0
58HP	211.9	195.6	179.3	163.0	146.7	130.4	114.1	97.8	81.5
60HP	219.1	202.2	185.4	168.5	151.7	134.8	118.0	101.1	84.3
62HP	227.5	210.0	192.5	175.0	157.5	140.0	122.5	105.0	87.5
64HP	234.0	216.0	198.0	180.0	162.0	144.0	126.0	108.0	90.0
66HP	241.02	222.48	203.94	185.4	166.86	148.32	129.78	111.24	92.7
68HP	248.04	228.96	209.88	190.8	171.72	152.64	133.56	114.48	95.4
70HP	255.06	235.44	215.82	196.2	176.58	156.96	137.34	117.72	98.1
72HP	262.08	241.92	221.76	201.6	181.44	161.28	141.12	120.96	100.8

6.3 Cooling Capacity table

ARV-H250/5R1MA						
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [0C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	21.4	24.2	25.2	27.0	29.0
	Power	4.8	4.9	4.9	4.9	4.9
20	Cooling capacity	21.4	24.2	25.2	27.0	29.0
	Power	5.0	5.0	5.1	5.1	5.2
25	Cooling capacity	21.4	24.2	25.2	27.0	29.0
	Power	5.2	5.3	5.3	5.3	5.3
30	Cooling capacity	21.4	24.2	25.2	27.0	29.0
	Power	5.3	5.5	5.5	5.5	5.6
35	Cooling capacity	21.4	24.2	25.2	27.0	29.0
	Power	5.6	5.6	5.8	5.9	5.9
40	Cooling capacity	21.4	24.2	24.9	26.0	27.2
	Power	5.7	5.9	5.9	5.9	6.0
45	Cooling capacity	21.4	23.2	24.7	25.5	26.5
	Power	6.0	6.0	6.1	6.1	6.1
50	Cooling capacity	20.2	21.4	22.9	23.4	24.7
	Power	6.1	6.3	6.4	6.5	6.6
52	Cooling capacity	18.9	20.2	21.4	21.7	22.7
	Power	6.3	6.4	6.5	6.6	6.6

ARV-H280/5R1MA						
Outdoor dry bulb temperature [0C]	Correction coefficient	Indoor dry/wet bulb temperature [0C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	23.8	26.9	28.0	30.0	32.2
	Power	5.9	6.0	6.0	6.0	6.0
20	Cooling capacity	23.8	26.9	28.0	30.0	32.2
	Power	6.1	6.2	6.2	6.2	6.3
25	Cooling capacity	23.8	26.9	28.0	30.0	32.2
	Power	6.3	6.5	6.5	6.5	6.5
30	Cooling capacity	23.8	26.9	28.0	30.0	32.2
	Power	6.5	6.7	6.7	6.7	6.8
35	Cooling capacity	23.8	26.9	28.0	30.2	32.2
	Power	6.8	6.9	7.1	7.2	7.2
40	Cooling capacity	23.8	26.9	27.7	28.8	30.2
	Power	7.0	7.2	7.2	7.3	7.3

45	Cooling capacity	23.8	25.8	27.4	28.3	29.4
	Power	7.3	7.4	7.5	7.5	7.5
52	Cooling capacity	22.4	23.8	25.5	26.0	27.4
	Power	7.5	7.7	7.9	8.0	8.0
50	Cooling capacity	21.0	22.4	23.8	24.1	25.2
	Power	7.7	7.9	8.0	8.0	8.1

ARV-H330/5R1MA						
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [0C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	28.5	32.2	33.5	35.8	38.5
	Power	7.4	7.6	7.6	7.6	7.6
20	Cooling capacity	28.5	32.2	33.5	35.8	38.5
	Power	7.7	7.7	7.8	7.8	7.9
25	Cooling capacity	28.5	32.2	33.5	35.8	38.5
	Power	7.9	8.1	8.1	8.1	8.2
30	Cooling capacity	28.5	32.2	33.5	35.8	38.5
	Power	8.1	8.4	8.5	8.5	8.5
35	Cooling capacity	28.5	32.2	33.5	36.2	38.5
	Power	8.5	8.6	8.9	9.0	9.1
40	Cooling capacity	28.5	32.2	33.2	34.5	36.2
	Power	8.8	9.0	9.1	9.1	9.2
45	Cooling capacity	28.5	30.8	32.8	33.8	35.2
	Power	9.2	9.3	9.3	9.4	9.4
50	Cooling capacity	26.8	28.5	30.5	31.2	32.8
	Power	9.4	9.6	9.9	10.0	10.1
52	Cooling capacity	25.1	26.8	28.5	28.8	30.2
	Power	9.6	9.9	10.0	10.1	10.1

ARV-H400/5R1MA						
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [0C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	34.0	38.4	40.0	42.8	46.0
	Power	9.4	9.6	9.6	9.6	9.6
20	Cooling capacity	34.0	38.4	40.0	42.8	46.0
	Power	9.7	9.8	9.9	9.9	10.1

25	Cooling capacity	34.0	38.4	40.0	42.8	46.0
	Power	10.1	10.3	10.3	10.3	10.4
30	Cooling capacity	34.0	38.4	40.0	42.8	46.0
	Power	10.3	10.6	10.7	10.7	10.8
35	Cooling capacity	34.0	38.4	40.0	43.2	46.0
	Power	10.8	11.0	11.3	11.4	11.5
40	Cooling capacity	34.0	38.4	39.6	41.2	43.2
	Power	11.2	11.4	11.5	11.6	11.6
45	Cooling capacity	34.0	36.8	39.2	40.4	42.0
	Power	11.6	11.8	11.9	11.9	12.0
50	Cooling capacity	32.0	34.0	36.4	37.2	39.2
	Power	12.0	12.2	12.5	12.7	12.8
52	Cooling capacity	30.0	32.0	34.0	34.4	36.0
	Power	12.2	12.5	12.7	12.8	12.8

ARV-H450/5R1MA						
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	38.3	43.2	45.0	48.2	51.8
	Power	10.7	11.0	11.0	11.0	11.0
20	Cooling capacity	38.3	43.2	45.0	48.2	51.8
	Power	11.1	11.2	11.4	11.4	11.5
25	Cooling capacity	38.3	43.2	45.0	48.2	51.8
	Power	11.5	11.7	11.7	11.7	11.9
30	Cooling capacity	38.3	43.2	45.0	48.2	51.8
	Power	11.7	12.1	12.3	12.3	12.4
35	Cooling capacity	38.3	43.2	45.0	48.6	51.8
	Power	12.4	12.5	12.9	13.0	13.2
40	Cooling capacity	38.3	43.2	44.6	46.4	48.6
	Power	12.8	13.0	13.2	13.2	13.3
45	Cooling capacity	38.3	41.4	44.1	45.5	47.3
	Power	13.3	13.4	13.5	13.6	13.7
50	Cooling capacity	36.0	38.3	41.0	41.9	44.1
	Power	13.7	13.9	14.3	14.4	14.6
52	Cooling capacity	33.8	36.0	38.3	38.7	40.5
	Power	13.9	14.3	14.5	14.6	14.6

ARV-H500/5R1MA						
Outdoor dry bulb temperature [°C]	Correction coefficient	Indoor dry/wet bulb temperature [°C]				
		22/15	24/17	27/19	29/21	32/23
15	Cooling capacity	42.8	48.4	50.4	53.9	58.0
	Power	11.9	12.2	12.2	12.2	12.2
20	Cooling capacity	42.8	48.4	50.4	53.9	58.0
	Power	43.3	43.8	44.4	44.4	44.9
25	Cooling capacity	42.8	48.4	50.4	53.9	58.0
	Power	12.7	13.0	13.0	13.0	13.2
30	Cooling capacity	42.8	48.4	50.4	53.9	58.0
	Power	13.0	13.4	13.6	13.6	13.7
35	Cooling capacity	42.8	48.4	50.4	54.4	58.0
	Power	13.7	13.9	14.3	14.4	14.6
40	Cooling capacity	42.8	48.4	49.9	51.9	54.4
	Power	14.2	14.4	14.6	14.7	14.7
45	Cooling capacity	42.8	46.4	49.4	50.9	52.9
	Power	51.9	52.4	52.9	53.2	53.4
50	Cooling capacity	40.3	42.8	45.9	46.9	49.4
	Power	15.2	15.4	15.9	16.0	16.2
52	Cooling capacity	37.8	40.3	42.8	43.3	45.4
	Power	15.4	15.9	16.1	16.2	16.2

6.4 Heating Capacity table

ARV-H250/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [°C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	16.24	15.56	14.84	14.28	13.72
	Power	3.66	4.72	4.10	4.32	4.54
-15/-16	Heating capacity	17.92	17.24	16.52	15.96	15.40
	Power	4.39	5.43	4.83	5.05	5.27
-10/-12	Heating capacity	19.88	19.28	18.48	17.92	17.36
	Power	5.27	6.43	5.71	5.93	6.15
-7/-8	Heating capacity	21.28	21.01	20.16	19.47	18.76
	Power	5.93	7.18	6.37	6.59	6.81
-1/-2	Heating capacity	22.12	21.60	20.72	20.16	19.60
	Power	6.30	7.59	6.73	6.95	7.17
2/1	Heating capacity	22.68	22.19	21.28	20.72	20.16
	Power	6.51	7.84	6.95	7.17	7.39
7/6	Heating capacity	29.12	29.16	28.00	27.44	26.88
	Power	6.88	8.26	7.32	7.54	7.76
10/9	Heating capacity	30.80	30.91	29.68	28.99	28.28
	Power	7.25	8.68	7.69	7.91	8.13
15/12	Heating capacity	32.48	32.66	31.36	30.67	29.96
	Power	7.69	9.18	8.13	8.34	8.56
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

ARV-H280/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [°C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	18.27	17.50	16.70	16.07	15.44
	Power	3.80	5.87	6.27	7.55	9.30
-15/-16	Heating capacity	20.16	19.39	18.59	17.96	17.33
	Power	9.33	11.01	9.42	9.47	13.15
-10/-12	Heating capacity	22.37	21.68	20.79	20.16	19.53
	Power	12.41	14.51	12.45	12.48	16.94
-7/-8	Heating capacity	23.94	23.64	22.68	21.90	21.11
	Power	15.62	18.13	15.59	15.63	20.81
-1/-2	Heating capacity	24.89	24.31	23.31	22.68	22.05
	Power	18.08	20.90	17.90	17.81	23.45
2/1	Heating capacity	25.52	24.96	23.94	23.31	22.68
	Power	19.21	22.19	19.14	19.20	25.12

7/6	Heating capacity	32.76	32.81	31.50	30.87	30.24
	Power	20.85	24.01	20.72	20.77	27.05
10/9	Heating capacity	34.65	34.78	33.39	32.61	31.82
	Power	28.89	33.20	28.83	29.05	36.39
15/12	Heating capacity	36.54	36.74	35.28	34.50	33.71
	Power	32.47	37.22	32.19	32.22	40.52
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

ARV-H330/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [0C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	21.75	20.84	19.88	19.13	18.38
	Power	4.55	5.87	5.10	5.37	5.64
-15/-16	Heating capacity	24.00	23.09	22.13	21.38	20.63
	Power	5.46	6.75	6.00	6.28	6.55
-10/-12	Heating capacity	26.63	25.82	24.75	24.00	23.25
	Power	6.55	7.99	7.10	7.37	7.65
-7/-8	Heating capacity	28.50	28.14	27.00	26.07	25.13
	Power	7.37	8.93	7.92	8.19	8.47
-1/-2	Heating capacity	29.63	28.94	27.75	27.00	26.25
	Power	7.83	9.44	8.37	8.64	8.91
2/1	Heating capacity	30.38	29.72	28.50	27.75	27.00
	Power	8.09	9.75	8.64	8.91	9.19
7/6	Heating capacity	39.00	39.06	37.50	36.75	36.00
	Power	8.55	10.27	9.10	9.37	9.65
10/9	Heating capacity	41.25	41.40	39.75	38.82	37.88
	Power	9.01	10.79	9.56	9.83	10.11
15/12	Heating capacity	43.50	43.74	42.00	41.07	40.13
	Power	9.56	11.41	10.11	10.37	10.64
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

ARV-H400/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [0C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	26.10	25.00	23.85	22.95	22.05
	Power	5.60	7.22	6.27	6.61	6.95
-15/-16	Heating capacity	28.80	27.70	26.55	25.65	24.75
	Power	6.72	8.31	7.39	7.73	8.06
-10/-12	Heating capacity	31.95	30.98	29.70	28.80	27.90
	Power	8.06	9.84	8.74	9.07	9.41
-7/-8	Heating capacity	34.20	33.77	32.40	31.28	30.15
	Power	9.07	10.99	9.75	10.08	10.42
-1/-2	Heating capacity	35.55	34.72	33.30	32.40	31.50
	Power	9.64	11.61	10.30	10.63	10.97

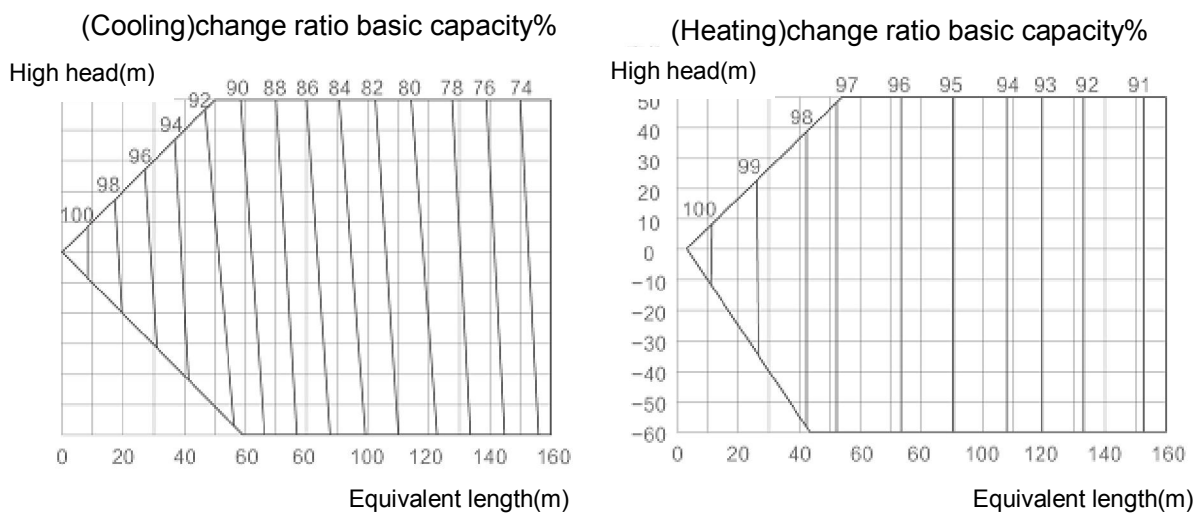
2/1	Heating capacity	36.45	35.66	34.20	33.30	32.40
	Power	9.96	12.00	10.63	10.97	11.31
7/6	Heating capacity	46.80	46.87	45.00	44.10	43.20
	Power	10.53	12.64	11.20	11.54	11.87
10/9	Heating capacity	49.50	49.68	47.70	46.58	45.45
	Power	11.09	13.28	11.77	12.10	12.44
15/12	Heating capacity	52.20	52.49	50.40	49.28	48.15
	Power	11.77	14.05	12.44	12.76	13.10
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

ARV-H450/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [°C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	29.00	27.78	26.50	25.50	24.50
	Power	6.40	8.25	7.17	7.55	7.94
-15/-16	Heating capacity	32.00	30.78	29.50	28.50	27.50
	Power	7.68	9.50	8.45	8.83	9.22
-10/-12	Heating capacity	35.50	34.42	33.00	32.00	31.00
	Power	9.22	11.24	9.98	10.37	10.75
-7/-8	Heating capacity	38.00	37.52	36.00	34.76	33.50
	Power	10.37	12.56	11.14	11.52	11.91
-1/-2	Heating capacity	39.50	38.58	37.00	36.00	35.00
	Power	11.02	13.27	11.77	12.15	12.54
2/1	Heating capacity	40.50	39.62	38.00	37.00	36.00
	Power	11.38	13.71	12.15	12.54	12.92
7/6	Heating capacity	52.00	52.08	50.00	49.00	48.00
	Power	12.03	14.44	12.80	13.18	13.57
10/9	Heating capacity	55.00	55.20	53.00	51.76	50.50
	Power	12.68	15.18	13.45	13.83	14.22
15/12	Heating capacity	58.00	58.32	56.00	54.76	53.50
	Power	13.45	16.05	14.22	14.58	14.97
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

ARV-H500/5R1MA						
Outdoor ambient temperature of dry/wet bulb [°C]	capacity/power correction	Indoor dry/wet bulb temperature [°C]				
	coefficient	15	18	20	23	25
-20/-21	Heating capacity	32.77	31.39	29.95	28.82	27.69
	Power	7.50	9.67	8.40	8.85	9.30
-15/-16	Heating capacity	36.16	34.78	33.34	32.21	31.08
	Power	9.00	11.13	9.90	10.35	10.80
-10/-12	Heating capacity	40.12	38.89	37.29	36.16	35.03
	Power	10.80	13.18	11.70	12.15	12.60
-7/-8	Heating capacity	42.94	42.40	40.68	39.28	37.86
	Power	12.15	14.71	13.05	13.50	13.95

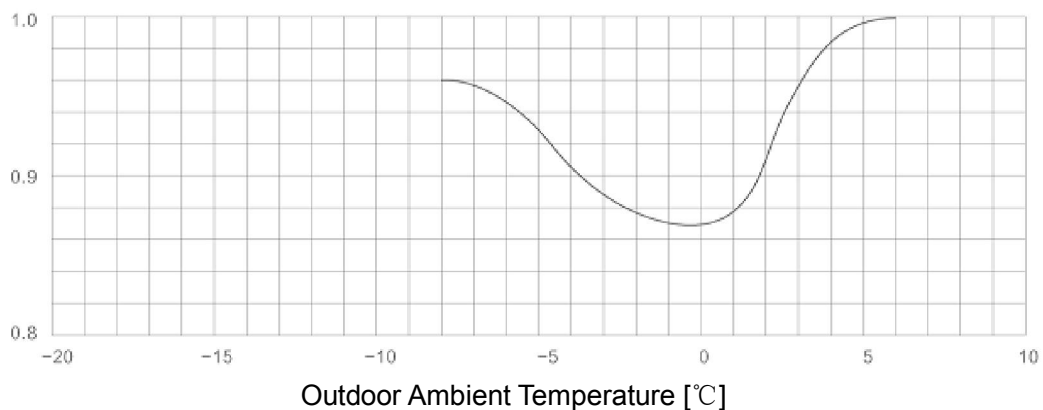
-1/2	Heating capacity	44.64	43.60	41.81	40.68	39.55
	Power	12.91	15.55	13.79	14.24	14.69
2/1	Heating capacity	45.77	44.77	42.94	41.81	40.68
	Power	13.34	16.07	14.24	14.69	15.14
7/6	Heating capacity	58.76	58.85	56.50	55.37	54.24
	Power	14.10	16.93	15.00	15.45	15.90
10/9	Heating capacity	62.15	62.38	59.89	58.49	57.07
	Power	14.86	17.79	15.76	16.21	16.66
15/12	Heating capacity	65.54	65.90	63.28	61.88	60.46
	Power	15.76	18.81	16.66	17.09	17.54
15-24	Heating capacity	0.85 – 1.05 of nominal				
	Power	0.80 – 1.20 of nominal				

6.5 Length Correction Coefficient “K3” of Indoor/Outdoor Unit Connecting Tube.



Positive side of high head means installation height of outdoor unit should be higher than indoor unit; negative side of high head means installation height of outdoor unit should be lower than indoor unit; (change ratio of basic capacity)

6.6 Heating Capacity Correction Coefficient “K4” under Frosting of Outdoor Heat Exchanger



6.7 Capacity Correction

Under cooling mode: actual cooling capacity = nominal cooling capacity×K3;

Under heating mode: actual Heating capacity = nominal cooling capacity×K3×K4.

7 Electric Characteristic

Unit			Power		OFM	
Model	Hz	Voltage	MCA	Breaker (A)	Output power (W)	FLA
ARV-H220/5R1MA	50	380-415	28.8	32	750	23
ARV-H280/5R1MA	50	380-415	28.8	32	750	23
ARV-H330/5R1MA	50	380-415	28.8	32	750	23
ARV-H400/5R1MA	50	380-415	44.5	50	450+370	35.6
ARV-H450/5R1MA	50	380-415	44.5	50	450+370	35.6
ARV-H500/5R1MA	50	380-415	46.1	50	450+370	36.9

Symbols:

MCA: Min. Circuit Amps (A)

OFM: Outdoor fan motor

FLA: Full load AMPS (A)

Notice:

1 Voltage range

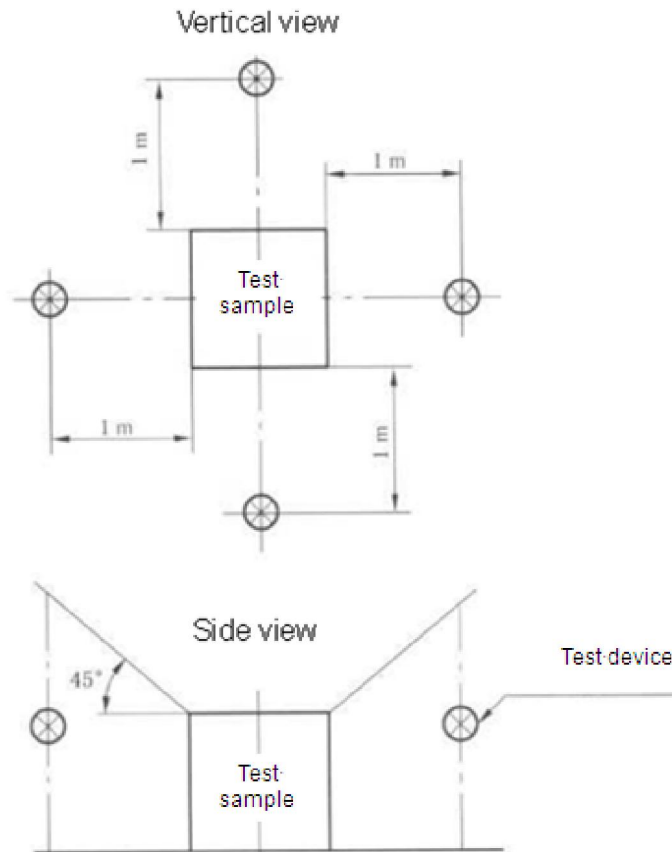
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limit.

2 Maximum allowable voltage unbalance between phase is 2%

$MCA = 1.25 * FLA$

3 Select wire size base on the MCA

8 Sound level



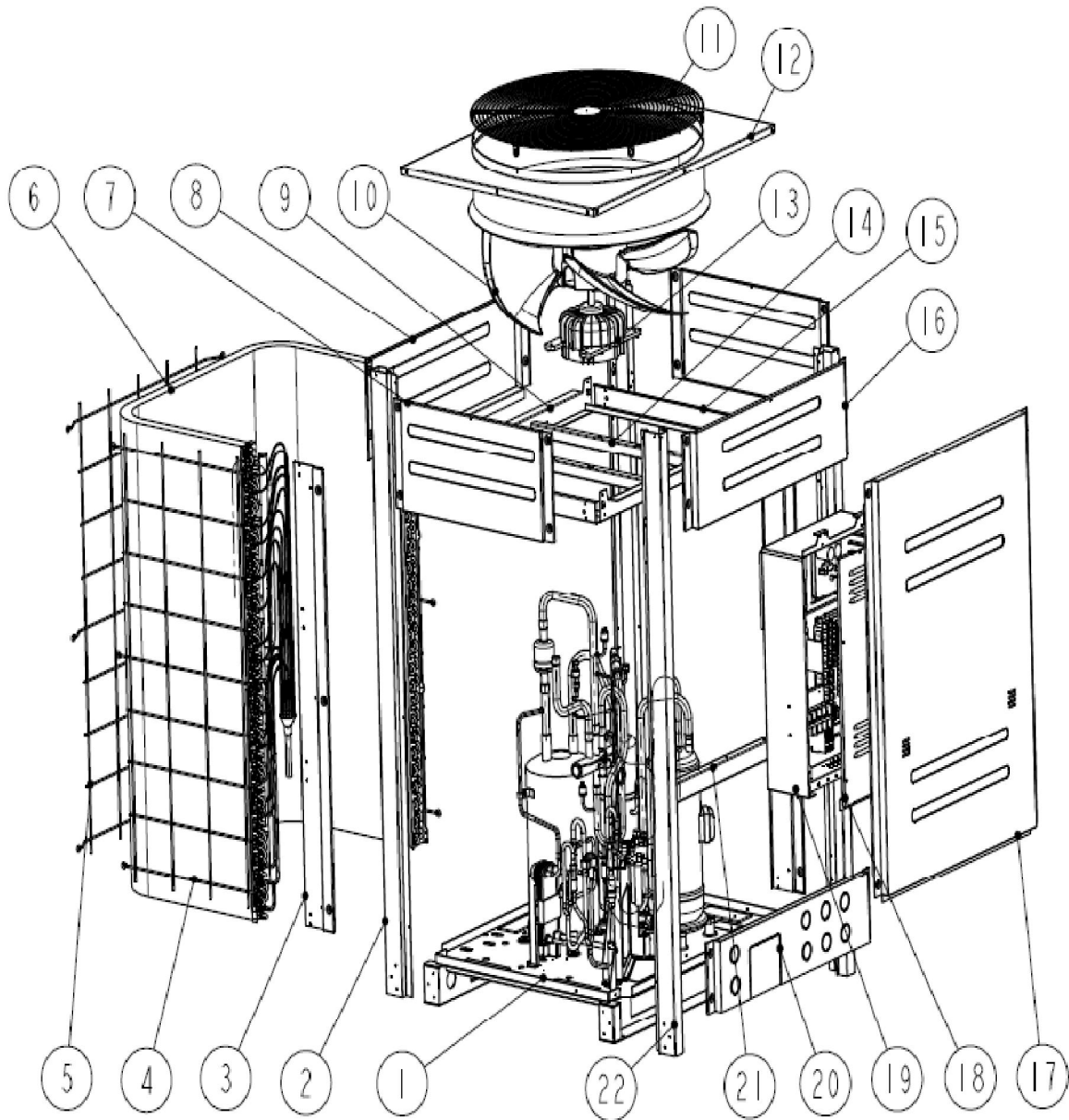
Model	Sound (dB)
ARV-H220/5R1MA	60
ARV-H280/5R1MA	60
ARV-H330/5R1MA	60
ARV-H400/5R1MA	62
ARV-H450/5R1MA	62
ARV-H500/5R1MA	62

Note:

1. The operating condition are assumed to be a standard(JIS Condition).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.
3. The result is the biggest one of four testing device.
4. Test height (Unit height +1)/2m, horizontal distance : 1m.

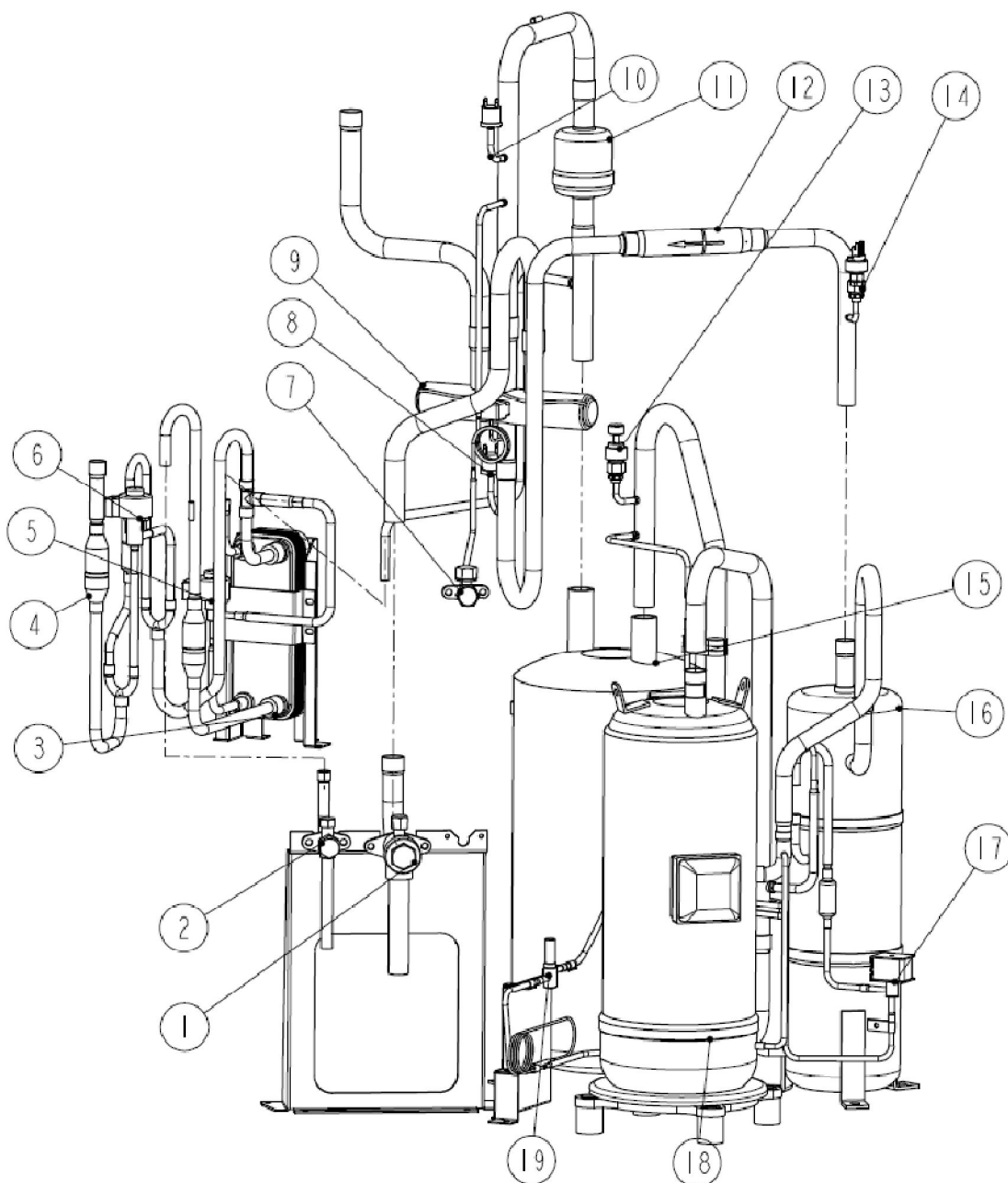
9.Explode View

ARV-H220/5R1MA, ARV-H280/5R1MA

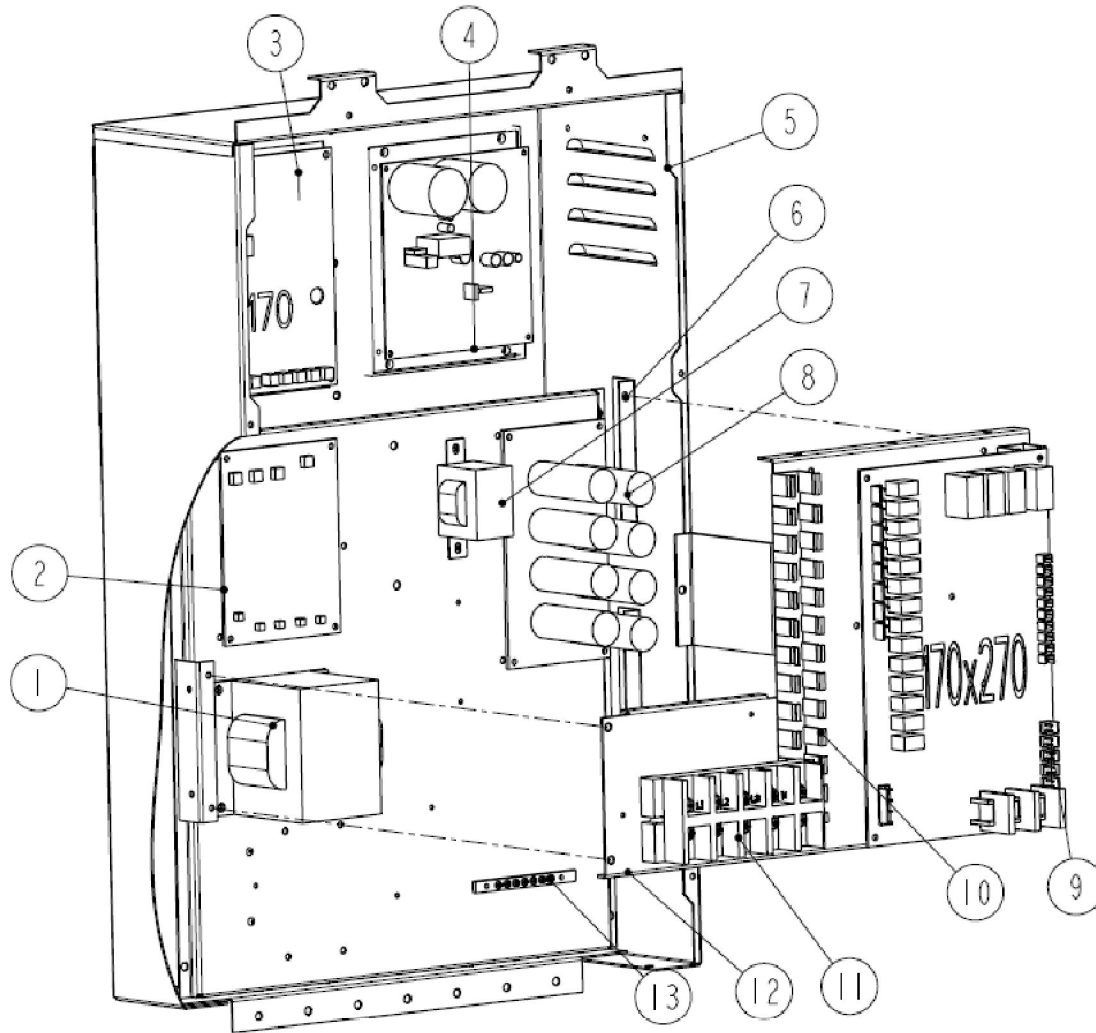


No.	AUX code	Part name	Part name	Number	Unit
1	/	DLR-280W5/DCM3 底盘组件	Classis components	1	Set
2	/	DLR-450W5/DCM3 前右立柱	Front right side support cylinder	2	Pc
3	/	DLR-450W5/DCM3 冷凝器护板	Condenser plate	2	Pc
4	/	DLR-450W5-DCM-3A 侧钢丝网罩	Side steel net cover	2	Pc
5	/	DLR-280W5-DCM-3A 后钢丝网罩	Back steel net cover	1	Pc
6	/	DLR-280W5/DCM3 冷凝器总成	Condenser assembly	1	Set
7	/	DLR-450W5/DCM3 上侧板	Upper side panel	2	Pc
8	/	DLR-280W5/DCM3 后上面板	Back upper panel	1	Pc
9	/	DLR-280W5/DCM3 横梁	Beam	2	Pc
10	/	轴流风叶 $\phi 700 \times 206.6$	Axial flow fan $\phi 560 \times 86$	1	Pc

11	/	LSQWRF65MX/D 风叶网罩 I	Net cover	1	Pc
12	/	DLR-280W/DCM 导风圈/导风板(铆接)	Guide ring (plating)	1	Pc
13	/	室外电机 DMSB-750W-8P	Fan motor	1	Pc
14	/	DLR-450W5/DCM3 电机支架	Motor bracket	2	Pc
15	/	DLR-450W5/DCM3 横梁(短)	Beam (short)	2	Pc
16	/	DLR-280W5/DCM3 上面板	Upper panel	1	Pc
17	/	DLR-280W5/DCM3 前面板(上)	Front panel	1	Pc
18	/	DLR-280W5-DCM-3A 电控箱盖	Electric box cover	1	Pc
19	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
20	/	DLR-280W5/DCM-AVR3 阀板	Valve board	2	Pc
21	/	DLR-280W5-DCM-3A 电控箱支架	Electric box bracket	1	Pc
22	/	DLR-450W5/DCM3 前左立柱	Front left side support cylinder	2	Pc

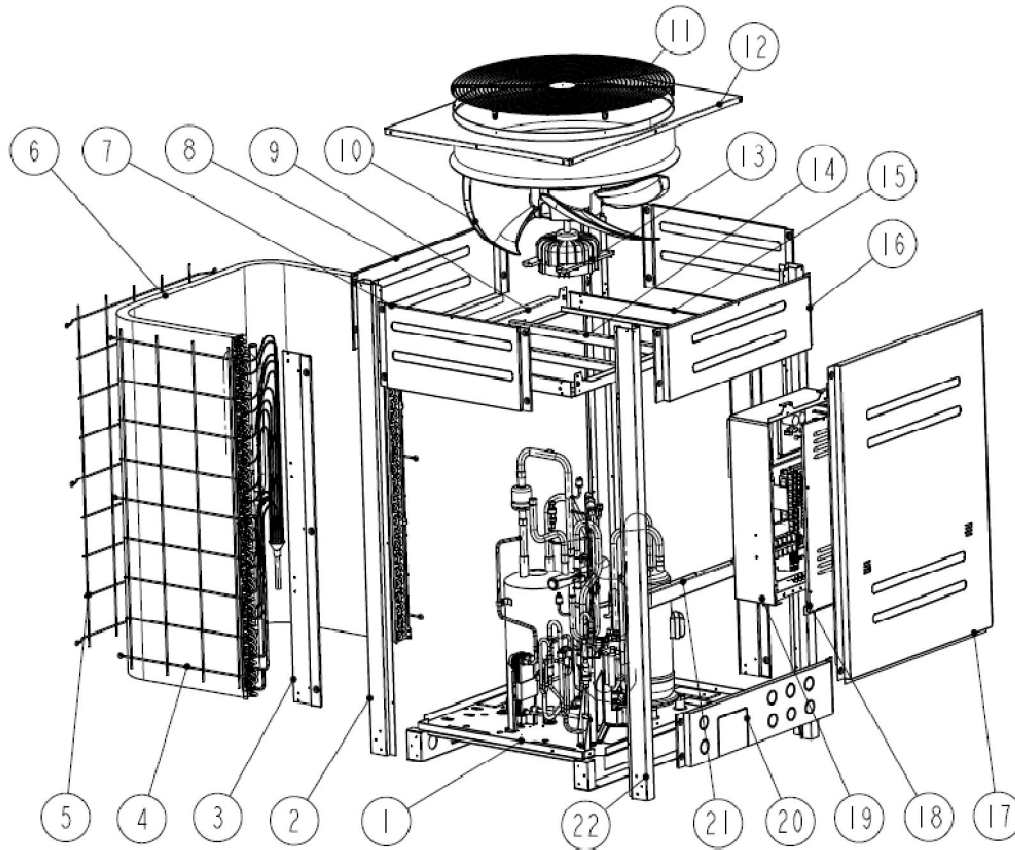


No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)截止阀组件 7/8in(双焊接)	Stop valve assembly	1	Set
2	/	(ROHS)截止阀组件 1/2in(双焊接)	Stop valve assembly	1	Set
3	/	板式换热器 B3-014-4.5-H 2×3/8in+2×1/2in	Plate heat exchanger	1	Pc
4	/	过滤器 φ12.7×φ12.7-100	Filter	2	Pc
5	/	电子膨胀阀阀体 CAM-BD22FKS-1	EXV	1	Pc
6	/	(ROHS)电子膨胀阀阀体 UKV-32D61	EXV	1	Pc
7	/	(ROHS)截止阀 1/4in(直管)(R410a)	Stop valve	1	Pc
8	/	四通换向阀阀体 SHF-H35672-003	4-way valve	1	Pc
9	/	低压开关 H20PS C 0.3/0.1(弯管)	Low pressure switch	1	Pc
10	/	高压开关 H20PS D 4.2/3.3(弯管)	High pressure switch	1	Pc
11	/	过滤器 φ22.2×φ22.2-185	Filter	1	Pc
12	/	单向阀 22.2×22.2-160	One-way valve	1	Pc
13	/	压力传感器 NSK-S783-1(0~3.0)MPa	Pressure sensor	1	Pc
14	/	压力传感器 NSK-S784-1(0~5.0)MPa	Pressure sensor	1	Pc
15	/	气液分离器 QFQ-15L(22)(立)	Gas-liquid separator	1	Pc
16	/	油分离器 16P(R410a)	Oil separator 16P(R410a)	1	Pc
17	/	电磁阀阀体 FDF2A	EXV FDF2A	1	Pc
18	/	压缩机 E655DHD-65D2YG(变频并 联)	Compressor E655DHD-65D2YG	1	Pc
19	/	电磁阀阀体 FDF2AK01	EXV FDF2AK01	1	Pc

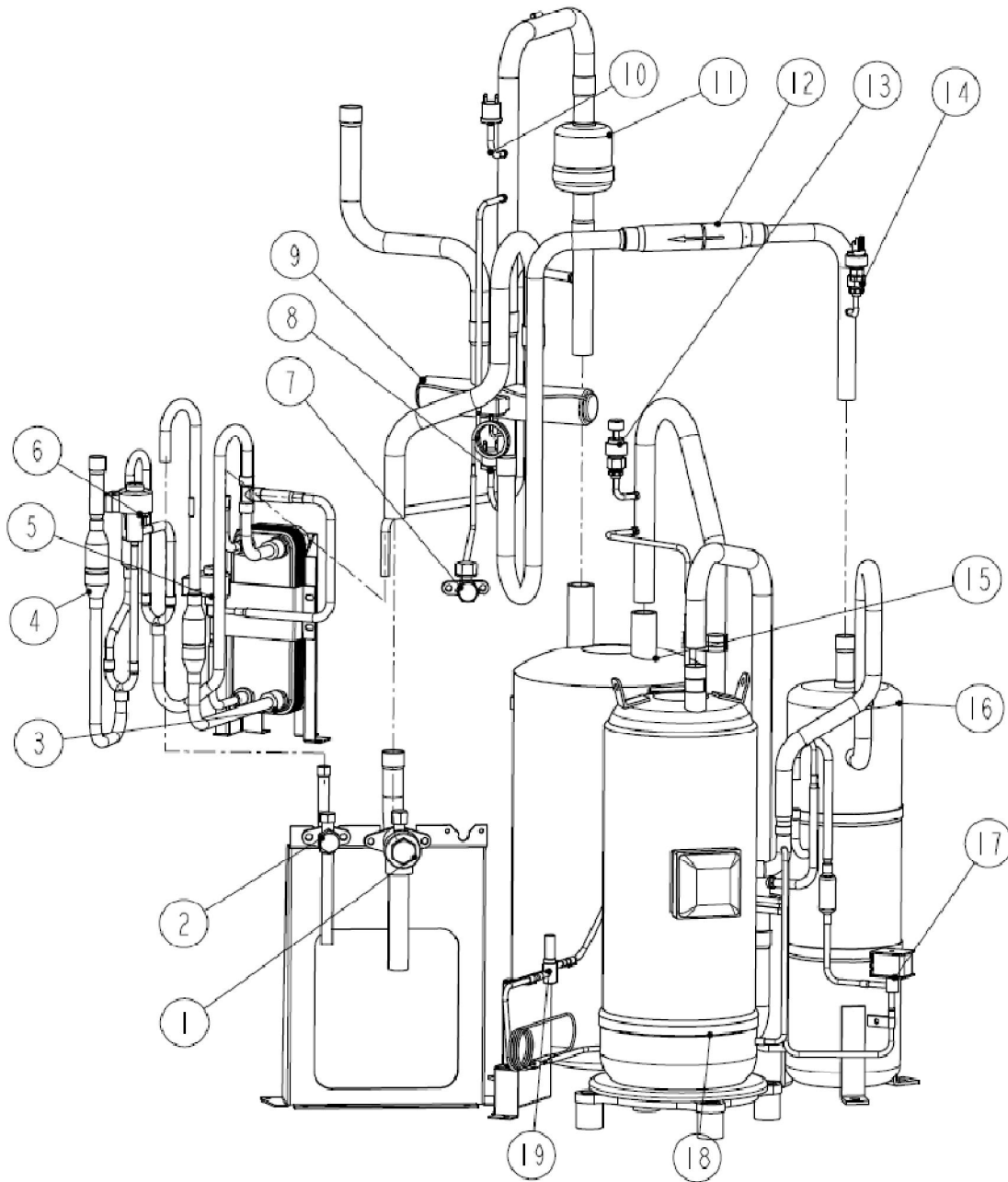


No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)电抗器 DK-5mH-30A(L=400)	(ROHS)Electric reactor	1	Pc
2	/	滤波板 ZLBP3D-SWLB-XESE1	Filter board	1	Pc
3	/	模块板 ZLBP3D-SWMK-XESE1	Moudle board 1	1	Pc
4	/	模块板 BPFJ-SW-XSE1	Moudle board 2	1	Pc
5	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
6	/	DLR-450W5-DCM-3A 电控元器件固定板支架	Electric components fixed plate bracket	2	Pc
7	/	(ROHS)变压器 TDB-16-B2B	Transformer	1	Pc
8	/	电容板 ZLBP3D-SWDR-XESE1	Capacitor board	1	Pc
9	/	控制板 ZLBP-SW3C-SYE1(ZK)	Main PC board	1	Pc
10	/	线槽 25×45	Trunking	2	Pc
11	/	端子板 5位(600V 16mm ²)	Terminal board 5 bits	1	Pc
12	/	DLR-450W5-DCM-3A 电控元器件固定板上	Electric components fixed plate	1	Pc
13	/	接地铜排 7位	Earthing copper row	1	Pc

ARV-H330/5R1MA

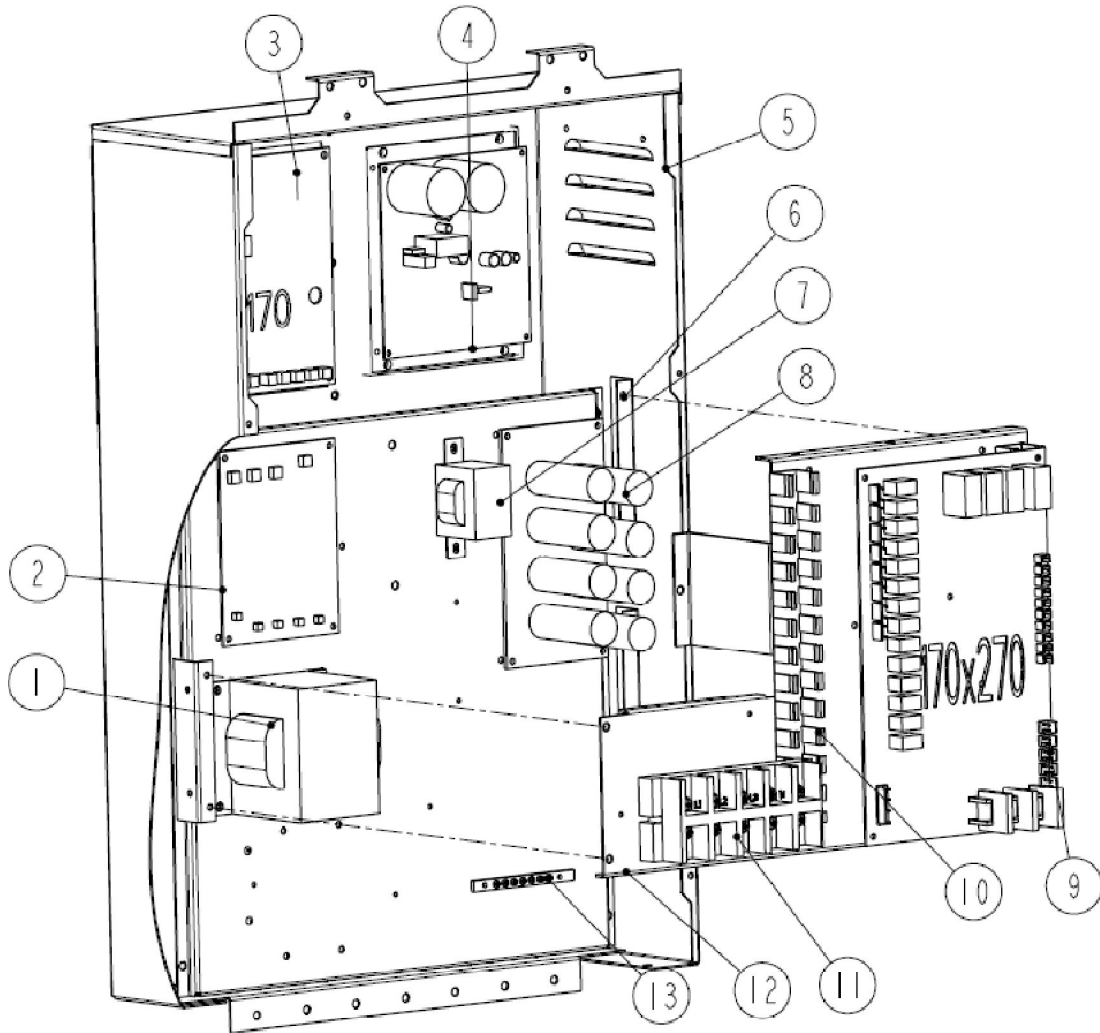


No.	AUX code	Part name	Part name	Number	Unit
1	/	DLR-280W5/DCM3 底盘组件	Classis components	1	Set
2	/	DLR-450W5/DCM3 前右立柱	Front right side support cylinder	2	Pc
3	/	DLR-450W5/DCM3 冷凝器护板	Condenser plate	2	Pc
4	/	DLR-450W5-DCM-3A 侧钢丝网罩	Side steel net cover	2	Pc
5	/	DLR-280W5-DCM-3A 后钢丝网罩	Back steel net cover	1	Pc
6	/	DLR-335W5/DCM3 冷凝器总成	Condenser assembly	1	Set
7	/	DLR-450W5/DCM3 上侧板	Upper side panel	2	Pc
8	/	DLR-280W5/DCM3 后上面板	Back upper panel	1	Pc
9	/	DLR-280W5/DCM3 横梁	Beam	2	Pc
10	/	轴流风叶 $\phi 700 \times 206.6$	Axial flow fan $\Phi 560 \times 86$	1	Pc
11	/	LSQWRF65MX/D 风叶网罩 I	Net cover	1	Pc
12	/	DLR-280W/DCM 导风圈/导风板(铆接)	Guide ring (plating)	1	Pc
13	/	室外电机 DMSB-750W-8P	Fan motor	1	Pc
14	/	DLR-450W5/DCM3 电机支架	Motor bracket	2	Pc
15	/	DLR-450W5/DCM3 横梁(短)	Beam (short)	2	Pc
16	/	DLR-280W5/DCM3 上面板	Upper panel	1	Pc
17	/	DLR-280W5/DCM3 前面板(上)	Front panel	1	Pc
18	/	DLR-280W5-DCM-3A 电控箱盖	Electric box cover	1	Pc
19	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
20	/	DLR-280W5/DCM-AVR3 阀板	Valve board	2	Pc
21	/	DLR-280W5-DCM-3A 电控箱支架	Electric box bracket	1	Pc
22	/	DLR-450W5/DCM3 前左立柱	Front left side support cylinder	2	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)截止阀组件 7/8in(双焊接)	Stop valve assembly	1	Set
2	/	(ROHS)截止阀组件 1/2in(双焊接)	Stop valve assembly	1	Set
3	/	板式换热器 B3-014-4.5-H 2×3/8in+2×1/2in	Plate heat exchanger	1	Pc
4	/	过滤器 φ12.7×φ12.7-100	Filter	2	Pc
5	/	电子膨胀阀阀体 CAM-BD22FKS-1	EXV	1	Pc
6	/	(ROHS)电子膨胀阀阀体 UKV-32D61	EXV	1	Pc
7	/	(ROHS)截止阀 1/4in(直管)(R410a)	Stop valve	1	Pc
8	/	四通换向阀阀体 SHF-H35672-003	4-way valve	1	Pc
9	/	低压开关 H20PS C 0.3/0.1(弯管)	Low pressure switch	1	Pc
10	/	高压开关 H20PS D 4.2/3.3(弯管)	High pressure switch	1	Pc

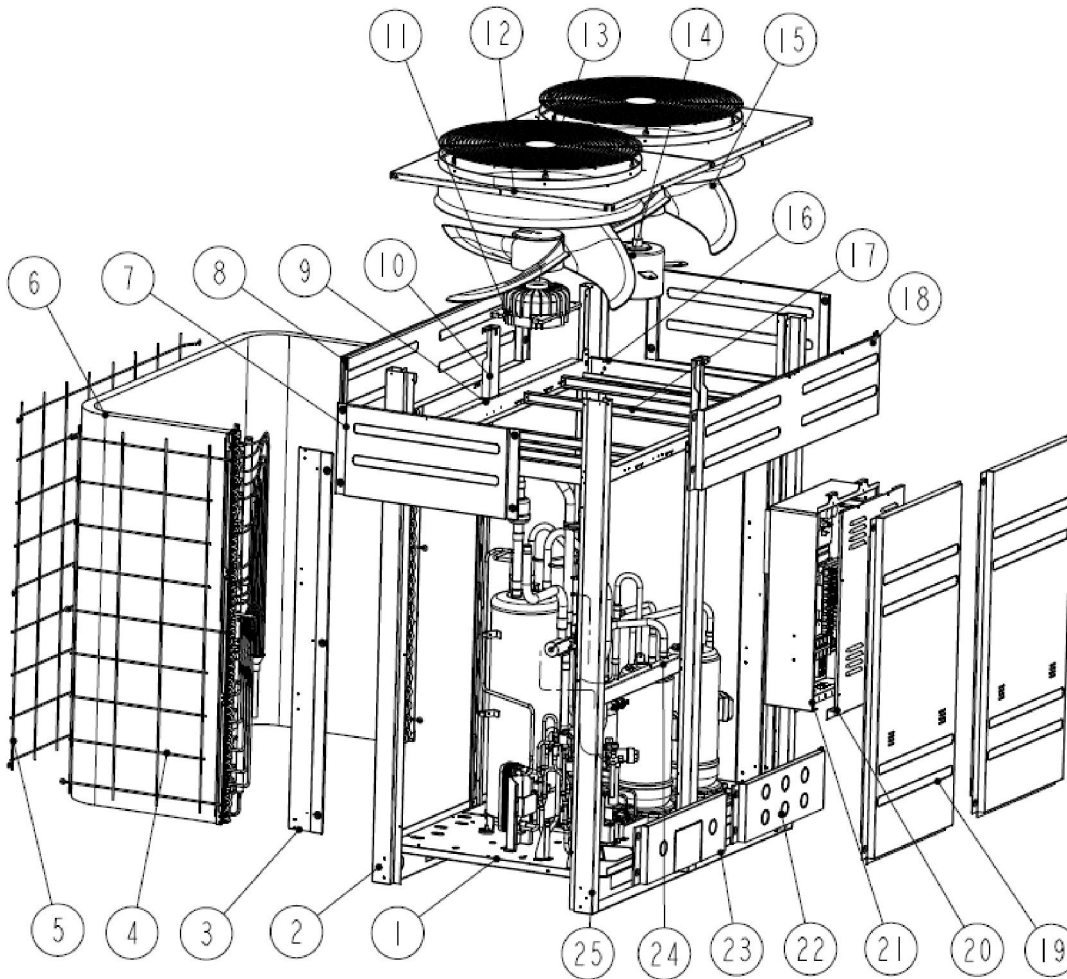
11	/	过滤器 φ22.2×φ22.2-185	Filter	1	Pc
12	/	单向阀 22.2×22.2-160	One-way valve	1	Pc
13	/	压力传感器 NSK-S783-1(0~3.0)MPa	Pressure sensor	1	Pc
14	/	压力传感器 NSK-S784-1(0~5.0)MPa	Pressure sensor	1	Pc
15	/	气液分离器 QFQ-15L(22)(立)	Gas-liquid separator	1	Pc
16	/	油分离器 16P(R410a)	Oil separator	1	Pc
17	/	电磁阀阀体 FDF2A	EXV	1	Pc
18	/	压缩机 E655DHD-65D2YG(变频并 联)	Compressor	1	Pc
19	/	电磁阀阀体 FDF2AK01	EXV	1	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)电抗器 DK-5mH-30A(L=400)	(ROHS)Electric reactor	1	Pc
2	/	滤波板 ZLBP3D-SWLB-XESE1	Filter board	1	Pc
3	/	模块板 ZLBP3D-SWMK-XESE1	Module board 1	1	Pc
4	/	模块板 BPFJ-SW-XSE1	Module board 2	1	Pc
5	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
6	/	DLR-450W5-DCM-3A 电控元器件固	Electric components fixed plate bracket	2	Pc

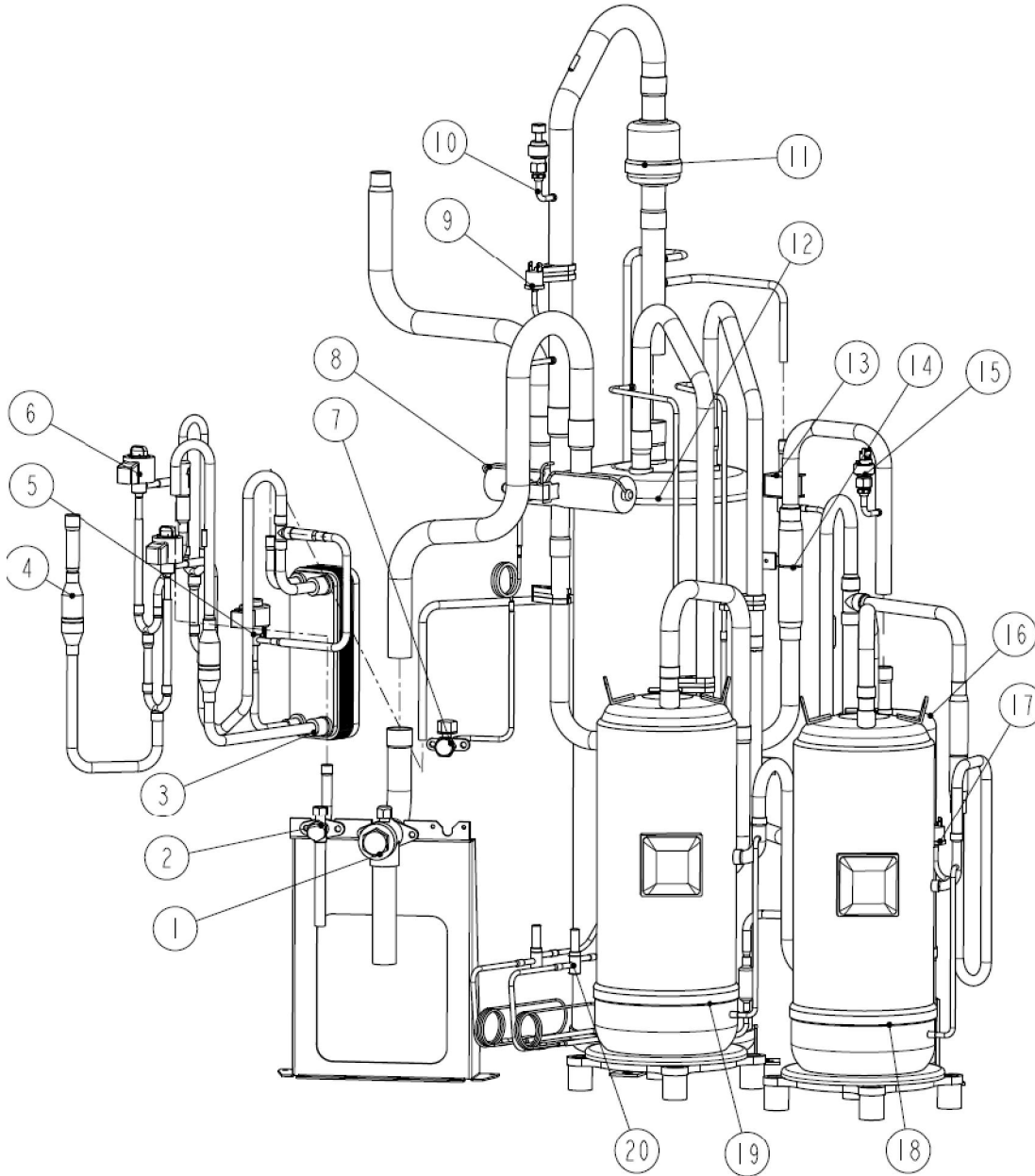
定板支架					
7	/	(ROHS)变压器 TDB-16-B2B	Transformer	1	Pc
8	/	电容板 ZLBP3D-SWDR-XESE1	Capacitor board	1	Pc
9	/	控制板 ZLBP-SW3C-SYE1(ZK)	Main PC board	1	Pc
10	/	线槽 25×45	Trunking	2	Pc
11	/	端子板 5位(600V 16mm ²)	Terminal board 5 bits	1	Pc
12	/	DLR-450W5-DCM-3A 电控元器件固定板上	Electric components fixed plate	1	Pc
13	/	接地铜排 7位	Earthing copper row	1	Pc

ARV-H400/5R1MA, ARV-H450/5R1MA



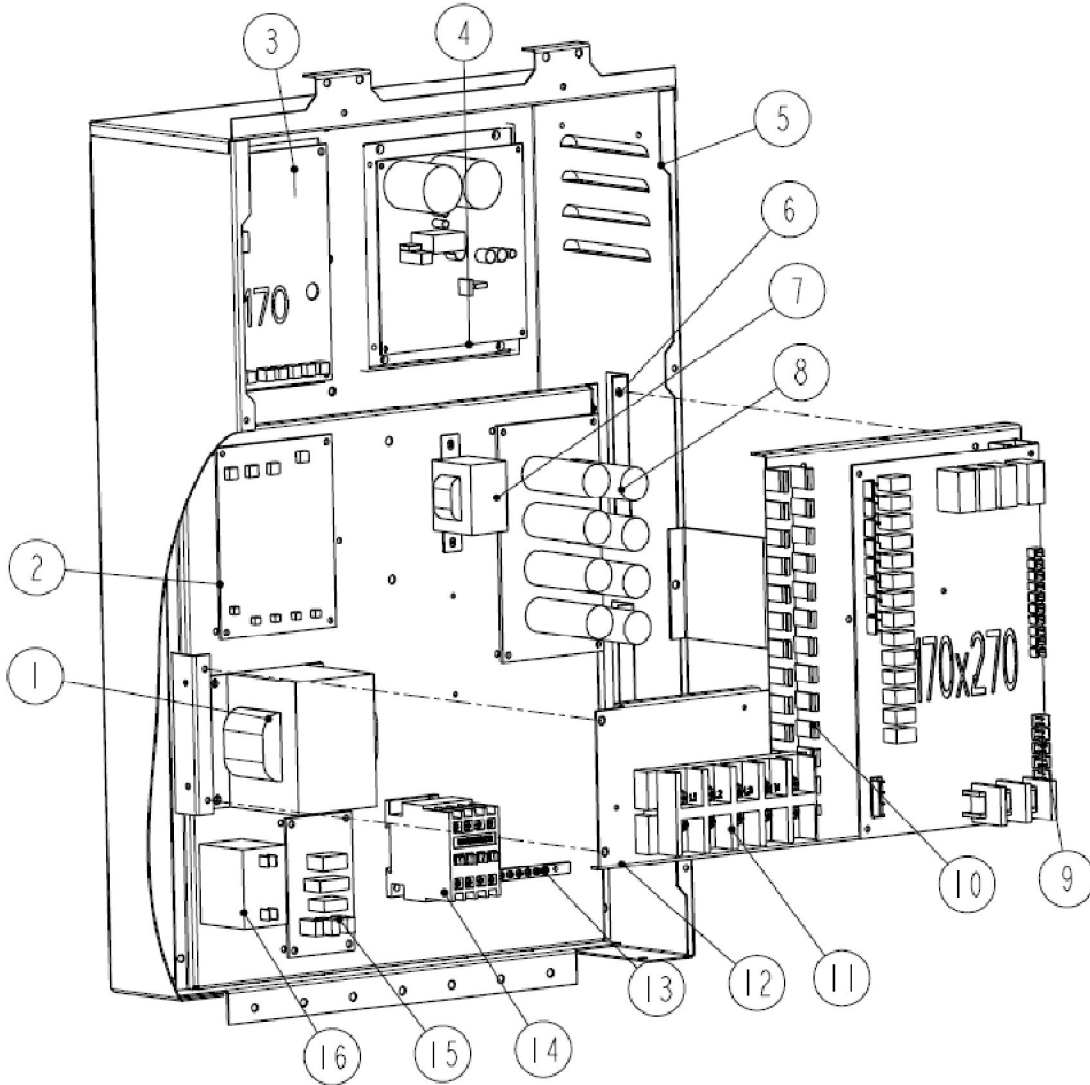
No.	AUX code	Part name	Part name	Number	Unit
1	/	DLR-450W5/DCM3 底盘组件	Chassis components	1	Set
2	/	DLR-450W5/DCM3 前右立柱	Front right side support cylinder	2	Pcs
3	/	DLR-450W5/DCM3 冷凝器护板	Condenser plate	2	Pc
4	/	DLR-450W5-DCM-3A 侧钢丝网罩	Side steel net cover	2	Pc
5	/	DLR-450W5-DCM-3A 后钢丝网罩	Back steel net cover	1	Pc
6	/	DLR-450W5/DCM3 冷凝器总成	Condenser assembly	1	Set
7	/	DLR-450W5/DCM3 上侧板	Upper side panel	2	Pc
8	/	DLR-450W5/DCM3 后上面板	Back upper panel	1	Pc

9	/	DLR-450W5/DCM3 横梁(长)	Beam	2	Pc
10		DLR-450W5/DCM3 顶盖板支撑条	Top cover plate support	2	Pc
11		室外电机 DMSB-450W-8P	Fan motor	1	Pc
12	/	DLR-450W5/DCM3 顶盖板/导风圈 (铆接)	Guide ring (plating)	2	Pc
13	/	DLR-450W5-DCM-3A 风叶网罩	Net cover	2	Pc
14	/	室外电机(三速) YDK370-6	Fan motor	1	Pc
15	/	轴流风叶 $\phi 600 \times 178$	Axial flow fan $\phi 560 \times 86$	2	Pc
16	/	DLR-450W5/DCM3 横梁(短)	Beam (short)	2	Pc
17	/	DLR-450W5/DCM3 电机支架	Motor bracket	4	Pc
18	/	DLR-450W5/DCM3 上面板	Upper panel	1	Pc
19	/	DLR-450W5/DCM3 前面板	Front panel	2	Pc
20	/	DLR-280W5-DCM-3A 电控箱盖	Electric box cover	1	Pc
21	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
22	/	DLR-450W5/DCM3 阀板(右)	Valve board(right)	2	Pc
23	/	DLR-450W5/DCM3 阀板(左)	Valve board(left)	1	Pc
24	/	DLR-450W5/DCM3 电控横梁	Electric box bracket	1	Pc
25	/	DLR-450W5/DCM3 前左立柱	Front left side support cylinder	2	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)截止阀组件 9/8in(双焊接)	Stop valve assembly	1	Set
2	/	(ROHS)截止阀组件 1/2in(双焊接)	Stop valve assembly	1	Set
3	/	板式换热器 B3-014-4.5-H 2×3/8in+2×1/2in	Plate heat exchanger	1	Pc
4	/	过滤器 φ12.7×φ12.7-100	Filter	2	Pc
5	/	电子膨胀阀阀体 CAM-BD22FKS-1	EXV	2	Pc
6	/	(ROHS) 电子膨胀阀阀体 UKV-32D61	EXV	1	Pc
7	/	(ROHS)截止阀 1/4in(直管)(R410a)	Stop valve	1	Pc
8	/	四通换向阀阀体 VH61100	4-way valve	1	Pc
9	/	低压开关 H20PS C 0.3/0.1(弯管)	Low pressure switch	1	Pc
10	/	压力传感器 NSK-S783-1(0~3.0)MPa	Pressure sensor	1	Pc
11	/	过滤器 φ28.6×φ28.6-185	Filter	1	Pc

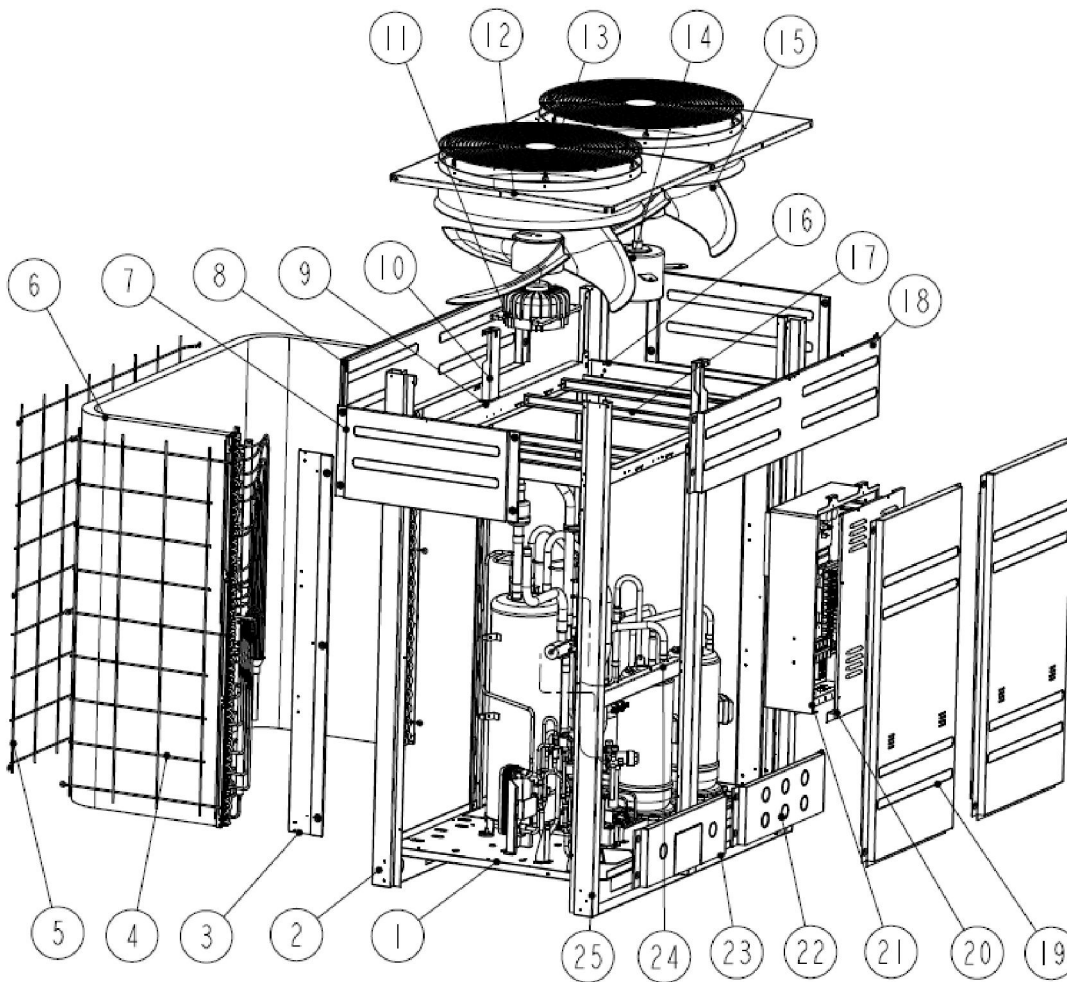
12	/	气液分离器 QFQ-23L(双出管)	Gas-liquid separator	1	Pc
13	/	电磁阀阀体 FDF2A	EXV	1	Pc
14	/	单向阀 22.2×22.2-160	One-way valve	1	Pc
15	/	压力传感器 NSK-S784-1(0~5.0)MPa	Pressure sensor	1	Pc
16	/	油分离器 16P(R410a)	Oil separator	1	Pc
17	/	高压开关 H2OPS D 4.2/3.3(弯管)	High pressure switch	2	Pc
18	/	压缩机 E605DH-59D2YG(定频并联)	Compressor	1	Pc
19	/	压缩机 E655DHD-65D2YG(变频并联)	Compressor	1	Pc
20	/	电磁阀阀体 FDF2AK01	EXV	2	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS) 电抗器 DK-5mH-30A(L=400)	(ROHS)Electric reactor	1	Pc
2	/	滤波板 ZLBP3D-SWLB-XESE1	Filter board	1	Pc
3	/	模块板 ZLBP3D-SWMK-XESE1	Mouldle board 1	1	Pc
4	/	模块板 BPFJ-SW-XSE1	Mouldle board 2	1	Pc
5	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
6	/	DLR-450W5-DCM-3A 电控元器件固定板支架	Electric components fixed plate bracket	2	Pc

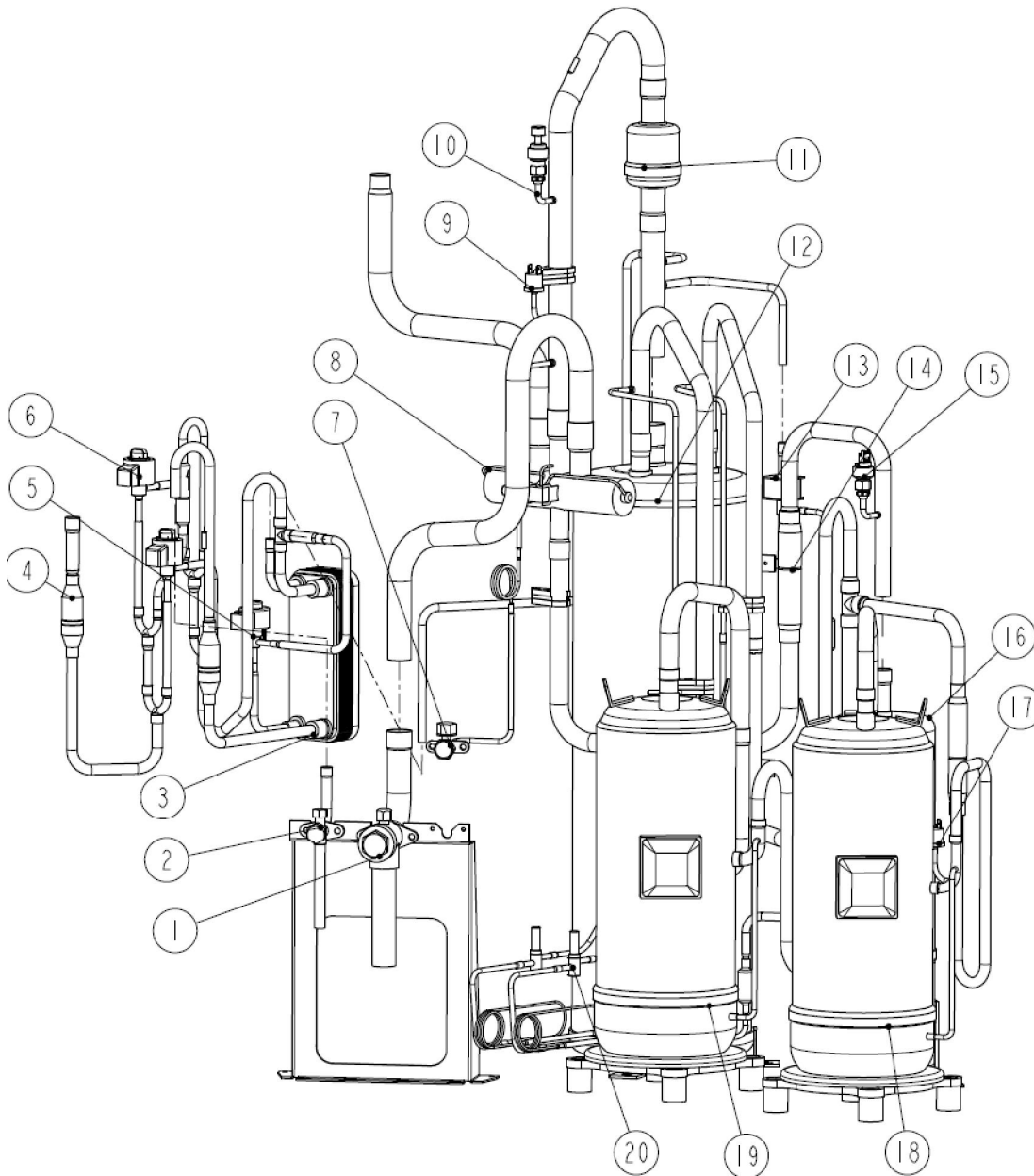
7	/	(ROHS)变压器 TDB-16-B2B	Transformer	1	Pc
8	/	电容板 ZLBP3D-SWDR-XESE1	Capacitor board	1	Pc
9	/	控制板 ZLBP-SW3C-SYE1(ZK)	Main PC board	1	Pc
10	/	线槽 25×45	Trunking	2	Pc
11	/	端子板 5位(600V 16mm ²)	Terminal board 5 bits	1	Pc
12	/	DLR-450W5-DCM-3A 电控元器件固定板上	Electric components fixed plate	1	Pc
13	/	接地铜排 7位	Earthing copper row	1	Pc
14	/	交流接触器 GC4-18/01KK	AC contactor	1	Pc
15	/	控制板 FAN(AC)-3F-SYE1	PC board	1	Pc
16	/	(ROHS)电容 15μF/450V a.c	Capacitor	1	Pc

ARV-H500/5R1MA



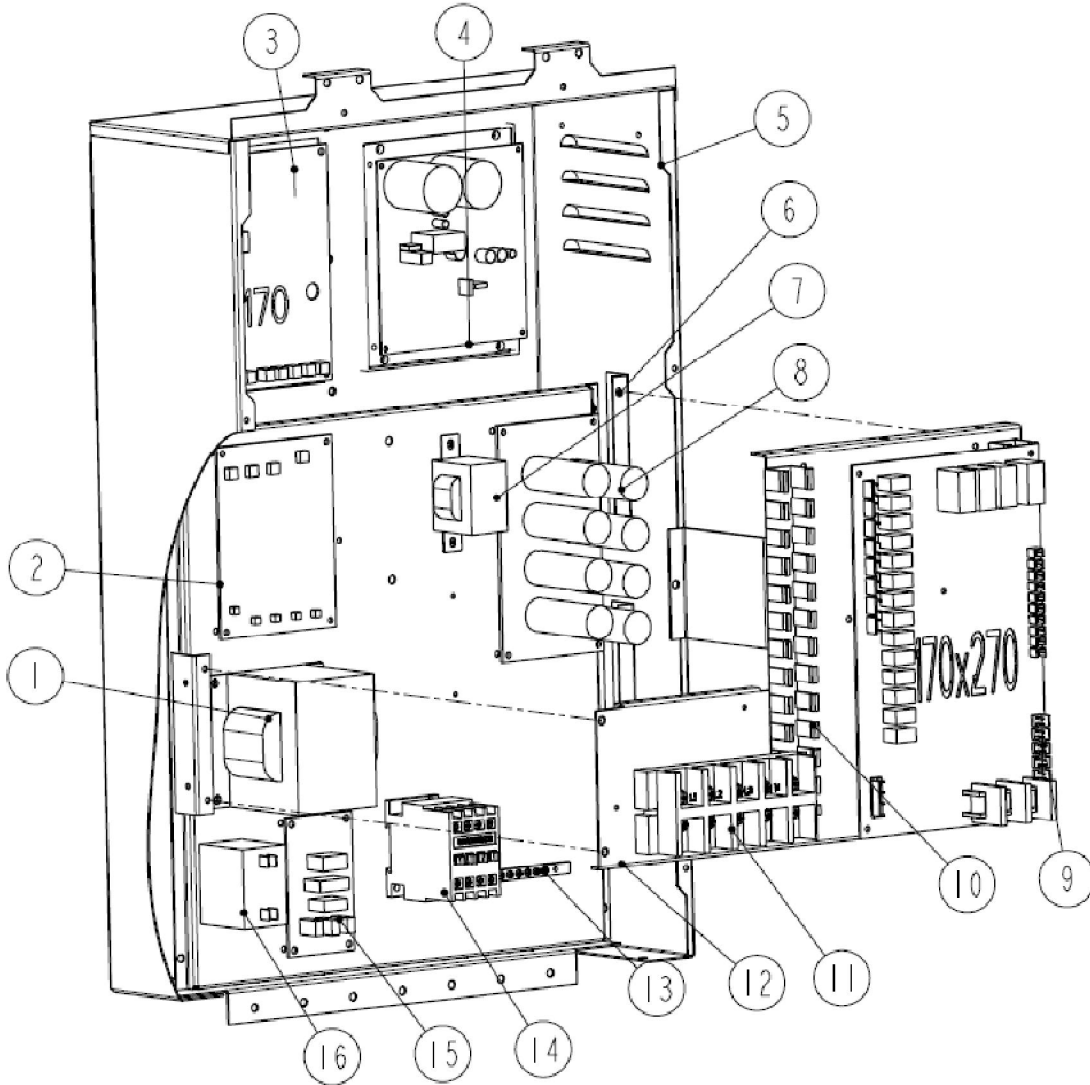
No.	AUX code	Part name	Part name	Number	Unit
1	/	DLR-450W5/DCM3 底盘组件	Classis components	1	Set
2	/	DLR-450W5/DCM3 前右立柱	Front right side support cylinder	2	Pcs
3	/	DLR-450W5/DCM3 冷凝器护板	Condenser plate	2	Pc
4	/	DLR-450W5-DCM-3A 侧钢丝网罩	Side steel net cover	2	Pc
5	/	DLR-450W5-DCM-3A 后钢丝网罩	Back steel net cover	1	Pc
6	/	DLR-450W5/DCM3 冷凝器总成	Condenser assembly	1	Set
7	/	DLR-450W5/DCM3 上侧板	Upper side panel	2	Pc

8	/	DLR-450W5/DCM3 后上面板	Back upper panel	1	Pc
9	/	DLR-450W5/DCM3 横梁(长)	Beam	2	Pc
10		DLR-450W5/DCM3 顶盖板支撑条	Top cover plate support	2	Pc
11		室外电机 DMSB-450W-8P	Fan motor	1	Pc
12	/	DLR-450W5/DCM3 顶盖板/导风圈 (铆接)	Guide ring (plating)	2	Pc
13	/	DLR-450W5-DCM-3A 风叶网罩	Net cover	2	Pc
14	/	室外电机(三速) YDK370-6	Fan motor	1	Pc
15	/	轴流风叶 $\phi 600 \times 178$	Axial flow fan $\Phi 560 \times 86$	2	Pc
16	/	DLR-450W5/DCM3 横梁(短)	Beam (short)	2	Pc
17	/	DLR-450W5/DCM3 电机支架	Motor bracket	4	Pc
18	/	DLR-450W5/DCM3 上面板	Upper panel	1	Pc
19	/	DLR-450W5/DCM3 前面板	Front panel	2	Pc
20	/	DLR-280W5-DCM-3A 电控箱盖	Electric box cover	1	Pc
21	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
22	/	DLR-450W5/DCM3 阀板(右)	Valve board(right)	2	Pc
23	/	DLR-450W5/DCM3 阀板(左)	Valve board(left)	1	Pc
24	/	DLR-450W5/DCM3 电控横梁	Electric box bracket	1	Pc
25	/	DLR-450W5/DCM3 前左立柱	Front left side support cylinder	2	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS)截止阀组件 9/8in(双焊接)	Stop valve assembly	1	Set
2	/	(ROHS)截止阀组件 1/2in(双焊接)	Stop valve assembly	1	Set
3	/	板式换热器 B3-014-4.5-H 2×3/8in+2×1/2in	Plate heat exchanger	1	Pc
4	/	过滤器 φ12.7×φ12.7-100	Filter	2	Pc
5	/	电子膨胀阀阀体 CAM-BD22FKS-1	EXV	2	Pc
6	/	(ROHS) 电子膨胀阀阀体 UKV-32D61	EXV	1	Pc
7	/	(ROHS)截止阀 1/4in(直管)(R410a)	Stop valve	1	Pc
8	/	四通换向阀阀体 VH61100	4-way valve	1	Pc
9	/	低压开关 H20PS C 0.3/0.1(弯管)	Low pressure switch	1	Pc
10	/	压力传感器 NSK-S783-1(0~3.0)MPa	Pressure sensor	1	Pc
11	/	过滤器 φ28.6×φ28.6-185	Filter	1	Pc

12	/	气液分离器 QFQ-23L(双出管)	Gas-liquid separator	1	Pc
13	/	电磁阀阀体 FDF2A	EXV	1	Pc
14	/	单向阀 22.2×22.2-160	One-way valve	1	Pc
15	/	压力传感器 NSK-S784-1(0~5.0)MPa	Pressure sensor	1	Pc
16	/	油分离器 16P(R410a)	Oil separator	1	Pc
17	/	高压开关 H2OPS D 4.2/3.3(弯管)	High pressure switch	2	Pc
18	/	压缩机 E655DH-65D2YG(定频并联)	Compressor	1	Pc
19	/	压缩机 E655DHD-65D2YG(变频并联)	Compressor	1	Pc
20	/	电磁阀阀体 FDF2AK01	EXV	2	Pc



No.	AUX code	Part name	Part name	Number	Unit
1	/	(ROHS) 电抗器 DK-5mH-30A(L=400)	(ROHS)Electric reactor	1	Pc
2	/	滤波板 ZLBP3D-SWLB-XESE1	Filter board	1	Pc
3	/	模块板 ZLBP3D-SWMK-XESE1	Mouldle board 1	1	Pc
4	/	模块板 BPFJ-SW-XSE1	Mouldle board 2	1	Pc
5	/	DLR-280W5-DCM-3A 电控箱组件	Electric box components	1	Set
6	/	DLR-450W5-DCM-3A 电控元器件固定板支架	Electric components fixed plate bracket	2	Pc

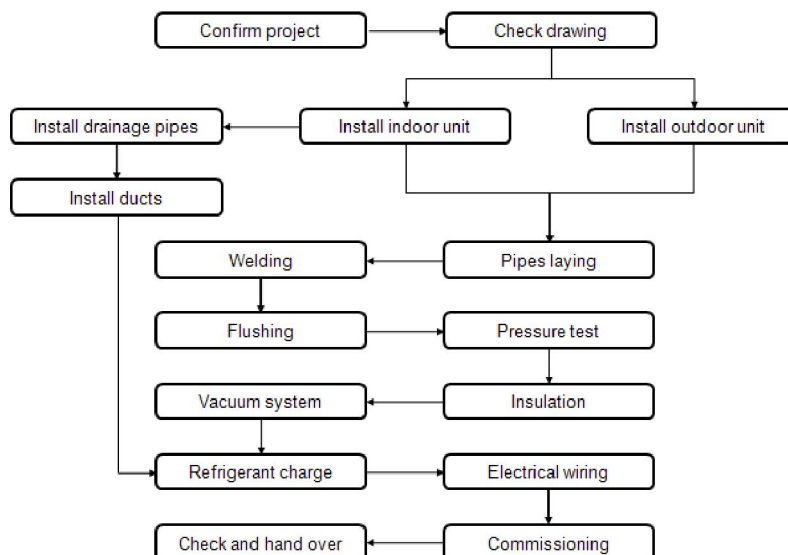
7	/	(ROHS)变压器 TDB-16-B2B	Transformer	1	Pc
8	/	电容板 ZLBP3D-SWDR-XESE1	Capacitor board	1	Pc
9	/	控制板 ZLBP-SW3C-SYE1(ZK)	Main PC board	1	Pc
10	/	线槽 25×45	Trunking	2	Pc
11	/	端子板 5位(600V 16mm ²)	Terminal board 5 bits	1	Pc
12	/	DLR-450W5-DCM-3A 电控元器件固定板上	Electric components fixed plate	1	Pc
13	/	接地铜排 7位	Earthing copper row	1	Pc
14	/	交流接触器 GC4-18/01KK	AC contactor	1	Pc
15	/	控制板 FAN(AC)-3F-SYE1	PC board	1	Pc
16	/	(ROHS)电容 15μF/450V a.c	Capacitor	1	Pc

Part 4 Installation

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2. Installation Unit.....	209
3. Installation of refrigerant auxiliary pipe.....	212
4. Additional refrigerant and lubrication oil.....	225
5. Insulation.....	226
6. Electrical connection.....	217
7. Commissioning.....	231

1. Preparation on installation

1.1 Installation procedure



1.2 Preparation and Tools before Installation

◇ Please buy the following parts from the market before installation

Hanging bolt (4 per unit)
PVC drain pipe
Some cable ties
Connecting copper tube
Branch manifold (choose according to actual installation situation)
Thermal insulation materials for connecting copper tube (PEF foaming materials with thickness above 8mm)
Power cord and power connection line (it's required to wire according to requirement for line diameter in wiring diagram)

Note:

Due to the difference between the characteristics of R410A and R22 refrigerant, it's necessary to use dedicated tools of R410A for some tools during installation.

- ◇ The selected position hanging indoor unit should be able to support the weight of unit without noise and additional vibration. It's necessary to reinforce before installation if reinforcement is required;
- ◇ The space of selected ceiling should be enough for holding indoor unit;
- ◇ The installation location should be easy for drainage;
- ◇ It shouldn't be installed in places (such as kitchen, laundry and mechanical workshop, etc.) of heat source, vapor source and more oil mist to prevent degradation of heat exchanger, electric shock and unit damage caused by plastic parts corrosion;
- ◇ Install in the place at least one meter away from TV and radio to prevent interfering TV and radio.
- ◇ There is no barrier blocking ventilation nearby and cold air should be able to evenly distribute to each indoor corner;
- ◇ There should be certain spacing between the surrounding and barrier of indoor unit to ease maintenance;
- ◇ The unit uses R410A environment-friendly refrigerant that is a kind of nonflammable and nontoxic gas. Since the refrigerant has larger specific gravity than air, it will suffuse on the ground in case of leakage. Therefore, the unit must be well ventilated if installed in closed room to prevent suffocation. In case of refrigerant leakage, immediately stop unit operation, timely contact maintenance personnel and avoid any open fire on site because refrigerant will decompose hazardous gas when exposed to open fire.

Tool	Application	R410A	Reasons
Pipe cutter	cutting tube	○	—
Flaring <i>tool</i>	flaring tube and flaring opening when welding	▲	It's required to increase extension allowance of copper tube when using R410A.
Tube bender	bending tube	○	—
Torque <i>wrench</i>	tightening flare nut	▲	The torque of 1/2 and 5/8 is increased and torque reference is changed
Welding torch, 2B silver solder	welding auxiliary tube	○	—
Oxygen, acetylene		○	—
Nitrogen		○	Prevent the oxidation of the copper pipe while welding
Vacuum pump with return flow stop valve (pumping speed $\geq 4L/S$)	Vacuum piping system	▲	Don't use original vacuum pump. It must be ensured that the oil in vacuum pump can't flow into A/C system.
Refrigerant holder	dosing of refrigerant charge	▲	R410A should be charged in liquid state.
Electronic scale		○	—
Pressure gauge	inspection equipment refrigerant pressure while vacuumizing, charging ,running	▲	The old pressure gauge can't be used due to the need of different pressure. MAX: HP5.3Mpa LP3.5Mpa
Connecting hose		▲	
Leak detector	Checking the leakage of system	▲	Don't use Freon leak detector of CFCs or HCFCs, because there is no chlorine in new refrigerant. It's necessary to use hydrogen leak <i>detector</i> or R134a leak <i>detector</i> .

◇ **Note:** ○ universal ▲ special for R410A

2. Installation of Outdoor Unit

2.1 Installation Location and Foundation

The installation location should efficiently stand the weight of outdoor unit, isolate noise and vibration;
 The installation location should keep away from direct sunlight. It's preferable to erect a sunshade is necessary;

The installation location must be able to drain rainwater and water formed by frost;

The installation location must be able to ensure A/C system can't be buried by snow;

The installation location must be able to ensure *air* outlet can't face to strong wind;

The installation location must be able to ensure air discharge and operation noise of unit can't disturb neighbors;

The installation location must be free from waste and oil mist.

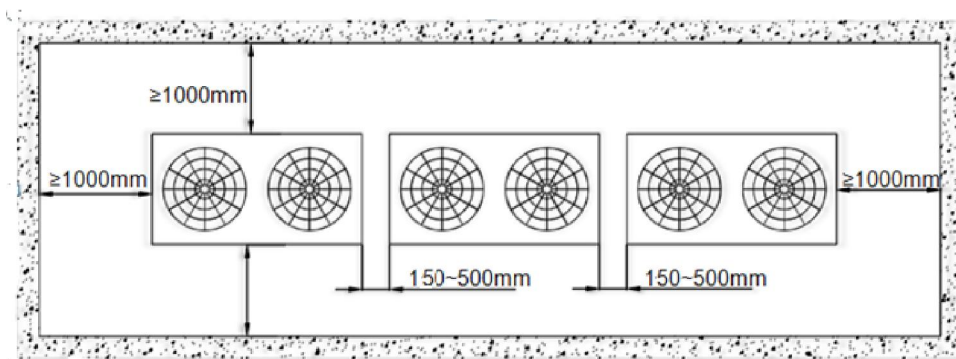
Warning:

Outdoor unit may subject to failure if it runs in the air environment containing oil source (including motor oil), salt (coastal area) and sulfide gas (nearby hot spring and refinery).

2.2 Maintenance and Ventilation Space of modular outdoor unit

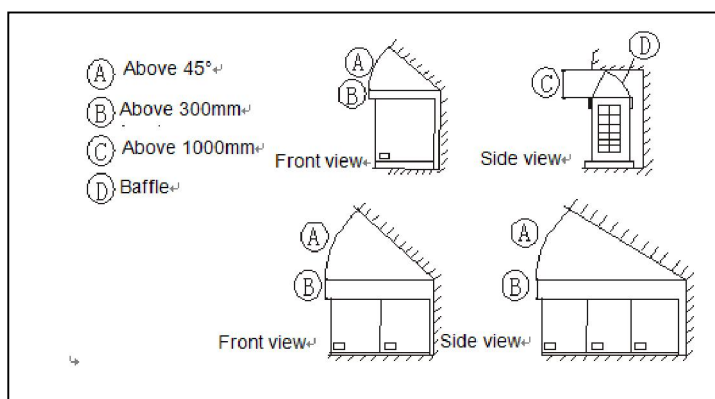
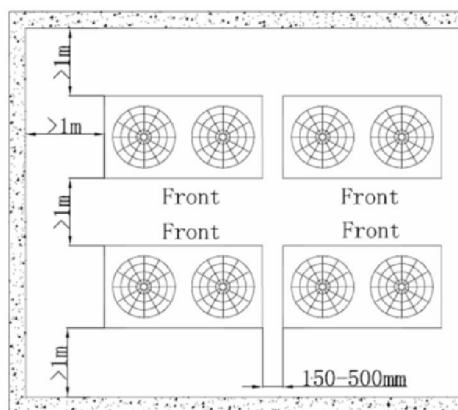
◇ In case of installation, after reserving maintenance space as shown below, install outdoor unit and install power supply device at side of outdoor unit by referring to installation instruction of power supply device manual.

◇ Ensure necessary installation and maintenance space, and modules of the same system must be placed at the same height (see the following diagram).



◇ If two rows of outdoor units, we suggest face to face, because easy to maintenance; no air short circuit.

◇ If there is barrier above outdoor unit, install according to the following diagram:

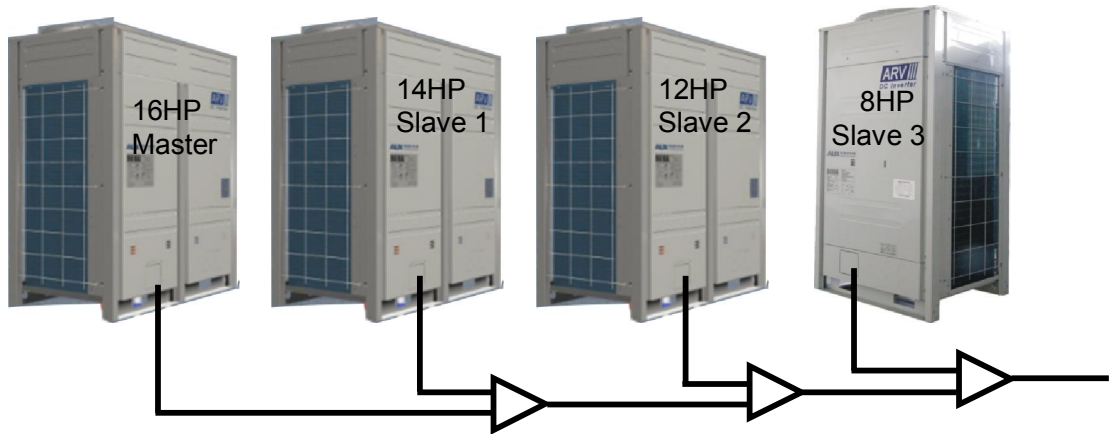


Note:

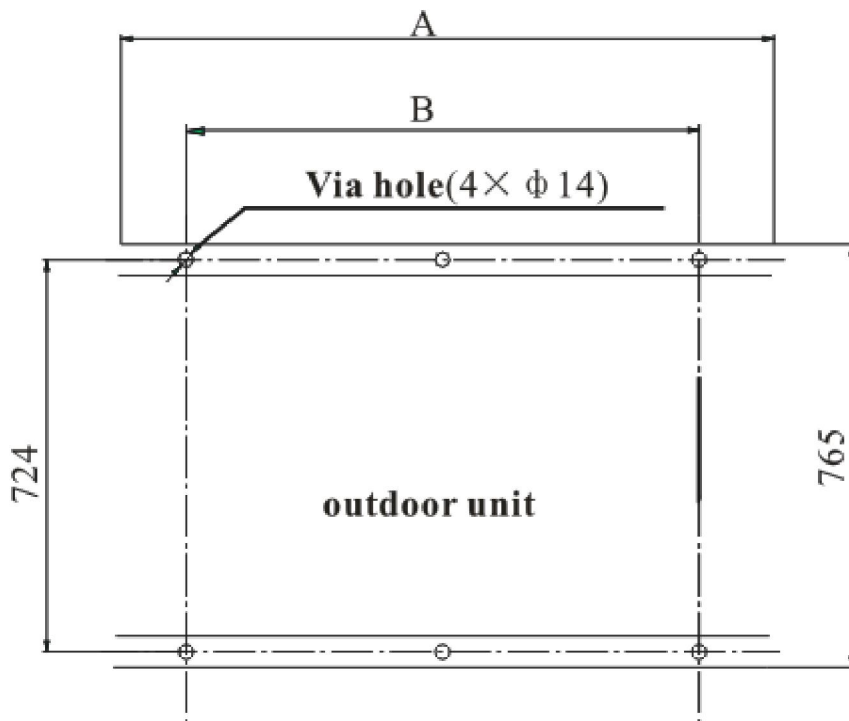
If there is stacking objects around outdoor unit, it should be at least 1000mm higher than the top of outdoor unit. If it is lower than the above height, it's required to add mechanical discharge device to improve the ventilation.

2.3 Installation of Outdoor Unit

- ◇ Tighten outdoor unit on mounting support with M10 bolt and nut, and keep it horizontal. The bolt should have a proper length of 20mm more than base surface.
- ◇ The outdoor unit with biggest capacity in the combination should be set as master unit.

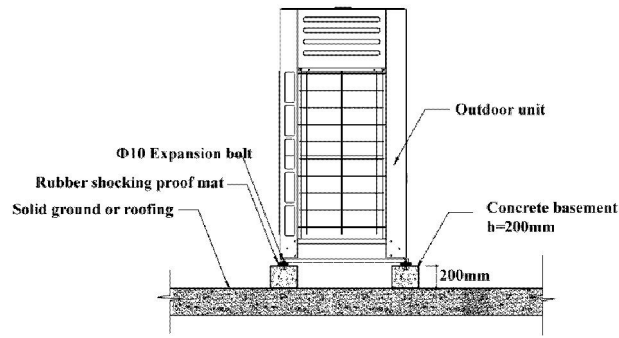


- ◇ In case of installing on roof, it is necessary to firmly secure A/C system to prevent the attack of earthquake or strong wind;
- ◇ The installation space for anchor bolt please refer to the following drawing



Model	A	B
ARV-H250/5R1MA、ARV-H280/5R1MA、ARV-H330/5R1MA	935	807
ARV-H400/5R1MA、ARV-H450/5R1MA、ARV-H500/5R1MA	1240	1117

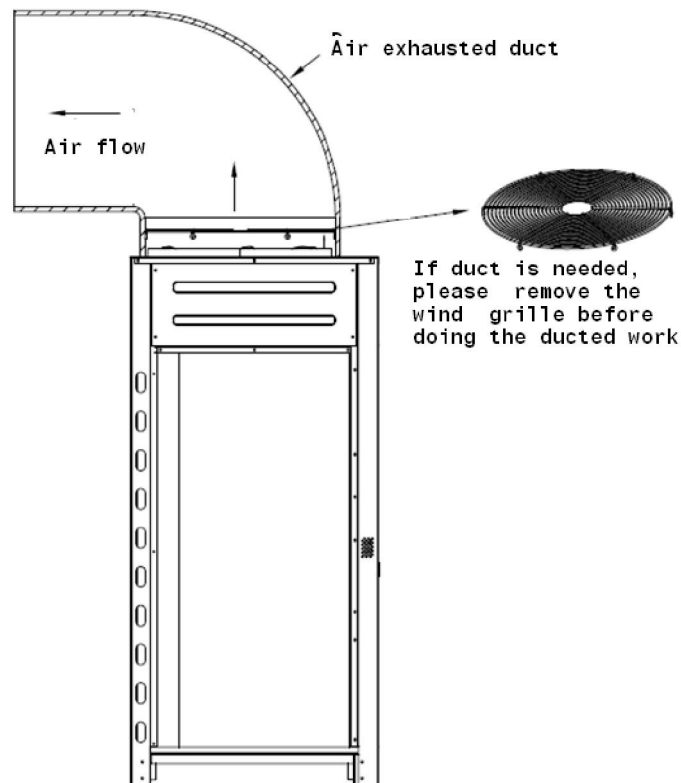
◇The foundation can be made of channel steel or concrete. Reserve the space for discharging the condensate water from outdoor units.



- ◇Install drainage channels to ensure condensed water flow out smoothly;
- ◇Try not to use four-square base to support outdoor unit; rubber anti-vibration pads are necessary to avoid vibration.



◇If the outdoor unit need to side out of the wind by ducting work , it is essential to remove out the wind grille



2.4 Installation of indoor unit (refer to the part of indoor unit)

3. Installation of refrigerant auxiliary pipe

3.1 Installation notice

◇ Please use seamless red copper auxiliary pipe.

◇ Ensure to fill nitrogen for protection when welding.

It's mandatory to fill purge nitrogen to prevent oxidation layer (Cu₂O) formed in copper Auxiliary pipe when welding, otherwise substantial oxidation layers will cause fatal failure of A/C system;

Foreign matters (oxides) will cause blockage of capillary tube or expansion valve, abnormal discharge temperature, poor cooling (no heating) capacity, and blocking cylinder of compressor. Mostly, foreign matters cause blocking cylinder of compressor by blocking the oil return hole of gas/liquid separator;

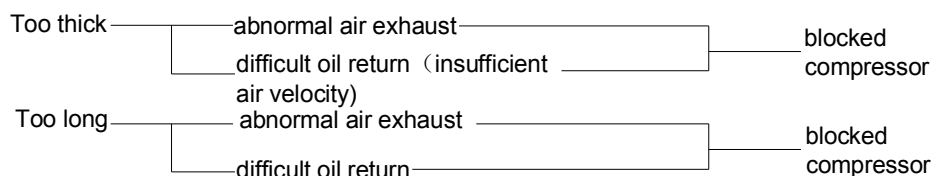
◇ When welding auxiliary pipe of the same diameter, you are required to expand the inside diameter at connection area with flaring tool, then butt and weld two Auxiliary pipes. It's absolutely prohibited butting and welding with flaring opening;

◇ Please purge with nitrogen or air before connection to remove dust and moisture inside auxiliary pipe; Don't install refrigerant Auxiliary pipe when it rains to prevent water ingress; Suspend and fix outdoor Auxiliary pipe to prevent water ingress;

Impact of water on system: blocking capillary or expansion valve, generating acid I ron/copper erosion due to refrigerant hydrolysis, generating foreign matter crystal (cage compounds) due to reaction of refrigeration oil;

Don't let dust or foreign matter such as concrete fragment, sand and copper slag ingress into the system;

◇ Specification of refrigerant Auxiliary pipe should be selected according to unit requirement



◇ Refrigerant auxiliary pipe should be fixed.

When running, refrigerant Auxiliary pipe will sway, expand or shrink, if unfixed, load will concentrate on certain part, resulting fracture of refrigerant Auxiliary pipe that should be fixed every 2~3m.

◇ Please lay out the Auxiliary pipe according to its orientation. Don't repeat bending and unbending operation over three times on the same position of Auxiliary pipe (because Auxiliary pipe will be hardened in this way);

◇ Auxiliary pipe bender must be used for auxiliary pipe bending. The curvature can't be too small, otherwise the auxiliary pipe may be bent and shrunken, affecting refrigerant flow;

3.2 Combination Ratio of Capacity

For VRF system, combination ratio of indoor unit and outdoor unit should meet the following requirement:

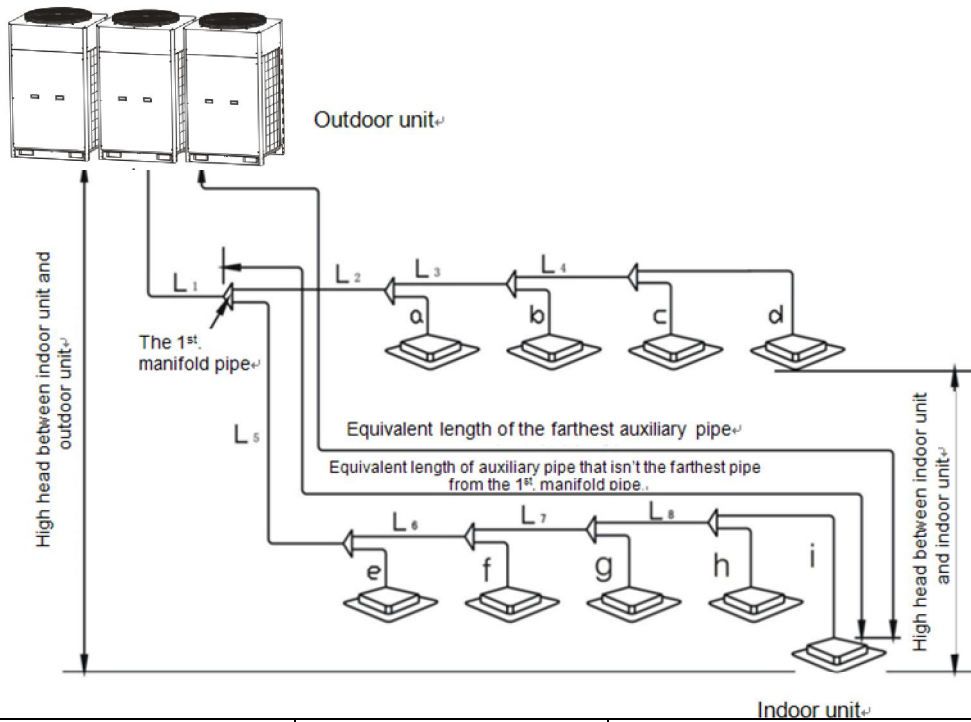
$$\frac{\sum \text{rated cooling capacity of indoor unit}}{\sum \text{rated cooling capacity of outdoor unit of one system}} \leq N\%$$

Note:

1. The recommended value of N% is not bigger than 100%. If indoor units not fully opened very often, value of N% can be up to 130%;
2. Maximum cooling capacity of unit is determined by the rated cooling capacity of outdoor unit;
3. If permitted, it's recommended to use less indoor units and shorter pipeline

3.3 Connection schematic diagram of auxiliary pipe

Connection Schematic Diagram of system



		Allowable value		Part of Auxiliary pipe
Length of Auxiliary pipe	overall length of auxiliary pipe (equivalent length)	<20HP	700m	L1+L2+L3+L4+L5+L6+L7+L8+a+b+c+d+e+f+j+h+i
		>20HP	1000m	
	Max. length between outdoor unit and fastest indoor unit	actual length≤165m		L1+L5+L6+L7+L8+i
		equivalent length≤190m		190
	Max. length between indoor unit and the first Y branch pipe	≤40m		L5+L6+L7+L8+i
	Difference of the fastest indoor unit to the closest indoor unit	≤40m		
Distance between outdoor unit and general branch pipe of outdoor unit	actual length		≤10m	
	equivalent		≤13m	
High head	level difference of indoor unit and outdoor unit	outdoor unit is at the upper part	70m	_____
		outdoor unit is at the lower part	90m	_____
	level difference among indoor units	15m		_____

Note:

Equivalent length refers to conversion length of parts such as elbow after considering pressure loss.
 Equivalent length: actual length of pipe + quantity of elbow × equivalent length of each elbow + quantity of oil trap × equivalent length of each oil trap

Elbow and oil trap recommend dimension list

Type Diameter of pipe(mm)	90° elbow(mm)	Oil trap(mm)
9.52	0.18	1.3
12.7	0.20	1.5
15.88	0.25	2.0
19.05	0.35	2.4
22.2	0.40	3.0
25.4	0.45	3.4
28.6	0.50	3.7
31.8	0.55	4.0
34.93	0.58	4.2
41.3	0.63	4.6
44.5	0.66	5.0

Example:

When actual length of 10HP outdoor unit is 80m, diameter of pipe is 25.40mm and 12 elbows & 2 oil traps are used, the equivalent length should be calculated:

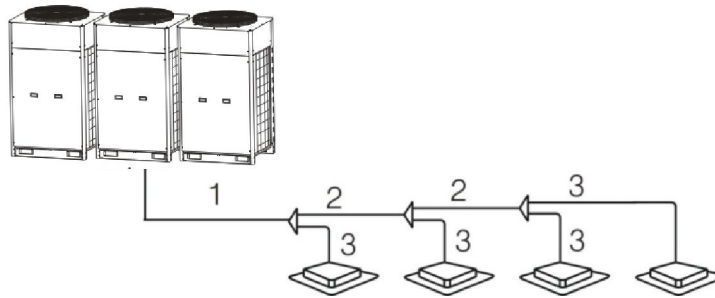
$$80+0.45 \times 12+3.4 \times 2=92.2(\text{m})$$

Note:

If there is relatively big high head of indoor and outdoor unit, "S"-shaped oil trap must be installed every 8~10m for vertical pipe.

3.4 Determination method of auxiliary pipe and branch pipe

◇ Selecting type of refrigerant auxiliary pipe



Type of Auxiliary pipe	Connecting parts	No.
Main Auxiliary pipe	between outdoor unit and the 1 st . branch pipe	1
	between branch pipe and branch pipe	2
Branch Auxiliary pipe	between branch pipe and indoor unit	3

◇ Diameter of auxiliary pipe 1 depends on auxiliary pipe specification of outdoor unit.

Model	Gas side(mm)	liquid side(mm)	The 1 st Branch pipe
ARV-H220/5R1M	φ22.2	φ12.7	AFG-12A
ARV-H280/5R1M	φ22.2	φ12.7	
ARV-H330/5R1M	φ28.6	φ12.7	
ARV-H400/5R1M	φ28.6	φ12.7	AFG-24A
ARV-H450/5R1M	φ28.6	φ12.7	
18<A≤24 HP	φ28.6	φ15.88	AFG-24A
24<A≤34 HP	φ34.93	φ19.05	AFG-34A
34<A≤50 HP	φ41.3	φ19.05	AFG-50A
50<A≤64 HP	φ47.6	φ22.2	AFG-64A

◇ Diameter of auxiliary pipe “2” depends on the total capacity of indoor unit connected to the Branch pipe.

Total capacity of indoor unit (HP)	Gas side(mm)	liquid side(mm)	selection of Branch pipe
0 <B≤2.2	φ12.7	φ6.35	AFG-00A
2.2<B≤4.0	φ15.88	φ9.52	AFG-00A
4.0<B<8.0	φ19.05	φ9.52	AFG-00A
8≤B≤12	φ22.2	φ12.7	AFG-12A
12<B≤24	φ28.6	φ15.88	AFG-24A
24<B≤34	φ34.93	φ19.05	AFG-34A
34<B≤50	φ41.3	φ19.05	AFG-50A
50<B≤64	φ47.6	φ22.2	AFG-64A

Note:

The 1st. Branch pipe should be based on total capacity of outdoor unit and other Branch pipes
Shouldn't larger than the 1st Branch pipe.

◇ Diameter of auxiliary pipe “3” depends on indoor unit.

Cooling capacity of indoor unit(kW)	Gas pipe(mm)	Liquid pipe(mm)	Remark
2.2	φ9.52	φ6.35	
2.8	φ9.52	φ6.35	Cassette and Ceiling & Floor unit: 12.7/6.35
3.6	φ12.7	φ6.35	
4.5	φ12.7	φ6.35	
5.6	φ12.7	φ6.35	
7.1	φ15.88	φ9.52	
8.0	φ15.88	φ9.52	
9.0	φ15.88	φ9.52	
10.0	φ15.88	φ9.52	
11.2	φ19.05	φ9.52	
12.5	φ19.05	φ9.52	
14.0	φ19.05	φ9.52	
15.0	φ19.05	φ9.52	

◇ Minimum wall thickness of auxiliary pipe should meet data of the following table.

Diameter of Auxiliary pipe (mm)	φ6.35	φ9.52	φ12.7	φ15.88	φ19.05	φ22.2
Minimum wall thickness (mm)	0.8	0.8	1.0	1.0	1.0	1.2
Diameter of Auxiliary pipe (mm)	Φ25.4	Φ28.6	Φ34.93	Φ41.3	Φ44.5	Φ47.6
Minimum wall thickness (mm)	1.2	1.3	1.5	1.5	2	2

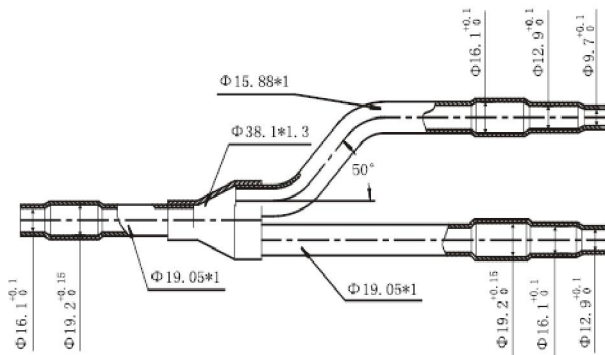
3.5 Type and physical dimension of branch pipe

Notice:

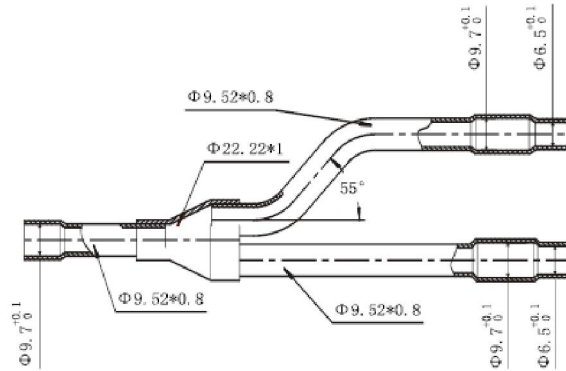
In addition to ensuring compliance with joint of main auxiliary pipe, it's allowable to select Branch pipe with similar specification as long as it meets pressure-proof requirement. It's required that no leaking at gas pressure of 4.5Mpa and no distortion and leaking at hydraulic pressure of 6.3MPa.

AFG-00A Physical Dimension

Gas side joint

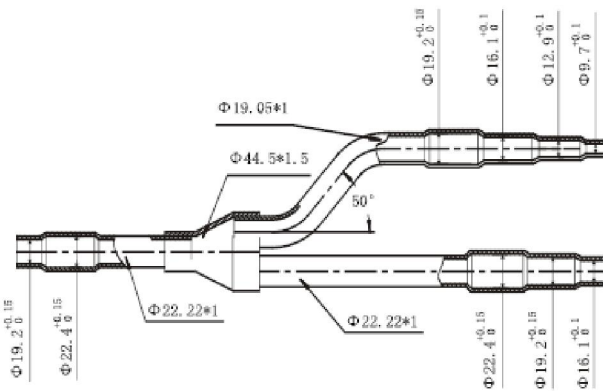


Liquid side joint

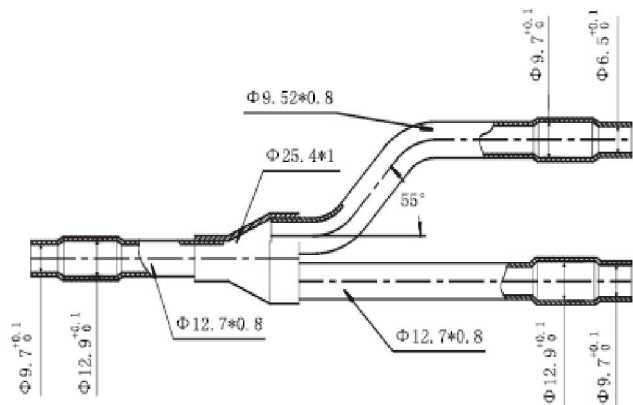


AFG-12A Physical Dimension

Gas side joint

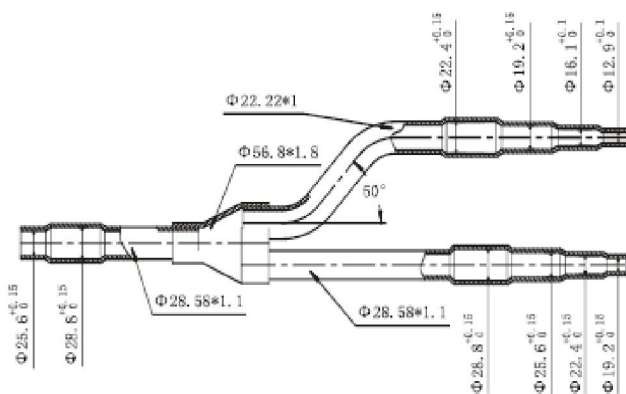


Liquid side joint

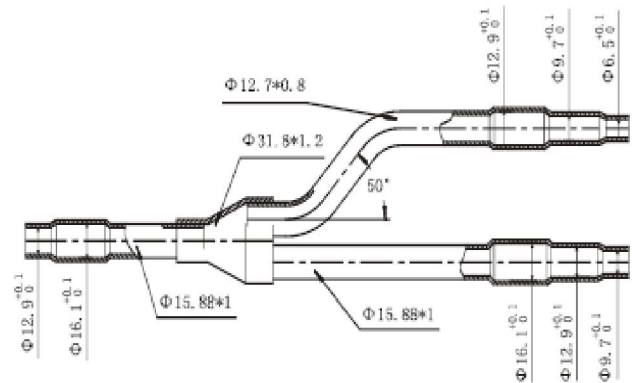


AFG-24A Physical Dimension

Gas side joint

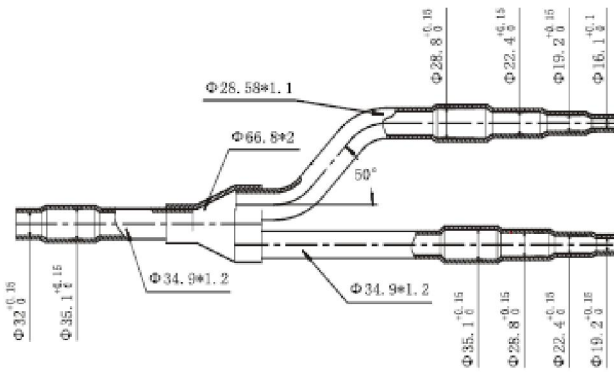


Liquid side joint

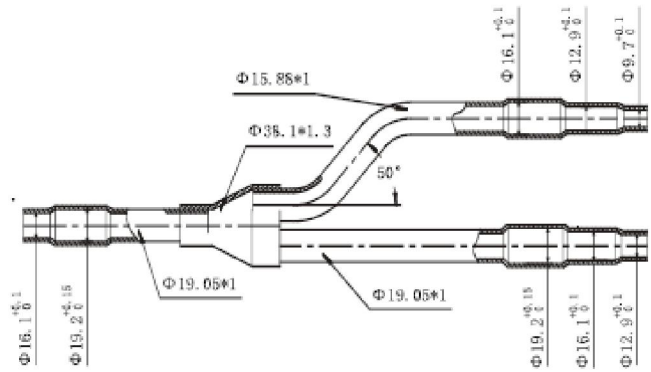


AFG-34A Physical Dimension

Gas side joint

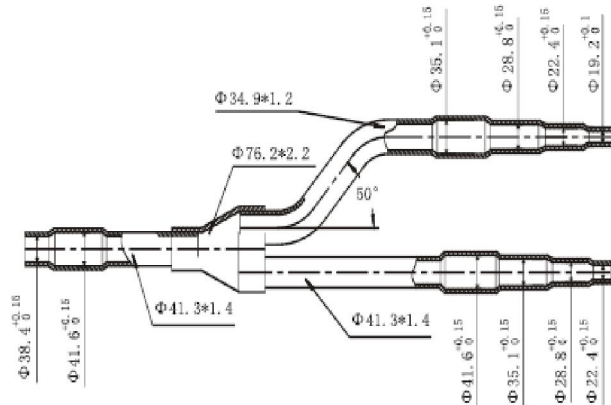


Liquid side joint

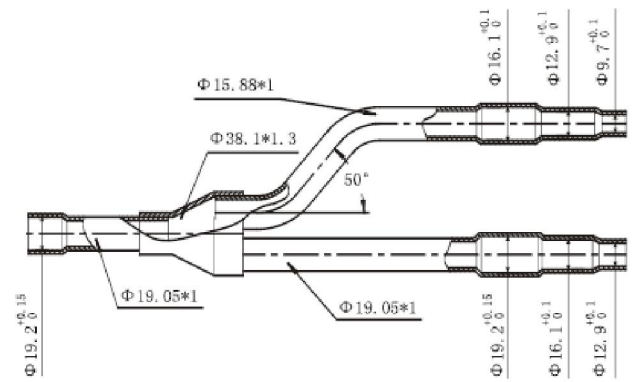


AFG-50A Physical Dimension

Gas side joint

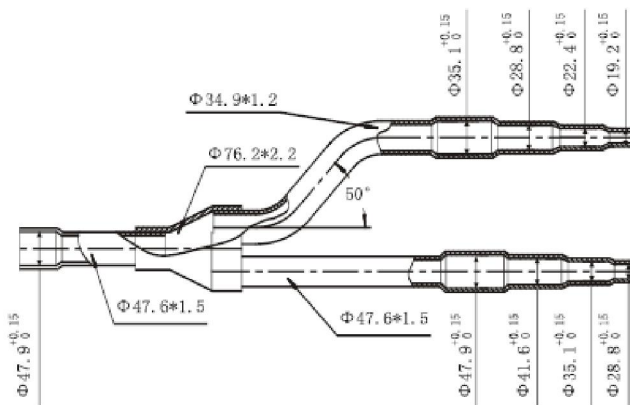


Liquid side joint

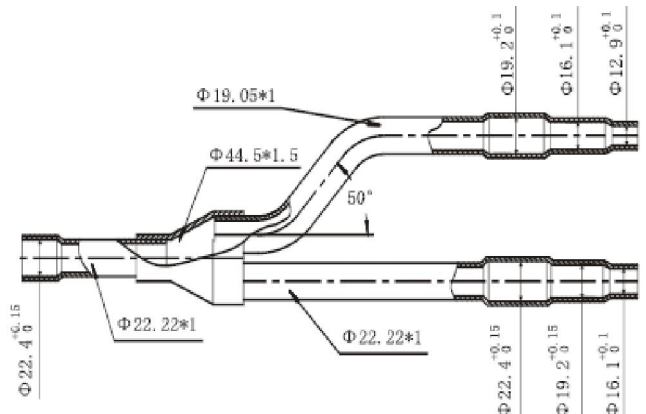


AFG-64A Physical Dimension

Gas side joint

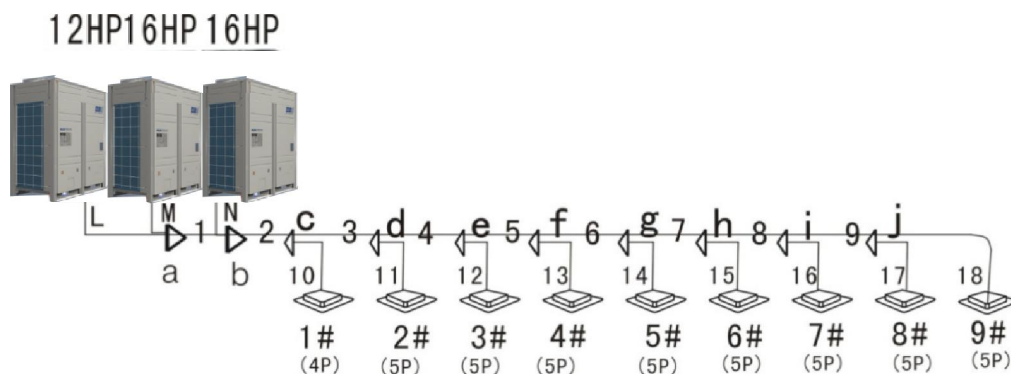


Liquid side joint



Example of auxiliary pipe design

Three modules combination of (12+16+16) HP is taken as the example to explain selection of auxiliary pipe.



Parallel connection of outdoor modules:

1. Pipe diameter of L, M and N depends on HP of corresponding outdoor unit, which is $\Phi 22.2/\Phi 12.7$ 、 $\Phi 28.6/\Phi 12.7$ 、 $\Phi 28.6/\Phi 12.7$ respectively.
2. Corresponding HP of 1 is “12HP +16HP =28HP” and its pipe diameter is $\Phi 34.93/\Phi 19.05$. Y-type branch pipe “a” should use the type of AFG-34A.
3. Pipe “2” is main pipe. Dimension of both pipe “2” and Branch pipe depends on total capacity of outdoor unit. Sum of total capacity of outdoor units is “12 + 16 + 16 =44HP”. Dimension of pipe “2” is $\Phi 41.3/\Phi 19.05$. Y-type branch pipe “c” should use AFG-34A and Y-type branch pipe “b” should use AFG-50A.

For indoor side:

1. Branch auxiliary pipes include 10~18 and the dimension is $\Phi 19.05/\Phi 9.52$.
2. Downstream indoor units of main auxiliary pipe “9” include 8# and 9#. Its HP sum is “5+5=10HP”. Dimension of pipe “9” is $\Phi 22.2/\Phi 12.7$. Branch pipe “j” should use AFG -12A.
3. Downstream indoor units of auxiliary pipe “8” include 7#, 8# and 9#. Its HP sum is “5×3=15HP”. Dimension of pipe “8” is $\Phi 28.6/\Phi 12.7$. Branch pipe “i” should use AFG -24A.
4. Downstream indoor units of main auxiliary pipe “7” include 6# ~ 9#. Its HP sum is “5×4=20HP”. Dimension of pipe “7” is $\Phi 28.6/\Phi 15.88$. Branch pipe “h” should use AFG -24A.
5. Downstream indoor units of main auxiliary pipe “6” include 5# ~ 9#. Its HP sum is “5×5=25HP”. Dimension of pipe “6” is $\Phi 34.93/\Phi 19.05$. Branch pipe “h” should use AFG -34A.
6. Downstream indoor units of main auxiliary pipe “5” include 4# ~ 9#. Its HP sum is “5×6=30HP”. Dimension of pipe “5” is $\Phi 41.3/\Phi 19.05$. Branch pipe “f” should use AFG -34A.
7. Downstream indoor units of auxiliary pipe “4” include 3#~9#. Its HP sum is “5×7=35HP”. Dimension of pipe “4” is $\Phi 41.3/\Phi 19.05$. Branch pipe “e” should use AFG -50A.
8. Downstream indoor units of auxiliary pipe “3” include 2#~9#. Its HP sum is “5×8=40HP”. Dimension of pipe “3” is $\Phi 41.3/\Phi 19.05$. Branch pipe “d” should use AFG -50A.

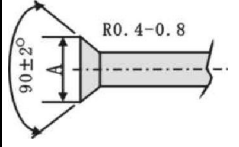
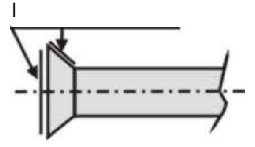
Note:

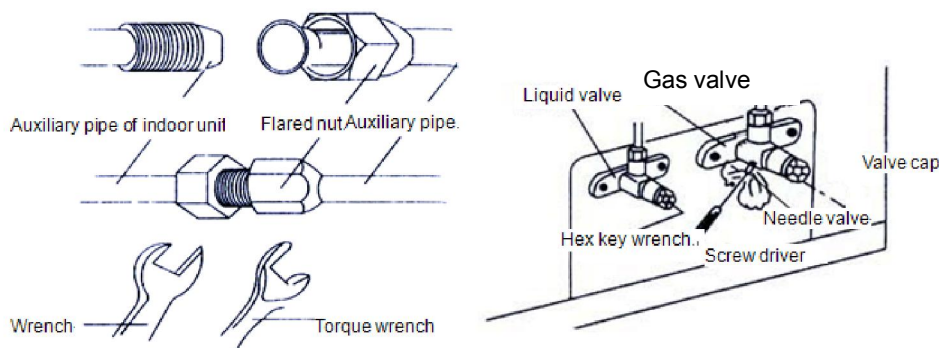
Y-type fitting “a” and “b” must be put horizontally, otherwise, uneven distribution of refrigerant will be caused.

3.6 Connection and Welding of auxiliary pipe

Requirement for flaring opening connection:

- ◇ Debur the auxiliary pipe before flaring, then flare auxiliary pipe with flaring tool as per the dimensions of flaring opening in the following table:
- ◇ Apply a thin layer of refrigeration oil on both inside and outside at the flaring part;
- ◇ Align flaring opening with threaded joint of indoor unit, manually and tightly screw flared nut, then screw with torque wrench as per the tightening torque in the following table.
- ◇ Remove valve cap on liquid valve and air valve of shutoff valve of outdoor unit, align flaring opening with shutoff valve of outdoor unit, sufficiently screw flared nut with hand, and then screw with torque wrench as per the tightening torque in the following table.

Diameter of Auxiliary pipe	Tightening torque	Machining dimension of flared section (A)	Shape of flaring opening	Apply oil
1/4in(φ6.35mm)	15-19 (N·m)	8.8-9.1mm		
3/8in(φ9.52mm)	35-40 (N·m)	12.8-13.2mm		
1/2in(φ12.7mm)	50-60 (N·m)	16.2-16.6mm		
5/8in(φ15.88mm)	68-80 (N·m)	19.2-19.6mm		
3/4in(φ19.05mm)	100-120 (N·m)	23.6-24mm		

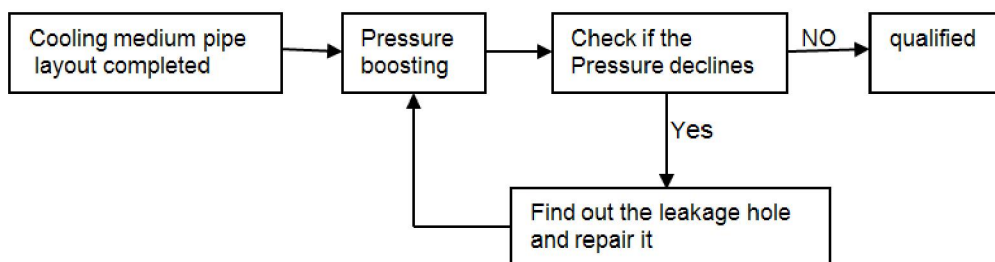


Requirement of welding connection:

- ◇ If welding connection method is used to connect auxiliary pipe and Branch pipe, you are required to weld before system connection and purge with nitrogen to prevent oxidation layer formed inside copper auxiliary pipe when welding.

3.7 Air Tightness Test

It aims to confirm if there is leakage in auxiliary pipe by using nitrogen and the steps are as follows:



Gradual pressurization test

According to each refrigerant system, do gradual pressurization test (nitrogen is required) on gas pipe and liquid pipe.

Phase 1: 3.0 kg / cm²; Pressurize at least 3 minutes; → Large hole may be found.

Phase 2: 15.0 kg / cm²; Pressurize at least 3 minutes; → Large hole may be found.

Phase 3: 43.0 kg / cm²: Retain the pressure for about 24 hours. → Small hole may be found.

Even if pressurize up to 43.0kg / cm², it's impossible to find small hole in very short time. Therefore, in phase 3, it's required to place for 24 hours to observe after pressurization.

Observe pressure drops.

It's necessary to correct if pressurized temperature is different from observed ambient temperature with difference of

0.1 kg / cm² per 1°C. Correction value =(pressurized temperature - observed temperature)x0.1

Example:

pressure is 43.0 kg/cm² and temperature is 25°C in case of pressurization.

After 24 hours, if pressure is 42.5kg/cm² and temperature is 20°C, it is deemed qualified.

Check leaking hole.

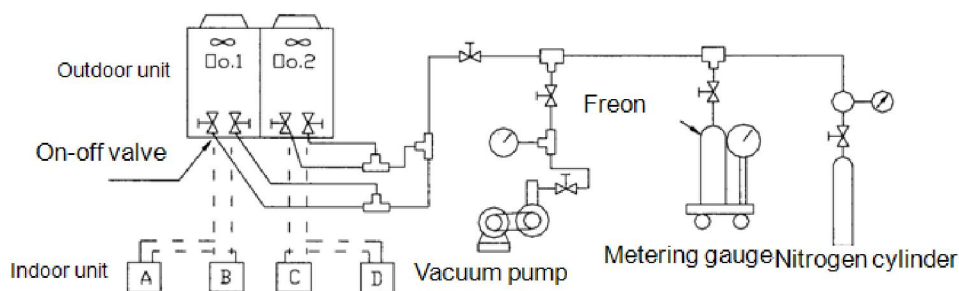
listening check: larger leaking hole can be found by listening.

Touch check: feel if there is leaking by putting hand at pipe joint.

Soapsuds check: bubble can be found at leaking part.

In order to find small leaking hole or pressure drop is found but leaking hole can't be found in pressurization test

- 1) Discharge nitrogen to the position of 3.0 kg/cm².
- 2) Charge fluorine (R410a) up to the position of 5.0 kg/cm² (namely the mixed state of nitrogen and fluorine)
- 3) Check with halogen lamp, butane gas(petroleum gas) detector and electric detector.
- 4) If leaking hole can't be found, recheck by continuously pressurize up to 28 kg/cm². (maximum pressure is 43 kg/cm²)



Note:

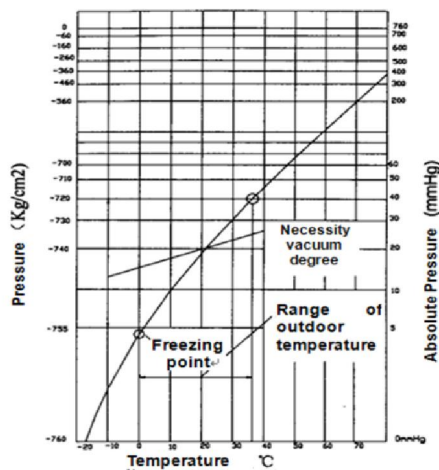
Super-long pipeline should be checked section by section.

1. From each indoor unit to each Auxiliary pipe well;
2. Standpipe inside each Auxiliary pipe well;
3. From each auxiliary pipe well to outdoor unit;
4. From indoor unit to outdoor unit as a whole.
5. After sir tightness test of the system is completed, it's preferable to reduce nitrogen pressure to 5~10 kgf/cm².

3.8 Vacuum Drying

Note:

1. The vacuum break shall use nitrogen to carry out. If use other gas mistakenly, it may cause explosion.
2. The vacuum drying adopts the vacuum pump to turn the water (liquid) in pipe to steam (gas) and discharge it to the outside pipe, and dry the pipe. Under the normal air pressure, the boiling point of water (steam temperature) is 100°C, but the pressure in vacuum pump pipe is near vacuum, this makes the boiling point lower to below the outside air temperature, and the water in the pipe is evaporated.



Water's boiling point(°C)	Pressure (mmHg)	Vacuum degree(mmHg)
40	55	-705
30	36	-724
26.7	25	-735
24.4	23	-737
22.2	20	-740
20.6	18	-742
17.8	15	-745
15.0	13	-747
11.7	10	-750
7.2	8	-752
0	5	-755

Example:

when the air temperature is at 7.2°C, the vacuum drying can be carried out under -752mmHg.

Selection of the vacuum pump

The following 2 points shall be noted in selection of the vacuum pump:

- ① Select the vacuum pump with prospected vacuum requirement (vacuum reaches -755mmHg)
- ② require the pumps with large exhaust capacity (around 40L / min or above).

Moreover, before operation, the vacuum meter shall be checked to ensure its measuring range can reach -755mmHg below. Lube oil rotating vacuum pump needs to change the lube oil every one or two month, and check the vacuum state.

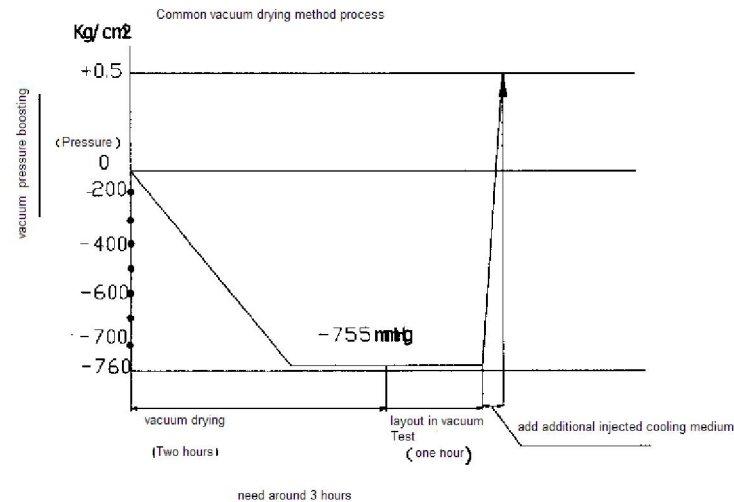
(Reference) The types and vacuum state of vacuum pump

Type	Exhaust volume in maximum vacuum state	Function	
		Vacuum drying	Exhaust
Oil lubrication pump shaft (with oil)	0.02mmHg 100L/min	Suited	Suited
Oil free pump shaft (without oil)	10mmHg 50L/min	Unsuited	Suited
	0.02mmHg 40L/min	Suited	Suited

Vacuum drying

For the methods of the vacuum drying, according to different environments, there are two methods can be selected.

1 common method operation



① Vacuum drying (at the first time)

connect the multimeter to the inlets of liquid pipe and air pipe, and operate the vacuum pump for 2 hours or more. (The vacuum state shall be below -755mmHg)

If the extraction lasts for 2 hours, but the vacuum state cannot reach -755mmHg below, then there exists water or leakage in the system, at this time, extraction will continue for 1 hour.

If the extraction lasts for 3 hours, and the vacuum state cannot reach -755mmHg , then check whether there exists leakage hole.

② Vacuum layout test

When the vacuum state reaches -755mmHg , lay out the vacuum dryer, if the vacuum meter value is stable, it means qualified; if the value rises then it means there is water or leakage hole.

③ Add additional refrigerant

Connect the refrigerant tank to the maintenance pipe of the liquid pipe to facilitate adding of the system need refrigerant.

④ Open all the open-close valves of the liquid pipes and air pipes

(Notes) vacuum extraction operation carries out in liquid pipe direction and air pipe direction (because there are all kinds of parts equipped in indoor unit, the process may interrupted).

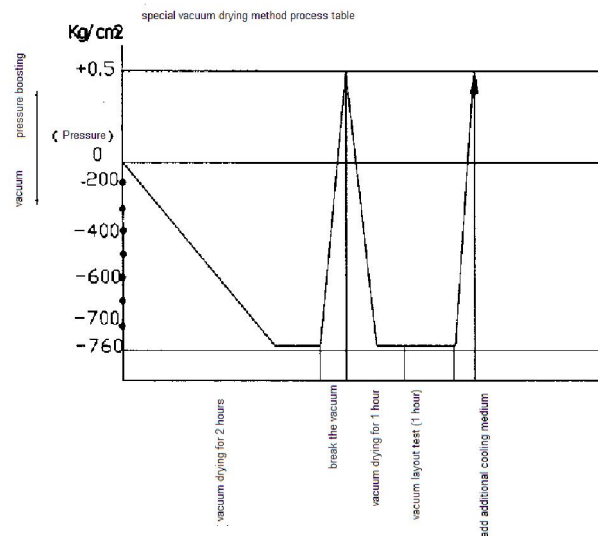
2 Special vacuum drying method

This kind of vacuum drying method is used in the condition that there is water mixed in the pipe. Such as When flushing refrigerant pipe, water is found.

When the project carried out in raining weather, there may be condensate in the pipe.

If the project last for a long time, there may be water enter the pipe.

In project, the rainwater may enter the pipe.



Method is that insert break the nitrogen vacuum work procedure for more than one time during common vacuum drying process.

Operation procedures:

- ① Vacuum drying (at the first time).....extraction for 2 hours
- ② Break vacuum (at the second time).....add nitrogen to 0.5kg/cm²
Since the nitrogen is a kind of drying gas, when breaking the vacuum, it can accomplish drying effect, but if there is lot of water, the drying effect is not complete. Therefore, in refrigerant project, water penetration and condensate in the pipe shall be specially noted.
- ③ Vacuum drying (at the second time).....extraction for more than 1 hour
Judgment: when reaches -755mmHg or below, it is qualified. If it cannot reach this value within 2 hours, then vacuum break ② and ③ shall be carried out repeatedly.
- ④ Vacuum layout test..... 1 hour.
- ⑤ Additional refrigerant injection
- ⑥ Open the open-close valve

4.Additional refrigerant and lubrication oil

4.1 Add refrigerant

Please add refrigerant as the following chart tell us on the basis of total length of connection pipe, the methods of adding refrigerant are as follows:

Diameter of liquid duct(mm)	L1(Φ25.4)	L2(Φ22.22)	L3(Φ19.05)	L4(Φ15.88)	L5(Φ12.7)	L6(Φ9.52)	L7(Φ6.35)
Additional amount of refrigerant (kg/m)	0.45	0.34	0.25	0.17	0.11	0.054	0.022

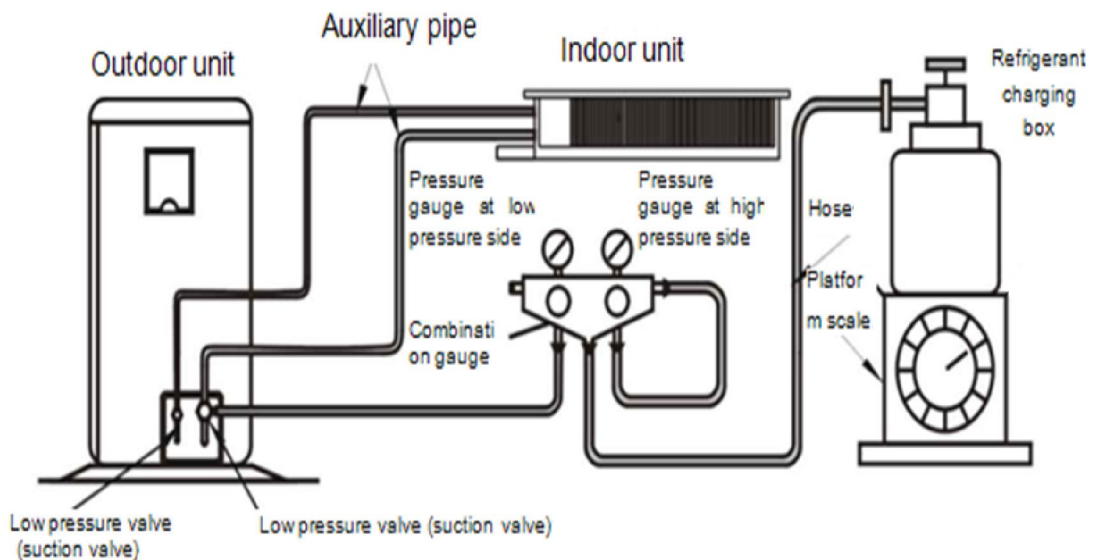
Additional amount of refrigerant = length of liquid pipe in refrigerant auxiliary pipe × corresponding additional amount of refrigerant for each meter of liquid pipe.

$$\text{Additional amount of refrigerant} = (L1 \times 0.45) + (L2 \times 0.34) + (L3 \times 0.25) + (L4 \times 0.17) + (L5 \times 0.11) + (L6 \times 0.054) + (L7 \times 0.022)$$

Note:

1. It must record the calculation result (better make a table);
2. To pour the liquid refrigerant into liquid duct from shut-off valve on side of liquid duct when it is completely dried;
3. It may pour the gas refrigerant into liquid duct from air duct through the operation of compressor on trial run, when refrigerant is not completely poured into;
4. It must measure the injection of refrigerant with electronic scale

Adding refrigerant method



4.2 Additional amount of lubrication oil

For a system (single module or multiple modules), when the average refrigerant of every module ≤20kg, it no necessary to add freeze oil, when the average refrigerant of every module >20kg, then add 1 kg refrigerant, and add 100 ml freeze oil at the same time.

Model	ARV-H250/5R 1MA	ARV-H280/5R 1MA	ARV-H330/5R 1MA	ARV-H400/5R 1MA	ARV-H450/5R1 MA	ARV-H450/5R1 MA
Specification of oil	FVC68D					
Refrigerant charge when leaving factory	3.5	3.5	3.5	4.5	4.5	4.5

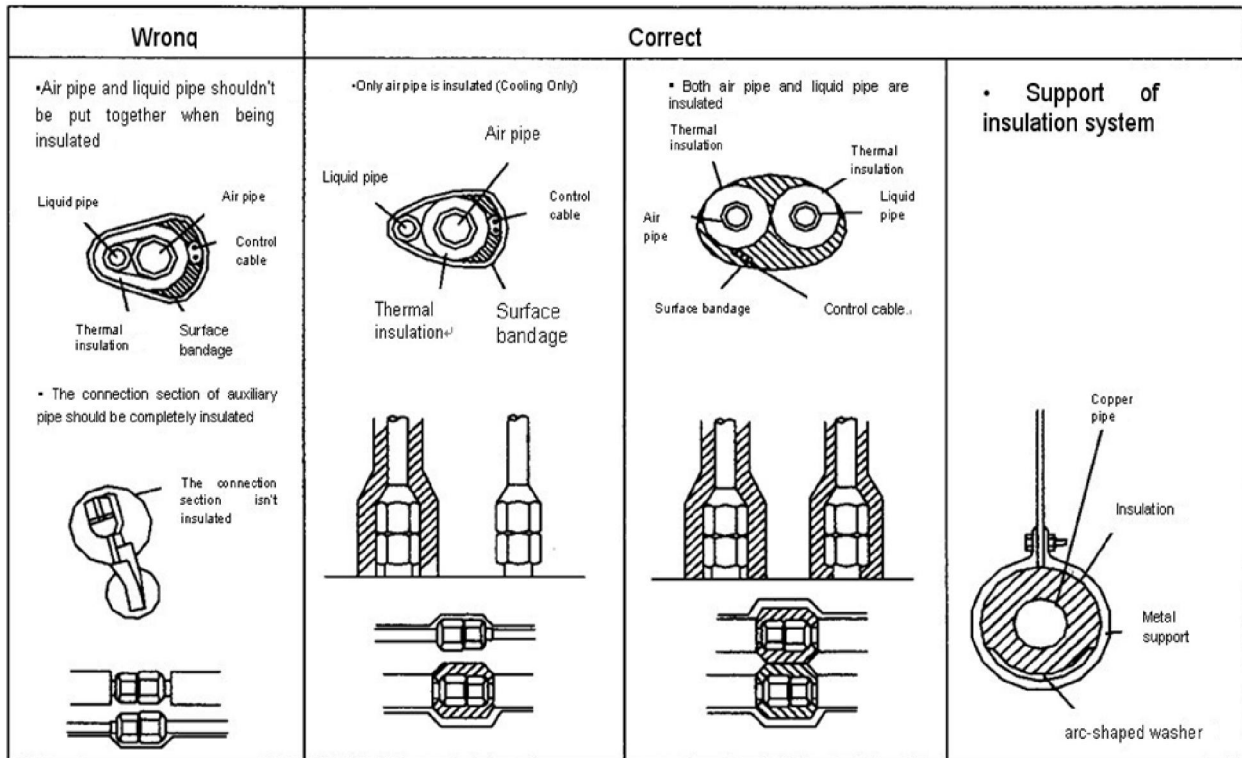
5. Insulation

Thermal insulation wrapping of auxiliary pipe

Thermal insulation materials should be used for drain pipe and auxiliary pipe to prevent condensation or water leakage.

Note:

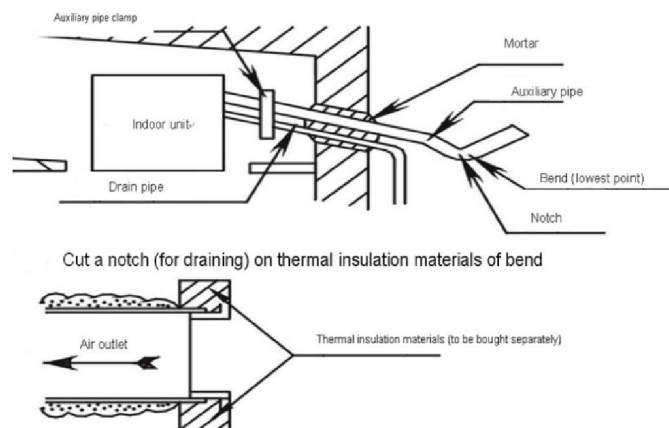
- ◇ Wrap auxiliary pipe with thermal insulation materials of good insulation performance ($>120^{\circ}\text{C}$).
- ◇ Notice for high-humidity environment: the A/C system is verified by condensation conditions test. However, it may subject to dripping if working in high-humidity (condensation temperature $>23^{\circ}\text{C}$) environment for a long time. In this case, please add the following thermal insulation materials:
- ◇ The thermal insulation materials should be glass fiber thermal insulation materials with 10~20mm thickness.



Sealing of Wall Opening

After installing auxiliary pipe and drain pipe, it's necessary to seal the gap among wall opening, Auxiliary pipe, drain pipe and electric wire with mortar or putty to prevent capacity degradation or water leakage caused by rainwater or foreign matter from ingressing into room and A/C system.

If outdoor unit is higher than indoor unit, it's necessary to bend auxiliary pipe to ensure the lowest point of auxiliary pipe is lower than wall opening and prevent rainwater flowing into room or A/C system along the tubing.



6. Electrical connection

Caution	All field wiring and components must be installed by a licensed electrician.
	Please separately design the special power of indoor units and outdoor units.
	Be sure to use a dedicated power circuit, Never use a power supply shared by another appliance. The connection fixing circuit installs all polar disconnecting device with contact gap above 3mm.
	The indoor units' power, creepage protector and manual switch connecting to the same outdoor unit must be general. All indoor units must be the same circuit, and must simultaneously on or off; otherwise, system life will seriously effect, and appear the situation not to solve.
	The communication line between indoor units and outdoor units please use 2 core shielded wiring, while don't use the multi core wiring without shielded affect, for the interference is reduced each other.
	Purchased wiring, parts and materials should be in compliance must comply with relevant local and national regulations.
	Air conditioning equipment should be grounded according to the relevant local and national electrical regulations.
	Don't switch on power supply before electrical operation. Maintenance operation should be conducted after switching off power supply.
	This is machine includes an inverter device. Connect earth and leave charge to eliminate the impact on other devices by reducing noise generated from the inverter device and to prevent leaked current from being charged in the outer hull of the product.
	Don't connect the ground wire to gas pipe, water pipe, telephone ground wires or lightning rod and other ground wires.
	Leakage protector, power switch and breaker must be installed on power supply to prevent electric shock accident.
	The specification of single-phase control board fuse is F3.15AL 250V,
	The specification of outdoor unit control board fuse is F6.3AL 250V;
	The specification of three-phase outdoor unit control board fuse is F3.15AL 250V,
	The specification of fan unit control board fuse is F10AL 250V.
	Reliable grounding is required, because electric shock will be caused by improper grounding.
Never install a phase advancing capacitor. As this unit is equipped with an inverter ,installing a phase advancing capacitor will not only deteriorate power factor improvement effect, but also may cause capacitor abnormal heating accident due to high-frequency waves.	
Notice	Electrical wiring must be done in accordance with the wiring diagrams and the description herein.
	Signal wire and power wire must be separated, and can't share the same wire. It's strictly prohibited connecting signal wire to heavy current.
	When connecting wiring and wire holder, use cable clamp to fix and make sure no exposure.
	Refrigerant piping system and wiring system of indoor and outdoor unit belongs to the different system.
	When power wire is parallel with signal wire, put wires to their own wire tube and remain proper gap
	Voltage discrepancy of power wire terminal (side of power transformer) and end voltage (side of unit) should be less than 2%. If its length could not be shortened, thicken the power wire. Voltage discrepancy between phases shall not pass 2% rated value and Current discrepancy between highest and lowest phase should be less than 3% rated value.
	Never connect the power supply in reversed phase. The unit can not operate normally in reversed phase. If you connect in inversed phase, replace two of the three phases.

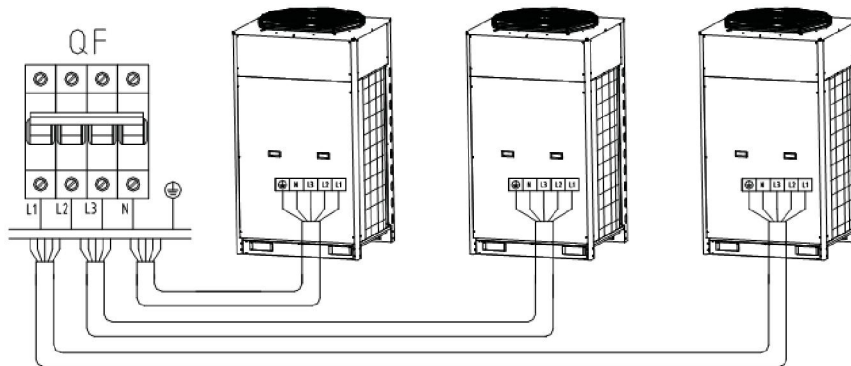
6.2 Electrical Wiring of indoor unit and outdoor unit (refer to the part of indoor unit and outdoor unit)

6.3 Wiring Diagram of Indoor Unit and Outdoor Unit

Note:

- Power line must be properly fixed;
- Each outdoor unit must be grounded;
- Each indoor unit must be grounded;
- Power line must be thickened when it is overlong.

Wiring Diagram of Modular Outdoor Unit



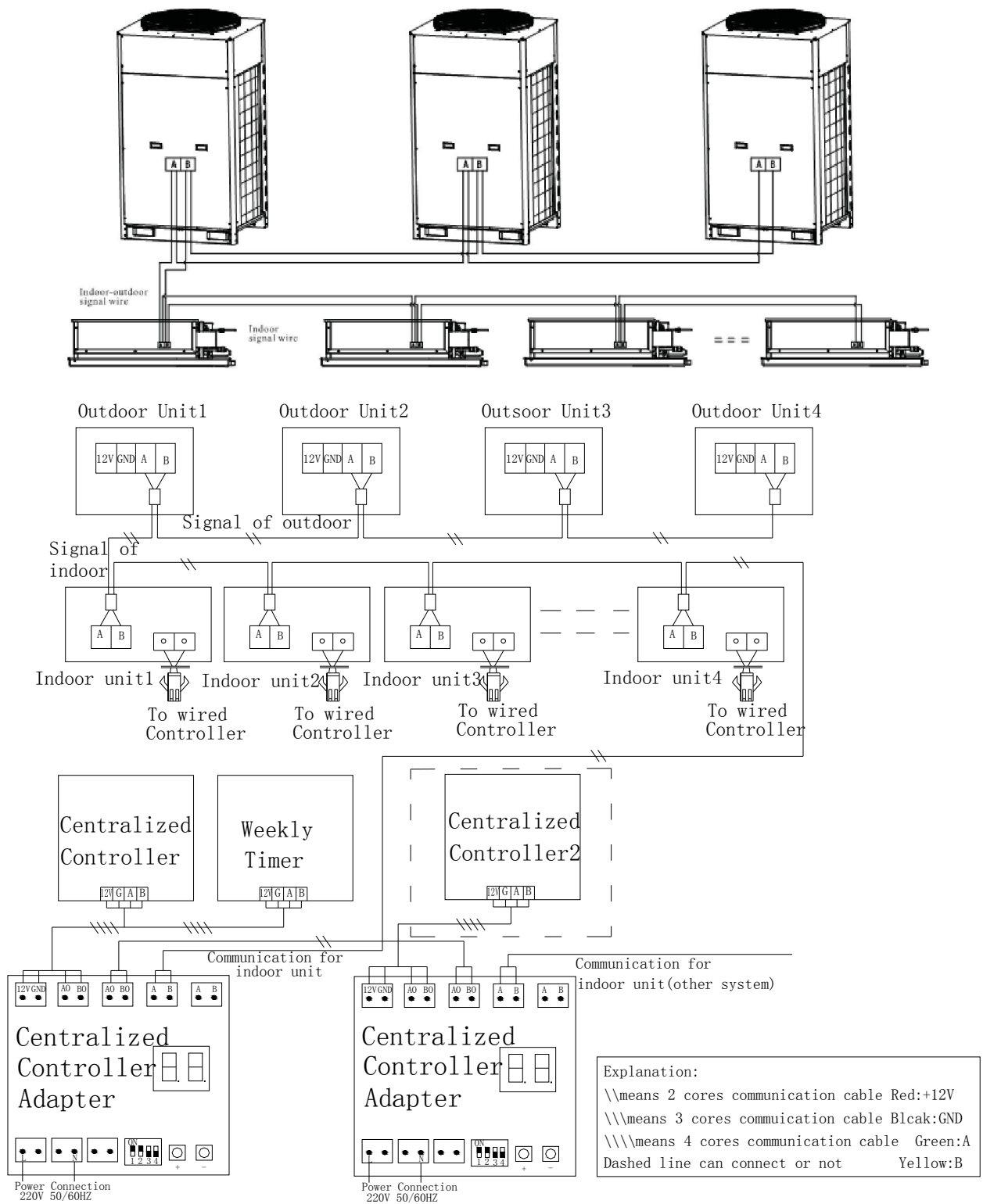
Recommended Specification for Power Line of Outdoor Unit (stand-alone power supply)

Item		Power supply	Sectional area of power line (mm ²)	Rated current breaker (A)	Rated current of creepage breaker Leakage current Operate time	Containing an area of ground wire(mm ²)
Unit Type						
separate power	ARV-H220/5R1MA	380V-415V 3N~ 50Hz	6	32	40 A,30mA, <0.1 sec.	6
	ARV-H280/5R1MA		6	32	40A,30mA, <0.1 sec.	6
	ARV-H330/5R1MA		6	32	40A,30mA, <0.1 sec.	6
	ARV-H400/5R1MA		16	50	70A,30mA, <0.1 sec.	16
	ARV-H450/5R1MA		16	50	70A,30mA, <0.1 sec.	16
	ARV-H500/5R1MA		16	50	70A,30mA, <0.1 sec.	16

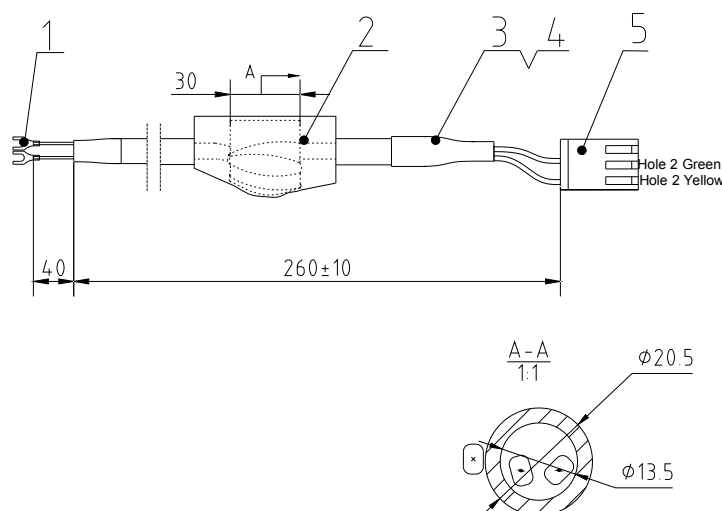
Recommended Specification for Power Line of Indoor Unit (separate power supply from outdoor unit)

Item		Power supply	Sectional area of power line (mm ²)	Rated current of over current breaker (A)	Rated current of creepage breaker Leakage current Operate time
Unit Type					
Separate power	<10 A	Single-phase 220-240V/ 50Hz	2.5	16	20 A,30mA, <0.1 sec.
	≥10 A and <15 A		4	20	25A,30mA, <0.1 sec.
	≥15 A and <22 A		6	32	40 A,30mA, <0.1 sec.
	≥27 A		10	40	50 A,30mA, <0.1 sec.

6.4 Communication Line Connection



6.5 Specification for Communication Line



Note:

- ◇ Currently, there are two length specifications as shown in the following table for indoor and outdoor communication line: L=10m and L=20m.
- ◇ Communication Line Specification of Indoor Unit and Wired Controller
- ◇ Sectional area of power cord is the minimum value, which should be enlarged to higher specification to prevent voltage drop in case of long power supply connecting line. If single double-layer wire is used, please choose Grade 1 cross-section specification and wrap with dedicated sheaths for electricians;

6.6 Wiring

- 1) Open electric controlled box cover of indoor unit, wire according to electrical schematic diagram on electric controlled box cover, firmly press connecting line on connecting terminal without loosening, ground wire must be connected at designated position.
- 2) Open cover plate of electric appliance on right of outdoor unit and wire according to electrical schematic diagram on backside of electric appliance cover plate.
- 3) Be noted to thread connecting line through tension disc and press firmly, wire end must be firmly pressed on connecting terminal without loosening and ground wire must be connected at designated position.
- 4) After wiring, properly bind connecting auxiliary pipe, connecting line and drain pipe with bandage as shown below:

Note:

1. Be noted that unit connecting line can't be put together with thermal insulation material and should be at least 20cm away from unit connecting pipe.
2. Don't flatten drainpipe when binding

6.7 Parameter setting (refer to the part of control system)

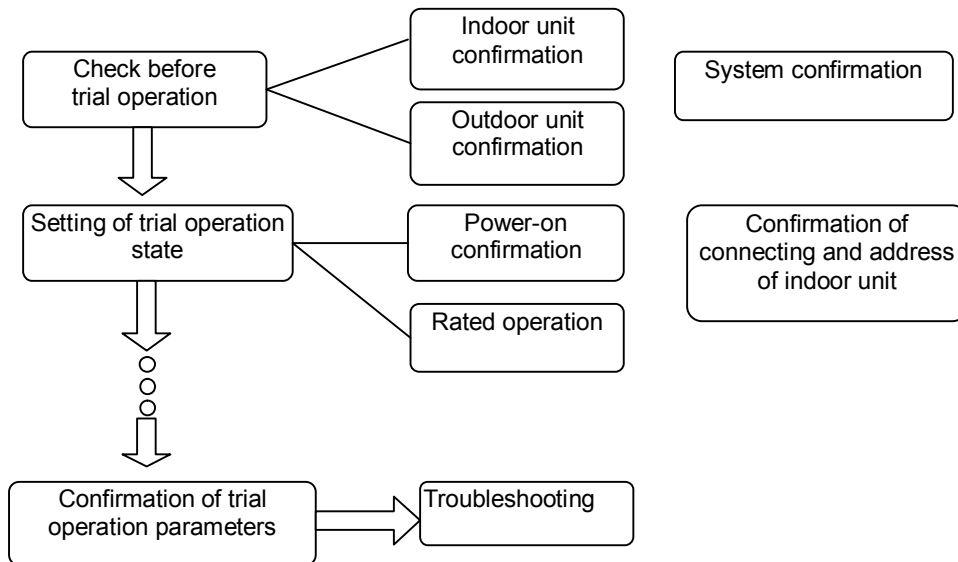
7.Commissioning

Note:

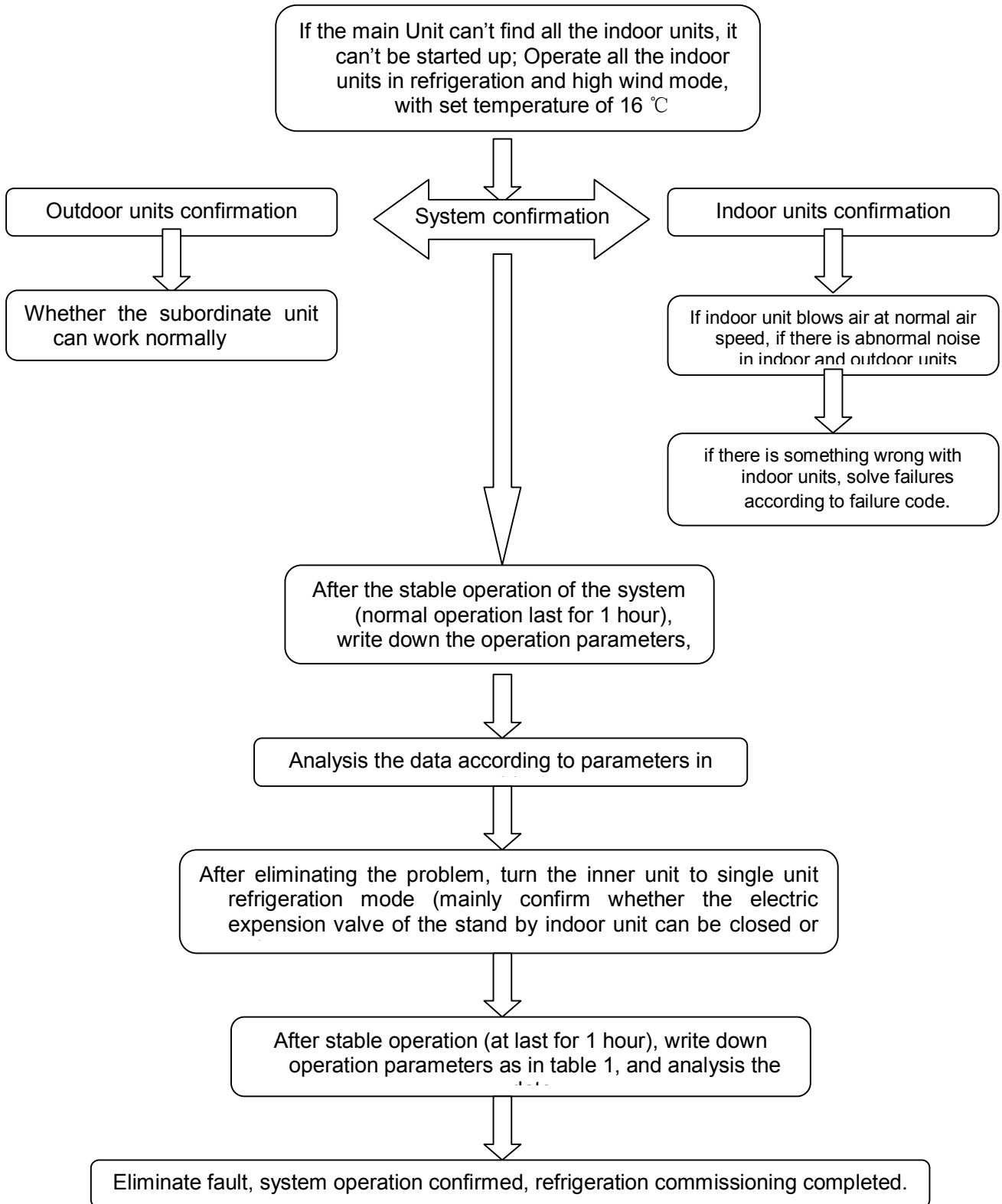
In winter, supply power 8 hours in advance for initial operation so that crankshaft case can be preheated in advance.

In winter, after main power supply is interrupted for 8 hours, conduct trial operation again only after 2.5 hours of power-on.

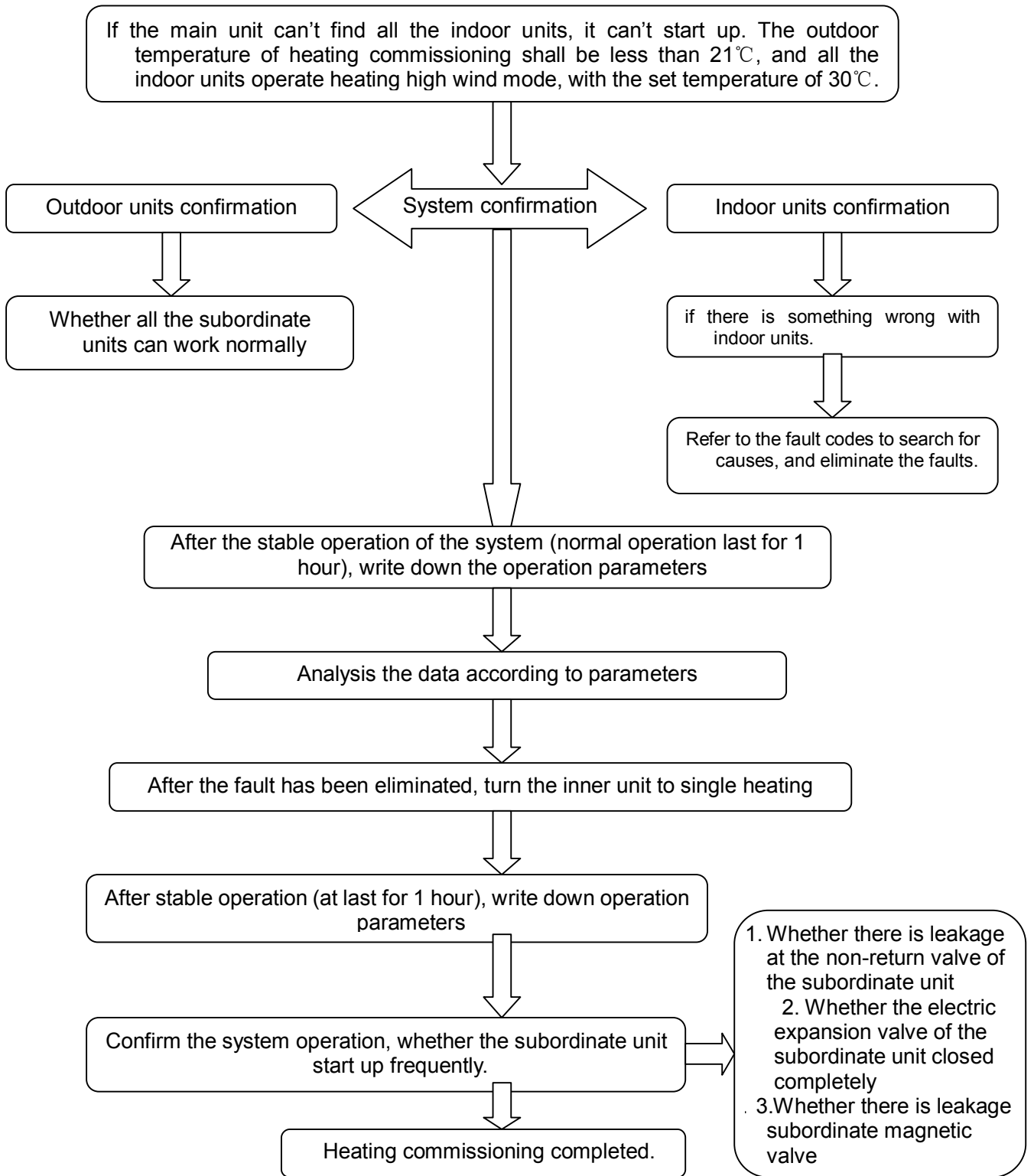
Commissioning procedure



Cooling Commissioning procedure



Heating Commissioning procedure



7.2 Check before Commissioning

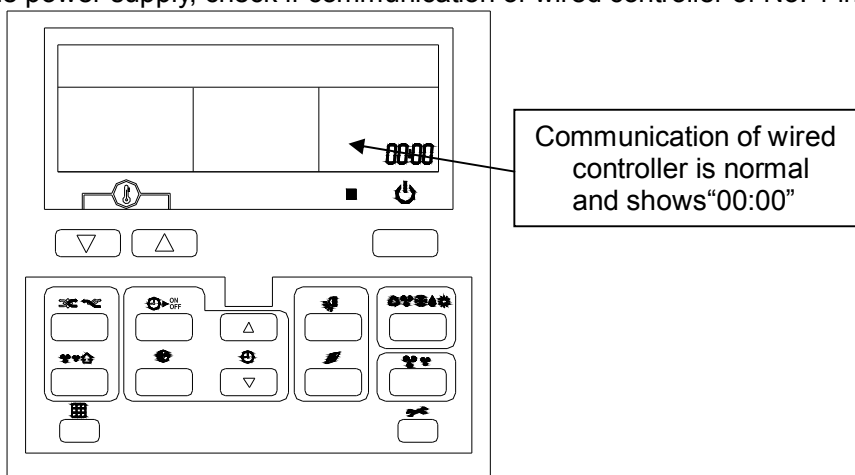
It's required to confirm the state of indoor and outdoor unit before trial operation to prevent failure of trial operation caused by improper installation.

No.	Items
Indoor unit	If indoor unit is integrated, if the position of electric appliance closure complies with factory inspection and if it is firmly fixed.
	Before switching on power supply, test resistance among live wire, naught wire and ground point of power supply terminal block with 500V megohm meter. The resistance must be above 1 megohm.
	Check if ventilation duct, air return duct and air port is smooth and clean.
Outdoor unit	If dial switch of outdoor unit electric controlled panel is correctly set and if capacity dial of outdoor unit is correct.
	Before switching on power supply, test resistance among live wire, naught wire and ground point of power supply terminal block with 500V megohm meter. The resistance must be above 1 megohm.
	If panel of indoor unit is restored.
Wiring	If all power lines of outdoor unit are installed in place and meet the specification required by technical documents.
	If all power lines of indoor unit are installed in place and meet the specification required by technical documents.
	Check power lines of indoor unit to prevent the following case: partial indoor units have experienced power failure, but power supply of other indoor units and outdoor units work normally and outdoor units are still in operation in the same system. Ensure using the same power supply for indoor units of the same system where possible.
	Spacing between heavy current and weak current of power line and communication line must be over 50mm to prevent bad communication.
EXV	if shut off valve of outdoor unit has been completely opened

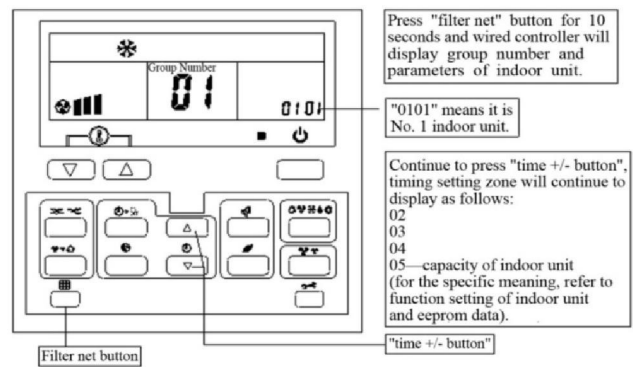
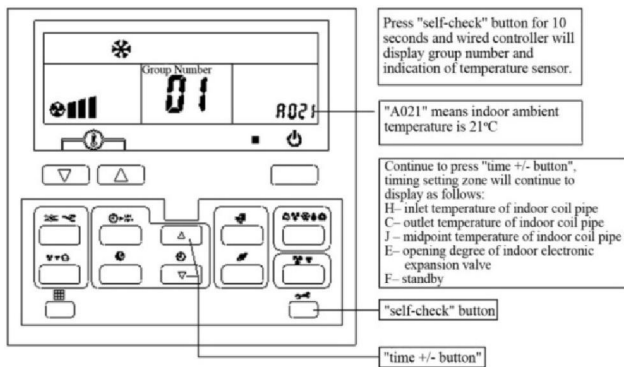
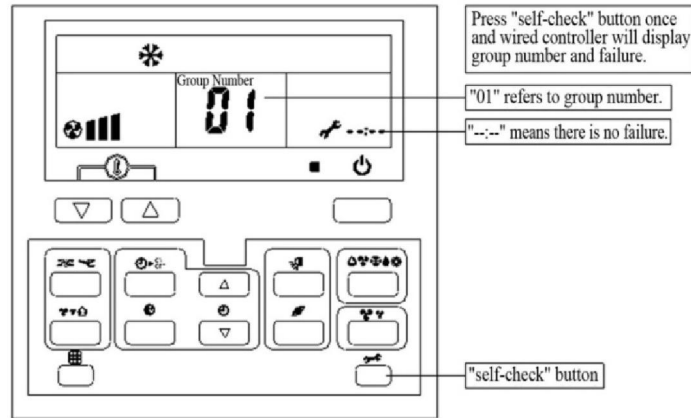
7.3 Example of Commissioning Based on Wired Controller

Connect one outdoor unit to four indoor units

- (1) After finishing wiring of indoor and outdoor units, connect communication line of wired controller and indoor units;
- (2) Switch on the power supply, check if communication of wired controller of No. 1 indoor unit is normal;



- (3) Open "cooling" mode for No. 1 indoor unit; after the unit is started, check if there is something wrong with No. 1 indoor unit by using wired controller, if temperature of indoor unit sensors is normal and if parameters of indoor unit are correct;



- (4) Switch to "heating" mode and observe in the same way as in step (3) if parameters are normal;
- (5) Set mode as "ventilation" (High fan speed) mode and observe if there is strong wind blown from indoors.
- (6) Open "Swing" button with remote controller and check if air guiding strip of No. 1 indoor unit swings normally;
- (7) Conduct trial operation for the other three indoor units one by one according to the above steps;
- (8) Switch to "cooling" mode and operate for 1h, observe if drainage is normal;
- (9) After confirming unit can operate normally, select "OFF" function to stop trial operation.

Indoor Unit List

Indoor units operation parameter abbreviation

Indoor units number; The biggest number is 64

No.	Operation Parameter Abbreviation	Detailed information
1	Pd	Discharge pressure
2	Ps	Suction pressure
3	Pd_t	Saturation temperature under discharge pressure
4	Ps_t	Saturation temperature under suction pressure
5	Tda	DC inverter compressor discharge temperature
6	Tdb	Fixed speed compressor 1# discharge temperature
7	Tdc	Fixed speed compressor 2# discharge temperature
8	Tcm	Temperature of middle point of condenser
9	Toilb	Oil temperature of fixed speed compressor 1#
10	Toilc	Oil temperature of fixed speed compressor 2#
11	Ts	Temperature of main suction pipe
12	Tao	Outdoor ambient temperature
13	Tci	Inlet temperature of plate heat exchanger refrigerant
14	Tco2	Outlet temperature of plate heat exchanger refrigerant
15	Tdef	Defrosting temperature of condenser
16	Tdef2	Defrosting temperature of condenser 2
17	Tfin	DC inverter compressor drive module temperature
18	Icm	DC inverter compressor running current
19	CT1	Fixed speed compressor 1# running current
20	CT2	Fixed speed compressor 2# running current
21	Ifan	DC inverter fan motor running current
22	COMPa	DC inverter compressor rotate speed
23	COMPb	Fixed speed compressor 1# rotate speed
24	COMPc	Fixed speed compressor 2# rotate speed

Continued From Previous Sheet

No.	Operation Parameter Abbreviation	Detailed information
25	Fan1Spd	DC inverter fan motor rotate speed
26	Fan2Spd	Fixed speed fan motor rotate speed
27	PMV1	Electronic expansion valve 1
28	PMV2	Electronic expansion valve 2
29	PMV3	Electronic expansion valve of subcooling
31	LP	Low pressure switch
32	HPc	Fixed speed compressor 2# high pressure switch
33	HPb	Fixed speed compressor 1# high pressure switch
34	Hpa	DC inverter compressor high pressure switch
35	PC	Manual control
37	COMPc	Fixed speed compressor 2# rotate speed
38	COMPb	Fixed speed compressor 1# rotate speed
39	CHh	Electrical heater of gas-liquid separator
40	CHc	Crankcase heater of fixed speed compressor 2#
41	CHb	Crankcase heater of fixed speed compressor 1#
42	CHa	Crankcase heater of DC inverter compressor
52	SVB	Oil return solenoid valve of fixed speed compressor
53	SVA	Oil return solenoid valve of DC inverter compressor
57	SV1	Unloading valve
58	SV0	Four-way valve
60	Process Sequence	Process sequence
61	Operation Process	Operation process
62	Operation Mode	Operation mode
63	Operation Priority	Operation priority
72	Outdoor Address	Outdoor address
73	Compressor Operation Time	Compressor operation time
74	Error Grade	Error grade
75	Diagnostic Code	Diagnostic Code
76	Frequency Adjusting Status	Frequency adjusting status
77	Frequency Limited Reason	Frequency limited reason
79	Fan Speed Grade	Fan speed grade
80	Type_outdoor unit	Type of outdoor unit
81	Capacity	Capacity
82	Firmware Edition	Firmware edition
83	Frmware Date	Frmware date
84	Output Percentage	Output percentage
85	INV Malfunction	DC inverter drive module malfunction
88	Aimed Output Ratio	Aimed output ratio
90	Mode Command	Mode command
91	Priority	Priority command
93	Process Command	Process Command
94	Sequence Command	Sequence command

Continued From Previous Sheet

No.	Operation Parameter Abbreviation	Detailed information
96	Output Percentage	Output percentage command
97	Start_COMa	Fixed speed compressor start command
98	Malfunction Command	Malfunction command
99	Compression Ratio	Compression ratio
101	Ics	DC inverter compressor busbar current
102	Vcs	DC inverter compressor busbar voltage
133	Operation Sequence	Operation sequence
134	Operation Process	Operation process
135	Defrosting Ratio	Defrosting ratio
136	Load rate_indoor	Load rate of inoor unit
137	TIME_oil return	Accumulation time of oli returning
141	Result_chargeing	Refrigerant charging result
142	Judge_chargeing	Refrigerant charging judging
144	Tset	Temperature setted
145	ON/OFF	Operation status
146	Running Mode	Running mode
147	Fan Speed	Fan speed
148	Swing Mode	Swing mode
161	Tai	Temperature of indoor ambient
162	Type_indoor unit	Type of indoor unit
163	Capacity	Capacity
164	Te2	Refrigerant inlet temperature of indoor coil in cooling mode
167	Te1	Refrigerant outlet temperature of indoor coil in cooling mode
168	User Authority	User authority
169	Rmd	Room card
170	Float	Float switch
173	Protection_C&H	Anti-freezing protection under cooling/ overheating protection under heating
174	Qut	Quiet Operation
175	Tem	Temperature of middle point of indoor coil
176	PG Fan Motor	PG fan motor
177	AC Fan Motor	AC fan motor
178	Swg	Swing
179	Pmp	Drainage pump
180	Htr	Electric heater
181	Hlt	Health function
182	PC	Manual control
183	Power_wired controller	Power supply for wired controller
184	SHS	Degree of superheat
185	Diagnostic Code	Diagnostic Code
186	Capacity Need	Capacity need
187	SCS	Degree of subcooling
189	Pulse_EXV	Electronic expansion valve open pulse







(3) Start cooling mode of indoor unit one by one. After units are started, observe indoor units according to monitoring software and actual situation.

No.	observe parameters of indoor and outdoor units	Normal State
1	if there is something wrong with indoor units	None
2	If indoor unit blows air at normal air speed.	It blows out cool air at set air speed.
3	if there is abnormal noise in indoor and outdoor units	no abnormal noise
4	if ambient temperature, inlet temperature of coil pipe, midpoint temperature of coil pipe and outlet temperature of coil pipe of indoor units are normal	Within the range of allowable error
5	if electronic expansion valve of indoor units is normal	Opening degree is available in case of startup. Expansion valve is normal and can be closed when the unit is closed.
6	if there is something wrong with outdoor units	None
7	if frequency and fan of outdoor unit are normal	it operates at automatic frequency and fan blows air.
8	if temperature sensor of outdoor unit is normal	Within the range of allowable error
9	if electronic expansion valve of outdoor units is opened	Opened, with opening degree

Part 5 Controller System

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1 Controller introduction

Remote Controller		Wired Controller		Centralized Controller	Centralized controller adapter plate
					
YK-F(set) (DLRG-YK-HCE1(F06SET))	YK-H YKR-H/009E	XK-05A XK03-DCZ-SYE1	XK-02A (DCZ-XK-RKC1)	DCZCC-XK-SYE1	232-485 converter Gateway Computer


Control component list

Type	Model	Function description
Remote controller	YK-F(set) (DLRG-YK-HCE1(F06SET))	More the following functions than general wireless remote controller add address setting function.
	YK-K (YKR-K/001E)	General wireless remote controller, none address setting function, with 2 swing, clock function, and etc.
	YK-H (YKR-H/009E)	General wireless remote controller, none address setting function, with back light display, clock function, and etc.
	YK-F (Q-YK-HCE1(F001))	General wireless remote controller, big screen and LCD display, none address setting function, with back light display, clock function, and etc.
Wired controller	XK-02A (DCZ-XK-RKC1)	With a directly connecting 10m display board wire, add setting address function. For the display board of indoor unit with wired control port. Control Max. 16 indoor units.
Centralized controller	DCZCC-XK-SYE1	With weekly timer. Control Max. 64 indoor units. Can control multiple refrigeration systems, but each refrigeration system must connect centralized controller adaptor and SMPS.
Centralized controller adaptor	Adaptor DCZ-ZJB-HCE1 SMPS HF10W-S-12	Centralized controller adaptor and switch-mode power supply. Accessories equipment of centralized controller.
Centralized Control Software		Control Max. 256 outdoor units and 4096 indoor units. Can control 64 refrigeration systems. but each refrigeration system must connect gateway. Whole control system must connect a 232-485 converter and a special computer.
Centralized Control Software Adaptor	232-485 converter Gateway Computer	Accessories equipment of centralized controller software.
Monitoring Software	AUX-ARV-monitoring	The central control monitor of outdoor unit. Can only control a refrigeration system. Monitor Max. 4 outdoor unit. Must connect USB-485 communication
Selection Software	AUX Project Express (AuxSelectionV1.08_)	Without password. Select branch pipe and copper pipe faster and more accurate.
Charge-by-household	To be continued	/
BMS system	To be continued	/

2 Remote controller



POWER button: Switch the unit ON/off.

MODE button: Select mode , push the button one time, then the operation modes will change in turn as Auto-Cooling-Dehumidify-Heating 

TEMP + button and TEMP - button: Temperature adjustment range: 16~32

FAN button: Change the fan speed will change in turn as: Low-Medium-High-Auto

SWING button: Press this button for the first time when operation, it will start the swing function. Push the button for the second time, cancel the swing function. (The function is available matched with the concerned unit)

TIMER/CLOCK button:

Clock Setting: Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When press the button for 5 seconds, the time display zone will flicker, then press **【+】** and **【-】** button and to adjust hour that uses 12-hour clock including “A.M.” and “P.M.” time; press the button again to complete the setting.

Timer setting: Press the button to set TIMER ON/OFF , press the button then “ON” will flicker on the display screen. then press **【+】** and **【-】** button and to adjust hour that uses 12-hour clock including “A.M.” and “P.M.” time; press the button again to complete the setting. The “OFF” setting is the same methods.

Remark: When setting functions such as mode, temperature, air port and air velocity, display screen displays all presetting parameters and remains constant; after reaching presetting time, air conditioner will automatically start as per presetting state.

After setting timing ON and OFF function, pressing button of **【Timer/Clock】** can cancel timing setting.

SLEEP button: Press the button to display sleep symbol and initiate sleep function; press the button again or press button of **【Power】** to cancel sleep function and sleep symbol will disappear.

3 Wired Controller



ON/OFF button: Switch the unit ON/off.

Mode button: Select mode , push the button one time, then the operation modes will change in turn as below: Auto-Cooling-Dehumidify-Heating 

Temp +/- button: Press the button can adjust temperature. Temperature adjustment range: 16~32°C

Fan button: Change the fan speed will change in turn as :Auto-Low-Medium-High-Auto

Swing button: Press this button for the first time when operation, it will start the swing function. Push the button for the second time, cancel the swing function. (The function is available matched with the concerned unit)

Health button: Press this button change to switch mode: Health mode.

Sleep button: Press the button to display sleep symbol and initiate sleep function; press the button again or press button of **【Power】** to cancel sleep function and sleep symbol will disappear.

Timer button: Press the button to set Timer ON/OFF, press the button then “ON” will flicker on the display screen. then press **【Clock +/- button】**and to adjust hour that uses 12-hour clock including “A.M.” and “P.M.” time; press the button again to complete the setting. The “OFF” setting is the same methods.

Remark: When setting functions such as mode, temperature, swing and fan speed, display screen displays all presetting parameters and remains constant; after reaching presetting time, air conditioner will automatically start as per presetting state.

After setting timing ON and OFF function, pressing button of **【Timer】** can cancel timing setting.

Notes:

1. Time sequence of timing ON and OFF determines the order of “Timing ON-Timer OFF” and “Timer OFF- Timing ON” . If the both are the same or either one is the same as time of current clock, it is invalid to press “Timer” button to confirm presetting time; after it reaches the presetting time, it will implement corresponding timing operation.
2. After setting time of timing ON and OFF, pressing “Timer” button can cancel timing.
3. Enter into time setting state of timing function; if there is no input related to time within consecutive 10 seconds, cancel the operation, return to previous state and go on with current time.
4. Default time of timer ON is 08:00 and default time of timer OFF is 18:00.

Clock +/- button: Normally display the clock set currently (display 12:00 for the first electrifying or resetting). When press the **【Timer button】** button for 5 seconds, the time display zone will flicker, then press **【Clock +/- button】** and to adjust hour that uses 12-hour clock including “A.M.” and “P.M.” time, press the **【Timer button】** again to complete the setting.

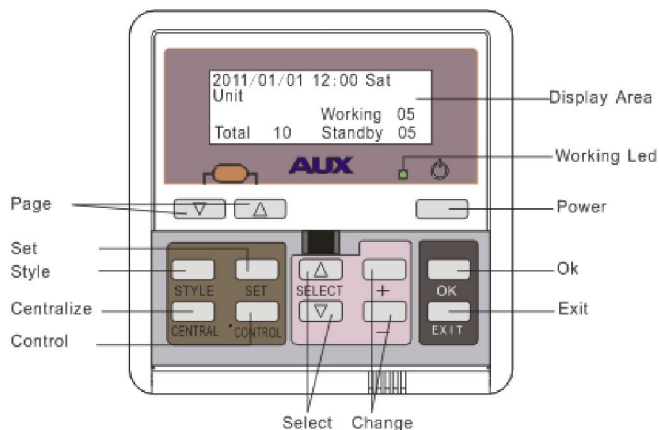
Filter Net button: When symbol of [Filter Net button] displays after wired controller receives “Filter” cleaning signal sent by indoor unit, press “Filter Net” button, “Filter Net” will go out and send filter cleaning reset signal to indoor unit; if [Filer] didn’t display, it will be ineffective in case of short pressing of filter button.

Self-check button: Press the button to display group number and failure code of this wired controller. (Failure code of wired controller for each unit displays for 3 seconds, then automatically exit after displaying failure state of the whole unit); Continuously press the button for 5 seconds, failure code will be cleared in the normal state.

Parameter setting

Parameter Query and Setting of Indoor Unit of Wired Controller please refer to “6 Parameter setting of indoor unit” of “Part 5 Controller”

4 Centralized Controller



(DCZCC-XK-SYE1)

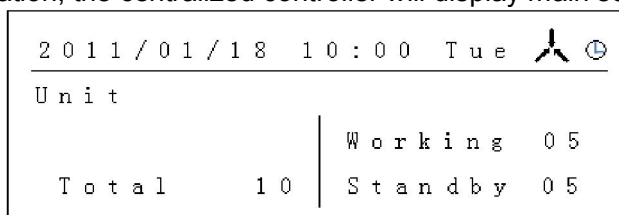
1. Centralized Controller function

- 1). Operation status of as many as 63 indoor units can be monitored, including wind speed, set temperature, etc.
- 2). Mode, air speed and temperature setting are possible for individual/zoned/all indoor units.
- 3). 3 operation modes are available: Last-in Preferred, Centralized Control and Lock;
- 4). The malfunctions of the indoor units can be monitored and saved for inquiry;
- 5). Timed on/off is possible by specifying the exact time or by weekly schedule.
- 6). Any number of centralized units can be zoned with as many as 63 indoor units set as one zone, so that units in the same zone will carry out the same operation. (As the factory default, a centralized group is considered as a zone)

2. Operating Instructions

Enter main screen

During the initialization, no key inputs are processed until the end of the preliminary communication. After the end of the initialization, the centralized controller will display main screen a:



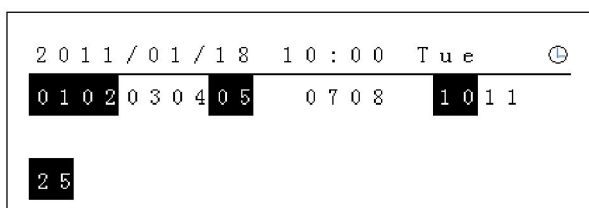
Main screen a Note ①

Switching between the main screen a, b and c is possible by pressing the “Style” key. The main screen a, b and c are collectively called the “the main screens”.

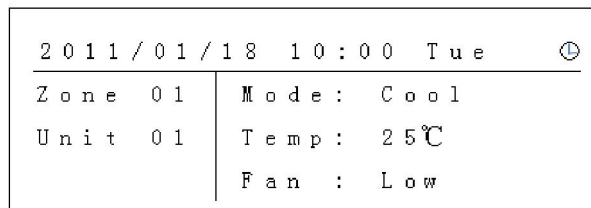
Main screen a: displays the statistic data for the operation of the networked units.

Main screen b: displays list of the networked units.

Main screen c: displays the function information of individual units.



Main screen b Note ①②



Main screen c Note③

Note

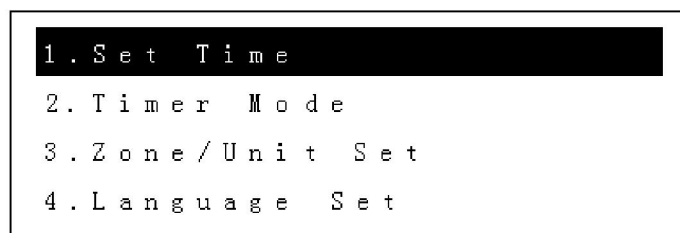
- ① When among all units, one or more are turned on, the operation indicator will light, otherwise, it will remain off.
- ② Reverse displayed numbers indicate the units that are currently on and normally displayed ones indicate those that are off. Numbers that are not displayed indicate the units that are either not exist or communicatively failed. Press “Page” key to view the next page.
- ③ Displays the information of the individual unit whose operation status is indicated by the operation indicator. Press “Page” key to view the information of the next unit.

Quick on/off

- ◇ When the operation indicator is on under main screen a and b, pressing “Power” key will turn off all units. When the operation indicator is off, pressing “Power” key will turn on all units .
- ◇ Under main screen c, pressing “Power” key will only switch the operation status of the unit that is currently selected.

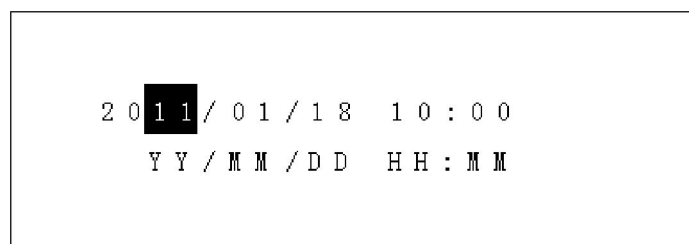
Set /change time

Under the main screens, press “Set” key to enter the page “ Set Manu”:



Page “Set Manu”

Select “Set Time” with the “Select” key , then press “Ok” to enter the page “ Time Setting ”.



Page “Time setting”

- ◇ Under “Time Setting” screen, switch between the items using the “Select” key. The reversely displayed item is the selected one . Change it using the “Change” key.
- ◇ Then, press “Ok” key to make the change effective and return to page “ Set Manu” .
- ◇ If the “Exit” key is pressed during making the change, you will return to the main screen without the change being effective.
- ◇ Pressing and holding the “Change” key for 2 seconds enables fast changing.

Timer Mode

- ◇ Under the main screen, press “Set” key to enter the page “Set Manu”. Then, select “Timer Mode” using the “Select” key. The timer mode that is currently selected will display on the right of the line. Using the “Change” key to select the desired timer mode. Then press “Ok” key to enter the corresponding page of timer mode.
- ◇ Under the page “Set Manu”, select “Timer Mode”, then select “No Timer” using the “Change” key to deactivate the timer function.
- ◇ The centralized controller support 3 timer modes: “Current”, “Daily” and “Weekly”. Only one timer mode can be activated at the same time.

a. Current/Daily Timing

Open	Time 1:	08:00
Close	Time 1:	17:00
Open	Time 2:	09:00
Close	Time 2:	16:00

Current/Daily Timing

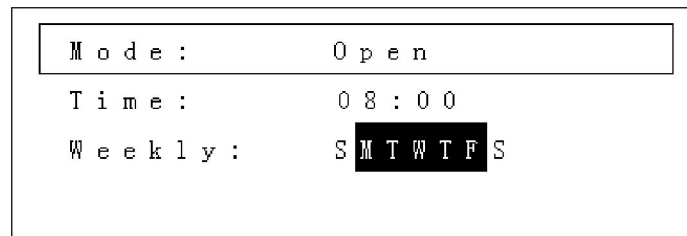
- ◇ Current and daily timer mode each has 4 timers with 2 designated for open and the other 2 for close.
- ◇ Switch between the timers using the “Select” key. The reversely displayed item is the currently selected one.
- ◇ Change the time of it using “Change” key. Pressing and holding the “Change” key for 2 seconds enables fast changing.
- ◇ All timers work at same time.
- ◇ Current timer works only for the current day , with the timer mode automatically switched to “No Timer”. The Daily timer always works.
- ◇ If two timers are of the same time but different types , the one that is set to close will be executed.
- ◇ If it is set to open and close the system at the same time, the close order will be executed.
- ◇ The timers are executed by time order. If the current status of the current unit is the same as the target status set by the timer, the timer will be automatically ignored.
- ◇ As exemplified in the above figure, the system is set to open at 8:00AM and close at 16:00 PM.

b. Weekly Timer

1. Open	08:00	SMTWTFSS
2. Close	17:00	SMTWTFSS
3. Not Used		
4. Not Used		

The list of weekly timers

- ◇ There are 8 weekly timers and the one with the frame shown is currently selected.
- ◇ “Open” and “Close” indicate the related timer is an open and close timer, respectively. “Not Used” indicates that the timer is invalid. “SMTWTFSS” indicate the day selection with each letter representing Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, respectively. The reversely displayed letter(s) indicates when the timer will work while the normally displayed one(s) indicates when it won’t work.
- ◇ As exemplified timer 1 is currently selected, timer 1 and timer 2 are activated, other timers are invalid. Thus the timing is as follows: The system is set to open at 8:00 AM and close at 17:00 PM from Monday to Friday each week. No operation on Saturday and Sunday.
- ◇ Switch between timer 1-8 using “select” key , with the selected one shown with frame. Now press “Ok” key to enter the change page of the corresponding timer and make desired settings.

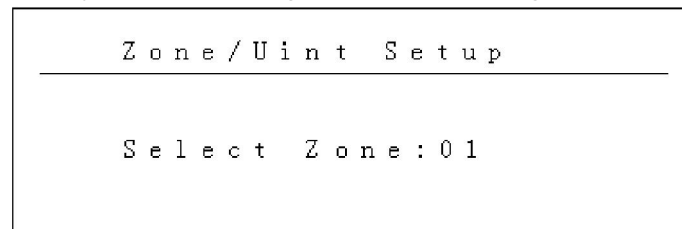


Change weekly timing

- ◇ The 3 lines are “Mode”, “Time” and “Weekly” respectively.
- ◇ The line with the frame shown is currently selected.
- ◇ The “Mode” line is to set whether the timer is activated or not and whether it is set to open or close the unit.
- ◇ The “Time” line is to set the work time of the timer.
- ◇ The “Weekly” line is to set the days on which the timer is activated with those days indicated reversely.
- ◇ Switch between the selected item using “Select” key , with the selected one shown with frame.
- ◇ Press “Change” key to make desired changes.
- ◇ After making all the changes, press “Exit” key to return to the previous screen. The setting is now finished.
- ◇ The operation of the other weekly timers are the same as the above. After making the changes, press “Exit” key to return to the main screen.

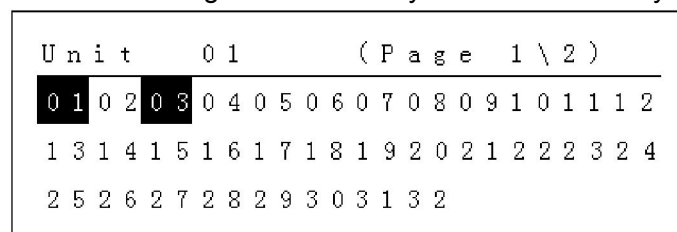
Zone/Unit Set

Under the main screen, press “Set” key to enter the page “Set Manu”. Then, select “Zone/Unit Set” using the “Select” key. Press “Ok” key to enter the page “Zone/Unit setting”.



Page “Zone/Unit setting”

Select the number of the zone to set using the “Select” key. Press the “Ok” key to distribute the members.

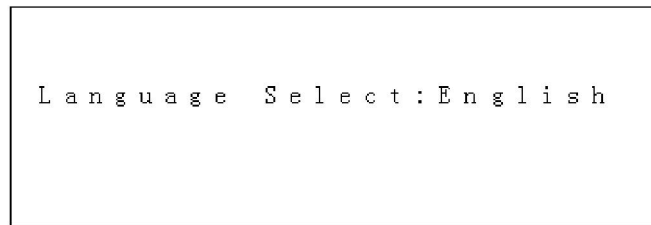


Page “Member Distribution”

- ◇ Under the page “Member Distribution”, select among the different unit numbers. The selected one will flash and the corresponding unit number will be displayed in the first line. Using the “Change” key to decide whether to join the current zone. The reversely displayed numbers belong to the current zone while the normally displayed ones do not belong to the current zone.
- ◇ Press “Page” keys to display other pages.
- ◇ After all members are set , press “Ok” key to finish the setting of the current zone.
- ◇ To set other zones, select the corresponding numbers and repeat the above operation.

Language Set

Under the main screen, press “Set” key to enter the page “Set Manu”. Then, select “Language Set” using the “Select” key. Press “Ok” key to enter the page “Language Setting”.

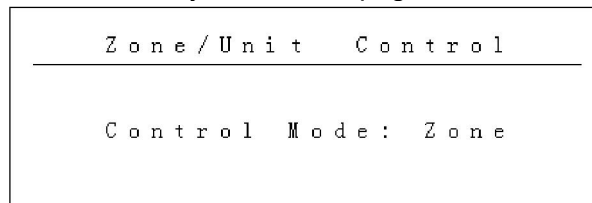


Page "Language Setting"

Under page "Language Setting", press "Change" key to select the desired language : Chinese or English. After selecting the desired language, press "Ok" key to activate that language.

Zoned Control

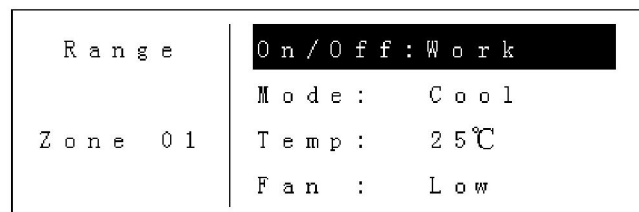
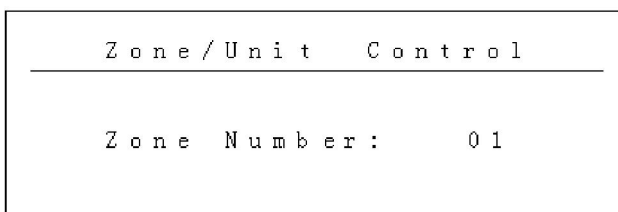
Under the main screens, press "Control" key to enter the page " Set Manu a":



Set Manu a

Under the page "Set Manu a", press "Change" key to select among the 3 control modes: "All", "Zone" and "Unit". After selecting the desired mode, press "Ok" key to enter the submenu.

Pressing "All" mode will directly open the page "Control Setting" and others will open the page "Set Manu b". Select the target code and press "Ok" to enter the page "Control Setting".





In the page "Control Setting", the items displayed on the left are the control targets and those displayed on the right are the specific controls. Press "Select" key to switch between the different items and change the controls using "Change" key. After changing the setting, press "Ok" key to make the change effective.

Centralized Control and Lock Functions

Under the main screen, press "Centralize" key to switch between the regular, centralized and lock modes. The upper right icon on the main screen indicates centralize status.

The icon is not displayed in the regular mode and the indoor unit is controlled in "Last-in Preferred" mode.

In the centralized mode, a  icon will display with the indoor unit run under the settings of the centralized controller, but the remote control and line control work for the open and close of the indoor unit.

In the lock mode, a  icon will display with the operation status of the centralized controller remain unchanged. The remote control and the line control do not work for the open and close of the indoor unit.

Failure Inquiry Function

Under the main screens, press and hold the "Style" key to enter the "Historical Failures Inquiry" screen.

F a u l t	(0 1 / 2 0)
<hr/>	
U n i t 0 1	
R e c e n t l y :	a 3
P r e v i o u s l y :	j 4

Historical Failure Inquiries

Under the page "Historical Failure Inquiry", press "Select" key to switch between the historical failures of each unit, with units that have no historical failures

For the meaning of the specific trouble code, refer to the technical manual of the unit.

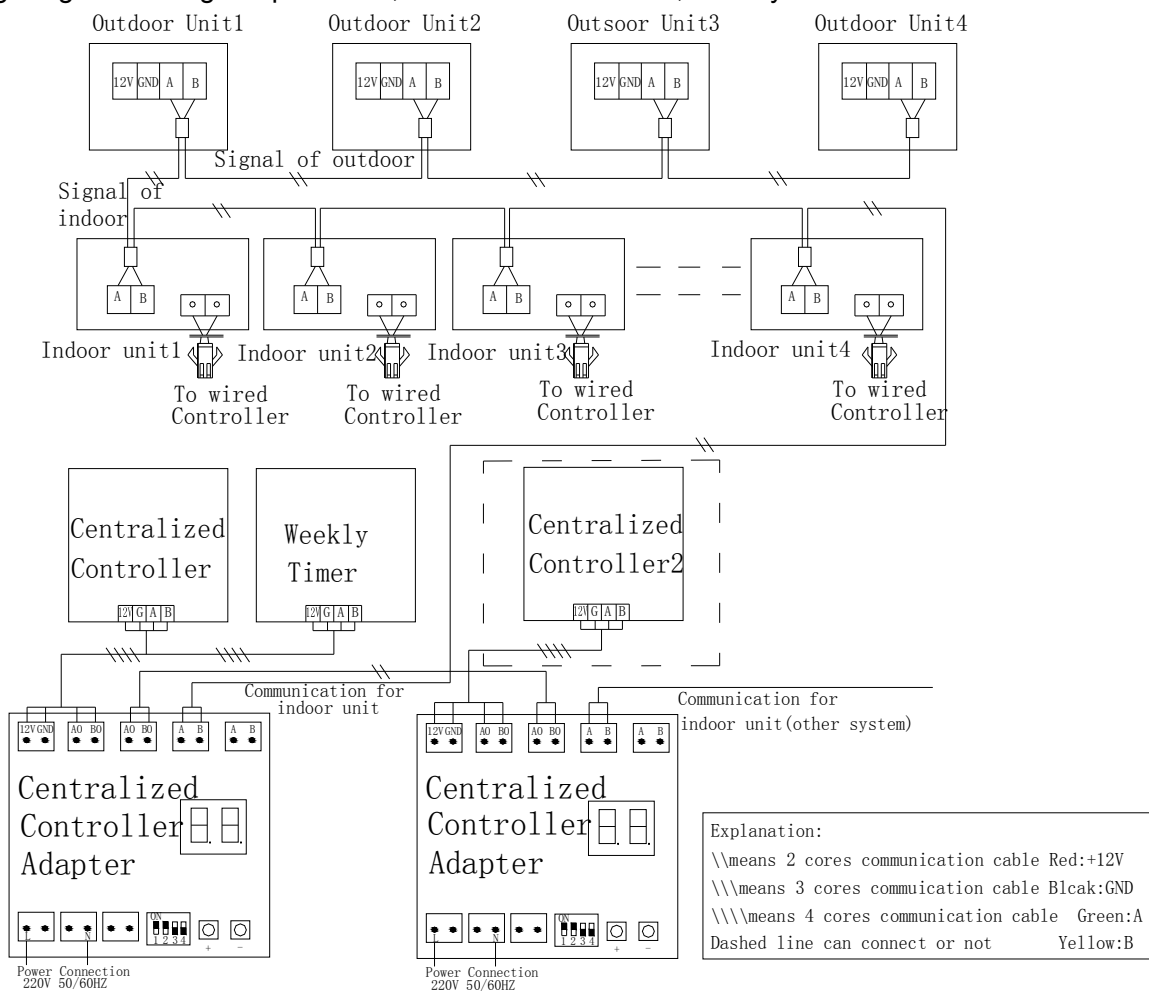
Accessory : Centralized Controller Adaptor

Function : Centralized controller adaptor is used with centralized controller together.

Wiring Diagram



Wiring Diagram among Adapter Plate, Centralized Controller, Weekly Timer and Monitor



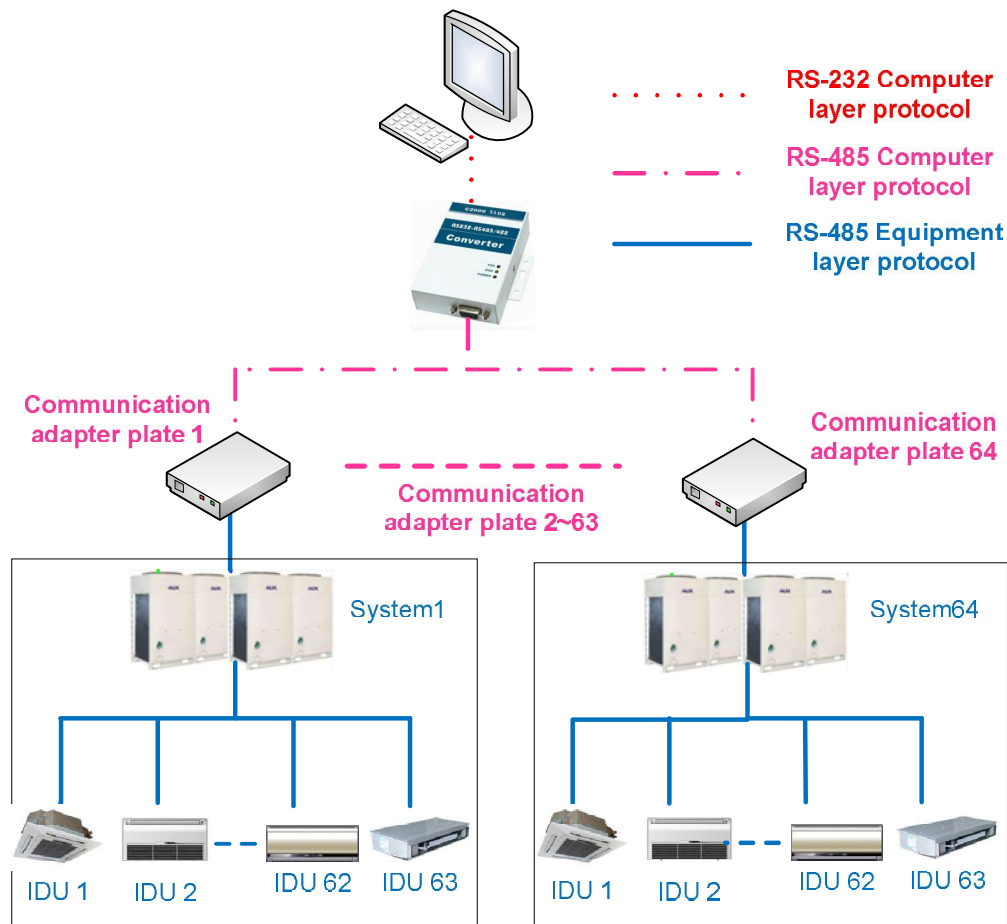
- (1) Connect to power supply of 220V.
- (2) Connect B and A with communication line of indoor unit;
- (3) Connect 12V, GND, BO and AO with communication line of centralized controller;
- (4) Connect BO and AO with communication line of the others adaptors.

5 Centralized Controller Software

5.1 System overview

DC inverter ARV units distribute complicated and dispersedly in buildings. It will adverse to centralized control, management and maintenance, if there has not a good centralized control system. To solve this problem, we develop a ARV centralized control system combine with electronic and computer technologies. Though the RS-485 network, this system can capture and control the function of all the ARV units in buildings. And information will be intuitive reflected in computer; these greatly facilitate users to control the units.

The overall structure of the system shown



5.2 Features:

- ◇ Users do not need to arrive the harsh environment of the site, they can monitor the function of units just through computer. These greatly improve convenience of daily management and the efficiency of central air conditioners;
- ◇ Centralized control can improve the efficiency of air conditioners. It is more energy-efficient and environmental ;
- ◇ Timely find the fault and save the maintenance cost of air conditioner units, minimize losses ;
- ◇ Timer function with multi-period week, fully automated schedule planning of unit;
- ◇ This system is suitable for all DC inverter ARV types of AUX;
- ◇ Each ARV unit can access at most 63 indoor sets;
- ◇ This system can access at most 64 ARV outdoor systems, it need to access repeater to increase RS485 network equipment if the outdoor systems are more than 64. The way of wiring is instructed in Engineering installation and wiring description;
- ◇ Every ARV unit need to configured a communication adapter plate;
- ◇ If PC has RS-485 interface, there is no need to configuration RS-232 to RS-485/422 Optically isolator.

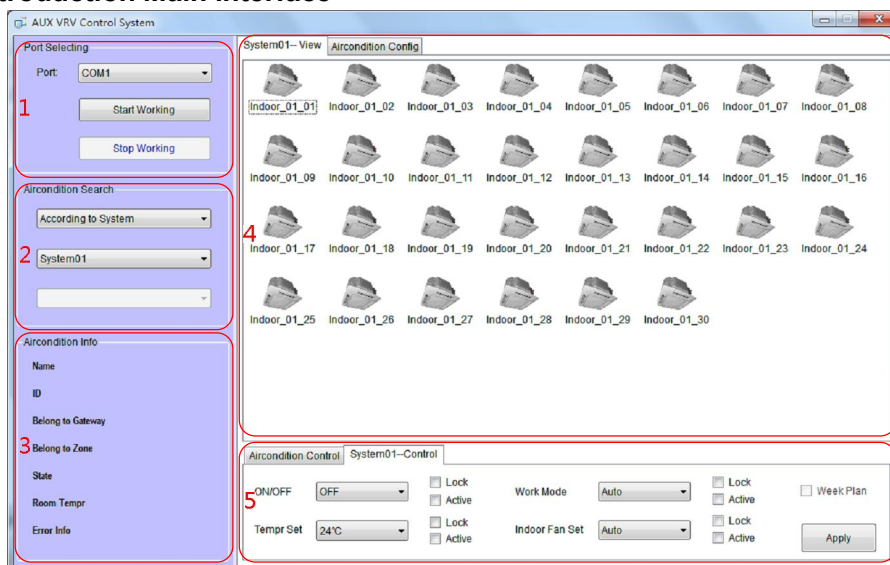
5.3 Main components of Centralized Controller System

No.	Main components	Required
1	PC	Operation system: Windows XP SP2 and above, Windows 7; Minimum hardware requirements: CPU:P4, 2.0GHz; Hard-disk space: 20G; RAM: 1G; Display:17 inches and above, resolution 1024*768 and above; Serial port: at least one normal work serial port; Others: ensure computer works independently on the system, no connection other network (Internet, Local Area Network).And remove or sealed the external input equipment, such as USB port, CD-rom (CD-rom can be removed after finishing installing the system), to prevent the invasion of computer virus; computer does not install other software which is irrelevant the system; equipped with UPS to prevent computer powered-off more than 1 hour,
2	RS-232 to RS-485/422 converter	
3	RS-485/422 Repeater	ARV System >64 sets must be used.
4	Communications adapter plate	

5.4 Software install and uninstall

- 1) Run setup.exe in CD to install;
- 2) If operation system has not installed Windows Install 3.1 and Windows .NET Framework 3.5,the installation program will install the two program first; when programs installation is completed, system installation will be continue, the default installation path is D:\Program Files\Aux Group\AUX_ARV_Setup.
- 3) uninstall:select [Control Panel- Add or Remove Programs -AUX_ARV_Setup],click"Cancel" to uninstall.

5.5 Software introduction Main interface



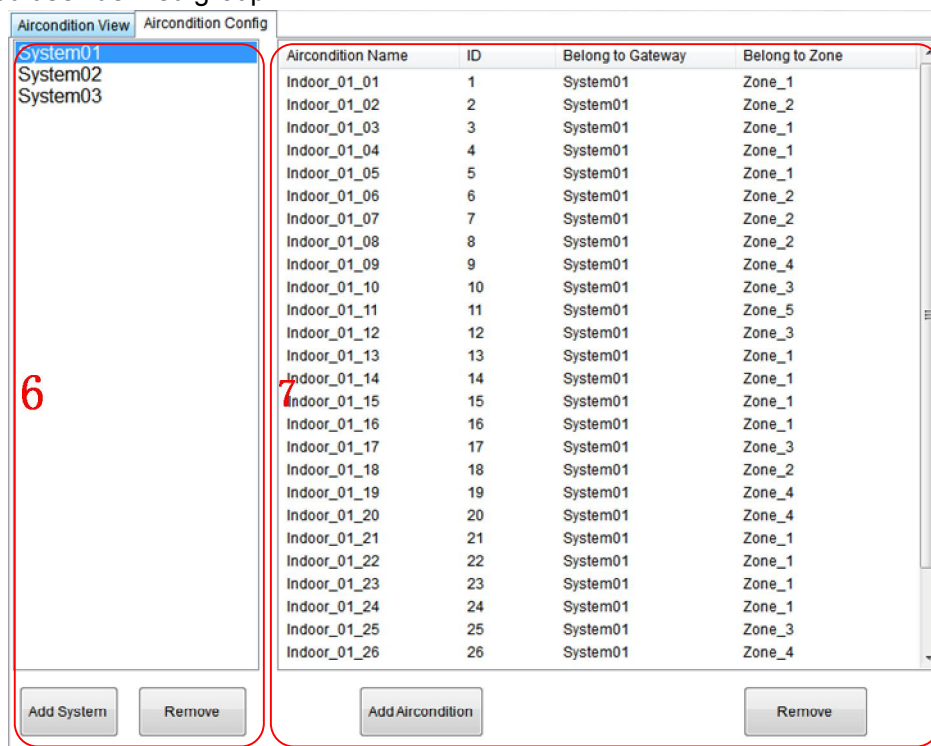
- Area 1 -- Serial setting area, choose the serial and press "Start Working button, system will in operation, press "Stop Working" button, system will stop working;
- Area 2 -- The inquire area for air conditioner unit, it can be divided into the system inquire and user-defined group inquire, the inquired unit will be displayed in area 4.
- Area 3 -- Display area of single air conditioner indoor unit, select one of indoor units in area 4, then the area will display the name, ID (address of indoor unit) , system belonged ,group belonged, current condition, the room temperature of indoor unit , failure etc.

Area 4 -- Display area of air conditioner group, as shown in above picture, it displayed all the indoor unit in the group System01.

Area 5 -- Control area of air conditioner, it can control one single air conditioner and some air conditioner group, this will be described in detail later.

5.6 System initial setting

click "Air condition Config" in area 4, it will enter the interface of system initial setting. Initial setting is divided into 3 parts: added/removed outdoor unit system, added/modified/removed air conditioner, add/changed user-defined group.



◇ Added/removed outdoor unit system

Area 6 shown in the figure above is the operation area of added/removed outdoor unit system. The quantity of outdoor unit system of the whole project must match with the added one in figure 6, and the centralized control address (the address displayed on communication adapter plate)of every system must correspond with the system serial number.

Note:

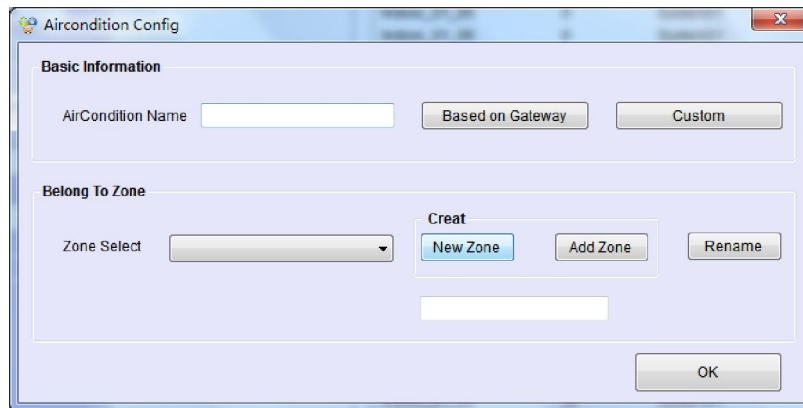
If the outdoor unit system deleted, the indoor unit belonged in it will also be delete! Please handle with care.

◇ Added/deleted indoor unit

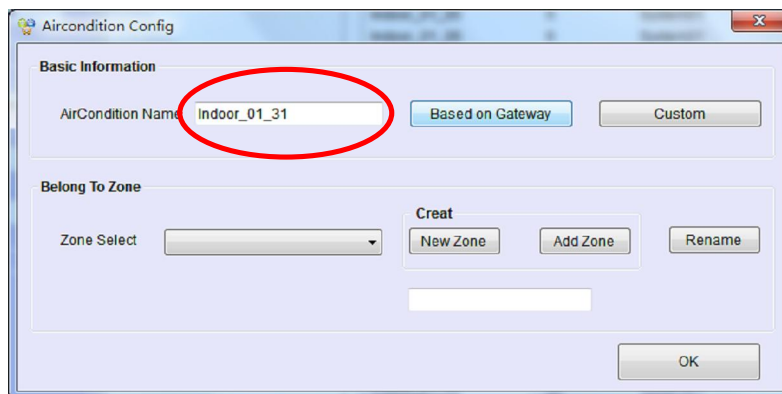
Area 7 shown in the figure above is the operation area of added/deleted indoor unit. Before added, user need to select one option in area 6 shows that he would add indoor unit in that outdoor system(the added quantity of indoor unit system must match with the actual quantity in the outdoor system).

5.7 Concrete operation:

Click "Add Air condition" button, the following dialog box will pop up

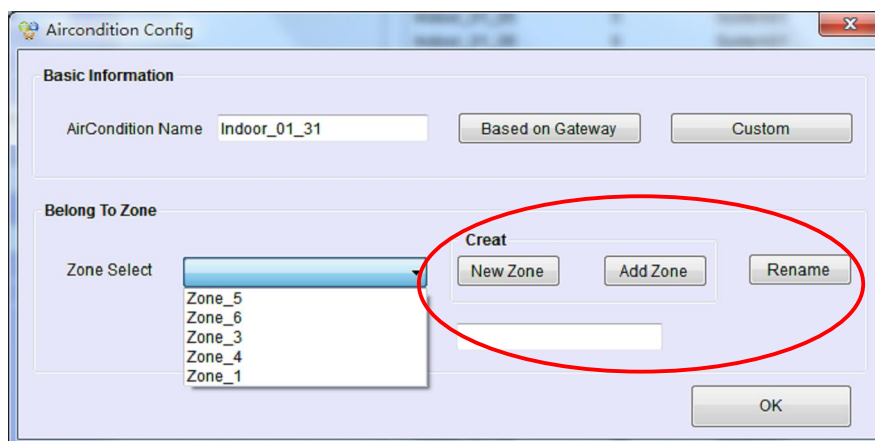


Click Based On Gateway button, there will generate a name (the red circle part in the figure below) according to indoor unit address and the system it belongs to; click Custom button, user need to set a name by himself.



Then is to choose the group the air conditioners belong. User can choose a group defined by himself in Area Select. If there has not user-defined group, user can establish a user-defined group in Create module, detail explanation in Added/changed user-defined group. Click "OK" to complete new group addition after the completion of the new group added.

5.8 Added/changed user-defined group



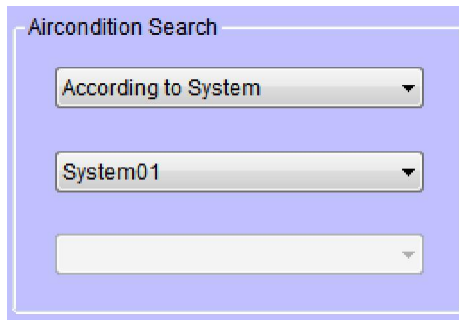
The red circle part in the figure above is the added and changed operation area. If user need to add new group, first, click New Zone button and input the name of user-defined group, then click Add Zone button, here will show the name inputted just now, establishment complete; If user need to modify the name of group, select the group in Zone Select, input the new name, then click the Rename button, modification complete when the new name show in Zone Select.;

Note:

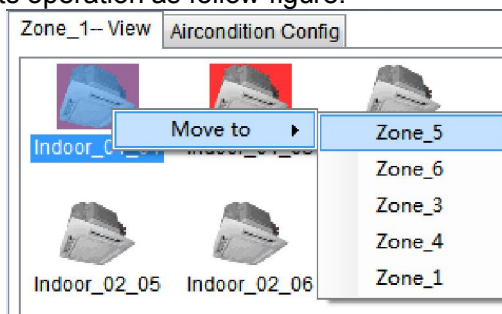
Group deletion does not support now, be careful when adding.

5.9 System query operation

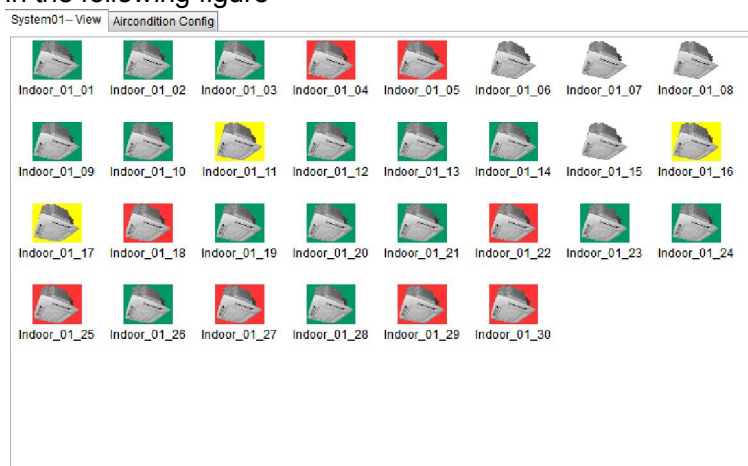
System query operation includes system query and user-defined group query. Query ways can be chosen as the figure below:



- ◇ If the chosen group is in According to System, then all the unit condition of the group will be displayed in area 4 (area 4 will display the condition of all the indoor unit in System01 as the above picture shows).
- ◇ If user chooses one of the group in According to Zone, area 4 will display the condition of all the units in it. In addition, user can move the indoor unit to other groups arbitrarily under the state of user-defined group query, its operation as follow figure:



When system is working (click Start Working in area 1), area 4 will display all the working condition of indoor unit, as shown in the following figure—



- ◇ No background is turned off;
- ◇ Green background is turned on;
- ◇ Red background is system failure;
- ◇ Yellow background is communication failure or electrical failure.

5.10 System control operation

System control can be divided into single unit control; group control and weekly group timing control 3 parts. Single unit control achieves the controlling of one indoor unit; group control achieves the controlling of System group and Zone group; weekly group timing control achieves the weekly timing control of Zone group (user-defined group).

- 1) Single unit control

Besides on/off, temperature setting, mode setting, indoor speed setting, single unit control added the lock function (lock the 4 function above). If one function is locked, user cannot use it. For example, if ON/OFF is lock(choose Lock in ON/OFF), user cannot turn on/off the locked unit by remote or wired controller. Indoor unit will executive command when click Apply after setting completed.

2) Group control

Group control achieves the unified control of one group, setting interface is shown as following figure:

Besides the general control and locking control of single unit control, group control is added the Active function. The matching state of indoor unit will change only when choose Apply function, unselected ones stay unchanged. For example, choose ON and Active, all the indoor units will be turned on, but the temperature, mode, speed will not be changed like the setting of group. Indoor unit will executive command when click Apply after setting completed.

3) Weekly group timing control

Weekly group time control is one of the control function in user-defined Zone, system group has no this function, setting can be chosen only when the user-defined region is selected in query. Shown as figure below:

Then setting dialog box will pop out when Week Plan is selected, shown as figure below, After completion of set, click the "OK" button to finish the setting.

Notes:

- ◇ All the related intellectual property rights as System patent right, software copyright etc. ownership belongs to Ningbo AUX Electrical Company Ltd.. Any unit or individual shall not copy, assignment, transact or use related production in other ways without permission. Otherwise Ningbo AUX Electrical Company Ltd. will have the right to pursue legal responsibilities.
- ◇ If system is damaged by suffering a natural force majeure (such as earthquake fire typhoon, etc.), all losses should be responsible for system investors.
- ◇ The user should use legal copy of Windows XP or Windows 7 and other legal copy of related software and antivirus software, make sure the computer is virus free and the Computer Independent Connecting Billing System is unaffected by other network or external port (USB port etc.), otherwise it is the users' responsibilities if there is any lost or damage.
- ◇ The user should use authorized computers along with UPS, the UPS should use the standard that it can keep the computer working for at least one hour if the power is suddenly cut off, and during this one hour the administrator would take care of the computer. It is users' responsibilities if any accident or data loss happened because of a sudden power failure.
- ◇ he user must make sure that the Photoelectric isolating converter is placed in a safe place that the converter is not easily damaged by people, make sure the wiring terminal is not loose leading to poor contact, and make sure the power is NOT easily cut off, otherwise it is the users' responsibilities if there is any lost or damage.
- ◇ To make sure the system work for a long time, the user should regularly check and repair it, reboot the computer at a fixed time every day, so that the computer could run in a good environment, ensure the reliability of the system, release the computer resource. Here is what users should do, first stop the communications of Billing System, then exit it, reboot the computer, open the software after the computer is rebooted.

Accessory of central control system

1) RS-232 to RS-485/422 optically isolated converter



Function: The centralized control system RS485 network signal conversion for RS232 serial signal to achieve the interconnection of computers with centralized control system.

Specifications Dimensions:

Equipment name	L (mm)	W (mm)	H (mm)
Optically isolated converter	113	55	25

Notice:

- ◇ Must be fixed installed indoors, avoid collision, exposure or rain. Suggest placed in monitor room with computer
- ◇ Must use the original manufacturer configured equipment, not allow to buy replacement products of other type or brand.
- ◇ Require a separate power supply and must install adequate 220V AC outlet to provide power.

2) RS-485/422 Repeater



Function: Extend the communication distance and increase the number of RS-485 bus network. The repeater is not required, only when there is more than 64 communications equipment or communication distance is more than 800 meters.

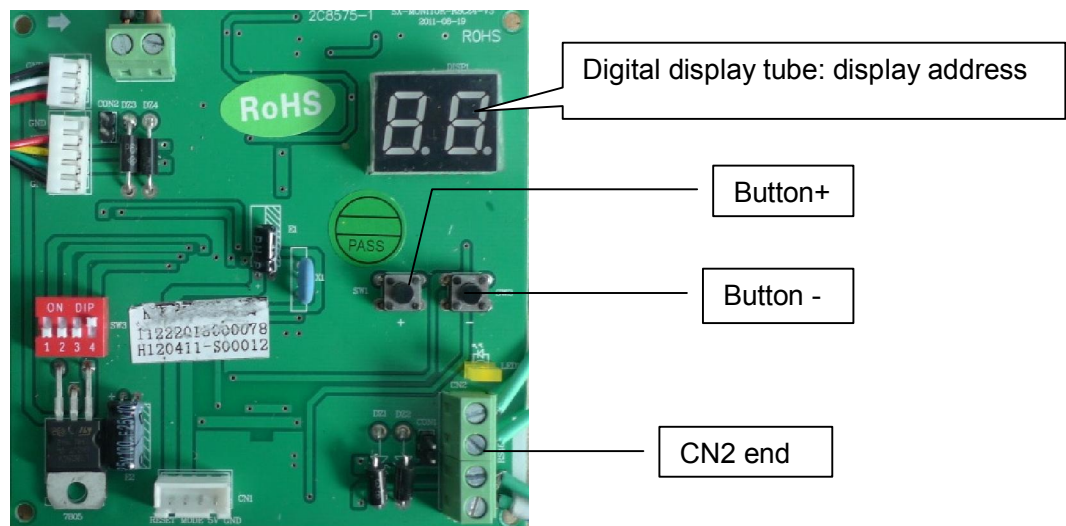
Specifications Dimensions:

Equipment name	L (mm)	W (mm)	H (mm)
Optically isolated converter	120	80	25

Notice:

- ◇ Must be fixed installed indoors, avoid collision, exposure or rain. Suggest placed in monitor room with computer
- ◇ Must use the original manufacturer configured equipment, not allow to buy replacement products of other type or brand.
- ◇ Require a separate power supply and must install adequate 220V AC outlet to provide power.

3) Communications adapter plate introduction



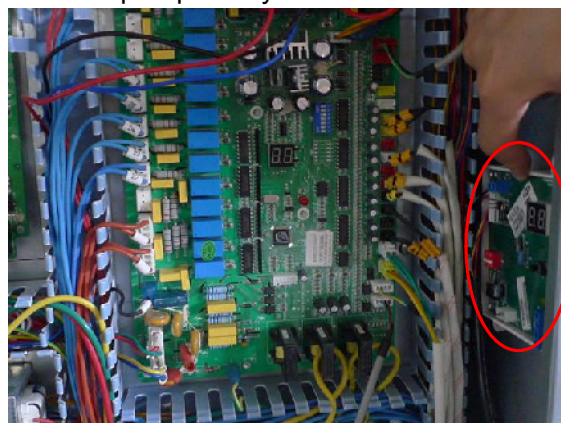
Function: Computer and communication protocol and unit end communication protocol are incompatible with each other, must add communication adapter plate to make both communicate. According to its own configuration address, communication adapter plate can extract the information or command of corresponding unit send from computer. After a semantic conversion, these information and command will pass to corresponding unit. The status information will pass to computer at the same time. Then the communication adapter plate also plate plays a role in communication gateway. Specific configuration and operation dwell on instruction of communication adapter plate.

Notice:

- ◇ Ensure the address is different from the other adapter plate of the adapter plate, which means keep the only of adapter plate address;
- ◇ Adapter plates should install in the control box of DC inventor outdoor unit and keep 15cm above with the power line;
- ◇ Ensure the communication line access to the correct interface; otherwise it will not work properly.

Installation

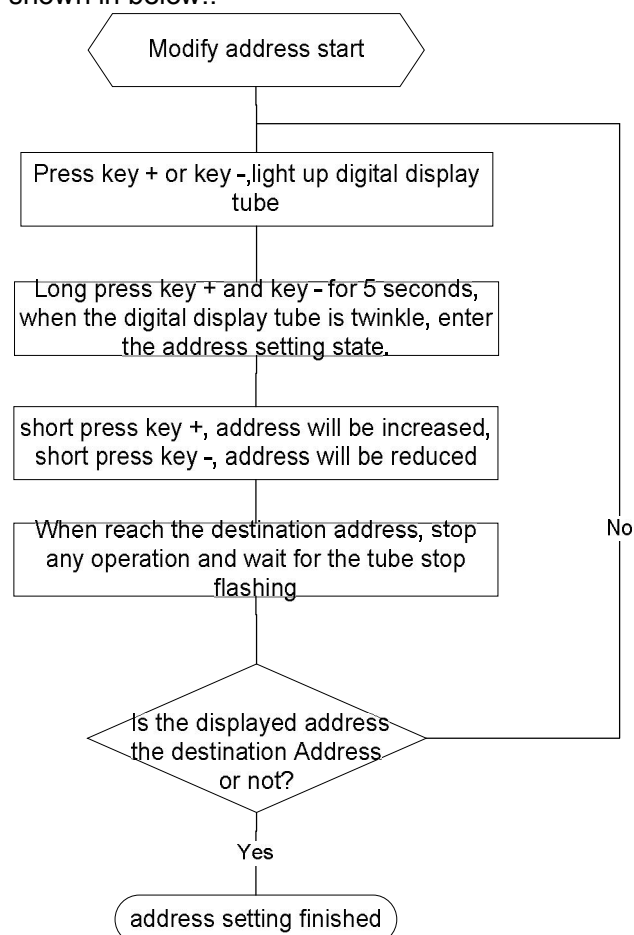
Communication adapter plate should be installed in the electric cabinet side wall of host outdoor unit. Whether outdoor unit is the host machine will not be set until it leaves the factory, and not all the outdoor units are the host machine, So each outdoor communications adapter plate neither fixed in the electrical control box, nor left holes in the installation position (outdoor units besides the host machine should not install the communication adapter plate in case of the water flows into the electrical control box from the hole leaved in the installation position, which will lead to safety issues), so users should use the tapping screw to install the communication adapter plate by themselves.



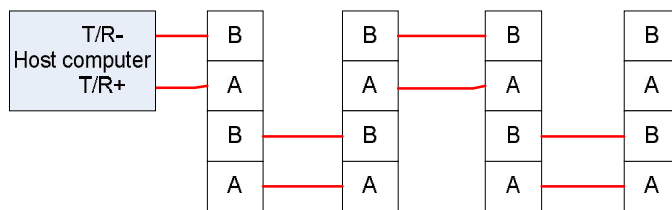
The initial setup of communication adapter plate and CN2 wiring instruction

As mentioned before, the address of communication adapter plate in the whole ARV centralized control system is only, so user should set the address before use it. And user need use digital display tube(use to display the current address) and the 2 buttons (+,-) under it, The operation method of address setting is:

- A. If communication adapter plate is not powered, power-on first. Then digital display tube will display the current address of communication adapter plate. The tube will go off if there is no operation in 5 seconds;
- B. If digital display tube goes off and user need to check the address, just press any button, the tube will be lighted up after button released;
- C. If use need to modify address, first light up digital display tube, then press two button at the same time, release them when the number the tube displayed is twinkling. At this time the communication adapter board will enter the address setting state: short press key +, address will be increased, short press key -, address will be reduced; long press key +, address will be increased continuously after the tube flashes for 3 seconds, long press key -, address will be reduced continuously. When reach the destination address, stop any operation and wait for the tube stop flashing (about 5 seconds). If the displayed address is the destination one after the tube stopping flashing, address setting finished; The operation step as shown in below::



CN2 end is the computer network end use to place RS-485, the specific wiring way shown as below:



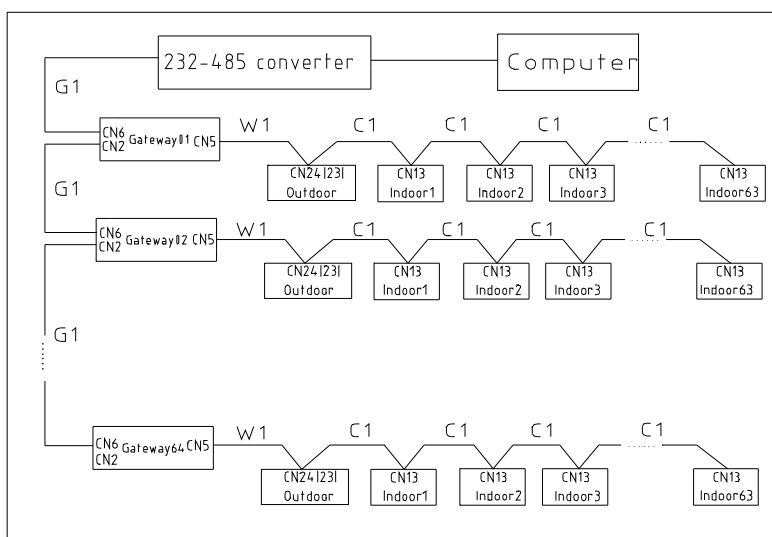
Note:

When 232 to 485 converter of host computer and communication adapter plate is wiring, A-B end must be one-to-one(A to A, B to B, no reversing), if not it will cause network paralysis!

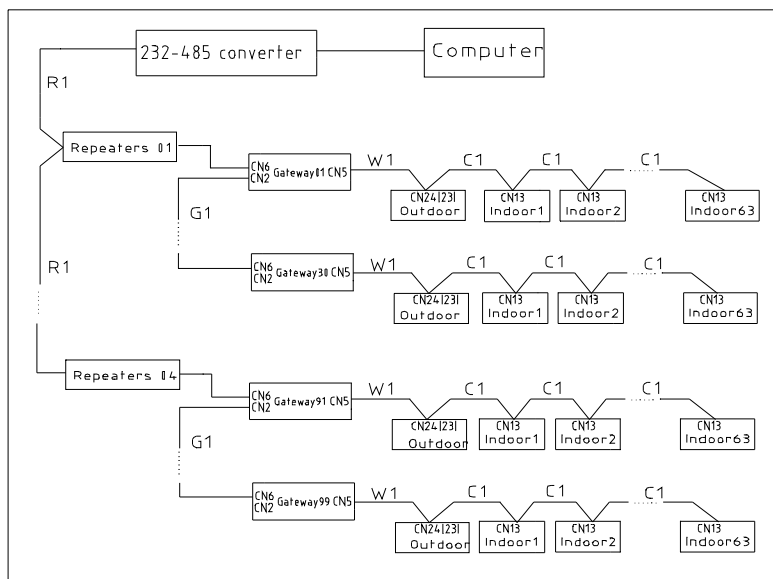
Engineering installation and wiring description

There are 2 kinds electrical wiring scheme: ARV system <= 64 sets scheme and ARV system > 64 sets scheme.

1 The wiring scheme of ARV system <= 64 sets scheme and ARV system as below:



2 The wiring scheme of ARV system > 64 sets scheme below:



Instruction:

- a) The 2 figure above use “gateway “instead “communication adapter board”;
- b) In figure 7, at most 30 communication adapter plate can be mounted in one repeater and must ensure each address of them don’t conflict. For example, if there has 90 communication adapter plate, you

need configure 3 repeaters, each repeater mounts 30 communication adapter plate, so the communication adapter plate address setting range is 1~90.

Installation and wiring notice

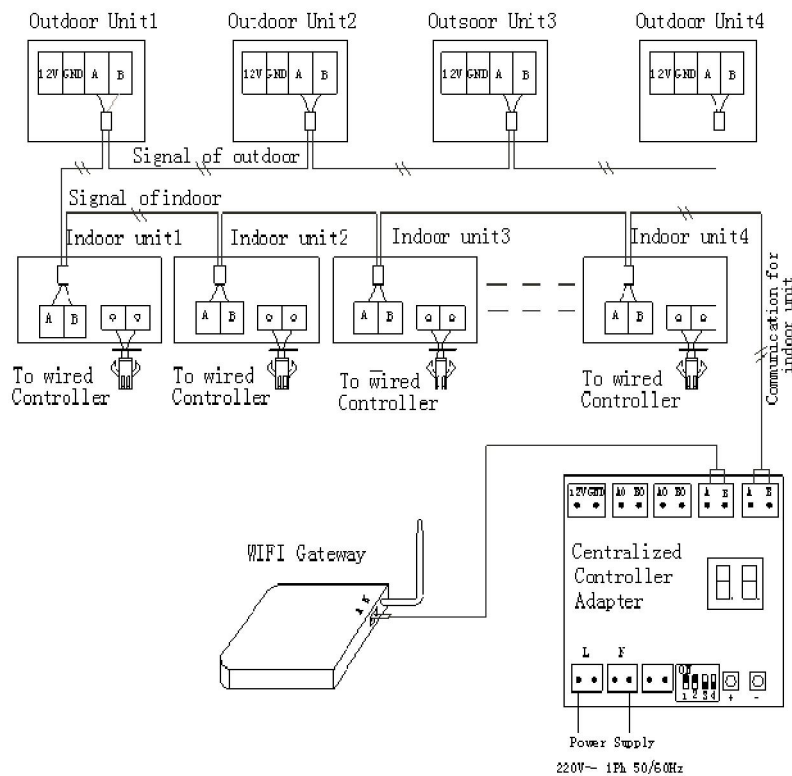
- ◇ User should purchase the wire of ARV network wiring and computer network wiring (G1, C1, R1) their own. In order to ensure normal communication, we recommend 4 core 5 kinds of shielded twisted-pair cable and above specification of communication wire;
- ◇ Every outdoor unit equips the original manufacturers W1 wire;
- ◇ Installation specification of communication wire
- ◇ Ensure the conduction of each communication wire is good; they must have passed the special conducting test.
- ◇ Ensure the equipments in a same 485 network use the way of hand in hand connect with each other.
- ◇ Communication signal wire cannot placed in trunking with other strong frequency signal wire or high-frequency signal lines; even more cannot bind with those high-frequency signal lines; the distance between communication wire and power frequency electric wire is at least 15cm, the calculation of minimum interval distance among other high-frequency signal lines according to the signal frequency and voltage;
- ◇ If there has no other wiring way only has the condition of communication wire must parallel with strong frequency signal wire, please insist the construction side add shielding steel pipe.
- ◇ Communication wire C1 must go special slot and wiring along the refrigerant piping.

6 Wireless Network Centralized Control System

6.1 Overall Structure



6.2 Wiring



6.3 Opera

1) Install t

> Fo



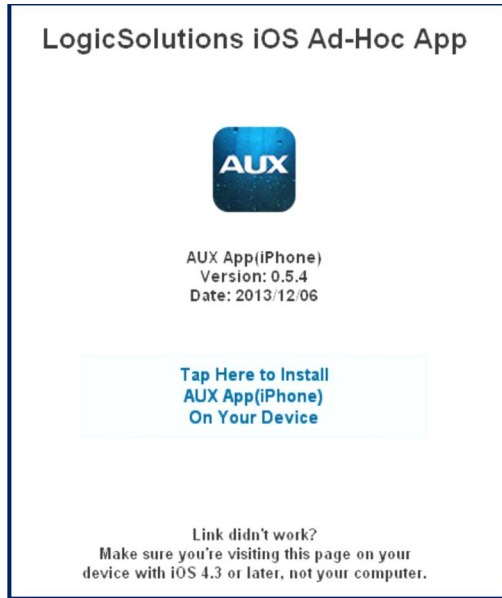
AUXAndroid(20131...
2013-12-18 9:37
APK 文件

> For iPhone device

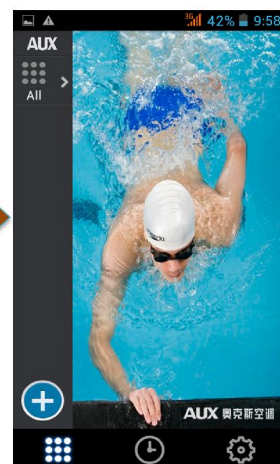
Pls. download at the following website

a) <http://www.logicsolutions.com.cn/store/auxapp.php>

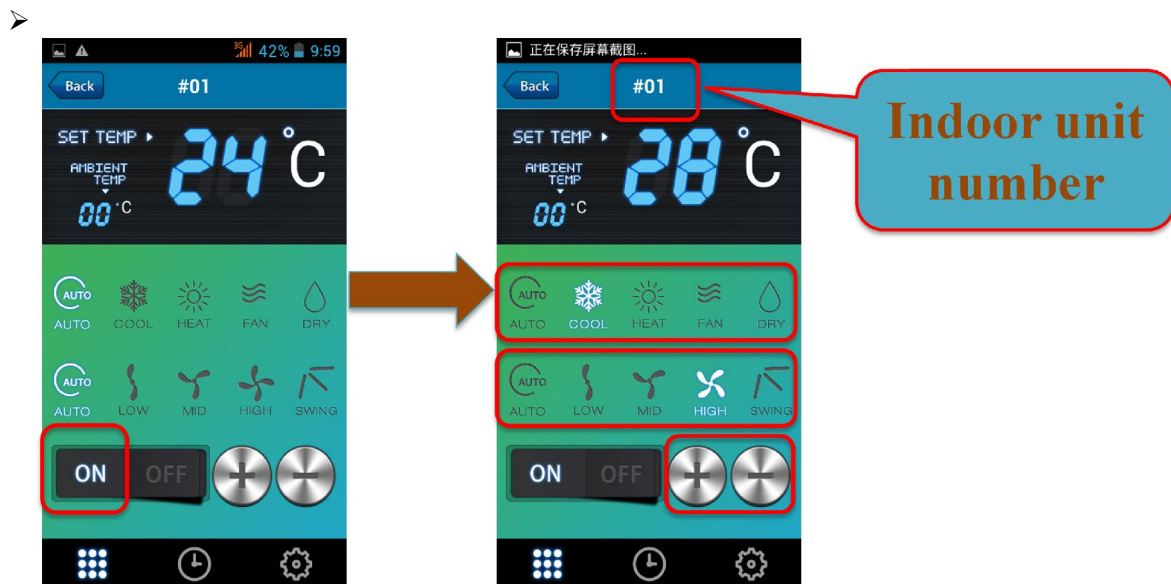
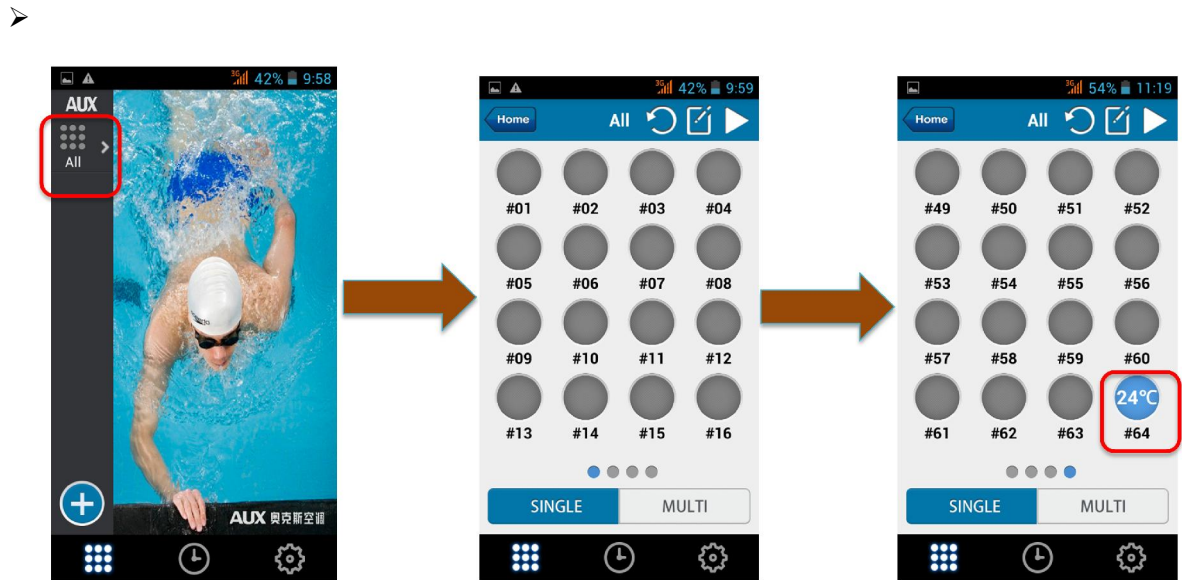
b) <http://www.logicsolutions.com.cn/store/auxiphone.php>



1) Oper



➤ Indoor units group setting



7 Selection software

1. Basic function of selection software

No.	Function	Instruction
1	Selecting indoor units	Selecting indoor unit for project according the capacity, air flow volume and room information
2	Selecting outdoor units	Automatic selection suitable outdoor unit for project according to the capacity of indoor units, the capacity ratio between indoor and outdoor unit, and the temperature of indoor and outdoor unit.
3	Drawing piping diagram	Every outdoor system can draw corresponding piping diagram. The system will auto select branch pipe, gas pipe and liquid pipe according to selected indoor and outdoor unit. The pipe length can be input according to the project diagram if the project need. Ability compensation also can be displayed for the software.
4	Drawing wiring diagram	Every outdoor system can draw wiring diagram. The wiring length can be input according to the project diagram if the project need. Wring include : power cable ,signal cable and so on. Remote controller and wired controller can be chosen according to the customer's demands.
5	Selecting BMS or Centralized Controller	The software can be used to select either BMS or centralized controller and draw connecting wiring diagram.
6	Output the report	The report can be output in 3 kinds of forms, PDF, word and CAD.

2. Operation instruction

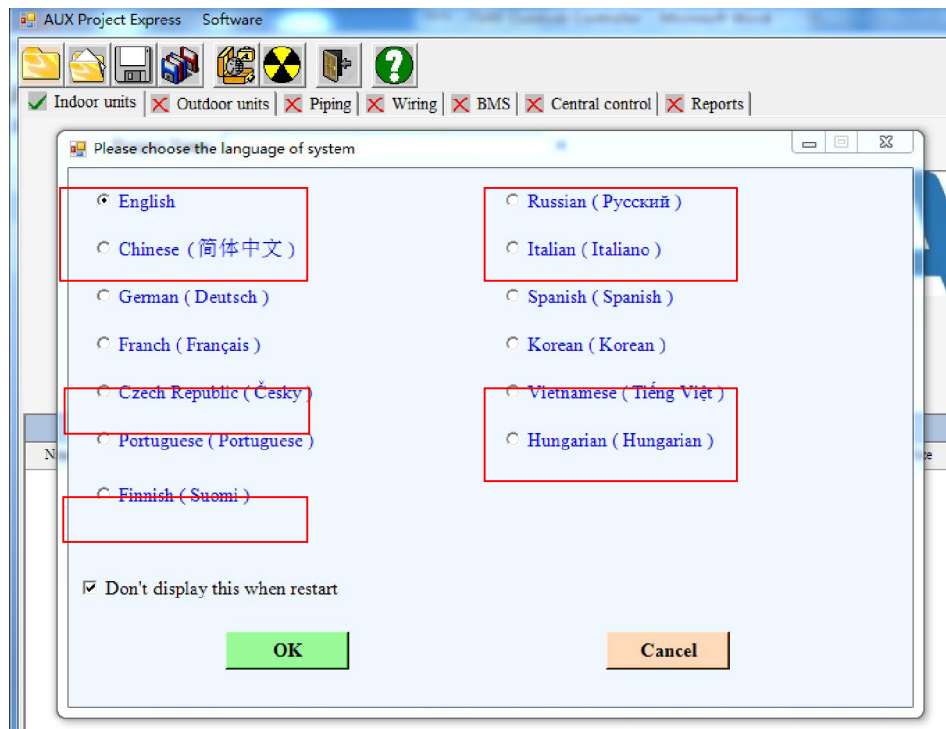
Main interface

The screenshot shows the main interface of the AUX Project Express software. At the top, there are six menu buttons: 'New project', 'Open project', 'Save file and save as', 'Lang switcher', 'System paramete', and 'Software version'. Below these is a toolbar with icons for file operations and a 'Working interface switcher' dropdown menu. The main workspace contains a form for project information (Project Name, Client Name, Client Address, Memo) and a 'Refrigerant' dropdown menu set to 'R410A'. The 'AUX' logo is prominently displayed. At the bottom, there is a table titled 'Indoor units in current project' with columns for Name, Model, Room, With outdoor, Cooling Capacity, Heating Capacity, Airflow, Noise, Size, and Weight. Callout boxes on the right side of the image point to the 'Working interface switcher', 'Refrigerant', 'Project information', 'Selecting indoor unit', and 'Adding room information' areas.

Notice:

You can select indoor unit, after you write project information. Project name must write, the other enforce to write.

Lang switcher interface



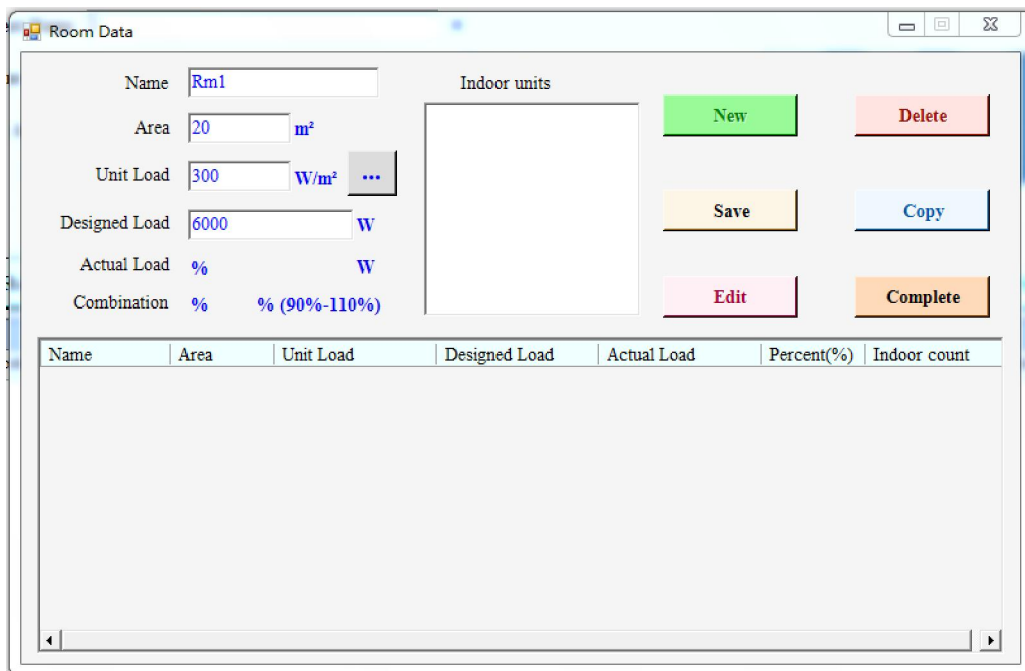
Note:

The software support multinational language, several language can support at present, Chinese, English, Russian, Italian, Finnish, Hungarian, Czech, Vietnamese.

2.1 Selecting indoor unit

There are 2 methods for select indoor unit. when the project has the room information, we can select indoor unit according to room information. Else, we only can select indoor unit according to the capacity. Step 1: Click “New”, then adding room information, after click “Save”;

Adding room information interface

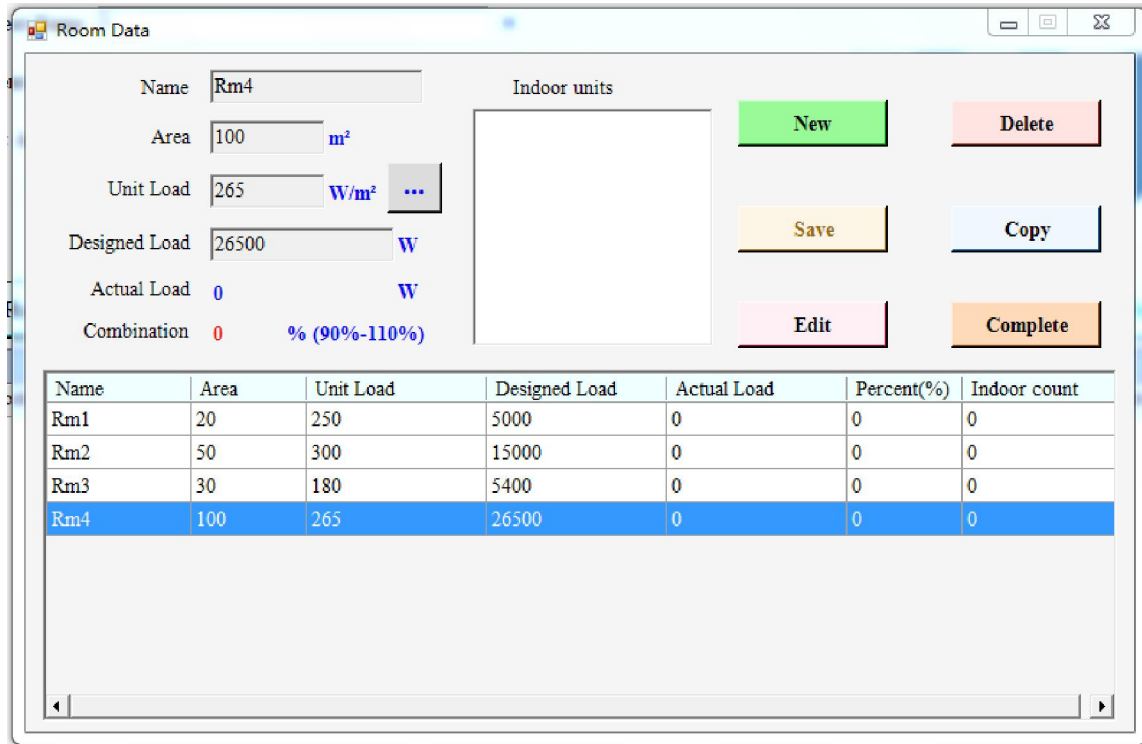


Step 2: The whole rooms are added in the room data, click "Complete".

"Delete": It can delete the useless room.

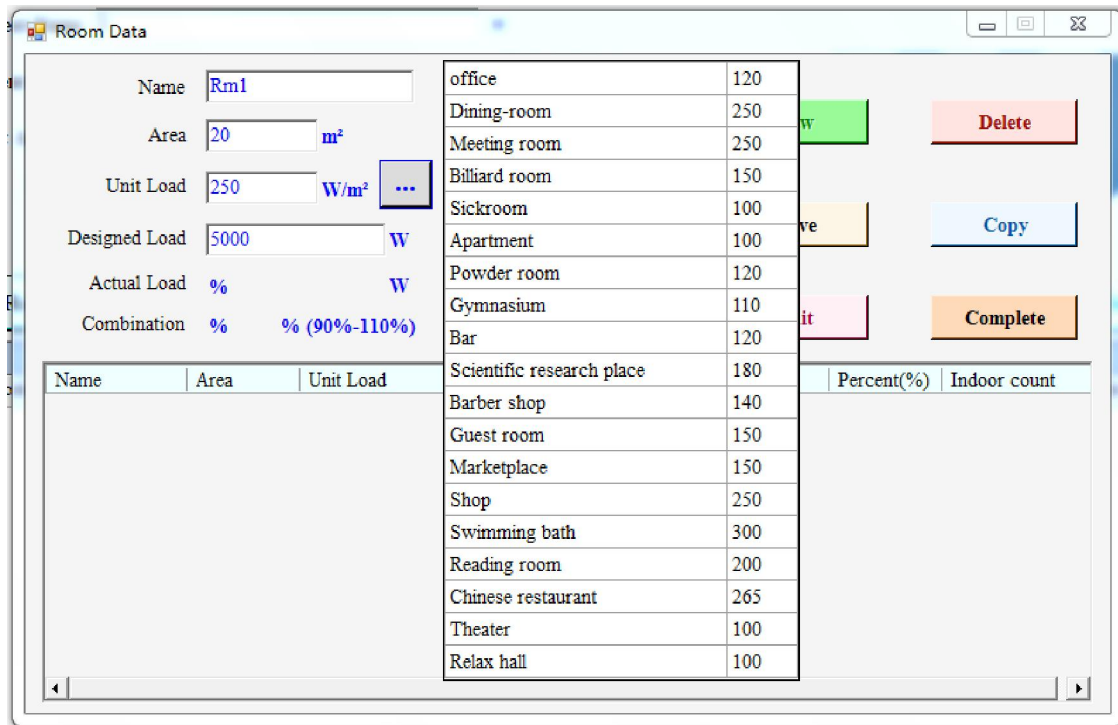
"Edit": It can edit the room information.

Edit indoor unit interface



Unit Load: Click "...", then displaying the recommended unit load, click again it disappear.

Unit load interface



Input indoor unit name ,if click "▼", the model selecting can open the options, as below:

Setting indoor units interface

The screenshot shows the 'Add indoor units' dialog box. On the left, there are three dropdown menus for 'Model Selecting', 'Family', and 'Model'. Below them is a 'Default Controlling mode' section with radio buttons for 'Wired Control' and 'Remote Control'. At the bottom left is a 'Room' dropdown menu. The main area contains a 'Name' field (set to 'Ind1'), a 'Quantity' field (set to '1'), and an 'Advanced' button. A 3D image of the indoor unit is shown on the right. Below the image are 'Parameter' fields for Cooling Capacity (2.8 kW), Heating Capacity (3 kW), Airflow (620 m³/h), Noise (38/35/32 dB(A)), Weight (20 kg), and Size (593×593×284 mm). At the bottom are 'OK', 'Complete', and 'Cancel' buttons.

Input indoor unit name and quantity

Picture of selecting indoor unit

Default Controlling mode. Be Chosen by custom's

“Room”: View room information

“Detail”: View selecting indoor unit detail

“Advanced” : Advanced indoor selection. If the customs need advanced selection, It can select by inputting cooling capacity, room and airflow.

Advanced detail interface

The screenshot shows the 'Advanced indoor selection' dialog box. It has a 'Selection' section with checkboxes for 'Cooling Capacity', 'Room', and 'Airflow'. Below are 'Room' and 'Room' dropdown menus. There are buttons for 'Auto Selection', 'Reset', 'Refresh', 'Delete', 'Save Selection', and 'Complete'. The right side shows 'Designed Cooling Capacity', 'Actual Cooling Capacity', 'Designed airflow', and 'Actual airflow' fields. A 'Series' dropdown is set to 'Mini VRF 50HZ'. On the far right is a table showing the selection of units.

Family	QTY
High Static Pressure Duct T...	0
Low Static Pressure Duct T...	0
Middle Static Pressure Duct...	0
Ceiling & Floor Type	0

Model	QTY	Remote-Control	Room	Cooling Capacity	Airflow	Noise	Size

- ◇ Selecting indoor units according to room information. Selecting indoor unit 5,6 and 7 according to rm 4,as below:

Indoor unit information interface

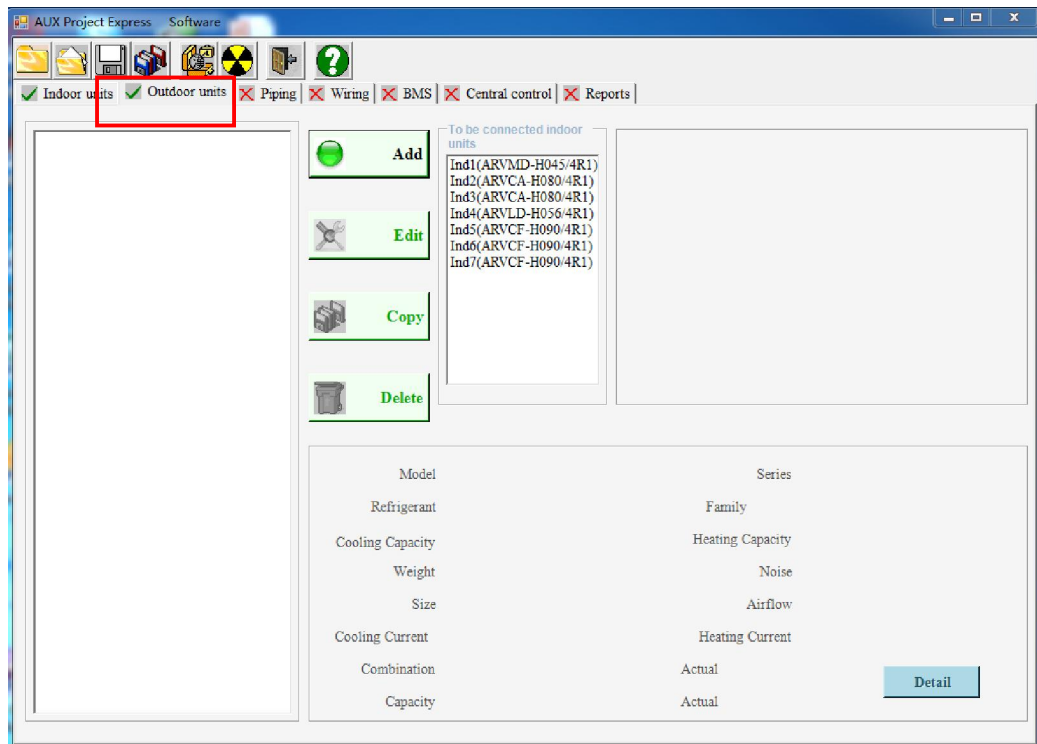
Finished indoor unit selection interface

Indoor units in current project									
Name	Model	Room	With outdoor	Cooling Capacity	Heating Capacity	Airflow	Noise	Size	Weight
Ind1	ARVMD-H04	Rm1		4.5 kW	5 kW	950 m³/h	42/39/37 d	890×785×290 mm	34 kg
Ind2	ARVCA-H080	Rm2		8 kW	10 kW	1500 m³/h	41/38/35 d	835×835×240 mm	27 kg
Ind3	ARVCA-H080	Rm2		8 kW	10 kW	1500 m³/h	41/38/35 d	835×835×240 mm	27 kg
Ind4	ARVLD-H056	Rm3		5.6 kW	6 kW	780 m³/h	40/37/34 d	1110×547×240 mm	30 kg
Ind5	ARVCF-H090/	Rm4		9 kW	11 kW	1500 m³/h	47/44/41 d	1333×673×243 mm	34 kg
Ind6	ARVCF-H090/	Rm4		9 kW	11 kW	1500 m³/h	47/44/41 d	1333×673×243 mm	34 kg
Ind7	ARVCF-H090/	Rm4		9 kW	11 kW	1500 m³/h	47/44/41 d	1333×673×243 mm	34 kg

2.2 Setting outdoor unit

After indoor units setting finished. Outdoor units area will be light, or will be keep dim.

Before outdoor units selection interface



Add outdoor units interface

Only heat pump at present.

Model of outdoor unit

Capacity ratio between IDO and OUD from 50% to 130%.

Picture of selecting Outdoor unit

View pipe length and drop diagram

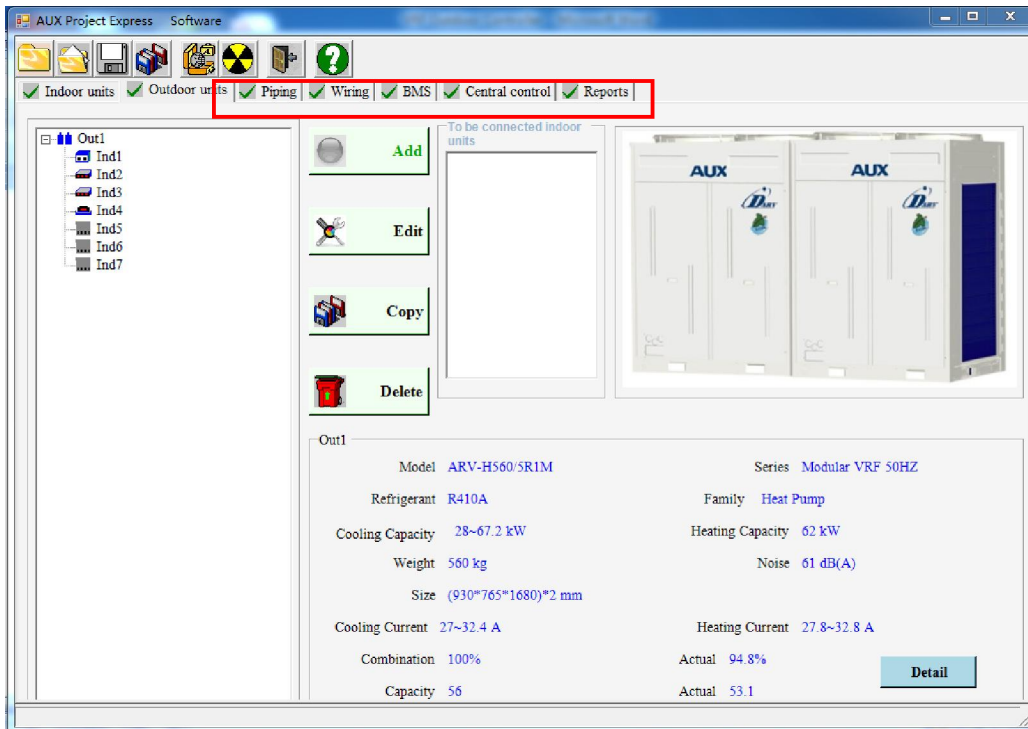
“Detail” View selecting outdoor unit detail

Notice:

“Series optional” make sure outdoor unit power and refrigerant type as same as indoor unit

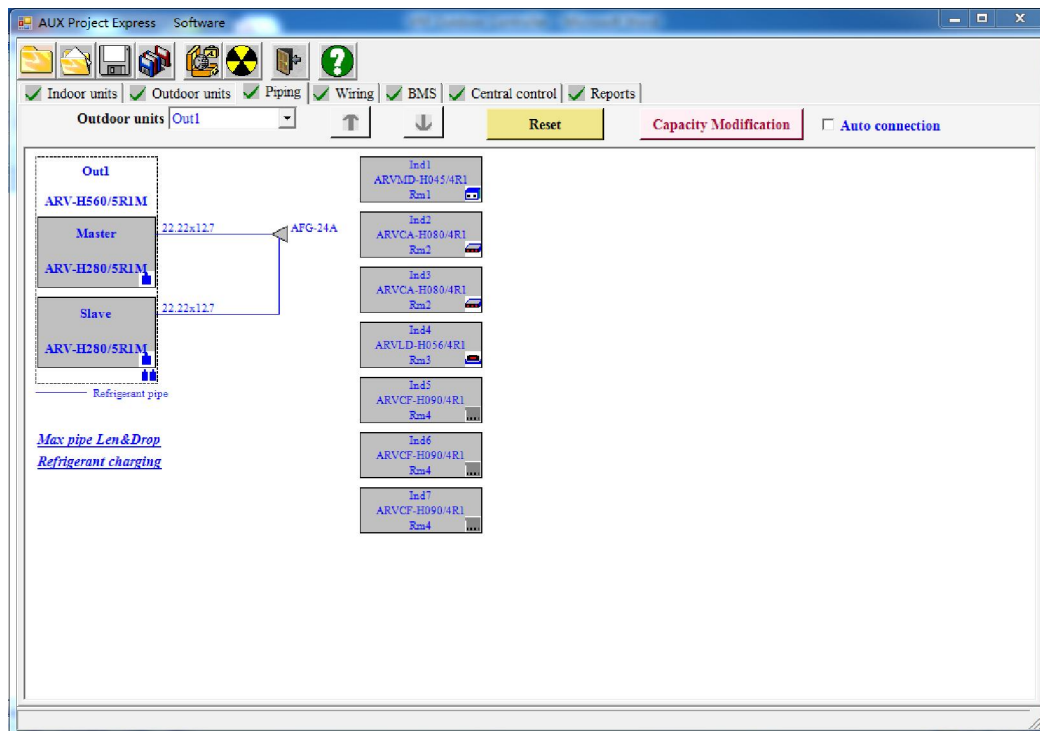
After selecting outdoor units finished, other button will be light, or will keep dim.

Outdoor units selection finished interface

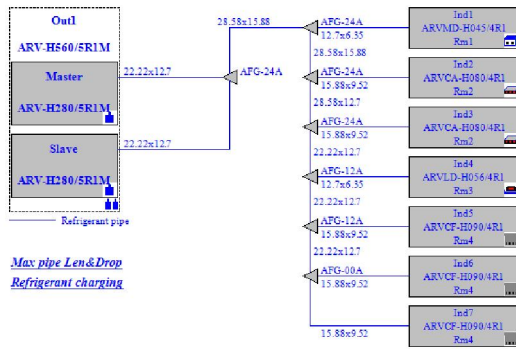


2.3 Drawing piping diagram

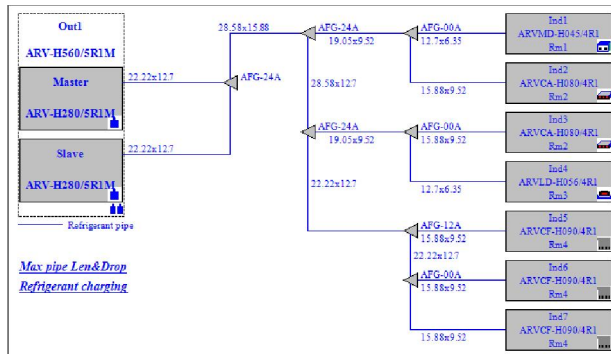
There are 2 methods drawing piping diagram: Auto connection and manual operation by the custom's demands.



The result as below:



Auto connection



Manual operation connection

◇ Click pipe in order to input pipe length.

Pipe information interface

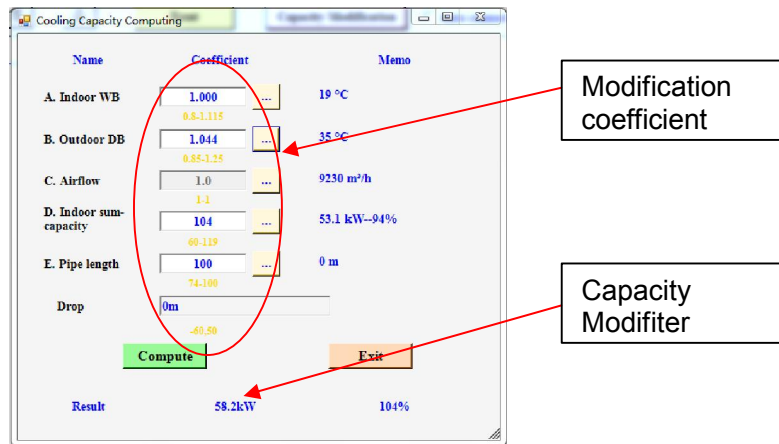
The screenshot shows the 'AUX Project Express' software interface. The 'Capacity Modification' button is highlighted. A 'Pipe length' dialog box is open, showing 'Pipe type: Refrigerant pipe' and 'Pipe Data: 12.7x6.35 mm'. The 'Length' field is set to '0' with a maximum value of '40' meters. A red circle highlights a pipe in the background diagram, and a red arrow points from this circle to the 'Pipe length' dialog box.

The diameter of branch pipe, gas pipe and liquid pipe can be chosen automatically.

The length of gas pipe and liquid pipe must be input by the construction drawing.

“Capacity Modification” Click the button will display below information

Capacity Modification interface



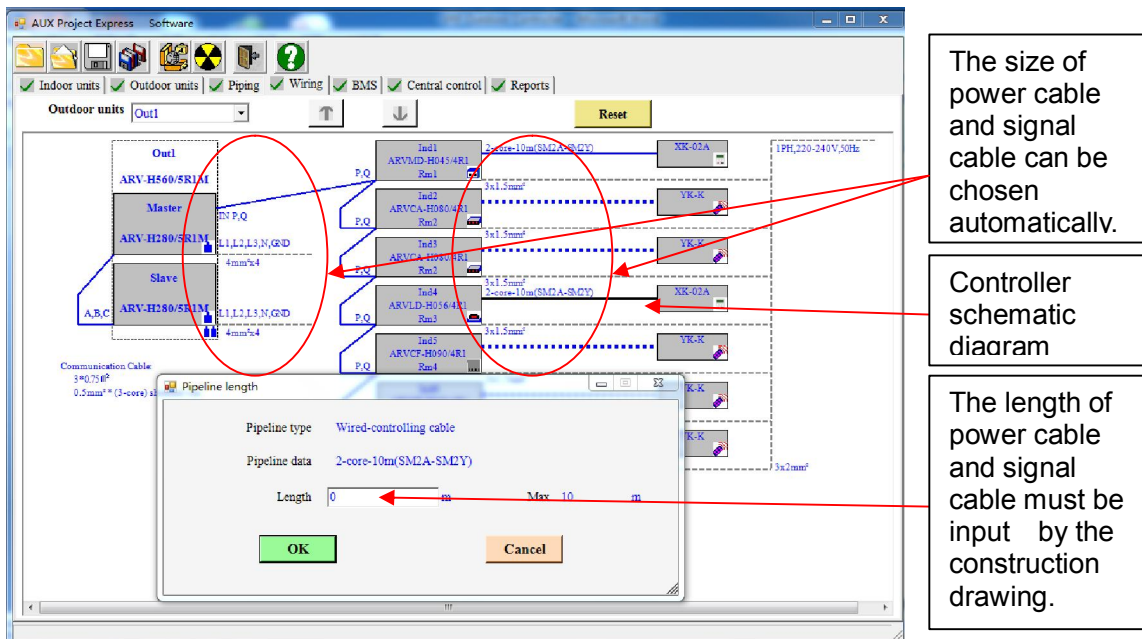
Modification coefficient

Capacity Modifier

2.4 Electrical wiring diagram

Click wiring in order to input wiring length.

Electrical wiring interface



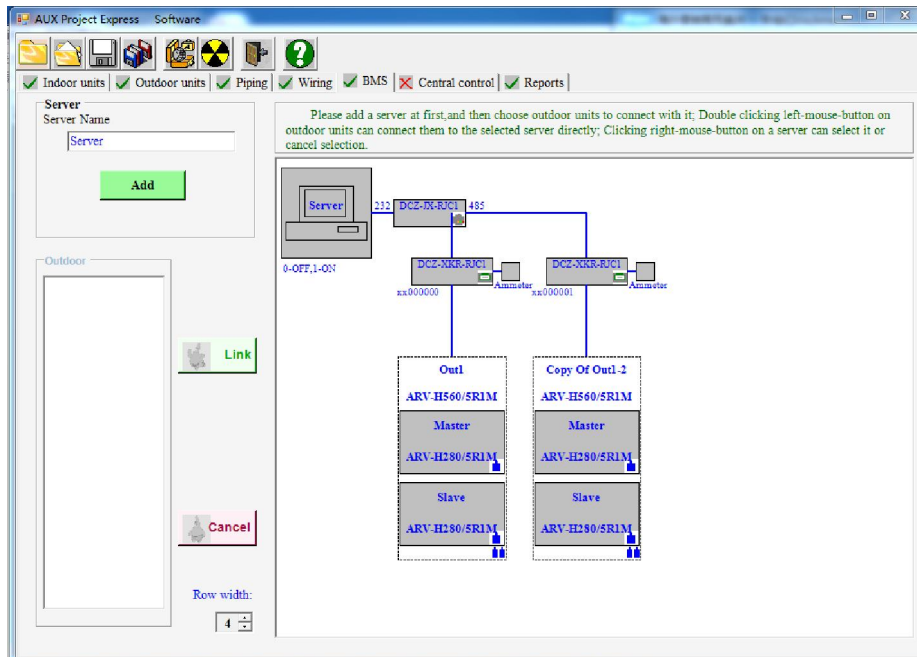
The size of power cable and signal cable can be chosen automatically.

Controller schematic diagram

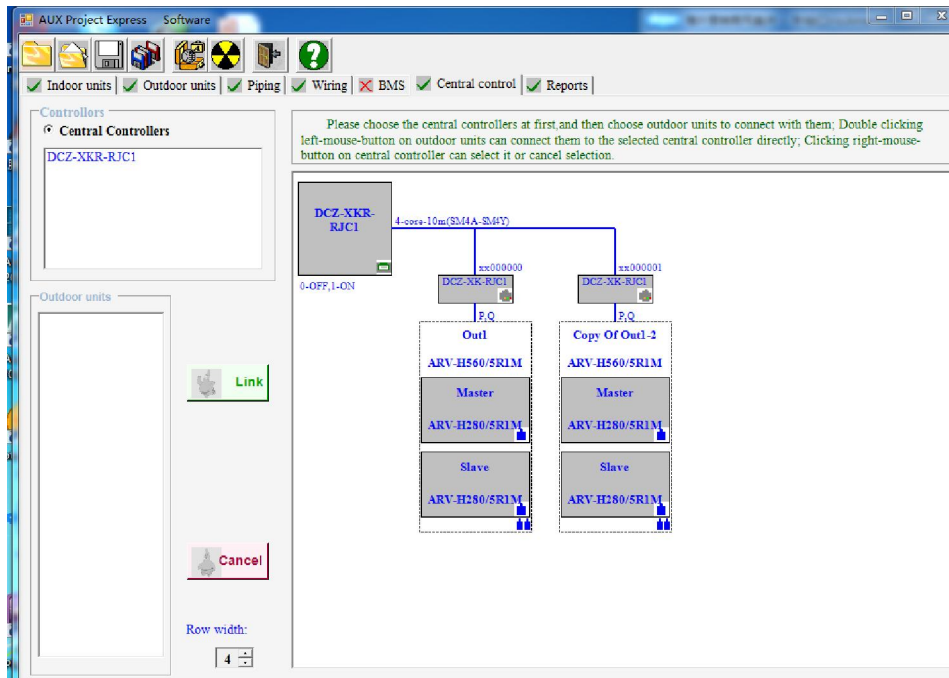
The length of power cable and signal cable must be input by the construction drawing.

2.5 Selecting BMS or Centralized Controller

Selecting BMS interface

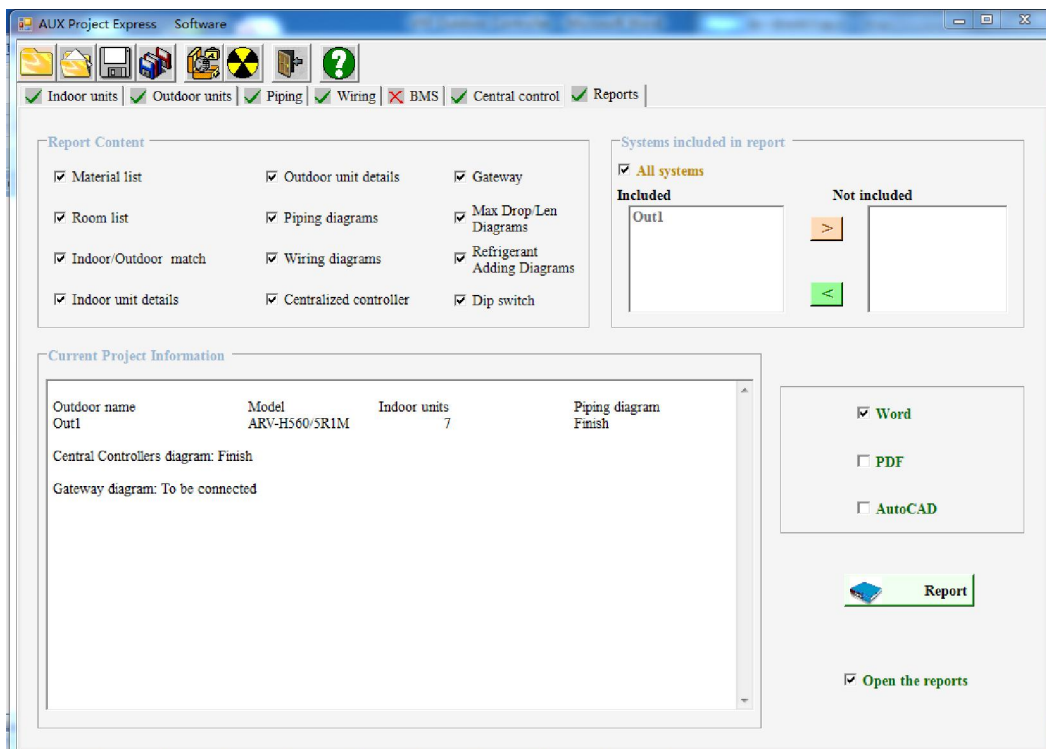


Selecting Centralized Controller interface



2.6 Output the report

Output report optional interface



8 Parameter setting of indoor unit

8.1 Parameter Setting instruction

No.	Parameter Setting Items	Default value	Min. value	Max. value	Remarks
1	communication address of indoor unit	1	1	64	
2	centralized address of indoor unit	1	1	64	
3	address of wired controller of indoor unit	1	1	16	
4	model of indoor unit	1	0	7	0--1HP cassette-type unit (swing angle of mode "C"), 4--1HP Auxiliary electric heating of cassette-type unit, 1--5HP cassette-type unit (swing angle of mode "D"), 5--5HP Auxiliary electric heating of cassette-type unit, 2--duct-type unit, 6-- Auxiliary electric heating of duct-type unit, 3--ceiling & floor unit (swing angle of mode "C"), 7-- Auxiliary electric heating of ceiling & floor unit.
5	capacity of indoor unit	8	1	100	250W/unit
6	priority of indoor unit	0	0	3	0--No priority 1--priority 1 2--priority 2 3--priority 3
7	heating temperature compensation of indoor unit	0	0	10	Unit:°C
8	auto restart function of indoor unit	1	0	1	0--Available 1--not available
9	room card selection	0	0	1	0--invalid room card 1--valid room card
10	clearing time of filter net	5	1	5	500h/unit
11	operating mode displayed by wired controller	1	0	2	0--[auto][heating] [dehumidification] [cooling][ventilation] 1--[heating] [dehumidification] [cooling][ventilation] 2--[dehumidification][cooling][ventilation]
12	installation height of indoor unit	0	0	1	0-- installation height is lower than 2.7m 1--installation height is higher than 2.7m
13	switching between Celsius degree and Fahrenheit	0	0	1	0--Celsius degree 1--Fahrenheit
14	display of room temperature	0	0	1	0-- room temperature not to be displayed 1-- room temperature to be displayed
15	selection of room temperature	0	0	1	0-- temperature sensor of return air 1--temperature sensor of wired controller

Notice:

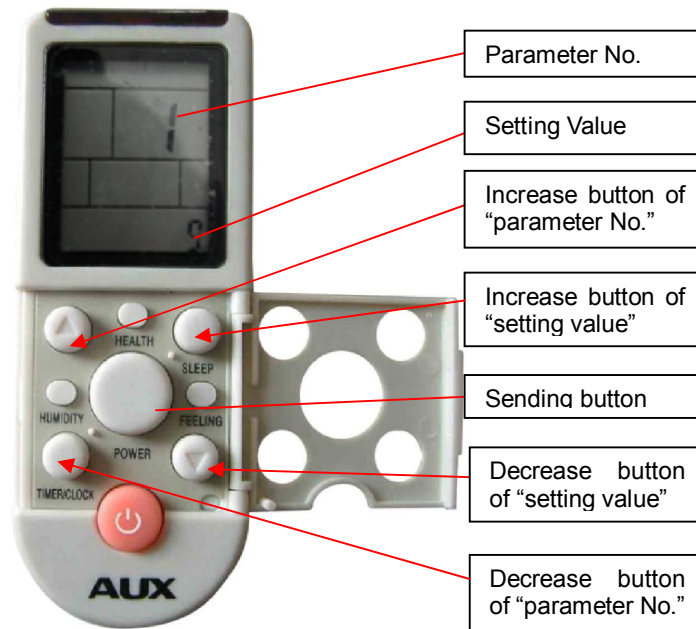
- ◇The above-mentioned data can be inquired through wired controller, centralized controller and monitoring software;
- ◇Function setting of the above-mentioned data can be changed through wired controller and centralized controller.

8.2 Parameter setting method based on remote controller

Notice:

- ◇ The following parameters of remote controller must be set one by one to prevent repeated number.
- ◇ Parameters of remote controller should be set in a way that is not valid for the sending order of display lamp plate of indoor unit, wired controller, centralized controller, weekly timer and display lamp plate of outdoor unit.

1.Address Setting of Indoor Unit Based on Remote Controller

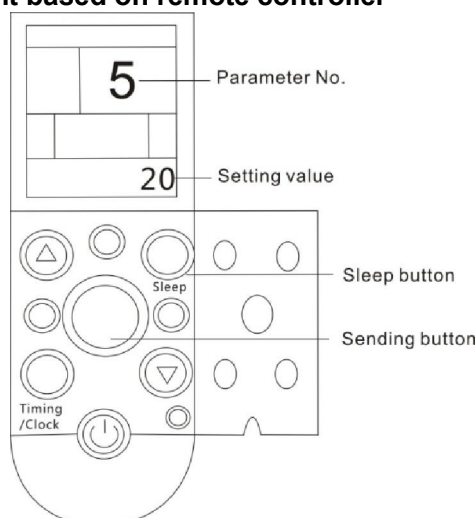


Parameter Setting: Press [Sleep] button 8 times within 5 seconds to enter into interface of remote parameter change; Select “parameter No.”, set “setting value” and press “sending button” to send order; When hearing buzzer once, it indicates successful setting.

Example :

Set this indoor unit as No. 9 indoor unit Press [Sleep] button 8 times within 5 seconds to enter into interface of remote parameter change; Select “parameter No.: 1”, set “setting value: 9” and press “sending button” to send order; then this indoor unit is set as No. 9 indoor unit.

2.Capacity setting of indoor unit based on remote controller



Example :

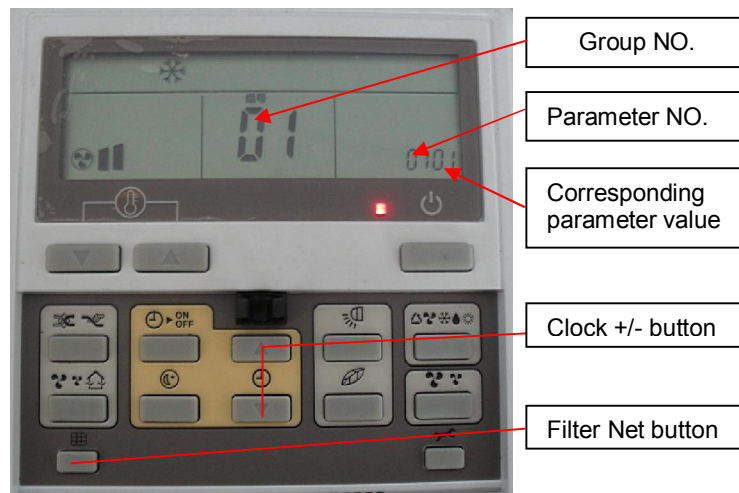
Set capacity of this indoor unit as 2P. Press [Sleep] button 8 times within 5 seconds to enter into interface of remote parameter change; Select “parameter No.: 5”, set “setting value: 20” and press “sending button” to send order; then capacity of this indoor unit is set as 2P.

Note:

- ◇ If setting capacity is 1P, setting value is 10;
- ◇ If setting capacity is 2P, setting value is 20; others follow by analog
- ◇ The parameter has been set when the product is sold. The parameter must be set when the product is sales-after stage or the PCB board is changed. The most of PCB board of IDO is same in the various indoor units.

8.3 Parameter setting method of wired controller

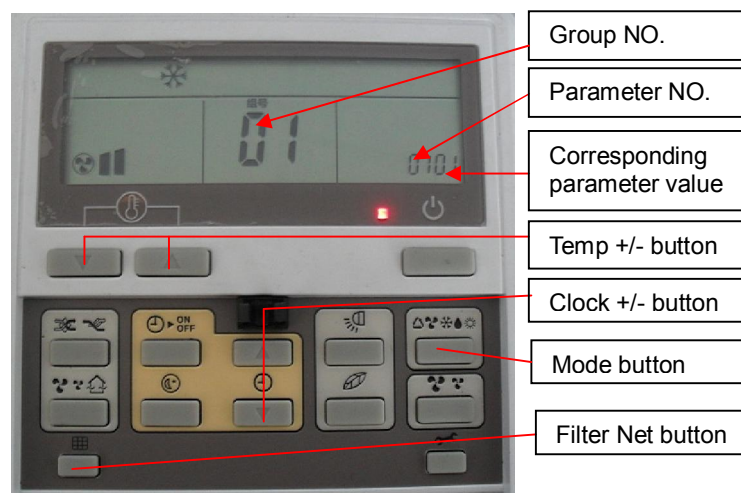
Parameter Inquiry



Example:

- ① Press [Filter Net Button] for 5 seconds, group number "01" of wired controller will be displayed in temperature zone of LCD screen and "0101" will be displayed in timing setting zone of LCD screen.
- ② "01" means that group number of wired controller is 1; "0101" means this indoor unit is No. 1 indoor unit.
- ③ Press [+/- Button of Time], "0201", "0301", "0401" "0510" will be displayed successively. See "function setting parameters and eeprom data" for number of parameters and corresponding meaning.

Parameter Setting



Example:

Go on with previous interface and change No. 1 indoor unit into No. 5 indoor unit:

- ① Press [Filter Net Button] for 5 seconds, group number "01" of wired controller will be displayed in temperature zone of LCD screen and "0101" will be displayed in timing setting zone of LCD screen as shown in previous interface.
- ② Then press [Mode Button] once, "corresponding parameter value 01" will flicker; press [+/--button of time] again to change the value into "05", press [Mode Button] to confirm. This indoor unit is changed as No. 5 indoor unit.

Part 6 Trouble shooting

1 Poor effect of cooling and heating.....	284
2.Error code indication.....	285
3 Indoor unit error code explanation	287
4.Outdoor unit error code explanation	288
Symbol Description	295
5.Centralized controller software trouble shooting.....	296

1 Poor effect of cooling and heating

Some phenomenon in using process are similar to failures, which are not failures in fact. Therefore, when cooling performance isn't satisfactory, eliminate the following factors first:

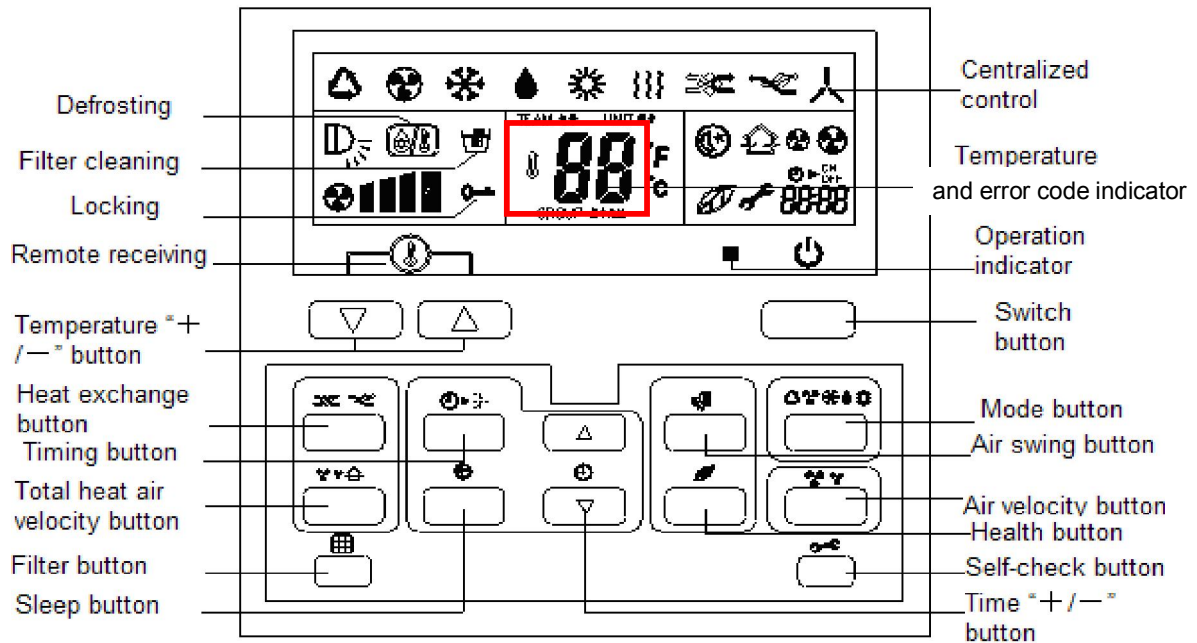
Phenomenon	Cause Description
If there is high ambient temperature outside and more people in room, air conditioner works in full load and cool air is blown from outlet, but room temperature can't be lowered.	In case of high ambient temperature, infiltration heat from outside increases, which increases cooling load of air conditioner; if there are more people (e.g.10 people) in room, each people discharges 120W heat, 10 people discharge 1200W heat altogether, which consume half cooling capacity of air conditioner, therefore, cooling capacity of air conditioner seems not enough and room temperature can't be lowered. It's normal and not the fault of air conditioner.
Air conditioner is hard to start, stops after starting or fuse is blown due to under voltage of power supply.	It is not failure. It's necessary to check the cause of power supply. If it is caused by under voltage of power grid, user should install additional voltage stabilizer for power supply to enable voltage to reach 220V or 380V and use air conditioner normally.
When it operates under high air velocity, room temperature can't cool down and there is no much air flow volume at outlet.	Filth blockage of air filter makes cooling capacity can't be taken out by flowing air timely, causing insufficient cooling capacity that can be solved by removing and cleaning filtering net.
When it operates under high air velocity, unit vibrates and makes loud noise	It is normal that the unit vibrates and makes loud noise when it operates in maximum speed.
Temperature controller isn't properly adjusted and doesn't bring maximum function of cooling, so room temperature can't cool down.	Adjust temperature controller to solve the problem
Heat pump-type air conditioner has unsatisfactory heating effect in cold winter, which is reasonable.	Minimum ambient temperature for starting heating function of air conditioner is -15°C . So air conditioner can't effectively heat below this temperature.
Improper installation position of air conditioner can also result in uneven indoor temperature or poor cooling effect.	Readjust the installation position of air conditioner.
mist blown out from indoor unit	It is caused when cool airflow in air conditioner cools down the air in indoor unit.
noise	Air conditioner will make noise when stopping operation, because refrigerant in the unit flows to opposite direction;
	Air conditioner will expand or shrink due to air temperature change, causing harsh sound; sound of water flow is caused by refrigerant flowing in the unit.
odor in room sometimes	Air conditioner won't bring odor by itself, so it must be caused by odor accumulated in environment.
	Solution: clean air filtering net.
In case of heating, air isn't blown out immediately after starting the unit and "Operation" indicator flickers when wired controller is used.	The heating state is used to prevent blowing out cool air. Please wait for a moment.
	The unit has restart function upon power-on after power failure. Air conditioner will automatically start in case of power-on after power failure and operate according to the mode set before power failure.

2.Error code indication

Indoor unit error code display

After indoor and outdoor units shut down due to failure, failure code will display on wired controller or remote receiving board. In case of normal protection, no failure code will display on wired controller or remote receiving board of indoor unit. Among others, wired controller doesn't automatically send warning, which requires pressing CHECK button to display corresponding failure codes. Remote receiving board directly displays failure codes. After failures are removed, display will automatically disappear.

Wired controller uses failure code of two digits, the first digit of which indicates characters in column "B" and the second digit of which indicates "0~F" characters corresponding to each row.



Remote receiving panel uses three indicators. Power light and timing light have three states respectively corresponding to row "9" and column "B". Flickering times of running light correspond to "0~F" characters of each row. The details are shown below:

Power Light (red light)	Timing Light (yellow light)	Running Light (green light)	Indoor unit Failure code
○	○	★(1 time)	A1
○	○	★(2 ~9 times)	A2~A9
○	○	★ (10 times)	AA
○	○	★ (11 times)	AB
○	○	★ (12 times)	AC
○	○	★ (13 times)	AD
○	○	★ (14 times)	AE

Remarks:

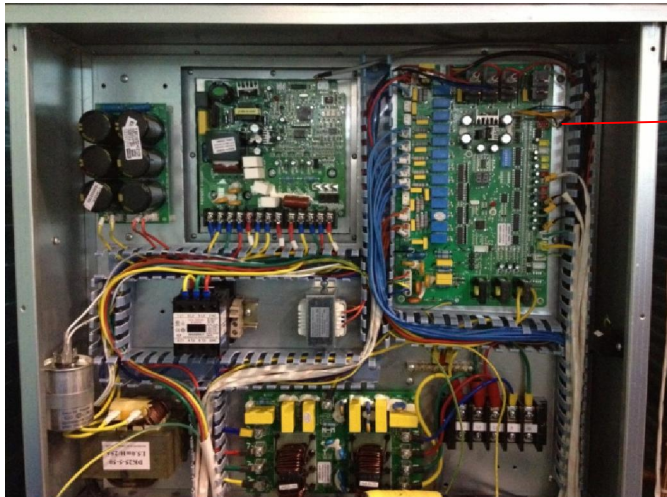
○(dim), ●(on) ★(flashing)

When power light or timing light flickers, it only flickers one time for each warning. After flickering, running light indicates according to specific failure.

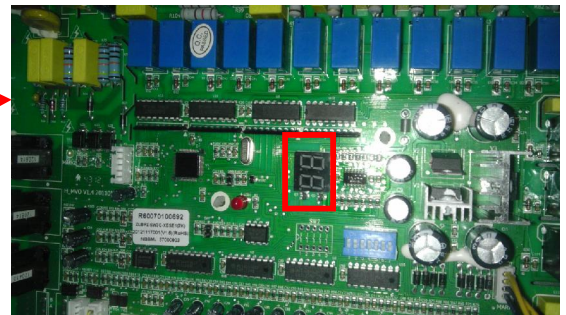
For new four way cassette panel add the digital light display error code



Outdoor unit error code display



Outdoor unit control box



Outdoor unit main PCB

3 Indoor unit error code explanation

Error code	Error code definition	Recovery or not	Problem possible reasons
A1	Indoor ambient temperature sensor failure	Yes	Indoor PCB is broken
			The fuse of indoor PCB is broken
			temperature sensor broken , or exceed test limit
A2	Temperature sensor about middle position of evaporator failure	Yes	Indoor PCB is broken
			The fuse of indoor PCB is broken
			temperature sensor broken , or exceed test limit
A3	Indoor coil pipe inlet temperature sensor failure	Yes	Indoor PCB is broken
			The fuse of indoor PCB is broken
			temperature sensor broken , or exceed test limit
A4	Indoor coil pipe outlet temperature sensor failure	Yes	Indoor PCB is broken
			The fuse of indoor PCB is broken
			temperature sensor is broken , or exceed test limit
A5	Indoor water pump failure	Yes	Water pump no power
			Water pump switch short-circuit or unconnected
			Water pump is broken
			Drain pipe block or up lean
			Indoor PCB is broken
A6	Failure of indoor PG fan	No	Fan motor failure
			Fan motor block
			The connection between PCB and fan motor failure.
			Indoor fan block
A7	Failure of reversible synchronous motor	No	Step motor failure
			The connection between PCB and step motor failure.
A8	Indoor unit ERRPROM module failure	No	Indoor unit PCB is broken
			Error module is broken.
A9	The communication between indoor unit and outdoor unit failed	No	The communication wire between indoor unit and outdoor unit is broken.
			Indoor unit power close
			Indoor PCB is broken
AA	The communication between indoor unit and wire controller failed	No	The communication wire between indoor unit and outdoor unit is broken.
			Indoor unit power close
			Indoor PCB is broken
			Wire controller is broken
AC	Two or more indoor unit central control system address repeated	Yes	The central control address setting incorrect
AE	Operation mode conflict	Yes	The operation mode setting incorrect
AH	Two or more indoor unit refrigerant system address repeated	Yes	System address setting incorrect
AJ	Indoor unit total capacity exceeded	Yes	Stop some indoor units
AF	The EXV leakage	No	EXV is blocked
			Indoor unit temperature sensor issue.
			Evaporator inlet sensor failure.

4. Outdoor unit error code explanation

Code	Error code definition	Recovery or not	Possible reason
C1	Ambient temperature sensor "Tao" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C2	Defrosting temperature sensor "Tdef1" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C3	Exhaust pipe temperature of variable frequency compressor "Tdi" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C4	Exhaust temperature of fixed frequency compressor No.1 "Td1" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C5	Exhaust temperature of fixed frequency compressor No.1 "Td2" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C6	Suction pipe temperature of compressor "Ts" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C7	Suction pipe temperature of variable frequency compressor "Tsi" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C8	Outdoor unit condenser middle position sensor "Tc1" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
C9	Temperature sensor of plate heat exchanger inlet "Tco1" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
CA	Temperature sensor of plate heat exchanger inlet "Tco2" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
CC	Temperature sensor of plate heat exchanger outlet failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
CH	Outdoor condenser outlet temperature sensor "Tco" failure	Yes	Temperature sensor failure or test temperature exceed limit.
			Sensor connection is incorrect.
			Outdoor unit PCB failure.
F1	High pressure sensor "Pd" failure	Yes	High pressure sensor failure
			Low pressure sensor connection is incorrect.
			Outdoor unit PCB failure
F2	High pressure sensor "Pd" limit frequency protection	Yes	Exhaust pipe or condenser pipe block
			Condenser dirty
			Outdoor unit fan stop or low speed
			Refrigerant overcharge
F3	High pressure sensor "Pd" protection.	Yes	Exhaust pipe or condenser pipe block
			Condenser dirty

			Outdoor unit fan stop or low speed
			Refrigerant overcharge
F4	Low pressure sensor "Ps" failure.	No	Low pressure sensor is broken.
			The connection between sensor and outdoor PCB incorrect
			Outdoor unit PCB failure
F5	Low pressure sensor "Pd" limit frequency protection	Yes	Indoor unit fan stop or low speed
			Evaporator dirty
			Indoor EXV full open in cooling mode (Outdoor EXV full open in heating mode)
			Lack refrigerant
			The pipe between evaporator and suction port block
F6	Low pressure sensor "Pd" protection.	No	Indoor unit fan stop or low speed
			Evaporator dirty
			Indoor EXV full open in cooling mode (Outdoor EXV full open in heating mode)
			Lack refrigerant
			The pipe between evaporator and suction port block
F7	High suction pressure "Ps" shutdown protection	N/A	Once confirm the unrecoverable
F8	Compression ratio too large protection	N/A	Once confirm the unrecoverable
F9	Compression ratio too small protection	N/A	Once confirm the unrecoverable
FA	Differential pressure is too small between high pressure and low pressure	N/A	Once confirm the unrecoverable
FB(FH)	DC inverter compressor low discharge temperature "Tdi" limit frequency protection	N/A	Once confirm the unrecoverable
FC	Compressor oil temperature "Toil1" too high protection	N/A	Once confirm the unrecoverable
FD(FJ)	Compressor oil temperature "Toil1" too low protection	N/A	Once confirm the unrecoverable
FE	Compressor oil temperature "Toil2" too high protection	N/A	Once confirm the unrecoverable
FF	Compressor oil temperature "Toil2" too low protection	N/A	Once confirm the unrecoverable
H1	DC inverter compressor high pressure switch "HPSi" failure	No	System pressure exceed high pressure switch limit.
			High pressure switch failure
			High pressure sensor failure
			Instantaneous power-off
			Stop valve closed
			Outdoor unit fan stop
			Outdoor unit air outlet block
			In heating mode indoor unit fan stop
			In heating mode indoor unit EXV block
H2	Fix speed compressor high pressure switch "HPS1" failure	No	System pressure exceed high pressure switch limit.
			High pressure switch failure
			High pressure sensor failure
			Instantaneous power-off

			Stop valve closed
			Outdoor unit fan stop
			Outdoor unit air outlet block
			In heating mode indoor unit fan stop
			In heating mode indoor unit EXV block
H3	Fix speed compressor high pressure switch "HPS2" failure	No	System pressure exceed high pressure switch limit.
			High pressure switch failure
			High pressure sensor failure
			Instantaneous power-off
			Stop valve closed
			Outdoor unit fan stop
			Outdoor unit air outlet block
			In heating mode indoor unit fan stop
			In heating mode indoor unit EXV block
H4	Low pressure switch "LPS" failure	No	System pressure lower than low pressure switch limit.
			Low pressure switch failure
			Low pressure sensor failure
			Instantaneous power-off
			Stop valve closed
			In cooling mode indoor unit EXV close or block
			In heating mode outdoor unit EXV close or block
			In heating mode outdoor unit fan stop
			In heating mode outdoor unit air outlet block
H5	Lack refrigerant	Yes	System leakage
H6	DC inverter compressor current overload limit frequency protection	Yes	Power supply incorrect
H7	DC inverter compressor current overload protection	Yes	Power supply incorrect
H8	Fix speed compressor 1 over current protection	Yes	The stop valve closed
			Outdoor unit air outlet block
			System supply power voltage exceed limit (Rated voltage 15%)
			Compressor failure
			Current transformer failure
H9	Fix speed compressor 2 over current protection	Yes	The stop valve closed
			Outdoor unit air outlet block
			System supply power voltage exceed limit (Rated voltage 15%)
			Compressor failure
			Current transformer failure
HA	AC power under voltage protection	Yes	System supply power voltage exceed limit (Rated voltage 15%)
			Instantaneous power-off
			The supply power phase lack
			Frequency driving PCB failure
			Instantaneous power-off
			Electrical wiring incorrect
			Compressor failure
			Outdoor unit fan motor failure

HC	The phase of fix compressor 1 incorrect	No	The power wire of fix speed compressor incorrect
			Outdoor unit PCB failure
HH	The phase of fix compressor 2 incorrect	No	The power wire of fix speed compressor incorrect
			Outdoor unit PCB failure
HJ	Main power failure	No	Supply power phase-reversal
			Supply power phase lack
			Outdoor unit PCB failure
HE	AC power overvoltage protection	Yes	System supply power voltage exceed limit (Rated voltage 15%)
E1	4-way valve failure	No	4-way valve failure
			The connection of 4-way valve and main PCB incorrect
			Mail PCB failure
E2	DC inverter compressor exhaust temperature "Tdi" limit frequency protection	Yes	Compressor operate in a low speed, system will adjust and recovery automatic.
			Compressor issue
			Lack refrigerant
			Suct port block
E3	DC inverter compressor exhaust temperature "Tdi" over protection	No	System less refrigerant
			DC inverter Compressor failure
			Compressor air return filter block
			EXV open degree is small
			EXV block
			Gas pipe stop valve closed
			Liquid pipe stop valve closed
			System exhaust sensor failure
Outdoor unit PCB failure			
E4	DC inverter compressor exhaust temperature "Td1"over protection	No	System less refrigerant
			Fix speed compressor failure
			Fix speed compressor air return filter block
			EXV open degree is small
			EXV block
			Gas pipe stop valve closed
			Liquid pipe stop valve closed
			System exhaust temperature sensor failure
Outdoor unit PCB failure			
E5	DC inverter compressor exhaust temperature "Td2"over protection	No	System less refrigerant
			Fix speed compressor failure
			Fix speed compressor air return filter block
			EXV open degree is small
			EXV block
			Gas pipe stop valve closed
			Liquid pipe stop valve closed
			System exhaust sensor failure
Outdoor unit PCB failure			
E6	Compressor suction temperature "Ts" limit frequency protection	Yes	Indoor unit fan stop or low speed
			Indoor unit EXV over open
			Evaporator dirty

E7	Temperature sensor about middle position of condenser "Tc1" limit frequency protection	Yes	Compressor operate in a low speed, system will adjust and recovery automatic.
			Condenser dirty
			The pipe from condenser to exhaust port block
			Refrigerant overcharge
E8	Temperature sensor about middle position of condenser "Tc1" protection	No	Condenser dirty
			The pipe from condenser to exhaust port block
			Outdoor unit fan motor stop or low speed
			Refrigerant overcharge
E9	Compressor casing over heat protection	Yes	System less refrigerant
			Fix speed compressor failure
			Fix speed compressor air return filter block
			EXV open degree is small
			EXV block
			Gas pipe stop valve closed
			Liquid pipe stop valve closed
			System exhaust sensor failure
EA	Oil temperature (Toil) over protection	No	Compressor overheat
			Outdoor unit fan motor low speed
EH	Compressor oil temperature "Toil" too low protection	N/A	Once confirm the unrecoverable
EC	Low discharge temperature protection of fixed frequency compressor No.1,"Td1"	N/A	Once confirm the unrecoverable
EJ	Low discharge temperature protection of fixed frequency compressor No.2,"Td2"	N/A	Once confirm the unrecoverable
EE	Temperature sensor about middle position of condenser "Tc2" limit frequency protection	Yes	The pipe from condenser to exhaust port block
			Condenser dirty
			Outdoor unit fan motor stop or low speed
			Refrigerant overcharge
EF	Temperature sensor about middle position of condenser"Tc2" protection	No	The pipe from condenser to exhaust port block
			Condenser dirty
			Outdoor unit fan motor stop or low speed
			Refrigerant overcharge
J1	The communication between outdoor units failure	Yes	The communication wire between outdoor units disconnect, short circuit or connect incorrect.
			Outdoor unit PCB failure
			Outdoor unit main power failed
J2	The communication between outdoor unit and indoor unit failure	Yes	The communication wire between indoor unit and outdoor unit disconnect, short circuit or connect incorrect.
			Indoor unit main power failed
			Indoor unit PCB failure
J3	The communication between PCB and INV module failure	Yes	The connection between driving module and main PCB failure
			The communication part of outdoor unit control PCB failure
			Frequency driving board failure

			Compressor failure
J4	The communication between outdoor unit main PCB and DC fan motor drive module failure	Yes	
J5	Outdoor unit parameter setting incorrect	Yes	Outdoor unit dial switch incorrect
			Mail PCB failure
J6	Main power supply cable diameter is too small	Yes	/
J7	Outdoor unit main control PCB ERROM module failure	Yes	Mail PCB failure
JJ	Indoor unit total capacity exceeding	Yes	/
JE	Oil return failure or defrosting failure	Yes	/
JF	"MCU" automatic reset failure	Yes	/
31	Module protection (F0)	Yes	Supply voltage below level let the current excessive
			Supply voltage exceed limit
			Outdoor fan stop or low speed
32	Module hardware protection	Yes	Supply voltage below level let the current excessive
			Supply voltage exceed limit
			Outdoor fan stop or low speed
33	Module software protection	Yes	Supply voltage below level let the current excessive
			Supply voltage exceed limit
			Outdoor fan stop or low speed
34	Compressor unconnected	Yes	The connect of driving module and DC inverter compressor incorrect
			Driving module failure
			Compressor failure
35	Compressor phase current overload protection	Yes	Compressor overload
			Compressor coil disconnect
			Inverter driving board failure
			Compressor failure
36	Driving module current failure	Yes	Supply voltage below level
			Supply voltage exceed limit
			Driving module failure
37	Driving module temperature alarm	No	Inverter driving board failure
38	Driving module temperature failure	Yes	Driving module failure
			Compressor failure
			Outdoor unit fan stop or low speed
39	Drive module high temperature shutdown protection	Yes	/
3A	DC fan motor drive module protection	N/A	Once confirm the unrecoverable
3C	DC fan motor drive module overcurrent protection or overcurrent sensor failure	N/A	Once confirm the unrecoverable
3H	DC fan motor drive module start failure or Running out of step	N/A	Once confirm the unrecoverable
3J	DC fan motor drive module	N/A	Once confirm the unrecoverable

	over-voltage or under-voltage protection		
3E	DC inverter compressor running out of step	N/A	Once confirm the unrecoverable
41	DC inverter compressor drive module IMP alarm	N/A	Once confirm the unrecoverable
42	DC fan motor overspeed protection	N/A	Once confirm the unrecoverable
43	DC fan motor drive module Eeprom data corruption	N/A	Once confirm the unrecoverable
45	Defrosting temperature sensor "Tdef2" failure	Yes	/
46	Temperature sensor of outdoor unit condenser middle position "Tc2" failure	Yes	/
47	Indoor unit loss failure	Yes	/

Symbol Description

Symbol	Abbreviation	Detailed information
	Pd	Discharge pressure
	Ps	Suction pressure
	Tda	DC inverter compressor discharge temperature
	Tdb	Fixed speed compressor 1# discharge temperature
	Tcm	Temperature of middle point of condenser
	Ts	Temperature of main suction pipe
	Tao	Outdoor ambient temperature
	Tci	Inlet temperature of plate heat exchanger refrigerant
	Tdef	Defrosting temperature of condenser
	Tdef2	Defrosting temperature of condenser 2
	CT1	Fixed speed compressor 1# running current
	CT2	Fixed speed compressor 2# running current
	PMV1	Electronic expansion valve 1 (for heating)
	PMV2	Electronic expansion valve 2
	PMV3	Electronic expansion valve of subcooling
	LPS	Low pressure switch
	HPSa	DC inverter compressor high pressure switch
	HPSb	Fixed speed compressor 1# high pressure switch
	HPSc	Fixed speed compressor 2# high pressure switch
	SVA	Oil return electromagnetic valve of DC inverter compressor
	SVB	Oil return electromagnetic valve of fixed speed compressor
	SV0	Four-way valve
	SV1	Unloading valve
	Tset	Temperature setted
	Tai	Temperature of indoor ambient
	Te1	Refrigerant outlet temperature of indoor coil in cooling mode
	Te2	Refrigerant inlet temperature of indoor coil in cooling mode
	Tem	Temperature of middle point of indoor coil

5. Centralized controller software trouble shooting

Troubles	Possible Reasons	Troubleshooting method
Software on the communication failure warning, some or all of the air conditioners cannot indicated or query the status.	Some Communication wires are not Twisted-pairs	Replace them with Twisted-pairs
	The CN2 of the communication adapter plate has loosening or shedding in connection.	Rotating the Communication wire of CN2
	Communication wires have breakages	Welding the Communication wires or replace new ones
	Spring inside the socket cannot bounce or has been pushed to the end result in the Communication wire not connected.	Repair or replace socket
	Communication wire A&B short circuit or connected to wrong places.	Repair the short circuit section or exchange port A&B.
	Communication wire and the power line got too close (< 15cm)	Apart the Communication wire and the power line to at least 15cm, otherwise wrap them with shield steel pipes.
Line inspection is normal, but some or all of the some or all of the air-con cannot indicated or query the status , or the address got conflict.	Serial port of the computer terminal Communication wire and the software selection one does not match.	Replace the ports or change the serial port setting.
	The communication adapter plate does not supply power after reset the address and result in the new address not effective.	power on communication adapter plate again.
	Unit has no power supply.	Power on unit
	The address of the computer groups got error or repeated.	One more check and modify the address setting.
Line inspection is normal, but one of the air-con cannot indicated or query the status.	Communication adapter plate got system halted or hardware damaged.	Change communication adapter plate
	Maybe the repeater need installing or gets incorrect connection.	Installing the repeater correctly.

Appendix

1. Relation between temperature sensor of compressor and resistance

R25=50K Ω ±1%			
B25/50=3950K ±1%			
T [°C]	R min [K Ω]	R nom [K Ω]	R max [K Ω]
-20	449.9	464.7	479.9
-19	425.7	439.5	453.6
-18	402.9	415.7	428.8
-17	381.5	393.4	405.6
-16	361.3	372.3	383.6
-15	342.2	352.5	363.0
-14	324.3	333.9	343.7
-13	307.5	316.4	325.5
-12	291.5	299.8	308.3
-11	276.6	284.3	292.2
-10	262.4	269.6	276.9
-9	249.0	255.7	262.5
-8	236.5	242.7	249.0
-7	224.5	230.3	236.2
-6	213.3	218.7	224.2
-5	202.7	207.7	212.8
-4	192.7	197.3	202.0
-3	183.2	187.5	191.9
-2	174.3	178.3	182.4
-1	165.8	169.5	173.3
0	157.7	161.2	164.7
1	150.2	153.4	156.7
2	142.9	145.9	148.9
3	136.1	138.9	141.7
4	129.7	132.3	134.93
5	123.6	126.0	128.4
6	117.8	120.0	122.3
7	112.2	114.3	116.4
8	107.1	109.0	111.0
9	102.1	103.9	105.7
10	97.42	99.08	100.8
11	92.97	94.51	96.06
12	88.74	90.17	91.61
13	84.73	86.05	87.38
14	80.92	82.14	83.37
15	77.29	78.42	79.56
16	73.84	74.89	75.95
17	70.57	71.54	72.51
18	67.46	68.35	69.25
19	64.49	65.32	66.15

20	61.68	62.44	63.20
21	59.00	59.70	60.40
22	56.44	57.09	57.74
23	54.02	54.61	55.20
24	51.70	52.25	52.80
25	49.50	50.00	50.50
26	47.37	47.87	48.37
27	45.34	45.84	46.34
28	43.41	43.91	44.41
29	41.59	42.08	42.57
30	39.84	40.33	40.82
31	38.18	38.66	39.15
32	36.59	37.07	37.55
33	35.07	35.55	36.03
34	33.64	34.11	34.58
35	32.27	32.73	33.20
36	30.95	31.41	31.87
37	29.70	30.15	30.61
38	28.50	28.95	29.40
39	27.37	27.81	28.25
40	26.29	26.72	27.16
41	25.24	25.67	26.10
42	24.25	24.67	25.09
43	23.31	23.72	24.14
44	22.41	22.81	23.22
45	21.53	21.93	22.33
46	20.71	21.10	21.50
47	19.92	20.30	20.69
48	19.16	19.54	19.92
49	18.44	18.81	19.18
50	17.75	18.11	18.48
51	17.08	17.44	17.80
52	16.44	16.79	17.14
53	15.84	16.18	16.53
54	15.26	15.59	15.93
55	14.69	15.02	15.35
56	14.16	14.48	14.81
57	13.65	13.96	14.28
58	13.15	13.46	13.77
59	12.69	12.99	13.30
60	12.23	12.53	12.83
61	11.80	12.09	12.39
62	11.39	11.67	11.96
63	10.98	11.26	11.54
64	10.60	10.87	11.15
65	10.23	10.50	10.77
66	9.880	10.14	10.41

67	9.537	9.792	10.05
68	9.211	9.460	9.715
69	8.897	9.141	9.391
70	8.595	8.834	9.078
71	8.306	8.539	8.778
72	8.028	8.256	8.490
73	7.759	7.983	8.212
74	7.501	7.720	7.944
75	7.254	7.468	7.687
76	7.016	7.225	7.440
77	6.786	6.991	7.201
78	6.565	6.765	6.971
79	6.352	6.548	6.749
80	6.147	6.339	6.536
81	5.950	6.138	6.331
82	5.761	5.944	6.133
83	5.578	5.757	5.942
84	5.401	5.577	5.758
85	5.231	5.403	5.580
86	5.069	5.237	5.410
87	4.912	5.076	5.245
88	4.760	4.921	5.087
89	4.615	4.772	4.934
90	4.474	4.628	4.787
91	4.338	4.489	4.645
92	4.207	4.354	4.506
93	4.081	4.225	4.374
94	3.958	4.099	4.245
95	3.840	3.978	4.121
96	3.726	3.861	4.001
97	3.616	3.748	3.885
98	3.509	3.639	3.773
99	3.407	3.534	3.665
100	3.308	3.432	3.560
101	3.212	3.333	3.459
102	3.119	3.238	3.361
103	3.030	3.146	3.267
104	2.942	3.056	3.174
105	2.858	2.970	3.086
106	2.778	2.887	3.000
107	2.699	2.806	2.917
108	2.623	2.728	2.837
109	2.549	2.652	2.758
110	2.479	2.579	2.683
111	2.410	2.508	2.610
112	2.343	2.439	2.539
113	2.279	2.373	2.471

114	2.216	2.308	2.404
115	2.156	2.246	2.340
116	2.097	2.186	2.278
117	2.040	2.127	2.217
118	1.985	2.070	2.158
119	1.932	2.015	2.102
120	1.880	1.962	2.047

2. Relation between Temperature Sensor of Coil Pipe and Resistance

R25=20K Ω \pm 1%							
B25/50=3950K \pm 1%							
Temp	resistance(K Ω)			(resist.tol)		(temp.tol) $^{\circ}$ C	
($^{\circ}$ C)	R max	R(t) Normal	R min	MAX(+)	MIN(-)	MAX(+)	MIN(-)
-30	377.571	347.000	318.338	8.81	8.26	1.36	1.36
-29	354.642	326.228	299.608	8.71	8.16	1.35	1.35
-28	333.353	306.927	282.189	8.61	8.06	1.33	1.33
-27	313.547	288.957	265.927	8.51	7.97	1.32	1.32
-26	295.088	272.196	250.774	8.41	7.87	1.31	1.31
-25	277.860	256.541	236.582	8.31	7.78	1.30	1.30
-24	261.761	241.901	223.323	8.21	7.68	1.29	1.29
-23	246.699	228.193	210.873	8.11	7.59	1.27	1.27
-22	232.598	215.349	199.219	8.01	7.49	1.26	1.26
-21	219.385	203.304	188.260	7.91	7.40	1.25	1.25
-20	206.995	192.000	177.984	7.81	7.30	1.24	1.24
-19	195.360	181.376	168.317	7.71	7.20	1.23	1.23
-18	184.441	171.398	159.212	7.61	7.11	1.21	1.21
-17	174.193	162.025	150.667	7.51	7.01	1.20	1.20
-16	164.568	153.215	142.613	7.41	6.92	1.19	1.19
-15	155.527	144.932	135.048	7.31	6.82	1.17	1.18
-14	147.029	137.141	127.911	7.21	6.73	1.16	1.17
-13	138.912	129.812	121.205	7.01	6.63	1.15	1.15
-12	131.406	122.913	114.874	6.91	6.54	1.14	1.14
-11	124.346	116.418	108.921	6.81	6.44	1.12	1.13
-10	117.701	110.300	103.307	6.71	6.34	1.11	1.12
-9	111.446	104.536	98.003	6.61	6.25	1.10	1.11
-8	105.556	99.104	93.009	6.51	6.15	1.08	1.09
-7	100.007	93.983	88.288	6.41	6.06	1.07	1.08
-6	94.780	89.154	83.840	6.31	5.96	1.06	1.07
-5	89.852	84.598	79.632	6.21	5.87	1.05	1.06
-4	85.124	80.298	75.665	6.01	5.77	1.03	1.05
-3	80.746	76.240	71.910	5.91	5.68	1.02	1.03
-2	76.615	72.408	68.368	5.81	5.58	1.01	1.02
-1	72.717	68.789	65.019	5.71	5.48	1.00	1.01
0	69.037	65.370	61.847	5.61	5.39	0.98	1.00
1	65.563	62.139	58.852	5.51	5.29	0.97	0.99
2	62.280	59.084	56.012	5.41	5.2	0.96	0.97
3	59.180	56.196	53.330	5.31	5.1	0.94	0.96
4	56.248	53.463	50.785	5.21	5.01	0.93	0.95
5	53.428	50.879	48.381	5.01	4.91	0.92	0.94
6	50.810	48.432	46.098	4.91	4.82	0.91	0.93
7	48.335	46.117	43.940	4.81	4.72	0.89	0.91
8	45.993	43.924	41.895	4.71	4.62	0.88	0.90
9	43.776	41.847	39.951	4.61	4.53	0.87	0.89
10	41.678	39.879	38.112	4.51	4.43	0.86	0.88
11	39.691	38.015	36.365	4.41	4.34	0.84	0.87
12	37.809	36.247	34.710	4.31	4.24	0.83	0.85

13	36.026	34.571	33.136	4.21	4.15	0.82	0.84
14	34.338	32.982	31.646	4.11	4.05	0.80	0.83
15	32.736	31.474	30.228	4.01	3.96	0.79	0.82
16	31.218	30.043	28.883	3.91	3.86	0.78	0.81
17	29.778	28.685	27.606	3.81	3.76	0.77	0.79
18	28.411	27.395	26.390	3.71	3.67	0.75	0.78
19	27.115	26.170	25.236	3.61	3.57	0.74	0.77
20	25.885	25.007	24.137	3.51	3.48	0.73	0.76
21	24.717	23.902	23.094	3.41	3.38	0.72	0.75
22	23.607	22.851	22.099	3.31	3.29	0.70	0.73
23	22.554	21.853	21.156	3.21	3.19	0.69	0.72
24	21.553	20.903	20.255	3.11	3.1	0.68	0.71
25	20.600	20.000	19.400	3.00	3.00	0.66	0.70
26	19.734	19.141	18.549	3.10	3.09	0.69	0.72
27	18.909	18.323	17.739	3.20	3.19	0.72	0.75
28	18.123	17.545	16.970	3.30	3.28	0.74	0.78
29	17.374	16.804	16.238	3.40	3.37	0.77	0.80
30	16.660	16.098	15.541	3.49	3.46	0.80	0.83
31	15.979	15.426	14.879	3.59	3.55	0.82	0.85
32	15.329	14.785	14.248	3.68	3.63	0.85	0.88
33	14.709	14.175	13.647	3.77	3.72	0.88	0.91
34	14.117	13.593	13.075	3.86	3.80	0.90	0.93
35	13.553	13.038	12.531	3.95	3.89	0.93	0.96
36	13.013	12.508	12.012	4.04	3.97	0.95	0.98
37	12.499	12.003	11.517	4.13	4.05	0.98	1.01
38	12.007	11.521	11.045	4.21	4.13	1.01	1.04
39	11.537	11.062	10.595	4.30	4.21	1.03	1.06
40	11.088	10.622	10.166	4.38	4.29	1.06	1.09
41	10.659	10.203	9.757	4.46	4.37	1.09	1.11
42	10.248	9.803	9.367	4.55	4.45	1.11	1.14
43	9.856	9.420	8.994	4.63	4.52	1.14	1.17
44	9.480	9.054	8.638	4.71	4.60	1.17	1.19
45	9.121	8.705	8.298	4.79	4.67	1.19	1.22
46	8.778	8.371	7.973	4.86	4.75	1.22	1.24
47	8.449	8.051	7.663	4.94	4.82	1.24	1.27
48	8.134	7.745	7.367	5.02	4.89	1.27	1.30
49	7.832	7.453	7.083	5.09	4.96	1.30	1.32
50	7.543	7.173	6.812	5.16	5.03	1.32	1.35
51	7.267	6.905	6.553	5.24	5.10	1.35	1.37
52	7.002	6.649	6.305	5.31	5.17	1.38	1.40
53	6.747	6.403	6.068	5.38	5.24	1.40	1.43
54	6.504	6.168	5.841	5.45	5.30	1.43	1.45
55	6.270	5.942	5.623	5.52	5.37	1.46	1.48
56	6.046	5.726	5.415	5.59	5.43	1.48	1.50
57	5.831	5.519	5.216	5.66	5.50	1.51	1.53
58	5.625	5.321	5.025	5.72	5.56	1.53	1.56
59	5.428	5.131	4.842	5.79	5.62	1.56	1.58
60	5.238	4.948	4.667	5.86	5.69	1.59	1.61
61	5.055	4.773	4.499	5.92	5.75	1.61	1.63

62	4.880	4.605	4.338	5.98	5.81	1.64	1.66
63	4.712	4.444	4.183	6.05	5.87	1.67	1.68
64	4.551	4.289	4.035	6.11	5.93	1.69	1.71
65	4.396	4.140	3.893	6.17	5.98	1.72	1.74
66	4.247	3.998	3.756	6.23	6.04	1.75	1.76
67	4.103	3.861	3.625	6.29	6.10	1.77	1.79
68	3.966	3.729	3.500	6.35	6.15	1.80	1.81
69	3.833	3.603	3.379	6.41	6.21	1.82	1.84
70	3.706	3.481	3.263	6.46	6.26	1.85	1.87
71	3.583	3.364	3.152	6.52	6.32	1.88	1.89
72	3.466	3.252	3.045	6.58	6.37	1.90	1.92
73	3.352	3.144	2.942	6.63	6.42	1.93	1.94
74	3.243	3.040	2.843	6.68	6.47	1.96	1.97
75	3.138	2.940	2.748	6.74	6.53	1.98	2.00
76	3.037	2.844	2.657	6.79	6.58	2.01	2.02
77	2.940	2.751	2.569	6.84	6.63	2.04	2.05
78	2.846	2.662	2.485	6.89	6.67	2.06	2.07
79	2.756	2.577	2.403	6.95	6.72	2.09	2.10
80	2.669	2.494	2.325	7.00	6.77	2.11	2.13
81	2.585	2.415	2.250	7.04	6.82	2.14	2.15
82	2.504	2.338	2.178	7.09	6.86	2.17	2.18
83	2.426	2.264	2.108	7.14	6.91	2.19	2.20
84	2.351	2.193	2.041	7.19	6.96	2.22	2.23
85	2.279	2.125	1.976	7.24	7.00	2.25	2.26
86	2.209	2.059	1.914	7.28	7.04	2.27	2.28
87	2.142	1.995	1.854	7.33	7.09	2.30	2.31
88	2.077	1.934	1.796	7.37	7.13	2.33	2.33
89	2.014	1.875	1.740	7.42	7.17	2.35	2.36
90	1.954	1.818	1.687	7.46	7.22	2.38	2.39
91	1.895	1.763	1.635	7.50	7.26	2.41	2.41
92	1.839	1.710	1.585	7.55	7.30	2.43	2.44
93	1.785	1.659	1.537	7.59	7.34	2.46	2.46
94	1.732	1.609	1.490	7.63	7.38	2.48	2.49
95	1.681	1.561	1.446	7.68	7.43	2.51	2.52
96	1.632	1.515	1.402	7.72	7.47	2.54	2.54
97	1.585	1.471	1.360	7.76	7.51	2.56	2.57
98	1.539	1.428	1.320	7.80	7.55	2.59	2.59
99	1.495	1.386	1.281	7.85	7.59	2.62	2.62
100	1.452	1.346	1.243	7.89	7.63	2.64	2.64
101	1.411	1.307	1.207	7.93	7.68	2.67	2.67
102	1.371	1.270	1.172	7.98	7.72	2.70	2.70
103	1.332	1.233	1.137	8.02	7.76	2.72	2.72
104	1.295	1.198	1.104	8.07	7.81	2.75	2.75
105	1.258	1.164	1.070	8.11	8.11	2.77	2.77

3. Relation between Ambient Temperature Sensor and Resistance

R25 = 15.0 K Ω \pm 3%			
B25/50 = 3950K \pm 2%			
T [°C]	R min [K Ω]	R nom [K Ω]	R max [K Ω]
-25	183.4	199.1	216
-24.5	178	193.1	209.4
-24	172.8	187.4	203
-23.5	167.8	181.8	196.9
-23	162.9	176.5	190.9
-22.5	158.2	171.3	185.2
-22	153.7	166.2	179.6
-21.5	149.3	161.4	174.3
-21	145	156.7	169.1
-20.5	140.9	152.1	164.1
-20	136.9	147.7	159.2
-19.5	133	143.4	154.6
-19	129.2	139.3	150
-18.5	125.6	135.3	145.6
-18	122.1	131.4	141.4
-17.5	118.7	127.7	137.3
-17	115.4	124.1	133.3
-16.5	112.2	120.6	129.5
-16	109.1	117.2	125.7
-15.5	106.1	113.9	122.1
-15	103.1	110.7	118.6
-14.5	100.3	107.6	115.3
-14	97.59	104.6	112
-13.5	94.94	101.7	108.8
-13	92.37	98.88	105.8
-12.5	89.87	96.16	102.8
-12	87.45	93.52	99.92
-11.5	85.11	90.96	97.13
-11	82.83	88.48	94.43
-10.5	80.63	86.07	91.81
-10	78.48	83.74	89.27
-9.5	76.41	81.48	86.82
-9	74.39	79.29	84.43
-8.5	72.43	77.16	82.12
-8	70.54	75.1	79.88
-7.5	68.69	73.1	77.71
-7	66.9	71.15	75.61
-6.5	65.17	69.27	73.57
-6	63.48	67.44	71.59
-5.5	61.84	65.67	69.66
-5	60.25	63.95	67.8
-4.5	58.71	62.27	65.99
-4	57.21	60.65	64.24
-3.5	55.75	59.08	62.54
-3	54.34	57.55	60.89

-2.5	52.96	56.06	59.29
-2	51.63	54.62	57.73
-1.5	50.33	53.22	56.22
-1	49.07	51.86	54.76
-0.5	47.84	50.54	53.33
0	46.65	49.25	51.95
0.5	45.49	48	50.61
1	44.37	46.79	49.31
1.5	43.27	45.61	48.04
2	42.21	44.47	46.81
2.5	41.17	43.36	45.62
3	40.17	42.28	44.46
3.5	39.19	41.23	43.33
4	38.24	40.2	42.24
4.5	37.31	39.21	41.17
5	36.41	38.25	40.14
5.5	35.53	37.31	39.13
6	34.68	36.39	38.16
6.5	33.85	35.51	37.21
7	33.05	34.64	36.29
7.5	32.26	33.8	35.39
8	31.5	32.99	34.52
8.5	30.75	32.19	33.67
9	30.03	31.42	32.84
9.5	29.33	30.67	32.04
10	28.64	29.94	31.26
10.5	27.97	29.22	30.5
11	27.32	28.53	29.77
11.5	26.69	27.86	29.05
12	26.07	27.2	28.35
12.5	25.47	26.56	27.67
13	24.89	25.94	27.01
13.5	24.32	25.33	26.37
14	23.76	24.74	25.74
14.5	23.22	24.17	25.13
15	22.69	23.61	24.54
15.5	22.18	23.06	23.96
16	21.68	22.53	23.4
16.5	21.19	22.02	22.85
17	20.72	21.51	22.32
17.5	20.26	21.02	21.8
18	19.8	20.55	21.3
18.5	19.36	20.08	20.8
19	18.94	19.63	20.33
19.5	18.52	19.19	19.86
20	18.11	18.75	19.4
20.5	17.71	18.33	18.96
21	17.33	17.93	18.53
21.5	16.95	17.53	18.11

22	16.58	17.14	17.7
22.5	16.22	16.76	17.3
23	15.87	16.39	16.91
23.5	15.53	16.03	16.53
24	15.19	15.68	16.16
24.5	14.87	15.33	15.8
25	14.55	15	15.45
25.5	14.23	14.67	15.12
26	13.91	14.36	14.8
26.5	13.61	14.05	14.49
27	13.31	13.74	14.18
27.5	13.02	13.45	13.88
28	12.73	13.16	13.59
28.5	12.45	12.88	13.31
29	12.18	12.6	13.03
29.5	11.92	12.34	12.76
30	11.66	12.08	12.49
30.5	11.41	11.82	12.23
31	11.17	11.57	11.98
31.5	10.93	11.33	11.73
32	10.69	11.09	11.49
32.5	10.47	10.86	11.26
33	10.24	10.63	11.03
33.5	10.03	10.41	10.8
34	9.816	10.2	10.59
34.5	9.609	9.987	10.37
35	9.408	9.782	10.16
35.5	9.211	9.581	9.957
36	9.019	9.385	9.758
36.5	8.831	9.194	9.563
37	8.648	9.007	9.372
37.5	8.469	8.824	9.185
38	8.294	8.645	9.003
38.5	8.123	8.471	8.825
39	7.957	8.3	8.651
39.5	7.794	8.134	8.481
40	7.635	7.971	8.315
40.5	7.479	7.812	8.152
41	7.328	7.657	7.993
41.5	7.179	7.505	7.838
42	7.034	7.356	7.686
42.5	6.893	7.211	7.537
43	6.755	7.069	7.391
43.5	6.619	6.93	7.249
44	6.487	6.795	7.11
44.5	6.358	6.662	6.974
45	6.232	6.532	6.841
45.5	6.108	6.405	6.711
46	5.988	6.282	6.584

46.5	5.87	6.16	6.459
47	5.755	6.042	6.337
47.5	5.642	5.926	6.218
48	5.532	5.812	6.101
48.5	5.424	5.701	5.987
49	5.319	5.593	5.875
49.5	5.216	5.486	5.766
50	5.115	5.382	5.659
50.5	5.016	5.28	5.553
51	4.919	5.18	5.45
51.5	4.825	5.083	5.35
52	4.732	4.987	5.251
52.5	4.642	4.894	5.155
53	4.553	4.802	5.06
53.5	4.467	4.713	4.968
54	4.382	4.625	4.877
54.5	4.3	4.54	4.789
55	4.219	4.457	4.703
55.5	4.139	4.374	4.618
56	4.061	4.293	4.534
56.5	3.985	4.214	4.452
57	3.911	4.137	4.373
57.5	3.839	4.062	4.295
58	3.767	3.988	4.218
58.5	3.698	3.916	4.143
59	3.63	3.845	4.07
59.5	3.563	3.776	3.998
60	3.498	3.708	3.927
60.5	3.434	3.642	3.859
61	3.371	3.577	3.791
61.5	3.31	3.513	3.725
62	3.25	3.45	3.66
62.5	3.191	3.389	3.596
63	3.134	3.329	3.534
63.5	3.077	3.271	3.473
64	3.022	3.213	3.413
64.5	2.968	3.157	3.354
65	2.915	3.102	3.297
65.5	2.863	3.048	3.241
66	2.813	2.995	3.185
66.5	2.763	2.943	3.131
67	2.714	2.892	3.078
67.5	2.666	2.842	3.026
68	2.62	2.793	2.975
68.5	2.574	2.745	2.925
69	2.529	2.698	2.876
69.5	2.485	2.652	2.828
70	2.442	2.607	2.781
70.5	2.399	2.563	2.734

71	2.358	2.519	2.689
71.5	2.317	2.477	2.645
72	2.278	2.435	2.601
72.5	2.239	2.394	2.558
73	2.2	2.354	2.516
73.5	2.163	2.315	2.475
74	2.126	2.276	2.435
74.5	2.09	2.238	2.395
75	2.055	2.201	2.356
75.5	2.02	2.165	2.318
76	1.986	2.129	2.28
76.5	1.953	2.094	2.244
77	1.92	2.06	2.208
77.5	1.888	2.026	2.172
78	1.857	1.993	2.138
78.5	1.826	1.961	2.103
79	1.796	1.929	2.07
79.5	1.766	1.898	2.037
80	1.737	1.867	2.005
80.5	1.709	1.837	1.973
81	1.681	1.808	1.942
81.5	1.653	1.779	1.912
82	1.626	1.75	1.882
82.5	1.6	1.722	1.852
83	1.574	1.695	1.824
83.5	1.548	1.668	1.795
84	1.524	1.642	1.767
84.5	1.499	1.616	1.74
85	1.475	1.59	1.713
85.5	1.451	1.565	1.687
86	1.428	1.541	1.661
86.5	1.406	1.517	1.636
87	1.383	1.493	1.611
87.5	1.361	1.47	1.586
88	1.34	1.447	1.562
88.5	1.319	1.425	1.538
89	1.298	1.403	1.515
89.5	1.278	1.381	1.492
90	1.258	1.36	1.47
90.5	1.238	1.34	1.448
91	1.219	1.319	1.426
91.5	1.2	1.299	1.405
92	1.181	1.279	1.384
92.5	1.163	1.26	1.364
93	1.145	1.241	1.343
93.5	1.128	1.222	1.324
94	1.11	1.204	1.304
94.5	1.093	1.186	1.285
95	1.077	1.168	1.266

95.5	1.06	1.151	1.248
96	1.044	1.134	1.229
96.5	1.028	1.117	1.212
97	1.013	1.1	1.194
97.5	0.9976	1.084	1.177
98	0.9826	1.068	1.16
98.5	0.9679	1.052	1.143
99	0.9535	1.037	1.127
99.5	0.9392	1.022	1.11
100	0.9252	1.007	1.095
100.5	0.9115	0.9922	1.079
101	0.8981	0.9778	1.064
101.5	0.8848	0.9636	1.049
102	0.8717	0.9497	1.034
102.5	0.8589	0.936	1.019
103	0.8463	0.9225	1.005
103.5	0.8339	0.9093	0.9906
104	0.8218	0.8963	0.9767
104.5	0.8098	0.8835	0.9631
105	0.7981	0.871	0.9497

Parameter table of testing operation

Testing operation parameter of multi-couple unit																											
	Ref. value	Main unit					Subordinate unit1					Subordinate unit 2					Subordinate unit 3										
Exhaust																											
Suction																											
High pressure																											
Low pressure																											
Ambient temperature																											
TC																											
Ta																											
PMV																											
Compressor current																											
Frequency																											
Operation parameter of indoor unit																											
No.	Indoor unit capacity	PMV	Ta	Inlet	middle	Outlet	No.	Indoor unit capacity	PMV	Ta	Inlet	middle	Outlet	No.	Indoor unit capacity	PMV	Ta	Inlet	middle	Outlet	No.	Indoor unit capacity	PMV	Ta	Inlet	middle	Outlet
Ref. value																											
1							17							33								49					
2							18							34								50					
3							19							35								51					
4							20							36								52					
5							21							37								53					
6							22							38								54					
7							23							39								55					
8							24							40								56					
9							25							41								57					
10							26							42								58					
11							27							43								59					
12							28							44								60					
13							29							45								61					
14							30							46								62					
15							31							47								63					