Service manual

(Light commercial R410a)

Four-way Cassette

Ceiling&Floor

Low ESP Duct

Mid ESP Duct

Contents

Chapter I Model Selection

1. General description

1.1Product introduction

1.1.1 Four-way Cassette

Four-way cassette type air conditioner (Cooling-only or heat pump), is installed under the ceiling, compared with Floor&Standing type A/C, it has following advantages: saving room space; Ceiling installation combining with the decoration, makes the room more elegant; Flexible installation in anywhere in the ceiling and 4-direction blowing, makes the indoor temperature is even and makes you feel more comfortable, so Four-way Cassette type A/C is perfect replacing product of Floor & Standing type A/C.

Application occasions：

Small super market, restaurant, office, meeting room, villa meeting room, family bedroom and so on, and it can even be used as the updating product for modern residential A/C.

Features：

◇Concealed design, ceiling installation, room space saving, it is very suitable for family or office occasion;

◇With Setting or Auto two operation modes, 4-way blowing, strong circulating wind, multi fan speed, the cooling or heating capacity can reach to each corner of the room;

◇One-step formed shell by mold, appearance is elegant;

◇Special insulation design, achieves high heat insulation efficiency, and no condensation on shell;

◇Built-in drain pump, drain-head height is up to 1.2meters, creating the ideal solution for perfect water drainage, also construction and installation is much easier and convenient;

◇Long term air filter, wash period is two times longer than normal filter, and maintenance is free;

◇3D helix air blade ensures the air flow sufficiently, reduces the unit thickness, and reduces the operation noise greatly;

◇Plastic drip tray adopts innovative foam-PS combined with plastic technical, the thickness of plastic reaches 1mm, avoid any leakage;

◇6 segments heat exchanger, increase exchanging area, the efficiency of heat exchanging increased by 10%~15%;

◇Ingenious hook design, the panel is convenient to install or remove;

◇Fresh air intake design, leading in fresh air to improve indoor air quality anytime;

◇3-phase power supply type units with low ambient temperature cooling function, which makes the unit can run normally on the condition that the ambient temperature falls down to -15℃;

◇Auto-restart function;

◇Standard remote controller and optional wired controller;

◇Auxiliary electric heater for heat pump unit, with fast heating and low ambient temperature heating functions;

◇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.

1.1.2 Ceiling& Floor

Ceiling& Foor type A/C (Cooling-only or Heat pump) can be installed under the ceiling and also on the floor. Compared with normal Floor &Standing type A/C, it can be hoisted under the ceiling, saving room space, it is also the updating product for Floor & Standing type A/C.

Application occasions:

Small super market, restaurant, office, meeting room, villa living room, family bedroom, and it can even be used as the updating product for modern residential A/C.

Features:

◇Suspended ceiling design, installation under ceiling, saving room space, it is very suitable for family or office place;

◇Convenient and flexible for indoor unit installation, can be installed under the ceiling or on the floor;

◇With Setting or Auto two operation modes, multi fan speed, makes you feel more comfortable;

◇Shell was formed by mold, the appearance is “slim”, “elegant”, “fashion” and “comfortable”;

◇Special insulation design, achieces high heat insulation efficiency and no condensation on shell;

◇Long term air filter, the wash period is two times longer than normal filter, maintenance is free;

◇Adopting low noise centrifugal fan, strong wind but quiet operation, the silence design achieves harmony residential living;

◇All the installation and maintenance can be done in the bottom of unit, saving the maintenance space;

◇3-phase power supply type units with low ambient temperature cooling function, which makes the unit can run normally on the condition that the ambient temperature falls down to -15℃;;

◇Standard remote controller and optional wired controller;

◇Auxiliary electric heater for heat pump unit, with fast heating and low ambient temperature heating functions;

◇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..

1.1.3 Low & Medium ESP Duct

Duct type air conditioner (Cooling-only or Heat pump), named for the duct can be installed to connect with air outlet and inlet. According to different ESP, it divides into Low ESP Duct type (12~30Pa), Medium ESP Duct type (50~80Pa) and High ESP Duct type (higher than 80P).

Application occasions：

Small super market, hotel, restaurant, office, meeting room and so on.

Features：

◇Conceal design, the unit is installed inside of ceiling, doesn't take room space, suitable for family and office place;

◇With Setting or Auto two operation modes, multi fan speed, makes you feel more comfortable;

◇There are red and white two teminals for motor wiring, users can adjust the ESP by changing the terminals to meet different requirements, simple and convenient; Low ESP Duct is 12/30Pa, and Medium ESP duct is 50/80Pa, the default setting is 12/30Pa;

◇Special insulation design, achieces high heat insulation efficiency, and no condensation on shell;

◇Low noise centrifugal fan, strong wind but quiet operation;

◇3-phase power supply type units with low ambient temperature cooling function, which makes the unit can run normally on the condition that the ambient temperature falls down to -15℃;

◇Auto restart;

◇Standard remote controller and optional wired controller;

◇Auxiliary electric heater for heat pump unit, with fast heating and low ambient temperature heating functions;

◇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..

1.2 Nomenclature

1.3 Function introduction

1.3.1 Cassette function

Type	Item / model	CO4C-**H						
		12	18	24	36	42	48	60
Protection	High pressure protection	—	—	—	○	○	○	○
	Low pressure protection	—	—	—	○	○	○	○
	Compressor overloading protection	○	○	○	○	○	○	○
	High exh. temperate protection	—	—	—	○	○	○	○
	Phase protection(Phase-loss, phase- reverse)	—	—	—	○	○	○	○
	Over-heating protection	○	○	○	○	○	○	○
	Anti-freezing protection	○	○	○	○	○	○	○
	Sensor failure alarm	○	○	○	○	○	○	○
	Failure code display	○	○	○	○	○	○	○
Comfort	Cooling	○	○	○	○	○	○	○
	Heating	○	○	○	○	○	○	○
	3-Speed	○	○	○	○	○	○	○
	Adjustable ESP	—	—	—	—	—	—	—
	Auto-restart(Optional)	○	○	○	○	○	○	○
	Anti-cold wind	○	○	○	○	○	○	○
	Afterheat wind blowing	○	○	○	○	○	○	○
	Timing ON/OFF	○	○	○	○	○	○	○
Operation	Time display	○	○	○	○	○	○	○
	Operation mode display	○	○	○	○	○	○	○
	Fan speed display	○	○	○	○	○	○	○
	Defrost display	○	○	○	○	○	○	○
	Timing ON/OFF display	○	○	○	○	○	○	○
	Wind angle display	○	○	○	○	○	○	○
	Sleeping mode display	○	○	○	○	○	○	○
Running	Auto start	○	○	○	○	○	○	○
	Dehumidifying	○	○	○	○	○	○	○
	Auto defrost	○	○	○	○	○	○	○
	Ventilation function	○	○	○	○	○	○	○
	Low ambient temperature cooling	○	○	○	○	○	○	○
Health	Washable air filter	○	○	○	○	○	○	○
	Fresh air interface	—	○	○	○	○	○	○
Installation	Left/right drainage(optional)	—	—	—	—	—	—	—
	Left/right pipe connection(optional)	—	—	—	—	—	—	—
	Down/back air suction(optional)	—	—	—	—	—	—	—
	Installation indicating board	—	○	○	○	○	○	○

Remarks：○ Stands for “YES”　　— Stands for “NO”

1.3.2 Ceiling& floor function

Type	Item \ Model	COF-**H						
		12/4	18/4	24/4	36/5	42/5	48/5	60/5
Protection	High pressure protection	—	—	—	○	○	○	○
	Low pressure protection	—	—	—	○	○	○	○
	Compressor overloading protection	○	○	○	○	○	○	○
	High Ext. temperate protection	—	—	—	○	○	○	○
	Phase protection(Phase-loss, phase- reverse)	—	—	—	○	○	○	○
	Over-heating protection	○	○	○	○	○	○	○
	Anti-freezing protection	○	○	○	○	○	○	○
	Sensor failure alarm	○	○	○	○	○	○	○
	Failure code display	○	○	○	○	○	○	○
Comfort	Cooling	○	○	○	○	○	○	○
	Heating	○	○	○	○	○	○	○
	3-Speed	○	○	○	○	○	○	○
	Adjustable ESP	—	—	—	—	—	—	—
	Auto-restart(Optional)	○	○	○	○	○	○	○
	Anti-cold wind	○	○	○	○	○	○	○
	Afterheat wind blowing	○	○	○	○	○	○	○
	Timing ON/OFF	○	○	○	○	○	○	○
Operation	Time display	○	○	○	○	○	○	○
	Operation mode display	○	○	○	○	○	○	○
	Fan speed display	○	○	○	○	○	○	○
	Defrost display	○	○	○	○	○	○	○
	Timing ON/OFF display	○	○	○	○	○	○	○
	Wind angle display	○	○	○	○	○	○	○
	Sleeping mode display	○	○	○	○	○	○	○
Running	Auto start	○	○	○	○	○	○	○
	Dehumidifying	○	○	○	○	○	○	○
	Auto defrost	○	○	○	○	○	○	○
	Ventilation function	○	○	○	○	○	○	○
	Low ambient temperature cooling	—	—	—	○	○	○	○
Health	Washable air filter	○	○	○	○	○	○	○
	Fresh air interface	—	○	○	○	○	○	○
Installation	Left/right drainage	—	—	—	—	—	—	—
	Left/right pipe connection	—	—	—	—	—	—	—
	Down/back air suction	—	—	—	—	—	—	—
	Installation indicating board	—	—	—	—	—	—	—

Remarks：○ Stands for “YES”　　— Stands for “NO”

1.3.4 Medium ESP Duct Function

Type	Item / Model	COD-**H					
		18	24	36	42	48	60
Protection	High pressure protection	—	—	—	○	○	○
	Low pressure protection	—	—	—	○	○	○
	Compressor overload protection	○	○	○	○	○	○
	Exhaust high temperature protection	—	—	—	○	○	○
	Phase protection(Phase-loss, phase- reverse)	—	—	—	○	○	○
	Overheating protection	○	○	○	○	○	○
	Prevent frostbite protection	○	○	○	○	○	○
	Sensor failure alarm	○	○	○	○	○	○
	Malfunction code display function	○	○	○	○	○	○
Comfort	Cooling	○	○	○	○	○	○
	Heating	○	○	○	○	○	○
	Three speed	○	○	○	○	○	○
	Adjusted static pressure	—	—	—	—	—	—
	Auto- restart function(Optional)	○	○	○	○	○	○
	Anti-cold wind	○	○	○	○	○	○
	Afterheat wind blowing	○	○	○	○	○	○
	Timing on/off function	○	○	○	○	○	○
Operating	Clock display	○	○	○	○	○	○
	Running mode display	○	○	○	○	○	○
	Fan speed display	○	○	○	○	○	○
	Defrost display	○	○	○	○	○	○
	Timing on/off display	○	○	○	○	○	○
	Wind angle display	○	○	○	○	○	○
	Sleeping display	○	○	○	○	○	○
Running	Automatic running	○	○	○	○	○	○
	Dehumidify running	○	○	○	○	○	○
	Automatic defrost	○	○	○	○	○	○
	Ventilation function	○	○	○	○	○	○
	Low ambient cooling function	—	—	—	○	○	○
Health	Washable air filter	○	○	○	○	○	○
	Fresh air interface	○	○	○	○	○	○
Installation	Left /right drainage	—	—	—	—	—	—
	Left /right pipe connection	—	—	—	—	—	—
	Back/down air suction	—	—	—	—	—	—
	Guide board for collocating and installation	—	—	—	—	—	—

Remarks：○ Stands for “YES”　　— Stands for “NO”

2. Unit performance

2.1 Appearance

2.1.1 Indoor unit

<table>
<tr><td>Series</td><td colspan="7">Picture of the Unit &Cooling capacity(Btu/h)</td></tr>
<tr><td rowspan="2">Four-way Cassette</td><td colspan="2">  </td><td colspan="2">  </td><td colspan="3">  </td></tr>
<tr><td>12k Btu/h</td><td>18k Btu/h</td><td>24k Btu/h</td><td>36k Btu/h</td><td>42k Btu/h</td><td>48k Btu/h</td><td>60k Btu/h</td></tr>
<tr><td rowspan="2">Ceiling &Floor</td><td colspan="2">  </td><td colspan="2">  </td><td colspan="3">  </td></tr>
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<tr><td>Low ESP Duct</td><td colspan="7">  </td></tr>
</table>

<table>
<tr><td></td><td colspan="6">12k Btu/h</td></tr>
<tr><td rowspan="2">Mid ESP Duct</td><td colspan="3">  </td><td colspan="3">  </td></tr>
<tr><td>18k Btu/h</td><td>24k Btu/h</td><td>36k Btu/h</td><td>42k Btu/h</td><td>48k Btu/h</td><td>60k Btu/h</td></tr>
</table>

2.1.2 Universal outdoor unit

Cooling capacity (Btu/h)	12k Btu/h	18 k Btu/h	24 k Btu/h	36 k Btu/h	42 k Btu/h	48 k Btu/h	60 k Btu/h
Universal outdoor unit							

2.1.3 Remote controller, Wired controller, Display panel and Receiver

Remote controller, wired controller, display panel and receiver		
	Available for all models above	Available for all models above
Note	For Cassette and Ceiling & Floor indoor unit, remote controller is standard and wired controller is optional. For Duct indoor unit, wired controller is standard (without Remote controller receiver), remote controller is optional (remote controller receiver will be necessary if there is no wired controller).	

2.2 Performance parameters

2.2.1 Universal outdoor unit

Model			COE-12H
Power Supply		V~,Hz,Ph	220~240,50,1
Max. Input Consumption		W	1750
Max. Current		A	8.0
Capacity	Cooling	Btu/h	12000
		kW	3.6
	Heating	Btu/h	13500
		kW	3.9
Compressor	Model		PA150X2C-4FT
	Type		ROTARY
	Brand		TOSHIBA
	Capacity	W	3670
	Input	W	1245
	Rated Current(RLA)	A	5.75
	Locked Rotor Amp(LRA)	A	29.9
	Thermal Protector Position		UP3RE0596-T56
	Capacitor	uF	35
	Refrigerant Oil	ml	480
Outdoor Fan Motor	Model		YDK30-6A
	Brand		AUX
	Output Power	W	30
	Capacitor	uF	2.5
	Speed	r/min	770
Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.6
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.And Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	850×492×25.4
	g.Number Of U-Tube		12
	h. Number Of Circuits		4
	i.Heat Exchanging Area	㎡	11.79
Air Flow Volume		m^3/h	1980
Noise Level		dB(A)	53
Dimension(W×D×H)	Net	mm	760×260×540
	Packing	mm	880×350×610
Weight	Net	kg	38
	Gross	kg	41
Refrigerant	Type		R410A

Type/Quantity	Charged Volume	kg	1165
Design Pressure		MPa	4.15
Refrigerant Piping	Liquid Side	mm	6.35
	Gas Side	mm	12.7
	Max. Length	m	15
	Max. Height	m	10
Operation Temperature Range		℃	16~32
Ambient Temp (Cooling/Heating)		℃	-15~49
Application Area		m^2	15~35
Connection Wiring	Power Wiring (Indoor)	mm^2	/
	Power Wiring (Outdoor)	mm^2	$3\times1.5mm^2$
	Signal Wiring	mm^2	$3\times1.5mm^2+1mm^2$
Stuffing Quantity	20/40/40H	Unit	102/213/284

Model			COE-18H	COE-24H
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Max. Input Consumption		W	2650	3200
Max. Current		A	12.0	14.5
Capacity	Cooling	Btu/h	18000	24000
		kW	5.3	7.2
	Heating	Btu/h	20000	27500
		kW	5.8	8.1
Compressor	Model		PA215X2CS-4KU1	PA290X3CS-4MUI
	Type		ROTARY	ROTARY
	Brand		TOSHIBA	TOSHIBA
	Capacity	W	5340	7180
	Input	W	1830	2430
	Rated Current(RLA)	A	8.55	11.4
	Locked Rotor Amp(LRA)	A	36.8	61
	Thermal Protector Position		UP3SE0391-T39	UP14SE5145
	Capacitor	uF	50	50
	Refrigerant Oil	ml	750	950
Outdoor Fan Motor	Model		YDK65-6B	YDK68-6A
	Brand		AUX	AUX
	Output Power	W	65	68
	Capacitor	uF	4	4
	Speed	r/min	870	830
Coil	a.Number Of Row		2	2
	b.Tube Pitch(a)x Row Pitch(b)	mm	22×19.05	22×19.05
	c.Fin Spacing	mm	1.6	1.5

	d.Fin Material		Hydrophilic	Hydrophilic
	e.Tube Outside Dia.And Material	mm	φ7.94， Inner grooved	φ7.94， Inner grooved
	f.Coil Length x Height x Width	mm	760×484×38.1	776×660×38.1
	g.Number Of U-Tube		24	30
	h. Number Of Circuits		4	5
	i.Heat Exchanging Area	㎡	17.66	23.71
Air Flow Volume		m^3/h	2600	2790
Noise Level		dB(A)	55	60
Dimension(W×D×H)	Net	mm	800×300×590	800×300×690
	Packing	mm	930×410×660	930×410×760
Weight	Net	kg	45	56
	Gross	kg	49	60
Refrigerant Type/Quantity	Type		R410A	R410A
	Charged Volume	kg	1360	2360
Design Pressure		MPa	4.15	4.15
Refrigerant Piping	Liquid Side	mm	6.35	9.52
	Gas Side	mm	12.7	15.88
	Max. Length	m	20	30
	Max. Height	m	15	15
Operation Temperature Range		℃	16~32	16~32
Ambient Temp (Cooling/Heating)		℃	-15~49	-15~49
Application Area		m^2	20~50	30~70
Connection Wiring	Power Wiring (Indoor)	mm^2	/	/
	Power Wiring (Outdoor)	mm^2	$3×2.5mm^2$	$3×4mm^2$
	Signal Wiring	mm^2	$3×2.5mm^2+1mm^2$	$3×1mm^2+2×1mm^2$
Stuffing Quantity	20/40/40H	Unit	102/204/204	102/204/204

Model			COE-36H
Power Supply		V~,Hz,Ph	380~415,50,3
Max. Input Consumption		W	4570
Max. Current		A	12.0
Capacity	Cooling	Btu/h	36000
		kW	10.6
	Heating	Btu/h	40000
		kW	11.7
Compressor	Model		C-SBP130H38A
	Type		SCROLL
	Brand		SANYO
	Capacity	W	10900
	Input	W	3750

	Rated Current(RLA)	A	6.8
	Locked Rotor Amp(LRA)	A	66
	Thermal Protector Position		UP18
	Capacitor	uF	/
	Refrigerant Oil	ml	1700
Outdoor Fan Motor	Model		YDK150-6C-420
	Brand		WEITELI
	Output Power	W	150
	Capacitor	uF	6
	Speed	r/min	800
Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	22/19.05
	c.Fin Spacing	mm	1.6
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.And Material	mm	φ7.94， Inner grooved
	f.Coil Length x Height x Width	mm	889×814×38.1
	g.Number Of U-Tube		36
	h. Number Of Circuits		6
	i.Heat Exchanging Area	㎡	30.66
Air Flow Volume		m^3/h	3190
Noise Level		dB(A)	60
Dimension(W×D×H)	Net	mm	903×354×857
	Packing	mm	1030×410×980
Weight	Net	kg	86
	Gross	kg	94
Refrigerant Type/Quantity	Type		R410A
	Charged Volume	kg	2830
Design Pressure		MPa	4.15
Refrigerant Piping	Liquid Side	mm	9.52
	Gas Side	mm	15.88
	Max. Length	m	50
	Max. Height	m	30
Operation Temperature Range		℃	16~32
Ambient Temp (Cooling/Heating)		℃	-15~49
Application Area		m^2	40~100
Connection Wiring	Power Wiring (Indoor)	mm^2	$3×1mm^2$
	Power Wiring (Outdoor)	mm^2	$5×2.5mm^2$

	Signal Wiring	mm^2	$2×1mm^2$
Stuffing Quantity	20/40/40H	Unit	60/124/124

Model			COE-48H
Power Supply		V~,Hz,Ph	380~415,50,3
Max. Input Consumption		W	6100
Max. Current		A	16.1
Capacity	Cooling	Btu/h	48000
		kW	14.0
	Heating	Btu/h	53000
		kW	15.5
Compressor	Model		C-SBP170H38A
	Type		SCROLL
	Brand		SANYO
	Capacity	W	14100
	Input	W	4750
	Rated Current(RLA)	A	8.68
	Locked Rotor Amp(LRA)	A	63
	Thermal Protector Position		UP18
	Capacitor	uF	/
	Refrigerant Oil	ml	1700
Outdoor Fan Motor	Model		YDK68-6-359
	Brand		WEITELI
	Output Power	W	68
	Capacitor	uF	3
	Speed	r/min	860
Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	22/19.05
	c.Fin Spacing	mm	1.6
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.And Material	mm	φ7.94， Inner grooved
	f.Coil Length x Height x Width	mm	750×1188×38.1
	g.Number Of U-Tube		54
	h. Number Of Circuits		9
	i.Heat Exchanging Area	㎡	38.85
Air Flow Volume		m^3/h	5200
Noise Level		dB(A)	62
Dimension(W×D×H)	Net	mm	945×340×1255
	Packing	mm	1090×430×1370
Weight	Net	kg	97
	Gross	kg	110

Refrigerant Type/Quantity	Type		R410A
	Charged Volume	kg	2890
Design Pressure		MPa	4.15
Refrigerant Piping	Liquid Side	mm	9.52
	Gas Side	mm	19.05
	Max. Length	m	50
	Max. Height	m	30
Operation Temperature Range		℃	16~32
Ambient Temp (Cooling/Heating)		℃	-15~49
Application Area		m^2	60~140
Connection Wiring	Power Wiring (Indoor)	mm^2	$3×1mm^2$
	Power Wiring (Outdoor)	mm^2	$5×2.5mm^2$
	Signal Wiring	mm^2	$2×1mm^2$
Stuffing Quantity	20/40/40H	Unit	43/86/103

Model			COE-60H
Power Supply		V~,Hz,Ph	380~415,50,3
Max. Input Consumption		W	7800
Max. Current		A	20.5
Capacity	Cooling	Btu/h	60000
		kW	17.6
	Heating	Btu/h	63500
		kW	18.5
Compressor	Model		JT170G-P8Y1
	Type		SCROLL
	Brand		DAKIN
	Capacity	W	15900
	Input	W	4500
	Rated Current(RLA)	A	8.9
	Locked Rotor Amp(LRA)	A	59.4
	Thermal Protector Position		UP18WA162-46G
	Capacitor	uF	/
	Refrigerant Oil	ml	1500
Outdoor Fan Motor	Model		YDK68-6-359
	Brand		WEITELI
	Output Power	W	68
	Capacitor	uF	3
	Speed	r/min	860
Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	22/19.05

	c.Fin Spacing	mm	1.6
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.And Material	mm	φ7.94， Inner grooved
	f.Coil Length x Height x Width	mm	750×1188×38.1
	g.Number Of U-Tube		54
	h. Number Of Circuits		9
	i.Heat Exchanging Area	㎡	38.85
Air Flow Volume		m^3/h	5200
Noise Level		dB(A)	62
Dimension(W×D×H)	Net	mm	945×340×1255
	Packing	mm	1090×430×1370
Weight	Net	kg	105
	Gross	kg	119
Refrigerant Type/Quantity	Type		R410A
	Charged Volume	kg	3310
Design Pressure		MPa	4.15
Refrigerant Piping	Liquid Side	mm	9.52
	Gas Side	mm	19.05
	Max. Length	m	50
	Max. Height	m	30
Operation Temperature Range		℃	16~32
Ambient Temp (Cooling/Heating)		℃	-15~49
Application Area		m^2	80~180
Connection Wiring	Power Wiring (Indoor)	mm^2	$3×1mm^2$
	Power Wiring (Outdoor)	mm^2	$5×2.5mm^2$
	Signal Wiring	mm^2	$2×1mm^2$
Stuffing Quantity	20/40/40H	Unit	43/86/103

2.2.2 Four-way Cassette

Model			CO4C-12H
Power Supply		V~,Hz,Ph	220~240,50,1
Capacity	Cooling	Btu/h	12000
		KW	3.6
	Heating	Btu/h	13500
		W	3.9
Electric Data	Cooling Power Input	KW	1.19
	Heating Power Input	KW	1.20
	Cooling Current	A	5.45
	Heating Current	A	5.49
Performance	EER	W/W	3.02
	COP	W/W	3.25

Indoor Fan Motor	Model		YDK10-6 Q
	Brand		HUATE
	Output Power	W	10
	Capacitor	uF	1.5
	Speed (Hi/Mi/Lo)	r/min	820/720/590
Indoor Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.5
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	1115×205×25.4
	g.Number Of U-Tube		8
	h. Number Of Circuits		3
	i.Heat Exchanging Area	m^2	4.85
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	620/496/434
	Noise Level(Hi/Mi/Lo)	dB(A)	41/38/32
	Rated Input Power(Cooling/Heating)	W	25
	Rated Current (Cooling/Heating)	A	0.11
	Moisture Removal	(L/h)	1.05
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	593×593×284
	Packing (W*H*D)	mm	690×710×340
	Net Weight	Kg	20
	Gross Weight	Kg	25
Panel	Unit Dimension (W*H*D)	mm	650×650×55
	Packing (W*H*D)	mm	700×700×70
	Net weight	Kg	3
	Gross weight	Kg	5
Refrigerant Pipe	Liquid Side	mm	6.35
	Gas Side	mm	12.7
Operation Temperature Range		℃	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-15~49/-5~24
Application Area		m^2	15~35

Connection Wiring	Power Wiring	Indoor	mm^2	/
		Outdoor	mm^2	$3\times1.5mm^2$
	Signal Wiring		mm^2	$3\times1.5mm^2+1mm^2$
Wireless Remote Controller				YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	61/128/154

Model			CO4C-18H	CO4C-24H
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	Btu/h	18000	24000
		KW	5.3	7.2
	Heating	Btu/h	20000	27500
		W	5.8	8.1
Electric Data	Cooling Power Input	KW	1.76	2.39
	Heating Power Input	KW	1.80	2.51
	Cooling Current	A	8.05	10.94
	Heating Current	A	8.24	11.49
Performance	EER	W/W	3.01	3.01
	COP	W/W	3.23	3.23
Indoor Fan Motor	Model		YDK25-6-50 Q	YDK30-6 Q
	Brand		HUATE	HUATE
	Output Power	W	25	30
	Capacitor	uF	2.5	3
	Speed (Hi/Mi/Lo)	r/min	930/750/650	500/400/320
Indoor Coil	a.Number Of Row		2	2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	c.Fin Spacing	mm	1.4	1.6
	d.Fin Material		Hydrophilic	Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	1115×205×25.4	2142×205×25.4
	g.Number Of U-Tube		10	8
	h. Number Of Circuits		4	8
	i.Heat Exchanging Area	m^2	7.09	10.02
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	850/680/595	1100/880/770
	Noise Level(Hi/Mi/Lo)	dB(A)	41/38/32	45/42/36
	Rated Input Power(Cooling/Heating)	W	63	73
	Rated Current (Cooling/Heating)	A	0.29	0.33

		Moisture Removal	(L/h)	1.5	2.1
		External Static Pressure	Pa	0	0
		Unit Dimension (W*H*D)	mm	593×593×284	835×835×240
		Packing (W*H*D)	mm	690×710×340	900×900×320
		Net Weight	Kg	20	27
		Gross Weight	Kg	25	34
Panel		Unit Dimension (W*H*D)	mm	650×650×55	950×950×55
		Packing (W*H*D)	mm	700×700×70	1000×1000×100
		Net weight	Kg	3	5
		Gross weight	Kg	5	7
Refrigerant Pipe		Liquid Side	mm	9.52	9.52
		Gas Side	mm	15.88	15.88
Operation Temperature Range			℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24	-15~49/-5~24
Application Area			m^2	20~50	30~70
Connection Wiring	Power Wiring	Indoor	mm^2	/	/
		Outdoor	mm^2	3×1.5mm^2	3×4mm^2
	Signal Wiring		mm^2	3×1.5mm^2+1mm^2	3×1.5mm^2+1mm^2
Wireless Remote Controller				YKR-H/009E	YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	53/111/132	38/81/95

Model			CO4C-36H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	36000
		KW	10.6
	Heating	Btu/h	40000
		W	11.7
Electric Data	Cooling Power Input	KW	3.77
	Heating Power Input	KW	3.50
	Cooling Current	A	7.22
	Heating Current	A	6.69
Performance	EER	W/W	2.81
	COP	W/W	3.34
Indoor Fan Motor	Model		YDK45-6 Q
	Brand		HUATE
	Output Power	W	45
	Capacitor	uF	4
	Speed (Hi/Mi/Lo)	r/min	650/520/450
Indoor Coil	a.Number Of Row		2

	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.4
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	2142×205×25.4
	g.Number Of U-Tube		9
	h. Number Of Circuits		9
	i.Heat Exchanging Area	m^2	12.76
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1800/1440/1261
	Noise Level(Hi/Mi/Lo)	dB(A)	48/45/39
	Rated Input Power(Cooling/Heating)	W	94
	Rated Current (Cooling/Heating)	A	0.43
	Moisture Removal	(L/h)	3
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	835×835×240
	Packing (W*H*D)	mm	900×900×320
	Net Weight	Kg	27
	Gross Weight	Kg	34
Panel	Unit Dimension (W*H*D)	mm	950×950×55
	Packing (W*H*D)	mm	1000×1000×100
	Net weight	Kg	5
	Gross weight	Kg	7
Refrigerant Pipe	Liquid Side	mm	9.52
	Gas Side	mm	15.88
Operation Temperature Range		℃	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-15~49/-5~24
Application Area		m^2	40~100
Connection Wiring	Power Wiring Indoor	mm^2	$3×1mm^2$
	Power Wiring Outdoor	mm^2	$5×2.5mm^2$
	Signal Wiring	mm^2	$2×1mm^2$
Wireless Remote Controller			YKR-H/010E
Qty'per 20'& 40'&40HQ(Only For Reference)		Set	32/67/78

Model			CO4C-48H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	48000
		KW	14.0
	Heating	Btu/h	53000
		W	15.5
Electric Data	Cooling Power Input	KW	4.87

	Heating Power Input	KW	5.13
	Cooling Current	A	9.32
	Heating Current	A	9.82
Performance	EER	W/W	2.87
	COP	W/W	3.02
Indoor Fan Motor	Model		YDK80-6-50 Q
	Brand		KANGBAO
	Output Power	W	80
	Capacitor	uF	6
	Speed (Hi/Mi/Lo)	r/min	685/540/450
Indoor Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.4
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	2142×246×25.4
	g.Number Of U-Tube		11
	h. Number Of Circuits		11
	i.Heat Exchanging Area	m^2	15.60
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	50/47/41
	Rated Input Power(Cooling/Heating)	W	145
	Rated Current (Cooling/Heating)	A	0.66
	Moisture Removal	(L/h)	5.1
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	835×835×280
	Packing (W*H*D)	mm	900×900×360
	Net Weight	Kg	30
	Gross Weight	Kg	37
Panel	Unit Dimension (W*H*D)	mm	950×950×55
	Packing (W*H*D)	mm	1000×1000×100
	Net weight	Kg	5
	Gross weight	Kg	7
Refrigerant Pipe	Liquid Side	mm	9.52
	Gas Side	mm	19.05
Operation Temperature Range		℃	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-15~49/-5~24
Application Area		m^2	60~140

Connection Wiring	Power Wiring	Indoor	mm^2	3×1mm7
		Outdoor	mm^2	5×2.5mm7
	Signal Wiring		mm^2	2×1mm2
Wireless Remote Controller				YKR-H/014E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	23/49/56

Model			CO4C-60H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	60000
		KW	17.6
	Heating	Btu/h	63500
		W	18.5
Electric Data	Cooling Power Input	KW	6.28
	Heating Power Input	KW	6.00
	Cooling Current	A	12.02
	Heating Current	A	11.48
Performance	EER	W/W	2.80
	COP	W/W	3.00
Indoor Fan Motor	Model		YDK80-6-50 Q
	Brand		KANGBAO
	Output Power	W	80
	Capacitor	uF	6
	Speed (Hi/Mi/Lo)	r/min	685/540/450
Indoor Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.4
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	2142×246×25.4
	g.Number Of U-Tube		11
	h. Number Of Circuits		11
	i.Heat Exchanging Area	m^2	15.60
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	50/47/41
	Rated Input Power(Cooling/Heating)	W	145
	Rated Current (Cooling/Heating)	A	0.66
	Moisture Removal	(L/h)	5.5
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	835×835×280
	Packing (W*H*D)	mm	900×900×360
	Net Weight	Kg	30

	Gross Weight		Kg	37
Panel	Unit Dimension (W*H*D)		mm	950×950×55
	Packing (W*H*D)		mm	1000×1000×100
	Net weight		Kg	5
	Gross weight		Kg	7
Refrigerant Pipe	Liquid Side		mm	9.52
	Gas Side		mm	19.05
Operation Temperature Range			℃	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24
Application Area			m^2	80~180
Connection Wiring	Power Wiring	Indoor	mm^2	3×1mm9
		Outdoor	mm^2	5×2.5mm9
	Signal Wiring		mm^2	2×1mm2
Wireless Remote Controller				YKR-H/016E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	23/49/56

2.2.3 Ceiling&Floor

Model			COF-12H
Power Supply		V~,Hz,Ph	220~240,50,1
Capacity	Cooling	Btu/h	12000
		kW	3.6
	Heating	Btu/h	13500
		kW	3.9
Electric Data	Cooling Power Input	kW	1.13
	Heating Power Input	kW	1.15
	Cooling Current	A	5.17
	Heating Current	A	5.26
Performance	EER	W/W	3.20
	COP	W/W	3.40
Indoor Fan Fotor	Model		YSK15-6
	Brand		KANGBAO
	Output Power	W	15
	Capacitor	uF	1.5
	Speed (Hi/Mi/Lo)	r/min	820/650/420
Indoor Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.4
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved

	f.Coil Length x Height x Width		mm	570×266.5×25.4
	g.Number Of U-Tube			13
	h. Number Of Circuits			2
	i.Heat Exchanging Area		m^2	4.90
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)		m^3/h	650/520/455
	Noise Level(Hi/Mi/Lo)		dB(A)	39/36/30
	Rated Input Power(Cooling/Heating)		W	38
	Rated Current (Cooling/Heating)		A	0.17
	Moisture Removal		(L/h)	1.05
	External Static Pressure		Pa	0
	Unit Dimension (W*H*D)		mm	929×660×205
	Packing (W*H*D)		mm	995×710×280
	Net Weight		Kg	24
	Gross Weight		Kg	27
Refrigerant Pipe	Liquid Side		mm	6.35
	Gas Side		mm	12.7
Operation Temperature Range			℃	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24
Application Area			m^2	15~35
Connection Wiring	Power Wiring	Indoor	mm^2	/
		Outdoor	mm^2	$3×1.5mm^2$
	Signal Wiring		mm^2	$3×1.5mm^2+1mm^2$
Wireless Remote Controller				YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	63/135/144

Model			COF-18H	COF-24H
Power Supply		V~,Hz,Ph	220~240,50,1	220~240,50,1
Capacity	Cooling	Btu/h	18000	24000
		kW	5.3	7.2
	Heating	Btu/h	20000	27500
		kW	5.8	8.1
Electric Data	Cooling Power Input	kW	1.72	2.18
	Heating Power Input	kW	1.70	2.51
	Cooling Current	A	7.87	9.98
	Heating Current	A	7.78	11.49
Performance	EER	W/W	3.08	3.31
	COP	W/W	3.41	3.23
Indoor Fan Fotor	Model		YSK35-4	YSK60-4
	Brand		KANGBAO	KANGBAO
	Output Power	W	35	60

	Capacitor		uF	3	3
	Speed (Hi/Mi/Lo)		r/min	1050/850/750	910/780/690
Indoor Coil	a.Number Of Row			3	3
	b.Tube Pitch(a)x Row Pitch(b)		mm	20.5×12.7	20.5×12.7
	c.Fin Spacing		mm	1.4	1.6
	d.Fin Material			Hydrophilic	Hydrophilic
	e.Tube Outside Dia.and Material		mm	φ7， Inner grooved	φ7， Inner grooved
	f.Coil Length x Height x Width		mm	570×266.5×38.1	950×266.5×38.1
	g.Number Of U-Tube			19	18
	h. Number Of Circuits			3	6
	i.Heat Exchanging Area		m^2	7.17	10.00
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)		m^3/h	920/736/644	1200/960/840
	Noise Level(Hi/Mi/Lo)		dB(A)	43/40/34	46/43/37
	Rated Input Power(Cooling/Heating)		W	85	125
	Rated Current (Cooling/Heating)		A	0.39	0.57
	Moisture Removal		(L/h)	1.5	2.1
	External Static Pressure		Pa	0	0
	Unit Dimension (W*H*D)		mm	929×660×205	929×660×205
	Packing (W*H*D)		mm	995×710×280	995×710×280
	Net Weight		Kg	25	26
	Gross Weight		Kg	28	28
Refrigerant Pipe	Liquid Side		mm	6.35	9.52
	Gas Side		mm	12.7	15.88
Operation Temperature Range			℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24	-15~49/-5~24
Application Area			m^2	20~50	30~70
Connection Wiring	Power Wiring	Indoor	mm^2	/	/
		Outdoor	mm^2	3×2.5mm^2	3×4mm^2
	Signal Wiring		mm^2	3×2.5mm^2+1mm^2	3×1mm^2+2×1mm^2
Wireless Remote Controller				YKR-H/009E	YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	56/134/136	56/115/115

Model			COF-36H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	36000
		kW	10.6

	Heating	Btu/h	40000
		kW	11.7
Electric Data	Cooling Power Input	kW	3.77
	Heating Power Input	kW	3.50
	Cooling Current	A	7.22
	Heating Current	A	6.69
Performance	EER	W/W	2.81
	COP	W/W	3.34
Indoor Fan Fotor	Model		YSK75-4
	Brand		KANGBAO
	Output Power	W	75
	Capacitor	uF	4
	Speed (Hi/Mi/Lo)	r/min	1250/1180/982
Indoor Coil	a.Number Of Row		3
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.5
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7，Inner grooved
	f.Coil Length x Height x Width	mm	950×266.5×38.1
	g.Number Of U-Tube		18
	h. Number Of Circuits		6
	i.Heat Exchanging Area	m^2	10.62
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1500/1200/1050
	Noise Level(Hi/Mi/Lo)	dB(A)	50/47/41
	Rated Input Power(Cooling/Heating)	W	156
	Rated Current (Cooling/Heating)	A	0.71
	Moisture Removal	(L/h)	3
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	1280×660×205
	Packing (W*H*D)	mm	1346×710×280
	Net Weight	Kg	33
	Gross Weight	Kg	38
Refrigerant Pipe	Liquid Side	mm	9.52
	Gas Side	mm	15.88
Operation Temperature Range		℃	16~32
Ambient Temperature Range(Cooling/Heating)		℃	-15~49/-5~24
Application Area		m^2	40~100
Connection Wiring	Power Wiring Indoor	mm^2	$3×1mm^2$
	Power Wiring Outdoor	mm^2	$5×2.5mm^2$
	Signal Wiring	mm^2	$2×1mm^2$
Wireless Remote Controller			YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)		Set	36/73/89

Model			COF-48H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	48000
		kW	14.0
	Heating	Btu/h	51000
		kW	15.0
Electric Data	Cooling Power Input	kW	4.87
	Heating Power Input	kW	5.13
	Cooling Current	A	9.32
	Heating Current	A	9.82
Performance	EER	W/W	2.87
	COP	W/W	3.02
Indoor Fan Fotor	Model		YSK125-4
	Brand		KANGBAO
	Output Power	W	125
	Capacitor	uF	5
	Speed (Hi/Mi/Lo)	r/min	1370/1180/1080
Indoor Coil	a.Number Of Row		3
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.5
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	1333×266.5×38.1
	g.Number Of U-Tube		18
	h. Number Of Circuits		6
	i.Heat Exchanging Area	m^2	14.86
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	51/48/42
	Rated Input Power(Cooling/Heating)	W	192
	Rated Current (Cooling/Heating)	A	0.87
	Moisture Removal	(L/h)	5.1
	External Static Pressure	Pa	0
	Unit Dimension (W*H*D)	mm	1631×660×205
	Packing (W*H*D)	mm	1697×710×280
	Net Weight	Kg	44
	Gross Weight	Kg	49
Refrigerant Pipe	Liquid Side	mm	9.52
	Gas Side	mm	19.05

Operation Temperature Range			℃	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24
Application Area			m^2	60~140
Connection Wiring	Power Wiring	Indoor	mm^2	$3×1mm^2$
		Outdoor	mm^2	$5×2.5mm^2$
	Signal Wiring		mm^2	$2×1mm^2$
Wireless Remote Controller				YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	26/56/64

Model			COF-60H
Power Supply		V~,Hz,Ph	380~415,50,3
Capacity	Cooling	Btu/h	60000
		kW	17.6
	Heating	Btu/h	63500
		kW	18.5
Electric Data	Cooling Power Input	kW	5.71
	Heating Power Input	kW	6.00
	Cooling Current	A	10.93
	Heating Current	A	11.48
Performance	EER	W/W	2.80
	COP	W/W	3.00
Indoor Fan Fotor	Model		YSK125-4
	Brand		KANGBAO
	Output Power	W	125
	Capacitor	uF	5
	Speed (Hi/Mi/Lo)	r/min	1370/1180/1080
Indoor Coil	a.Number Of Row		3
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.5
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	1333×266.5×38.1
	g.Number Of U-Tube		18
	h. Number Of Circuits		6
	i.Heat Exchanging Area	m^2	14.86
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1800/1440/1260
	Noise Level(Hi/Mi/Lo)	dB(A)	51/48/42
	Rated Input Power(Cooling/Heating)	W	192
	Rated Current (Cooling/Heating)	A	0.87
	Moisture Removal	(L/h)	5.1

		External Static Pressure	Pa	0
		Unit Dimension (W*H*D)	mm	1631×660×205
		Packing (W*H*D)	mm	1697×710×280
		Net Weight	Kg	44
		Gross Weight	Kg	49
Refrigerant Pipe		Liquid Side	mm	9.52
		Gas Side	mm	19.05
Operation Temperature Range			℃	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-15~49/-5~24
Application Area			m^2	60~140
Connection Wiring	Power Wiring	Indoor	mm^2	3×1mm^2
		Outdoor	mm^2	5×2.5mm^2
	Signal Wiring		mm^2	2×1mm^2
Wireless Remote Controller				YKR-H/009E
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	26/56/64

2.2.3 Low Duct Type

2.2.4 Medium Duct Type

Model			COD-18H
Power Supply		V~,Hz,Ph	220~240,50,1
Capacity	Cooling	Btu/h	18000
		kW	5.3
	Heating	Btu/h	20000
		kW	5.8
Electric Data	Cooling Power Input	kW	1.73
	Heating Power Input	kW	1.70
	Cooling Current	A	7.92
	Heating Current	A	7.78
Performance	EER	W/W	3.06
	COP	W/W	3.42
Indoor Fan Motor	Model		YSK100-4
	Brand		KANGBAO
	Output Power	W	100
	Capacitor	uF	3
	Speed (Hi/Mi/Lo)	r/min	960/860/840
Indoor Coil	a.Number Of Row		2
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7
	c.Fin Spacing	mm	1.5
	d.Fin Material		Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	625×369×25.4
	g.Number Of U-Tube		18
	h. Number Of Circuits		3
	i.Heat Exchanging Area	m^2	6.96
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	950/760/665
	Noise Level(Hi/Mi/Lo)	dB(A)	44/41/35
	Rated Input Power(Cooling/Heating)	W	149
	Rated Current (Cooling/Heating)	A	0.68
	Moisture Removal	(L/h)	1.50
	External Static Pressure	Pa	50/80
	Unit Dimension (W*H*D)	mm	890×290×785
	Packing (W*H*D)	mm	1100×360×870
	Net Weight	Kg	34
	Gross Weight	Kg	40
Refrigerant Pipe	Liquid Side	mm	6.35
	Gas Side	mm	12.7
Operation Temperature Range		℃	16~32

Ambient Temperature Range(Cooling/Heating)			℃	-5~49/-15~24
Application Area			m^2	20~50
Connection Wiring	Power Wiring	Indoor	mm^2	/
		Outdoor	mm^2	$3×2.5mm^2$
	Signal Wiring		mm^2	$3×2.5mm^2+2×1mm^2$
Wireless Remote Controller				G-XK-HCE3
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	42/88/103

Model			COD-24H	COD-36H
Power Supply		V~,Hz,Ph	220~240,50,1	380~415,50,3
Capacity	Cooling	Btu/h	24000	36000
		kW	7.2	10.6
	Heating	Btu/h	27500	40000
		kW	8.1	11.7
Electric Data	Cooling Power Input	kW	2.24	3.73
	Heating Power Input	kW	2.35	3.55
	Cooling Current	A	10.25	7.14
	Heating Current	A	10.76	6.79
Performance	EER	W/W	3.22	2.84
	COP	W/W	3.45	3.29
Indoor Fan Motor	Model		YSK160-4	YSK180-4
	Brand		KANGBAO	KANGBAO
	Output Power	W	160	180
	Capacitor	uF	2.5	5
	Speed (Hi/Mi/Lo)	r/min	1050/1000/910	1050/1000/910
Indoor Coil	a.Number Of Row		3	3
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	c.Fin Spacing	mm	1.6	1.5
	d.Fin Material		Hydrophilic	Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	625×369×38.1	625×369×38.1
	g.Number Of U-Tube		27	27
	h. Number Of Circuits		5	5
	i.Heat Exchanging Area	m^2	9.84	10.44
Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)	m^3/h	1200/960/840	1500/1200/1050
	Noise Level(Hi/Mi/Lo)	dB(A)	47/44/38	50/47/41
	Rated Input Power(Cooling/Heating)	W	214	260
	Rated Current (Cooling/Heating)	A	0.97	1.18
	Moisture Removal	(L/h)	2.10	3.00
	External Static Pressure	Pa	50/80	50/80
	Unit Dimension (W*H*D)	mm	890×290×785	890×290×785

	Packing (W*H*D)		mm	1100×360×870	1100×360×870
	Net Weight		Kg	36	36
	Gross Weight		Kg	42	42
Refrigerant Pipe	Liquid Side		mm	9.52	9.52
	Gas Side		mm	15.88	15.88
Operation Temperature Range			℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-5~49/-15~24	-5~49/-15~24
Application Area			m^2	30~70	40~100
Connection Wiring	Power Wiring	Indoor	mm^2	/	$3×1mm^2$
		Outdoor	mm^2	$3×4mm^2$	$5×2.5mm^2$
	Signal Wiring		mm^2	$3×1mm^2+3×1mm^2$	$2×1mm^2$
Wireless Remote Controller				G-XK-HCE3	G-XK-HCE3
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	39/83/96	32/69/79

Model			COD-48H	COD-60H
Power Supply		V~,Hz,Ph	380~415,50,3	380~415,50,3
Capacity	Cooling	Btu/h	48000	60000
		kW	14.0	17.6
	Heating	Btu/h	53000	63500
		kW	15.5	18.5
Electric Data	Cooling Power Input	kW	4.87	5.71
	Heating Power Input	kW	5.13	6.00
	Cooling Current	A	9.32	10.92
	Heating Current	A	9.82	11.48
Performance	EER	W/W	2.87	2.80
	COP	W/W	3.02	3.00
Indoor Fan Motor	Model		YSK180-4	YSK180-4
	Brand		KANGBAO	KANGBAO
	Output Power	W	180	180
	Capacitor	uF	6	6
	Speed (Hi/Mi/Lo)	r/min	1100/990/920	1100/990/920
Indoor Coil	a.Number Of Row		3	3
	b.Tube Pitch(a)x Row Pitch(b)	mm	20.5×12.7	20.5×12.7
	c.Fin Spacing	mm	1.6	1.6
	d.Fin Material		Hydrophilic	Hydrophilic
	e.Tube Outside Dia.and Material	mm	φ7， Inner grooved	φ7， Inner grooved
	f.Coil Length x Height x Width	mm	985×369×38.1	985×369×38.1
	g.Number Of U-Tube		27	27
	h. Number Of Circuits		9	9
	i.Heat Exchanging Area	m^2	15.56	15.56

Indoor Unit	Indoor Air Flow (Hi/Mi/Lo)		m^3/h	2000/1600/1400	2000/1600/1400
	Noise Level(Hi/Mi/Lo)		dB(A)	53/50/44	53/50/44
	Rated Input Power(Cooling/Heating)		W	316	316
	Rated Current (Cooling/Heating)		A	1.44	1.44
	Moisture Removal		(L/h)	5.10	5.50
	External Static Pressure		Pa	50/80	50/80
	Unit Dimension (W*H*D)		mm	1250×290×785	1250×290×785
	Packing (W*H*D)		mm	1460×360×870	1460×360×870
	Net Weight		Kg	41	41
	Gross Weight		Kg	47	47
Refrigerant Pipe	Liquid Side		mm	9.52	9.52
	Gas Side		mm	19.05	19.05
Operation Temperature Range			℃	16~32	16~32
Ambient Temperature Range(Cooling/Heating)			℃	-5~49/-15~24	-5~49/-15~24
Application Area			m^2	60~140	80~180
Connection Wiring	Power Wiring	Indoor	mm^2	$3×1mm^2$	$3×1mm^2$
		Outdoor	mm^2	$5×2.5mm^2$	$5×2.5mm^2$
	Signal Wiring		mm^2	$2×1mm^2$	$2×1mm^2$
Wireless Remote Controller				G-XK-HCE3	G-XK-HCE3
Qty'per 20'& 40'&40HQ(Only For Reference)			Set	21/46/51	21/46/51

Notes:

◇Nominal cooling capacities are based on the following conditions: Return air temp.: 27℃DB, 19℃WB, and outdoor temp.: 35℃DB, 24℃℃WB;

◇Nominal heating capacities are based on the following conditions: Return air temp.: 20℃DB, and outdoor temp.: 7℃DB, 6℃℃WB;

◇Parameters above are all measured when the connecting pipe is 5 meters.

2.3 Capacity amendment

2.3.1 Running range

Cooling capacity (Btu/h)		12000	18000	24000	36000	42000	48000	60000
Power supply		220-240V~/50Hz			380-415V 3N~/50Hz			
Voltage		187～242V			320～420V			
Outdoor ambient temperature	Cooling	-15～49℃(Low ambient cooling function)						
	Heating	-15～24℃						

2.3.2 Amendment coefficient of cooling capacity under different indoor/outdoor DB and WB temperature

Indoor air inlet temperature℃		**Outdoor air inlet DB temperature℃**				
DB	**WB**	**25**	**30**	**35**	**40**	**43**
23	16	0.98	0.94	0.89	0.85	0.82
25	18	1.05	1	0.95	0.90	0.87
27	19	1.1	1.05	1	0.95	0.91
28	20	1.12	1.07	1.02	0.96	0.93
30	22	1.19	1.13	1.08	1.02	0.99
32	24	1.26	1.20	1.15	1.08	1.05

Actual cooling capacity calculation：

Actual cooling capacity=amendment coefficient of cooling capacity × nominal cooling capacity

——nominal cooling capacity could be found from the performance parameters list

——amendment coefficient of cooling capacity could be found from table above.

2.3.3 Amendment coefficient of heating capacity under different indoor/outdoor DB and WB temperature

Indoor air inlet DB temperature ℃	Outdoor air inlet WB temperature ℃				
	-5	0	6	10	15
16	0.65	0.80	1.02	1.13	-
18	0.61	0.76	1.02	1.12	-
20	0.6	0.75	1	1.11	1.25
21	0.59	0.72	0.99	1.1	1.24
22	0.58	0.71	0.97	1.09	1.23
24	0.56	0.7	0.96	1.08	1.22

Actual heating capacity calculation：

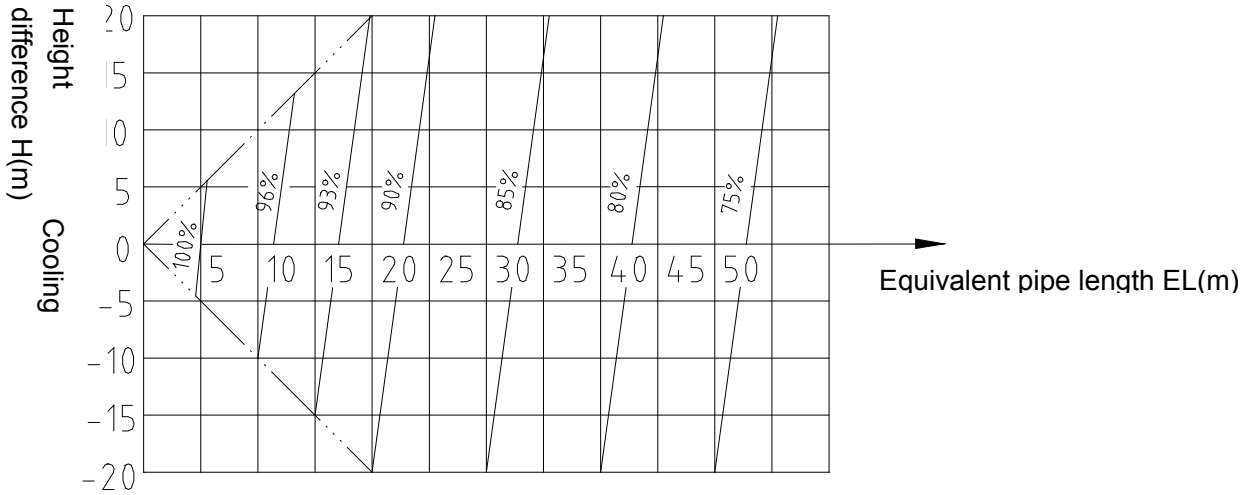
Actual heating capacity=amendment coefficient of heating capacity × nominal heating capacity

——nominal heating capacity could be found from the performance parameters list

——amendment coefficient of heating capacity could be found from table above.

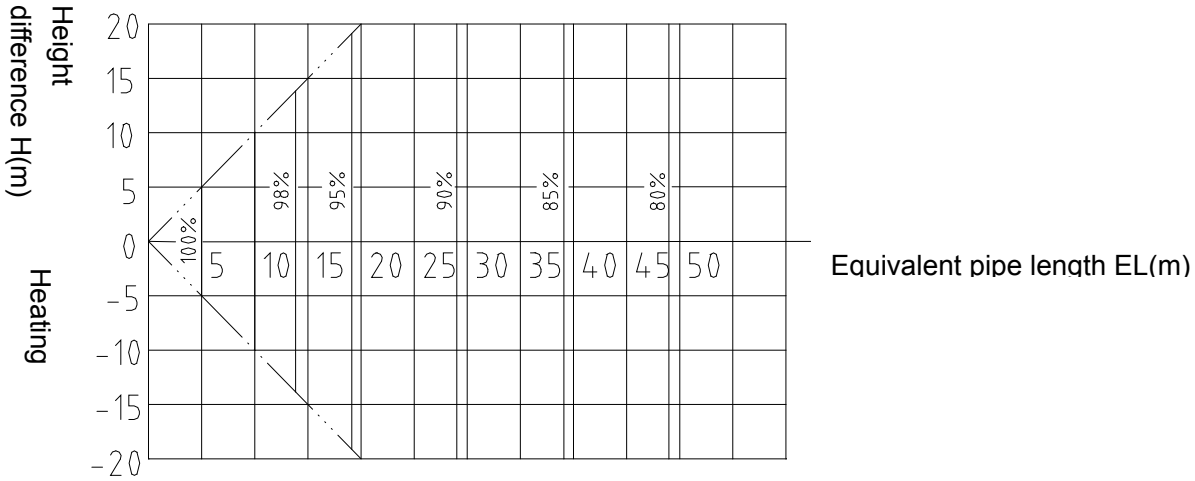
2.3.4 Amentdment coefficients of heating and cooling capacity under different height drop

Different Cooling Capacity modified coefficients at different height:



Note: H = Height of Outdoor Unit — Height of Indoor Unit

Different Heating Capacity modified coefficients at different height:



Note: H = Height of Outdoor Unit — Height of Indoor Unit

2.3.5 Equivalent pipe length conversion

Equivalent pipe length means converting pipe elbow to straight pipe length after considerate the pressure loss.

Elbow and Oil loop conversion tablet

Type / Pipe Dia.(mm)	Bend	Oil Loop
6．35	0．10	0．7
9．52	0．18	1．3
12．70	0．20	1．5
15．88	0．25	2．0
19．05	0．35	2．4
22．02	0．40	3．0

Equivalent pipe length L＝Actual Pipe length L+ Bend Qty× Equivalent pipe bend length+ Oil Loop Qty × Equivalent Oil Loop length

Sample:

CO4C-48H Actual Pipe length is 25 meters, Gas pipe diameter is 19.05mm. If there's 5 bends and 2 oil loops during the installation, then the equivalent pipe length should be:

L=25+0.35×5+2.4×2=31.5(m)

◇Specification of connection pipe for indoor unit and outdoor unit

Cooling Capacity(Btu/h)		12000	18000	24000	36000	42000	48000	60000
Connection Pipe (mm)	Liquid Pipe	Φ6.35	Φ6.35	Φ9.52	Φ9.52			
	Gas Pipe	Φ12.7	Φ12.7	Φ15.88	Φ19.05			
Max. Length(m)	Liquid Pipe Dia.	Φ6.35	Φ6.35	Φ9.52	Φ9.52			
	Gas Pipe Dia.	Φ12.7	Φ12.7	Φ15.88	Φ19.05			
	Max. Length	15	20	30	50			
Max. Height (m)		10	15	15	30			
Max. Bend Qty		4	4	4	10			
Extra R410a per meter when the pipe length is more than 5 meter (kg)		0.02	0.02	0.02	0.07			

Caution:

1.The standard Pipe length is 5m, if the pipe length is less than this then no additional charging is necessary. If the pipe length is more than this then you should charge more refrigerant into the system according to the above Charging Data

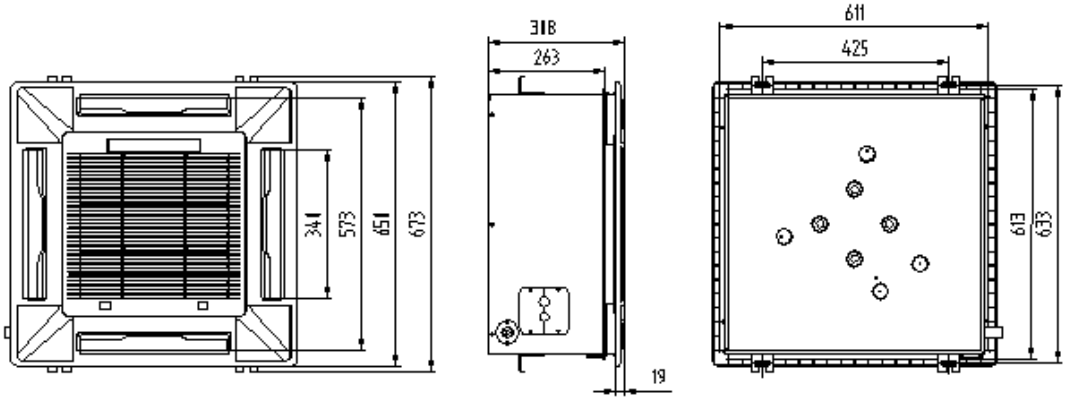
2.The thickness of the pipe is 0.5-1.0, bearing pressure is 3.040MPa；

3.If the connection pipe is too long, the cooling capacity and stability would be decreased. And the more bend quantity, the resistance in the piping system would be bigger, then the cooling and heating capacity would be decreased even lead to compressor broken. We suggest you to use the shortest connection pipe according to the pipe length parameter in this manual.

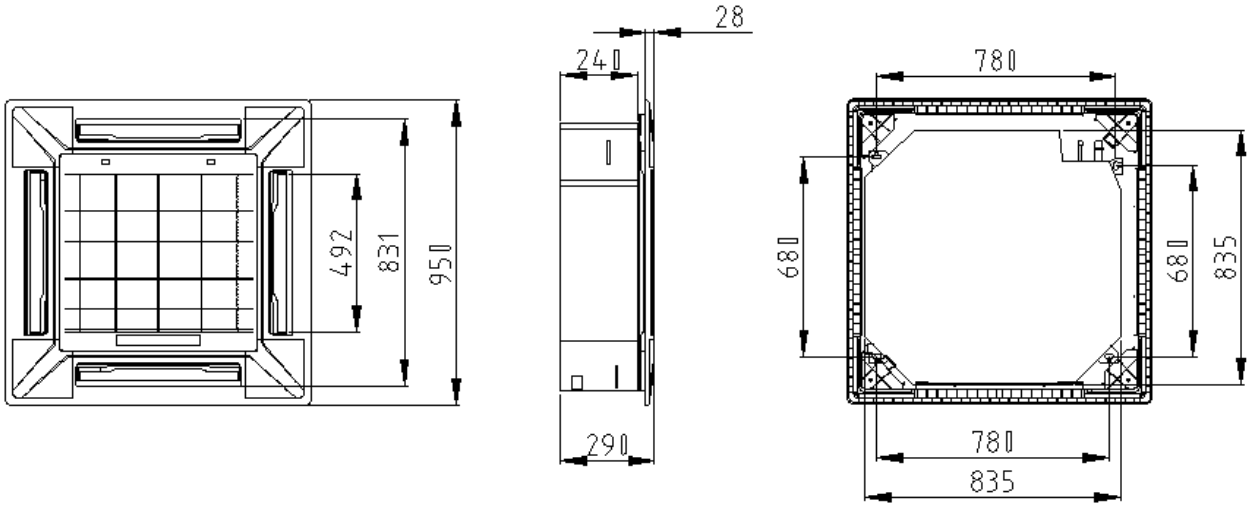
3. Unit outside dimension

3.1 Four-way Cassette

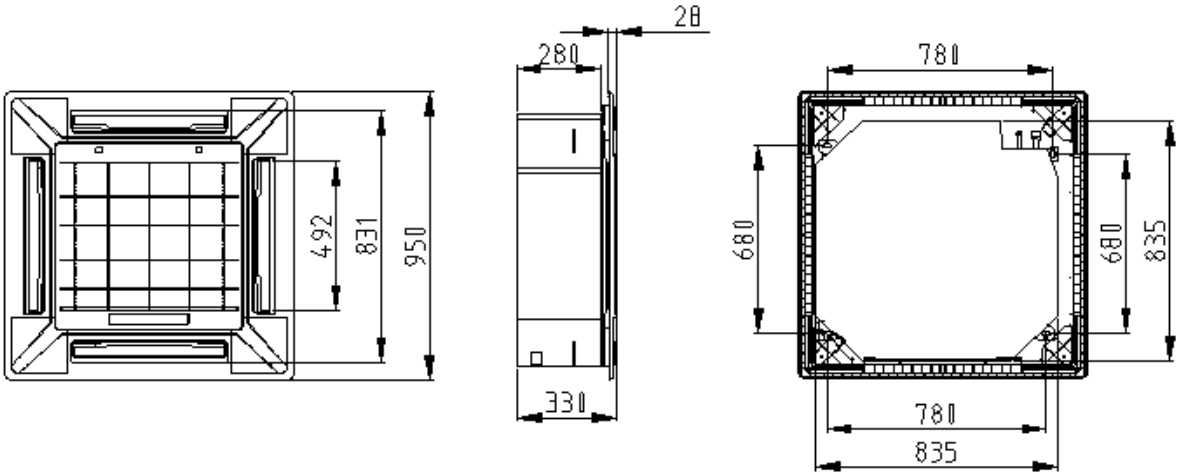
, CO4C-12H
CO4C-18H



CO4C-24H
, CO4C-36H

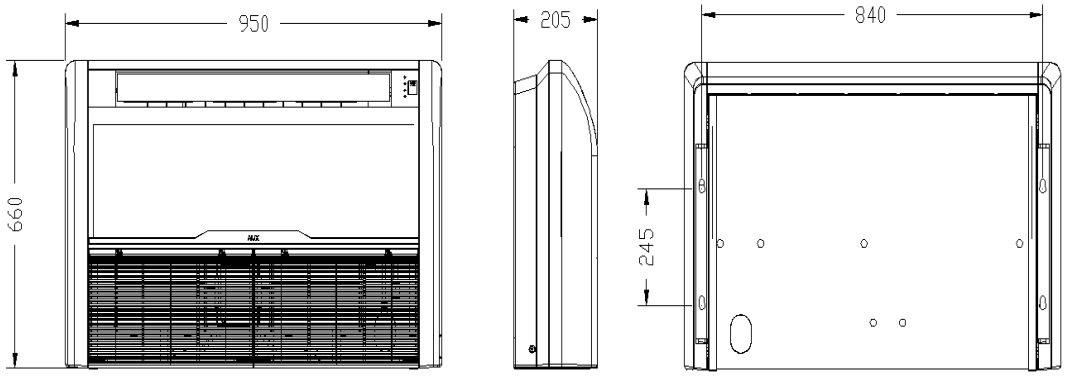


, CO4C-48H
CO4C-60H

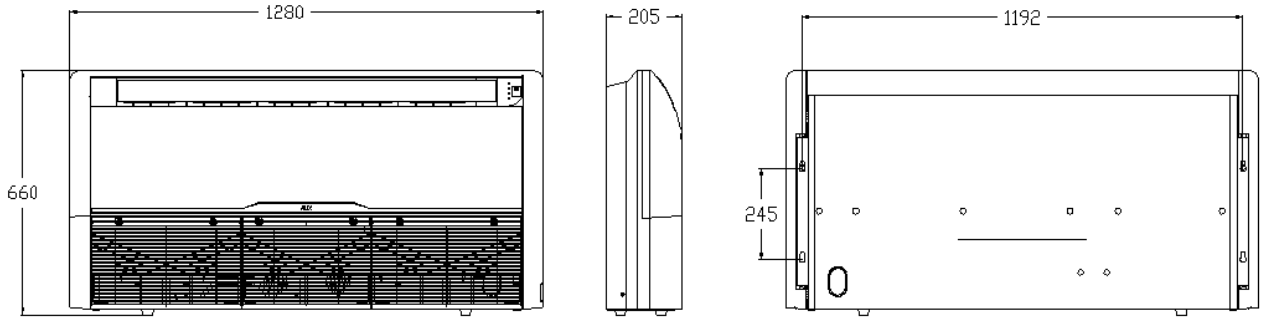


3.2 Ceiling & Floor

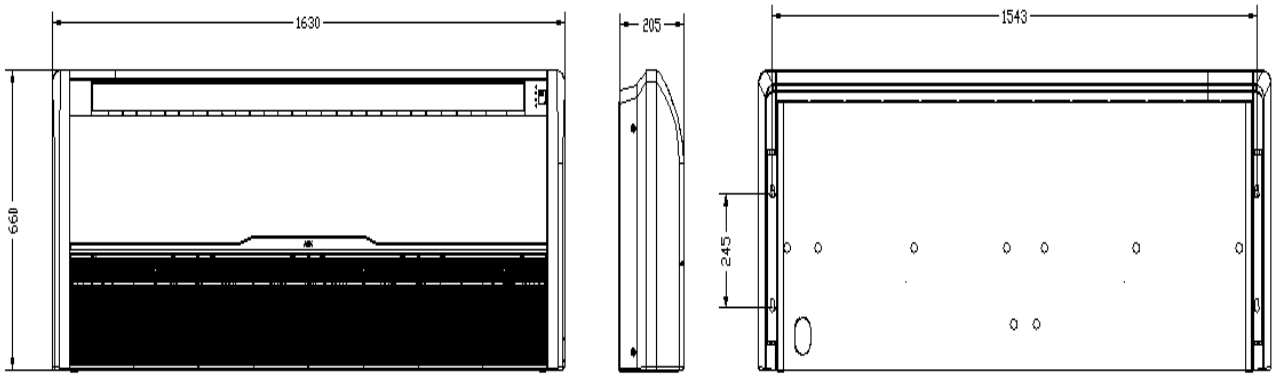
COF-12H
COF-18H



COF-24H
COF-36H



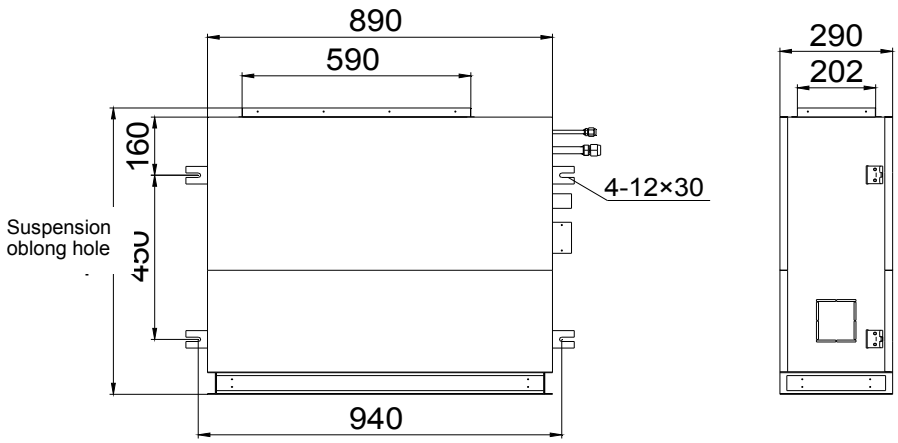
, CO4C-48H,COF-60H



3.4 Medium ESP Duct

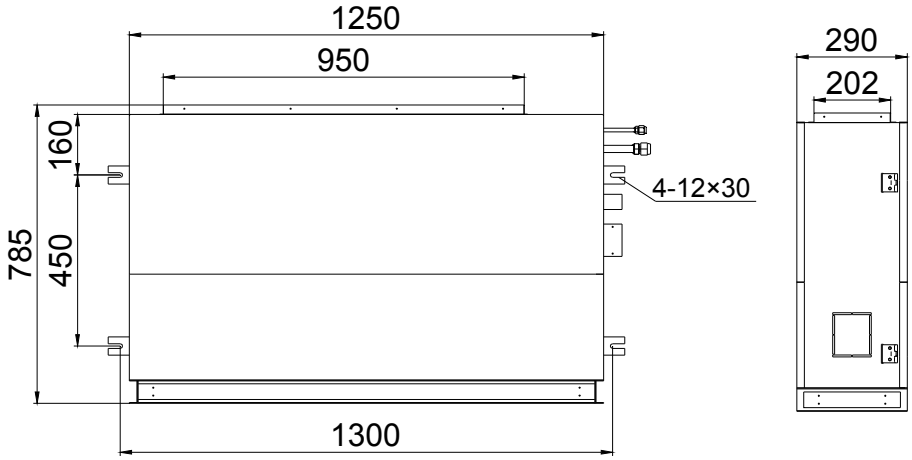
-, COD-18H

COD-24H, COD-36H



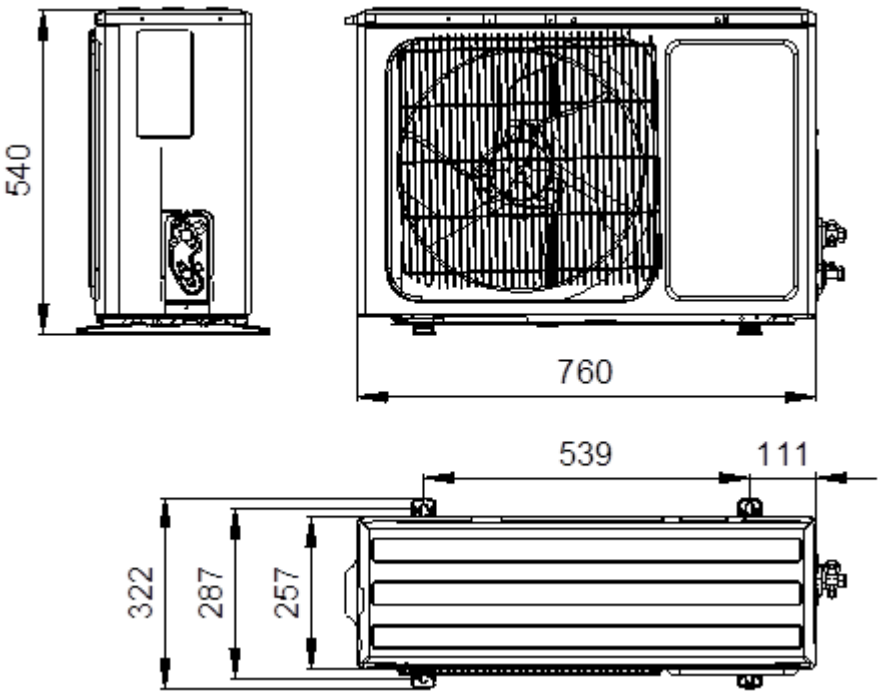
COD-48H

COD-60H

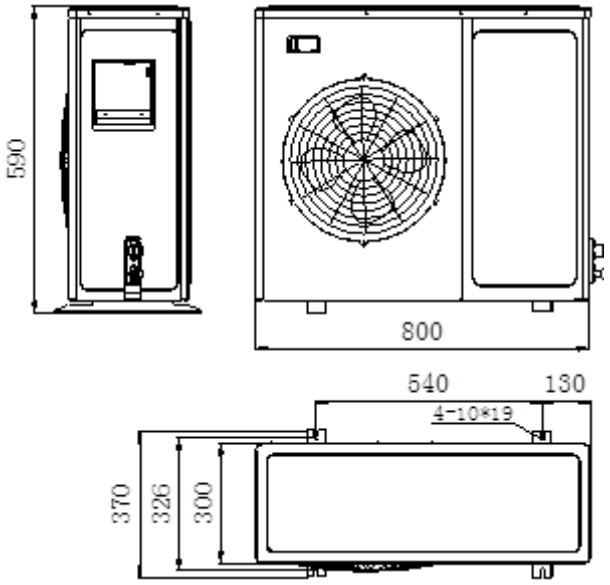


3.5 Universal outdoor unit

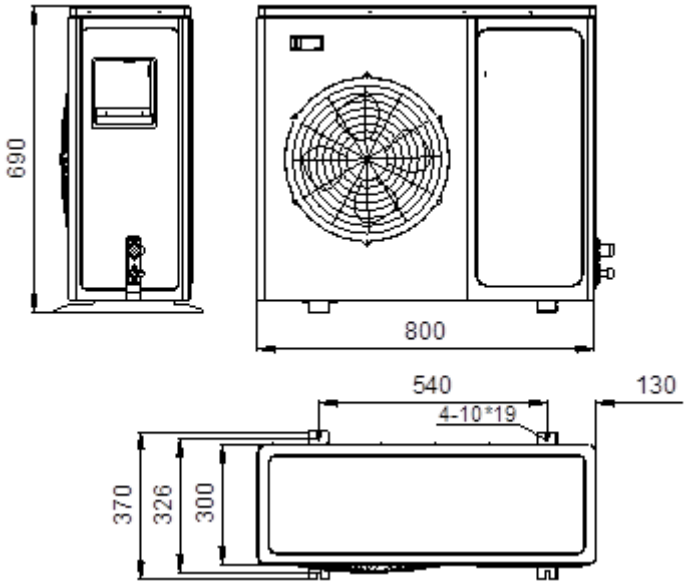
-, COE-12H



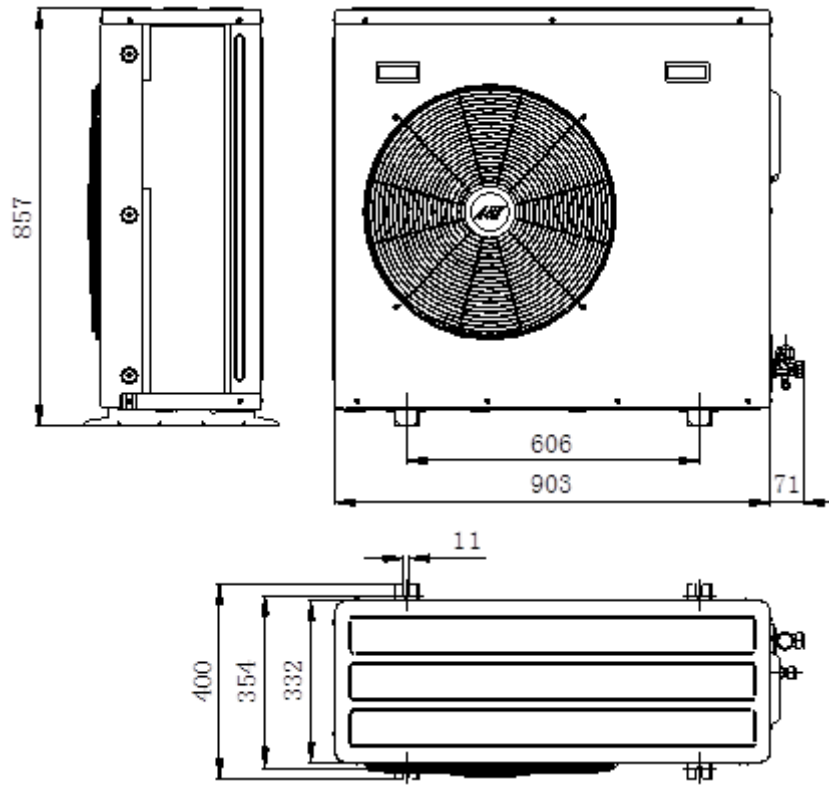
-, COE-18H



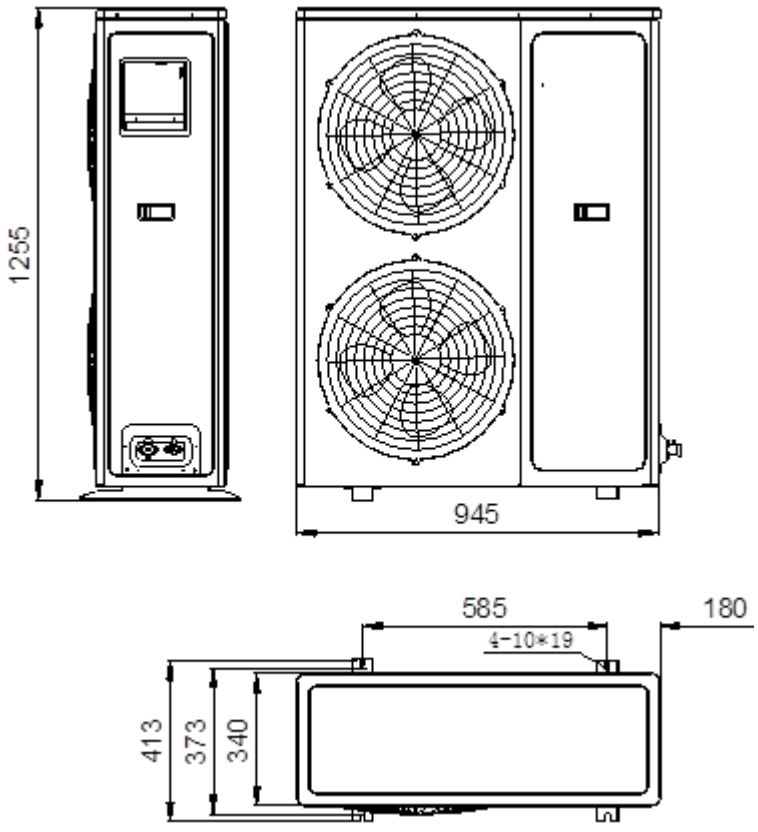
COE-24H



, COE-36H



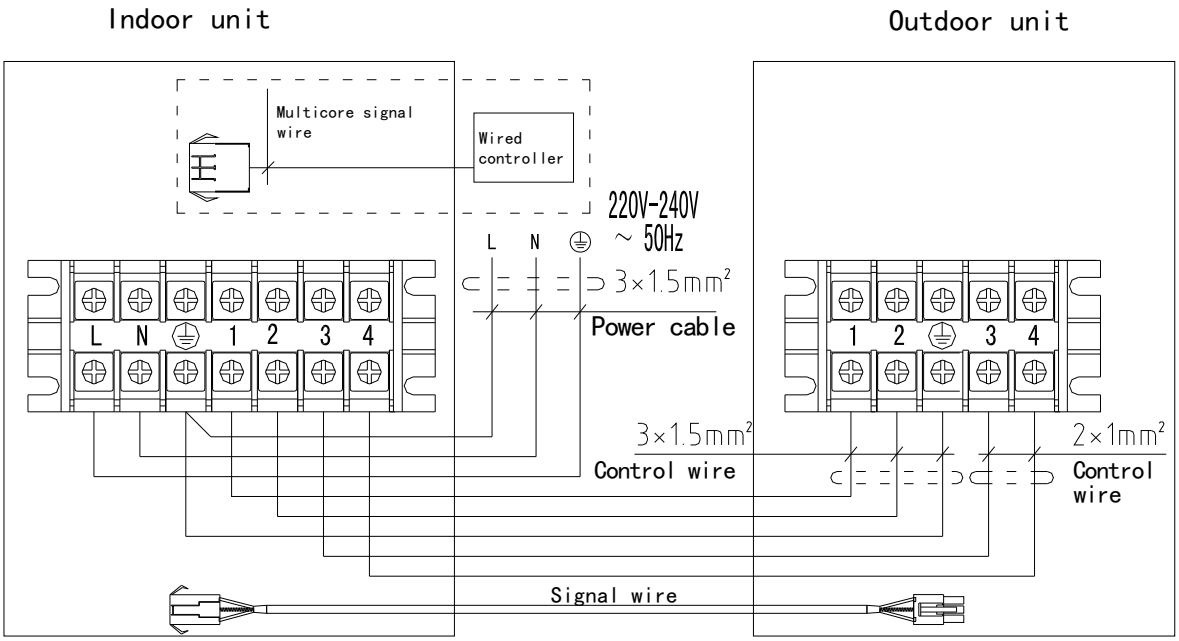
COE-48H, COE-60H



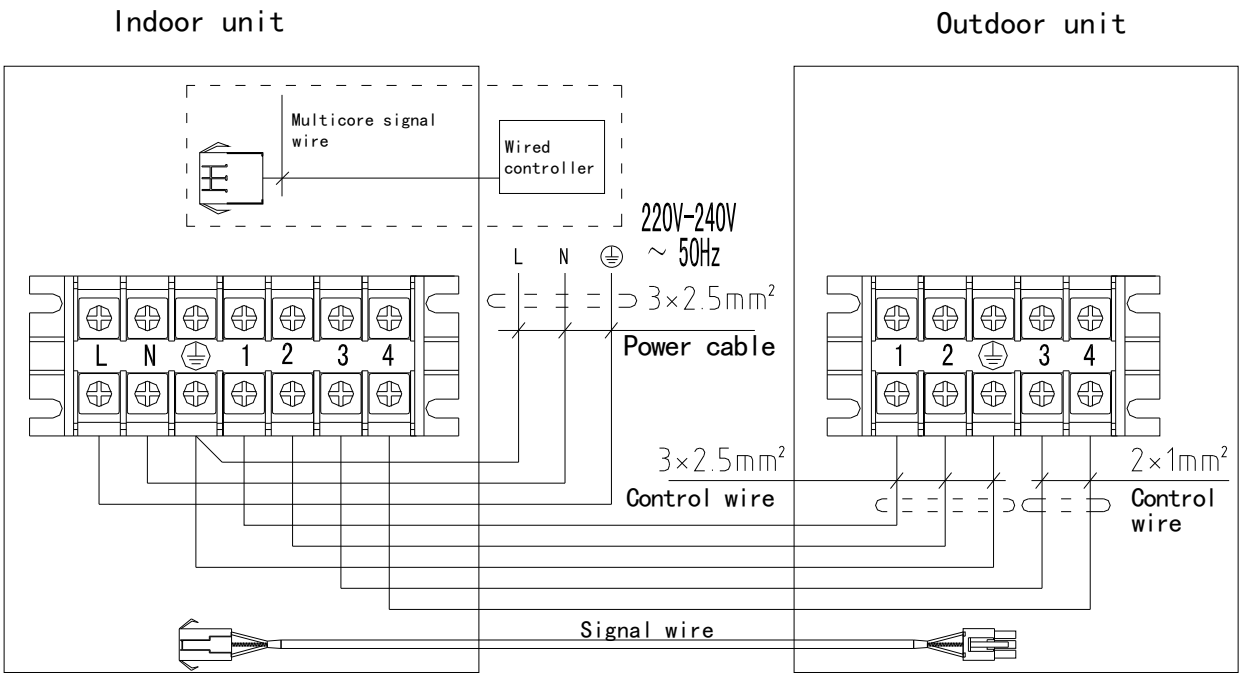
4. Electrical connection diagram between indoor and outdoor unit

4.1 Four-way Cassette

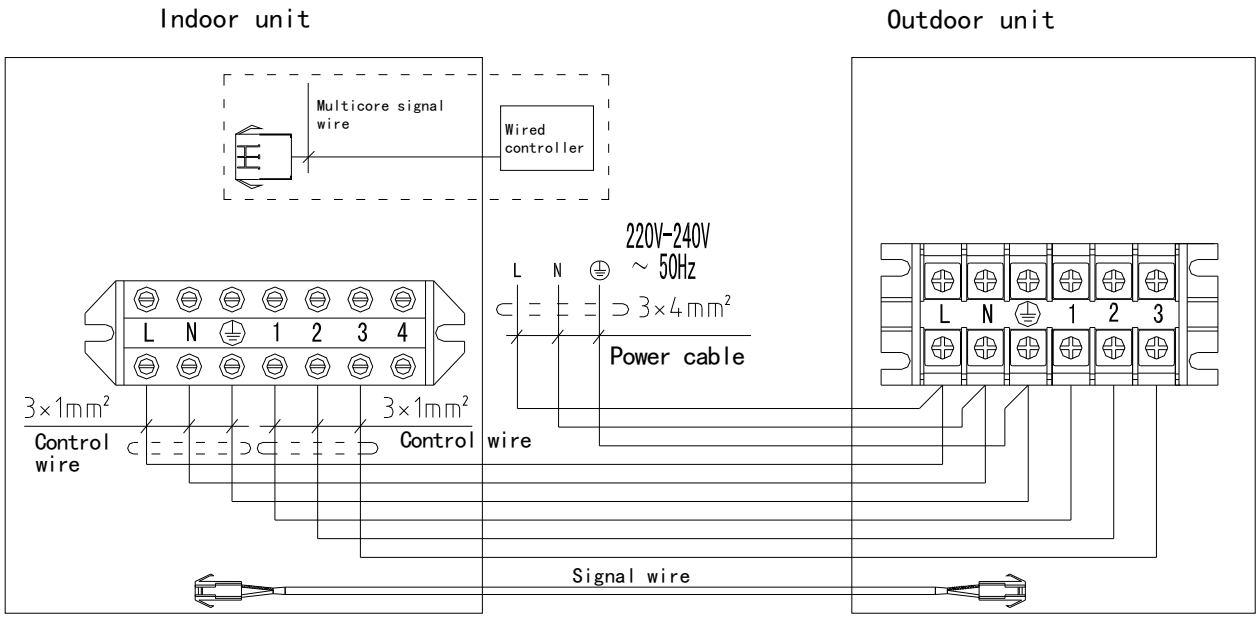
CO4C-12H



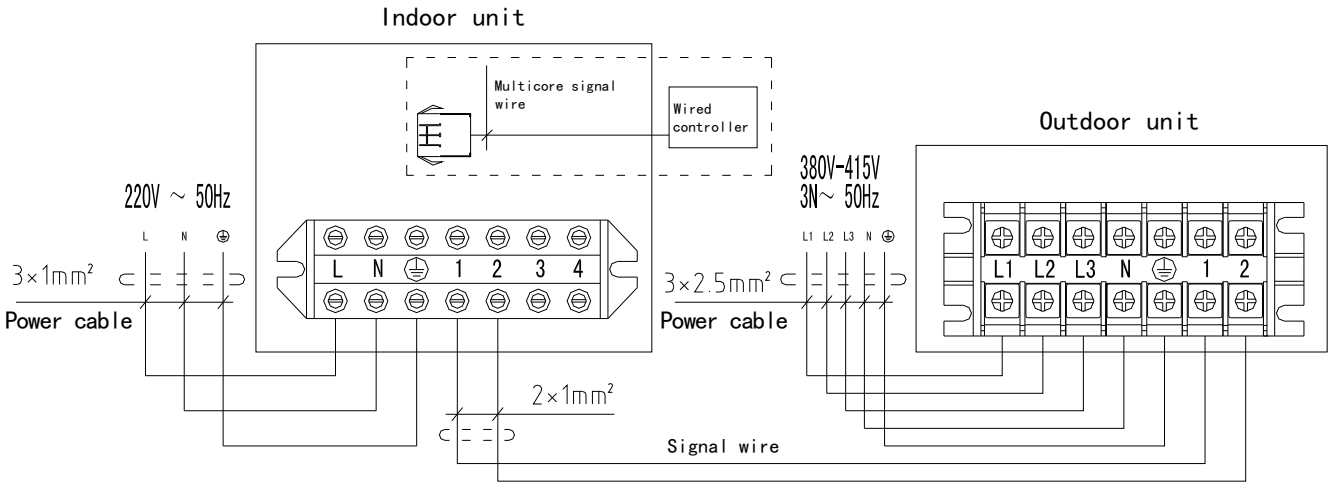
CO4C-18H


Indoor unit
Outdoor unit
Multicore signal wire
Wired controller
220V-240V
~ 50Hz
L N
3×2.5mm²
Power cable
L N 1 2 3 4
1 2 3 4
3×2.5mm²
Control wire
2×1mm²
Control wire
Signal wire

CO4C-24H

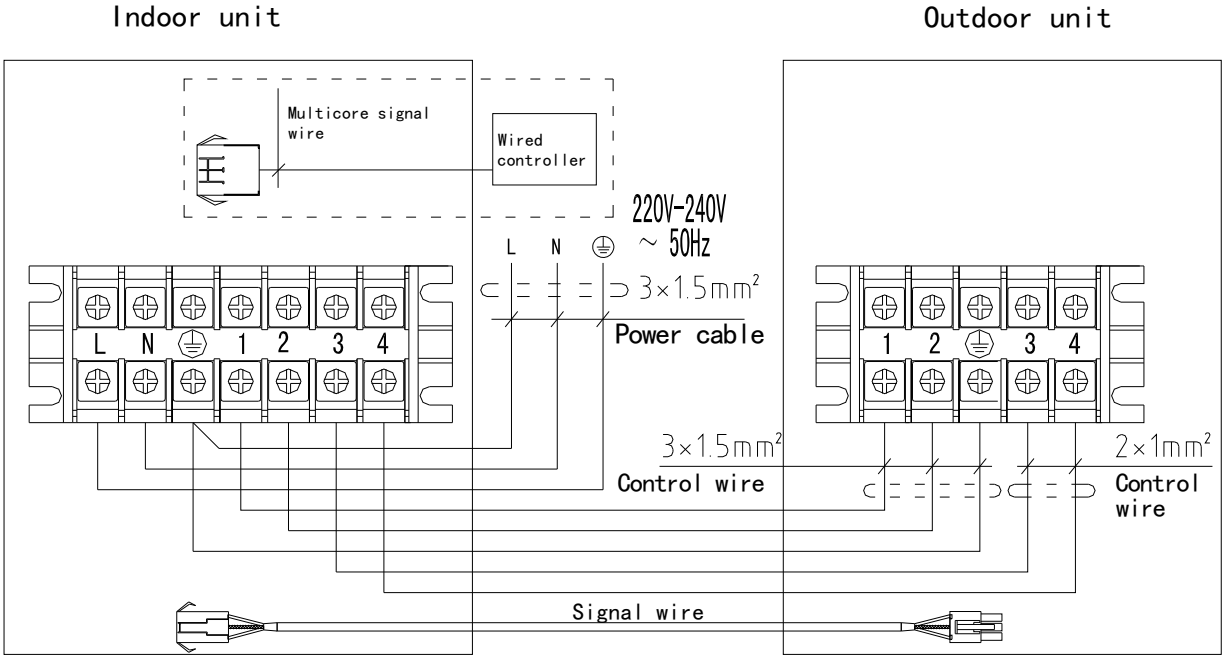

Indoor unit
Outdoor unit
Multicore signal wire
Wired controller
220V-240V
~ 50Hz
L N
3×4mm²
Power cable
L N 1 2 3 4
L N 1 2 3
3×1mm²
Control wire
3×1mm²
Control wire
Signal wire

CO4C-36H, CO4C-48H, CO4C-60H

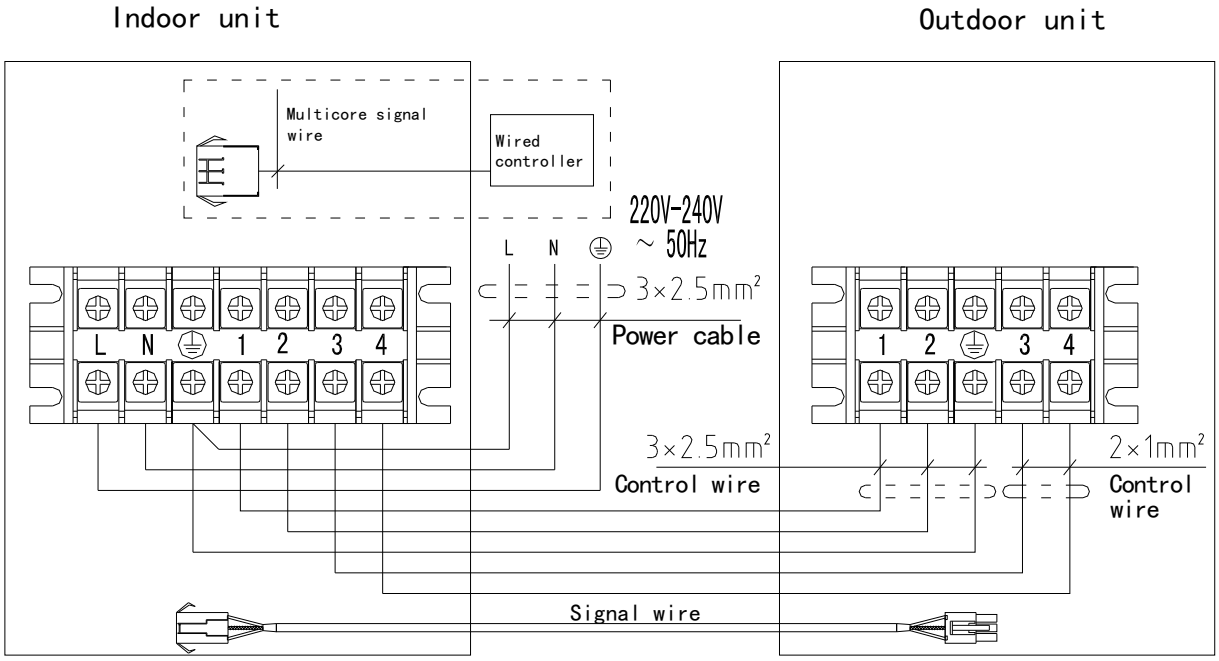


4.2 Ceiling & Floor and Duct Type

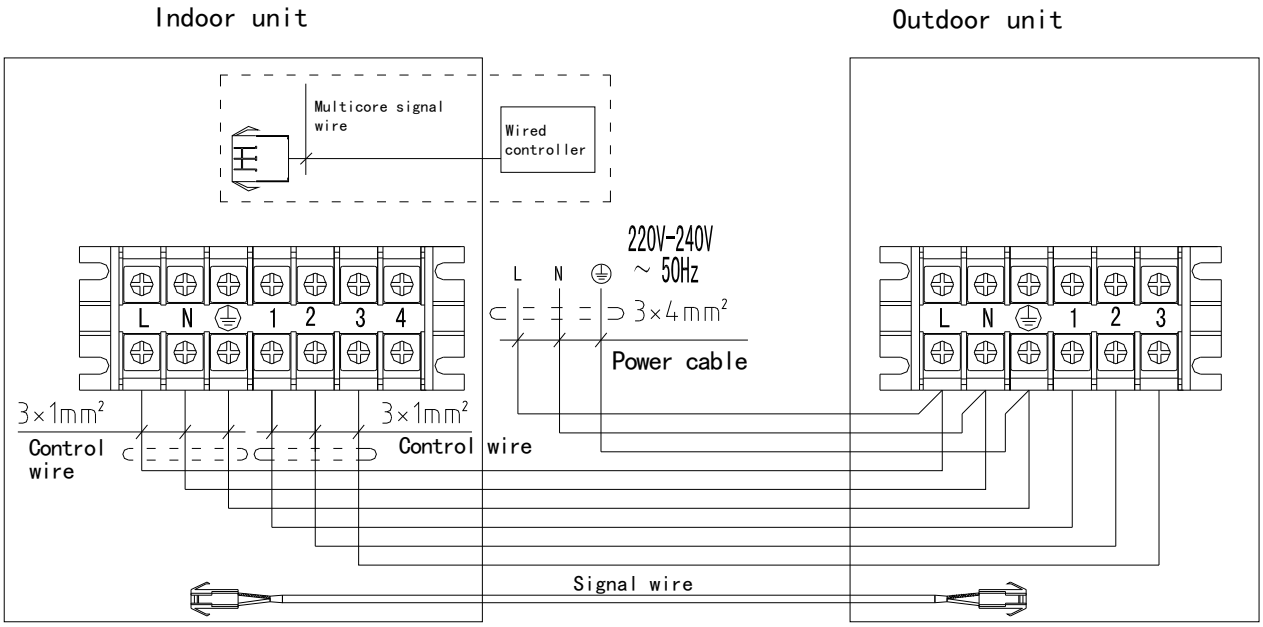
COF-12H, COD-12H



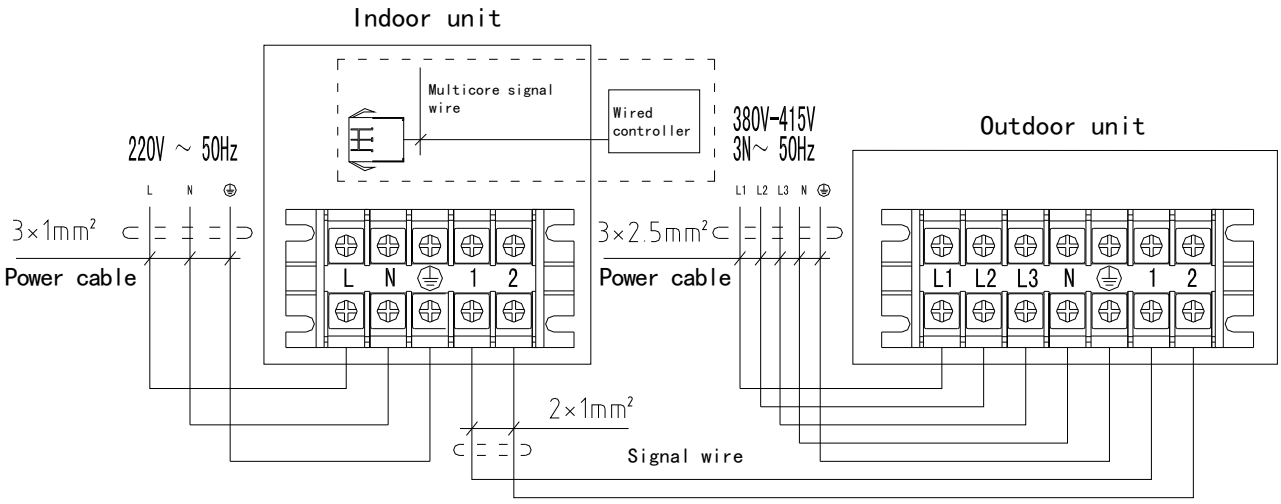
COF-18H
COD-18H



COF-24H
COD-24H



COF-36H, COF-48H, COF-60H
COD-36H, COD-48H, COD-60H



Part Ⅱ Installation and Commissioning

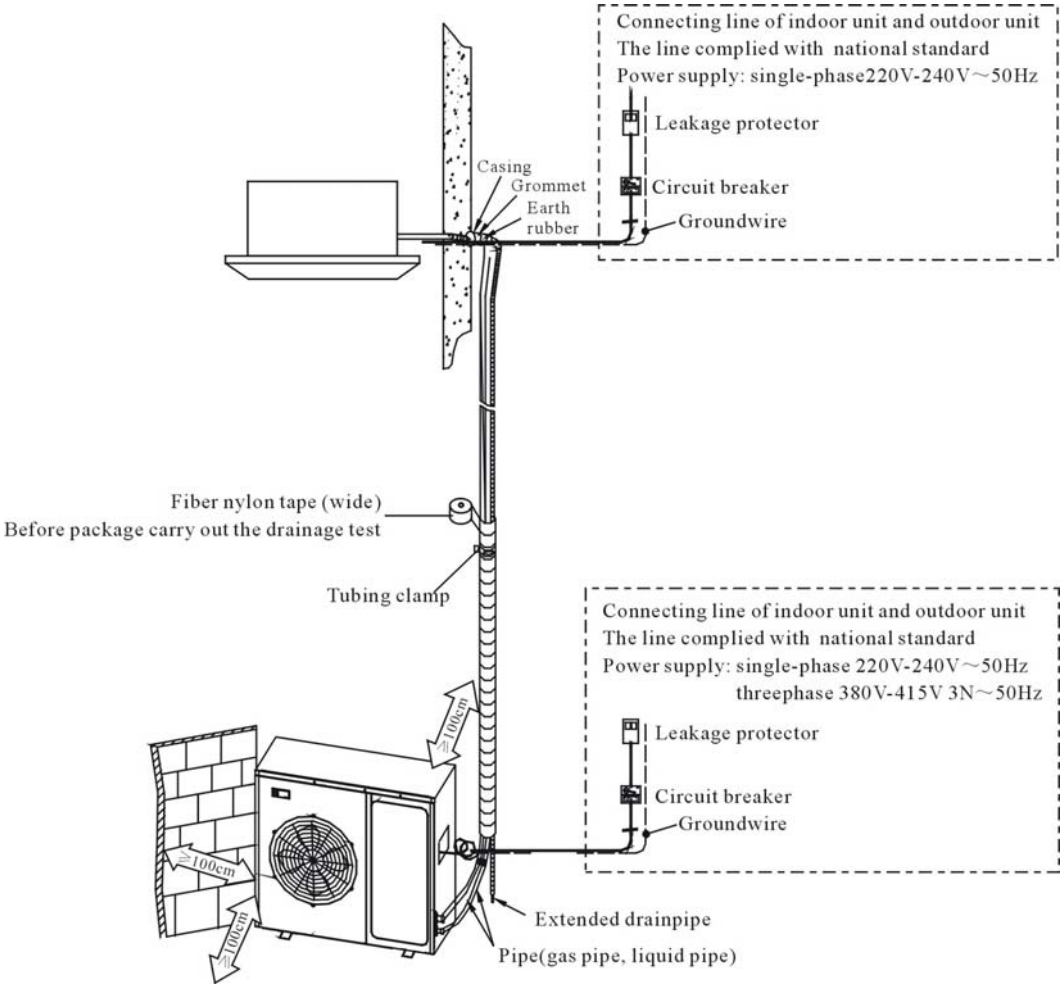
1.General introduction

1.1 Preparation and tools before installation

Please buy following spare parts from your local market before installation	Besides general implements, other implements are needed when connecting the pipe
Hung bolts M12, 4 pcs	Acetylene cylinders, oxygen cylinders (when longer pipe used it should be welded)
Drainage pipe PVC	One set pipe cut machine. (cut copper pipe)
Copper connecting pipe	Refrigerant cans, electronic balance (when longer pipe used additional gas should be charged)
Adhesive belt (big size) 5 pcs, (small size) 5 pcs	Pressure gauges, pipe clamp, welding torch, 2B silver electrode
Heat insulation material used to connect copper pipe (PE foam material, its thickness is more than 8mm)	Wrench 2 pcs, one of them is with adjustable torque wrench (42N.m，65N.m，100N.mm)
Power cable, connecting wire between indoor and outdoor unit (Must be in accordance with the wire diameter in the wiring diagram)	Nitrogen cylinder (in order to prevent oxidation when welding, using Nitrogen to replace the air)

1.2 Unit outside dimension (Please refer to Chapter I, part 3)

1.3 Installation diagram



2. Indoor unit installation

2.1 Installation precaution

◇Hanging location should be able to support the unit's weight, there should be no increase in noise and vibration. If the hanging location needs reinforcement, it should be reinforced before installation;

◇Choose the space above the ceiling that can put the indoor unit inside;

◇The location should be easy for drainage;

◇The unit should not be installed in the heat source, steam source, oil mist places (such as machine room, kitchen, laundry room, mechanical workshop, etc.) in order to avoid performance degradation, electric shock, plastic parts corrosion which lead to unit broken;

◇Choose the location at least 1 meter away from TV and radio, in order to avoid interference to them

◇There is no obstacles getting in the way of air circulation, cold air can evenly spread to all corners of the room;

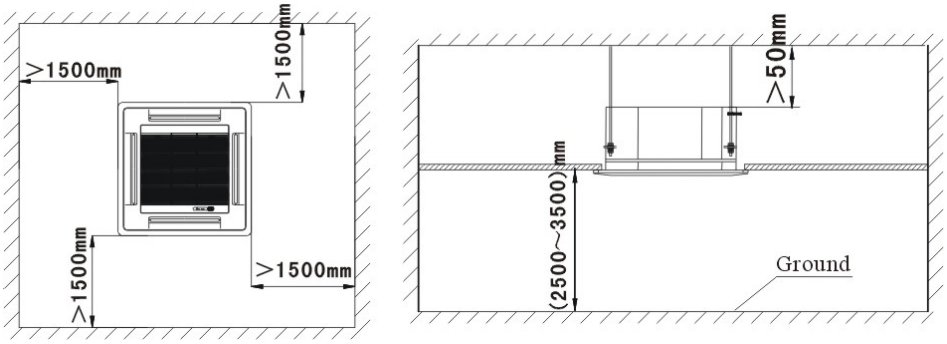
◇In order to facilitate maintenance and repair, there should be certain distance between indoor unit and obstacles;

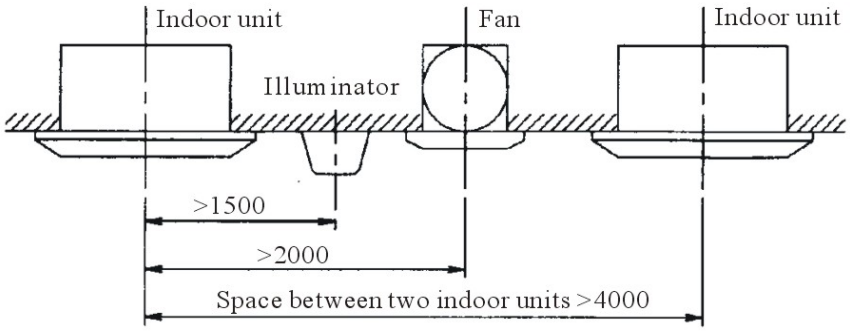
◇Refrigerant R410A is used for this unit, which is non-flammable and non-toxic gas. As the proportion of refrigerant is bigger than air, so if it leaks the gas will be filled on the ground. Therefore, if the units

mounted on a closed room there must be good ventilation to prevent suffocation. In case of leakage of refrigerant, units should immediately stop running, and contact with maintenance personnel in time. There must be no fire at the site, because the refrigerant will turn to harmful gas when get to the fire.

2.2 Four-way Cassette

2.2.1 The distance between indoor unit and obstacle





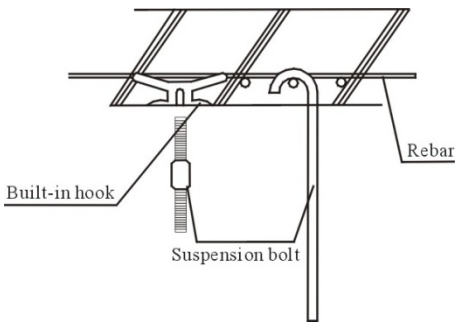
2.2.2 Indoor unit suspension

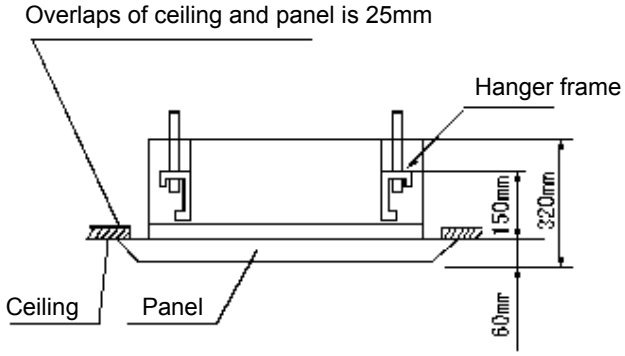
◇Select the suspension foundation:

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.

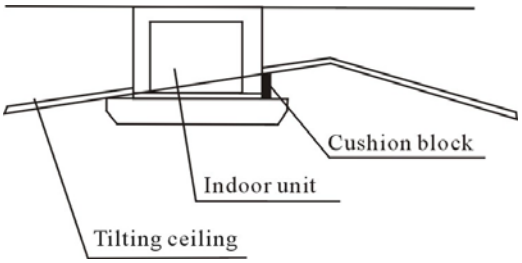
◇Fixing of suspension foundation:

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





◇If the unit is installed on a sloping ceiling, a cushion block should be installed between the ceiling and the air outlet panel, in order to ensure that the unit is installed on a level surface.
It is as shown in the drawing as follows:



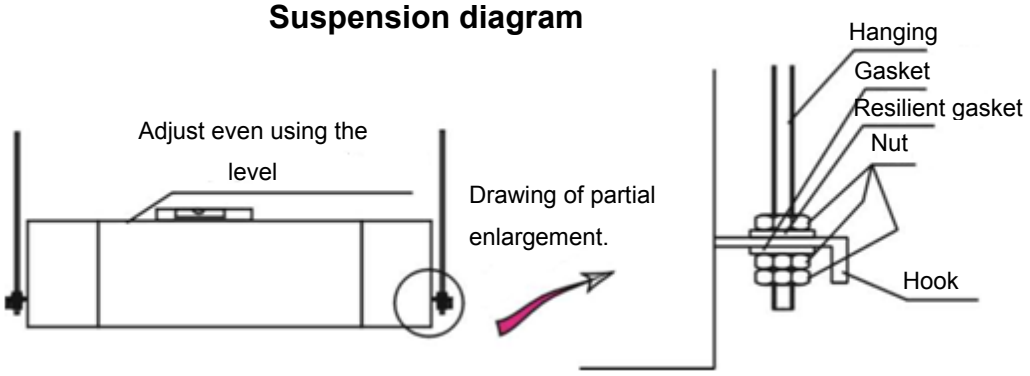
◇ Adjust the relative position of the suspension hook on the suspension bolt so that the unit can be in level position in all directions. Check with a level gauge after the installation is complete in order to ensure that the indoor unit is horizontal, otherwise it will cause water leakage, air leakage etc.

◇Tighten the bolt and ensure that four hooks are in close contact with the nuts and washers, and the unit is suspended firmly and reliably onto the hooks.

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

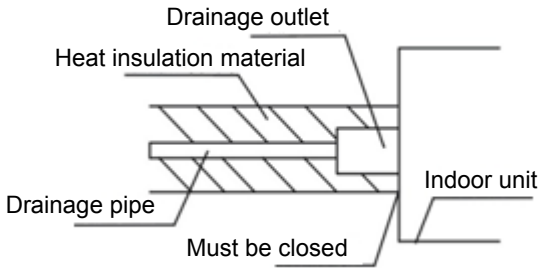
◇Ensure that the centre of the indoor unit is in alignment with the centre of the opening in the ceiling.

Suspension diagram



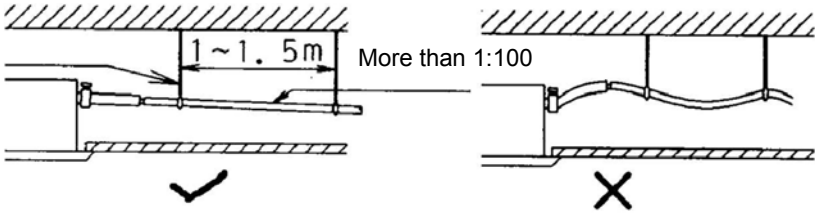
2.2.3 Drainage pipe installation

◇ The drain pipe should be properly insulated to prevent the generation of condensation.

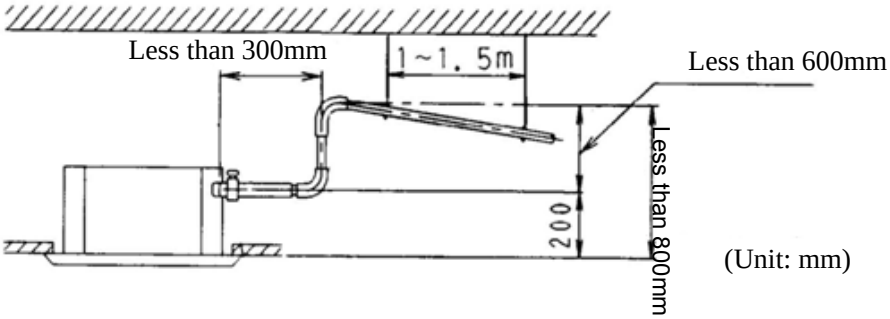


Heat insulation material: the thickness of rubber insulation pipe should be more than 8mm

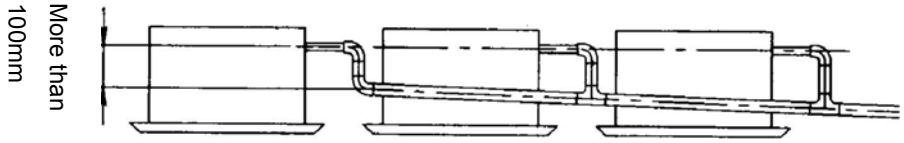
◇Drainage pipe must have a downward gradient (1 / 50 1 / 100).If the drain pipe is installed ups and downs, it will cause water backflow or leakage etc.



◇The unit has a drain pump which will lift up to 1200mm. However after the pump stops the water still in the pipe will drain back and may overflow the drain tray causing a water leak. For this reason please install the drain pipe as shown.



◇When draining multiple units into a common drain line, this common drain should be installed about 100mm below each units drain outlet, as shown in the drawing.

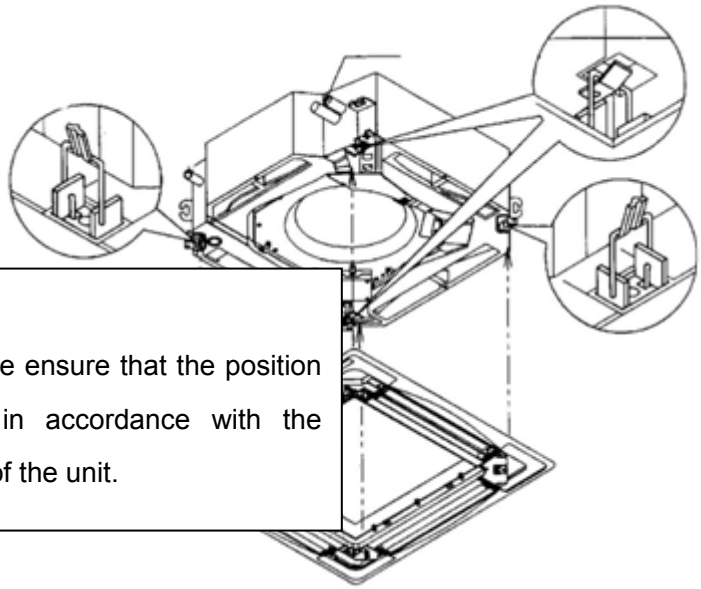


◇When finish installation please carry out the drainage test to ensure that the water flow through the pipeline fluently, and carefully observe the junction to ensure that there is no water leakage. If the unit is installed in the newly built house, strongly recommend that this test taken before the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

2.2.4 Panel installation

◇To install the panel：

As to the MB06 panel please refer to the following picture, the panel has four hooks which attach to corresponding hangers on the unit and the panel should be positioned using these first. The panel is then fixed into position by four bolts which are accessed through the four corner panels on the grille.

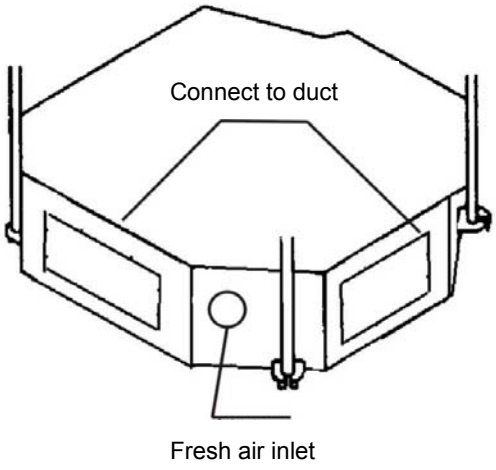


Notes:

When installing please ensure that the position of swing motor is in accordance with the position of the pipes of the unit.

2.2.5 Connect duct, fresh air ventilation

In order to meet different customers' requirements and their different usage environment, 3hp and 5hp indoor unit reserves one fresh air ventilation hole and four duct connection holes. The fresh air can be introduced from outside or through duct.



◇Fresh air ventilation: on the corner of the unit there is a circular fresh air connection hole, if users want this feature, please cut down the circular metal sheet and connect it to the duct. Fresh air replacement hole is connected to the return air inlet of the indoor unit, when in the process of operation due to the negative pressure, the fresh air can be introduced from outside.

◇Connect to duct: there is four rectangular connection holes on the four sides of the unit. If users what to connect it to the duct, please close the outlet to the side which needs connecting to the duct as well as cut down the rectangular metal sheet.

Notes:

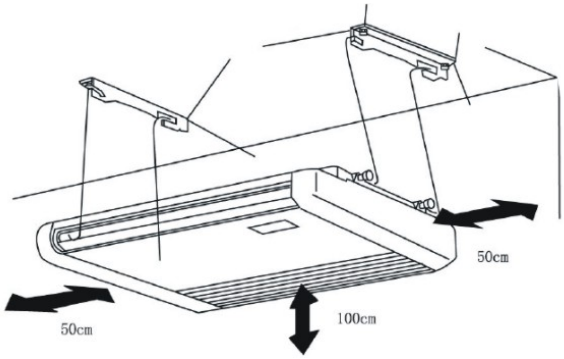
◇Only under special usage that it is allowed to connect to duct pipe and the length of the duct pipe should be less than 5 meters.

◇Using the duct that can prevent frost and noise.

◇ Using heat insulation material to seal the junction between duct and the unit.

2.3 Ceiling & Floor

2.3.1 The distance between indoor unit and obstacle



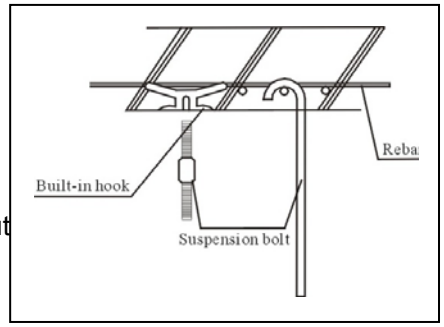
2.3.2 Indoor unit suspension

◇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;



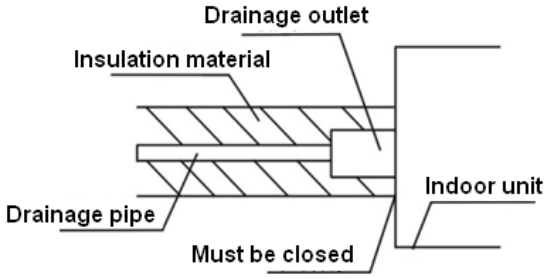
◇Adjust the relative positions of the suspension hooks to ensure the indoor unit is level in all directions. Use a spirit level to ensure this, otherwise water leakage, air leakage etc. will be resulted;

◇Tighten the nuts and ensure that the hooks are tightly connected to the nut phenomenon of virtual hanging;

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

2.3.3 Drainage pipe installation

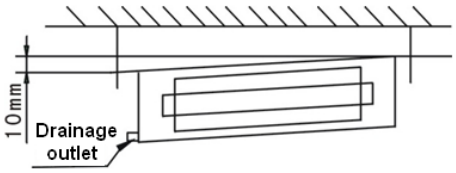
◇The drain pipe should be properly insulated to prevent the generation of condensation, see picture as follows：

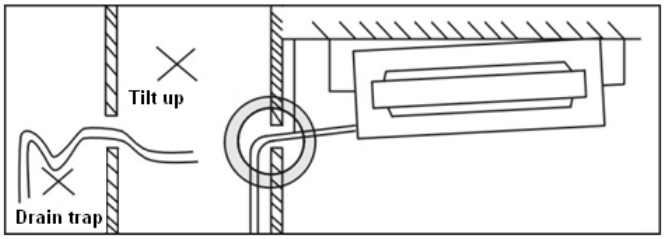


Heat insulation material: rubber insulation pipe with the thickness of more than 8mm

◇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.

The pipe should not rise at any point.

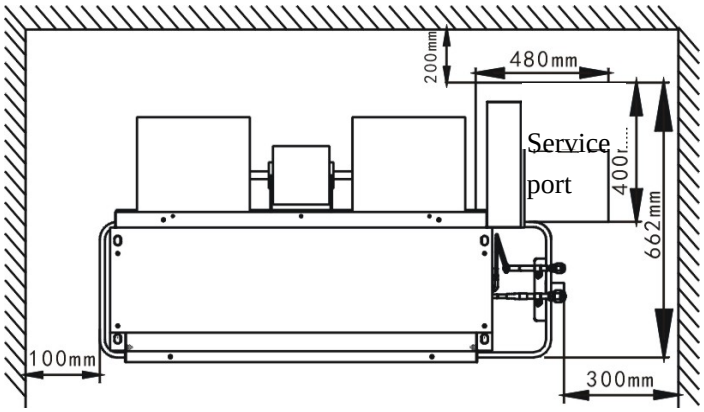




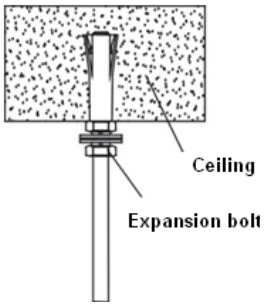
◇When finish installation，please carry out the drainage test to ensure that the water flow through the pipeline fluently, and carefully observe the junction to ensure that there is no water leakage at the junction. If the unit is installed in the newly built house, strongly recommend that this test taken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

2.4 Low ESP Duct

2.4.1 The distance between indoor unit and obstacle



2.4.2 Indoor unit suspension



◇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;

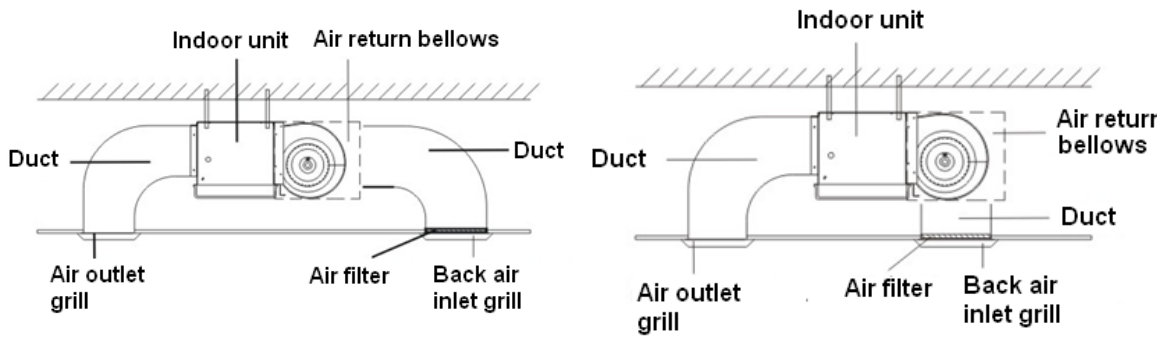
◇Tighten the nuts and ensure that the hooks are tightly connected to the nuts and shims, and there is no phenomenon of virtual hanging;

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

2.4.3 duct pipeline installation

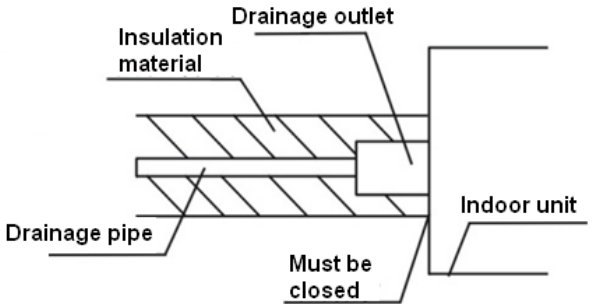
◇Using canvas to connect between indoor unit and duct pipeline, in order to save unnecessary vibration .

◇Duct pipeline connection can be divided into two kinds, one is back air return and the other is below air return, as to the detail connection method, please refer to the following picture.



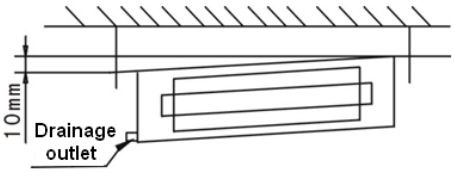
2.4.4 Drainage pipe installation

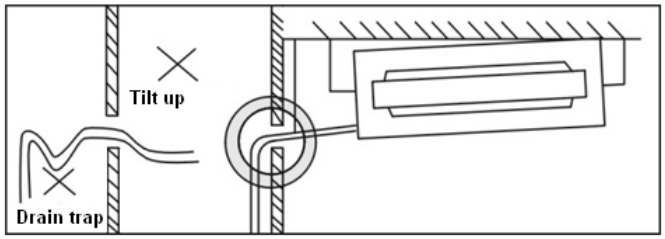
◇Drainage pipes must be wrapped with heat insulation materials, otherwise it will cause frost or droplets, see picture as follows:



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.

2.4.5 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:

◇Mounting hole set up: please use certain instrument to dig a square hole with 88*88mm on the ceiling

◇Remote controller receiver installation.

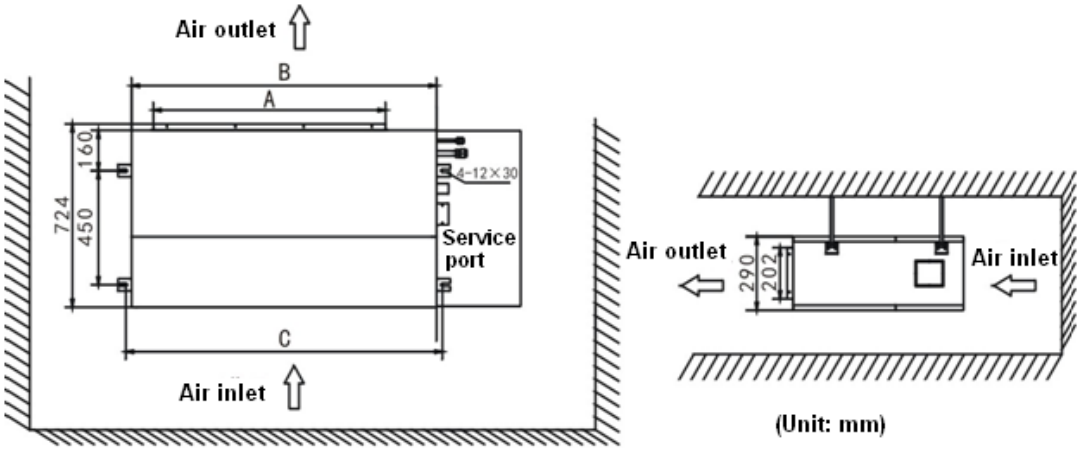
Hold the two sides (with clip sides) of the receiver, set the spring clip in the vertical way then insert it into the mounting hole, if the two sides of the receiver is in the same level with the ceiling the

installation is finished.

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

2.5 Medium ESP Duct

2.5.1 The distance between indoor unit and obstacle



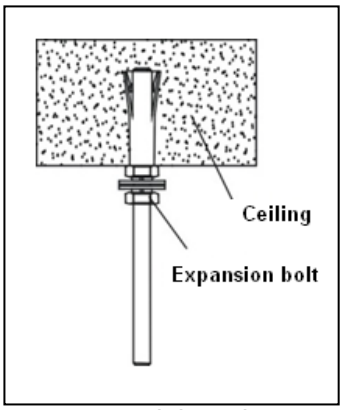
2.5.2 Indoor unit suspension

◇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;



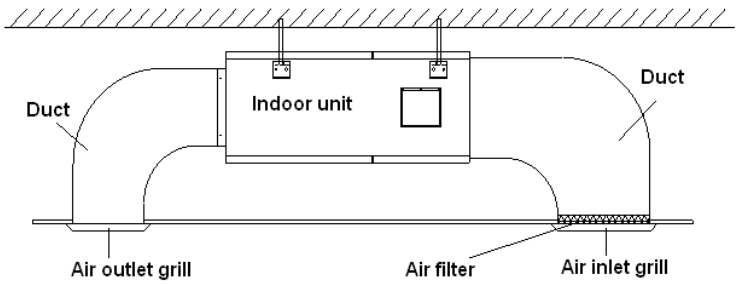
◇Adjust the relative positions of the suspension hooks to ensure the indoor unit is level in all directions. Use a spirit level to ensure this, otherwise water leakage, air leakage etc. will be resulted;

◇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.

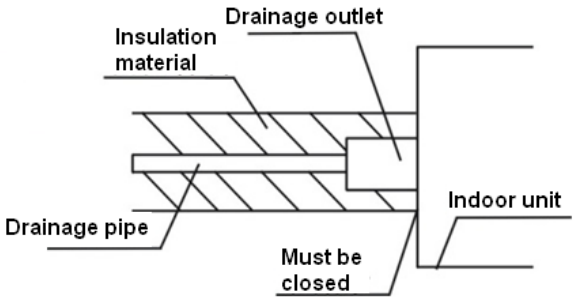
2.5.3 Duct pipeline installation

◇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.



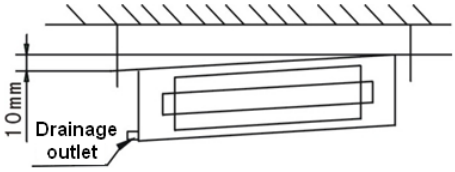
2.5.4 Drainage pipe installation

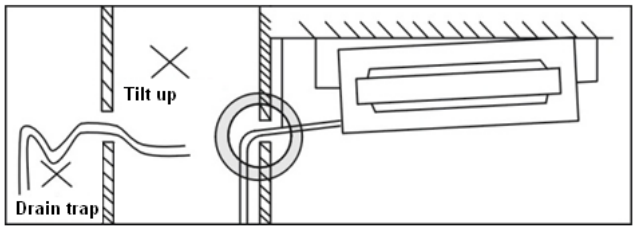
◇Drainage pipes must be wrapped with heat insulation materials, otherwise it will cause frost or droplets, see picture as follows:



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.

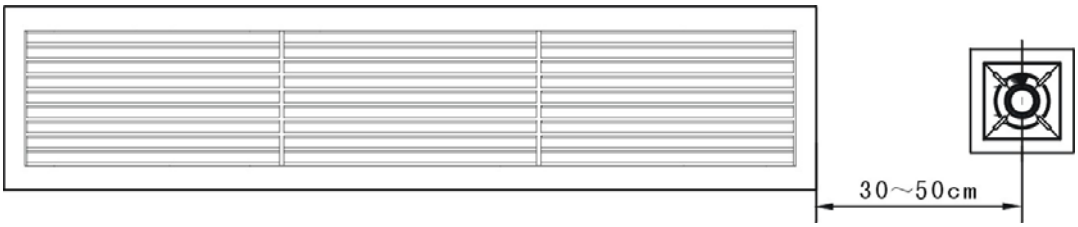




◇When finish installation please carry out the drainage test to ensure that the water flow through the pipeline fluently, and carefully observe the junction to ensure that there is no water leakage at the junction. If the unit is installed in the newly built house, strongly recommend that this test taken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

2.5.5 Remote controller receiver installation.

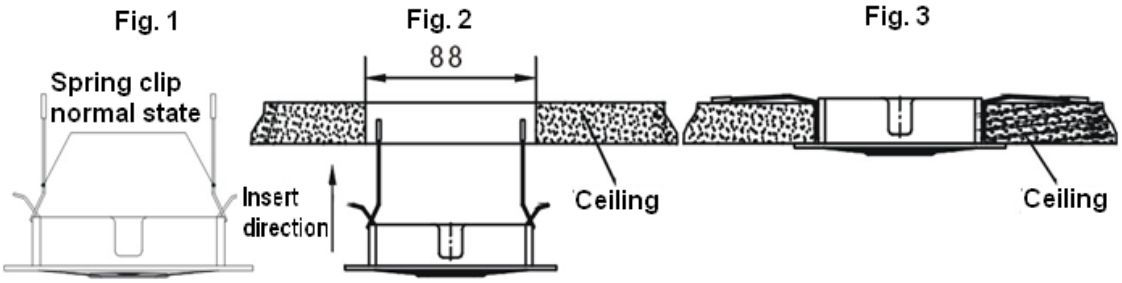
◇Installation site: recommend that the receiver is mounted with the distance of 30~50 cm to the indoor unit air outlet(on your choice as well), while must ensure that the receiver can get the signal that the remote controller sends, please refer to the following installation picture:



◇Mounting hole set up: please use certain instrument to dig a square hole with 88*88mm on the ceiling

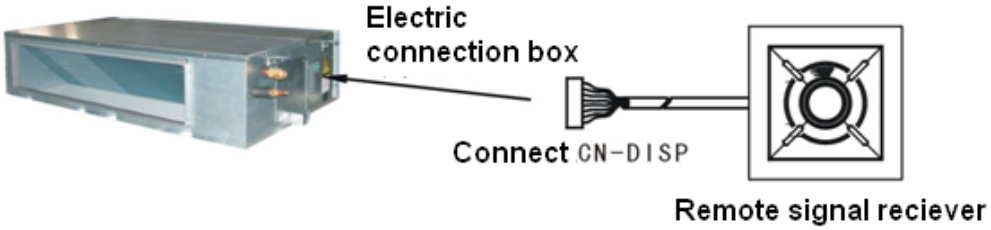
◇Remote controller receiver installation.

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.



3. Outdoor unit installation

3.1 Select installation position of outdoor unit

3.1.1 Installation site and base

◇The site shall be strong enough to bear its weight, prevent noise and vibration.

◇The site shall be ensured to avoid direct sunshine, if necessary set a Havelock above the outdoor unit.

◇The site shall be easy to drainage the rain water and the frost water.

◇The site shall be ensured that the outdoor unit will not be covered by snow during the winter season.

◇The site shall be ensured that the outlet is not facing the strong wind.

◇The site shall be ensured that outlet air and operation noise will not affect the neighbors' daily life.

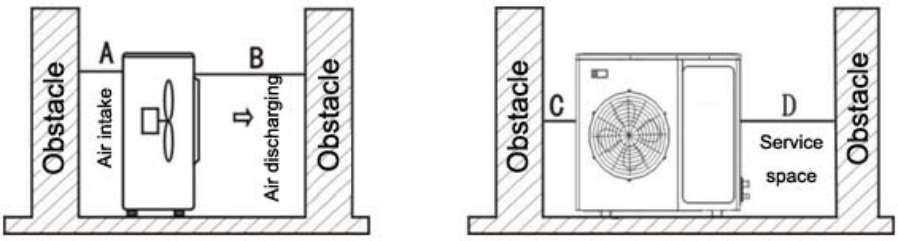
◇The site shall be ensured that the outdoor unit will not be affected by the garbage and oil mist.

Warning ：

If outdoor unit working under such environment which contains oil (including machine oil) salt(marine areas), sulfide gas (hot springs and oil refinery areas), those substance may lead to the failure work of the outdoor unit.

3.1.2 Maintenance and ventilation space

◇The site shall be easy for ventilation then the outdoor unit can inhale and discharge air easily. What's more please reserve enough space for maintenance.



Note： Require A＞300mm； B＞1500mm； C＞300mm； D＞500mm；

3.2 Outdoor unit installation

◇Use size M10 bolt and nut to fasten the outdoor unit tightly on the bracket, keep it in the horizontal level. The suitable length for bolt shall 20mm over the base level, in order to minimize vibration please do set a rubber shock absorber.

◇If the outdoor unit is mounted on the wall or on the rooftop, in order to prevent earthquake and strong wind please fasten it as tightly as possible.

◇Set a drainage channel to ensure the condensing water can drain out smoothly.

◇To avoid that only four angles metal sheet to support the outdoor unit.

4. Connection piping installation

4.1 Piping installation precaution

Please choose the phosphorus deoxidation seamless copper pipe as the piping.

◇If use the lengthen piping needs welding:Please welding before fasten the nut, when welding using nitrogen gas to replace the air in the pipe in order to prevent oxidation.

◇If there are many points to be welded when installing the lengthen piping, please set a filter in the pipe(buy from local market)

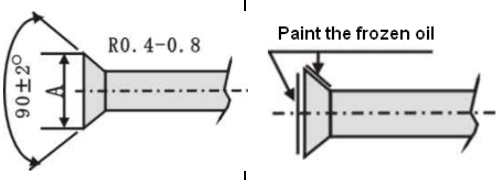
◇Please use nitrogen gas or air to remove the dust and water in the pipe,

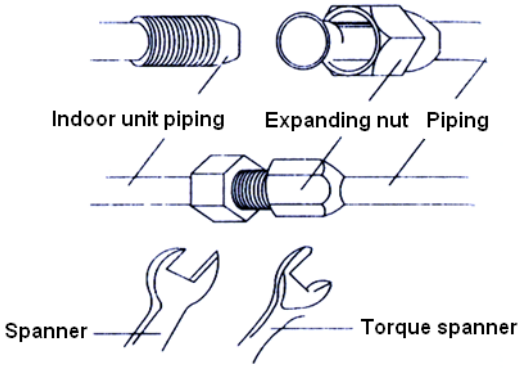
◇Please lay out the piping according to the tend towards of the piping, but it is not allowed more than 3 times curved at the same point of the pipe(if do like this the pipe will become rigid)

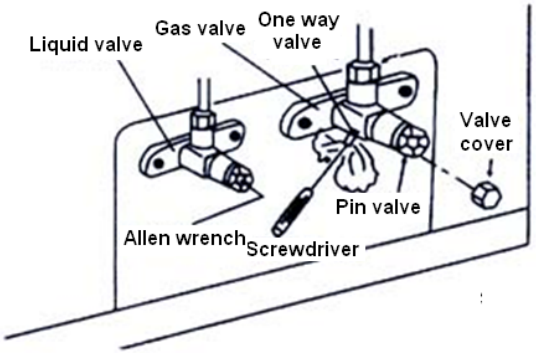
◇Pipe bending machine is used during the process of bending the pipe, the curvature shall not be too small or it will affect the refrigerant flow.

4.2 Connection piping installation

4.2.1 Piping specification selection (as to the detail selection please take reference to the cooling capacity adjust index figure during different installation situations)

Piping diameter	Tighten torque	Expanding size (A)	Expanding shape	Paint the frozen oil
1/4in(φ6.35mm)	15-19(N·m)	8.3-8.7mm		
3/8in(φ9.52mm)	35-40(N·m)	12.0-12.4mm		
1/2in(φ12.7mm)	50-60(N·m)	15.4-15.8mm		
5/8in(φ15.88mm)	62-76(N·m)	18.6-19.0mm		
3/4in(φ19.05mm)	70-75(N·m)	22.9-23.3mm		





4.2.2 Piping connection

◇Using expanding machine to expand accessories, the size of horn shown in the following figure:

◇ Paint a thin layer of frozen oil at both inside and outside part of the expanding.

◇Make the expanding right to the screw thread shape connection of the indoor unit, using hands to tighten the nut then using a wrench to tighten the nut again, the tighten torque as follows figure.

◇Take out the cover of the indoor unit gas valve and liquid valve, make the expanding right to the stop valve of outdoor unit, using hands to tighten the nut then using a wrench to tighten the nut again, the tighten torque as follows figure.

4.2.3 Emptying or vacuum

Before charging the refrigerant to the system, to ensure that there is no impurities, water or non-condensable gas. So, emptying and vacuum operation should be carried out.

◇Vacuum: when process this operation please be sure that the connection pipe is tightened up.

①Screw off the cover of maintenance valve connection, connect the pressure gauge to the connection of maintenance valve

②Connect the vacuum pump to the pressure gauge, turn on the vacuum pump and pressure gauge to process the vacuum operation toward the indoor unit and piping, while to ensure that the absolute pressure is no less than 50Pa after this operation.

③ Turn off the pressure gauge and vacuum pump to keep the pressure in the same level in 20 minutes.

◇Emptying: when process this operation, please disconnect the high pressure valve with liquid valve.

①Connect the gas valve of the stop valve to the thimble side of the rubber hoses, the other side of rubber hoses should be connected to the refrigerant tank.

② Open the refrigerant tank valve, using the refrigerant inside the tank with high speed to empty the air in the indoor unit and the connection piping. When the outlet air becomes mist (it feels cold by touching it), then the air is emptied.

③When ensure that the air is emptied, connect and tighten the high pressure valve of outdoor unit stop valve and liquid side connection pipe, keep this state more than 10 seconds.

④Use soapy what to test each connection junctions (including lengthen piping welding junction)

⑤Confirmed that there is no leakage, turn off the valve of refrigerant tank, take down the rubber hose as well.

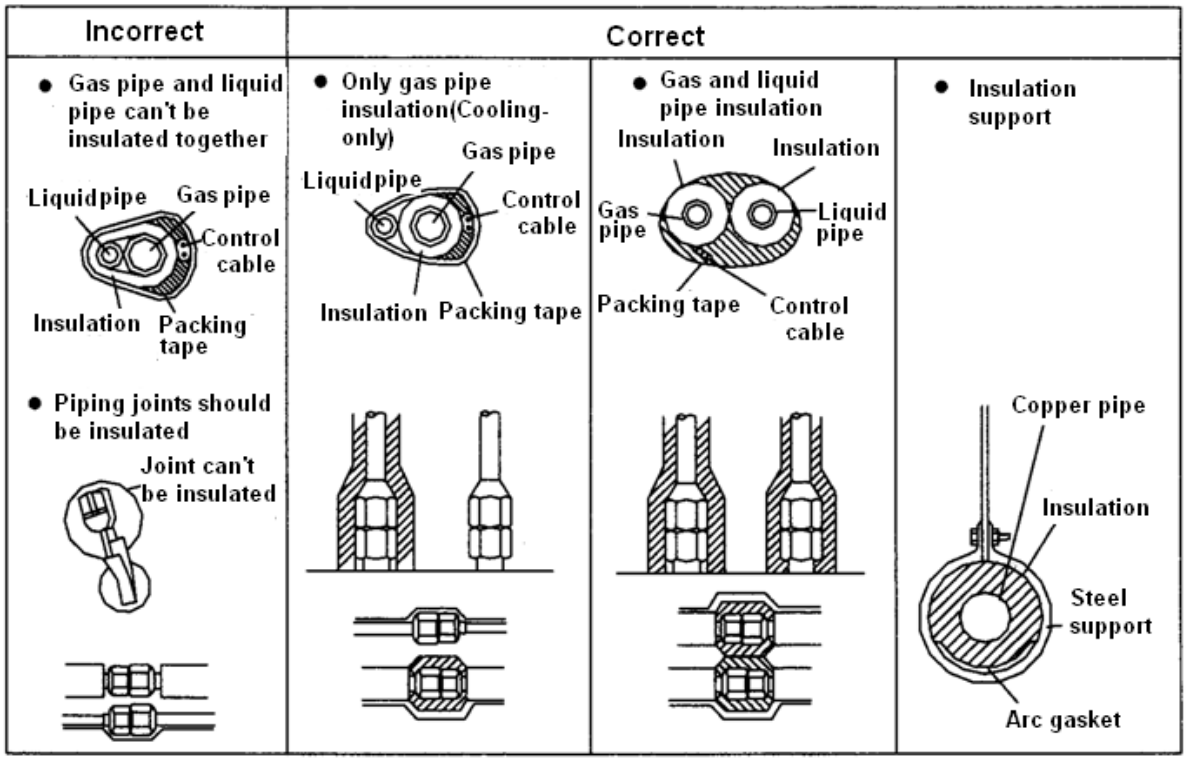
◇Turn on the high-low pressure valve of the outdoor unit.

After vacuum and emptying, screw back the cover of the maintenance valve of outdoor unit low pressure valve, screw off the high-low pressure valve of the outdoor unit (note: shall totally turned off). Connect the refrigerant to the system.

4.2.4 Heat insulation package of piping

Notes: drainage pipe and connection piping should be wrapped by heat insulation material respectively or there will be dew or leakage.

◇ Use heat insulation material with good insulation performance to wrap the pipe.



◇Notes during the high temperature working environment

Our air conditioner is proved my dew conditioner experiment. But if it keeps on working during the high humidity (the dew temperature is more than23℃) environment which may lead to water leakage, in such condition please use following additional insulation material.

◇Glass fiber insulation material with the thickness between 10~20mm can be used.

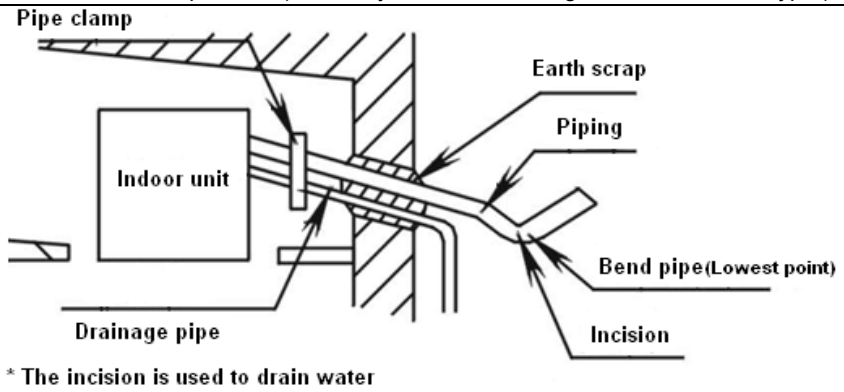
◇The part of indoor unit which get in touch with the back side of ceiling should pasted with insulation material.

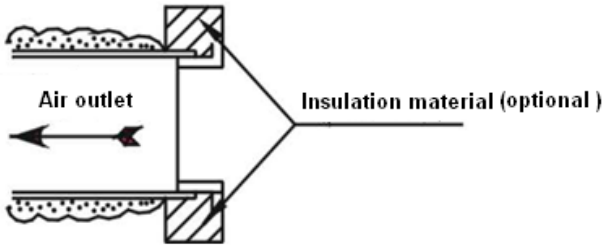
◇Besides the previously more than 8mm thick insulation material, connection piping (both gas pipe and liquid pipe), drainage pipe should be wrapped by additional 10~30 mm thick insulation material.

4.2.5 To seal the hole on the wall

◇To prevent rainwater or other foreign bodies from entering the room and air-conditioner after installing the tubing and drain pipe, the gap between wall hole and tubing, drain pipe and electric wire should be sealed with mastic, sealant rubber or putty, or poor performance or leakage will result

◇If the outdoor unit is higher than indoor unit, tubing should be bent to ensure that the lowest point of the tubing is lower than the wall hole to prevent rainwater entering the room or air-conditioner along the piping system.

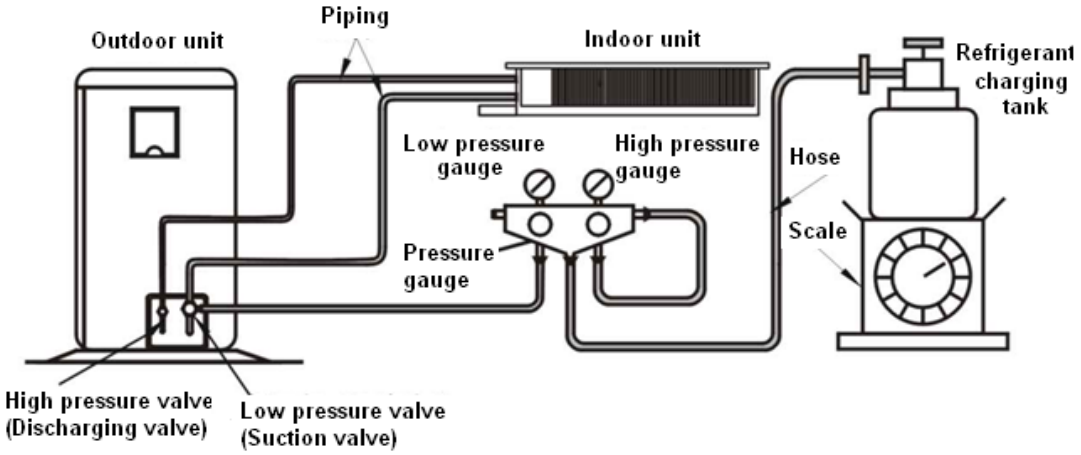




4.2.6 Additional refrigerant charge

When pipe length exceeds 5m, please add refrigerant according to the table below:

Connection piping	Piping size)		Additional refrigerant charge amount (kg/m)
	Gas pipe	Liquid pipe	
Piping between indoor and outdoor unit	φ9.52×0.75mm	φ6.35×0.75mm	0.02
	φ12.7×1mm	φ6.35×0.75mm	0.02
	φ15.88×1mm	φ9.52×0.75mm	0.05
	φ19.05×1mm	φ9.52×0.75mm	0.07
	φ19.05×1mm	φ12.7×1mm	0.09



4.2.7 Others

Users to install the air conditioner at site shall ensure that the oil can return to the unit smoothly.

◇ Horizontal pipes should incline toward the outdoor unit using a 20:1 slop.e

◇ If there is a height difference between the indoor and outdoor unit, oil loops should be installed in the interconnecting gas (large) pipe;

When the vertical pipe height difference is less than 5 meters, an oil loop should be installed at the bottom

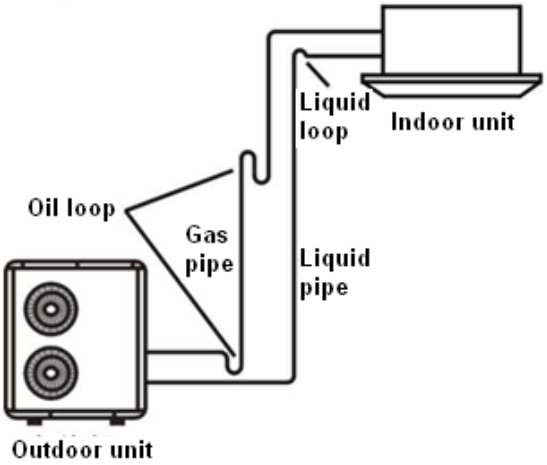
of the gas (large) pipe;

When the vertical pipe height difference is more than 5 meters, then for every 5 meters an oil loop must be installed at the bottom of the gas (large) pipe, and a short loop (liquid ring) should be installed at the exit of the indoor unit liquid (small) pipe;

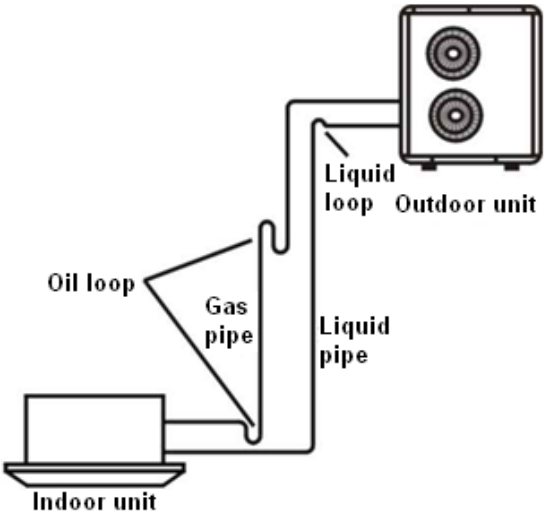
When the connecting gas pipe vertical height difference is less than 5 meters but the constant rise distance is too long, an oil loop should be installed in the gas (large) pipe every 10 meters.

◇When the outdoor and indoor units are at the same elevation, the oil deposit bend and liquid ring do not need to be installed, if the horizontal connecting pipe length is less than 10 meters.

When the horizontal connecting pipe length is more than 10 metres, install an oil loop in the gas (large) pipe every 10 metres.



The indoor unit is above the outdoor unit



The outdoor unit is above the indoor unit

Note: This chart is for explanation purposes. An actual installation will differ from this according to the site conditions.

When making an oil trap the radius of the bend should be between 1.5 and 2 times the pipe diameter.

5.Electrical connection

5.1 Electrical connection precaution

Warning	Installation of electric items must be carried out by qualified, professional technicians. An isolated circuitry should be fixed with whole-pole disconnection devices, which is with at least 3mm gap of touch point. . Power supply and indoor to outdoor connection should use special cable. Providing the necessity of installation or replacement, the professional technician of service store appointed by manufacturer must be required, while self-operation by users is prohibited.
	In case of any electric shock accident, the creepage protection devices /power supply on-off and breaker must be required with power supply.
	The specification of fuse for single phase control board is F5AL 250V, while for 3 phase control board, both indoor and outdoor unit, it is F3.15AL 250V。
	Machine must be earthed surely. If not, it'll be probably caused creepage.
	Equivalent 227IEC53(RVV) type of power cord of GB5023 or the excelled must be required. The cords should be fixed properly against broken, while ends/joints of cords is under outside force. Improper connection or fixation will cause disaster like fire….etc. Equivalent 245IEC57(YZW) type of power cord of GB5023 or the excelled must be used as connection line of indoor and outdoor.
Notice	The earth line is neither allowed to connect to gas pipe, water pipe or circuitry of telephone or lighting rod, nor to the earth line of other devices.
Others	●Please fix power supply cord and connection wires of indoor and outdoor, in accordance with circuit diagram ●Fix the cords into terminal boards properly and safely with cable fixation tools to avoid any danger caused by the power cord under outside forces. ●After fixation, use bind tape (affixed) to bind wires avoiding any collision with other components like compressor, copper pipes…etc

5.2 Electrical connection

5.2.1 Wiring diagram of indoor & outdoor, refer to section of selection

5.2.2 Recommendation of power supply cord

Sheet 1（power supply:220V～，50Hz）

Cooling capacity (Btu/h)	Model	Power supply spec.	Power supply side	Power supply cord	Connection wires
12000	CO4C-12H COF-12H - -	220-240V~50Hz	Indoor side	3×1.5mm^2	3×1.5mm^2
18000	CO4C-18H COF-18H COD-18H	220-240V~50Hz	Indoor side	3×2.5mm^2	3×2.5mm^2
24000	CO4C-24H COF-24H COD-24H	220-240V~50Hz	Outdoor side	3×4mm^2	4×1mm^2

Sheet 2（power supply 380V 3N～，50Hz）

Cooling capacity (Btu/h)	Model	Power supply spec.	Power supply cord of indoor unit	Power supply cord of outdoor unit	Connection wires
36000	CO4C-36H COF-36H COD-36H	Outdoor unit: 380-415V 3N~50Hz Indoor unit: 220-240V~50Hz Indoor and outdoor input separately	3×1mm^2	5×2.5mm^2	2×1mm^2
42000	- - -				
48000	CO4C-48H COF-48H COD-48H				
60000	COF-60H COD-60H				

Notice：

◇Above mentioned power supply cord is the cable which connect air on-off of indoor to indoor/outdoor unit. Power supply cord of indoor/outdoor unit is the power supply cable connecting indoor and outdoor unit

◇The section area of power supply cord core is minimized one. To avoid voltage pressure dropped down, while longer power supply cord needed, the section area should be enlarged for one gauge.

◇The connection wires to indoor unit is the cable of 27IEC53(RVV) type, 300/500V; while the connection wires to outdoor unit and the connection wires from outdoor to indoor unit is the multi-end of cable （neoprene）of 245IEC57(YZW)type,300/500V. if the single core with double skin type of cable is chosen for installation,, please choose 1# gauge of section area and wrapped with special jacket for electrician.

◇All of the ceiling/floor type unit is without accessorial electric heating

5.2.3 Indoor wire connection

Remove electric control box cover of indoor unit, connect the wires in accordance with the electric

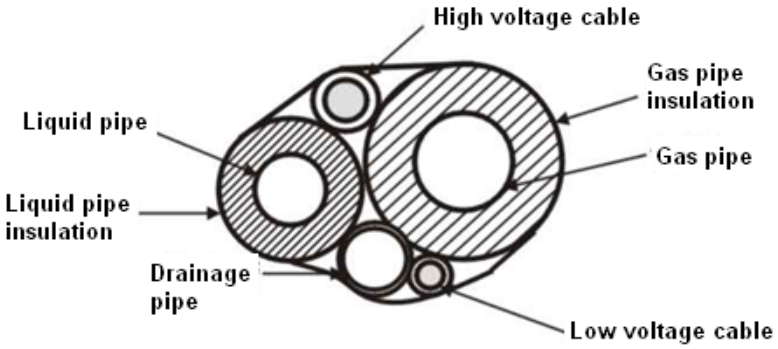
diagram mentioned on the back of the cover. The wire ends must be tightly fixed into terminal boards without ease. The earth wire must be fixed into appointed position.

5.2.4 Outdoor wire connection

◇Remove the electric item cover, which is positioned in the right side of outdoor unit, connect the wires in accordance with the electric diagram on the back of the cover.

◇Be sure that pressing the wires tightly with the terminal boards while it through the board, the wire ends must be tightly fixed into terminal boards. The earth wire must be fixed into appointed position.

◇After all the wire connected, bundle connection pipe, connection wires and drainage pipe with strips like mentioned drawing below:



Notice：

◇Compressor of COE-36H, COE-48H, COE-60H, is 3 phase power supply and the outdoor PCB with phase sequence protection. Please be careful with wire connection.

◇Be sure do't make the drainage pipe flat while bundled!

6. Commissioning

After installation, machine can be started commissioning.

6.1 Check installation condition

◇Check indoor/outdoor unit installation and wire connection in accordance with the requirement of service manual.

◇Check the power supplying, diameter of wires, air on-off and make it sure that the items can be matched with machines and, earth wire connection safety.

◇Check air inlet/outlet duct and make it sure that the items is clean, operating smoothly.

6.2 Commissioning

●During winter, the first run of performance should be supplied power 8 hours in advance to warm-up the crankcase.

●During winter, while after 8 hours power off, the performance test should be 2 and half hours power on later:

◇Power on, run machine with cooling mode.

◇After 3 minutes compressor protection, check if there is normal cooling air come from indoor unit and if

there is abnormal noise come from indoor/outdoor units

◇Configure the mode with “fan” and check if there is high air come from indoor unit.

◇Operate “swing” mode, check if the louver is properly swaying.

◇Press the other buttons on the remote controller and check if the complete unit is on proper working condition

◇Operate machine 1 hour with “cooling” mode and check if the drainage system is on proper condition

◇Switch the mode for “heating” and check if there is warm air come from indoor, if there is abnormal noise come from indoor/outdoor units

◇After confirmation of normal working condition, press the “on-off” to stop running machine.

◇Then and there, train the end users with operation, maintaining and special notice.

Chapter Ⅲ Use and maintenance

1. Operation introduction

1.1 Remote controller

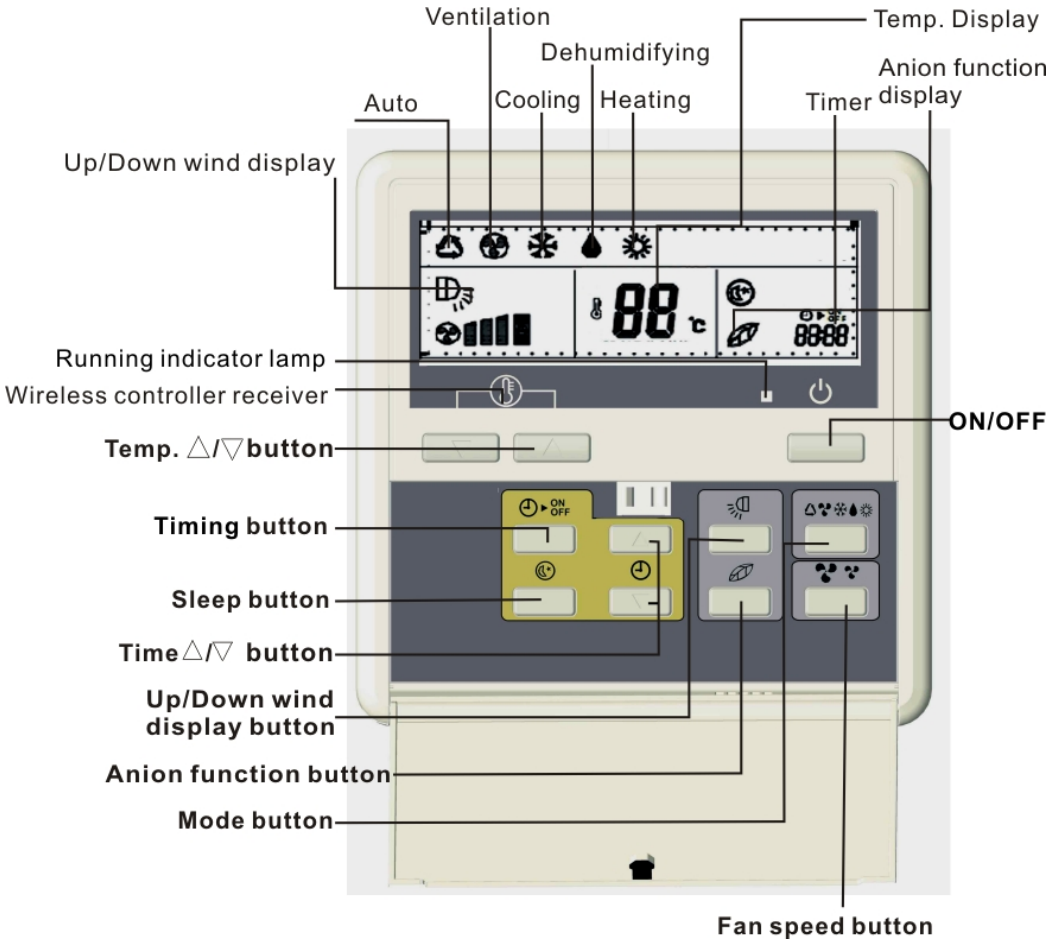
1.1.1 Basic condition of remote controller

Name	Figure	Basic condition for operation
Remote controller		1. Power source Use 2 pcs No 7 batteries, working voltage: 2.0V-5.0V; 2. Signal frequency: infrared frequency 38kHz; 3. Remote distance: max working distance is7m。
		Key operation introduction: 1.Temperature setting range 16℃-32℃; 2. when heating: When indoor coil temp. is lower than request, the fan will change into low speed,. After the temp. reach to the request temp., it will change into setting fan speed.

1.2 Wired controller

1.2.1 Basic condition of wired controller

title	figure	Basic condition of use
Wired controller		1. Power source：voltage DC 12V； 2. Work temperature range of PCB：（-10~+70）℃； 3. Work humidity range of PCB：RH20%~RH90%；
		5 buttons：【mode】、【temp-】、【on/off】、【temp+】、【fan speed】, one each used for change mode、set temp、switch on/off、select fan speed.



1.2.2 Operation of wired controller

Virtually all functions of the wired controller are the same as those of the remote controller and you should refer to the remote controller instructions. The exception is the LOCK function

◇LOCK button：meantime press【temp-】and【temp+】;

◇The wired controller may be used at the same time as the wireless model by pointing the REMOTE controller at the wired controller receiver shown above

1.2.3 Installation of wired controller

◇First, take apart the base panel from the wired controller.;

◇According to the two installation holes on the install board, use two screws to fix the base panel to the wall as shown below;

◇Ensure that the connecting cable of the controller is accessible before connecting the wired controller to the base panel.;

◇Join the wired controller connection cable to the indoor unit using the cable provided.

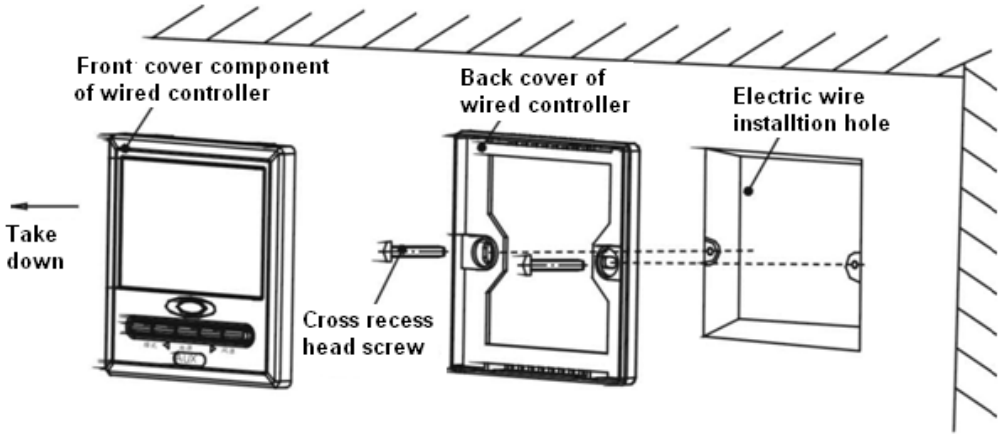


Figure 1

2. Daily maintenance

2.1 Clean inhaler

2.1.1 Filter cleaning precaution

◇Before cleaning the filter, ensure the unit is switched off and the power is off；

◇Forbidden to use water clean the filter , it will hurt PCB or get an electric shock；

◇When cleaning filter net, be sure you are standing steady, if you use ladder or others, please be careful.

2.1.2 Washing filter net

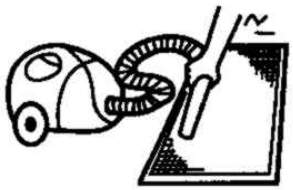
◇ Use vacuum or water to clean the net；

◇In order to ensure the best performance from your air conditioner clean the air filter regularly We recommend cleaning once a month or more frequently if required.

◇When the filter is very dirty it can be washed in detergent and hot water (below 45oC)；

◇Ensure the filter is fully dry before reinstallation to avoid risk of electric shock or short circuiting；

◇Do not dry the filter using direct sunlight；



2.2 Check at the beginning of each season

◇Check whether there are no physical obstructions at the air inlet or outlet of either indoor or outdoor unit；

◇Check whether there are some garbage at the water outlet；

◇Check whether electrical cables are in good condition, particularly the earth cable；

◇When power on, check weather letters display on the screen of the wired controller. When working in winter， must connect power for 8 hours before switch on unit.

2.3 Check at the end of service season

◇Operate for 2 3 hours under the ventilation condition; remove the moisture of the indoor unit.；

◇If not use air conditioner in a long time, please close the power to save energy, the letter will disappear on wired controller;

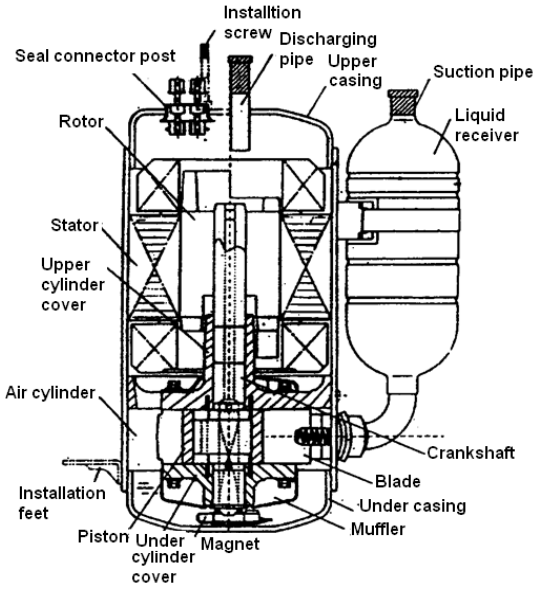
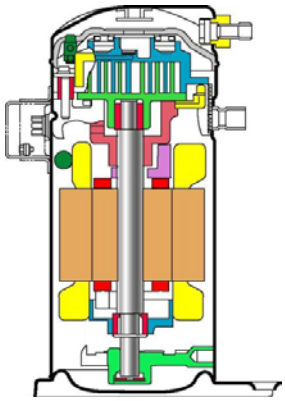
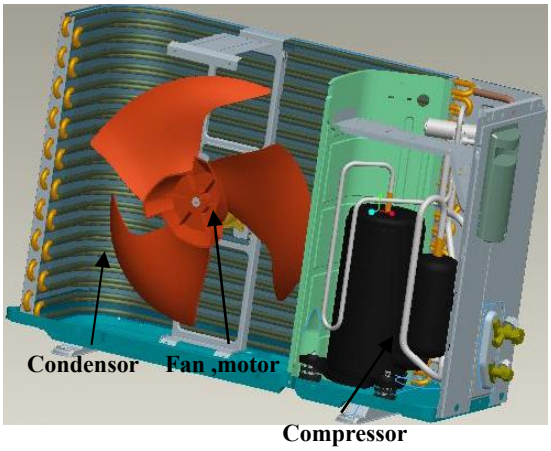
◇Take the batteries out of remote controller;

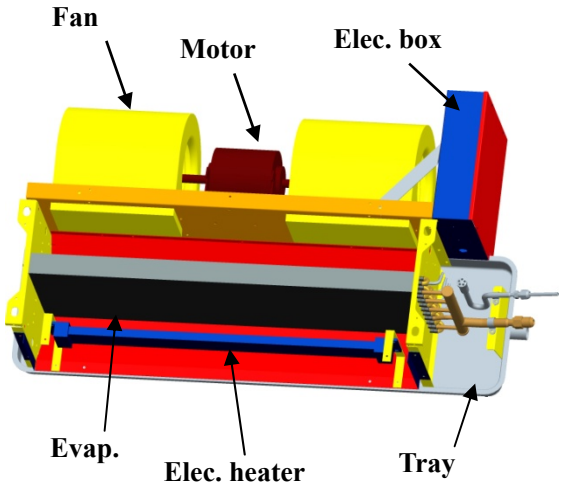
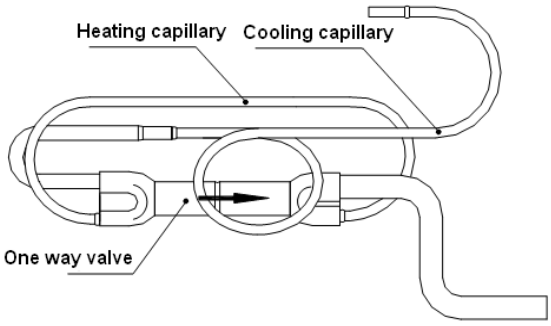
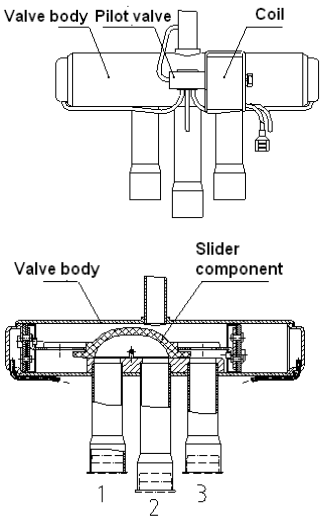
◇Suggest that use dustproof to cover the outdoor unit;

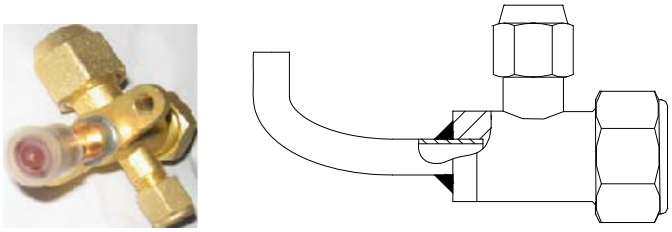
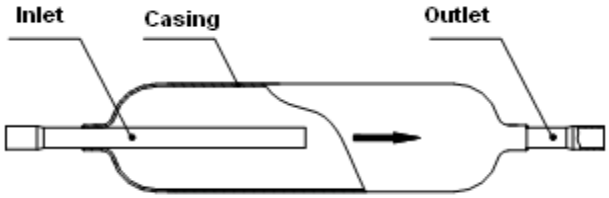
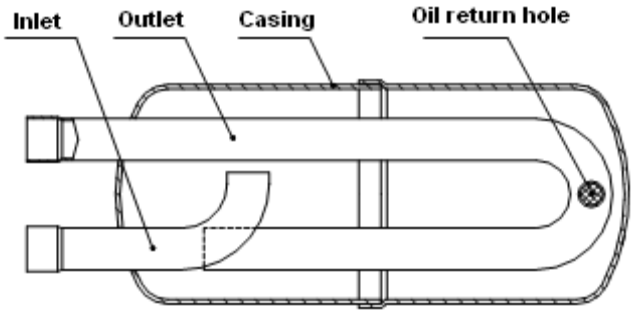
Chapter Ⅳ After sale service

1. Main components of air conditioner

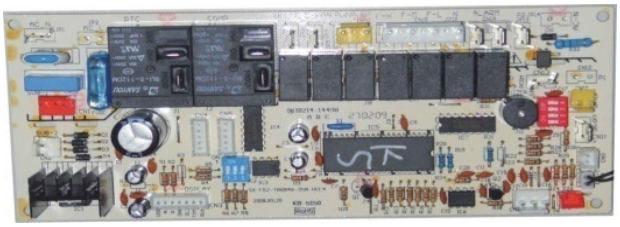
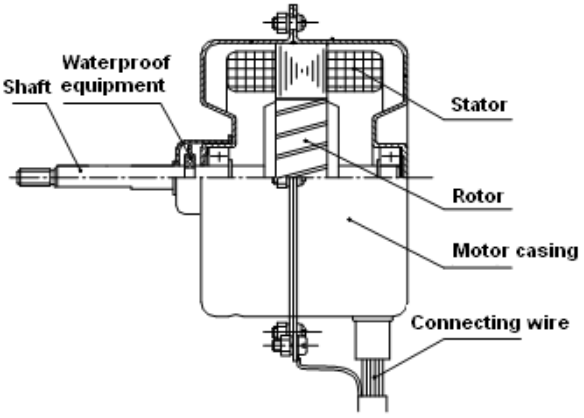
1.1 Main components of refrigeration system

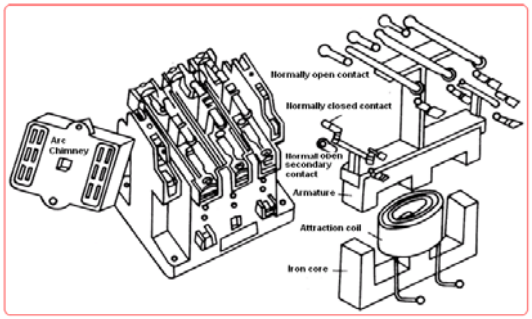
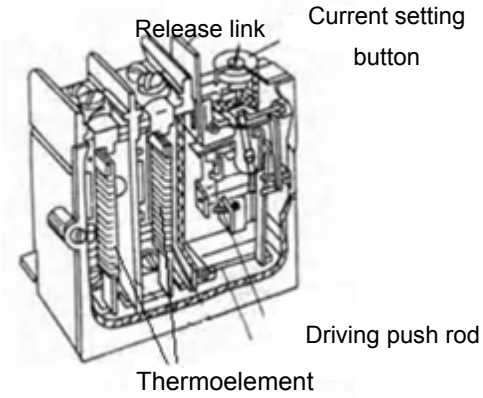
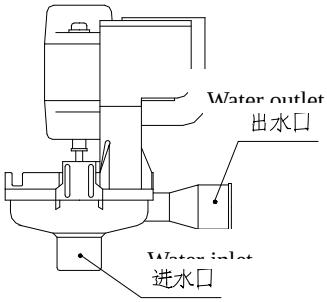
No	Appellation	Figuration and inner configuration	Instruction
1	Rotary compressor		The function of compressor：after refrigerant evaporate in evaporator, compress the low temp and low pressure refrigerant gas，make the gas become high temp and high pressure gas，and then send the gas to condenser, make the refrigerant cycle, in this series products, all the compressors are complete hermetic compressor which motor and compressor together.
2	Scroll compressor		
3	condenser (heat exchanger)		The function of condenser： Make the high temp and high pressure refrigerant gas discharged by compressor become liquid [make the gas heat exchange with air], （mark：when heating, condenser become evaporator）

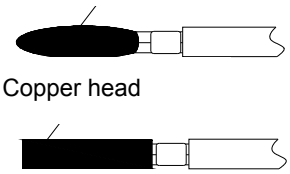
4	Evaporator (heat exchanger)		Function of evaporator： Make the low pressure refrigerant liquid from capillary or expansion valve happen heat exchange with air
5	Capillary (throttle components)		Function of capillary： Utilize aperture and length change bring pressure gap., control refrigerant flow quantity and pressure
6	One way valve		One way valve is used for heat pump unit, it make the refrigerant liquid only flow as the arrow direction
7	Four way valve		Function of 4 way valve： When change cooling mode into heating mode, it will change the flow direction of refrigerant； When heating, the valve get electricity （ cooling without electricity），the slip assembly move to the right connect pipe 2 and 3, so change the flow direction.

8	Stop valve		Function： To stop or release refrigerant, only on/off, can't adjust or throttle
9	Muffler		Function： Eliminate the system noise
10	Gas and liquid separator		Function： Separate liquid and gas refrigerant, to protect the compressor

1.2 Electrical system main components

No	Appellation	Figuration and inner configuration	Instruction
1	PCB		Function： Via program to control the relay, make every components on/off according to temperature and pressure variety, so to realize automatic control
2	Fan motor		Function： Drive the fan，make the indoor and outdoor unit have heat exchange with air.

3	Pressure switch		Function： To avoid the air conditioner work in a abnormal pressure, making the air conditioner work safety.
4	Capacitor	 	Induce the single-phase motor produce gyre magnetic field，connect with the accessory winding，and participate in the operation.
5	AC Contactor		When AC contactor's inner magnetic loop without power, the counter force of spring and the weight of armature core will make the main connector disconnect, when the magnetic loop with power, it will make the main connector connect, the power is on, accessories contactor will act.
6	Heat relay		Heat relay is normally made up of double metal sheet, when the current is too large, the double metal sheet will heat distortion and movement, and open the protection contactor ,which causes control circuit disconnect and then the main circuit will be cut off, after it cooling, control circuit will restore connection, but the main circuit is still disconnect, need to press start button to restart unit,
7	Condensate pump		Only for Cassette, the pump head is 1.2 meter，the condensate pipe must have over 1/100 descend angle，after unit cooling or dehumidify stops running, the pump will still work 3 minutes to clean the condensate.

8	Sensor	Plastic package  Copper head 	Physical properties will change along with the temperature, pressure change，used for check temperature and pressure.

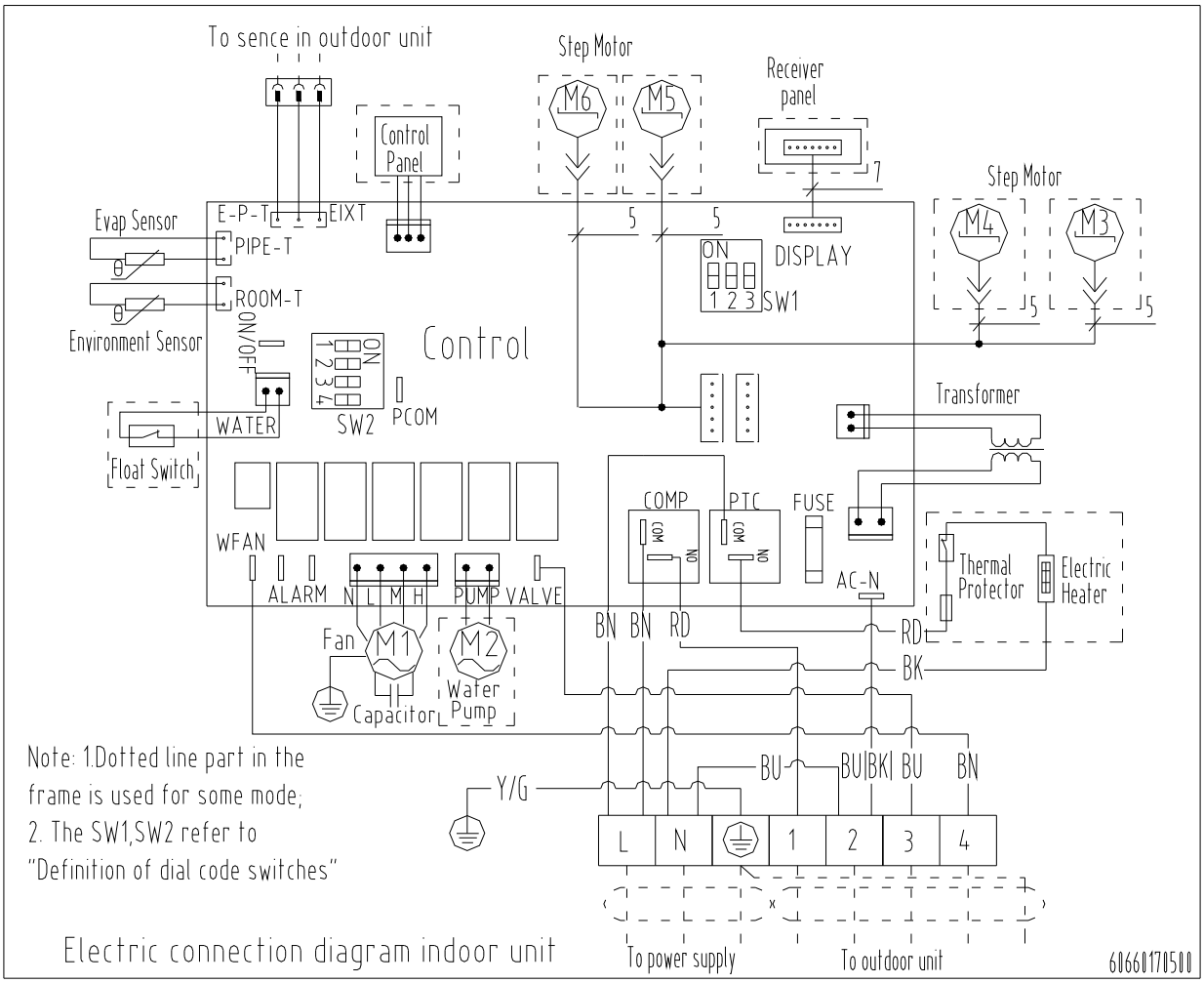
2. Control board (PCB) inner wiring diagram

2.1 Indoor unit

CO4C-12H, CO4C-18H

COF-12H, COF-18H

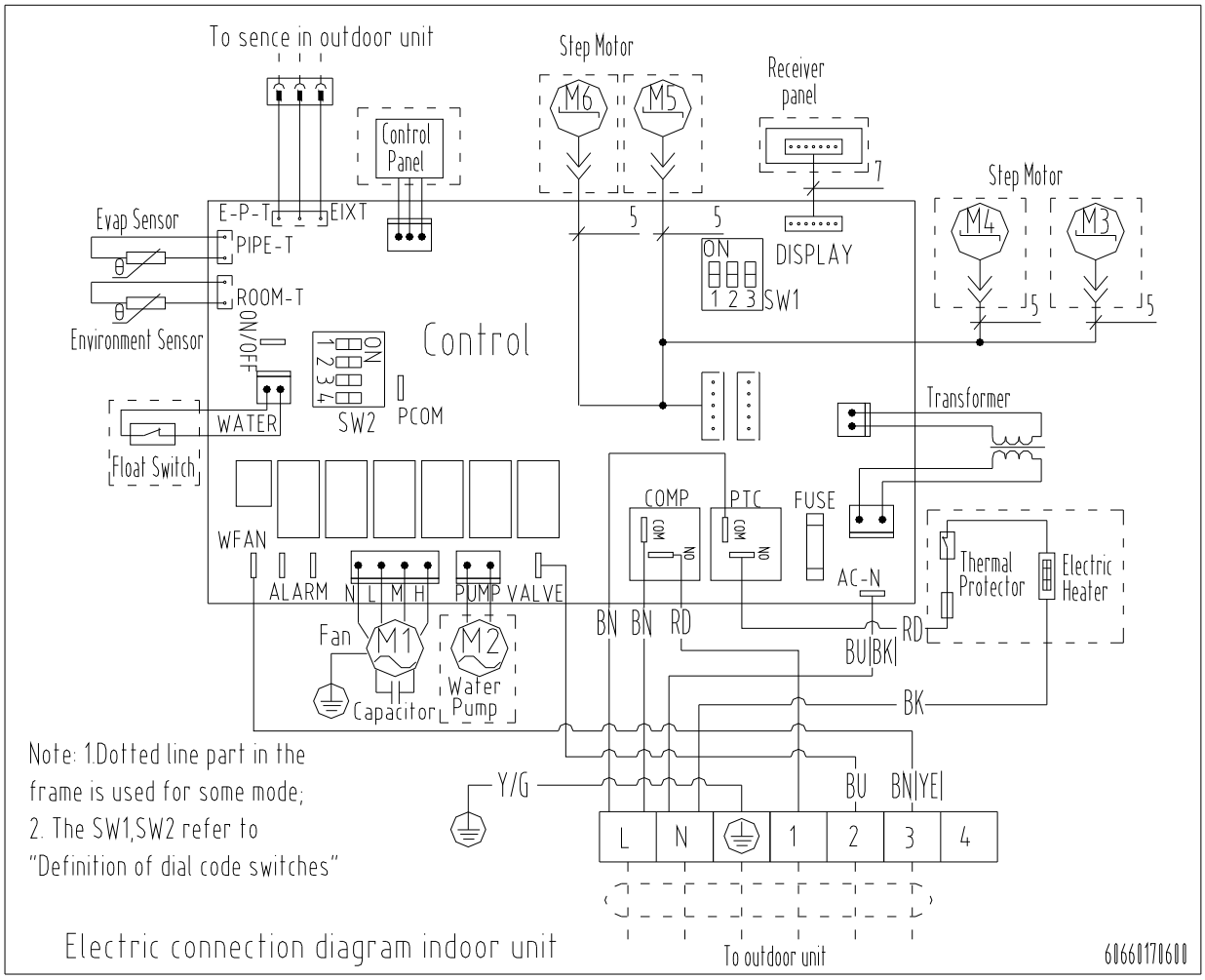
, COD-18H



CO4C-24H

COF-24H

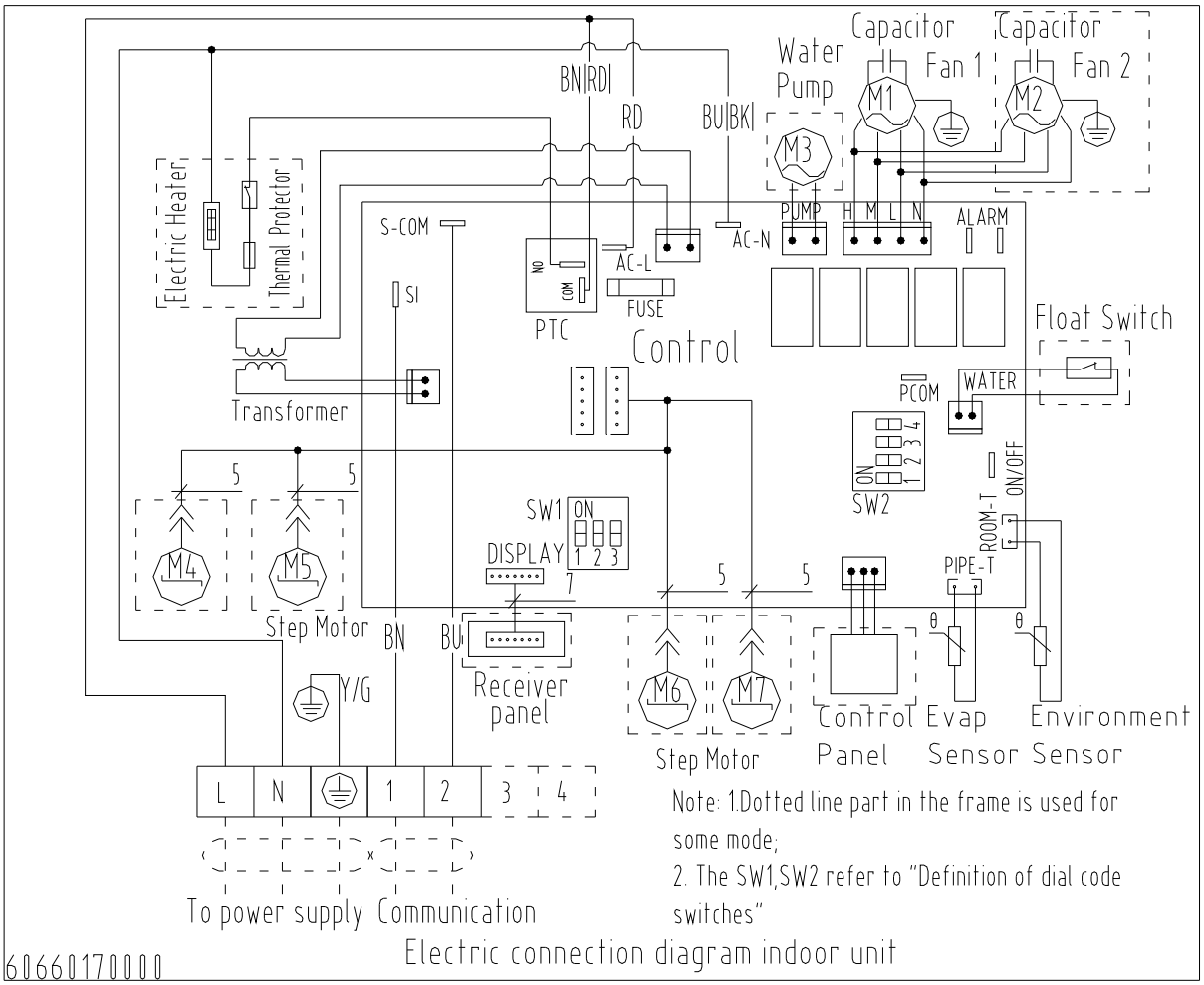
COD-24H



CO4C-36H, -, CO4C-48H, CO4C-60H

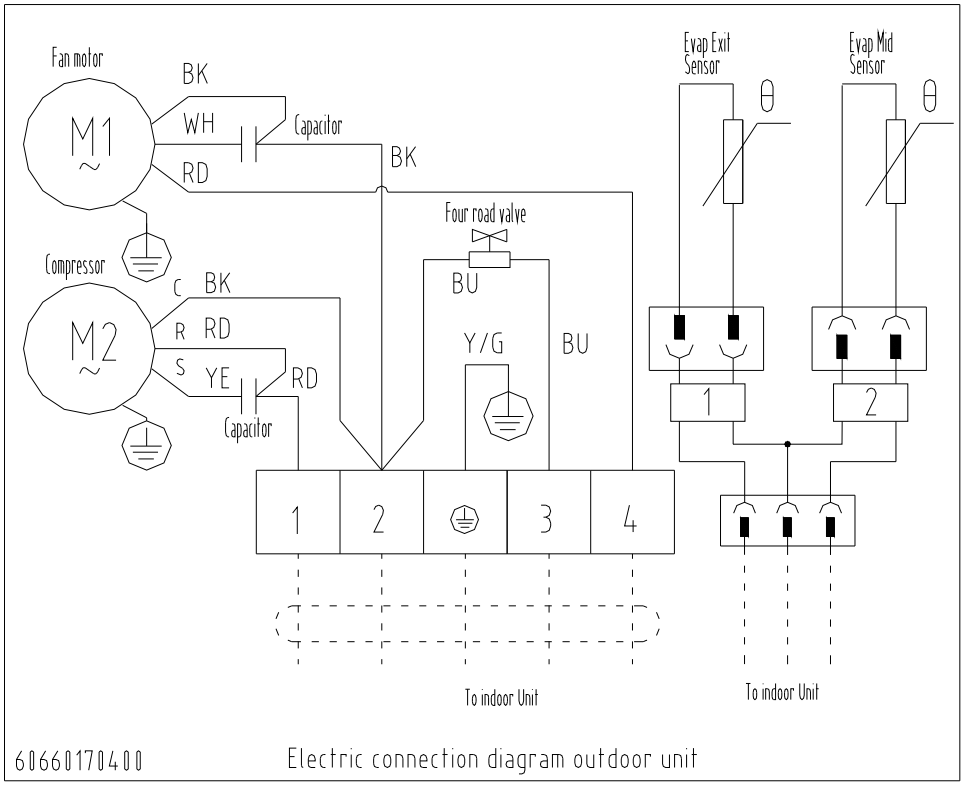
COF-36H, -, COF-48H, COF-60H

COD-36H, -, COD-48H, COD-60H

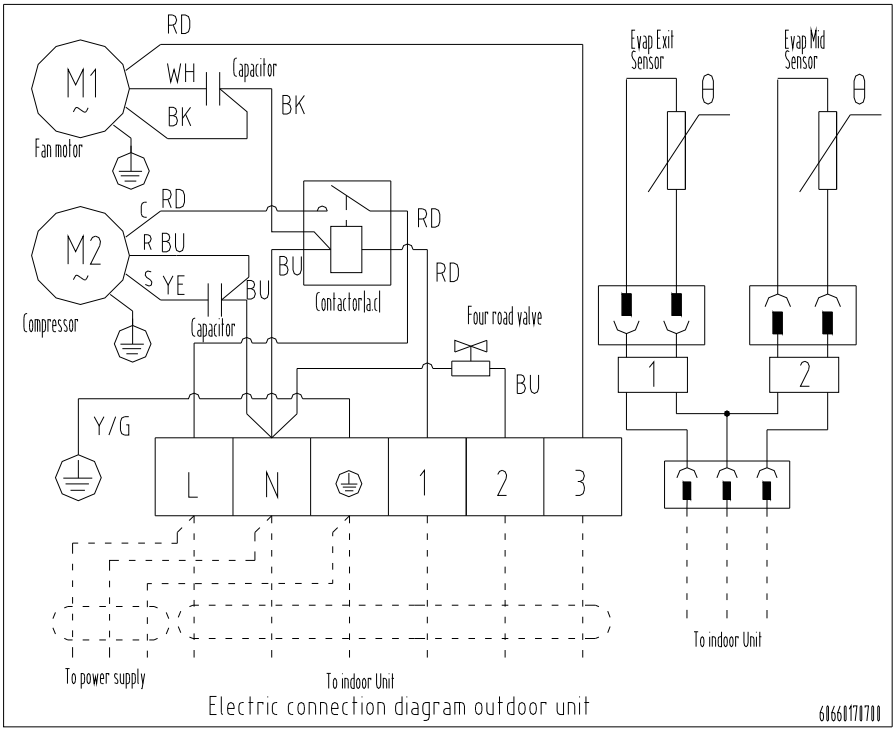


2.2 Outdoor unit

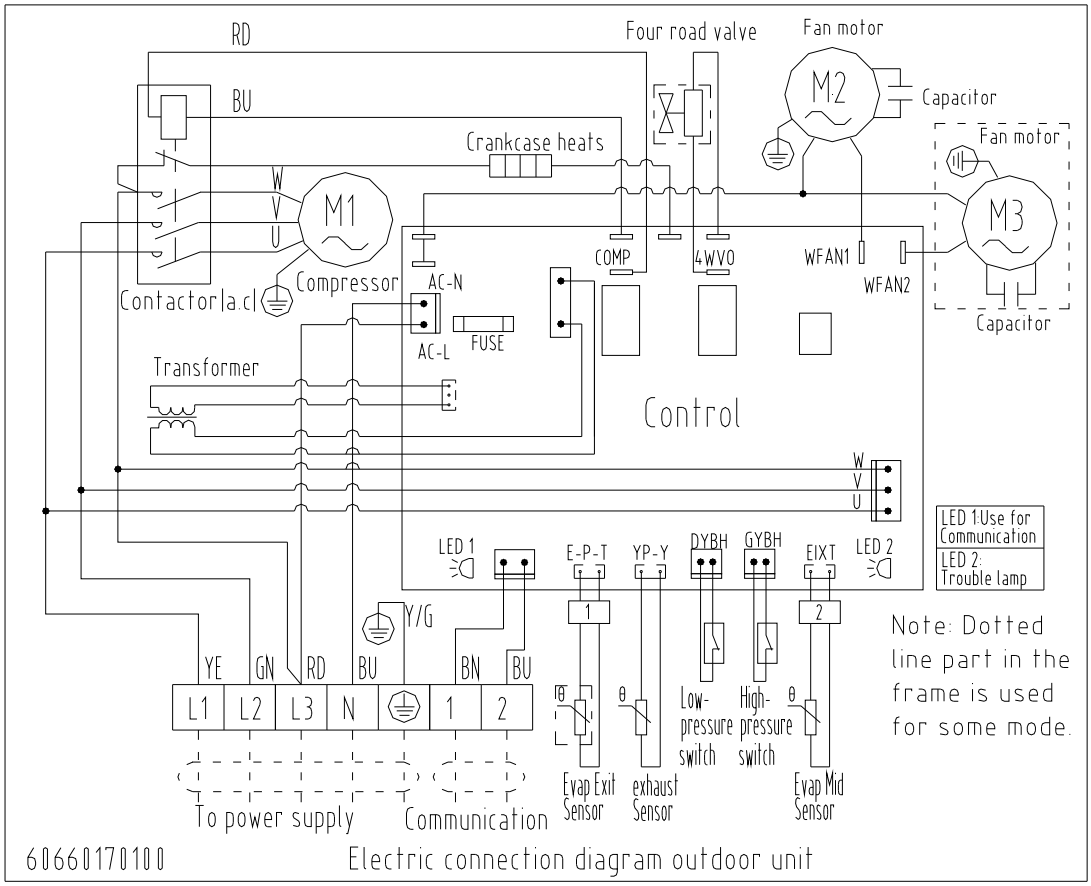
COE-12H, COE-18H



COE-24H

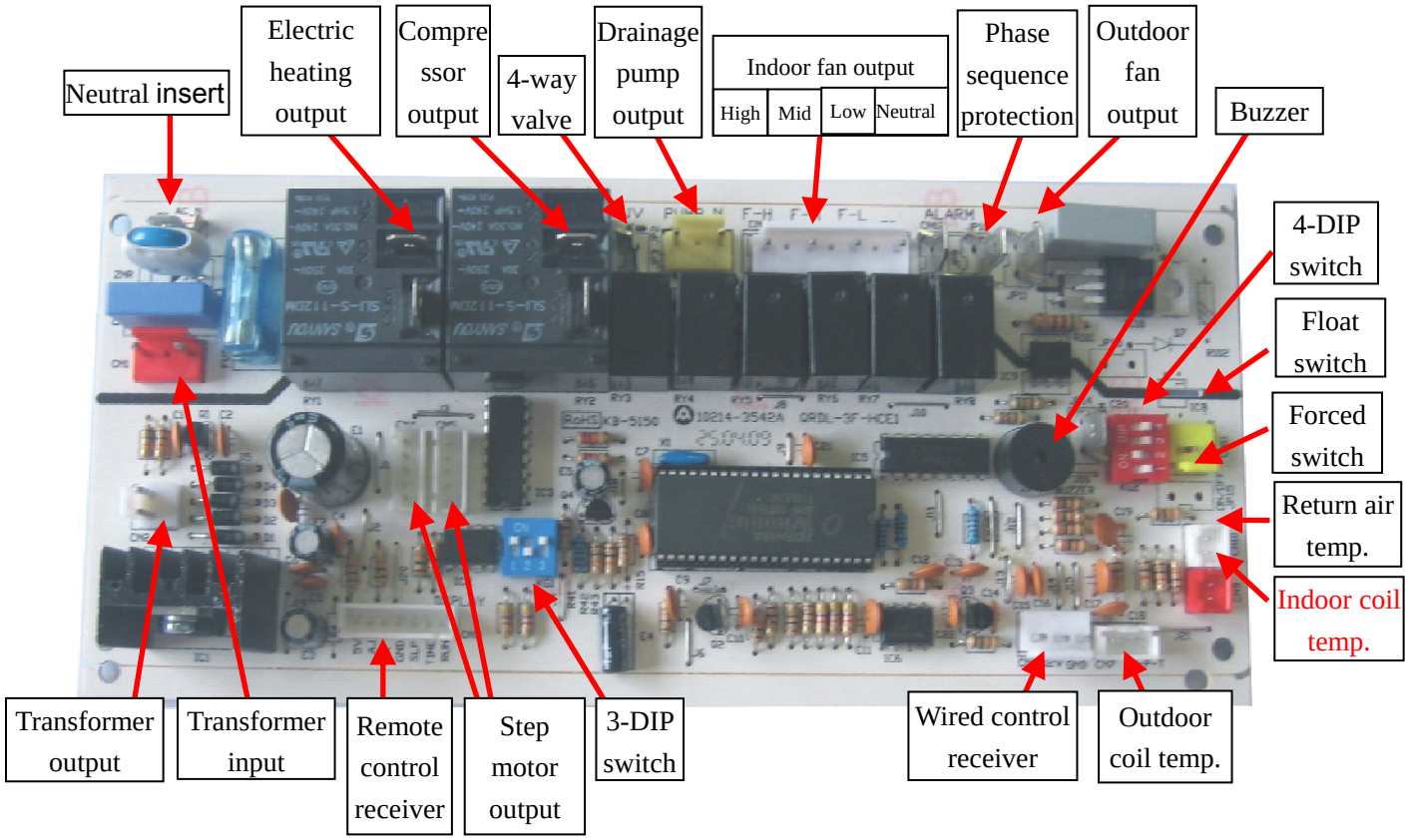


COE-36H, COE-48H, COE-60H

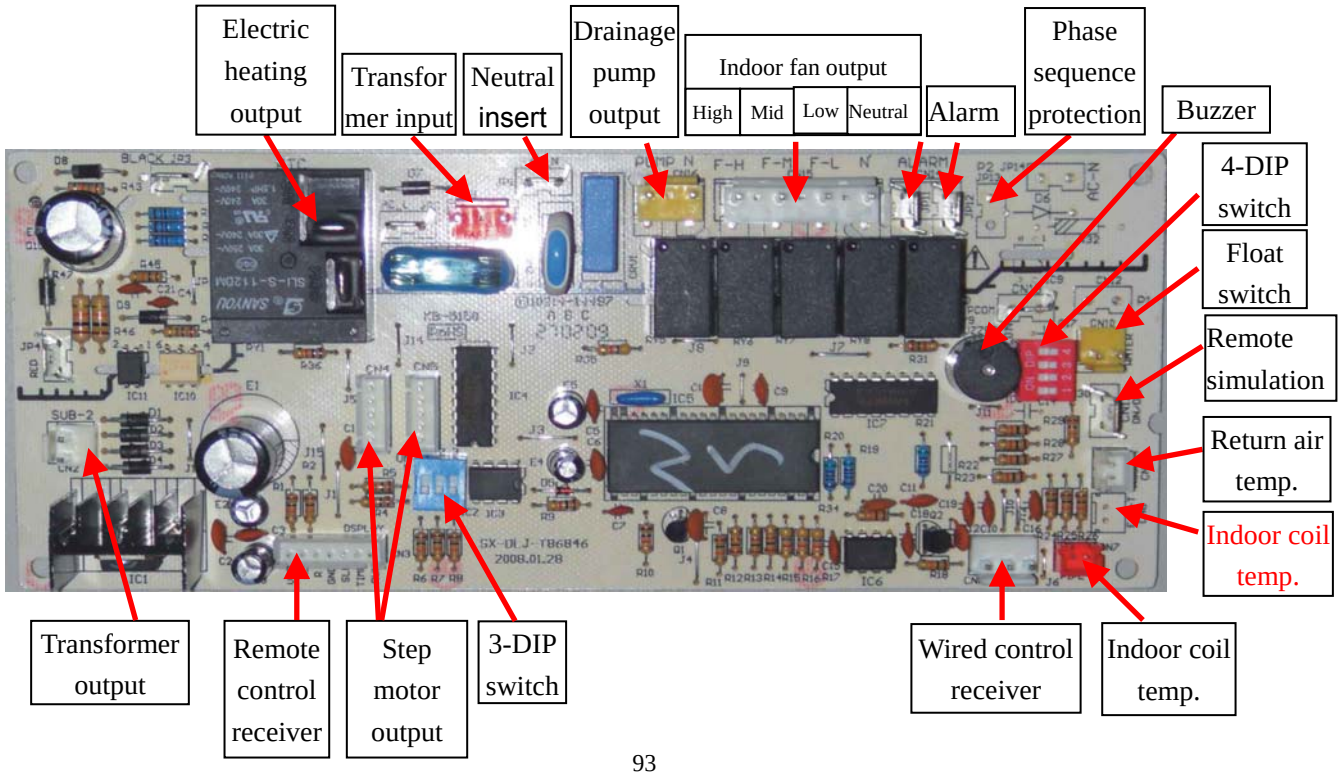


2.2 Introduction of Control Board (PCB Board) sockets

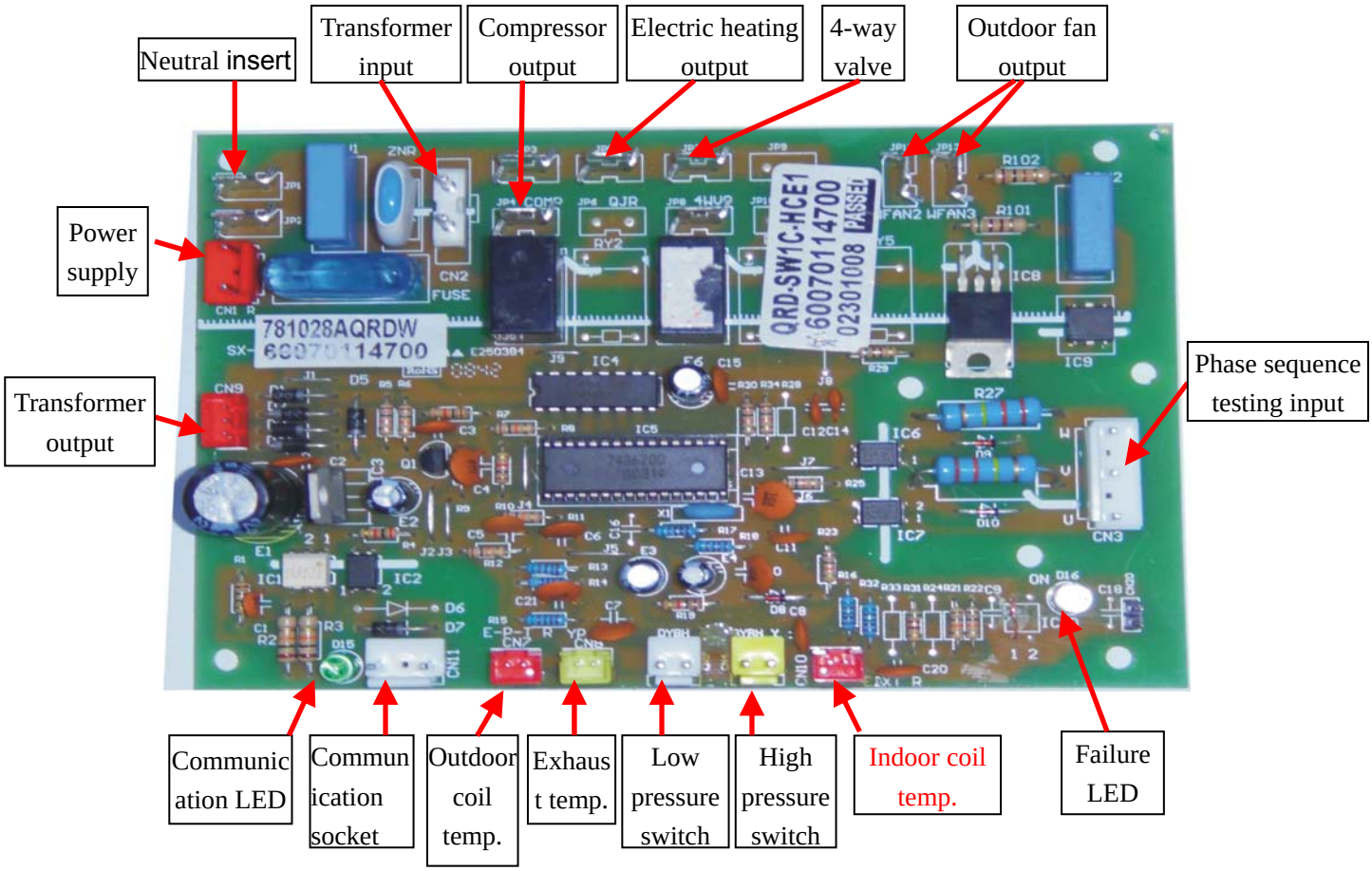
2.2.1 Introduction of control board QRDL-3F-HCE1 sockets (Indoor unit) (match with the outdoor unit which the Power supply is 220V-240V, 1PH)



2.2.2 Introduction of Control Board sockets QRD-SN3F-HCE1 (indoor unit) (match with the outdoor unit which the Power supply is 380V-415V, 3PH)



2.2.3 Introduction of Control Board QRD-SW3F-HCE1 (outdoor unit board) sockets (Power supply 380V-415V)



3. Unit control functions

3.1Main function

◇Forced switch

When air conditioner is on, press forced switch, the unit will be turned off; or when air conditioner is off, press the forced switch, unit will be turned on and enter into auto mode operation. Once receiving signal from remote control or wired control, the unit will run in setting mode.

◇Commissioning

Press forced switch for 5 seconds until buzzer sounds twice, then controller gets into commissioning. At the state of commissioning, press the forced switch, the unit will be turned off. The commissioning time will last for 30 minutes and the mode is cooling.

a）In the mode of commissioning, inlet air temperature sensor is ineffectual. Compressor runs after 3 min protecting.(3 min protecting are not available in the first time power),indoor fan is running in low speed.

b） In the mode of commissioning, no protection is valid except the three phase protection and the 3 min protection for the compressor.

◇ Auto operation

When remote control select auto mode, the unit will choose cooling, dehumidify or heating according to indoor temperature and automatically runs at selected mode.

a) When getting into auto mode, the indoor unit runs at low wind for 20 seconds while other equipment not start, after 20 seconds, indoor fan stops, the units enters into mode judgment.

b) Once the room temperature over 27℃ the units run in cooling mode of setting wind and setting temperature 24℃.

c) When the room temperature is between 20℃ and 27℃, the units run in dehumidifying mode of setting wind and setting temperature 24℃

d) When the room temperature is under 20℃, the unit run in heating mode (Cooling-only in ventilation mode) of setting wind and setting temperature 24℃

e) The system mode do not change according to temperature fluctuation, restarting or mode changing, operation mode should be selected by the controller.

◇Cooling operation

Temperature is set by remote controller or wired controller, it can be adjusted from 16℃ - 32℃ by pressing “temperature +”, “temperature -” on the remote controller (or wired controller). Press “fan speed” button to choose fan speed among auto wind, high speed wind, medium speed wind, low speed wind.

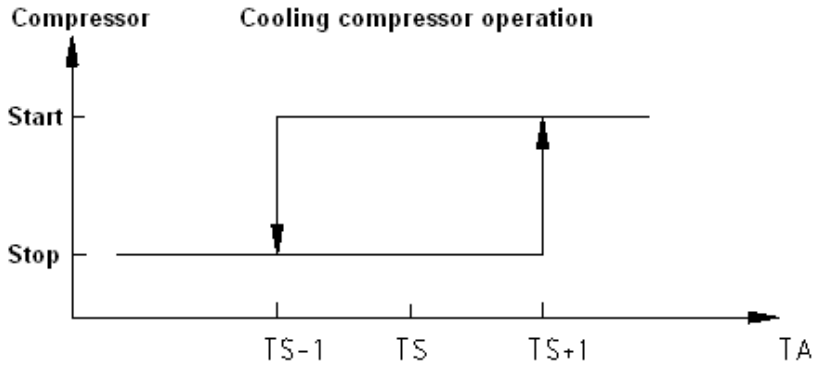
Operation state

a) The indoor fan motor always runs at the speed set by remote controller or wired controller.

b) When the indoor temperature TA-setting temperature TS≥1℃, the compressor starts as well as outdoor fan after compressor meets 3 min protection

c) When TA =TS, The unit operation state keep the same.

d) When indoor unit temperature TA – setting temperature TS ≤ -1, the compressor and outdoor fan stop after compressor meets 3 min protection



Auto wind control

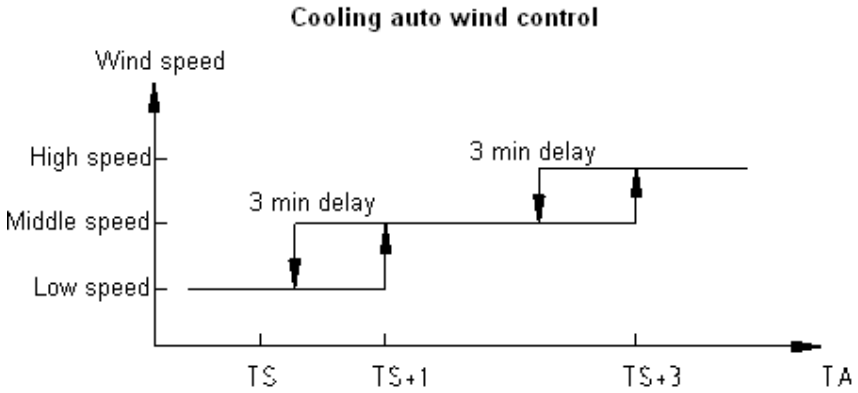
When unit is set to auto wind by remote controller or wired controller, indoor wind speed will be controlled abide by regulation as follow

a) When TA - TS≥3℃, at high speed

b) When TS +1℃≤TA＜TS +3℃, at medium speed

c) When TA – TS＜1℃, at low speed

d) There is no 3 min delay when wind speed switch from low to high, contrary to wind speed switch from high side to low side.



◇Dehumidify operation

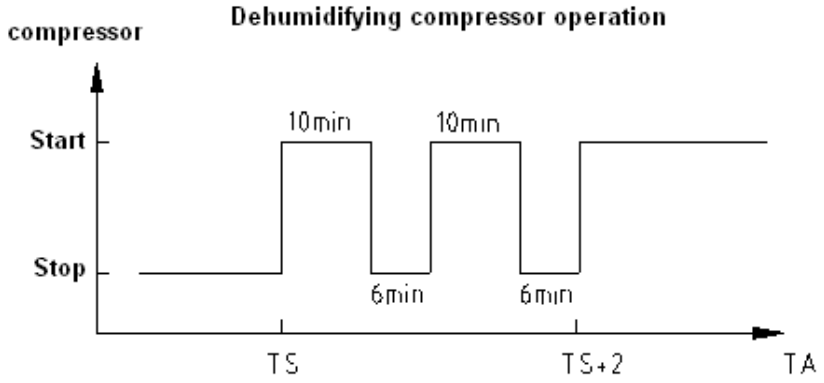
Temperature is set by remote controller (or wired controller), temperature adjustable range from 16℃-32℃, user can adjust temperature through “temperature + ” and “temperature - ”button on remote controller or wired controller. Press “fan speed” button to choose fan speed among auto wind, high speed wind, medium speed wind, low speed wind.

Operation state

a) When TA ≥TS+2℃, and 3 min protection can be satisfied, the compressor and outdoor fan will run continuously and wind speed run at set speed.

b) When TS ≤ TA < TS+2℃ and 3 min protection can be satisfied, the compressor and outdoor fan keep 10 min on while off in another 6 min, indoor fan keeps 13 min on while off in subsequent 3 min, the indoor fan will start at low wind speed after the compressor stops for 3 min.

c) When TA < TS and 3 min protection can be satisfied, the compressor, outdoor fan and indoor fan stops running, the indoor fan restart at low wind speed after the compressor stops 3 min



Auto wind control

When unit is set to auto wind by remote controller or wired controller, indoor wind speed will be controlled abide by regulation as follow

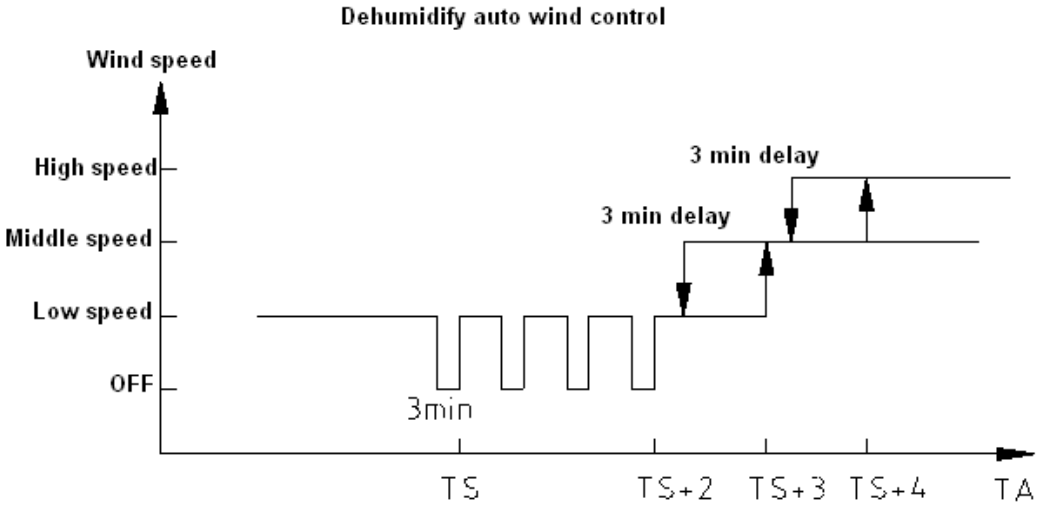
a) If TA - TS≥4℃, at high speed

b) If TS +3℃≤TA＜TS +4℃, at medium speed

c) If TS +2℃≤TA＜TS +3℃, at low speed

d) If TS≤TA＜TS +2℃, at low speed intermittently

e) If TA＜TS, the indoor fan will restart after stop for 3 min, and operates at low wind.



◇Ventilation operation

Outdoor unit stay closed, indoor fan motor operates at set wind and wind speed can be set at high, medium, low by remote controller.

◇Heating operation

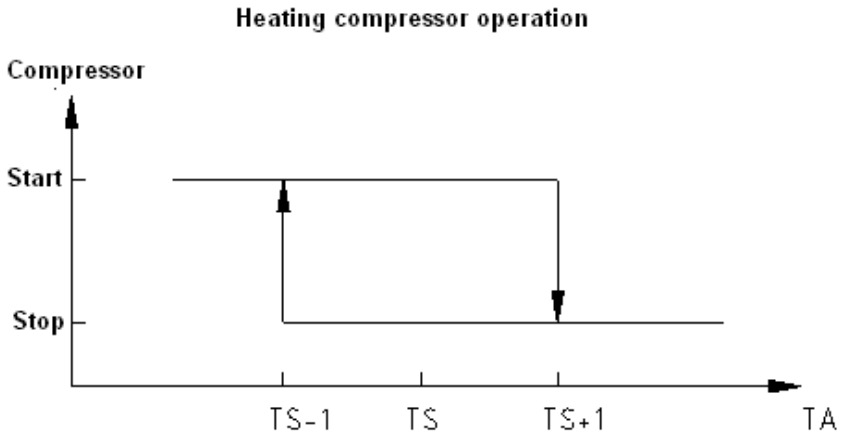
Temperature is set by remote controller (or wired controller), temperature control range from 16℃- 32℃, user can adjust temperature through “temperature + ”and “temperature -” button on remote controller or wired controller. Press “fan speed” button to choose fan speed among auto wind, high speed wind, medium speed wind, low speed wind.

Operation state

a) When TA- TS≤-1℃, if compressor meets 3 min protection, the compressor and outdoor fan start, indoor fan runs according to Anti-cold air condition

b) When TA- TS≥1℃, if compressor meets 3 min continuous operation, the compressor and outdoor fan stop, indoor fan runs according to Anti-cold air condition

c) If TA=TS, stay in the previous state.



Compressor initial start control

When the outdoor coil temperature ≥7℃, the compressor starts after 4-way valve turns on for 10 seconds, 2 seconds later, the outdoor fan starts, indoor fan motor operates according to Anti-cold air mode. When the coil temperature <7℃, the compressor starts first, when One of the following conditions is satisfied: the outdoor coil temperature ≥12℃ or unit keep running for 10 minutes; then the outdoor fan starts, 10 seconds later, the compressor shut off; 15 seconds later, the four way valve turns on; 5 seconds later, the compressor restart and the indoor fan runs according to Anti-cold air mode.

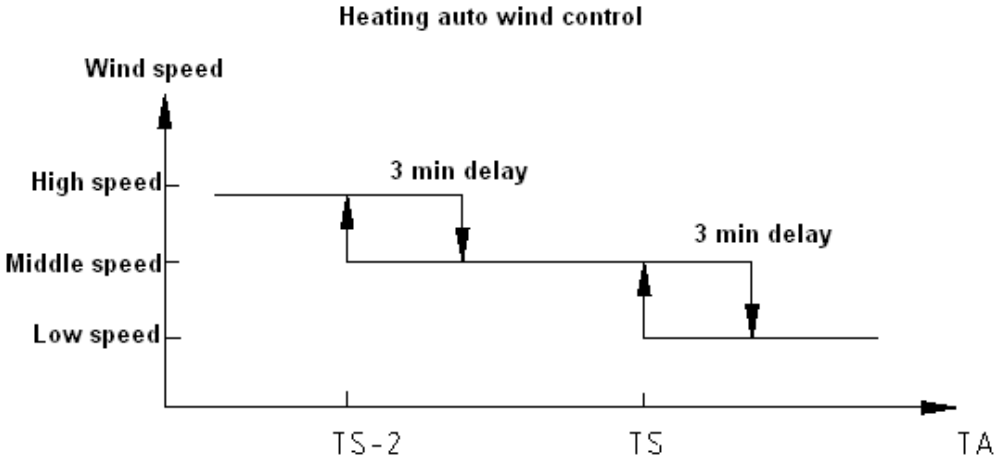
Auto wind control

a) When TA ＜ TS-2℃, at high wind speed

b) When TS-2℃ ≤ TA＜TS, at medium wind speed

c) When TA ≥ TS, at low wind speed

d) There is no 3 min postpone when wind speed switch from low to high, contrary to wind speed switch from high to low.



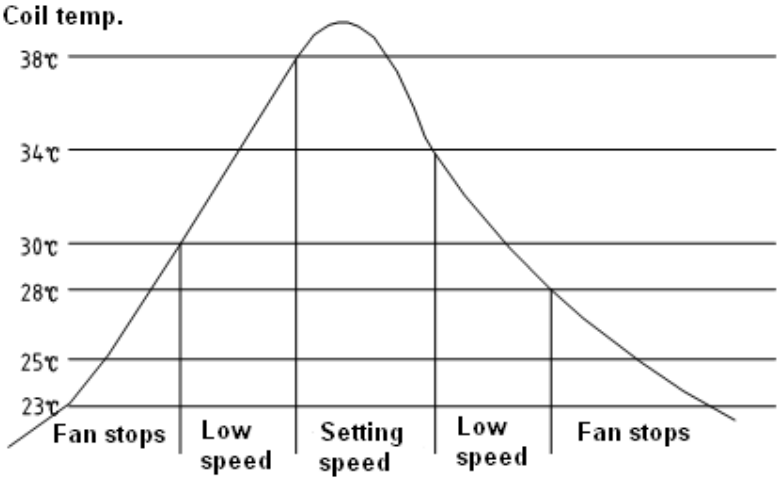
Anti-cold air

a）Anti-cold air when the compressor is running

b)When TE is raising and TE＜30℃, indoor fan stops, if 30℃≤TE＜38℃, indoor fan runs at low wind speed.

c)When TE≥38℃, indoor fan runs at setting speed

d)When TE is descending and TE＞34℃, indoor fan runs at setting speed. When 28℃＜TE≤34℃, indoor fan runs at low wind. When TE≤28℃, indoor fan stops..



a）Anti-cold air when the compressor is off

b)When TE＞30℃,if indoor fan is originally on then it blows low wind(last for maximum 30S).

c)When TE≤30℃, indoor fan stops.

Blowing surplus heat

When indoor temperature reach set temperature or turn off the unit , if TE＞35℃, indoor fan motor operates at low wind, if indoor temperature ≤35℃， indoor fan stops running.

◇Swing control

There are totally 4 swing modes： A, B, C, D, among them A and B is an assembly, C and D is an assembly. Each mode switches through sleep button on remote control or wired control, detail operation is as follows: press sleep button 10 times continuously in 5 second, buzzer sounds 4 times, and swing angle belongs to C/D mode (it takes effect when repower on), in the same way press sleep button 10 times continuously in 5 second, buzzer sounds 2 times, then swing returns to A/B mode (it takes effect when repower on). The swing mode switches among assembly is accomplished by dip switch. Detailed operations are as follows: ON as A mode, OFF as B mode, OFF as C mode.

◇Timing

The largest timing time is 24 hours, minimum scale is 1 min, single timing style, timing function will keep valid when mode change, and indication lamp keep light once set.

Timing off

Only when the unit is running, this function can be set, set range is 1min-24h and unit will automatically shutdown when time runs out.

Timing on

Only when the unit is running, this function can be set, set range is 1min-24h and unit will automatically shutdown when time runs out.

Turn on or turn off after timing set, original timing and sleeping functions will be canceled automatically.

◇ Sleeping

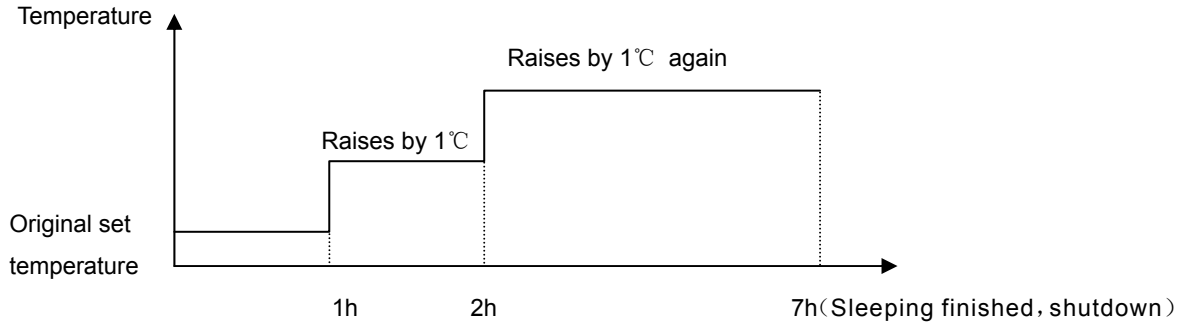
The sleeping function is valid in auto, cooling, dehumidifying, heating operation, indoor fan blows low wind once enters into sleeping mode and sleeping indication lamp turns to light. Press the sleep button and enters to sleeping operation, for cooling operation the set temperature raises by 1℃ 1 h later, and for heating operation the set temperature descends by 2℃ 1 h later. After another 1h operation, for cooling operation the set temperature raises by 1℃ again, and for heating operation the set temperature descends by 2℃ again. After the sleeping mode runs for 7h the unit shutdown.

When enters into sleeping operation, mode switch will be valid, however sleeping function will be cancel

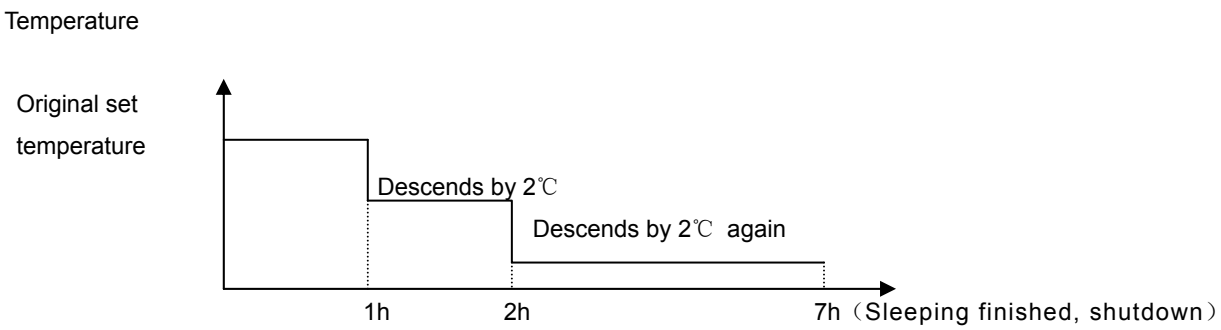
after mode switch and if press “temperature +” button the unit will adjust temperature according to” new set temperature + amending temperature.”

At the state of sleeping mode, press “sleep” button, mode button or turn off the unit, the sleeping mode will be canceled.

Sleeping in cooling operation：



Sleeping in heating operation：



◇Long distance control

a) Control board has function of long distance control

b) The switch of long distance control can be masked through indoor unit DIP switch.

c) When long distance switch is off and unit turns off, the remote controller and wired controller shall not be able to turn on the unit.

d) When long distance switch is on and unit starts in auto mode, mode can be changed by remote controller or wired controller.

◇Self -check operation

Press the forced switch at the same time power on, the buzzer sounds twice and enters into self-check operation process

Electric heating motion, indoor fan operates at high speed →operation lamp light for 1s →timing lamp light for 1s →power lamp light for 1s →indoor fan runs at low speed and medium speed both for 1s →compressor motion 1s →four ways valve motion 1s →outdoor motion 1s →buzzer sounds once then close and unit enters into ready state, ending self-check.

3.2 Control function

◇Water level protection and drainage pump control

a) To prevent condensation water overflowing from indoor unit to damage the indoor unit and indoor decoration, it is necessary to take condensation water out by using drainage pump.

b) The work process of drainage pump depends on the state of water level switch, and water level protection can be masked through DIP switch of indoor unit.

c) The drainage pump has to work for 180s when it is power on for the first time, while if there is drainage failure then allowing the compressor to go on running, and if the drainage failure doesn’t

disappear after drainage pump works for 180s, the compressor will stop working and start water level protection.

d) At the state of cooling or dehumidifying, the drainage keeps running and never stop even operates in anti-freezing protection

e) When the water level switch is off (water flooded), and be off for 3 s, it will be considered as drainage pump system failure, drainage pump keeps working while compressor stop running, and alarm water level protection, If water level protection failure disappears soon after a while, the units return to normal running (the compressor 3 min protection priority).If the failure still exist in 30 min, the water pump stops working and unit enters into shutdown, alarm water level protection.

Note: Only for Cassette this function is valid.

◇Anti-freezing protection

a) The protection is to prevent indoor evaporator from frosting in large area.

b) When indoor coil temperature ≤-2 and lasts for 10s, in addition, the compressor keeps running for 5 min or longer, the compressor and outdoor fan stops running, indoor fan runs at setting speed.

c) If indoor coil temperature ≥ 7℃, unit quits the protection, once the compressor meets 3 min protection the unit restart.

d) This function is valid only when cooling or dehumidifying.

◇Anti over-heating protection

a) This protection is to avoid wind temperature is too high in heating to cause user feel uncomfortable.

b) When indoor coil temperature TE≥57℃ and lasts for 10s, outdoor unit stops, when indoor coil temperature TE≥64℃ and lasts for 10s, the compressor stops and indoor unit fan speed keep unchanged.

c) When TE< 52℃，unit quits this protection, after the compressor meets 3 min protection, unit returns to normal operation.

d) This function is only valid when heating.

◇ Cooling high pressure protection

a) This protection is to prevent outdoor motor failure which leads to compressor exhaust pressure over using range to cause compressor damage.

b) When outdoor coil temperature ＞64℃， and lasts for over 20s, the compressor stops running, when the coil temperature < 52 degree and the 3 min compressor protection is satisfied, the compressor returns to normal running.

c) Once high pressure protection appears 3 times in half an hour, the whole unit stops running and indoor unit alarms high pressure protection.

◇Shortage of refrigerant or four valves failure protection

a) This protection is to prevent refrigerant shortage of system and four ways valve failure to turn direction when heating, both of which lead to cycle liquid be greatly produced which damage the compressor

① Make a record of indoor coil temperature T1 before compressor starts, when the compressor keeps running for 6 hours, indoor temperature is T2, and if T1-T2＞5℃

②The compressor keeps running for 6 min then room temperature - indoor coil temperature ＜5℃

b) Heating operation: Satisfy the following two conditions and lasts for 10s:

① Make a record of indoor coil temperature T1 before compressor starts, the compressor keeps running (except defrost operation)for 8 min, indoor coil temperature is T2, if T2-T1 ≤ 8℃

②The compressor keeps running (except defrost operation) for 8 min, if T2-T1 ＜8℃

◇Exhaust temperature protection

a) This function is to prevent exhaust temperature be too high to reduce the compressor operation

longevity

b) When the compressor started, exhaust temperature TP>120℃ and lasts for 3s, exhaust temperature protection will be activated, the compressor stops, as well as outdoor fan, and alarm outdoor protection.

c) When exhaust temperature falls to 85℃, quits this protection, the failure code will not disappear but the unit can resume after restart.

Note: This function is available for three phase power supply

◇High and low pressure protection

a) This protection is to guarantee the unit runs in allowing range, free from the compressor damage

b) High pressure protection: High pressure switch off and lasts for 3s, high pressure protection appears, the compressor and fan motor all stops, alarm outdoor unit protection, and failure code will not disappear even when high pressure switch returns to normal, but the unit can resume when restart.

c) Low pressure protection

① Checking low pressure failure after the unit starts for 5 min, low pressure switch off and lasts for 3s, low pressure protection appears, the compressor and fan motor stop, alarming outdoor protection, failure code disappear after low pressure switch return to normal, when the compressor 3 min protection is satisfied unit returns to normal running.

②When low pressure appears 3 times in 30 min, the protection is unable to resume, the whole unit stops and the unit can resume after the failure is solved and restart

③Do not check low pressure when defrosting.

Note: This function is available for three phase power supply

◇Phase sequence protection

a) This protection is to prevent the compressor rollback or lack phase lead to over current, and finally destroy the compressor

b) When outdoor unit appears lack phase or phase sequence incorrect, the unit stops immediately and enters into protection, alarming outdoor protection, even phase sequence or lack phase switch return to normal the failure code will not disappear, the unit can resume when restarting

◇ Outdoor fan motor control

The unit has function of low ambient cooling and high ambient heating, when cooling take outdoor coil temperature as basis and when heating take indoor coil temperature as basis, the outdoor fan automatic carries out stepless speed adjustment to keep the unit in normal operation state.

◇ Defrosting control

a) On the situation that the outdoor sensor is in good condition, once following conditions are satisfied defrosting begins, the operation lamp will shine when running defrosting.

① Outdoor coil temperature below definite temperature and lasts for 2 min

②The compressor running time surpass defrosting internal time (defrosting internal time recalculates when power off by accident or remote controller), the compressor keeps running continuously for over 5 min. When defrosting begins, the compressor, indoor fan, outdoor fan will stop, 15s later 4-way valve will be closed, and 5 more seconds later the compressor enters into defrosting operation.

b) Ending defrosting condition (one of the following conditions is satisfied defrosting ends)

① Outdoor coil temperature ≥12℃

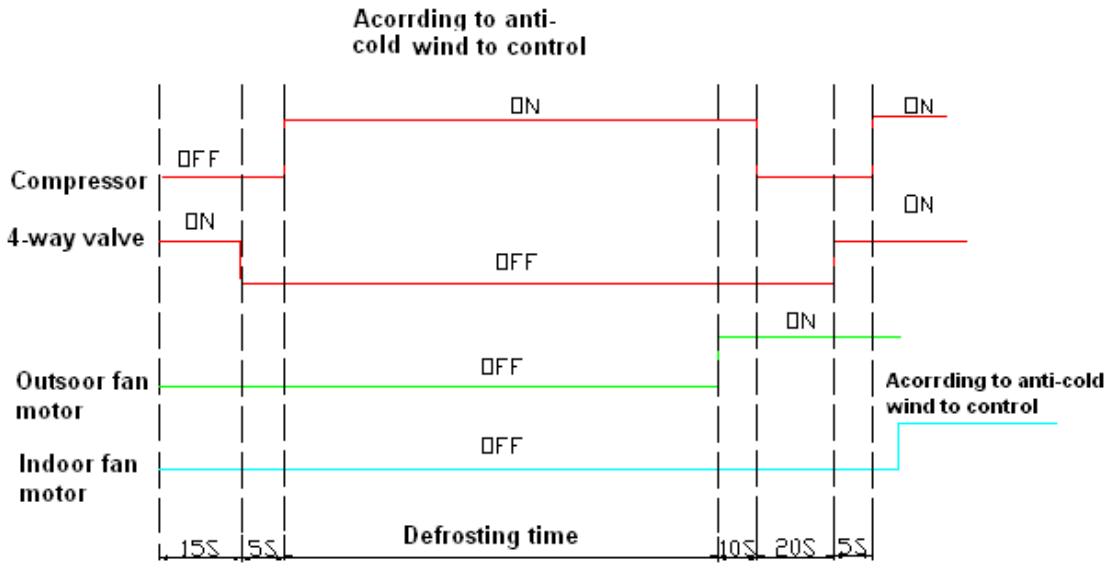
② Defrosting time up to 10 min

③Mode switch or turning off the unit by remote controller，defrosting exits immediately.

After the defrosting is finished, outdoor fan will start, 10 s later the compressor will stop, and 15 s later four ways valve will open, 5 more seconds later the compressor will start, the unit returns to normal heating operation, and indoor fan runs as anti-cold wind mode

c) Defrosting entering temperature and heating internal time will auto-adjusted by outdoor defrosting time

d) Defrosting time sequence drawing



◇Intelligent defrosting function(only in the case of outdoor coil is damaged this function is carried out)

Entering conditions

On the condition of running intelligent defrosting operation, one of following 7 conditions is satisfied (As for secondary condition in upper condition, it is only valid that all secondary condition be satisfied at the same time)

a) Condition No.1

①The outdoor fan enters into over-load protection and stops running.

②Outdoor fan stops running then restarts and keeps running over 10 min

③The compressor accumulating running time ≥45min

④The compressor continuous running time ≥20min

⑤TE ≤ 48℃。

b) Condition No.2

①Enter into heating mode 5 min later or finish defrosting 5 min later, catch the max difference value between TE and TA

If TE≥38℃， when the difference between TE and TA decrease by 5℃ or more and lasting time ≥3min

If the difference between TE and TA decrease by 3℃ or more and lasting time ≥3min

②The compressor continuous running time ≥5min

③The compressor accumulating running time ≥45min

④TE ≤ 48℃；

Note: If there is wind modification, and when indoor fan wind speed descends 1 grade, temperature modification -1℃.when indoor fan wind speed climbs 1 grade, temperature modification +1℃

c) Condition No.3

①The compressor accumulating running time ≥3h

②The continuous compressor running time ≥5min

③The min. difference between TE and TA ＜16℃

d) Condition No.4

①The min. difference between TE and TA ＜16℃ continuously last for 5 min

②The compressor accumulating running time ≥45 min

③The compressor continuous running time ≥20min

If the condition is satisfied unit will enter into defrosting, current TE will be recorded before defrosting. When the defrosting is over, and the compressor continuously runs for 10 min, then compare current TE with TE before defrosting, if the latter doesn't high than former by 3℃ or more, next time unit will not enter into defrosting at this condition, until mode switch, turn off then restart to heating or go through a defrosting yet.

e) Condition No.5

Begin to calculate time once air conditioner enters into over-heating protection, enters into compulsory defrosting after 2 h later.

f) Condition No.6

①5 min later after enters into heating mode for the first time, catching max value of TE, if TE ＜38℃

②The compressor continuous running time ≥5min

③The compressor accumulating running time ≥45 min

g) Condition No.7

①At heating mode and the compressor accumulating running time is over 2h.

②Within the 2 h never carry out defrosting

③The compressor continuous running time ≥5min, catching max value of TE, if TE ＜30 and lasting time ≥3min.

Quit conditions

One of following 3 conditions is satisfied unit quit the intelligent defrosting

a) Intelligent defrosting time ≥9min

b) Intelligent defrosting time lasts for 4 min, if TE≥0℃, and in 10s TE increased by 2℃ or more.

c) Intelligent defrosting time lasts for 5min, if TE≥5℃

Defrosting time sequence

a) When the defrosting begins, the compressor, indoor fan, outdoor fan all stop, 30s later 4-way valve will be closed as well, then 15s later the compressor starts and enters into defrosting operation.

b) When quit from defrosting, the compressor stops and outdoor fan starts, 55s later four ways valve will be open, and 5s later the compressor starts and air conditioner returns to normal operation, indoor fan operates as anti-freezing wind mode.

◇Sensor failure

a) Indoor room temperature（TA）

When TA is abnormal, the unit stops to run protection, failure code will display (see the failure indication table), failure code will disappear when TA returns to normal.

b) Indoor coil temperature（TE）

When TE is abnormal, failure code will display (see the failure indication table), failure code will disappear when TE returns to normal

c) Outdoor coil temperature（TW）

When in cooling or dehumidifying mode, doesn't check TW

When in heating mode, after the unit starts outdoor coil temperature will be checked, if TW is abnormal, unit normal starting is permitted, and defrosting automatically be set as intelligent, failure code will display (see the failure indication table), failure code disappears when TW return to normal, and heating defrosting returns to normal.

d) Exhaust temperature（TP）

Check the exhaust temperature sensor when power on

When TP is abnormal, unit will start normally and exhaust over-heat protection be canceled, at the same time failure code displays, failure code disappears when TP back to normal, exhaust over-heat protection will be recovery

e) Outdoor condensation temperature (TL)

When in heating mode, doesn't check TL

When in cooling mode, after the unit starts check the outdoor condensation temperature, if TL is abnormal the unit normal starting is allowed and cancel the low ambient cooling function, at the same time the failure code displays, failure code disappears when TH back to normal, the low ambient cooling function will be recovery.

◇Communication failure

a) Communication failure between indoor and outdoor units: The indoor and outdoor communication is abnormal, or one of indoor unit and outdoor unit control board is not electrified, then power off and display failure code, when communication returns to normal failure code disappears.

b) The communication failure of wired controller: when wired controller or main control board doesn't receive correct signal for consecutive 2 min, then turn off and display failure code, when communication returns to normal failure code disappears.

4. Failure code

4.1 Failure code

When air condition has failure, the timing lamp on light board of controller will display different code according to different failure case.

4.1.1Unit failure code for unit power supply is 220-240V

Suitable for units: capacity 12000~24000Btu, power supply 220-240V～, 50Hz

Failure causing	Display mode 1（indication lamp on display lamp board）	Display mode 2（wired controller）	Display priority	Phenomenon
Communication failure	none	E5	1	shutdown
Drainage system failure	Timing lamp flash 4 times/8s	E4	2	shutdown
Phase failure, phase-loss or low voltage failure	Timing lamp lash 6 times/8s	E6	3	shutdown
Indoor temperature sensor abnormal (TA)	Timing lamp flash 1 times/8s	E1	4	shutdown
Indoor coil sensor abnormal(TE)	Timing lamp flash 2 times/8s	E3	5	shutdown
Outdoor coil sensor abnormal(TW)	Timing lamp flash 2 times/1s	E2	6	non-stop
Indoor heating over-load protection		None	7	shutdown
Defrosting(not failure)	Operation lamp flash	None	8	non-stop

4.2.2 Unit failure code for unit power supply is 380-415V

Suitable for units：capacity 36000~60000BTU, power supply 380-415V 3N～，50Hz

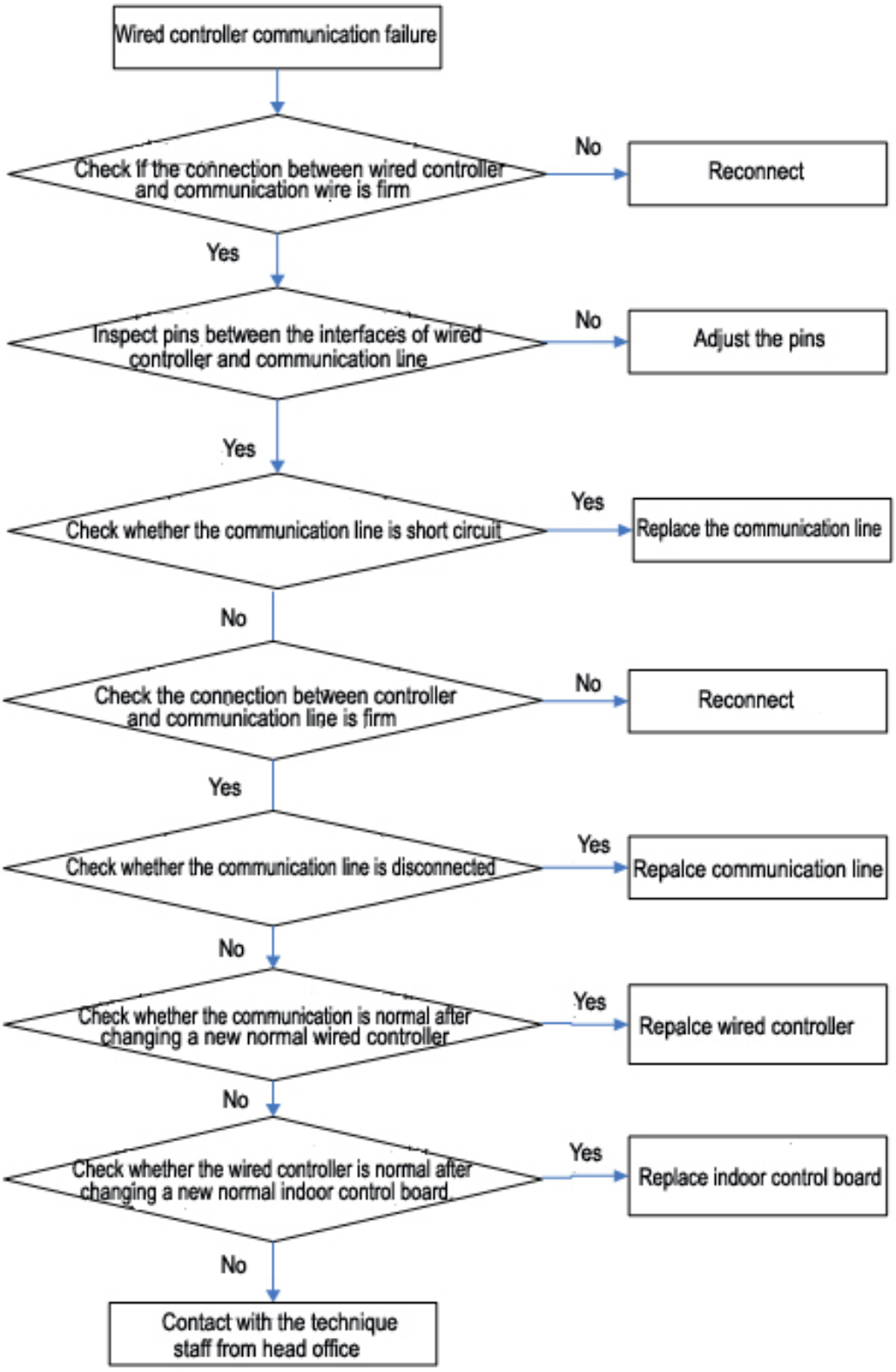
Failure causing	Display mode1（indication lamp on display lamp board）	Display mode1（failure lamp on control board）	Display mode3（wired controller）	Display priority	Phenomenon
Communication failure	Flash 5 times and go out 2S	Flash 2 times and go out 2S	F1	1	shutdown
Wired controller communication failure	—	—	E5	1	shutdown
Drainage system failure	Flash 4 times and go out 2S	—	E4	3	shutdown
Outdoor protection(Phase failure)	Flash6 times and go out 2S	—	E6	2	shutdown
Outdoor protection (discharging over-temperature)	Flash 10 times and go out 2S	Flash 10 times and go out 2S	EA	7	shutdown
High pressure protection	Flash 9 times and go out 2S	Flash 1 times and go out 2S	E9	6	shutdown
Low pressure protection	Flash 9 times and go out 2S	Flash 3 times and go out 2S	E9	6	shutdown
Indoor temp. sensor abnormal(TA)	Flash 1 times and go out 2S	—	E1	4	shutdown
Indoor coil sensor abnormal(TE)	Flash 3 times and go out 2S	—	E3	5	shutdown
Outdoor coil sensor abnormal(TW)	Flash 2 times and go out 2S	Flash 2 times and go out 2S	E2	8	non-stop
Outdoor condensate temp. Sensor abnormal(TL)	Flash 7 times and go out 2S	Flash 7 times and go out 2S	E7	9	non-stop
Discharging temp. sensor abnormal(TP)	Flash 8 times and go out 2S	Flash 8 times and go out 2S	E8	10	non-stop

Note: When correct signal has not been received by wired control or main control board in 2 consecutive min, then the unit turns off and indicates relative failure code, once communication renew and failure code disappears automatically.

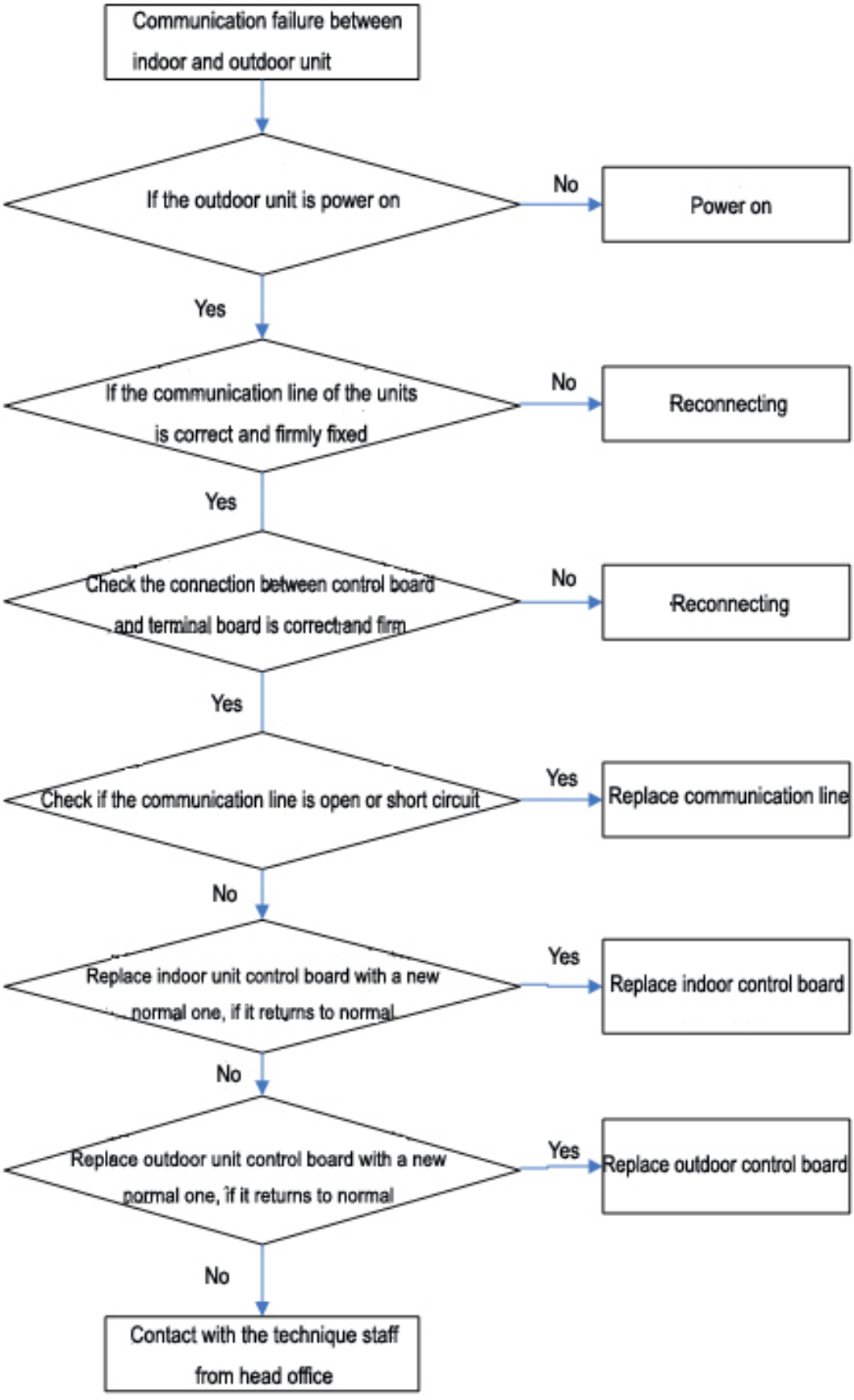
5. Failure analysis and elimination

5.1Analysis and elimination for the failure with failure code

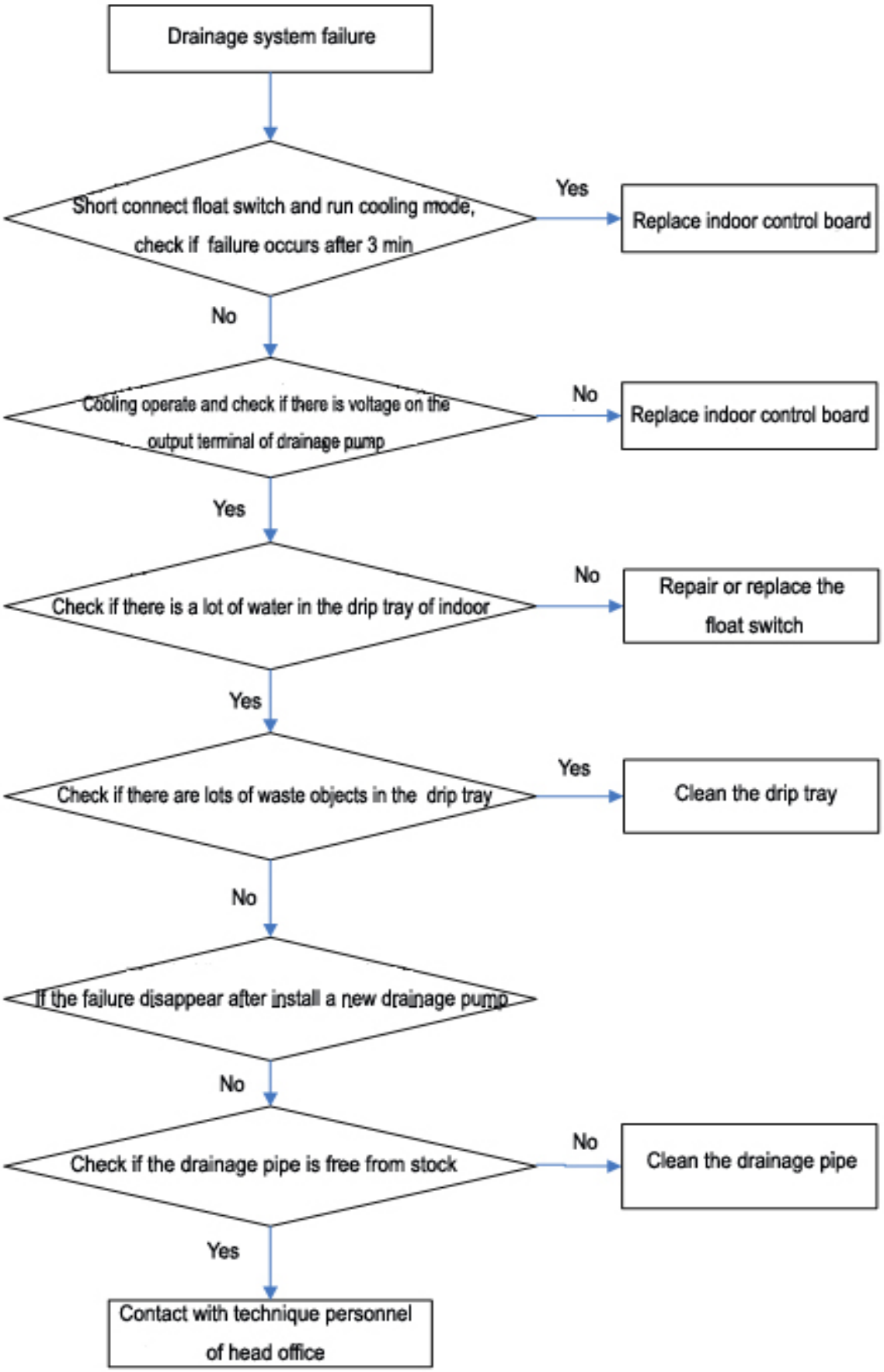
Wired controller communication failure



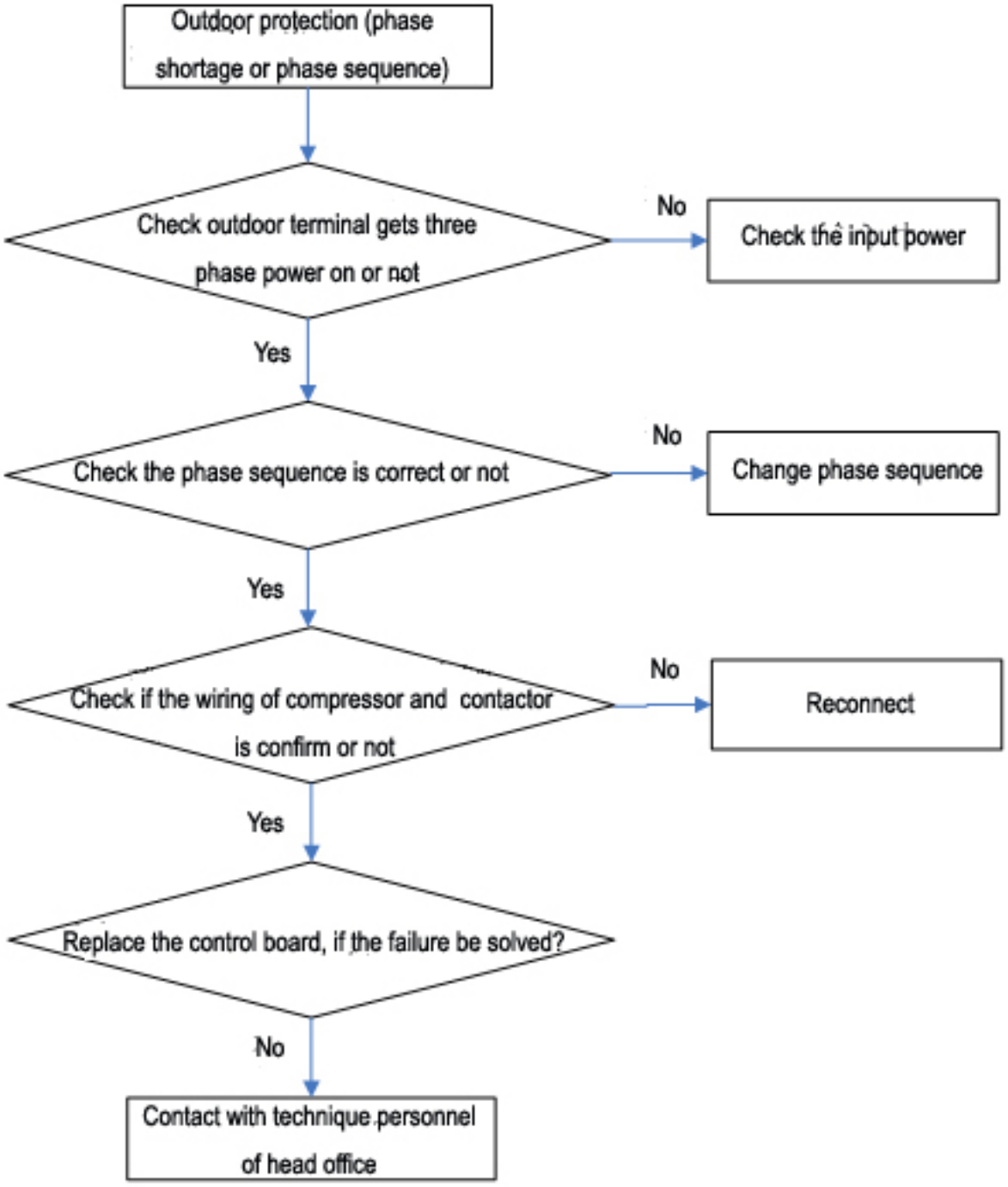
Communication failure between indoor and outdoor unit



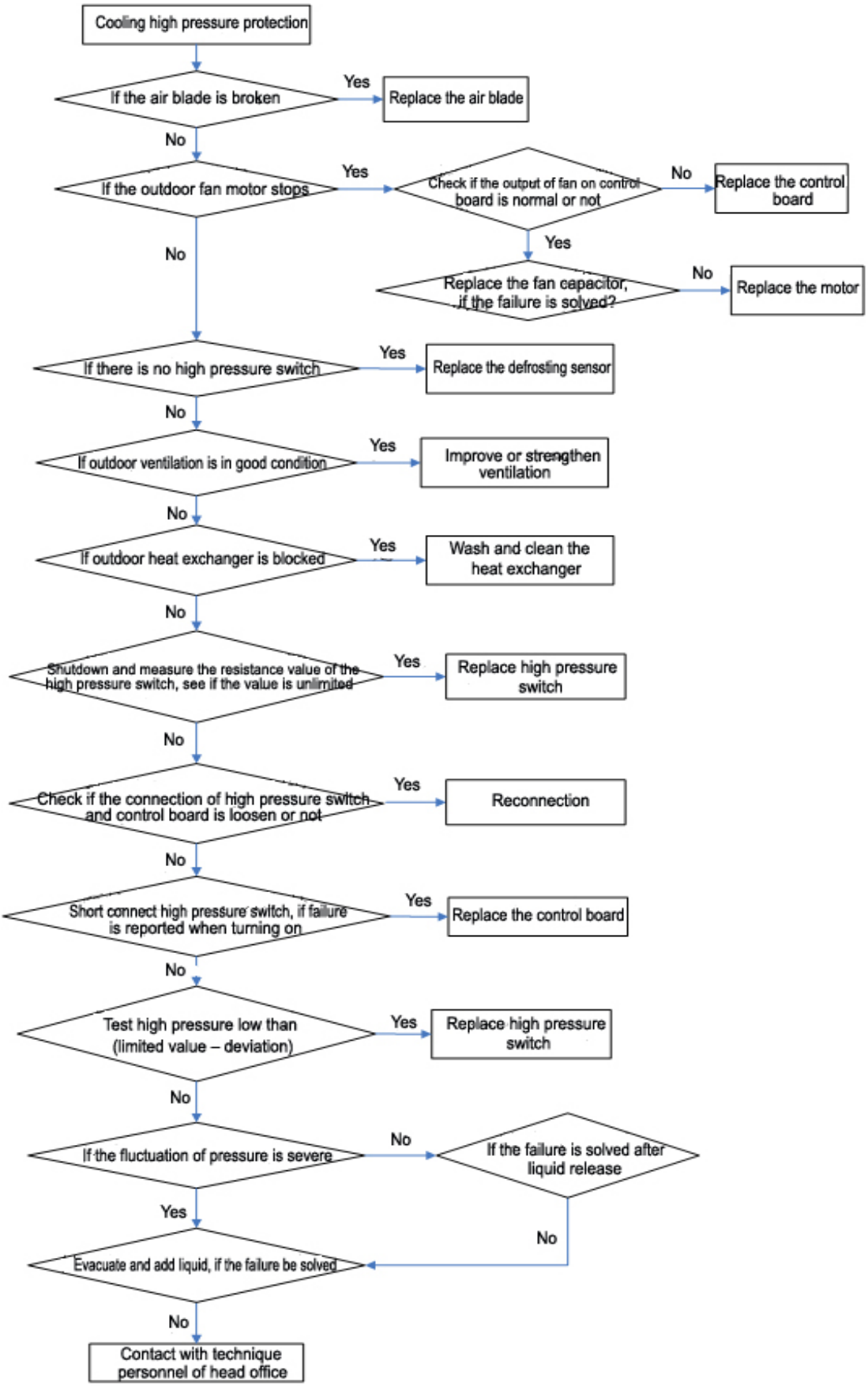
Drainage system failure


Drainage system failure
Short connect float switch and run cooling mode, check if failure occurs after 3 min
Yes
Replace indoor control board
No
Cooling operate and check if there is voltage on the output terminal of drainage pump
No
Replace indoor control board
Yes
Check if there is a lot of water in the drip tray of indoor
No
Repair or replace the float switch
Yes
Check if there are lots of waste objects in the drip tray
Yes
Clean the drip tray
No
If the failure disappear after install a new drainage pump
No
Check if the drainage pipe is free from stock
No
Clean the drainage pipe
Yes
Contact with technique personnel of head office

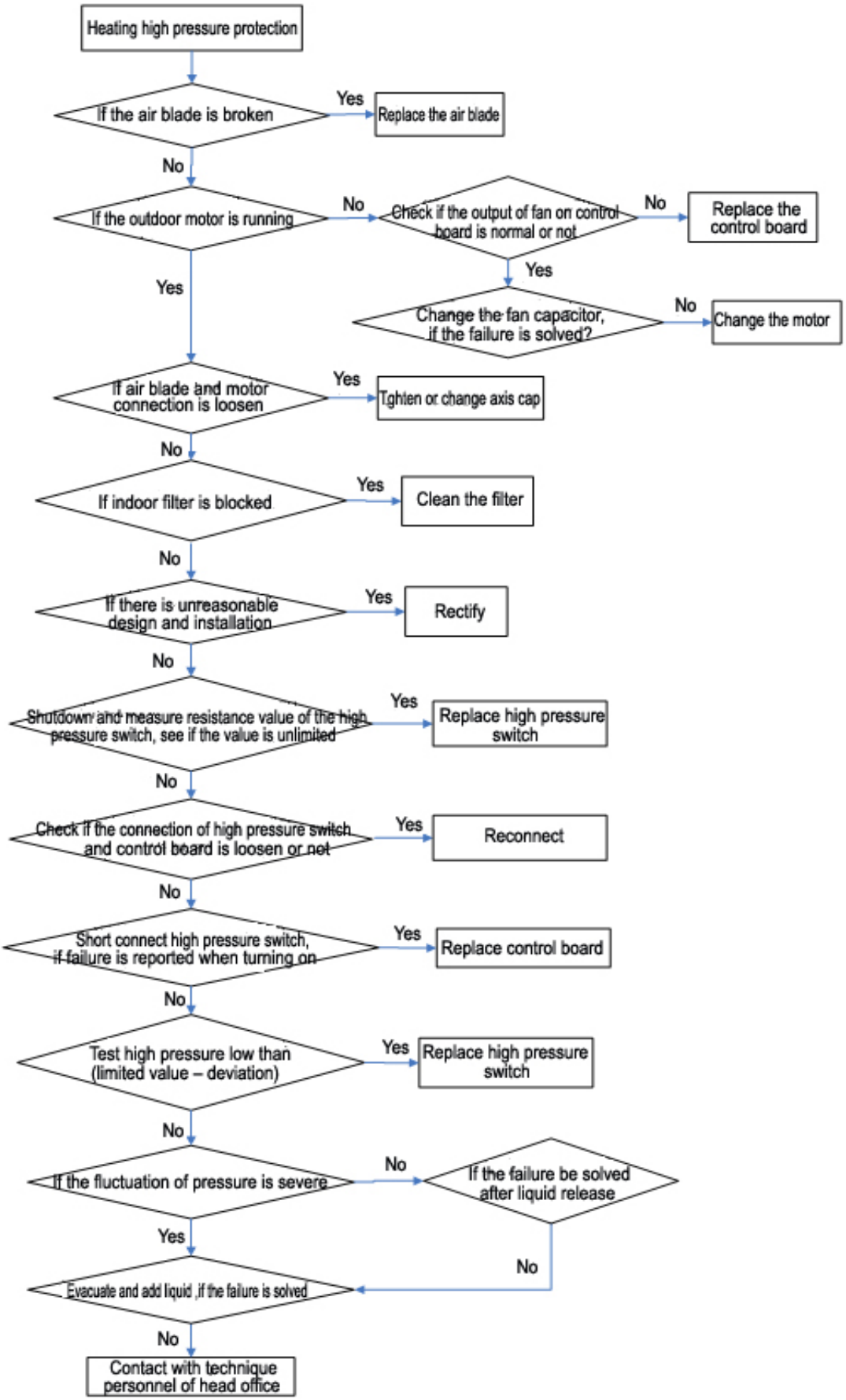
Outdoor protection(phase sequence)



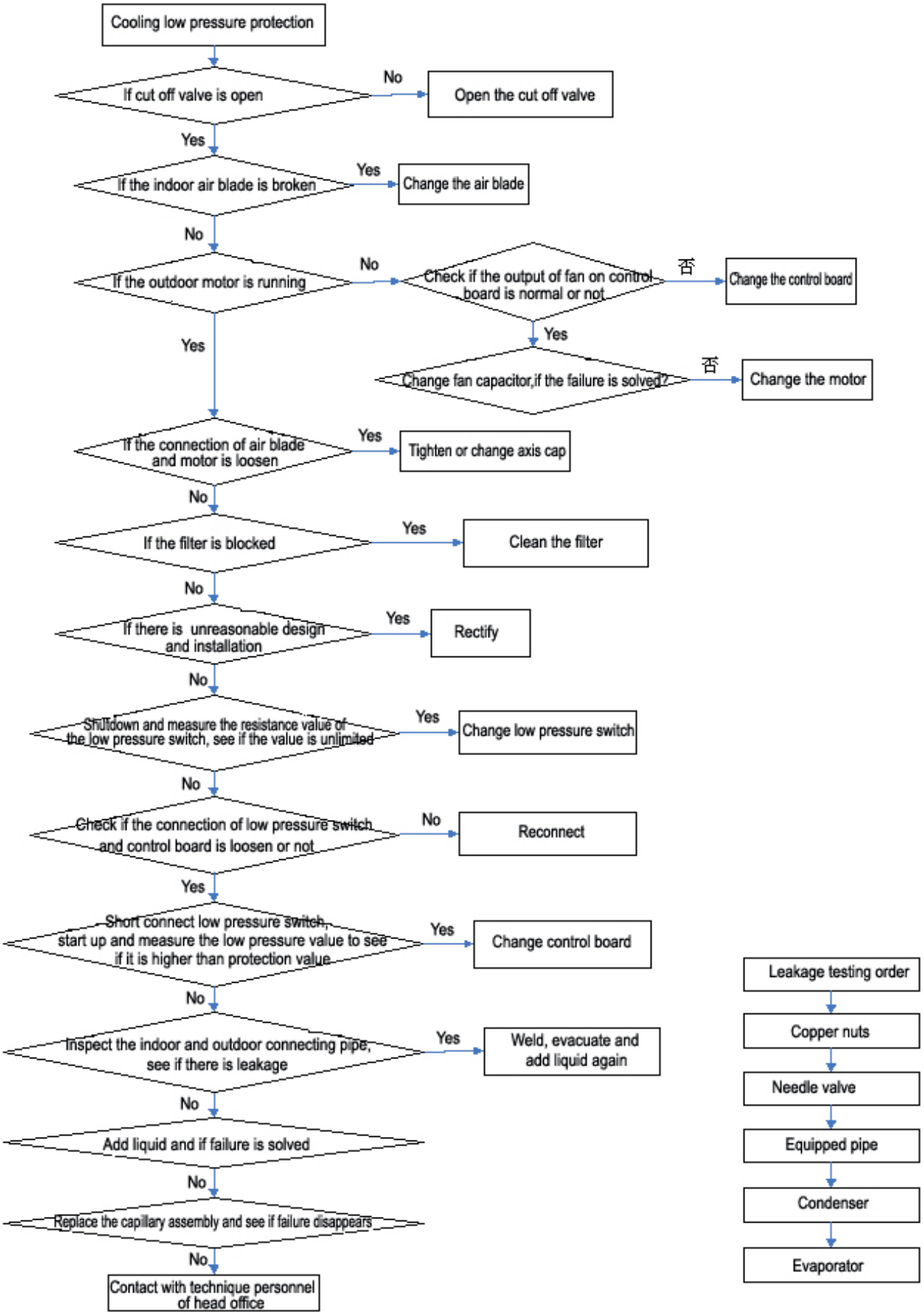
Cooling high pressure protection


Cooling high pressure protection
If the air blade is broken
Yes
Replace the air blade
No
If the outdoor fan motor stops
Yes
Check if the output of fan on control board is normal or not
No
Replace the control board
Yes
No
Replace the fan capacitor, if the failure is solved?
No
Replace the motor
If there is no high pressure switch
Yes
Replace the defrosting sensor
No
If outdoor ventilation is in good condition
Yes
Improve or strengthen ventilation
No
If outdoor heat exchanger is blocked
Yes
Wash and clean the heat exchanger
No
Shutdown and measure the resistance value of the high pressure switch, see if the value is unlimited
Yes
Replace high pressure switch
No
Check if the connection of high pressure switch and control board is loosen or not
Yes
Reconnection
No
Short connect high pressure switch, if failure is reported when turning on
Yes
Replace the control board
No
Test high pressure low than (limited value – deviation)
Yes
Replace high pressure switch
No
If the fluctuation of pressure is severe
No
If the failure is solved after liquid release
Yes
No
Evacuate and add liquid, if the failure be solved
No
Contact with technique personnel of head office

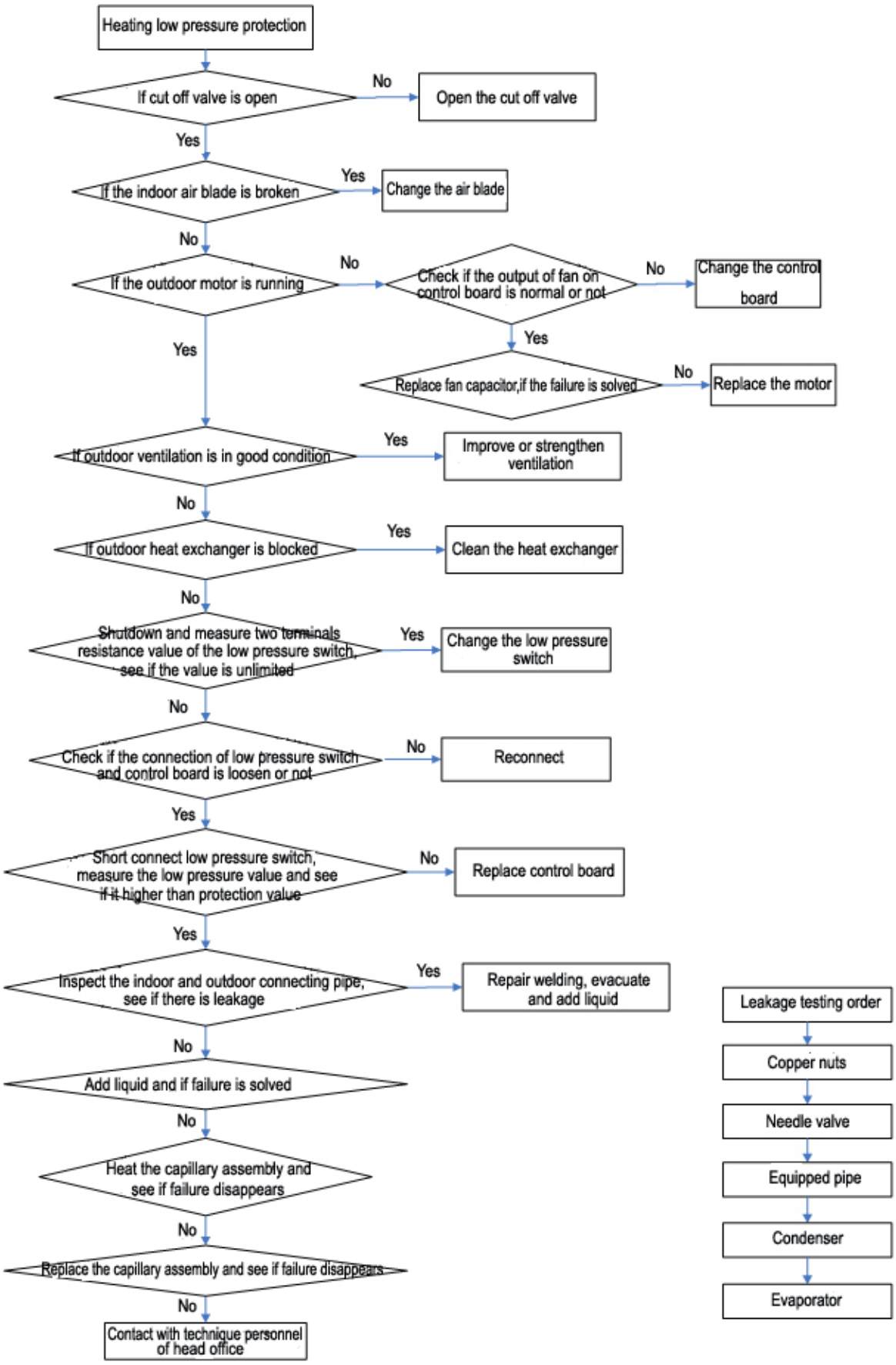
Heating high pressure protection



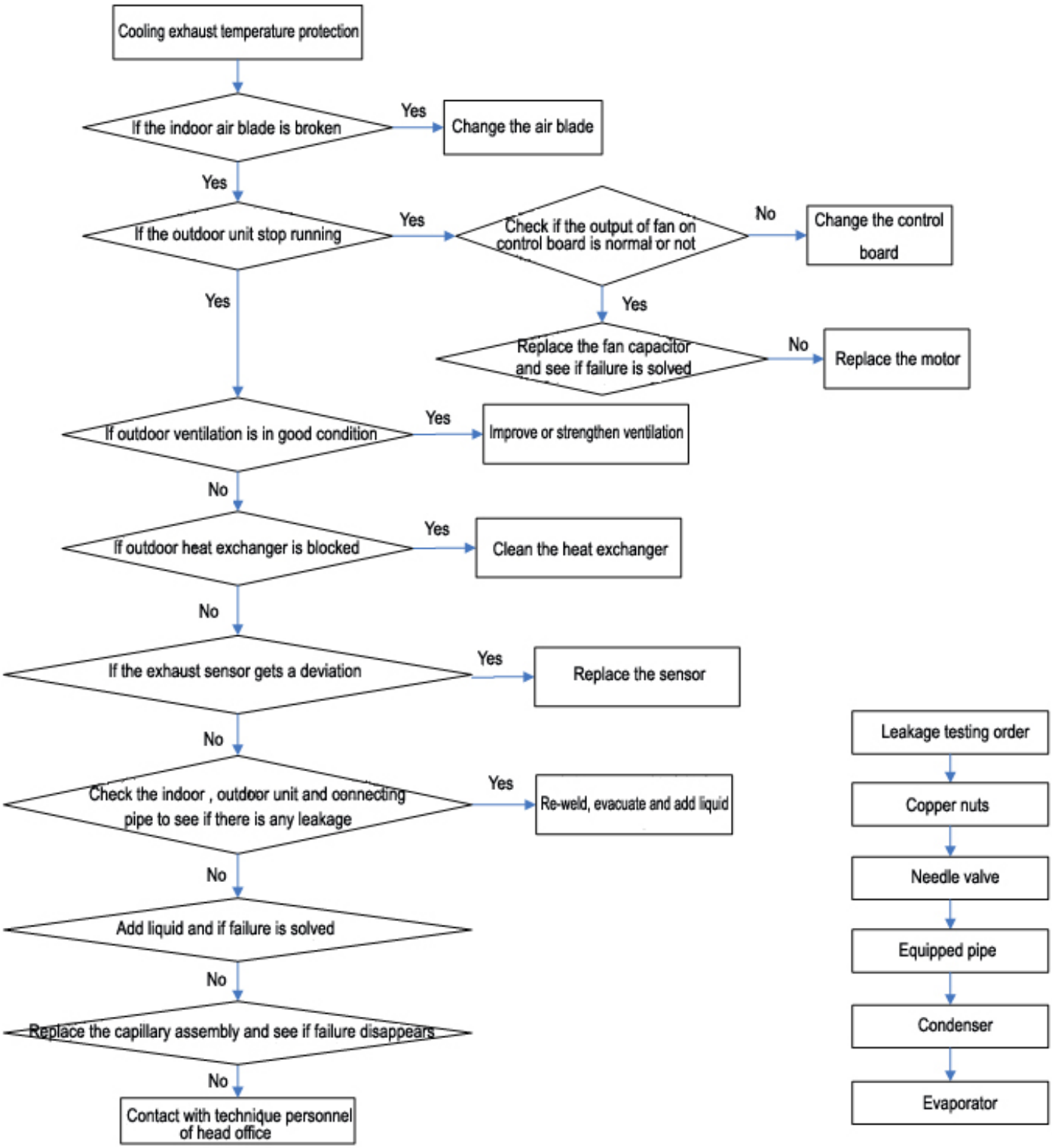
Cooling low pressure protection


Cooling low pressure protection
If cut off valve is open
No
Open the cut off valve
Yes
If the indoor air blade is broken
Yes
Change the air blade
No
If the outdoor motor is running
No
Check if the output of fan on control board is normal or not
否
Change the control board
Yes
Yes
Change fan capacitor,if the failure is solved?
否
Change the motor
If the connection of air blade and motor is loosen
Yes
Tighten or change axis cap
No
If the filter is blocked
Yes
Clean the filter
No
If there is unreasonable design and installation
Yes
Rectify
No
Shutdown and measure the resistance value of the low pressure switch, see if the value is unlimited
Yes
Change low pressure switch
No
Check if the connection of low pressure switch and control board is loosen or not
No
Reconnect
Yes
Short connect low pressure switch, start up and measure the low pressure value to see if it is higher than protection value
Yes
Change control board
No
Inspect the indoor and outdoor connecting pipe, see if there is leakage
Yes
Weld, evacuate and add liquid again
No
Add liquid and if failure is solved
No
Replace the capillary assembly and see if failure disappears
No
Contact with technique personnel of head office
Leakage testing order
Copper nuts
Needle valve
Equipped pipe
Condenser
Evaporator

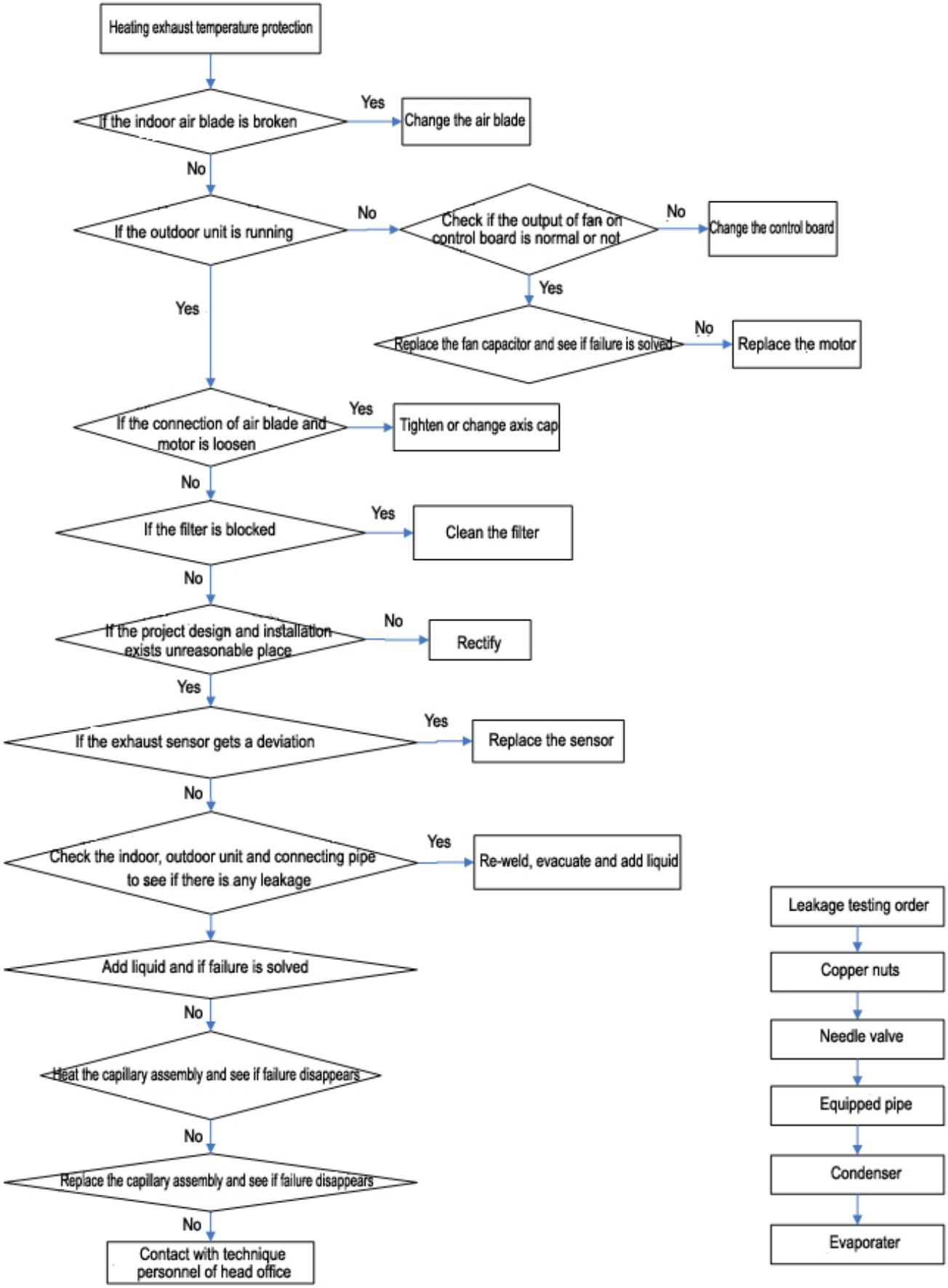
Heating low pressure protection


Heating low pressure protection
If cut off valve is open
No
Open the cut off valve
Yes
If the indoor air blade is broken
Yes
Change the air blade
No
If the outdoor motor is running
No
Check if the output of fan on control board is normal or not
No
Change the control board
Yes
Yes
Replace fan capacitor,if the failure is solved
No
Replace the motor
If outdoor ventilation is in good condition
Yes
Improve or strengthen ventilation
No
If outdoor heat exchanger is blocked
Yes
Clean the heat exchanger
No
Shutdown and measure two terminals resistance value of the low pressure switch, see if the value is unlimited
Yes
Change the low pressure switch
No
Check if the connection of low pressure switch and control board is loosen or not
No
Reconnect
Yes
Short connect low pressure switch, measure the low pressure value and see if it higher than protection value
No
Replace control board
Yes
Inspect the indoor and outdoor connecting pipe, see if there is leakage
Yes
Repair welding, evacuate and add liquid
No
Add liquid and if failure is solved
No
Heat the capillary assembly and see if failure disappears
No
Replace the capillary assembly and see if failure disappears
No
Contact with technique personnel of head office
Leakage testing order
Copper nuts
Needle valve
Equipped pipe
Condenser
Evaporator

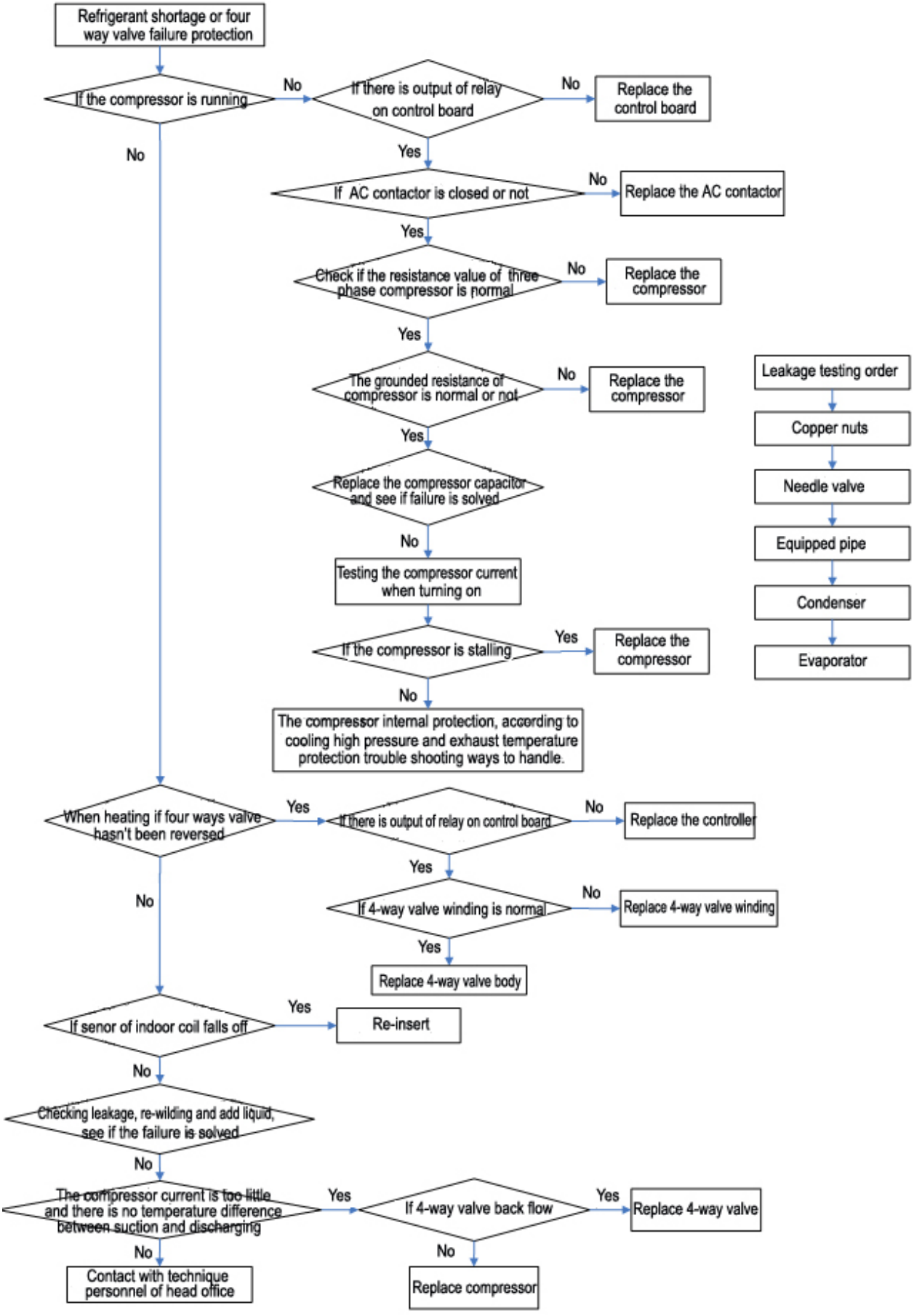
Cooling exhaust temperature protection



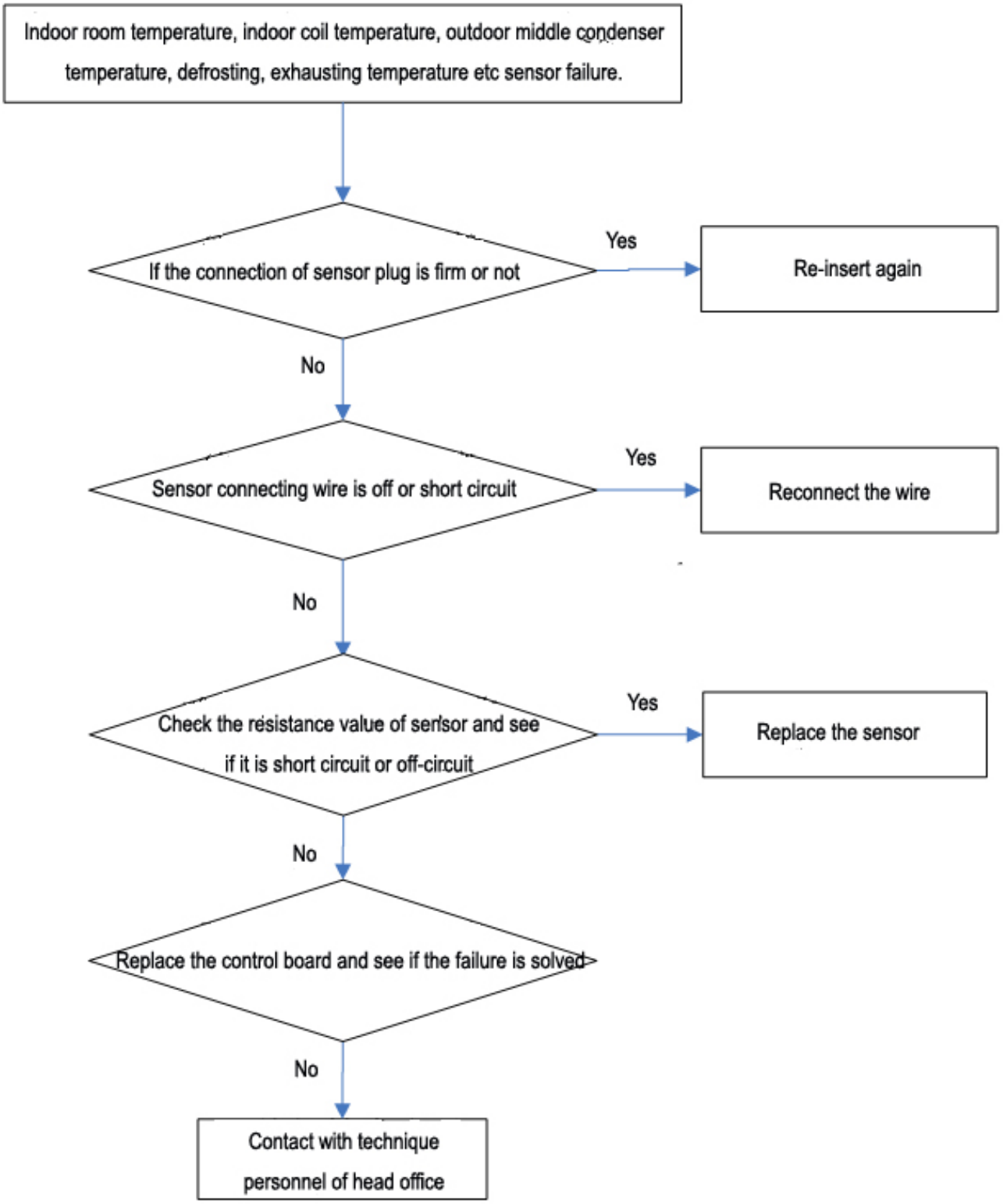
Heating exhaust temperature protection



Refrigerant shortage or four way valve failure protection

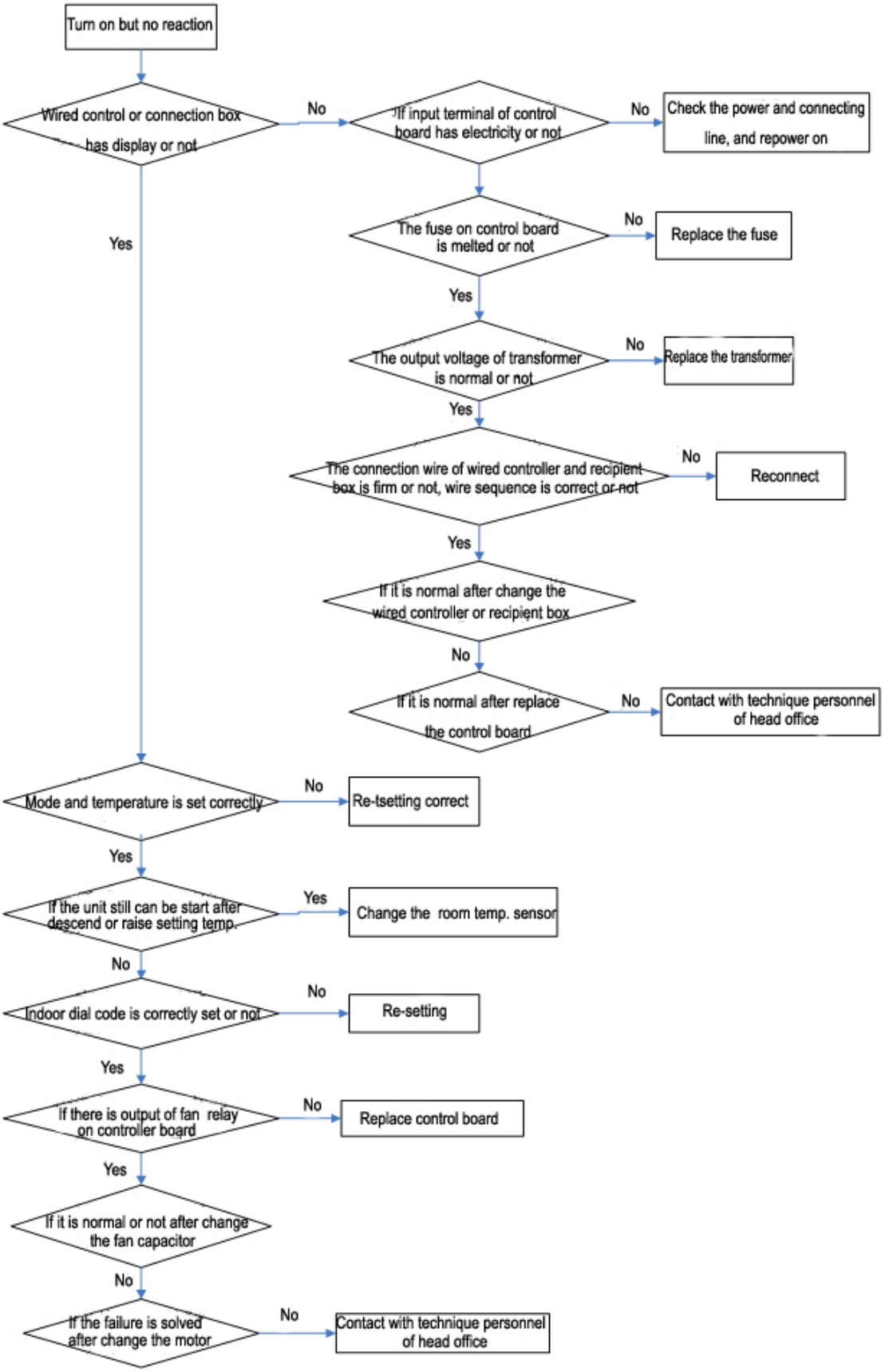

Refrigerant shortage or four way valve failure protection
If the compressor is running
No
If there is output of relay on control board
No
Replace the control board
Yes
If AC contactor is closed or not
No
Replace the AC contactor
Yes
Check if the resistance value of three phase compressor is normal
No
Replace the compressor
Yes
The grounded resistance of compressor is normal or not
No
Replace the compressor
Yes
Replace the compressor capacitor and see if failure is solved
No
Testing the compressor current when turning on
If the compressor is stalling
Yes
Replace the compressor
No
The compressor internal protection, according to cooling high pressure and exhaust temperature protection trouble shooting ways to handle.
Leakage testing order
Copper nuts
Needle valve
Equipped pipe
Condenser
Evaporator
No
When heating if four ways valve hasn't been reversed
Yes
If there is output of relay on control board
No
Replace the controller
Yes
If 4-way valve winding is normal
No
Replace 4-way valve winding
Yes
Replace 4-way valve body
No
If senor of indoor coil falls off
Yes
Re-insert
No
Checking leakage, re-wilding and add liquid, see if the failure is solved
No
The compressor current is too little and there is no temperature difference between suction and discharging
Yes
If 4-way valve back flow
Yes
Replace 4-way valve
No
Contact with technique personnel of head office
No
Replace compressor

Sensor failure protection

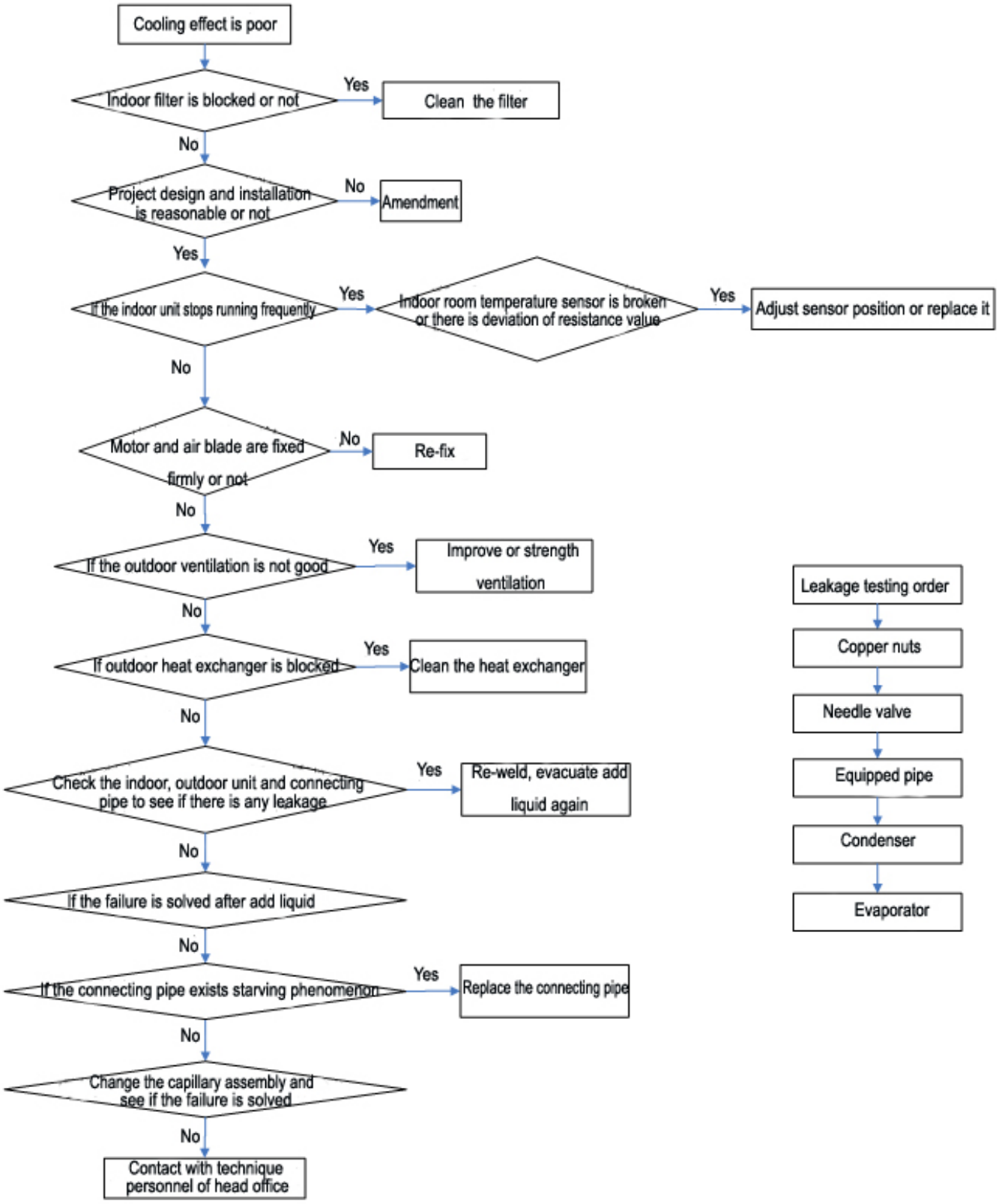


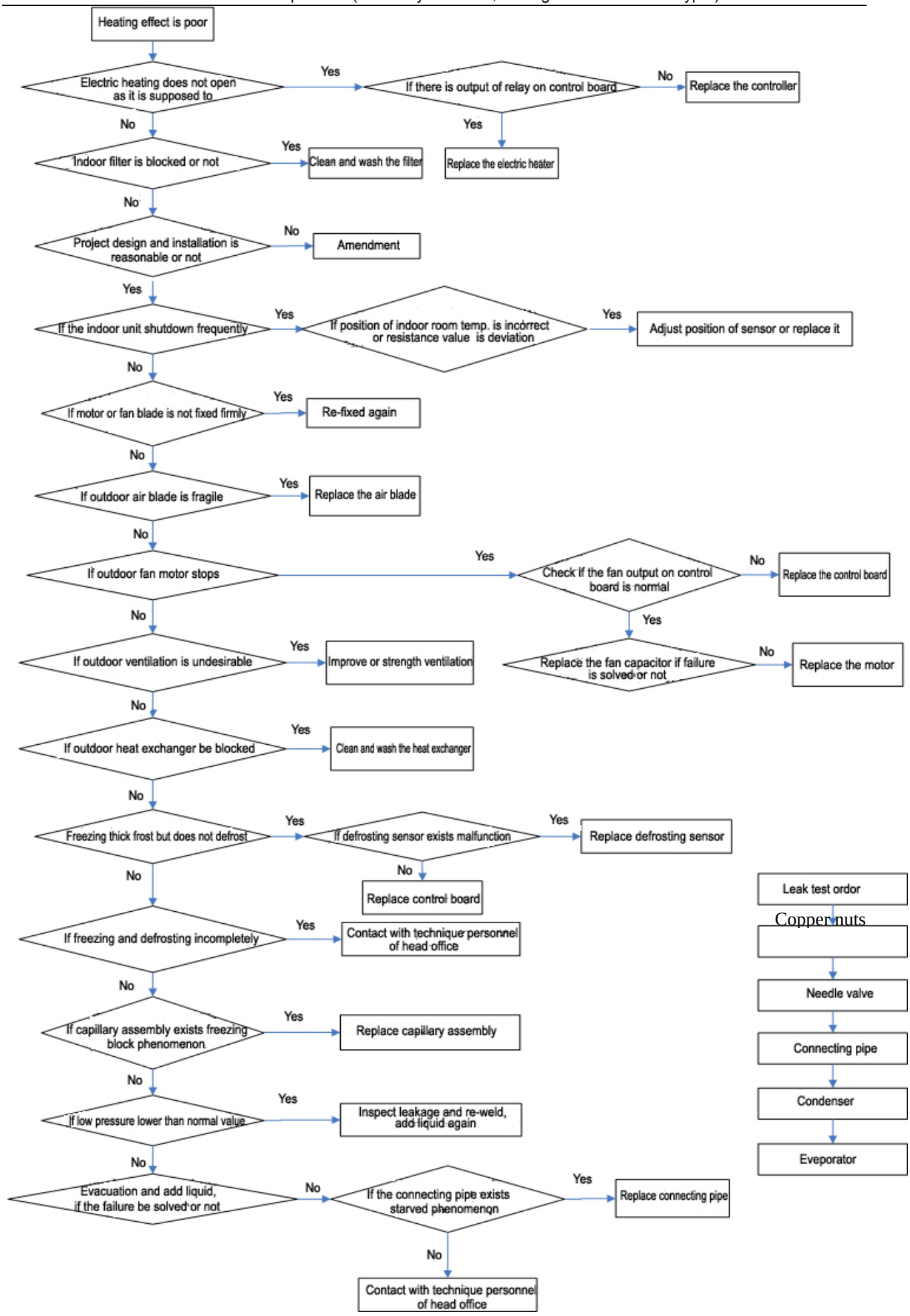
5.2 Analysis and elimination for the failure without failure code

5.2.1 No action after power-on

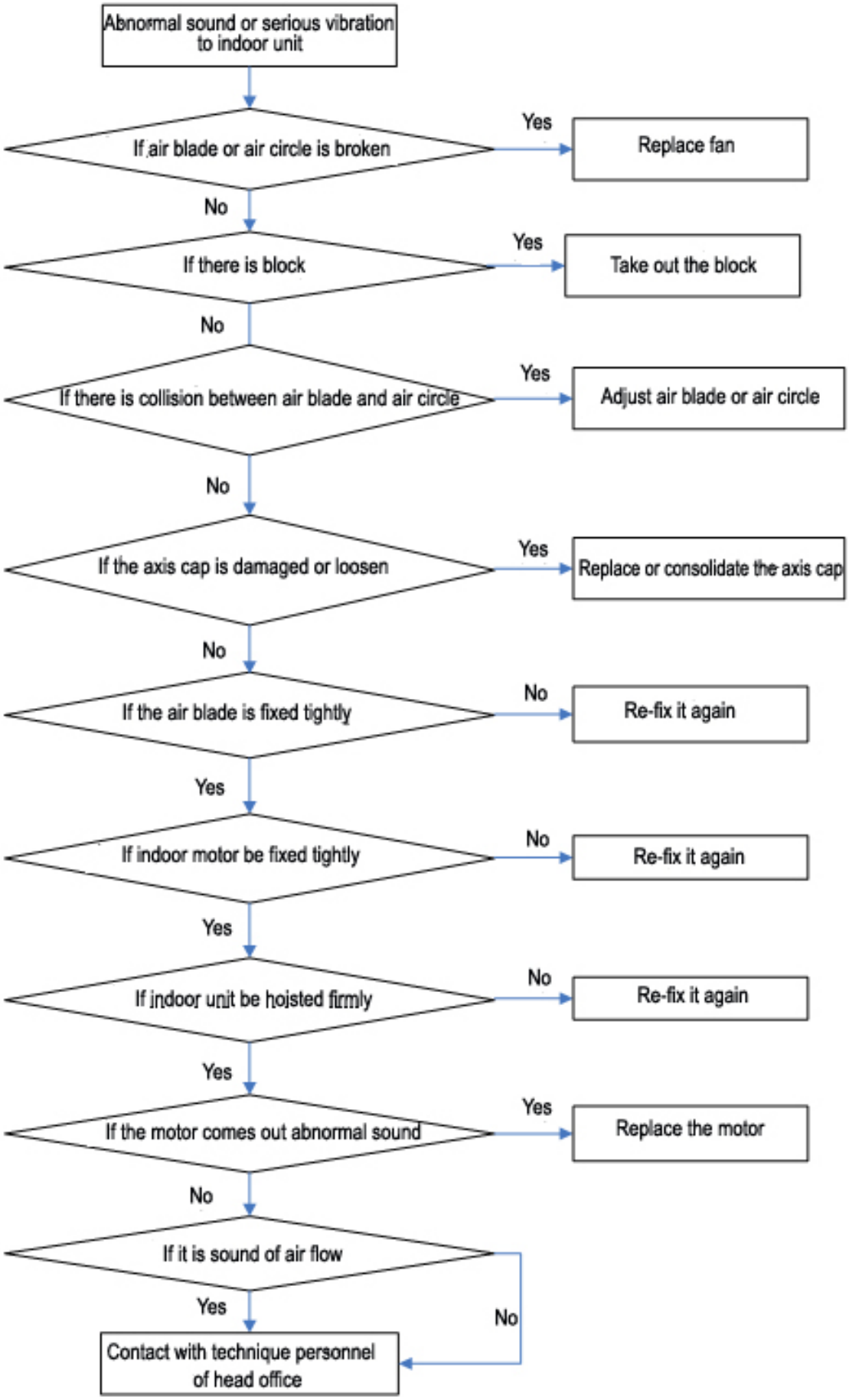


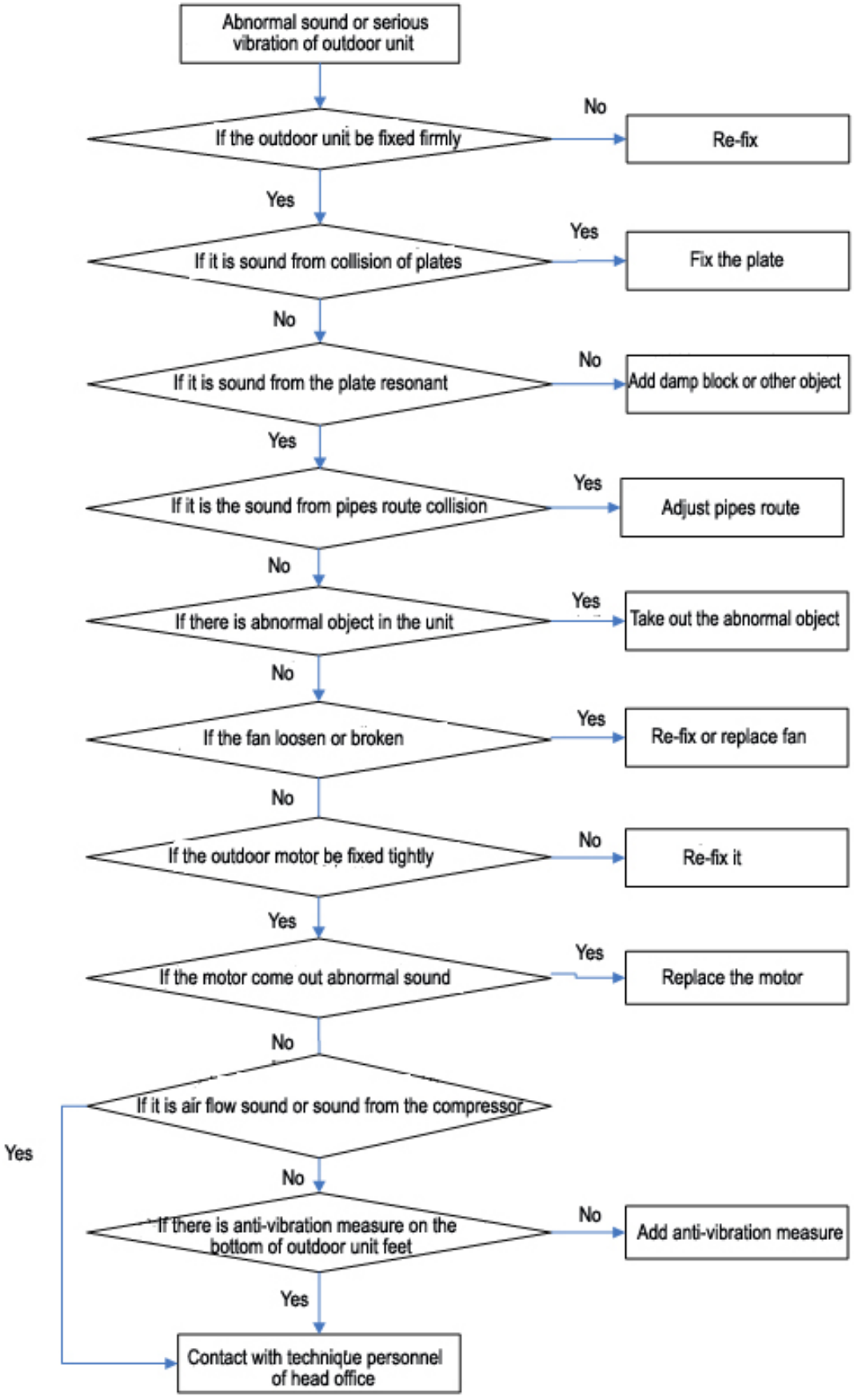
5.2.2 Air conditioner operates, but effect is terrible



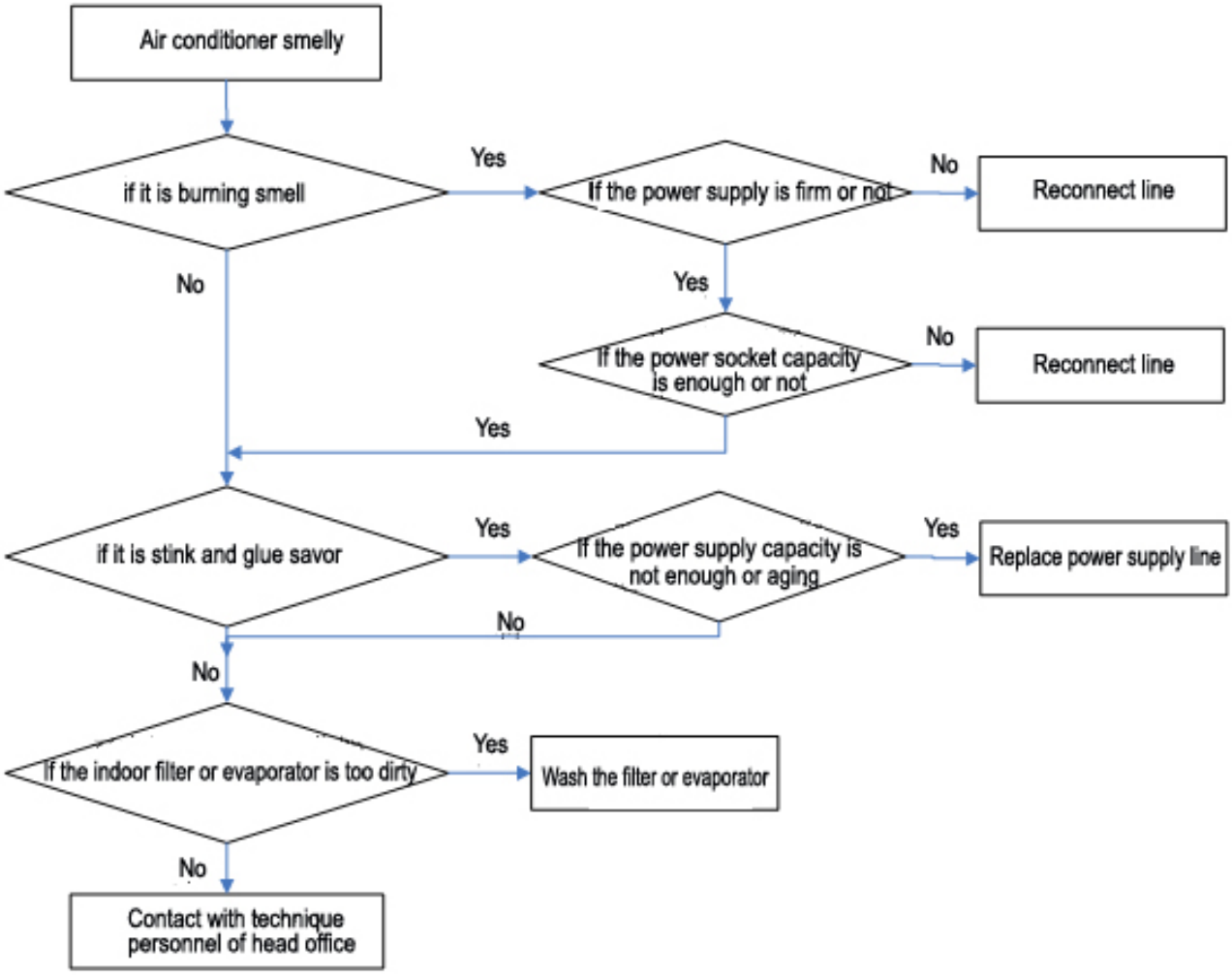

Heating effect is poor
Electric heating does not open as it is supposed to
Yes
If there is output of relay on control board
No
Replace the controller
Yes
Replace the electric heater
No
Indoor filter is blocked or not
Yes
Clean and wash the filter
No
Project design and installation is reasonable or not
No
Amendment
Yes
If the indoor unit shutdown frequently
Yes
If position of indoor room temp. is incorrect or resistance value is deviation
Yes
Adjust position of sensor or replace it
No
If motor or fan blade is not fixed firmly
Yes
Re-fixed again
No
If outdoor air blade is fragile
Yes
Replace the air blade
No
If outdoor fan motor stops
Yes
Check if the fan output on control board is normal
No
Replace the control board
Yes
Replace the fan capacitor if failure is solved or not
No
Replace the motor
No
If outdoor ventilation is undesirable
Yes
Improve or strength ventilation
No
If outdoor heat exchanger be blocked
Yes
Clean and wash the heat exchanger
No
Freezing thick frost but does not defrost
Yes
If defrosting sensor exists malfunction
Yes
Replace defrosting sensor
No
Replace control board
No
If freezing and defrosting incompletely
Yes
Contact with technique personnel of head office
No
If capillary assembly exists freezing block phenomenon
Yes
Replace capillary assembly
No
If low pressure lower than normal value
Yes
Inspect leakage and re-weld, add liquid again
No
Evacuation and add liquid, if the failure be solved or not
No
If the connecting pipe exists starved phenomenon
Yes
Replace connecting pipe
No
Contact with technique personnel of head office
Leak test ordor
Copper nuts
Needle valve
Connecting pipe
Condenser
Eveporator

5.2.3 Abnormal sound or viberation

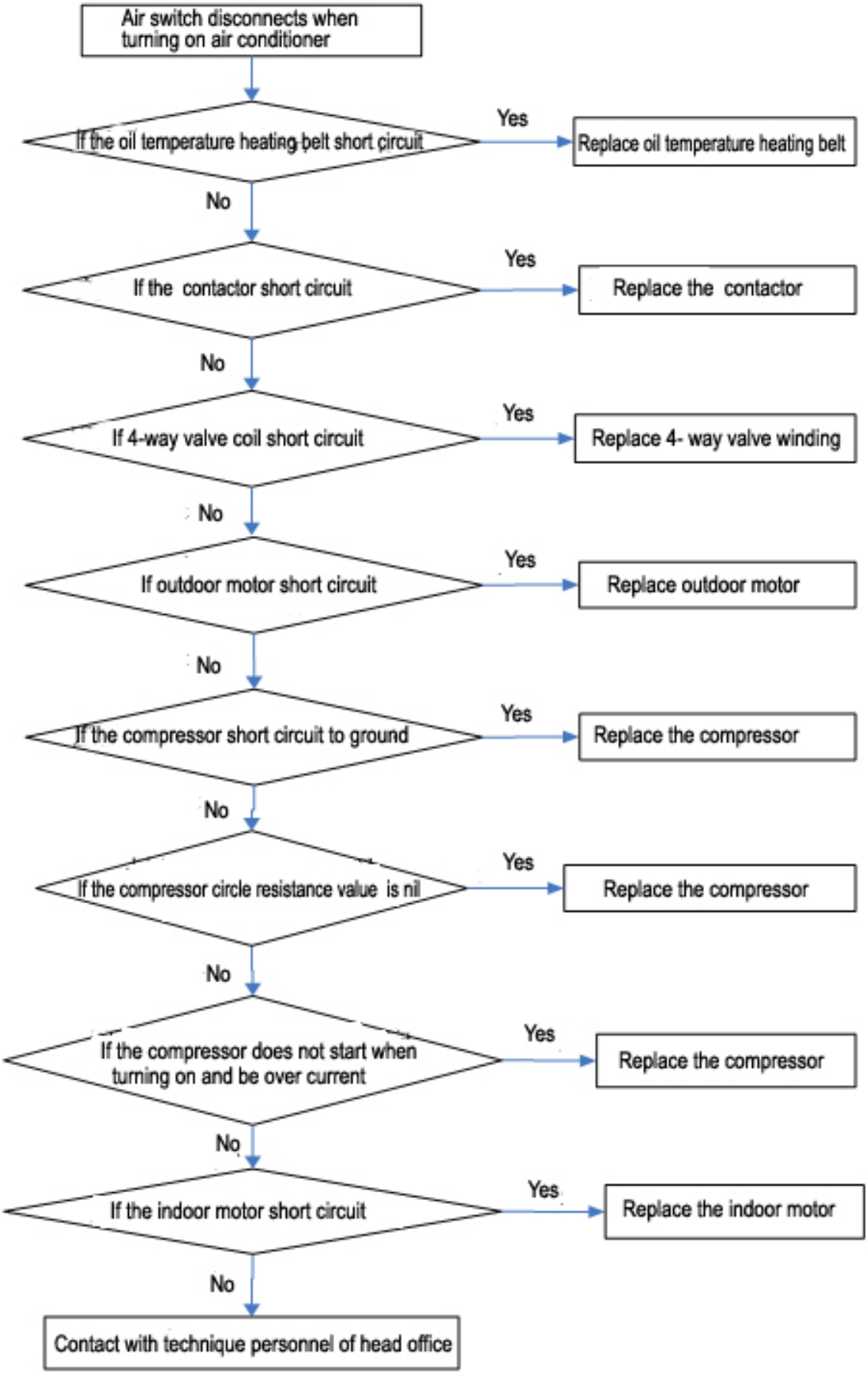



Abnormal sound or serious vibration of outdoor unit
If the outdoor unit be fixed firmly
No
Re-fix
Yes
If it is sound from collision of plates
Yes
Fix the plate
No
If it is sound from the plate resonant
No
Add damp block or other object
Yes
If it is the sound from pipes route collision
Yes
Adjust pipes route
No
If there is abnormal object in the unit
Yes
Take out the abnormal object
No
If the fan loosen or broken
Yes
Re-fix or replace fan
No
If the outdoor motor be fixed tightly
No
Re-fix it
Yes
If the motor come out abnormal sound
Yes
Replace the motor
No
If it is air flow sound or sound from the compressor
Yes
No
If there is anti-vibration measure on the bottom of outdoor unit feet
No
Add anti-vibration measure
Yes
Contact with technique personnel of head office

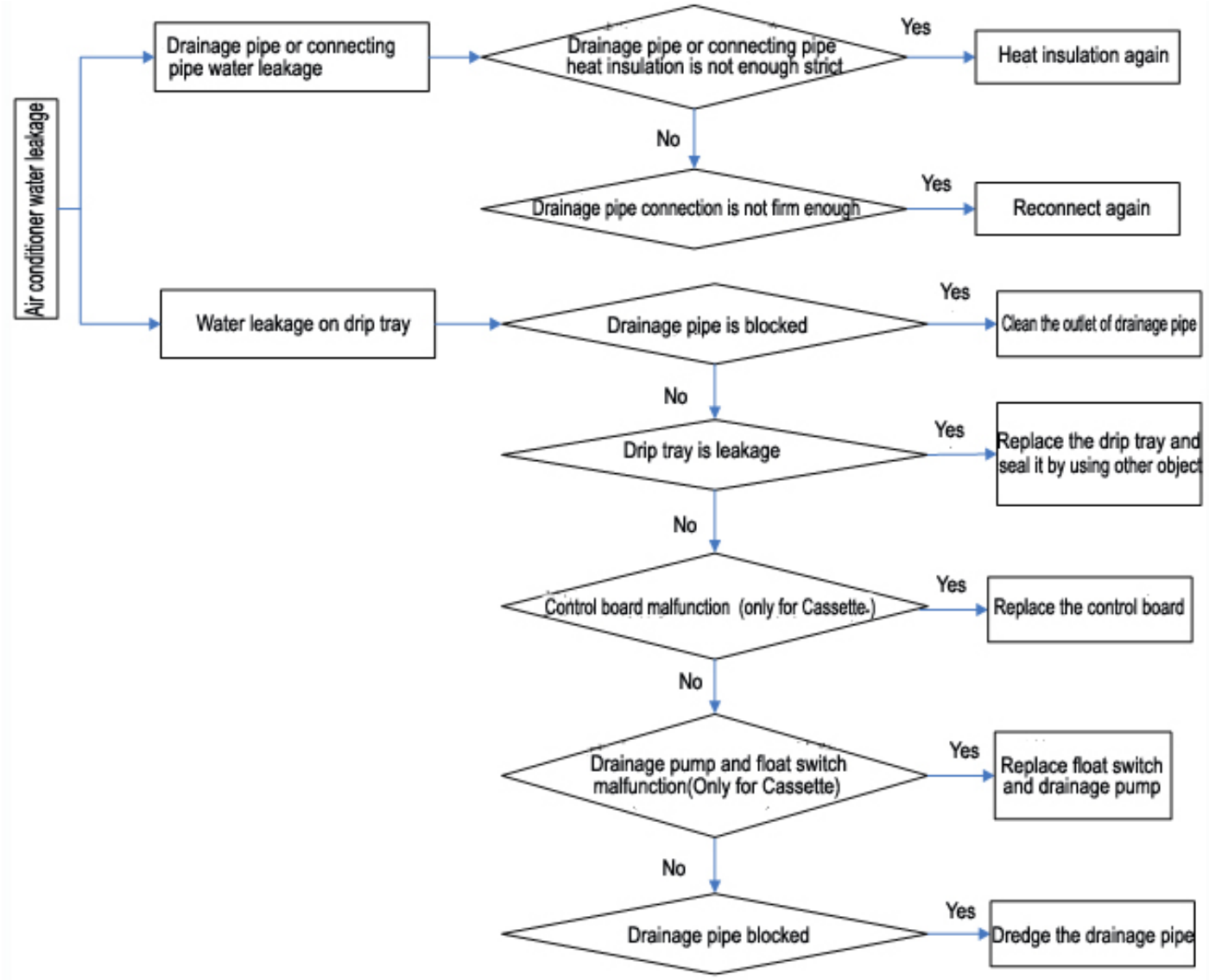
5.2.4Abnormal odor



5.2.5 Air switch action when air conditioner starting up



5.2.6Air conditioner water leakage



5.3 Non-aircon failure

5.3.1Poor cooling or heating efficiency, but it is not failure

During the process of using air conditioner, some phenomenon seems to be malfunction but actually not. Thus when cooling effect does not achieve to your expectation, the following factors have to be ruled out

Phenomenon	Causing explanation
High outside temperature and too many indoor individuals, even air conditioner runs at full-load operation, the wind blowing out from air outlet is cold, but it is difficult to lower the indoor temperature, this is not malfunction.	When the outdoor temperature is higher, more heat penetrates into indoor space, which increases the cooling load of AC. If there are too many individuals(for example 10 individuals) and every individual gives off 120W, totally 1200W, this will running out of half of AC cooling capacity, and the unit's cooling capacity this time is far from enough, indoor temperature is hard to lower down. It is normal phenomenon and do not mean useless of AC.

Power voltage is too low, causing AC uneasy to start and shut down after starting, or fuse be burned out etc.	It is not malfunction, need to find out the causing, if the causing is the electricity net voltage is too low, user should load a power manostat to keep voltage between 220V-380V for AC normally running
Select high wind speed but indoor temperature still at high side, air flow from the air outlet is too weak.	It is because air filter is too dirty or blocked making cooling capacity fail to be brought by air flow, causing cooling capacity inadequate. Take out filter and wash, the problem will be solved.
Select high wind speed, the vibration and sound of unit are severe.	Fan runs at high speed, severe vibration and sound of unit is normal phenomenon
Temperature controller adjusts improper and max cooling capacity is not utilized completely, thus indoor temperature can't lower down.	Adjust the temperature controller, and problem will be solved.
As for Heat pump air conditioner heating effect is not ideal during cold winter, this is normal phenomenon.	The lowest temperature is －7℃ when heating, below this temperature unit cannot heat effectively.
Improper installation will lead to indoor temperature uneven or bad cooling effect.	It is necessary to adjust AC installation position

5.3.2 It means there is failure if following phenomenon is happened

Phenomenon	Causing explanation
Mirage comes out from indoor unit	When the cold air from AC cools the indoor air
Noise	●When air conditioner stops running, there will be some noise, and this is because the refrigerant flows contrarily. ●AC expand or shrink according to temperature, causing harsh sounds ●Liquid sound is from refrigerant flowing
Sometimes, the room is smelly	●The AC itself will not be smelly, if it is smelly, it is because environment smell accumulated ● Solution: clean the filter
when heating, there is no wind at the beginning of starting unit	● It is to prevent cold air blowing, please be patient ● The unit has auto-restart function, when it is repowered again, unit will run according to the mode which is set before the power off. (Note: default is closed)

The unit has auto-restart function, when it is repowered again, unit will run as setting mode. Note: closed default

6. Electric components malfunction inspection

No	Component name	Inspection methods
1	Compressor	1. Using multi-meter ohm phase, there is correct resistance value among windings (single phase compressor refers to specification, three phase compressor resistance approximately equal), resistance of winding should be infinite.
2	Control board	1. 1Check if any connection part of PCB loosen or drop off, printed tinsel and components have any burn, fade, breaking off or aging phenomenon, all joints exist short circuit phenomenon etc. 2. Test the circuit board system in the term of voltage, pulse on, resistance variation, by using testing meter. 3. Judge the output and input is normal or not according to electric principle diagram
3	Contactor	1、Press the contactor by hand, the contactor reacts immediately and without question 2、The contacting point of contactor has no burn and melt phenomenon 3、The winding has resistance value below 1000, but cannot be nil or infinite
4	4-ways valve winding	The winding has resistance value below 1000, but cannot be nil or infinite
5	Capacitor	1、No expansion phenomenon apparently 2、Measure capacitor by using capacitor phase of multi-meter(if the multi-meter has no capacitor phase, use ohm phase, contact the two terminal of meter to two feet of capacitor, and quickly switch positive pole and negative pole and reconnect, the resistance should display from nil to infinite quickly. The resistance can’t change is always nil or infinite).
6	Sensor	1. Using multi-meter to measure resistance, find out temperature according to resistance table, the temperature should accord with sensor temperature. 2. Resistance cannot be nil or infinite
7	Motor	1、No burning trace apparently 2、Using multi-meter ohm phase, there is correct resistance value among windings (single phase compressor refers to specification, three phase compressor resistance approximately equal), resistance of winding should be infinite.

7. Sensor resistance reference table

7.1 Coil and environment temperature sensor 5K3470 resistance reference table

Coil and environment temperature sensor 5K3470					
Tx(℃)	Average (KΩ)	Tx(℃)	Average (KΩ)	Tx(℃)	Average (KΩ)
-20	72.99	21	5.854	61	1.421
-19	35.16	22	5.626	62	1.376
-18	33.43	23	5.408	63	1.334
-17	31.80	24	5.199	64	1.293
-16	30.26	25	5.000	65	1.254
-15	28.80	26	4.811	66	1.215
-14	27.42	27	4.630	67	1.179
-13	26.12	28	4.456	68	1.143
-12	24.88	29	4.291	69	1.109
-11	23.71	30	4.132	70	1.076
-10	22.60	31	3.980	71	1.044
-9	21.55	32	3.835	72	1.013
-8	20.56	33	3.695	73	0.9837
-7	19.61	34	3.562	74	0.9550
-6	18.72	35	3.434	75	0.9273
-5	17.87	72	3.311	76	0.9005
-4	17.06	37	3.193	77	0.8746
-3	16.30	38	3.081	78	0.8496
-2	15.57	39	2.972	79	0.8254
-1	14.88	40	2.869	80	0.8021
0	14.23	41	2.769	81	0.779
1	13.60	42	2.673	82	0.758
2	13.01	43	2.581	83	0.737
3	12.45	44	2.493	84	0.716
4	11.91	45	2.409	85	0.696
5	11.40	46	2.307	86	0.677
6	10.92	47	2.249	87	0.658
7	10.46	48	2.174	88	0.641
8	10.02	49	2.102	89	0.623
9	9.596	50	2.032	90	0.606
10	9.197	72	1.965	91	0.590
11	8.817	52	1.901	92	0.574
12	8.454	53	1.839	93	0.559
13	8.108	54	1.780	94	0.544
14	7.779	55	1.722	95	0.530
15	7.464	56	1.667	96	0.726
16	7.164	57	1.614	97	0.502
17	6.877	58	1.563	98	0.489

18	6.603	59	1.724	99	0.476
19	6.342	60	1.466	100	0.464
20	6.092				

7.2 Exhaust temperature sensor 6.339K3954

Exhaust temperature sensor R80：6.339KΩ±1%　B25/80=3954K±1%							
T [℃]	Rmin [KΩ]	T [℃]	Rmin [KΩ]	T [℃]	Rmin [KΩ]	T [℃]	Rmin [KΩ]
-20	440.7	20	60.42	60	12.32	100	3.377
-19	417.0	21	57.79	61	11.89	101	3.279
-18	394.7	22	55.29	62	11.48	102	3.184
-17	373.7	23	52.91	63	11.08	103	3.093
-16	353.9	24	50.65	64	10.70	104	3.003
-15	335.2	25	48.49	65	10.34	105	2.918
-14	317.7	26	46.44	66	9.992	106	2.836
-13	301.2	27	44.49	67	9.652	107	2.755
-12	285.6	28	42.64	68	9.328	108	2.678
-11	271.0	29	40.88	69	9.017	109	2.603
-10	257.1	30	39.19	70	8.717	110	2.530
-9	244.0	31	37.59	71	8.428	111	2.460
-8	231.7	32	36.06	72	8.152	112	2.392
-7	220.0	33	34.59	73	7.885	113	2.326
-6	209.0	34	33.21	74	7.628	114	2.262
-5	198.6	35	31.88	75	7.381	115	2.201
-4	188.7	36	30.60	76	7.143	116	2.141
-3	179.4	37	29.39	77	6.914	117	2.083
-2	170.7	38	28.23	78	6.693	118	2.026
-1	162.4	39	27.13	79	6.480	119	1.972
0	154.5	40	26.07	80	6.276	120	1.920
1	147.1	41	25.06	81	6.075	121	1.868
2	140.0	42	24.09	82	5.881	122	1.819
3	133.3	43	23.17	83	5.694	123	1.772
4	127.1	44	22.29	84	5.514	124	1.725
5	121.1	45	21.44	85	5.340	125	1.680
6	115.4	46	20.64	86	5.175	126	1.636
7	109.9	47	19.86	87	5.014	127	1.594
8	104.9	48	19.13	88	4.859	128	1.552
9	100.0	49	18.42	89	4.711	129	1.513
10	95.43	50	17.74	90	4.567	130	1.475
11	91.07	51	17.09	91	4.429	131	1.437
12	86.93	52	16.46	92	4.294	132	1.401
13	83.00	53	15.87	93	4.166	133	1.365
14	79.26	54	15.30	94	4.040	134	1.331
15	75.71	55	14.74	95	3.920	135	1.297

16	72.33	56	14.22	96	3.803	136	1.266
17	69.13	57	13.71	97	3.691	137	1.234
18	66.08	58	13.23	98	3.583	138	1.204
19	63.18	59	12.77	99	3.478	139	1.174

8. Compressor freezing oil brand and standard oil charge

Outdoor model	Brand	Compressor specification	Compressor Lubricating Oil brand	Oil charge (cm^3)
AL-C(H)12/4R1(U)	TOSHIBA	PA150X2C-4FT	VG74	480
AL-C(H)18/4R1(U)	TOSHIBA	PA215X2CS-4KU1	VG74	750
AL-C(H)24/4R1(U)	TOSHIBA	PA290X3CS-4MUI	VG74	950
AL-C(H)36/5R1(U)	SANYO	C-SBP130H38A	FV68S	1700
AL-C(H)42/5R1(U)	SANYO	C-SBP160H38A	FV68S	1700
AL-C(H)48/5R1(U)	SANYO	C-SBP170H38A	FV68S	1700
AL-C(H)60/5R1(U)	DAIKIN	JT170G-P8Y1	DAPHNE FVC68D	1500

9. System principle diagram

Cooling circle:
the Compressor inhales the low-temperature and low-pressure refrigerant vapor from the evaporator, and vapor be turned into high-temperature and high-pressure gas then enters into condenser, the high-temperature and high-pressure refrigerant gas and outdoor air make heat exchange in the condenser, the compressed vapor is then cooled by heat exchange with the outside air, so that the vapor condenses to be a high-temperature and high-pressure fluid, and then through capillary throttling to cooled, low pressure, then the liquid enters into the evaporator and two-phase of gas and liquid refrigerant in the evaporator completely evaporate, thereby cooling the indoor air; from evaporator the vapor is inhaled into compressor again, so it runs continuously cycle to cycle, cooled air is continuous supplied to the air-conditioned area though Duct by fan motor.

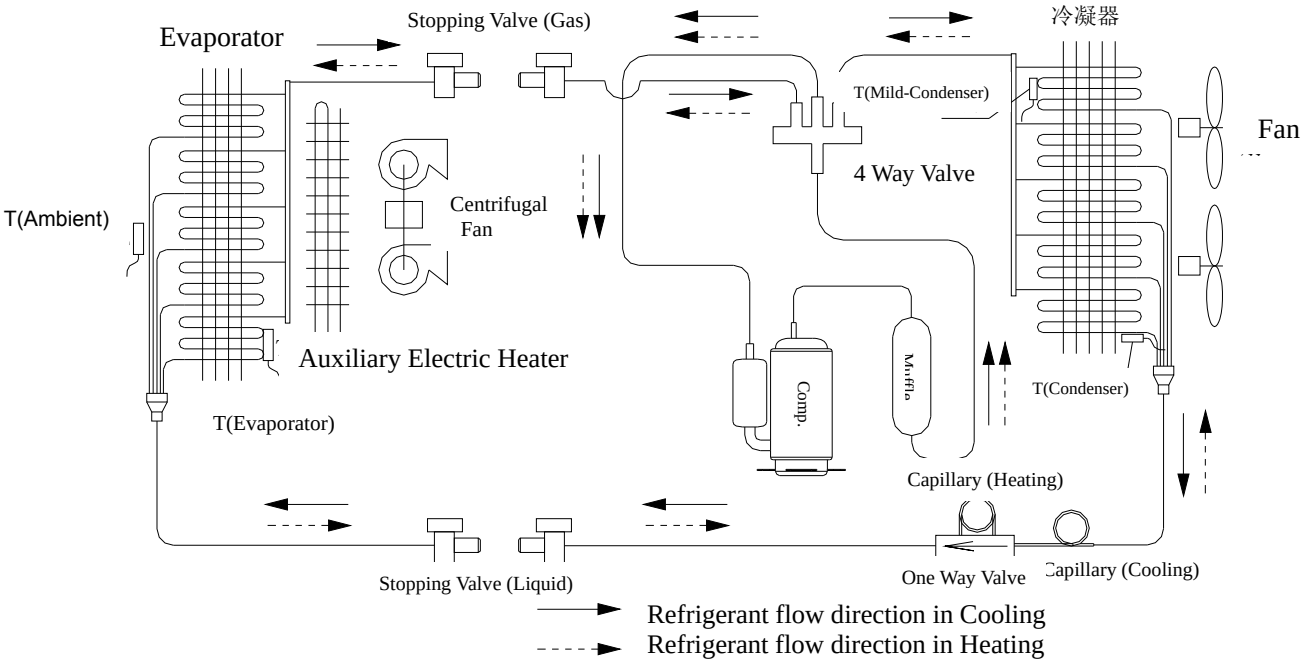
Heating cycle:
It is the contrary cycle of cooling cycle, at this moment the 4-way valve changes direction, and make refrigerant flow to direction changer, that is, the vapor discharged from the compressor enters into the indoor heat exchanger to condense, the condensation of refrigerant after the capillary expenditure, evaporates in the outdoor heat exchanger, and then inhaled by the compressor after evaporation, so it runs continuously periodically , the heated air is continuous supplied to the air-conditioned area though Duct by fan motor.

9.1 12000, 18000 Btu/h （power supply 220-240V）

CO4C-12H, CO4C-18H

COF-12H, COF-18H

COD-12H, COD-18H

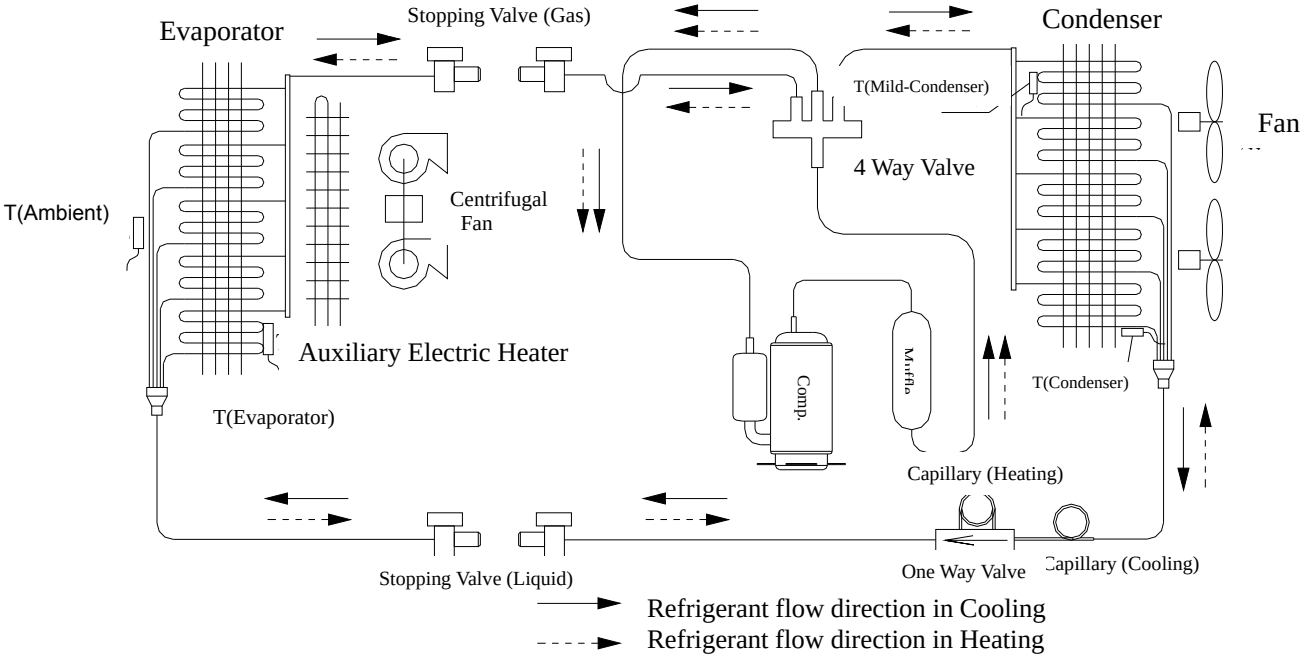


9.2 24000 Btu/h （power supply 220-240V）

CO4C-24H

COF-24H

COD-24H

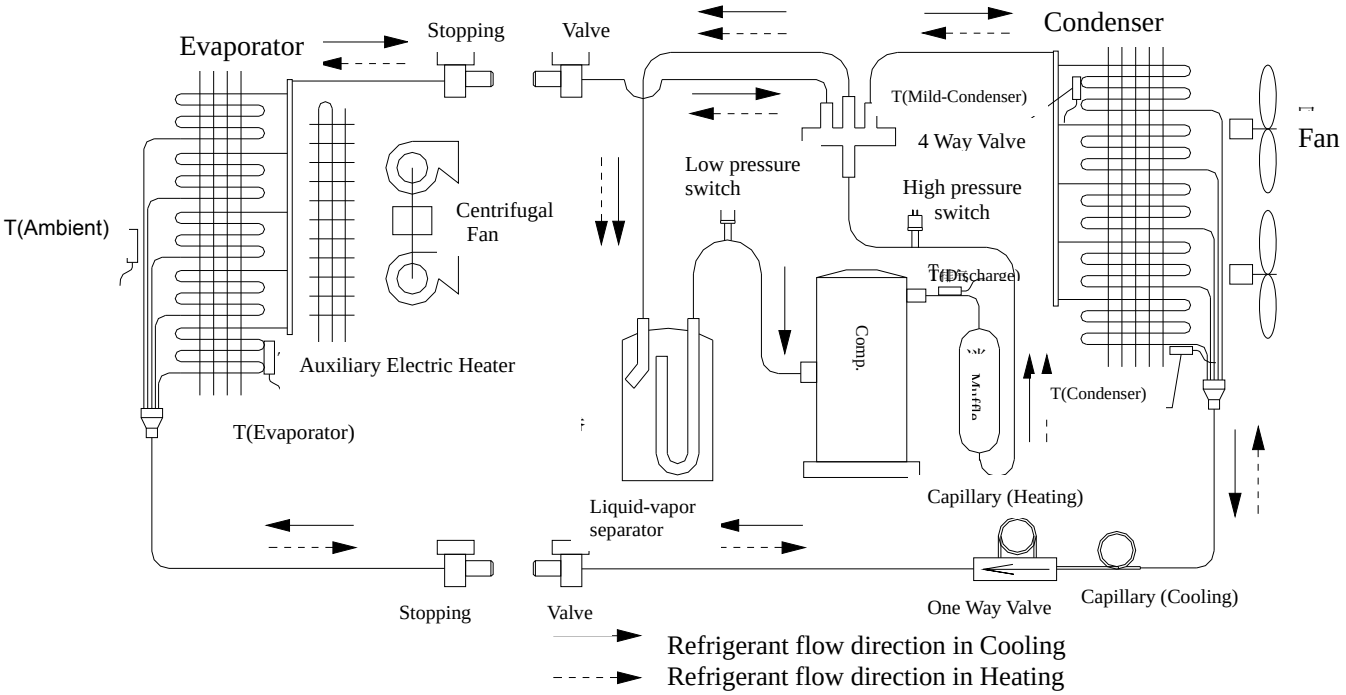


9.3 24000～60000Btu/h(Power supply 380-415V)

CO4C-36H, CO4C-42H, CO4C-48H, CO4C-60H

COF-36H, -, COF-48H, COF-60H

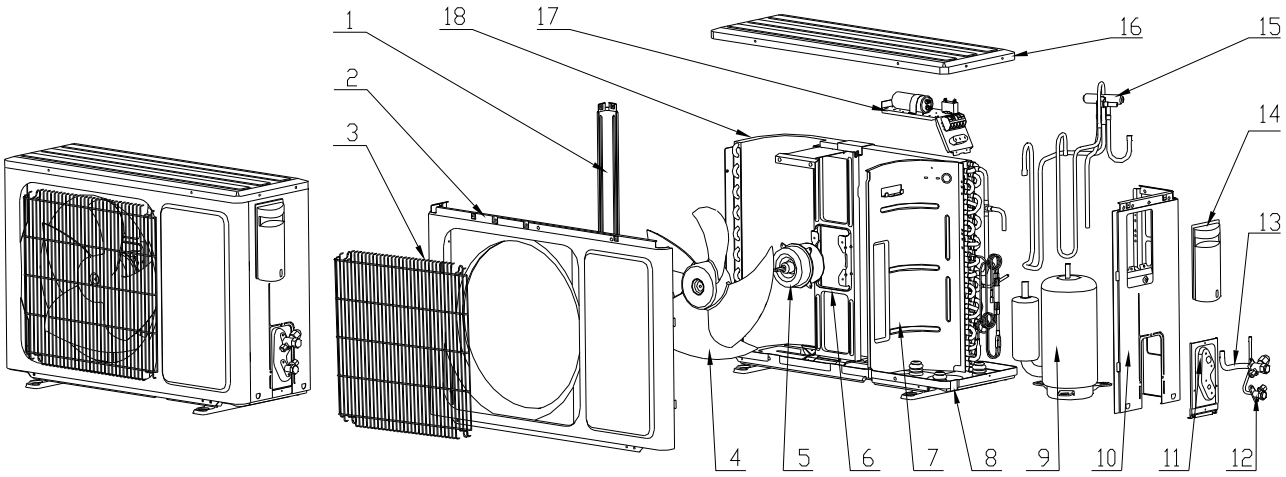
COD-36H, -, COD-48H, COD-60H



10. Explored Diagram and Spare Parts List

10.1 Outdoor units

10.1.1 COE-12H

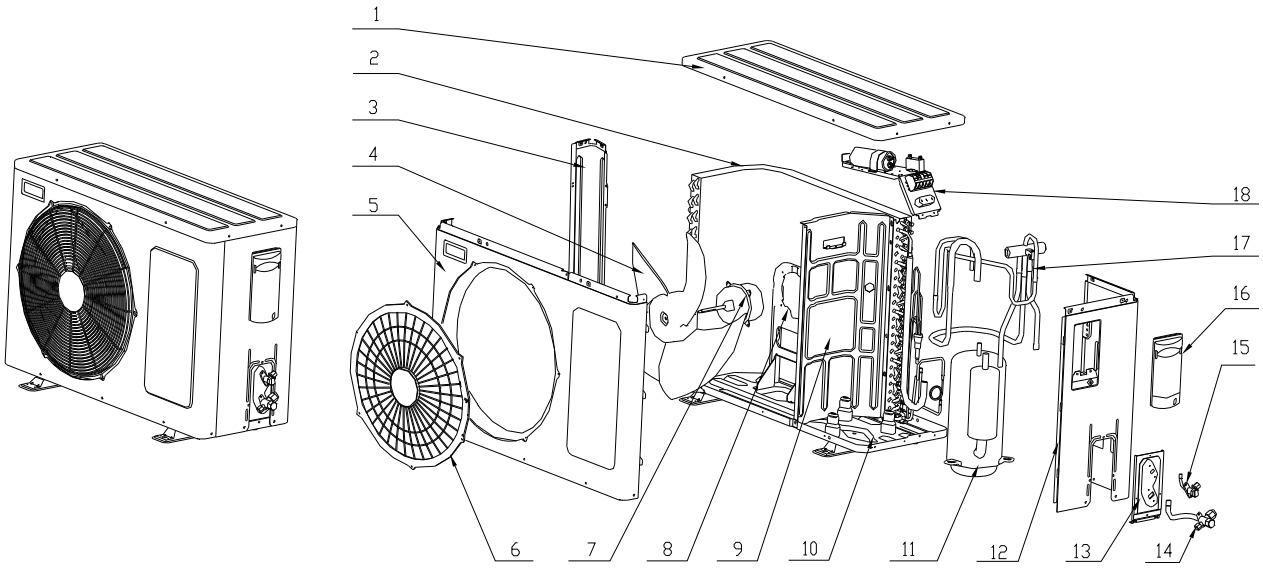


COE-12H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	左侧支撑板	Left-hand board	1	
2	面板	Big panel	1	
3	面板网罩（钢丝）	Net for big panel	1	
4	轴流风叶	Axial-flow wind leaves	1	Φ400
5	室外风扇电机	Outdoor Motor	1	

6	电机架	Motor bracket	1	
7	隔风立板	Wind-defending vertical board	1	
8	底盘组件	Chassis assembly	1	
9	压缩机	Compressor	1	PA150X2C-4FT
10	右侧板	Right-hand board	1	
11	阀板	Stop valve board	1	
12	截止阀组件 1/4in	Stop valve 1/4in	1	
13	截止阀组件 1/2in	Stop valve 1/2in	1	
14	电器盖板	Cover for electric components	1	
15	四通阀管路组件	Four-way valve assembly	1	
15.1	四通阀	Four-way valve loop	1	Not including Cooling
15.2	四通阀线圈	Four-way valve loop	1	
16	顶盖板	Top cover board	1	
17	电器架总成	Electric assembly	1	
17.1	电容 35μF	Capacitor for Compressor	1	35μF
17.2	电容 2.5μF	Capacitor for fan motor	1	2.5μF
17.3	端子板	Terminal board	1	
17.4	电器架	Electric components box	1	
17.5	传感器 0.5m	Sensor 0.5m	1	5K3470 EL2A
17.6	传感器 1m	Sensor 1m	1	5K3470 EL2A
18	冷凝器总成	condenser assembly	1	
18.1	冷凝器组件	condenser part	1	
18.2	制冷毛细管	Cooling capillary	1	
18.3	制热毛细管	Heating capillary	1	

10.1.2 COE-18H, COE-24H



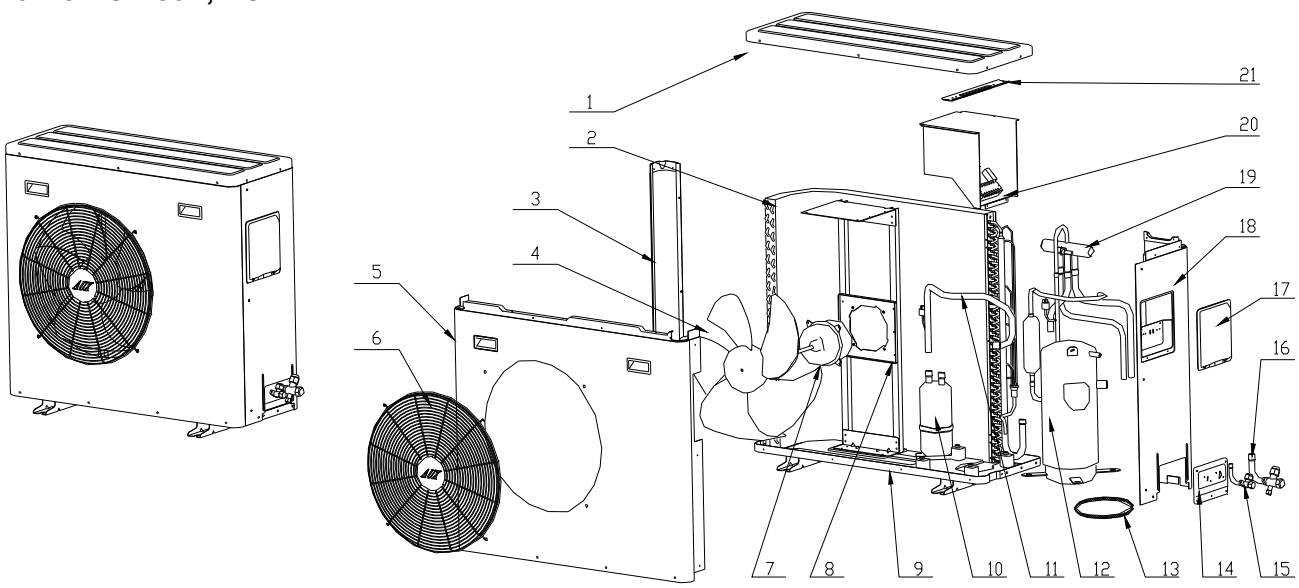
COE-18H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	顶盖板	Top cover board	1	
2	冷凝器总成	condenser assembly	1	
2.1	冷凝器组件	condenser part	1	
2.2	制冷毛细管	Cooling capillary	1	
2.3	制热毛细管	Heating capillary	1	
3	左侧板	Left-hand board	1	
4	轴流风叶	Axial-flow wind leaves	1	Φ420×150
5	面板	Big panel	1	
6	面板网罩	Net for big panel	1	
7	室外风扇电机	Outdoor Motor	1	
8	电机架组件	Motor bracket assembly	1	
9	隔风立板	Wind-defending vertical board	1	
10	底盘组件	Chassis assembly	1	
11	压缩机	Compressor	1	PA215X2CS-4KU1
12	右侧板	Right-hand board	1	
13	阀板	Stop valve board	1	
14	截止阀组件 1/4in	Stop valve 1/4in	1	
15	截止阀组件 1/2in	Stop valve 1/2in	1	
16	电器盖板	Cover for electric components	1	
17	四通阀管路组件	Four-way valve assembly	1	
17.1	四通阀	Four-way valve loop	1	Not including Cooling
17.2	四通阀线圈	Four-way valve loop	1	
18	电器架总成	Electric assembly	1	
18.1	电容 50μF	Capacitor for Compressor	1	50μF
18.2	电容 4μF	Capacitor for fan motor	1	4μF
18.3	端子板	Terminal board	1	
18.4	电器架	Electric components box	1	
18.5	传感器 0.5m	Sensor 0.5m	1	5K3470 EL2A
18.6	传感器 1m	Sensor 1m	1	5K3470 EL2A

COE-24H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	顶盖板	Top cover board	1	
2	冷凝器总成	condenser assembly	1	
2.1	冷凝器组件	condenser part	1	
2.2	制冷毛细管	Cooling capillary	1	
2.3	制热毛细管	Heating capillary	1	
3	左侧板	Left-hand board	1	
4	轴流风叶	Axial-flow wind leaves	1	Φ440
5	面板	Big panel	1	
6	面板网罩	Net for big panel	1	
7	室外风扇电机	Outdoor Motor	1	YDK85-6-50
8	电机架组件	Motor bracket assembly	1	
9	隔风立板	Wind-defending vertical board	1	
10	底盘组件	Chassis assembly	1	
11	压缩机	Compressor	1	PA290X3CS-4MUI
12	右侧板	Right-hand board	1	
13	阀板	Stop valve board	1	
14	截止阀组件 3/8in	Stop valve 3/8in	1	
15	截止阀组件 5/8in	Stop valve 5/8in	1	
16	电器盖板	Cover for electric components	1	
17	四通阀管路组件	Four-way valve assembly	1	
17.1	四通阀	Four-way valve loop	1	Not including Cooling
17.2	四通阀线圈	Four-way valve loop	1	
18	电器架总成	Electric assembly	1	
18.1	电容 50μF	Capacitor for Compressor	1	50μF
18.2	电容 4μF	Capacitor for fan motor	1	4μF
18.3	端子板	Terminal board	1	
18.4	电器架	Electric components box	1	
18.5	交流接触器	AC contactor	1	
18.5	传感器 0.5m	Sensor 0.5m	1	5K3470 EL2A
18.6	传感器 1m	Sensor 1m	1	5K3470 EL2A

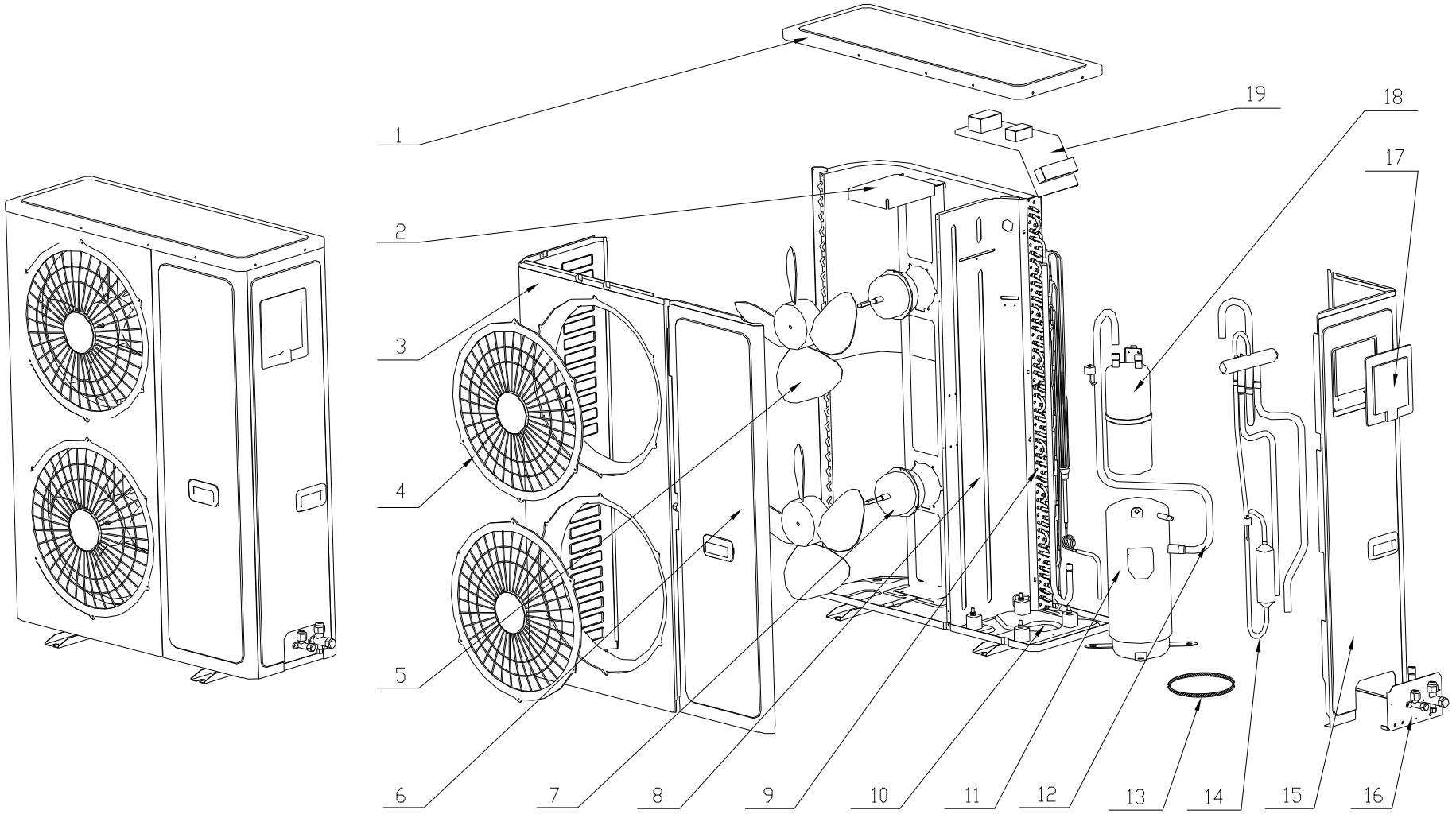
10.1.3 COE-36H, COE-42H



COE-36H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	顶盖板	Top cover board	1	
2	冷凝器总成	condenser assembly	1	
2.1	冷凝器组件	condenser part	1	
2.2	制冷毛细管	Cooling capillary	1	
2.3	制热毛细管	Heating capillary	1	
3	左侧板	Left-hand board	1	
4	轴流风叶	Axial-flow wind leaves	1	Φ490×130
5	面板	Big panel	1	
6	面板网罩	Net for big panel	1	
7	室外风扇电机	Outdoor Motor	1	YDK150-6C-420
8	电机架组件	Motor bracket assembly	1	
9	底盘组件	Chassis assembly	1	
10	气液分离器组件	Flash chamber assembly	1	
11	回气管组件	Return air pipe assembly	1	
11.1	低压开关	Low Pressure Switch	1	
12	压缩机	Compressor	1	C-SBP130H38A
13	油温加热带	Oil heat strap	1	
14	阀板	Stop valve board	1	
15	截止阀组件 3/8in	Stop valve 3/8in	1	
16	截止阀组件 5/8in	Stop valve 5/8in	1	
17	电器盖板	Cover for electric components	1	
18	右侧板	Right-hand board	1	
19	四通阀管路组件	Four-way valve assembly	1	
19.1	四通阀	Four-way valve loop	1	Not including Cooling-only units
19.2	四通阀线圈	Four-way valve loop	1	
19.3	消音器	Muffler	1	
19.4	高压开关	High Pressure Switch	1	
20	电器架总成	Electric assembly	1	
20.1	电容 6μF	Capacitor for fan motor	1	6μF
20.2	端子板	Terminal board	1	
20.3	电器架	Electric components box	1	
20.4	交流接触器	AC contactor	1	
20.5	控制板	PCB board	1	QRD-SW1C-HCE1
20.6	变压器	Transformer	1	
20.7	传感器 1.3m	Sensor 1.3m	1	5K3470 XH2
20.8	传感器 0.9m	Sensor0.9m	1	6.3K3954 XH2
20.9	传感器 0.9m	Sensor 0.9m	1	5K3470 XH2
21	电器架固定板	Electric components bracket	1	

10.1.4 COE-48H, COE-60H



COE-48H spare parts list

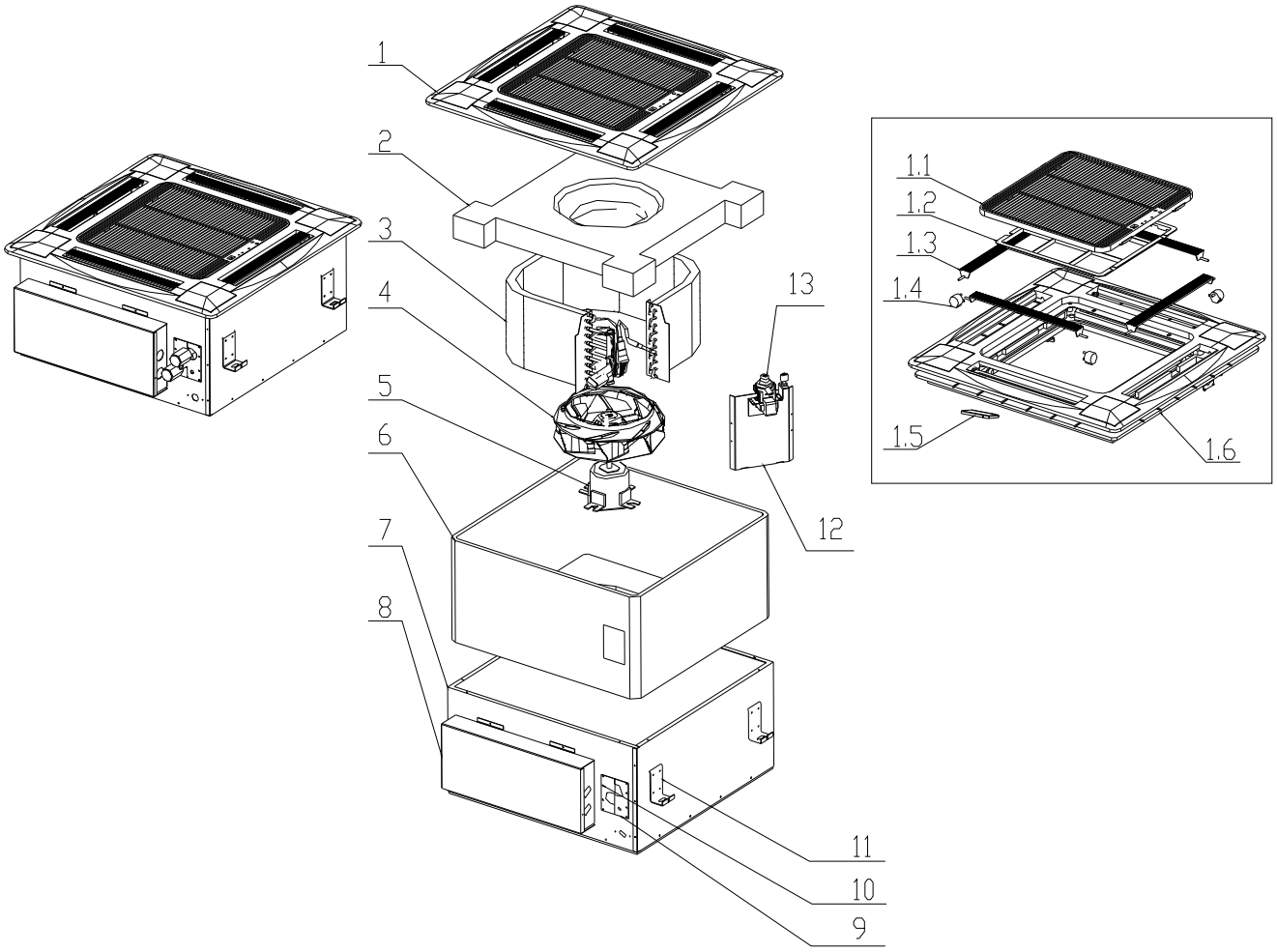
N0.	Chinese name	Part Name	Quantity	Remark
1	顶盖板	Top cover board	1	
2	电机架组件	Motor bracket assembly	1	
3	大面板	Big panel	1	
4	面板网罩	Net for big panel	2	
5	轴流风叶	Axial-flow wind leaves	2	
6	小面板	Small panel	1	
7	室外风扇电机	Outdoor Motor	2	YDK68-6-359
8	隔风立板	Wind-defending vertical board	1	
9	冷凝器总成	Condenser assembly	1	
9.1	上冷凝器组件	Upside condenser part	1	
9.2	下冷凝器组件	Underside condenser part	1	
9.3	制冷毛细管	Cooling capillary	1	
9.4	制热毛细管	Heating capillary	1	Not including Cooling-only units
10	底盘组件	Chassis assembly	1	
11	压缩机	Compressor	1	C-SBP170H38A
12	回气管组件	Return air pipe assembly	1	
12.1	低压开关	Low Pressure Switch	1	
13	油温加热带	Oil heat strap	1	
14	四通阀管路组件	Four-way valve assembly	1	
14.1	高压开关	High Pressure Switch	1	
14.2	四通阀	Four-way valve	1	Not including Cooling-only units
14.3	四通阀线圈	Four-way valve loop	1	
14.4	消音器	Muffler	1	
15	右侧板	Right-hand board	1	
16	阀板组件	Stop valve assembly	1	
16.1	截止阀3/8in	Stop valve 3/8in	1	
16.2	截止阀3/4in	Stop valve 3/4in	1	
17	电器盖板	Cover for electric components	1	
18	气液分离器	Flash chamber	1	
19	电器总成	Electric assembly	1	
19.1	控制板	PCB board	1	
19.2	交流接触器	AC contactor	1	
19.3	电容　3μF	Capacitor for fan motor	1	3μF
19.4	端子板	Terminal board	1	
19.5	变压器	transformer	1	
19.6	传感器 1.3m	Sensor 1.3m	1	5K3470 XH2
19.7	传感器 0.9m	Sensor0.9m	1	6.3K3954 XH2
19.8	传感器 0.9m	Sensor 0.9m	1	5K3470 XH2
19.9	电器架	Electric components box	1	

COE-60H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	顶盖板	Top cover board	1	
2	电机架组件	Motor bracket assembly	1	
3	大面板	Big panel	1	
4	面板网罩	Net for big panel	2	
5	轴流风叶	Axial-flow wind leaves	2	
6	小面板	Small panel	1	
7	室外风扇电机	Outdoor Motor	2	YDK68-6-359
8	隔风立板	Wind-defending vertical board	1	
9	冷凝器总成	Condenser assembly	1	
9.1	上冷凝器组件	Upside condenser part	1	
9.2	下冷凝器组件	Underside condenser part	1	
9.3	制冷毛细管	Cooling capillary	1	
9.4	制热毛细管	Heating capillary	1	Not including Cooling-only units
10	底盘组件	Chassis assembly	1	
11	压缩机	Compressor	1	JT170G-P8Y1
12	回气管组件	Return air pipe assembly	1	
12.1	低压开关	Low Pressure Switch	1	
13	油温加热带	Oil heat strap	1	
14	四通阀管路组件	Four-way valve assembly	1	
14.1	高压开关	High Pressure Switch	1	
14.2	四通阀	Four-way valve	1	Not including Cooling-only units
14.3	四通阀线圈	Four-way valve loop	1	
14.4	消音器	Muffler	1	
15	右侧板	Right-hand board	1	
16	阀板组件	Stop valve assembly	1	
16.1	截止阀3/8in	Stop valve 3/8in	1	
16.2	截止阀3/4in	Stop valve 3/4in	1	
17	电器盖板	Cover for electric components	1	
18	气液分离器	Flash chamber	1	
19	电器总成	Electric assembly	1	
19.1	控制板	PCB board	1	
19.2	交流接触器	AC contactor	1	
19.3	电容 3μF	Capacitor for fan motor	1	3μF
19.4	端子板	Terminal board	1	
19.5	变压器	transformer	1	
19.6	传感器 1.3m	Sensor 1.3m	1	5K3470 XH2
19.7	传感器 0.9m	Sensor0.9m	1	6.3K3954 XH2
19.8	传感器 0.9m	Sensor 0.9m	1	5K3470 XH2
19.9	电器架	Electric components box	1	

10.2 Four-way Cassette

10.2.1 CO4C-12H, CO4C-18H



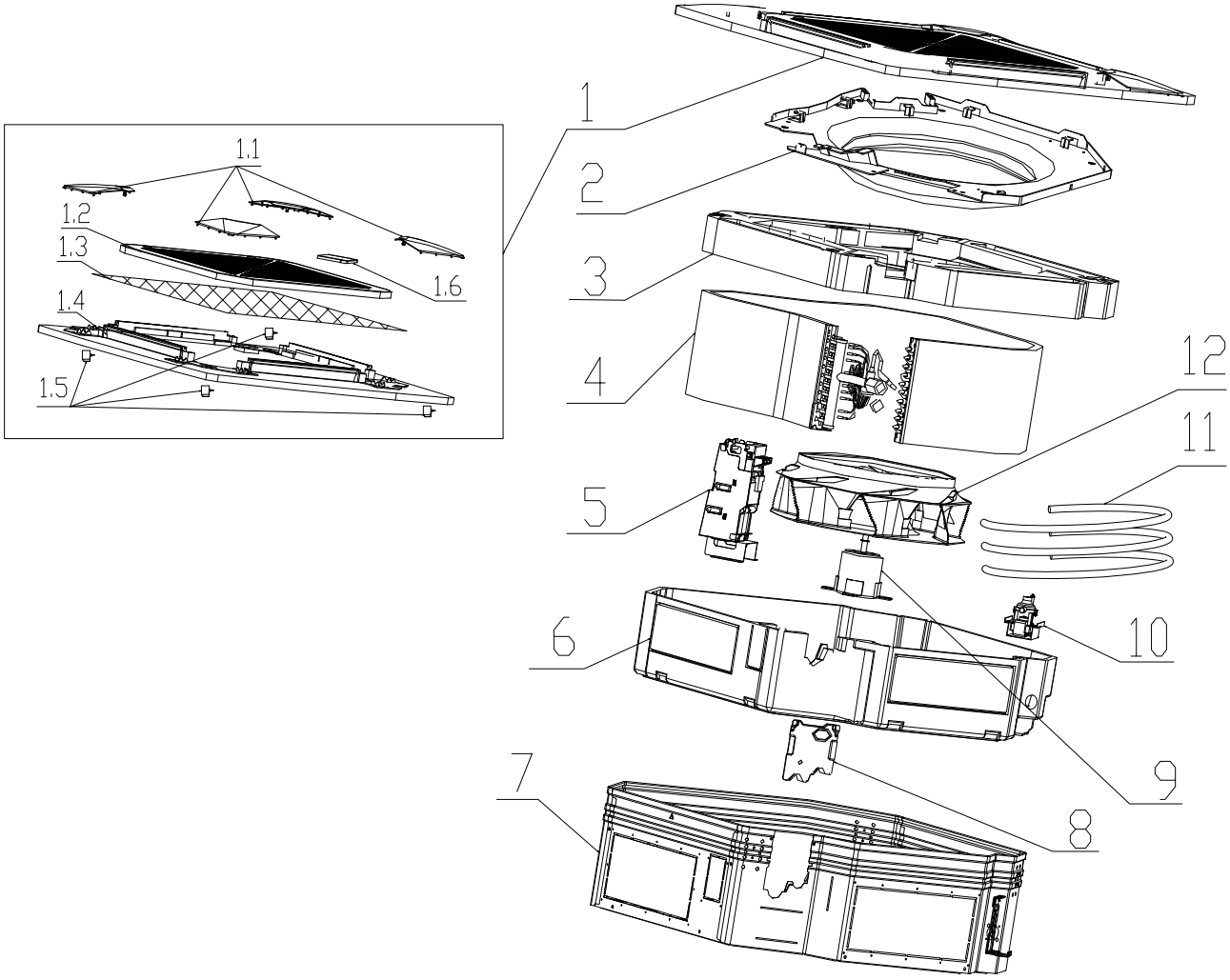
CO4C-12H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	面板 MB07	Panel MB06	1	
1.1	回风格栅组件	Return air grille assembly	1	
1.2	空气过滤网	Air filter net	1	
1.3	导风叶片	guide wind vane	4	
1.4	步进电机	Step motor	4	
1.5	显示灯板	Display board	1	Q-B-HWE1
1.6	面板围框组件	Panel frame assembly	1	
2	接水盘组件	Water pan	1	
3	蒸发器总成	Evaporator assembly	1	
3.1	蒸发器组件	Evaporator part	1	
3.2	蒸发器出气管组件	Evaporator outlet tube assembly	1	
3.3	蒸发器进液管组件	Evaporator inlet tube assembly	1	
4	风轮	Wind wheel	1	Φ283×166
5	电机	Fan motor	1	YDK10-6 Q
6	风道	Air passage	1	
7	底盘总成	Chassis assembly	1	
7.1	底盘组件	Chassis	1	
7.2	围板 A	Boarding A	1	
7.3	围板 B	Boarding B	1	
8	电控盒总成	Electric assembly	1	
8.1	控制板	PCB board	1	QRDL-3F-HCE1
8.2	变压器 QC2-E1	Transformer	1	
8.3	电容 1.5μF	capacitance	1	1.5μF
8.4	传感器 5K3470 1	Sensor 5K3470 1	1	
8.5	传感器 5K3470 2	Sensor 5K3470 2	1	
8.6	端子板 7 位	Terminal board	1	
8.7	电控盒	Electric components box	1	
8.8	电控盒盖	Cover for electric components	1	
9	阀板 A	Valve board A	1	
10	阀板 B	Valve board B	1	
11	挂钩	Pothook	4	
12	蒸发器连接板	Evaporator connect board	1	
13	排水泵	Drain pump	1	PLD-700
13.1	浮子开关	Bodder switch	1	
13.2	排水泵支架	Drain pump support	1	

CO4C-18H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
The other spare parts are same as CO4C-24H except electric box assembly, evaporator assembly and fan motor				
3	蒸发器总成	Evaporator assembly	1	
3.1	蒸发器组件	Evaporator part	1	
3.2	蒸发器出气管组件	Evaporator outlet tube assembly	1	
3.3	蒸发器进液管组件	Evaporator inlet tube assembly	1	
5	电机	Fan motor	1	YDK25-6-50 Q
8	电控盒总成	Electric assembly	1	
8.1	控制板	PCB board	1	QRDL-3F-HCE1
8.2	变压器 QC2-E1	Transformer	1	
8.3	电容 2.5μF	capacitance	1	2.5μF
8.4	传感器 5K3470 1	Sensor 5K3470 1	1	
8.5	传感器 5K3470 2	Sensor 5K3470 2	1	
8.6	端子板 7 位	Terminal board	1	
8.7	电控盒	Electric components box	1	
8.8	电控盒盖	Cover for electric components	1	

10.2.2 CO4C-24H、CO4C-36H、-、CO4C-48H



CO4C-24H spare part list

N0.	Chinese name	Part Name	Quantity	Remark
1	面板 MB06	Panel MB06	1	
1.1	面板边角盖板	Panel cover board	2	
1.2	回风格栅组件	Return air grille assembly	2	Not including Cooling-only units
1.3	空气过滤网	Air filter net	1	
1.4	面板围框组件	Panel frame assembly	1	
1.4.1	面板围框	Panel frame	1	
1.4.2	导风叶片	guide wind vane	4	
1.5	步进电机	Step motor	1	35BYJ46-QC120
1.6	显示灯板	Display board	1	Q-B-HWE1
2	导风圈总成	Guide wind loop assembly	1	
2.1	导风圈	Guide wind loop	1	
2.2	导风圈配板	Guide wind board	1	
2.3	端子板 7 位	Terminal board	1	
3	接水盘组件	Water pan	1	
4	蒸发器总成	Evaporator assembly	1	
4.1	蒸发器组件	Evaporator part	1	
4.2	蒸发器出气管组件	Evaporator outlet tube assembly	1	
4.3	蒸发器进液管组件	Evaporator inlet tube assembly	1	
5	电控盒总成	Electric assembly	1	
5.1	控制板	PCB board	1	QRDL-3F-HCE1
5.2	变压器 QC2-E1	Transformer	1	
5.3	电容 3μF	capacitance	1	3μF
5.4	传感器 5K3470 1	Sensor 5K3470 1	1	
5.5	传感器 5K3470 2	Sensor 5K3470 2	1	
6	底盘泡沫组件	Chassis foam assembly	1	
7	底盘组件	Chassis assembly	1	
8	配管盖板	Piping cover board	1	
9	电机	Fan motor	1	YDK30-6 Q
10	排水泵总成	Drain pump assembly	1	
10.1	排水泵支架	Drain pump support	1	
10.2	水泵减振橡胶	Pump damping rubber	3	
10.3	排水泵	Drain pump	1	PLD-1200
10.4	排水软管(水泵用)	Drain tube(Drain pump)	1	
10.5	排水接管	Drain tube	1	
10.6	浮子开关 GMF-31	Bodder switch	1	
11	电加热组件	Heater assembly	1	Not including Cooling-only units
11.1	热熔断器 RH-100-15	Thermal cut-off	1	
11.2	温控器 KSD-A80-16	Temperature controller	1	
11.3	电加热管 0.83kW	Heater	2	
12	风轮	Wind wheel	1	Φ462×147(3P)

CO4C-36H spare part list

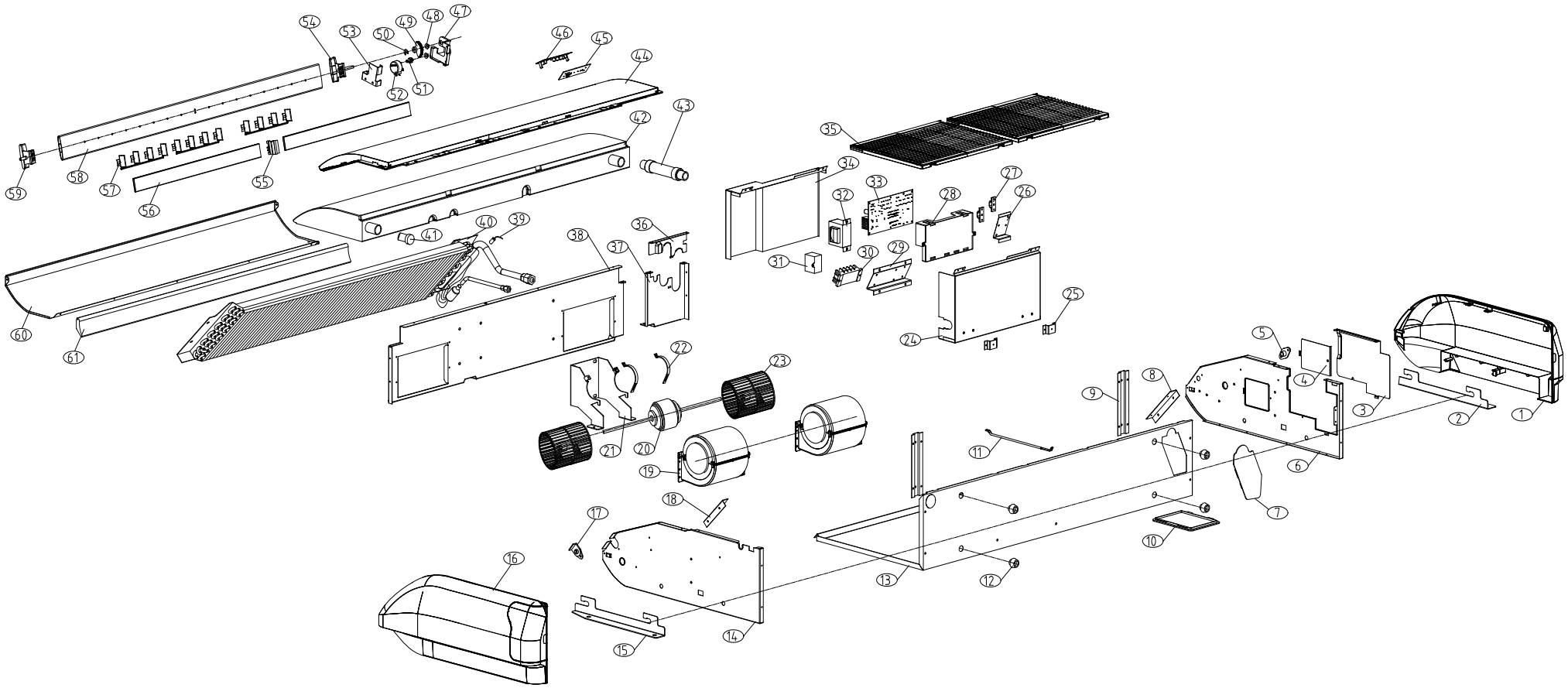
N0.	Chinese name	Part Name	Quantity	Remark
1	面板 MB06	Panel MB06	1	
1.1	面板边角盖板	Panel cover board	2	
1.2	回风格栅组件	Return air grille assembly	2	Not including Cooling-only units
1.3	空气过滤网	Air filter net	1	
1.4	面板围框组件	Panel frame assembly	1	
1.4.1	面板围框	Panel frame	1	
1.4.2	导风叶片	guide wind vane	4	
1.5	步进电机	Step motor	1	35BYJ46-QC120
1.6	显示灯板	Display board	1	Q-B-HWE1
2	导风圈总成	Guide wind loop assembly	1	
2.1	导风圈	Guide wind loop	1	
2.2	导风圈配板	Guide wind board	1	
2.3	端子板 7 位	Terminal board	1	
3	接水盘组件	Water pan	1	
4	蒸发器总成	Evaporator assembly	1	
4.1	蒸发器组件	Evaporator part	1	
4.2	蒸发器出气管组件	Evaporator outlet tube assembly	1	
4.3	蒸发器进液管组件	Evaporator inlet tube assembly	1	
5	电控盒总成	Electric assembly	1	
5.1	控制板	PCB board	1	QRD-SN3F-HCE1
5.2	变压器 QC2-E1	Transformer	1	
5.3	电容 4μF	capacitance	1	4μF
5.4	传感器 5K3470 1	Sensor 5K3470 1	1	
5.5	传感器 5K3470 2	Sensor 5K3470 2	1	
6	底盘泡沫组件	Chassis foam assembly	1	
7	底盘组件	Chassis assembly	1	
8	配管盖板	Piping cover board	1	
9	电机	Fan motor	1	YDK45-6 Q
10	排水泵总成	Drain pump assembly	1	
10.1	排水泵支架	Drain pump support	1	
10.2	水泵减振橡胶	Pump damping rubber	3	
10.3	排水泵	Drain pump	1	PLD-1200
10.4	排水软管(水泵用)	Drain tube(Drain pump)	1	
10.5	排水接管	Drain tube	1	
10.6	浮子开关 GMF-31	Bodder switch	1	
11	电加热组件	Heater assembly	1	Not including Cooling-only units
11.1	热熔断器 RH-100-15	Thermal cut-off	1	
11.2	温控器 KSD-A80-16	Temperature controller	1	
11.3	电加热管 0.83kW	Heater	2	
12	风轮	Wind wheel	1	Φ462×147(3P)

-、CO4C-48H spare part list

N0.	Chinese name	Part Name	Quantity	Remark
1	面板 MB06	Panel MB06	1	
1.1	面板边角盖板	Panel cover board	2	
1.2	回风格栅组件	Return air grille assembly	2	Not including Cooling-only units
1.3	空气过滤网	Air filter net	1	
1.4	面板围框组件	Panel frame assembly	1	
1.4.1	面板围框	Panel frame	1	
1.4.2	导风叶片	guide wind vane	4	
1.5	步进电机	Step motor	1	35BYJ46-QC120
1.6	显示灯板	Display board	1	Q-B-HWE1
2	导风圈总成	Guide wind loop assembly	1	
2.1	导风圈	Guide wind loop	1	
2.2	导风圈配板	Guide wind board	1	
2.3	端子板 7 位	Terminal board	1	
3	接水盘组件	Water pan	1	
4	蒸发器总成	Evaporator assembly	1	
4.1	蒸发器组件	Evaporator part	1	
4.2	蒸发器出气管组件	Evaporator outlet tube assembly	1	
4.3	蒸发器进液管组件	Evaporator inlet tube assembly	1	
5	电控盒总成	Electric assembly	1	
5.1	控制板	PCB board	1	QRD-SN3F-HCE1
5.2	变压器 QC2-E1	Transformer	1	
5.3	电容 6μF	capacitance	1	6μF
5.4	传感器 5K3470 1	Sensor 5K3470 1	1	
5.5	传感器 5K3470 2	Sensor 5K3470 2	1	
6	底盘泡沫组件	Chassis foam assembly	1	
7	底盘组件	Chassis assembly	1	
8	配管盖板	Piping cover board	1	
9	电机	Fan motor	1	YDK80-6-50 Q
10	排水泵总成	Drain pump assembly	1	
10.1	排水泵支架	Drain pump support	1	
10.2	水泵减振橡胶	Pump damping rubber	3	
10.3	排水泵	Drain pump	1	PLD-1200
10.4	排水软管(水泵用)	Drain tube(Drain pump)	1	
10.5	排水接管	Drain tube	1	
10.6	浮子开关 GMF-31	Bodder switch	1	
11	电加热组件	Heater assembly	1	Not including Cooling-only units
11.1	热熔断器 RH-100-15	Thermal cut-off	1	
11.2	温控器 KSD-A80-16	Temperature controller	1	
11.3	电加热管 0.83kW	Heater	3	
12	风轮	Wind wheel	1	Φ462×147(3P)

10.3 Ceiling & Floor

10.3.1 COF-12H, COF-18H

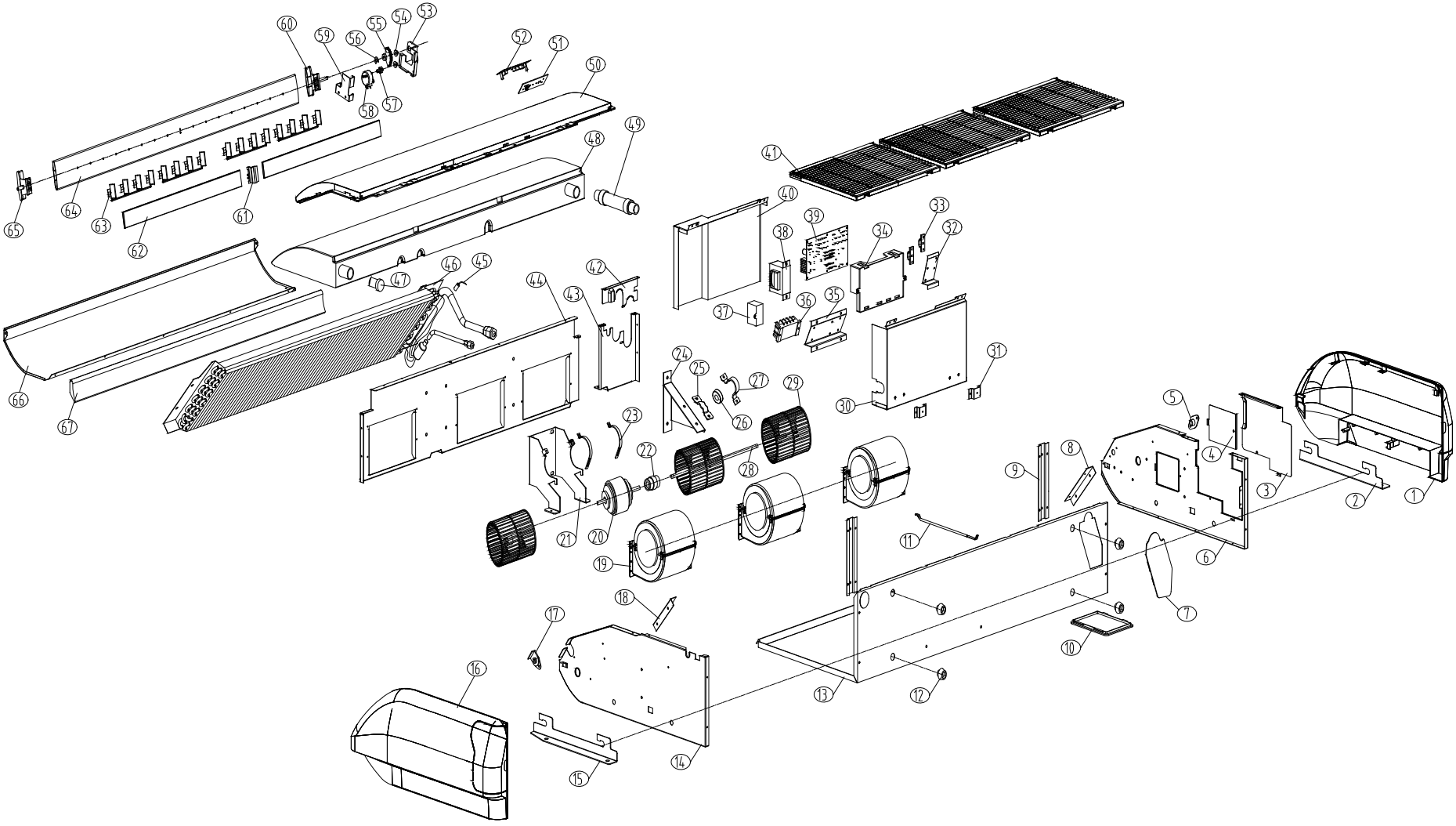


COF-12H, COF-18H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	DR-35N/C2 右侧面板	Right panel	1	
2	DR-35N/C2 右吊板	Right suspend plate	1	
3	DR-35N/C2 右侧盖 B	Right cover B	1	
4	DR-35N/C2 右侧盖 A	Right cover A	1	
5	DR-35N/C2 导风栅右固定座	Base of right-swing	1	
6、8、53	DR-35N/C2 右侧支架板焊接组件	Bracket of right-hand board assembly	1	
7	DR-35N/C2 底盘管路罩	Chassis pipe cover	1	
10	DR-35N/C2 后板管路罩	Back board pipe cover	1	
11	DR-35N/C2 面板支撑条	Panel reinforced plate	1	
12	DR-35N/C2 橡胶减震垫	Rubber shock absorption	4	
9、13	DR-120N/C2 底架焊接组件	chassis assembly	1	
14、18	DR-35N/C2 左侧支架板焊接组件	Bracket of left-hand board assembly	1	
15	DR-35N/C2 左吊板	Left suspend plate	1	
16	DR-35N/C2 左侧面板	Left panel	1	
17	DR-35N/C2 导风栅左固定座	Base of left-swing	1	
19、23	离心风轮	Centrifugal fan motor assembly	2	
20	风扇电机 YSK15-6D	Fan motor	1	COF-12H
	风扇电机 YSK35-4D	Fan motor	1	COF-18H
21	DR-35N/C2 电机架	Motor bracket	1	
22	DR-35N/C2 电机抱攀	Motor reinforced plate	2	
24～29	DR-35N/C2 电控盒焊接组件	Electric components box assembly	1	
30	端子板	Terminal board	1	
31	电容	Capacitor	1	
32	变压器	Transformer	1	
33	控制板	PCB board	1	QRDL-3F-HCE1
34	DR-35N/C2 电控盒盖	Cover for electric components	1	
35	DR-35N/C2 回风栅组件	Air-inlet grill assembly	2	

N0.	Chinese name	Part Name	Quantity	Remark
35	DR-35N/C2 回风栅组件	Air-inlet grill assembly	2	
35.1	回风格栅 300×380 乳白	Air-inlet grill(white)	2	
35.2	DR-35N/C2 回风栅挂扣	Air-inlet grill buckle 1	4	
35.3	DR-35N/C2 回风格栅固定滑扣	Air-inlet grill buckle 2	4	
35.4	DR-35N/C2 回风栅螺孔盖帽	Cover for Air-inlet grill bolt	2	
35.5	DR-35N/C2 回风过滤网	filtration net	2	
36	DR-35N/C2 前阀板	Valve board 1	1	
37	DR-35N/C2 后阀板	Valve board 2	1	
38	DR-35N/C2 涡壳固定板	partition board	1	
39	传感器	Sensor	1	
40	DR-36N/C3 蒸发器组件	Evaporator assembly	1	COF-12H
	DR-51N/C3 蒸发器组件	Evaporator assembly	1	COF-18H
41	接水盘出水口橡胶塞	Rubber plug of Draining tray	1	
42	接水盘 DR-35N/C2 L1×L2	Draining tray	1	
43	排水管	Plastic water pipe	1	
44	DR-35N/C2 前面板	Panel	1	
45	显示灯板	Display board	1	
46	DR-35N/C2 显示灯盖板	Display board cover	1	
47	DR-35N/C2 步进电机罩	Step motor cover	1	
48	DR-35N/C2 导风栅轴套	Bearing cover	2	
49	DR-35N/C2 从动齿轮	gear wheel 1	1	
50	挡圈 GB/T15049.8 Φ8	Spring	2	
51	DR-35N/C2 电机齿轮	gear wheel 2	1	
52	步进电机	step motor	1	
54～59	DR-35N/C2 导风栅组件	Air Guide Louver assembly	1	
60	DR-35N/C2 后面板	Back panel	1	
61	橡塑密封条	Rubber airproof bar	1	

10.3.2 COF-24H, COF-36H



COF-24H spare parts list

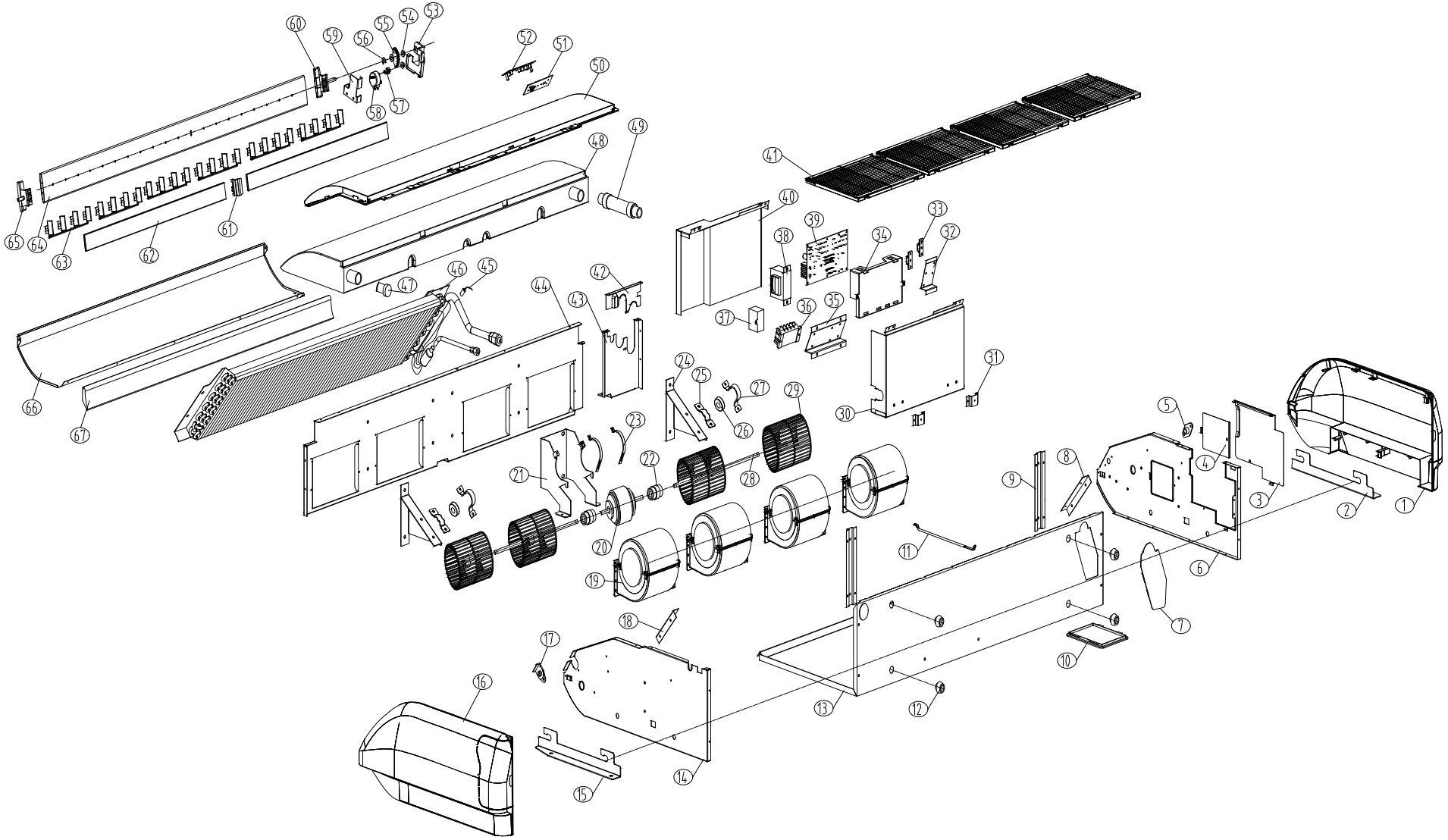
N0.	Chinese name	Part Name	Quantity	Remark
1	DR-35N/C2 右侧面板	Right panel	1	
2	DR-35N/C2 右吊板	Right suspend plate	1	
3	DR-35N/C2 右侧盖 B	Right cover B	1	
4	DR-35N/C2 右侧盖 A	Right cover A	1	
5	DR-35N/C2 导风栅右固定座	Base of right-swing	1	
6、8、59	DR-35N/C2 右侧支架板焊接组件	Bracket of right-hand board assembly	1	
7	DR-35N/C2 底盘管路罩	Chassis pipe cover	1	
10	DR-35N/C2 后板管路罩	Back board pipe cover	1	
11	DR-35N/C2 面板支撑条	Panel reinforced plate	1	
12	DR-35N/C2 橡胶减震垫	Rubber shock absorption	4	
9、13	DR-120N/C2 底架焊接组件	chassis assembly	1	
14、18	DR-35N/C2 左侧支架板焊接组件	Bracket of left-hand board assembly	1	
15	DR-35N/C2 左吊板	Left suspend plate	1	
16	DR-35N/C2 左侧面板	Left panel	1	
17	DR-35N/C2 导风栅左固定座	Base of left-swing	1	
19、29	离心风轮	Centrifugal fan motor assembly	3	
20	风扇电机	Fan motor	1	YSK60-4D
21	DR-35N/C2 电机架	Motor bracket	1	
22	联轴器 Φ15	Connector	1	
23	DR-35N/C2 电机抱攀	Motor reinforced plate	2	
24	DR-35N/C2 轴承支撑架	Motor support	1	
25	DR-35N/C2 轴承座	Bearing base	1	
26	6202 轴承	Bearing	1	
27	DR-35N/C2 轴承上盖	Bearing top cover	1	
28	加长轴 Φ15	Motor axes	1	
30～35	DR-35N/C2 电控盒焊接组件	Electric components box assembly	1	
36	端子板 7 位	Terminal board	1	
37	电容	Capacitor	1	

N0.	Chinese name	Part Name	Quantity	Remark
38	变压器	Transformer	1	
39	控制板 QRD-3F-HCE4	PCB board	1	
40	DR-35N/C2 电控盒盖	Cover for electric components	1	
41	DR-35N/C2 回风栅组件	Air-inlet grill assembly	3	
	回风格栅 300×380(DR) 乳白	Air-inlet grill(white)	3	
	DR-35N/C2 回风栅挂扣	Air-inlet grill buckle 1	6	
	DR-35N/C2 回风格栅固定滑扣	Air-inlet grill buckle 2	6	
	DR-35N/C2 回风栅螺孔盖帽	Cover for Air-inlet grill bolt	3	
	DR-35N/C2 回风过滤网	filtration net	3	
42	DR-70N/C2 前阀板	Valve board 1	1	
43	DR-70N/C2 后阀板	Valve board 2	1	
44	DR-70N/C2 涡壳固定板	partition board	1	
45	盘管传感器	Sensor	1	
46	蒸发器组件	Evaporator assembly	1	
47	DR-35N/C2 接水盘出水口橡胶塞	Rubber plug of Draining tray	1	
48	接水盘 DR-70N/C2 L1×L2	Draining tray	1	
49	排水管	Plastic water pipe	1	
50	DR-70N/C2 前面板	Panel	1	
51	显示灯板	Display board	1	
52	DR-35N/C2 显示灯盖板	Display board cover	1	
53	DR-35N/C2 步进电机罩	Step motor cover	1	
54	DR-35N/C2 导风栅轴套	Bearing cover	2	
55	DR-35N/C2 从动齿轮	gear wheel 1	1	
56	挡圈 GB/T15049.8 Φ8	Spring	2	
57	DR-35N/C2 电机齿轮	gear wheel 2	1	
58	步进电机	step motor	1	
60～65	ALCF-H24B2 导风栅组件	Air Guide Louver assembly	1	
66	DR-70N/C2 后面板	Back panel	1	
67	橡塑密封条	Rubber airproof bar	1	

COF-36H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
The other spare parts are same as COF-24H except Motor, PCB board and terminal board				
20	风扇电机	Fan motor	1	YSK75-4 D
36	端子板 5 位	Terminal board	1	
39	控制板	PCB board	1	QRD-SN3F-HCE1

10.3.3 -, COF-48H, COF-60H



-, COF-48H, COF-60H, spare parts list

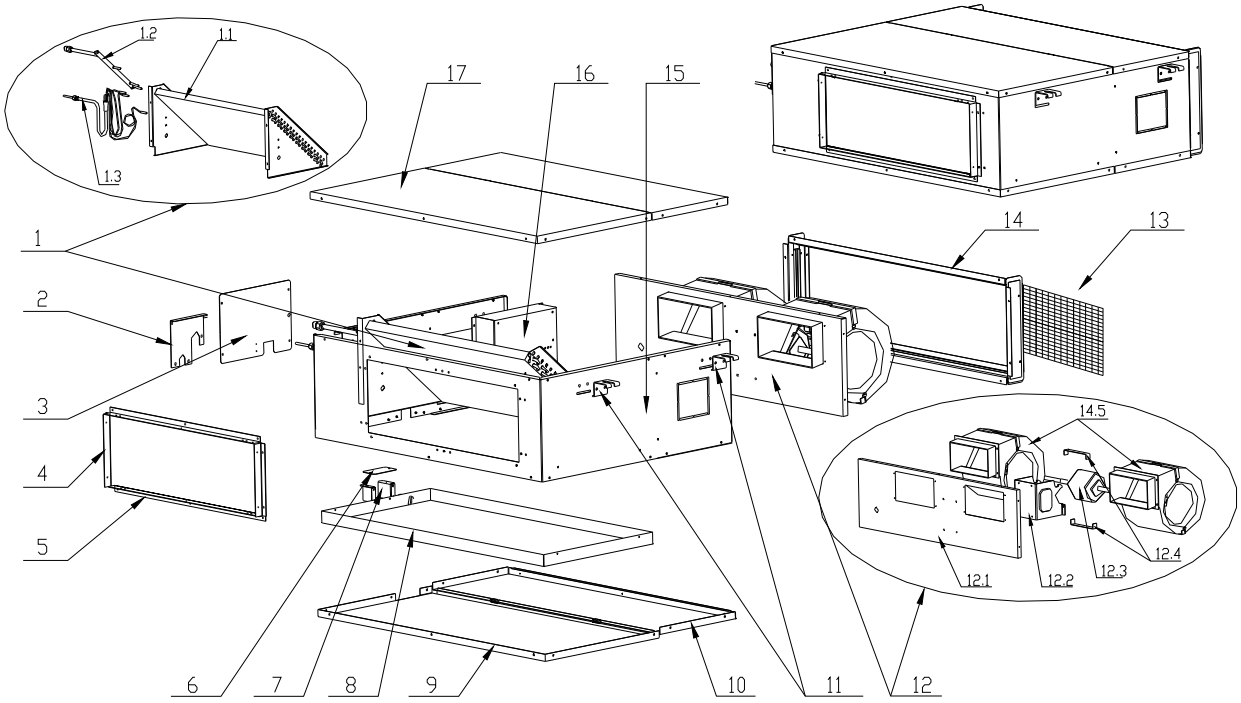
N0.	Chinese name	Part Name	Quantity	Remark
1	DR-35N/C2 右侧面板	Right panel	1	
2	DR-35N/C2 右吊板	Right suspend plate	1	
3	DR-35N/C2 右侧盖 B	Right cover B	1	
4	DR-35N/C2 右侧盖 A	Right cover A	1	
5	DR-35N/C2 导风栅右固定座	Base of right-swing	1	
6、8、59	DR-35N/C2 右侧支架板焊接组件	Bracket of right-hand board assembly	1	
7	DR-35N/C2 底盘管路罩	Chassis pipe cover	1	
10	DR-35N/C2 后板管路罩	Back board pipe cover	1	
11	DR-35N/C2 面板支撑条	Panel reinforced plate	1	
12	DR-35N/C2 橡胶减震垫	Rubber shock absorption	4	
9、13	DR-120N/C2 底架焊接组件	chassis assembly	1	
14、18	DR-35N/C2 左侧支架板焊接组件	Bracket of left-hand board assembly	1	
15	DR-35N/C2 左吊板	Left suspend plate	1	
16	DR-35N/C2 左侧面板	Left panel	1	
17	DR-35N/C2 导风栅左固定座	Base of left-swing	1	
19、29	离心风轮	Centrifugal fan motor assembly	4	
20	风扇电机 YSK125-4-50 D	Fan motor	1	
21	DR-35N/C2 电机架	Motor bracket	1	
22	联轴器 Φ15	Connector	2	
23	DR-35N/C2 电机抱攀	Motor reinforced plate	2	
24	DR-35N/C2 轴承支撑架	Motor support	2	
25	DR-35N/C2 轴承座	Bearing base	2	
26	6202 轴承	Bearing	2	
27	DR-35N/C2 轴承上盖	Bearing top cover	2	
28	加长轴 Φ15	Motor axes	2	
30～35	DR-35N/C2 电控盒焊接组件	Electric components box assembly	1	
36	端子板 5 位	Terminal board	1	
37	电容	Capacitor	1	

N0.	Chinese name	Part Name	Quantity	Remark
38	变压器	Transformer	1	
39	控制板	PCB board	1	
40	DR-35N/C2 电控盒盖	Cover for electric components	1	
41	DR-35N/C2 回风栅组件	Air-inlet grill assembly	4	
	回风格栅 300×380(DR) 乳白	Air-inlet grill(white)	4	
	DR-35N/C2 回风栅挂扣	Air-inlet grill buckle 1	8	
	DR-35N/C2 回风格栅固定滑扣	Air-inlet grill buckle 2	8	
	DR-35N/C2 回风过滤网	filtration net	4	
	DR-35N/C2 回风栅螺孔盖帽	Cover for Air-inlet grill bolt	4	
42	DR-70N/C2 前阀板	Valve board 1	1	
43	DR-70N/C2 后阀板	Valve board 2	1	
44	DR-120N/C2 涡壳固定板	partition board	1	
45	盘管传感器	Sensor	1	
46	蒸发器组件	Evaporator assembly	1	
47	DR-35N/C2 接水盘出水口橡胶塞	Rubber plug of Draining tray	1	
48	接水盘 DR-120N/C2 L1×L2	Draining tray	1	
49	排水管	Plastic water pipe	1	
50	DR-120N/C2 前面板	Panel	1	
51	显示灯板	Display board	1	
52	DR-35N/C2 显示灯盖板	Display board cover	1	
53	DR-35N/C2 步进电机罩	Step motor cover	1	
54	DR-35N/C2 导风栅轴套	Bearing cover	2	
55	DR-35N/C2 从动齿轮	gear wheel 1	1	
56	挡圈 GB/T15049.8 Φ8	Spring	2	
57	DR-35N/C2 电机齿轮	gear wheel 2	1	
58	步进电机	step motor	1	
60～65	DR-120N/C2 导风栅组件	Air Guide Louver assembly	1	
66	DR-120N/C2 后面板	Back panel	1	
67	DR-120N/C2 橡塑密封条	Rubber airproof bar	1	

10.4 Low&Medium ESP Duct

10.4.1 -

10.4.2 COD-18H、COD-24H、COD-36H



COD-18H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	蒸发器总成	Evaporator part	1	
1.1	蒸发器组件	Evaporator assembly	1	
1.2	蒸发器出气管组件	Evaporator liquid input pipe assembly	1	
1.3	蒸发器进液管组件	Evaporator gas output pipe assembly	1	
2	阀板	Valve board	1	
3	电控盒盖	Cover for electric components	1	
4	出风法兰A	Air outlet flange A	2	
5	出风法兰B	Air outlet flange B	2	
6	排水管保护板B	Drainpipe bracket B	1	
7	排水管保护板A	Drainpipe bracket A	1	
8	凝水盘组件	Drip tray assembly	1	
9	底板	Chassis	1	
10	回风盖板	Air inlet cover board	2	
11	吊钩	Pothook	4	
12	蜗壳固定板组件	Centrifugal fan fasten board assembly	1	
12.1	蜗壳固定板	Centrifugal fan fasten board	1	
12.2	电机架组件	Motor bracket assembly	1	
12.3	室内风扇电机	Fan motor	1	YSK100-4-50 G
12.4	电机抱攀	Fan motor fixity	2	
12.5	离心风机	Centrifugal fan motor assembly	2	
13	空气过滤器	Air filter	1	850×245×7
14	过滤网滑道组件	slideway assembly	1	
14.1	左右滑道组件	Left&Right slideway assembly	2	
14.2	上下滑道组件	Up&down slideway assembly	2	

14.3	左右过滤器法兰	Left&Right france	2	
14.4	上下过滤器法兰	Up&down france	2	
15	围板	Boarding	1	
16	电控盒总成	Electric assembly	1	
16.1	控制板	PCB board	1	QRDL-3F-HCE1
16.2	变压器 QC2-E1	Transformer	1	
16.3	回风温度传感器	Sensor 5K3470 1	1	
16.4	盘管温度传感器	Sensor 5K3470 2	1	
16.5	端子板 7位	Terminal board	1	
16.6	电控盒组件	Electric components box	1	
17	顶盖板	Top cover board	1	

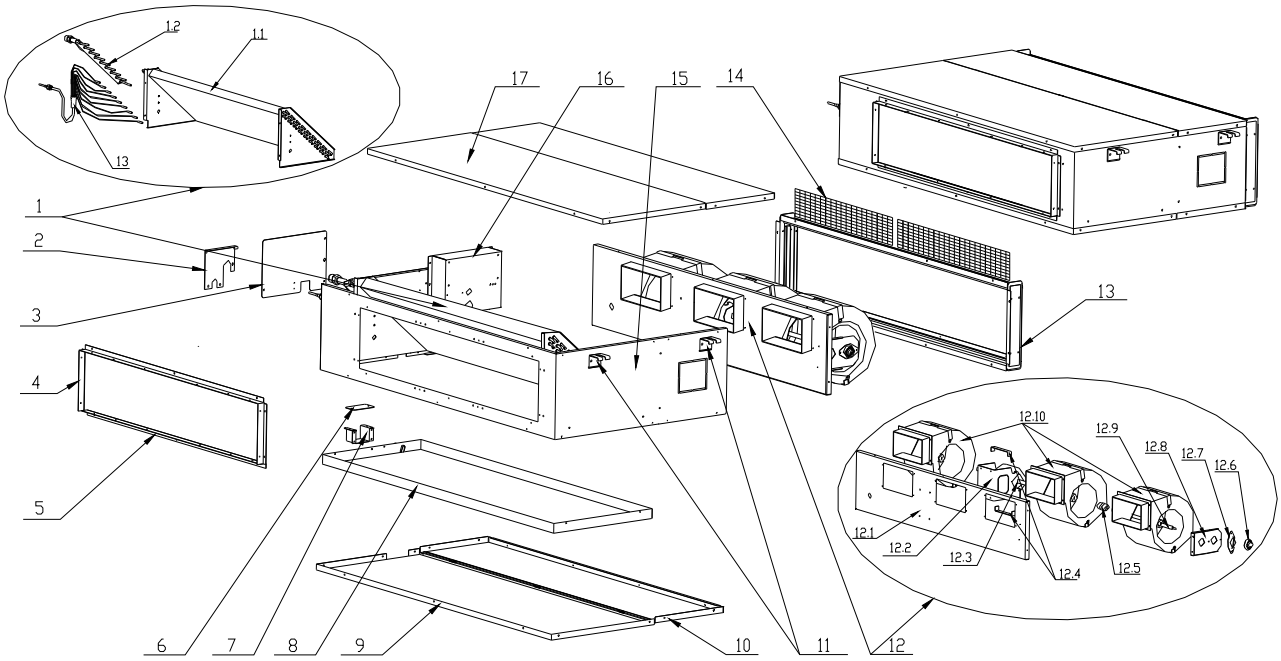
COD-24H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
The other spare parts are same as COD-18H except electrical assembly, evaporator assembly and volute fixing boardassembly				
1	蒸发器总成	Evaporator part	1	
1.1	蒸发器组件	Evaporator assembly	1	
1.2	蒸发器出气管组件	Evaporator liquid input pipe assembly	1	
1.3	蒸发器进液管组件	Evaporator gas output pipe assembly	1	
12	蜗壳固定板组件	Centrifugal fan fasten board assembly	1	
12.1	蜗壳固定板	Centrifugal fan fasten board	1	
12.2	电机架组件	Motor bracket assembly	1	
12.3	室内风扇电机	Fan motor	1	YSK150-4G-50
12.4	电机抱攀	Fan motor fixity	2	
12.5	离心风机	Centrifugal fan motor assembly	2	
16	电控盒总成	Electric assembly	1	
16.1	控制板	PCB board	1	QRDL-3F-HCE1
16.2	变压器 QC2-E1	Transformer	1	
16.3	回风温度传感器	Sensor 5K3470 1	1	
16.4	盘管温度传感器	Sensor 5K3470 2	1	
16.5	端子板 7位	Terminal board	1	
16.6	电控盒组件	Electric components box	1	

COD-36H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
The other spare parts are same as COD-18H except electronic assembly, evaporator assembly and volute fixing boardassembly				
1	蒸发器总成	Evaporator part	1	
1.1	蒸发器组件	Evaporator assembly	1	
1.2	蒸发器出气管组件	Evaporator liquid input pipe assembly	1	
1.3	蒸发器进液管组件	Evaporator gas output pipe assembly	1	
14	蜗壳固定板组件	Centrifugal fan fasten board assembly	1	
14.1	蜗壳固定板	Centrifugal fan fasten board	1	
14.2	电机架组件	Motor bracket assembly	1	
14.3	室内风扇电机	Fan motor	1	YSK-180-4P
14.4	电机抱攀	Fan motor fixity	2	
14.5	离心风机	Centrifugal fan motor assembly	2	
16	电控盒总成	Electric assembly	1	
16.1	控制板	PCB board	1	QRD-SN3F-HCE1
16.2	变压器 QC2-E1	Transformer	1	
16.3	回风温度传感器	Sensor 5K3470 1	1	
16.4	盘管温度传感器	Sensor 5K3470 2	1	
16.5	端子板 5位	Terminal board	1	
16.6	电控盒组件	Electric components box	1	

10.4.3 -, COD-48H, COD-60H



-, COD-48H, COD-60H spare parts list

N0.	Chinese name	Part Name	Quantity	Remark
1	蒸发器总成	Evaporator part	1	
1.1	蒸发器组件	Evaporator assembly	1	
1.2	蒸发器集气管组件	Evaporator liquid input pipe assembly	1	
1.3	蒸发器进液管组件	Evaporator gas output pipe assembly	1	
2	阀板	Valve board	1	
3	电控盒盖	Cover for electric components	1	
4	出风法兰A	Air outlet flange A	2	
5	出风法兰B	Air outlet flange B	2	
6	排水管保护板B	Drainpipe bracket B	1	
7	排水管保护板A	Drainpipe bracket A	1	
8	凝水盘组件	Drip tray assembly	1	
9	底板	Chassis	1	
10	回风盖板	Air inlet cover board	2	
11	吊钩	Pothook	4个	
12	蜗壳固定板组件	Centrifugal fan fasten board assembly	1	
12.1	蜗壳固定板	Centrifugal fan fasten board	1	
12.2	电机架组件	Motor bracket assembly	1	
12.3	室内风扇电机	Fan motor	1	YSK-180-4P
12.4	电机抱攀	Fan motor fixity	2	
12.5	联轴器 Φ14	Coupling	1	
12.6	橡胶轴承	Rubber axletree	1	
12.7	橡胶轴承压板	Rubber axletree board	1	
12.8	橡胶轴承支架	Rubber axletree bracket	1	
12.9	加长轴	Axes	1	φ14×470
12.10	离心风机	Centrifugal fan motor assembly	3	

13	过滤网滑道组件	slideway assembly	1	
13.1	左右滑道组件	Left&Right slideway assembly	2	
13.2	上下滑道组件	Up&down slideway assembly	2	
13.3	左右过滤器法兰	Left&Right france	2	
13.4	上下过滤器法兰	Up&down france	2	
14	空气过滤器	Air filter	2	
15	围板	Boarding	1	
16	电控盒总成	Electric assembly	1	
16.1	控制板	PCB board	1	QRD-SN3F-HCE1
16.2	变压器 QC2-E1	Transformer	1	
16.3	回风温度传感器	Sensor 5K3470 1	1	
16.4	盘管温度传感器	Sensor 5K3470 2	1	
16.5	端子板 5位	Terminal board	1	
16.6	电控盒组件	Electric components box	1	
17	顶盖板	Top cover board	1	