

16 SEER TOP-DISCHARGE UNIT STANDARD TECHNICAL MANUAL



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R410A 60Hz Universal Outdoor series

Part 1. General Information

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1. Model Names of Indoor/Outdoor Units

1.1 Indoor Units

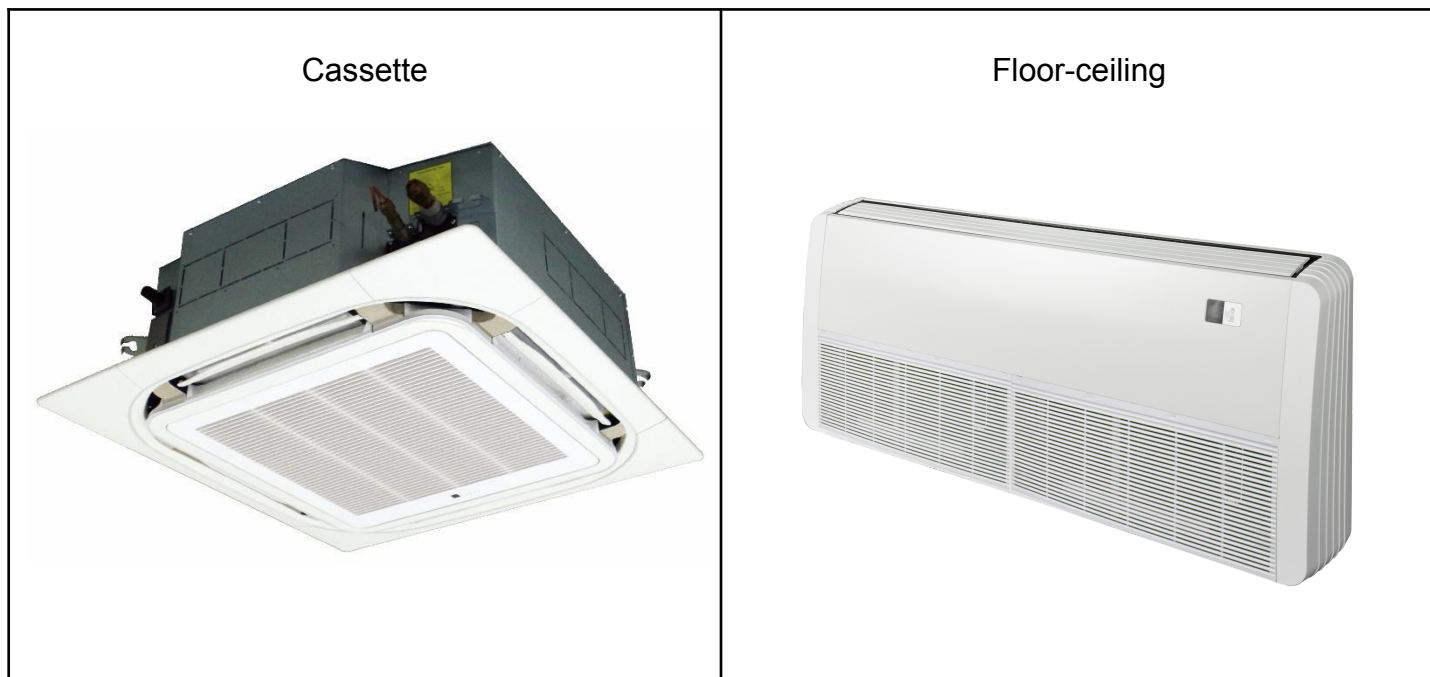
Model name	Dimension(W×H×D) (mm)	Power supply
SEER 16 Cooling Only		
T16CU16VT36S	1250×675×235	208~230V-1Ph-60Hz
T16CU16VT60S	1670×750×235	208~230V-1Ph-60Hz

1.2 Outdoor Units

Model name	Dimension (W×H×D) (mm)	Power supply
24V control		
T16CROVT36AS	740×633×740	208~230V-1Ph-60Hz
T16CROVT60AS	740×835×740	208~230V-1Ph-60Hz

2. External Appearance

2.1 Indoor unit



2.2 Outdoor unit



Note: Standard outdoor unit is using metal grill, and plastic grill can be customized.

3. Features

3.1 Capacity range : 36k/60k, cooling only type.

3.2 Well known brand inverter compressor: Mitsubishi & GMCC, reliable quality.

3.3 Can be matched with cassette\floor-ceiling and air-handler units.

3.4 Coils constructed with enhanced aluminum fins, golden fins/ blue fins are available.

3.5 Integrated circuit with refrigerant cooling design

3.6 24V control, time delay relay, fan relay and transformer included.

3.7 R410A environment friendly refrigerant.

3.8 Flexible installation, ceiling suspended and floor standing .

3.9 New panel for cassette units, simple and vogue appearance suit for different.

Part 2 Outdoor Unit

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1. Specification

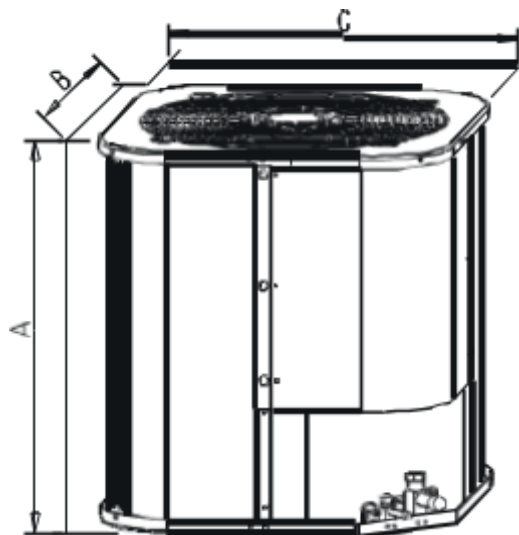
Model name		Unit	T16CROVT36AS	T16CROVT60AS
Code		Outdoor code	821039000061	821039000060
Power supply		V/Ph/Hz	208~230-1-60	208~230-1-60
Cooling	Capacity	Btu/h	36000	60000
	Capacity	W	10500(3500-10500)	16000(6200-16000)
	Power Input	W	600-4000	600-5500
	Current Input	A	2.5-19	2.5-30
Outdoor coil	Number of row		1	2
	Fin spacing	mm	1.4	1.4
	Fin material		Hydrophilic aluminum foil aluminum	Hydrophilic aluminum foil aluminum
	Tube outside diameter	mm	φ7	φ7
	Tube material		Inner grooved	Inner grooved
	Coil length x height x width	mm	2148×588×13.37	2136×798×26.76
Compressor	Brand		GMCC	Mitsubishi
	Model		ATM240D57UFT	MNB40FEQMC
	Type		Twin-rotary	Twin-rotary
	Capacity	W/h	7190	12900
	Input	W	1935	3960
	Rated current(RLA)	A	8.85	14.8
	Refrigerant oil	ml	670	1100
Outdoor fan motor	Brand		Lvzhi	SINJUN
	Model		YDK-110-8P2	YDK-230-6P2
	Output	W	110.00	230.00
	Running current	A	0.9	/
	Capacitor	μF	6μF/450V	12μF/450V
	Speed	r/min	850	1100
Outdoor air flow		m ³ /h	4500	6000
Outdoor noise level		dB(A)	57	60
Outdoor dimension	Unit (WxHxD)	mm	740×740×635	740×740×835
	Packing (WxHxD)	mm	760×760×660	760×760×875
Net/Gross weight		kg	66/70	80/85
Refrigerant	Type		R410A	R410A
	Charge	kg	2.2	3.8
Refrigerant pipe	Liquid side/ Gas side	mm(inch)	3/8 / 3/4	3/8 / 3/4
	Max. refrigerant pipe length	m	25	30
	Max. difference in level	m	20	20
Operation temperature range		°C	16~32	16~32
Ambient temperature range		°C	16~50	16~50

Model			36K	60K
			820023100002	820023100001
			T16CU16VT36S	T16CU16VT60S
Indoor power supply		V/Ph/H z	208~230/1/60	208~230/1/60
Cooling	Capacity	kW	10.5	16
	Input	W	240	320
	Rated current	A	1.0	1.5
Max. power input		W	4000	6800
Max. current input		A	19.0	35.0
Indoor fan motor	Model		YSK110-180LD-4P2	YSK110-85LD-4P2
	Brand		XINJUN	KANGBAO
	Power output	W	180	85*2
	Capacitor	μF	5	5
	Speed	r/min	1330/1230/1130	1560/1430/1300
	Insulation class			B
Indoor coil	Number of rows		3	4
	Tube pitch(a) x row pitch(b)	mm	25*21.65	22*19.05
	Fin spacing	mm	1.7	1.4
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	9.52	7.94
			Inner grooved	Inner grooved
	Coil length x height x width	mm	982/250/65	1360/252/70
	Number of circuits		5	4
Indoor air flow(High speed)		m ³ /h	1800	2000
Indoor noise level		dB(A)	≤64	≤65
Indoor unit	Dimension(W×H×D)	mm	1250×675×235	1670×675×235
	Packing(W×H×D)	mm	1380×765×325	1750×765×325
	Gross/Net weight	kg	38/33	49/43
Max pressure		MPa	4.5	4.5
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88
Drainage pipe		mm	DN25	DN25
Standard controller			Wired control	
Operation temp		°C	16-32	16~32

2.Dimensions

All dimensions are in mm. They are subject to change without notice.

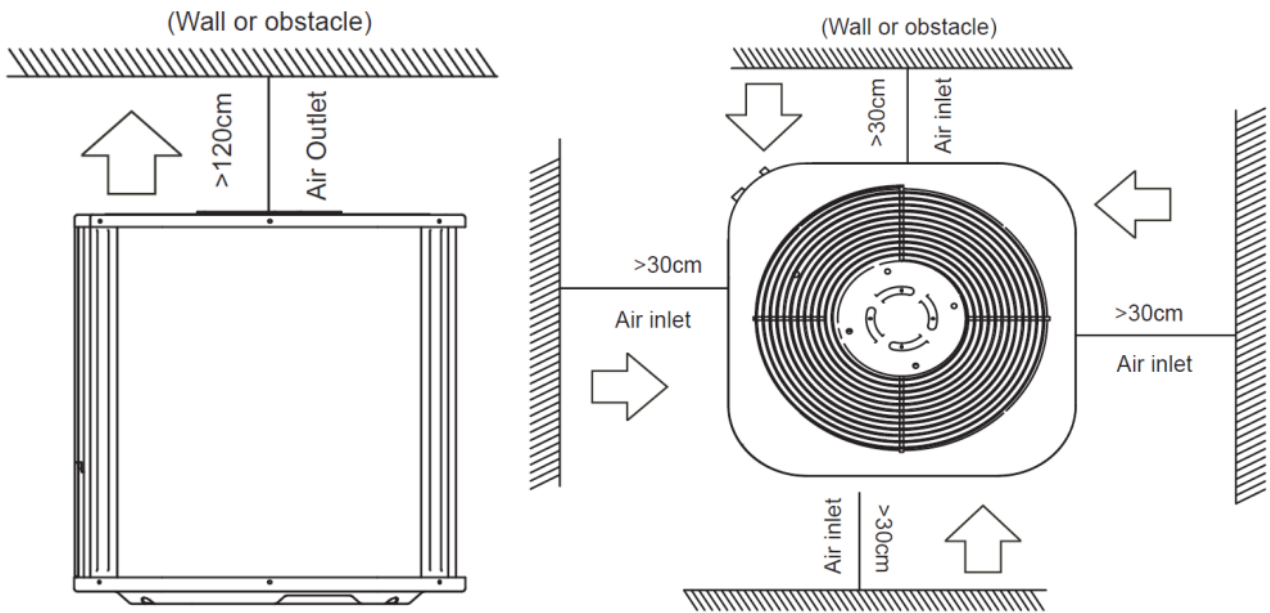
Certified dimensions will be provided upon request.



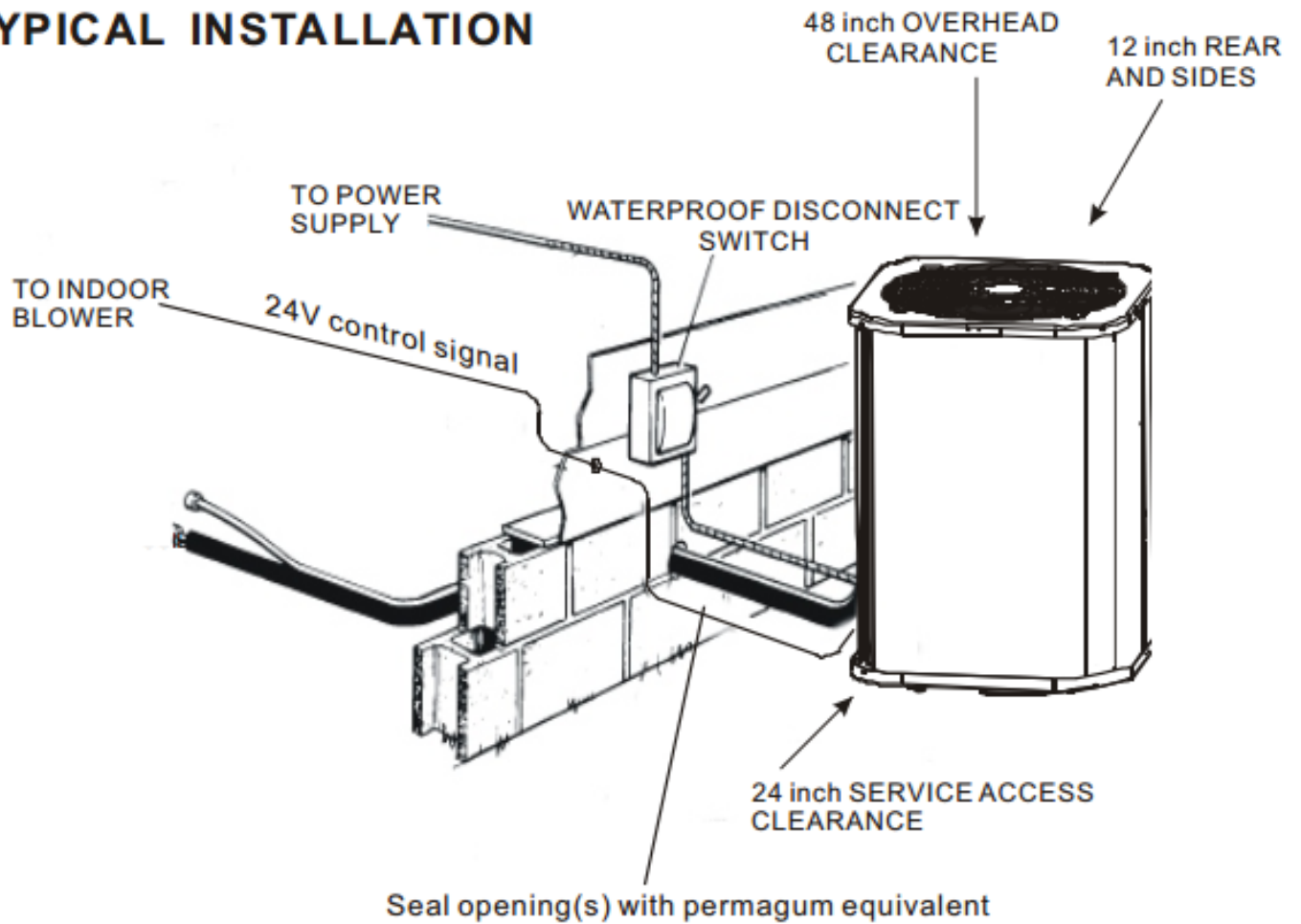
Model	Dimensions(mm)			Refrigerant Connection pipe Size(mm)		
	A	B	C	Liquid(ϕ)		Vapor(ϕ)
				LF	RF	
36K	633	740	740	9.52	12.7	19.05
60K	835	740	740	9.52	12.7	19.05

NOTE: LF means cooling only model; RF means heat pump model.

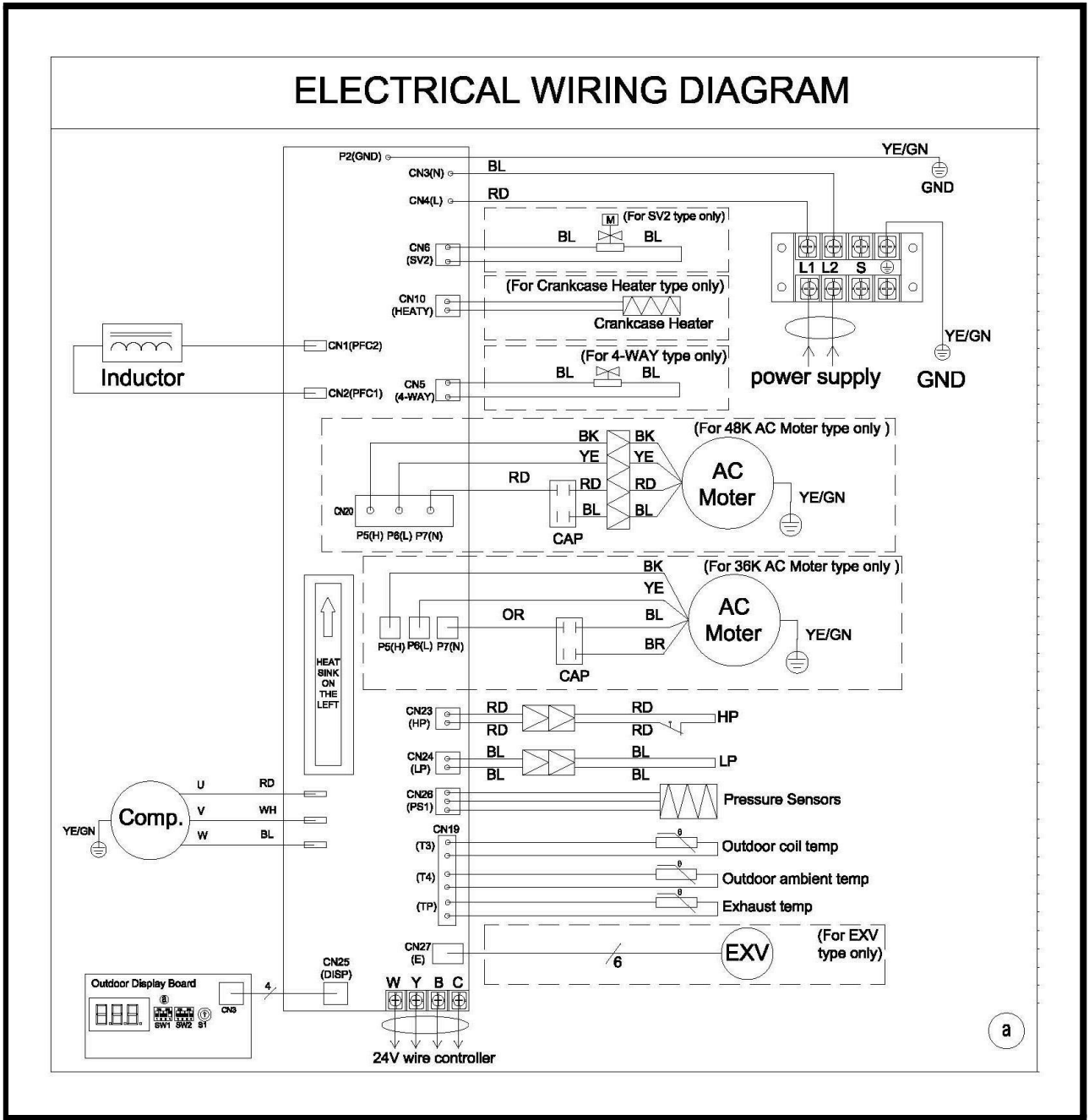
3. Service Space



TYPICAL INSTALLATION



4. Wiring Diagrams



Check Table

NUM	Display content		Frequency amplification (step; Actual value)
01	Outdoor ability (machine style)	16	Electronic expansion ΔEV (step ; Actual value)
02	Run mode (0:shutdown; 2:refrigeration; 3:heating)	17	---
03	Compressor target frequency (Hz ; Actual value)	18	---
04	Compressor wroking frequency (Hz ; Actual value)	19	Tfin Module tempreture ($^{\circ}F/^{\circ}C$; Actual value)
05	Compressor actual frequency (Hz ; Actual value)	20	Oil spilling (CC ; Actual value / 8)
06	Fan speed (High / low ; Actual value)	21	Tcs HP target tempreture ($^{\circ}F/^{\circ}C$; Actual value)
07	PS1 conversion temperature ($^{\circ}F/^{\circ}C$; Actual value)	22	Pressure sensor value (Actual value * 25)
08	T3 condensing temp ($^{\circ}F/^{\circ}C$; Actual value)	23	T3 conversion pressure (Actual value * 25)
09	T4 outdoor ambient temp ($^{\circ}F/^{\circ}C$; Actual value)	24	---
10	T5 exhaust temp ($^{\circ}F/^{\circ}C$; Actual value)	25	Excessive target tempreture ($^{\circ}F/^{\circ}C$; Actual value)
11	AC current (A ; Actual value)	26	Excessive exhuast tempreture ($^{\circ}F/^{\circ}C$; Actual value)
12	---	28	---
13	AC voltage (VAC ; (effective value-60)*2)	29	---
14	DC voltage (VDC ; Actual value / 2)	31	Enter PI contrlo flag (0 / 1)
15	Electronic expansion valve opening (step ; Actual value / 4)	34	Frequency limit
		37	Last failure code

Failure and Protection

Code	Failure or protection definition	Code	Failure or protection definition
E4	T4 outdoor air temperature sensor failure	P4	Excessive exhaust temperature protection
E6	T5 Condensate temperature sensor failure	P5	Excessive condensing temperature protection (refrigeration)
E5	T3 Exhaust temperature sensor failure	P6	IPM modules protection
E9	AC overvoltage/undervoltage protection	P8	Excessive IPM temperature protection
E10	EEPROM failure	P9	DC Moter protection
E12	IPM modular failure	P12	Standby with wet wroking state exception
E13	HP/LP pressure sensor failure	P13	Standby with HP condensing state exception (heating)
E14	T3 / T5 sensor disconnected	P14	High compression ratio protection
E15	HPS condenser sensor disconnected	P15	Low compression ratio protection
H0	Comm. failure between master chip and DSP	L1	DC low voltage protection
H1	Excessive T3 temperature abnormality (refrigeration) (20 times P5 protection in 180 minutes)	L2	DC High Voltage rotection
H2	HPS abnormal (20 times P1 protection in 150 minutes)	L4	MCE fault/synchronous fault/compressor start fault
H3	High pressure condensate pressure abnormality (heating) (20 times P13 protection in 180 minutes)	L5	Zero speed failure
H4	excessive module temperature abnormality (20 times P8 within 120 mins)	L7	Phase lack protection of compressor
H5	condensate low pressure abnormality (20 times P2 within 100 mins)	L8	Compressor stalls
H6	Excessive T5 temperature abnormality (20 times P4 within 100 mins)	L9	HP condensing pressure frequency limiting
H7	wet working abnormal (20 times P12 within 200 mins)	LA	VAC frequency limiting
H8	T3 condenser sensor disconnected (20 times E14 within 120 mins)	LC	T3 condensing temp. frequency limiting
H12	TP condenser sensor disconnected (20 times E14 within 180 mins)	LD	T5 exhuast temp. frequency limiting
P1	High pressure protection	LE	IPM module frequency limiting
P2	Refrigerant low pressure abnormal operation protection(refrigeration)	LF	Current frequency limiting
P3	Overcurrent protection	d0	Oil return state
		dF	Defrosting state
		dH	Forced operation mode

SW1 & SW2 For Outdoor Display Board switch setting : (Factory default)

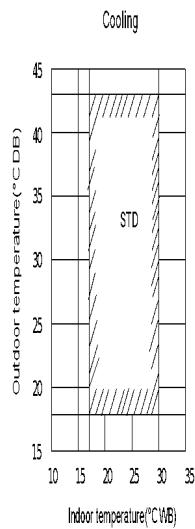
<p>SW1</p> <p style="text-align: center;">ON</p> <table style="margin: auto;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </table>					1	2	3	4	<p>SW2</p> <p style="text-align: center;">ON</p> <table style="margin: auto;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; background-color: #cccccc;"></td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> </table>					1	2	3	4
1	2	3	4														
1	2	3	4														

5. Electric Characteristics

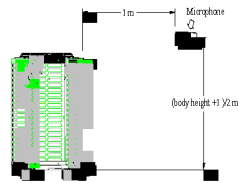
Model	Outdoor Unit				
	Hz	Voltage	Min.	Max.	Outdoor motor output(kw)
COT-36CNVR1-1 6	60	208~230V	198V	242V	0.21
COT-60CNVR1-1 6	60	208~230V	198V	242V	0.36

6. Operation Limits

Operation mode	Outdoor temperature(°C)	Room temperature(°C)
Cooling operation	18~47	16~32



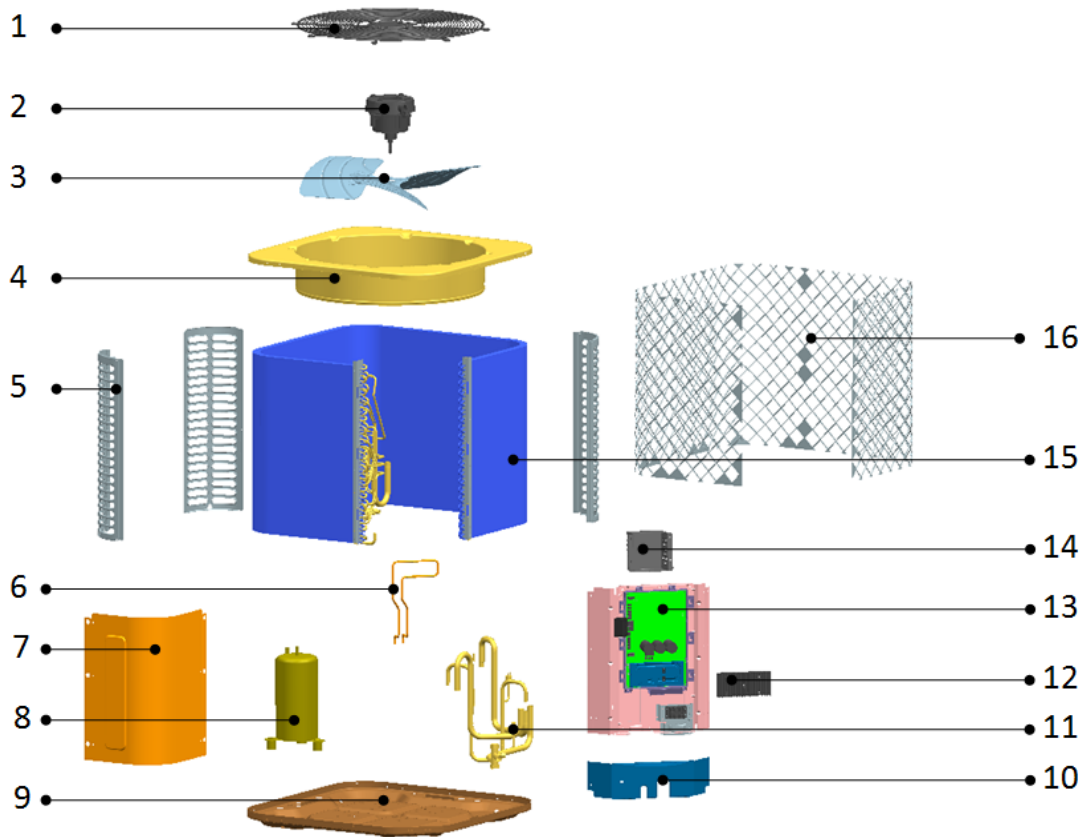
7. Sound Levels



Model	Noise level dB(A)
COT-36CNVR1-16	57
COT-60CNVR1-16	60

Note: Sound level is measured at a point 1 m in front of the unit, at a height of (Unit body height + 1)/2 m.

8. Exploded View



No.	Part Name	Qty	No.	Part Name	Qty
1	Cover net	1	11.3	Gas outlet pipes welded assy	1
2	Outdoor motor	1	11.3.1	Gas outlet pipe	1
3	Axial-flow fan	1	11.3.2	Gas concentration filter pipe	1
4	Top cover assy	1	12	Cooler cover	1
5	Support board	3	13	Electronic components	1
6	Refrigerant cooling tubes assy	1	13.1	Terminal block	1
7	Top panel	1	13.2	Outdoor display board	1
8	Compressor	1	13.3	Outdoor integrated E-board	1
9	Chassis assy	1	13.4	Reactor	1
10	Bottom side panel	1	13.5	Inserted fan motor capacitor	1
11	Refrigerant flow tubes assy	1	13.6	E-parts installation board welded assy	1
11.1	High pressure valve welded assy	1	13.7	Main control board installation base	1
11.1.1	High pressure valve connecting pipe	1	13.8	Communication board installation base	1
11.1.2	Square valve	1	13.9	Terminal block installation board	1
11.2	Low pressure valve welded assy	1	14	Reactor installation lid	1
11.2.1	Square valve	1	15	Condenser	1

11.2. 2	Low pressure valve connecting pipe	1	16	Outdoor unit protecting net	1
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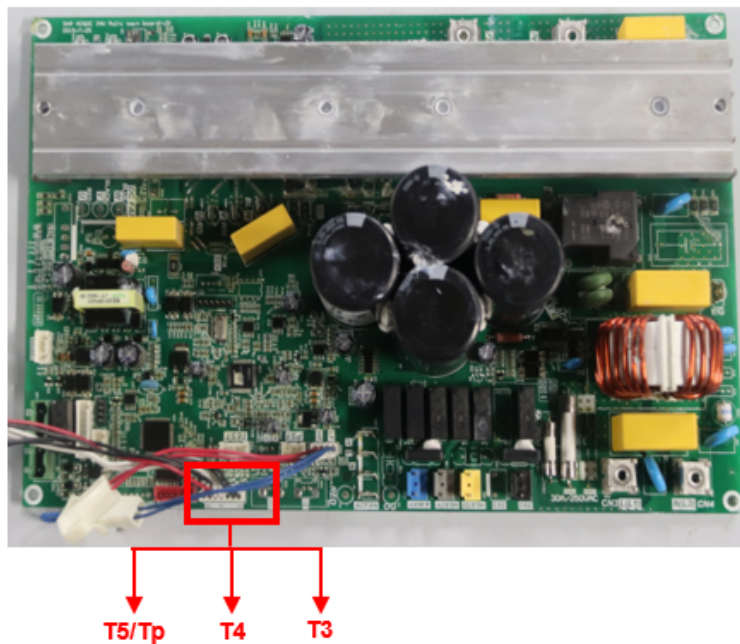
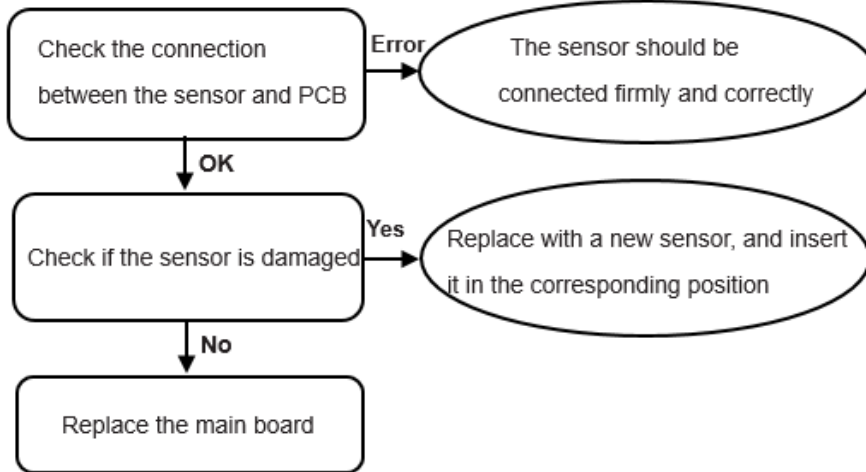
9. Troubleshooting

The fault codes for outdoor unit as follows:

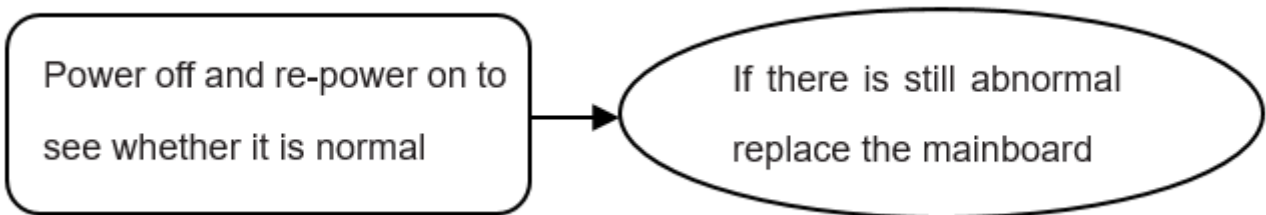
CODE	FAULT DESCRIPTION
E4	T4 Outdoor ambient temperature sensor error
E5	T5 Discharge temperature sensor error
E6	T3 Condenser temperature sensor error
E9	AC under voltage protection
E10	EEPROM error
E12	IPM modular sensor error
E13	HLP Pressure sensor error
E14	T3 or T5 sensor disconnect error
E15	High pressure switch error
H0	Communication error of main chip and IPM chip
H1	T3 sensor high temperature error(In cooling mode) (20 times P5 error within 180mins)
H2	High pressure switch error(20 times P1 error within 150 mins)
H3	High pressure abnormal in heating mode (20 times P13 error within 180 mins)
H4	IPM modular high temp error (20 times P8 within 120 mins)
H5	Low pressure error (20 times P2 within 100 mins)
H6	Discharge temperature abnormal error(20 times P4 within 100 mins)
H7	Wet operation error (20 times P12 within 200 mins)
H8	T3 condenser sensor disconnect error (20 times E14 within 100 mins)
H12	Discharge temp sensor disconnect error(20 times E14 within 180 mins)
P1	High pressure protection
P2	Low pressure protection
P3	DC over current protection
P4	T5 Discharge temperature abnormal error
P5	T3 Condenser sensor high temp protection(In cooling mode)
P6	IPM module protection
P8	IPM high temperature protection (Ft)M high temperature protection (Ft)
P9	DC fan motor error
P12	Wet operation error
P14	High compression ratio protection
P15	Low compression ratio protection
L1	DC cable bus low voltage protection
L2	DC cable bus high voltage protection
L4	MCE fault / sync / closed loop
L5	Zero speed protection
L7	Compressor phase loss protection ratio protection
L8	Compressor stalls
L9	Frequency limitation or decline by high pressure

LA	Frequency limitation by voltage
LC	Frequency limitation by condenser temp.
LD	Frequency limitation by discharge temp
LE	Frequency limitation by IPM modular high temp
LF	Frequency limitation by current

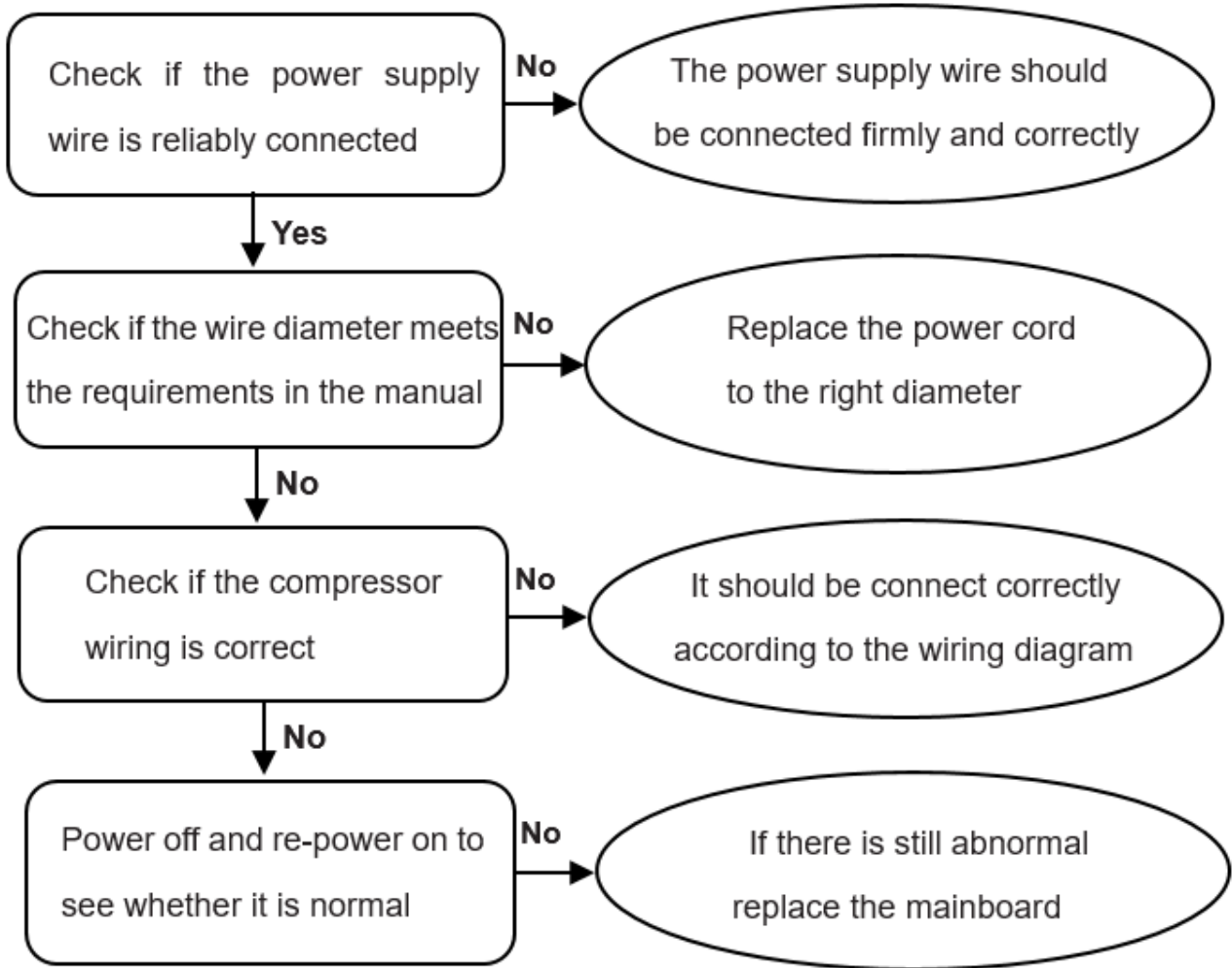
1. E4/E5/E6 (T4/T5/T3 temperature sensors error)



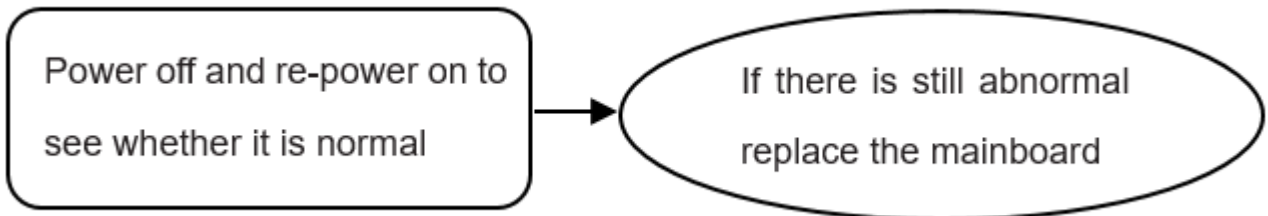
2. E10 (EEPROM failure)



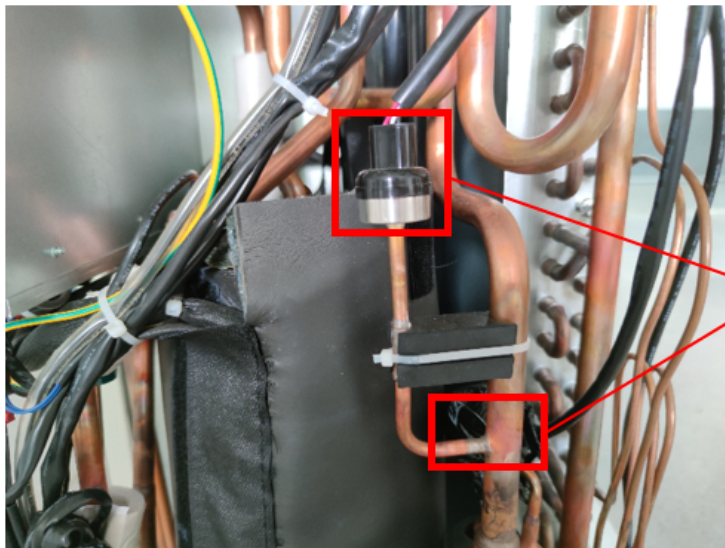
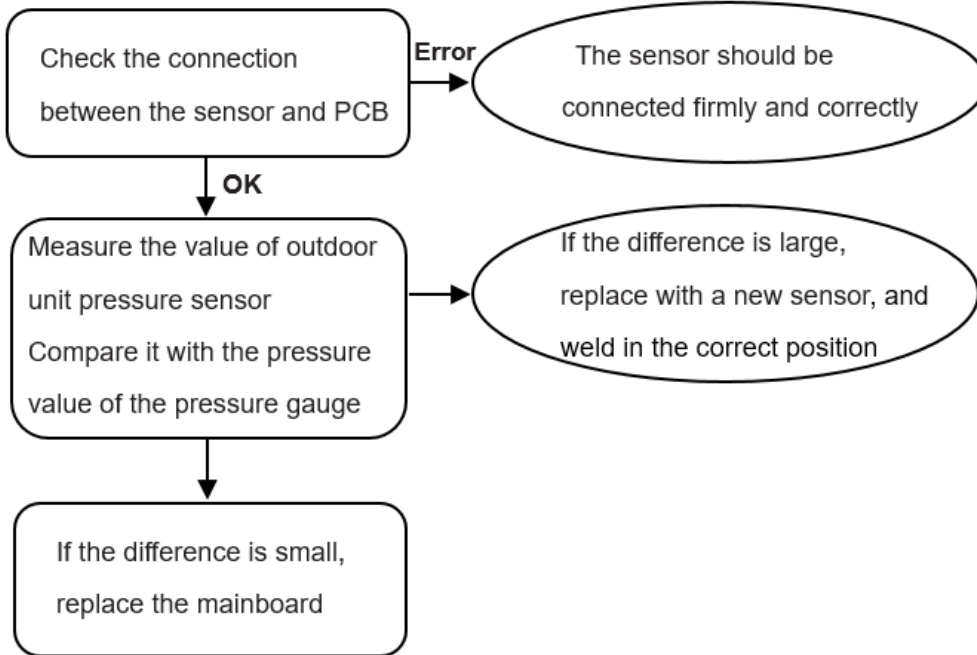
3. E9 (AC under voltage protection)



4.E12 (IPM modular sensor error)

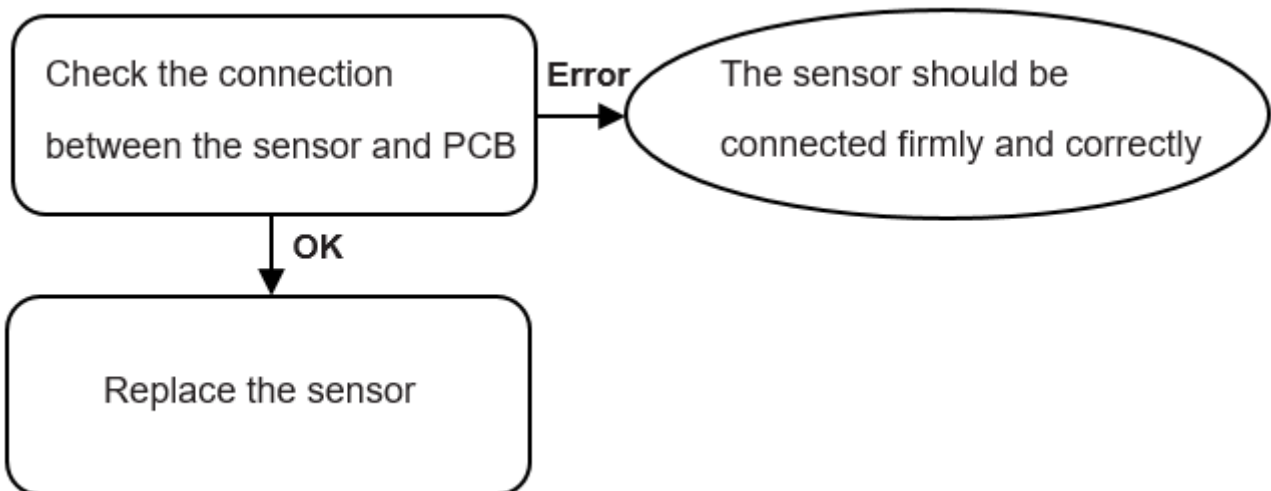


5. E13 (HLP Pressure sensor error)

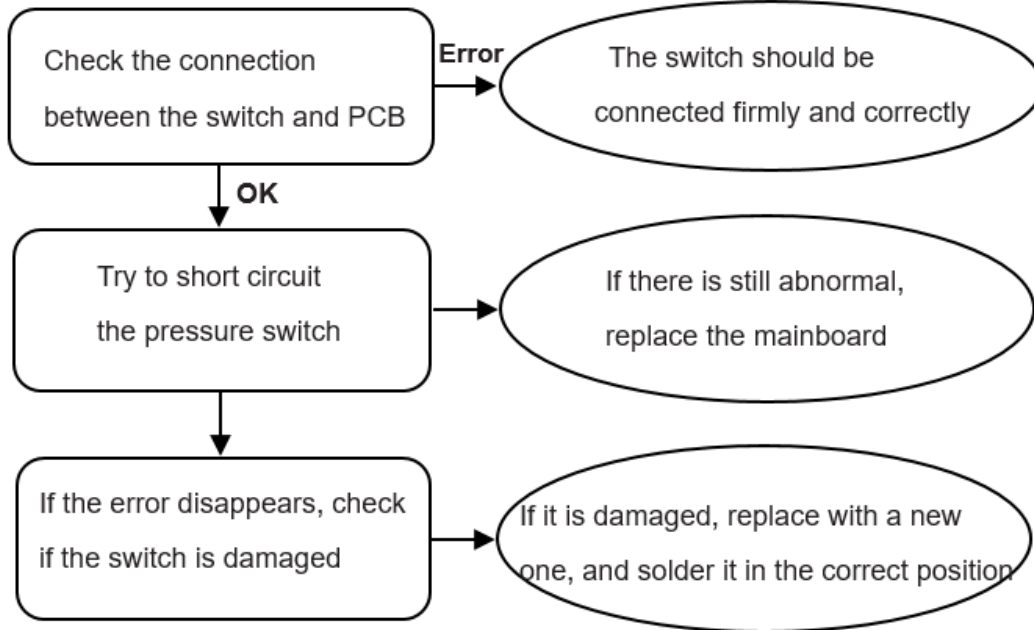


The pressure sensor should be soldered in the correct position

6. E14/H8/H12 (T3 or T5 sensor disconnect error)

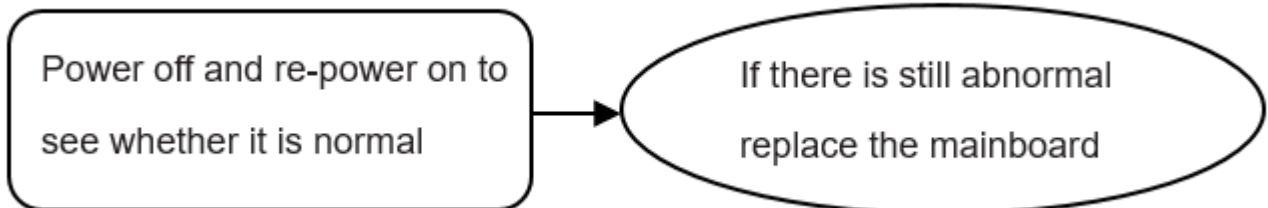


7. E15 (High pressure switch error)

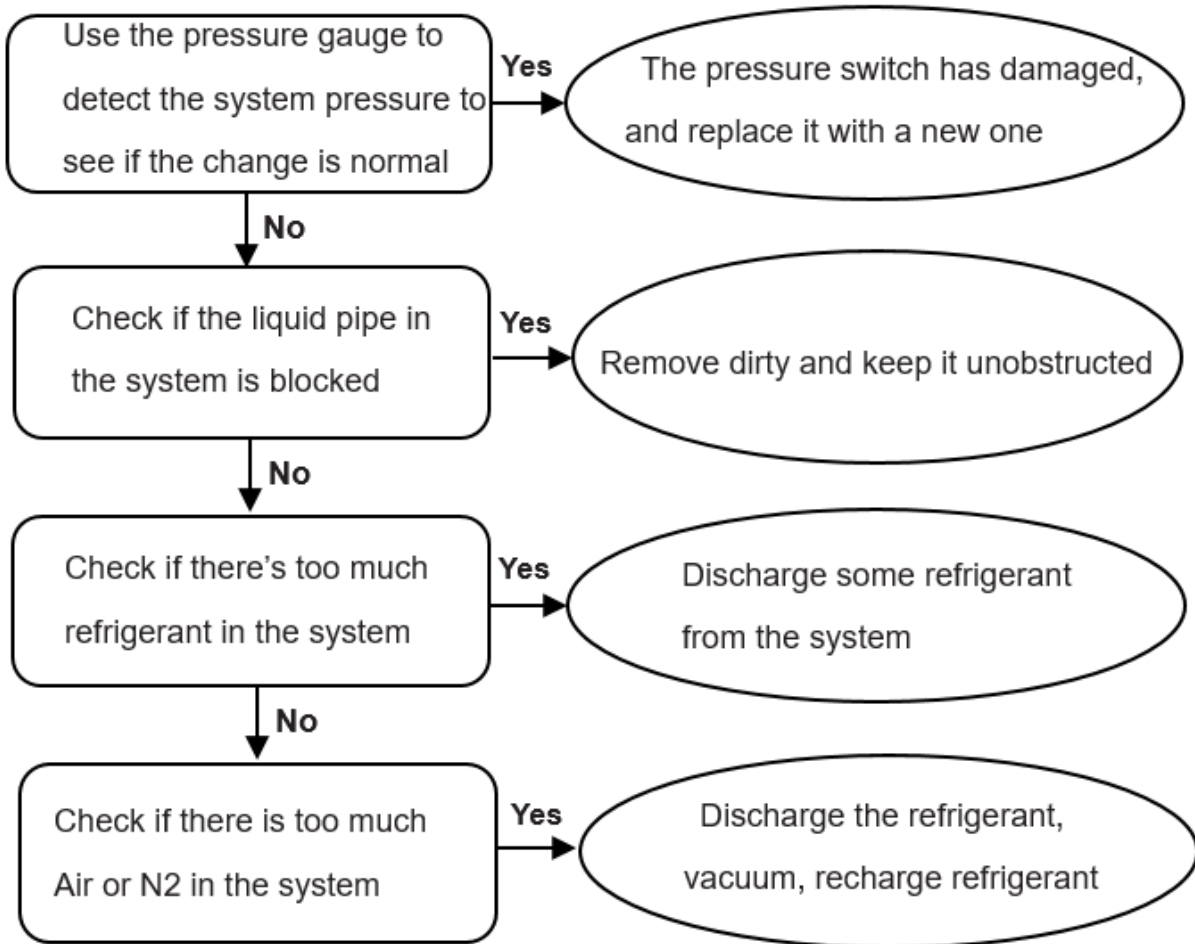


The high pressure switch should be soldered in the correct position

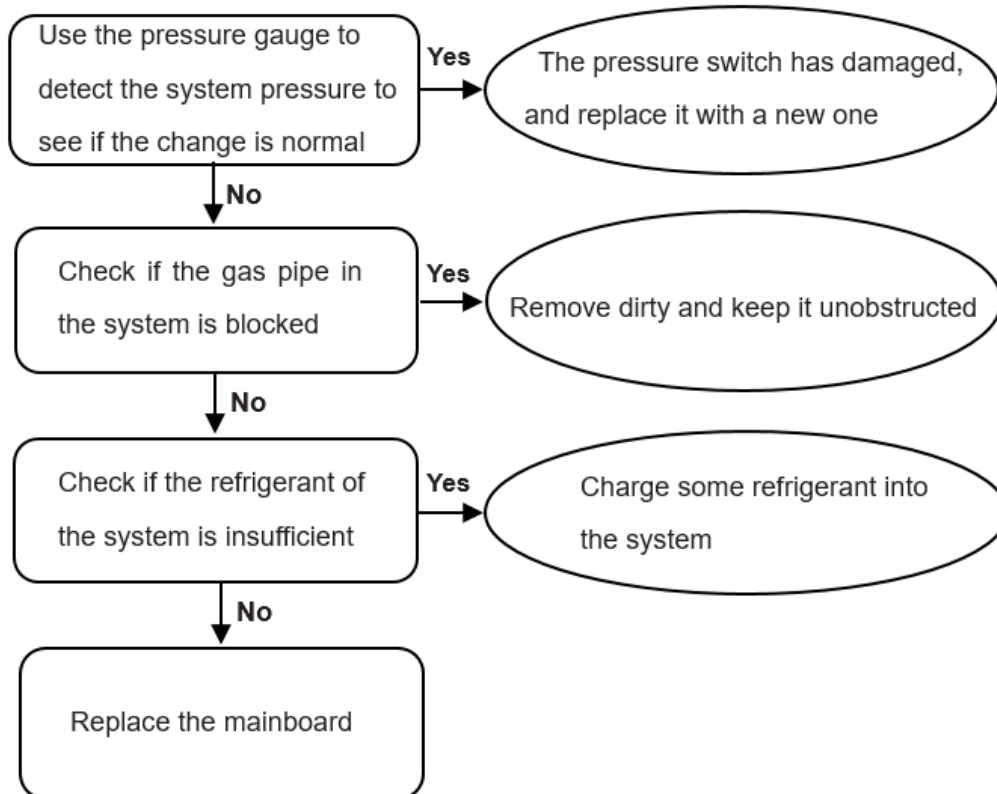
8. H0 (Communication error of main chip and IPM chip)



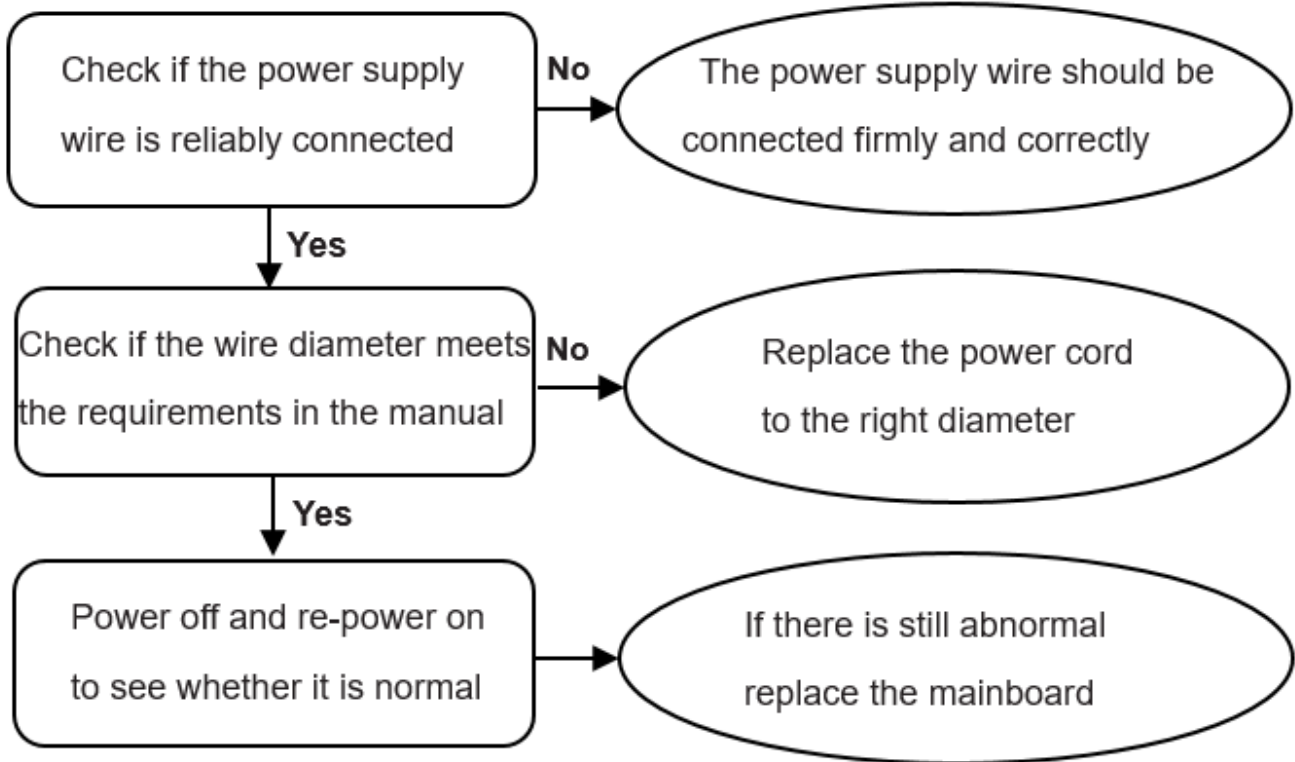
9. P1/H2 (High pressure switch protection)



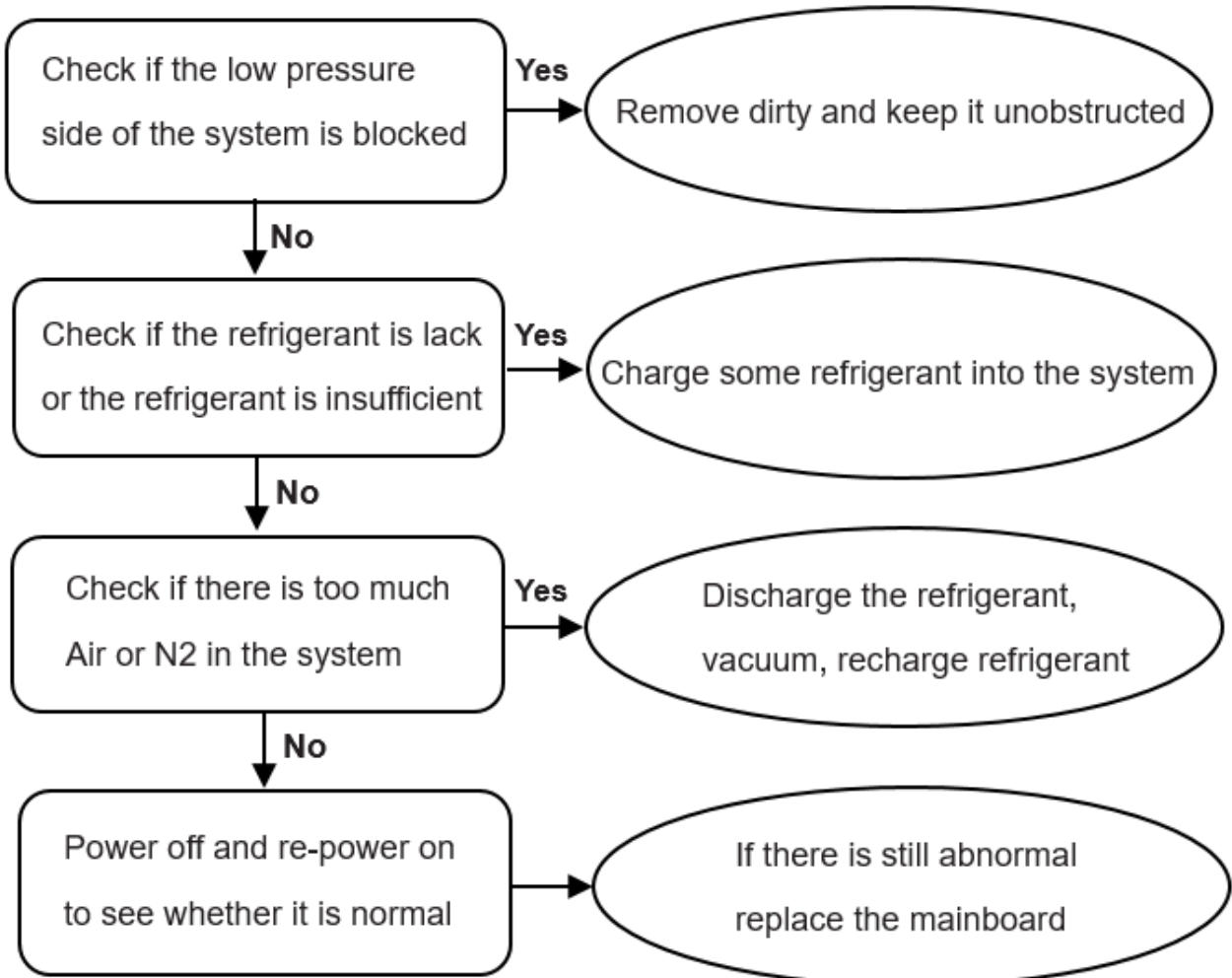
10. P2/H5 (Low pressure switch protection)



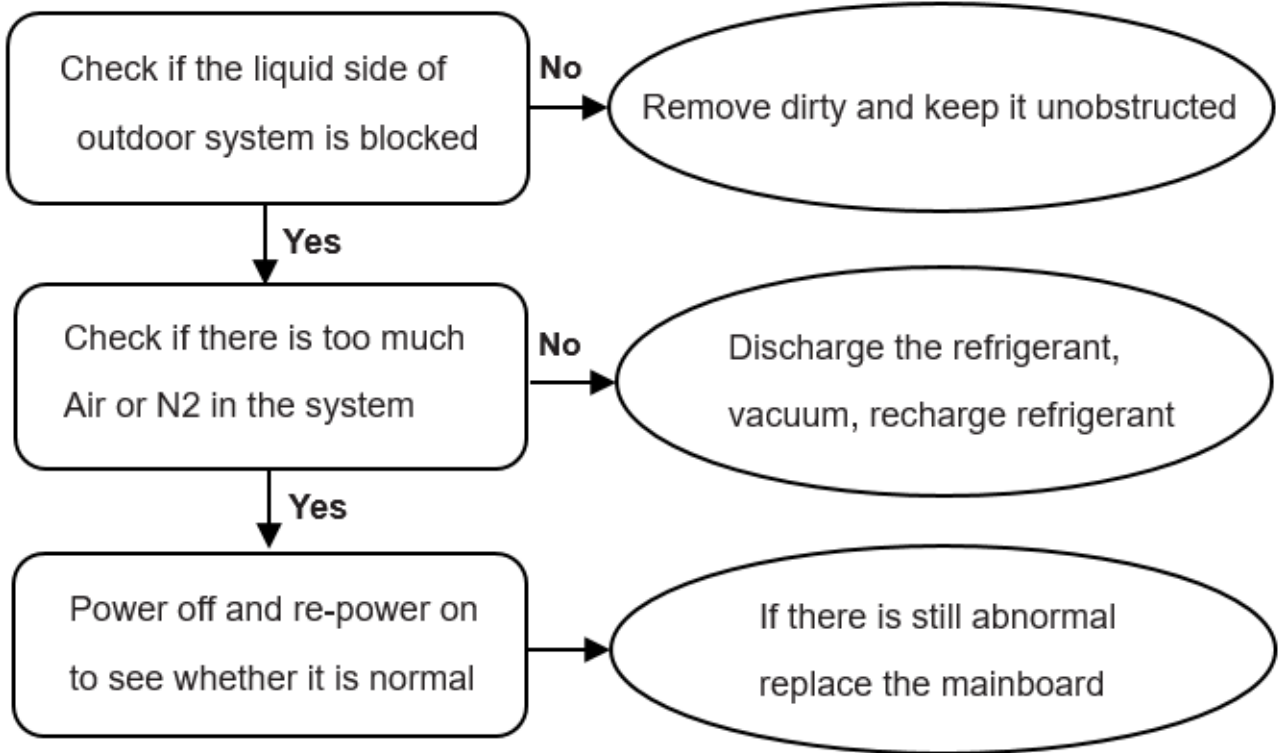
11. P3(Inverter over current protection)



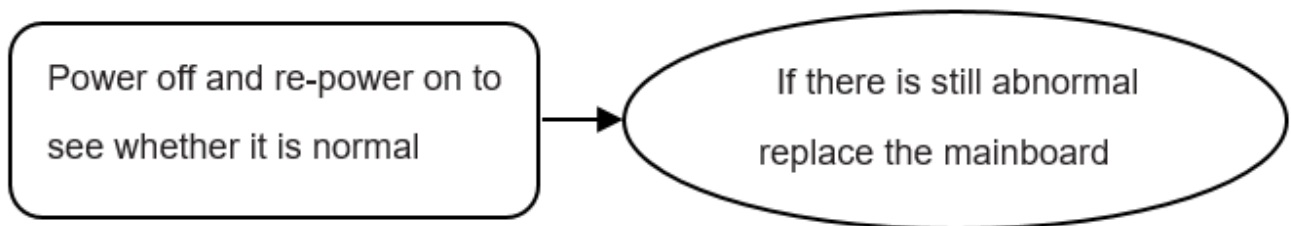
12. P4/H6 (T5 Discharge temperature abnormal error)



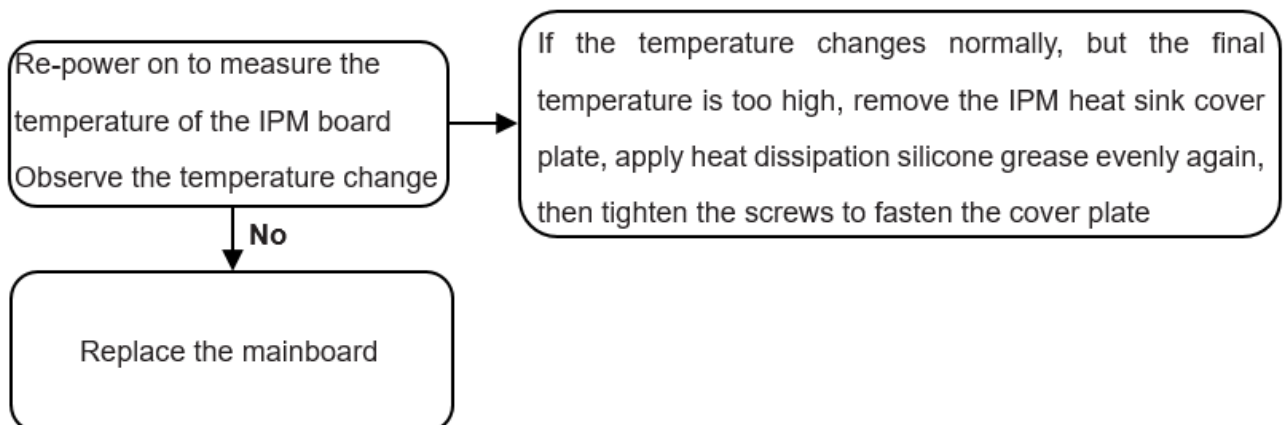
13. P5/H1 (T3 condenser sensor high temp protection)



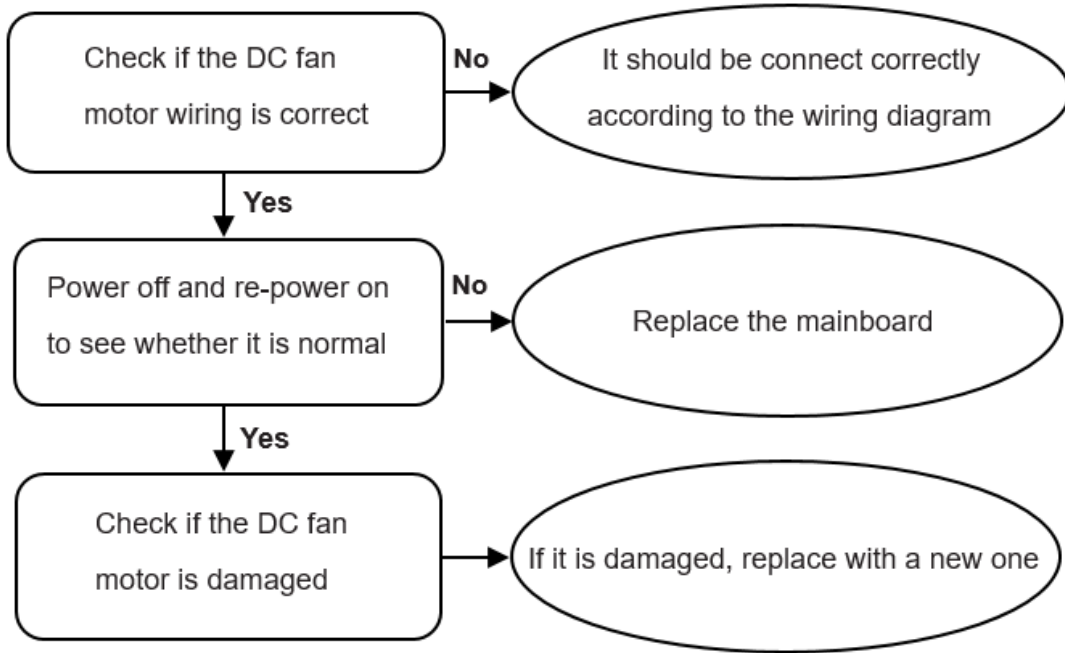
14. P6 (IPM module protection)



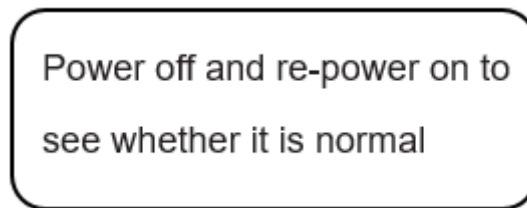
15. P8/H4 (IPM high temperature protection)



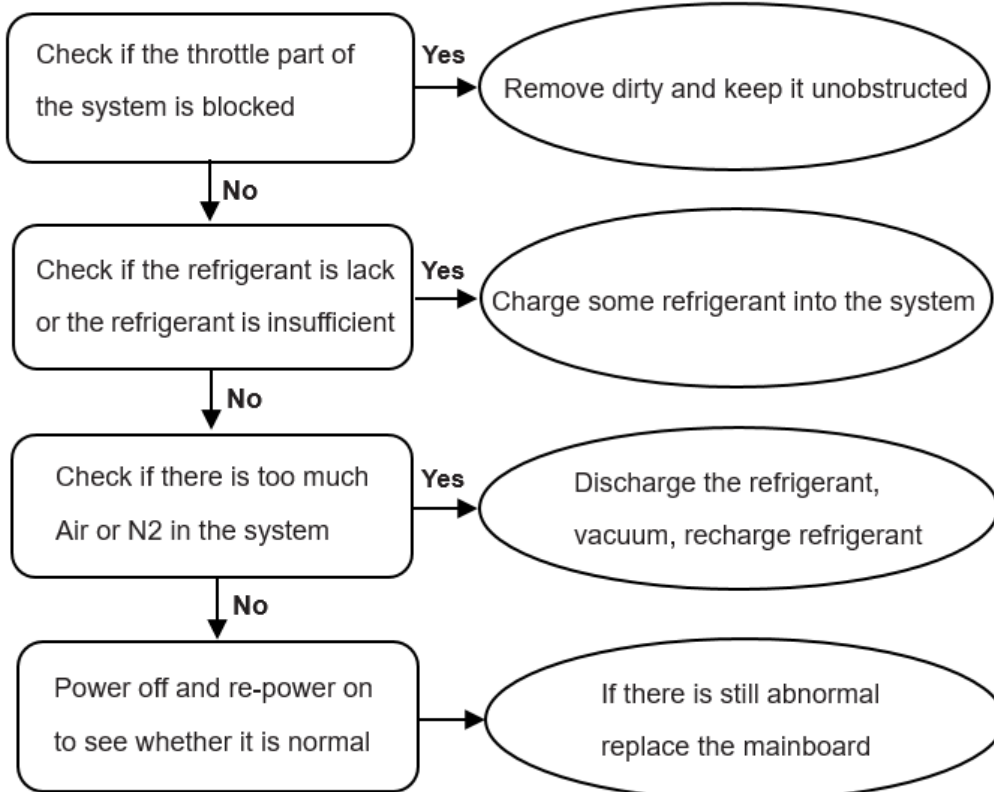
16. P9 (DC fan motor error)



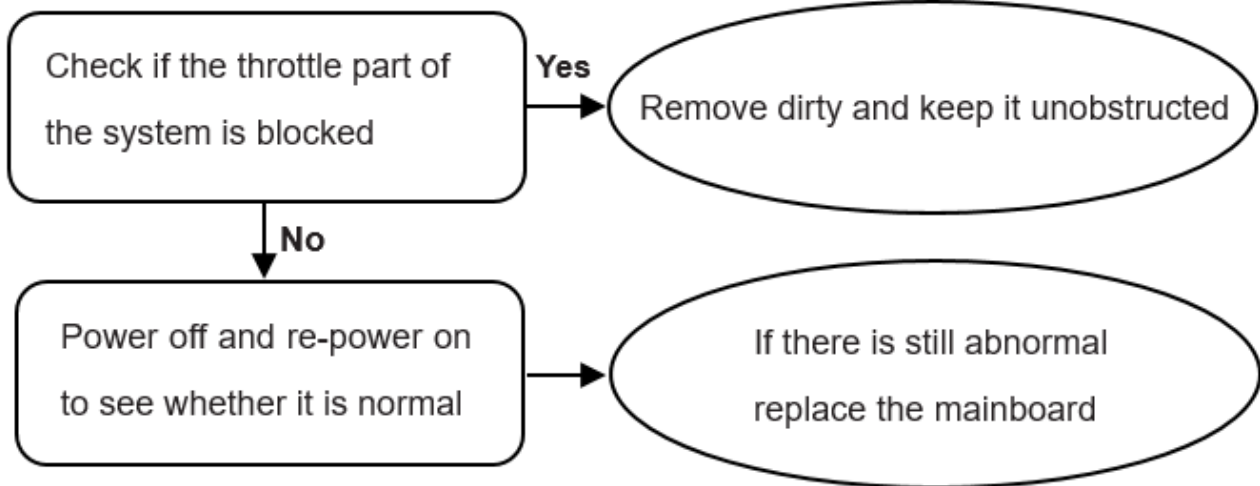
17. P12/H7 (Wet operation error)



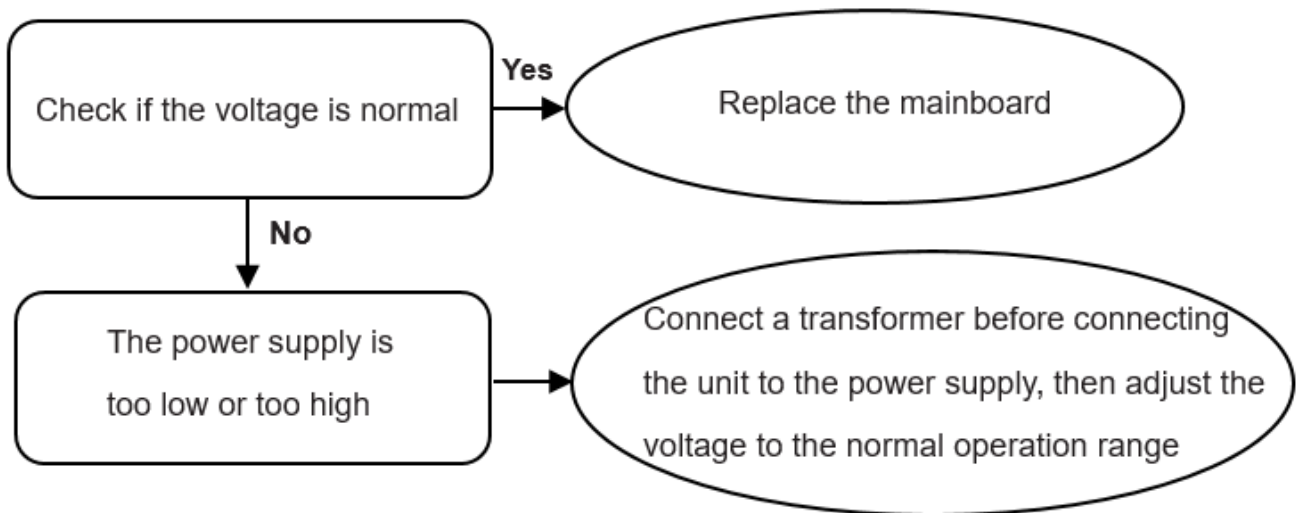
18. P14 (High compression ratio protection)



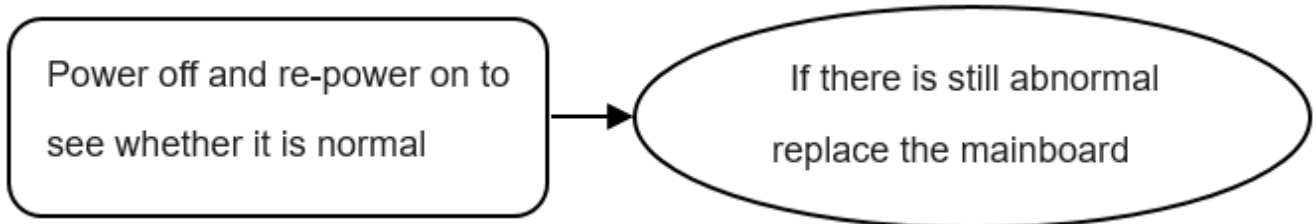
19. P15 (Low compression ratio protection)



20. L1/L2(DC cable bus low/high voltage protection)



21. L4-L8 (IPM module subdivision protection)



Part 3 Indoor units

1 .Round-way cassette	28
2. Floor-ceiling	39

1. Round-way cassette



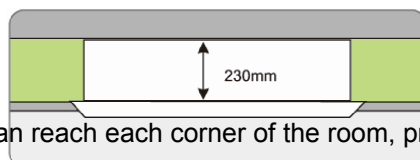
1.1 Standard round-flow cassette

(1) Brand-new panel design. Indoor unit use uniform panel, simple and convenient.

(2) Simple, fealty and vogueish appearance suit for different requirements, it's mostly used for office, shopping center, restaurant, meeting room and etc. 18kbtu/h~55kbtu/h, standard type, 950mm*950mm

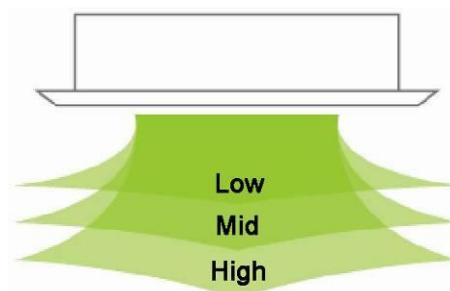


(3) Ultra-thin body design, the min. height is only 230mm, saving installation space.



(4) Round way air flow, cool air can reach each corner of the room, providing comfortable environment.

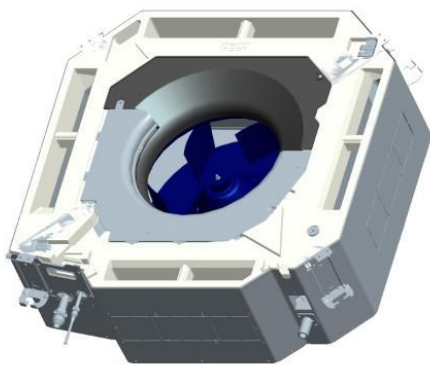
(5) 3-fan speed, meet for different requirement.



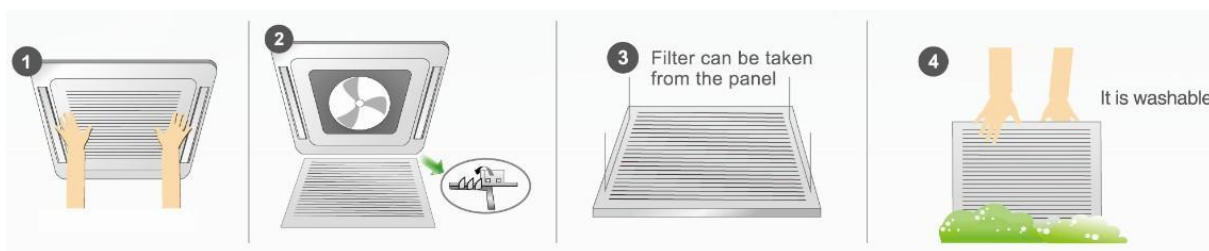
(6) New streamlined fan design.



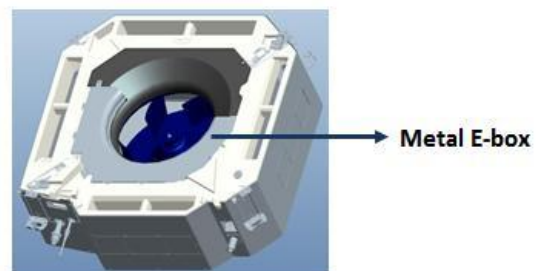
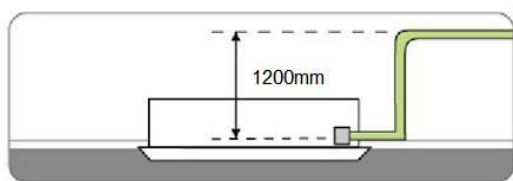
(7) Occupied a small installation space, saving interior space



(8) Easy and convenient installation and maintenance, washable filter design.



(9) Built-in water pump, water head up to 1200mm.



(10) Integrated E-control box, The E-box is safely covered by metal plate, for better fire resistance.

1.2. Specification

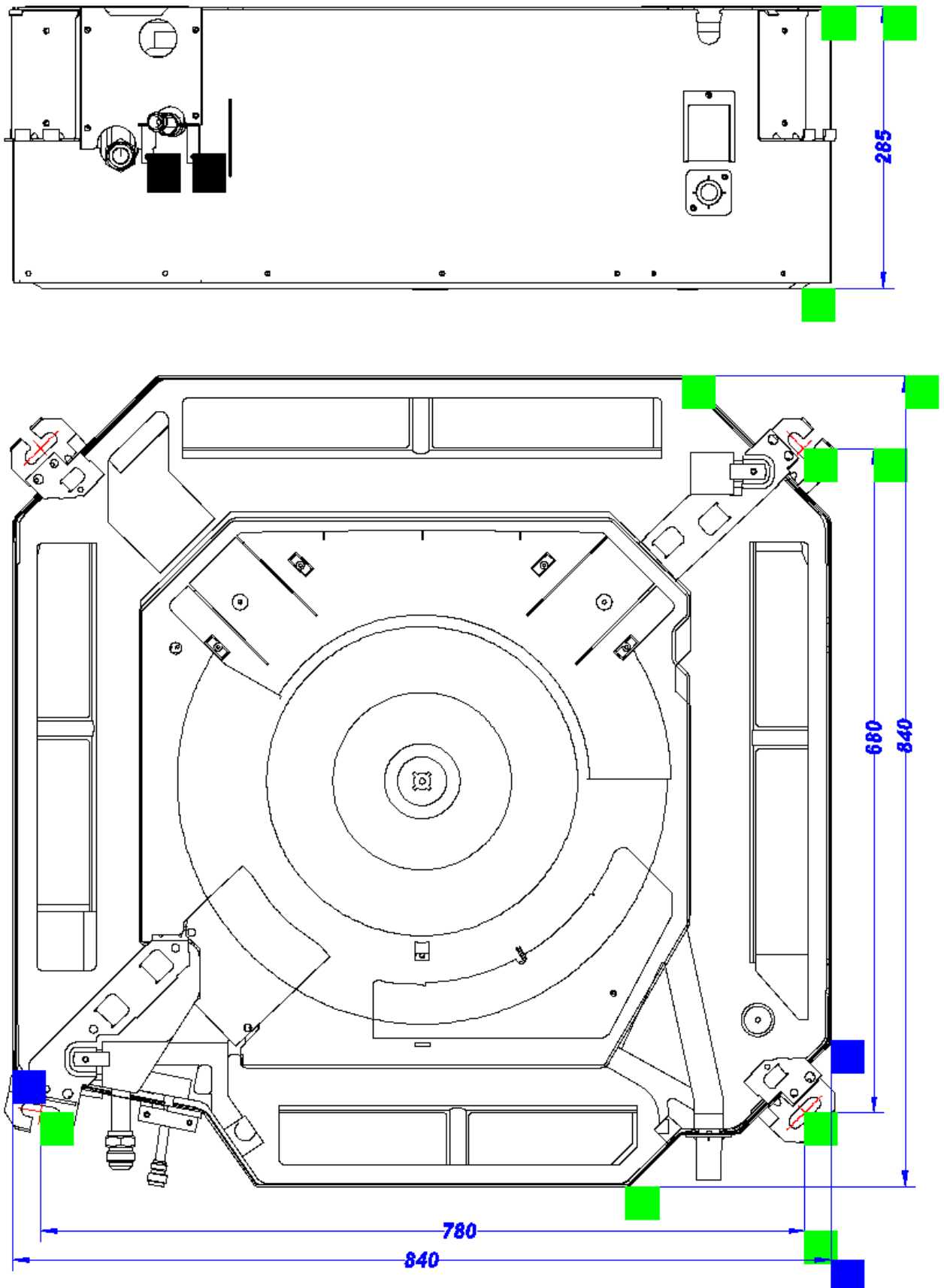
Model			36K	60K
			820030100018	820030100019
			CCA-V36CNR1-Q30 5	CCA-V60CNR1-Q30 5
Indoor power supply		V/Ph/Hz	208~230/1/60	208~230/1/60
Cooling	Capacity	kW	10.5	16
	Input	W	180	180
	Rated current	A	0.8	0.8
Max. power input		W	4000	6800
Max. current input		A	19.0	35
Indoor fan motor	Model		YDK-80Q-8P2	YDK-80Q-8P2
	Brand		KAIBANG	KAIBANG
	Power output	W	80	80
	Capacitor	μF	4	4
	Speed	r/min	670/590/500	670/590/500
	Insulation class		B	B
Indoor coil	Number of rows		2	3
	Tube pitch(a)xrow pitch(b)	mm	21*13.4	21*13.4
	Fin spacing	mm	1.45	1.6
	Fin type		Hydrophilic	Hydrophilic
	Tube outside dia. and type	mm	Φ7	Φ7
			Inner grooved	Inner grooved
	Coil lengthxheightxwidth	mm	2000*252*26.74	2000*252*40.1
Number of circuits		12	6	
Indoor air flow(High speed)		m ³ /h	1700	1900
Indoor noise level		dB(A)	≤64	≤65
Indoor unit	Dimension(W×H×D)	Body(mm)	840×285×840	840×285×840
		Panel(mm)	950×50×950	950×50×950
	Packing(W×H×D)	Body(mm)	920×310×920	920×310×920
		Panel(mm)	1030×100×1030	1030×100×1030
	Net/Gross weight	Body(kg)	29/33.5	31/35.5
		Panel(kg)	9.5/6.5	9.5/6.5
Max pressure		MPa	4.5	4.5
Refrigerant type			R410A	R410A
Refrigerant piping	Liquid side/Gas side	mm	Φ9.52/Φ15.88	Φ9.52/Φ15.88

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Drainage pipe	mm	DN25	DN25
Standard controller		Remote control	
Operation temp	°C	16~32	16~32

1.3. Dimension

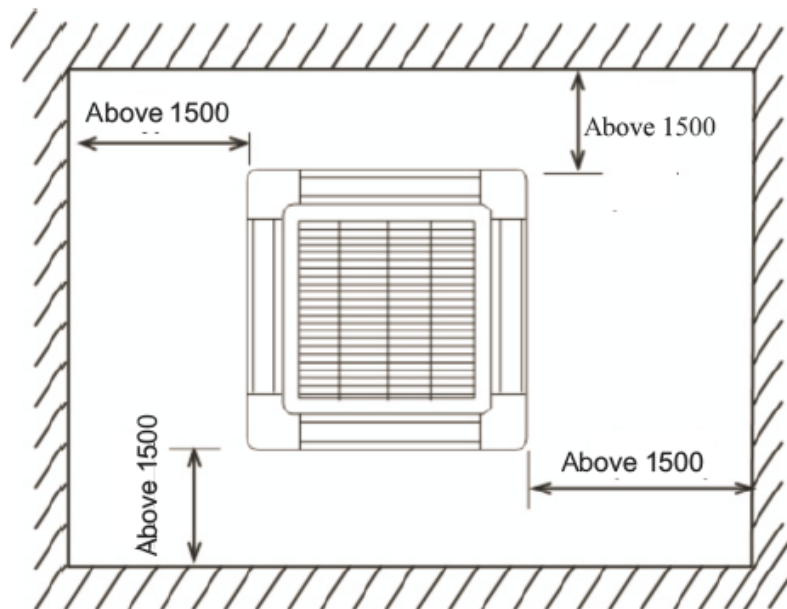
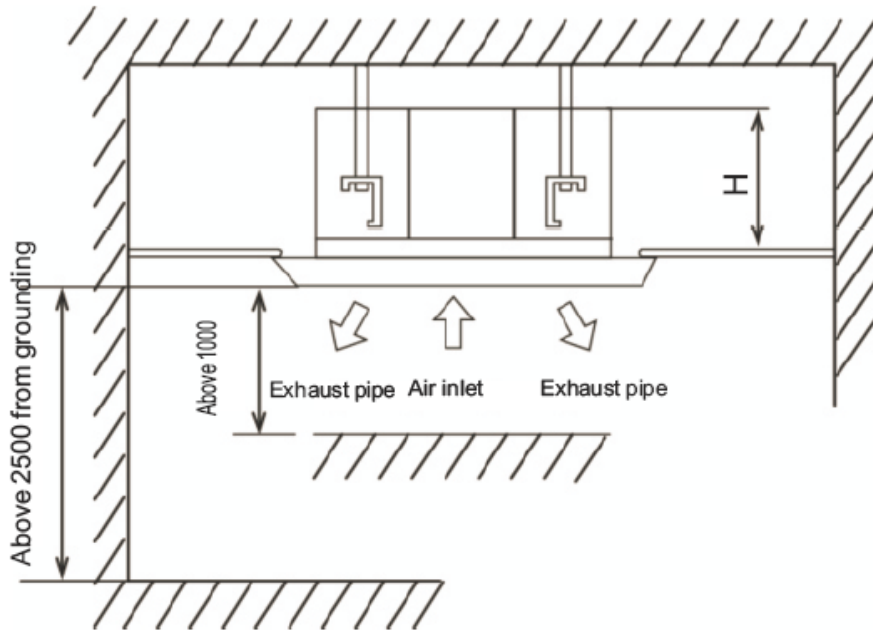
CCA-V36CNR1-Q305, CCA-V60CNR1-Q305



1.4. Service space

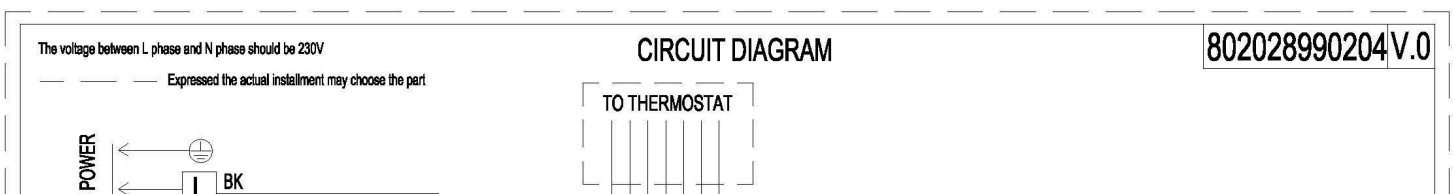
The indoor unit should be installed in a location that meets the following requirements:

- (1) There is enough interspace for installation and maintenance.
- (2) The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- (3) The outlet and the inlet are not impeded, and the influence of external air is the least.
- (4) The air flow can reach throughout the room.
- (5) The connecting pipe and drainpipe could be extracted out easily.
- (6) There is no direct radiation from heaters.



1.5. Wiring diagram

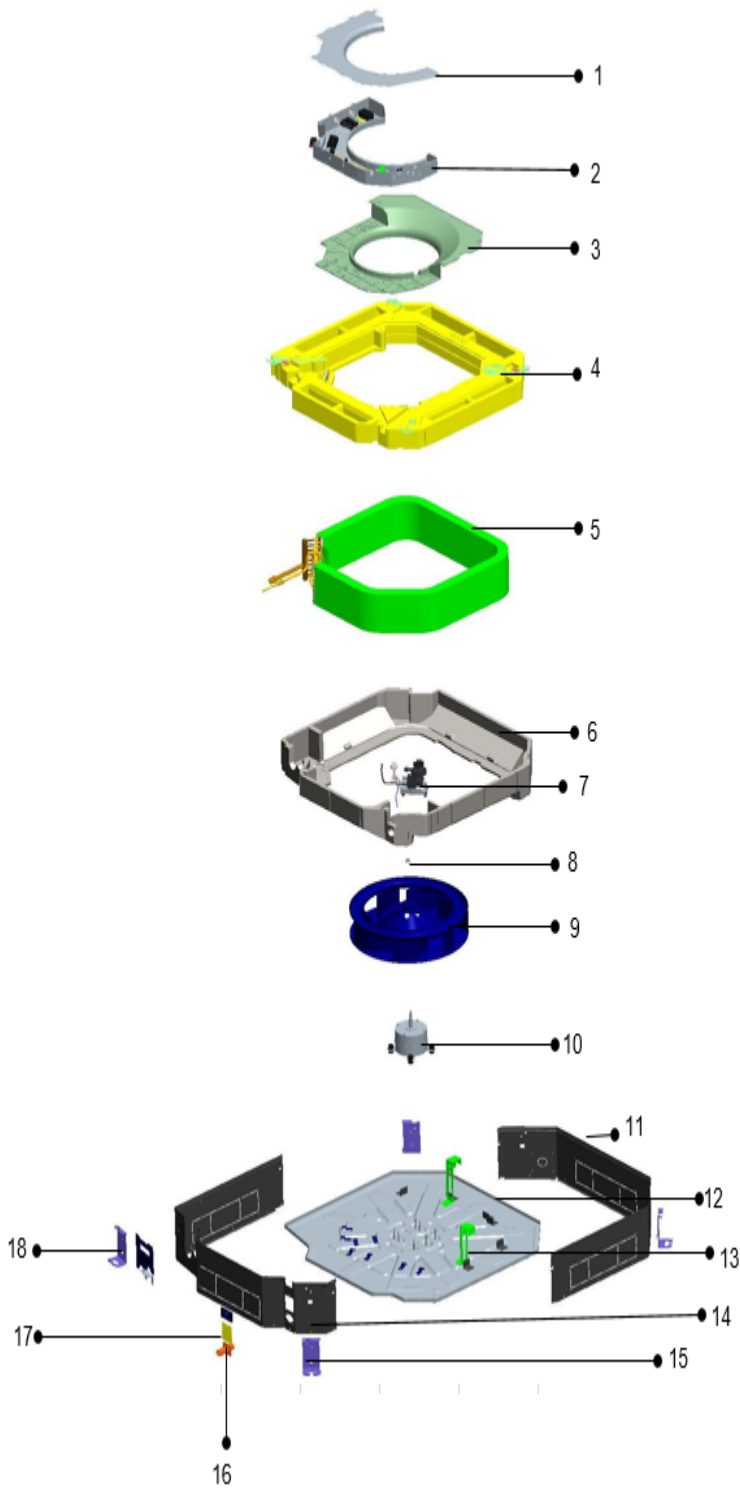
CCA-V36CNR1-Q305, CCA-V60CNR1-Q305



1.6. Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	W
CCA-V36CNR1-Q305	60	208-230V	198V	242V	80
CCA-V60CNR1-Q305	60	208-230V	198V	242V	80

1.7. Exploded View



No.	Part Name	QTY
1	E-parts box cover	1
2	Electric control components for indoor unit	1
2.1		1
2.2	Fan motor capacitor	1
2.3	Terminal	1
2.4	E-parts board for indoor unit	1
2.5	Temperature sensor	1
2.6	Temperature sensor	1
2.7	Welded chassis for E-parts box	1
2.8	Wires outlet board	1
3	Wind inlet guide assy	1
3.1	Wind inlet guide	1
4	Water pan	1
5	Evaporator components	1
5.1	Insulating pipe	1
5.2	Insulating pipe	1
5.3	Insulating pipe	1
5.4	Evaporator welding assy	1
5.4.1	Installation tube for probe	2
5.4.2	Evaporator	1
5.4.3	Collecting capillary assy for evaporator	1
5.4.4	Splitter capillary assembly	1
6	Upper foam components	1
7	Water pump components	1
7.1	Water pump bracket	1
7.2	Water pump	1
7.3	Underlay for water pump support	3
7.4	Water switch	1
8	Wind wheel clasp	1
9	Centrifugal fan	1
10	Fan motor for indoor unit	1
11	Rear brattice	1
12	Chassis assy	1
13	Auxiliary fixing board for evaporator	2
14	Front brattice	1
15	Hanger	4
16	Discharge pipe joint	1
17	Side maintenance board for water pump	1
18	Valve panel	1

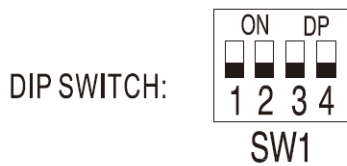
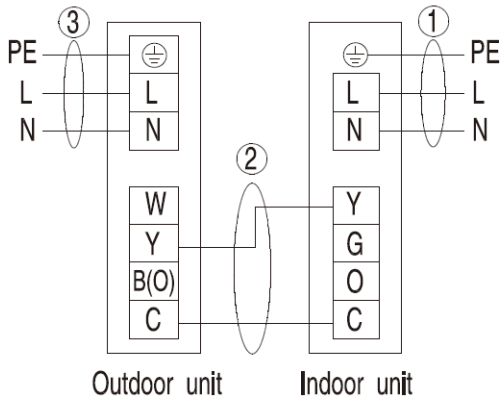
1.8. The Specification of Wiring

Model	Indoor power wire /Diameter (mm ²)	Indoor-Outdoor Signal wire /Diameter (mm ²)	Outdoor power wire /Diameter (mm ²)
36K	3*1.0	≥0.75	3*4.0
60K	3*1.0	≥0.75	3*6.0

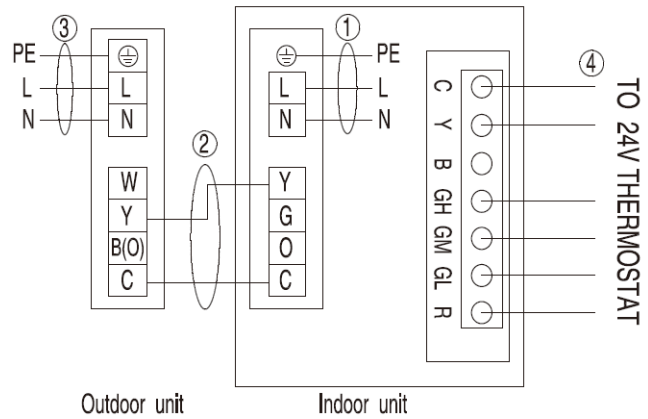
Note: Outdoor and indoor units supply separately.

1.9. Field Wiring

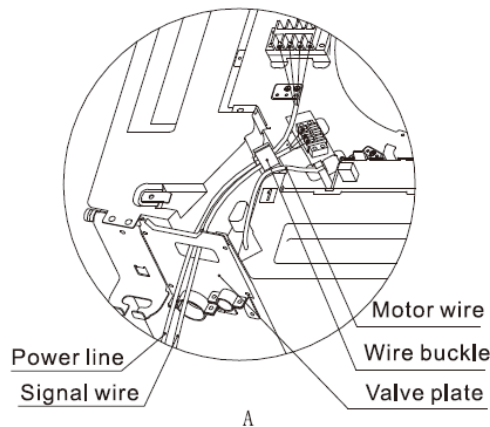
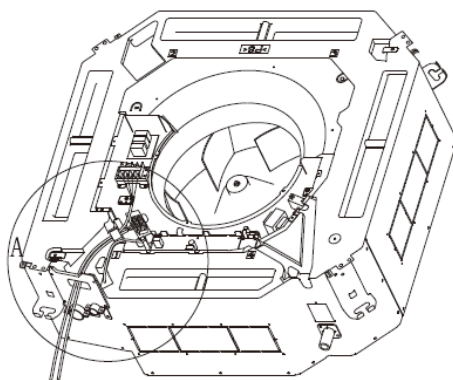
Outdoor unit can use remote controller, wired controller, and 24V thermostat controller. The wiring diagram is like below, pay attention to select the SW1.



Single-phase for cooling type
(Remote Controller & Wired Controller)



Single-phase for cooling type
(24V Thermostat Controller)



Note: The arrangement diagram is only for signal wire and power line. For wiring, please refer to power wiring diagram.

1.10. Troubleshooting

1.10.1 Malfunction analysis

When air conditioner goes wrong before you contact the servicing department, please read the following contents, it will help you save much more time and energy.

Problems	Phenomena	Causes	Solution
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Air conditioner fails to run	Press " ON/OFF key on the remote controller, no " beep " sound comes from the indoor unit and the RUN light is off	Power failure	Press " ON/OFF " key after comeback of power
		Power switch is off	Turn on power supply
		Fuse of power switch may have burned	Replace the fuse
		The creepage switch is off	Turn on the creepage switch
		The remote controller is working out of the function range	Operate the remote controller, in the function range of the remote controller
		Batteries of remote controller exhausted (Information on the screen darken)	Replace them with new batteries
Air conditioner fails to start	Remote controller indicates that the air conditioner is working	Be in 3 minutes protection of compressor	Wait or call your dealer for service
After starting up, the air conditioner will stop working in a short time		Air inlet or outlet of the indoor or outdoor unit are blocked	Eliminate all dirties and make air smooth
		The air filter is dirt	Clean the filter
Air flow is normal but the air blew out is not cool or warm	Remote controller indicates that the air conditioner is working	Temperature is not set correctly, too high in COOL mode or too low in HEAT mode	Set the temperature properly
		The air filter net has been blocked with dust or dirt	Clean the air filter net
		Air inlet or outlet of the indoor or outdoor unit are blocked	Eliminate all dirties and make air smooth
		Doors and windows are open	Close doors and windows

Note: Once the air conditioner break down for power failure, it can start only by pressing "ON/OFF" key on the remote controller even if the power restores.

1.10.2 Self-fault diagnostic function

LED Faults	Digital display	Failure description
Timer light flashing	E2	Ambient temperature sensor (T1) failure
Running light flashing	E3	Evaporator pipe temperature sensor (T2) failure
Defrost light and Protect light flashing	E5	Outdoor unit failure
Running light and Timer light flashing	E7	Indoor unit EEPROM failure
Defrost light and Timer light flashing	E8	Indoor unit fan stall failure
Running light and Defrost light flashing	E9	Indoor unit and Wired controller communication failure
Defrost light flashing	F6	Condenser pipe temperature sensor (T3) failure
Protect light flashing	EE	Water full failure

E2: Indoor ambient temp. sensor fault (T1 sensor)

Solution:

- (1) Check the T1 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25°C, if not, replace it; if resistance normally, change the indoor main board.

E3: Indoor evaporator pipe temperature sensor (T2) failure

Solution:

- (1) Check the T2 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about 5KΩ at 25°C, if not, replace it; if resistance normally, change the indoor main board

E5: Outdoor unit failure

Check the detail of failure at the outdoor unit.

E7: EEPROM failure

Change the indoor mainboard

E8: The protection for the stall of indoor fan motor

Solution:

- (1) Check the connection between motor and main board is loosen or not, inset it firmly
- (2) Check that is something blocked the motor or fan blade, if it is, remove it; if not, change the indoor main board or DC motor

E9: Indoor unit and wire controller communication failure

Solution:

- (1) Check the connection between wired controller and main board is loosen or not, inset it firmly
- (2) Connect with a new wired controller, if not solve, change with a new communication cable
- (3) If all above steps done, it still not solves, change the indoor main board or transformer.

F6: Outdoor condenser pipe temperature sensor (T3) failure

Solution:

- (1) Check the T3 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about $5K\Omega$ at 25°C , if not, replace it; if resistance normally, change the main board.

EE: Water fulfilled protection (Alarm of condensing water overflow)

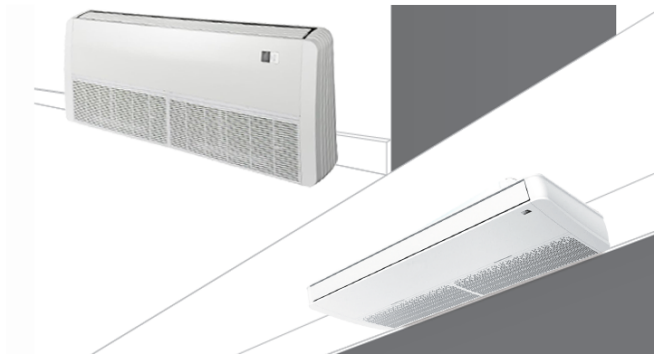
Solution:

- (1) If the unit does not have water drainage pump:
 - a) Check the water level switch short connect or not, if not, short connect it, if it still not solves, change the main board
- (2) If the unit has water drainage pump:
 - a) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step
 - b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

2.Floor & Ceiling

2.1 Features

2.1.1 Flexible installation, ceiling suspended and floor standing.



2.1.2 Adopting centrifugal fans, higher ESP and longer air flow distance.



2.1.3 Two way auto-swing function, built-in two louver motor, vertical and horizontal air-flow adjustment.



2.1.4 Washable air filter

2.1.5 LED display optional.

2.1.6 Water pump optional, pumping head is up to 1200mm.

2.1.7 Adopting waterproof plastic film on water collector, avoiding water leakage.



2.1.8 Self-diagnostic function and multi protection; Auto-restart function.



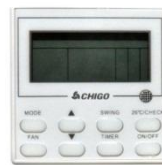
2.1.9 Standard for wireless controller; option for wired controller



Standard



Optional



2.2 Specifications

Model name		Unit	CUA-V36CNR1-LDBB	CUA-V60CNR1-LDBC
Power supply		V/Ph/Hz	208~230-1-60	208~230-1-60
Cooling	Capacity	Btu/h	36000	60000
	Capacity	W	10500	16000
	Input(indoor)	W	240	320
	Rated current(indoor)	A	1	1.50
Operation Control			Wireless control	
Indoor coil	Number of row		3	4
	Fin spacing	mm	1.7	1.4
	Fin material		Hydrophilic Aluminium Fin	Hydrophilic Aluminium Fin
	Tube outside diameter	mm	φ9.52	φ7
	Tube material		Inner grooved tube	Inner grooved tube
	Coil length x height x width	mm	948*250*70	1408*252*70
	Number of circuit		6	6
Indoor fan motor	Brand		Weiling	Yongan
	Model		YSK110-180LD-4P2	YSK110-85LD-4P2
	Qty		1	2
	Output	W	180	85
	Capacitor	μF	5	5
	Speed (Hi/Me/Lo)	r/min	1330/1230/1130	1560/1430/1300
Indoor air flow		m ³ /h	1800	2000
Indoor noise level (Hi/Me/Lo)		dB(A)	59.5/58/55.5	62/60/58
Indoor dimension	Unit (WxHxD)	mm	1300*670*235	1670*670*235
	Packing (WxHxD)	mm	1380*765*325	1750*765*325
Indoor weight	Net/Gross	kg	33/38	43/49
Design pressure		MPa	4.5	4.5
Drainage water pipe diameter		mm	φ25	φ25
Refrigerant piping	Liquid side/Gas side	mm(inch)	φ9.52/φ19.05(3/8"/3/4")	φ9.52/φ19.05(3/8"/3/4")
Operation temperature	Cooling	°C	16~32	16~32

Notes:

1. Nominal cooling capacities are based on the following conditions:

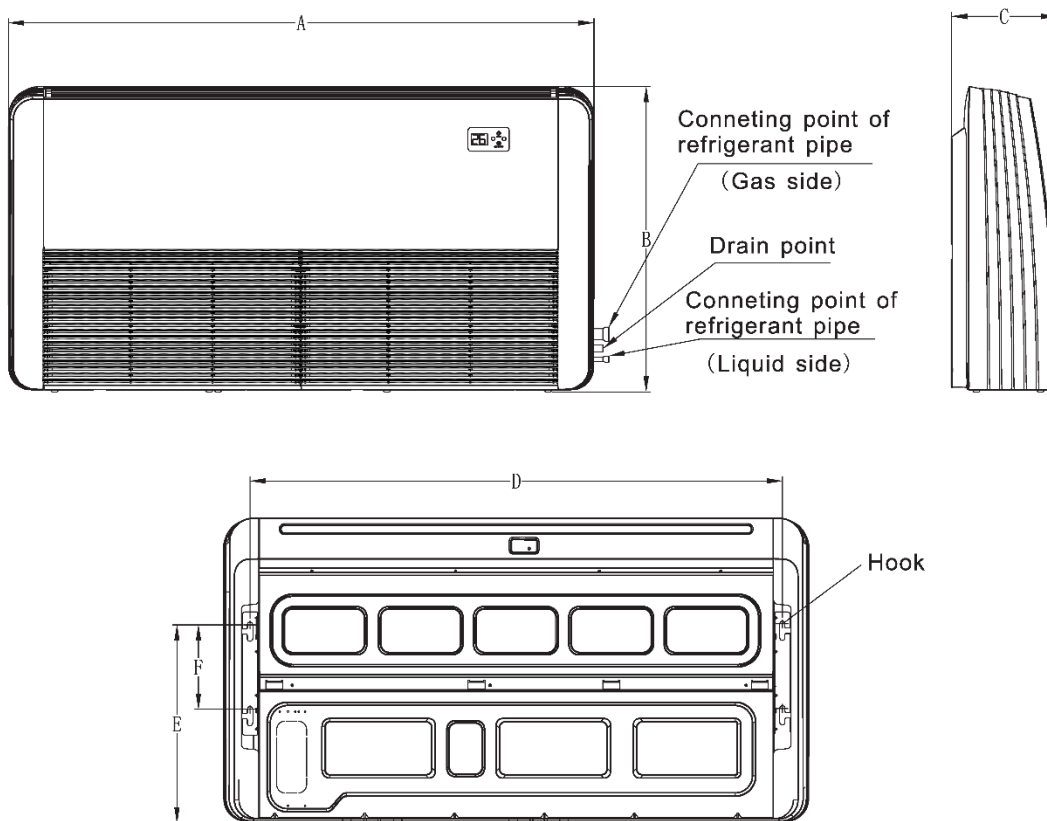
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. Piping: 5m (horizontal)

2. Nominal heating capacities are based on the following conditions:

Indoor temp: 20°CDB; Outdoor temp: 7°CDB, 6°CWB; Equivalent ref. Piping: 5m (horizontal)

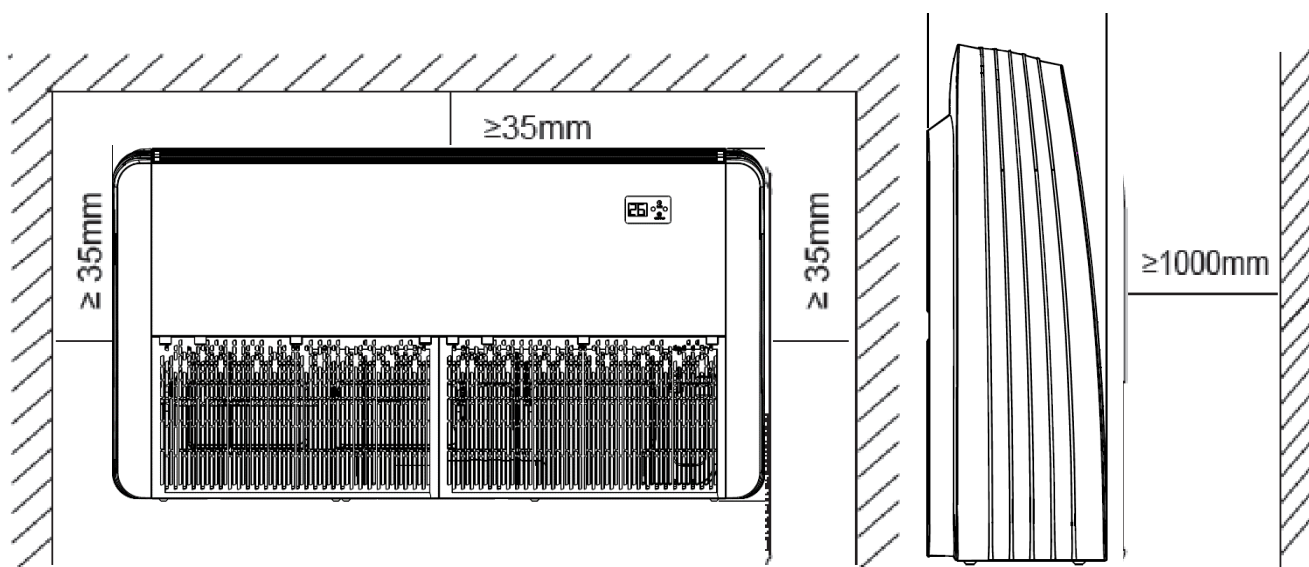
3. Actual noise level may differ, depending on the room structure, etc, since these noise values are from an anechoic room.

2.3 Dimensions



Model(kBtu/h)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)
36	1250	675	235	1185	440	188
60	1670	675	235	1553	440	188

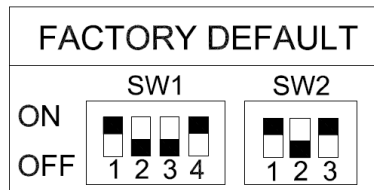
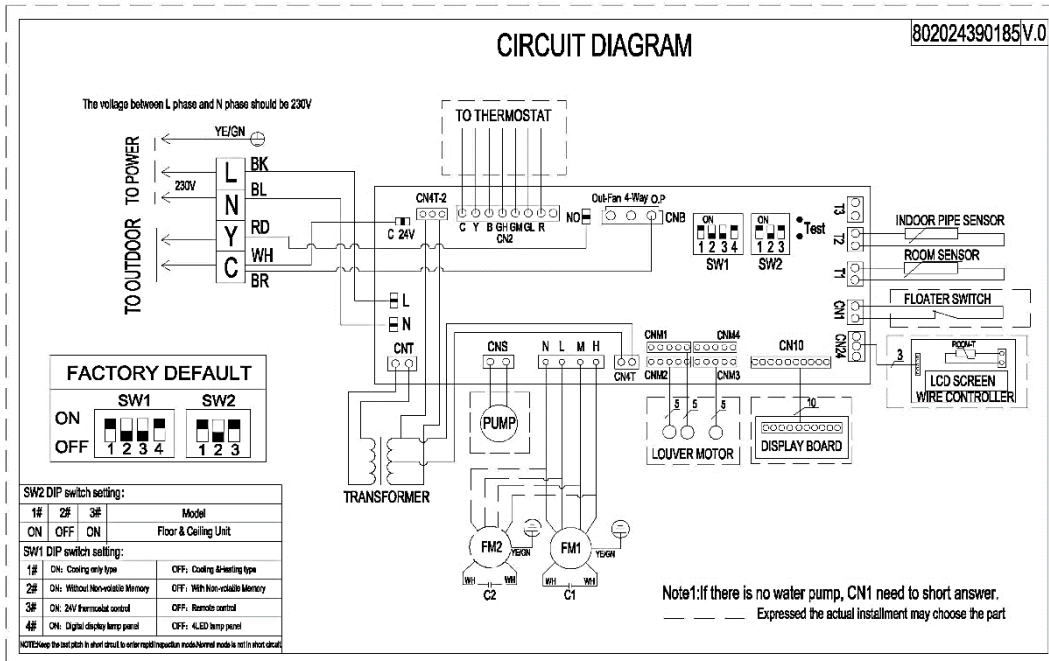
2.4 Service Space



There is enough space for installation and maintenance. The ceiling is horizontal, and its structure can endure the weight of the indoor unit. The outlet and the inlet are not impeded, and the influence of external air is the least. The air flow can reach throughout the room. The connecting pipe and drainpipe could be extracted out easily.

2.5 Wiring Diagrams

CUA-V36CNR1-LDBB, CUA-V60CNR1-LDBC



SW2 DIP switch setting :

1#	2#	3#	Model
ON	OFF	ON	Floor & Ceiling Unit

SW1 DIP switch setting :

1#	ON: Cooling only type	OFF: Cooling & Heating type
2#	ON: Without Non-volatile Memory	OFF: With Non-volatile Memory
3#	ON: 24V thermostat control	OFF: Remote control
4#	ON: Digital display lamp panel	OFF: 4LED lamp panel

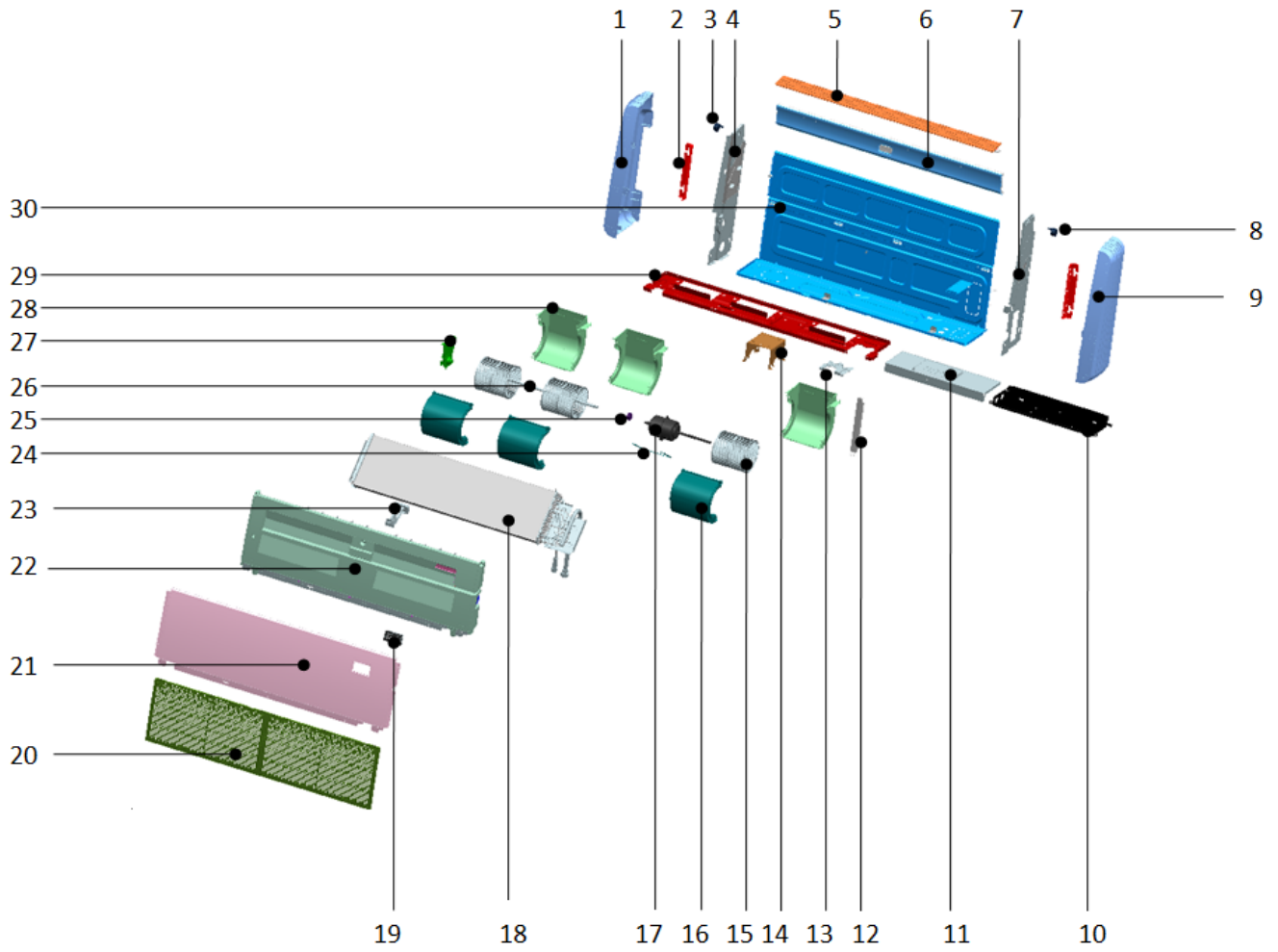
NOTE:Keep the test pitch in short circuit to enter rapid inspection mode.Normal mode is not in short circuit.

2.6 Electric Characteristics

Model	Indoor Units				Indoor Fan Motor
	Hz	Voltage	Min.	Max.	kW
CUA-V36CNR1-LDBB	60	208-230V	198	254	0.18
CUA-V60CNR1-LDBC	60	208-230V	198	254	0.17

2.7 Exploded View

2.7.1 CUA-V36CNR1-LDBB

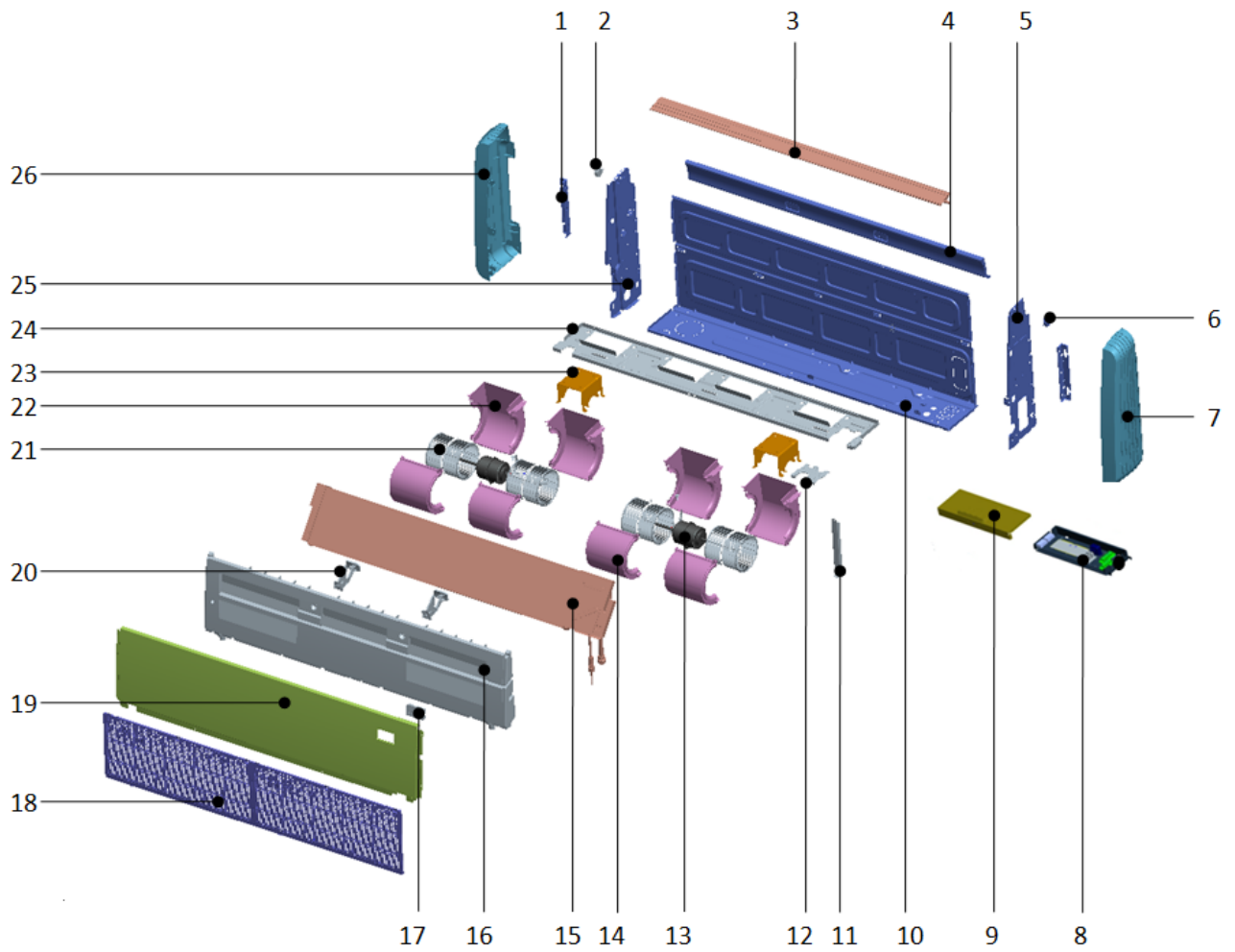


No.	Part Name	QT Y	No.	Part Name	QT Y
1	Left cover plate	1	18. 2	Temperature sensor	1
2	Right mounting plate of evaporator	2	18. 3	Evaporator right lower mounting plate	1
3	Horizontal stepper motor	1	18. 4	Evaporator left lower mounting plate	1
4	Right side board assembly	1	18. 5	Evaporator right upper mounting plate	1
5	Wind guide assembly	1	18. 6	Evaporator left upper mounting plate	1
6	Rear cover plate	1	19	Display panel assembly	1
7	Right side board assembly	1	19. 1	Digital tube lamp board	1
8	Horizontal stepper motor	1	19. 2	Display mask	1
9	Right cover plate	1	19. 3	Display board mounting box	1
10	Electronic control component	1	20	Return air grille assembly	2
10.1	Indoor PCB board	1	20. 1	Return air grille	2
10.2	E-part box	1	20. 2	Filter	2
10.3	Temperature sensor	1	20. 3	Grille buckle	4
10.4	Terminal	1	20. 4	Grille screw cover	6
10.5	Short-cut wire	1	21	Top cover assembly	1
10.6	PC board isolation column	1	22	Water tray assembly	1
10.7	Transformer	1	22. 1	Water tray foam	1
10.8	Fan motor capacitor	1	22. 2	Horizontal swing leaf mount 1	1
10.9	Connecting wire group of display board	1	22. 3	Horizontal swing leaf mount 2	1
11	E-control box cover	1	22. 4	Horizontal swing leaf active rod	1
12	Support bar	1	22. 5	Horizontal swing leaf connecting rod 1	1
13	Pipe plate	1	22. 6	Wind guide blade	10
14	Motor bracket	1	22. 7	Stepper motor	1
15	Centrifugal fan blade	2	23	Wind guide bracket	1
16	Upper volute	3	24	Motor enclosure	1
17	Asynchronous iron case indoor motor	1	25	Coupling	1
18	Evaporator assembly	1	26	Connecting shaft	1

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18.1	Evaporator Pre welding assembly	1	27	Motor support assembly	1
18.1. 1	Evaporator assembly	1	28	Lower volute	3
18.1. 2	Evaporator output tube assembly	1	29	Middle beam welding assembly	1
18.1. 3	Evaporator input tube assembly	1	30	Chassis assembly	1

2.7.2 CUA-V60CNR1-LDBC

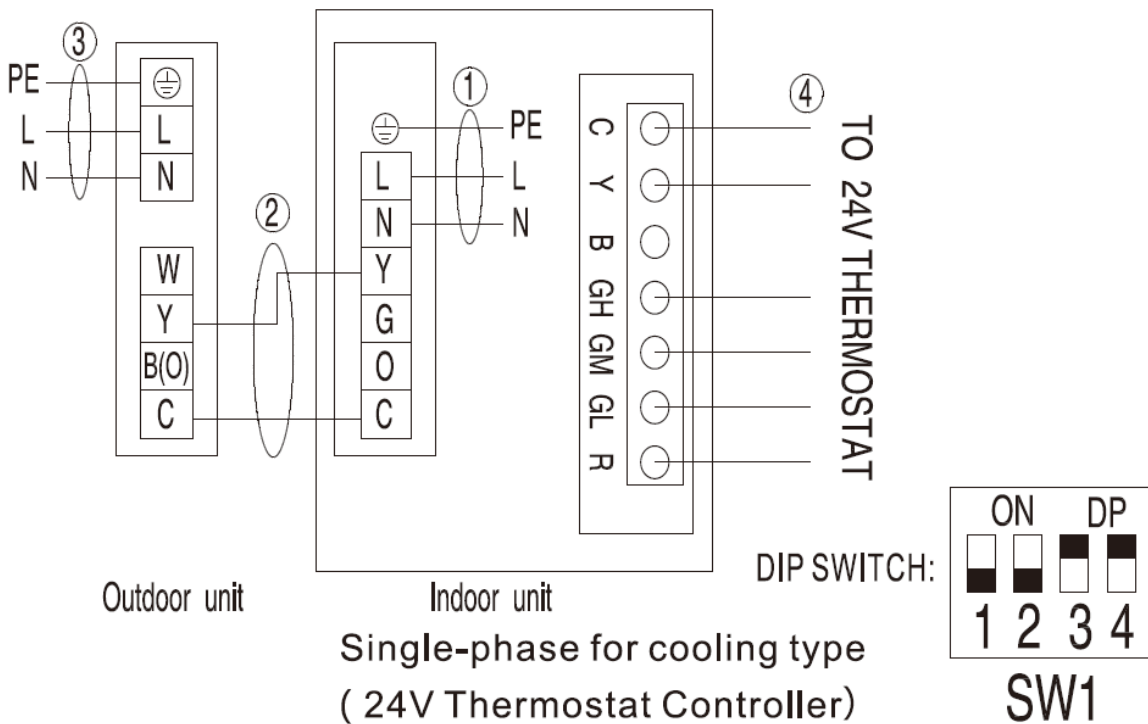


No.	Part Name	QTY	No.	Part Name	QTY
1	Right mounting plate of evaporator	1	16	Water tray assy	1
2	Horizontal step motor	1	16.1	Water tray foam assembly	1
3	Wind guide assembly	1	16.2	Horizontal swing leaf mount 1	1
4	Rear cover with cotton	1	16.3	Horizontal swing leaf mount 2	1
5	Right side board assembly	1	16.4	Horizontal swing leaf active rod	1
6	Horizontal step motor	1	16.5	Horizontal swing leaf connecting rod 1	1
7	Right cover	1	16.6	Horizontal swing leaf connecting rod 2	1
8	Indoor PCB assembly	1	16.7	Wind guide blade	1
8.1	E-part box	1	16.8	Vertical stepper motor	1
8.2	Indoor PCB	1	17	Display panel assembly	1
8.3	Terminal	1	17.2	Show mask	1
8.4	Transformer	1	17.3	Display board mounting box	1
8.5	Blade fan capacitor	2	18	Back style assembly	2
9	Electric box cover	1	18.1	Back style	2
10	Chassis assembly	1	18.2	Filter	2
11	Support bar	1	18.3	Grille buckle	6
12	Pipe plate	1	18.4	Grille screw cover	6
13	Indoor fan motor	2	19	Top cover assy	1
14	Upper volute	4	20	Wind guide bracket	2
15	Evaporator assy	1	21	Centrifugal fan blade	4
15.1	Evaporator assembly	1	22	Lower volute	4
15.2	Evaporator return header assembly	1	23	Motor bracket	2
15.3	Evaporator splitter capillary assembly	1	24	Middle beam welding assembly	1
15.4	Evaporator right mounting plate	1	25	Left side board assembly	1
15.5	Evaporator left mounting plate	1	26	Left cover	1
15.6	Evaporator right lower mounting plate	1			
15.7	Evaporator left lower mounting plate	1			

2.8 The Specification of Power

Items Model(Btu/h)	Outdoor power wires	Indoor power wires	Signal cables	Power supply types
18/24Kseries(single-phase)	3 x 2.5mm ²	3 x 1.0mm ²	≥0.75mm ²	Outdoor and Indoor units supply separately
36K series (single-phase)	3 x 4.0mm ²	3 x 1.0mm ²		
48/60K series (single-phase)	3 x 6.0mm ²	3 x 1.0mm ²		

2.9 Field Wiring



2.10 Troubleshooting

2.10.1 Malfunction analysis

If the following cases happen, do not worry, for them being not faults:

Phenomena	Phenomena analysis
The air conditioner can not be restarted just after shutting down	The unit delays running for 3 minutes after stopping for protection. The three-minute protection timer built-in micro-computer works automatically, but it is not for the case when the unit is powered first time.
The air conditioner does not supply air at the beginning of heating.	The air conditioner does not supply air to avoid of blowing cold air until the indoor heat exchanger is warm(2-5minutes).
The air conditioner does not supply air after it has running for 5-10 minutes in heating mode.	The air conditioner enters defrost mode automatically when the outdoor temp. is quite low or the humidity is too high, so please wait for a moment. Besides, during defrosting, some moisture or steam will come out from the outdoor unit.
The air conditioner does not supply air in dehumidifying mode.	Sometimes, the fan of indoor unit will stop running to prevent the condensate from evaporating and save energy.
The air conditioner blows out the moisture in cooling mode.	This is caused by too high temperature and humidity of the room. It will eliminate when the temperature and humidity reduces.
The air blown out is smelly.	The air blown out is smelly during operating, it may come from the tobacco or other cosmetics stucked to the inner of the air conditioner.
Squeak is heard from the unit	This is caused by the circulating refrigerant inside the unit.
Crack is heard from the unit	This is caused by heat expansion or contraction of plastics
When the power restores, the air conditioner can not run	This is because the memory circuit of the microcomputer is cleared. Please start the air conditioner through the remote controller.
The air conditioner can not receive the signal from the remote controller.	It may happen when the signal receiver of the air conditioner is exposed to sunlight or strong light directly or the batteries are used up. In that case, eliminate those factors or change the batteries.
There is some drop on the air outlet and the grille.	The air outlet and the grille moisture will condense when the air conditioner is operated in humid environment for a long time, please adjust the grille and the vane to the position which is in parallel with the wind supply direction and select "High speed" mode to improve the condensing phenomena.

Pull out power plug immediately and inform to your distributor in the following situations:

- 1.Fuse or breaker often breaks off
- 2.Power wires are excessively hot
- 3.Covering of power wires is broken
4. Switch works well
5. Abnormal noise is heard during operation

2.10.2 Self-fault diagnostic function

Our company will provide convenient service to our customers, and install all kinds of judgment systems, which can display the unmoral function of the unit.

Indoor fault codes table:

Digital display	Failure description
E2	Ambient temperature sensor (T1) failure
E3	Evaporator pipe temperature sensor (T2) failure
E5	Outdoor unit failure
E7	Indoor unit EEPROM failure
E8	Indoor unit fan stall failure
E9	Indoor unit and Wired controller communication failure
F6	Condenser pipe temperature sensor (T3) failure
EE	Water full failure

Following cases are not air conditioner troubles

- 1.Sometimes , air conditioner may give off odours , for the unit can absorb the smell of rooms ,furniture, cigarettes , makeup, etc., and then emit it again.
- 2.A continuous low hissing sound is heard when the system is in operation. This is the sound of refrigerant gas flowing through both indoor and outdoor units.
- 3.When starting up or stopping the air conditioner, you can hear "cracking" sound from the air conditioner, t his sound is produced by the contraction or the expansion of the structural part of the air conditioner, which is caused by temperature change.

E2: Indoor ambient temp. sensor fault (T1 sensor)

Solution:

- (1) Check the T1 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about $5K\Omega$ at 25°C , if not, replace it; if resistance normally, change the indoor main board.

E3: Indoor evaporator pipe temperature sensor (T2) failure

Solution:

- (1) Check the T2 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about $5K\Omega$ at 25°C , if not, replace it; if resistance normally, change the indoor main board

E5: Outdoor unit failure

Check the detail of failure at the outdoor unit.

E7: EEPROM failure

Change the indoor mainboard

E8: The protection for the stall of indoor fan motor

Solution:

- (1) Check the connection between motor and main board is loosen or not, inset it firmly
- (2) Check that is something blocked the motor or fan blade, if it is, remove it; if not, change the indoor main board or DC motor

E9: Indoor unit and wire controller communication failure

Solution:

- (1) Check the connection between wired controller and main board is loosen or not, inset it firmly
- (2) Connect with a new wired controller, if not solve, change with a new communication cable
- (3) If all above steps done, it still not solves, change the indoor main board or transformer.

F6: Outdoor condenser pipe temperature sensor (T3) failure

Solution:

- (1) Check the T3 sensor connection loosen or not, inset it firmly, if not solve, go to next step;
- (2) Take out the sensor, measure the resistance of the sensor, it is about $5K\Omega$ at 25°C , if not, replace it; if resistance normally, change the main board.

EE: Water fulfilled protection (Alarm of condensing water overflow)

Solution:

- (1) If the unit does not have water drainage pump:
 - b) Check the water level switch short connect or not, if not, short connect it, if it still not solves, change the main board
- (2) If the unit has water drainage pump:
 - b) Check the water level switch if it is connected well, inset it firmly; then check the switch is blocked or not, if it is blocked, replace it, otherwise go to next step
 - b) Check the connection between pump and main board if it is 220-240V, if it is, change the water pump; if not, change the indoor main board

Part 4 Installation

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1. Precaution on Installation

1.1. Measure the necessary length of the connecting pipe, and make it by the following way.

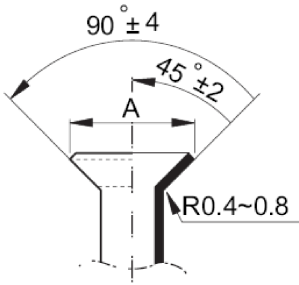
a. Connect the indoor unit at first, then the outdoor unit.

Bend the tubing in proper way. Do not harm them.

CAUTIONS:

- Daub the surfaces of the flare pipe and the joint nuts with frozen oil, and wrench it for 3~4 rounds
- With hands before fasten the flare nuts.

Be sure to use two wrenches simultaneously when you connect or disconnect the pipes.

Pipe gauge	Tightening torque	Flare dimension A		Flare shape
		Min (mm)	Max	
Φ6.35	15~16N.m (153~163 kgf.cm)	8.3	8.7	
Φ9.52	25~26N.m (255~265kgf.cm)	12.0	12.4	
Φ12.7	35~36N.m (357~367kgf.cm)	15.4	15.8	
Φ15.9	45~47N.m (459~480 kgf.cm)	18.6	19.1	
Φ19.1	65~67N.m (663~684kgf.cm)	22.9	23.3	

b. The stop value of the outdoor unit should be closed absolutely (as original state). Every time you connect it, first loosen the nuts at the part of stop value, then connect the flare pipe immediately (in 5 minutes). If the nuts have been loosened for a long time, dusts and other impurities may enter the pipe system and may cause malfunction later. So please expel the air out of the pipe with refrigerant before connection.

c. Expel the air after connecting the refrigerant pipe with the indoor unit and the outdoor unit. Then fasten the nuts at the repair-points.

1.2. Locate The Pipe

a. Drill a hole in the wall (suitable just for the size of the wall conduit), then set on the fittings such as the wall conduit and its cover.

b. Bind the connecting pipe and the cables together tightly with binding tapes. Do not let air in, which will cause water leakage by condensation.

c. Pass the bound connecting pipe through the wall conduit from outside. Be careful of the pipe allocation to do no damage to the tubing.

1.3. Connect the pipes.

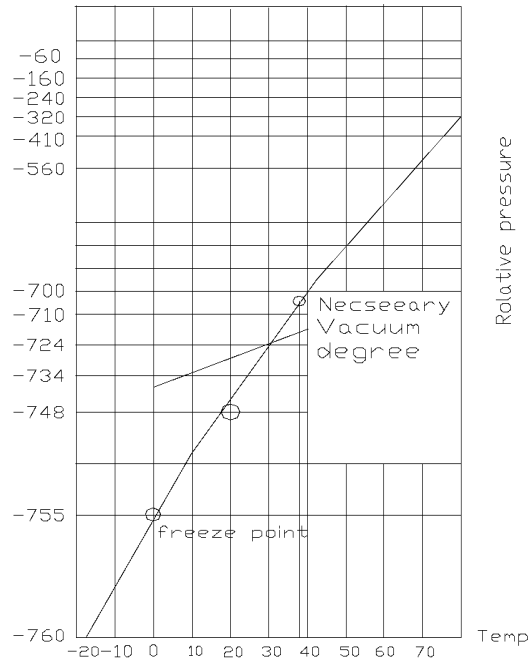
1.4. Then, open the stem of stop values of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.

1.5. Be sure of no leakage by checking it with leak detector or soap water.

1.6. Cover the joint of the connecting pipe to the indoor unit with the soundproof / insulating sheath (fittings), and bind it well with the tapes to prevent leakage.

2. Vacuum Dry and Leakage Checking

2.1 Vacuum Dry: use vacuum pump to change the moisture (liquid) into steam (gas) in the pipe and discharge it out of the pipe to make the pipe dry. Under one atmospheric pressure, the boiling point of water(steam temperature) is 100°C. Use vacuum pump to make the pressure in the pipe near vacuum state, the boiling point of water falls relatively. When it falls under outdoor temperature, the moisture in the pipe will be vaporized.

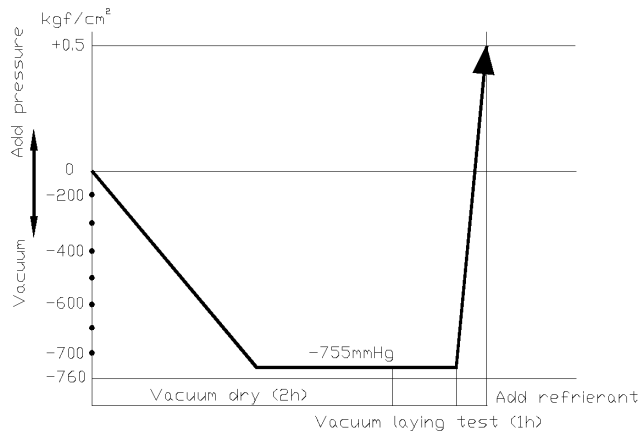


2.2 Vacuum dry procedure

There are two methods of vacuum dry due to different construction environment: common vacuum dry, special vacuum dry.

①. Common vacuum dry procedure

- Vacuum dry (for the first time)---connect the all-purpose detector to the inlet of liquid pipe and gas pipe, and run the vacuum pump more than two hours (the vacuum pump should be below -755mmHg)
- If the pump can't achieve below -755mmHg after pumping 2 hours, moisture or leakage point will still exist in the pipe. At this time, it should be pumped 1 hour more.
- If the pump can't achieve -755mmHg after pumping 3 hours, please check if there are some leakage points.
- Vacuum placement test: place 1 hour when it achieves -755mmHg, pass if the vacuum watch shows no rising. If it rises, it shows there's moisture or leakage point.
- Vacuuming from liquid pipe and gas pipe at the same time.
- Sketch map of common vacuum dry procedure.



②. Special vacuum dry procedure

- This vacuum dry method is used in the following conditions:
- There's moisture when flushing the refrigerant pipe.
- Rainwater may enter into the pipe.
- Vacuum dry for the first time 2h pumping

③. Vacuum destroy for the second time Fill nitrogen to 0.5Kgf/cm²

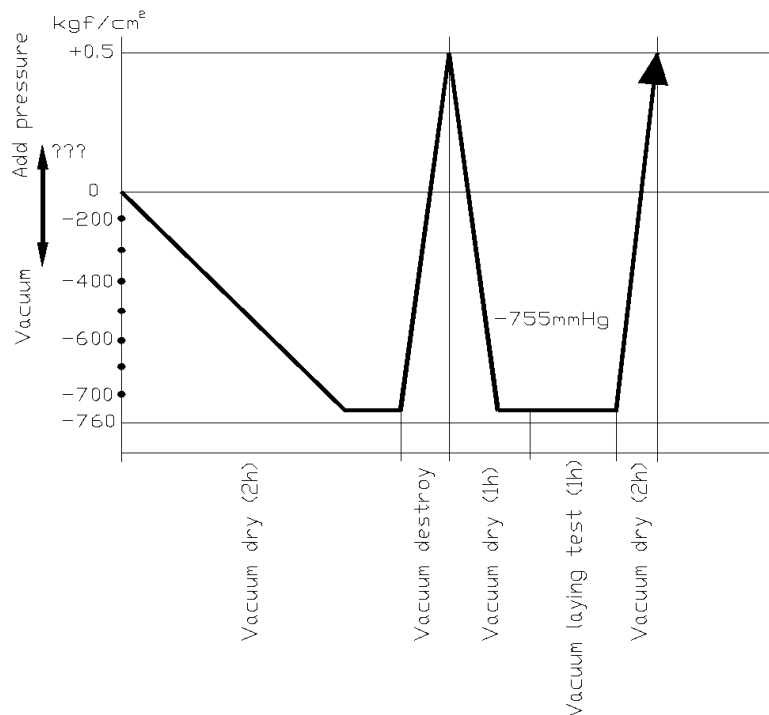
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

④. Vacuum dry for the second time 1h pumping

Determinant: Pass if achieving below -755mmHg. If -755mmHg can't be achieved in 2h, repeat procedure ③ and ④.

⑤. Vacuum placing test 1h

⑥. Sketch map of special vacuum dry procedure



3. Additional Refrigerant Charge

Caution

- Refrigerant cannot be charged until field wiring has been completed.
- Refrigerant may only be charged after performing the leak test and the vacuum pumping.
- When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of the danger of liquid hammer.
- Charging with an unsuitable substance may cause explosions and accidents, so always ensure that the appropriate refrigerant is charged.
- Refrigerant containers shall be opened slowly.
- Always use protective gloves and protect your eyes when charging refrigerant.

The outdoor unit is factory charged with refrigerant. Calculate the added refrigerant according to the diameter and the length of the liquid side pipe of the outdoor unit/indoor unit

R(g) \ D(mm)	φ6.35	φ9.52	φ12.7
L(m)			
Less than 5m (One-way)	—	—	—
Added Refrigerant When Over 5m(One-way)	20g/m×(L-5)	40g/m×(L-5)	60g/m×(L-5)

Remark:

R (g): Additional refrigerant to be charged

L (m): The length of the refrigerant pipe (one-way)

D (mm): Liquid side piping

4. Insulation Work

4.1 Insulation material and thickness

4.1.1. Insulation material

Insulation material should adopt the material which is able to endure the pipe's temperature: no less than 70°C in the high-pressure side, no less than 120°C in the low-pressure side (For the cooling type machine, no requirements at the low-pressure side.)

- ◆ Example: Heat pump type----Heat-resistant Polyethylene foam (withstand above 120°C)
Cooling only type----Polyethylene foam (withstand above 100°C)

4.1.2. Thickness choice for insulation material

Insulation material thickness is as follows:

	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	Φ6.4—Φ25.4	10mm
	Φ28.6—Φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

4.2 Refrigerant pipe insulation

4.2.1. Work Procedure

- ① Before laying the pipes, the non-jointing parts and non-connection parts should be heat insulated.
- ② When the gas proof test is eligible, the jointing area, expanding area and the flange area should be heat insulated.

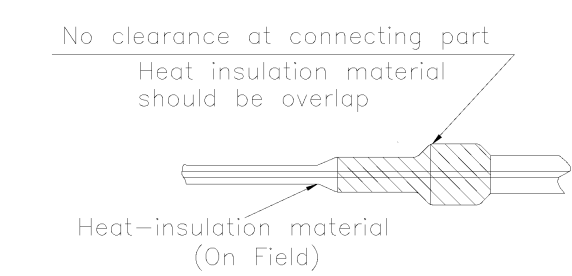
4.2.2. Insulation for non-jointing parts and non-connection parts

wrong	right	
Gas pipe and liquid pipe should not be put together to insulate	Insulate the gas pipe (cooling only)	Insulate the gas pipe and liquid pipe

For construction convenience, before laying pipes, use insulation material to insulate the pipes to be deal with, at the same time, at two ends of the pipe, remain some length not to be insulated, in order to be welded and check the leakage after laying the pipes.

4.2.3. Insulate for the jointing area, expanding area and the flange area

- ① Insulate for the jointing area, expanding area and the flange area should be done after checking leakage of the pipes
- ② Make sure there's no clearance in the joining part of the accessorial insulation material and local preparative insulation material.



4.3 Drainage pipe insulation

The connection part should be insulated, or else water will be condensing at the non-insulation part.

4.4 Note

- 5.4.1 The jointing area, expanding area and the flange area should be heat insulated after passing the pressure test.
- 4.4.2 The gas and liquid pipe should be heat insulated individually, the connecting part should be heat insulated individually.
- 4.4.3 Use the attached heat-insulation material to insulate the pipe connections (pipes' tie-in ,expand nut) of the indoor unit.

5. Test Operation

(1) The test operation must be carried out after the entire installation has been completed.

(2) Please confirm the following points before the test operation.

- The indoor unit and outdoor unit are installed properly.
- Tubing and wiring are correctly completed.
- The refrigerant pipe system is leakage-checked.
- The drainage is unimpeded.
- The ground wiring is connected correctly.
- The length of the tubing and the added stow capacity of the refrigerant have been recorded.
- The power voltage fits the rated voltage of the air conditioner.
- There is no obstacle at the outlet and inlet of the outdoor and indoor units.
- The gas-side and liquid-side stop valves are both opened.
- The air conditioner is pre-heated by turning on the power.

(3) According to the user's requirement, install the remote controller when the remote controller's signal can reach the indoor unit smoothly.

(4) Test operation

Set the air conditioner under the mode of "COOLING" with the remote controller, and check the following points.

Indoor unit

- Whether the switch on the remote controller works well.
- Whether the buttons on the remote controller works well.
- Whether the air flow louver moves normally.
- Whether the room temperature is adjusted well.
- Whether the indicator lights normally.
- Whether the temporary buttons works well.
- Whether the drainage is normal.
- Whether there is vibration or abnormal noise during operation.

Outdoor unit

- Whether there is vibration or abnormal noise during operation.
- Whether the generated wind, noise, or condensed of by the air conditioner have influenced your neighborhood.
- Whether any of the refrigerant is leaked.