



**R410A 60Hz Universal Outdoor Series
18 SEER**

Technical Manual

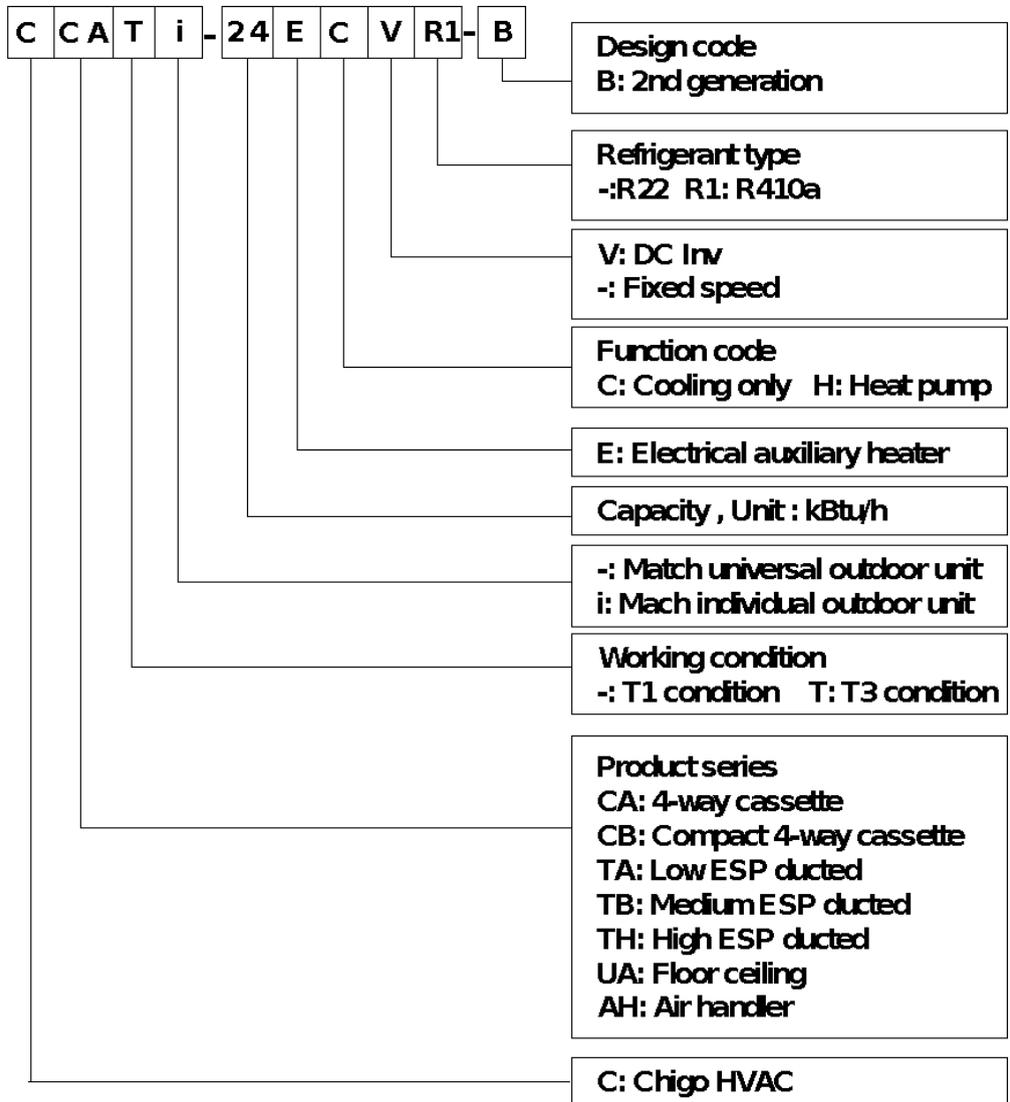
Part 1. General Information	1
1. Nomenclature	2
2. Model Names of Indoor/Outdoor Units	4
3. External Appearance	5
4. Features	6
Part 2. Indoor Unit	7
Air Handler Type	7
1. Features	8
2. Specification	10
3. Dimension	12
4. Service Space	13
5. Wiring Diagrams	14
6. Electric Characteristics	14
7. Exploded View	15
8. The Specification of Wiring	17
9. Field Wiring	18
10. Trouble shooting	18
Part 3 Outdoor Unit	19
1. Specification	20
2. Dimensions	22
3. Service Space	23
4. Wiring Diagrams	24
5. Electric Characteristics	24
6. Operation Limits	25
7. Sound Levels	26
8. Exploded View	27
9. Troubleshooting	29
Part 4 Installation	30
1. Precaution on Installation	31
2. Vacuum Dry and Leakage Checking	32
3. Additional Refrigerant Charge	34
4. Insulation Work	35
5. Test Operation	37

Part 1. General Information

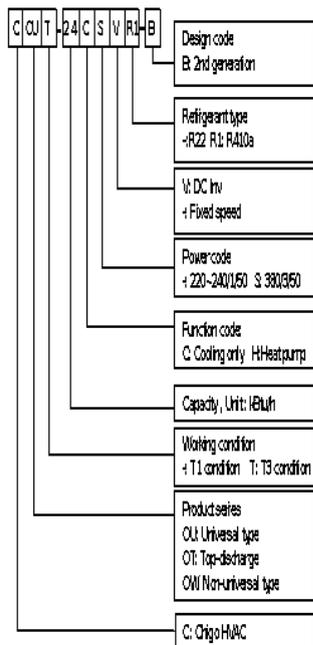
1. Nomenclature	2
2. Model Names of Indoor/Outdoor Units	4
3. External Appearance	6
4. Features	7

1.Nomenclature

1.1 Indoor unit



1.2 Outdoor unit



2. Model Names of Indoor/Outdoor Units

2.1 Indoor Units

Model name	Dimension(W×H×D) (inch)	Power supply
CAHi-24CNVR1	20 x46 x22	208~230V-1Ph-60Hz
CAHi-36CNVR1	20 x46 x22	208~230V-1Ph-60Hz
CAHi-48CNVR1	22 x55 x24	208~230V-1Ph-60Hz
CAHi-60CNVR1	22 x55 x24	208~230V-1Ph-60Hz

2.2 Outdoor Units

Model name	Dimension(W×H×D) (inch)	Power supply
CTV18CN24A	29x29x25	208~230V-1Ph-60Hz
CTV18CN36A	29x29x25	208~230V-1Ph-60Hz
CTV18CN48A	33x29x29	208~230V-1Ph-60Hz
CTV18CN60A	33x29x29	208~230V-1Ph-60Hz

3.External Appearance

3.1 Indoor unit



3.2 Outdoor unit



Note: Standard outdoor unit is using plastic grill. Metal grill can be customized.

4.Features

4.1 Wide operation range.

4.2 Well known brand inverter compressor, reliable quality.

4.3 Condenser coils constructed with copper tubing and enhanced aluminum fins.

4.4 Use TXV(cooling) as expansion device;

4.5 Direct drive motors, 3-speed, provide selections of air flow to meet desired applications.

4.6 24V control, time delay relay, fan relay and transformer included.

4.7 R410A environment friendly refrigerant.

4.8 AHRI certification, ETL certification.

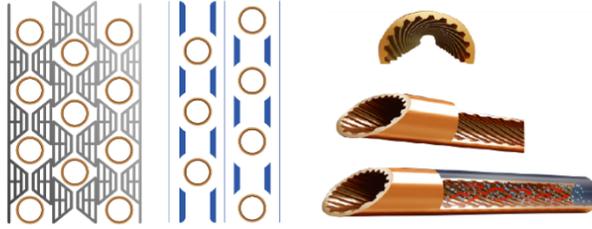
Part 2. Indoor Unit

Air Handler Type

1.Features	8
2.Specification	10
3. Dimension	12
4.Service Space	13
5. Wiring Diagrams	14
6. Electric Characteristics	14
7. Exploded View	15
8. The Specification of Wiring	17
9. Field Wiring	18
10. Trouble shooting	18

1. Features

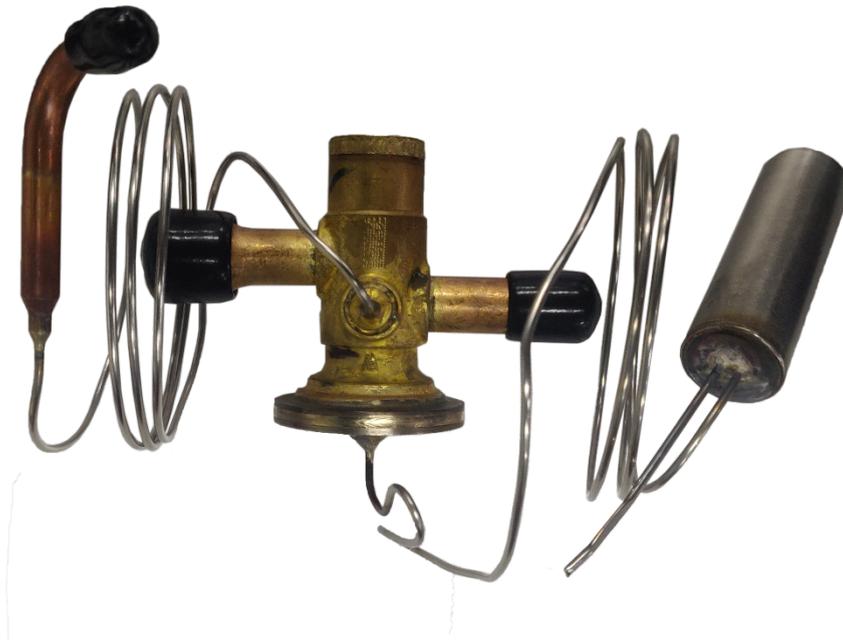
(1) "A" shape coils, constructed with copper tubing and enhanced aluminum fins



(2) Direct drive motors, 3 speed , provides lections of air flow to meet desired applications. $\varnothing 10$ " big fan, powerful wind. Motor is covered with thermal insulator, keep motor running in safety status.

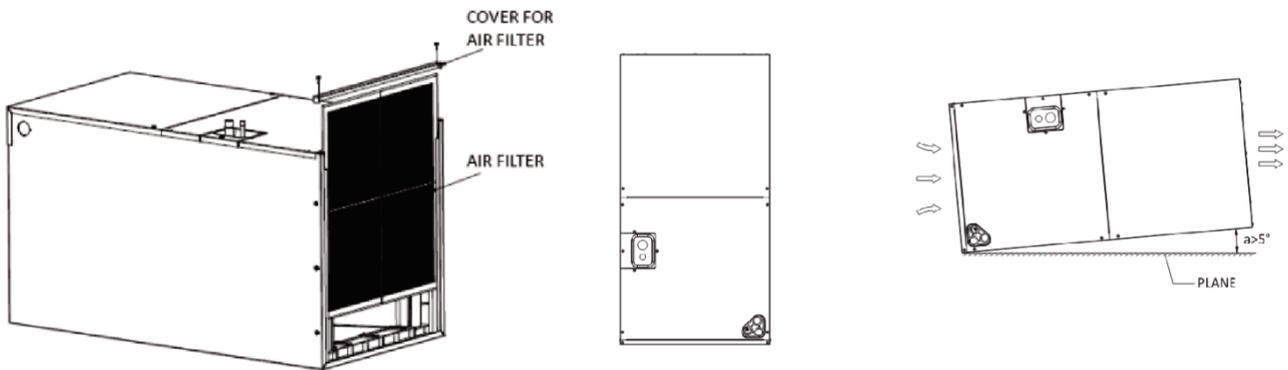


(4) Use TXV as expansion device (18 SEER air handler)



(5) Detachable air filter for cleaning or renewal

Versatile 4-way convertible design for vertical up airflow, horizontal right airflow.



2. Specification

Model		CAHi-24CNV R1	CAHi-36CNV R1	CAHi-48CNV R1	CAHi-60CNV R1	
Power supply		V/Ph/Hz	208-230V/1PH/60Hz			
Cooling	Capacity	Btu/h	24000	34500	47000	56000
	Minimum Circuit Ampacity	A	17.7	24.2	31.9	36.5
	Max. Overcurrent Protection	A	30	40	50	60
	SEER		17.5	17.5	17.5	17.5
Heating	Capacity	Btu/h	24000	34500	46500	55000
	HSPF		9.5	9.0	9.5	9.5
Indoor coil	Number of rows		4×2	4×2	4×2	5×2
	Tube outside dia. / Type		7mm / Innergroove tube			
	Fin spacing / Thickness / Type	mm / mm	1.6 / 0.095 / Hydrophilic aluminium			
	Tube pitch(a) × row pitch(b)	mm	13.37 × 21	13.37 × 21	13.37 × 21	13.37 × 21
Indoor motor	type		ECM			
	Rated HP		1/3	1/2	3/4	3/4
	Rated RPM	r/min	770	870	1050	1120
	FLA		2.8	4.1	6.0	6.0
Indoor fan	material		Galvanized plate			
	Type		Centrifugal			
	Diameter	inch	11	11	11	11
	Height	inch	10-5/8	10-5/8	10-5/8	10-5/8
Indoor air flow		CFM	830	1100	1500	1750
ESP		Pa	25	37.5	50	50
Indoor noise level		dB(A)	63	66	67	68
Metering device	Throttle type		TXV			
	Model number		3TR	3TR	5TR	5TR
Electrical Data	Voltage-Phase-Hz	V-Ph-Hz	208/230V 1Ph 60Hz			
	Minimum Circuit Ampacity		3.5	5.1	7.5	7.5

	Max. Overcurrent Protection		15	15	15	15
	Min / Max Volts	V	187 / 253	187 / 253	187 / 253	187 / 253
Indoor unit	Dimension (W×H×D)	mm	500×1162×560		560×1350×620	
		in.	19-2/3×45-3/4×22		22×53-1/8×24-1/2	
	Packing (W×H×D)	mm	580×1210×650		640×1390×710	
		in.	22-5/6×47-5/8×25-3/5		25-1/5×54-3/4×28	
	Net / Gross weight	kg	57 / 63	57 / 63	77 / 85	77 / 85
		lbs	126 / 139	126 / 139	170 / 188	170 / 188
Refrigerant piping Liquid side / Gas side		in.	3/8 / 3/4	3/8 / 3/4	3/8 / 7/8	3/8 / 7/8
Shipping per STD40HQ			154	154	104	104

Notes:

- Nominal cooling capacities are based on the following conditions:
Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. piping: 5m (horizontal)
- Actual noise level may differ, depending on the room structure, etc., since these noise values are from an anechoic room.

3. Dimension

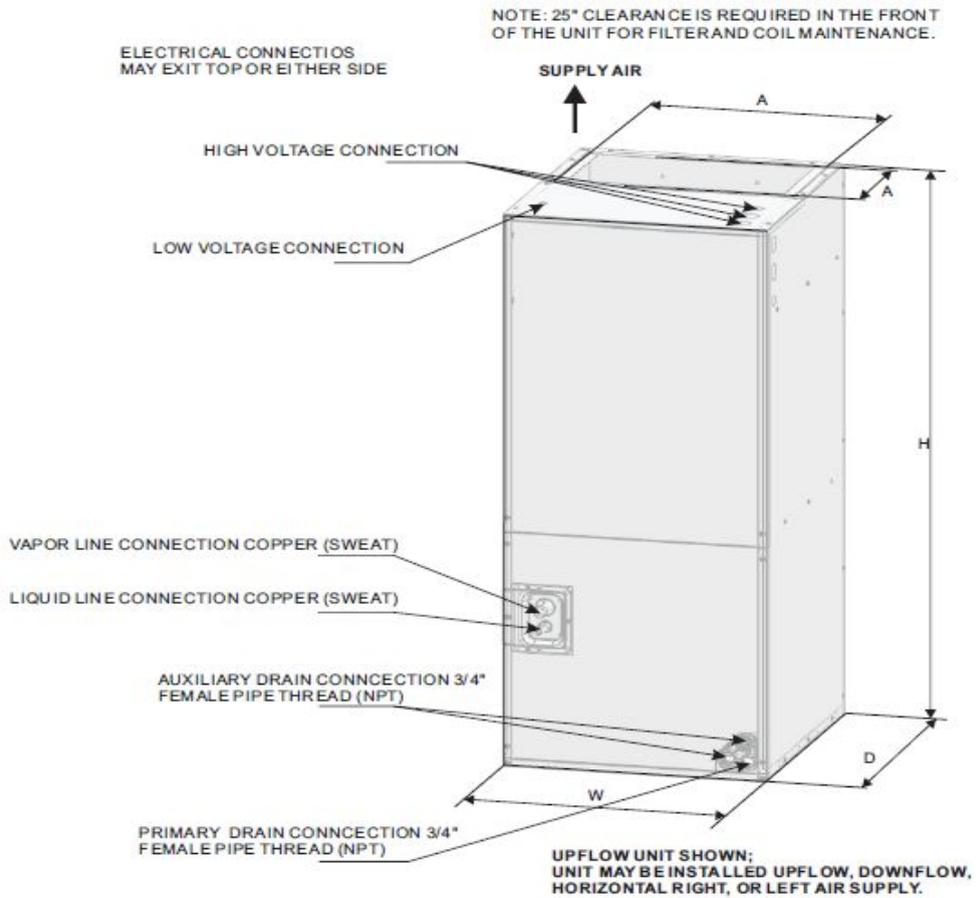


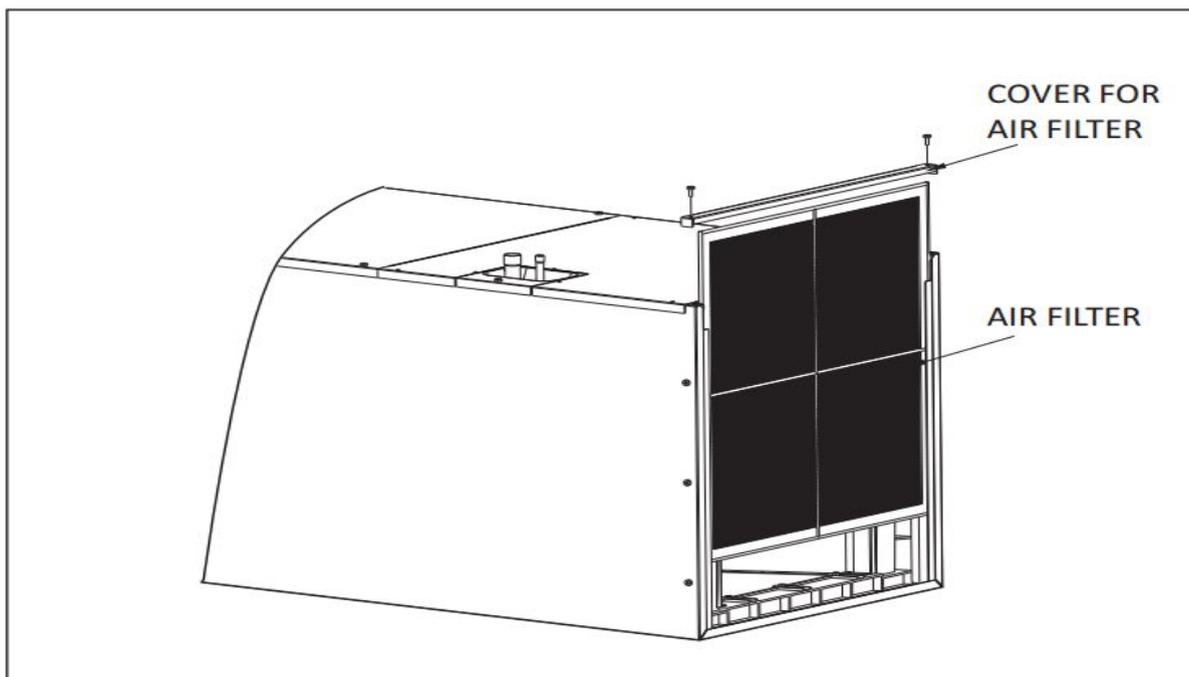
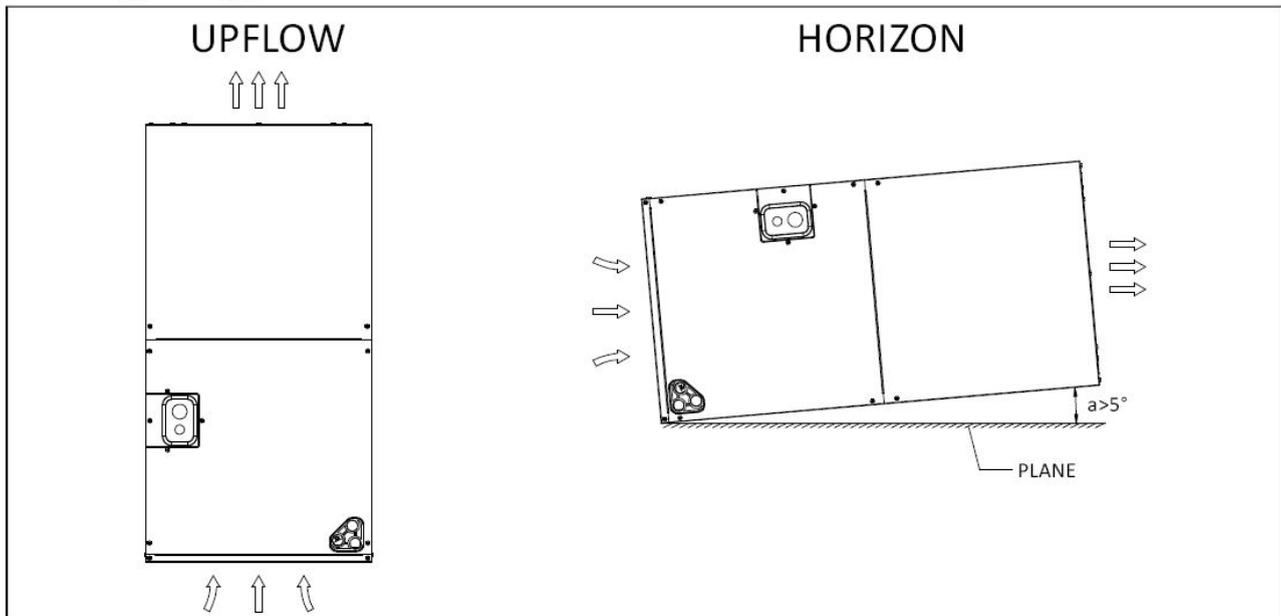
Fig.1 DIMENSIONS

DIMENSIONAL DATA					
MODEL SIZE	Dimensions				
	UNIT HEIGHT "H"/in	UNIT WIDTH "W"/in	UNIT LENGTH "D"/in	SUPPLY DUCT "A"/in	LIQUID LINE / VAPOR LINE IN
24K	46.46	19.69	21.65	454	3/8" / 7/8"
36K	46.46	19.69	21.65	454	3/8" / 7/8"
48K	54.53	22.05	24.02	496	3/8" / 7/8"
60K	54.53	22.05	24.02	496	3/8" / 7/8"

4. Service Space

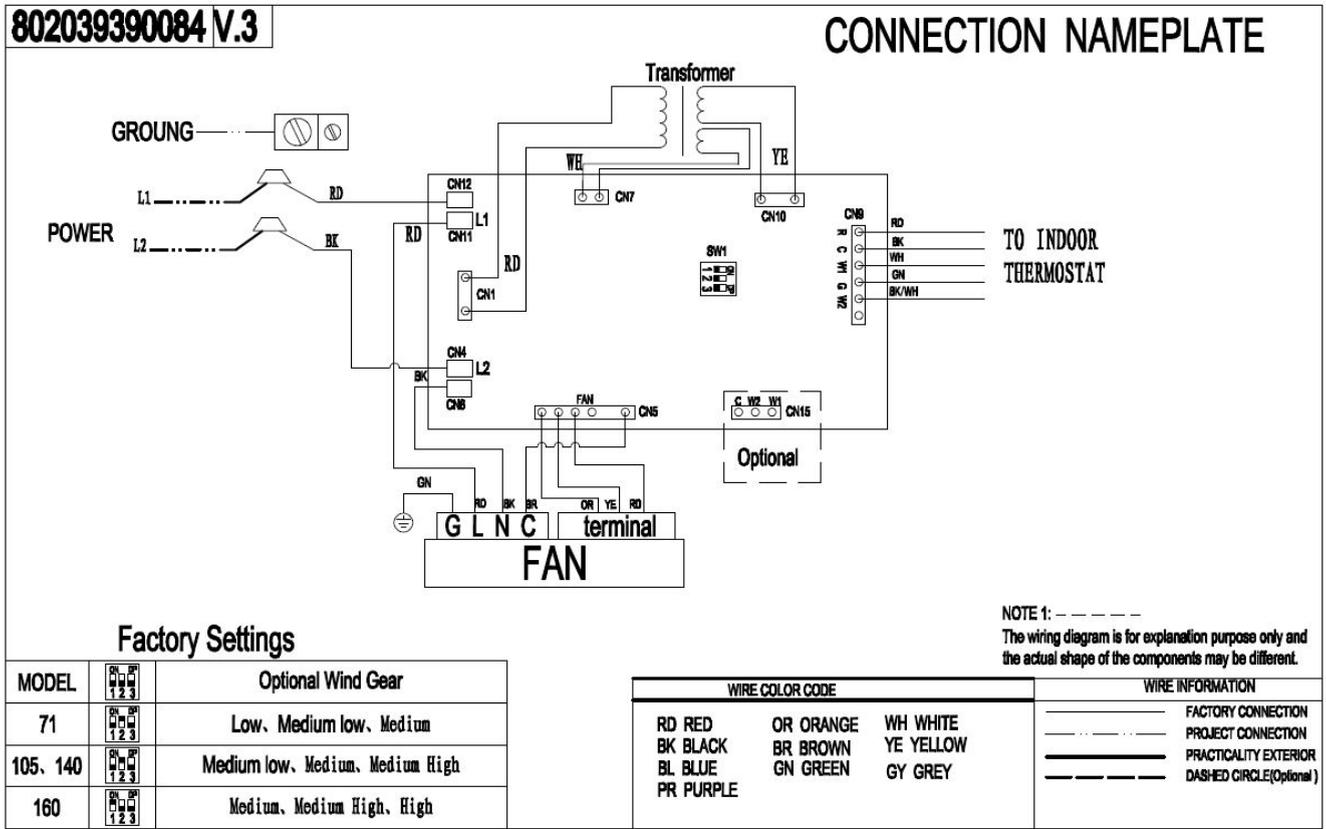
The indoor unit should be installed in a location that meets the following requirements:
INSTALLATION NOTES: .

1. When up hand discharge , how to trap or plug all drains is see the left Figure.
2. When right hand discharge , how to trap or plug all drains is see the top Figure.
3. The seal-plugs are supplied as accessories , and be screwed tightly only with hand.



5. Wiring Diagrams

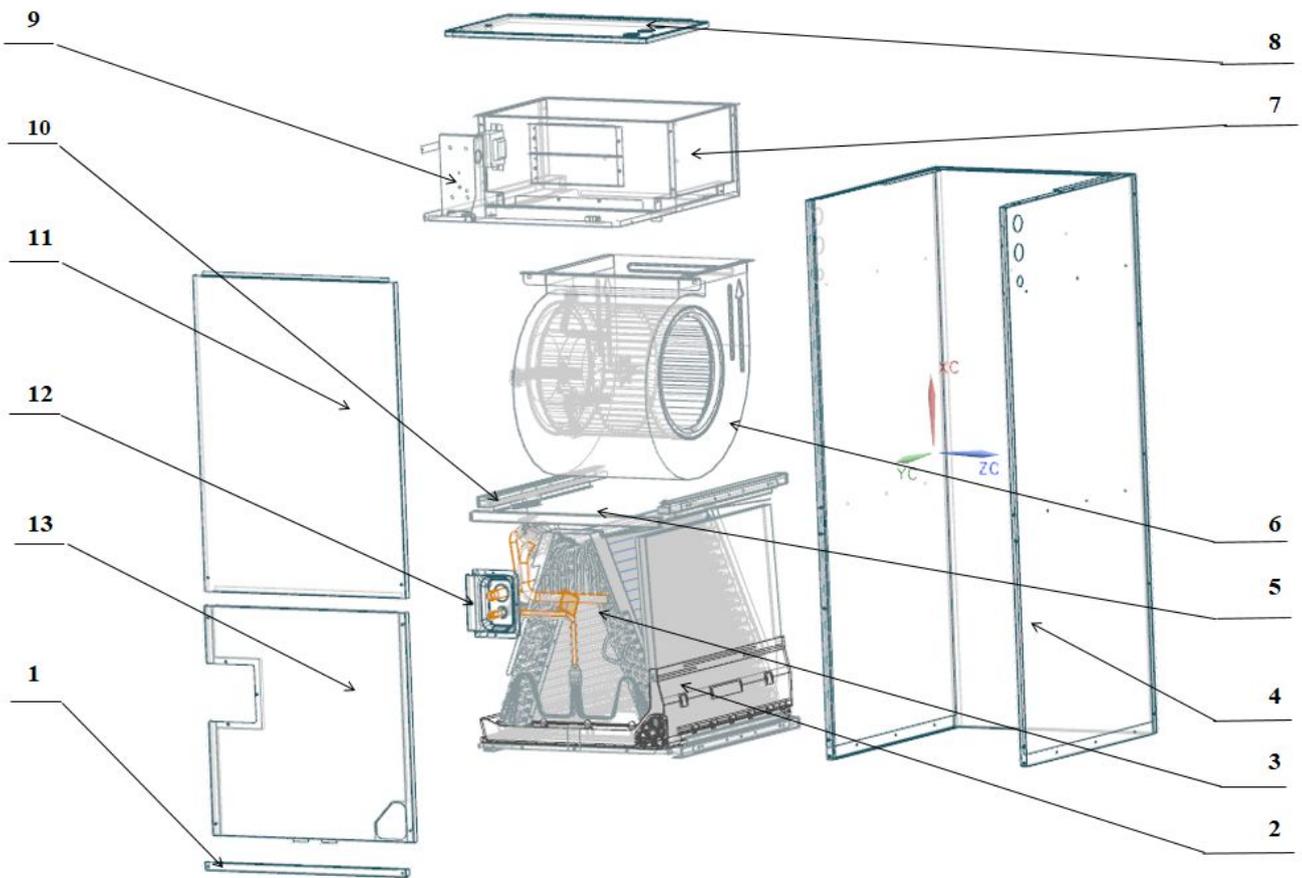
24K/36K/48K/60K



6. Electric Characteristics

Model	Indoor Units			
	Hz	Voltage	Min.	Max.
CAHi-24CNVR1	60	208-230V	198V	242V
CAHi-36CNVR1	60	208-230V	198V	242V
CAHi-48CNVR1	60	208-230V	198V	242V
CAHi-60CNVR1	60	208-230V	198V	242V

7.Exploded View



No.	Part Name	Quantity
1	Filter Cover plate	1
2	Water pan components	1
2.1	Water pan# 1	1
2.2	Water pan# 2	1
2.3	Water pan fixed block	1
2.4	Water pan brace	2
3	Evaporator pre-welded assembly	1
3.1	Air header Assembly	1
3.2	Diverter Assembly	1
3.3	TXV	1
3.4	Connecting pipe	1
3.5	Evaporator	2
3.6	Evaporator Baffle	1

3.7	Evaporator baffle welded assembly	1
3.8	Evaporator Water Baffle #1	2
3.9	Evaporator Water Baffle #2	1
3.1 0	Evaporator Water Baffle #3	1
3.1 1	Evaporator Fixing Plate #1	1
3.1 2	Evaporator Fixing Plate #2	1
3.1 3	Evaporator Junction Plate	1
4	Chasiss assembly	1
5	Supporter	2
6.1	Right Volute Wind Wheel	1
6.2	Indoor Motor	1
7	Fan Motor Fixing plate assembly	1
7.1	Fan Motor Fixing plate	1
7.2	Wind Wheel Fixed Block	2
7.3	Fixed plate on air duct	1
7.4	Stator	2
7.5	air duct left stationary plate	1
7.6	air duct right stationary plate	1
8	Electronically Controlled Cover Plate Cotton Pasting Component	1
9	ELectronic Control Components	1
9.1	ELectronic Control Mounting Plate	1
9.2	Main Board	1
9.3	Transformer	1
10	Water pan supporter assembly	4
11	Upper side plate assembly	1
12	Pipe Cover plate assembly	1
13	Lower side plate assembly	1

8. The Specification of Wiring

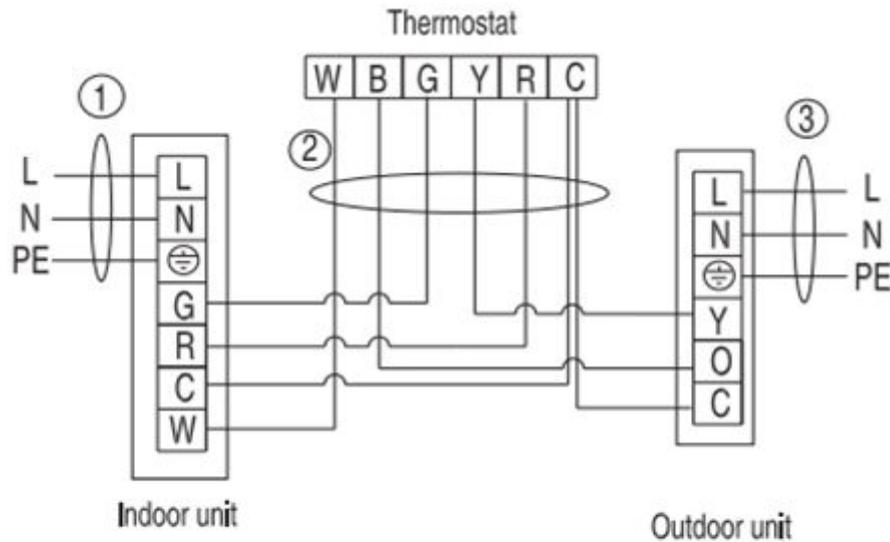
Note:

The cross-section areas of wires or lines should not be less than the corresponding ones listed in the table below; Besides, if the power wires is quite long from the unit, please choose the windings with larger cross-section area to guarantee the normal power supply.

Model	Type	Indoor power wire diameter	Thermostat communication wire diameter		Outdoor power wire diameter
			Indoor	Outdoor	
CTA18C024A	Cooling Only	3*1.0mm ²	4*0.75mm ²	3*0.75mm ²	3*2.5mm ²
CTA18C036A	Cooling Only	3*1.0mm ²	4*0.75mm ²	3*0.75mm ²	3*2.5mm ²
CTA18C048A	Cooling Only	3*1.0mm ²	4*0.75mm ²	3*0.75mm ²	3*4.0mm ²
CTA18C060A	Cooling Only	3*1.0mm ²	4*0.75mm ²	3*0.75mm ²	3*4.0mm ²

9. Field Wiring

1. To avoid the electrical shock, please connect the air conditioner with the ground lug. The main power plug in the air conditioner has been joined with the ground wiring, please don't change it freely.
2. The power socket is used as the air conditioner specially.
3. Don't pull the power wiring hard.
4. When connecting the air conditioner with the ground, observe the local codes.
5. If necessary, use the power fuse or the circuit, breaker or the corresponding scale ampere.



Applicable for 24k, 36k, 48k, 60k cooling & heating type

10. Troubleshooting

The fault codes for indoor unit as follows:

Display mode	Status description
Green light always on	No system alarm and error, normal standby
Red light always on	Evaporator tube temperature sensor(T 2) failure
Green light always on, yellow light flashing	Evaporator high and low temperature protection
Green light flashing	system is in normal operating status

Part 3 Outdoor Unit

1. Specification	20
2. Dimensions	22
3. Service Space	23
4. Wiring Diagrams	24
5. Electric Characteristics	24
6. Operation Limits	25
7. Sound Levels	26
8. Exploded View	27
9. Troubleshooting	29

1. Specification

Model			CTV18CN24A	CTV18CN36A	CTV18CN48A	CTV18CN60A
Electrical Data	Voltage-Phase-Hz	V-Ph-Hz	20/230V-1Ph-60Hz			
	Minimum Circuit Ampacity	A	17.7	24.2	31.9	36.5
	Max. Overcurrent Protection	A	25	40	50	60
	Min / Max Volts	V	187 / 253	187 / 253	187 / 253	187 / 253
Cooling	Capacity	Btu/h	24000	36000	47000	56000
	EER	Btu/h. W	11.6	11.6	11.6	10.8
	SEER	Btu/h. W	17.5	17.5	17.5	17.5
Compressor	Model		ATM240D57U FT	ATM240D57U FT	MNB42FCKM C-L	MNB42FCKM C-L
	Brand		GMCC	GMCC	Mitsubishi	Mitsubishi
	Type		Twin-rotary DC	Twin-rotary DC	Twin-rotary DC	Twin-rotary DC
	Capacity	W/h	7190±5%	7190±5%	13780±5%	13780±5%
	Input	W	1935±5%	1935±5%	4040±5%	4040±5%
	Rated current(RLA)	A	8.85	8.85	11.80	11.80
	Refrigerant oil	ml	870	870	1400	1400
	RLA		13.5	13.5	27.2	27.2
	LRA		45	45	58.1	58.1
Outdoor motor	Model		YDK-110-8P2- AL	YDK-110-8P2- AL	WZDK200-31 0G	WZDK200-31 0G
	Brand		Chigo	Chigo	Panasonic	Panasonic
	Type		AC	AC	DC	DC
	Rated HP	W	1/6	1/6	1/3	1/3
	Capacitor	µF	6	6	/	/
	Speed	rpm	850	850	1050	1050
	FLA	A	1	1	2.5	2.5
Outdoor Fan	material		Metal			
	Type		Axial flow			
	Diameter	In.	23-5/8	23-5/8	23-5/8	23-5/8
	Height	In.	2-3/4	4-1/2	4-1/2	4-1/2
	Air flow	CFM	2950	2950	4100	4100
Outdoor coil	Number of row		2	2	2	2
	Tube outside dia	mm (in.)	7 (9/32)	7 (9/32)	7 (9/32)	7 (9/32)
Outdoor noise level		dB(A)	75	77	79	79
Outdoor unit	Dimension (W×H×D)	mm	740×633×740		740×835×740	
		inch	29-1/8×25×29-1/8		29-1/8×32-7/8×29-1/8	
	Packing (W×H×D)	mm	760×660×760		760×875×760	
		in.	30×26×30		30/16×34-4/9×3	
	Net / Gross weight	kg	68 / 72	68 / 72	91 / 96	91 / 96
lbs		150 / 159	150 / 159	201 / 211	201 / 211	

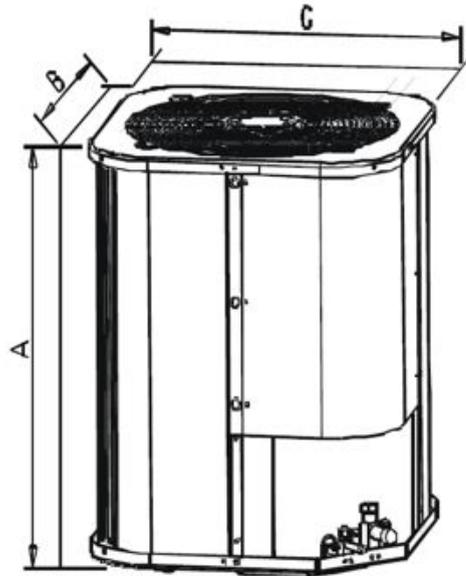
R410A 60Hz 18 SEER Universal Outdoor Series Technical Manual

Refrigerant system	Liquid side / Gas side	in.	3/8 / 3/4	3/8 / 3/4	3/8 / 7/8	3/8 / 7/8
	Factory charge R410A	oz	114	114	166	166
	Metering device		TXV	TXV	TXV	TXV

2 .Dimensions

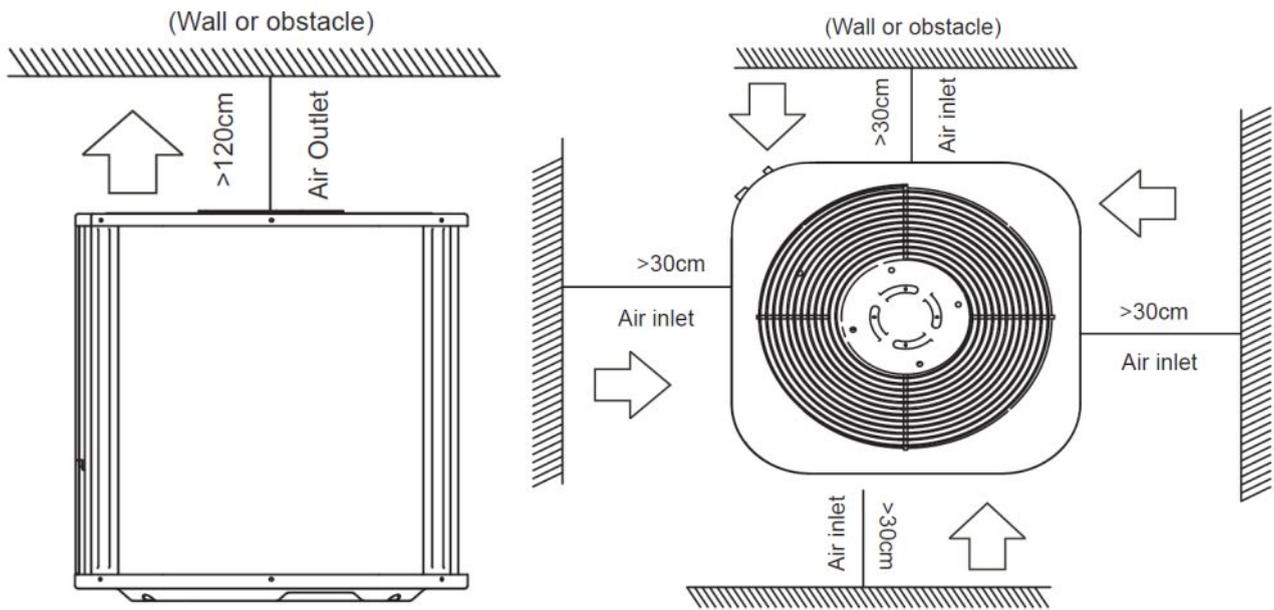
All dimensions are in mm. They are subject to change without notice. Certified dimensions will be provided upon request.

Unit Model	Dimensions(mm)			Refrigerant Connection Line Size(mm)			
	A	B	C	Liquid(Φ)		Vapor(Φ)	
				LF	RF	LF	RF
24	633	740	740	9.52		19.05	
36	633	740	740			19.05	
48	843	740	740			22	
60	843	740	740			22	

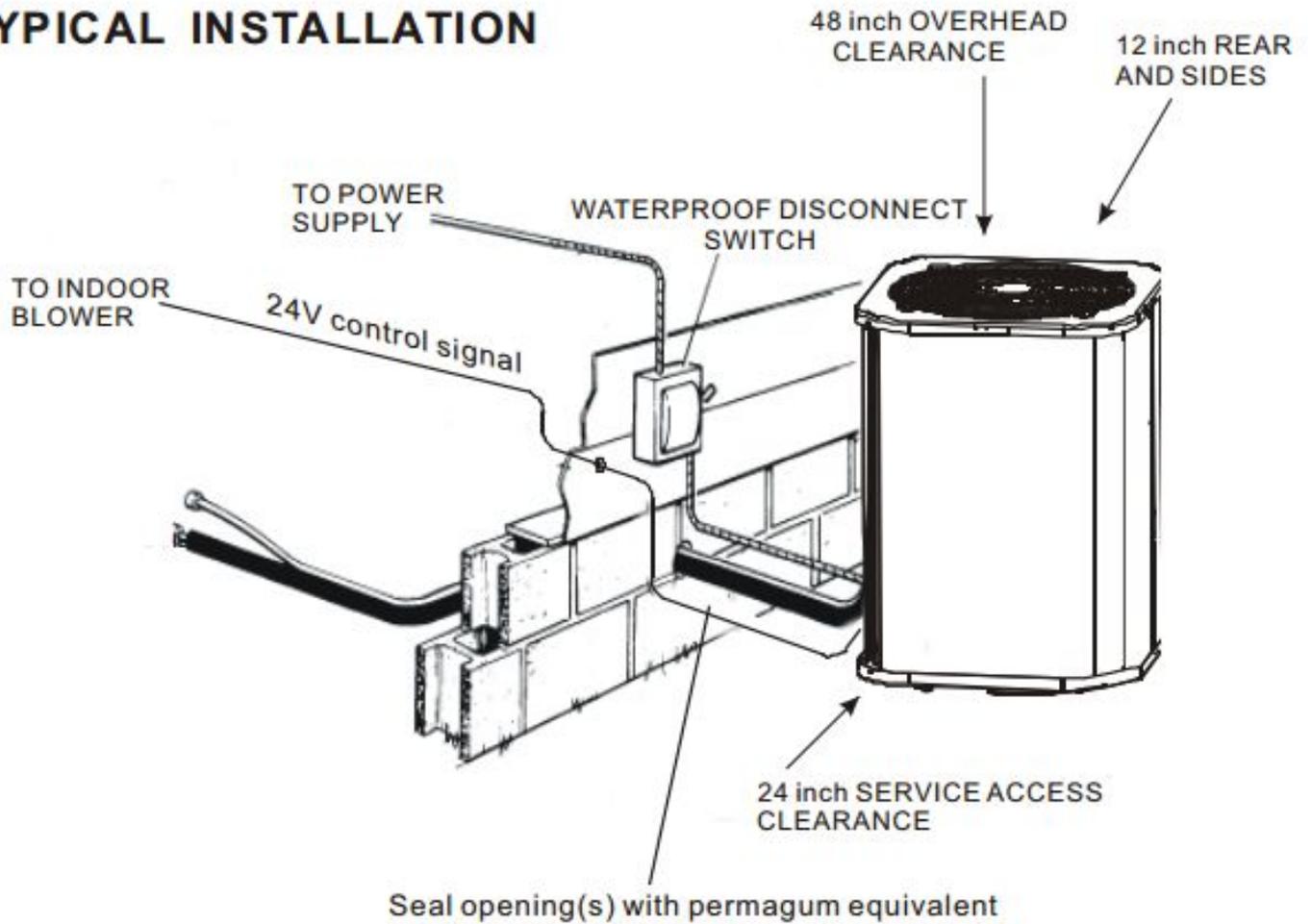


NOTE: LF means cooling only model; RF means heat pump model.

3. Service Space

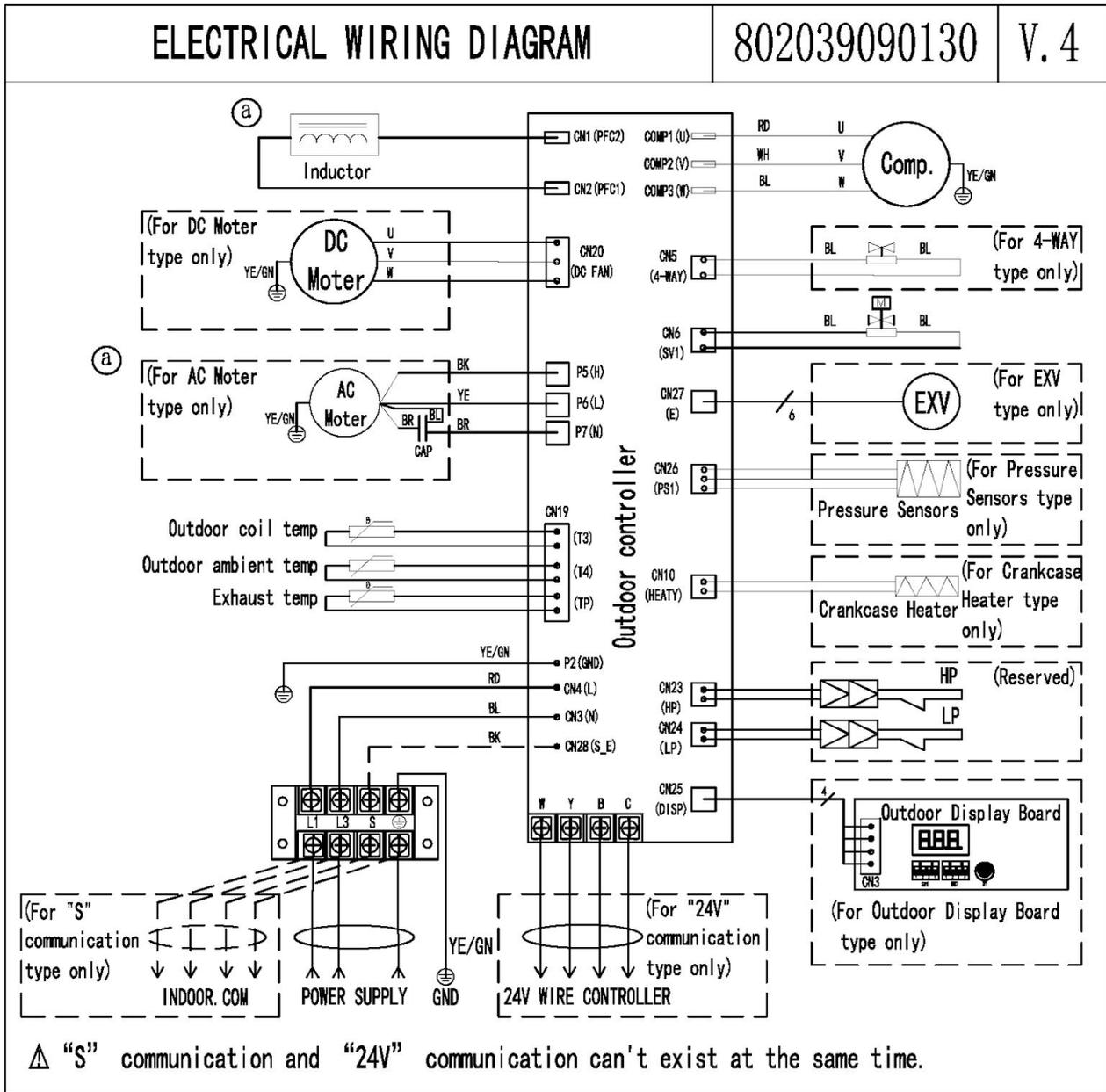


TYPICAL INSTALLATION



4. Wiring Diagrams

SEER 18 Cooling only



5. Electric Characteristics

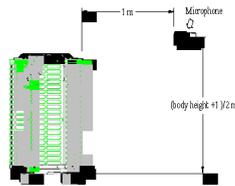
Model	Outdoor Unit			
	Hz	Voltage	Min.	Max.
CTV18CN24A	60	208~230V	187V	253V
CTV18CN36A	60	208~230V	187V	253V
CTV18CN48A	60	208~230V	187V	253V
CTV18CN60A	60	208~230V	187V	253V

8				
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6. Operation Limits

Operation mode	Outdoor temperature(°C)	Room temperature(°C)
Cooling operation	10~48	≥16

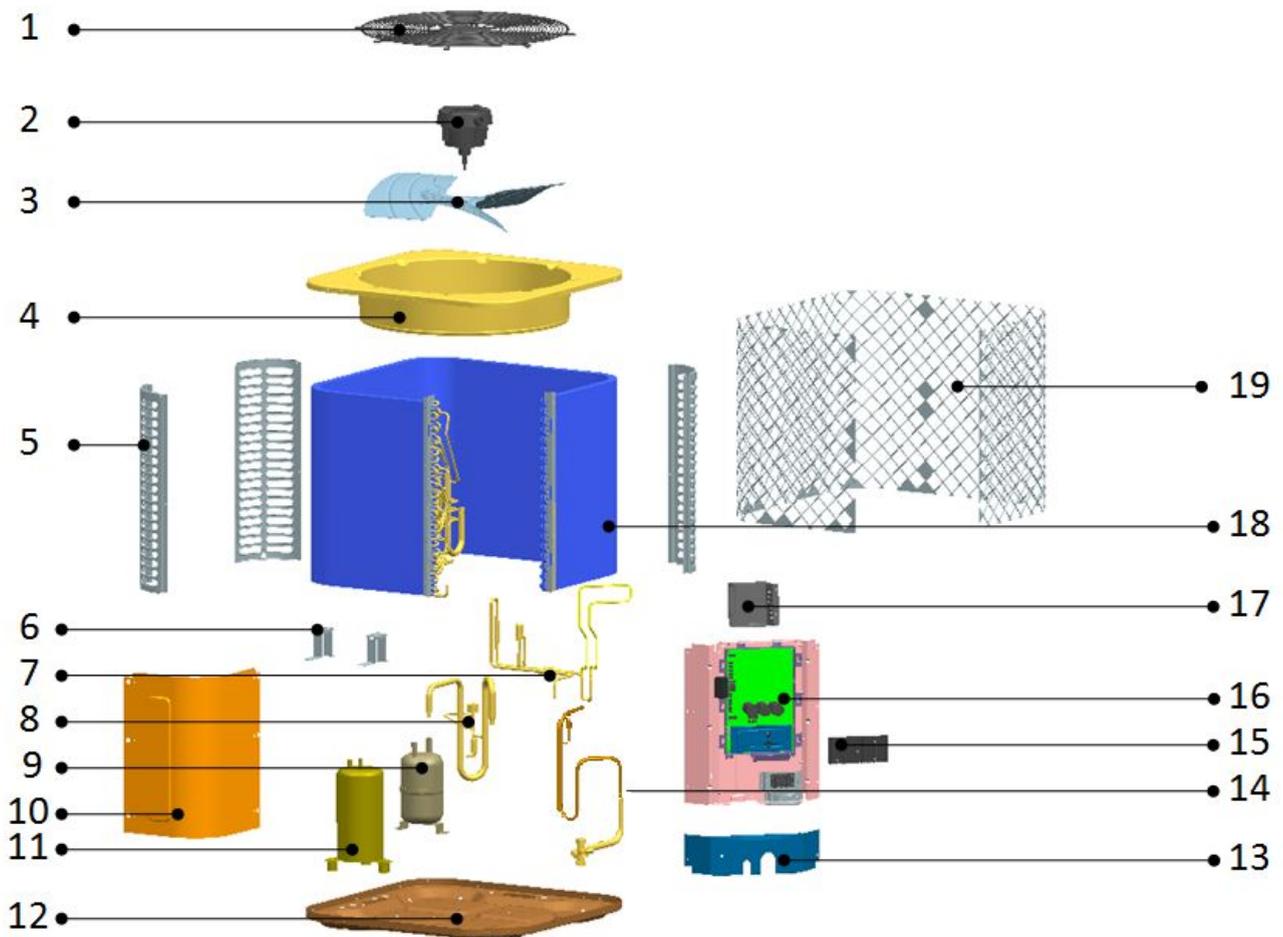
7. Sound Levels



Model	Noise level dB(A)
CTV18CN24A	75
CTV18CN36A	77
CTV18CN48A	79
CTV18CN60A	79

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	Quantity
1	Cover net	1
2	Outdoor motor	1
3	Axial-flow fan	1
4	Top cover assembly	1
5	Support board	3
6	Piping support plate	2
7	Refrigerant radiating pipe component	1
8	Air return duct welding assembly	1
8.1	Solenoid Valve	1
8.2	Air return duct #1	1
8.3	Air return duct #2	1
8.4	Liquid bypass capillary assembly	1
8.5	Solenoid Valve coil	1
9	Gas-liquid separator	1
10	Top panel	1

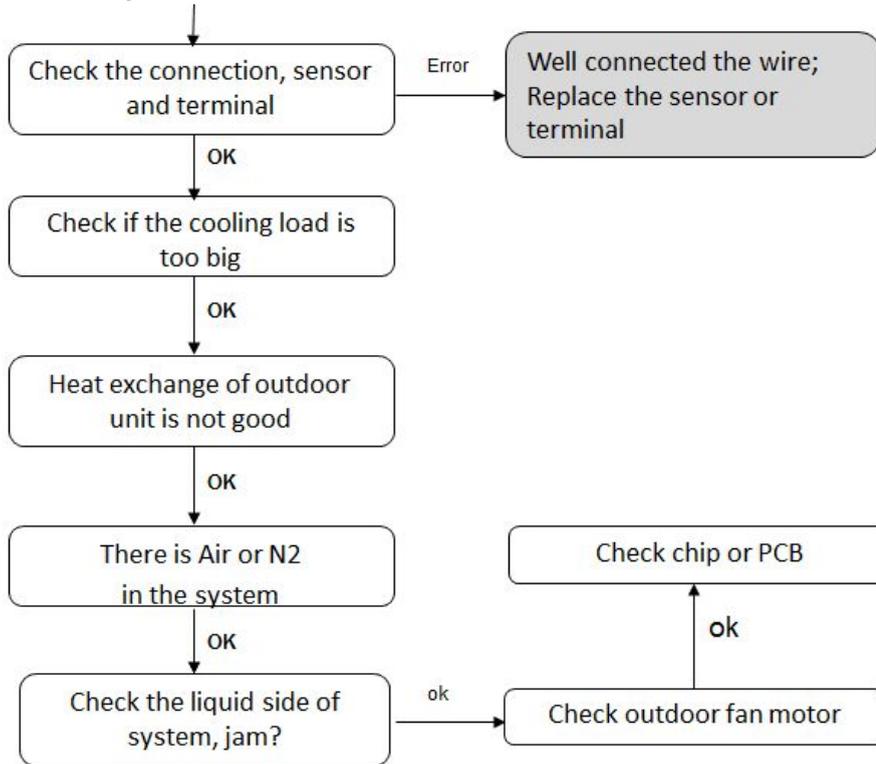
11	Inverter Compressor	1
12	Chassis assembly	1
13	Left side panel	1
14	Pipeline component	1
14.1	High pressure valve welding assembly	1
14.1.1	High pressure valve connecting pipe	1
14.1.2	Service valve	1
14.2	EXV welding assembly	1
14.2.1	Connecting pipe #1	1
14.2.2	Connecting pipe #2	1
14.2.3	Connecting pipe #3	1
14.2.4	Check valve	1
14.2.5	Bidirectional filter	1
14.2.6	Electronic expansion valve	1
14.2.7	Electronic expansion valve coil	1
15	Radiator cover	1
16	Electronic components	1
16.1	Terminal	1
16.2	Outdoor display panel	1
16.3	Outdoor inverter integrated board	1
16.4	Reactor	1
16.5	Fan capacitor	1
16.6	Electronic controlled mounting plate welding parts	1
16.7	Mainboard mounting base	1
16.8	Communication board mounting base	1
16.9	Terminal mounting plate	1
17	Reactor mounting plate	1
18	Condenser unit	1
19	Top discharge outdoor unit protective net	1

9. Troubleshooting

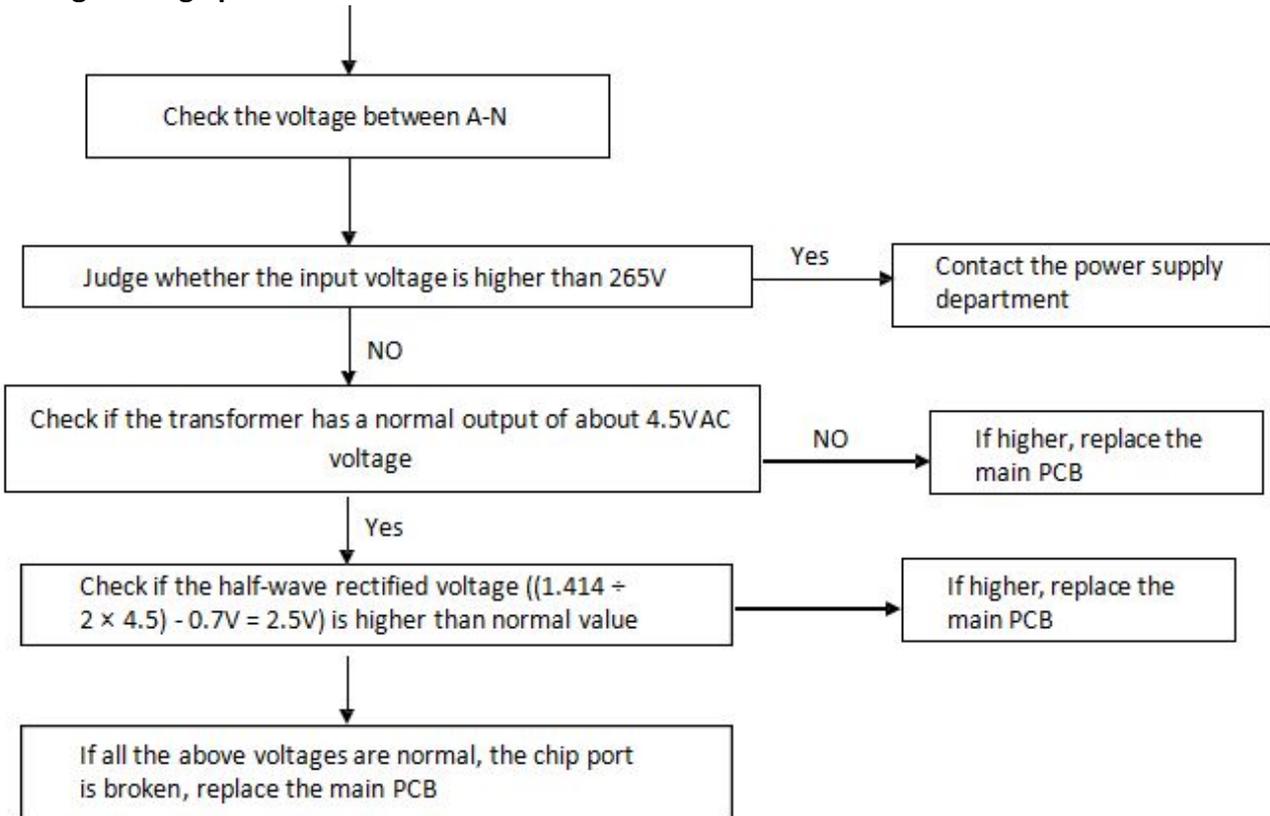
The fault codes for outdoor unit as follows:

	Display contents	Status description
No alarm : Green light flashing Yellow light off	Green light slow flashing	normal standby
	Green light fast flashing	operating
System alarm : Green light always on Yellow light flashing	T3 sensor failure	Green light flashes 2 times every 5 seconds
	T5 sensor failure	
	Low voltage alarm	Green light flashes 6 times every 5 seconds
	High voltage alarm	Green light flashes 1 times every 5 seconds
	System overcurrent	Green light flashes 3 times every 5 seconds
	Phase sequence detection failure	Green light flashes 4 times every 5 seconds
	T3 high temperature protection	
	High exhaust temperature protection	Green light flashes 5 times every 5 seconds
	485 communication failure (keep)	
	Fan feedback failure	Green light flashes 7 times every 5 seconds
System lock : Green light off Yellow light always on	High/low voltage protection happen 3 times in 20 minutes	
	High exhaust temperature protection happen 3 times in 20 minutes	
	Overcurrent protection happen 3 times in 20 minutes	

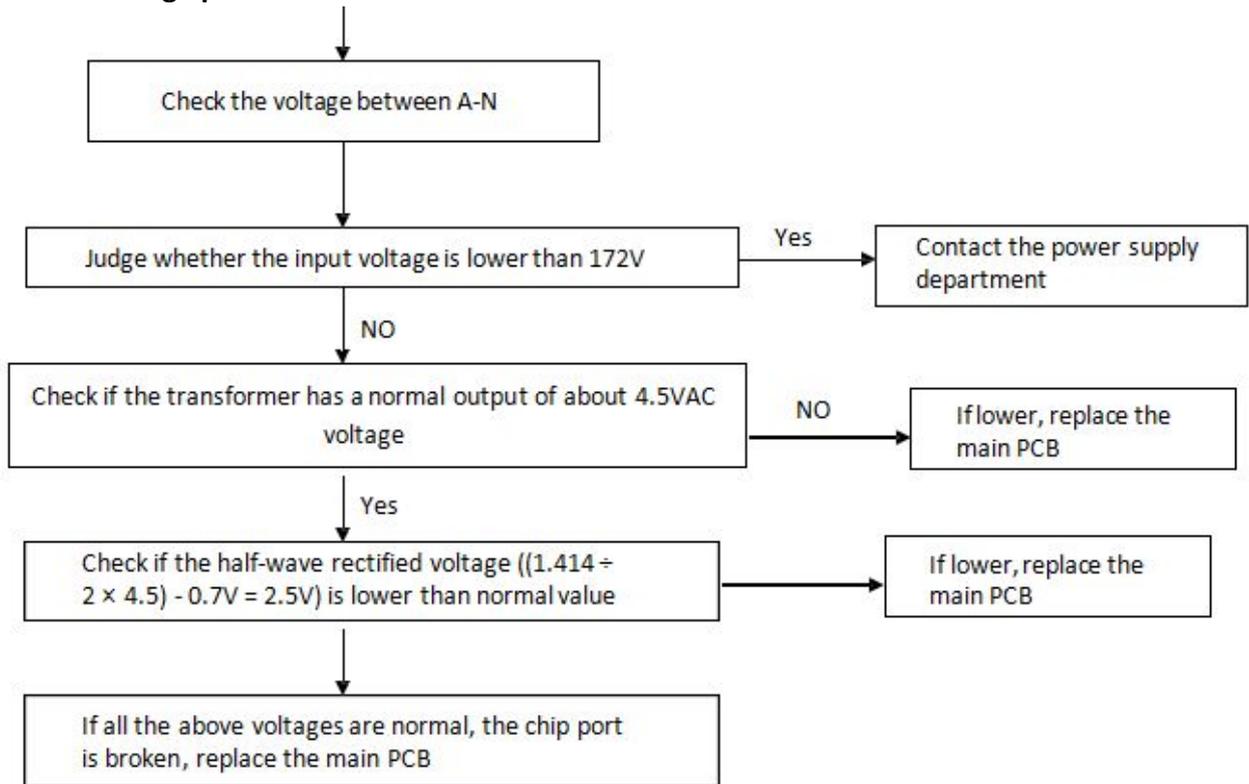
9.1.1 T3 temperature sensor fault



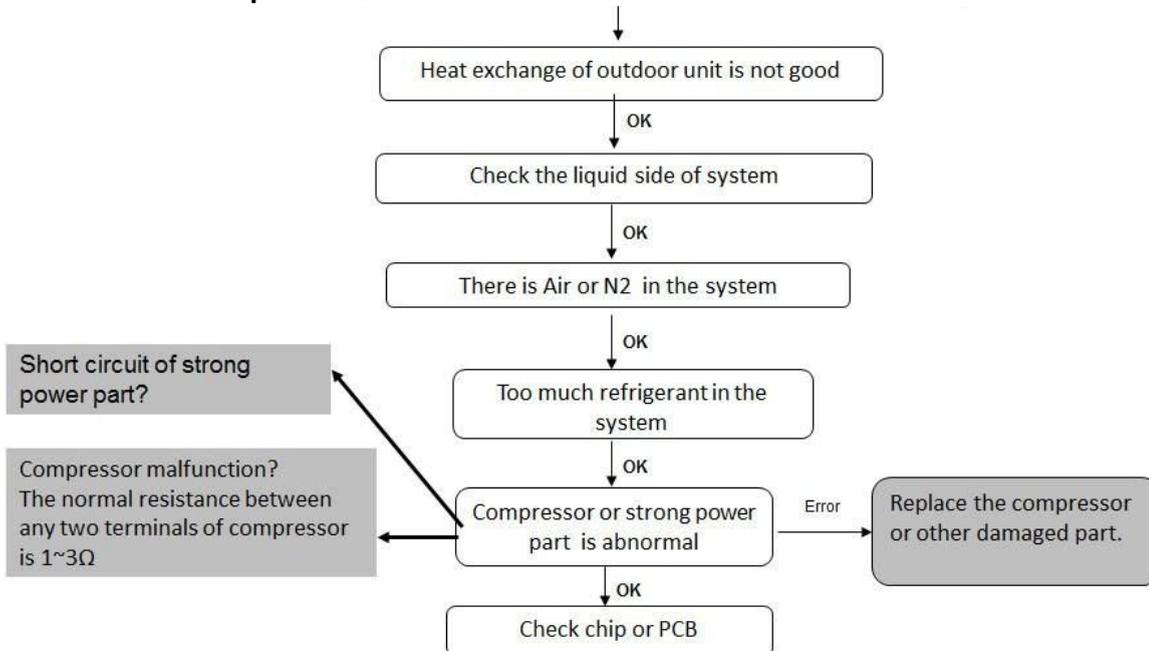
9.1.2 High voltage protection alarm



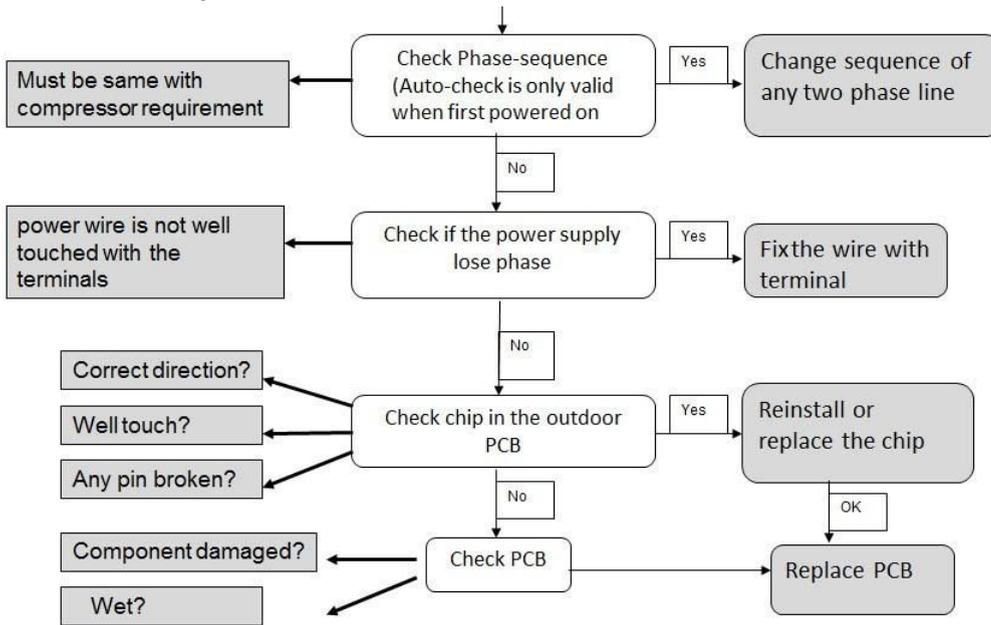
9.1.3 Low voltage protection alarm



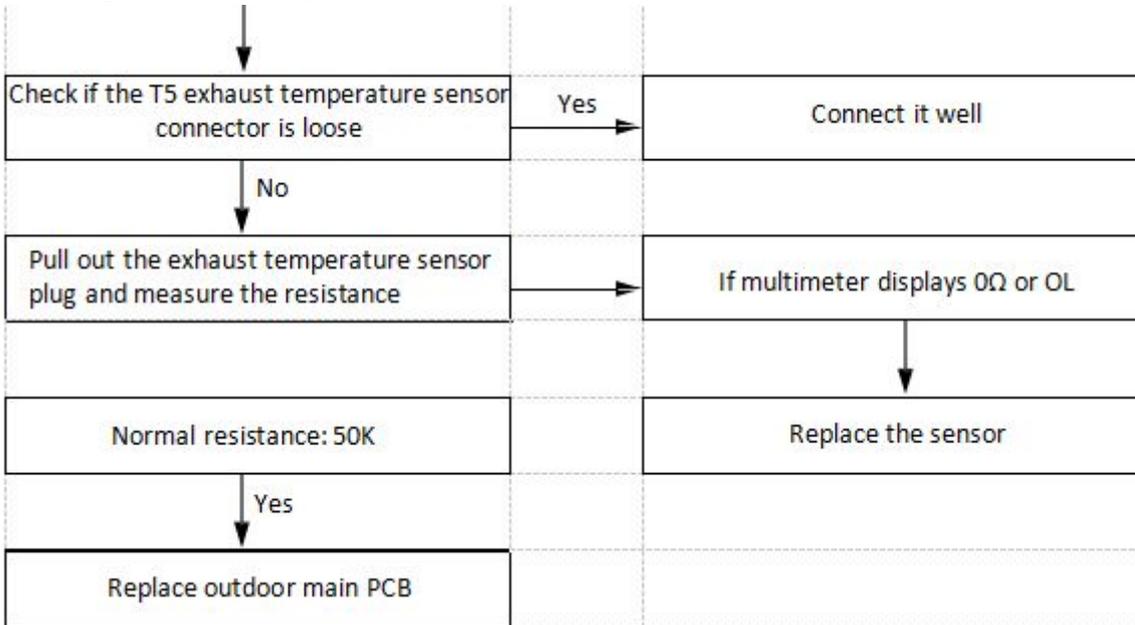
9.1.4 Over current protection



9.1.5 Phase-sequence fault



9.1.6 High exhaust temperature protection



Part 4 Installation

1. Precaution on Installation	31
2. Vacuum Dry and Leakage Checking	32
3. Additional Refrigerant Charge	34
4. Insulation Work	35
5. Test Operation	37

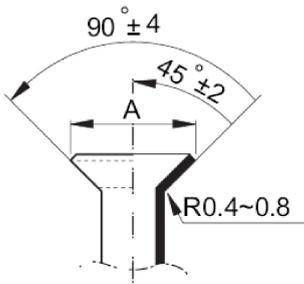
1. Precaution on Installation

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.

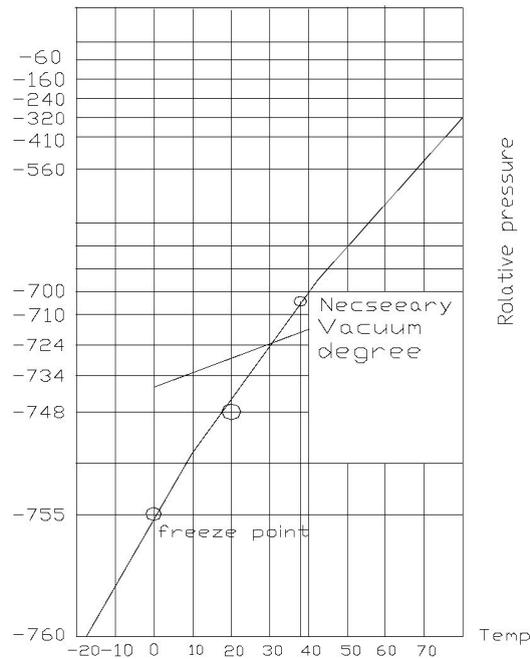
1.4. Then, open the stem of stop values of the outdoor unit to make the refrigerant pipe connecting the indoor unit with the outdoor unit in fluent flow.

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.

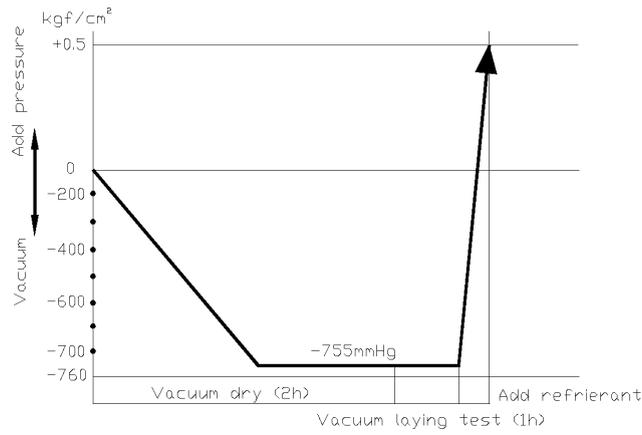


2.2 Vacuum dry procedure

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

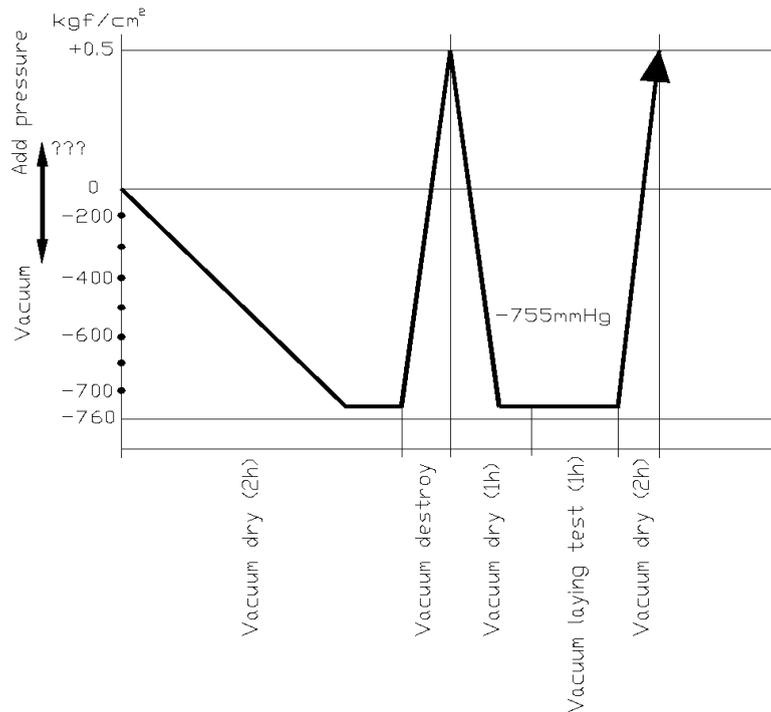
Because nitrogen is for drying gas, it has vacuum drying effect during vacuum destroy. But if the moisture is too much, this method can't dry thoroughly. So, please pay more attention to prevent water entering and forming condensation water.

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:

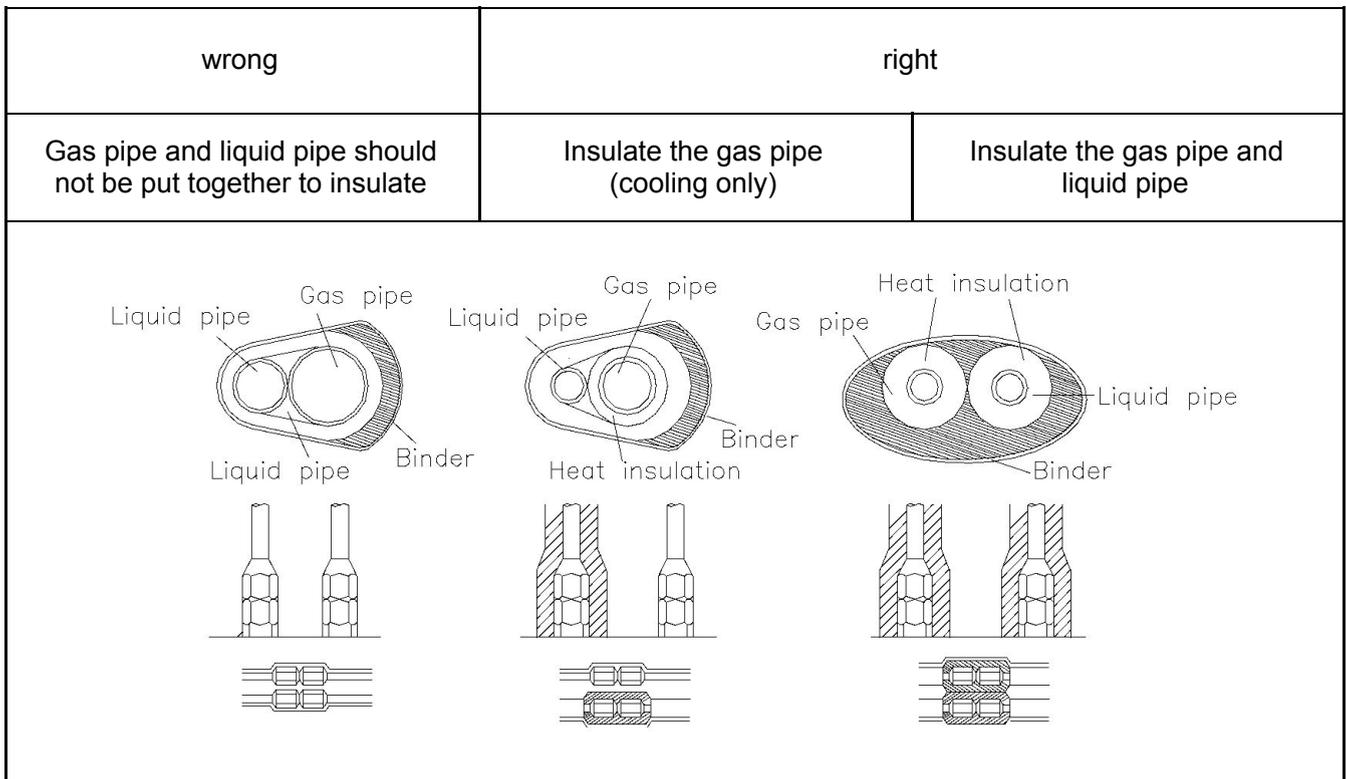
	Pipe diameter (mm)	Adiabatic material thickness
Refrigerant pipe	Φ6.4—Φ25.4	10mm
	Φ28.6—Φ38.1	15mm
Drainage pipe	Inner diameterΦ20—Φ32	6mm

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.

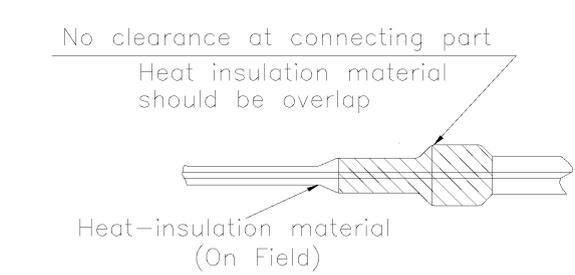
4.2.2. Insulation for non-jointing parts and non-connection parts



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.