

MULTI-ZONE MINI-SPLIT

(DUAL, TRIPLE, QUAD, & FIVE PORT)

SERVICE MANUAL



For the following models:

Indoor Unit

Wall Mounted

SHE9H4ZIGB
SHE12HZIGB
SHE18HZIGB
SHE24HZIGB

Floor/Ceiling

SMZFC9H4ZIGX
SMZFC12H4ZIGX
SMZFC18H4ZIGX
SMZFC24H4ZIGX

Console

SMZC9H4ZIGX
SMZC12H4ZIGX
SMZC18H4ZIGX

Cassette

SMZCA12H4ZIGX
SMZCA18H4ZIGX
SMZCA24H4ZIGX
SMZCA12H4ZIGC
SMZCA18H4ZIGC
SMZCA24H4ZIGC

Ducted

SMZD9H4ZIGX
SMZD12H4ZIGX
SMZD18H4ZIGX
SMZD21H4ZIGX
SMZD24H4ZIGX

Outdoor Unit

Dual

SMZ18H422ZOGB

Triple

SMZ24H421ZOGB

Quad

SMZ30H421ZOGB

Five Port

SMZ42H421ZOGB

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1. Precaution

- Installation MUST conform with local building codes or, in the absence of local codes, with the National Electrical Code NFPA70/ANSI C1-1993 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury, and/or death.
- This service manual is only intended for the service engineer to use.

1.1 Safety Precaution

- To prevent injury or damage to the user, other people, or property, the following instructions must be followed.
- Incorrect operation due to ignoring instructions may cause harm or damage.
- Before servicing the unit, be sure to read this service manual first.

1.2 Warning

- Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.
- For electrical work, contact the dealer, seller, a qualified electrician, or an authorized service center.
- Always ground the product.
- Install the panel and the cover of the control box securely.
- Always install a dedicated circuit and breaker.
- Use a properly rated breaker and fuse.
- Do not modify or extend the power cable.
- Do not install, remove, or reinstall the unit by yourself (customer).
- Be cautious when unpacking and installing the product.
- For installation, always contact the dealer or an authorized service center.
- Do not install the product on a defective installation stand.
- Be sure the installation does not deteriorate with age.
- Do not let the air conditioner run for a long time when the humidity in the area is high or if a door or window is left open.
- Make sure that the power cable cannot be pulled out or damaged during operation.
- Do not place anything on the power cable.
- Do not plug or unplug the power supply plug during operation.
- Do not touch or operate the product with wet hands.
- Do not place a heater or other appliance near the power cable.
- Do not allow water to run into electrical parts.
- Do not store or use flammable gas or combustibles near the product.
- Do not use the product in a tightly closed space for a long time. (oxygen deficiency)
- When flammable gas leaks, turn off the gas and open a window for ventilation before turning the product back on.
- If strange sounds or smoke comes from the product, turn the breaker off or disconnect the power supply cable.
- Stop operation and close the window during storms or hurricanes.
- Do not open the inlet grill of the product during operation.
- Do not touch the electrostatic filter, if equipped.

- When the product is soaked, contact an authorized service center.
- Be careful to prevent water from entering the product.
- Ventilate the product from time to time when operating with a stove, etc.
- Turn the main power off when cleaning or maintaining the product.
- When the product is not used for a long time, disconnect the power supply plug or turn off the breaker.
- Make sure that nobody can step on or fall onto the outdoor unit.

1.3 Caution

- Always check for gas (refrigerant) leakage after installation or repair of product.
- Install the drain hose to ensure that water is drained away properly.
- Keep level even when installing the product.
- Do not install the product where the noise or hot air from the outdoor unit could cause damage to harm to neighbors or other property.
- Use two or more people to lift and transport the product.
- Do not install the product where it will be exposed to sea wind (salt spray) directly.

1.4 Operational

- Do not expose the skin directly to cool air for a long time. (Do not sit in the draft)
- Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer air conditioner, not a precision refrigeration system.
- Do not block the inlet or outlet of air flow.
- Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.
- Do not touch the metal parts of the product when removing the air filter. They are very sharp.
- Do not step on or put anything on the product (outdoor units).
- Always insert the filter securely. Clean the filter every two weeks or more often if necessary.
- Do not insert hands or other objects through air inlet or outlet while the product is operating.
- Do not drink the water drained from the product.
- Use a firm stool or ladder when cleaning or maintaining the product.
- Replace all the batteries in the remote control with new ones of the same type. Do not mix old and new batteries or different types of batteries.
- Do not recharge or disassemble the batteries. Do not dispose of batteries in a fire.
- If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote if batteries have leaked inside.

2. Model Names and Definitions

2.1 Model Names and Definition

NOTE: The number of characters for each letter may be less than the example shown.

X A A B B C C D E F G X X

Example: S M Z C A 1 2 H 4 Z I G X

AA – Name of system

HE: High Efficiency

MZ: Multi-Zone

BB – Type of indoor unit (if applicable)

C: Console

CA: Cassette

FC: Floor/Ceiling

D: Ducted

NOTE: The “High Efficiency” and “Outdoor unit” do not have this characteristic. “High Efficiency” units are assumed to be wall mounted units.

CC – BTU Capacity

D – Heating or Cooling

H: Heat pump

E – Type of Refrigerant

4: R410a

F – Rated Voltage

Z: 230V

G – Type of unit

I: Indoor Unit

O: Outdoor Unit

X – Internal Code

Model	Type of Unit (I/O)	Type of Unit	Capacity (BTU)
SHE9H4ZIGB	Indoor	Wall Mounted	9,000
SHE12H4ZIGB			12,000
SHE18H4ZIGB			18,000
SHE24H4ZIGB			21,400
SMZC9H4ZIGX		Console	9,000
SMZC12H4ZIGX			12,000
SMZC18H4ZIGX			18,000
SMZCA12H4ZIGX / SMZCA12H4ZIGC		Cassette	12,000
SMZCA18H4ZIGX / SMZCA18H4ZIGC			14,400
SMZCA24H4ZIGX / SMZCA24H4ZIGC			22,800
SMZFC9H4ZIGX		Floor/Ceiling	8,500
SMZFC12H4ZIGX			11,900
SMZFC18H4ZIGX			17,000
SMZFC24H4ZIGX			22,800
SMZD9H4ZIGX		Ducted	8,500
SMZD12H4ZIGX			11,900
SMZD18H4ZIGX			15,300
SMZD21H4ZIGX			20,400
SMZD24H4ZIGX			23,800
SMZ18H422ZOGB	Outdoor	Outdoor	18,000
SMZ24H421ZOGB			24,000
SMZ30H421ZOGB			30,000
SMZ46H421ZOGB			46,000

2.2 Types of Indoor Units

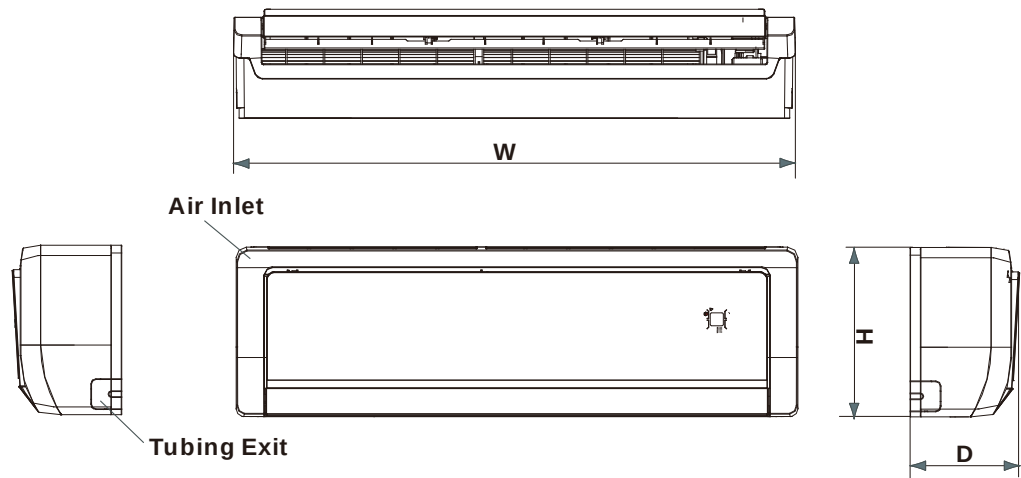
<u>Indoor Unit Type</u>	<u>Catalog Number</u>	<u>Indoor Unit</u>
Wall-mounted	SHE9H4ZIGB	
	SHE12H4ZIGB	
	SHE18H4ZIGB	
	SHE24H4ZIGB	
Console	SMZC9H4ZIGX	
	SMZC12H4ZIGX	
	SMZC18H4ZIGX	
Cassette	SMZCA12H4ZIGX	
	SMZCA18H4ZIGX	
	SMZCA24H4ZIGX	
	SMZCA12H4ZIGC	
	SMZCA18H4ZIGC	
	SMZCA24H4ZIGC	
Floor / Ceiling	SMZFC9H4ZIGX	
	SMZFC12H4ZIGX	
	SMZFC18H4ZIGX	
	SMZFC24H4ZIGX	
Ducted	SMZD9H4ZIGX	
	SMZD12H4ZIGX	
	SMZD18H4ZIGX	
	SMZD21H4ZIGX	
	SMZD24H4ZIGX	

3. Dimensions

3.1 Indoor Unit

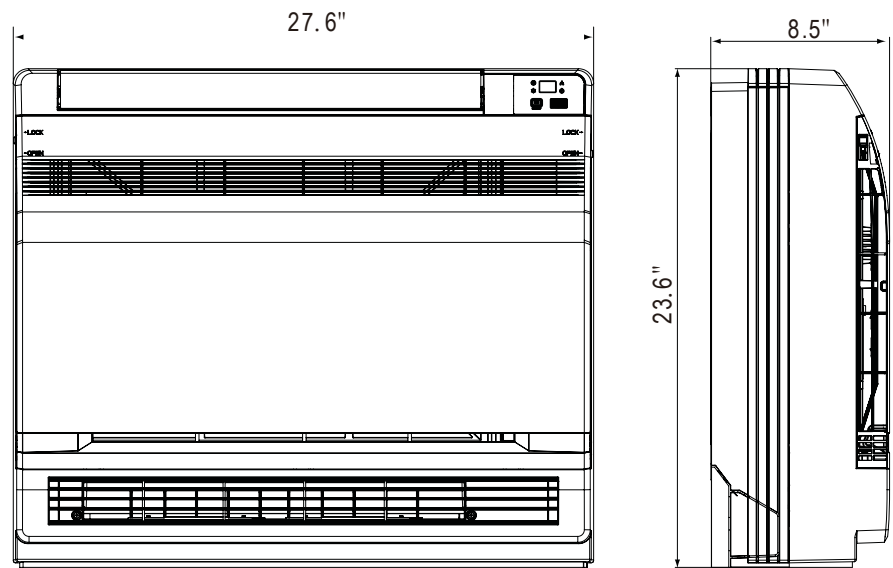
3.1.1 Wall Mounted

Model	Width	Height	Depth
SHE9H4ZIGB / SHE12H4ZIGB	33.3"	10.8"	7.1"
SHE18H4ZIGB	37"	11.7"	7.9"
SHE24H4ZIGB	39.6"	12.4"	8.6"



3.1.2 Console

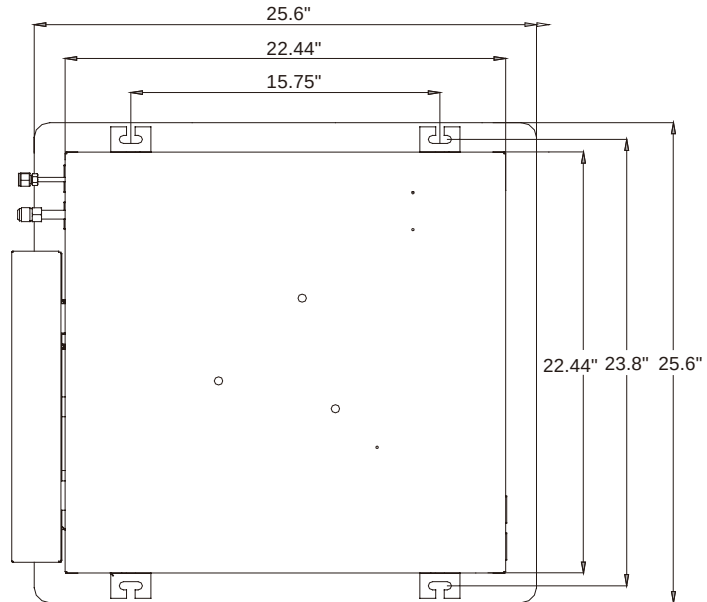
Model	Width	Height	Depth
SMZC9H4ZIGX			
SMZC12H4ZIGX	27.6"	23.6"	8.5"
SMZC18H4ZIGX			



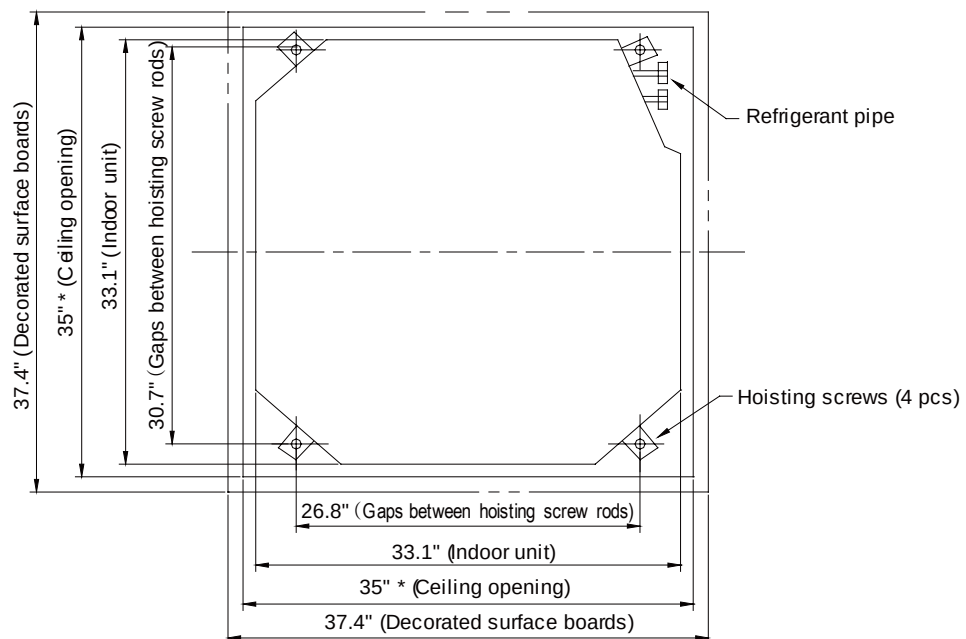
3.1.3 Cassette

Model	Width	Height	Depth
SMZCA12H4ZIGX	1 st Outline	1 st Outline	1 st Outline
SMZCA18H4ZIGX	1 st Outline	1 st Outline	1 st Outline
SMZCA24H4ZIGX	2 nd Outline	2 nd Outline	2 nd Outline

SMZCA12H4ZIGX & SMZCA18H4ZIGX

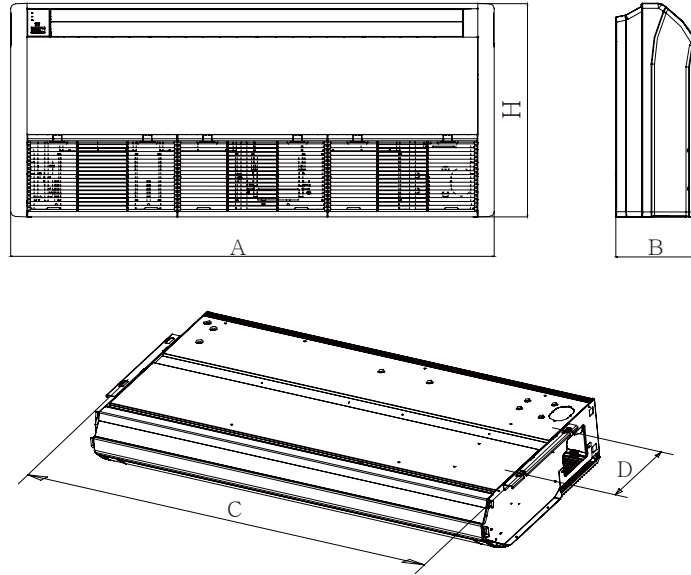


SMZCA24H4ZIGX



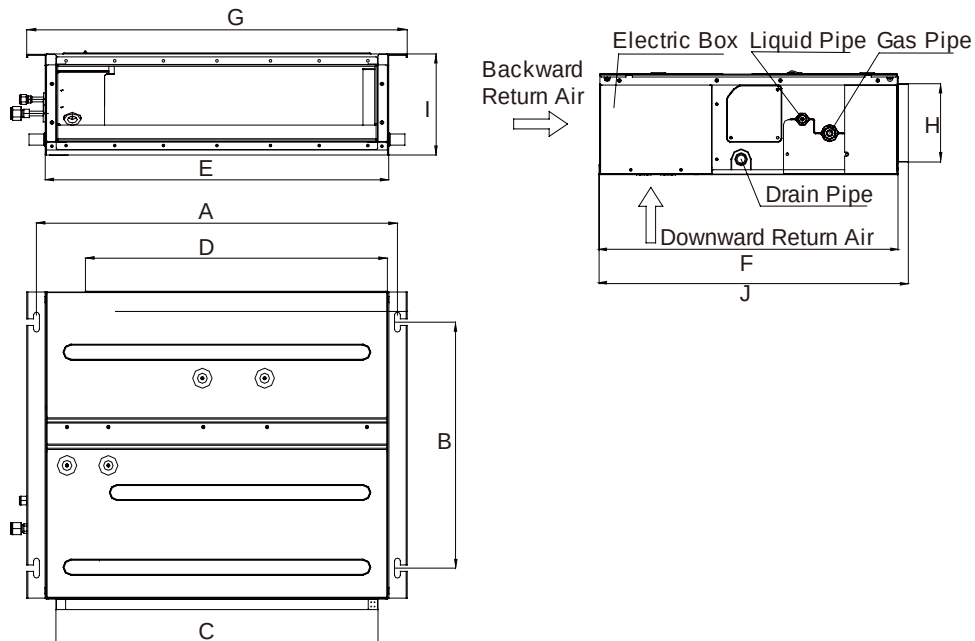
3.1.4 Floor/Ceiling

Model	A	B	H	C	D
SMZFC9H4ZIGX					
SMZFC12H4ZIGX	48.03"	8.86"	27.56"	45.59"	11.02"
SMZFC18H4ZIGX					
SMZFC24H4ZIGX					



3.1.4 Ducted

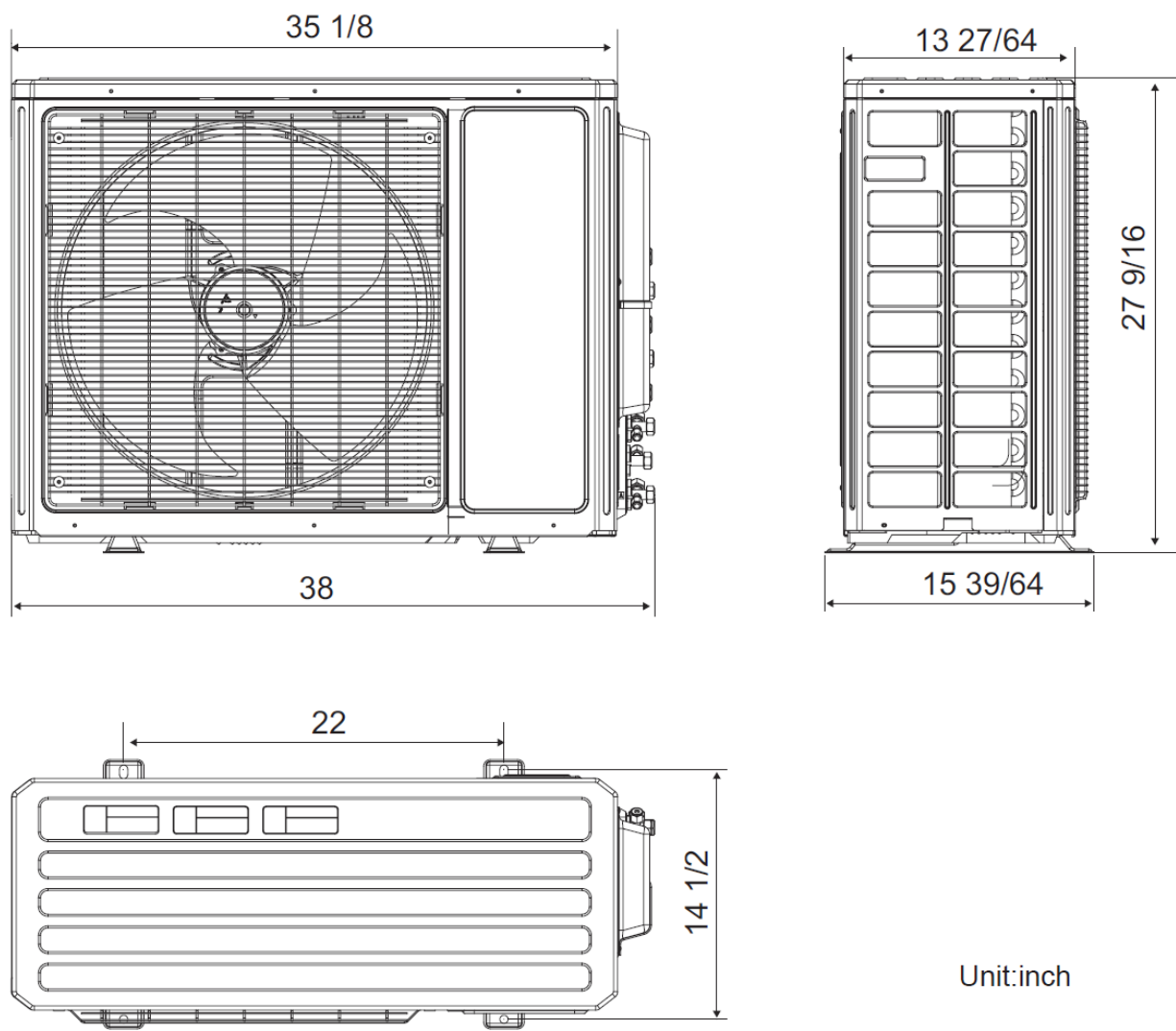
Model	A	B	C	D	E	F	G	H	I	J
SMZD9H4ZIGX	29.21"	19.33"	26.06"	24.41"	27.56"	24.21"	30.79"	6.14"	7.87"	25"
SMZD12H4ZIGX										
SMZD18H4ZIGX	37.09"	19.33"	33.94"	32.28"	35.43"	24.21"	38.66"	6.14"	7.87"	25"
SMZD21H4ZIGX	44.96"	19.33"	41.81"	40.16"	43.31"	24.21"	46.54"	6.14"	7.87"	25"
SMZD24H4ZIGX										



3.2 Outdoor Unit

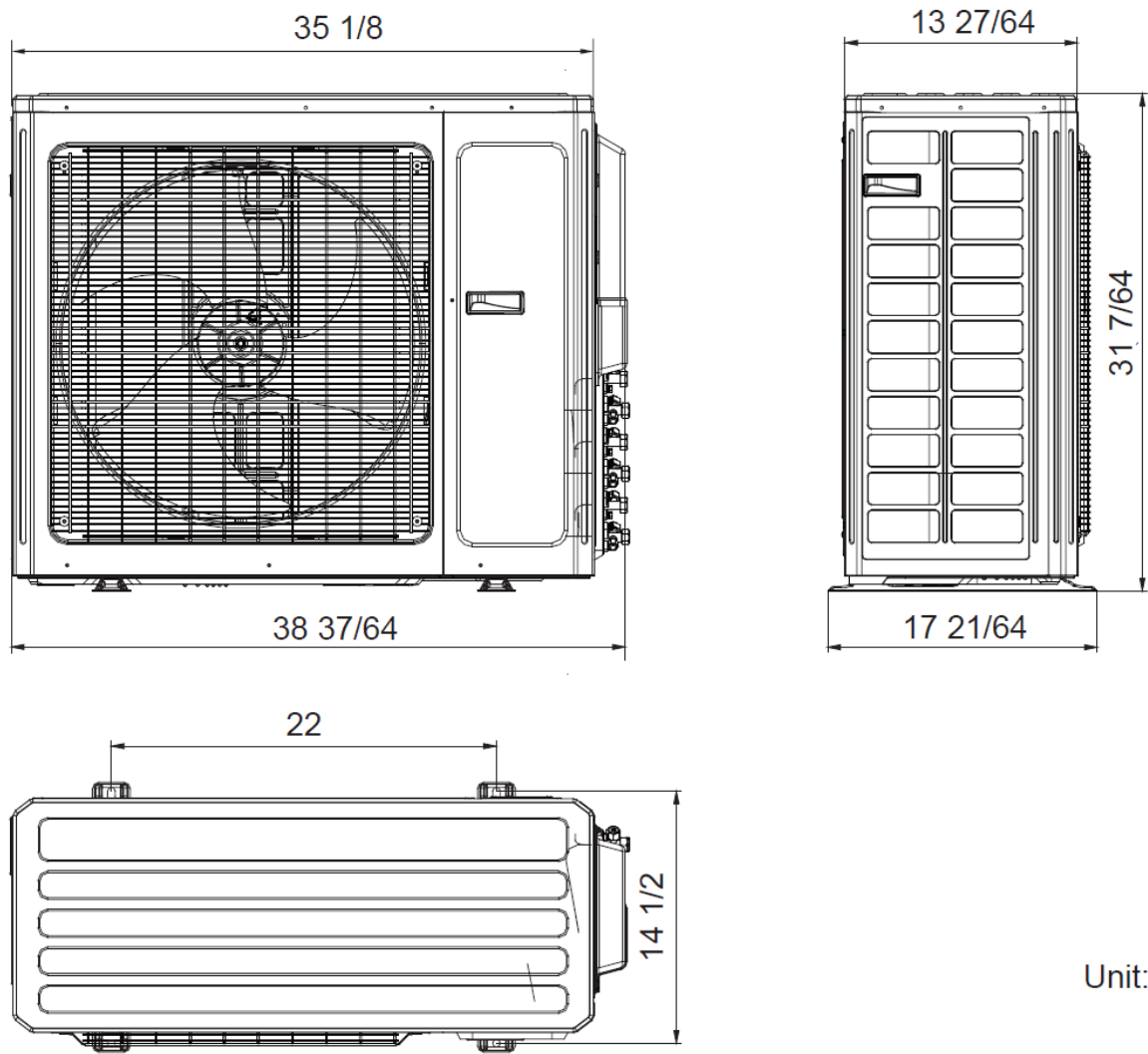
3.2.1 Dual Port

SMZ18H422Z0GB



3.2.2 Triple / Quad Port

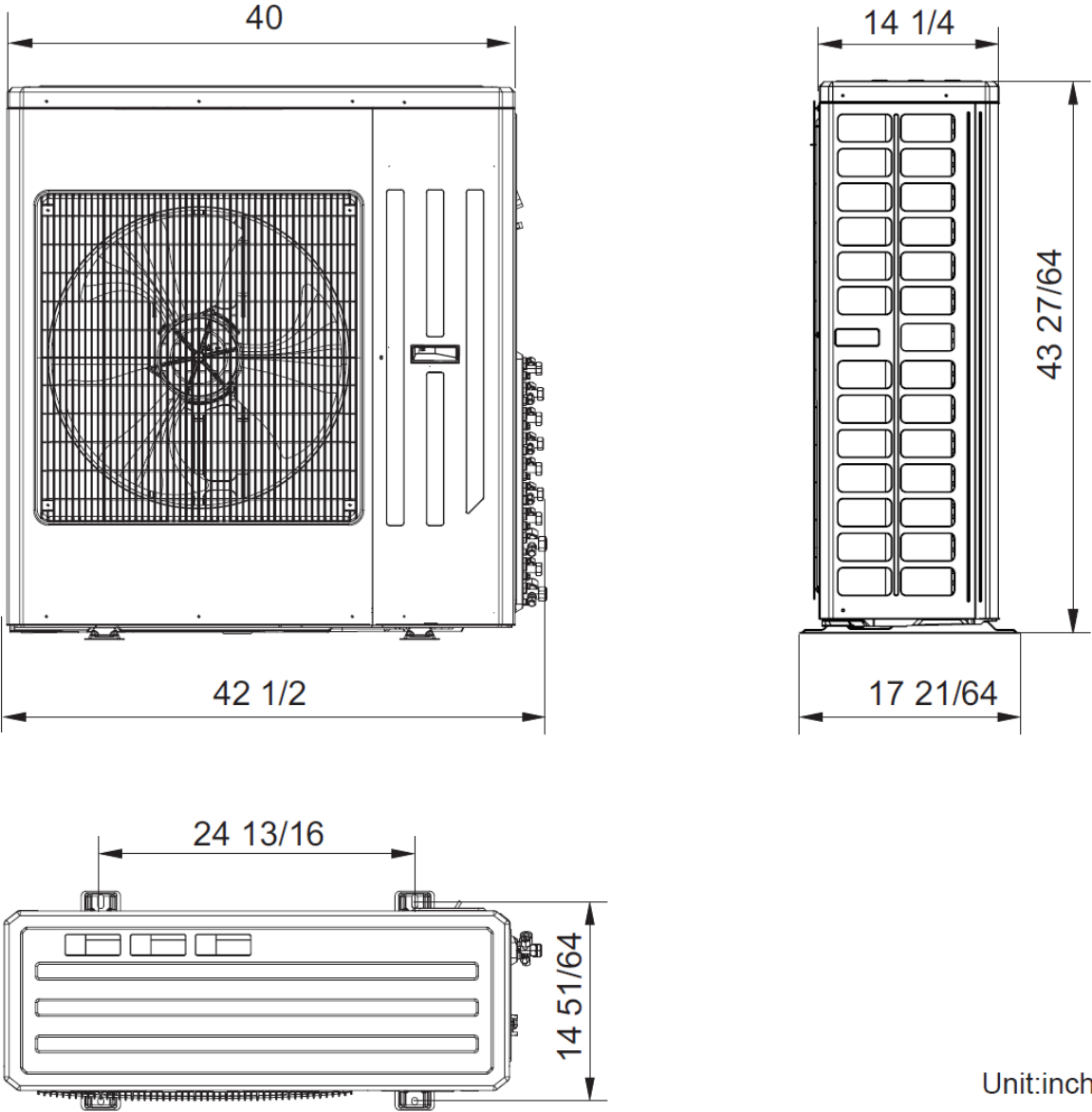
SMZ24H421ZOGB / SMZ30H421ZOGB



Unit:inch

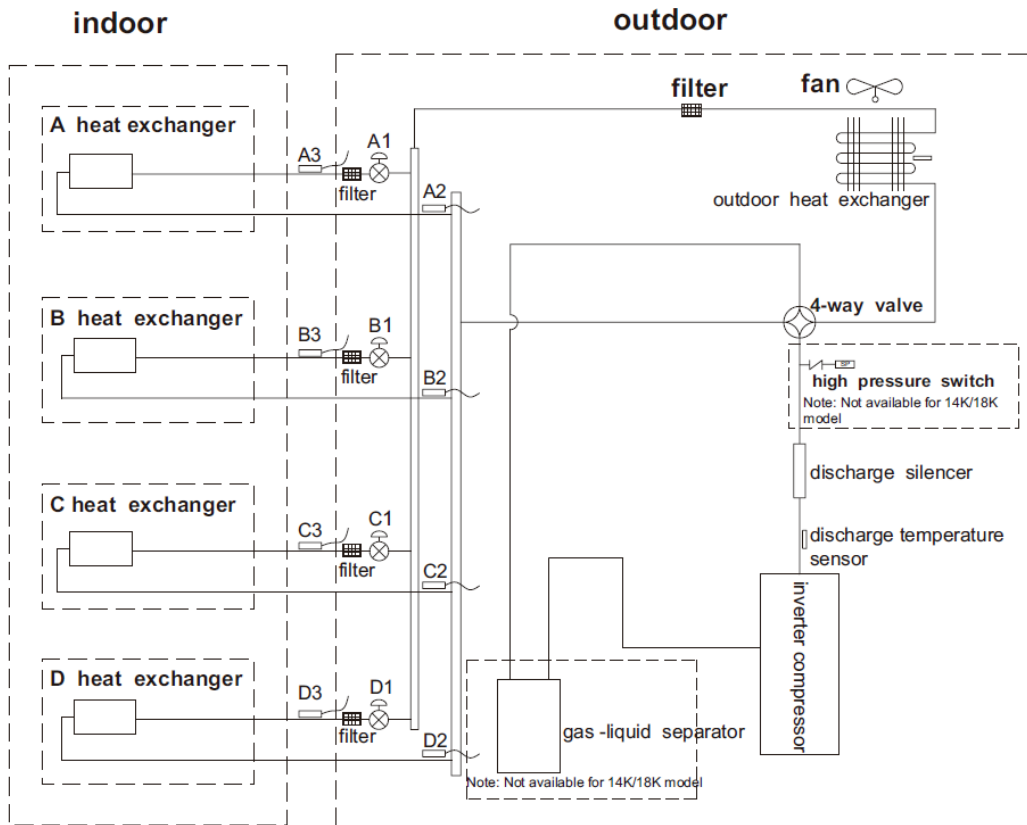
3.2.3 Five Port

SMZ42H421ZOGB



4. Refrigeration System Diagram

Model	Ports	Capacity (BTU)
SMZ18H422Z0GB	Dual	18,000
SMZ24H421Z0GB	Triple	24,000



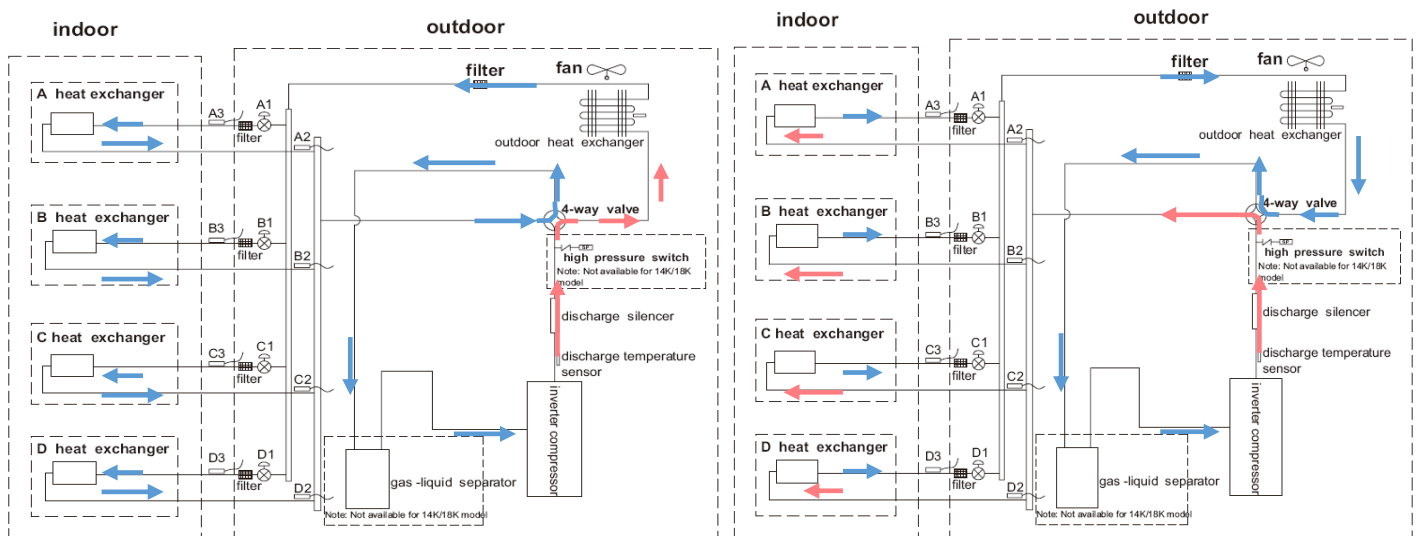
A1: Unit A electronic expansion valve
B1: Unit B electronic expansion valve
C1: Unit C electronic expansion valve
D1: Unit D electronic expansion valve

A2: Unit A gas pipe temperature sensor
B2: Unit B gas pipe temperature sensor
C2: Unit C gas pipe temperature sensor
D2: Unit D gas pipe temperature sensor

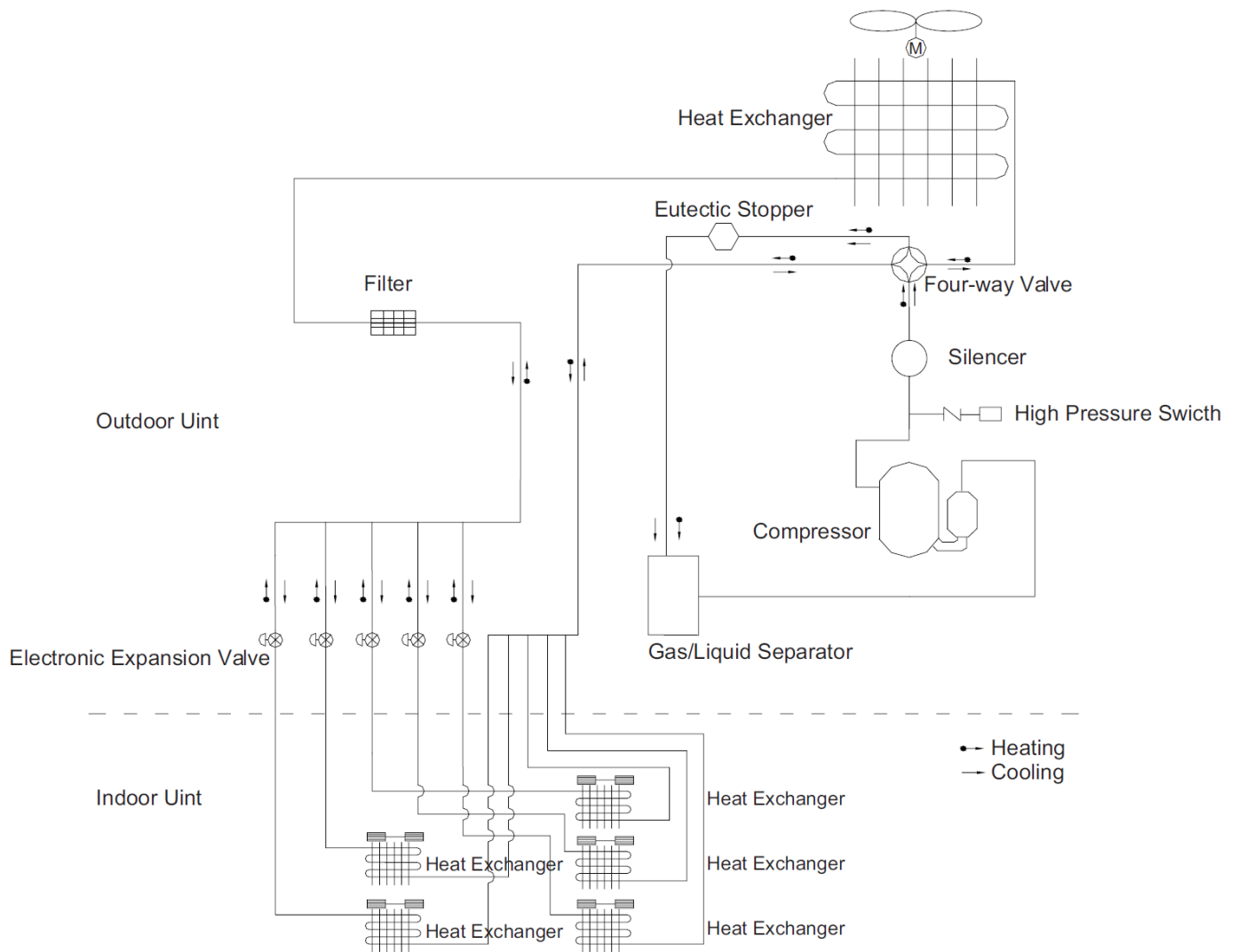
A3: Unit A liquid pipe temperature sensor
B3: Unit B liquid pipe temperature sensor
C3: Unit C liquid pipe temperature sensor
D3: Unit D liquid pipe temperature sensor

Cooling Cycle

Heating Cycle



<u>Model</u>	<u>Ports</u>	<u>Capacity (BTU)</u>
SMZ30H421Z0GB	Quad	30,000
SMZ42H421Z0GB	Five	42,000



5. Key Components

5.1 Compressor

Working Range: 36~110Hz (SMZ18H422ZOGB)
 30~100Hz (SMZ24H421ZOGB, SMZ30H421ZOGB)
 15~110Hz (SMZ42H421ZOGB)

Using the set temperature, unit capacity, indoor and outdoor temperature, the outdoor unit will determine the required load and adjust the working frequency of the compressor.

5.2 Electronic Expansion Valve

Opening Angle: 90~480Hz

The outdoor coil is separated into 2, 3, 4, or 5 independent systems. Each system is controlled by an electronic expansion valve. The refrigerant quantity allocation of the indoor unit is controlled by the opening angle of the electronic expansion valve. If the difference between the inlet and outlet temperature of the indoor unit is too high, the expansion valve will open. If the difference is too low, the expansion valve will close.

Cooling Mode: If the cooling indoor fan is turned off, the electronic expansion valve will close and there will be no refrigerant flowing to that unit. The opening of the expansion valve is controlled by the difference of the inlet and outlet temperature of the indoor unit and utilized to obtain the highest heat exchange efficiency (EER).

Heating Mode: If the heating indoor fan is turned off, the electronic expansion valve will maintain a certain opening angle to make sure that the oil in the heat exchanger can be returned to the compressor; there will be a small quantity of heat in the indoor unit coils.

5.3 Pressure Switch

NOTE: There is no pressure switch for model SMZ18H422ZOGB.

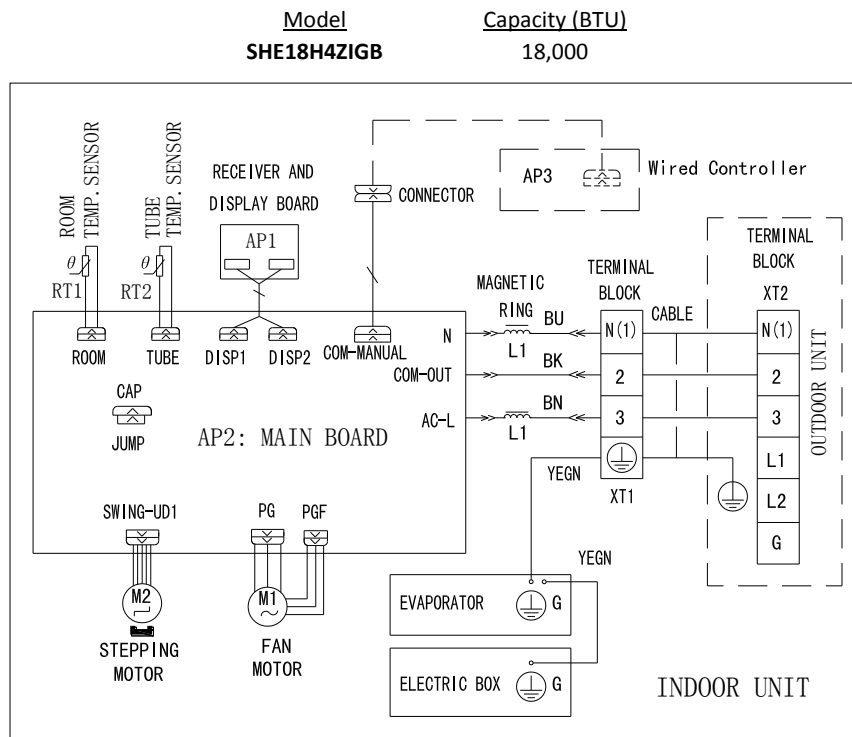
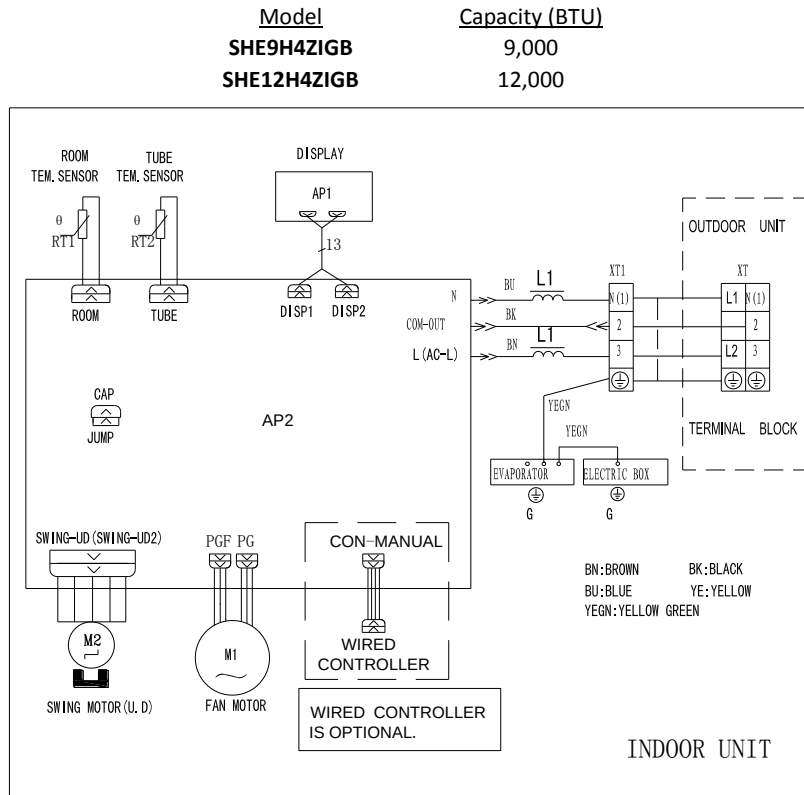
SMZ24H421ZOGB	High pressure switch:	653 / 566 psi (opens on pressure rise)
SMZ30H421ZOGB	High pressure switch:	624 / 537 psi (opens on pressure rise)
SMZ42H421ZOGB	High pressure switch:	624 / 537 psi (opens on pressure rise)

6. Wiring Diagram

NOTE: The wiring diagrams shown are subject to change without notice. Please refer to the one supplied with the unit for the most accurate information.

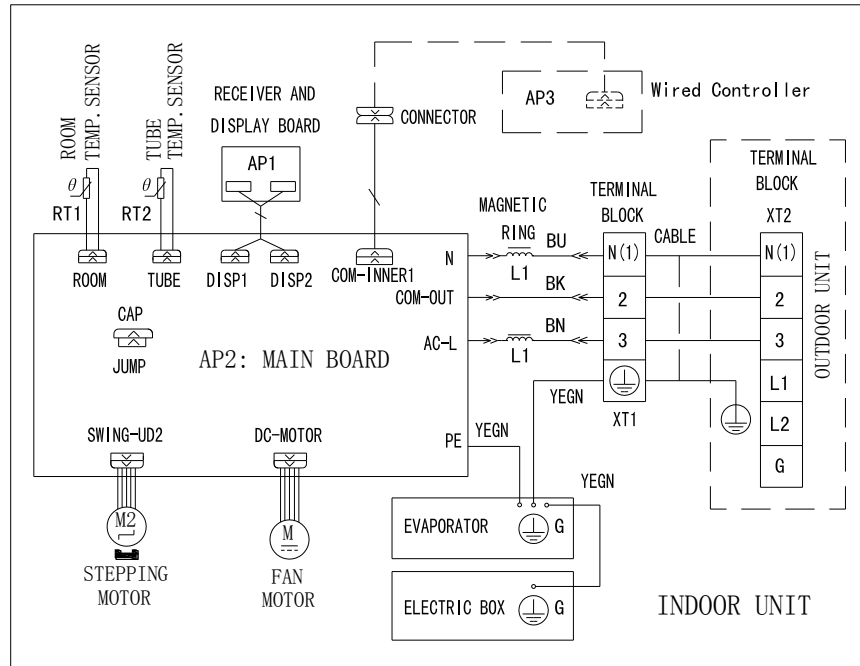
6.1 Indoor Units

6.1.1 Wall Mounted



Model
SHE24H4ZIGB

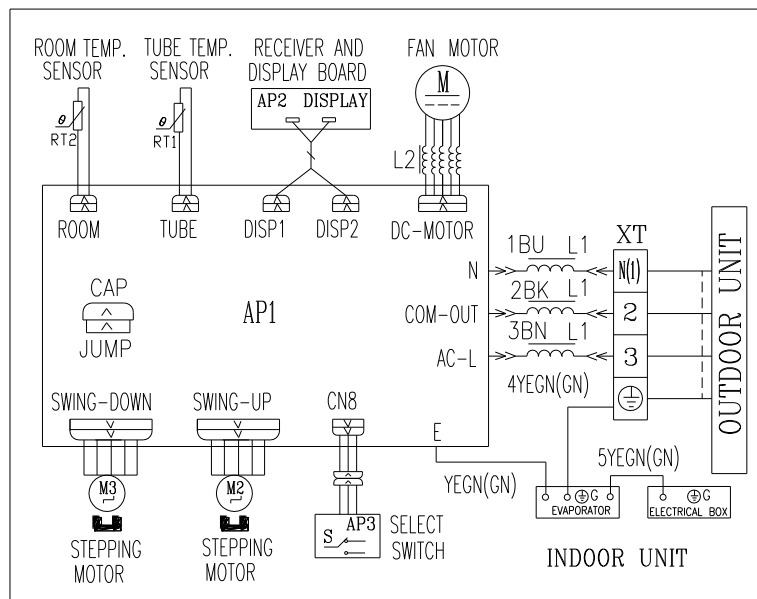
Capacity (BTU)
21,400



6.1.2 Console

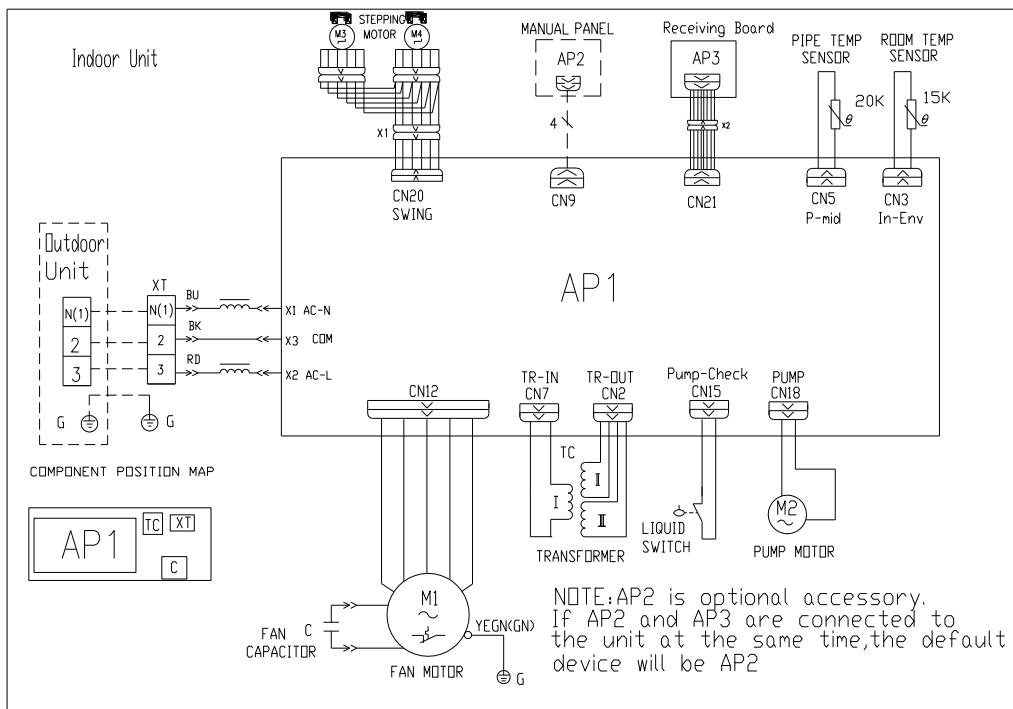
Model
SMZC9H4ZIGX
SMZC12H4ZIGX
SMZC18H4ZIGX

Capacity (BTU)
9,000
12,000
18,000

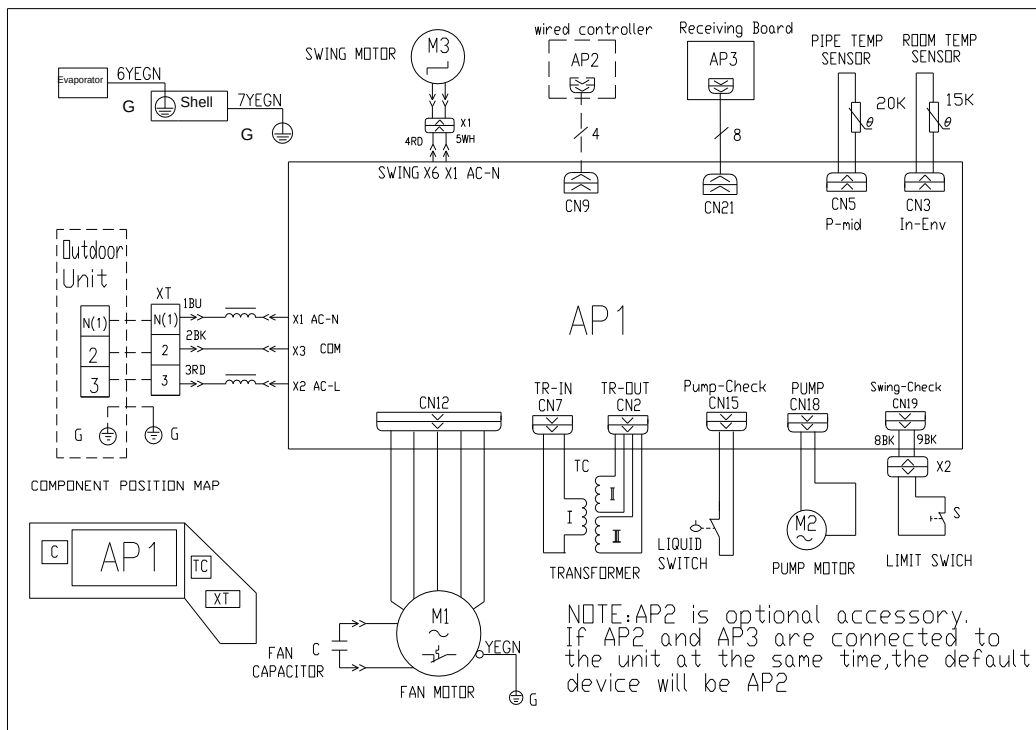


6.1.3 Cassette

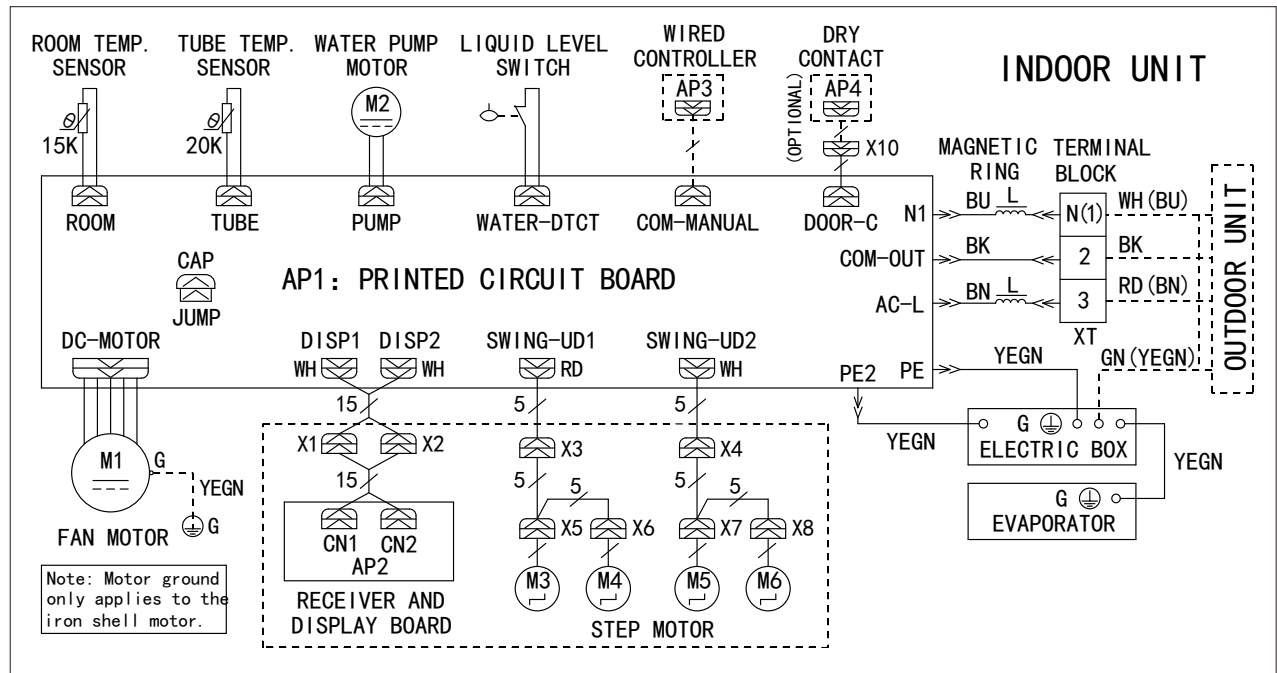
Model	Capacity (BTU)
SMZCA12HZIGX	12,000
SMZCA18HZIGX	14,400



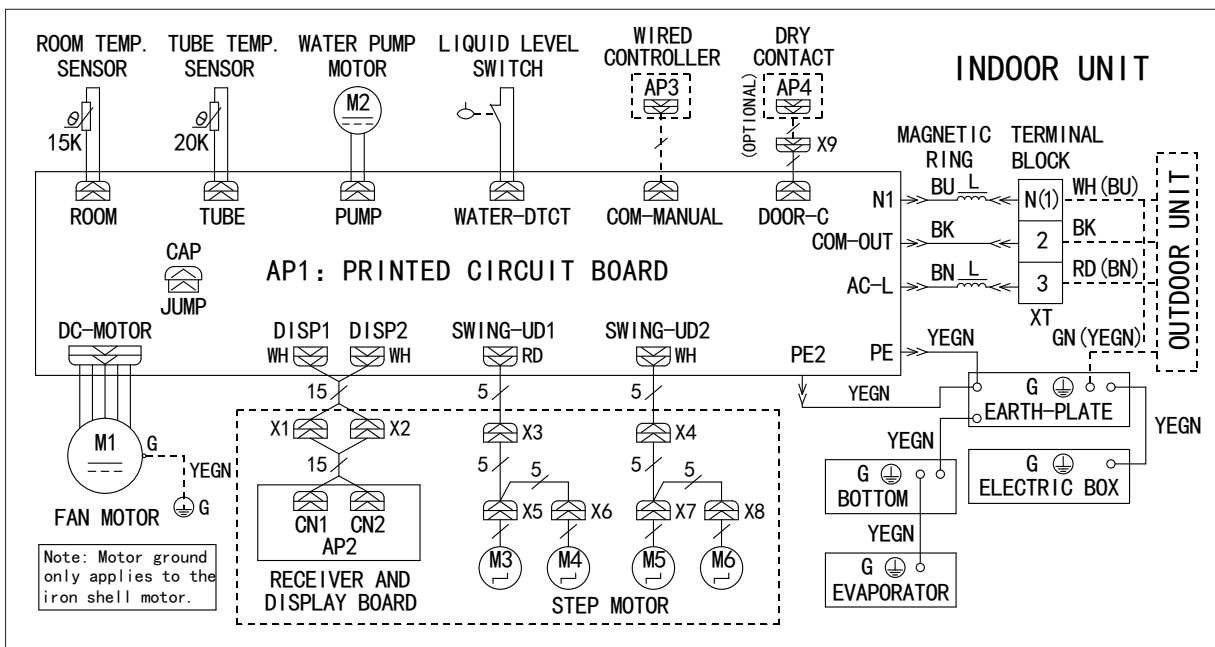
Model	Capacity (BTU)
SMZCA24HZIGX	22,800



Model	Capacity (BTU)
SMZCA12HZIGC	12,000
SMZCA18HZIGC	14,400

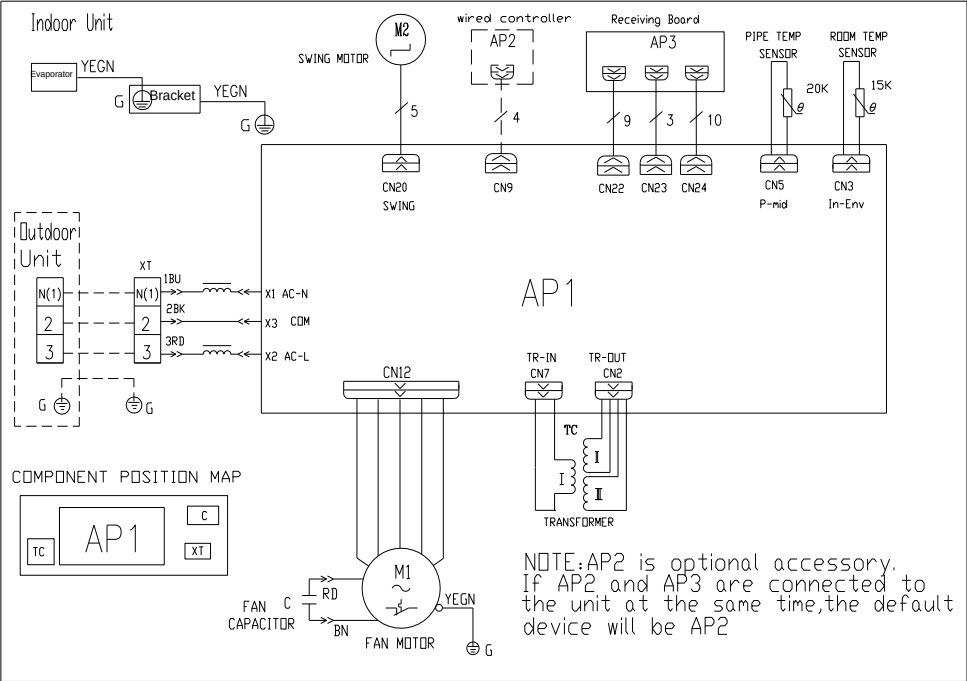


Model	Capacity (BTU)
SMZCA24HZIGC	22,800



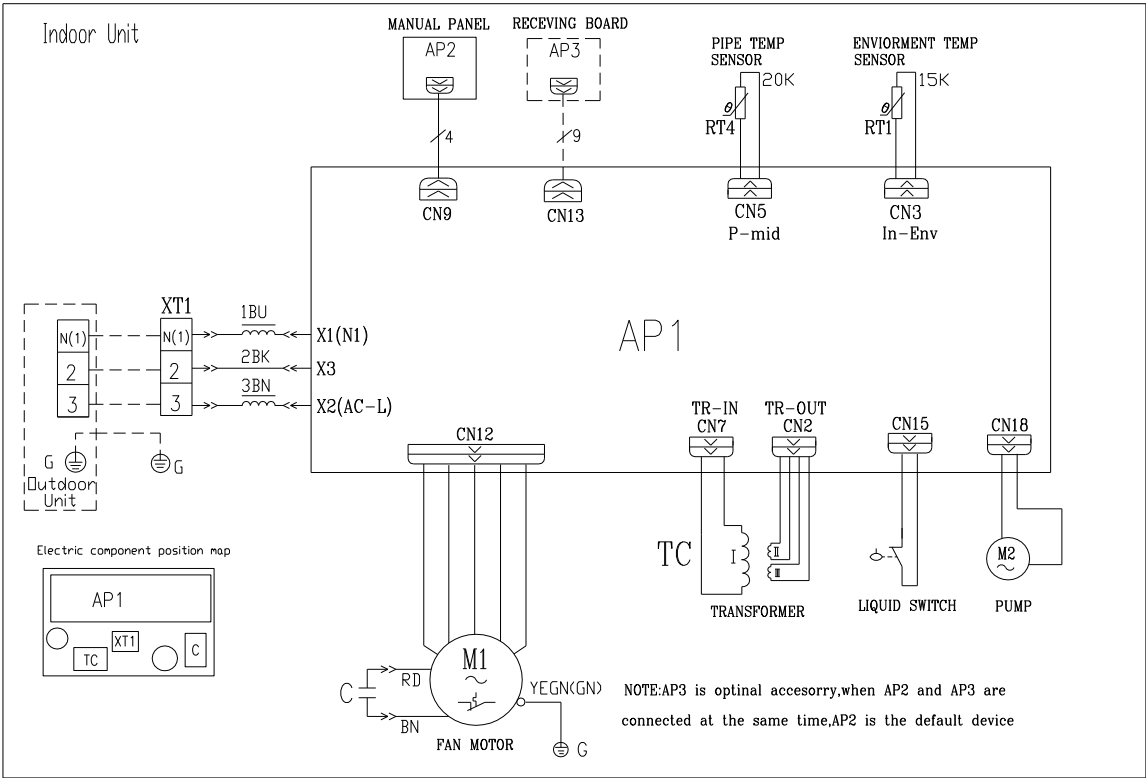
6.1.4 Floor/Ceiling

Model	Capacity (BTU)
SMZFC9H4ZIGX	8,500
SMZFC12H4ZIGX	11,900
SMZFC18H4ZIGX	17,000
SMZFC24H4ZIGX	22,800



6.1.5 Ducted

Model	Capacity (BTU)
SMZD9H4ZIGX	8,500
SMZD12H4ZIGX	11,900
SMZD18H4ZIGX	15,300
SMZD21H4ZIGX	20,400
SMZD24H4ZIGX	23,800

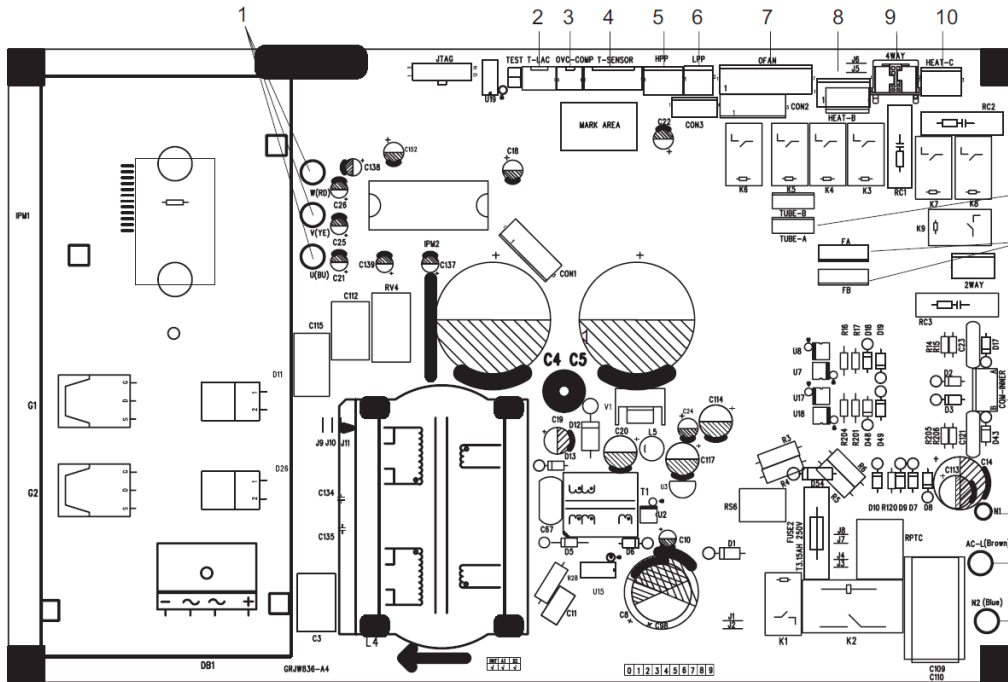


6.2 Outdoor Units

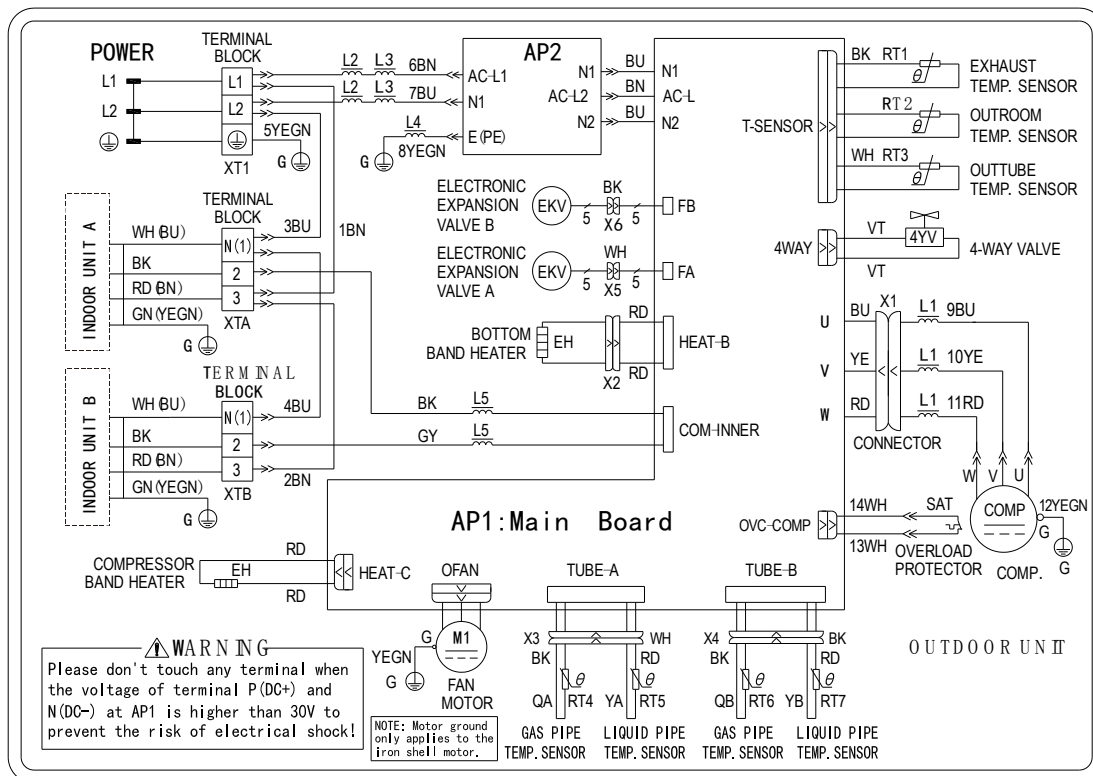
6.2.1 Dual Port

SMZ18H422Z0GB

● TOP VIEW

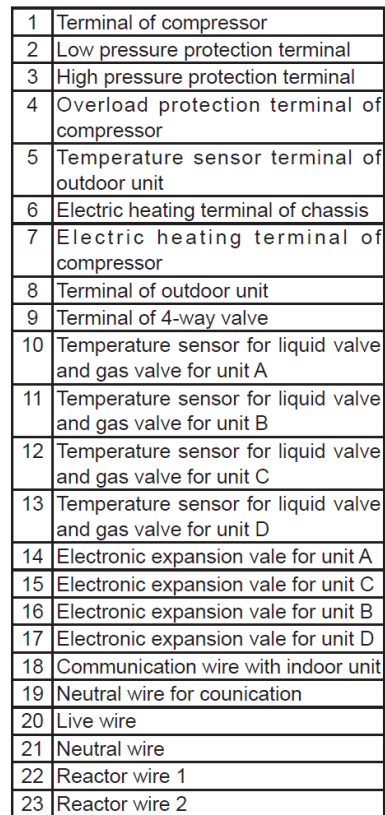


1	Terminal of compressor
2	Terminal of low-temperature cooling temperature sensor
3	Overload protection terminal of compressor
4	Temperature sensor terminal of outdoor unit
5	High pressure protection terminal
6	Low pressure protection terminal
7	Terminal of outdoor unit
8	Electric heating belt terminal of chassis
9	Terminal of 4-way valve
10	Electric heating belt terminal of compressor
11	Terminal of temperature sensor wire for liquid valve and gas valve
12	Terminal of electronic expansion valve
13	Terminal of communication wire for indoor unit and outdoor unit
14	Neutral wire terminal for communication
15	Live wire terminal
16	Neutral wire terminal



- TOP VIEW

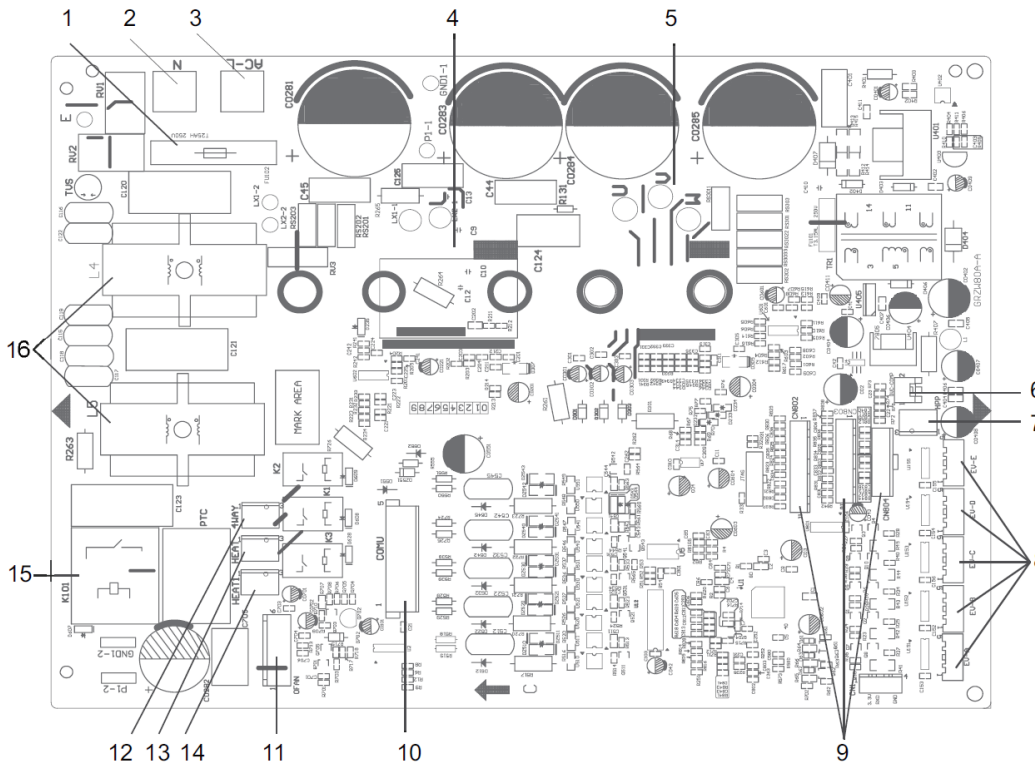
- TOP VIEW



6.2.3 Quad / Five Port

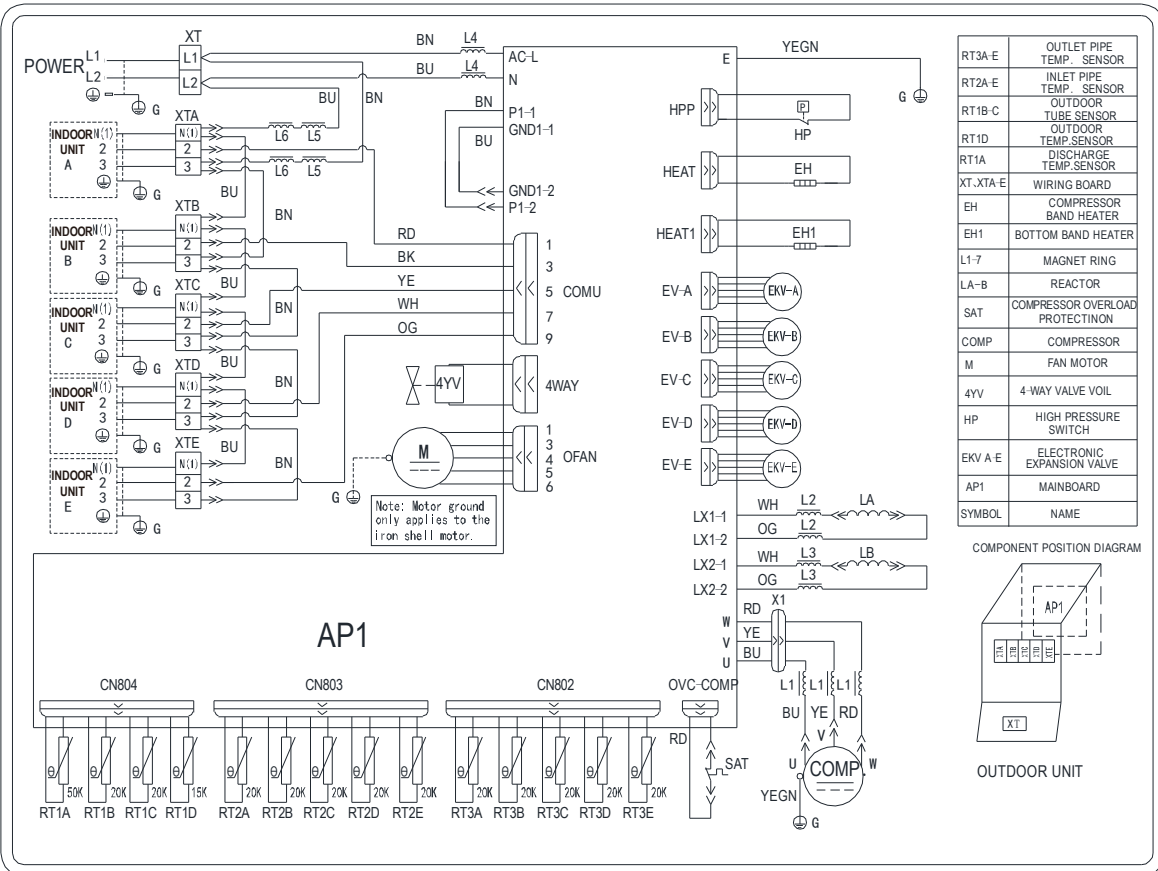
SMZ30H421ZGB / SMZ42H421ZGB

● TOP VIEW



1	T25AH 250V: Fuse
2	N: terminals of neutral wire
3	AC-L: terminals of line wire
4	PFC electrocircuit
5	U/V/W: terminals of compressor
6	OVC-COMP: terminals of overload protector
7	HPP: terminals of high pressure switch
8	EVA-EVE: terminals of EXV(electronic expansion valve)
9	CN802-CN803: terminals of temperature sensor
10	COMU: terminals of communication
11	OFAN: terminals of fan
12	4WAY: terminals of 4-way valve
13	HEAT: terminals of compressor band heater
14	HEAT1: terminals of bottom band heater
15	K101: Main relay
16	L4-L5: choke

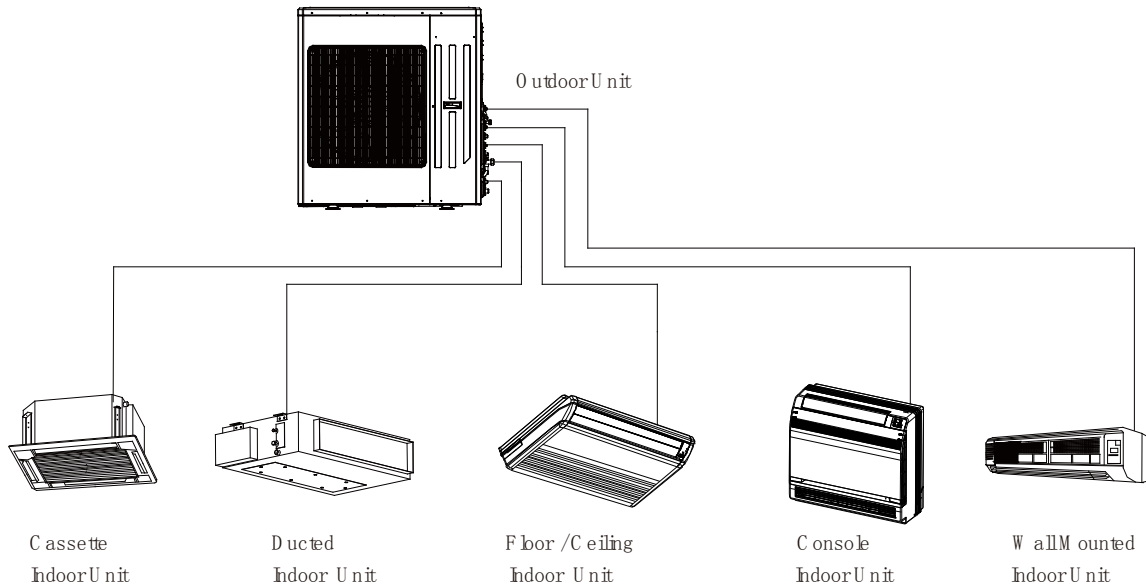
Wiring Diagram for SMZ42H421ZOGB



7. System Configuration

7.1 System Structure

For this multi-zone air conditioning system, the outdoor unit is able to drive the indoor units which can be different types as shown below. The console indoor unit can be controlled only by the remote control. The other indoor units can be controlled by either the remote control or the wall control. The outdoor unit will run if any of the indoor units sends a request for heating or cooling. All indoor units will stop once the outdoor unit is turned off.



7.2 Configuration Options

7.2.1 Dual Port Options

SMZ18H422Z0GB

NOTE: Do not mismatch or connect to an outdoor unit other than the designed matched system.

<u>One (1) Indoor Unit</u>	<u>Two (2) Indoor Units</u>
9K	9K + 9K
12K	9K + 12K

7.2.2 Quad Port Options

SMZ24H421ZOGB

*NOTE: Do not mismatch or connect to an outdoor unit other than the designed matched system.
This system must be used with a minimum of two (2) indoor units (evaporators).*

<u>Two (2) Indoor Units</u>	<u>Three (3) Indoor Units</u>
9K + 9K	
9K + 12K	9K + 9K + 9K
9K + 18K	9K + 9K + 12K
12K + 12K	
12K + 18K	

The configuration shown below will work but it is not recommended if all indoor units may require simultaneous continuous operation at full efficiency.

9K + 12K + 12K

7.2.3 Quad Port Options

SMZ30H421ZOGB

*NOTE: Do not mismatch or connect to an outdoor unit other than the designed matched system.
This system must be used with a minimum of two (2) indoor units (evaporators).*

<u>Two (2) Indoor Units</u>	<u>Three (3) Indoor Units</u>	<u>Four (4) Indoor Units</u>
9K + 9K	9K + 9K + 9K	
9K + 12K	9K + 9K + 12K	
9K + 18K	9K + 9K + 18K	9K + 9K + 9K + 9K
12K + 12K	9K + 12K + 12K	
12K + 18K	12K + 12K + 12K	
18K + 18K		

The configurations shown below will work but it is not recommended if all indoor units may require simultaneous continuous operation at full efficiency.

18K + 18K	9K + 12K + 18K	9K + 9K + 9K + 12K
	12K + 12K + 18K	9K + 9K + 12K + 12K

7.2.4 Five Port Options

SMZ42H421ZOGX

NOTE: Do not mismatch or connect to an outdoor unit other than the designed matched system.
This system must be used with a minimum of two (2) indoor units (evaporators).

<u>Two (2) Indoor Units</u>	<u>Three (3) Indoor Units</u>	<u>Four (4) Indoor Units</u>	<u>Five (5) Indoor Units</u>
	9K + 9K + 9K		
9K + 9K	9K + 9K + 12K		
9K + 12K	9K + 9K + 18K		
9K + 18K	9K + 12K + 12K		
12K + 12K	9K + 12K + 18K		
12K + 18K	9K + 18K + 18K	9K + 9K + 9K + 9K	
18K + 18K	12K + 12K + 12K	9K + 9K + 9K + 12K	
12K + 21K	12K + 12K + 18K	9K + 9K + 9K + 18K	
12K + 24K	12K + 18K + 18K	9K + 9K + 12K + 12K	9K + 9K + 9K + 9K + 9K
18K + 21K	9K + 9K + 21K	9K + 9K + 12K + 18K	
18K + 24K	9K + 9K + 24K	9K + 12K + 12K + 12K	
21K + 21K	9K + 18K + 21K		
21K + 24K	9K + 12K + 21K		
	9K + 12K + 24K		
	12K + 12K + 21K		

The configurations shown below will work but it is not recommended if all indoor units may require simultaneous continuous operation at full efficiency.

	18K + 18K + 18K	9K + 9K + 18K + 18K	
	9K + 18K + 24K	9K + 12K + 12K + 18K	
	9K + 21K + 21K	9K + 12K + 12K + 21K	
	9K + 21K + 24K	12K + 12K + 12K + 18K	9K + 9K + 9K + 9K + 18K
24K + 24K	12K + 18K + 21K	9K + 9K + 9K + 24K	9K + 9K + 9K + 12K + 12K
	12K + 18K + 24K	9K + 9K + 12K + 21K	9K + 9K + 12K + 12K + 12K
	12K + 21K + 21K	9K + 9K + 12K + 24K	9K + 9K + 9K + 9K + 12K
	12K + 12K + 24K	12K + 12K + 12K + 12K	
		9K + 9K + 9K + 21K	

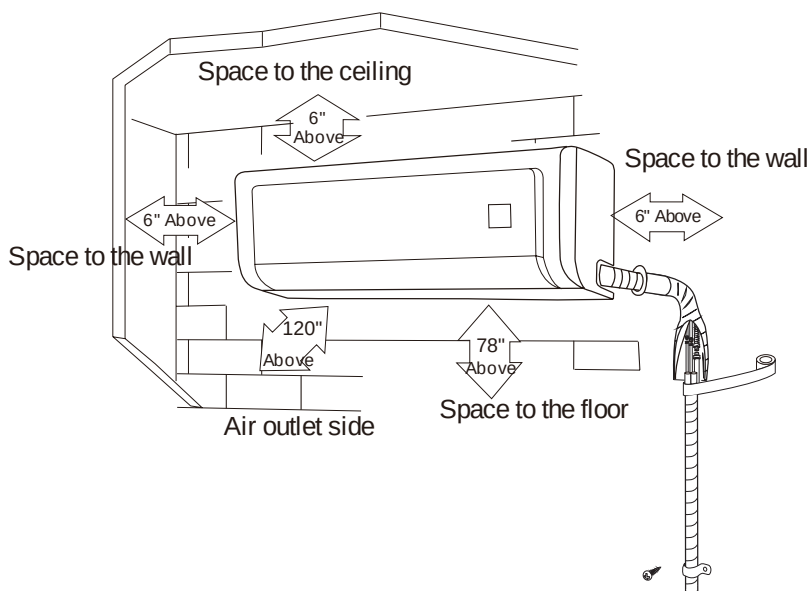
8. Installation

8.1 Placing the Indoor Unit

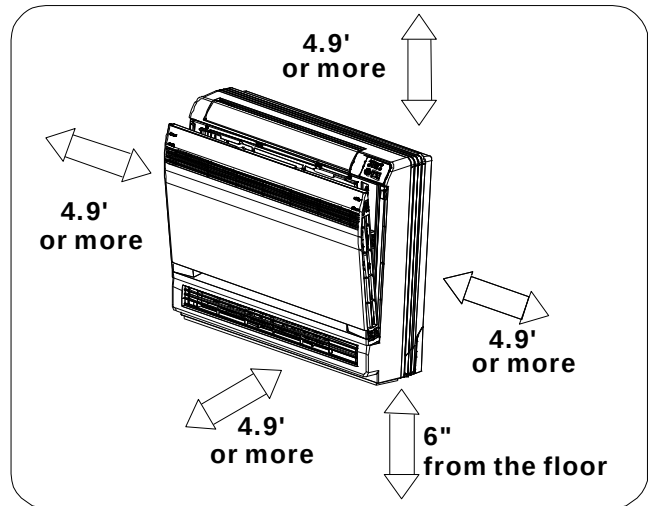
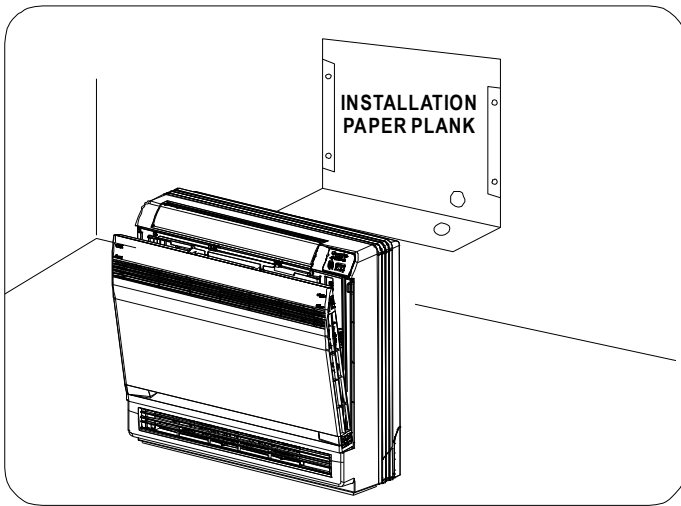
GENERAL WARNINGS!

- Ensure the proper clearance and mounting requirements are met as shown.
- Ensure airflow from the inlet and outlet area of the indoor unit is not obstructed.
- Make sure that there is enough space for care and maintenance.
- Do not install unit in a humid area (i.e. laundry room, bathroom).
- Ensure the installation area is level.
- Select a place where the condensate water can be easily drained.
- Ensure unit is installed away from heat sources, leakages of inflammable, explosive substances, or smog.
- The power cords and connection lines of the indoor and outdoor units must be at least 3.3 ft. away from the TV set or radio to avoid the image interference and noise.
- Select an area that is strong enough to withstand 4 times the weight of the indoor unit. This prevents vibration and noise. If not, reinforce before installation. (Refer to the installation cardboard template for more details.)

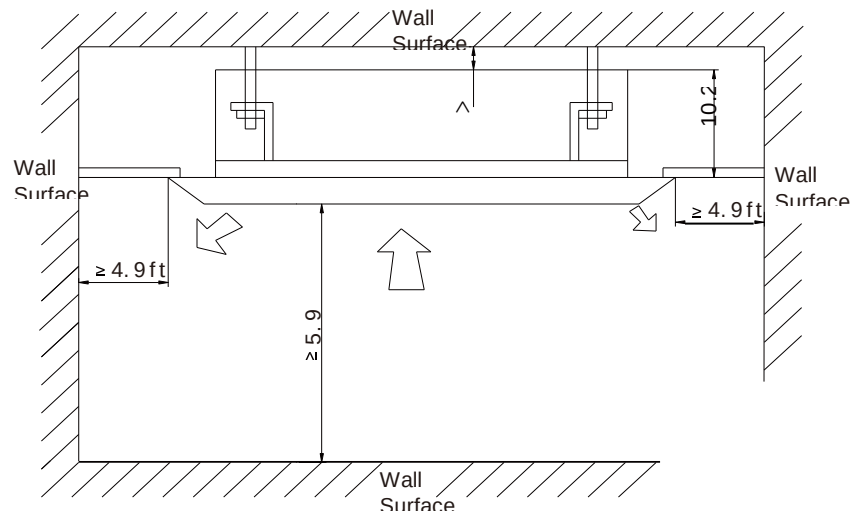
8.1.1 Wall Mounted



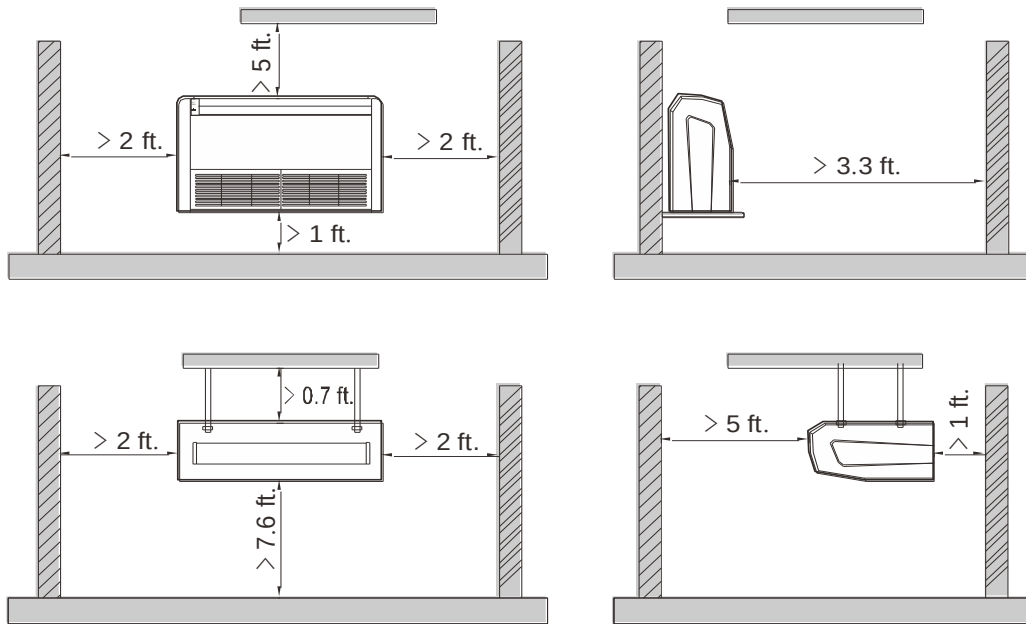
8.1.2 Console



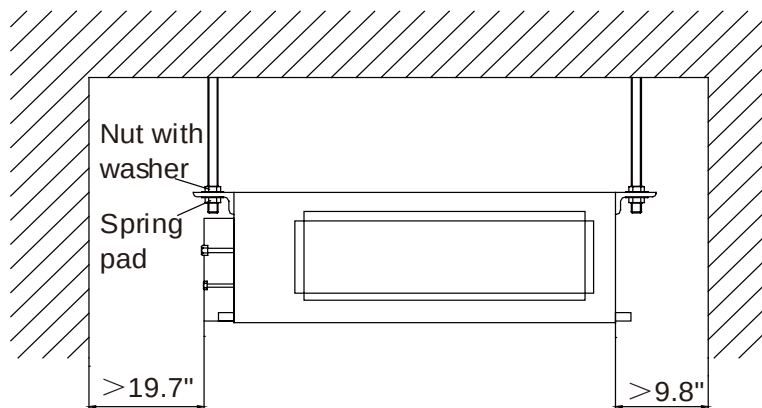
8.1.3 Cassette



8.1.4 Floor/Ceiling



8.1.5 Ducted

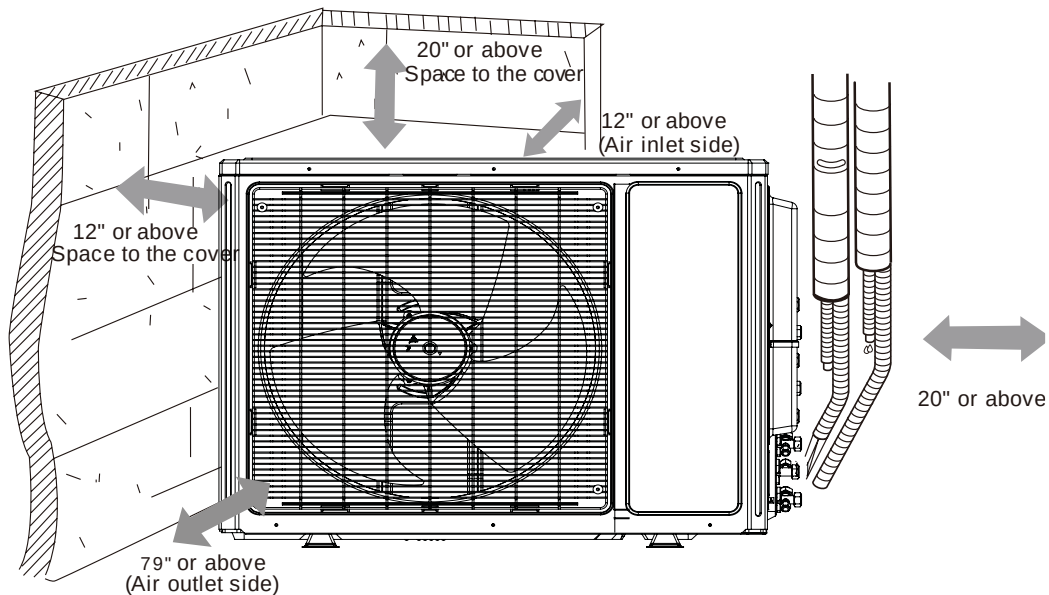


8.2 Placing the Outdoor Unit

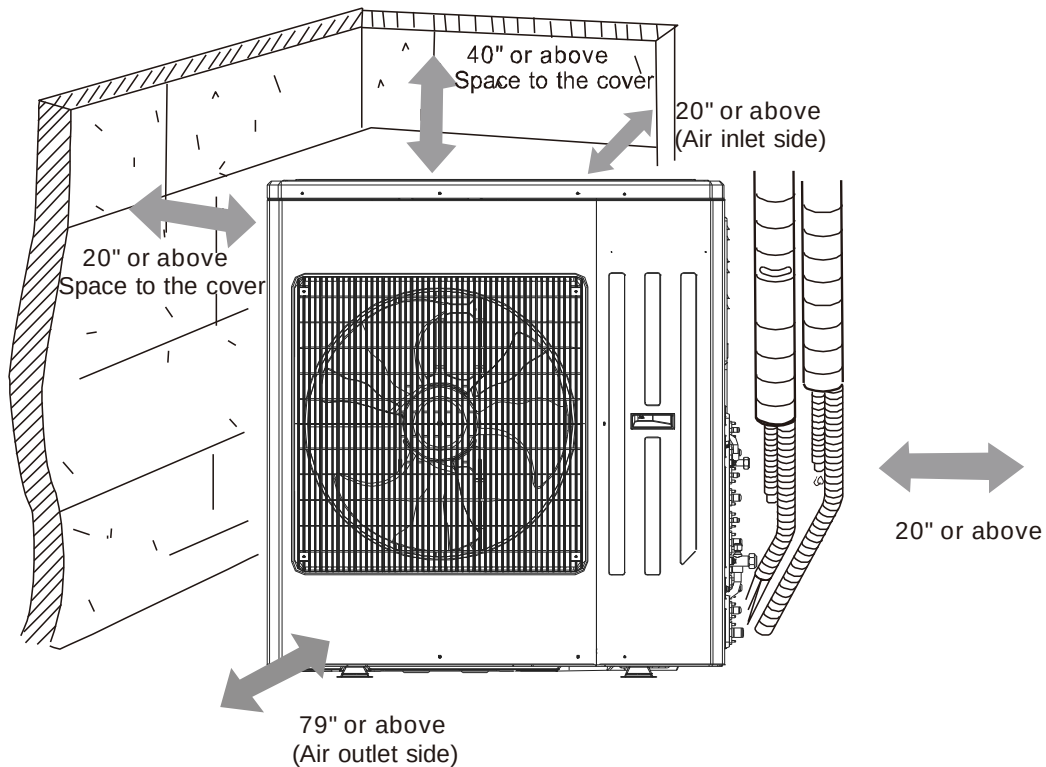
GENERAL WARNINGS!

- Ensure the proper clearance and mounting requirements are met as shown.
- Ensure airflow from the inlet and outlet area of the outdoor unit is not obstructed.
- Make sure that there is enough space for care and maintenance.
- Ensure the installation area is level.
- Ensure unit is installed away from heat sources, leakages of inflammable, explosive substances, or smog.

8.2.1 Dual/Triple Port



8.2.2 Quad/Five Port



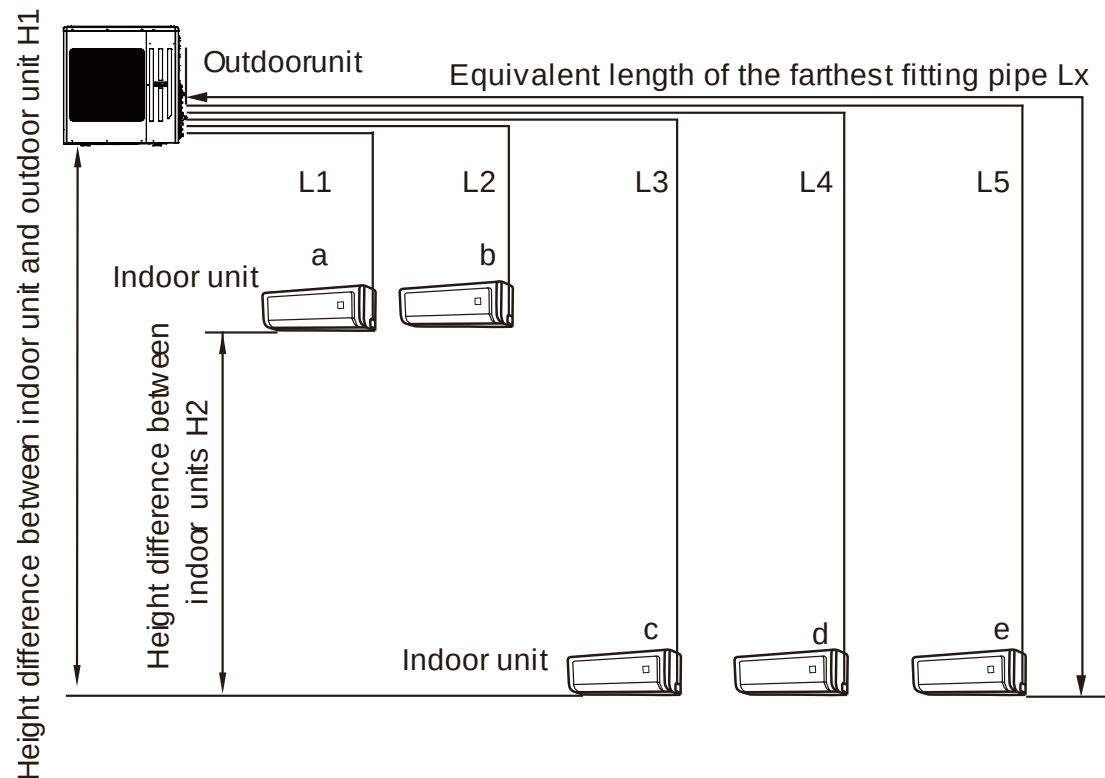
8.3 Maximum Line Length and Height

For best results, mount the outdoor unit as close as possible to the indoor units. Check the maximum line length specifications before mounting. **The maximum line length must not be exceeded!**

Dual/Triple Port Outdoor Units (18K, 24K)

Description	Dual Port Outdoor Unit	Triple Port Outdoor Unit
Max length for any indoor unit	32.8'	32.8'
Max height for each indoor and outdoor unit	32.8'	32.8'
Max total length	65.6'	196.85'

Quad / Five Port Outdoor Units (30K/42K)



Description	Connection Length	Quad Port Outdoor Unit	Five Port Outdoor Unit
Max length for any indoor unit	LX	82'	82'
Max height for each indoor and outdoor unit	H1	49.2'	49.2'
Max height difference between indoor units	H2	24.6'	24.6'
Max total length	L1 + L2 + L3 + L4 + (L5)	229.7'	246.1'

8.4 Tubing Connection Size

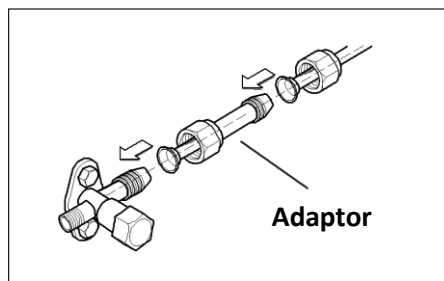
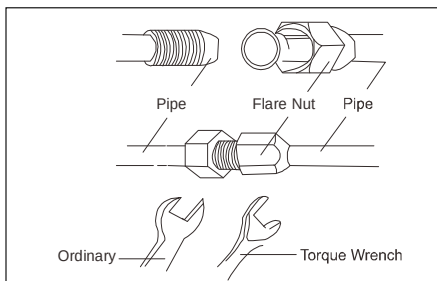
NOTE: When the indoor line set requires a different size from the outdoor connection, please follow the line set size of indoor unit. An adaptor is required to connect the line set to outdoor unit.

8.4.1 Indoor Unit

		1/4"	3/8"	1/2"	5/8"	Adapter Included	Adapter Size
Wall-Mounted B	9K / 12K	X	X				1/2" F to 3/8" M
	18K	X		X		Yes	3/8" F to 1/2" M
	24K	X			X	None	
Cassette Console Floor/Ceiling Ducted	9K	X	X			Yes	1/2" F to 3/8" M
	12K	X	X			Yes	1/2" F to 3/8" M
	18K	X		X		Yes	3/8" F to 1/2" M
	21K		X		X	None	
	24K		X		X	None	

8.4.2 Outdoor Unit

		1/4"	3/8"	1/2"	5/8"	Adapter Included
Dual Port (18K)	Terminal A	X	X			None
	Terminal B	X	X			
Triple (24K)	Terminal A	X	X			None
	Terminal B	X	X			
	Terminal C	X	X			
Quad Port (30K)	Terminal A	X	X			None
	Terminal B	X	X			
	Terminal C	X	X			
	Terminal D	X	X			
Five Port (42K)	Terminal A		X		X	3/8"F to 1/2"M (951-0515) -4 pcs, 3/8"F to 5/8"M (951-0516) -3 pcs, 1/4"F to 3/8"M (951-0517) -2 pcs,
	Terminal B	X		X		
	Terminal C	X		X		
	Terminal D	X	X			
	Terminal E	X	X			



8.5 Refrigerant Tubing

GENERAL WARNINGS!

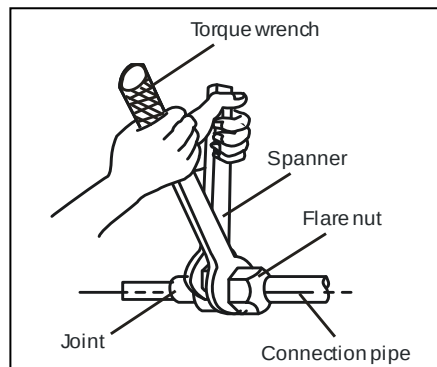
- The outdoor unit is supplied with a sufficient refrigerant charge of R410a for the maximum design length (no extra refrigerant required. Beyond this length, additional refrigerant is required and must be weighed in (see specifications).
- The indoor unit contains a small quantity of nitrogen. **DO NOT** remove the caps until tubing is ready to be installed.
- When removing the valve caps, **DO NOT** stand in front of valves as the system is under high pressure.
- An oil trap is recommended to be installed if the indoor unit is over 15 feet in height from the outdoor unit. To prevent kinking, bend tubes using a tubing tool.
- **DO NOT** braze tubing or use thread sealant. Use flare connections only.

8.5.1 Torque Table for Flare Nuts

When tightening the nut with a spanner and torque wrench, please follow the torque requests in the table below.

NOTE: Exceeding the tightening torque will damage the flare surface.

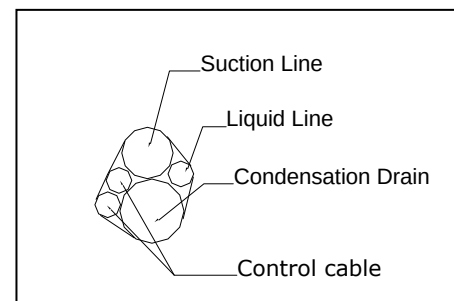
Nut Size	Torque
1/4"	11–22 lbs ft.
3/8"	23–29 lbs ft.
1/2"	33–37 lbs ft.
5/8"	44–48 lbs ft.



8.5.2 Bundling the Lines

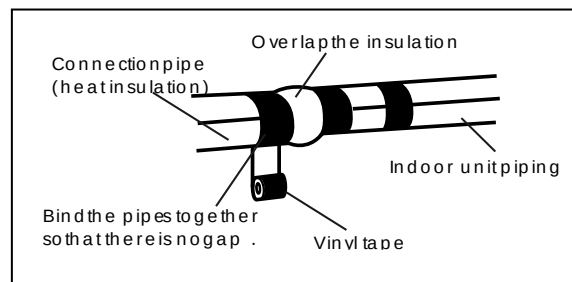
Bundle the refrigerant lines, control cables, and condensation drain together as shown in the picture below. Be sure to leave ample length on the control cables for termination. Bundle can be secured together using tape.

IMPORTANT: Condensate drain MUST be placed at the bottom of the bundle as shown. Failure to do so may cause evaporator to drain improperly.



Each tube must be insulated separately, including their unions with at least 1/4" thick insulation. Wrap the refrigeration tubing, drain hose, and electrical cables with a UV protected vinyl tape. Overlap insulation at all refrigeration joints. Insulation joints may overlap if desired.

CAUTION: Failure to completely wrap both lines with insulation may result in damage from condensation forming on lines and dripping onto wall, ceilings, etc.



8.6 Electrical Connection

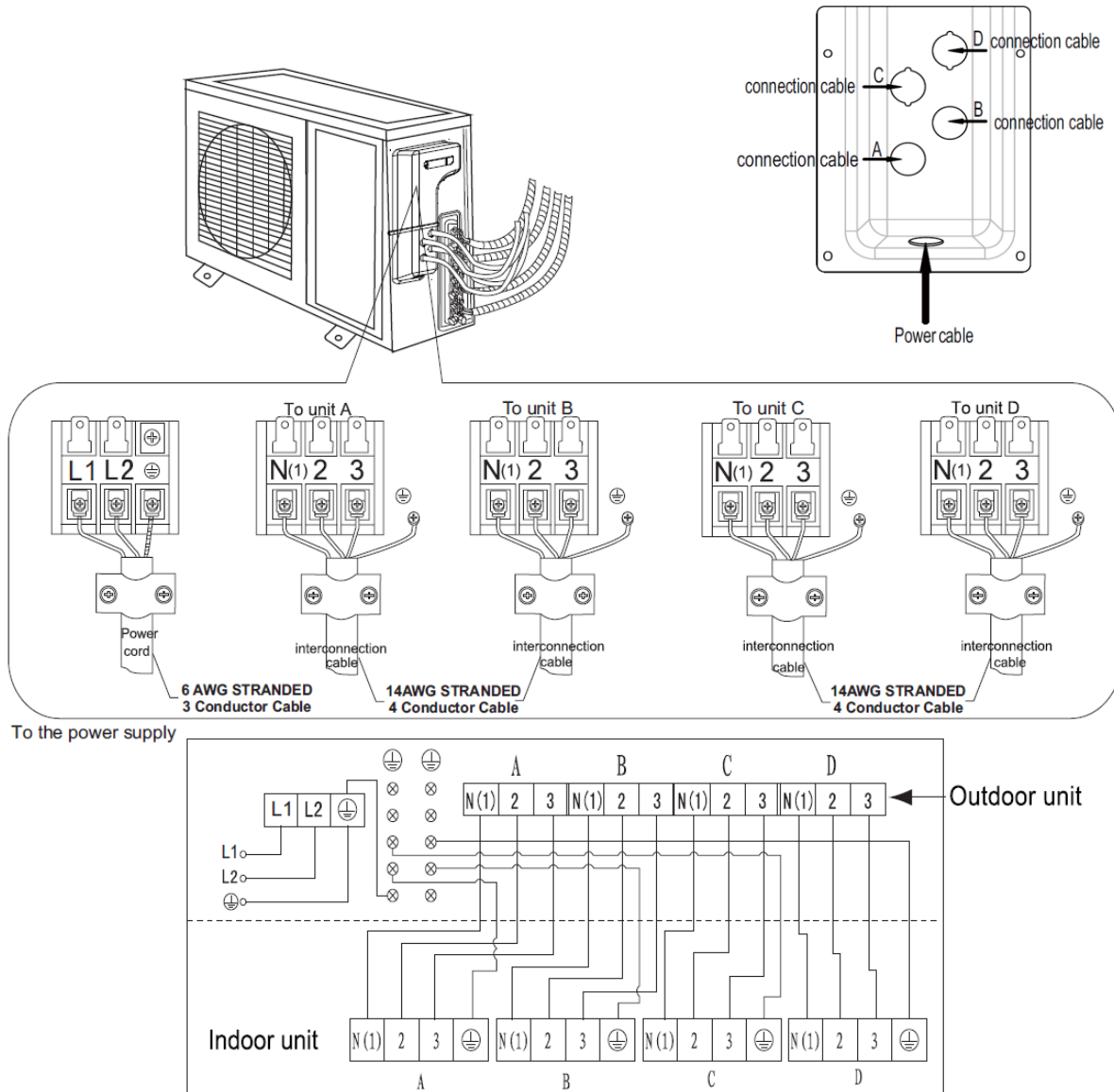
GENERAL WARNINGS!

- Electrical wiring and connections should be made by a qualified electrician in accordance with the National and Local electrical codes and regulations.
- The system must be properly grounded.
- Voltage should not vary beyond $\pm 10\%$ of the rated voltage.
- See the specifications page for proper wire sizes and circuit breaker sizes.
- See diagrams on pages 18-20 for further wiring information.

Connecting the Cable to the Outdoor Unit

1. Remove cable knock-outs (a water tight cable strain relief or conduit is recommended here).
2. Remove screws to take off side panel.
3. Feed cable wire through knock-out holes.
4. Connect the wires to the terminals.
5. Replace side panel with the screws.
6. Secure wire cables.

Typical Wiring Connections



WARNINGS!

- Improper wiring between the indoor and outdoor units can cause serious damage to the system and risk to personal injury or fire. Use caution when connecting the wiring to ensure that the wires are connected properly.
- **DO NOT** use thermostat wire to connect indoor and outdoor units. **DO NOT** cross wires!
- If a condensate pump is needed, it must be connected to the supply power at the outdoor unit.

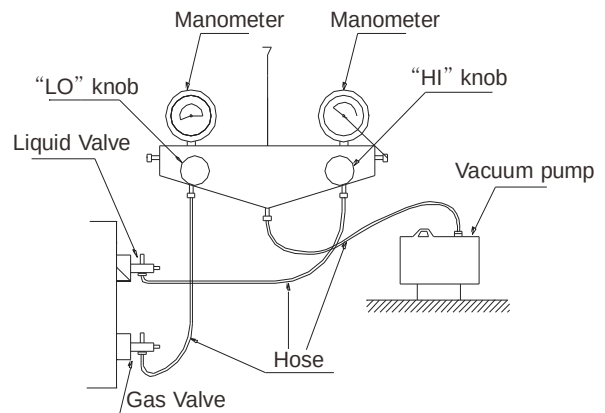
8.7 Evacuating the System

After connecting the indoor and outdoor units, evacuate the air from the line set and the indoor unit by following the procedures below.

Leak Testing

Indoor units are nitrogen pre-charged, however they should be pressure tested before installation. Follow the steps below to test for leaks.

1. Connect the charging hoses to the low side of the manifold and the service port of the gas valve (See figure beside).
2. Connect the center hose of the manifold valve to a nitrogen source.
NOTE: The nitrogen gas cylinder is used in a vertical standing position.
3. Charge system with nitrogen to 150 psi and check for leaks using standard industry leak detection methods.
4. Pay attention to possible evaporator leaks that may have occurred during shipping or installation.
5. Remove the nitrogen by opening the manifold valves.



Vacuum Purge

1. Connect the center hose of the manifold valves to a vacuum pump, and fully open the low and high pressure sides of the manifold valves. **DO NOT open service port valves.**
2. Turn on the vacuum pump. Evacuate system for about one (1) hour and confirm that the vacuum reading is 500 microns.
3. Close all manifold valves and turn off the vacuum pump. After waiting for several minutes, confirm that the vacuum reading of the manifold has not changed. If the vacuum reading has changed, there is a leak that must be found and repaired before continuing.
4. Remove the valve caps from the two valves. Slowly open liquid valve completely using a hexagonal Allen key. Use the same procedure on the suction valve. Open both valves to the full back seat position.
5. Securely tighten the caps back onto liquid and suction valves.
6. Check for gas leaks at all connections. Test with an electronic leak detector or with soapy water. Be sure to wipe off the soap with a clean cloth after leakage test.

8.8 Start-Up Testing

8.8.1 Preparation

NOTE: A wall control (MSWCH; 243-7002) is optional. For operation and installation details, please refer to manual 950-0210 and 950-0220 respectively.

1. Double check that all wiring has been properly connected.
2. Check that tubing has been properly connected and ensure the suction and liquid side service valves are fully open.
3. Review remote control functions in the operation manual.

8.8.2 Operational Test

NOTE: The cooling test can only be performed if the outdoor temperature is between 0.4°F and 118 °F. The heating test can only be performed if the outdoor temperature is between -4°F and 75°F. Unit may require several minutes to confirm the set point temperature and system functions

“COOL” Operation

NOTE: The indoor fan will not turn off in cooling mode when the set temperature is satisfied.

1. Ensure there is power going to the system. Turn on all indoor units and set to “COOL” mode. Change the set temperature to 61°F for all indoor units
2. Press the “FAN” button to select high fan speed on all units.
3. The compressor should turn on no later than three (3) minutes (compressor delay) afterwards. After operating for five (5) minutes after the compressor started, check for cool air flow. Outlet temperature should be 20-24°F lower than ambient temperature. (If outlet temperature is out of range, contact technical support).

“HEAT” Operation

NOTE: The indoor fan will turn off in heating mode shortly after the set temperature is satisfied.

1. Ensure there is power going to the system. Turn on all indoor units and set to “HEAT” mode. Change the set temperature to 86°F for all indoor units
2. Press the “FAN” button to select high fan speed on all units.
3. The compressor should turn on no later than five (5) minutes (compressor delay) afterwards. After operating for several minutes after the compressor started, verify the unit is blowing warm air.

8.8.3 Other Operations

Test the emergency operation button for proper operation. (see operation manual). It is recommended that all other function be tested for operation. Please refer to the operation manual to verify that the unit operates properly. Also, review the remote control functions with the owner. If unit does not perform as described, please see the troubleshooting section.

8.8.3 Temperature Differential

NOTE: This feature is only available for the wall mounted units.

Follow the following steps to set the temperature differential:

1. Change the temperature on the remote from °F to °C by pressing the “mode” and “-” button simultaneously.
2. Within thirty (30) seconds of bringing power to the system, set the indoor unit to HEAT mode. Change the setpoint to 17-20°C depending on the desired setting (see table on right for details). Alternate between pressing “+” and “-” (change temperature to original setting three (3) times within five (5) seconds). The indoor unit will display the differential (1-3°C) briefly and the heating and operation lights will flash three times.

Temperature	Differential
17°C	±3°C
18°C	±2°C
19°C	±1°C
20°C	±0°C

9. Functions and Protection Features

9.1 Functions

9.1.1 “COOL” Mode

Temperature range: 61~86°F

4 way valve position: Closed (Off)

On operation:

- The compressor will only start running when any of the indoor units call for cooling and the compressor delay interval has passed.
- When the compressor is operating, the electronic expansion valve and outdoor fan will also turn on.
- Using the indoor/outdoor ambient temperature, the set temperature, and the operating indoor units' capacity, the main board will calculate the system's load and set the working frequency of the inverter compressor.

Off Operation:

- The compressor will stop running when all indoor units have reached the set temperature.
- If one indoor unit has reached the set temperature while others are still operating, the corresponding electronic expansion valve for that particular unit will close completely after a five (5) second delay.
- The outdoor fan will turn off one (1) minute after the compressor shuts off.

Outdoor Fan Operation:

- The outdoor fan starts five (5) seconds before the compressor starts running.
- The outdoor fan will run at high speed for three (3) minutes when it first starts, then it will run at a set speed. The fan will run at each set speed for at least eighty (80) seconds.
- When the number of running indoor units is changed, the PC board will change the outdoor fan accordingly.
- When the compressor stops, the outdoor fan runs at the last set speed and then stop one (1) minute after.

Switching to “HEAT” mode: When all operating indoor units are switched from “COOL” to “HEAT” mode, the compressor will turn off and wait three (2) minutes before turning back on. The 4-way valve will open (on) two (2) minutes after the compressor stopped.

9.1.2 “DRY” Mode

Temperature range: Same as “COOL” mode

4 way valve position: Same as “COOL” mode

On operation: Same as “COOL” mode

NOTE: The maximum capacity of “DRY” mode is 90% of that of “COOL” mode.

9.1.3 “FAN” Mode

Temperature range: 61~86°F

4 way valve position: Closed (Off)

On operation:

- Indoor fan operates. Can be set to AUTO, HIGH, MED, or LOW.
- Compressor does not turn on

Outdoor Fan Operation: Off

9.1.4 “HEAT” Mode

Temperature range: 61~86°F

4 way valve position: Open (On)

On Operation:

- The compressor will only start running when any of the indoor units call for heating and the compressor delay interval has passed.
- When the compressor is operating, the electronic expansion valve and outdoor fan will also turn on.
- Using the indoor/outdoor ambient temperature, the set temperature, and the operating indoor units' capacity, the main board will calculate the system's load and set the working frequency of the inverter compressor.

Off Operation:

- The compressor will stop running when all indoor units have reached the set temperature.
- If one indoor unit has reached the set temperature while others are still operating, the corresponding electronic expansion valve for that particular unit will maintain a certain opening angle to make sure that the refrigerant in the coil can be returned to the compressor.
- The outdoor fan will turn off one (1) minute after the compressor shuts off.
- The 4 way valve will close (turn off) two (2) minutes after the compressor shuts off.

Outdoor Fan Operation:

- The outdoor fan starts five (5) seconds before the compressor starts running.
- The outdoor fan will run at high speed for forty (40) seconds when it first starts, then it will run at a set speed. The fan will run at each set speed for at least eighty (80) seconds.
- When the number of running indoor units is changed, the PC board will change the outdoor fan accordingly.
- When the compressor stops, the outdoor fan runs at the last set speed and then stop one (1) minute after.

Switching to “COOL” Mode: When all operating indoor units are switched from “HEAT” to “COOL” mode, the compressor will turn off and wait three (3) minutes before turning back on. The 4-way valve will close (off) two (2) minutes after the compressor stopped.

Defrost Function:

- This feature will activate according to specific conditions for the indoor/outdoor ambient and outdoor coil temperatures.
- “H1” code will be displayed on the indoor unit display or wall control.
- Unit will exit defrost mode after outdoor coil temperature reaches 50°F or the maximum defrost time has passed (generally 7-10 minutes).

Oil Return Function:

- Same as “Defrost Function”
- Maximum duration is five (5) minutes instead of 7-10 minutes.

9.2 Protection Features

9.2.1 Mode Conflict ("E7")

If two or more indoor units are operating in different modes, an indoor unit may show this error code if there is a mode conflict. Below are the priority levels and mode conflict for the different modes of operation.

"compressor ON" mode > "compressor OFF" mode
"FIRST on" mode > "NEXT on" mode

<u>Mode</u>	<u>Conflict</u>
COOL	
DRY	HEAT
FAN	
HEAT	COOL/DRY/FAN

9.2.2 Overload Protection ("E8")

NOTE: The condenser coils will be in the outdoor unit when operating in "COOL" mode and in the indoor unit when the system is operating in "HEAT" mode.

If the condenser coil temperature gets too high, the compressor should slow down and the temperature should therefore drop. If the outdoor coils are still too hot, the compressor will stop running and display an "E8" error code.

If the exhaust temperature protection continuously appears for 6 times, the compressor cannot resume running. In this case, the compressor resume running only by cutting off the power and re-energizing. If the running duration of the compressor is longer than seven/ten (7/10) minutes, the protection records will be cleared.

9.2.3 Compressor Overload Protection ("H3")

If the discharge temperature of the compressor is too high, the compressor will shut off. After the temperature has dropped and the compressor delay interval has passed, the compressor will resume operation. If this occurs six times in a row before the compressor stays on for longer than seven (7) minutes, then the system will not turn on until power has been disconnected to the system.

9.2.4 Communication Malfunction ("E6")

If the indoor unit does not receive a communication signal from the outdoor unit in 3 minutes, the indoor unit will display an "E6" error code and the outdoor unit will operate as if the indoor unit was not installed.

9.2.5 Intelligent Power Module (IPM) Protection ("H5")

When the IPM module is overheated, the compressor will stop. During this period, the indoor units will display the error code "H5." After the compressor has stopped for three (3) minutes, the system will resume operation. If this occurs six times in a row before the compressor stays on for longer than seven (7) minutes, then the system will not turn on until power has been disconnected to the system.

9.2.6 High Pressure Protection ("E1")

When the high-pressure is tripped for three (3) seconds continuously, the compressor will enter the high-pressure protection mode and the "E1" error codes will be displayed on the indoor units. The compressor will only resume after the power has been cut off and restored to the unit.

9.2.7 Compressor Phase Protection ("Ld")

If one of the three phases of the compressor is open, the system will enter the compressor phase protection mode with "Ld" displaying on the indoor units. The malfunction will be cleared after 1 min. The unit will restart and then determine if any of the phases are still open. If this occurs six times in a row before the compressor stays on for longer than seven (7) minutes, then the system will not turn on until power has been disconnected to the system.

9.2.8 Exhaust Protection (Temperature Overheat) ("E4")

If the exhaust temperature is higher than protection value, the compressor stops running and display an "E4" error code.

If the exhaust temperature protection continuously appears for 6 times, the compressor cannot resume running. In this case, the compressor resume running only by cutting off the power and re-energizing. If the running duration of the compressor is longer than seven/ten (7/10) minutes, the protection records will be cleared.

9.2.9 Anti-freezing Protection (for Quad / Five port units) ("E2")

Under Cooling and Dry mode, six (6) minutes after the compressor is started:

When it is detected for ten (10) minutes continuously that Tevap. (the temperature of evaporator) is lower than 28°F (varying with indoor unit), the Anti-freezing protection will be activated, the outdoor unit will immediately shut off the electronic expansion valve and the capacity will be set to "0" with an "E2" error code displayed.

When the Tevap. Exceeds 50°F and the compressor stopped over three (3) minutes, the unit will resume operation.

9.2.10 Over Current Protection ("E5")

This protection will be activated for following conditions with an "E5" error code displayed:

- a. The current of the whole unit is too high.
- b. The phase line current is too high.
- c. The compressor phase current is too high.

10. Error codes

10.1 Error Codes on Indoor unit panel

Malfunction Name	Display	Running LED	Cooling LED	Heating LED
Short/Open Circuit of the Liquid Valve Temp. Sensor	b5		19 Flashes	
Short/Open Circuit of the Suction Valve Temp. Sensor	b7		22 Flashes	
Jumper Failure	C5	15 Flashes		
Trial Operation for communication / Expansion Valve	dd	Flashing	Flashing	Flashing
Incorrect Communication Wiring or Expansion Valve Failure	dn			
High Pressure Protection	E1	1 Flash		
Anti-Freezing Protection	E2	2 Flashes		
Exhaust Protection (Temperature Overheat)	E4	4 Flashes		
Over Current Protection	E5	5 Flashes		
Communication Malfunction	E6	6 Flashes		
Mode Conflict	E7	7 Flashes		
Overload Protection	E8	8 Flashes		
Condensate Water Full of Indoor Unit	E9		Flashing	Flashing
EEPROM malfunction	EE			15 Flashes
Frequency Drop for Module current protection - phase current	En	3 Flashes	3 Flashes	3 Flashes
Frequency Drop for Module temperature protection	EU		6 Flashes	6 Flashes
Indoor Ambient Sensor Failure	F1		1 Flash	
Indoor Tube Sensor Failure	F2		2 Flashes	
Outdoor Ambient Sensor Failure	F3		3 Flashes	
Outdoor Tube Sensor Failure	F4		4 Flashes	
Outdoor Exhaust Sensor Failure	F5		5 Flashes	
Frequency Drop for Overload	F6		6 Flashes	
Oil Return in Cooling Mode	F7		7 Flashes	
Frequency Drop for Over Current Protection	F8		8 Flashes	
Frequency Drop for Exhaust Protection	F9		9 Flashes	
Refrigerant Recovery Mode	Fo	Flashing	Flashing	
Frequency Drop for Anti-Freezing Protection	FH		2 Flashes	2 Flashes
Defrost or Oil Return Heat Mode	H1			1 Flash
Compressor Overload Protection	H3			3 Flashes
IPM Protection	H5			5 Flashes
Indoor Fan Motor Failure	H6	11 Flashes		
Compressor Desynchronizing	H7			7 Flashes
PFC Over-Current Malfunction	HC			6 Flashes
Outdoor Fan Motor Failure	L3			
High Supply Voltage Protection	L9	20 Flashes		
Startup Failure	Lc			11 Flashes
Compressor Phase Failure / Reverse Protection	Ld			
Incorrect Indoor Unit Model	LP			
PFC Sensor Malfunction	oE			
Phase Over-Current Protection	P5			15 Flashes
IPM Temperature Sensor Failure	P7			18 Flashes
IPM Overheat Protection	P8			19 Flashes
Current Sensor Error	Pc	3 Flashes	3 Flashes	3 Flashes
High Voltage Protection of PN	PH		11 Flashes	
Low Voltage Protection of PN	PL			21 Flashes
Capacitor Charging Circuit Error	PU			17 Flashes
Compress Phase Circuit Detection Error	U1			12 Flashes
PN Voltage Drop Protection	U3			20 Flashes
AC Current Detect Circuit Malfunction	U5		13 Flashes	
Four Way Failure	U7		20 Flashes	
Indoor fan Motor Zero-cross Detecting Error	U8	17 Flashes		

10.2 Flash codes on the PC board of outdoor unit

10.2.1 Dual/Triple Ports

Remove the top cover of the outdoor unit to approach the control box. The wiring diagram and error code label are placed on the cover of the control box. There is not a flash located on the outdoor main boards. Please check the error codes displayed on the indoor units.

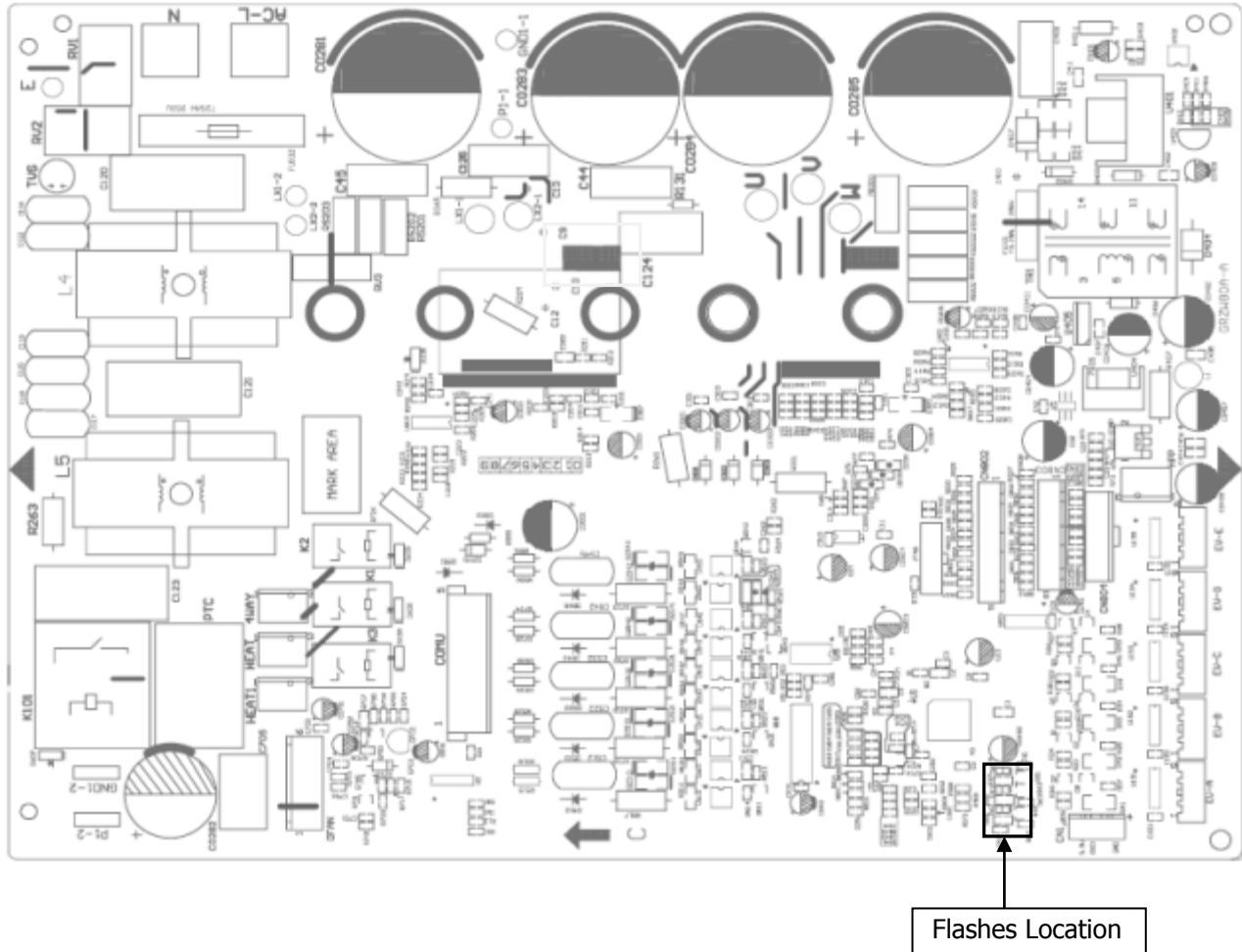
10.2.1.1 Error Code Label on SMZ18H422ZOGB (Dual Port) and SMZ24H421ZOGB (Triple Port)

Name of malfunction	Display of double eight code	Display of lamp		
		Running lamp/Power lamp	Cooling lamp	Heating lamp
Fault in input power zero	U8	blink 17 time		
Jumper cap malfunction protection	C5	blink 15 time		
No feedback of indoor fan motor	H6	blink 11 time		
Indoor ambient sensor open or short circuit	F1		blink 1 time	
Indoor tube sensor open or short circuit	F2		blink 2 time	
Inlet tube sensor malfunction	b5		blink 19 time	
Outlet tube sensor malfunction	b7		blink 22 time	
IPM sensor circuit malfunction	P7			blink 18 time
Outdoor ambient sensor open or short circuit	F3		blink 3 time	
Outdoor tube sensor open or short circuit	F4		blink 4 time	
Exhaust sensor open or short circuit	F5		blink 5 time	
Communication failure between indoor unit and outdoor unit	E6	blink 6 time		
Compressor phase current detection circuit malfunction	U1			blink 12 time
Compressor demagnetization protection	HE			blink 14 time
PN voltage drop protection	U3			blink 20 time
IPM high temperature protection	P8			blink 19 time
Capacitor charge malfunction	PU			blink 17 time
Refrigerant system high pressure protection	E1	blink 1 time		
Compressor over load protection	H3			blink 3 time
Loading EEPROM malfunction	EE			blink 15 time
Wrong connection or expansion valve malfunction(result)	dn			
AC current detect circuit malfunction	U5		blink 13 time	
Outdoor DC fan motor malfunction	L3	blink 23 time		
Wrong connection or expansion valve malfunction(checking)	dd			
Recovery refrigerant mode	Fo	blink 1 time	blink 1 time	
Startup failure	Lc			blink 11 time
Compressor exhaust high temperature protection	E4	blink 4 time		
Anti-high temperature protection	E8	blink 8 time		
AC over-current protection	E5	blink 5 time		
Over compressor phase current protection	P5			blink 15 time
Compressor loss step protection	H7			blink 7 time
Compressor loss of phase protection	Ld			
IPM protection	H5			blink 5 time
Low PN voltage protection	PL			blink 21 time
Over voltage protection for PN	PH		blink 11 time	
PFC protection	HC			blink 6 time
4-way valve reversal abnormal	U7		blink 20 time	
Mode conflict	E7	blink 7 time		

10.2.2 Quad / Five Ports

There are three flashes for error codes which are located on the outdoor main boards. When several malfunctions occur at the same time, they will be displayed in circulation and every malfunction is displayed for 5 seconds. Remove the top cover of the outdoor unit to gain access to the main board in the control box.

10.2.2.1 PCB Top View



10.2.2.2 Error Code Label on SMZ30H421Z0GB (Quad Port) and SMZ42H421Z0GB (Five Port)

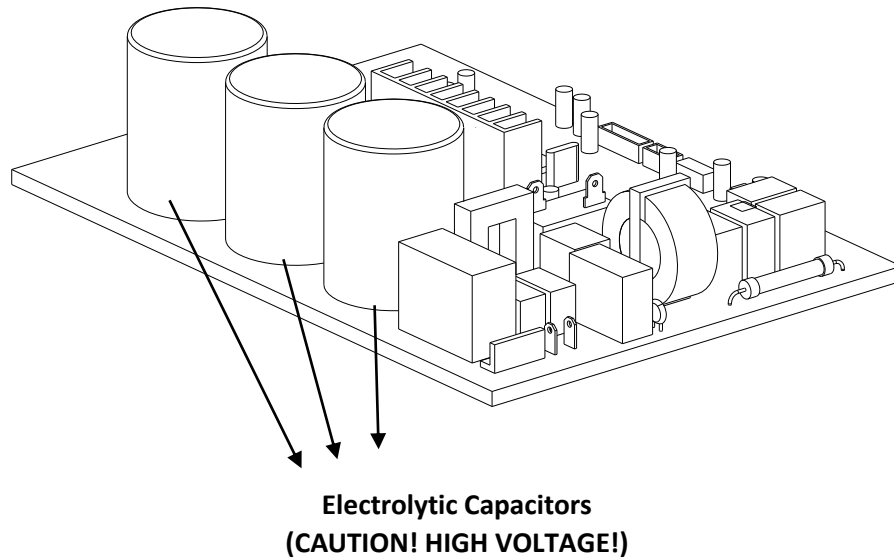
Name of malfunction	Indoor unit display	Outdoor unit control board LED status		
		Yellow	Green	Red
Compressor runs		flash once		
Defrost	H1	flash twice		
Anti-freezing protection	E2	flash 3 times		
IPM protection	H5	flash 4 times		
AC over-current protection	E5	flash 5 times		
Over-burden protection	E8	flash 6 times		
Compressor exhaust high temperature protection	E4	flash 7 times		
Compressor overload protection	H3	flash 8 times		
Power protection	L9	flash 9 times		
EEPROM reads and write protection		flash 11 times		
Low PN voltage protection	PL	flash 12 times		
Over voltage protection for PN	PH	flash 13 times		
PFC protection	HC	flash 14 times		
PFC module temperature protection	oE	flash 15 times		
Low pressure protection	E3	flash 16 times		
High pressure protection	E1	flash 17 times		
Limit/decline frequency(electric current)				flash once
Frequency limit (exhaust)				flash twice
Frequency limit (Over-burden)				flash 3 times
Outdoor tube sensor malfunction	F4			flash 5 times
Outdoor ambient sensor malfunction	F3			flash 6 times
Exhaust sensor malfunction	F5			flash 7 times
Attain the temperature of switch on				flash 8 times
Frequency limit(power)				flash 13 times
Outdoor fan malfunction	L3			flash 14 times
Frequency limit(PFC module temperature)				flash 15 times
PFC module sensor malfunction	oE			flash 16 times
Liquid pipe temperature sensor malfunction of A				flash 17 times
Gas pipe temperature sensor malfunction of A				flash 18 times
Liquid pipe temperature sensor malfunction of B				flash 19 times
Gas pipe temperature sensor malfunction of B				flash 20 times
Liquid pipe temperature sensor malfunction of C				flash 21 times
Gas pipe temperature sensor malfunction of C				flash 22 times
Liquid pipe temperature sensor malfunction of D				flash 23 times
Gas pipe temperature sensor malfunction of D				flash 24 times
Liquid pipe temperature sensor malfunction of E				flash 25 times
Gas pipe temperature sensor malfunction of E				flash 26 times
Exit of the condenser tube sensor malfunction				flash 27 times
Correspondence is normal			flash n times (n=indoor unit NO)	
Communication failure	E6		Often bright	
Indoor ambient sensor malfunction	F1			
Indoor evaporate sensor malfunction	F2			
Mode conflict	E7			
Accept fluorine mode	F0			
Jumper cap malfunction protection	C5			

11. Troubleshooting

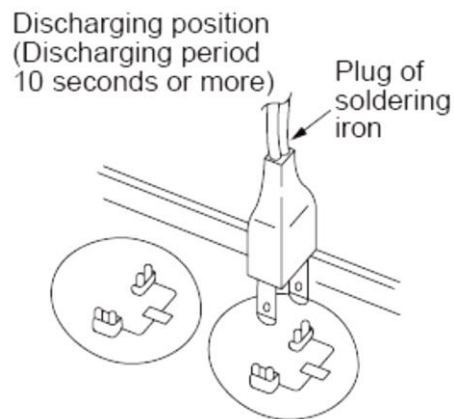
NOTE: All pictures used in this section are for reference only. Actual products may be different.

WARNING!

Electricity is still kept in the capacitors even when the power supply is shut off or disconnected. Do not forget to discharge the electricity in the capacitors before troubleshooting.



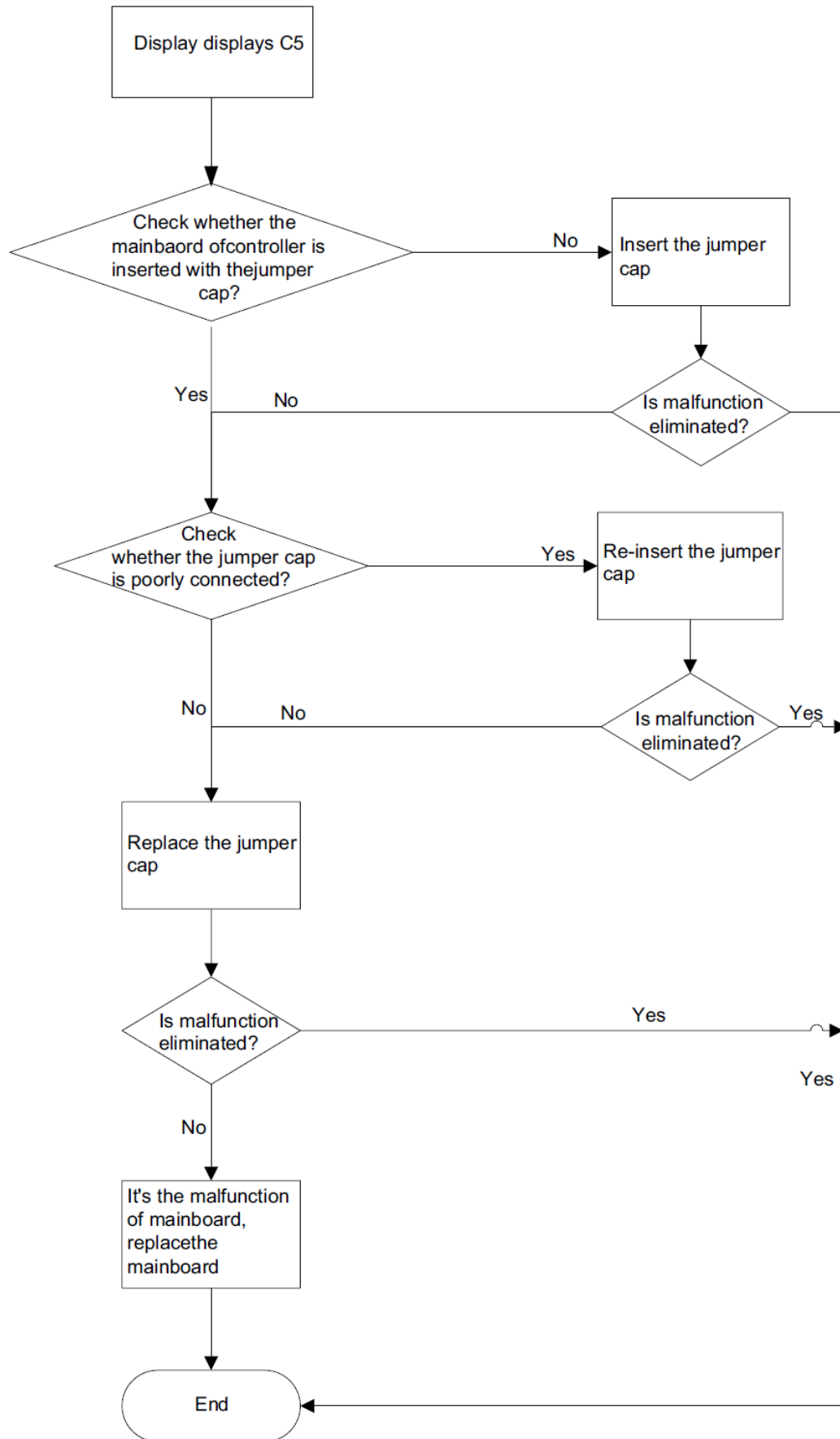
For other models, please connect the discharge resistance (approximately 100Ω 40W) or soldering iron (plug) between the “+” and “-” terminals of the electrolytic capacitor on the opposite side of the outdoor PCB.



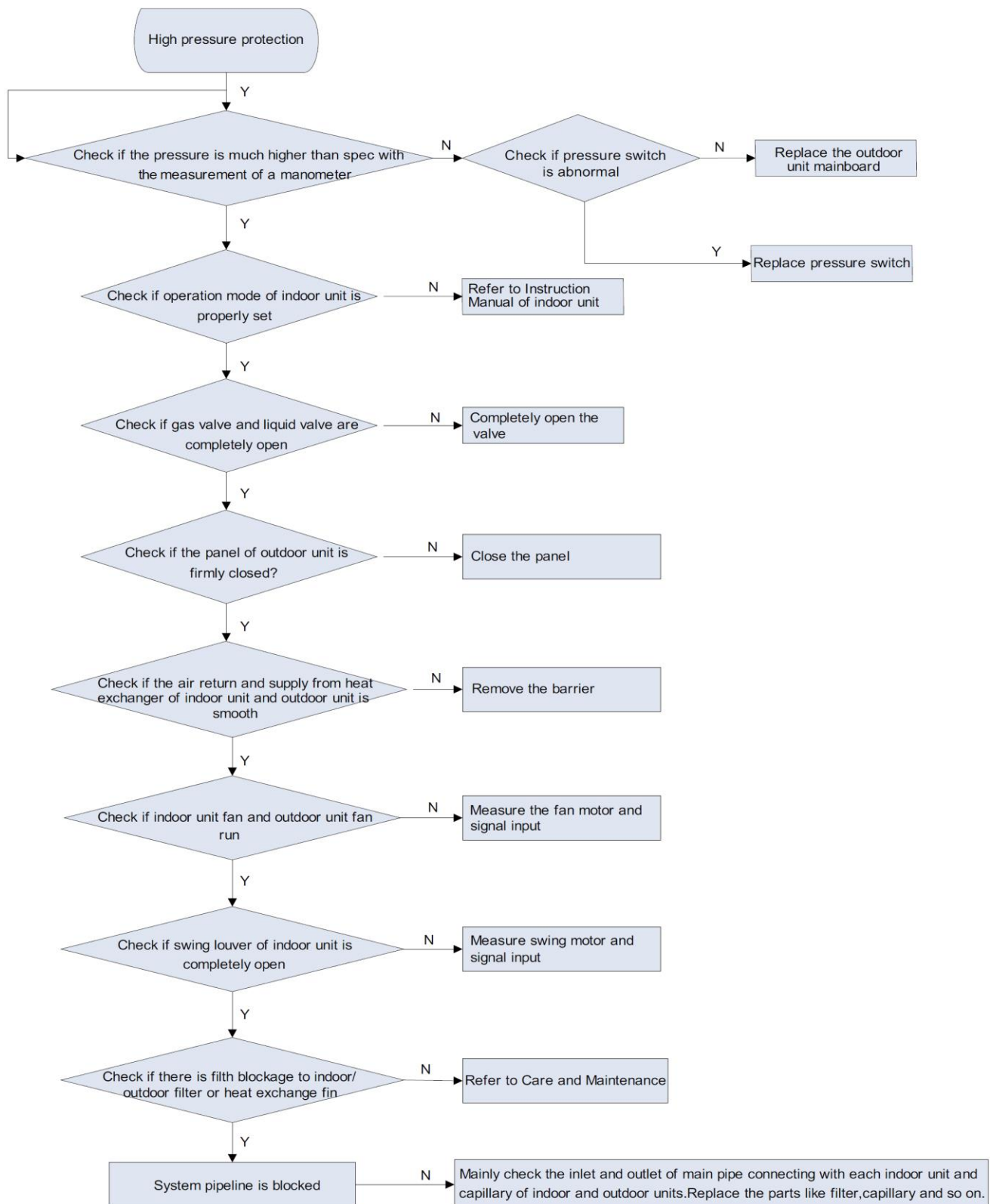
NOTE: The picture above is for reference only. The actual plugs and capacitors may be different.

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11.1 C5: Jumper Failure



11.2 E1: High Pressure Protection



Additional Possible Causes

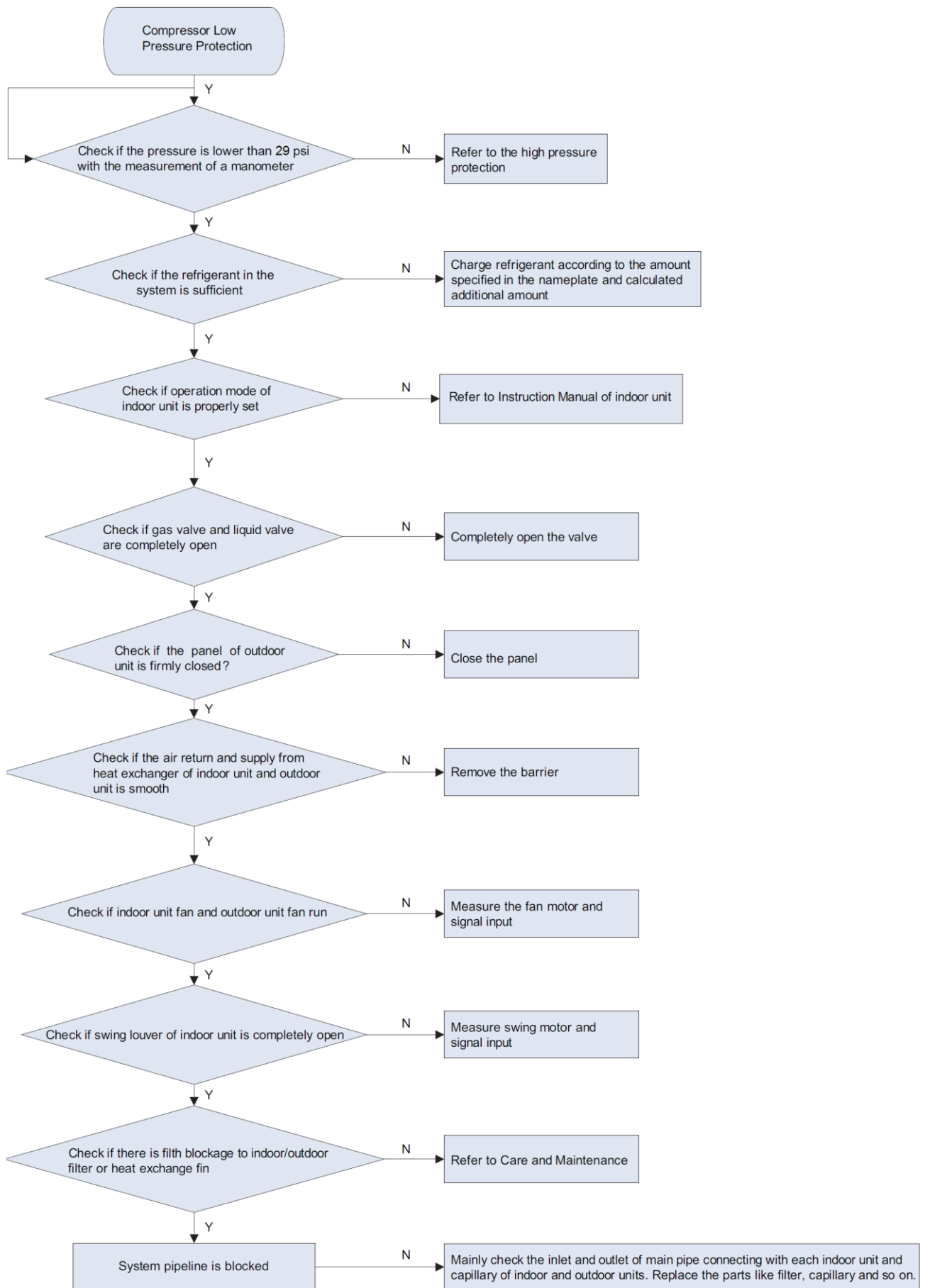
- Outdoor board and pressure switch is not connected well
- Too much refrigerant in the system
- Outdoor ambient temperature is too high (i.e. >127 °F)
- Expansion valve or 4-way valve failed

11.3 E2: Anti-Freezing Protection

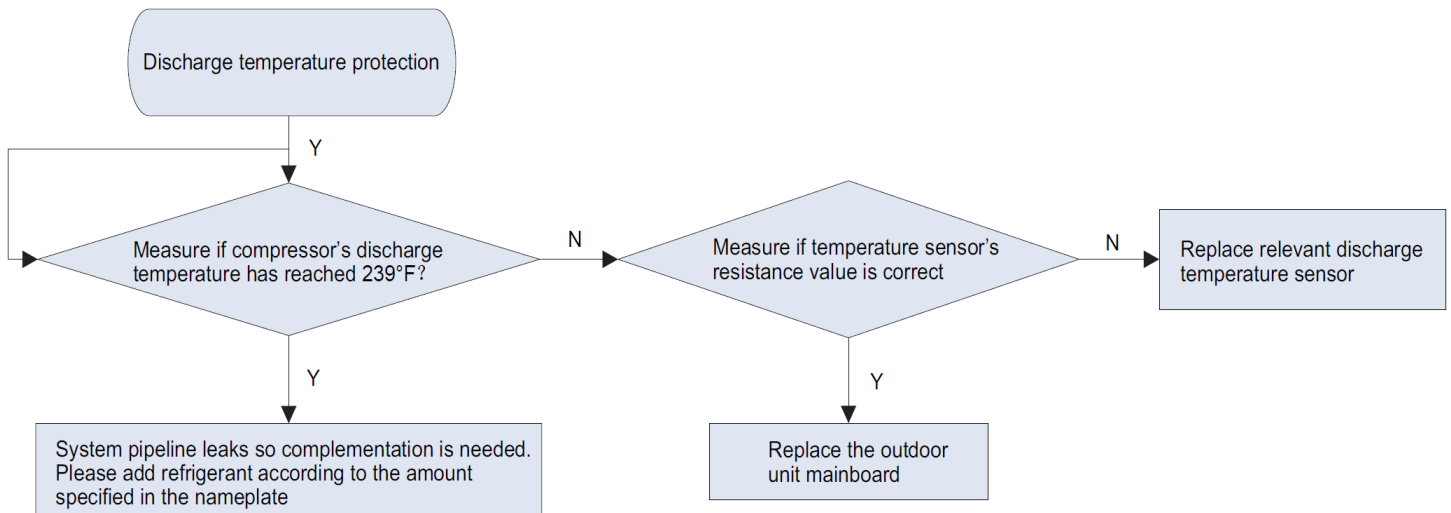
Possible Causes

- Check the air flow. Make sure the inlet and outlet of both indoor and outdoor unit is not blocked.
- Check the air filters and make sure they are clean.
- Check the indoor tube sensor F2 by referring the value from “Appendix II” on page 130. If it is broken, then replace the sensor. If the sensor is good, then replace the indoor PC board.

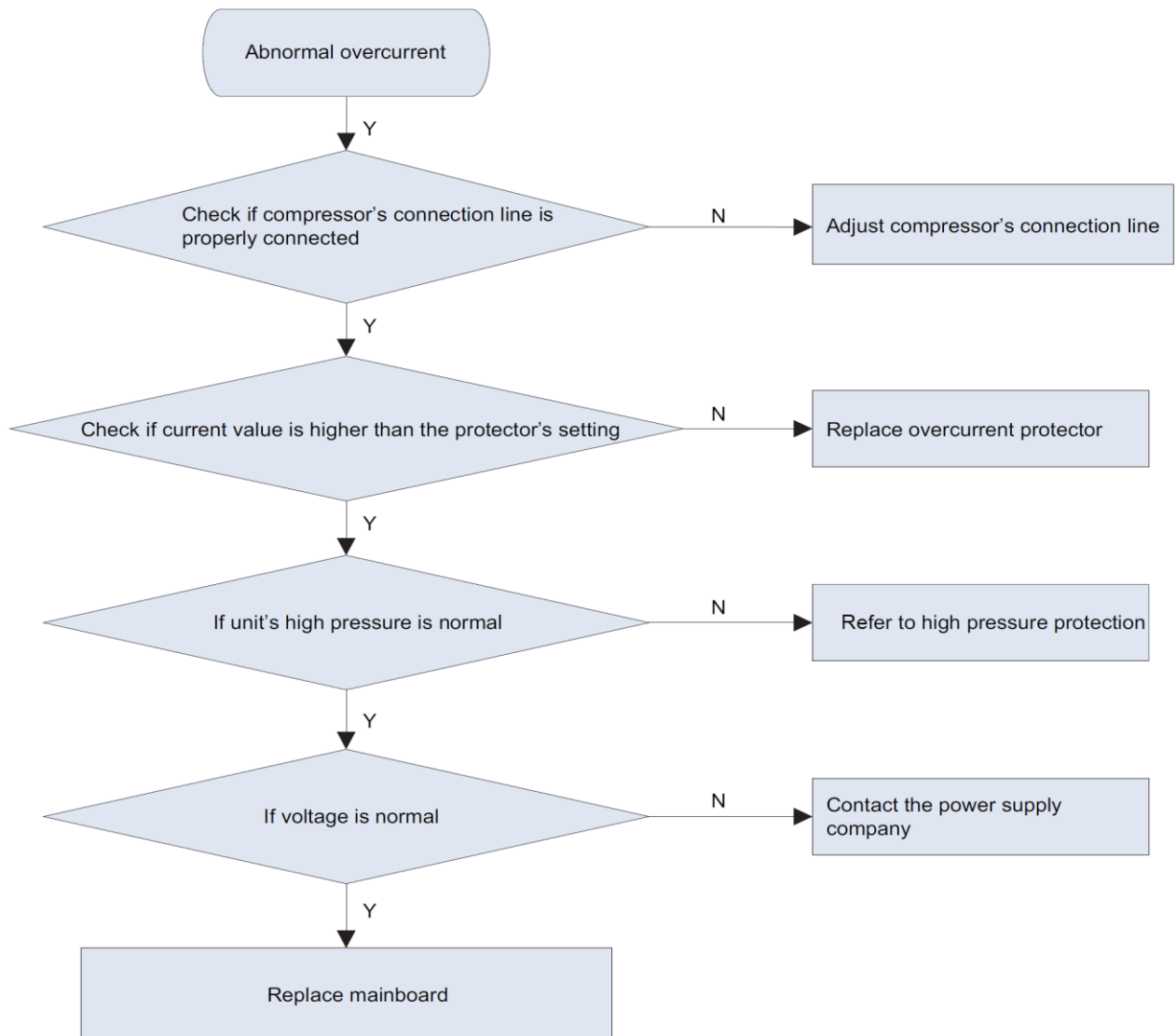
11.4 E3: Low Pressure Protection



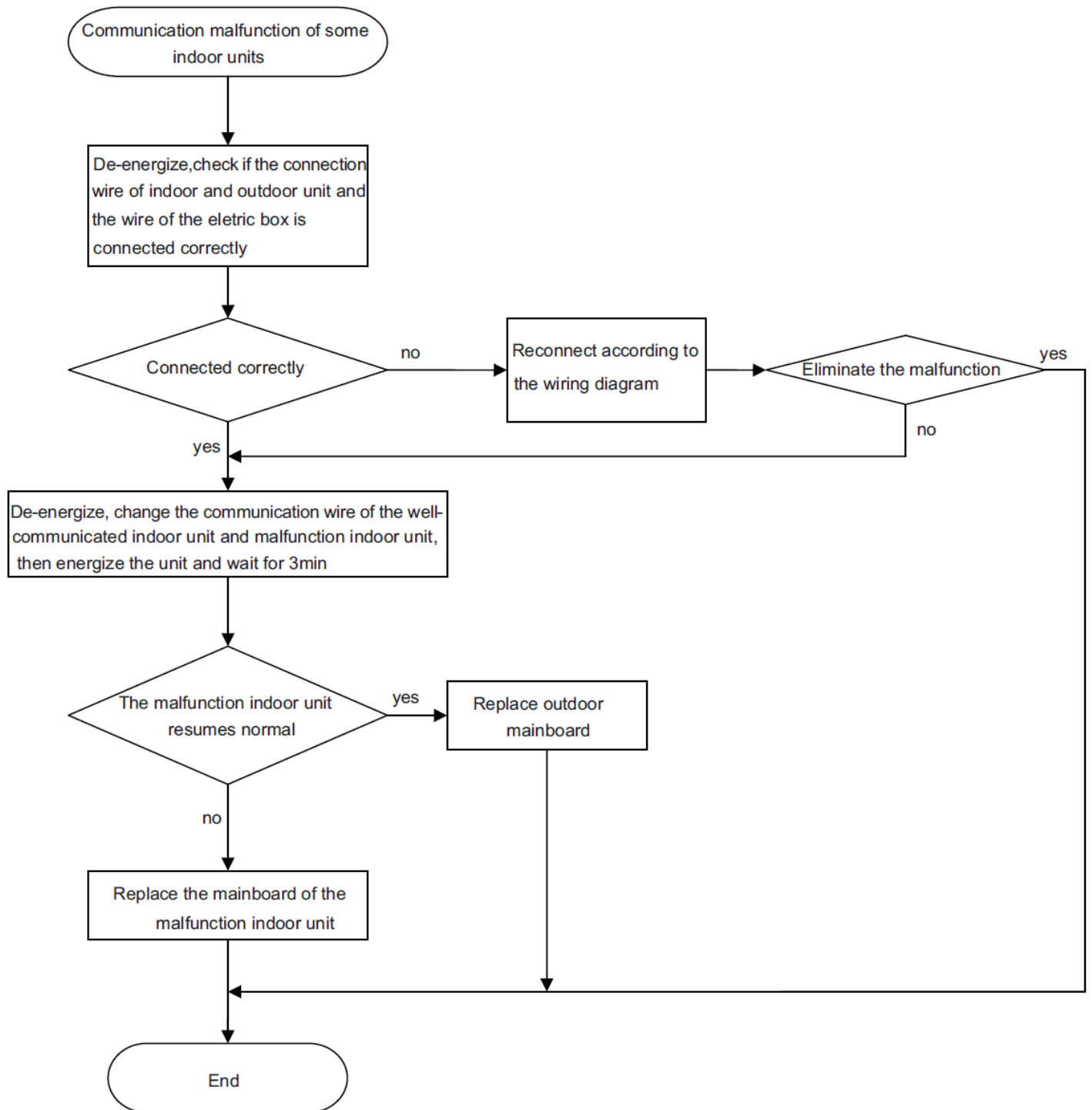
11.5 E4: Exhaust Protection



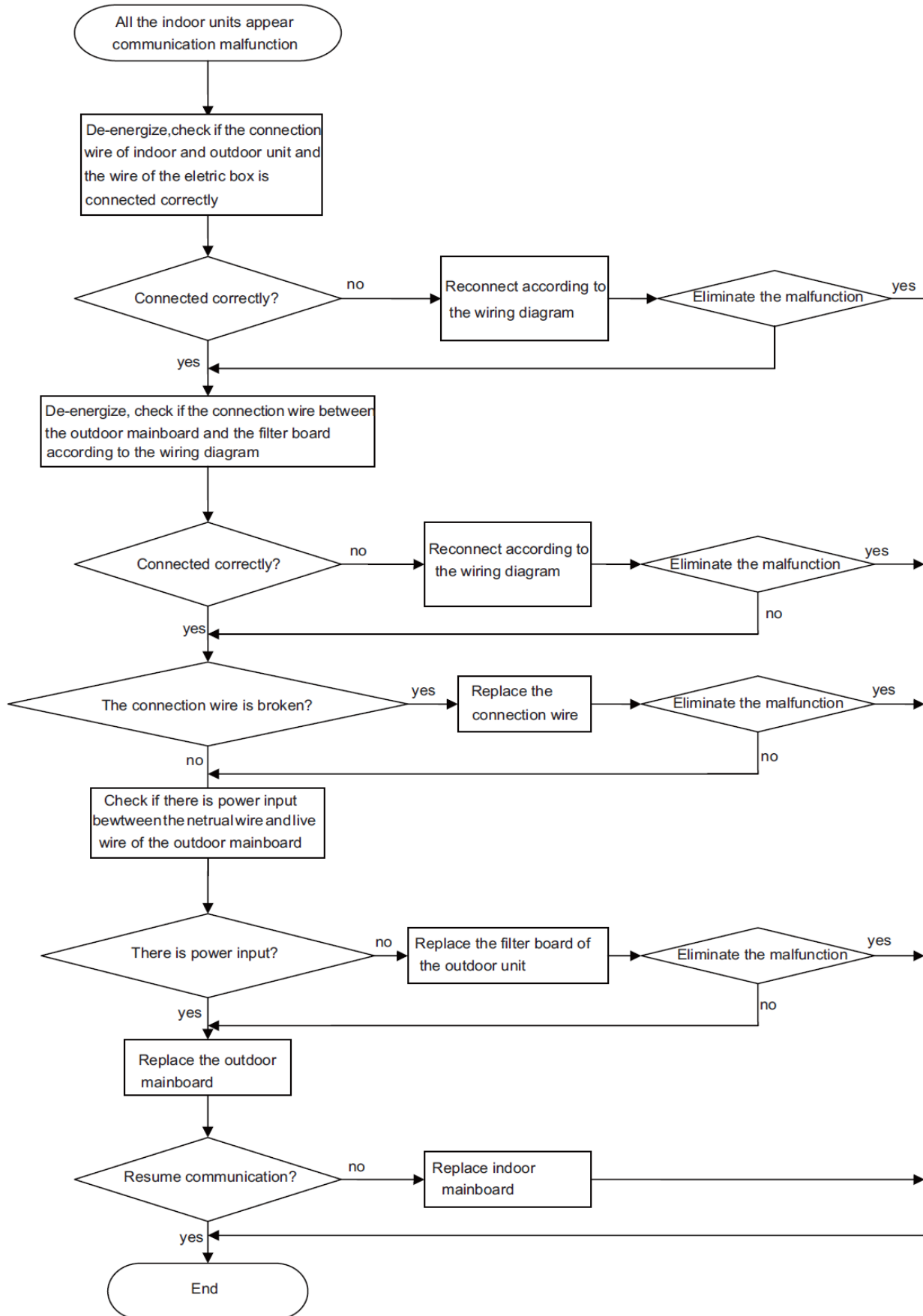
11.6 E5: Over-Current Protection



If “E6” only shows up on some indoor units.



If “E6” shows up on all indoor units.



11.8 E8: Overload Protection

Main Checking points:

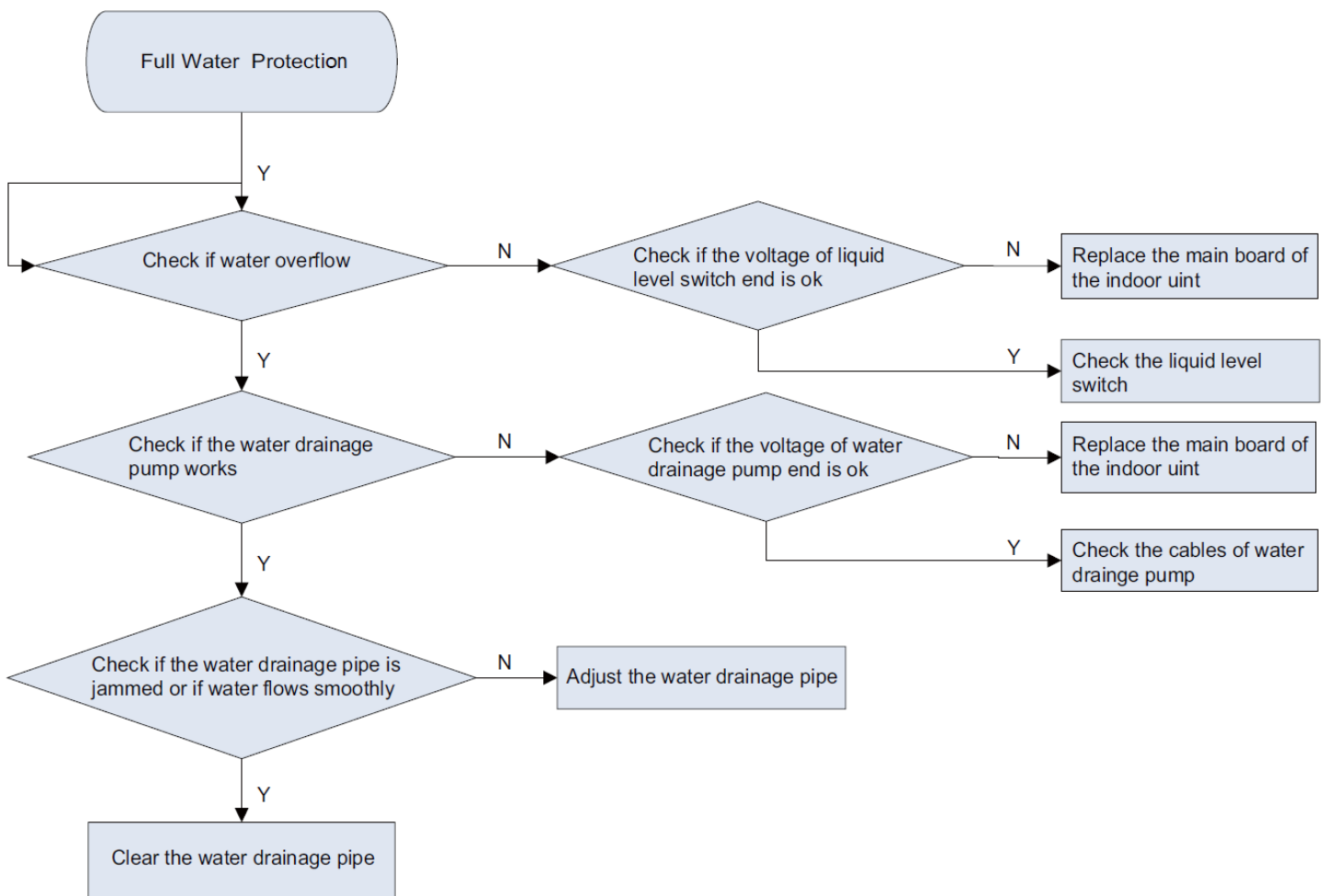
- Outdoor ambient temperature is too high (i.e. >127 °F);
- If the indoor fan and outdoor fan are running normally;
- If the indoor and outdoor radiation environment is good.

The system overload protection E8 is mainly caused by high pressure or overcurrent issue.

Please refer to the flow chat for E1 (on page 45) and E5 (on page 48).

11.9 E9: Condensate Water Full in Indoor Unit

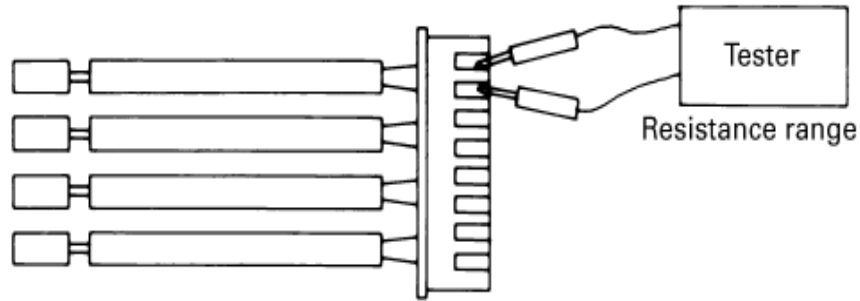
(For Cassette and Ducted indoor units only)



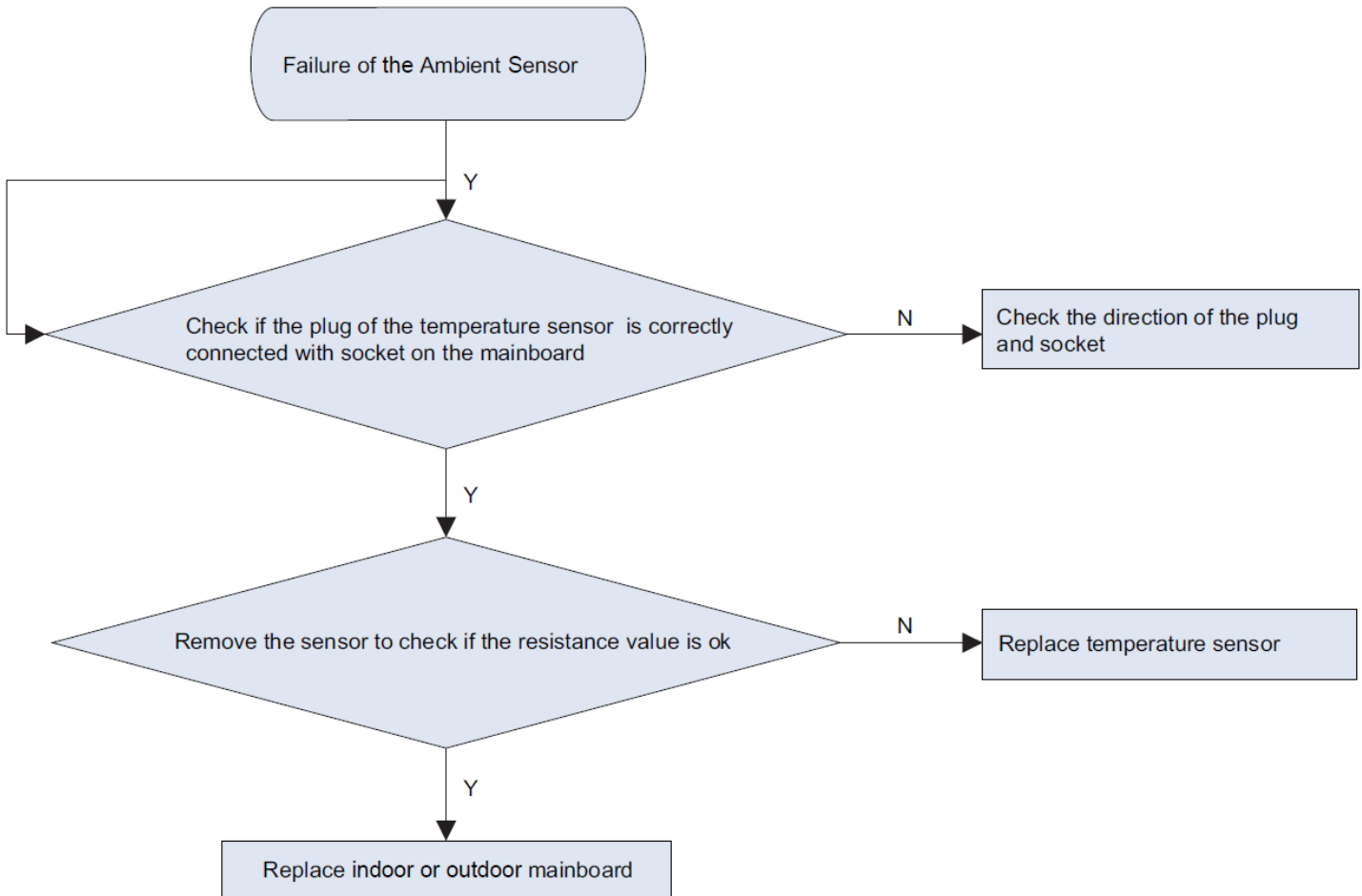
11.10 F1/F2/F3/F4/F5: Temperature Sensor Failure

- Check the resistance value of corresponding sensor.
- Check the position of corresponding sensor; make sure the connection is good.
- Check the wiring.
- If above are OK, the PC board may have to be replaced.

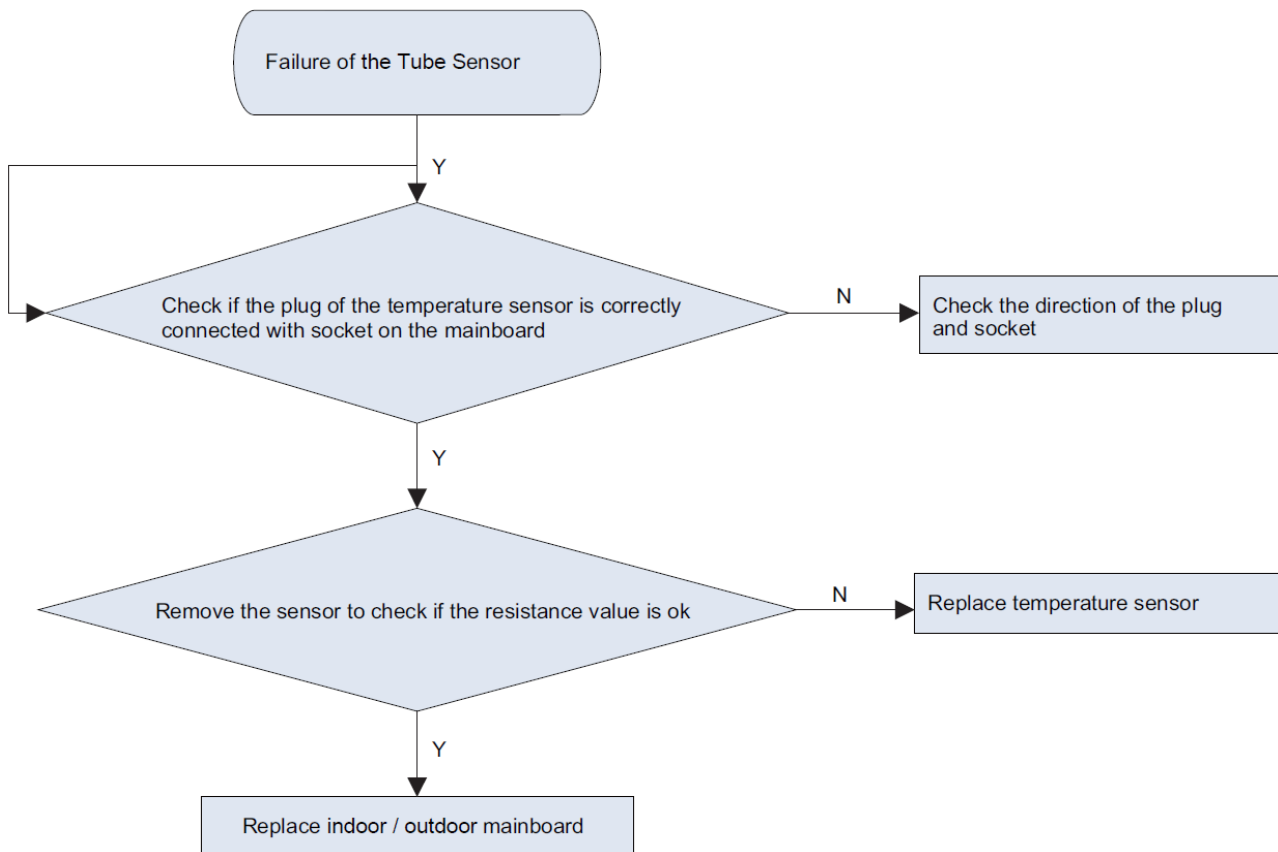
See Appendix I, II, or III on page 129-130 for the resistance of the sensors.



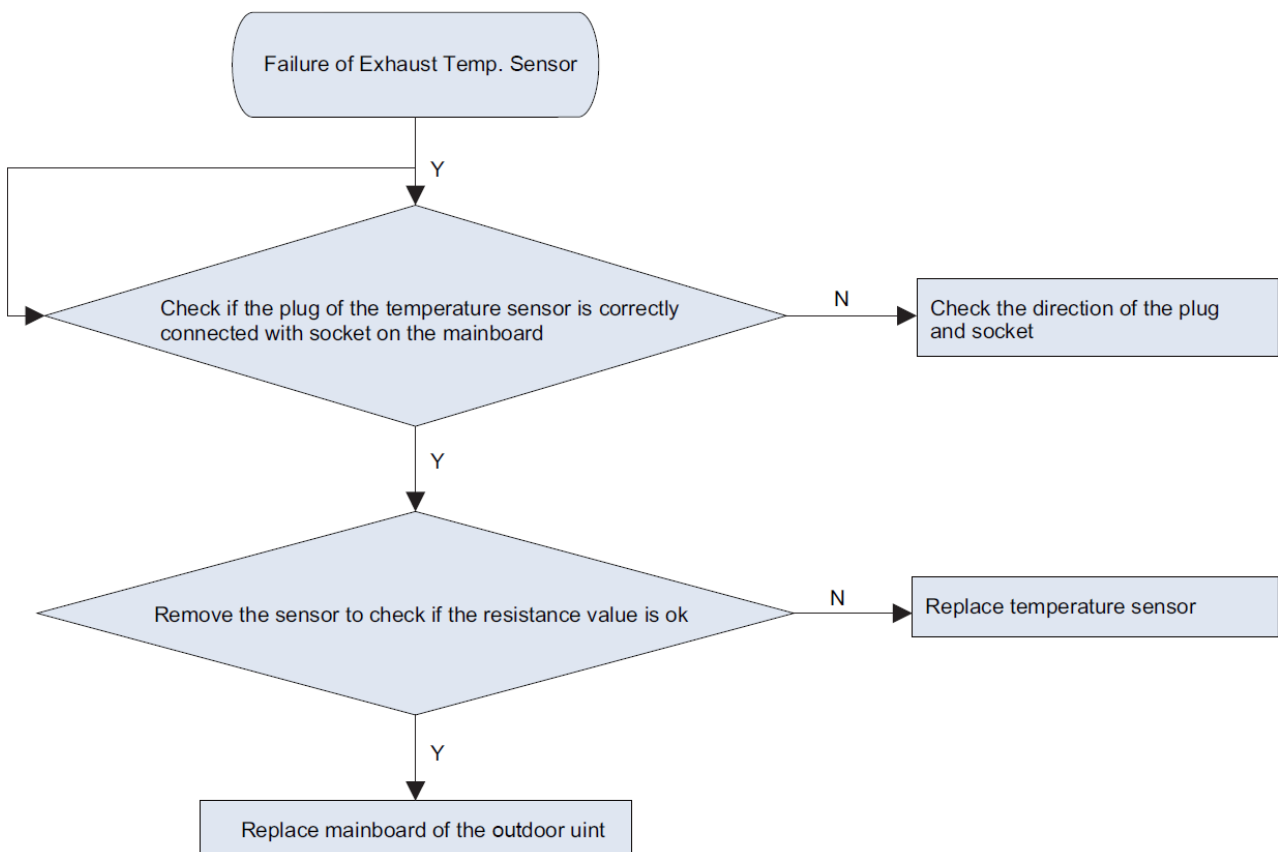
11.10.1 F1/F3: Ambient Sensor for Indoor and Outdoor



11.10.2 F2/F4: Tube Sensor for Indoor and Outdoor



11.10.3 F5: Exhaust Sensor Failure

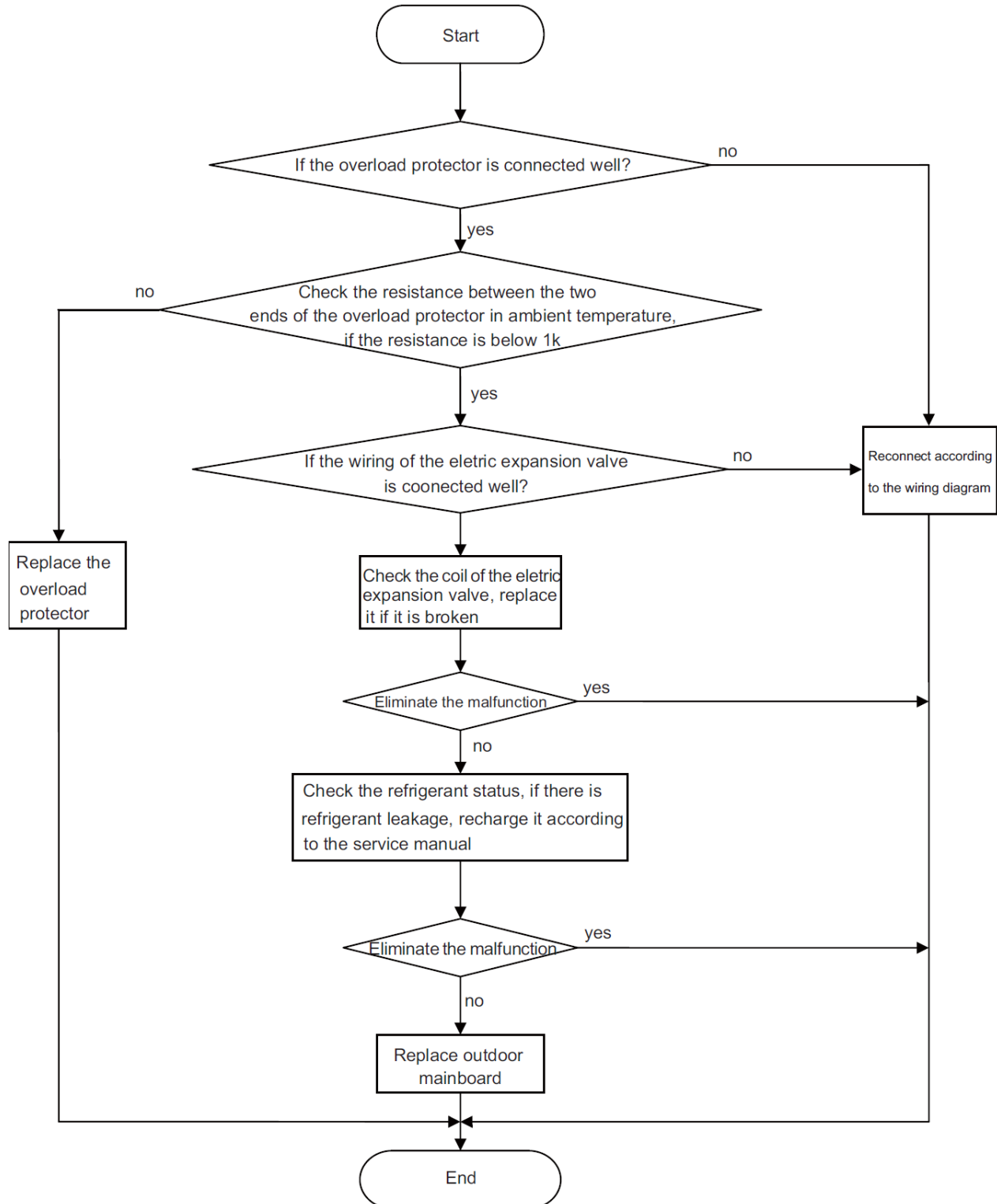


11.11 H3: Compressor Overload Protection

Main Checking points:

- If the electronic expansion valve is connected well or it is broken;
- If there is refrigerant leakage;
- If the overload protector is broken.

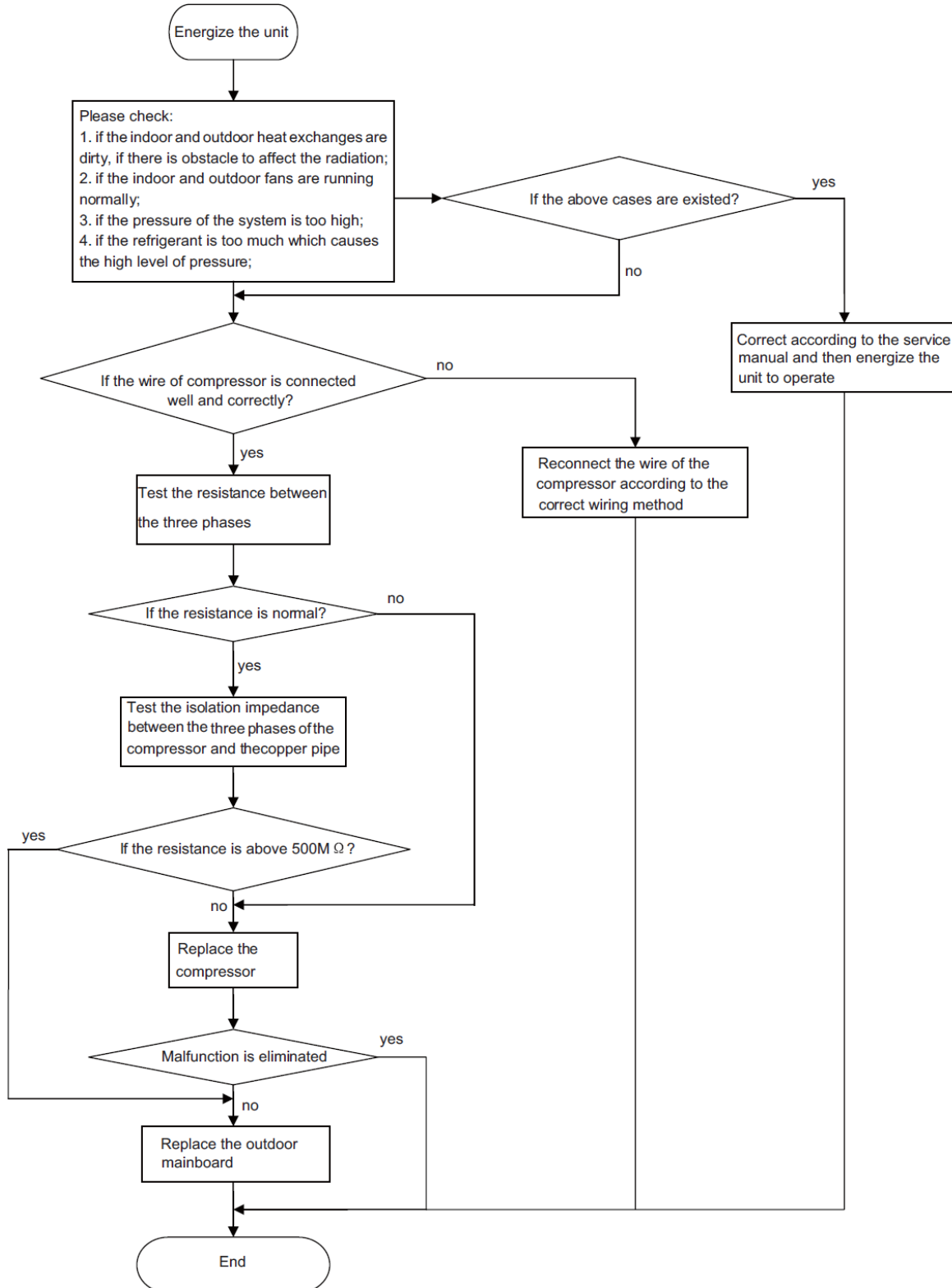
Note: The resistance of all terminals on the electronic expansion valve should be within 100 Ω .



11.12 H5: IPM Protection

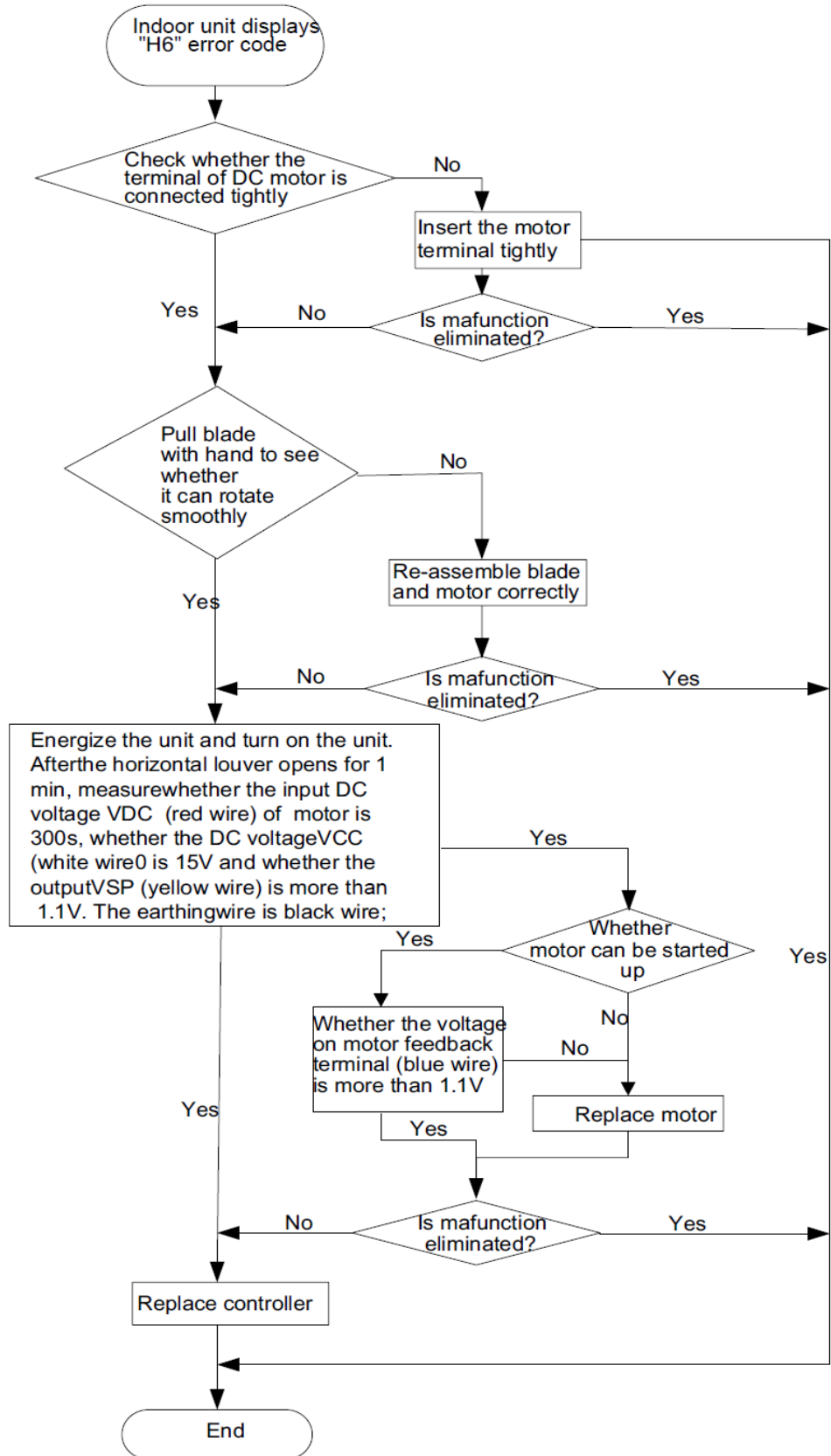
Main checking points:

- The input voltage of the unit is not normal.
- The connection wire for the compress is not connect well or loose.
- The resistance of the compressor is not normal.
- The unit is overloaded.
- The refrigerant charge is not correct.



11.13 H6: Indoor Fan Motor Failure

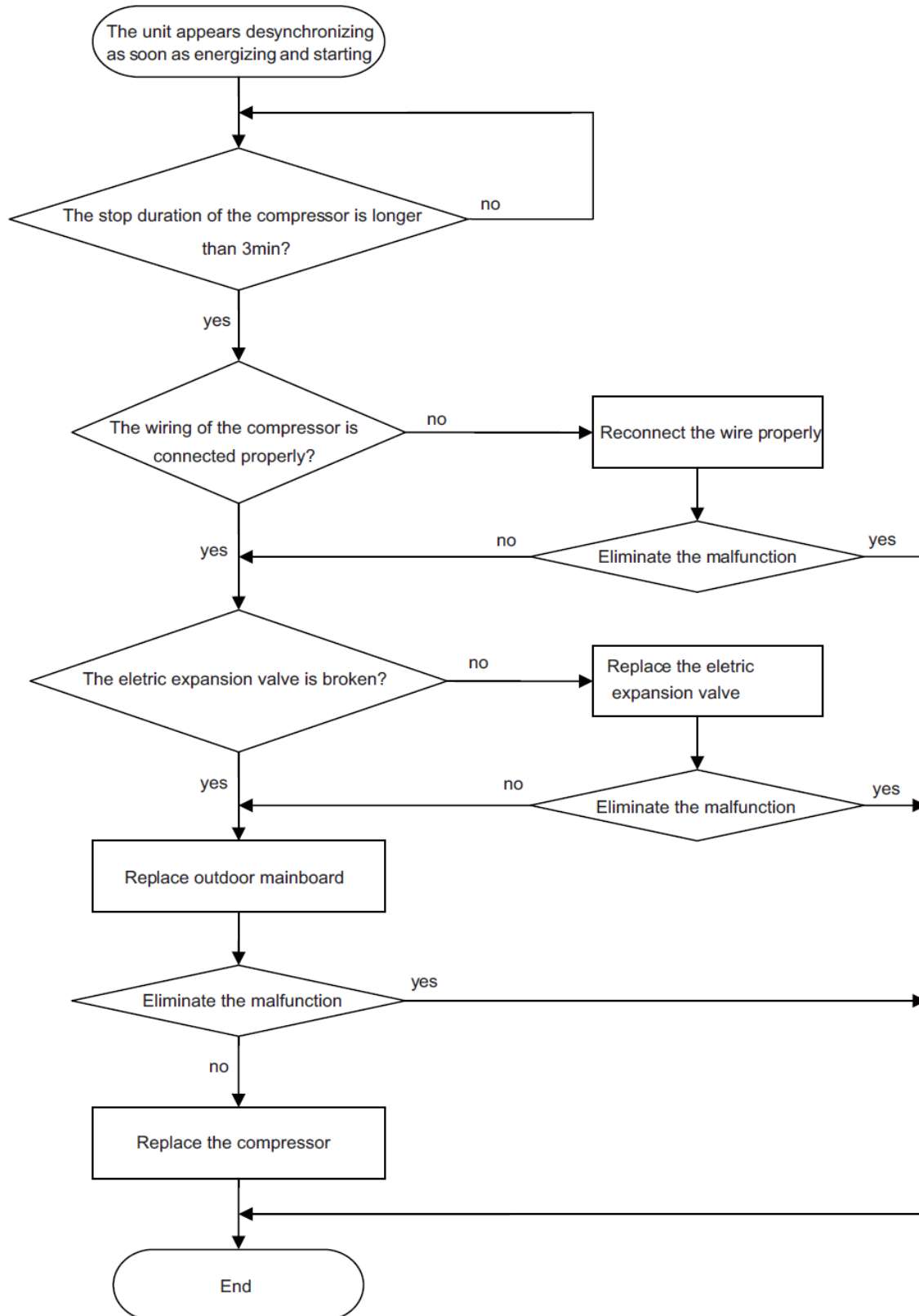
For Dual/Quad port units only (SMZ18H422ZOGB & SMZ24H421ZOGB)



11.14 H7: Compressor Desynchronizing

Main checking points:

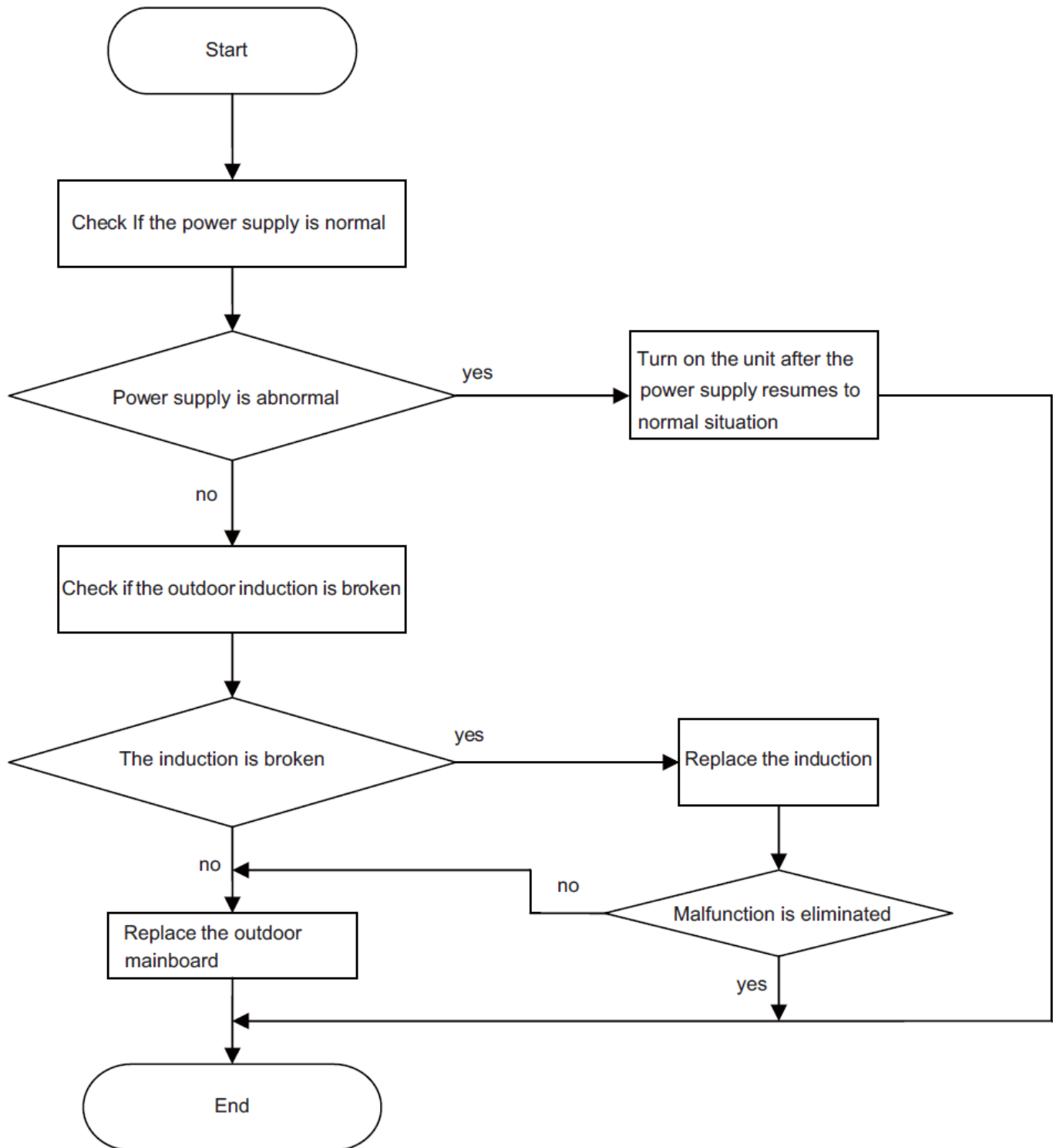
- If the pressure of the system is too high;
- If the electronic expansion valve is working normally or it is broken;
- If the radiation of the unit is not good.



11.15 HC: PFC Protection

Main checking points:

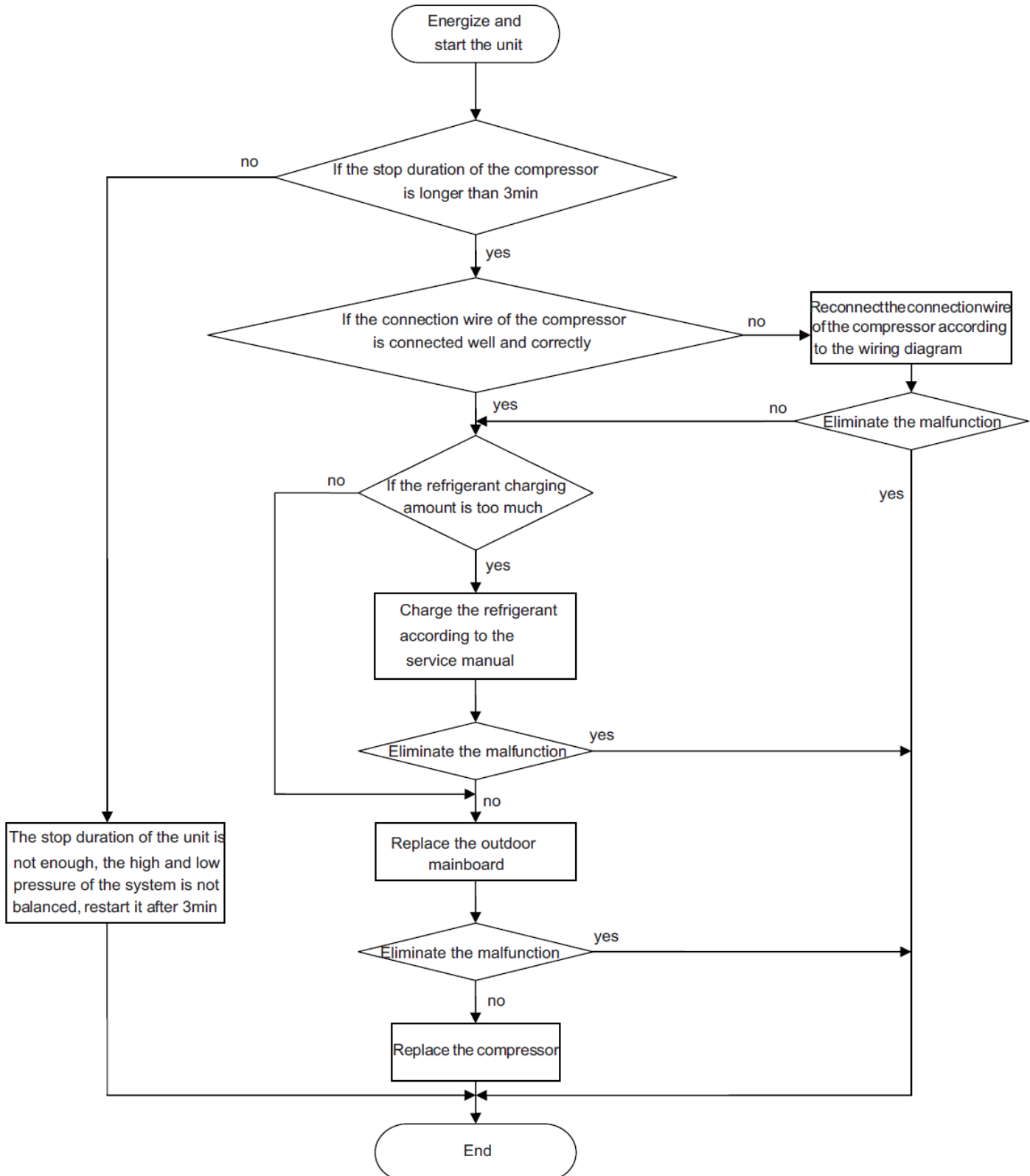
- If the wiring of the induction is connected well and if the induction is broken;
- If the outdoor mainboard is broken.



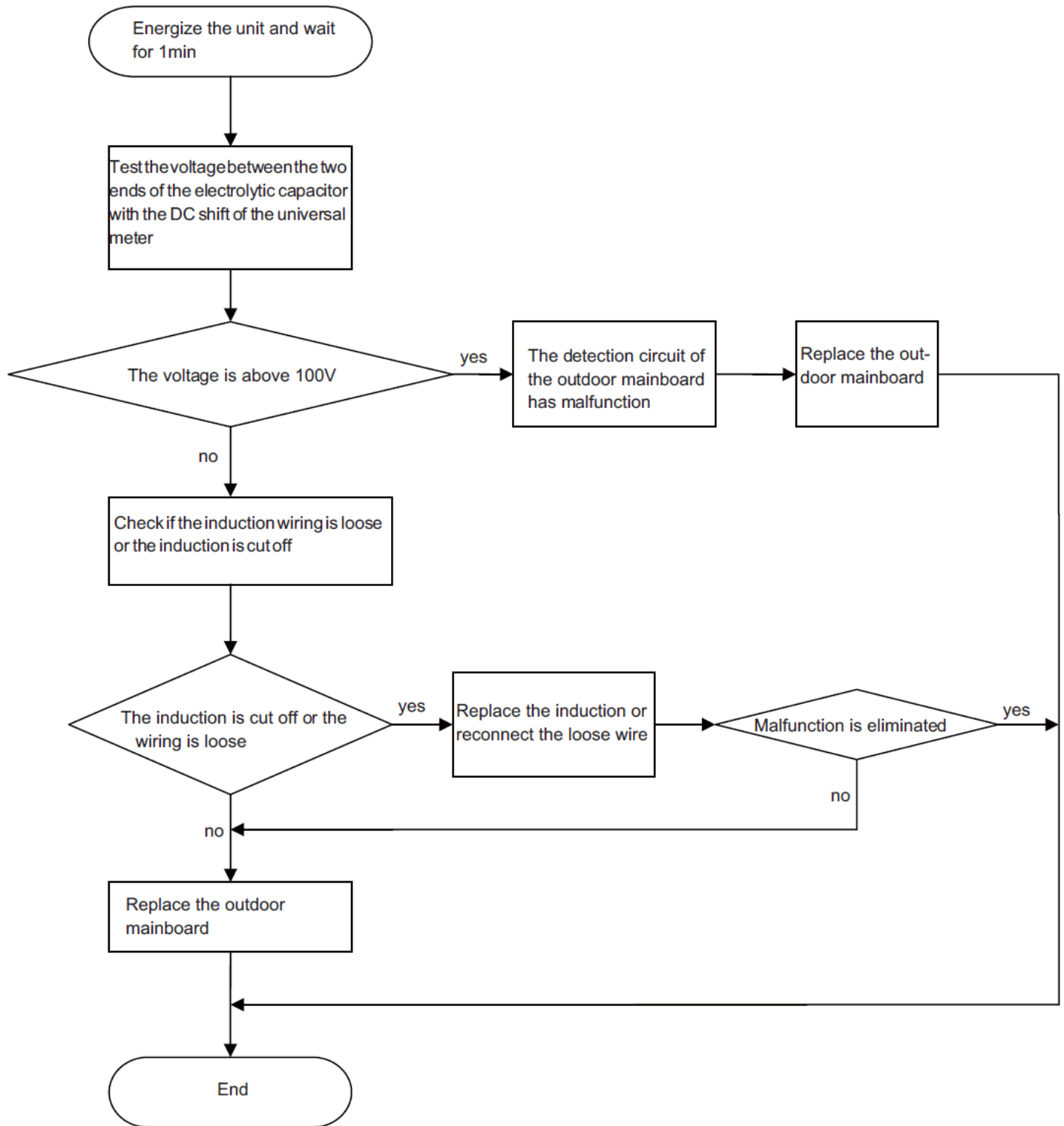
11.16 Lc: Startup Failure

Main checking points:

- If the connection wire of the compressor is connected properly;
- If the stop duration of the compressor is sufficient;
- If the compressor is broken;
- If the refrigerant charging amount is too much.

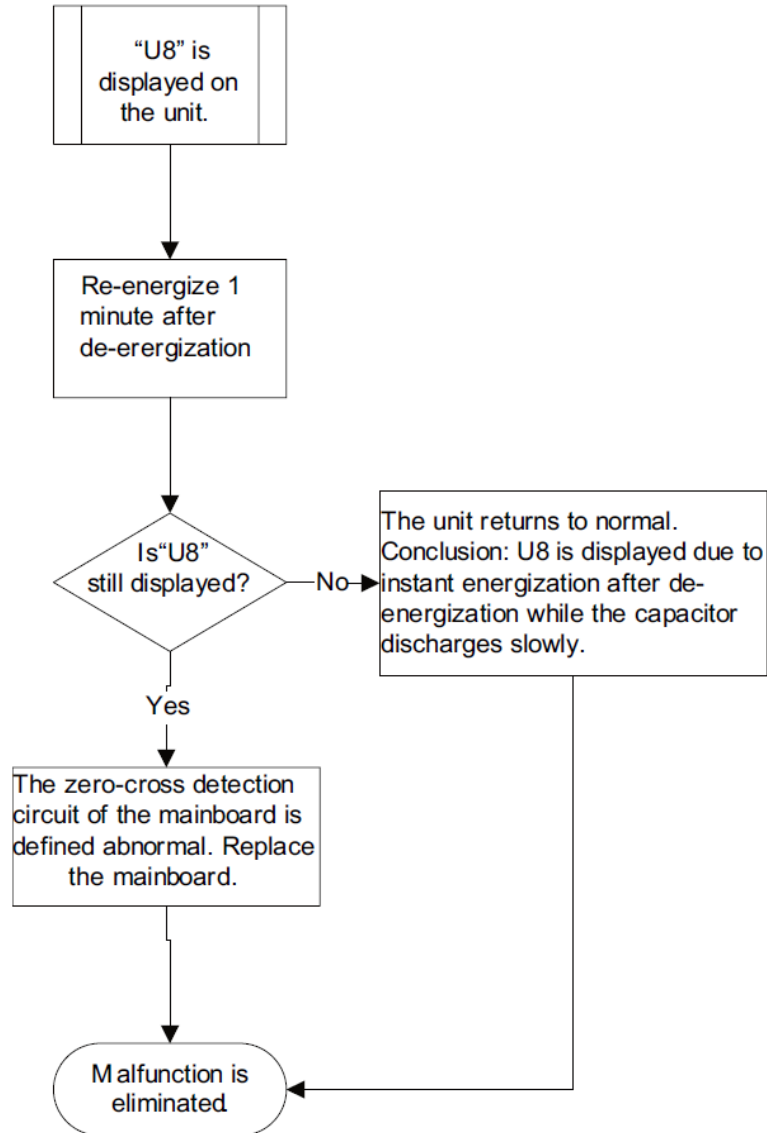


11.17 PU: Capacitor Charging Circuit Error



11.18 U8: Indoor Fan Motor Zero-Cross Detecting Error

For Dual/Triple port units only (SMZ18H422ZOGB /SMZ24H421ZOGB)



11.19 Maintenance Method for Normal Malfunction

11.19.1 Air Conditioner does not start up.

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't illuminated and no buzzer responded.	Confirm whether it's due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals.	Under normal power supply circumstances, operation indicator isn't illuminated after energization.	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly.
Power leakage for air conditioner	After energization, room circuit breaker trips off at once.	Make sure the air conditioner is grounded reliably. Make sure wires of air conditioner are connected correctly. Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, replace the power cord.
Model selection for breaker is improper	After energization, breaker trips off.	Select proper breaker.
Malfunction of remote control	After energization, operation indicator is illuminated, but no display on remote control or buttons have no action.	Replace batteries of the remote control. Repair or replace the remote control.

11.19.2 Poor Cooling (Heating)

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote control	Adjust the set temperature.
Indoor fan speed is set too low	Low air volume	Change the fan speed to high or medium.
Filter of indoor unit is blocked	Check the filter if it is blocked.	Clean the filter.
Installation position for indoor unit and outdoor unit is improper	Check whether the installation position is proper according to the installation requests for air conditioner. (See page 23 to page 26)	Adjust the installation position, install a rainproof and sunshield for outdoor unit as necessary.
Refrigerant is leaking	Air outlet temperature is higher than normal in cooling; Air outlet temperature is lower than normal in heating; The pressure is much lower than normal range.	Check the leakage and deal with it. Add the refrigerant as necessary.
Malfunction of four-way valve	Fling off cool air in heating mode	Replace the four-way valve.
Malfunction of capillary	Air outlet temperature is higher than normal in cooling; Air outlet temperature is lower than normal in heating; The pressure is much lower than normal range.	Check if there is refrigerant leakage. If not, the capillary is blocked. Then, replace the capillary.
Flow volume of valve is insufficient	The pressure is much lower than what stated in the specifications.	Open the valve completely.
Malfunction of horizontal louver	Horizontal louver does not swing	Refer to next section 11.19.3 below for detail.
Malfunction of the indoor fan motor	The indoor fan motor does not operate	Refer to the troubleshooting for error code H6 (on page 56) for detail.
Malfunction of the outdoor fan motor	The outdoor fan motor does not operate	Refer to next section 11.19.4 below for detail.
Malfunction of the compressor	The compressor does not operate	Refer to next section 11.19.5 below for detail.

11.19.3 Horizontal Louver does not swing

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
Wrong wiring, or poor connection	Check the wiring status according to the wiring diagram	Connect wires according to the wiring diagram, make sure all wiring terminals are connected firmly.
Step motor is damaged	Step motor does not operate.	Repair or replace step motor.
Main board is damaged	The horizontal louver does not operate while the step motor and wiring are fine.	Replace the main board.

11.19.4 Outdoor Fan Motor does not operate

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
Wrong wiring, or poor connection	Check the wiring status according to wiring diagram	Connect wires according to the wiring diagram, make sure all wiring terminals are connected firmly.
Capacity of the outdoor fan motor is damaged	Measure the capacity of fan with a multimeter and check if the capacity is out of the deviation range indicated on the nameplate of the fan capacitor.	Replace the fan capacitor
Power voltage is a little low or high	Measure the power supply voltage with a multimeter.	Power Regulator is recommended.
Outdoor fan motor is damaged	When the unit is on, cooling / heating performance is poor, the compressor makes a very big noise and very hot.	Replace the compressor oil and recharge the refrigerant. If the problem is not solved, replace the compressor.

11.19.5 Compressor does not operate

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
Wrong wiring, or poor connection	Check the wiring status according to wiring diagram	Connect wires according to the wiring diagram, make sure all wiring terminals are connected firmly.
Capacity of the compressor is damaged	Measure the capacity of the compressor with a multimeter and check if the capacity is out of the deviation range indicated on the nameplate of the fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Measure the power supply voltage with a multimeter.	Power Regulator is recommended.
Coil of the compressor is burnt out	Measure the resistance between compressor terminals with multimeter, it should be 0.	Repair or replace the compressor.
Cylinder of the compressor is blocked.	Compressor does not operate	Repair or replace the compressor.

11.19.6 Air Conditioner leaks

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
Drain pipe is blocked	Water leaking from the indoor unit.	Clean the drain pipe.
Drain pipe is broken	Water leaking from the drain pipe.	Replace the drain pipe.
Wrapping is not tight	Water leaking from the pipe connection joint of the indoor unit.	Wrap it again and bundle it tightly.

11.19.7 Abnormal Sound and Vibration

Possible Causes	Discriminating Method (Air Conditioner Status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts make abnormal noise	The front panel or other parts clicks.	It is normal. The sound will disappear after a few minutes.
When turn on or turn off the unit, there is a sound due to the flow of refrigerant inside air conditioner	The sound like running water can be heard	It is normal. The sound will disappear after a few minutes.
Debris gets into the indoor unit, or some parts rub against each other	There is an abnormal sound from the indoor unit.	Remove the debris. Adjust the parts position of indoor unit, tighten the screws and fix dampers.
Debris gets into the outdoor unit, or some parts rub against each other	There is an abnormal sound from the outdoor unit.	Remove the debris. Adjust the parts position of outdoor unit, tighten the screws and fix dampers.
Short circuit inside the magnetic coil	The four-way valve has an abnormal electromagnetic sound while heating.	Replace the magnetic coil.
Abnormal vibration of compressor	Outdoor unit makes big noise	Adjust the compressor gasket, tighten the bolts.
Abnormal noise inside the compressor	There is an abnormal noise inside the compressor.	The refrigerant might be over charged, please take out properly. Replace the compressor for other reasons.

12. Disassembly Procedure

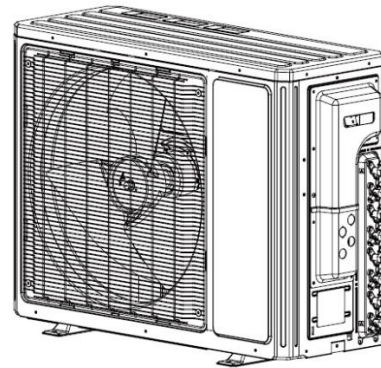
CAUTION! Be sure to wait for a minimum of 10 minutes after turning off power before disassembly.

12.1 Outdoor Units

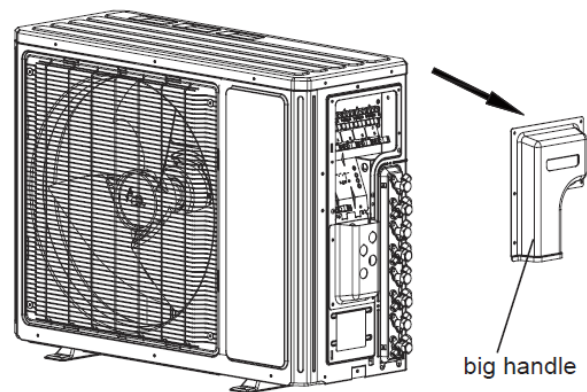
12.1.1 Dual Port (SMZ18H422ZOGX)

Step 1: Remove top cover and handle

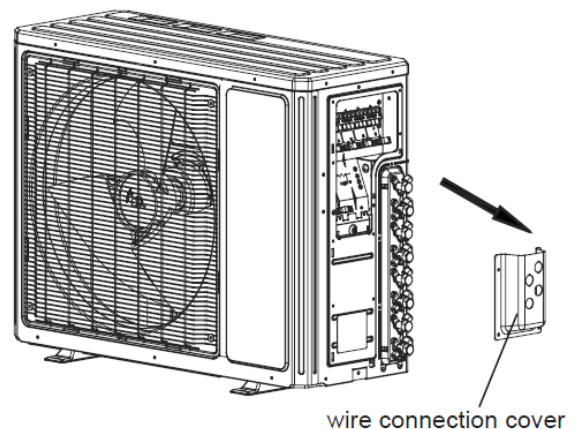
Before disassembly.



Twist off the screws used for fixing the handle, pull the handle upward to remove it.

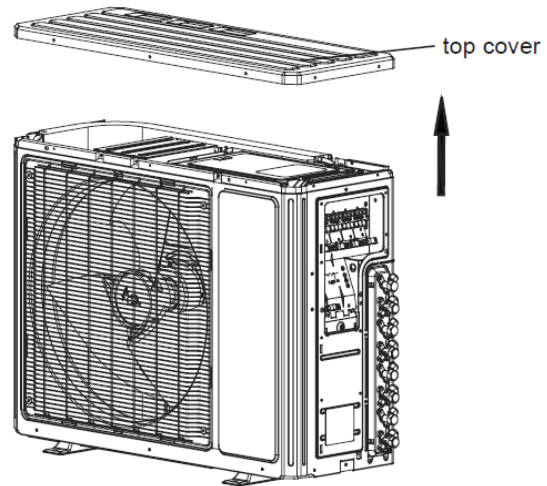


Twist off the screws used for fixing the wire connection cover, pull the cover upward to remove it.



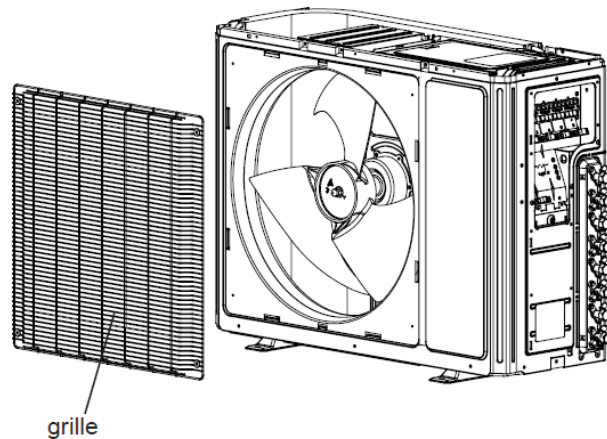
Step 2: Remove top cover

Twist off the screws used for fixing the top cover, pull the top cover upward to remove it.

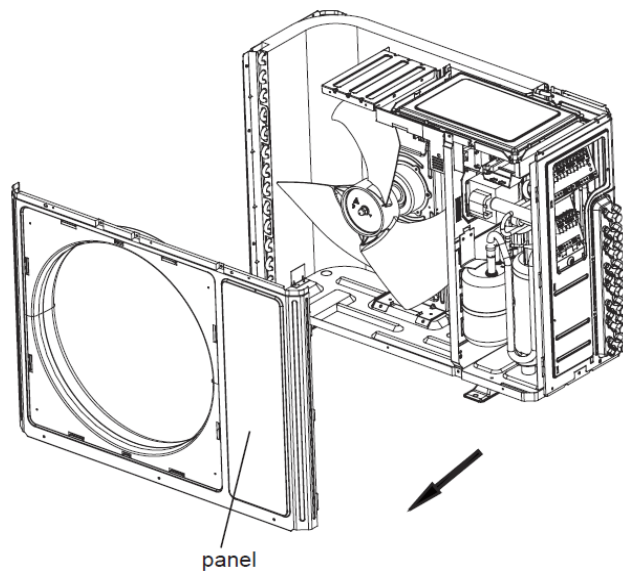


Step 3: Remove front grill and front panel

Remove the screws connecting the front grill and the front panel. Remove the front grill.

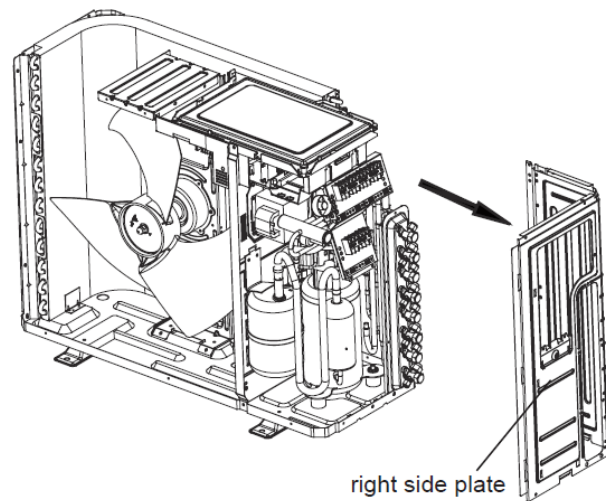


Twist off the screws fixing the panel, pull it upward, loosen the clasp on the right side, rotate it to the left, and then remove the front panel.



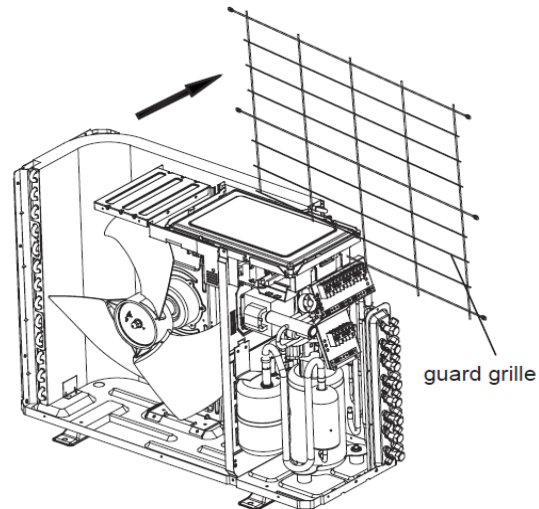
Step 4: Remove right side plate

Remove the screws connecting the right side plate with the chassis, the valve support, and the electric box. Then remove the right side plate assembly.

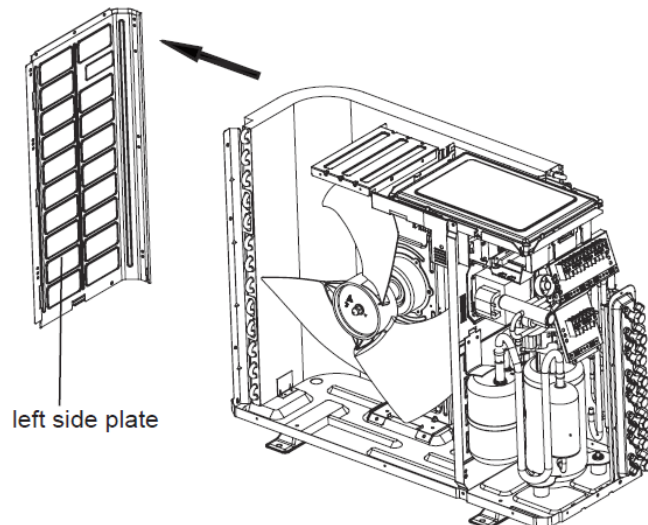


Step 5: Remove guard grille and left side plate

Remove the screws fixing guard grille and left side plate to remove guard grille.

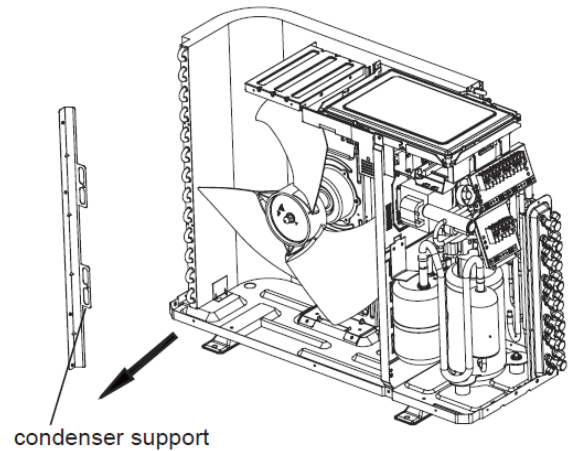


Remove the screws connecting the left side plate and the chassis and then remove the left side plate assembly.



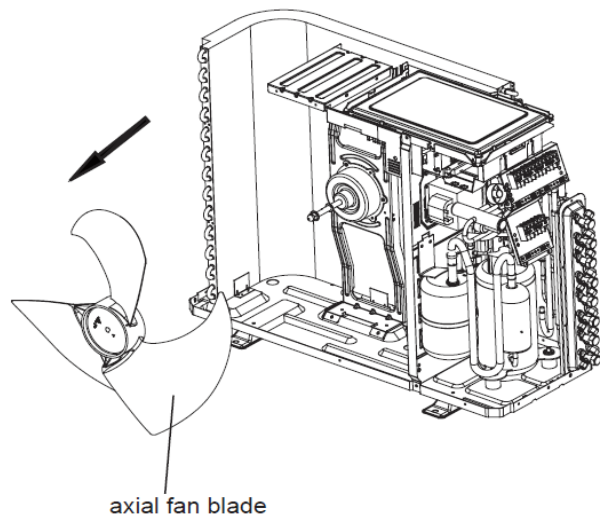
Step 6: Remove condenser support

Remove the screws fixing support and chassis, to remove the condenser support.



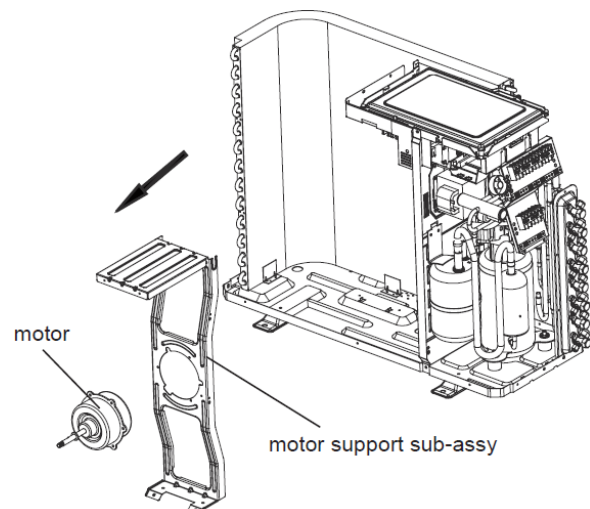
Step 7: Remove axial flow fan

Remove the nuts fixing the blade with spanner and then remove the axial flow fan.



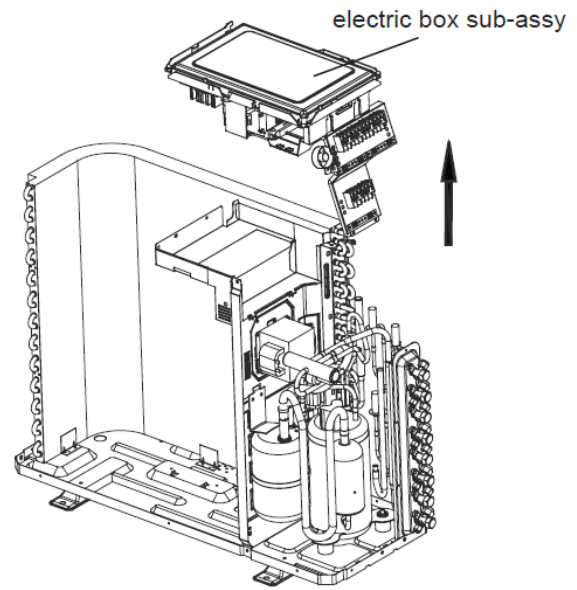
Step 8: Remove motor and motor support assembly

Remove the four (4) tapping screws fixing the motor. Disconnect the leading wire insert of the motor and then remove the motor. Remove the two (2) tapping screws fixing the motor support and then pull the motor support upwards to remove it.



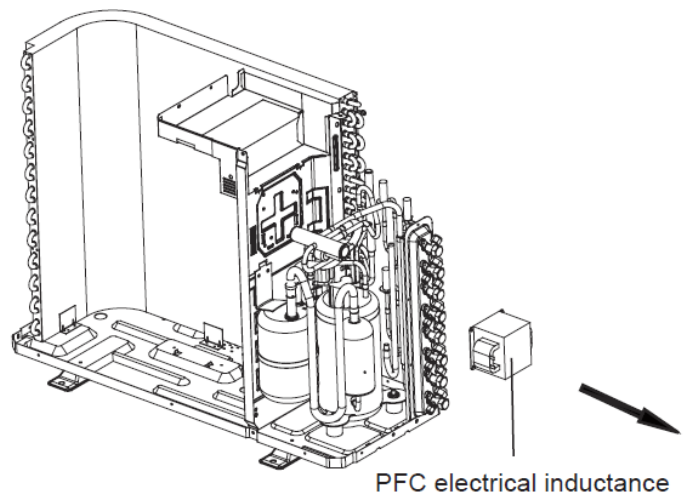
Step 9: Remove electric box assembly

Remove the screws fixing the electric box subassembly; loosen the wire bundle, pull out the wiring terminals and then pull the electric box upwards to remove it.



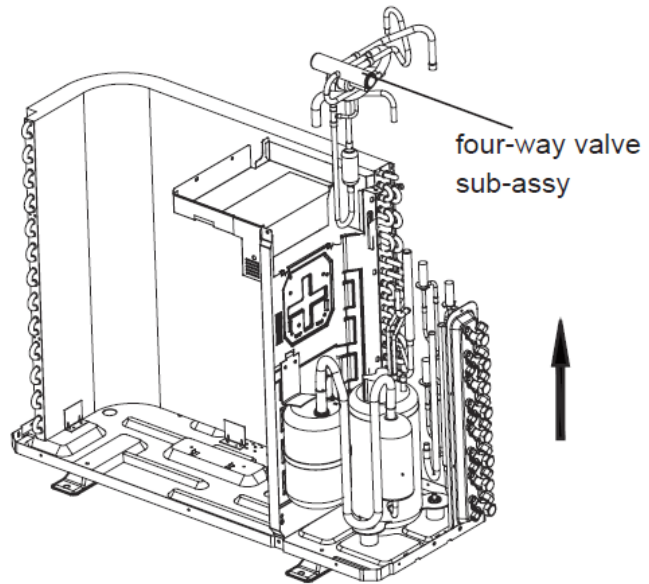
Step 10: Remove PFC electrical inductance

Remove the screws connecting PFC electrical inductance and isolation sheet to remove the PFC electrical inductance.



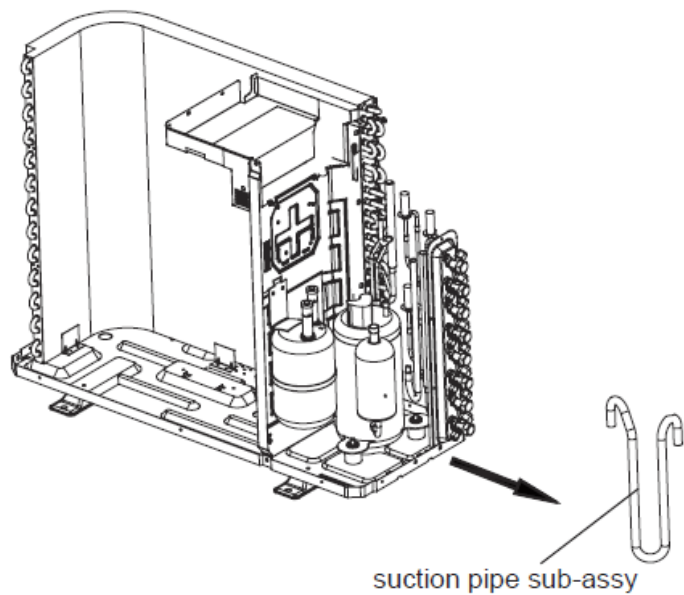
Step 11: Remove 4-way valve

Recover all the refrigerant from the system. Unsolder the pipelines connecting the compressor and condenser assembly. Then remove the 4-way valve assembly.



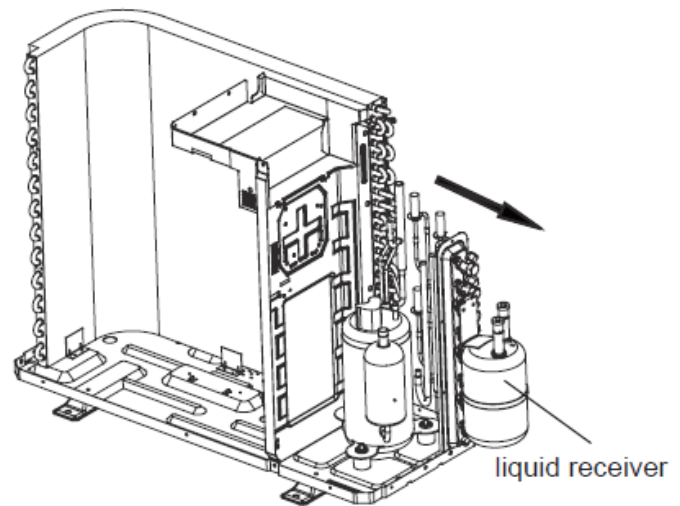
Step 12: Remove suction pipe assembly

Unsolder the brazed joint at the suction pipe assembly as well as the brazed joint for connection pipe for compressor and liquid receiver, and then pull it upwards to remove it.



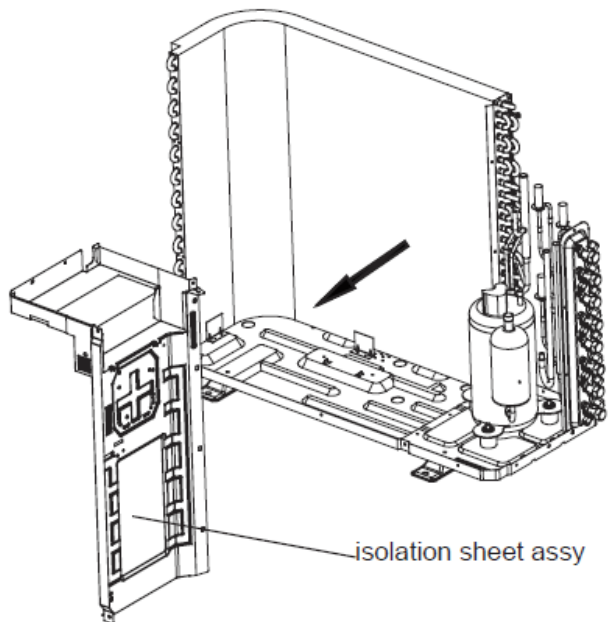
Step 13: Remove liquid receiver

Remove screws fixing the liquid receiver to the isolation sheet, and lift to remove the liquid receiver.



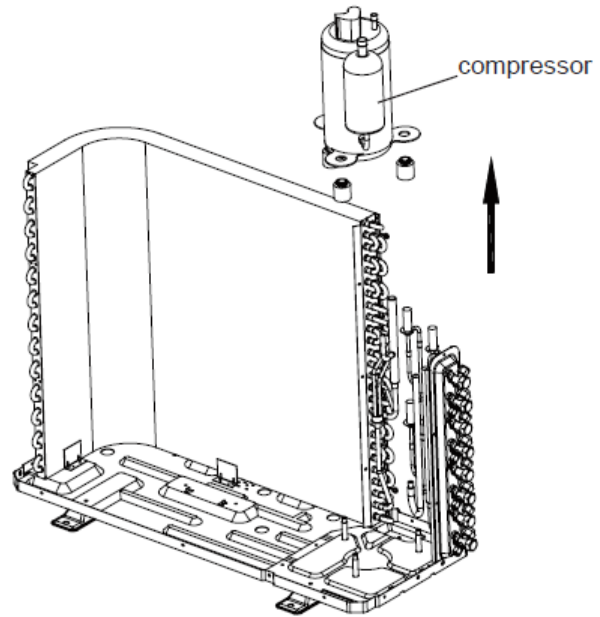
Step 14: Remove the isolation sheet assembly

Remove screws fixing isolation sheet and condenser side plate. Then remove the isolation sheet assembly.



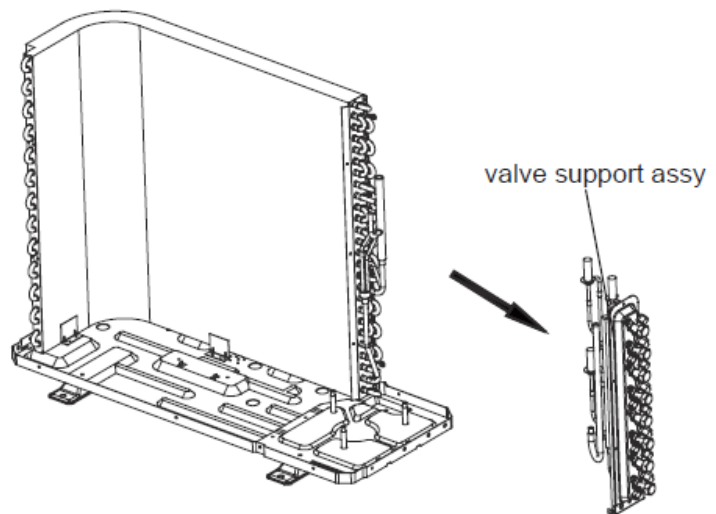
Step 15: Remove compressor

Twist off the three foot-nuts on the compressor with spanner, as well as the foot cushions, and then remove the compressor.



Step 16: Remove valve support assembly

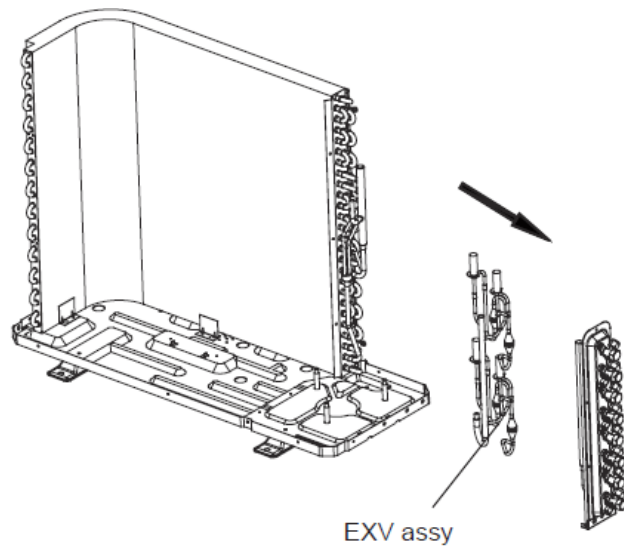
Remove the screws fixing valve support assembly to the chassis, and then pull it upwards to remove it.



Step 16: Remove electronic expansion valve assembly

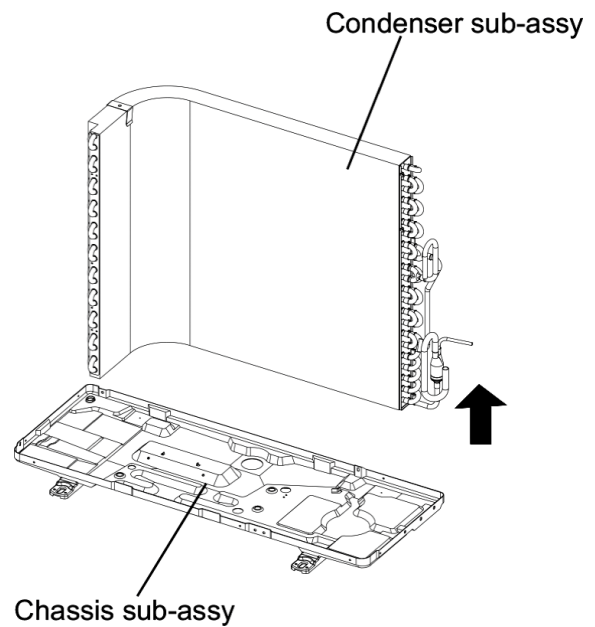
Unsolder the brazed joint between the electronic expansion valve and the connection pipe, and then remove the expansion valve. Meanwhile, rotate out the electronic coil and then pull it upwards to remove it.

Note: Wrap the valve body with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.



Step 17: Remove condenser assembly

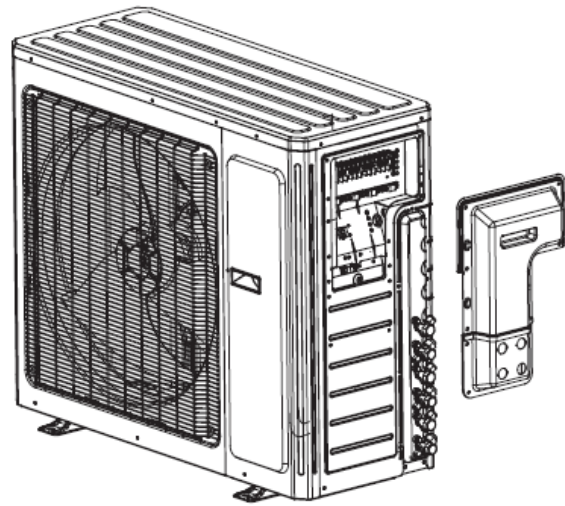
Separate the chassis assembly and condenser assembly.



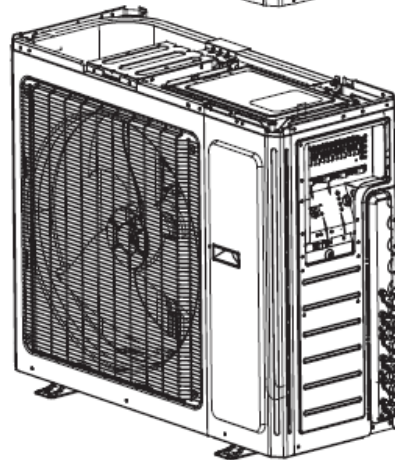
12.1.2 Triple Port (SMZ24H421ZOGB)

Step 1: Remove the big handle and top panel

Twist off the screws fixing the big handle, pill it upward to remove it.



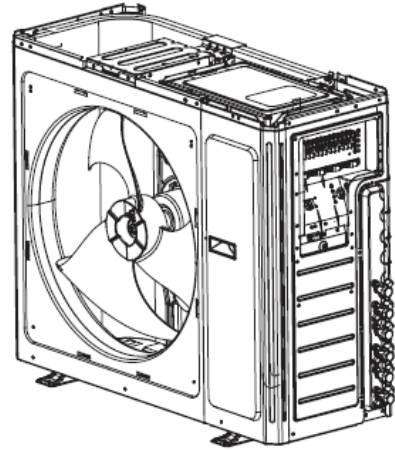
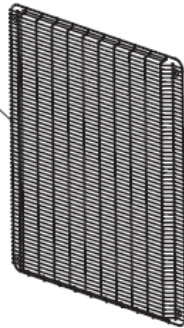
Remove the three (3) screws fixing the top panel with the front panel and the right side plate, and then remove the top panel.



Step 2: Remove grille, front side plate and panel

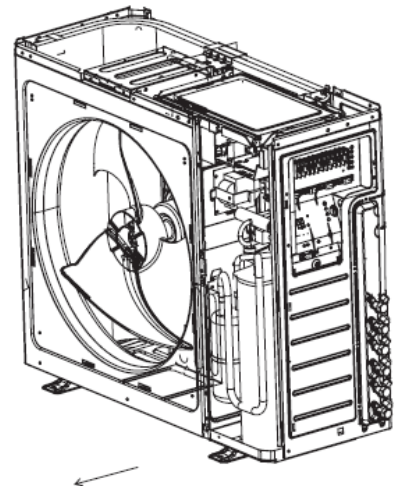
Remove the two (2) screws fixing grille and panel to remove the grill on the panel.

grille



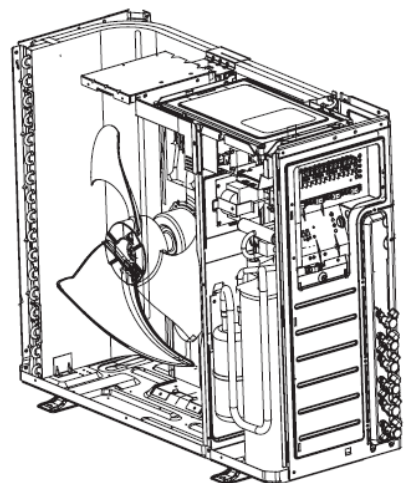
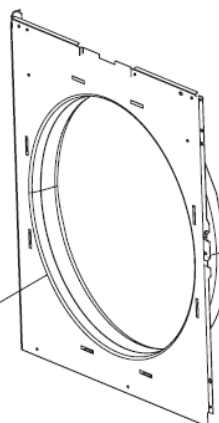
Remove the screw fixing the front side plate and panel to remove it

front side plate



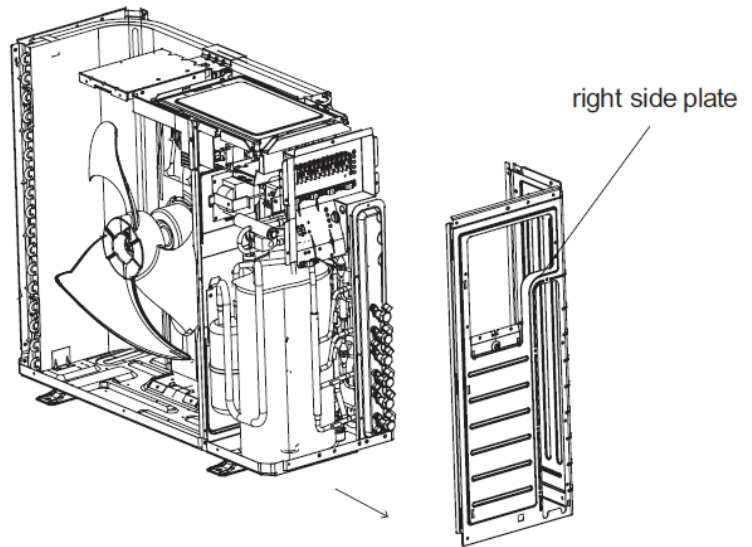
Remove the five (5) screws fixing panel, chassis, and motor support to remove the panel.

panel

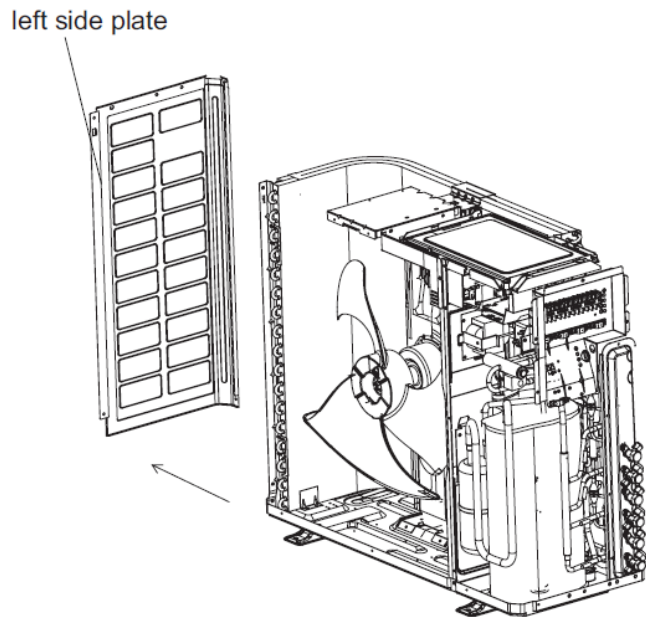


Step 3: Remove right side plate and left side plate

Remove the screws fixing the right side plate, chassis, valve support and the electric box, and then remove the right side plate assembly.

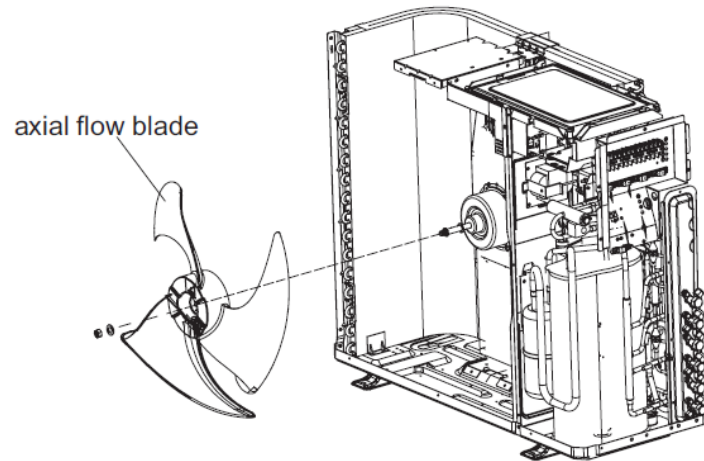


Remove the screws fixing the left side plate and chassis, and then remove the left side plate assembly.



Step 4: Remove fan motor and axial flow blade

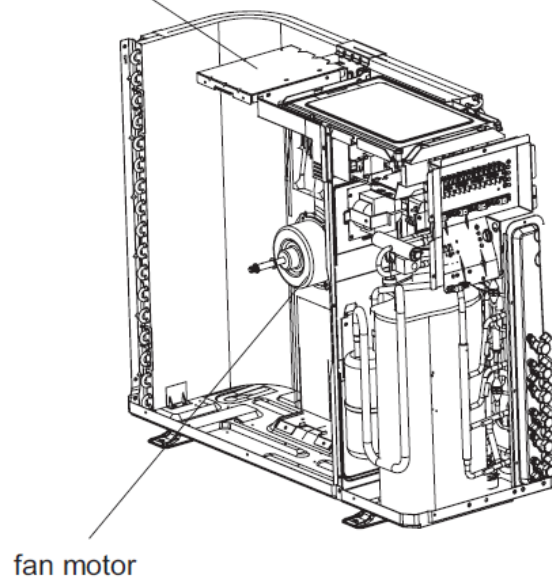
Remove the nuts fixing the fan to remove the axial flow blade



Remove the four (4) tapping screws fixing the motor, disconnect the leading wire insert of the motor and then remove the motor.

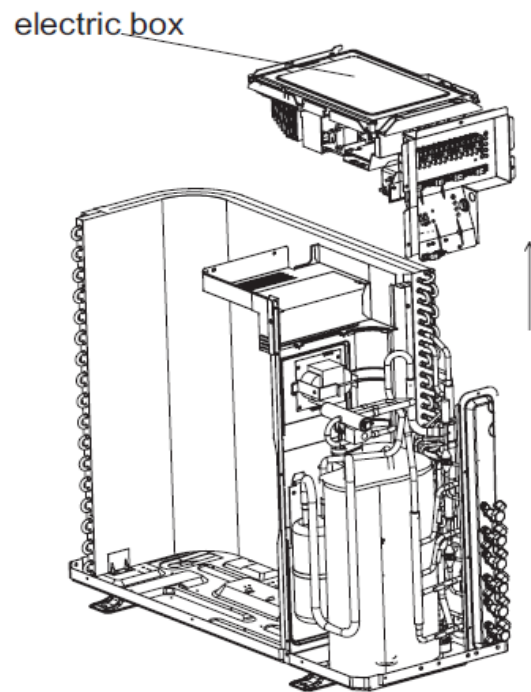
Remove the two (2) tapping screws fixing the motor support and then pull the motor support upwards to remove it.

fan motor fixing frame



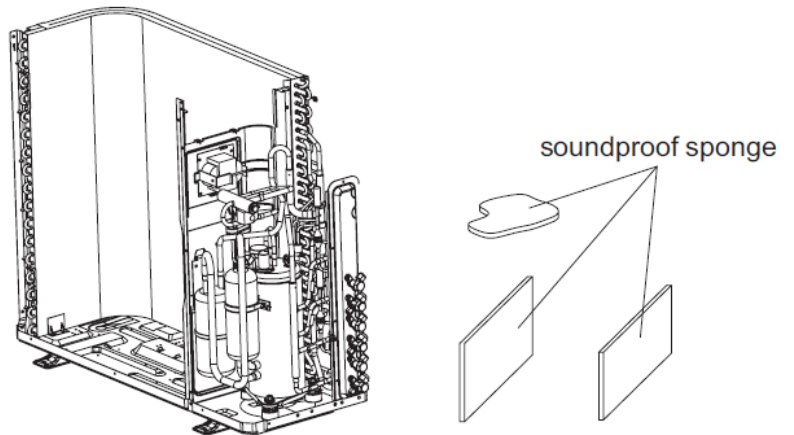
Step 5: Remove electric box

Remove the screws fixing the electric box assembly; loosen the wire bundle; pull out the wiring terminals and then pull the electric box upwards to remove it.



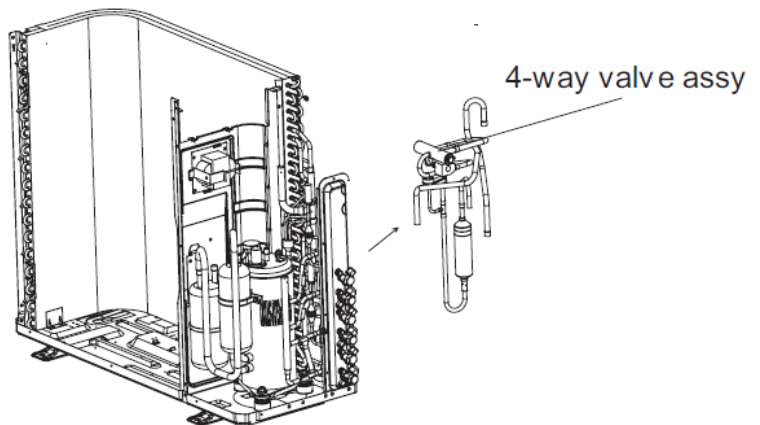
Step 6: Remove soundproof sponge and four-way valve

The piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully.

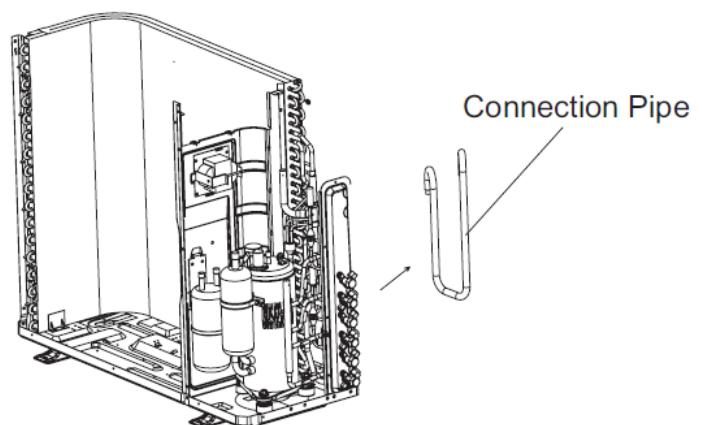


Recover all the refrigerant from the system. Unsolder the pipelines connecting the compressor and condenser assembly. Then remove the 4-way valve assembly.

Note: Wrap the valve body with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.

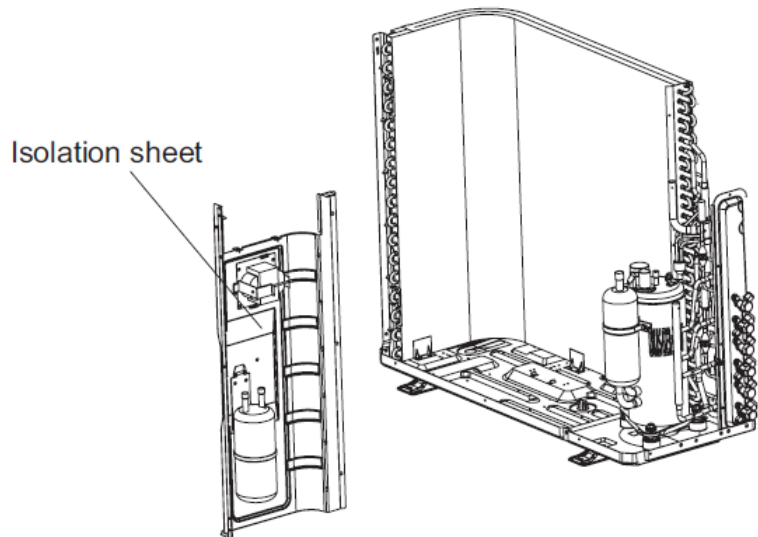


Unsolder the brazed joint at the connection pipe for compressor and liquid receiver, and then pull it upwards to remove it.



Step7: Remove isolation sheet

Remove the three (3) screws fixing the isolation sheet to remove it.



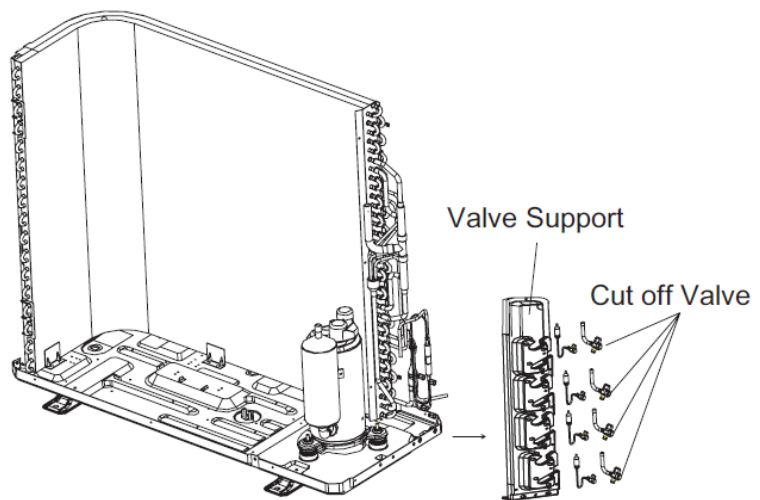
Step8: Remove cut of valve and valve support

Unscrew the two (2) bolts fixing the valve assembly. Unsolder the brazed joint connecting the gas valve and the suction pipe. Remove the gas valve.

Note: Wrap the valve body with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.

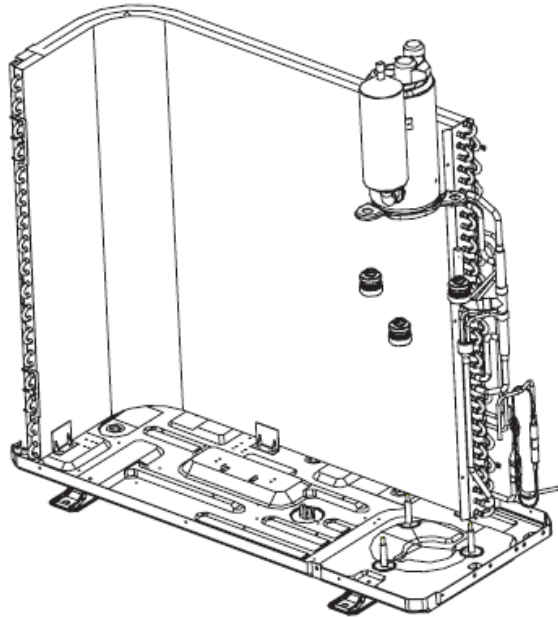
Unsolder the brazed joint connecting the liquid valve and the connecting pipe. Remove the liquid valve.

Remove the screws fixing the valve support and then remove it; remove the screw fixing the condenser and then pull the condenser upwards to remove it.



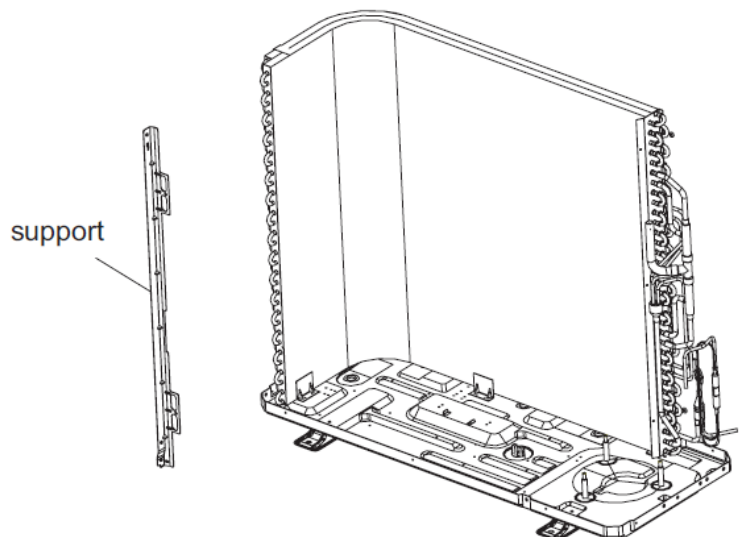
Step 9: Remove compressor

Twist off the three foot-nuts on the compressor with spanner, as well as the foot cushions, and then remove the compressor.



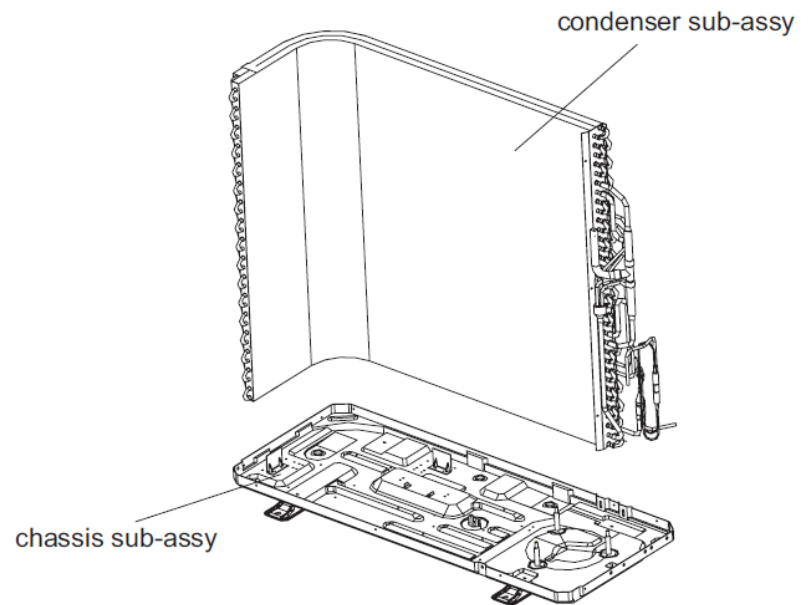
Step 10: Remove support

Remove the screws connecting the support and condenser assembly, and then remove the support.



Step 11: Remove condenser assembly

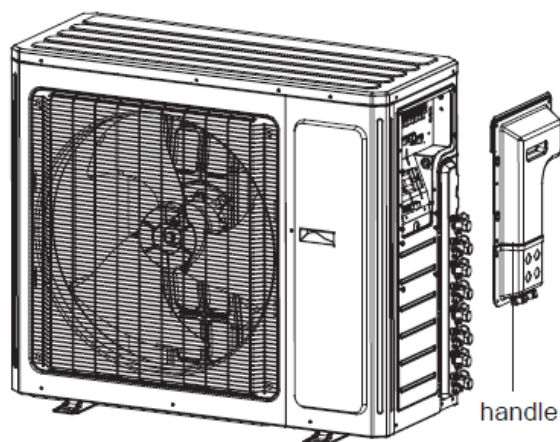
Separate the chassis assembly and condenser assembly.



12.1.3 Quad Port (SMZ30H421Z0GB)

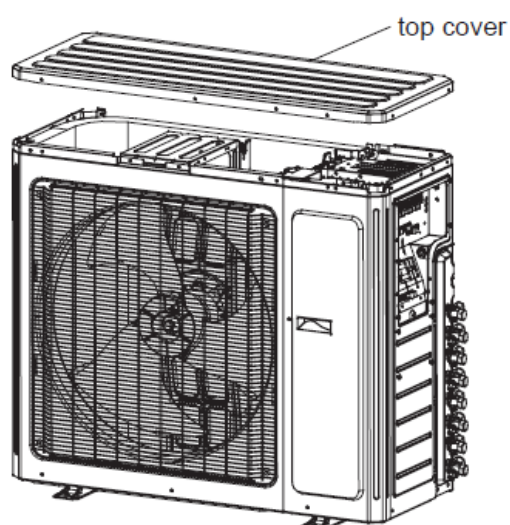
Step 1: Remove handle

Remove the screws connecting the handle with the right side plate to release it.



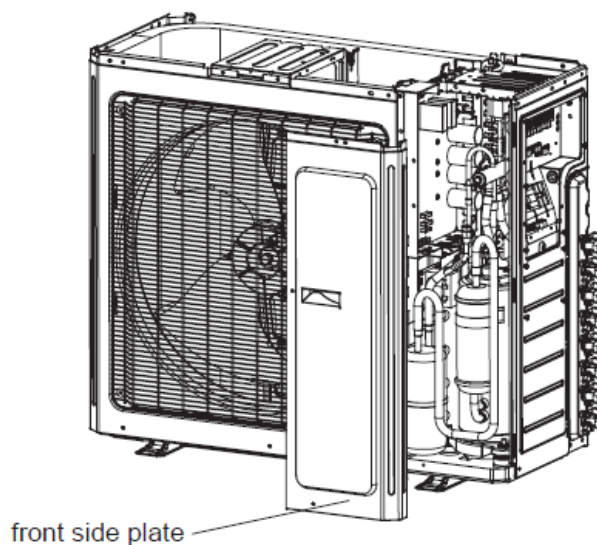
Step 2: Remove top cover

Remove the screws connecting the top cover with the outer case, the right side plate and the left side plate. Pull the top cover upwards to remove it.



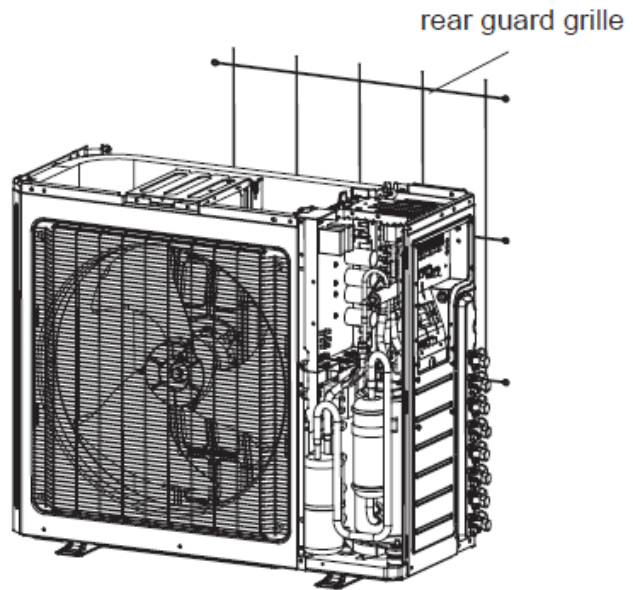
Step 3: Remove front side panel

Remove the screws connecting the front side plate with chassis and middle isolation sheet, and then remove the front side plate.



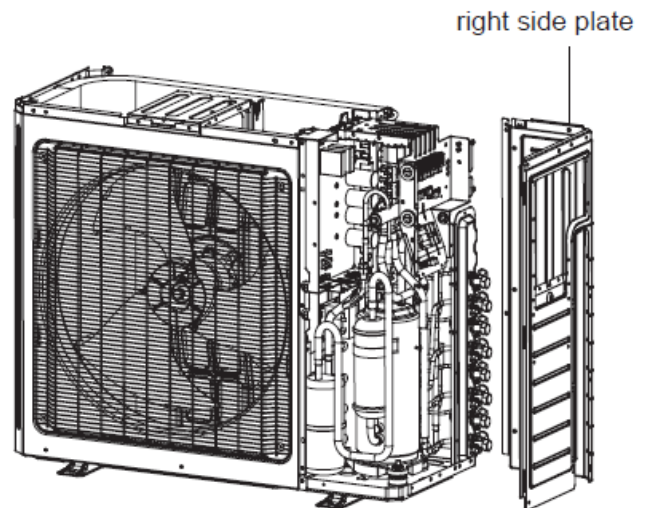
Step 4: Remove rear guard grille

Remove the six (6) screws connecting the grille with the right side plate and the left side plate, and then remove the rear guard grille.



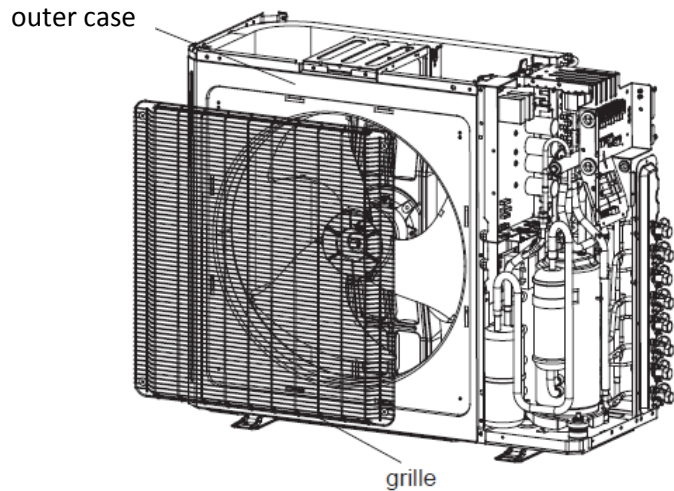
Step 5: Remove right side plate

Remove the screws connecting the right side plate with electric box assembly, valve support, chassis and condenser side plate. Then, remove the right side plate.



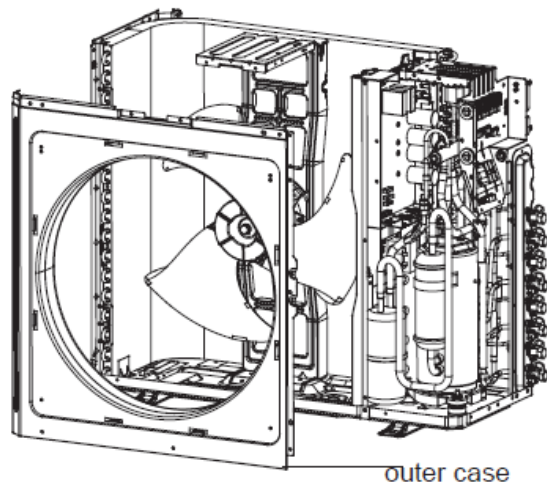
Step 6: Remove front grille and outer case

Remove the four (4) screws connecting the front grille and outer case, and then remove the grille.



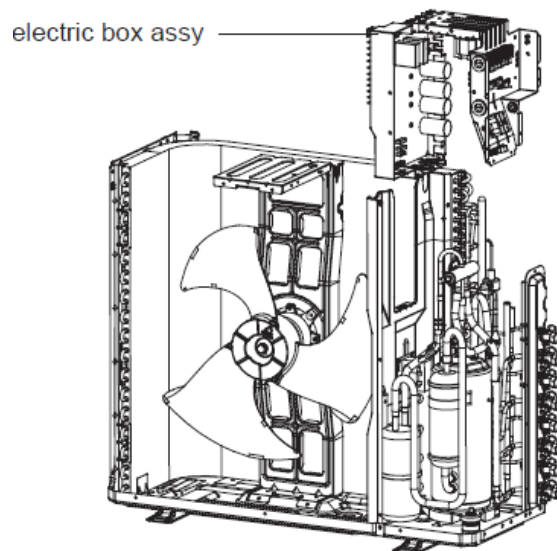
Step 7: Remove outer case

Remove the screws connecting outer case and motor support, middle isolation sheet and chassis, pull the outer case upward slightly, loosen clasps between outer case and the right side plate, the left side plate, and then remove the outer case.



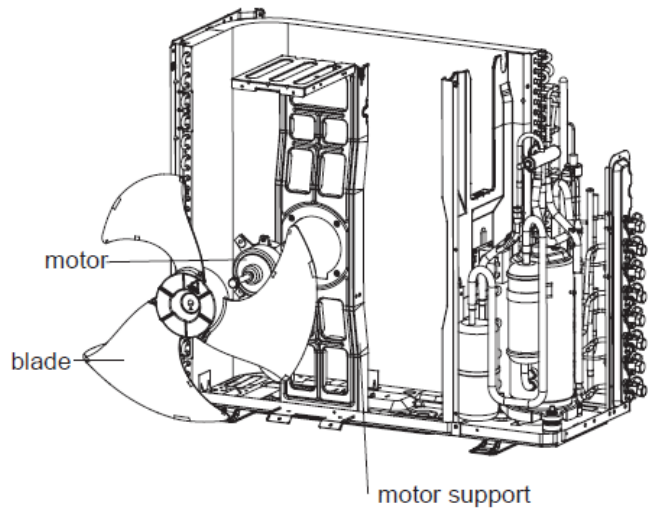
Step 8: Remove electric box assembly

Assembly the disassembled main parts in the reverse order as it was disassembled. Power on the unit to test it is working properly.



Step 9: Remove fan blade, motor and motor support

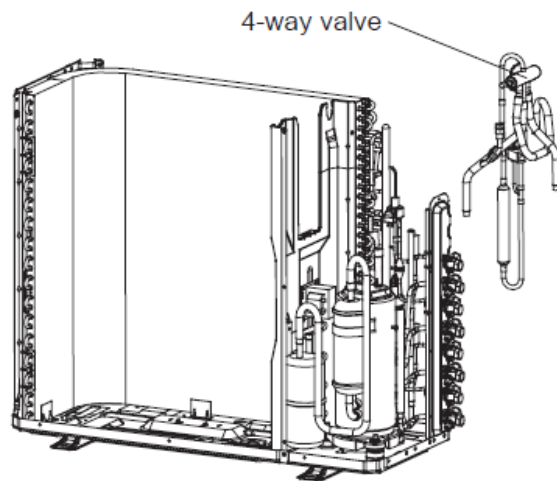
- a. Remove the nuts fixing axial flow blade with wrench, and then remove the fan blade.
- b. Remove the two (2) screws connecting motor support and chassis, loosen damper block and then remove the motor support.
- c. Remove the four (4) screws fixing motor, and then remove the motor.



Step 10: Remove four-way valve assembly

Recover all the refrigerant from the system. Unsolder the brazed joint between the four-way valve and accumulate, the compressor cut-off valve and condenser assembly. Then remove the 4-way valve assembly.

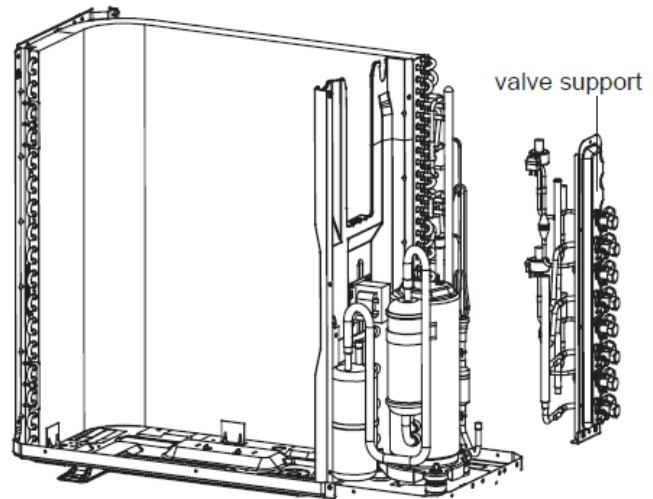
Note: Wrap the valve body with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.



Step 11: Remove valve support

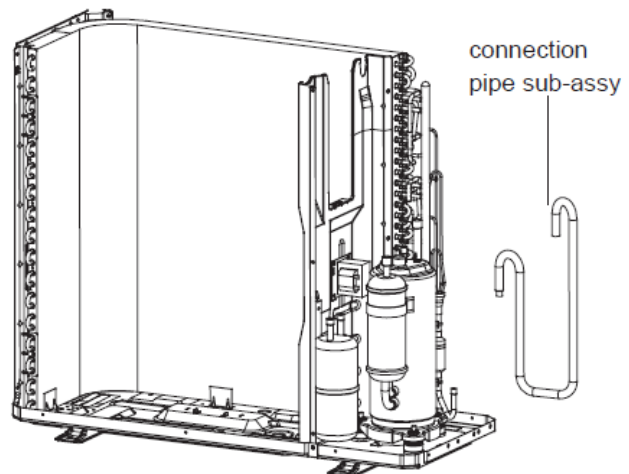
Unsolder all brazed joint connected with valve support and then remove the valve support.

Note: Wrap gas valve and liquid valve with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.



Step 12: Remove connection pipe assembly

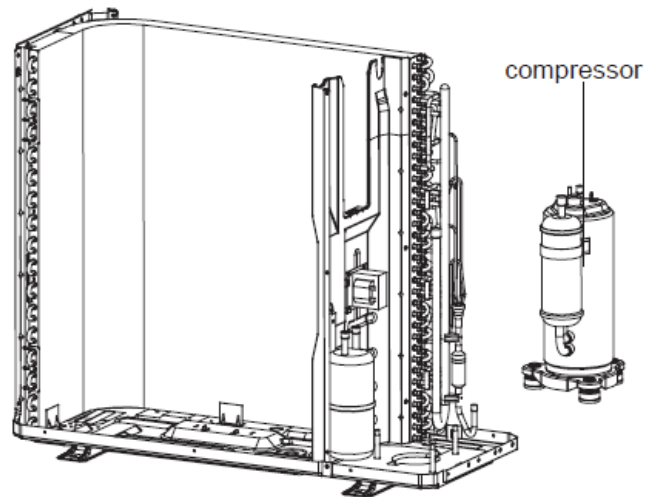
Unsolder all brazed joint connected with connection pipe and then remove it.



Step 13: Remove compressor

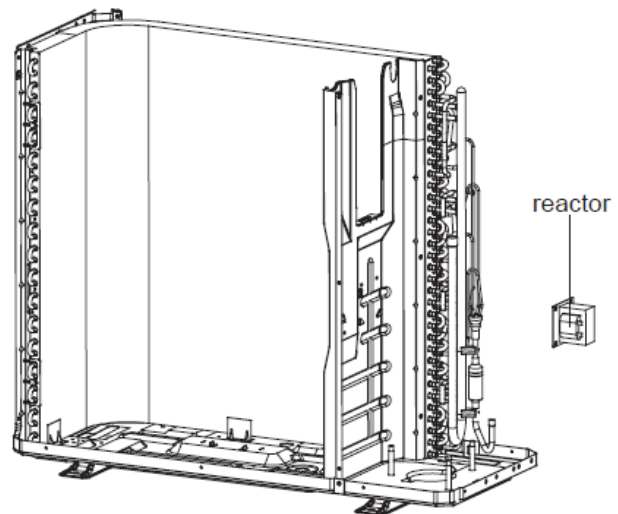
Twist off the three foot-nuts on the compressor with spanner, as well as the foot cushions, and then remove the compressor.

Note: Seal the ends of the discharge pipe and suction pipe to prevent the moisture and dust.



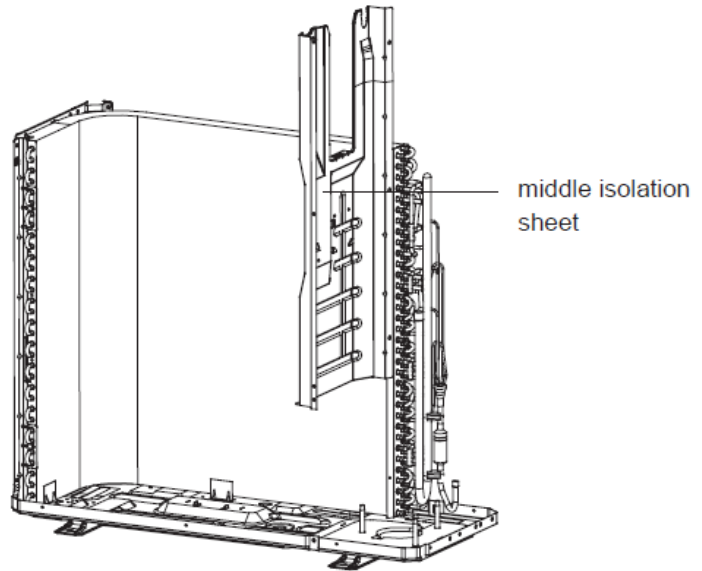
Step 14: Remove the reactor

Remove the four (4) screws fixing the reactor and the middle isolation sheet and then remove the reactor.



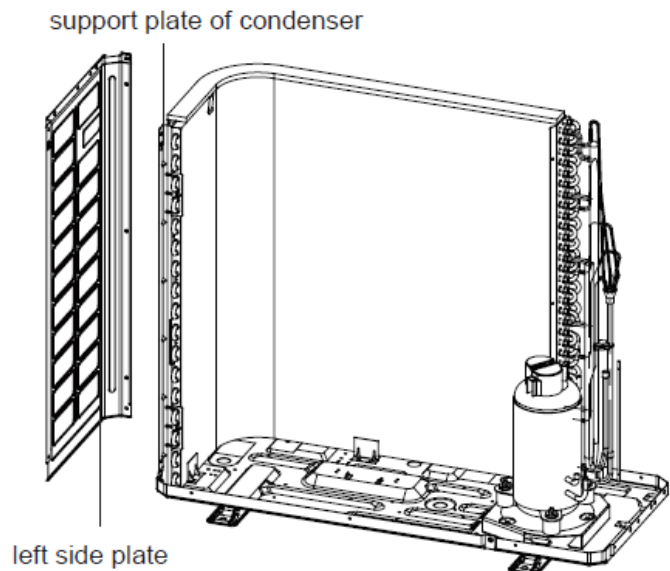
Step 15: Remove middle isolation sheet

Remove the screws connecting the middle isolation sheet and support plate of the condenser, chassis, and then remove the middle isolation sheet.



Step 16: Remove left side plate

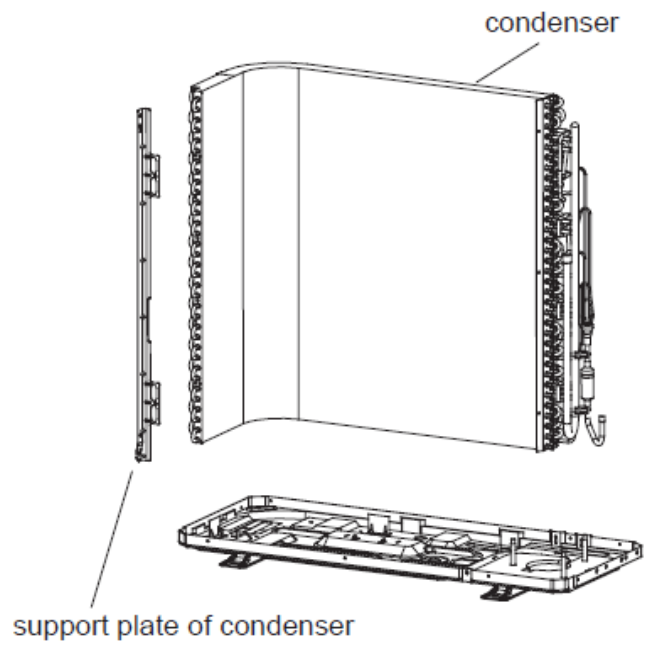
Remove the screws connecting the left side plate and support plate of condenser, chassis and then remove the left side plate.



Step 17: Remove condenser

Remove the five (5) screws connecting the condenser and chassis and then remove the condenser.

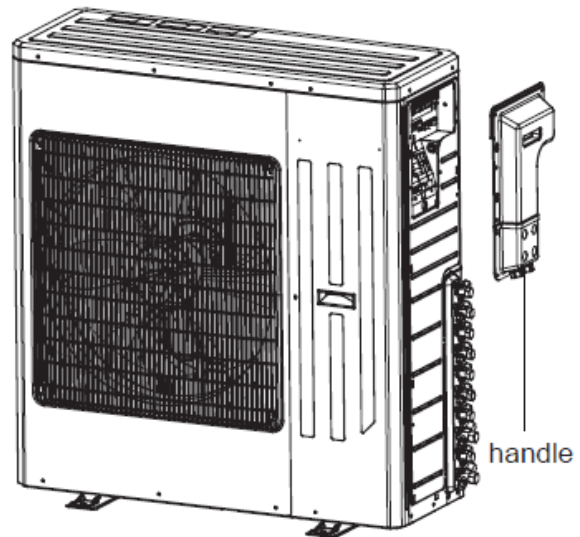
Remove the two (2) screws connecting support plate and condenser, and then remove the support plate of condenser.



12.1.4 Five Port (SMZ42H421ZOGB)

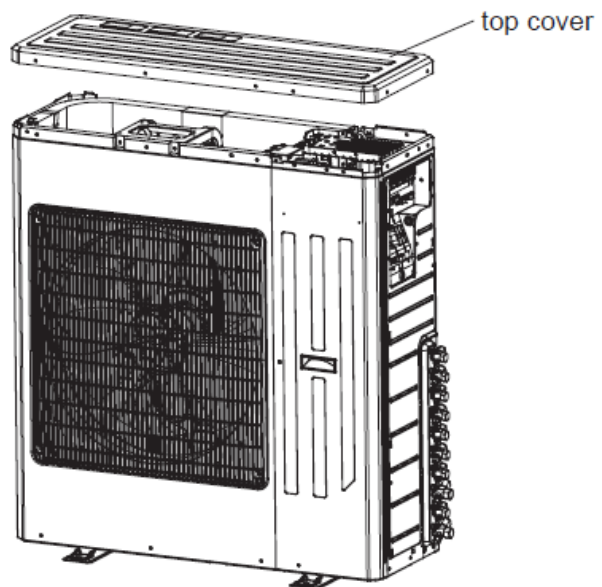
Step 1: Remove the handle

Remove the screws connecting the handle with the right side plate and then remove the handle.



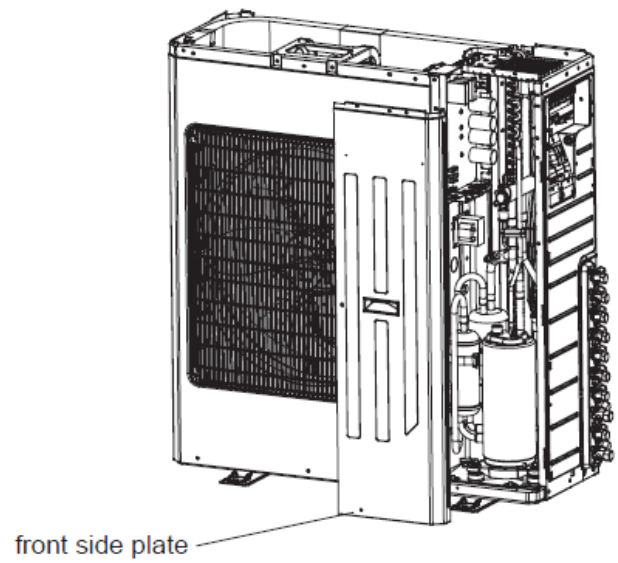
Step 2: Remove top cover

Remove the screws connecting the top cover with the outer case, right side plate and left side plate; Lift the top cover upwards to remove it.



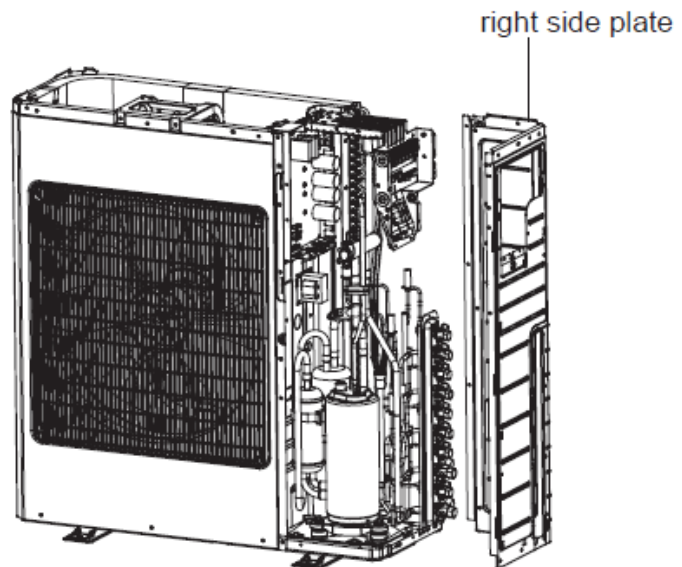
Step 3: Remove front side plate

Remove the screws connecting the front side plate with chassis and middle isolation sheet, and then remove the front side plate.



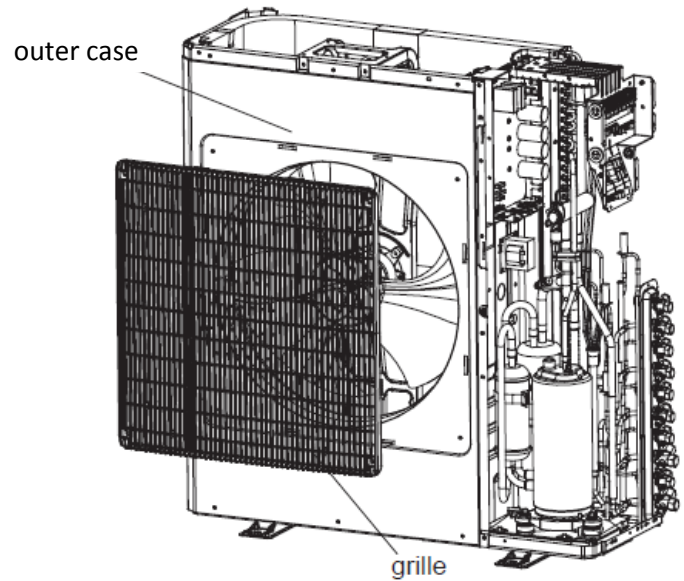
Step 4: Remove right side plate

Remove the screws connecting the right side plate with electric box assembly, valve support, chassis and the condenser side plate, and then remove the right side plate.



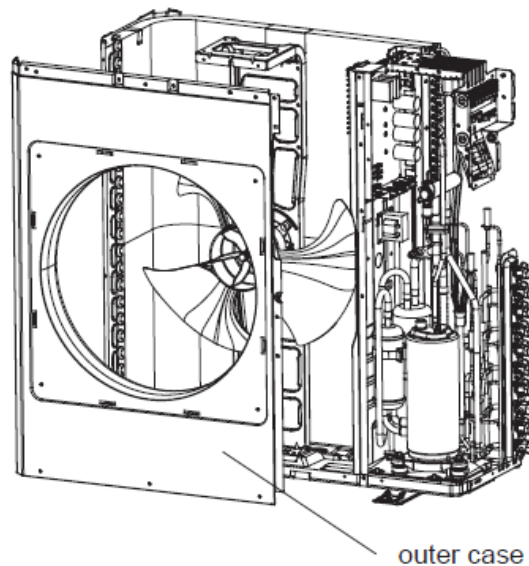
Step 5: Remove grille and outer case

Remove the four (4) screws connecting the grille and the outer case, and then remove the front grille.



Step 6: Remove the outer case

Remove the screws connecting the outer case and motor support, middle isolation sheet and chassis, pull the outer case upwards slightly, loose clamps between the outer case and the right side plate, left side plate and then remove the outer case.

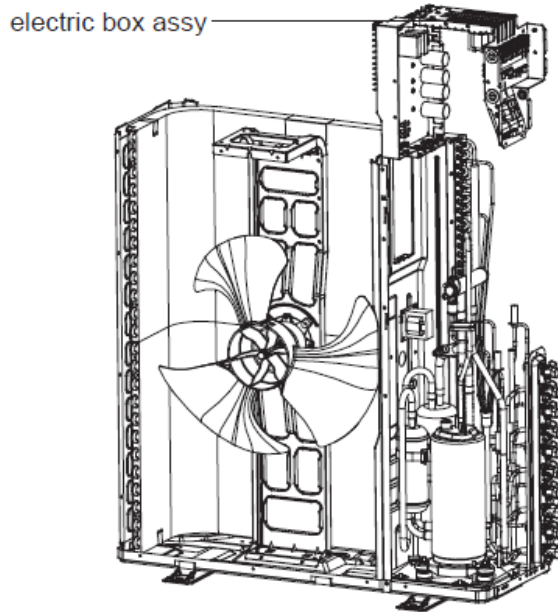


Step 7: Remove electric box assembly

- a. Remove the grounding wire screw on the electric box assembly and then remove the grounding wire.
- b. Disconnect the wiring terminals of reactor, compressor, high and low pressure switches, compressor overload protector, temperature sensor, outdoor fan motor and four-way valve.

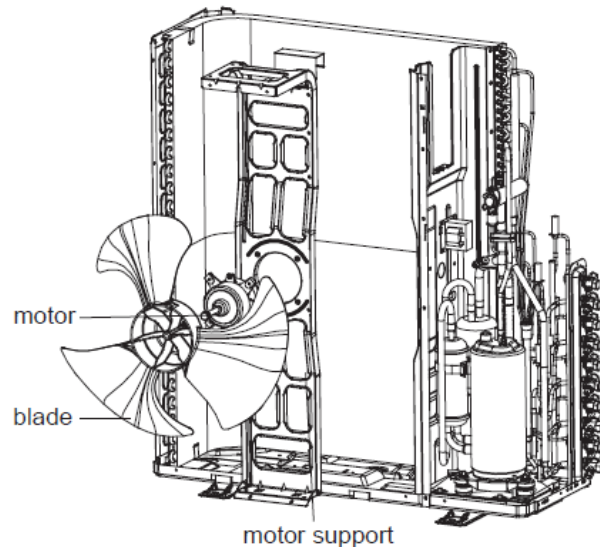
Note: Keep pressing the circlip when disconnecting the wiring terminal of reactor; keep pressing the retainer when disconnecting other wiring terminals.

- c. Remove the wire through the wiring groove.



Step 8: Remove fan blade, motor and motor support

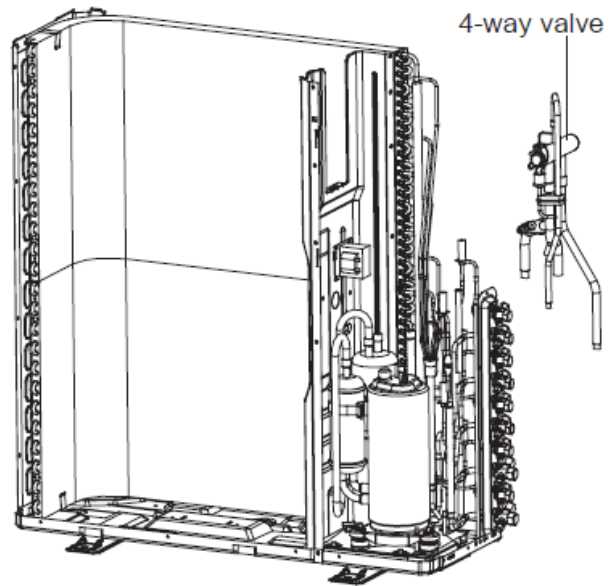
- a. Remove the nuts fixing axial flow blade with wrench, and then remove the fan blade.
- b. Remove the two (2) screws connecting motor support and chassis, loosen damper block and then remove the motor support.
- c. Remove the four (4) screws fixing motor, and then remove the motor.



Step 9: Remove four-way valve assembly

Recover all the refrigerant from the system. Unsolder the brazed joint between the four-way valve and accumulate, the compressor cut-off valve and condenser assembly. Then remove the 4-way valve assembly.

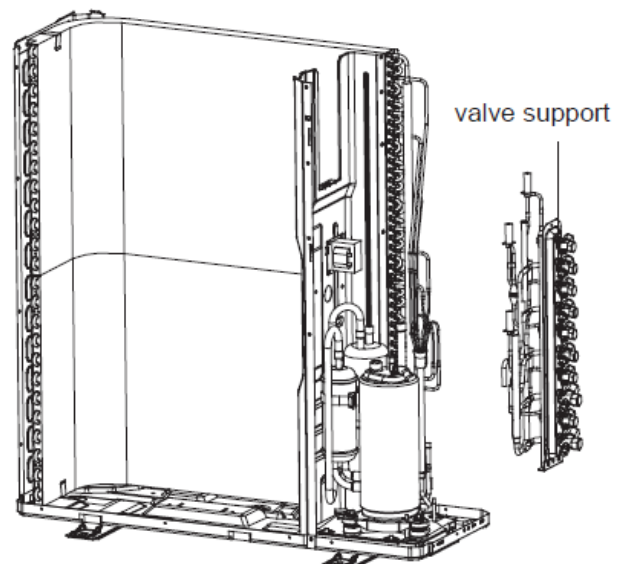
Note: Wrap the valve body with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.



Step 10: Remove valve support

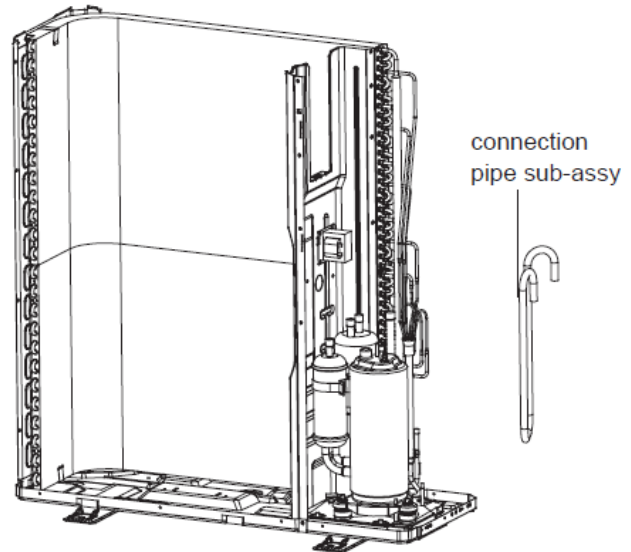
Unsolder all brazed joint connected with valve support and then remove the valve support.

Note: Wrap the gas valve and liquid valve with wet cloth completely while unsoldering to avoid damaging the valve caused by high temperature.



Step 11: Remove connection pipe assembly

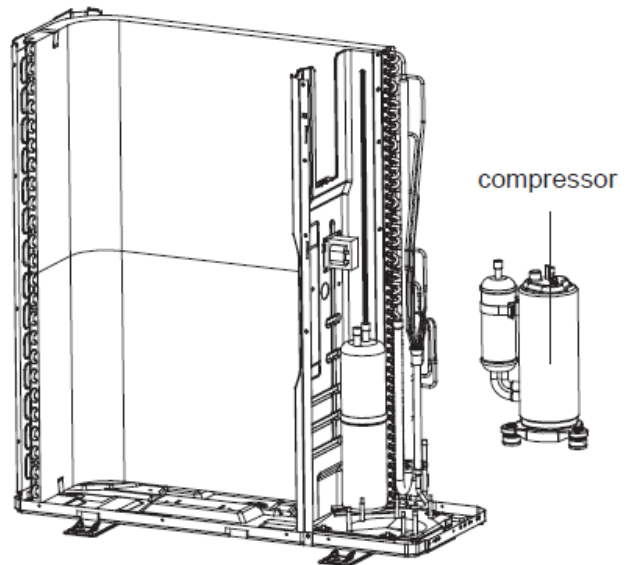
Unsolder all brazed joint connected with connection pipe and then remove it.



Step 12: Remove compressor

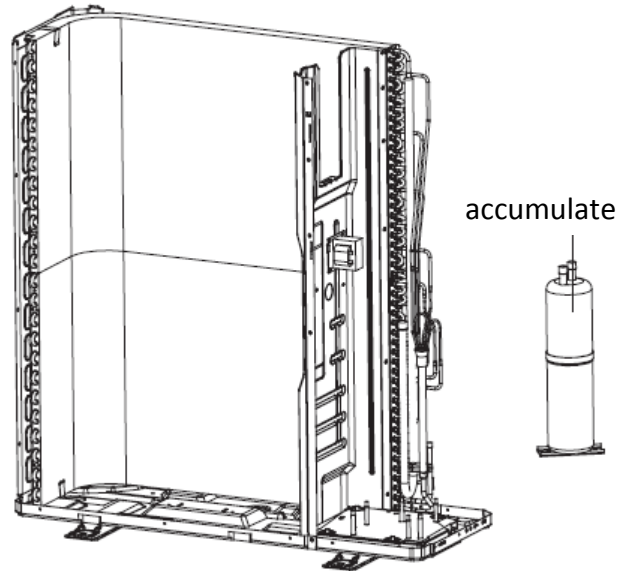
Twist off the three foot-nuts on the compressor with spanner, as well as the foot cushions, and then remove the compressor.

Note: Seal the ends of the discharge pipe and suction pipe to prevent the moisture and dust.



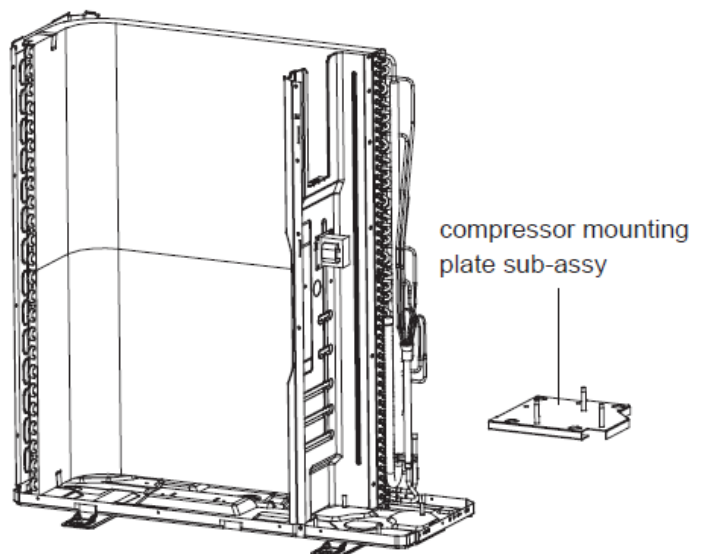
Step 13: Remove the accumulate

Unsolder all brazed joint connected with the accumulate, remove the two (2) foot nuts fixing it and compressor mounting plate assembly, and then remove the accumulate.



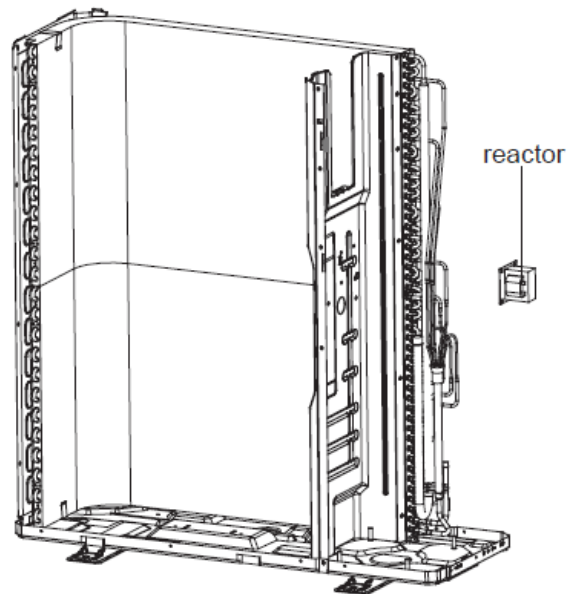
Step 14: Remove compressor mounting plate assembly

Remove the four (4) foot nuts fixing compressor mounting plate assembly and chassis to release it.



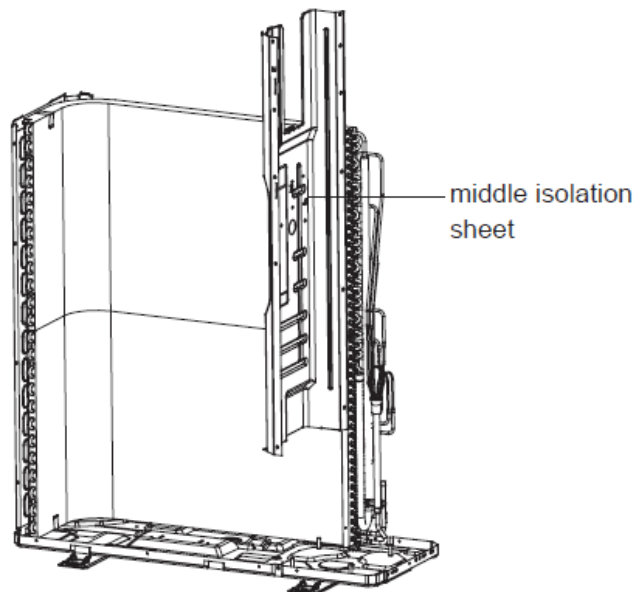
Step 15: Remove the reactor

Remove the four (4) screws fixing the reactor and the middle isolation sheet, and then remove the reactor.



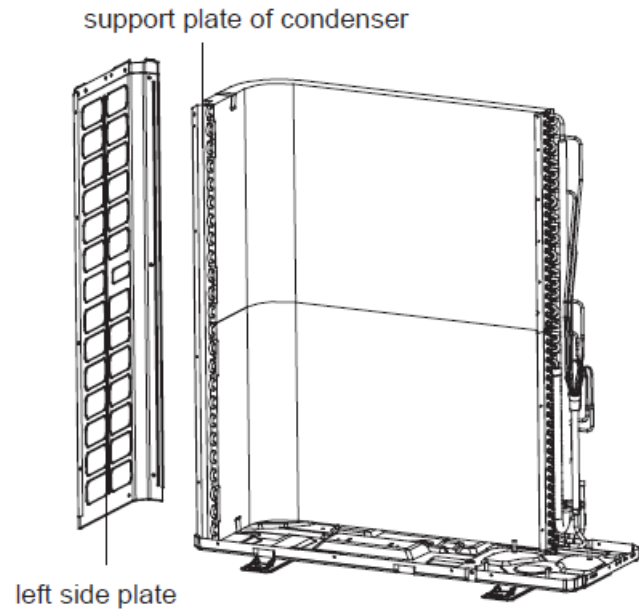
Step 16: Remove middle isolation sheet

Remove the screws connecting the middle isolation sheet and support plate of the condenser, chassis, and then remove the middle isolation sheet.



Step 17: Remove left side plate

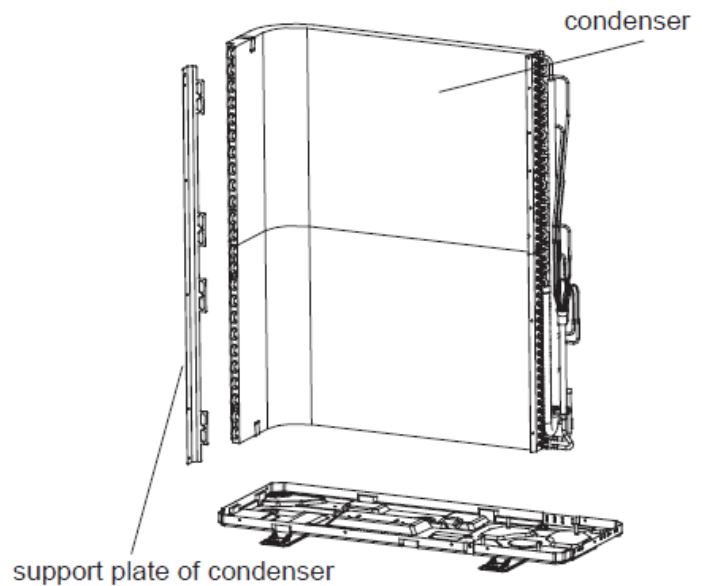
Remove the screws connecting the left side plate and the support plate of condenser, chassis and then remove the left side plate.



Step 18: Remove condenser

Remove the five (5) screws connecting the condenser and chassis and then remove the condenser.

Remove the two (2) screws connecting support plate and condenser, and then remove the support plate of condenser.

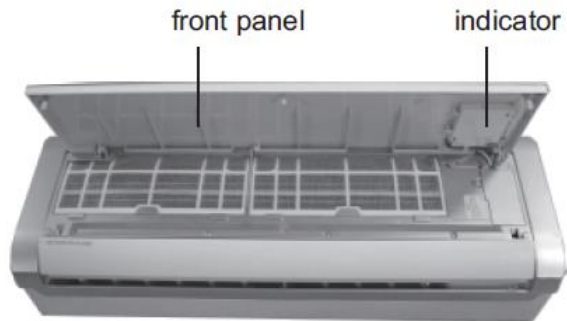


12.2 Indoor Units

12.2.1 Wall Mounted

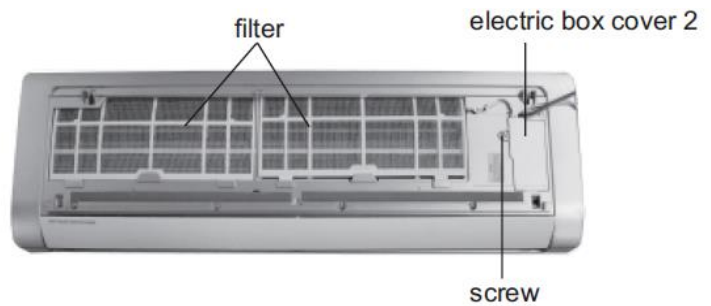
Step 1: Remove front panel

Open front panel and remove the screws holding the indicator. Push the rotor shaft on both sides of the panel to make it separate from the groove. Then remove the panel.



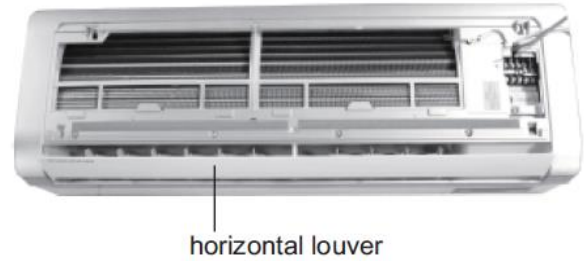
Step 2: Remove filter and electric box cover 2

Push the filter inward and then pull it upward to remove the filter. Remove screws on electric box cover 2 and then remove the cover.



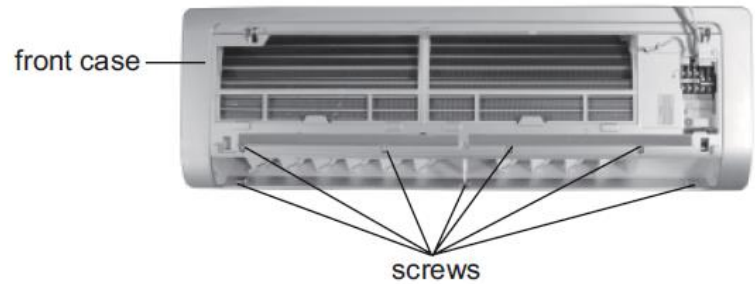
Step 3: Remove horizontal louver

Remove middle axle sleeve of horizontal louver and then slightly bend the horizontal louver to remove it.



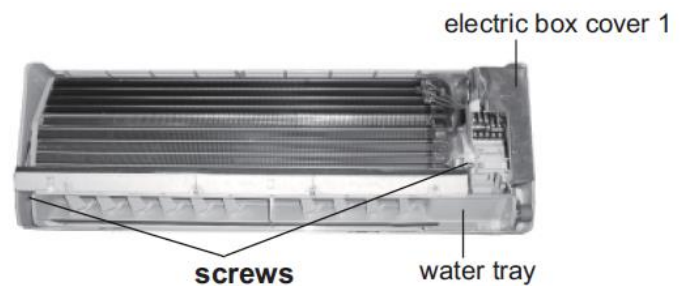
Step 4: Remove front case

Remove the screws holding in the front case. Loosen clasps in the middle of the front case and then turn over the front case to remove it



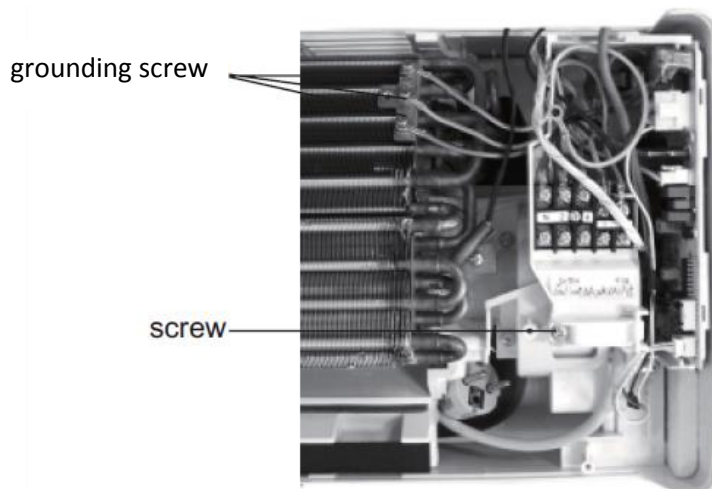
Step 5: Remove water tray

Remove the screws of electric box cover 1 and loosen the clasps. Unplug the wiring terminal of the swing motor and remove the screws holding the water tray in place. Then remove the water tray.



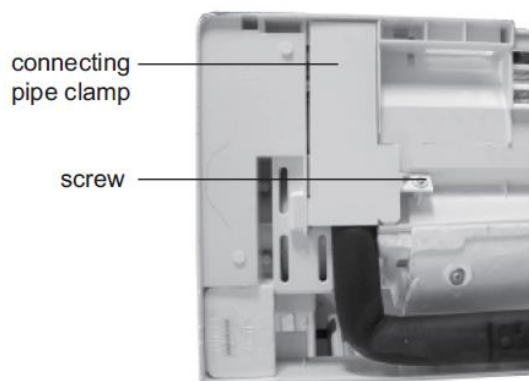
Step 6: Remove electric box

Remove the grounding screw of the evaporator and the screws of the electric box. Unplug the connecting wire for the indoor motor. Loosen the clasps of the electric box and then remove the electric box.

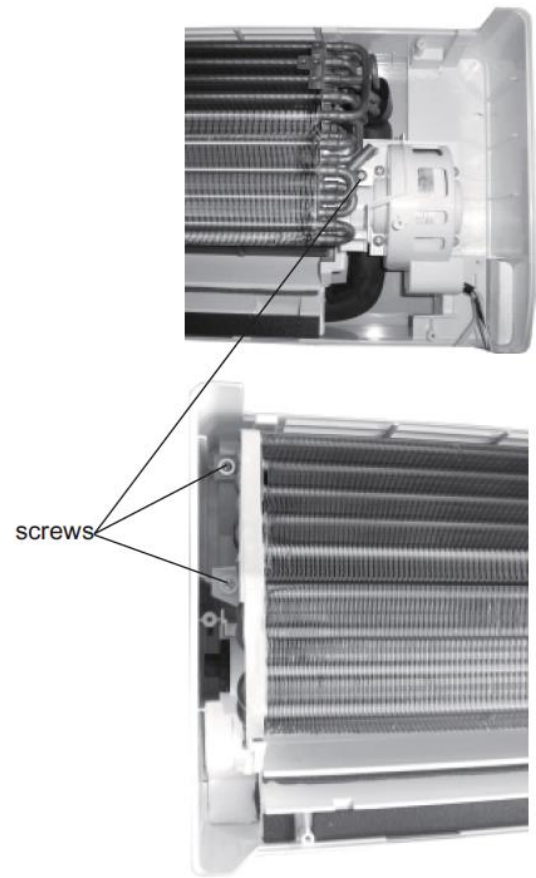


Step 7: Remove left side plate

Remove the screws fixing chassis and condenser support to remove the left side plate.

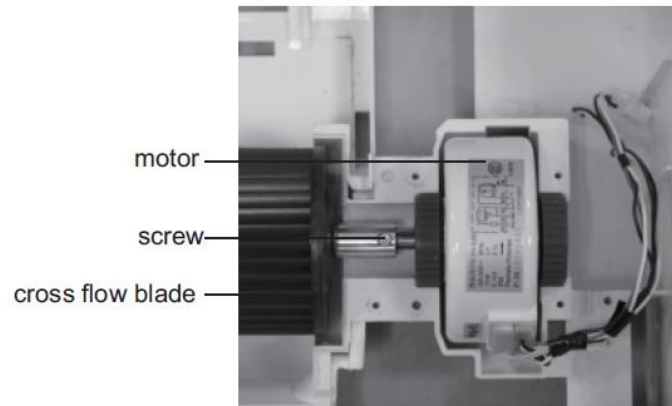
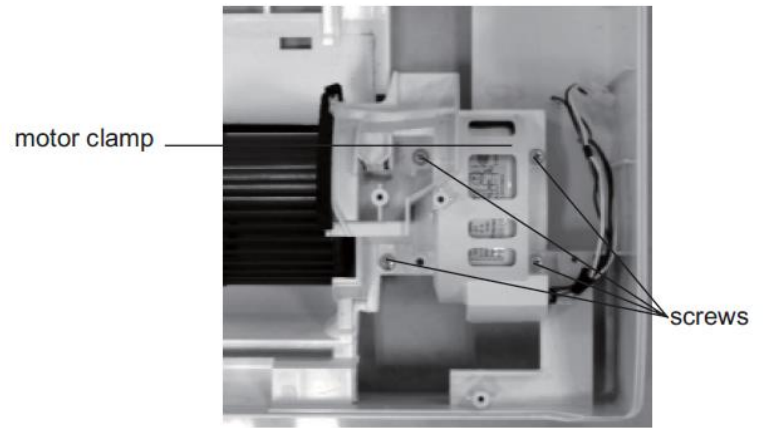


Remove connection screws between evaporator and the rear case. Slightly adjust the pipe of the evaporator and then remove the evaporator.



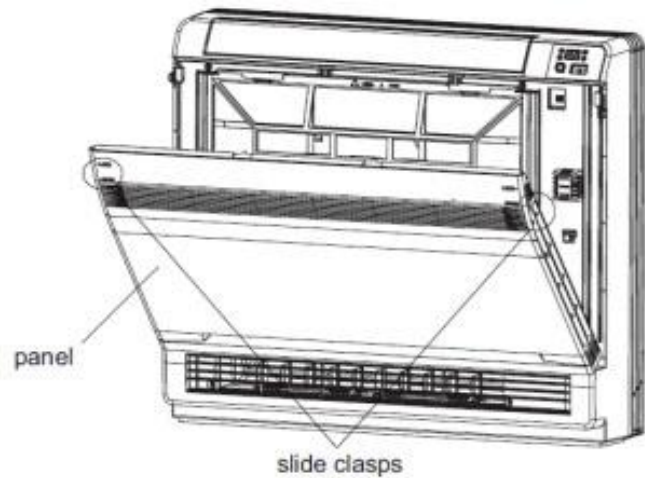
Step 8: Remove motor and cross flow blade

Remove the screws fixing the motor clamp and then remove the clamp. Remove connection screws between the motor and cross flow blade to remove the components.



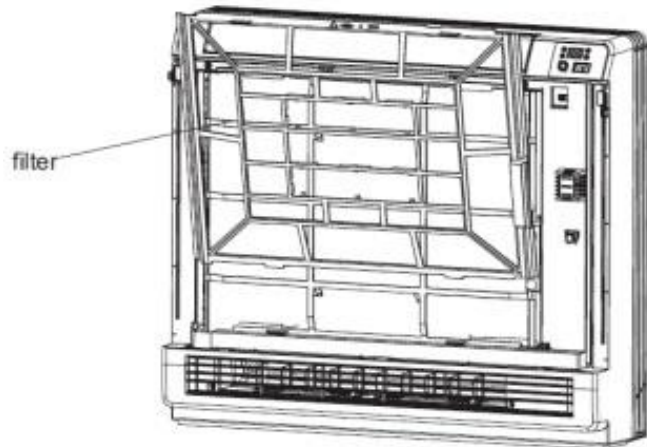
Step 1: Remove panel

Pull the slide clasps at both sides of the panel. Pull the panel outwards, then lift up to remove the panel.



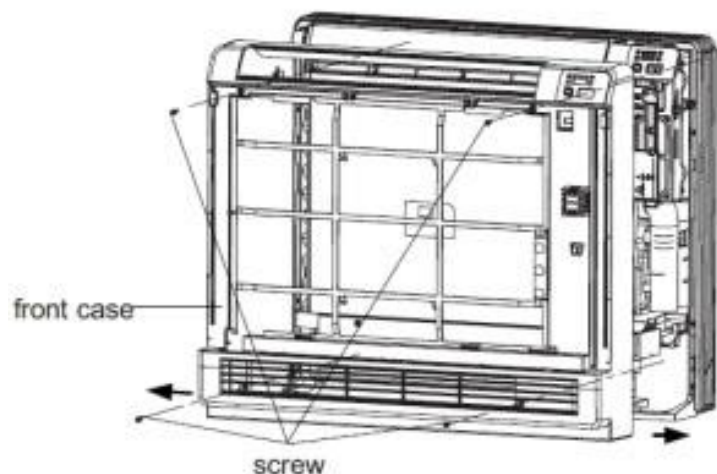
Step 2: Remove filter

Loosen the clasp on the upper side of the filter, then pull panel outwards to remove it.



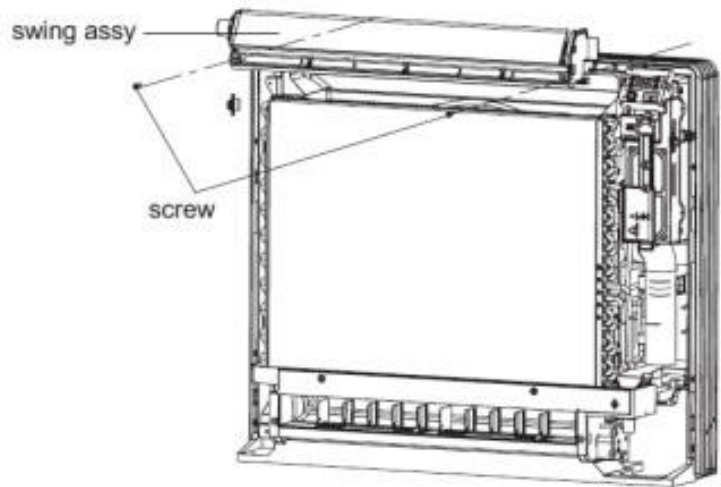
Step 3: Remove front case

Remove the tapping screws fixing the isolation sheet, loosen the wire binds, and then pull out the terminal. Lift to remove the electric box subassembly.



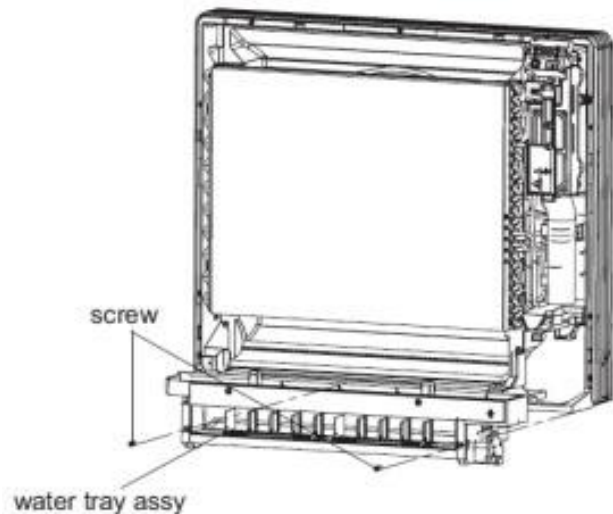
Step 4: Remove swing assembly

Remove the two (2) screws that fix the swing assembly in place. Pull out the connection wires with the electric box and then pull the swing assembly outwards to remove it.



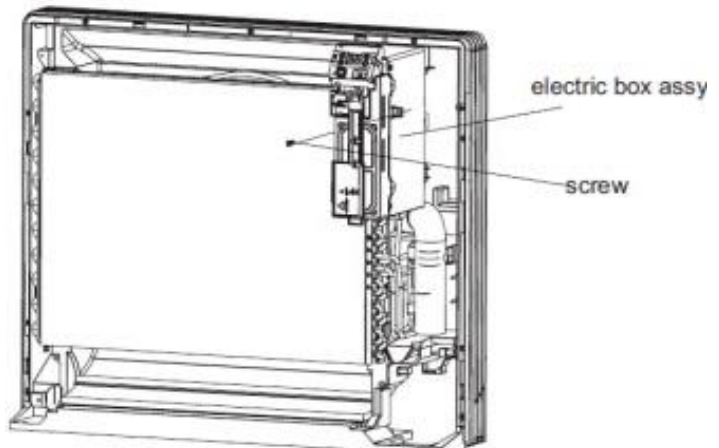
Step 5: Remove water tray assembly

Remove the two (2) screws that fix the water tray in place. Pull the water tray outwards to remove it.



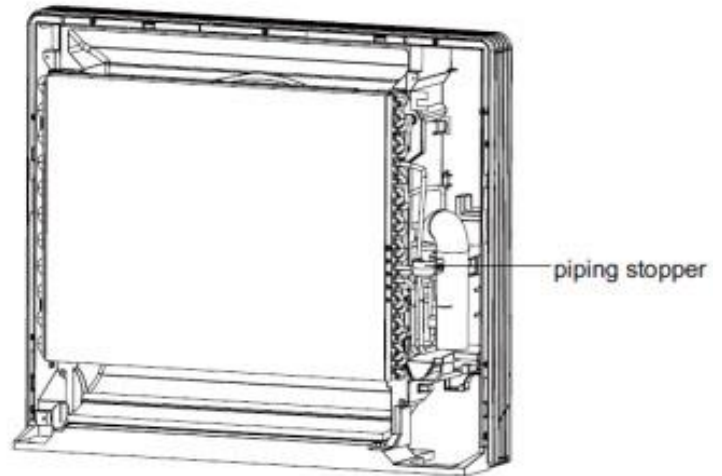
Step 6: Remove electric box assembly

Remove the one screw that fixes the electric box assembly in place. Disconnect all connections and then pull the electric box assembly outwards to remove it.



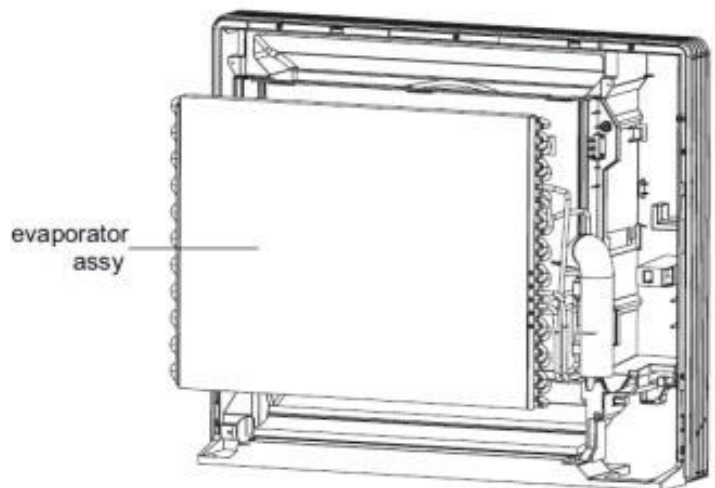
Step 7: Remove piping stopper

Remove nuts on the centrifugal blade and then pull the centrifugal blade outwards to remove it.



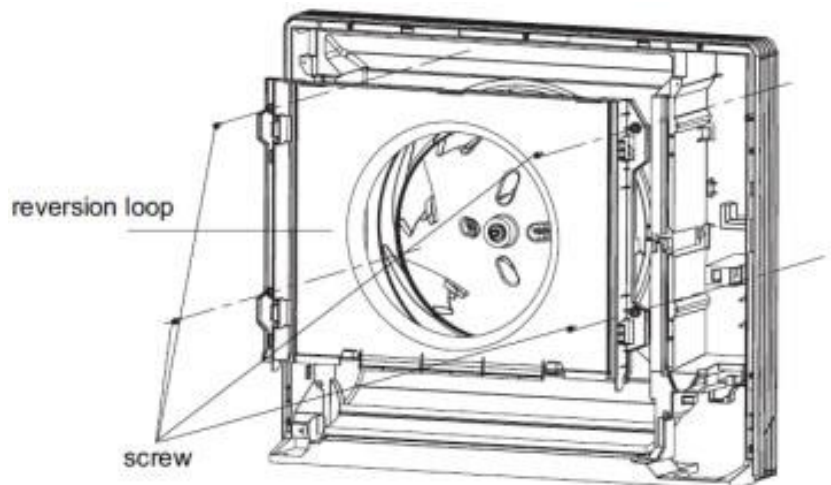
Step 8: Remove water tray assembly

Remove the two (2) screws that fix the water tray in place. Pull the water tray outwards to remove it.



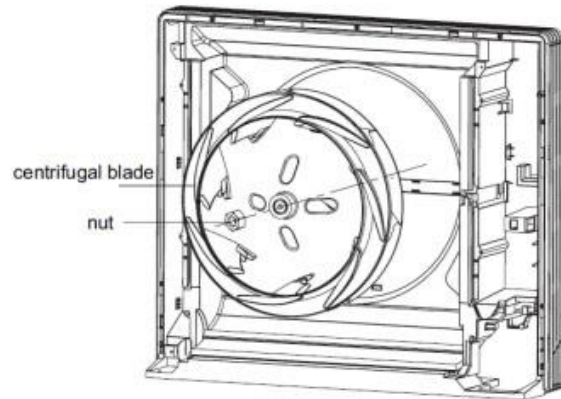
Step 9: Remove electric box assembly

Remove the one screw that fixes the electric box assembly in place. Disconnect all connections and then pull the electric box assembly outwards to remove it.



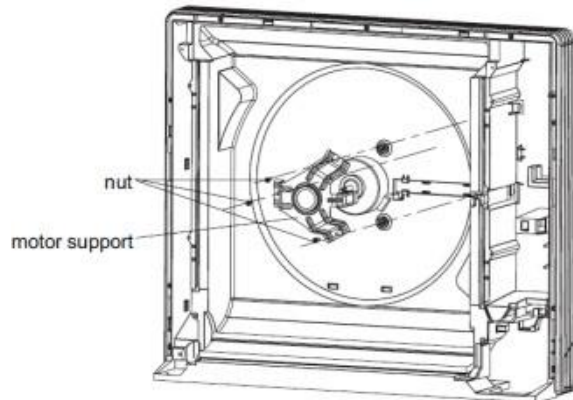
Step 10: Remove piping stopper

Remove nuts on the centrifugal blade and then pull the centrifugal blade outwards to remove it.



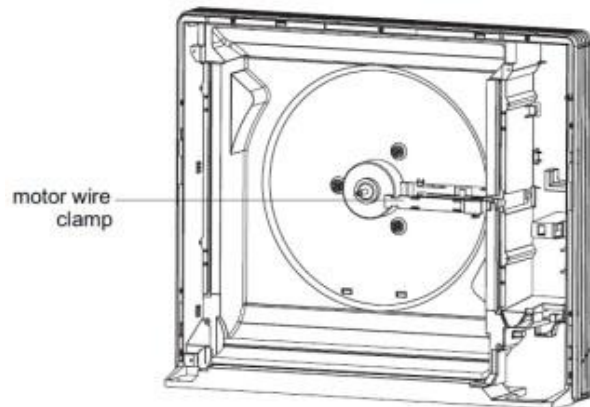
Step 11: Remove water tray assembly

Remove the two (2) screws that fix the water tray in place. Pull the water tray outwards to remove it.



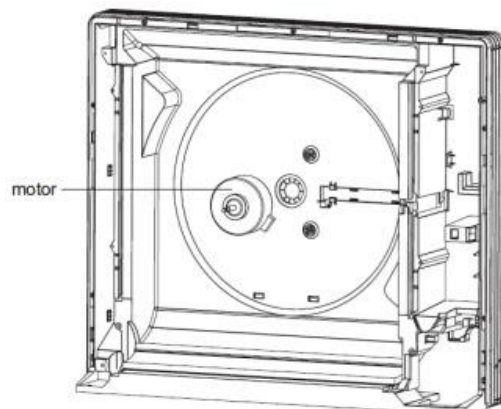
Step 12: Remove electric box assembly

Remove the one screw that fixes the electric box assembly in place. Disconnect all connections and then pull the electric box assembly outwards to remove it.



Step 13: Remove electric box assembly

Remove the one screw that fixes the electric box assembly in place. Disconnect all connections and then pull the electric box assembly outwards to remove it.

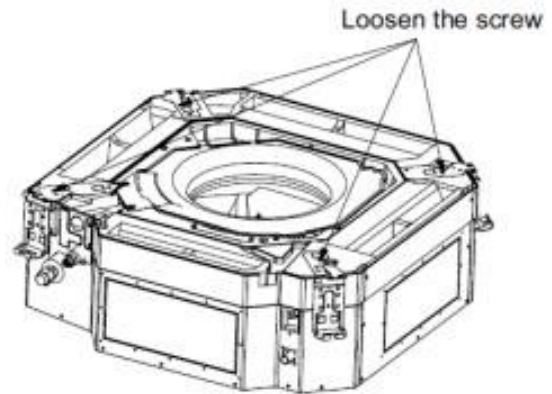


12.2.3 Cassette

12.2.3.1 Disassembly and Reassembly of Fan Motor

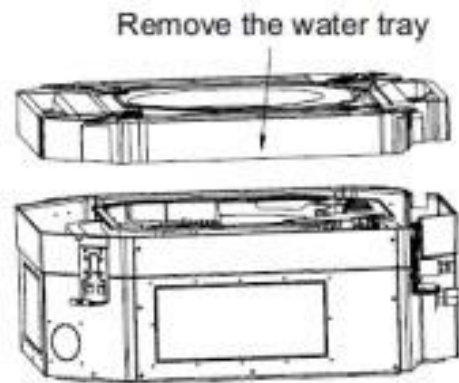
Step 1: Loosen the screws fixing the water tray

Use a screwdriver to loosen the screws that hold the water tray in place.



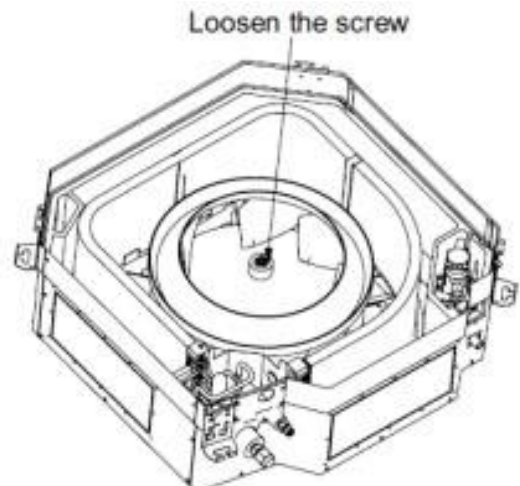
Step 2: Remove water tray

Remove the water tray by lifting it off of the rest of the unit.



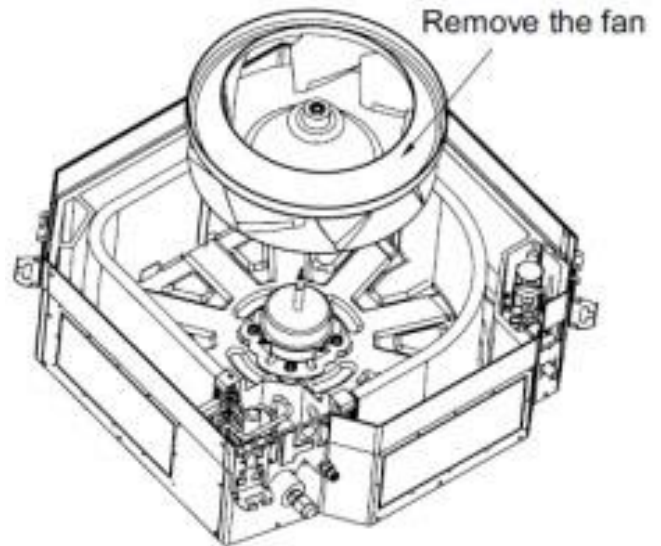
Step 3: Loosen bolts fixing the fan

Use a spanner to loosen the bolts that hold the fan in place.

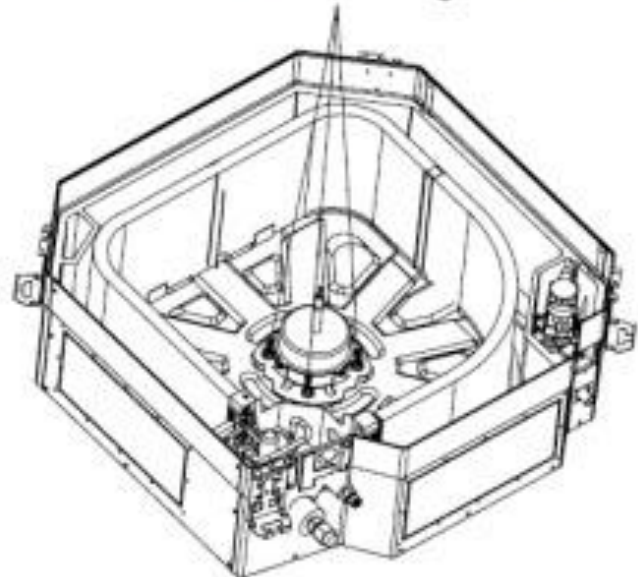


Step 4: Remove fan

Remove the fan by lifting it off of the rest of the unit.



Loosen the screws fixing the motor

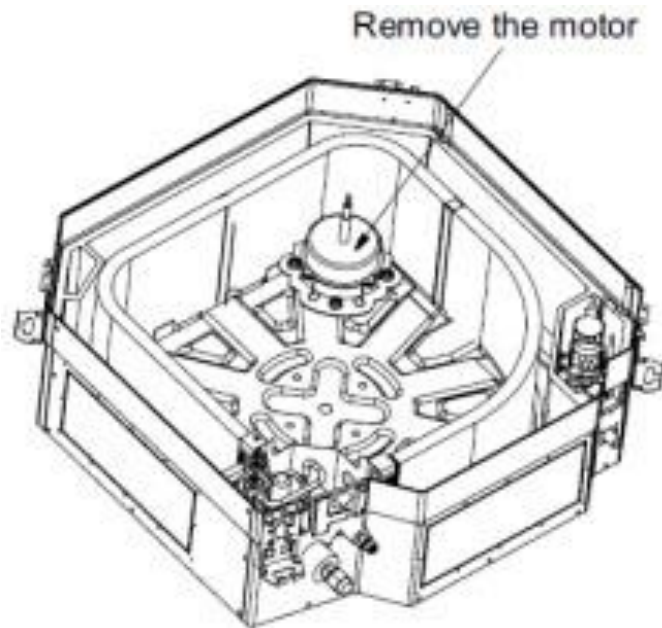


Step 5: Loosen the screws fixing the motor

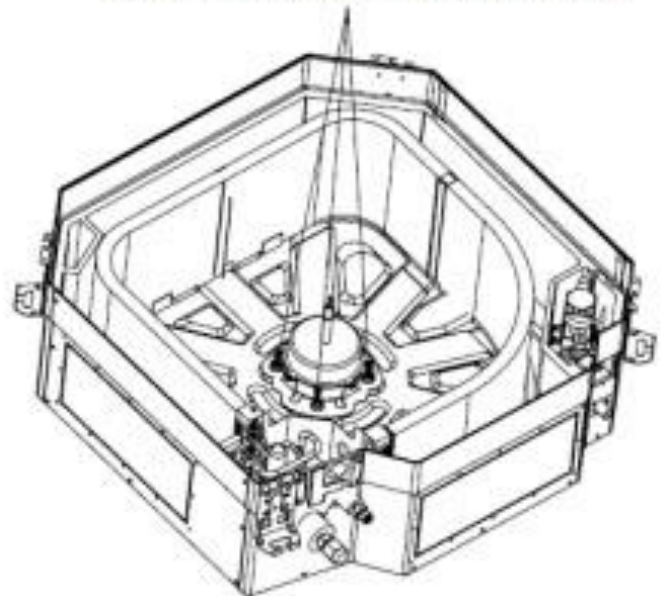
Use a screwdriver to loosen the screws that hold the motor in place.

Step 6: Replace the motor

Remove the old motor and replace with a new one, if necessary.



Tighten the screws fixing the motor

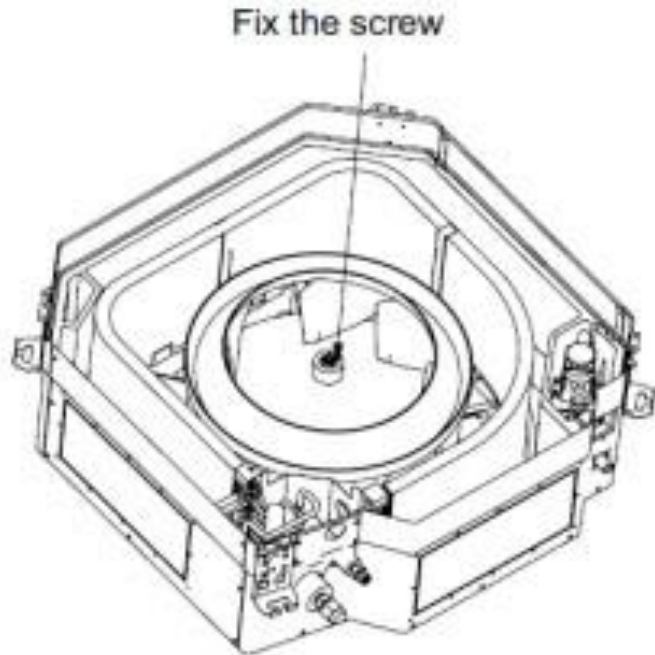


Step 7: Tighten the screws fixing the motor

Use a screwdriver to tighten the screws that hold the motor in place.

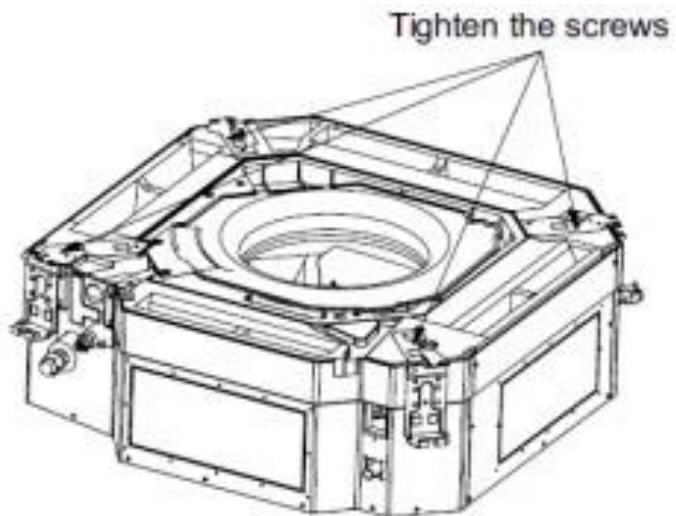
Step 8: Mount the fan

Mount the fan and use a spanner to tighten the bolts that hold the fan in place.



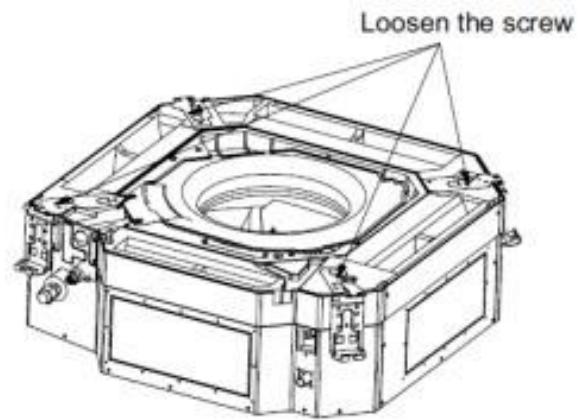
Step 9: Mount the water tray

Use a screwdriver to tighten the screws that fix the water tray.



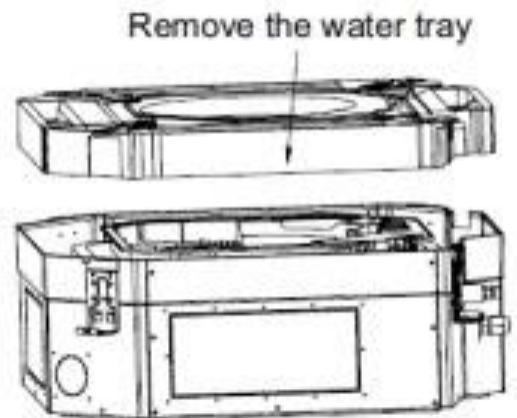
Step 1: Loosen the screws fixing the water tray

Use a screwdriver to loosen the screws that hold the water tray in place.



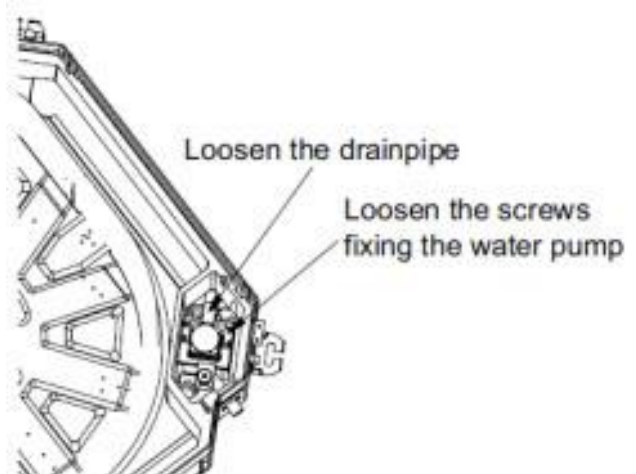
Step 2: Remove water tray

Remove the water tray by lifting it off of the rest of the unit.



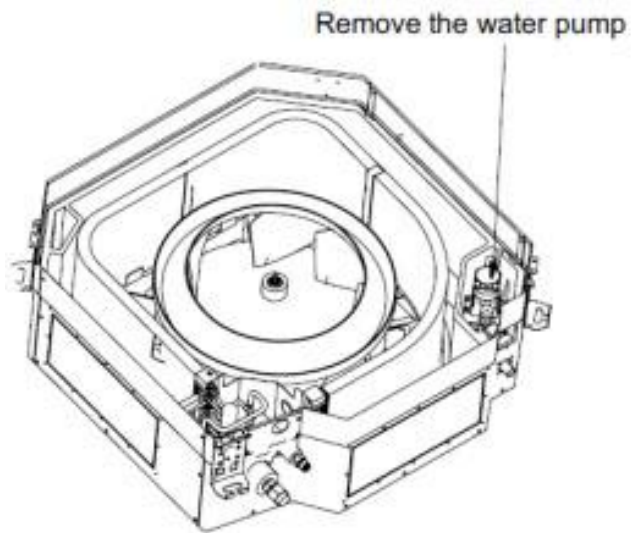
Step 3: Loosen screws fixing the pump

Pull out the water outlet pipe and loosen the screws fixing the water pump.



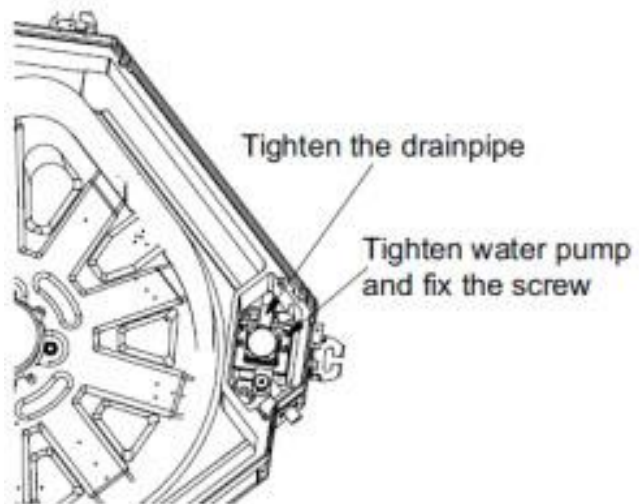
Step 4: Replace pump

Take out the pump and replace it with a new one, if necessary.



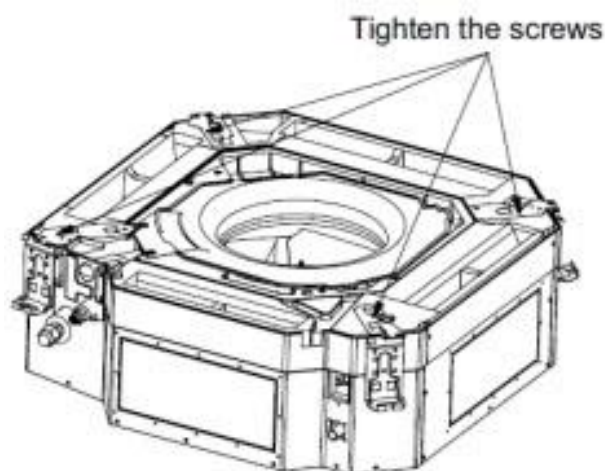
Step 5: Fix the water pump

Connect the drainage pipe and tighten the screws fixing the water pump.



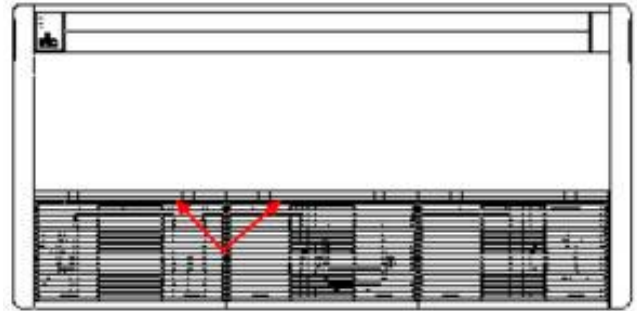
Step 6: Replace water tray

Mount the water tray and tighten the screws holding it in place.



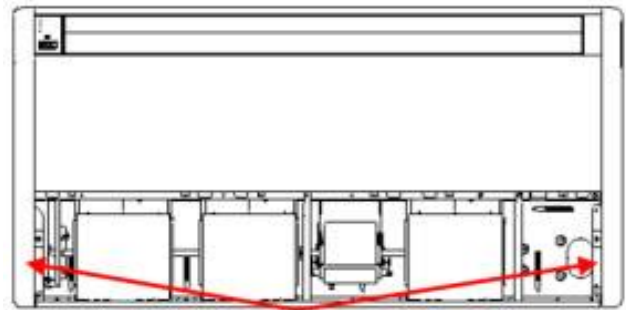
Step 1: Remove front panel

Pull down on the clip on the front grill until the grill is open (as shown in the diagram; arrow represents the position of the buttons; there are two clips for each “grill”).



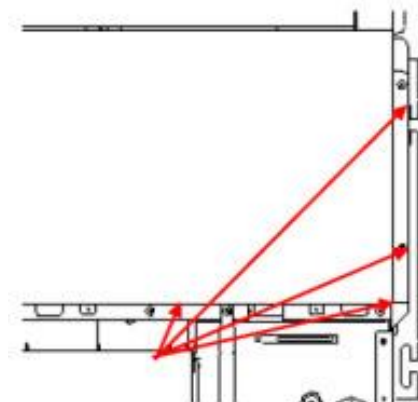
Step 2: Remove left and right plates

Remove the screws (as shown in diagram) with a screwdriver and then push upward to remove the right and left finishing plates. (The arrows in the diagram show the position of the screws.)



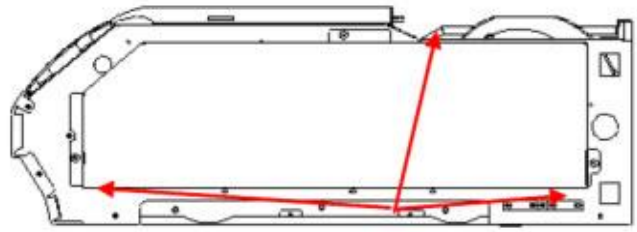
Step 3: Remove panel parts

Remove the screws shown by the arrow in the graph (two (2) on both right and left and four (4) in the front) with the screwdriver and then remove the panel parts.



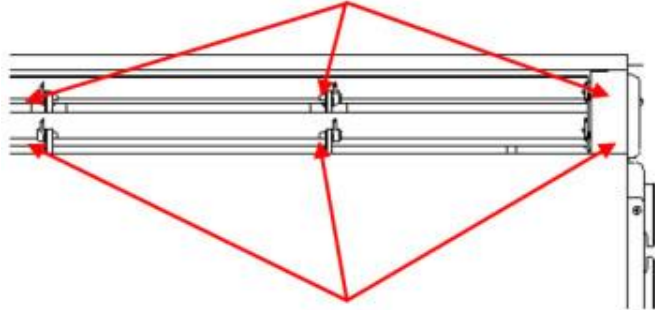
Step 4: Remove electric box cover

Remove the three (3) screws (as shown by the arrow in the graph) to remove the electric box cover.



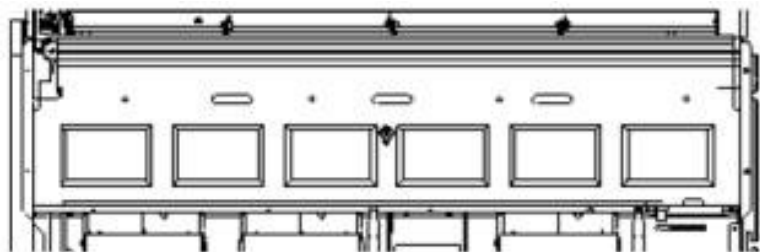
Step 5: Remove the air flow louvers

Remove the air flow louvers from the louver support subassembly and then remove both ends from the louver motor joint.



Step 6: Remove water tray modules

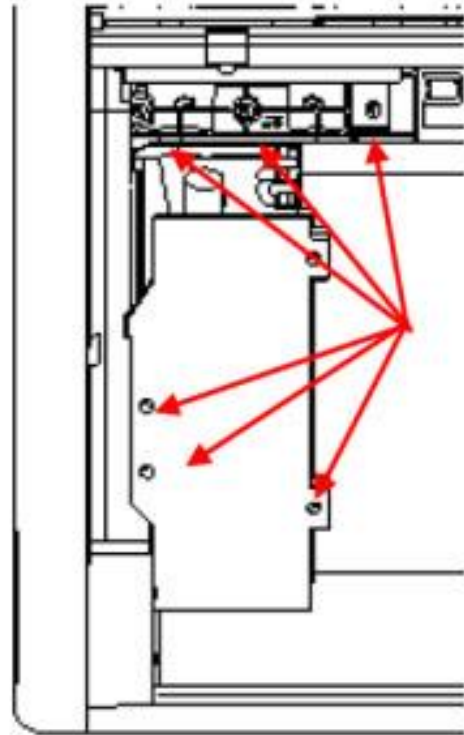
Remove the water tray modules.



Step 7: Remove evaporator components

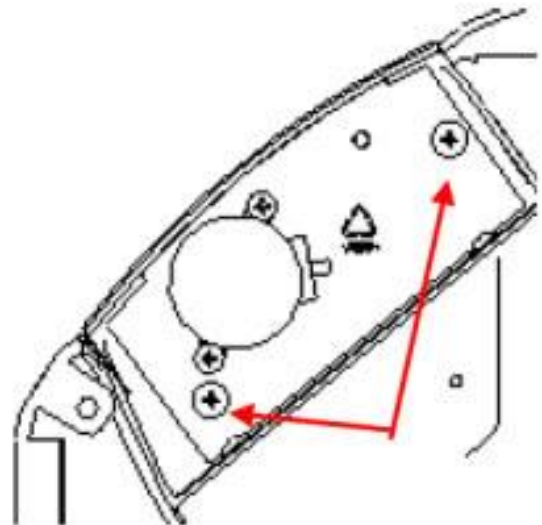
Remove the screws as shown by the arrow in the graph with a screwdriver.

(There are six (6) screws on the left and right of the evaporator and five (5) on the evaporator outlet press plates)



Step 8: Remove the fan plate subassembly

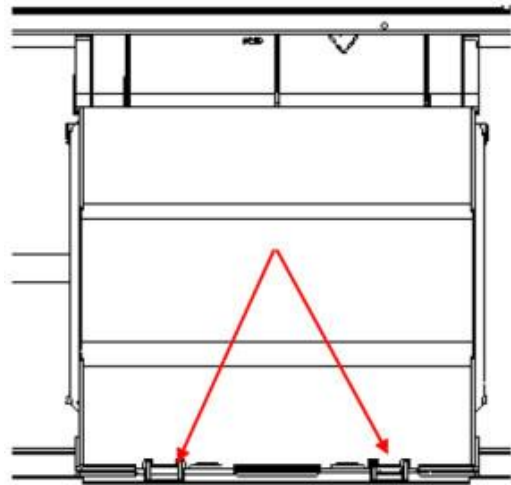
Remove the screws (as shown in diagram) with a screwdriver to remove the plate that holds the air sweeping fans in place.



Step 9: Remove front and back scroll cases

Press the buckle at the joints of the front and back scroll cases and pull upward to remove the front scroll case. Then remove the screws on the back scroll case. Lift the buckle of the back scroll case with hands and remove it.

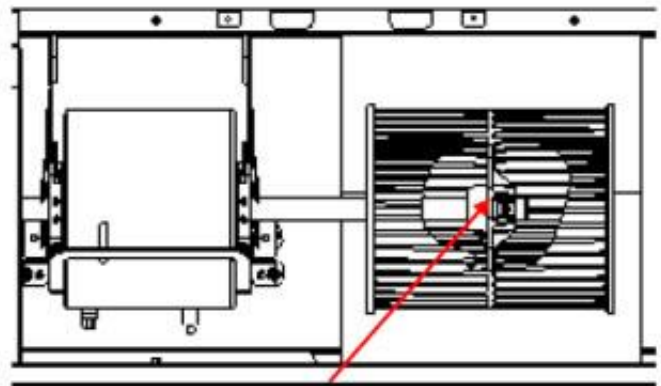
(see diagram to the right; arrows point to two (2) screws on the left and right side of unit)



Step 10: Remove fans

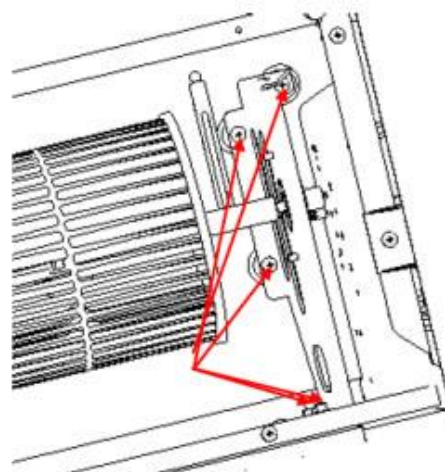
Remove the screws and bolt that hold the fan wheel in place and remove the wheel.

(see diagram for location of bolt)



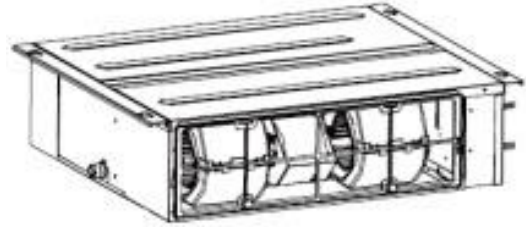
Step 11: Remove the bearing plates

Remove the four (4) screws on the plates that fix the bearings with a screwdriver.



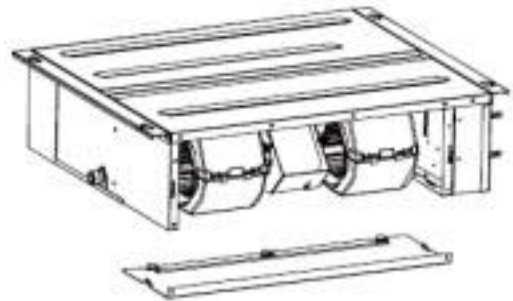
Step 1: Remove electric wire

Turn off the power supply to the system. Open the cover plate of the electric box, then disconnect the electric wires inside the box.



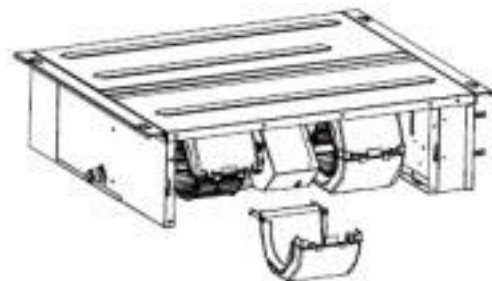
Step 2: Remove plate for the inlet air

Loosen the screws used to fix the cover plate for the inlet air with a screwdriver. Then remove the cover plate.



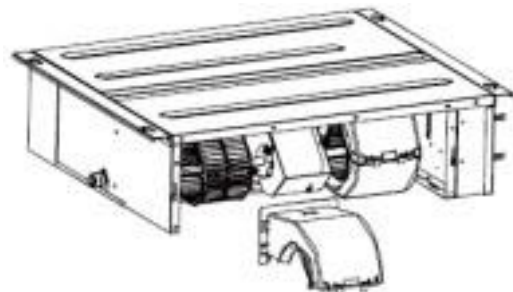
Step 3: Remove the rear fan motor casing

Undo the buckle of the rear and front of the fan motor casing, then remove the rear fan motor casing.



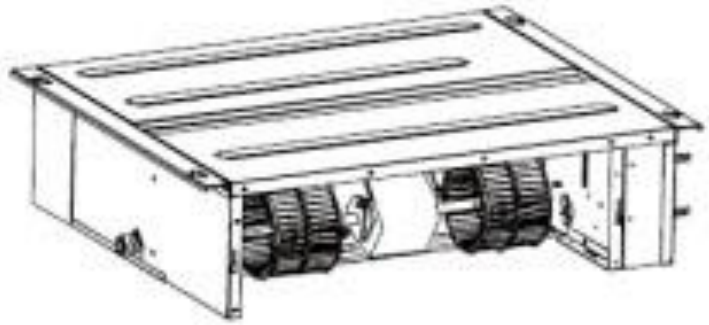
Step 4: Remove front fan motor casing

Loosen the screws used to fix the front fan motor casing and then remove the front fan motor casing.



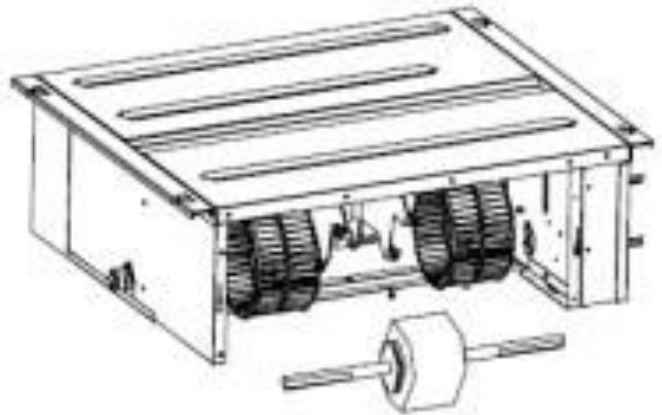
Step 5: Loosen the fan blade and motor

Loosen the screws used to fix the fan blades and then undo the buckle used to fix the motor.



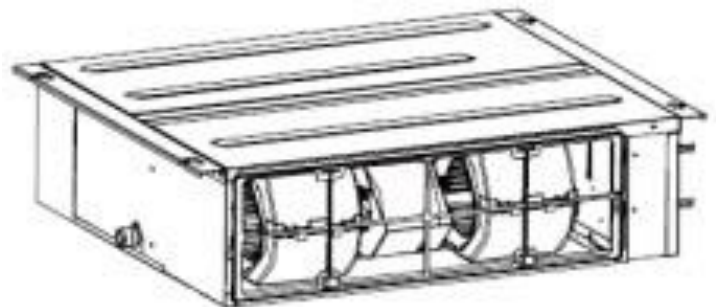
Step 6: Remove the motor

Separate the motor from the motor frame. Remove the fan blade, then take the motor out of the inlet air frame.



Step 7: Reassembly

Reassemble the fan by reversing the steps above. Power on the unit and perform tests to ensure all components are working properly after reassembly.



13. Specifications

13.1 Indoor Units

13.1.1 Wall Mounted B

Model Number		SHE9H4ZIGB	SHE12H4ZIGB	SHE18H4ZIGB	SHE24H4ZIGB
Product Code		243-2007-E	243-2008-E	243-2009-E	243-2010-E
Performance & Electrical	Rated Voltage	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH
	Min. / Max. Operating Voltage	187 / 253 VAC	187 / 253 VAC	187 / 253 VAC	187 / 253 VAC
	Cooling Capacity (BTU/H) (Min. ~ Max.)	9000 (3500~9600)	12000 (3100~13000)	18000 (5970~22350)	21400 (9600~25000)
	Heating Capacity (BTU/H) (Min. ~ Max.)	9800 (2200~11000)	13000 (2400~14000)	19800 (4100~22000)	23000 (4300~26000)
	Indoor Air Circulation (CFM) (Turbo / H / M / L)	306/ 277 /253 /218	335/ 277/ 253 /218	500/ 459/ 383/ 324	589/ 471/ 412/ 353
	Dehumidifying Volume (pts/h)	1.69	2.96	3.8	5.28
FAN Motor	Model	FN20X-PG	FN20X-PG	FN20W-PG	FN60B-ZL
	Fan Motor Speed (RPM)-Cooling Fan Motor Speed (RPM)-Heating (Turbo / H / M / L)	1260/1100/950/750 1320/1200/1100/950	1330/1100/950/750 1350/1170/1050/950	1500/1200/1050/900 1500/1250/1150/1050	1500/1200/1050/900 1450/1150/1020/950
	Output of Fan Motor (W)	20	20	20	60
	Fan Motor Capacitor (ufd)	1	1	1.5	N / A
	Fan Motor RLA (A)	0.2	0.2	0.32	0.24
	Fan Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
	Diameter-Length (in)	3 5/8 – 25 2/5	3 5/8 – 25 2/5	3 6/7 – 28	3 6/7 – 30 1/8
Evaporator	Evaporator	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube
	Pipe Diameter (in)	0.276	0.276	0.276	0.276
	Row-Fin Gap (in)	2-0.06	2-0.06	2-0.06	2-0.06
	Coil length(L) x height(H) x coil width(L) (in)	27.2 x 10.5 x 1	27.2 x 10.5 x 1	28.1 x 12 x 1	30 1/8 x 13 1/2 x 1
Design Data	Swing Motor Model / Output (W) (for horizontal louver)	MP24AA / 2	MP24AA / 2	MP28VB / 2.5	MP35XX / 3
	Fuse(A)	3.15	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550	550
	Low Pressure (PSI)	240	240	240	240
	Auto Restart	Yes	Yes	Yes	Yes
	*Remote	Yes	Yes	Yes	Yes
	Wall Control (optional)	Yes	Yes	Yes	Yes
	Sound Pressure Level dB(A) (Turbo / H / M / L)	42 / 38 / 35 / 32	44 / 39 / 36 / 33	49 / 44 / 40 / 35	53 / 45 / 41 / 37
	Sound Power Level dB(A) (Turbo / H / M / L)	52 / 48 / 45 / 42	54 / 49 / 46 / 43	59 / 54 / 50 / 45	63 / 55 / 51 / 47
	Flare Liquid line	1/4"	1/4"	1/4"	1/4"
	Flare Suction line	3/8"	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	33.3 / 7.1 / 10.8	33.3 / 7.1 / 10.8	37 / 7.9 / 11.7	39.6 / 8.6 / 12.4
	Dimension of Package (W / D / H) (approx in)	36.1 / 10.2 / 14.6	36.1 / 10.2 / 14.6	39.9 / 15.6 / 11.3	42.4 / 15.7 / 12.9
	Net / Gross Weight (lb)	22 / 27.6	22 / 27.6	28.7 / 35.3	29.8 / 37.5

13.1.2 Console

Model Number		SMZC9H4ZIGX	SMZC12H4ZIGX	SMZC18H4ZIGX
Product Code		243-6001-E	243-6002-E	243-6003-E
Performance & Electrical	Rated Voltage	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH
	Control	Remote	Remote	Remote
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H) (Min. ~ Max.)	9000 (3100~9600)	12000 (3100~13000)	18000 (6210~22000)
	Heating Capacity (BTU/H) (Min. ~ Max.)	9500 (2200~11000)	13000 (2400~14000)	19800 (4100~22000)
	Wire Size / No. of Conductors	14 AWG / 4C (Recommended)	14 AWG / 4C (Recommended)	14 AWG / 4C (Recommended)
	Indoor Air Circulation (CFM) (Turbo / H / MH / M / ML / L / Quiet)	383/ 330/ 312/ 282/ 253/ 218/ 188	441/ 383/ 353/ 324/ 294/ 265/ 206	494/ 471/ 424/ 383/ 341/ 312/ 241
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8
FAN Motor	Fan Motor Speed (RPM)-Cooling	650/560/530/480/430/370/320	750/650/600/550/500/450/350	840/800/720/650/580/530/410
	Fan Motor Speed (RPM)-Heating (Turbo / H / MH / M / ML / L / Quiet)	650/560/530/480/430/370/320	750/650/600/550/500/450/350	900/840/760/690/620/570/450
	Output of Fan Motor (W)	30	30	30
	Fan Motor Capacitor (ufd)	N/A	N/A	N/A
	Fan Motor RLA (A)	0.15	0.15	0.15
	Fan Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan
Evaporator	Diameter-Length (in)	3 1/7 – 14 4/7	3 1/7 – 14 4/7	3 1/7 – 14 4/7
	Evaporator	Aluminum fin - copper tube	Aluminum fin - copper tube	Aluminum fin - copper tube
	Pipe Diameter (in)	1/4	1/4	1/4
	Row-Fin Gap (in)	2-0.05	2-0.05	2-0.05
Design Data	Coil length(L) x height(H) x coil width(W) (in)	20.1 x 15.6 x 0.9	20.1 x 15.6 x 0.9	20.1 x 15.6 x 0.9
	Swing Motor Model (for horizontal louver)	MP24EB	MP24EB	MP24EB
	Fuse(A)	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Auto Restart	Yes	Yes	Yes
	Sound Pressure Level dB(A) (Turbo / H / MH / M / ML / L / Quiet)	40 / 38 / 36 / 33 / 30 / 26 / 25	43 / 40 / 38 / 37 / 35 / 32 / 27	48 / 46 / 44 / 41 / 37 / 35 / 33
	Sound Power Level dB(A) (Turbo / H / MH / M / ML / L / Quiet)	50 / 48 / 46 / 43 / 40 / 36 / 35	53 / 50 / 48 / 47 / 45 / 42 / 37	58 / 56 / 54 / 51 / 47 / 45 / 43
	Flare Liquid line	1/4"	1/4"	1/4"
	Flare Suction line	3/8"	3/8"	1/2"
	Drain Connection	1 1/9	1 1/9	1 1/9
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	27.6 / 8.5 / 23.6	27.6 / 8.5 / 23.6	27.6 / 8.5 / 23.6
	Dimension of Package (W / D / H) (approx in)	31 / 11.1 / 27.4	31 / 11.1 / 27.4	31 / 11.1 / 27.4
	Net / Gross Weight (lb)	33.1 / 39.7	33.1 / 39.7	33.1 / 39.7

13.1.3 Cassette

Model Of Indoor Unit		SMZCA12H4ZIGX	SMZCA18H4ZIGX	SMZCA24H4ZIGX
Product Code		243-6004-E	243-6005-E	243-6006-E
Performance & Electrical	Rated Voltage	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH
	Control	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	12000	14400	22800
	Heating Capacity (BTU/H)	13000	16000	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (High Fan Speed)	353	353	694
	Dehumidifying Volume(pts/h)	2.96	3.8	5.28
FAN Motor	Fan Motor Speed (RPM) (SH / H / M / L / SL)	845 / 700 / 530 / 600 / 515	845 / 700 / 530 / 600 / 515	620 / 570 / 520 / 280
	Output of Fan Motor (W)	11	11	50
	Fan Motor Capacitor (ufd)	1	1	3
	Fan Motor RLA (A)	0.23	0.23	0.43
	Fan Type	Centrifugal	Centrifugal	Centrifugal
	Diameter-Height (in)	11.14 – 5.83	11.14 – 5.83	17.72 – 4.41
Evaporator	Evaporator	Aluminum fin - Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube
	Pipe Diameter (in)	0.375	0.375	0.28
	Row-Fin Gap (in)	2-0.06	2-0.06	3-0.05
	Coil length(L) x height(H) x coil width(W) (in)	37.64 x 8.0 x 1.5	37.64 x 8.0 x 1.5	80.35 x 6.75 x 1.18
Design Data	Swing Motor Model (for horizontal louver)	MP35EA	MP35EA	MP35EA
	Fuse(A)	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Auto Restart	Yes	Yes	Yes
	Condensate Pump	Yes	Yes	Yes
	Condensate Pump lift (ft)	2.3	2.3	3.6
	Anti-Mildew Protection	Yes	Yes	Yes
	Sound Pressure Level dB(A) (High Fan Speed)	46	46	39
	Sound Power Level dB(A) (High Fan Speed)	56	56	49
	Flare Liquid line	1/4"	1/4"	3/8"
	Flare Suction line	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	22.4 / 22.4 / 9.1	22.4 / 22.4 / 9.1	33.1 / 33.1 / 9.45
	Dimension of Package (W / D / H) (approx in)	33.5 / 28.8 / 12.8	33.5 / 28.8 / 12.8	37.9 / 37.9 / 12.8
	Net / Gross Weight (lb)	39.7 / 50.7	39.7 / 50.7	61.7 / 77.2
	Dimensions of Panel (W / D / H) (approx in)	25.6 / 25.6 / 2.0	25.6 / 25.6 / 2.0	37.4 / 37.4 / 2.36
	Dimension of Panel Package (W / D / H) (approx in)	28.9 / 26.5 / 4.6	28.9 / 26.5 / 4.6	41.1 / 40.5 / 5.12
	Net / Gross Weight of Panel (lb)	5.5 / 8.1	5.5 / 8.1	14 / 22

Model Of Indoor Unit		SMZCA12H4ZIGC	SMZCA18H4ZIGC	SMZCA24H4ZIGC
Product Code		243-6018-E	243-6019-E	243-6020-E
Manufacturer Code		CN510N0190	CN510N0210	CN510N0200
Performance & Electrical	Rated Voltage	208/230 VAC / 1 PH / 60 Hz		
	Cooling Capacity (BTU/H)	12000	14400	228000
	Heating Capacity (BTU/H)	13000	16000	27400
	Indoor Air Circulation (CFM) (Turbo / H / M / L)	383 / 330 / 306 / 265	417 / 394 / 347 / 265	753 / 718 / 647 / 518
	Dehumidifying Volume(pts/h)	2.96	3.8	5.28
	Temperature Set Rating	61 °F to 86 °F		
FAN Motor	Fan Motor Speed (RPM) - cooling (Turbo / H / M / L)	800 / 700 / 650 / 560	900 / 850 / 750 / 580	650 / 620 / 560 / 450
	Output of Fan Motor (W)	45	45	45
	Fan Motor RLA (A)	0.5	0.5	0.5
	Fan Type	Centrifugal		
	Diameter-Height (in)	12.68 – 5.83	12.68 – 5.83	17.72 –5.59
Evaporator	Evaporator	Aluminum fin - copper tube		
	Pipe Diameter (in)	0.28	0.28	0.28
	Row-Row Pitch (in)	2-0.5	2-0.5	2-0.5
	Coil Length x Height x Width (in)	52.0 x 7.5 x 1.0	52.0 x 7.5 x 1.0	77.4 x 6.8 x 1.0
Design Data	Fuse(A)	5	5	5
	High Pressure (PSI)	550	550	550
	Low Pressure (PSI)	240	240	240
	Condensate Pump Lift (ft)	3.94	3.94	3.94
	Swing Motor (On Grille)	Yes	Yes	Yes
	Auto Restart	Yes	Yes	Yes
	Remote	Yes	Yes	Yes
	Wall Control (optional)	Yes	Yes	Yes
	Anti-Mildew Protection	Yes	Yes	Yes
	Sound Pressure Level dB(A) (Turbo / H / M / L)	44 / 41 / 38 / 34	47 / 51 / 41 / 35	47 / 45 / 41 / 36
	Sound Power Level dB(A) (Turbo / H / M / L)	55 / 52 / 49 / 45	58 / 56 / 52 / 46	58 / 56 / 52 / 47
	Flare Liquid line	1/4"	1/4"	3/8"
	Flare Suction line	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	23.5 / 23.5 / 9.4	23.5 / 23.5 / 9.4	33.1 / 33.1 / 9.45
	Dimension of Package (W / D / H) (approx in)	30.6 / 29.1 / 11.8	30.6 / 29.1 / 11.8	37.9 / 37.9 / 12.8
	Net / Gross Weight (lb)	44.1 / 52.9	44.1 / 52.9	57.3 / 70.5
	Dimensions of Panel (W / D / H) (approx in)	26.4 / 26.4 / 2.0	26.4 / 26.4 / 2.0	37.4 / 37.4 / 2.36
	Dimension of Panel Package (W / D / H) (approx in)	30.0 / 30.0 / 4.1	30.0 / 30.0 / 4.1	40.7 / 40.9 / 5.2
	Net / Gross Weight of Panel (lb)	7.7 / 11.0	7.7 / 11.0	15.4 / 25.3

13.1.4 Floor/Ceiling

Model Of Indoor Unit		SMZFC9H4ZIGX	SMZFC12H4ZIGX	SMZFC18H4ZIGX	SMZFC24H4ZIGX
Product Code		243-6007-E	243-6008-E	243-6009-E	243-6010-E
Performance & Electrical	Rated Voltage	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH
	Control	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)	Remote (standard) or Wall (optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	8500	11900	17000	22800
	Heating Capacity (BTU/H)	9500	13100	18700	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (H / M / L)	383 / 324 / 265	383 / 324 / 265	559 / 412 / 294	736 / 530 / 412
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8	5.28
FAN Motor	Fan Motor Speed (RPM) (H / M / L)	690 / 610 / 480	690 / 610 / 480	985/ 800 / 680	985/ 800 / 680
	Output of Fan Motor (W)	15	15	20	40
	Fan Motor Capacitor (ufd)	1	1	2.5	2
	Fan Motor RLA (A)	0.28	0.28	0.56	0.63
	Fan Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Diameter-Height (in)	5.49 – 4.13	5.49 – 4.13	5.49 – 4.13	5.49 – 4.13
Evaporator	Evaporator	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube
	Pipe Diameter (in)	0.28	0.28	0.28	0.28
	Row-Fin Gap (in)	2-0.06	2-0.06	2-0.06	2-0.06
	Coil length(L) x height(H) x coil width(W) (in)	31.7 x 12.0 x 1.0	31.7 x 12.0 x 1.0	36.2 x 12.0 x 2.0	36.2 x 12.0 x 2.0
Design Data	Swing Motor Mode (for horizontal louver)	MP35CG	MP35CG	MP35CG	MP35CG
	Fuse(A)	3.15	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550	550
	Low Pressure (PSI)	240	240	240	240
	Auto Restart	Yes	Yes	Yes	Yes
	Anti-Mildew Protection	Yes	Yes	Yes	Yes
	Sound Pressure Level dB(A) (H / M / L)	40 / 38 / 36	40 / 38 / 36	45 / 42 / 40	48 / 46 / 44
	Sound Power Level dB(A) (H / M / L)	50 / 48 / 46	50 / 48 / 46	55 / 52 / 50	58 / 56 / 54
	Flare Liquid line	1/4"	1/4"	1/4"	3/8"
	Flare Suction line	3/8"	3/8"	1/2"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9	48.0 / 27.6 / 8.9
	Dimension of Package (W / D / H) (approx in)	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4	52.9 / 32.4 / 12.4
	Net / Gross Weight (lb)	88.2 / 110.2	88.2 / 110.2	88.2 / 110.2	99.2 / 119.1

13.1.5 Ducted

Model Of Indoor Unit		SMZD9H4ZIGX	SMZD12H4ZIGX	SMZD18H4ZIGX	SMZD21H4ZIGX	SMZD24H4ZIGX
Product Code		243-6011-E	243-6012-E	243-6013-E	243-6014-E	243-6015-E
Performance & Electrical	Rated Voltage	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH	208-230V AC / 1 PH
	Control	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)	Wall (standard) or Remote(optional)
	Setting Range	61°F to 86°F	61°F to 86°F	61°F to 86°F	61°F to 86°F	61°F to 86°F
	Cooling Capacity (BTU/H)	8500	11900	15300	20400	23800
	Heating Capacity (BTU/H)	9500	13100	18700	22600	27400
	Wire Size / No. of Conductors	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)	4C- 14 AWG (Recommended)
	Indoor Air Circulation (CFM) (High Fan Speed)	265	294	412	589	589
	Dehumidifying Volume(pts/h)	1.69	2.96	3.8	4.23	5.28
FAN Motor	Fan Model	FG30A	FG40A	FG60A	FG20E	FG20E
	Fan Motor Speed (SH / H / M / L)	1230 / 970 / 760 / 640	1130 / 960 / 830 / 700	1000 / 920 / 780 / 720	1160 / 985 / 800 / 680	1160 / 985 / 800 / 680
	Output of Fan Motor (W)	40	49	75	22.5	22.5
	Fan Motor Capacitor (ufd)	1.5	3	3	3	3
	Fan Motor RLA (A)	0.35	0.35	0.43	0.54	0.54
	Fan Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
	Fan Quantity	2	2	3	4	4
	Diameter-Length (in)	5.49 – 5.30	5.49 – 5.30	5.49 – 5.30	5.49 – 5.30	5.49 – 5.30
Evaporator	Evaporator	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube	Aluminum fin – Inner grooved copper tube
	Pipe Diameter (in)	0.28	0.28	0.28	0.28	0.28
	Row-Fin Gap (in)	2-0.06	3-0.06	3-0.06	3-0.06	3-0.06
	Coil length(L) x height(H) x coil width(W) (in)	20.7 x 8.3 x 1.0	20.7 x 8.3 x 1.0	28.5 x 8.3 x 1.5	36.4 x 8.3 x 1.5	36.4 x 8.3 x 1.5
Design Data	Fuse(A)	3.15	3.15	3.15	3.15	3.15
	High Pressure (PSI)	550	550	550	550	550
	Low Pressure (PSI)	240	240	240	240	240
	Auto Restart	Yes	Yes	Yes	Yes	Yes
	Condensate Pump	Yes	Yes	Yes	Yes	Yes
	Condensate Pump lift (ft)	3.6	3.6	3.6	3.6	3.6
	Sound Pressure Level dB(A) (H / L)	37 / 31	39 / 32	41 / 33	42 / 34	42 / 34
	Sound Power Level dB(A) (H / L)	47 / 41	49 / 42	51 / 43	52 / 44	52 / 44
	Flare Liquid line	1/4"	1/4"	1/4"	3/8"	3/8 "
	Flare Suction line	3/8"	3/8"	1/2"	5/8"	5/8"
Dimensions & Weight	Dimensions of Unit (W / D / H) (approx in)	27.6 / 24.2 / 7.9	27.6 / 24.2 / 7.9	35.4 / 24.2 / 7.9	43.3 / 24.2 / 7.9	43.3 / 24.2 / 7.9
	Dimension of Package (W / D / H) (approx in)	35.2 / 29.3 / 12.0	35.2 / 29.3 / 12.0	44.2 / 29.3 / 12.0	52.1 / 29.3 / 12.0	52.1 / 29.3 / 12.0
	Net / Gross Weight (lb)	48.51 / 59.54	50.72 / 63.95	59.54 / 79.38	68.36 / 90.41	68.36 / 90.41

13.2 Outdoor Units

13.2.1 Dual Port

Model Number		243-1008-C SMZ18H422Z0GB
Rated Voltage & Frequency and Phase		208-230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		25
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 75
Refrigerant (R410A) (oz.)		56.45
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.66 / 12.50
Rated Power Input (W)		2,800
Rated Current (A) / Starting Current (A)		12.42 / 5
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		63
Insulation / Moisture Protection		I / IPX4
Cooling	Rated Capacity (Btu/h)	18,000
	Capacity Invert Range (Btu/h)	6,998 - 21,001
	Cooling Power Input (W)	1,440
	Cooling Current Input (A)	6.26
	SEER	22
Heating	Rated Capacity (Btu/h)	19,000
	Capacity Invert Range (Btu/h)	7,000 - 22,600
	Heating Power Input (W)	1,520
	Heating Current Input (A)	6.61
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / LW60M-ZL
	Motor Insulation Class / Safe Class	E / IPX4
	Output (W)	60
	Fan Speed (RPM)	630
Outdoor Fan	Fan Blade Diameter / Height (in)	20.47 / 2.28
	Air Flow Volume of Outdoor Unit (CFM)	1,883
Compressor	Model	QXA-B141zF030A
	TYPE / Brand	Inverter Rotary / Gree
	RLA	10.82
	Input (W)	1,440
	Crankcase Heater Input (W)	25 ± 7%
	Oil Type / Charge Volume (oz.)	RB68EP / 13.19
	Overload Protector	1NT11L-6233
Condenser	Number of Rows	2
	Fin pitch (in)	0.055
	Fin Type	Aluminum, Louvered
	Tube Outside Dia.(in)	0.276
	Coil Length x Height x Width (in)	33.50 x 25.98 x 1.50
	Number of circuits	2
	Defrosting Method	Automatic Defrosting
	Chassis Electrical Heater Power Input (W)	96
Dimensions & Weight	Unit Dimensions (W x H x D) (in)	37.60 x 27.56 x 15.59
	Packing Dimensions (W x H x D) (in)	40.51 x 29.53 x 18.03
	Net / Gross Weight (lb)	114.64 / 124.56
Connection	Flare Liquid line	1/4"
	Flare Suction line	3/8"
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	2
	Highest Pressure (psi)	638
	Lowest Pressure (psi)	377
	Design Length (ft)	32.8 (total) [*1]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	32.8
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	32.8
	Max Line Set Length (ft)	32.8 (for the farthest indoor unit)
	Max Line Set Length (ft)	65.6 (total)
	Charge over Design Length [*1] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 14 AWG

*1. When the total length of liquid line is over 32.8 ft, the additional refrigerant charge is required.

13.2.2 Triple Port

Model Number		243-1009-C SMZ24H421Z0GB
Rated Voltage & Frequency and Phase		208-230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		30
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 75
Refrigerant (R410A) (oz.)		77.60
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.72 / 12.70
Rated Power Input (W)		3,600
Rated Current (A) / Starting Current (A)		15.97 / 5
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		69
Insulation / Moisture Protection		I / IPX4
Cooling	Rated Capacity (Btu/h)	24,000
	Capacity Invert Range (Btu/h)	7,500 - 33,000
	Cooling Power Input (W)	1,920
	Cooling Current Input (A)	8.35
	SEER	21
Heating	Rated Capacity (Btu/h)	26,000
	Capacity Invert Range (Btu/h)	7,500 – 27,978
	Heating Power Input (W)	2,050
	Heating Current Input (A)	8.9
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / LW92K-ZL
	Motor Insulation Class / Safe Class	B or E / IPX4
	Output (W)	90
	Fan Speed (RPM)	800
Outdoor Fan	Fan Blade Diameter / Height (in)	21.65 / 2.60
	Air Flow Volume of Outdoor Unit (CFM)	2,354
Compressor	Model	QXAS-D23zX090B
	TYPE / Brand	Inverter Rotary / Gree
	RLA	15.82
	Input (W)	2,550
	Crankcase Heater Input (W)	40 ± 7%
	Oil Type / Charge Volume (oz.)	RB68EP / 32.12
	Overload Protector	1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.276
	Coil Length x Height x Width (in)	38.67 x 29.45 x 1.50
	Number of circuits	3
	Defrosting Method	Automatic Defrosting
Dimensions & Weight	Chassis Electrical Heater Power Input (W)	160
	Unit Dimensions (W x H x D) (in)	38.58 x 31.10 x 16.81
	Packing Dimensions (W x H x D) (in)	42.64 x 33.66 x 19.21
Connection	Net / Gross Weight (lb)	153.2 / 164.2
	Flare Liquid line	1/4"
	Flare Suction line	3/8" [*1]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	3
	Highest Pressure (psi) / Lowest Pressure (psi)	638 / 377
	Design Length (ft)	98.4 (total) [*2]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	32.8
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	32.8
	Max Line Set Length (ft)	65.6 (for the farthest indoor unit)
	Max Line Set Length (ft)	196.85 (total)
	Charge over Design Length [*2] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 12 AWG

*1. 18,000 BTU indoor units use a 1/2" to 3/8" adaptor joint that is included with the unit.

*2. When the total length of liquid line is over 98.4 ft, the additional refrigerant charge is required.

NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

13.2.3 Quad Port

Model Number		243-1010-C SMZ30H421Z0GB
Rated Voltage & Frequency and Phase		208-230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		30
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 86
Refrigerant (R410A) (oz.)		98.76
EER (W/W) / (Btu/h/W)		3.66 / 12.50
COP (W/W) / (Btu/h/W)		3.74 / 12.76
Rated Power Input (W)		3,800
Rated Current (A)		16.86
Low Ambient Cooling Function		Yes
Sound Power Level dB(A)		69
Insulation / Moisture Protection		I / IPX4
Overload Protection		Yes
Cooling	Rated Capacity (Btu/h)	28,400
	Capacity Invert Range (Btu/h)	8,189 - 33,438
	Cooling Power Input (W)	2,270
	Cooling Current Input (A)	9.87
	SEER	21
Heating	Rated Capacity (Btu/h)	30,000
	Capacity Invert Range (Btu/h)	8,189 - 32,414
	Heating Power Input (W)	2,350
	Heating Current Input (A)	10.22
	HSPF	10.5
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / SWZ150A
	Motor Insulation Class / Safe Class	E / IPX4
	Output (W) / Input (W)	100 / 150
	Full Load Amp. (FLA)	0.68
	Fan Speed (RPM)	850
Outdoor Fan	Fan Blade Diameter / Height (in)	21.65 / 4.72
	Air Flow Volume of Outdoor Unit (CFM)	2,354
Compressor	Model	QXAS-D32zX090A
	TYPE / Brand	Inverter Rotary / Gree
	RLA	13.9
	Input (W)	4,150
	Crankcase Heater Input (W)	40
	Oil Type / Charge Volume (oz.)	FV50S / 33.81
	Overload Protector	External 1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.313
	Coil Length x Height x Width (in)	36.10 x 29.45 x 1.50
	Number of circuits	4
	Defrosting Method	Automatic Defrosting
Dimensions & Weight	Chassis Electrical Heater Power Input (W)	96
	Unit Dimensions (W x H x D) (in)	38.58 x 31.10 x 16.81
	Packing Dimensions (W x H x D) (in)	42.64 x 33.66 x 19.21
	Net / Gross Weight (lb)	154.3 / 169.8
Connection	Flare Liquid line	1/4"
	Flare Suction line	3/8" [*1]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	4
	Highest Pressure (psi) / Lowest Pressure (psi)	624 / 377
	High Pressure Overload Protector (psi)	595
	Design Length (ft)	131.2 (total) [*2]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	49.2
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	24.6
	Max Line Set Length (ft)	82.0 (for the farthest indoor unit)
	Max Line Set Length (ft)	229.7 (total)
	Charge over Design Length [*2] (oz. / ft)	0.215
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 12 AWG

*1. 18,000 BTU indoor units use a 1/2" to 3/8" adaptor joint that is included with the unit.
*2. When the total length of liquid line is over 131.2 ft, the additional refrigerant charge is required.
NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

13.2.4 Five Port

Model Number		243-1011-C SMZ42H421Z0GB
Rated Voltage & Frequency and Phase		208-230V / 60Hz / 1PH
Min./ Max. Operating Voltage		187 / 253 VAC
Circuit Breaker Size (A)		40
Working Temperature Range (°F)		Cooling: -0.4 to 118; Heating: -4 to 86
Refrigerant (R410A) (oz.)		128.75
EER (W/W) / (Btu/h/W)		3.06 / 10.43
COP (W/W) / (Btu/h/W)		3.61 / 12.33
Rated Power Input (W)		4,000
Low Ambient Cooling Function		Yes
Sound Power Level dB(A) (Max.)		71
Insulation / Moisture Protection		I / IP24
Overload Protection		Yes
Cooling	Rated Capacity (Btu/h)	39,000
	Capacity Invert Range (Btu/h)	8,871 - 40,944
	Cooling Power Input (W)	3,740
	Cooling Current Input (A)	16.5
	SEER	21
Heating	Rated Capacity (Btu/h)	45,000
	Capacity Invert Range (Btu/h)	8,871 - 46,062
	Heating Power Input (W)	3,650
	Heating Current Input (A)	16
	HSPF	10.2
Fan Motor	Fan Type	Axial-flow
	Fan Motor Type / Model	DC Motor / SWZ150B
	Motor Insulation Class / Safe Class	B / IP44
	Output (W) / Input (W)	170 / 240
	Full Load Amp. (FLA)	0.82
Outdoor Fan	Fan Speed (RPM)	880
	Fan Blade Diameter / Height (in)	22.44 / 5.98
	Air Flow Volume of Outdoor Unit (CFM)	4,531
Compressor	Model	QXAS-D32zX090A
	TYPE / Brand	Inverter Rotary / LANDA
	RLA	17.8
	Input (W)	4150
	Crankcase Heater Input (W)	40
	Oil Type / Charge Volume (oz.)	FV50S / 33.81
	Overload Protector	External 1NT11L-6233
Condenser	Fin Type	Aluminum, Louvered
	Number of Rows / Fin Pitch (in) / Tube Outside Dia.(in)	2 / 0.055 / 0.313
	Coil Length x Height x Width (in)	41.57 x 30.55 x 11.26
	Number of circuits	5
	Defrosting Method	Automatic Defrosting
	Chassis Electrical Heater Power Input (W)	96
Dimensions & Weight	Unit Dimensions (W x H x D) (in)	42.80 x 43.43 x 17.32
	Packing Dimensions (W x H x D) (in)	45.59 x 48.62 x 19.41
	Net / Gross Weight (lb)	198.4 / 216.1
Connection	Flare Liquid line	1/4" [*1]
	Flare Suction line	3/8"-9K / 12K BTU; [*2] [*3]
	Service Port Fitting	1/2" - 20 UNF
	Max. drive IDU Number	5
	Highest Pressure (psi) / Lowest Pressure (psi)	624 / 377
	High Pressure Overload Protector (psi)	595
	Design Length (ft)	131.2 (total) [*4]
	Max Line Set Vertical Height (between outdoor and indoor unit) (ft)	49.2
	Max Line Set Vertical Height (between indoor and indoor unit) (ft)	24.6
	Max Line Set Length (ft)	82.0 (for the farthest indoor unit)
	Max Line Set Length (ft)	246.1 (total)
	Charge over Design Length [*4] (oz. / ft)	0.215 (over 131.2')
	Wiring (Indoor to Outdoor)	4C- 16 AWG
	Wiring (Outdoor unit to Power Disconnect)	3C- 8 AWG

*1. Using a 3/8" to 1/4" adaptor joint when connect this port to a 21K or 24K other type indoor units, like Cassette, Floor/Ceiling or Ducted.
*2. Using a 1/2" to 3/8" adaptor joint when connect this port to a 12K, 18K indoor unit.
*3. Using a 5/8" to 3/8" adaptor joint when connect this port to a 21K or 24K indoor unit.
*4. When the total length of liquid line is over 131.2 ft, the additional refrigerant charge is required.
*5. When the outdoor unit is above the indoor unit, the maximum vertical height should not exceed 49.2 ft.
NOTE: Outdoor unit must connect to a minimum of TWO indoor units.

14. Appendix

14.1 Appendix I: Resistance of Ambient Temperature Sensor (15K) for Indoor/Outdoor Units (F1,F3)

<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>
-2.2	138.1	68.0	18.75	138.2	3.848	208.4	1.071
-0.4	128.6	69.8	17.93	140.0	3.711	210.2	1.039
1.4	121.6	71.6	17.14	141.8	3.579	212.0	1.009
3.2	115.0	73.4	16.39	143.6	3.454	213.8	0.980
5.0	108.7	75.2	15.68	145.4	3.333	215.6	0.952
6.8	102.9	77.0	15.00	147.2	3.217	217.4	0.925
8.6	97.40	78.8	14.36	149.0	3.105	219.2	0.898
10.4	92.22	80.6	13.74	150.8	2.998	221.0	0.873
12.2	87.35	82.4	13.16	152.6	2.896	222.8	0.848
14.0	82.75	84.2	12.60	154.4	2.797	224.6	0.825
15.8	78.43	86.0	12.07	156.2	2.702	226.4	0.802
17.6	74.35	87.8	11.57	158.0	2.611	228.2	0.779
19.4	79.50	89.6	11.09	159.8	2.523	230.0	0.758
21.2	66.88	91.4	10.63	161.6	2.439	231.8	0.737
23.0	63.46	93.2	10.20	163.4	2.358	233.6	0.717
24.8	60.23	95.0	9.779	165.2	2.280	235.4	0.697
26.6	57.18	96.8	9.382	167.0	2.206	237.2	0.678
28.4	54.31	98.6	9.003	168.8	2.133	239.0	0.660
30.2	51.59	100.4	8.642	170.6	2.064	240.8	0.642
32.0	49.02	102.2	8.297	172.4	1.997	242.6	0.625
33.8	46.60	104.0	7.967	174.2	1.933	244.4	0.608
35.6	44.31	105.8	7.653	176.0	1.871	246.2	0.592
37.4	42.14	107.6	7.352	177.8	1.811	248.0	0.577
39.2	40.09	109.4	7.065	179.6	1.754	249.8	0.561
41.0	38.15	111.2	6.791	181.4	1.699	251.6	0.547
42.8	36.32	113.0	6.529	183.2	1.645	253.4	0.532
44.6	34.58	114.8	6.278	185.0	1.594	255.2	0.519
46.4	32.94	116.6	6.038	186.8	1.544	257.0	0.505
48.2	31.38	118.4	5.809	188.6	1.497	258.8	0.492
50.0	29.90	120.2	5.589	190.4	1.451	260.6	0.480
51.8	28.51	122.0	5.379	192.2	1.408	262.4	0.467
53.6	27.18	123.8	5.197	194.0	1.363	264.2	0.456
55.4	25.92	125.6	4.986	195.8	1.322	266.0	0.444
57.2	24.73	127.4	4.802	197.6	1.282	267.8	0.433
59.0	23.60	129.2	4.625	199.4	1.244	269.6	0.422
60.8	22.53	131.0	4.456	201.2	1.207	271.4	0.412
62.6	21.51	132.8	4.294	203.0	1.171	273.2	0.401
64.4	20.54	134.6	4.139	204.8	1.136	275.0	0.391
66.2	19.63	136.4	3.990	206.6	1.103	276.8	0.382

14.2 Appendix II: Resistance of Tube Temperature Sensor (20K) for Indoor/Outdoor Units (F2,F4)

<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>
-2.2	181.4	68.0	25.01	138.2	5.130	208.4	1.427
-0.4	171.4	69.8	23.90	140.0	4.948	210.2	1.386
1.4	162.1	71.6	22.85	141.8	4.773	212.0	1.346
3.2	153.3	73.4	21.85	143.6	4.605	213.8	1.307
5.0	145.0	75.2	20.90	145.4	4.443	215.6	1.269
6.8	137.2	77.0	20.00	147.2	4.289	217.4	1.233
8.6	129.9	78.8	19.14	149.0	4.140	219.2	1.198
10.4	123.0	80.6	18.13	150.8	3.998	221.0	1.164
12.2	116.5	82.4	17.55	152.6	3.861	222.8	1.131
14.0	110.3	84.2	16.8.0	154.4	3.729	224.6	1.099
15.8	104.6	86.0	16.10	156.2	3.603	226.4	1.069
17.6	99.13	87.8	15.43	158.0	3.481	228.2	1.039
19.4	94.00	89.6	14.79	159.8	3.364	230.0	1.010
21.2	89.17	91.4	14.18	161.6	3.252	231.8	0.983
23.0	84.61	93.2	13.59	163.4	3.144	233.6	0.956
24.8	80.31	95.0	13.04	165.2	3.040	235.4	0.930
26.6	76.24	96.8	12.51	167.0	2.940	237.2	0.904
28.4	72.41	98.6	12.00	168.8	2.844	239.0	0.880
30.2	68.79	100.4	11.52	170.6	2.752	240.8	0.856
32.0	65.37	102.2	11.06	172.4	2.663	242.6	0.833
33.8	62.13	104.0	10.62	174.2	2.577	244.4	0.811
35.6	59.08	105.8	10.20	176.0	2.495	246.2	0.77
37.4	56.19	107.6	9.803	177.8	2.415	248.0	0.769
39.2	53.46	109.4	9.420	179.6	2.339	249.8	0.746
41.0	50.87	111.2	9.054	181.4	2.265	251.6	0.729
42.8	48.42	113.0	8.705	183.2	2.194	253.4	0.71
44.6	46.11	114.8	8.370	1850.	2.125	255.2	0.692
46.4	43.92	116.6	8.051	186.8	2.059	257.0	0.674
48.2	41.84	118.4	7.745	188.6	1.996	258.8	0.658
50.0	39.87	120.2	7.453	190.4	1.934	260.6	0.64
51.8	38.01	122.0	7.173	192.2	1.875	262.4	0.623
53.6	36.24	123.8	6.905	194.0	1.818	264.2	0.607
55.4	34.57	125.6	6.648	195.8	1.736	266.0	0.592
57.2	32.98	127.4	6.403	197.6	1.710	267.8	0.577
59.0	31.47	129.2	6.167	199.4	1.658	269.6	0.563
60.8	30.04	131.0	5.942	201.2	1.609	271.4	0.549
62.6	28.68	132.8	5.726	203.0	1.561	273.2	0.535
64.4	27.39	134.6	5.591	204.8	1.515	275.0	0.521
66.2	26.17	136.4	5.320	206.6	1.470	276.8	0.509

14.3 Appendix III: Resistance of Exhaust Temperature Sensor (50K) for Outdoor Units (F5)

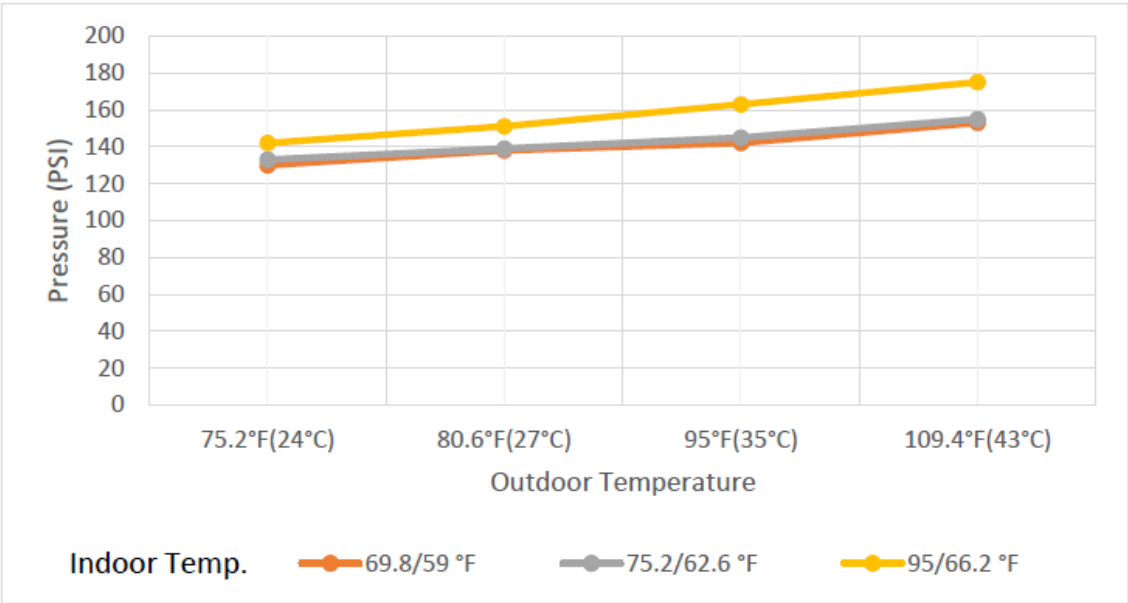
<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>	<u>Temp. (°F)</u>	<u>Resistance (kΩ)</u>
-20.2	853.5	50	98	120.2	18.34	190.4	4.75
-18.4	799.8	51.8	93.42	122	17.65	192.2	4.61
-16.6	750	53.6	89.07	123.8	16.99	194	4.47
-14.8	703.8	55.4	84.95	125.6	16.36	195.8	4.33
-13	660.8	57.2	81.05	127.4	15.75	197.6	4.2
-11.2	620.8	59	77.35	129.2	15.17	199.4	4.08
-9.4	580.6	60.8	73.83	131	14.62	201.2	3.96
-7.6	548.9	62.6	70.5	132.8	14.09	203	3.84
-5.8	516.6	64.4	67.34	134.6	13.58	204.8	3.73
-4	486.5	66.2	64.33	136.4	13.09	206.6	3.62
-2.2	458.3	68	61.48	138.2	12.62	208.4	3.51
-0.4	432	69.8	58.77	140	12.17	210.2	3.41
1.4	407.4	71.6	56.19	141.8	11.74	212	3.32
3.2	384.5	73.4	53.74	143.6	11.32	213.8	3.22
5	362.9	75.2	51.41	145.4	10.93	215.6	3.13
6.8	342.8	77	49.19	147.2	10.54	217.4	3.04
8.6	323.9	78.8	47.08	149	10.18	219.2	2.96
10.4	306.2	80.6	45.07	150.8	9.83	221	2.87
12.2	289.6	82.4	43.16	152.6	9.49	222.8	2.79
14	274	84.2	41.34	154.4	9.17	224.6	2.72
15.8	259.3	86	39.61	156.2	8.85	226.4	2.64
17.6	245.6	87.8	37.96	158	8.56	228.2	2.57
19.4	232.6	89.6	36.38	159.8	8.27	230	2.5
21.2	220.5	91.4	34.88	161.6	7.99	231.8	2.43
23	209	93.2	33.45	163.4	7.73	233.6	2.37
24.8	198.3	95	32.09	165.2	7.47	235.4	2.3
26.6	189.1	96.8	30.79	167	7.22	237.2	2.24
28.4	178.5	98.6	29.54	168.8	7	239	2.28
30.2	169.5	100.4	28.36	170.6	6.76	240.8	2.12
32	161	102.2	27.23	172.4	6.54	242.6	2.07
33.8	153	104	26.15	174.2	6.33	244.4	2.02
35.6	145.4	105.8	25.11	176	6.13	246.2	1.96
37.4	138.3	107.6	24.13	177.8	5.93	248	1.91
39.2	131.5	109.4	23.19	179.6	5.75	249.8	1.86
41	125.1	111.2	22.29	181.4	5.57	251.6	1.82
42.8	119.1	113	21.43	183.2	5.39	253.4	1.77
44.6	113.4	114.8	20.6	185	5.22	255.2	1.73
46.4	108	116.6	19.81	186.8	5.06	257	1.68
48.2	102.8	118.4	19.06	188.6	4.9	258.8	1.64

14.4 Appendix IV: Pressure on Service Port.

Dual Port (SMZ18H422ZOGB)

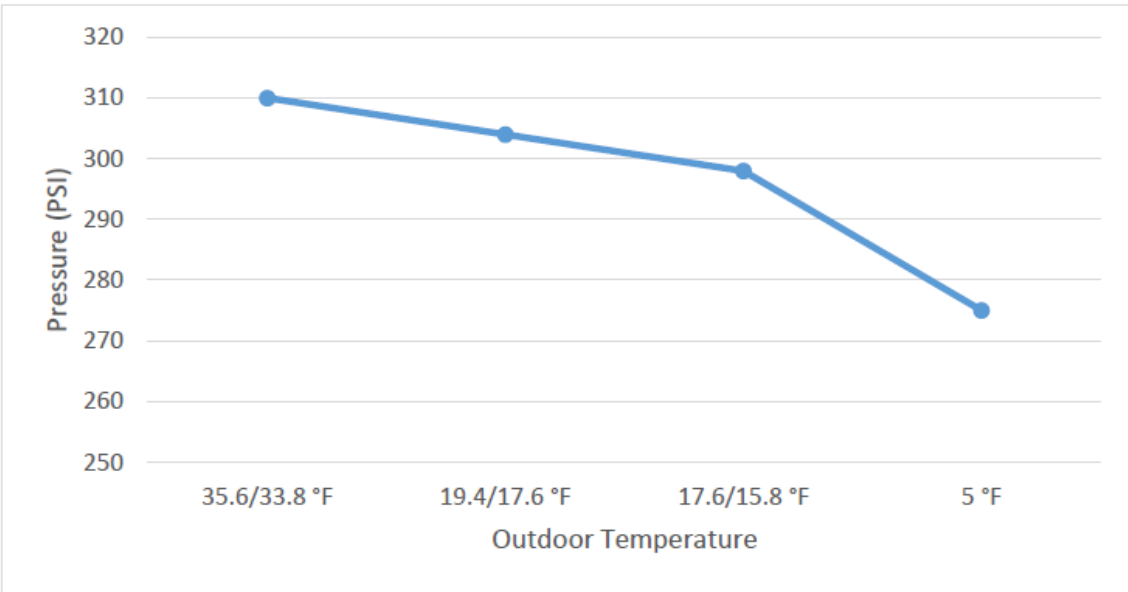
18K Cooling

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT)	75.2°F(24°C)	80.6°F(27°C)	95°F(35°C)	109.4°F(43°C)
69.8/59 °F		130	138	142	153
75.2/62.6 °F		133	139	145	155
95/66.2 °F		142	151	163	175



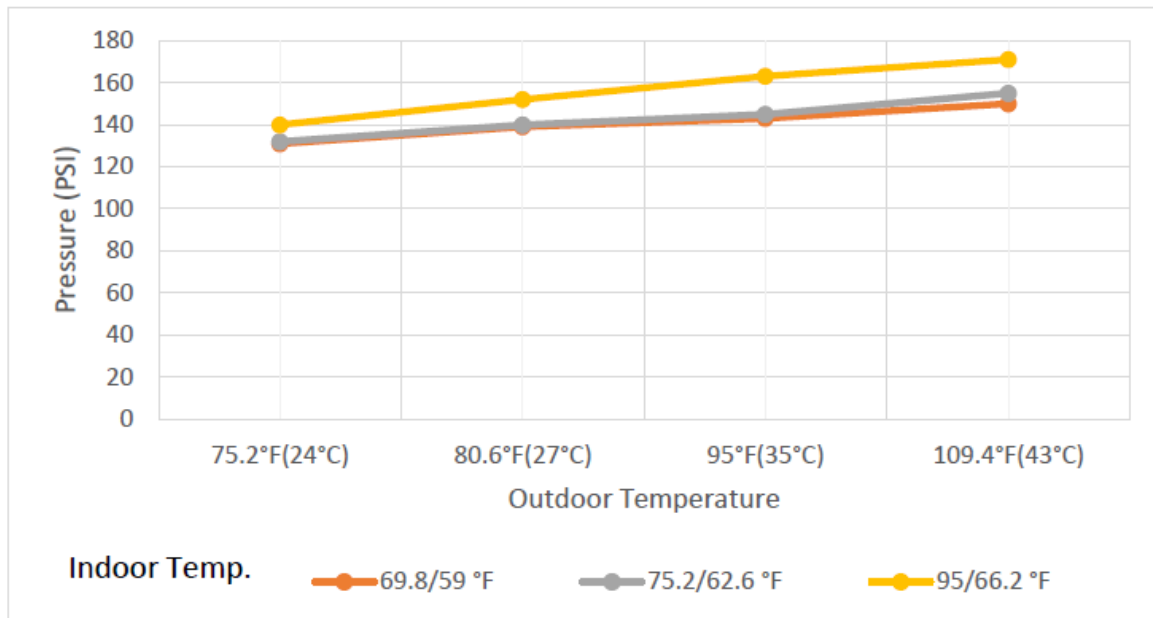
18K Heating

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT/WBT)	35.6/33.8 °F	19.4/17.6 °F	17.6/15.8 °F	5 °F
68/55.4 °F		310	304	298	275

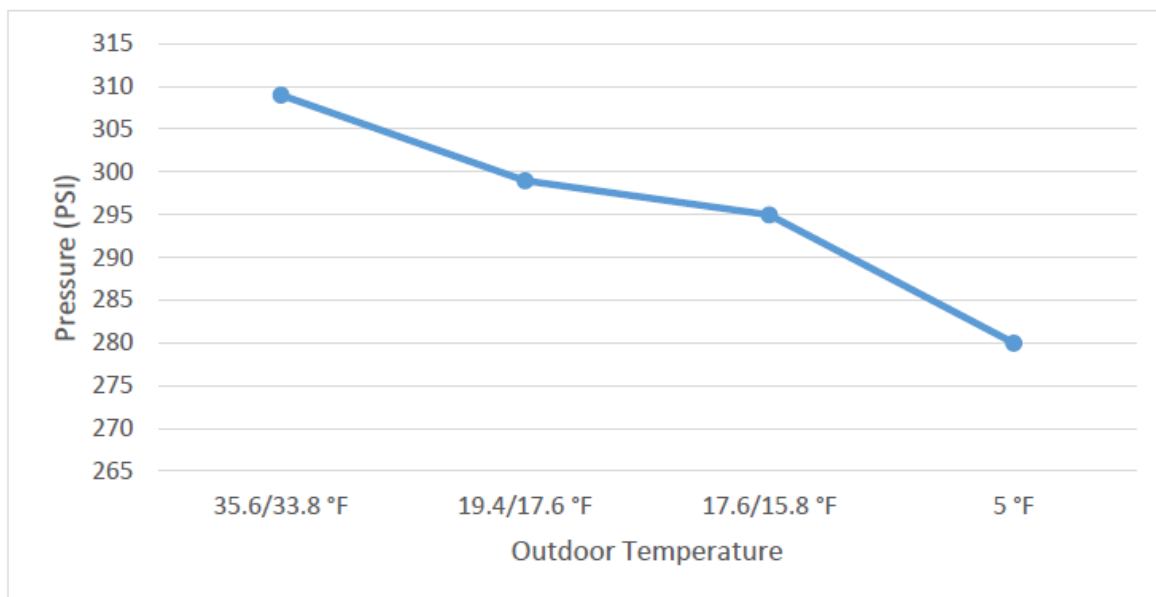


24K Cooling

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT)	75.2°F(24°C)	80.6°F(27°C)	95°F(35°C)	109.4°F(43°C)
69.8/59 °F		131	139	143	150
75.2/62.6 °F		132	140	145	155
95/66.2 °F		140	152	163	171

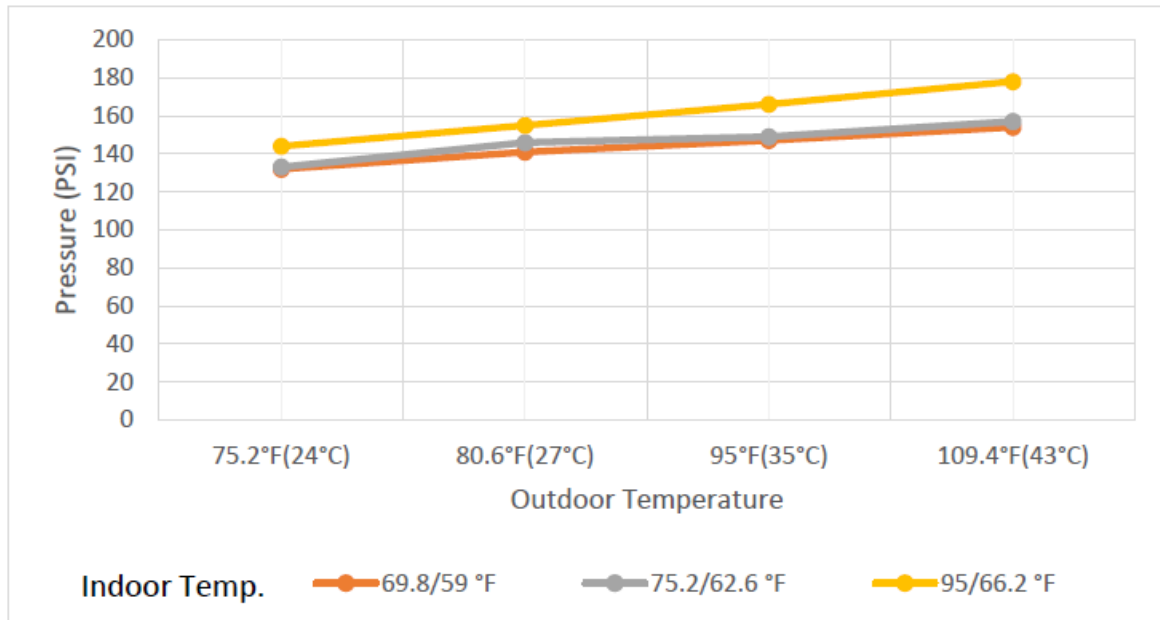
**24K Heating**

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT/WBT)	35.6/33.8 °F	19.4/17.6 °F	17.6/15.8 °F	5 °F
68/55.4 °F		309	299	295	280



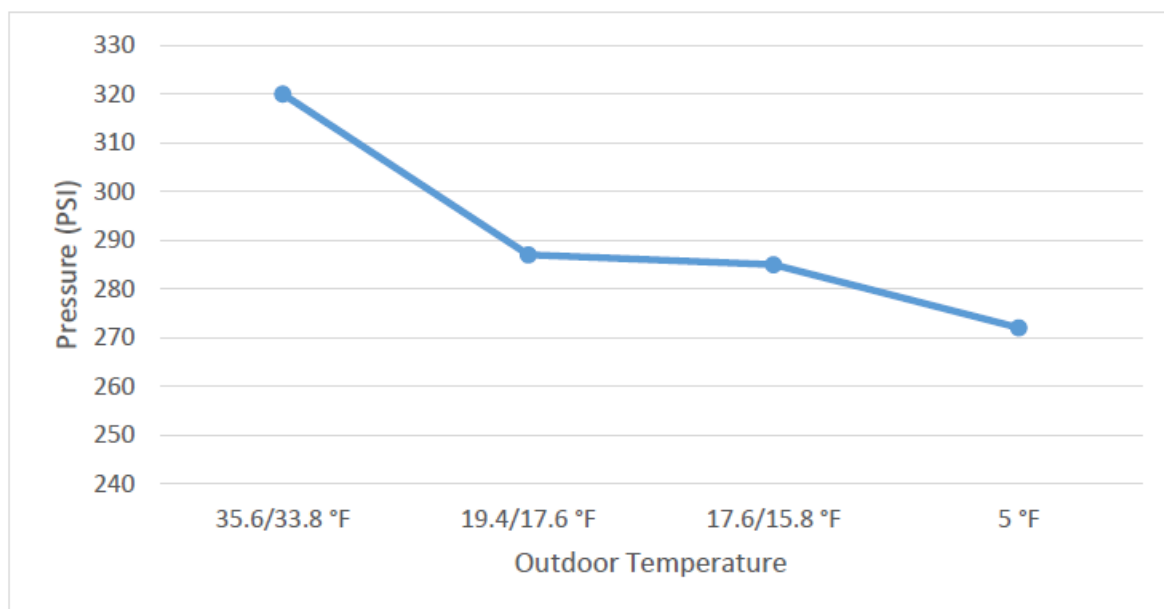
30K Cooling

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT)	75.2°F(24°C)	80.6°F(27°C)	95°F(35°C)	109.4°F(43°C)
69.8/59 °F		132	141	147	154
75.2/62.6 °F		133	146	149	157
95/66.2 °F		144	155	166	178



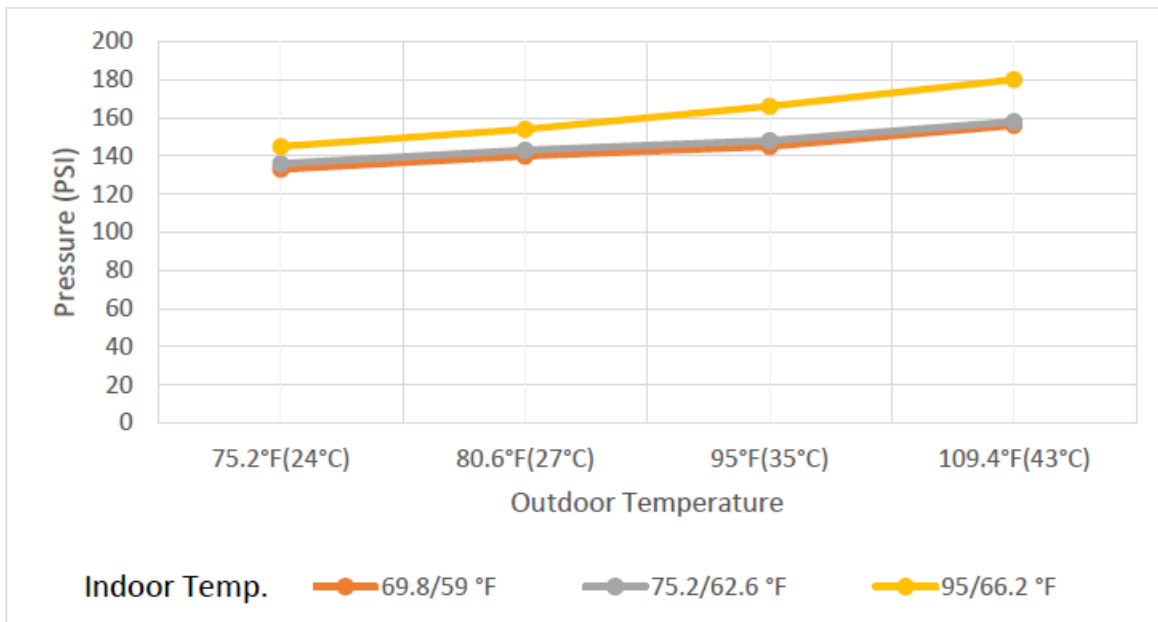
30K Heating

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT/WBT)	35.6/33.8 °F	19.4/17.6 °F	17.6/15.8 °F	5 °F
68/55.4 °F		320	287	285	272



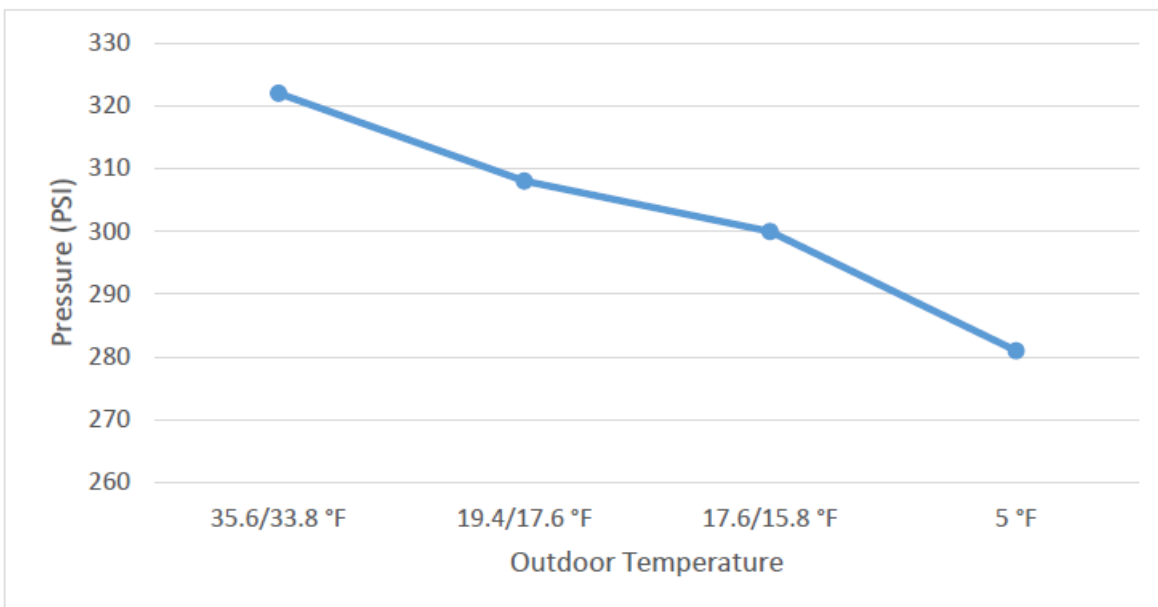
42K Cooling

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT)	75.2°F(24°C)	80.6°F(27°C)	95°F(35°C)	109.4°F(43°C)
69.8/59 °F		133	140	145	156
75.2/62.6 °F		136	143	148	158
95/66.2 °F		145	154	166	180



42K Heating

		Pressure (PSI)			
IDT (DBT/WBT)	ODT (DBT/WBT)	35.6/33.8 °F	19.4/17.6 °F	17.6/15.8 °F	5 °F
68/55.4 °F		322	308	300	281



14.5 Appendix IV: Cooling / Heating Capacity Tables.

Dual Port (SMZ18H422Z0GB)

Cooling

ROOM	UNIT:18K	OUTDOOR TEMPERATURE (Dry Bulb)							
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs	-15 °C 5 °F	-8 °C 17 °F	8 °C 47 °F	25 °C 77 °F	30 °C 86 °F	35 °C 95 °F	40 °C 104 °F	45 °C 113 °F
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	11246	12082	15480	17516	16654	15762	14999	14230
	Sensitive capacity (Btu/h)	8820	9476	12143	13740	13061	12362	11764	11159
	Total power input (W)	530	541	687	942	1054	1133	1170	1195
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	12689	13626	17634	19387	18649	17959	17190	16427
	Sensitive capacity (Btu/h)	9949	10692	13832	15205	14625	14089	13484	12880
	Total power input (W)	554	579	730	1004	1120	1203	1244	1269
27°C (81°F) D 19°C (66°F) W	Total capacity (Btu/h)	13093	14580	18133	19941	19387	18464	17984	17221
	Sensitive capacity (Btu/h)	10273	11433	14222	15641	15205	14482	14108	13503
	Total power input (W)	583	595	753	1033	1153	1240	1281	1310
32°C (90°F) D 23°C (73°F) W	Total capacity (Btu/h)	15121	16230	20560	22895	22189	15810	20489	19720
	Sensitive capacity (Btu/h)	11849	12730	16130	17954	17400	16670	16065	15477
	Total power input (W)	623	637	807	1108	1236	1327	1372	1401

Heating

ROOM	UNIT:18K	OUTDOOR TEMPERATURE (DB)									
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs	-20°C -4 °F	-17 °C 0 °F	-15 °C 5 °F	-8 °C 17 °F	-7 °C 19 °F	-4 °C 25 °F	0 °C 32 °F	4 °C 39 °F	7 °C 45 °F	12 °C 54 °F
15°C (59°F) D	Total capacity (Btu/h)	10951	11870	12523	13442	13702	15185	16908	18879	19374	21554
	Total power input (W)	960	1055	1102	1150	1183	1225	1325	1410	1434	1481
	COP (W) / (W)	3.34	3.30	3.33	3.43	3.40	3.63	3.74	3.92	3.96	4.27
18°C (64°F) D	Total capacity (Btu/h)	10641	11528	12162	13049	13309	14785	16509	18480	18974	20901
	Total power input (W)	980	1077	1125	1173	1207	1250	1352	1439	1463	1511
	COP (W) / (W)	3.18	3.14	3.17	3.26	3.23	3.47	3.58	3.76	3.80	4.05
21°C (69°F) D	Total capacity (Btu/h)	10539	11420	12048	12929	13176	14659	16382	18353	18848	20686
	Total power input (W)	1000	1099	1148	1197	1232	1276	1379	1468	1493	1542
	COP (W) / (W)	3.09	3.05	3.08	3.17	3.14	3.37	3.48	3.66	3.70	3.93
22°C (72°F) D	Total capacity (Btu/h)	10362	11015	11623	12466	12707	14190	15913	17884	18379	19919
	Total power input (W)	1028	1142	1193	1245	1281	1327	1434	1526	1552	1603
	COP (W) / (W)	2.95	2.83	2.85	2.94	2.91	3.13	3.25	3.43	3.47	3.64

Triple Port (SMZ24H421Z0GB)

Cooling

ROOM	UNIT:24K	OUTDOOR TEMPERATURE (Dry Bulb)							
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 3 pcs	-15 °C 5 °F	-8 °C 17 °F	8 °C 47 °F	25 °C 77 °F	30 °C 86 °F	35 °C 95 °F	40 °C 104 °F	45 °C 113 °F
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	14431	15503	19863	22476	21371	20225	19246	18259
	Sensitive capacity (Btu/h)	11317	12159	15581	17631	16759	15863	15095	14319
	Total power input (W)	796	813	1031	1415	1583	1701	1756	1794
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	16282	17485	22628	24877	23929	23045	22058	21078
	Sensitive capacity (Btu/h)	12766	13719	17749	19511	18767	18079	17303	16527
	Total power input (W)	833	869	1097	1508	1682	1806	1868	1905
27°C (81°F) D 19°C (66°F) W	Total capacity (Btu/h)	16800	18709	23268	25588	24877	23693	23076	22097
	Sensitive capacity (Btu/h)	13182	14671	18250	20071	19511	18583	18103	17327
	Total power input (W)	875	894	1131	1552	1732	1862	1924	1968
32°C (90°F) D 23°C (73°F) W	Total capacity (Btu/h)	19403	20826	26383	29379	28470	20287	26291	25304
	Sensitive capacity (Btu/h)	15204	16335	20692	23039	22327	21391	20615	19847
	Total power input (W)	936	956	1211	1663	1856	1992	2061	2104

Heating

ROOM	UNIT:24K	OUTDOOR TEMPERATURE (DB)									
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 3 pcs	-20°C -4 °F	-17 °C 0 °F	-15 °C 5 °F	-8 °C 17 °F	-7 °C 19 °F	-4 °C 25 °F	0 °C 32 °F	4 °C 39 °F	7 °C 45 °F	12 °C 54 °F
15°C (59°F) D	Total capacity (Btu/h)	13932	15101	15932	17101	17431	19318	21511	24018	24647	27421
	Total power input (W)	1249	1373	1434	1496	1539	1594	1723	1834	1865	1926
	COP (W) / (W)	3.27	3.22	3.26	3.35	3.32	3.55	3.66	3.84	3.87	4.17
18°C (64°F) D	Total capacity (Btu/h)	13537	14666	15472	16601	16931	18810	21003	23510	24139	26590
	Total power input (W)	1275	1401	1463	1526	1570	1627	1759	1872	1903	1966
	COP (W) / (W)	3.11	3.07	3.10	3.19	3.16	3.39	3.50	3.68	3.72	3.96
21°C (69°F) D	Total capacity (Btu/h)	13408	14529	15329	16448	16762	18649	20842	23349	23978	26316
	Total power input (W)	1301	1429	1493	1557	1602	1660	1794	1910	1942	20063
	COP (W) / (W)	3.02	2.98	3.01	3.10	3.07	3.29	3.40	3.58	3.62	3.85
22°C (72°F) D	Total capacity (Btu/h)	13182	14013	14787	15859	16165	18052	20245	22752	23381	25340
	Total power input (W)	1337	1486	1553	1619	1666	1726	1866	1986	2019	2086
	COP (W) / (W)	2.89	2.76	2.79	2.87	2.84	3.07	3.18	3.36	3.39	3.56

Quad Port (SMZ30H421Z0GB)

Cooling

ROOM	UNIT:30K	OUTDOOR TEMPERATURE (Dry Bulb)					
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs SHE12H4ZIGB – 1 pcs	20 °C 68 °F	25 °C 77 °F	30 °C 86 °F	35 °C 95 °F	40 °C 104 °F	45 °C 113 °F
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	24520	28631	30859	28914	22851	17839
	Sensitive capacity (Btu/h)	21135	23264	24172	23131	20906	17658
	Total power input (W)	1736	2108	2826	3099	2566	2172
	Sensitive capacity (W) / Total capacity (W) %	85.3	81.2	78.3	79.9	91	98.9
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	27550	31071	33084	31218	24550	19214
	Sensitive capacity (Btu/h)	23714	25502	26134	25298	22872	19057
	Total power input (W)	1760	2111	2853	3121	2583	2207
	Sensitive capacity (W) / Total capacity (W) %	85.65	82	78.9	81	93.1	99.1
27°C (81°F) D 19°C (66°F) W	Total capacity (Btu/h)	30313	33852	35179	33654	26052	25738
	Sensitive capacity (Btu/h)	25704	27389	32712	26154	24462	25110
	Total power input (W)	2009	2365	2905	3206	2773	2835
	Sensitive capacity (W) / Total capacity (W) %	84.55	80.9	92.9	76.9	93.8	97.5
32°C (90°F) D 23°C (73°F) W	Total capacity (Btu/h)	31228	37373	39601	37012	28321	21800
	Sensitive capacity (Btu/h)	29201	28573	29290	28522	25171	21387
	Total power input (W)	2025	2402	2955	3267	2668	2244
	Sensitive capacity (W) / Total capacity (W) %	93.5	76.4	80.9	77	88.8	98

Heating

ROOM	UNIT:30K	OUTDOOR TEMPERATURE					
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs SHE12H4ZIGB – 1 pcs	-13.9°C(7°F)D -15°C(5°F)W	-8.3°C(17°F)D -9.4°C(15°F)W	-2.2°C(28°F)D -3.9°C(25°F)W	3.3°C(38°F)D 1.7°C(35°F)W	8.3°C(47°F)D 6.1°C(35°F)W	13.9°C(57°F)D 12.7°C(55°F)W
15°C (59°F) D 10°C (50°F) W	Total capacity (Btu/h)	22384	22452	27468	37124	38557	40263
	Sensitive capacity (Btu/h)	22384	22452	27468	37124	38557	40263
	Total power input (W)	2820	2150	2750	2850	2950	2480
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
18°C (64°F) D 12°C (54°F) W	Total capacity (Btu/h)	21838	22281	27979	30709	37704	39580
	Sensitive capacity (Btu/h)	21838	22281	27979	30709	37704	39580
	Total power input (W)	2950	2280	2980	2950	3100	2630
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	22008	22008	26956	30197	36680	39069
	Sensitive capacity (Btu/h)	22008	22008	26956	30197	36680	39069
	Total power input (W)	3100	2400	3080	3100	3220	2750
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	21838	21769	27126	29174	36339	37806
	Sensitive capacity (Btu/h)	21838	21769	27126	29174	36339	37806
	Total power input (W)	3150	2500	3130	3200	3400	2930
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100

Five Port (SMZ42H421ZOGB)

Cooling

ROOM	UNIT:42K	OUTDOOR TEMPERATURE (Dry Bulb)					
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs SHE12H4ZIGB – 2 pcs	20 °C 68 °F	25 °C 77 °F	30 °C 86 °F	35 °C 95 °F	40 °C 104 °F	45 °C 113 °F
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	33012	35213	36510	33780	28867	23202
	Sensitive capacity (Btu/h)	29754	29174	29037	29344	27297	22486
	Total power input (W)	1980	2480	3650	3635	3600	2750
	Sensitive capacity (W) / Total capacity (W) %	90.1	82.8	79.5	86.9	92.6	96.9
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	33575	37977	38540	36612	33831	25779
	Sensitive capacity (Btu/h)	29395	30965	31238	31801	30931	24567
	Total power input (W)	1990	2685	3555	3485	3645	2775
	Sensitive capacity (W) / Total capacity (W) %	87.6	81.5	81.1	86.9	91.4	95.3
27°C (81°F) D 19°C (66°F) W	Total capacity (Btu/h)	37499	41389	43334	40809	34974	28662
	Sensitive capacity (Btu/h)	32125	33541	34121	33780	32586	26683
	Total power input (W)	2000	2820	3600	3590	3670	2800
	Sensitive capacity (W) / Total capacity (W) %	85.7	81.0	78.7	82.8	93.2	93.1
32°C (90°F) D 23°C (73°F) W	Total capacity (Btu/h)	44869	47804	48572	41406	37875	29856
	Sensitive capacity (Btu/h)	34138	34462	35333	33814	32722	28031
	Total power input (W)	2210	2515	3280	3555	3735	2830
	Sensitive capacity (W) / Total capacity (W) %	76.1	72.1	72.7	81.7	86.4	93.9

Heating

ROOM	UNIT:42K	OUTDOOR TEMPERATURE					
INDOOR TEMPERATURE	CONNECTED INDOOR UNIT: SHE9H4ZIGB – 2 pcs SHE12H4ZIGB – 2 pcs	-13.9°C(7°F)D -15°C(5°F)W	-8.3°C(17°F)D -9.4°C(15°F)W	-2.2°C(28°F)D -3.9°C(25°F)W	3.3°C(38°F)D 1.7°C(35°F)W	8.3°C(47°F)D 6.1°C(35°F)W	13.9°C(57°F)D 12.7°C(55°F)W
15°C (59°F) D 10°C (50°F) W	Total capacity (Btu/h)	27263	31125	31559	43266	39137	40263
	Sensitive capacity (Btu/h)	27263	31125	31559	43266	39137	40263
	Total power input (W)	3580	3380	3320	3580	2380	2020
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
18°C (64°F) D 12°C (54°F) W	Total capacity (Btu/h)	27638	30982	32074	43334	38386	39922
	Sensitive capacity (Btu/h)	27638	30982	32074	43334	38386	39922
	Total power input (W)	3550	3400	3300	3625	2530	2150
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
21°C (70°F) D 15°C (59°F) W	Total capacity (Btu/h)	28416	30890	31886	41628	37533	38966
	Sensitive capacity (Btu/h)	28416	30890	31886	41628	37533	38966
	Total power input (W)	3660	3570	3400	3760	2650	2300
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100
24°C (75°F) D 17°C (63°F) W	Total capacity (Btu/h)	28082	30573	29856	41287	36919	38898
	Sensitive capacity (Btu/h)	28081	30573	29856	41287	36919	38898
	Total power input (W)	3760	3690	3400	3910	2820	2420
	Sensitive capacity (W) / Total capacity (W) %	100	100	100	100	100	100