

ACIQ

SERVICE MANUAL

Air Handler Unitary Ducted System - Sizes 24 to 48

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SAFETY CONSIDERATIONS

Installing, starting up, and servicing air-conditioning equipment can be hazardous due to unit pressures, electrical components, and equipment location (roofs, elevated structures, etc.).

Only trained, qualified installers and service mechanics should install, start-up, and service this equipment.

Untrained personnel can perform basic maintenance functions such as coil cleaning. All other operations should be performed by trained service personnel **only**.

When working on the equipment, observe the precautions in the literature and on tags, stickers, and labels attached to the equipment.

Follow all safety codes. Wear safety glasses and work gloves. Keep a quenching cloth and fire extinguisher nearby when brazing. Use care in handling, rigging, and setting bulky equipment.

Read this manual thoroughly and follow all the warnings or cautions included in the literature and attached to the unit. Consult local building codes and the National Electrical Code (NEC) for special requirements.

Recognize safety information. This is the safety-alert symbol .

When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury. Understand these signal words: **DANGER**, **WARNING**, and **CAUTION**.

These words are used with the safety-alert symbol. **DANGER** identifies the most serious of hazards which will result in severe personal injury or death. **WARNING** signifies hazards which could result in personal injury or death. **CAUTION** is used to identify unsafe practices which may result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which will result in enhanced installation, reliability, or operation.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing the unit, the main electrical disconnect switch must be in the **OFF** position. There may be more than 1 disconnect switch. Lock out and tag switch with a suitable warning label.



WARNING

EXPLOSION HAZARD

Failure to follow this warning could result in death, serious personal injury, and/or property damage.

Never use air or gases containing oxygen for leak testing or operating refrigerant compressors. Pressurized mixtures of air or gases containing oxygen can lead to an explosion.



CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

Do not bury more than 36 in. (914 mm) of refrigerant pipe in the ground. If any section of pipe is buried, there must be a 6 in. (152 mm) vertical rise to the valve connections on the outdoor units. If more than the recommended length is buried, refrigerant may migrate to the cooler buried section during the extended periods of unit shutdown. This causes refrigerant slugging and could possibly damage the compressor at start-up.

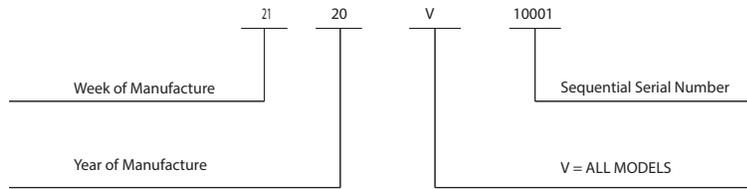
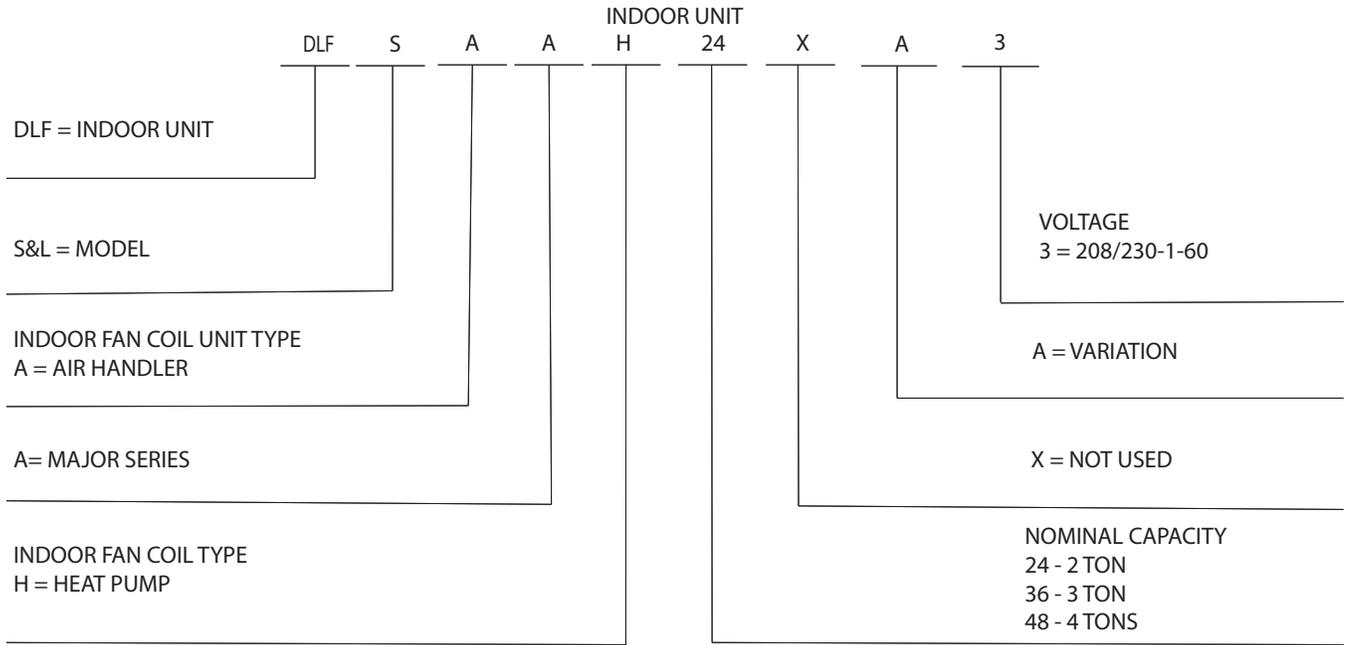
INTRODUCTION

This service manual provides the necessary information to service, repair, and maintain the indoor units. This manual contains "APPENDICES" on page 50 with data required to troubleshoot. Use the "TABLE OF CONTENTS" on page 1 to locate a desired topic.

MODEL NUMBER NOMENCLATURE

Table 1 — Unit Sizes

| KBTUH | V-PH-HZ | ID MODEL NO. |
|-------|--------------|--------------|
| 24 | 208/230-1-60 | ACIQ-24-AH |
| 36 | | ACIQ-36-AH |
| 48 | | ACIQ-48-AH |



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.



SPECIFICATIONS

Table 2 — Specifications

| SYSTEM | SIZE | | 24K | 36K | 48K | |
|----------------------------|---|--------------|---------------------------------------|---------------|-----------------|------|
| | Indoor Model | | ACIQ-24-AH | ACIQ-36-AH | ACIQ-48-AH | |
| Electrical | Voltage, Phase, Cycle | | V/Ph/Hz | 208/230-1-60 | | |
| | Power Supply | | Indoor unit powered from outdoor unit | | | |
| | MCA | | A. | 6.0 | 6.0 | 6.0 |
| | MOCP | | | 15.0 | 15.0 | 15.0 |
| Controls* | Wireless Remote Control (°F/°C Convertible) | | Standard | Standard | Standard | |
| Operating Range | Cooling Indoor DB Min - Max | °F (°C) | 62~90 (17~32) | 62~90 (17~32) | 62~90 (17~32) | |
| Piping | Pipe Connection Size - Liquid | in (mm) | 3/8" (9.52) | 3/8" (9.52) | 3/8" (9.52) | |
| | Pipe Connection Size - Suction | in (mm) | 5/8" (16) | 5/8" (16) | 5/8" (16) | |
| Indoor Coil | Face Area (sq. ft.) | Sq. Ft. | 1.69 | 1.69 | 1.69 | |
| | No. Rows | | 2 | 4 | 4 | |
| | Circuits | | 4 | 8 | 8 | |
| Indoor | Unit Width | in (mm) | 51.18 (1,300) | 51.18 (1,300) | 51.18 (1,300) | |
| | Unit Height | in (mm) | 24.61 (625) | 24.61 (625) | 24.61 (625) | |
| | Unit Depth | in (mm) | 22.44 (570) | 22.44 (570) | 22.44 (570) | |
| | Net Weight | lbs (kg) | 141.09 (64) | 144.84 (65.7) | 144.84 (65.7) | |
| | Fan speed number | | 3 | 3 | 3 | |
| | Airflow (lowest to highest) | CFM | 588/765/882 | 824/1000/1176 | 1176/1294/1412 | |
| | Sound Pressure (lowest to highest) | dB(A) | 43/40.4/37.2 | 46.5/43/37.9 | 53.9/51.9/50 | |
| | Moisture removal | Pint/h (L/h) | 3.16pint/hour | 7.67pint/hour | 11.98 pint/hour | |
| Field Drain Pipe Size O.D. | in (mm) | 3/4 inch | 3/4 inch | 3/4 inch | | |

Performance may vary based on the compatible outdoor units. See the respective pages on the outdoor unit's product data for performance data.

*To be used only to set airflow in accordance with the installation manual.

DIMENSIONS

Table 3 — Dimensions

| UNIT SIZE | | 24K | 36K | 48K |
|------------------|----------|---------------|---------------|---------------|
| Height | in (mm) | 48.82 (1,240) | 48.82 (1,240) | 48.82 (1,240) |
| Width | in (mm) | 19.61 (498) | 19.61 (498) | 19.61 (498) |
| Depth | in (mm) | 20.98 (533) | 20.98 (533) | 20.98 (533) |
| Operating Weight | lbs (kg) | 141.09 (64) | 144.84 (65.7) | 144.84 (65.7) |
| Shipping Weight | lbs (kg) | 156.09 (70.8) | 160.27 (72.7) | 159.83(72.5) |
| Shipping Height | in (mm) | 24.61 (625) | 24.61 (625) | 24.61 (625) |
| Shipping Width | in (mm) | 51.18 (1,300) | 51.18 (1,300) | 51.18 (1,300) |
| Shipping Depth | in (mm) | 22.44 (570) | 22.44 (570) | 22.44 (570) |

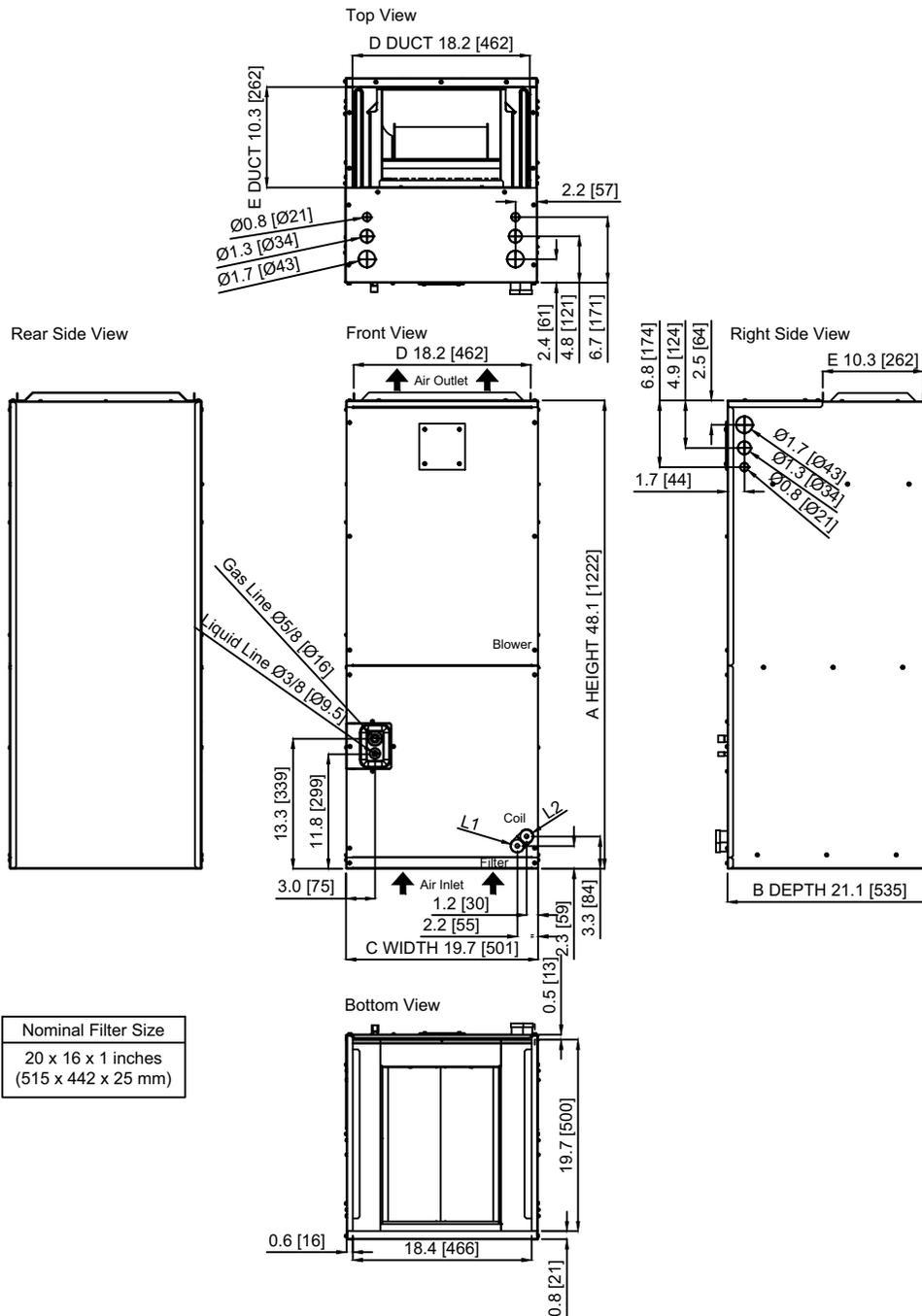


Fig. 1 — Dimensions

PART NAMES

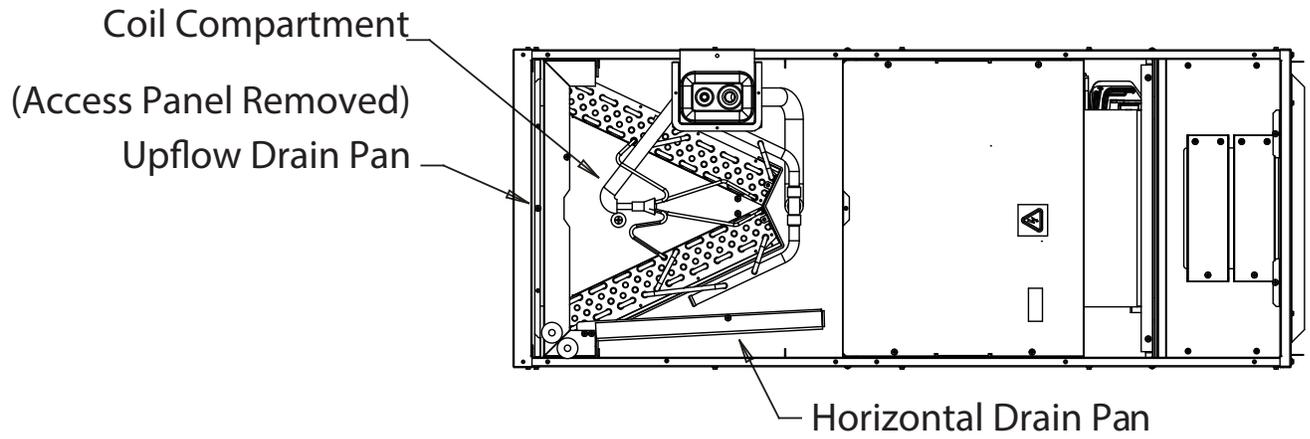


Fig. 2 —Part Names

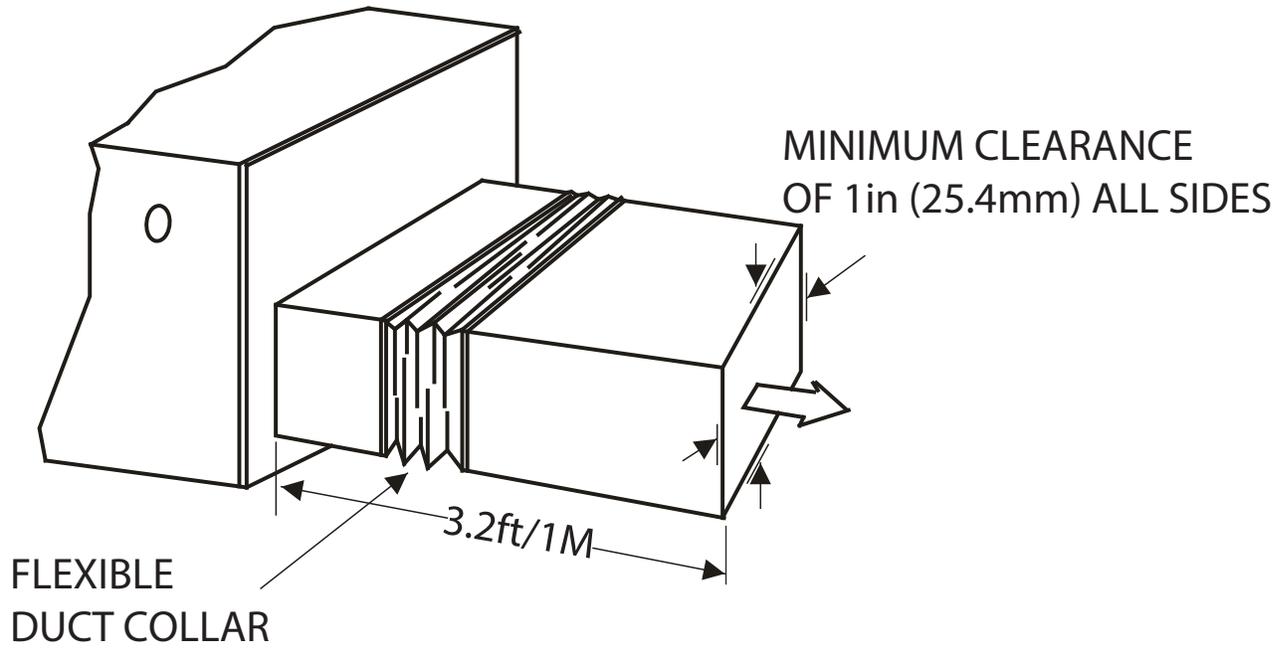


Fig. 3 — Service Section

CONNECTORS

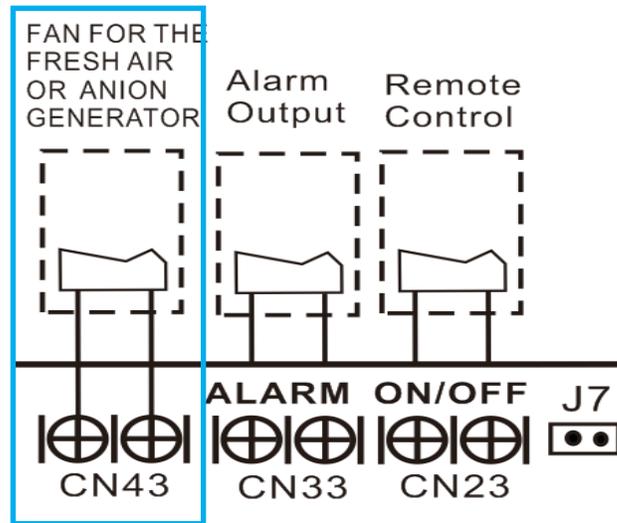


Fig. 4 — Connectors

For the new motor terminal port (also for the Anion generator) CN43:

1. When the indoor blower is running, CN 43 will be powered on with line voltage (208 or 230). Use this connection to power a relay for controlling a separate circuit for outdoor air fan or other peripheral.
2. When the unit enters force cooling mode or capacity testing mode, CN43 powers off.

CONNECTORS (CONT.)

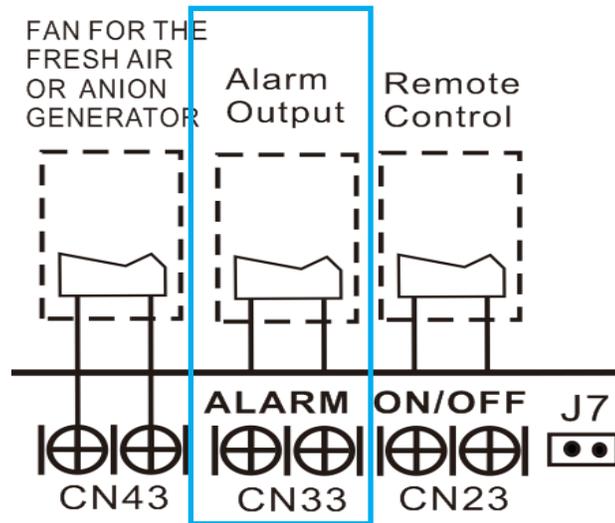


Fig. 5 — Connectors

For ALARM terminal port CN33:

- When there is an alarm on the unit, the CN33 dry contacts close. May be used to control a pilot relay for an external alarm device.

CONNECTORS (CONT.)

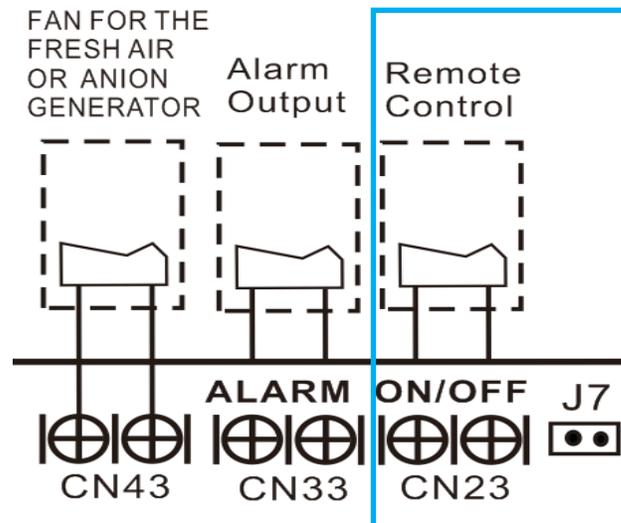


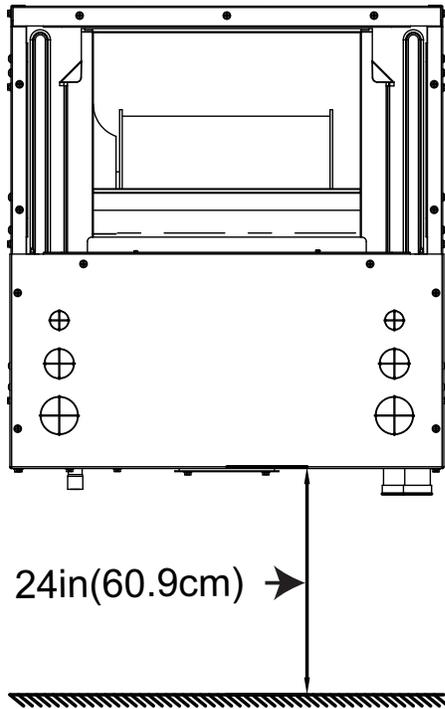
Fig. 6 — Connectors

For remote control (ON-OFF) terminal port CN23 and short connector of J7

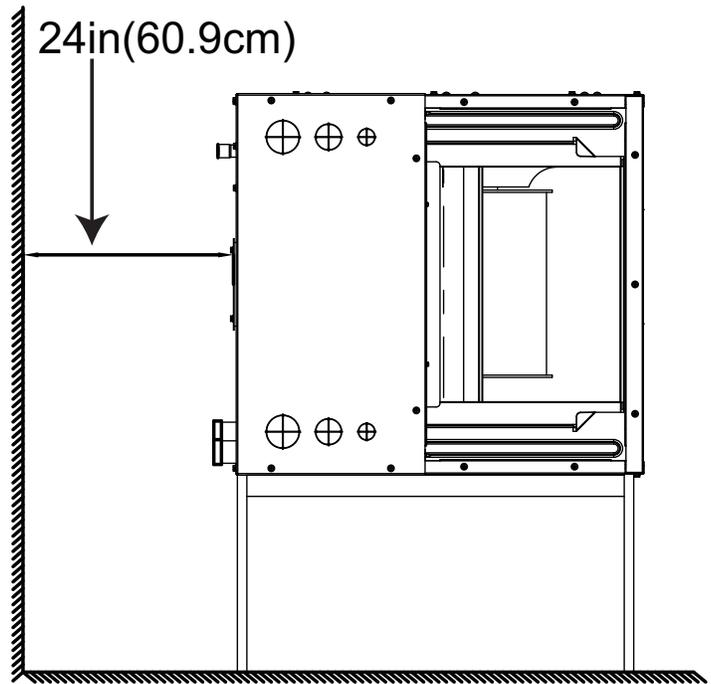
1. Remove the J7 short connector when using the **ON-OFF** function;
2. When the remote switch is off (OPEN); the system is off and the display displays "CP";
3. When the remote switch is on (CLOSE); the system is on;
4. When the remote switch is closed or opened, the system responds to the command within 2 seconds.

CLEARANCES

Allow a minimum of 24in (60.9 cm) clearance from the access panels.



Vertical Upflow Installations



Horizontal Installations

Fig. 7 — Clearances

ELECTRICAL DATA

Table 4 — Electrical Data

| HIGH WALL UNIT SIZE | INDOOR FAN | | | | MAX FUSE CB AMP |
|---------------------|--------------|-----|------|-----|--|
| | V-PH-HZ | FLA | HP | W | |
| 24K | 208/230-1-60 | 5 | 0.20 | 120 | Refer to outdoor unit installation instructions – Indoor unit powered by the outdoor unit |
| 36K | | 5 | 0.42 | 250 | |
| 48K | | 5 | 0.65 | 400 | |

LEGEND
FLA - Full Load Amps

WIRING

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. Use the Electrical Data table MCA (minimum circuit amps) and MOCP (maximum over current protection) to correctly size the wires and the disconnect fuse or breakers respectively.

Recommended Connection Method for Power and Communication Wiring:

The main power is supplied to the outdoor unit. The field supplied 14/3 stranded wire, with ground, has a 600 volt insulation rating and the power/communication wiring from the outdoor unit to indoor unit consists of four (4) wires and provides the power for the indoor unit.

Two wires are line voltage AC power, one is communication wiring (S) and the other is a ground wire. Wiring between the indoor and outdoor unit is polarity sensitive. The use of BX wire is NOT recommended.

If installed in a high Electromagnetic field (EMF) area and communication issues exists, a 14/2 stranded shielded wire can be used to replace L2 and (S) between the outdoor unit and indoor unit landing the shield onto ground in the outdoor unit only.


CAUTION

EQUIPMENT DAMAGE HAZARD
Failure to follow this caution may result in equipment damage or improper operation.
Wires should be sized based on NEC and local codes.


CAUTION

EQUIPMENT DAMAGE HAZARD
Failure to follow this caution may result in equipment damage or improper operation.
Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.
Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected. No wire should touch the refrigerant tubing, compressor or any moving parts.
Disconnecting means must be provided and shall be located within sight and readily accessible from the unit. Connecting cable with conduit shall be routed through the hole in the conduit panel.

CONNECTION DIAGRAMS

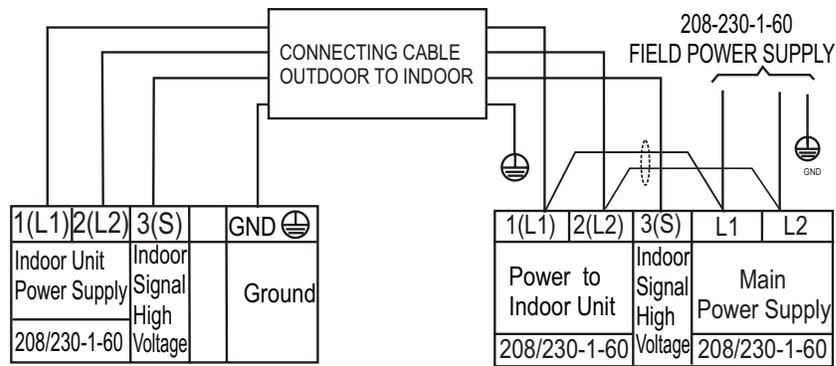


Fig. 8 — Size 24K Indoor Unit

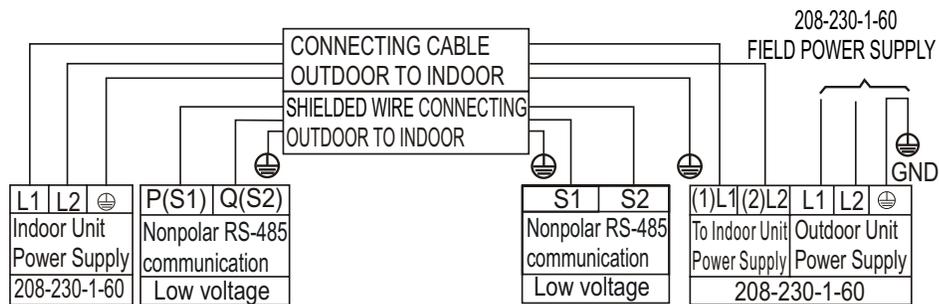


Fig. 9 — Size 36K- 48K Indoor Unit

NOTES:

1. **DO NOT** use a thermostat wire for any connection between the indoor and outdoor units.
2. All connections between the indoor and outdoor units must adhere to the connections shown in figures 8 - 9. The connections are polarity sensitive and **improper wiring results in a fault code.**

WIRING DIAGRAMS

Size 24K

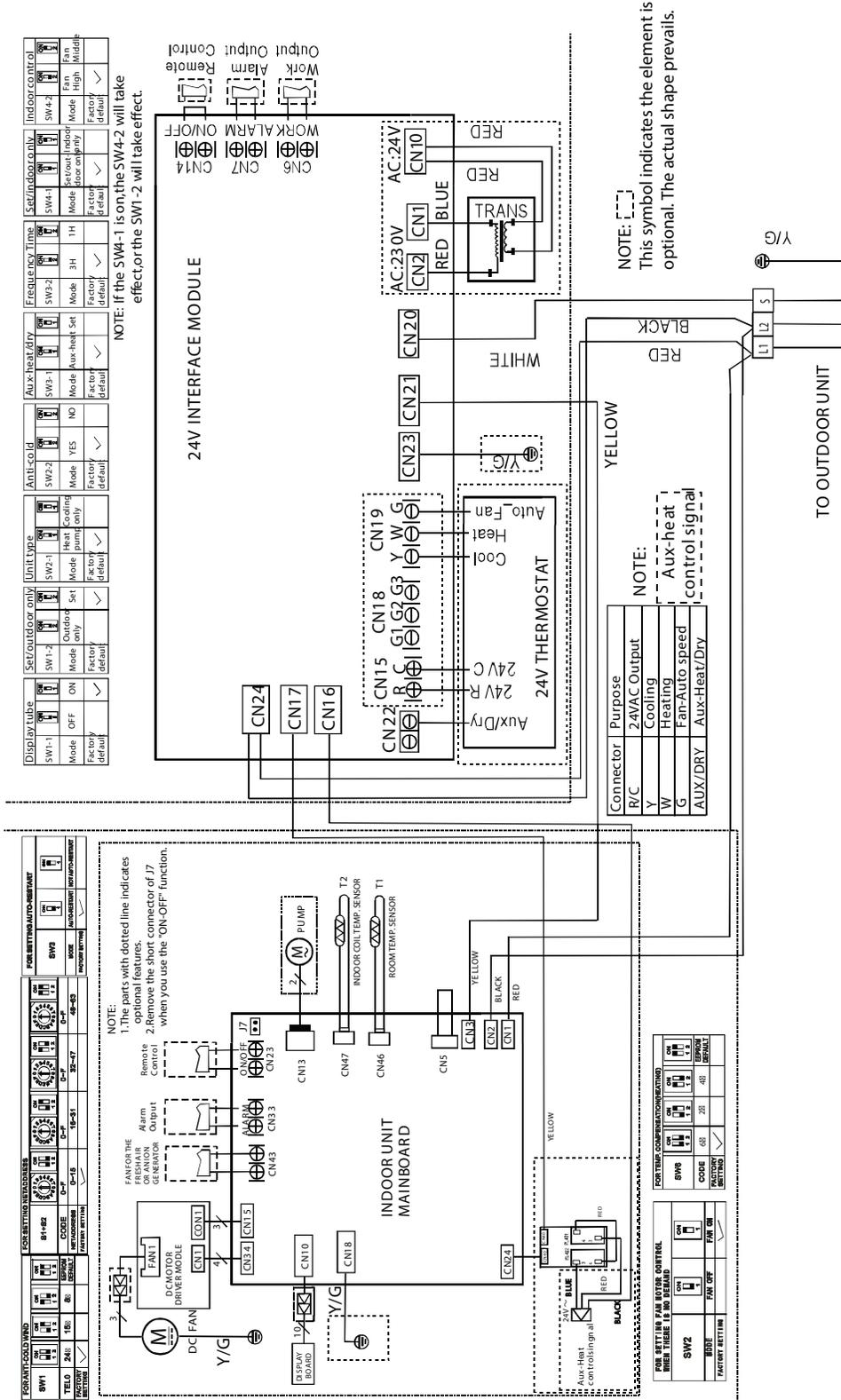


Fig. 10 — Wiring Diagram Size 24K

WIRING DIAGRAMS (CONT)

Table 5 — Wiring Diagram Size 24K-48K

| CODE | INDOOR UNIT MAINBOARD CONNECTION |
|-------------|--|
| CN1 | input: 230VAC High voltage |
| CN2 | input: 230VAC High voltage |
| CN3 | communication: 230VAC High voltage (24K only) |
| CN5 | output: 0-5VDC water level switch connection |
| CN10 | output: 12VDC display board connection |
| CN13 | output: 220V AC for the pump |
| CN15 | output: 220V AC for the fan |
| CN16 | RS485 Communication to 24 volt interface 0-10VDC 36-48K only |
| CN18 | output: 0V connection to the ground |
| CN23 | output: 12VDC for the remote controller |
| CN24 | output: 12VDC for the heater control board |
| CN33 | output: 0V for the alarm |
| CN34 | output: 15V DC for the driver board (danger) |
| CN43 | output: 220VAC for the fresh air fan |
| CN46 | input: 5V DC for the T1 sensor |
| CN47 | input: 5V DC for the T2 sensor |

Table 6 — Wiring Diagram Size 24K-48K

| CODE | 24 VOLT INTERFACE CONNECTION |
|-------------|---|
| CN1 | input: 230VAC High voltage |
| CN2 | input: 230VAC High voltage |
| CN6 | output: 0V for the work |
| CN7 | output: 0V for the alarm |
| CN8 | RS485 Communication to Indoor Unit 0 - 10 VDC 36-48K only |
| CN9-2 | RS485 Communication to Outdoor Unit 0-10 VDC 36-48K only |
| CN10 | input: 24V for the 24V interface board |
| CN14 | output: 12VDC for the remote controller |
| CN15 | output: 24VAC for the 24V thermostat |
| CN16 | output: 24VAC for the heater control |
| CN17 | output: 25VAC for the heater control |
| CN18 | input: 24VAC for the fan control |
| CN19 | input: 24VAC for the mode control |
| CN20 | communication: 230VAC High voltage "S" outdoor 24K only |
| CN21 | communication: 230VAC High voltage "S" Indoor 24K only |
| CN22 | input:24VAC for the AUX |
| CN23 | output: 0V connection to the ground |
| CN24 | input: 230VAC High voltage |

FAN AND MOTOR SPECIFICATIONS

Table 7 — Fan and Motor Specifications

| DUCTED SIZE | | 24K | 36K | 48K |
|-------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|
| | | (208/230 V) | (208/230 V) | (208/230 V) |
| INDOOR FAN | Material | Metal | Metal | Metal |
| | Type | LX-282*245*12.7-49J-B | LX-282*245*12.7-49J-B | LX-282*245*12.7-49J-B |
| | Diameter | inch 11.1 | 11.1 | 11.1 |
| | Height | inch 9.65 | 9.65 | 9.65 |
| INDOOR FAN MOTOR | Model | ZKFN-600-10-1 | ZKFN-600-10-1 | ZKFN-600-10-1 |
| | Volts | V 208/230 | 208/230 | 208/230 |
| | Type | DC | DC | DC |
| | Phase | 3 | 3 | 3 |
| | FLA | 5 | 5 | 5 |
| | Insulation class | B | B | B |
| | Safe class | IP20 | IP20 | IP20 |
| | Input | W 150 | 320 | 500 |
| | Output | W 120 | 250 | 400 |
| | Range of current | Amps 1.2±10% | 2.4±10% | 3.54±10% |
| | Rated current | Amps 1.2 | 2.4 | 3.54 |
| | Capacitor | µF NA | NA | NA |
| | Rated HP | HP 0.20 | 0.42 | 0.65 |
| | Rated Power High/Medium/Low | W 148/107/75 | 315/191/138 | 487/394/315 |
| | Speed High/Medium/Low | rev/min 720/640/550 | 900/800/700 | 1050/980/910 |
| | Rated RPM | rev/min 720 | 900 | 1050 |
| Max. input | W 325 | 483 | 610 | |

Airflow Specifications

Table 8 — Airflow Specifications

| SYSTEM SIZE | | 24K | 36K | 48K |
|--------------|--------|------------|------------|------------|
| | | (208/230V) | (208/230V) | (208/230V) |
| Indoor (CFM) | High | 882 | 1,176 | 1412, |
| | Medium | 765 | 1,000 | 1,294 |
| | Low | 588 | 824 | 1,176 |

REFRIGERATION CYCLE DIAGRAM

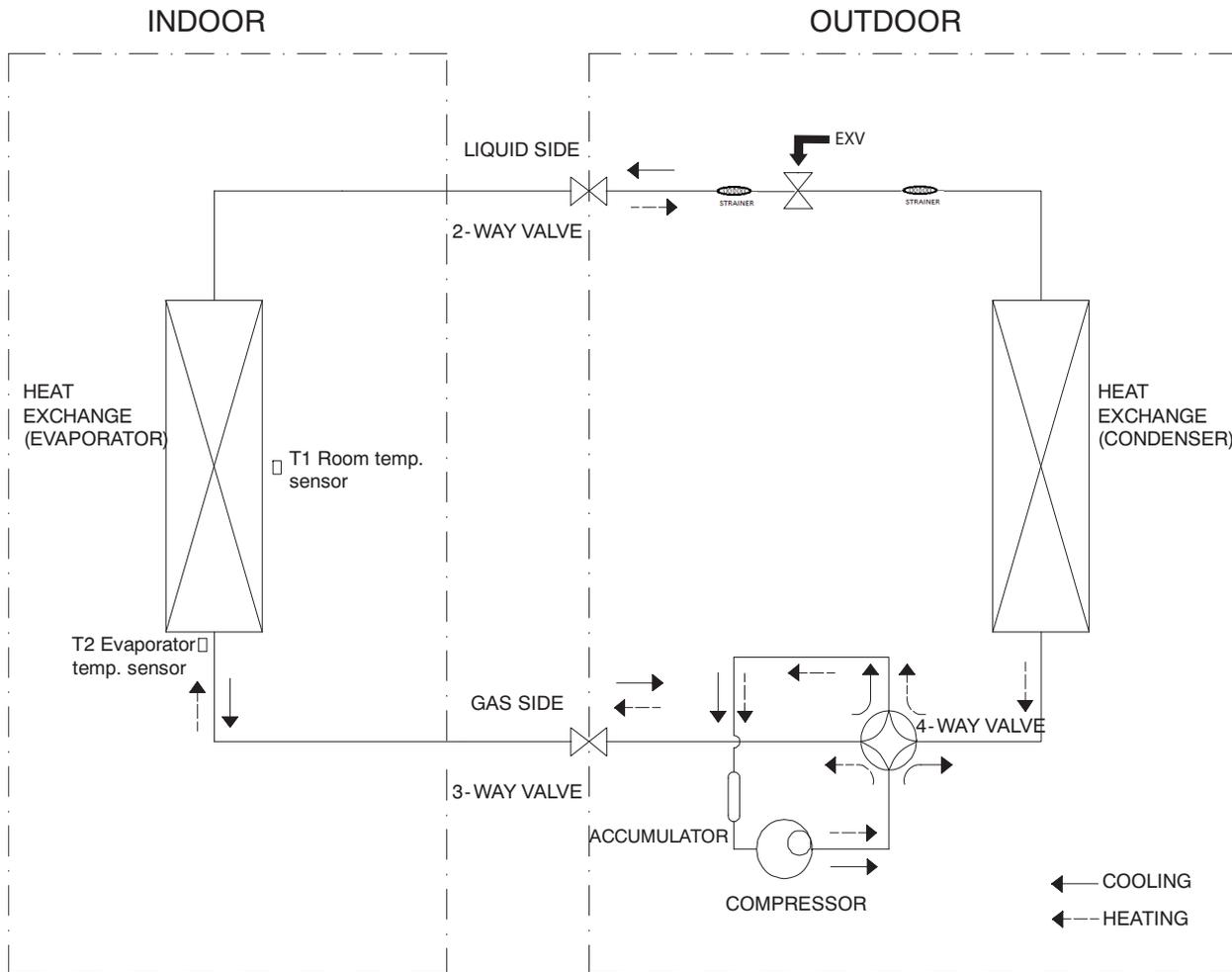


Fig. 12 — Heat Pumps

REFRIGERANT LINES

General refrigerant line sizing

1. The outdoor units are shipped with a full charge of R410A refrigerant. All charges, line sizing, and capacities are based on runs of 25 ft. (7.6 m). For runs over 25 ft. (7.6 m), consult the product data.
2. Minimum refrigerant line length between the indoor and outdoor units is 10 ft. (3 m).
3. Refrigerant lines should not be buried in the ground. If it is necessary to bury the lines, not more than 36 in. (914 mm) should be buried. Provide a minimum 6 in. (152 mm) vertical rise to the service valves to prevent refrigerant migration.
4. Both lines must be insulated. Use a minimum of ½ in. (12.7 mm) thick insulation. Closed-cell insulation is recommended in all long-line applications.
5. Special consideration should be given to isolating interconnecting tubing from the building structure. Isolate the tubing so that vibration or noise is not transmitted into the structure.
6. For piping runs greater than 25 ft. (7.6 m), add refrigerant up to the allowable length as specified in the product data.

Refrigerant Coil Specifications

Table 9 — Refrigerant Coil Specifications

| UNIT SIZE | | 24 | 36 | 48 | |
|---|----------------------------------|----------------------|----------------------|----------------------|------------------|
| AIR HANDLER INDOOR COIL | NUMBER OF ROWS | 2 | 4 | 4 | |
| | Tube pitch (a) x row pitch (b) | in | 0.83x0.53 | 0.83x0.53 | 0.83x0.53 |
| | | mm | 21x13.37 | 21x13.37 | 21x13.37 |
| | Fin Spacing | FPI | 20 | 20 | 20 |
| | | mm | 1.3 | 1.3 | 1.3 |
| | Fin type | Louvered | Louvered | Louvered | |
| | Fin Material | Hydrophilic Aluminum | Hydrophilic Aluminum | Hydrophilic Aluminum | |
| | Tube outside dia. | inch | 0.276 | 0.276 | 0.276 |
| | | mm | 7 | 7 | 7 |
| | Nominal Tube Wall | mm (inch) | 0.00945 (0.24) | 0.00945 (0.24) | 0.00945 (0.24) |
| | Tube Enhancement | (Yes/ No) | Yes | Yes | Yes |
| | Tube Material | | Copper | Copper | Copper |
| | Coil length x height x width | inch | 16.34x14.88x2.10 | 16.34x14.88x2.10 | 16.34x14.88x2.10 |
| | | mm | 415x378x53.48 | 415x378x53.48 | 415x378x53.48 |
| | Face area | ft ² | 1.69 | 1.69 | 1.69 |
| | Number of circuits | | 4 | 8 | 8 |
| | Metering Device | | EXV in outdoor unit | | |
| | High Burst Pressure | Psi (MPa) | 609.2(4.2) | 609.2 (4.2) | 609.2 (4.2) |
| | Low Burst Pressure | Psi (MPa) | 217.6 (1.5) | 217.6 (1.5) | 217.6 (1.5) |
| | Design (high/low) Burst Pressure | Psi | 550/340 | 550/340 | 550/340 |
| Gas Pipe (size – connection type) | In (mm) | 5/8" (15.9) | 5/8" (15.9) | 5/8" (15.9) | |
| Liquid Pipe (size – connection type) | In (mm) | 3/8" (9.52) | 3/8" (9.52) | 3/8" (9.52) | |

TROUBLESHOOTING

⚠ WARNING

Be sure to turn off all power supplies or disconnect all wires to avoid electric shock. While checking indoor/outdoor PCB, please equip oneself with anti-static gloves or wrist strap to avoid damage to the board.

⚠ WARNING

Electricity remains in capacitors even when the power supply is off. Ensure the capacitors are fully discharged before troubleshooting.

Test the voltage between P and N on back of the main PCB with a multimeter. If the voltage is lower than 36V, the capacitors are fully discharged.

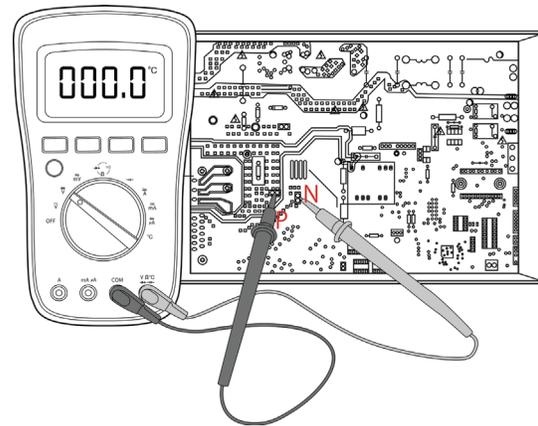


Fig. 13 — Voltage P and N

NOTE: Figure 13 is for reference only. The actual appearance may differ.

Error Display (Indoor Unit)

When the indoor unit encounters a recognized error, the operation lamp flashes in a corresponding series, the timer lamp may turn on or begin flashing, and an error code appears (see Table 10).

Table 10 — Error Display

| OPERATION LAMP | TIMER LAMP | DISPLAY | ERROR INFORMATION | SOLUTION |
|----------------|------------|--------------|---|----------|
| 1 time | OFF | E0 | Indoor unit EEPROM parameter error | Page 23 |
| 2 times | OFF | E1 | Indoor / outdoor unit communication error | Page 24 |
| 4 times | OFF | E3 | The indoor fan speed is operating outside of the normal range | Page 27 |
| 5 times | OFF | E4 | Indoor room temperature sensor T1 is in open circuit or has short circuited | Page 29 |
| 6 times | OFF | E5 | Evaporator coil temperature sensor T2 is in open circuit or has short circuited | Page 29 |
| 7 times | OFF | EC | Refrigerant Leakage Detection (for some models) | Page 31 |
| 8 times | OFF | EE | Water-level alarm malfunction | Page 30 |
| 9 times | OFF | E8 | Communication error between master and slave unit (for twins system) | Page 33 |
| 10 times | OFF | E9 | Another indoor unit malfunction (for twins system) | -- |
| 11 times | OFF | Ed | Outdoor unit malfunction | Page 32 |
| 1 times | ON | F0 | Current overload protection | Page 34 |
| 2 times | ON | F1 | Outdoor room temperature sensor T4 is in open circuit or has short circuited | Page 29 |
| 3 times | ON | F2 | Condenser coil temperature sensor T3 is in open circuit or has short circuited | Page 29 |
| 4 times | ON | F3 | Compressor discharge temperature sensor TP is in open circuit or has short circuited | Page 29 |
| 5 times | ON | F4 | Outdoor unit EEPROM parameter error | Page 23 |
| 6 times | ON | F5 | The outdoor fan speed is operating outside of the normal range (for some models) | Page 27 |
| 7 times | ON | F6 | Evaporator coil outlet temperature sensor T2B is in open circuit or has short circuited (for free-match indoor units) | Page 29 |
| 11 times | ON | f a | Communication error between indoor two chips (for some models) | Page 35 |
| 1 times | FLASH | P0 | IPM malfunction or IGBT over-strong current protection | Page 36 |
| 2 times | FLASH | P1 | Over voltage or over low voltage protection | Page 37 |
| 3 times | FLASH | P2 | Top temperature protection of compressor | Page 38 |
| 5 times | FLASH | P4 | Inverter compressor drive error | Page 36 |
| 6 times | FLASH | P5/-- | Indoor units mode conflict (match with multi outdoor unit) | Page 47 |
| 7 times | FLASH | P6 | Low pressure protection (for some models) | Page 39 |
| 8 times | FLASH | P7 | IGBT temperature sensor TH is in open circuit or has short circuited (for some models) | Page 29 |

For other errors: The display board may display a garbled code or a code undefined by the service manual. Ensure the code is not a temperature reading.

Error Display (For Some Outdoor Units)

Table 11 — Error Display

| DISPLAY | MALFUNCTION OR PROTECTION | SOLUTION |
|--------------------------|---|-----------------|
| E0/F4 | Outdoor unit EEPROM parameter error (for some units) | Page 23 |
| E1 | Indoor / outdoor unit communication error | Page 24 |
| XYE | For XYE Communication | Page 26 |
| E3/F5 | The outdoor fan speed is operating outside of the normal range | Page 27 |
| E4/E5/F1/F2/F3/ F6/P7 | Condenser coil temperature sensor T3 is in an open circuit or has short circuited. Compressor discharge temperature sensor TP is in an open circuit or has short circuited. | Page 29 |
| EE | Water-Level Alarm Malfunction | Page 30 |
| EC | Refrigerant Leakage Detection | Page 31 |
| ED | Outdoor unit malfunction | Page 32 |
| E8 | Communication Error Between Master and Slave Unit (for Twins System) | Page 33 |
| F0 | Overload Current Protection | Page 34 |
| FA | Communication Error Between Indoor Two Chips | Page 35 |
| P0/P4 | IPM Malfunction and Inverter Compressor Drive Error | Page 36 |
| P1 | Over voltage or over low voltage protection | Page 37 |
| P2 | Top Temperature Protection of Compressor | Page 38 |
| P6/J6 | Low Pressure Protection | Page 39 |
| J0 | Evaporator high temperature protection | Page 40 |
| J1 | Condenser high temperature protection | Page 41 |
| J2 | High discharge temperature protection | Page 42 |
| J3 | PFC module protection | Page 43 |
| J4 | Communication error between outdoor main chip and compressor driven chip | Page 44 |
| J5 | High pressure protection | Page 45 |
| J8 | AC power input voltage protection | Page 46 |

Outdoor Unit Point Check Function (36 and 48 only)

- A check switch is included on the outdoor PCB.
- Push SW1 to check the unit's status while running. The digital display shows the codes listed in Table 12 each time SW1 is pressed.

Table 12 — Outdoor Unit Point Check

| NUMBER OF PRESSES | DISPLAY | REMARK | | |
|-------------------|---|--|---|---|
| 00 | Normal display | Displays the running frequency, running state, or malfunction code | | |
| 01 | Indoor unit capacity demand code | Actual data*HP*10 If the capacity demand code is higher than 99, the digital display tube displays the single digit and tens digit. (For example, the digital display tube displays "5.0", which means the capacity demand is 15. The digital display tube displays "60", it means the capacity demand is 6.0). | | |
| 02 | Amendatory capacity demand code | | | |
| 03 | The frequency after the capacity requirement transfer | | | |
| 04 | The frequency after the frequency limit | | | |
| 05 | The frequency of sending to 341 chip | | | |
| 06 | Indoor unit evaporator temperature | If the temperature is lower than 0 degree, the digital display tube displays "0". If the temp. is higher than 70 degrees, the digital display tube displays "70". | | |
| 07 | Condenser pipe temp.(T3) | If the temp. is lower than -9 degrees, the digital display tube displays "-9". If the temperature is higher than 70 degrees, the digital display tube displays "70". If the indoor unit is not connected, the digital display tube displays: "--" | | |
| 08 | Outdoor ambient temp.(T4) | | | |
| 09 | Compressor discharge temp. (T5) | The display value is between 13~129 degrees. If the temperature is lower than 13 degrees, the digital display tube displays "13". If the temperature is higher than 99 degrees, the digital display tube displays a single digit and tens digit. (For example, the digital display tube displays "0.5", it means the compressor discharge temperature. is 105 degrees. The digital display tube displays "1.6", it means the compressor discharge temperature. is 116 degrees. | | |
| 10 | AD value of current | The display value is a hex number. | | |
| 11 | AD value of voltage | For example, the digital display tube displays "Cd", it means AD value is 205. | | |
| 12 | Indoor unit running mode code | Standby:0, Fan only 1,Cooling:2, Heating:3, Forced Cooling:4, Drying:6, Self Clean:8, Forced Defrosting:10 | | |
| 13 | Outdoor unit running mode code | Standby:0, Fan only 1,Cooling:2, Heating:3, Forced Cooling:4, Drying:6, Self Clean:8, Forced Defrosting:10 | | |
| 14 | EXV open angle | Actual data/4. If the value is higher than 99, the digital display tube displays a single digit and tens digit. For example, the digital display tube displays "2.0", it means the EXV open angle is 120x4=480p. | | |
| 15 | Frequency limit symbol | Bit7 | Frequency limit caused by IGBT radiator | The display value is a hexadecimal number. For example, the digital display shows 2A, then Bit5=1, Bit3=1, and Bit1=1. This means that a frequency limit may be caused by T4, T3, or the current. |
| | | Bit6 | Frequency limit caused by PFC | |
| | | Bit5 | Frequency limit caused by T4. | |
| | | Bit4 | Frequency limit caused by T2. | |
| | | Bit3 | Frequency limit caused by T3. | |
| | | Bit2 | Frequency limit caused by T5. | |
| | | Bit1 | Frequency limit caused by current | |
| | | Bit0 | Frequency limit caused by voltage | |
| 16 | Outdoor unit fan motor state | Off: 0, Turbo:1 High speed:2, Med speed: 3, Low speed: 4, Breeze:5, Super breeze: 6 other speed:7 | | |
| 17 | IGBT radiator temperature | The display value is between 30~120 degrees. If the temperature is lower than 30 degrees, the digital display tube displays "30". If the temperature is higher than 99 degrees, the digital display tube displays a single digit and a tens digit. (For example, the digital display tube displays "0.5", it means the IGBT radiator temperature is 105 degrees. The digital display tube displays "1.6", it means the IGBT radiator temperature is 116 degrees. | | |
| 18 | Indoor unit number | The indoor unit can communicate with outdoor unit well. General:1, Twins:2 | | |
| 19 | Evaporator pipe temp. T2 of 1# indoor unit | If the temperature is lower than 0 degree, the digital display tube displays "0". If the temperature is higher than 70 degrees, the digital display tube displays "70". If the indoor unit is not connected, the digital display tube displays: "--" | | |
| 20 | Evaporator pipe temp. T2 of 2# indoor unit | | | |
| 21 | Evaporator pipe temp. T2 of 3# indoor unit | | | |
| 22 | 1# Indoor unit capacity demand code | Actual data*HP*10 If the capacity demand code is higher than 99, the digital display tube displays a single digit and tens digit. (For example, the digital display tube displays "5.0", it means the capacity demand is 15. the digital display tube show "60", it means the capacity demand is 6.0). If the indoor unit is not connected, the digital display tube displays: "--" | | |
| 23 | 2# Indoor unit capacity demand code | | | |
| 24 | 3# Indoor unit capacity demand code | | | |
| 25 | Room temp. T1 of 1# indoor unit | If the temperature is lower than 0 degree, the digital display tube displays "0". If the temperature is higher than 70 degree, the digital display tube displays "70". If the indoor unit is not connected, the digital display tube displays: "--" | | |
| 26 | Room temp. T1 of 2# indoor unit | | | |
| 27 | Average room temp. T1 | | | |
| 28 | Reason of stop | | | |
| 29 | Evaporator pipe temp. T2B of 1# indoor unit | If the temperature is lower than 0 degree, the digital display tube displays "0".If the temperature is higher than 70 degree, the digital display tube displays "70". If the indoor unit is not connected, the digital display tube displays: "--" | | |
| 30 | Evaporator pipe temp. T2B of 2# indoor unit | | | |

Quick Maintenance by Error Code

If you do not have the time to test which specific parts are faulty, you can directly change the required parts according to the error code. You can locate the parts to replace by error code in Table 13.

Table 13 — Quick Maintenance by Error Code

| PART REQUIRING PAYMENT | ERROR CODE | | | | | | | | | |
|-------------------------|------------|----|----|----|----|----|----|----|----|----|
| | E0 | E1 | E3 | E4 | E5 | EC | EE | F0 | F1 | F2 |
| Indoor PCB | √ | √ | √ | √ | √ | √ | √ | x | x | x |
| Outdoor PCB | x | √ | x | x | x | x | x | √ | √ | √ |
| Indoor fan motor | x | x | √ | x | x | x | x | x | x | x |
| Outdoor fan motor | x | x | x | x | x | x | x | √ | x | x |
| T1 sensor | x | x | x | √ | x | x | x | x | x | x |
| T2 Sensor | x | x | x | x | √ | √ | x | x | x | x |
| T3 Sensor | x | x | x | x | x | x | x | x | x | √ |
| T4 Sensor | x | x | x | x | x | x | x | x | √ | x |
| TP Sensor | x | x | x | x | x | x | x | x | x | x |
| IGBT Sensor | x | x | x | x | x | x | x | x | x | x |
| Additional refrigerant | x | x | x | x | x | √ | x | √ | x | x |
| Capacitor of compressor | x | x | x | x | x | x | x | x | x | x |
| Compressor | x | x | x | x | x | x | x | √ | x | x |
| IPM board | x | x | x | x | x | x | x | x | x | x |
| Capacitor of fan motor | x | x | x | x | x | x | x | x | x | x |
| Outdoor fan | x | x | x | x | x | x | x | x | x | x |
| Display board | x | x | x | x | x | x | √ | x | x | x |
| Reactor or inductance | x | x | x | x | x | x | x | √ | x | x |
| Bridge rectifier | x | x | x | x | x | x | x | x | x | x |
| Water-level switch | x | x | x | x | x | x | √ | x | x | x |
| Water pump | x | x | x | x | x | x | √ | x | x | x |

Table 14 — Quick Maintenance by Error Code

| PART REQUIRING REPLACEMENT | ERROR CODE | | | | | | | | |
|----------------------------|------------|----|----|----|----|-------|----|-------|----|
| | F2 | F3 | F4 | F5 | F6 | P0/P4 | P1 | P6/J6 | P7 |
| Indoor PCB | x | x | x | x | x | x | x | x | x |
| Outdoor PCB | √ | √ | √ | √ | x | √ | √ | √ | √ |
| Indoor fan motor | x | x | x | x | x | x | x | x | x |
| Outdoor fan motor | x | x | x | √ | x | √ | x | x | x |
| T1 sensor | x | x | x | x | x | x | x | x | x |
| T2 Sensor | x | x | x | x | x | x | x | x | x |
| T3 Sensor | √ | x | x | x | x | x | x | x | x |
| T4 Sensor | x | x | x | x | x | x | x | x | x |
| TP Sensor | x | √ | x | x | x | √ | x | x | x |
| IGBT Sensor | x | x | x | x | x | x | x | x | √ |
| Additional refrigerant | x | x | x | x | x | x | x | x | x |
| Capacitor of compressor | x | x | x | x | x | x | x | x | x |
| Compressor | x | x | x | x | x | √ | √ | x | x |
| IPM board | x | x | x | x | x | √ | √ | x | x |
| Capacitor of fan motor | x | x | x | x | x | x | x | x | x |
| Outdoor fan | x | x | x | x | x | x | x | x | x |
| Display board | x | x | x | x | x | x | x | x | x |
| Reactor or inductance | x | x | x | x | x | √ | √ | x | x |
| Bridge rectifier | x | x | x | x | x | √ | √ | x | x |
| Pressure protector | x | x | x | x | x | x | x | √ | x |
| T2B Sensor | x | x | x | x | √ | x | x | x | x |

Table 15 — Quick Maintenance by Error Code

| PART REQUIRING REPLACEMENT | ERROR CODE | | | | | | | |
|----------------------------|------------|----|----|----|----|----|----|----|
| | J0 | J1 | J2 | J3 | J4 | J5 | J8 | P2 |
| Indoor PCB | x | x | x | x | x | x | x | x |
| Outdoor PCB | √ | √ | √ | √ | √ | √ | √ | √ |
| Indoor fan motor | x | x | x | x | x | x | x | x |
| Outdoor fan motor | √ | x | x | √ | x | x | x | x |
| T1 sensor | x | x | x | x | x | x | x | x |
| T2 Sensor | √ | x | x | x | x | x | x | x |
| T3 Sensor | x | √ | x | x | x | x | x | x |
| T4 Sensor | x | x | x | x | x | x | x | x |
| TP Sensor | x | x | √ | x | x | x | x | x |
| IGBT Sensor | x | x | x | x | x | x | x | x |
| Additional refrigerant | x | √ | √ | x | x | x | x | x |
| Capacitor of compressor | x | x | x | x | x | x | x | x |
| Compressor | x | √ | x | √ | x | x | x | x |
| IPM board | x | √ | x | √ | x | x | √ | x |
| Fan Motor Capacitor | x | x | x | x | x | x | x | x |
| Outdoor fan | x | x | x | x | x | x | x | x |
| Display board | x | x | x | x | x | x | x | x |
| Reactor or inductance | x | x | x | x | x | x | √ | x |
| Bridge rectifier | x | x | x | x | x | x | √ | x |
| Pressure protector | x | x | x | x | x | √ | x | x |
| Compressor driven chip | x | x | x | x | √ | x | x | x |
| Overload protector | x | x | x | x | x | x | x | √ |

NOTE: For certain models, the outdoor PCB can not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

DIAGNOSIS AND SOLUTION

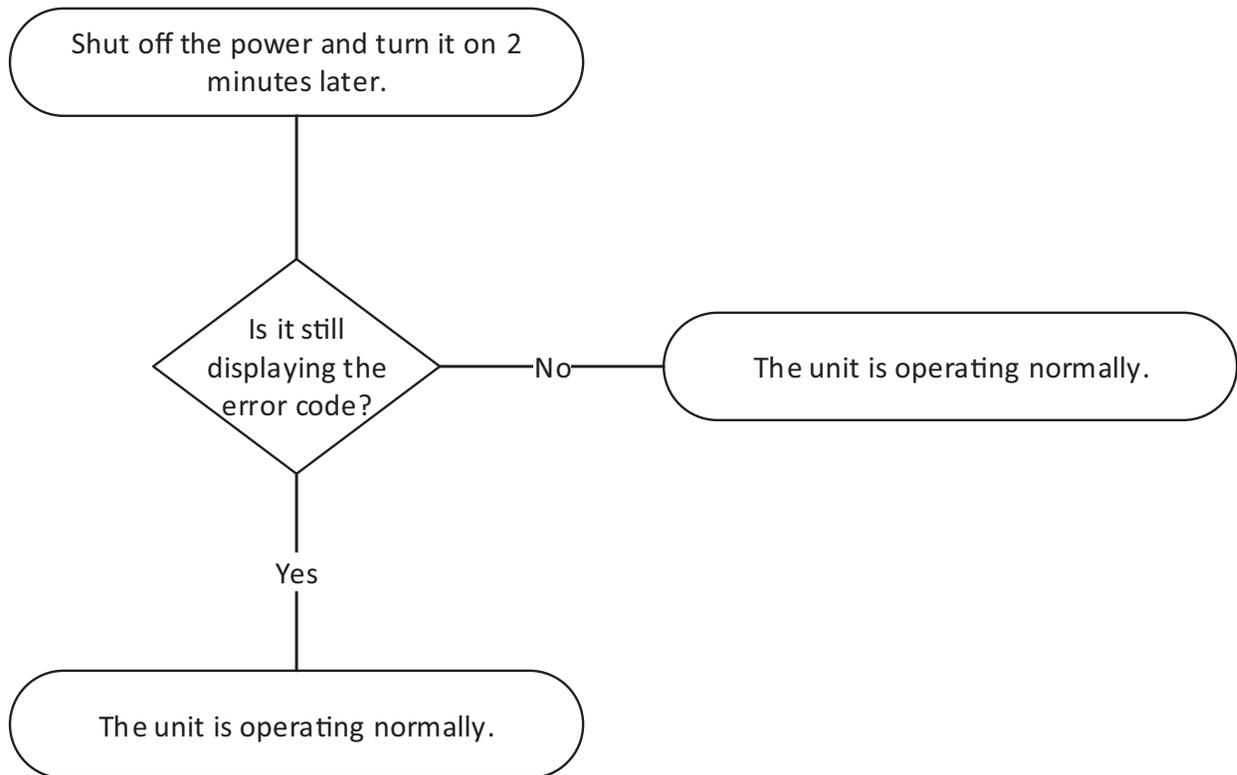
E0 / F4 (EEPROM Parameter Error Diagnosis and Solution)

Description: Indoor or outdoor PCB main chip does not receive feedback from the EEPROM chip.

Recommended parts to prepare:

- Indoor PCB
- Outdoor PCB

Troubleshooting and repair:



DIAGNOSIS AND SOLUTION (CONT.)

E1 (Indoor and Outdoor Unit Communication Error Diagnosis and Solution)

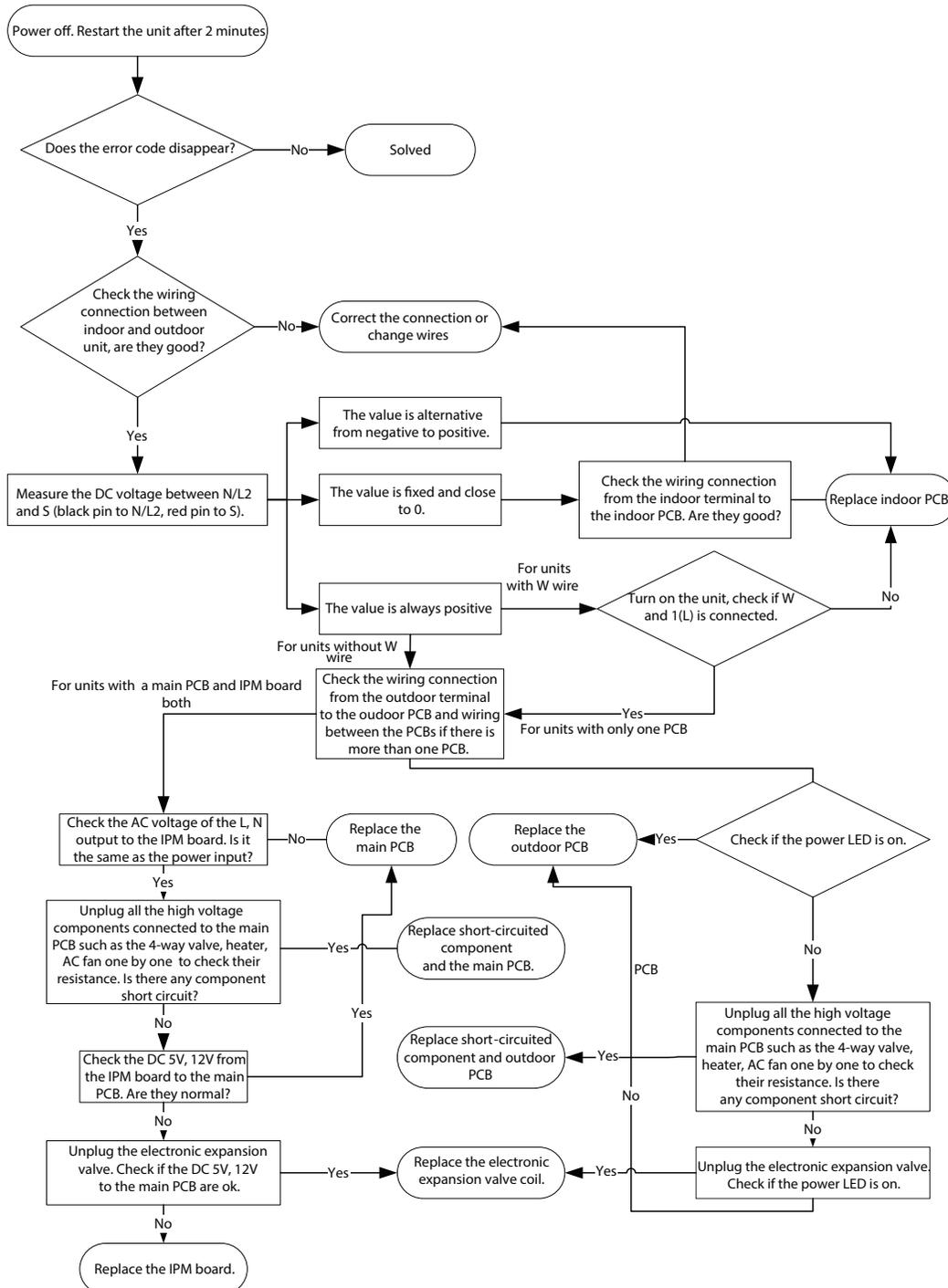
Description: Indoor unit can not communicate with the outdoor unit.

Recommended parts to prepare:

- Indoor PCB
- Outdoor PCB
- Reactor

Troubleshooting and Repair:

For S communication:



NOTE: For certain models, the outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

DIAGNOSIS AND SOLUTION (CONT.)

- Use a multimeter to test the DC voltage between 2 port (or S or L2 port) and 3 port (or N or S port) of the outdoor unit.
- The red pin of the multimeter connects with the 2 port (or S or L2 port) while the black pin is for 3 port (or N or S port).
- When the AC is normal running, the voltage is moving alternately as positive values and negative values.
- If the outdoor unit malfunctions, the voltage has always been the positive value.
- If the indoor unit malfunctions, the voltage maintains a certain value.

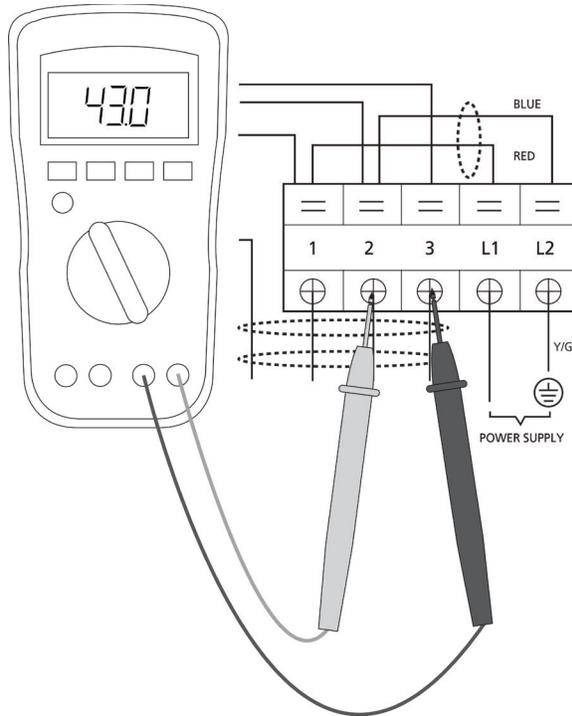


Fig. 14 — Multimeter Test

- Use a multimeter to test the reactor resistance which does not connect with the capacitor.
- The normal value should be around zero ohm. Otherwise, the reactor may malfunction.

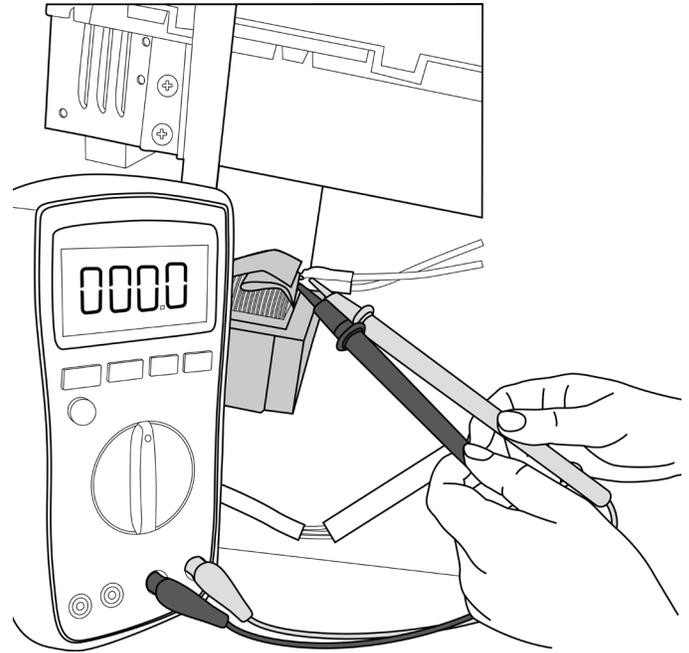


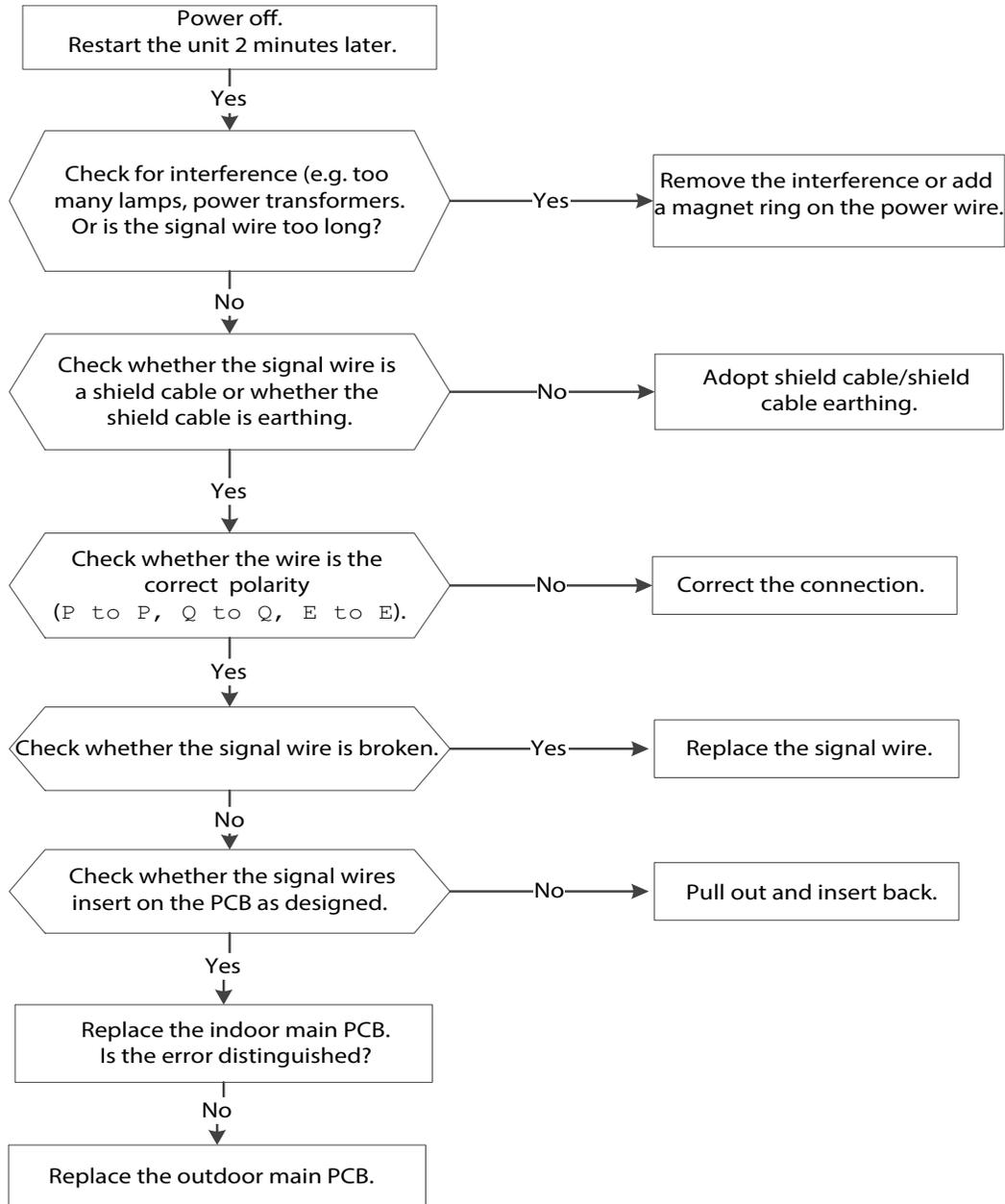
Fig. 15 — Multimeter Test

NOTE: The picture and the value are only for reference, actual condition and specific value may vary.

DIAGNOSIS AND SOLUTION (CONT.)

For XYE communication:

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

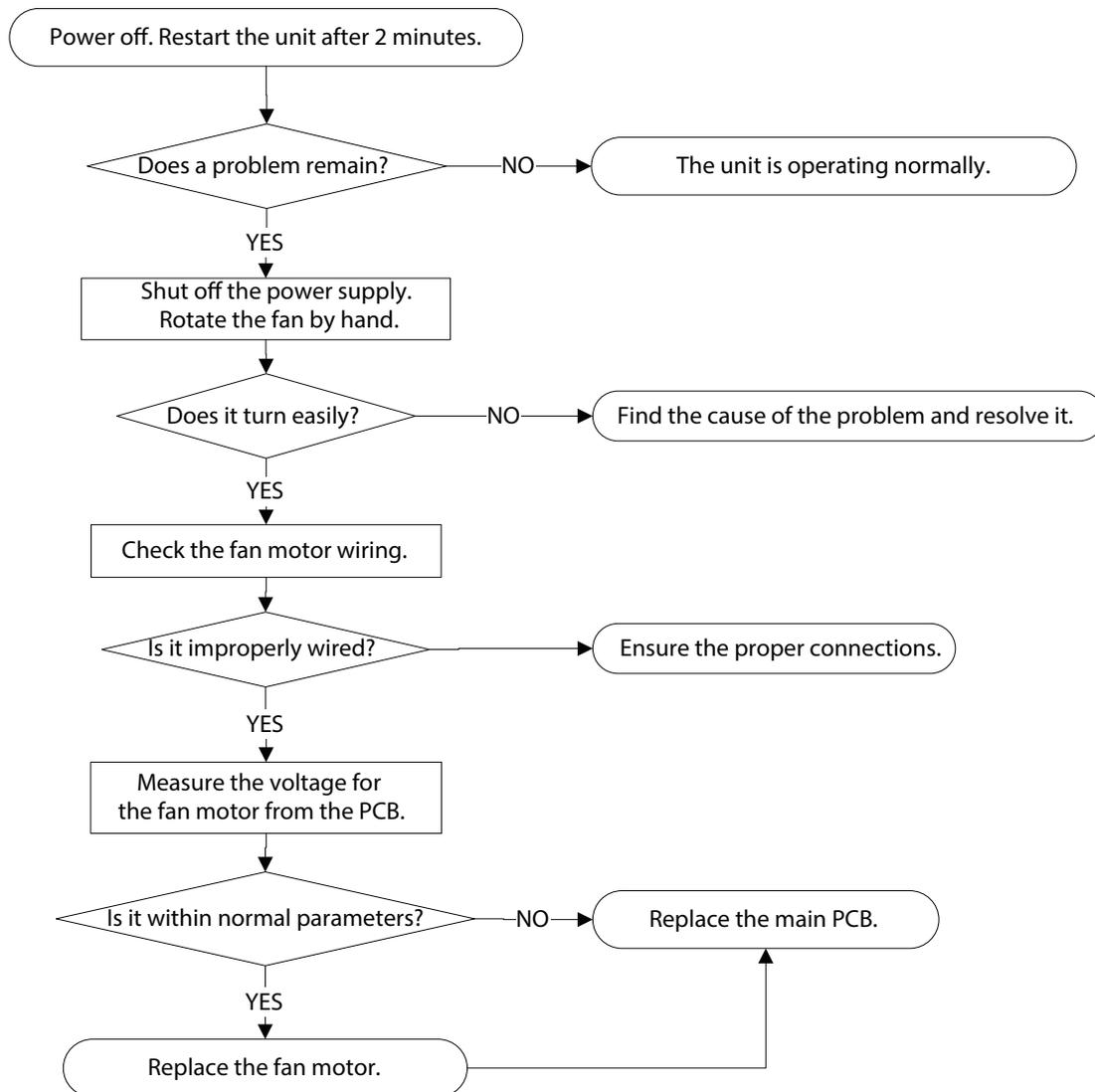
E3 / F5 (Fan speed is Operating Outside of Normal Range Diagnosis and Solution)

Description: When the indoor /outdoor fan speed keeps too low or too high for a certain time, the unit stops and the LED displays the failure.

Recommended parts to repair:

- Connection wires
- Fan assembly
- Fan motor
- PCB

Troubleshooting and Repair:



Index:

7. Indoor DC Fan Motor (control chip is on PCB)

Release the UVW connector. Measure the resistance of U-V, U-W, V-W. If the resistance is not equal to each other, the fan motor must be faulty and needs to be replaced. Otherwise the PCB is faulty and needs to be replaced.

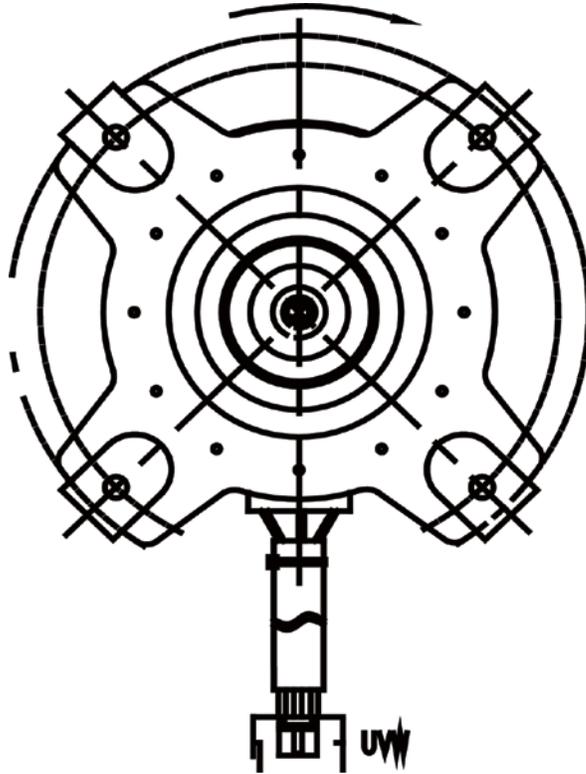


Fig. 16 — UVW Connector

DIAGNOSIS AND SOLUTION (CONT.)

E4/E5/F1/F2/F3/F6/P7 (Open Circuit or Short Circuit of Temperature Sensor Diagnosis and Solution)

Description: If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED displays the failure.

Recommended parts to prepare:

- Connection wires
- Sensors
- PCB

Troubleshooting and Repair:

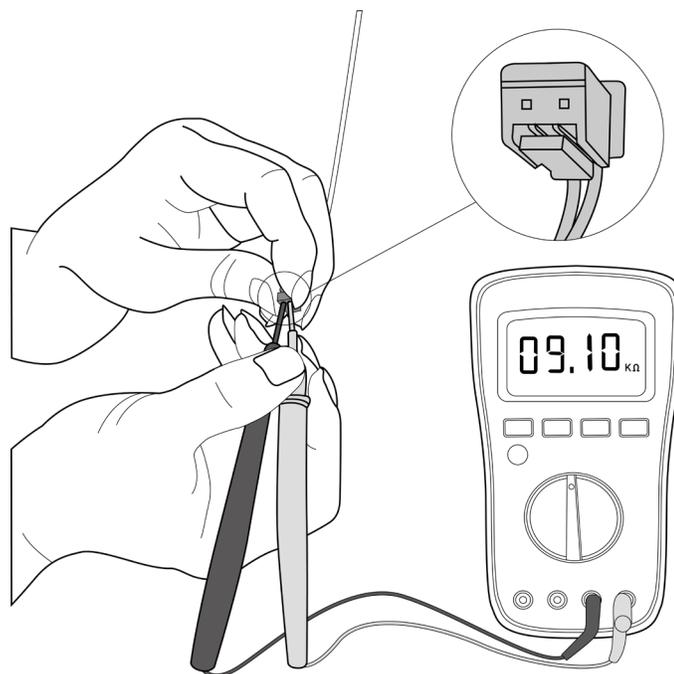
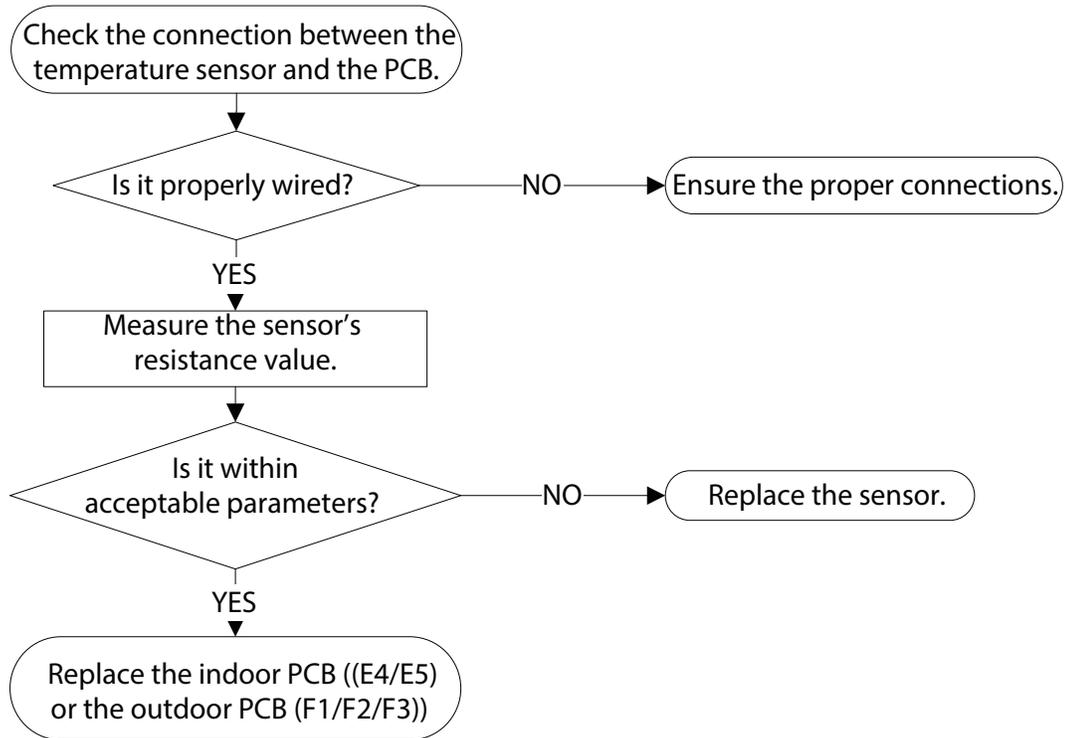


Fig. 17 — Test

NOTE: For certain models, the outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole. Figure 17 and the value are for reference only. The actual appearance and value may vary.

DIAGNOSIS AND SOLUTION (CONT.)

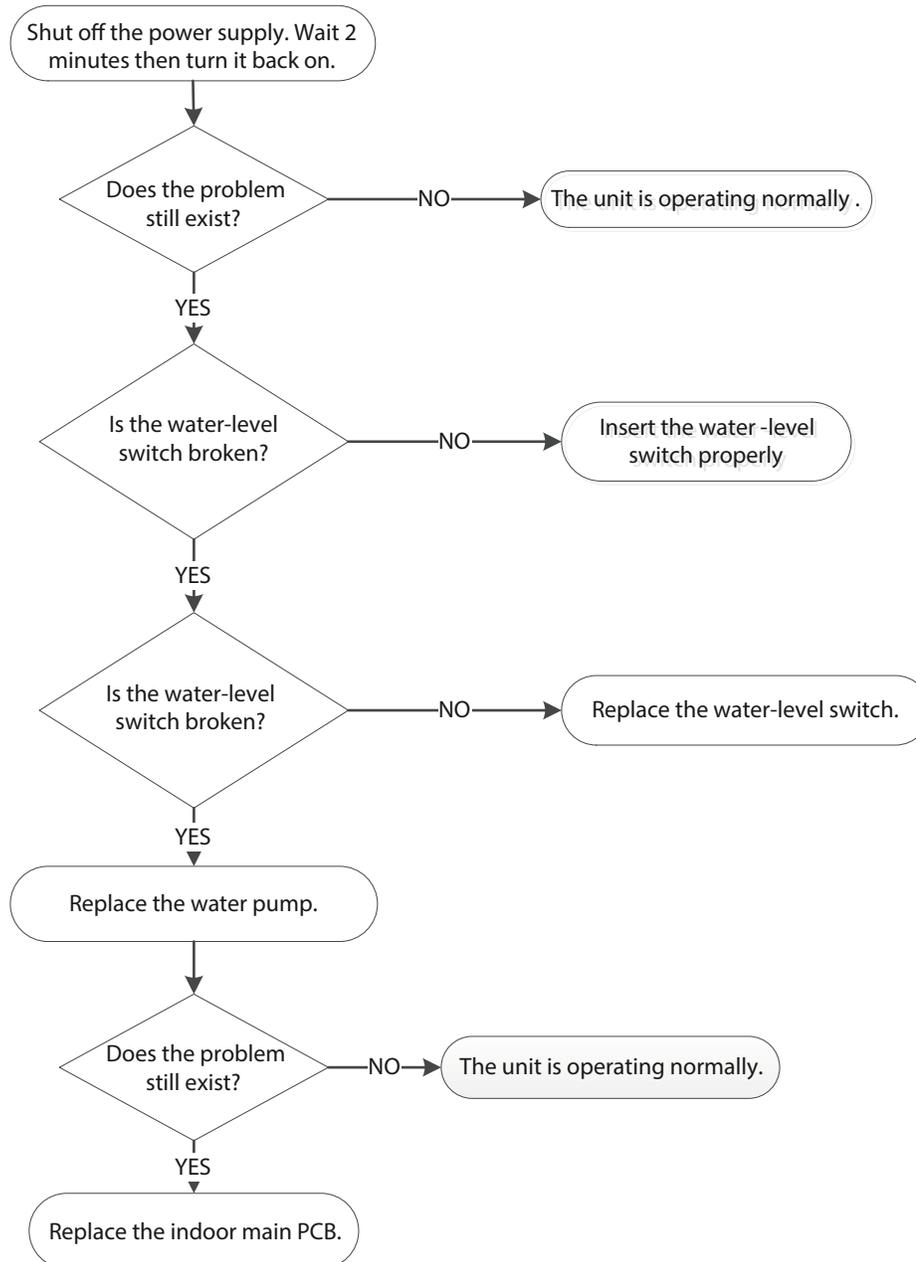
EE (Water-Level Alarm Malfunction Diagnosis and Solution)

Description: If the sampling voltage is not 5V, the LED displays the failure code.

Recommended parts to prepare:

- Connection wires
- Water-level switch
- Water pump
- Indoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

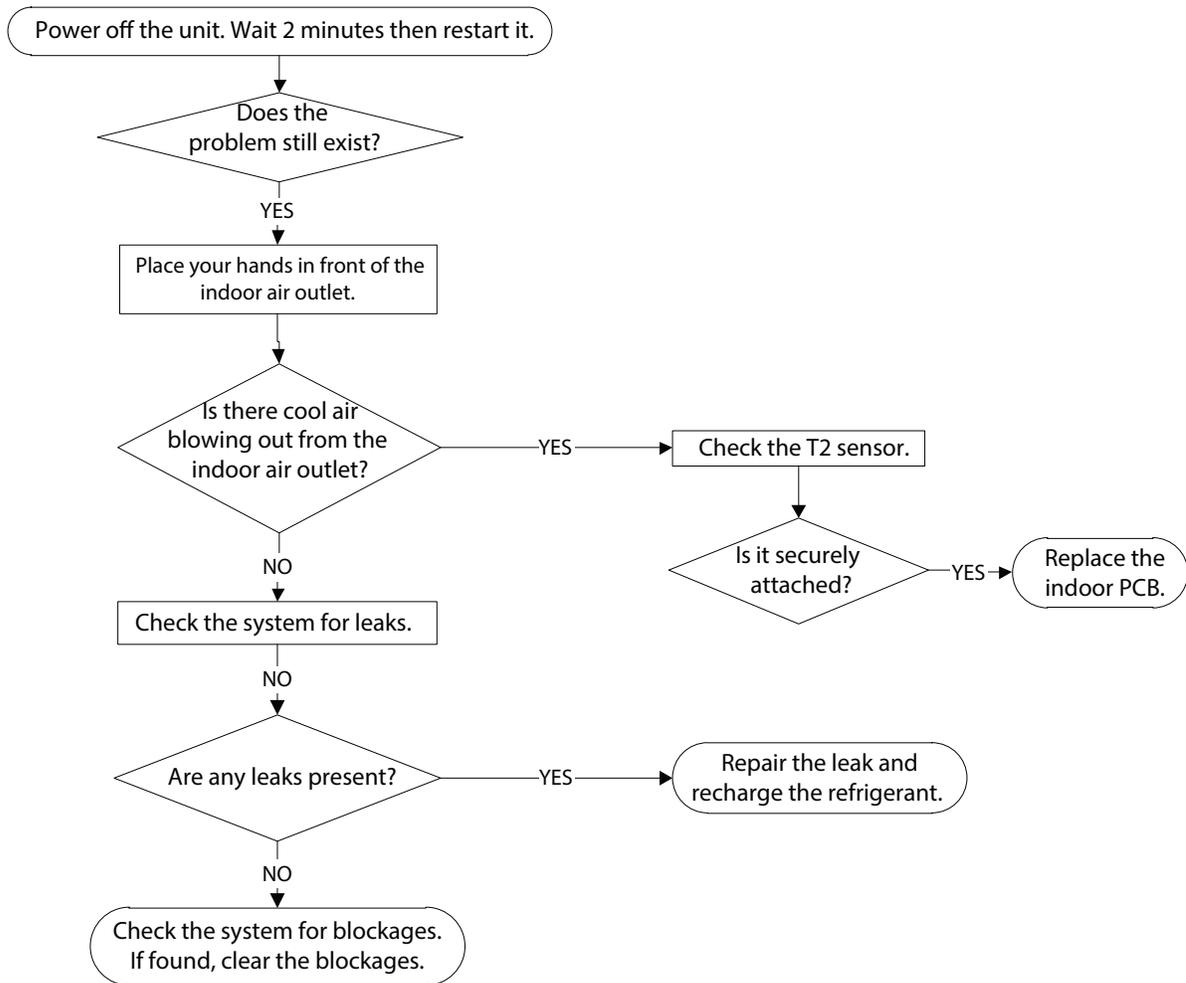
EC (Refrigerant Leakage Detection Diagnosis and Solution)

Description: Ensure the compressor's evaporator coil temperature (T2) starts running as Tcool. Initially 5 minutes after the compressor starts up, if $T2 < Tcool 1.8^{\circ}\text{F} (-1^{\circ}\text{C})$ does not stabilize for 4 seconds and the compressor running frequency exceeds 50Hz however it does not maintain for 3 minutes, and this occurs 3 times, the display area displays "EC" and the AC turns off.

Recommended parts to prepare:

- T2 sensor
- Indoor PCB
- Additional refrigerant

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

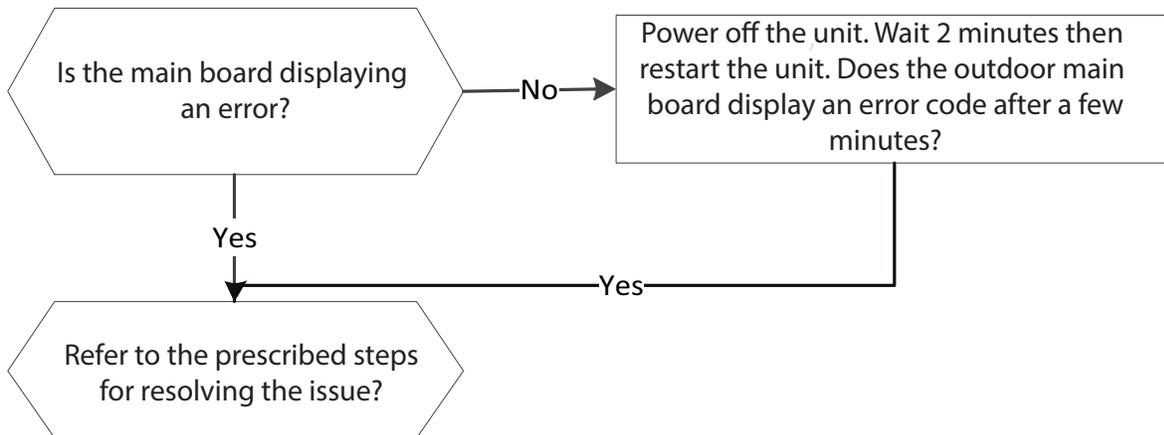
ED (Outdoor unit malfunction Diagnosis and Solution)

Description: The indoor unit detects that the outdoor unit has failed.

Recommended parts to prepare:

- Outdoor unit

Troubleshooting and Repair:



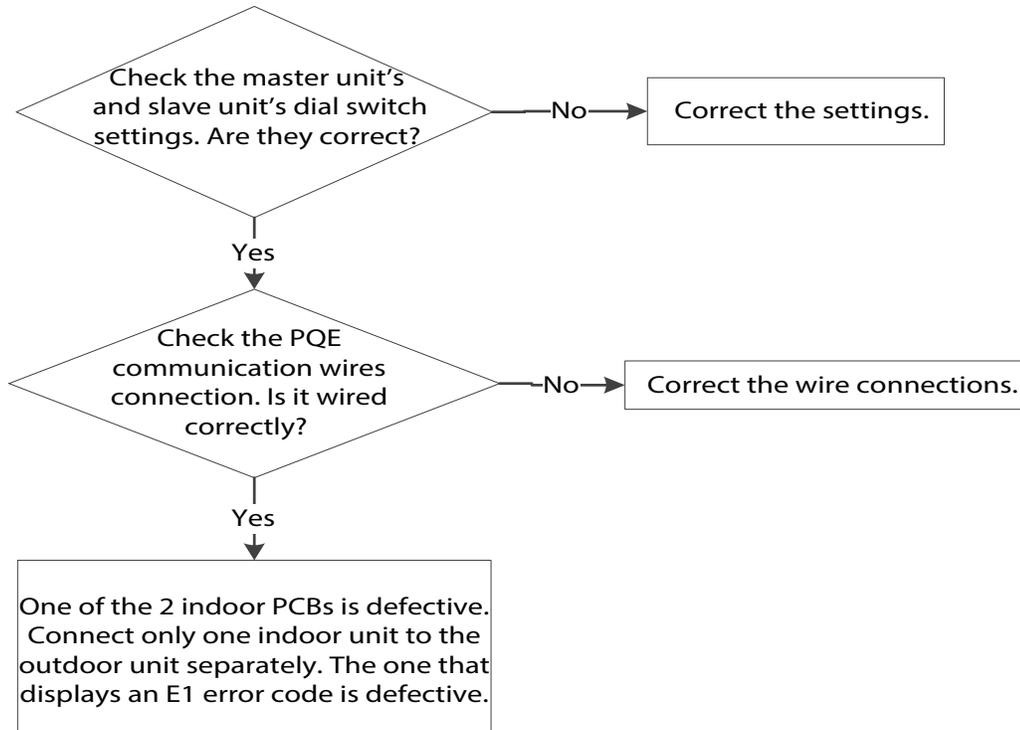
DIAGNOSIS AND SOLUTION (CONT.)

E8 (Communication Error Between Master and Slave Unit (for Twins System) Diagnosis and Solution)

Description: When set in twins system, master unit and slave unit cannot be recognized normally.

Recommended parts to prepare:

- Connection wires
- Indoor PCB



DIAGNOSIS AND SOLUTION (CONT.)

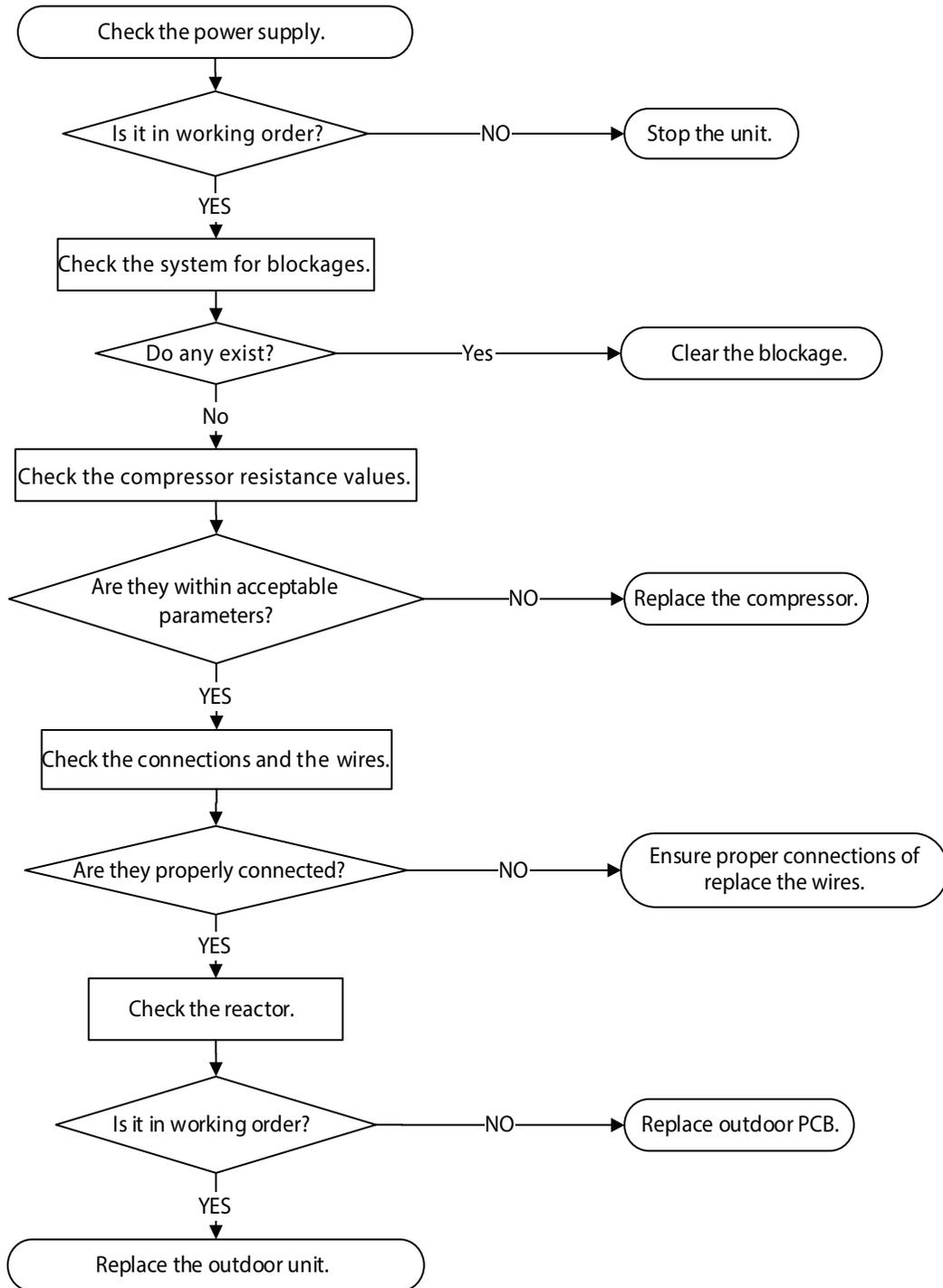
F0 (Overload Current Protection Diagnosis and Solution)

Description: An abnormal current rise is detected by checking the specified current detection circuit.

Recommended parts to prepare:

- Outdoor PCB
- Connection wires
- Compressor
- Reactor

Troubleshooting and repair:



NOTE: For certain models, the outdoor PCB can not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

DIAGNOSIS AND SOLUTION (CONT.)

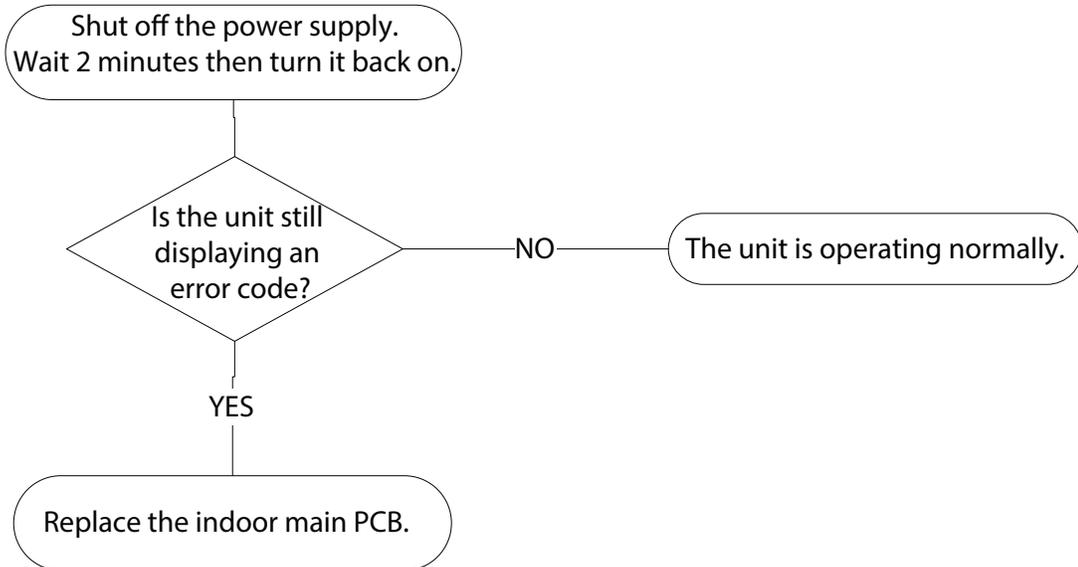
FA (Communication Error Between Indoor Two Chips Diagnosis and Solution)

Description: The indoor PCB main chip does not receive feedback from another chip.

Recommended parts to prepare:

- Indoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

P0/P4 (IPM Malfunction) and (Inverter Compressor Drive Error Diagnosis and Solution)

Description: P0: When the IPM sends an abnormal voltage signal to the compressor drive chip, the LED displays the failure code and the AC turns off.

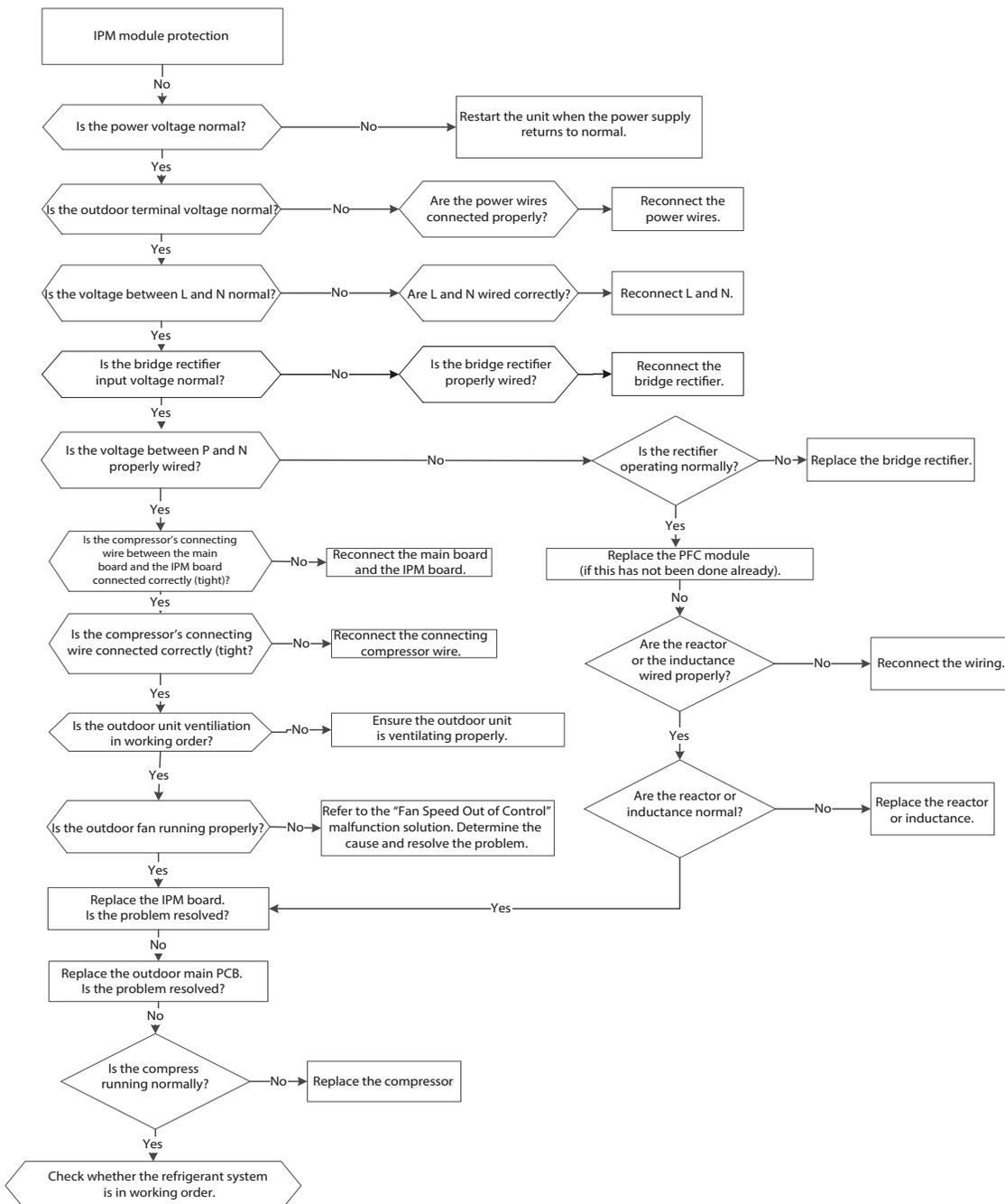
P4: The driven chip cannot detect the compressor's right rotor position.

Recommended parts to prepare:

- Connection wires
- IPM module board
- Outdoor fan assembly
- Compressor
- Outdoor PCB

Troubleshooting and Repair:

Test the resistance between every two ports of U, V, W of IPM and P, N. If any test 0 or close, the IPM is defective. Otherwise, follow the flowchart.



DIAGNOSIS AND SOLUTION (CONT.)

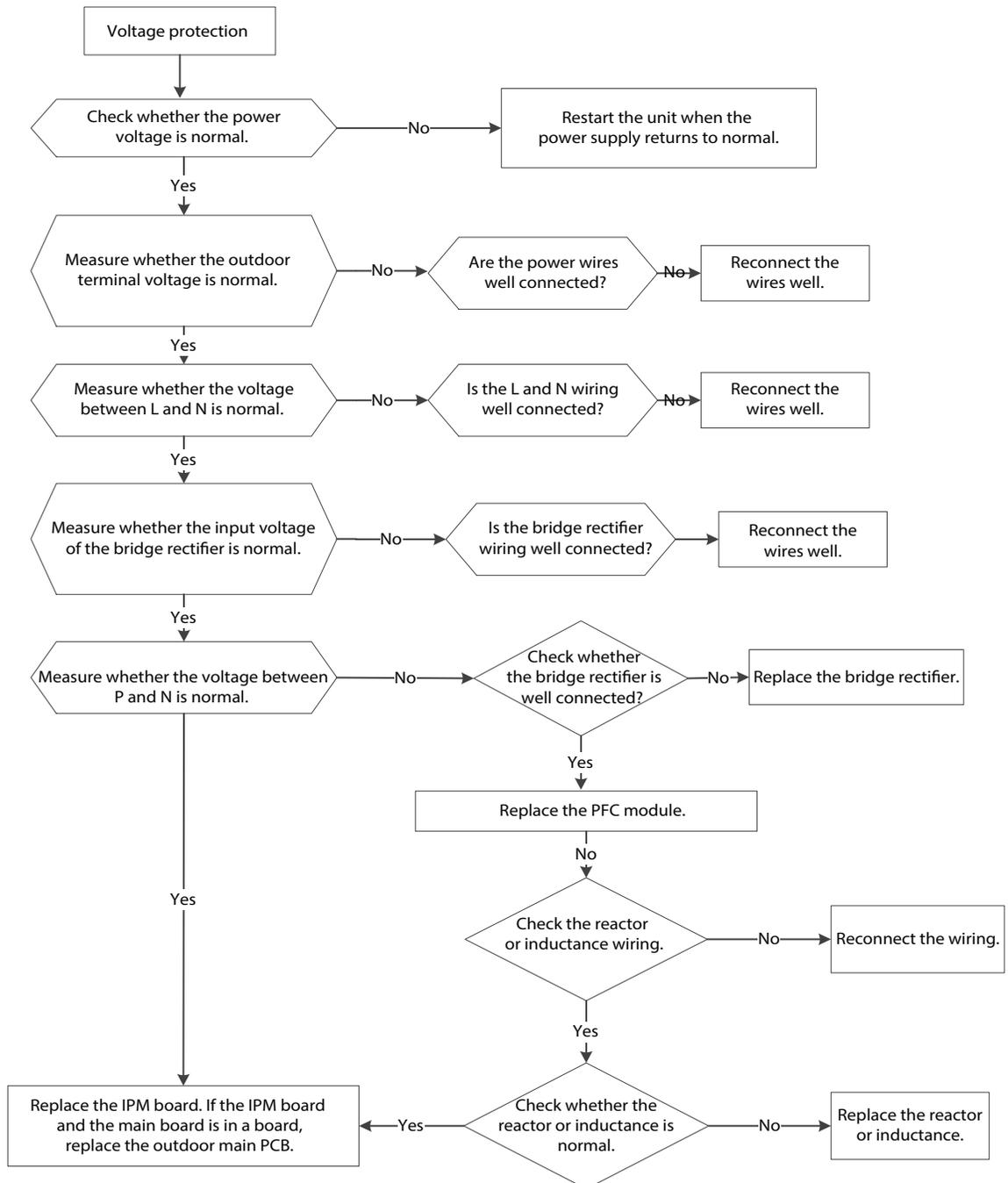
P1 (Over Voltage or Too Low Voltage Protection Diagnosis and Solution)

Description: Abnormal increases or decreases in voltage are detected by checking the specified voltage detection circuit.

Recommended parts to prepare:

- Power supply wires
- IPM module board
- Outdoor PCB
- Bridge rectifier
- PFC circuit or reactor

Troubleshooting and Repair:



NOTE: For certain models, the outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

DIAGNOSIS AND SOLUTION (CONT.)

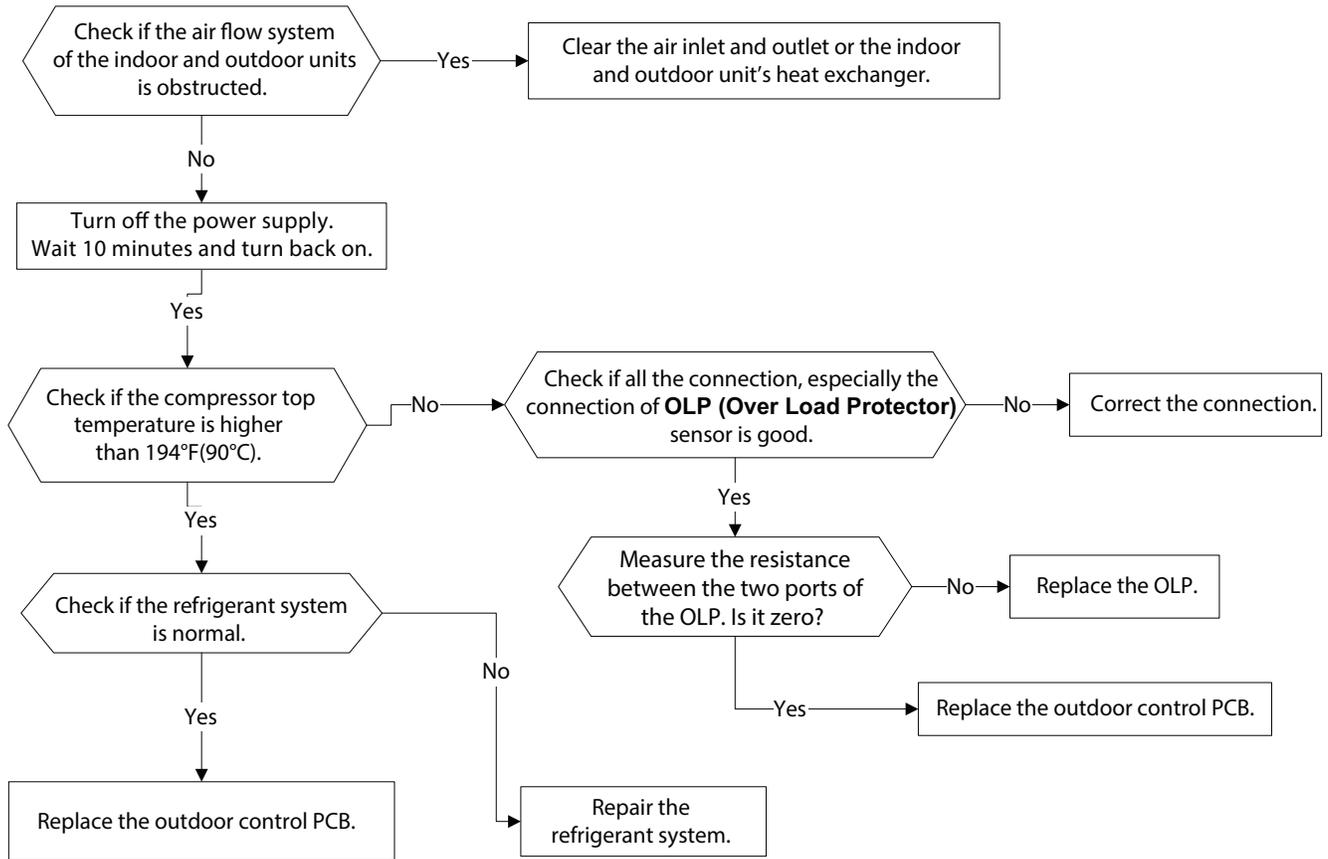
P2 (Top Temperature Protection of Compressor Diagnosis and Solution)

Description: If the sampling voltage is not 5V, the LED displays the failure.

Recommended parts to prepare:

- Connection wires
- Overload protector
- Outdoor PCB

Troubleshooting and Repair:



NOTE: For certain models, the outdoor PCB can not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.

DIAGNOSIS AND SOLUTION (CONT.)

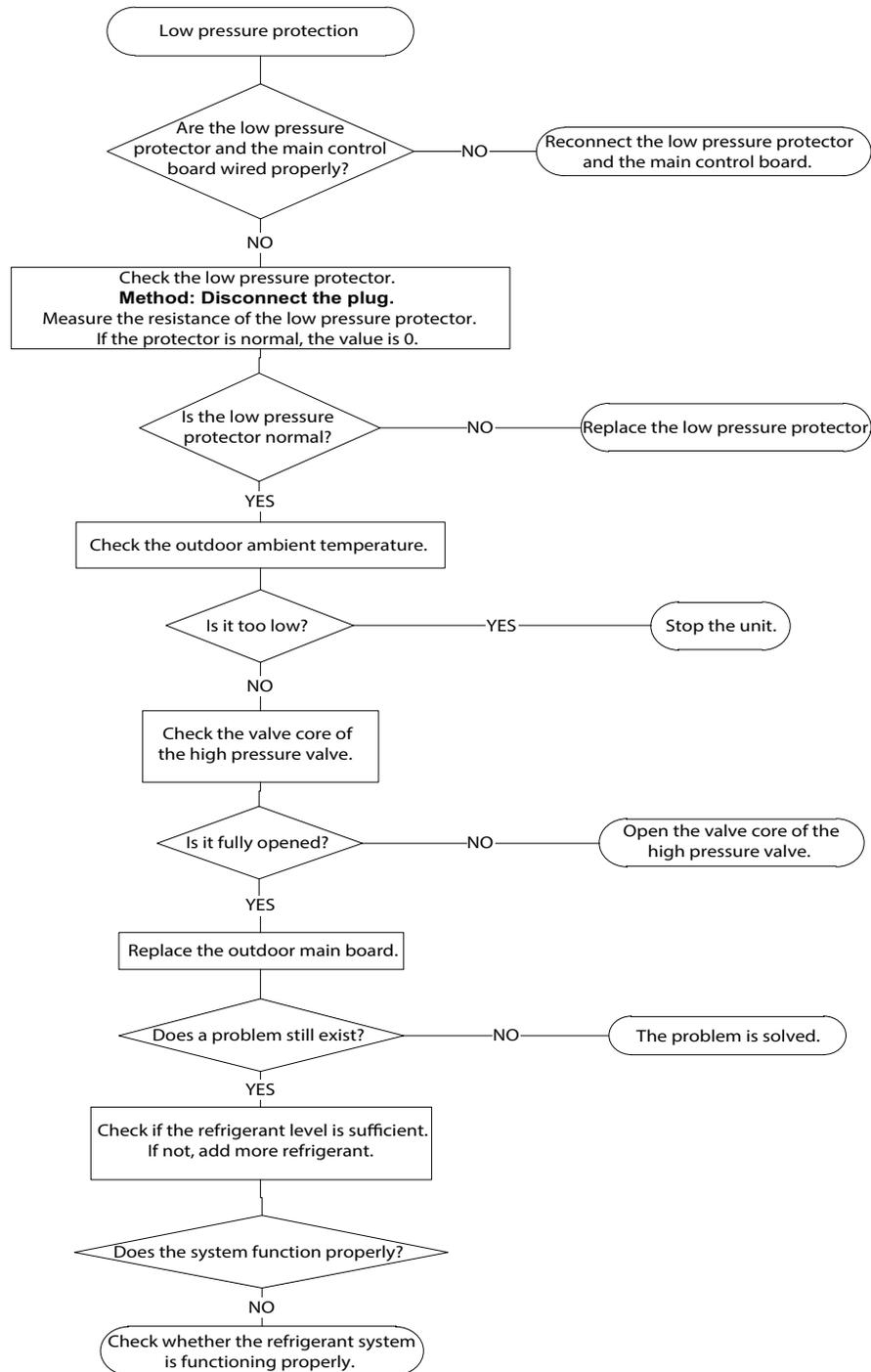
P6/J6 (Low Pressure Protection)

Description: If the sampling voltage is not 5V, the LED displays a failure code.

Recommended parts to prepare:

- Wiring mistake
- Overload protector
- System blockages
- Outdoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

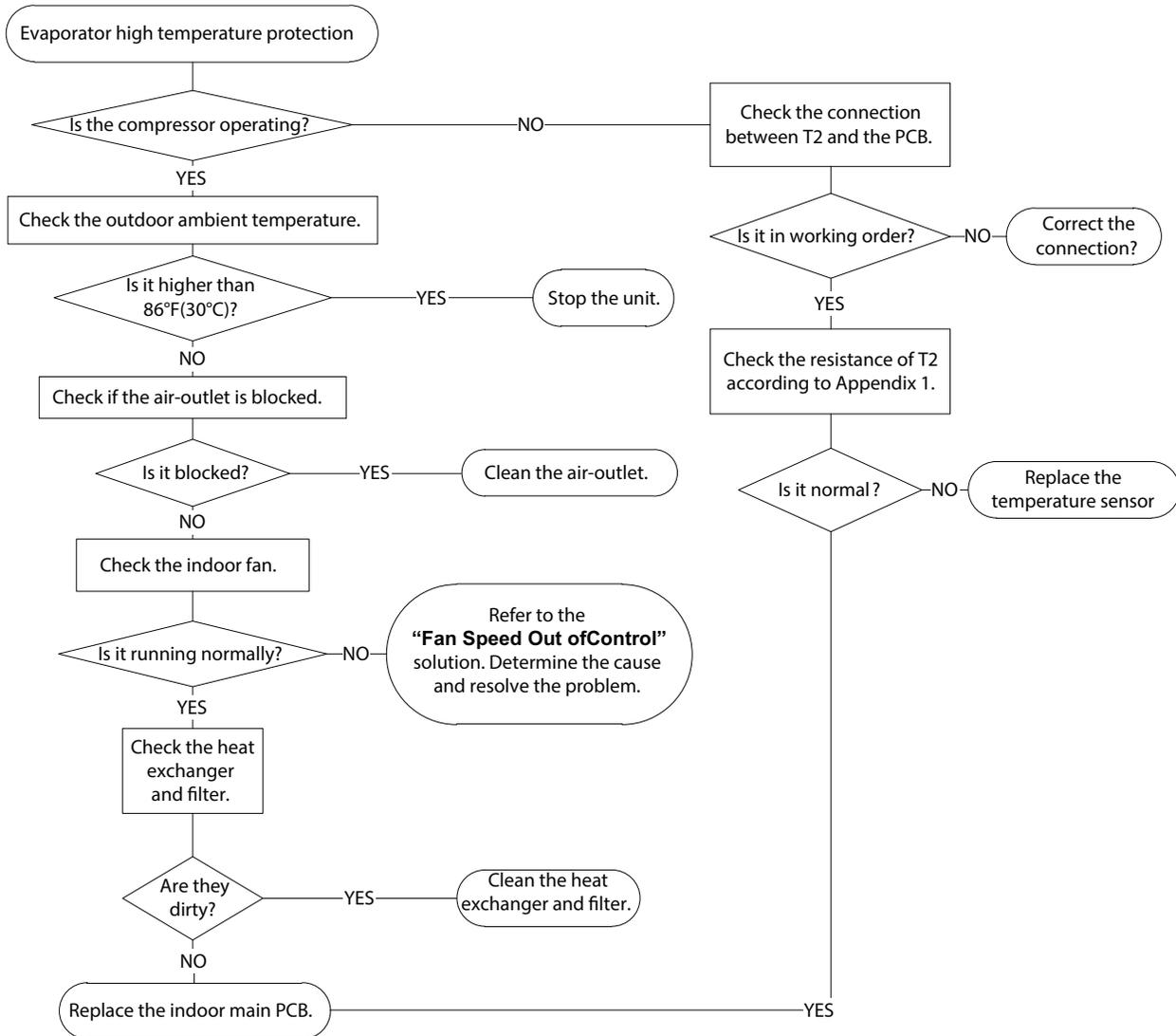
J0 (Evaporator High Temperature Protection)

Description: When the evaporator coil temperature is higher than 140°F 60°C, the unit stops. It starts again only when the evaporator coil temperature is less than a certain value.

Recommended parts to prepare:

- Wiring mistakes
- Overload protector
- System blockages
- Outdoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

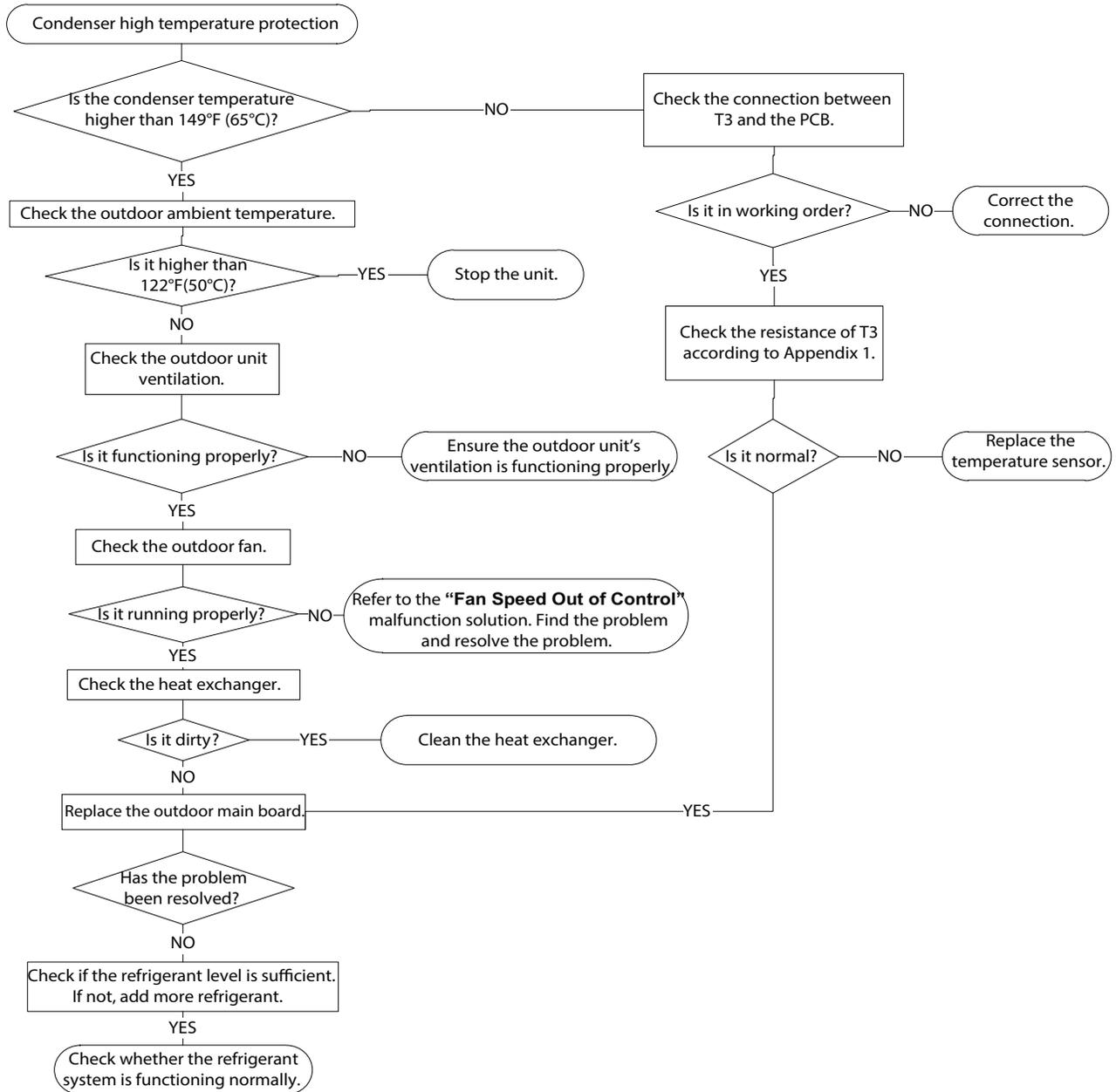
J1 (Condenser High Temperature Protection)

Description: When the outdoor pipe temperature is more than $TP3+5^{\circ}C$, the unit stops. It starts again only when the outdoor pipe temperature is less than $TP3-3^{\circ}C$.

Recommended parts to prepare:

- Condenser temperature sensor
- System leak or blockages

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

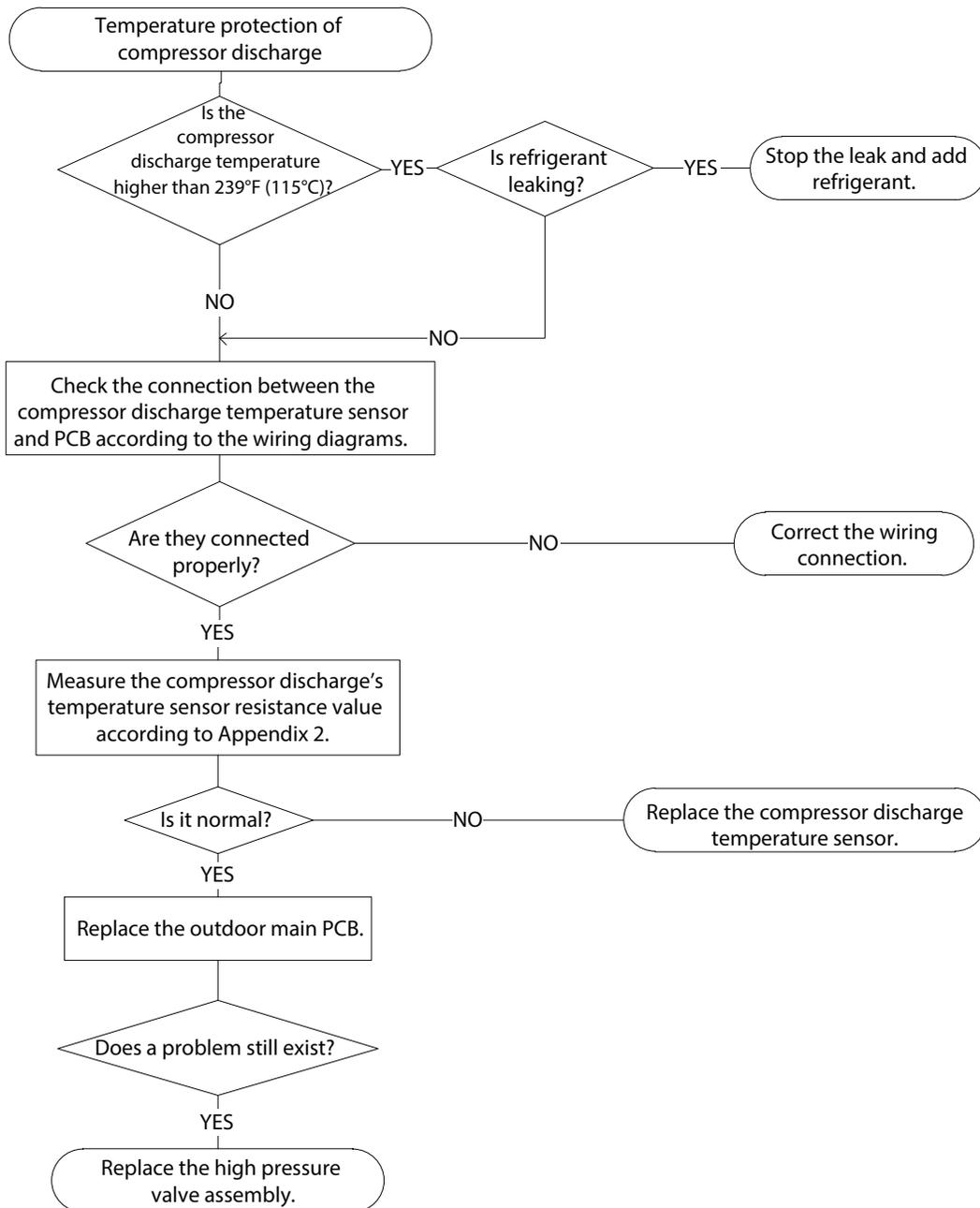
J2 (High Discharge Temperature Protection)

Description: When the compressor discharge temperature (T5) is more than 239°F (115°C) for 10 seconds, the compressor stops and does not restart until T5 is lower than 194°F (90°C).

Recommended parts to prepare:

- Refrigerant
- Wiring
- Discharge temperature sensor
- Outdoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

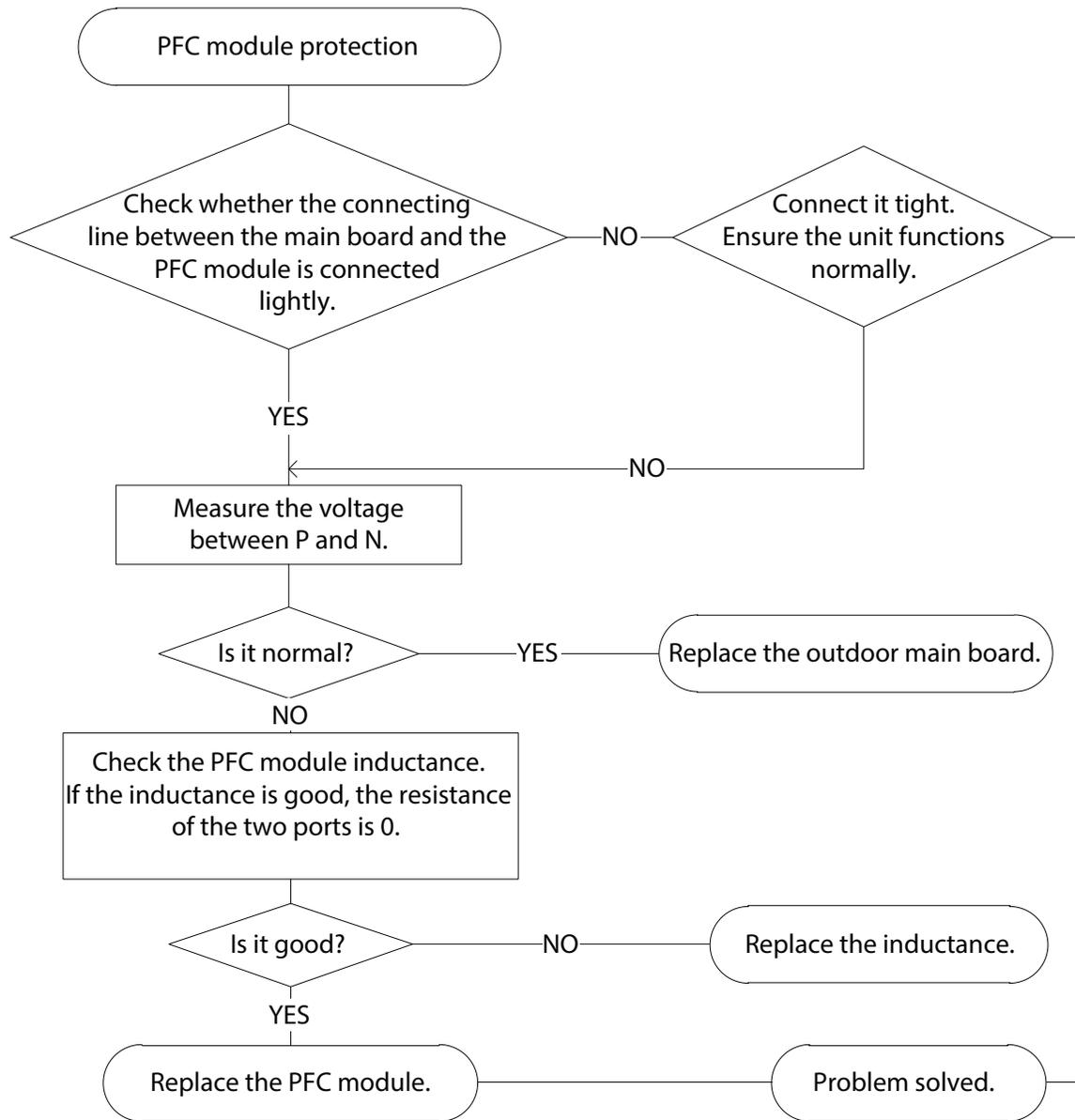
J3 (Module Protection)

Description: When the voltage signal that the IPM sends to the compressor drive chip is abnormal, the LED displays “J3” and AC turns off.

Recommended parts to prepare:

- Wiring
- IPM board
- Outdoor fan assembly
- Compressor
- Outdoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

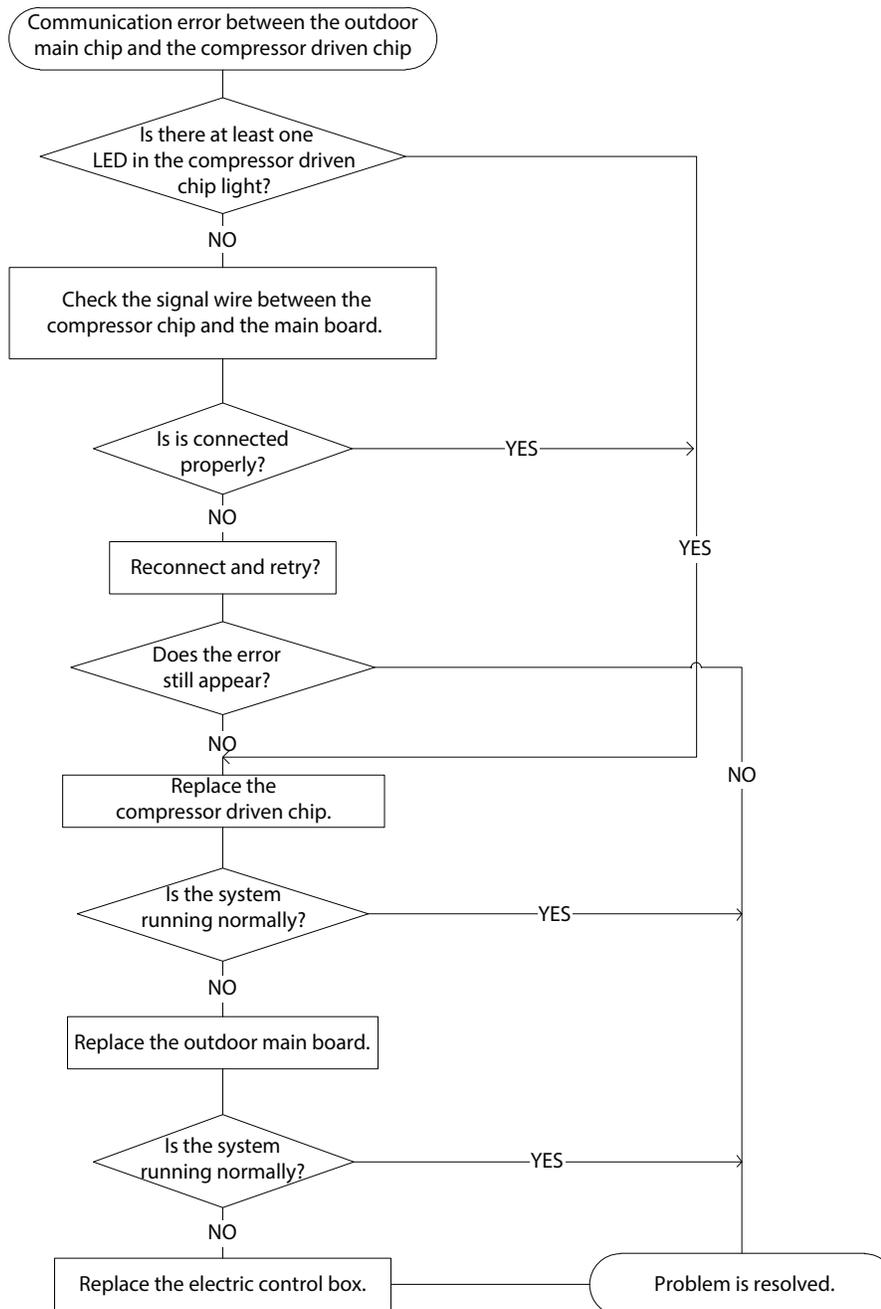
J4 (Communication Error Between Outdoor Main Chip and Compressor Driven Chip)

Description: The main PCB has not received feedback from the driven chip for 1 minute or the feedback data is wrong. The driven chip has not received feedback from the main PCB for 1 minute or the feedback data is wrong. The failure code disappears after the compressor stops or the communication runs efficiently.

Recommended parts to prepare:

- Outdoor PCB
- Compressor driven chip
- Signal wire

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

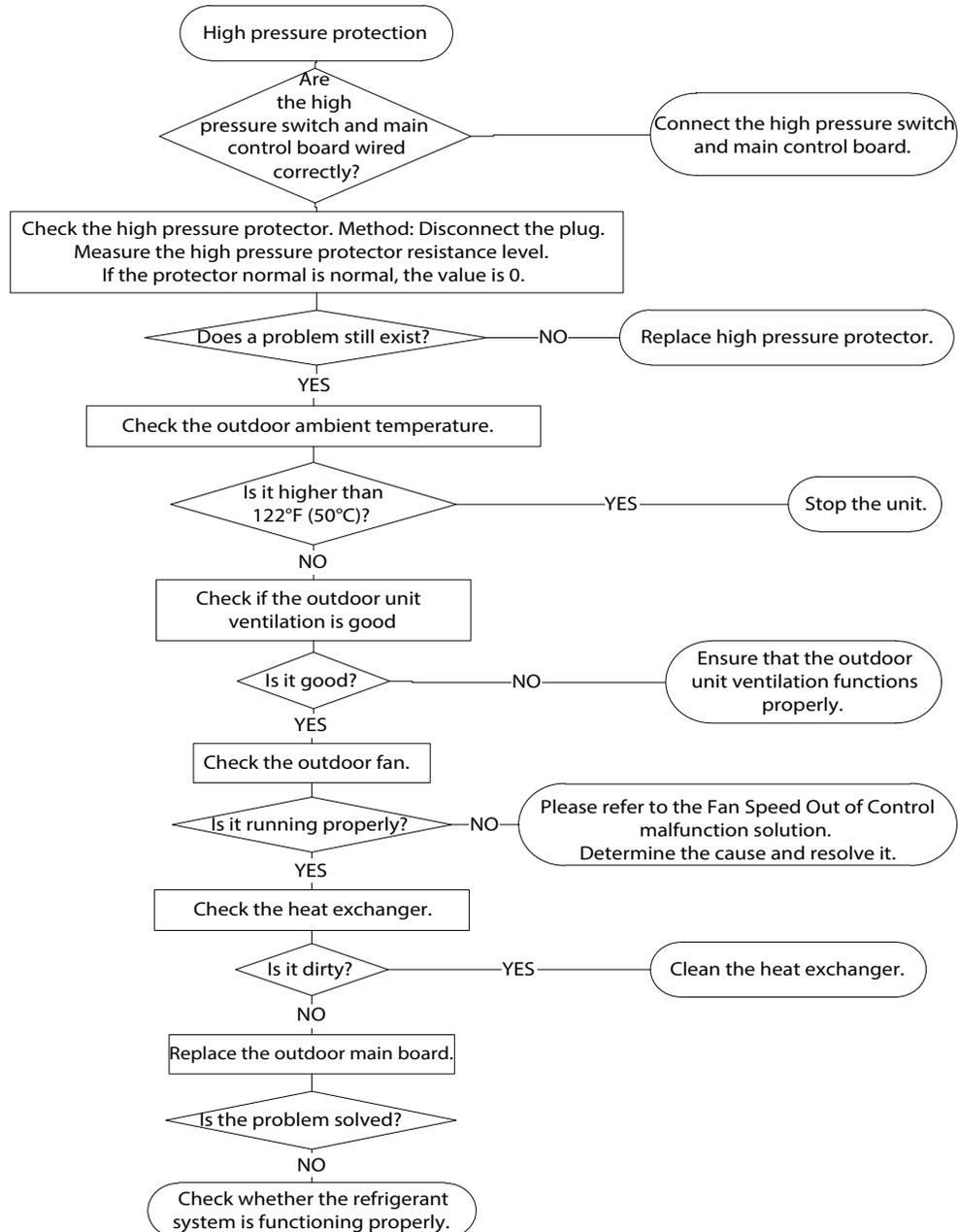
J5 (High Pressure Protection)

Description: If the sampling voltage is not 5V, the LED displays a failure code.

Recommended parts to prepare:

- Wiring
- Overload protector
- Outdoor PCB

Troubleshooting and Repair:



DIAGNOSIS AND SOLUTION (CONT.)

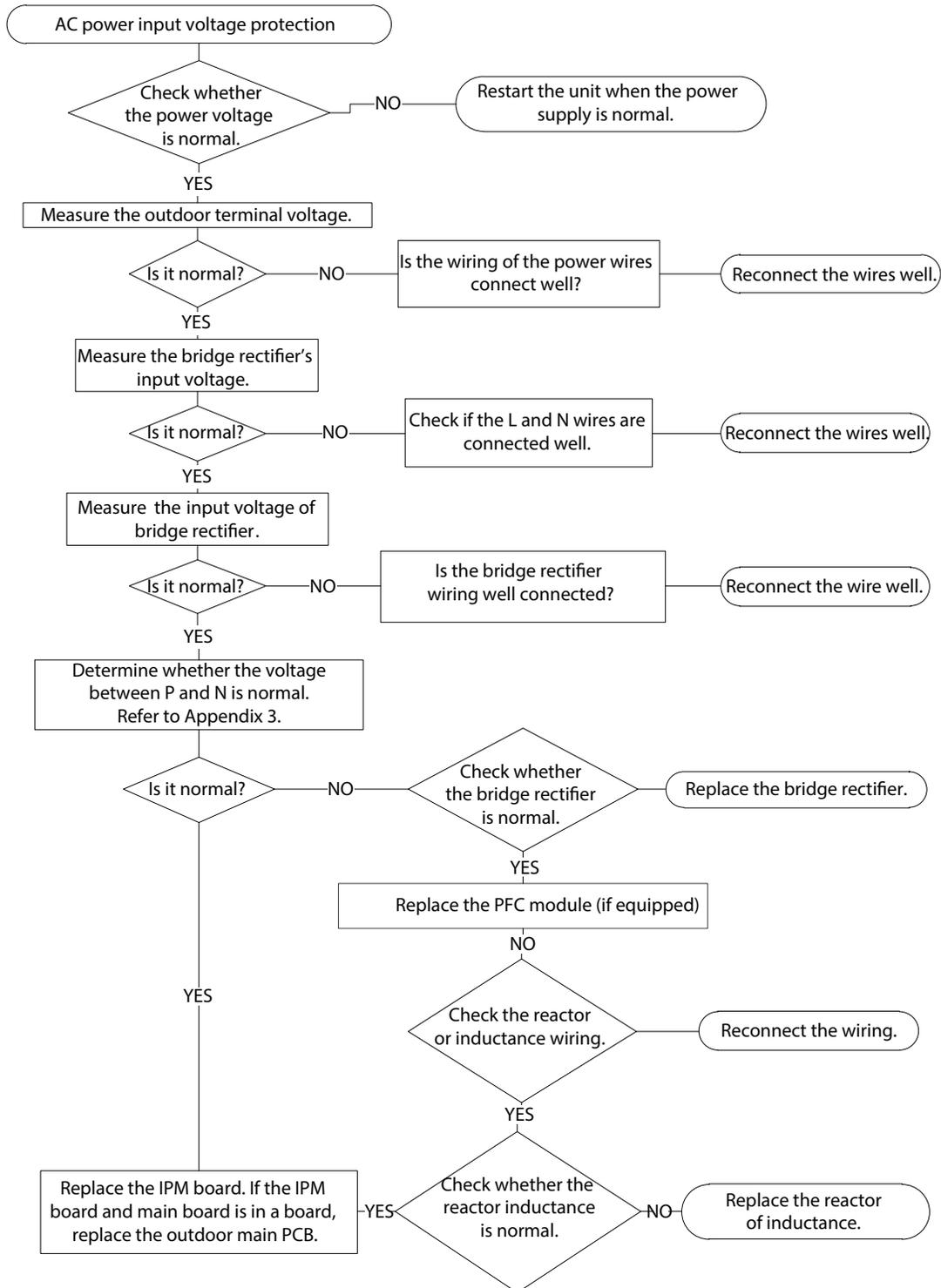
J8 (AC Power Input Voltage Protection)

Description: An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.

Recommended parts to prepare:

- Wiring
- Bridge rectifier
- IPM board

Troubleshooting and Repair



DIAGNOSIS AND SOLUTION (CONT.)

P5 (Indoor Units Mode Conflict (Match with a Multi Outdoor Unit))

Description: The indoor units cannot work in the **COOLING** and **HEATING** modes at the same time. The **HEATING** mode has the priority.

Suppose indoor unit (A) is working in the **COOLING** mode or the **FAN** mode and the indoor unit (B) is set to the **HEATING** mode. The indoor unit (A) turns off and indoor unit (B) keeps running in the **HEATING** mode.

Suppose indoor unit (A) is working in the **HEATING** mode, and indoor unit (B) is set to **COOLING** mode or the **FAN** mode, then indoor unit (B) changes to **STANDBY** and indoor unit (A) remains in the current mode.

| | COOLING MODE | HEATING MODE | FAN | OFF |
|---------------------|---------------------|---------------------|------------|------------|
| COOLING MODE | No | Yes | No | No |
| HEATING MODE | Yes | No | Yes | No |
| FAN | No | Yes | No | No |
| OFF | No | No | No | No |

NOTE:

No: No mode conflict

Yes: Mode conflict

DIAGNOSIS AND SOLUTION (CONT.)

Temperature Sensor Check



WARNING

Turn off all power supplies or disconnect all wires to avoid electric shock. Operate after compressor and coil have returned to normal temperature in case of injury.

1. Disconnect the temperature sensor from the PCB.
2. Measure the sensor's resistance value using a multi-meter.
3. Check the corresponding temperature sensor resistance value.

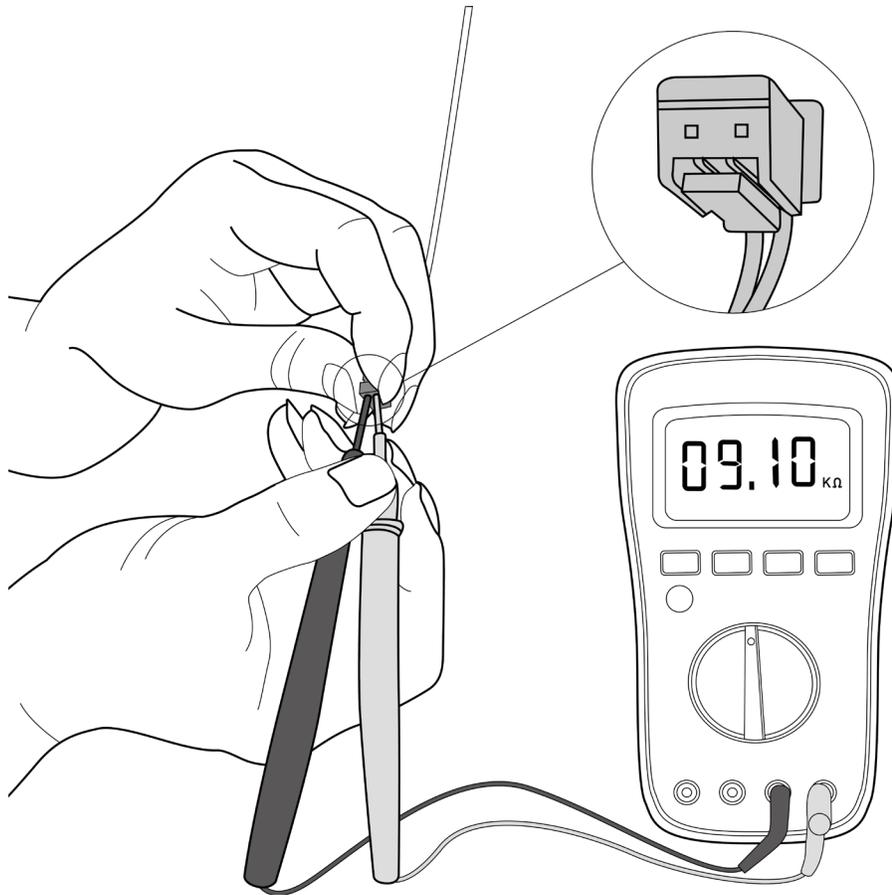


Fig. 18 — Temperature Sensor Check

NOTE: Figure 18 is for reference only. The actual condition and specific value may vary according to temperature.

Compressor Check

1. Disconnect the compressor power cord from the outdoor PCB.
2. Measure the resistance value of each winding using a multi-meter.
3. Check the resistance value of each winding using Table 19.

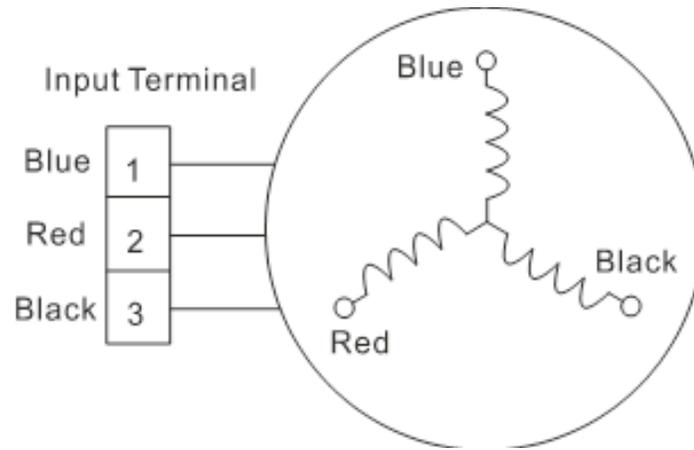


Fig. 19 — Input Terminal (typical)

APPENDICES

Appendix 1

Table 16 — Temperature Sensor Resistance Value Table for T1, T2, T3, T4 (°C--K)

| °C | °F | K OHM | °C | °F | K OHM | °C | °F | K OHM | °C | °F | K OHM |
|-----|----|---------|----|-----|---------|----|-----|---------|-----|-----|---------|
| -20 | -4 | 115.266 | 20 | 68 | 12.6431 | 60 | 140 | 2.35774 | 100 | 212 | 0.62973 |
| -19 | -2 | 108.146 | 21 | 70 | 12.0561 | 61 | 142 | 2.27249 | 101 | 214 | 0.61148 |
| -18 | 0 | 101.517 | 22 | 72 | 11.5 | 62 | 144 | 2.19073 | 102 | 216 | 0.59386 |
| -17 | 1 | 96.3423 | 23 | 73 | 10.9731 | 63 | 145 | 2.11241 | 103 | 217 | 0.57683 |
| -16 | 3 | 89.5865 | 24 | 75 | 10.4736 | 64 | 147 | 2.03732 | 104 | 219 | 0.56038 |
| -15 | 5 | 84.219 | 25 | 77 | 10 | 65 | 149 | 1.96532 | 105 | 221 | 0.54448 |
| -14 | 7 | 79.311 | 26 | 79 | 9.55074 | 66 | 151 | 1.89627 | 106 | 223 | 0.52912 |
| -13 | 9 | 74.536 | 27 | 81 | 9.12445 | 67 | 153 | 1.83003 | 107 | 225 | 0.51426 |
| -12 | 10 | 70.1698 | 28 | 82 | 8.71983 | 68 | 154 | 1.76647 | 108 | 226 | 0.49989 |
| -11 | 12 | 66.0898 | 29 | 84 | 8.33566 | 69 | 156 | 1.70547 | 109 | 228 | 0.486 |
| -10 | 14 | 62.2756 | 30 | 86 | 7.97078 | 70 | 158 | 1.64691 | 110 | 230 | 0.47256 |
| -9 | 16 | 58.7079 | 31 | 88 | 7.62411 | 71 | 160 | 1.59068 | 111 | 232 | 0.45957 |
| -8 | 18 | 56.3694 | 32 | 90 | 7.29464 | 72 | 162 | 1.53668 | 112 | 234 | 0.44699 |
| -7 | 19 | 52.2438 | 33 | 91 | 6.98142 | 73 | 163 | 1.48481 | 113 | 235 | 0.43482 |
| -6 | 21 | 49.3161 | 34 | 93 | 6.68355 | 74 | 165 | 1.43498 | 114 | 237 | 0.42304 |
| -5 | 23 | 46.5725 | 35 | 95 | 6.40021 | 75 | 167 | 1.38703 | 115 | 239 | 0.41164 |
| -4 | 25 | 44 | 36 | 97 | 6.13059 | 76 | 169 | 1.34105 | 116 | 241 | 0.4006 |
| -3 | 27 | 41.5878 | 37 | 99 | 5.87359 | 77 | 171 | 1.29078 | 117 | 243 | 0.38991 |
| -2 | 28 | 39.8239 | 38 | 100 | 5.62961 | 78 | 172 | 1.25423 | 118 | 244 | 0.37956 |
| -1 | 30 | 37.1988 | 39 | 102 | 5.39689 | 79 | 174 | 1.2133 | 119 | 246 | 0.36954 |
| 0 | 32 | 35.2024 | 40 | 104 | 5.17519 | 80 | 176 | 1.17393 | 120 | 248 | 0.35982 |
| 1 | 34 | 33.3269 | 41 | 106 | 4.96392 | 81 | 178 | 1.13604 | 121 | 250 | 0.35042 |
| 2 | 36 | 31.5635 | 42 | 108 | 4.76253 | 82 | 180 | 1.09958 | 122 | 252 | 0.3413 |
| 3 | 37 | 29.9058 | 43 | 109 | 4.5705 | 83 | 181 | 1.06448 | 123 | 253 | 0.33246 |
| 4 | 39 | 28.3459 | 44 | 111 | 4.38736 | 84 | 183 | 1.03069 | 124 | 255 | 0.3239 |
| 5 | 41 | 26.8778 | 45 | 113 | 4.21263 | 85 | 185 | 0.99815 | 125 | 257 | 0.31559 |
| 6 | 43 | 25.4954 | 46 | 115 | 4.04589 | 86 | 187 | 0.96681 | 126 | 259 | 0.30754 |
| 7 | 45 | 24.1932 | 47 | 117 | 3.88673 | 87 | 189 | 0.93662 | 127 | 261 | 0.29974 |
| 8 | 46 | 22.5662 | 48 | 118 | 3.73476 | 88 | 190 | 0.90753 | 128 | 262 | 0.29216 |
| 9 | 48 | 21.8094 | 49 | 120 | 3.58962 | 89 | 192 | 0.8795 | 129 | 264 | 0.28482 |
| 10 | 50 | 20.7184 | 50 | 122 | 3.45097 | 90 | 194 | 0.85248 | 130 | 266 | 0.2777 |
| 11 | 52 | 19.6891 | 51 | 124 | 3.31847 | 91 | 196 | 0.82643 | 131 | 268 | 0.27078 |
| 12 | 54 | 18.7177 | 52 | 126 | 3.19183 | 92 | 198 | 0.80132 | 132 | 270 | 0.26408 |
| 13 | 55 | 17.8005 | 53 | 127 | 3.07075 | 93 | 199 | 0.77709 | 133 | 271 | 0.25757 |
| 14 | 57 | 16.9341 | 54 | 129 | 2.95896 | 94 | 201 | 0.75373 | 134 | 273 | 0.25125 |
| 15 | 59 | 16.1156 | 55 | 131 | 2.84421 | 95 | 203 | 0.73119 | 135 | 275 | 0.24512 |
| 16 | 61 | 15.3418 | 56 | 133 | 2.73823 | 96 | 205 | 0.70944 | 136 | 277 | 0.23916 |
| 17 | 63 | 14.6181 | 57 | 135 | 2.63682 | 97 | 207 | 0.68844 | 137 | 279 | 0.23338 |
| 18 | 64 | 13.918 | 58 | 136 | 2.53973 | 98 | 208 | 0.66818 | 138 | 280 | 0.22776 |
| 19 | 66 | 13.2631 | 59 | 138 | 2.44677 | 99 | 210 | 0.64862 | 139 | 282 | 0.22231 |

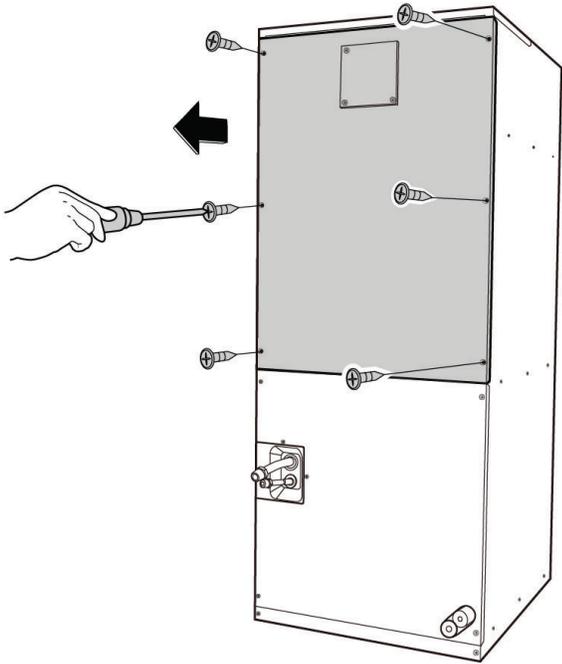
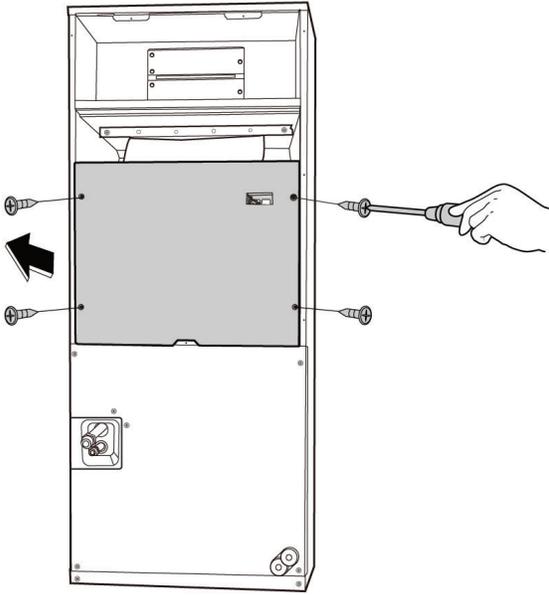
Appendix 2

Table 17 — Temperature Sensor Resistance Value Table for T5 (TP) (°C--K)

| ° C | ° F | K OHM | ° C | ° F | K OHM | ° C | ° F | K OHM | ° C | ° F | K OHM |
|-----|-----|-------|-----|-----|-------|-----|-----|-------|-----|-----|-------|
| -20 | -4 | 542.7 | 20 | 68 | 68.66 | 60 | 140 | 13.59 | 100 | 212 | 3.702 |
| -19 | -2 | 511.9 | 21 | 70 | 65.62 | 61 | 142 | 13.11 | 101 | 214 | 3.595 |
| -18 | 0 | 483 | 22 | 72 | 62.73 | 62 | 144 | 12.65 | 102 | 216 | 3.492 |
| -17 | 1 | 455.9 | 23 | 73 | 59.98 | 63 | 145 | 12.21 | 103 | 217 | 3.392 |
| -16 | 3 | 430.5 | 24 | 75 | 57.37 | 64 | 147 | 11.79 | 104 | 219 | 3.296 |
| -15 | 5 | 406.7 | 25 | 77 | 54.89 | 65 | 149 | 11.38 | 105 | 221 | 3.203 |
| -14 | 7 | 384.3 | 26 | 79 | 52.53 | 66 | 151 | 10.99 | 106 | 223 | 3.113 |
| -13 | 9 | 363.3 | 27 | 81 | 50.28 | 67 | 153 | 10.61 | 107 | 225 | 3.025 |
| -12 | 10 | 343.6 | 28 | 82 | 48.14 | 68 | 154 | 10.25 | 108 | 226 | 2.941 |
| -11 | 12 | 325.1 | 29 | 84 | 46.11 | 69 | 156 | 9.902 | 109 | 228 | 2.86 |
| -10 | 14 | 307.7 | 30 | 86 | 44.17 | 70 | 158 | 9.569 | 110 | 230 | 2.781 |
| -9 | 16 | 291.3 | 31 | 88 | 42.33 | 71 | 160 | 9.248 | 111 | 232 | 2.704 |
| -8 | 18 | 275.9 | 32 | 90 | 40.57 | 72 | 162 | 8.94 | 112 | 234 | 2.63 |
| -7 | 19 | 261.4 | 33 | 91 | 38.89 | 73 | 163 | 8.643 | 113 | 235 | 2.559 |
| -6 | 21 | 247.8 | 34 | 93 | 37.3 | 74 | 165 | 8.358 | 114 | 237 | 2.489 |
| -5 | 23 | 234.9 | 35 | 95 | 35.78 | 75 | 167 | 8.084 | 115 | 239 | 2.422 |
| -4 | 25 | 222.8 | 36 | 97 | 34.32 | 76 | 169 | 7.82 | 116 | 241 | 2.357 |
| -3 | 27 | 211.4 | 37 | 99 | 32.94 | 77 | 171 | 7.566 | 117 | 243 | 2.294 |
| -2 | 28 | 200.7 | 38 | 100 | 31.62 | 78 | 172 | 7.321 | 118 | 244 | 2.233 |
| -1 | 30 | 190.5 | 39 | 102 | 30.36 | 79 | 174 | 7.086 | 119 | 246 | 2.174 |
| 0 | 32 | 180.9 | 40 | 104 | 29.15 | 80 | 176 | 6.859 | 120 | 248 | 2.117 |
| 1 | 34 | 171.9 | 41 | 106 | 28 | 81 | 178 | 6.641 | 121 | 250 | 2.061 |
| 2 | 36 | 163.3 | 42 | 108 | 26.9 | 82 | 180 | 6.43 | 122 | 252 | 2.007 |
| 3 | 37 | 155.2 | 43 | 109 | 25.86 | 83 | 181 | 6.228 | 123 | 253 | 1.955 |
| 4 | 39 | 147.6 | 44 | 111 | 24.85 | 84 | 183 | 6.033 | 124 | 255 | 1.905 |
| 5 | 41 | 140.4 | 45 | 113 | 23.89 | 85 | 185 | 5.844 | 125 | 257 | 1.856 |
| 6 | 43 | 133.5 | 46 | 115 | 22.89 | 86 | 187 | 5.663 | 126 | 259 | 1.808 |
| 7 | 45 | 127.1 | 47 | 117 | 22.1 | 87 | 189 | 5.488 | 127 | 261 | 1.762 |
| 8 | 46 | 121 | 48 | 118 | 21.26 | 88 | 190 | 5.32 | 128 | 262 | 1.717 |
| 9 | 48 | 115.2 | 49 | 120 | 20.46 | 89 | 192 | 5.157 | 129 | 264 | 1.674 |
| 10 | 50 | 109.8 | 50 | 122 | 19.69 | 90 | 194 | 5 | 130 | 266 | 1.632 |
| 11 | 52 | 104.6 | 51 | 124 | 18.96 | 91 | 196 | 4.849 | | | |
| 12 | 54 | 99.69 | 52 | 126 | 18.26 | 92 | 198 | 4.703 | | | |
| 13 | 55 | 95.05 | 53 | 127 | 17.58 | 93 | 199 | 4.562 | | | |
| 14 | 57 | 90.66 | 54 | 129 | 16.94 | 94 | 201 | 4.426 | | | |
| 15 | 59 | 86.49 | 55 | 131 | 16.32 | 95 | 203 | 4.294 | | | |
| 16 | 61 | 82.54 | 56 | 133 | 15.73 | 96 | 205 | 4.167 | | | |
| 17 | 63 | 78.79 | 57 | 135 | 15.16 | 97 | 207 | 4.045 | | | |
| 18 | 64 | 75.24 | 58 | 136 | 14.62 | 98 | 208 | 3.927 | | | |
| 19 | 66 | 71.86 | 59 | 138 | 14.09 | 99 | 210 | 3.812 | | | |

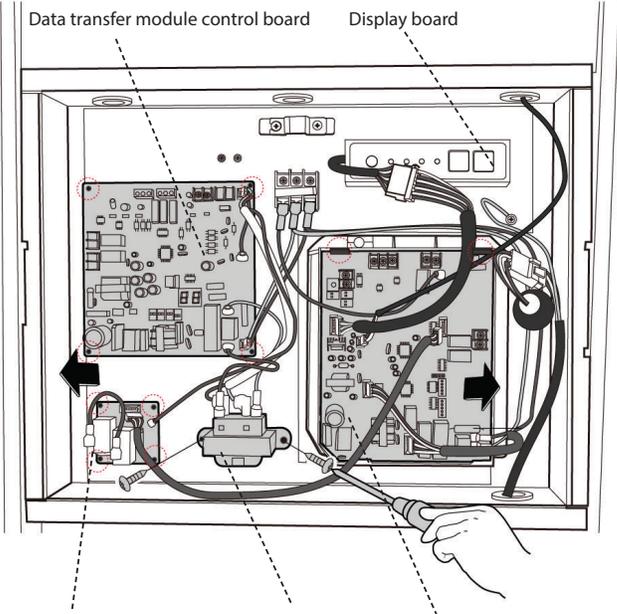
DISASSEMBLY INSTRUCTIONS

Electrical Parts (Anti-static gloves must be worn)

| PROCEDURES | ILLUSTRATION |
|---|--|
| <p>1. Remove the upside board screws (6) and then remove the upside plate.</p> |  |
| <p>2. Remove the electrical control box cover screws (4) and then remove the cover.</p> |  |

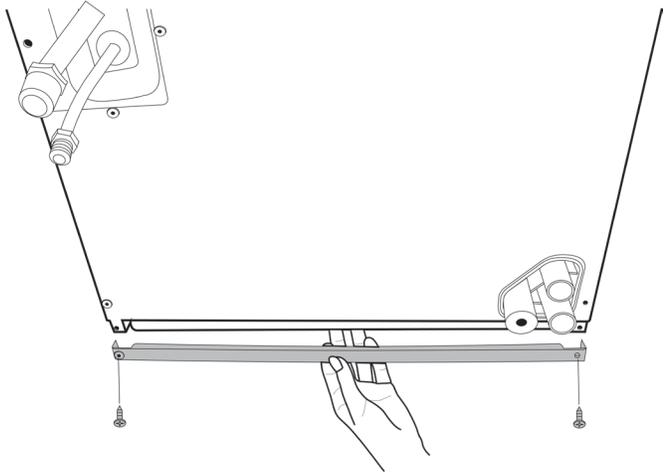
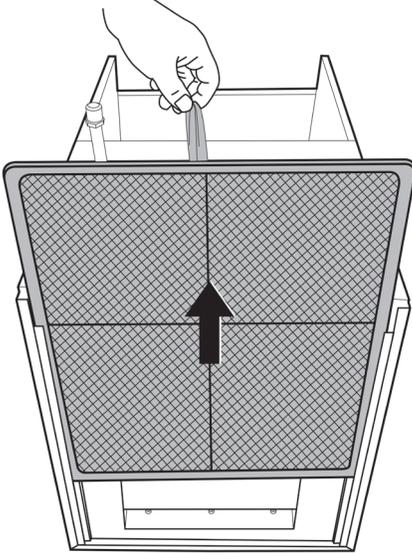
DISASSEMBLY INSTRUCTIONS (CONT.)

Electrical Parts

| PROCEDURES | ILLUSTRATION |
|--|---|
| <ol style="list-style-type: none">3. Unfasten the main control board hooks (2) to remove it.4. Release the data transfer module control board hooks (4) to remove it.5. Unfasten the auxiliary electric heater control board hooks (4) to remove it.6. Release the screws (2) and remove the transformer. |  <p data-bbox="803 913 1388 934">Auxiliary electric heater control board Transformer Main control board</p> |

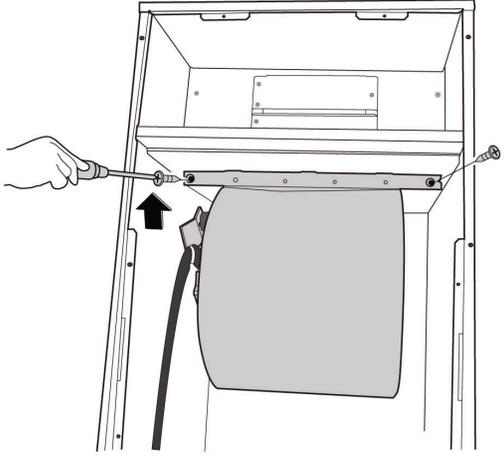
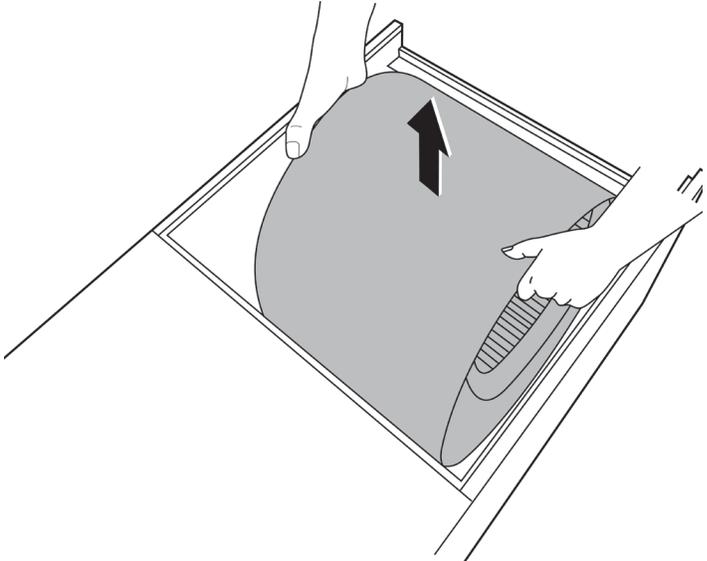
DISASSEMBLY INSTRUCTIONS (CONT.)

Filter

| PROCEDURES | ILLUSTRATION |
|---|---|
| <p>1. Remove the supporting bar's screws (2).</p> |  A line drawing showing a hand reaching up to unscrew a horizontal bar. The bar is supported by two vertical screws. To the left, a motor assembly is partially visible. The bar is connected to a larger frame structure. |
| <p>2. Remove the filter.</p> |  A line drawing of a trapezoidal filter with a mesh pattern. A hand is shown at the top edge, pulling the filter upwards. A large black arrow points upwards from the center of the filter, indicating the direction of removal. |

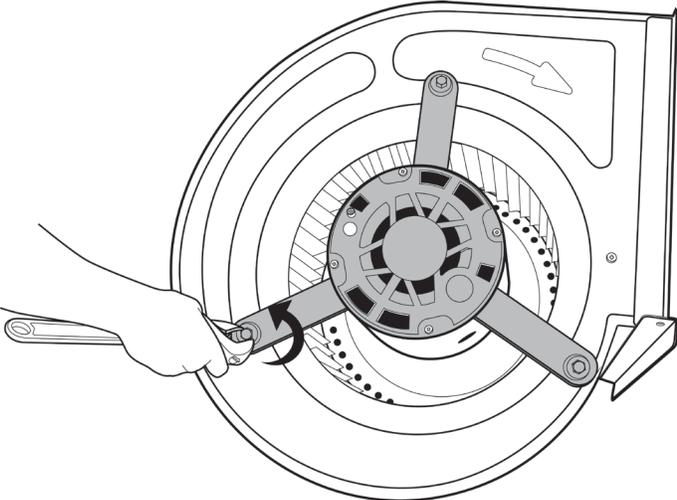
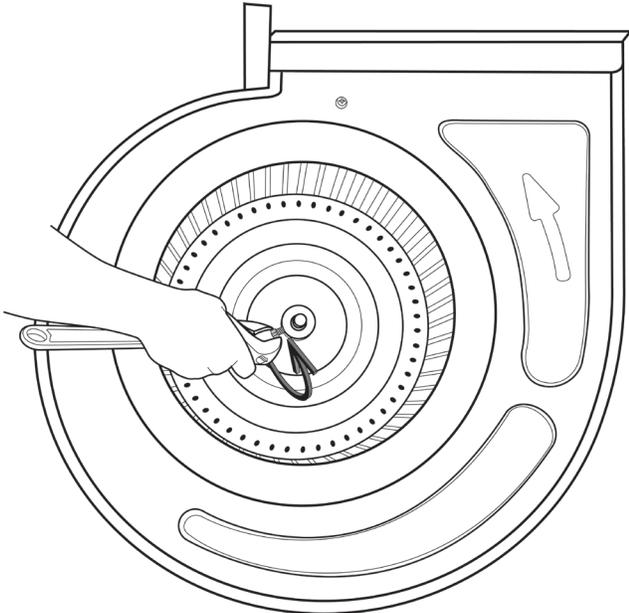
DISASSEMBLY INSTRUCTIONS (CONT.)

Fan Motor and Fan

| PROCEDURES | ILLUSTRATION |
|---|---|
| <p>1. Remove the fan assembly's screws (2).</p> |  A line drawing showing a hand using a screwdriver to remove screws from a fan assembly. The fan assembly is mounted on a metal frame. An arrow points to the screws being removed. |
| <p>2. Remove the fan assembly.</p> |  A line drawing showing a hand lifting the fan assembly out of the frame. The fan assembly is shown being lifted upwards, as indicated by an arrow. |

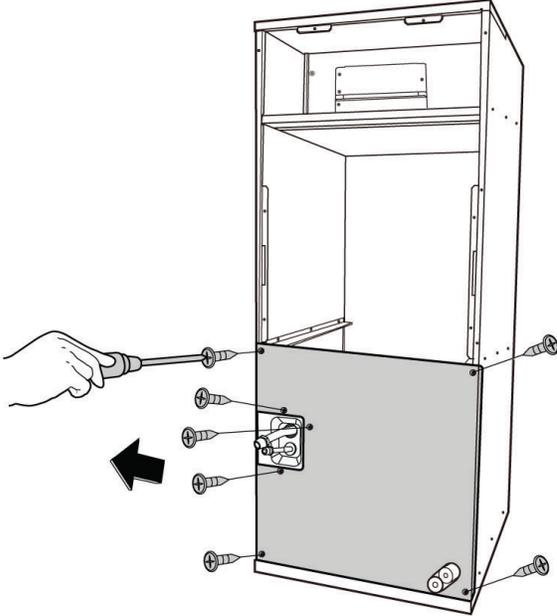
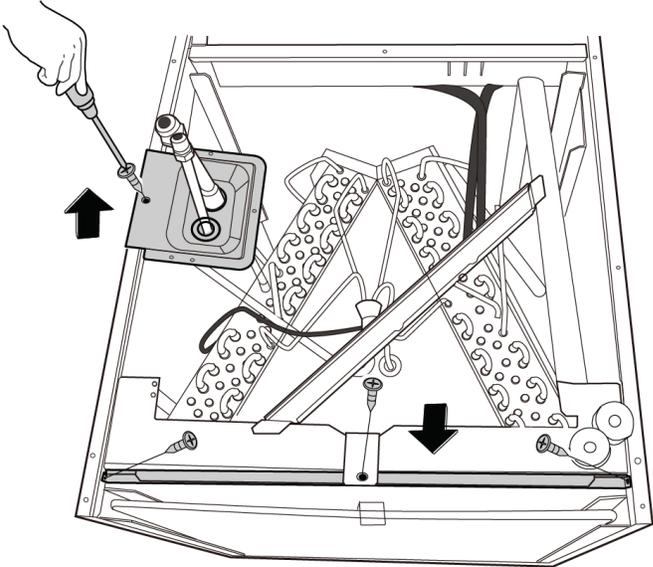
DISASSEMBLY INSTRUCTIONS (CONT.)

Fan Motor and Fan

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>3. Release the nuts (3) securing the fan motor and then remove the fan.</p> |  A line drawing showing a hand using a screwdriver to remove three nuts from the fan motor assembly. The fan motor is mounted on a circular panel. An arrow points to the right, indicating the direction of rotation or removal. |
| <p>4. Remove the nut (1) securing the fan and then remove the fan.</p> |  A line drawing showing a hand using a screwdriver to remove a nut from the fan. The fan is mounted on a circular panel. An arrow points to the right, indicating the direction of rotation or removal. |

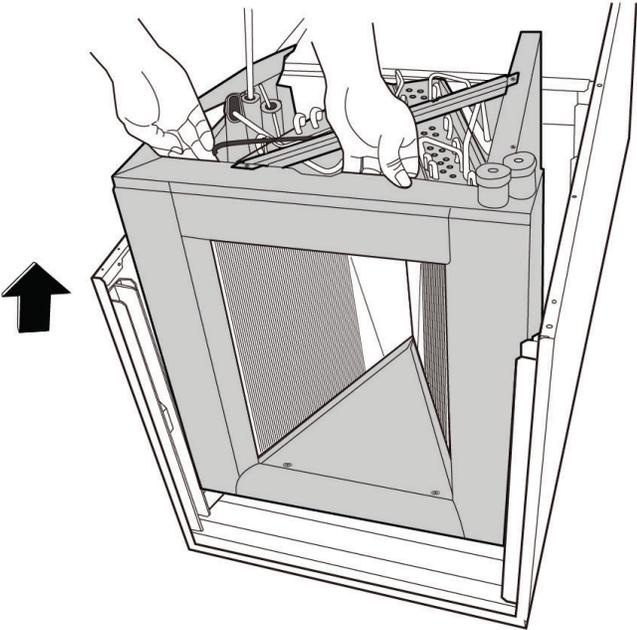
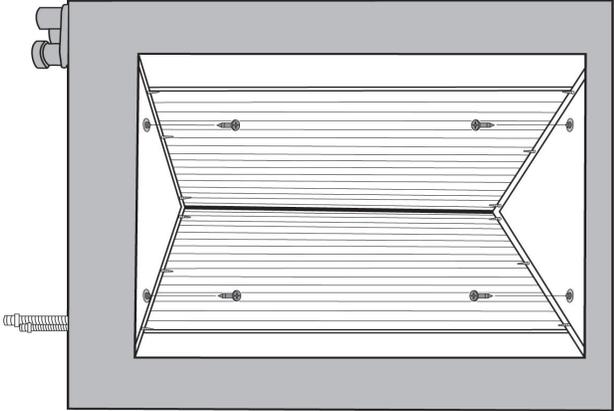
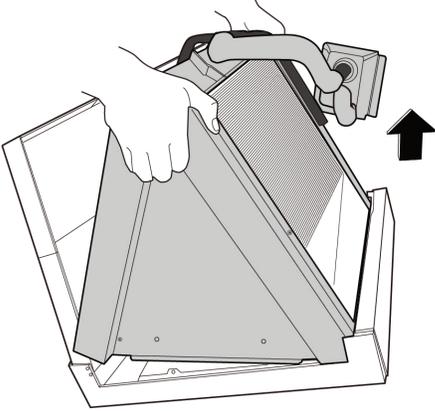
DISASSEMBLY INSTRUCTIONS (CONT.)

Evaporator

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>1. Remove the side plate screws (7).</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the side plate of a refrigerator compartment. The side plate is a dark grey rectangular panel attached to the side of the compartment. Several screws are shown being removed, with arrows indicating their removal. The compartment is shown in a partially disassembled state, with the side plate being the focus of the disassembly.</p> |
| <p>2. Remove the pipe clamp board screw (1) and the rear support board screws (3).</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the pipe clamp board and rear support board of a refrigerator compartment. The pipe clamp board is a small rectangular board attached to the side of the compartment. The rear support board is a larger board attached to the back of the compartment. Arrows indicate the removal of these components. The compartment is shown in a partially disassembled state, with the pipe clamp board and rear support board being the focus of the disassembly.</p> |

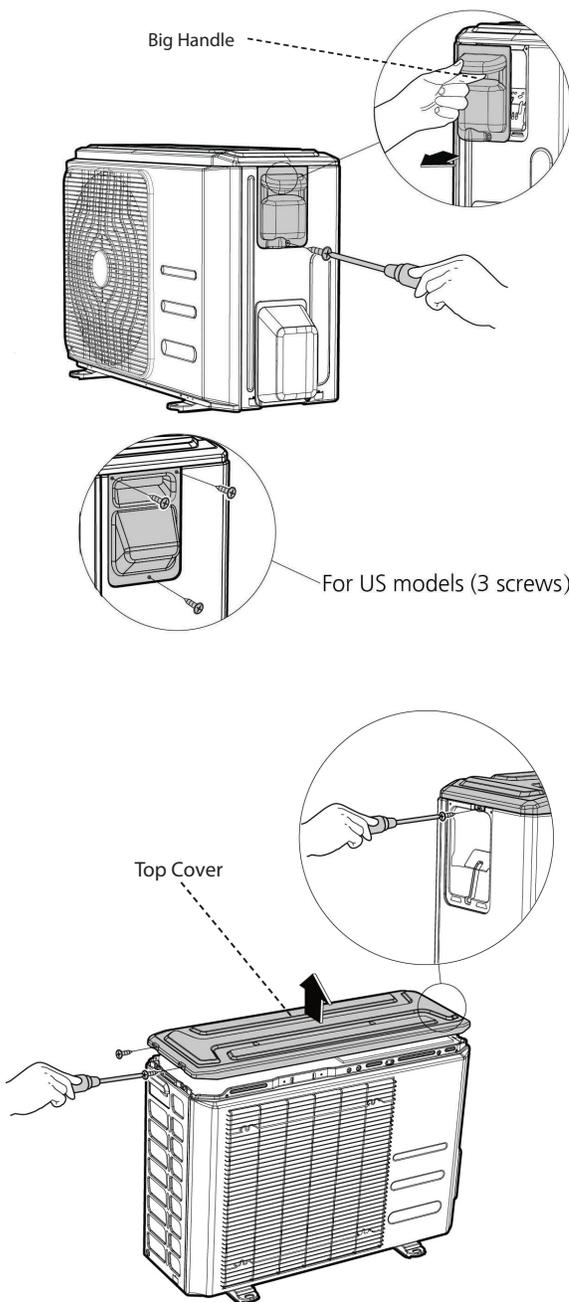
DISASSEMBLY INSTRUCTIONS (CONT.)

Evaporator

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>3. Take out the evaporator (with the water collector assembly).</p> |  <p>The illustration shows a hand pulling the evaporator assembly out of the refrigerator compartment. The assembly consists of a metal frame with a mesh evaporator coil and a water collector tray. An upward-pointing arrow indicates the direction of removal.</p> |
| <p>4. Remove the water collector assembly screws (4).</p> |  <p>The illustration shows the water collector assembly, which is a rectangular metal tray with a mesh evaporator coil. Four screws are shown being removed from the tray. An upward-pointing arrow indicates the direction of removal.</p> |
| <p>5. Release the evaporator and the water collector assembly.</p> |  <p>The illustration shows a hand releasing the evaporator and water collector assembly. The assembly is shown being lifted out of the refrigerator compartment. An upward-pointing arrow indicates the direction of removal.</p> |

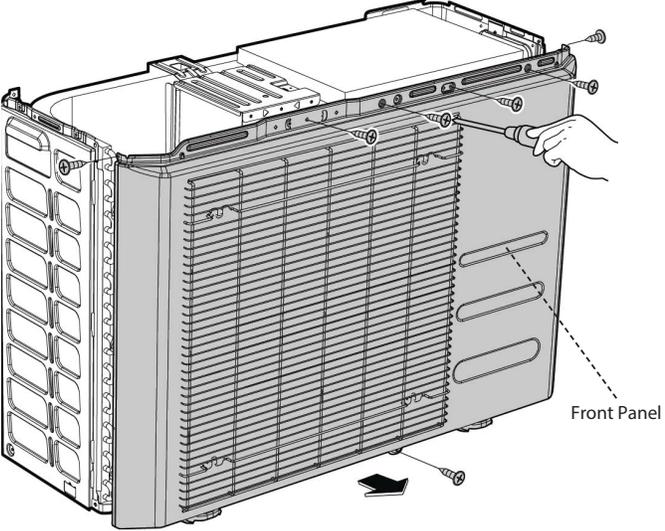
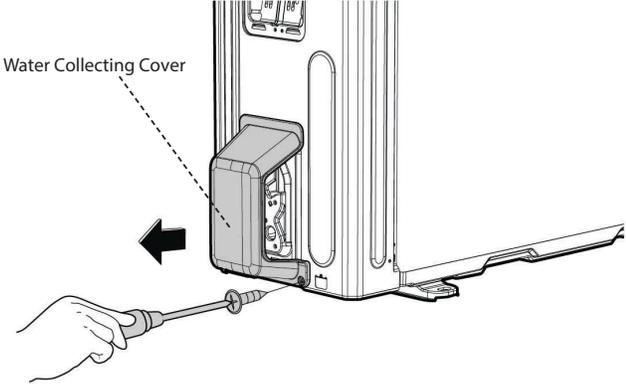
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <ol style="list-style-type: none">1. Turn off the air conditioner and the power breaker.2. Remove the big handle screws and then remove the big handle.3. Remove the top cover screws and then remove the top cover. |  <p>The illustration shows the disassembly process in three stages. The top callout, labeled 'Big Handle', shows a hand pulling the handle out of the unit. The middle callout, labeled 'For US models (3 screws)', shows a hand using a screwdriver to remove screws from the handle's base. The bottom callout, labeled 'Top Cover', shows a hand using a screwdriver to remove screws from the top of the unit, with an arrow indicating the top cover is being lifted off.</p> |

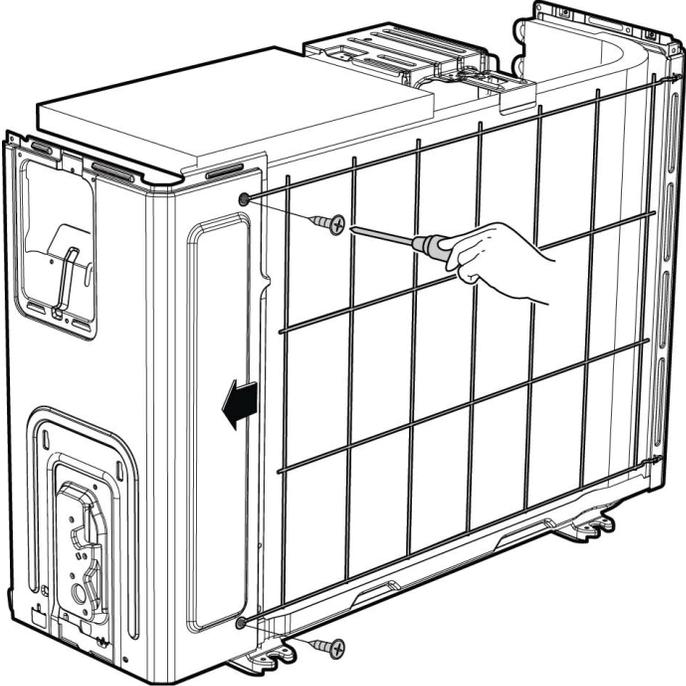
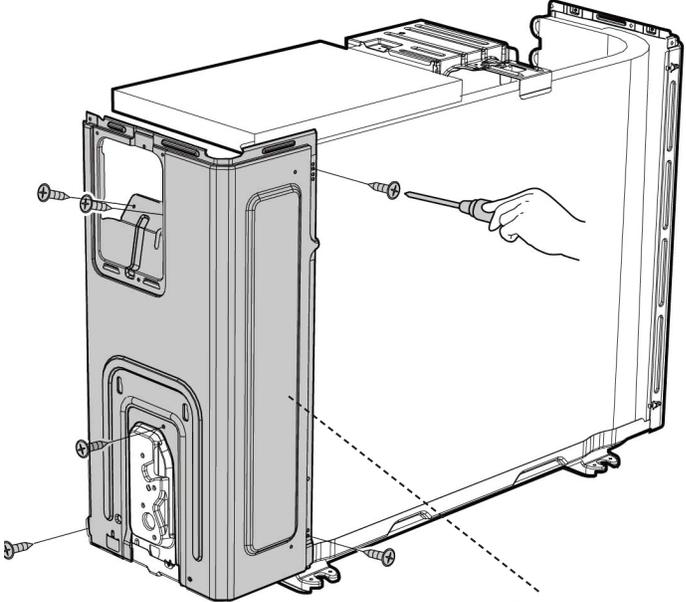
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>4. Remove the front panel screws (7) and then remove the front panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the front panel of a device. The front panel is labeled "Front Panel" with a dashed line. A screw is shown being removed from the top edge of the panel, and another screw is shown being removed from the bottom edge. The device is shown from a three-quarter perspective, highlighting the front panel and the screws being removed.</p> |
| <p>5. Remove the water collecting cover screw (1).</p> |  <p>The illustration shows a hand using a screwdriver to remove a screw from the water collecting cover of a device. The water collecting cover is labeled "Water Collecting Cover" with a dashed line. A screw is shown being removed from the bottom edge of the cover. The device is shown from a three-quarter perspective, highlighting the water collecting cover and the screw being removed.</p> |

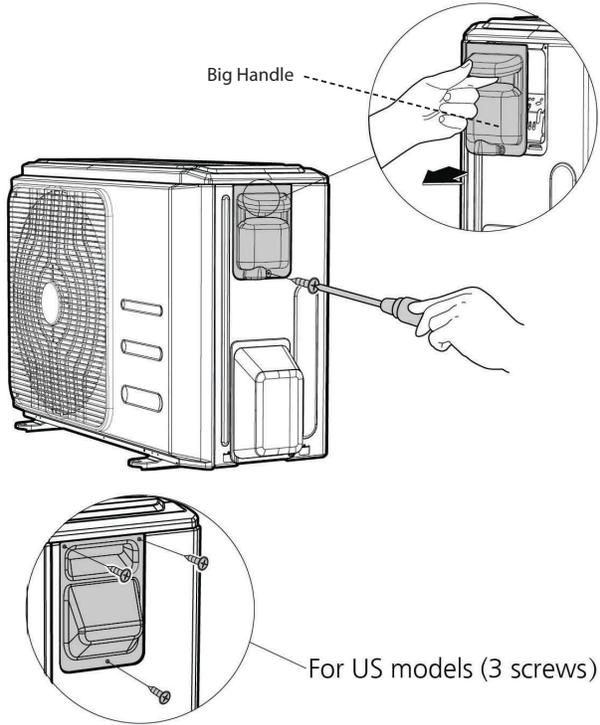
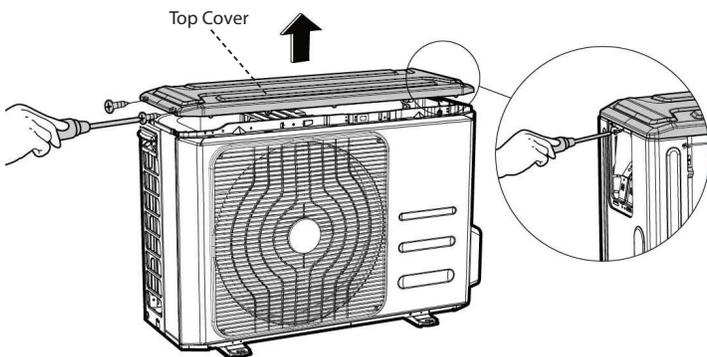
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>6. Remove the rear net screws (2) and then remove the rear net.</p> |  |
| <p>7. Remove the right panel screws and then remove the right panel.</p> |  <p data-bbox="1312 1629 1414 1654">Right Panel</p> |

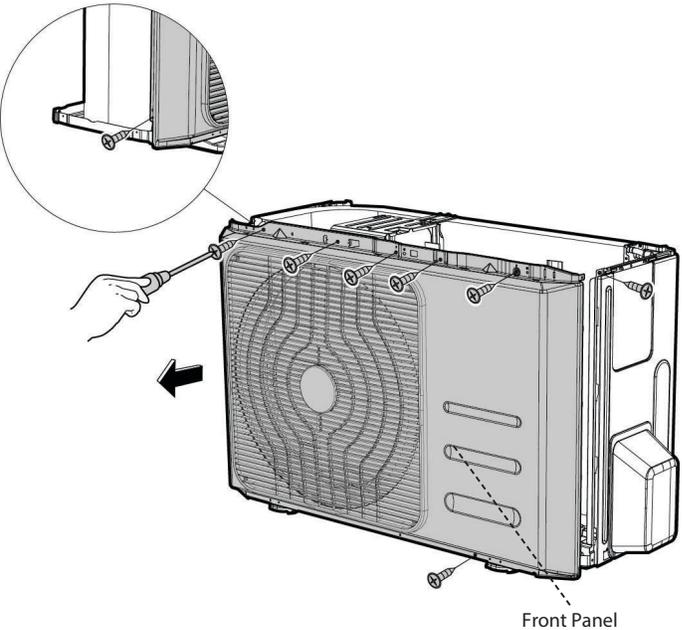
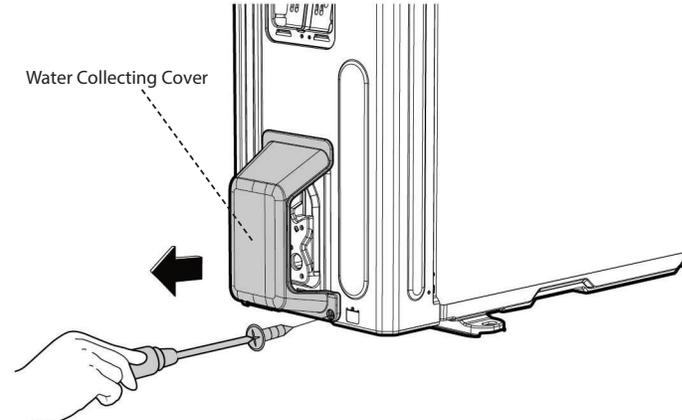
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <ol style="list-style-type: none"><li data-bbox="123 646 623 674">1. Turn off the air conditioner and the power breaker.<li data-bbox="123 676 669 724">2. Remove the big handle screws and then remove the big handle. |  <p>The illustration shows the air conditioner unit with the big handle being removed. A hand is shown using a screwdriver to remove the screws from the handle. A circular inset shows a close-up of the handle being pulled away from the panel plate. Another circular inset shows the panel plate with three screws being removed from the top cover area, labeled 'For US models (3 screws)'.</p> |
| <ol style="list-style-type: none"><li data-bbox="123 1308 690 1377">3. Remove the top cover screws (3) and then remove the top cover. One of the screws is located underneath the big handle. |  <p>The illustration shows the air conditioner unit with the top cover being removed. A hand is shown using a screwdriver to remove the screws from the top cover. A circular inset shows a close-up of the top cover being lifted away from the panel plate. An arrow points upwards from the top cover, labeled 'Top Cover'.</p> |

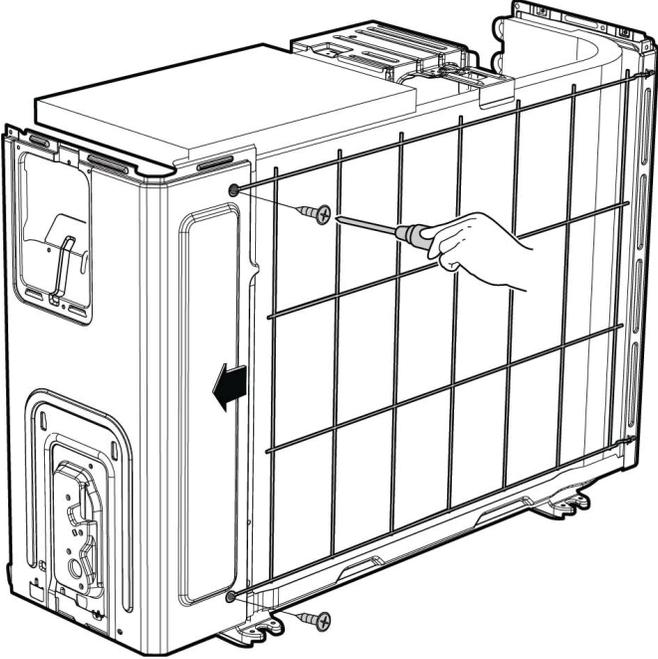
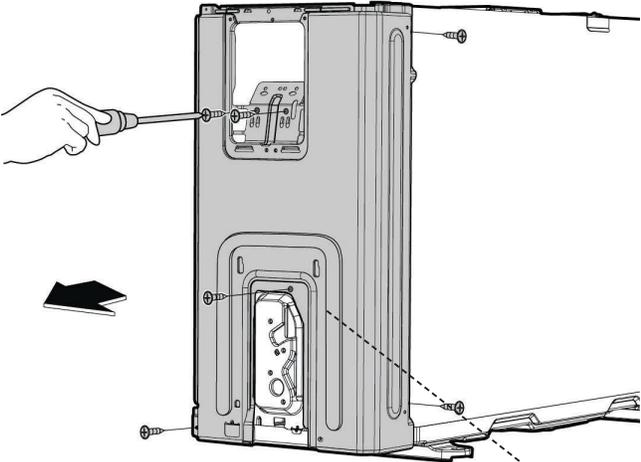
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>4. Remove the front panel screws (8) and then remove the front panel.</p> |  <p>Front Panel</p> |
| <p>5. Remove the screw (1) from the water collecting cover then remove the water collecting cover.</p> |  <p>Water Collecting Cover</p> |

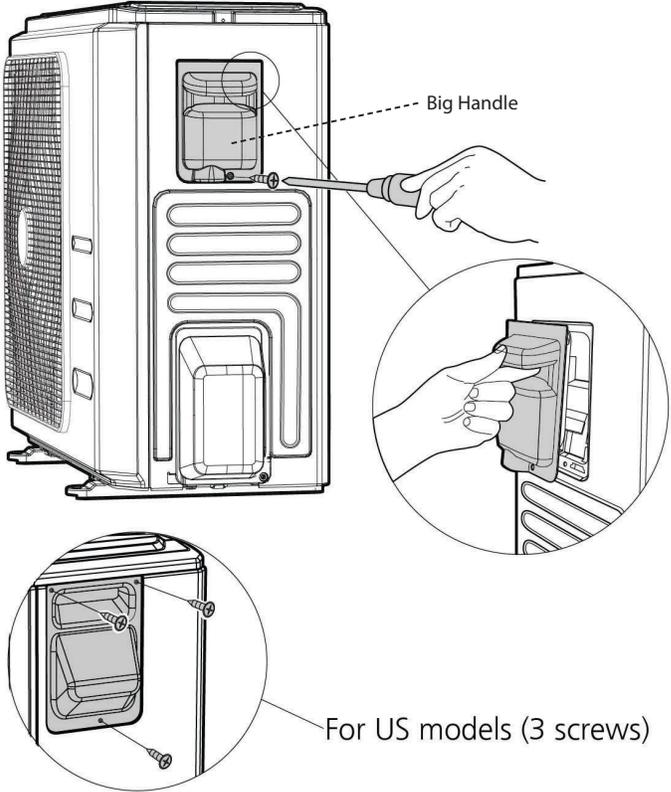
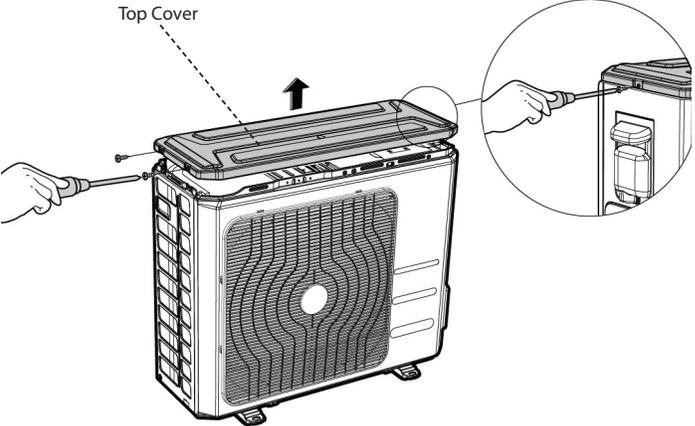
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>6. Remove the rear net screws (2) and then remove the rear net.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from a rear net. A black arrow points to the left, indicating the direction of removal. The net is attached to a panel with a handle on the left side.</p> |
| <p>7. Remove the right panel screws (5) and then remove the right panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the right panel. A black arrow points to the right, indicating the direction of removal. The right panel is shown being detached from the main unit. A label 'Right Panel' with a dashed line points to the detached panel.</p> |

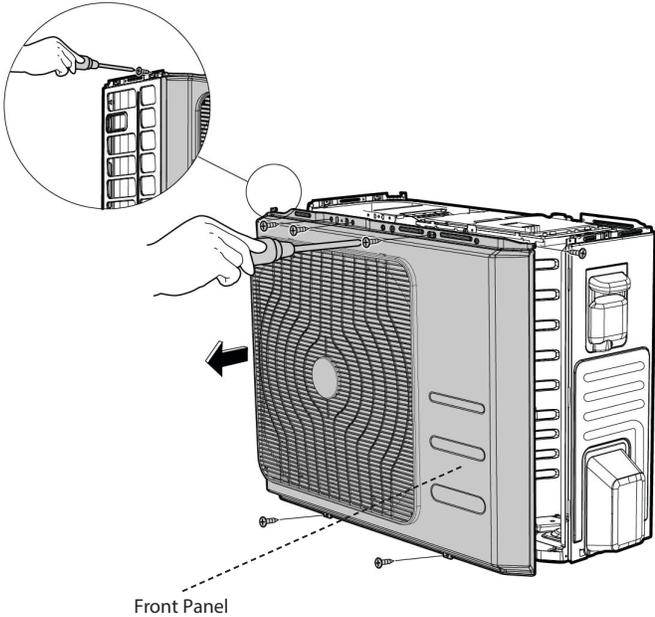
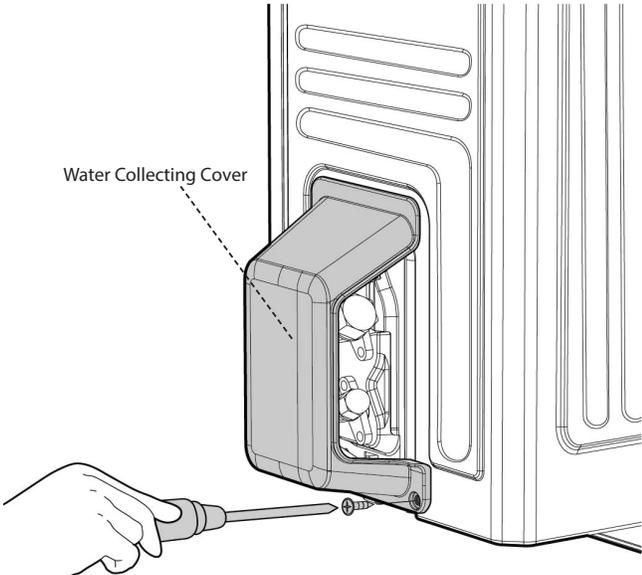
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <ol style="list-style-type: none"><li data-bbox="185 678 686 703">1. Turn off the air conditioner and the power breaker.<li data-bbox="185 707 732 753">2. Remove the big handle screws and then remove the big handle. |  <p data-bbox="1247 436 1341 457">Big Handle</p> <p data-bbox="1149 1058 1474 1087">For US models (3 screws)</p> |
| <ol style="list-style-type: none"><li data-bbox="185 1430 753 1476">3. Remove the top cover screws (3) and then remove the top cover. One of the screws is located under the big handle. |  <p data-bbox="927 1272 1011 1293">Top Cover</p> |

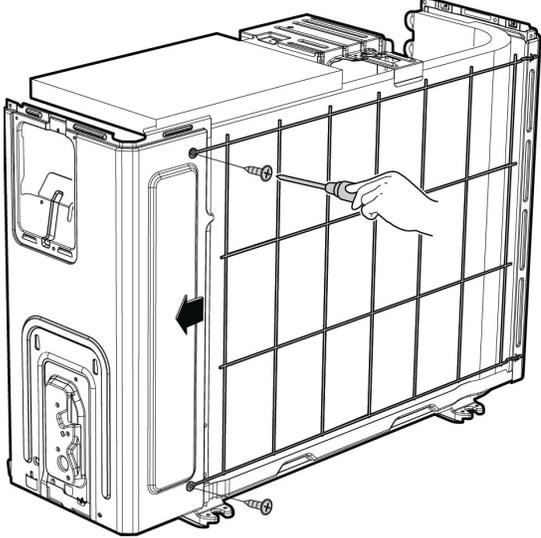
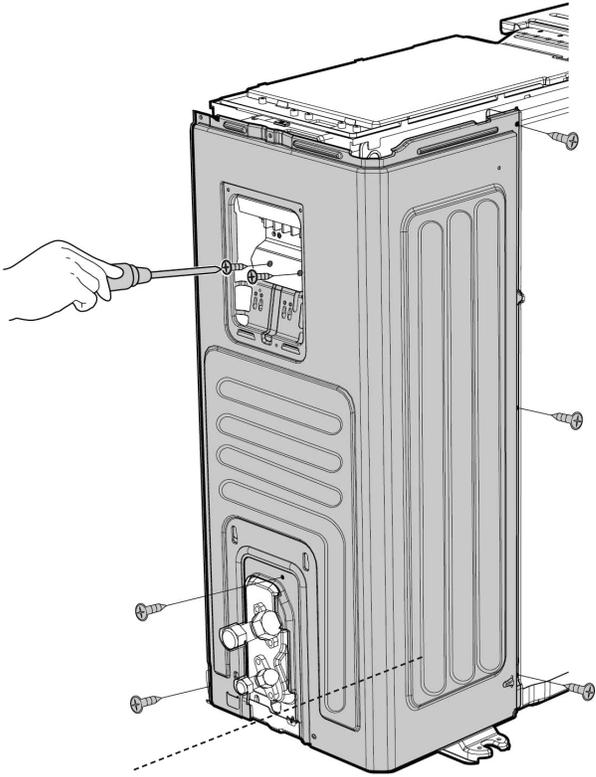
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|---|---|
| <p>4. Remove the front panel screws (7) and then remove the front panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the front panel of the unit. A circular inset provides a magnified view of the screw being removed. A dashed line points to the front panel with the label "Front Panel".</p> |
| <p>5. Remove the water collecting cover screw (1) and then remove the water collecting cover.</p> |  <p>The illustration shows a hand using a screwdriver to remove a screw from the water collecting cover. A dashed line points to the cover with the label "Water Collecting Cover".</p> |

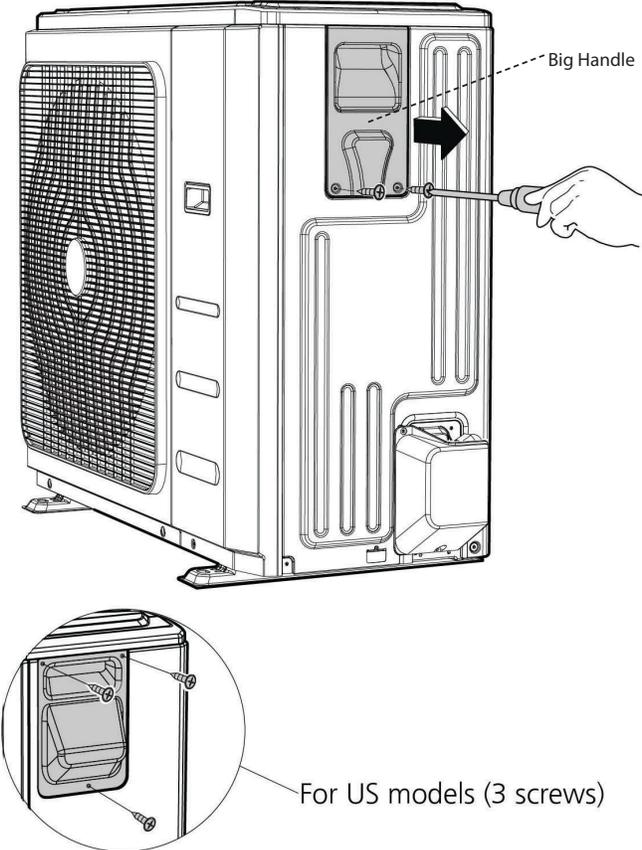
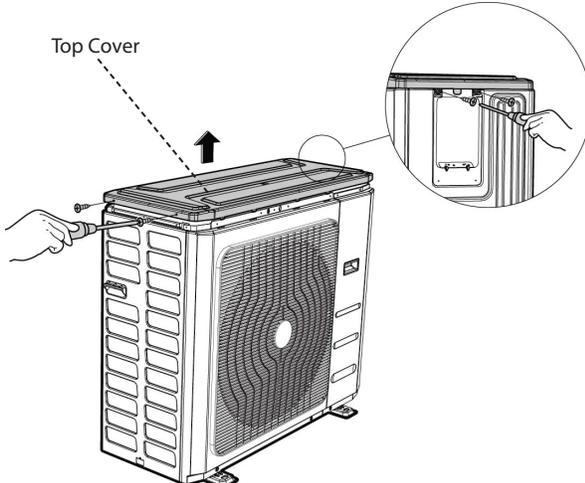
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate (Cont.)

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>6. Remove the rear net screws (2) and then remove the rear net.</p> |  <p>The illustration shows a side view of a rectangular unit with a wire mesh (rear net) attached to its back. A hand is using a screwdriver to remove screws from the mesh. A black arrow points to the left, indicating the direction to pull the net away from the unit.</p> |
| <p>7. Remove the right panel screws (7) and then remove the right panel.</p> |  <p>The illustration shows a side view of the unit with the right panel partially detached. A hand is using a screwdriver to remove screws from the panel. A dashed line points to the panel with the label "Right Panel".</p> |

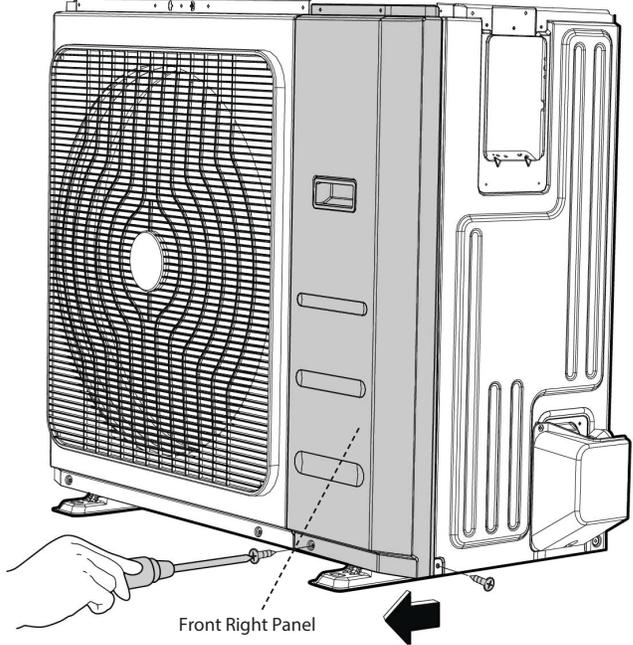
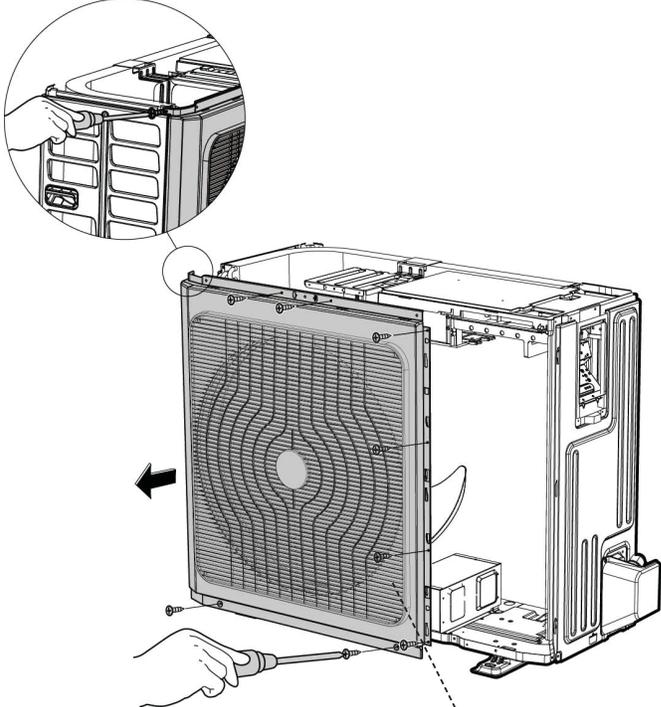
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <ol style="list-style-type: none">1. Turn off the air conditioner and the power breaker.2. Remove the big handle screws (2) and then remove the big handle. |  <p>Big Handle</p> <p>For US models (3 screws)</p> |
| <ol style="list-style-type: none">3. Remove the top cover screws (4) and then remove the top cover. Two of the screws are located under the big handle. |  <p>Top Cover</p> |

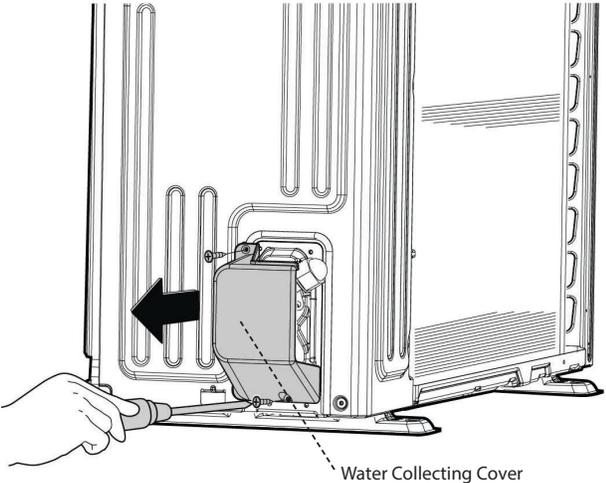
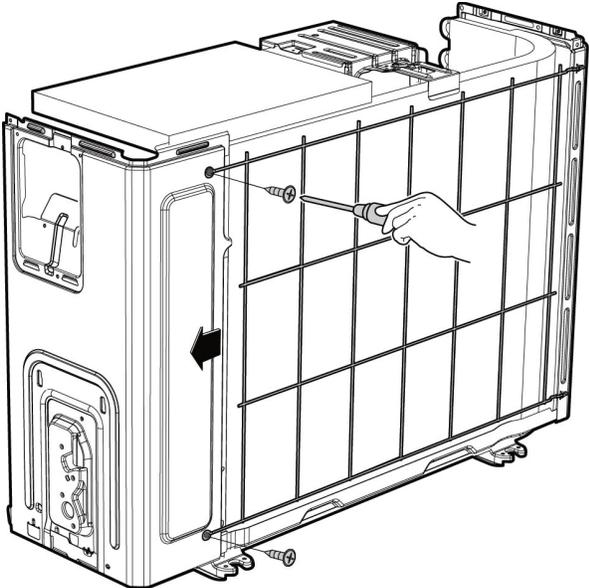
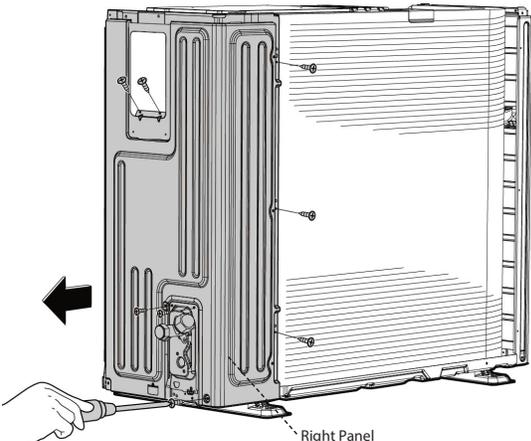
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|---|---|
| <p>4. Remove the front panel screws (2) and then remove the front right panel screws.</p> |  <p>Front Right Panel</p> |
| <p>5. Remove the front panel screws (9) and then remove the front panel.</p> |  <p>Front Panel</p> |

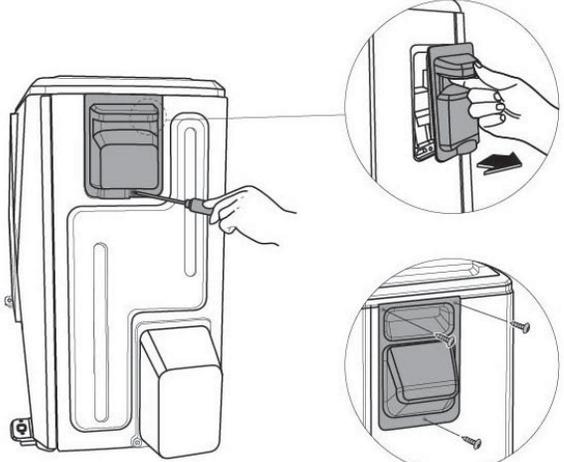
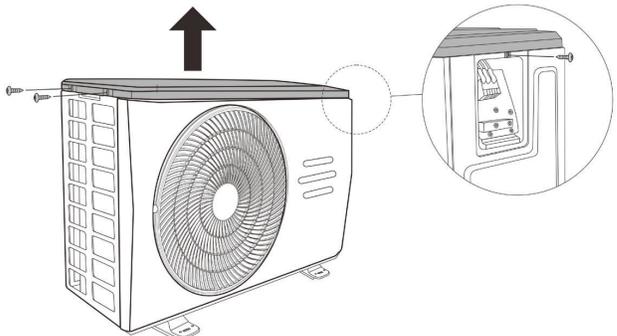
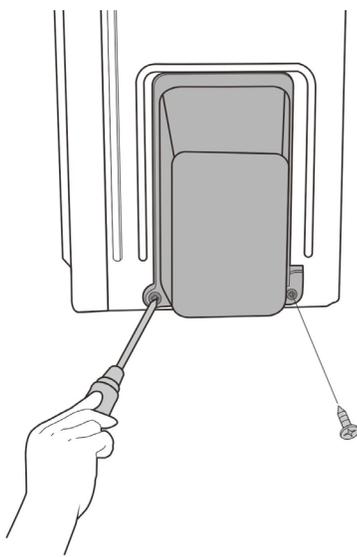
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|---|--|
| <p>6. Remove the water collecting cover screws (2) and then remove the water collecting cover</p> |  <p>Water Collecting Cover</p> |
| <p>7. Remove the rear net screws (2) and then remove the rear net.</p> |  |
| <p>8. Remove the right panel screws (8) and then remove the right panel.</p> |  <p>Right Panel</p> |

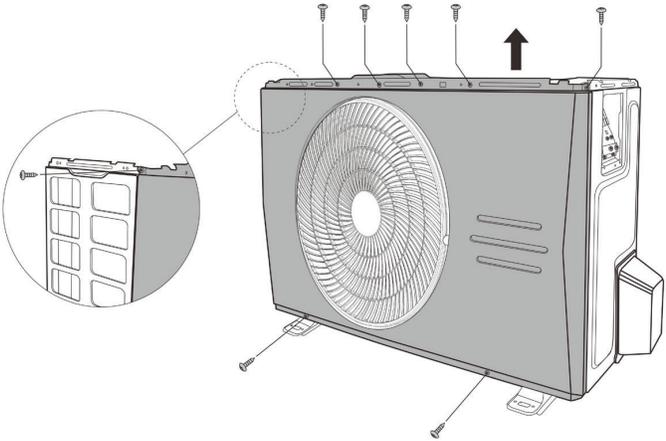
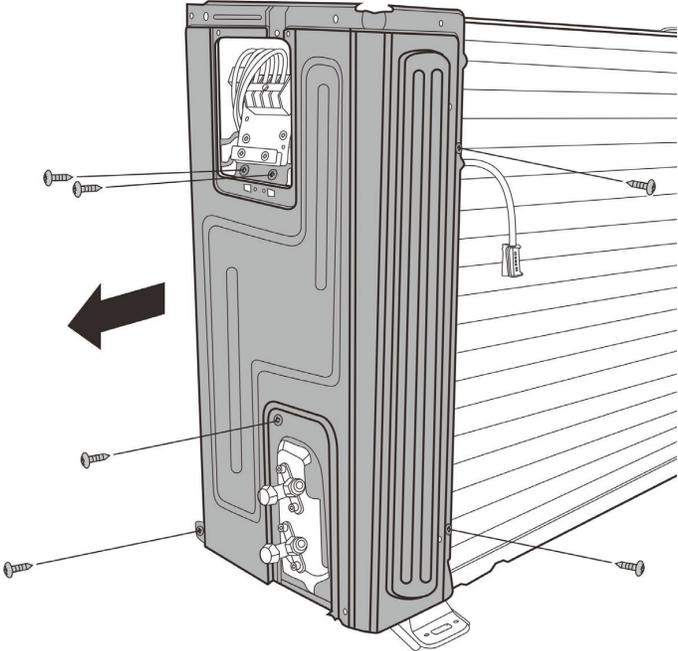
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|---|--|
| <ol style="list-style-type: none">1. Turn off the air conditioner and the power breaker.2. Remove the big handle screw and then remove the big handle. |  <p>For US models (3 screws)</p> |
| <ol style="list-style-type: none">3. Remove the top cover screws (3) and then remove the top cover. One of the screws is located under the big handle. |  |
| <ol style="list-style-type: none">4. Remove the water collecting cover screws (2) and then remove the water collecting cover. |  |

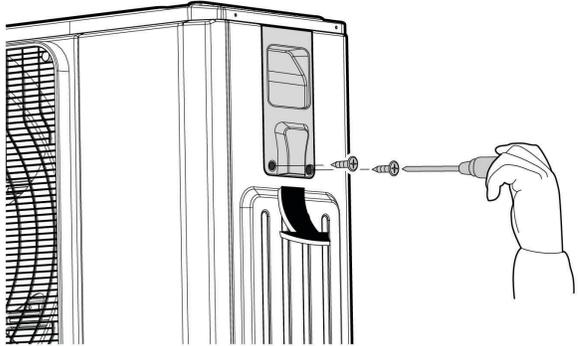
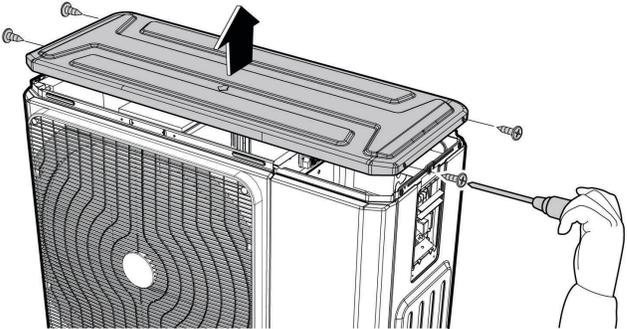
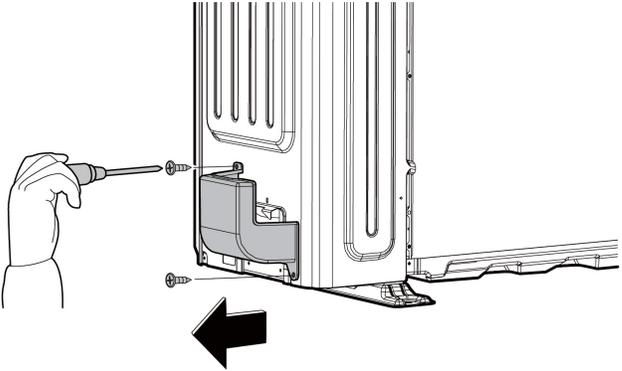
DISASSEMBLY INSTRUCTIONS (CONT.)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>5. Remove the front panel screws (6) and then remove the front panel (6 screws - on/off models) (8 screws - inverter models).</p> |  An illustration of the front panel of an air conditioning unit. Five screws are shown being removed from the top edge of the panel, with an upward-pointing arrow indicating their removal direction. A circular inset on the left shows a close-up of the front panel with a grid of six rectangular cutouts. The main unit is shown from a three-quarter perspective, highlighting the fan grille and the right-side control panel. |
| <p>6. Remove the right panel screws (6) and then remove the right panel.</p> |  An illustration of the right side of the air conditioning unit. Six screws are shown being removed from the right panel, with a leftward-pointing arrow indicating the removal direction. The right panel is shown partially detached, revealing the internal wiring and components. The unit is shown from a three-quarter perspective, highlighting the fan grille and the right-side control panel. |

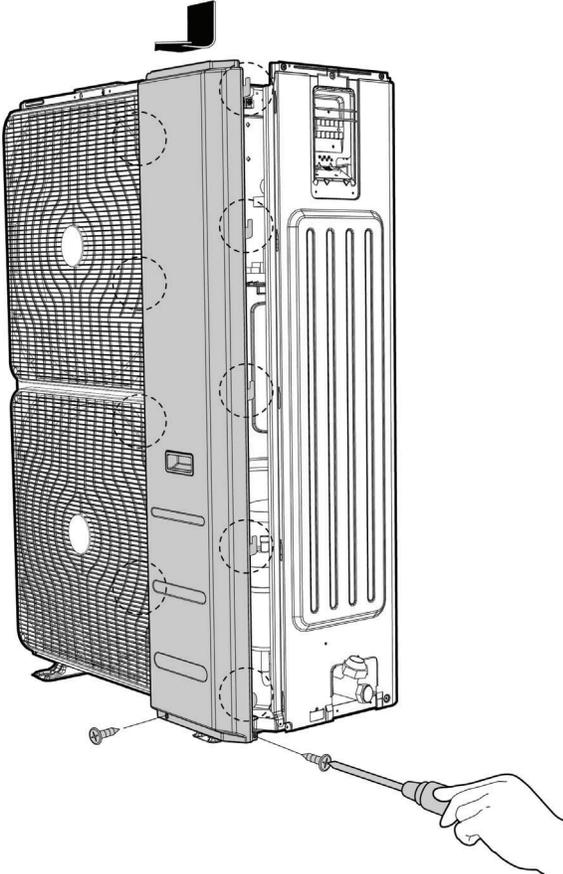
DISASSEMBLY INSTRUCTIONS (CONT)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|--|
| <ol style="list-style-type: none"><li data-bbox="186 436 683 464">1. Turn off the air conditioner and the power breaker.<li data-bbox="186 468 732 516">2. Remove the big handle screws and then remove the big handle. |  |
| <ol style="list-style-type: none"><li data-bbox="186 898 753 968">3. Remove the top cover screws (4) and then remove the top cover. Two of the screws are located underneath the big handle. |  |
| <ol style="list-style-type: none"><li data-bbox="186 1352 729 1400">4. Remove the water collecting cover screws (2) and then remove the water collecting cover. |  |

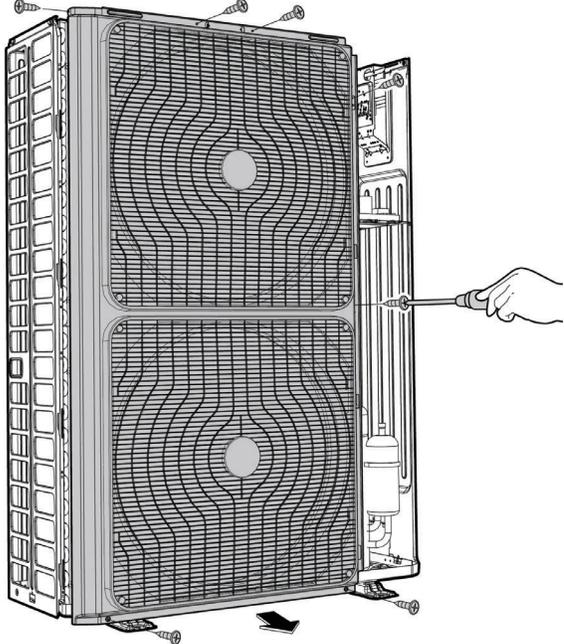
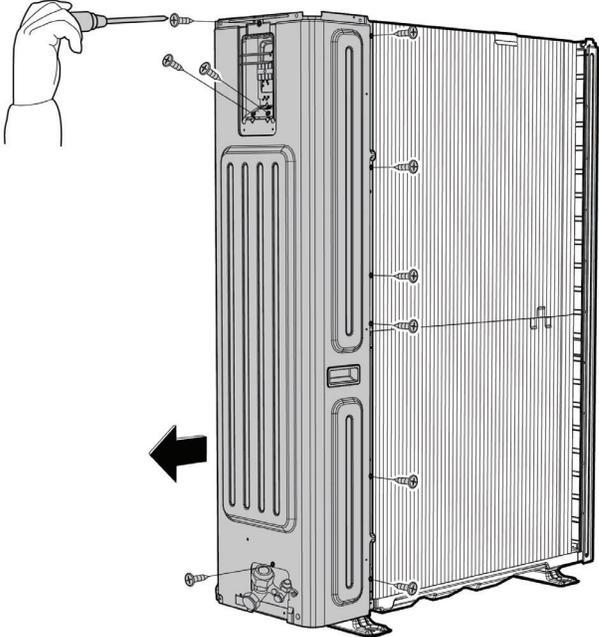
DISASSEMBLY INSTRUCTIONS (CONT)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>5. Remove the front right panel screws (2) and then remove the front panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the front right panel of a device. The device is shown in a three-quarter view, with the front panel partially detached. Dashed lines indicate the location of the screws being removed. A hand is shown at the bottom right, using a screwdriver to remove a screw from the bottom right corner of the front panel. Another screw is shown lying on the surface below the device. The device has two large fans on the left side and a control panel on the right side.</p> |

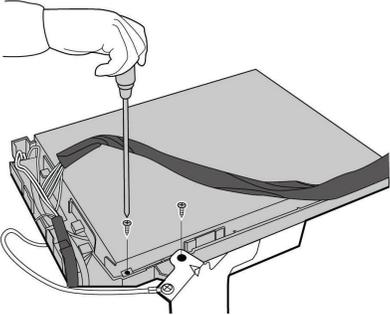
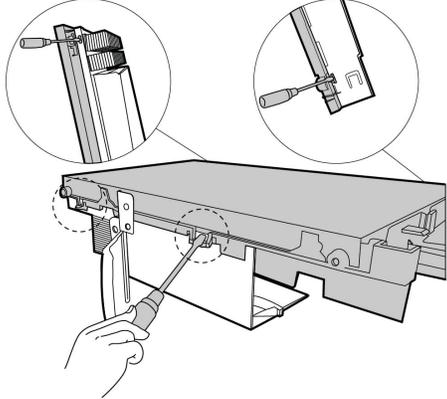
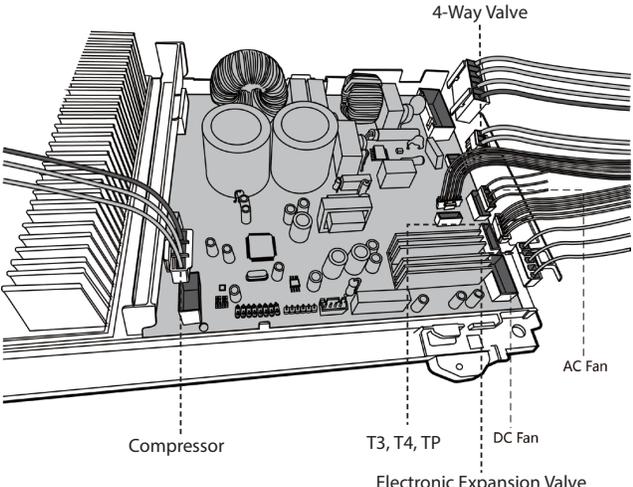
DISASSEMBLY INSTRUCTIONS (CONT)

Panel Plate

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Remove the front right panel screws (7) and then remove the front panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the right side of the front panel. The front panel is partially detached, revealing the internal fan and coil assembly. A black arrow points downwards from the bottom of the front panel, indicating its removal direction.</p> |
| <p>2. Remove the right panel screws (10) and remove the right panel.</p> |  <p>The illustration shows a hand using a screwdriver to remove screws from the right side of the unit. The right panel is partially detached, revealing the internal components. A large black arrow points to the left, indicating the removal direction of the right panel.</p> |

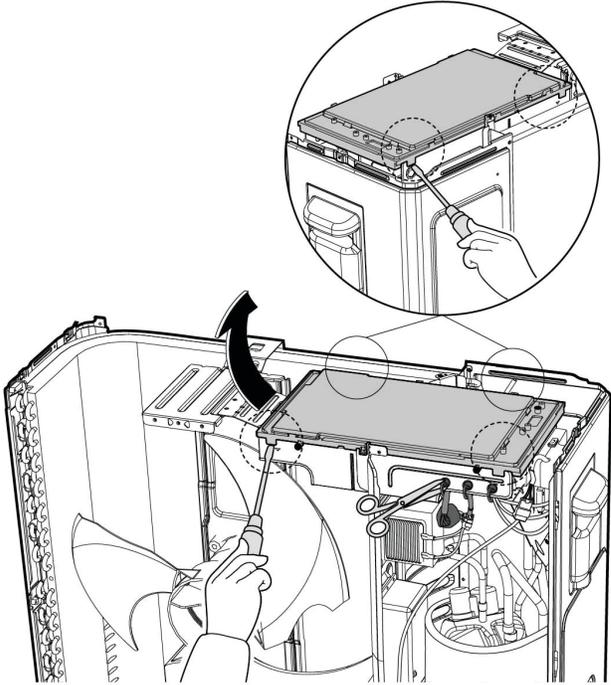
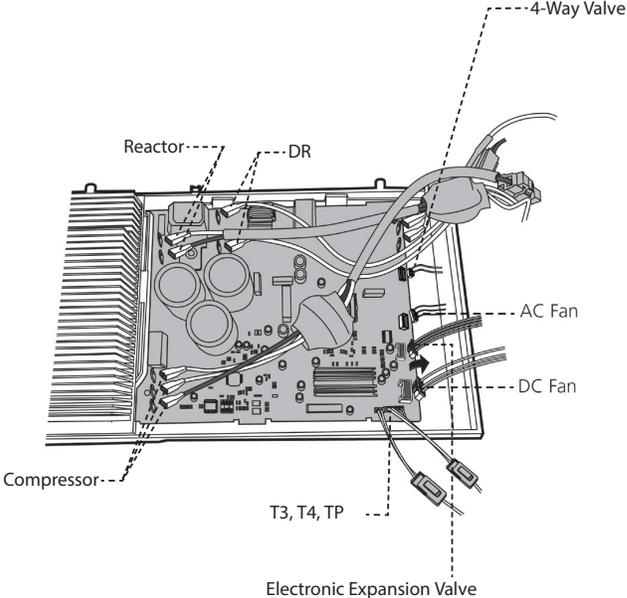
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 1

| PROCEDURES | ILLUSTRATION |
|---|--|
| <p>1. Remove the top cover screws (2).</p> |  |
| <p>2. Unfasten the hooks (4) and then open the electronic box cover.</p> |  |
| <p>3. Disconnect the fan motor connector from the electronic control board. 4. Remove the compressor connector. 5. Remove the two blue wires connected to the four-way valve. 6. Remove the connectors of the condenser coil temperature sensor (T3), outdoor ambient temperature sensor (T4) and the discharge temperature sensor (TP). 7. Disconnect the electronic expansion valve wire. 8. Remove the electronic control board.</p> |  |

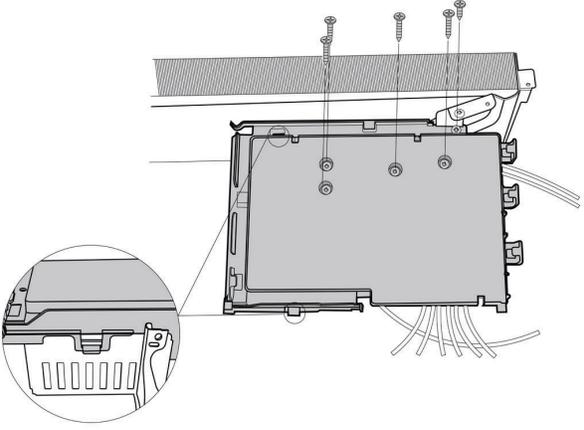
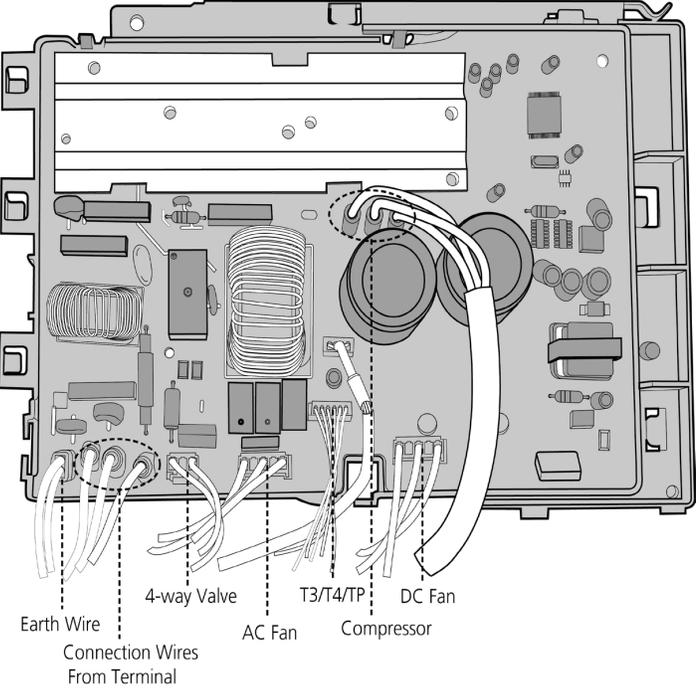
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 2

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Unfasten the hooks (4) and then open the electronic control box cover.</p> |  |
| <p>2. Disconnect the fan motor connector from the electronic control board. 3. Remove the compressor connector. 4. Pull out the two blue wires connected to the four-way valve. 5. Remove the connectors of the condenser coil temperature sensor (3), outdoor ambient temperature sensor (T4) and the discharge temperature sensor (TP). 6. Disconnect the electronic expansion valve wire. 7. Remove the electronic control board.</p> |  |

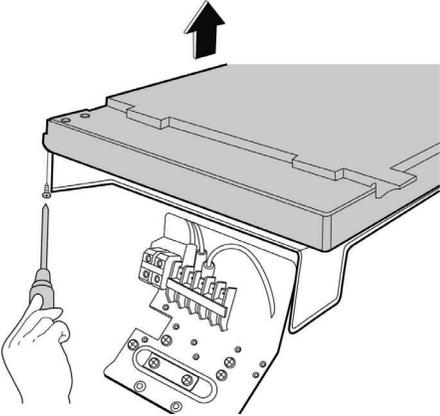
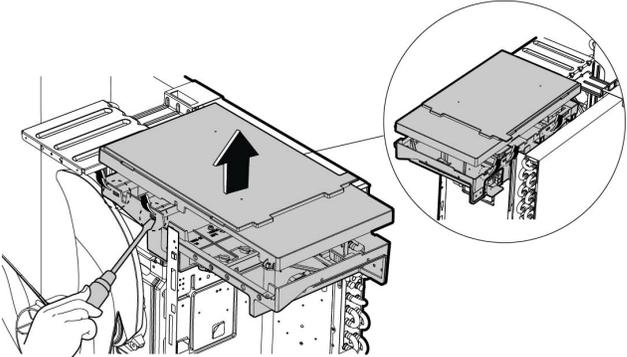
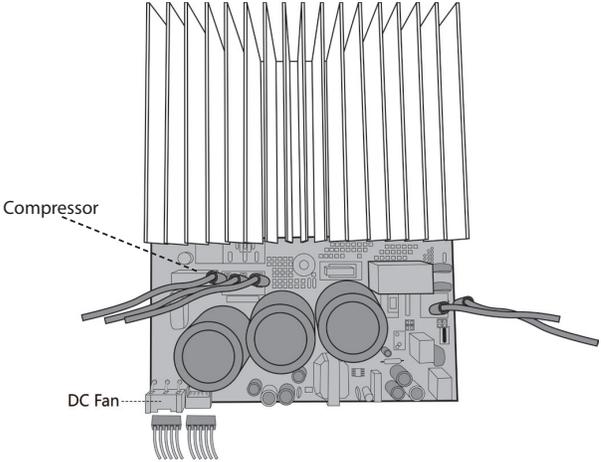
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 3

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>1. Remove the screws (5) and unfasten the hooks (2) and then open the electronic box cover.</p> |  |
| <p>2. Disconnect the fan motor connector from the electronic control board. 3. Remove the compressor connector. 4. Remove the two blue wires from the four-way valve. 5. Remove the connectors of the condenser coil temperature sensor (T3), outdoor ambient temperature sensor (T4), and the discharge temperature sensor (TP). 6. Disconnect the electronic expansion valve wire. 7. Remove the DR connector and the reactor. 8. Remove the electronic control board.</p> |  |

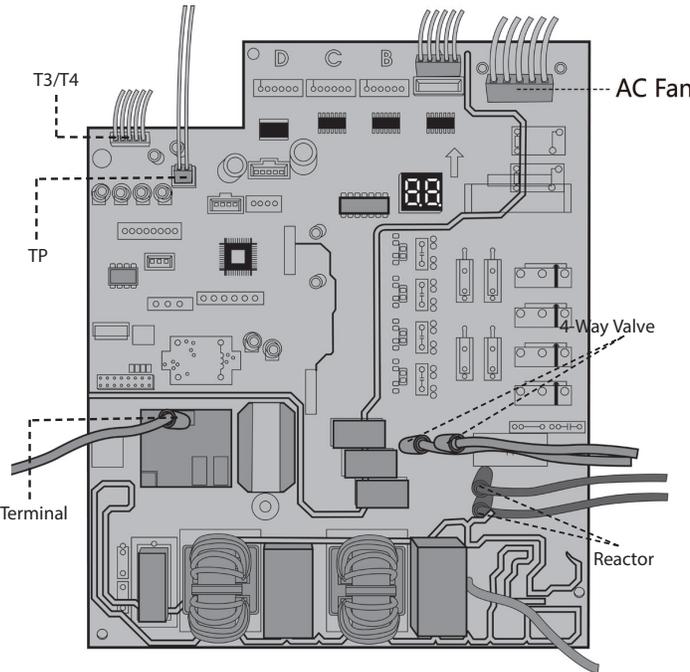
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 4

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Remove the top cover screw (1).</p> |  |
| <p>2. Unfasten the hooks (5) and then open the electronic control box cover.</p> |  |
| <p>3. Disconnect the fan motor connector from the IPM board. 4. Remove the compressor connector.</p> |  |

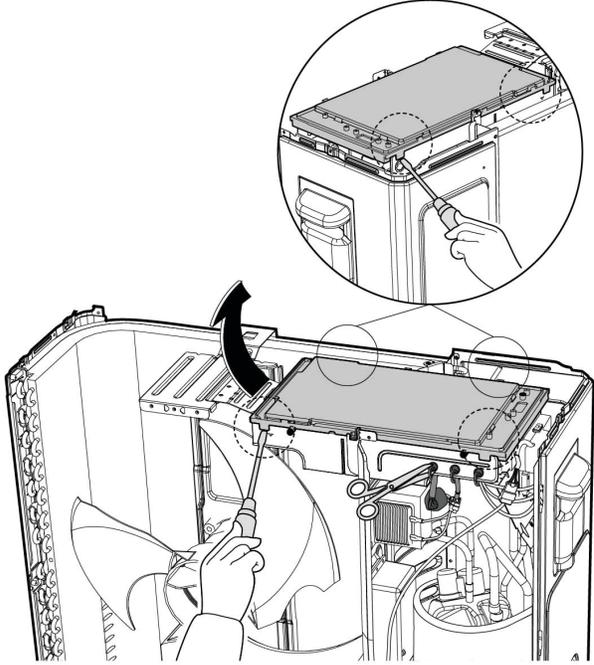
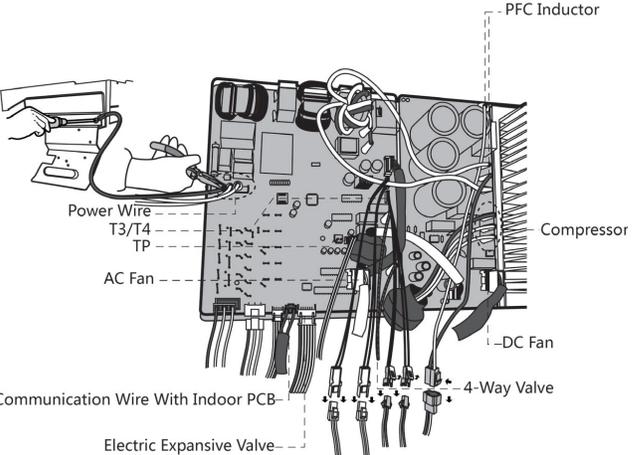
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 4 (CONT)

| PROCEDURES | ILLUSTRATION |
|---|--|
| <ol style="list-style-type: none">5. Remove the wire connected to the terminal.6. Remove the connectors of the condenser coil temperature sensor (T3), outdoor ambient temperature sensor (T4) and the discharge temperature sensor (TP).7. Disconnect the electronic expansion valve wire.8. Remove the four-way valve connector.9. Remove the reactor connector.10. Remove the electronic control box. |  |

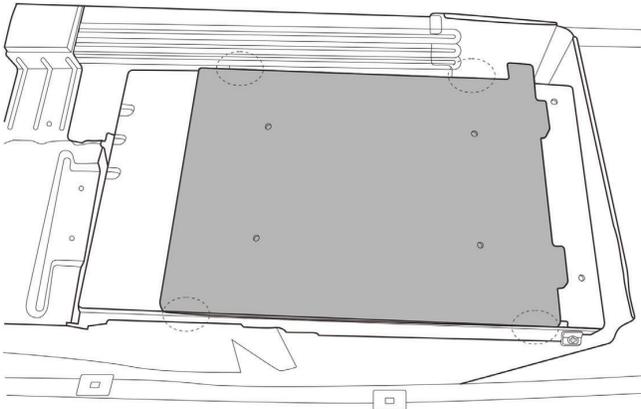
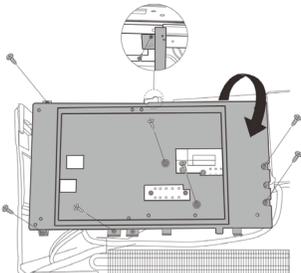
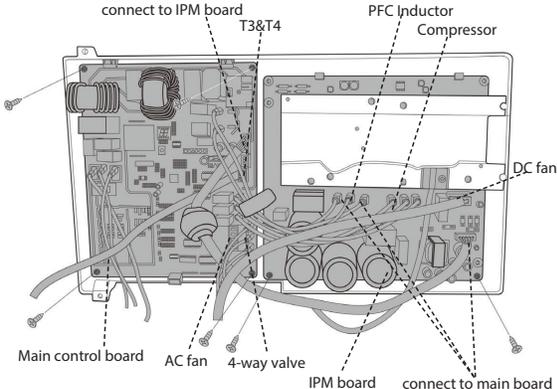
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 5

| PROCEDURES | ILLUSTRATION |
|---|--|
| <p>1. Unfasten the hooks (4) and then open the electronic control box.</p> |  |
| <p>2. Disconnect the outdoor DC fan connector from the electronic control board.</p> <p>3. Remove the compressor connector.</p> <p>4. Remove the two blue wires from the four-way valve.</p> <p>5. Remove the connectors of the condenser coil temperature (T3), outdoor ambient temperature sensor (T4) and the discharge temperature sensor (TP).</p> <p>6. Disconnect the electronic expansion valve wire.</p> <p>7. Disconnect the communication wire indoor PCB.</p> <p>8. Disconnect the PFC inductor.</p> <p>9. Remove the electronic control box.</p> |  |

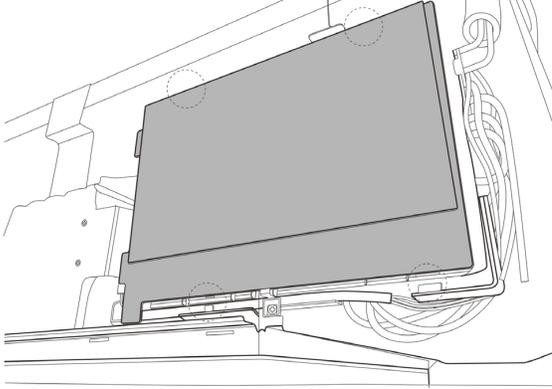
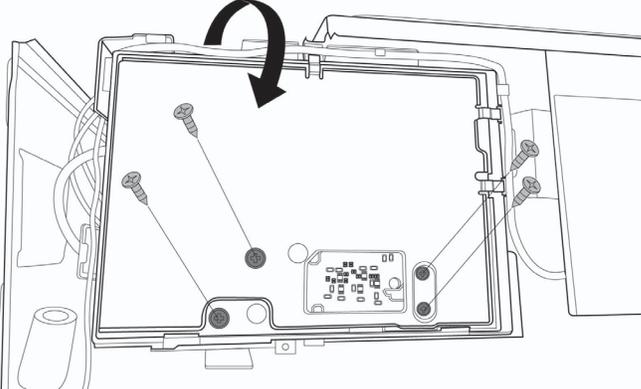
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 6

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Unfasten the hooks (4) and then open the electronic control box.</p> |  |
| <p>2. Remove the screws (8) on the electronic control board and then turn over the electronic control board.</p> |  |
| <p>3. Remove the two blue wires connected with the four-way valve.</p> <p>4. Remove the connectors of the condenser coil temperature sensor (T3), outdoor ambient temperature sensor (T4) and the discharge temperature sensor (TP).</p> <p>5. Disconnect the electronic expansion valve wire.</p> <p>6. Remove the screws (4) and unfasten the hooks (3). Next, remove the main control board.</p> <p>7. Disconnect the connector for the outdoor DC fan from the IPM board.</p> <p>8. Remove the compressor connector.</p> <p>9. Remove the PFC inductor connector.</p> <p>10. Remove the connectors (3) between the IPM board and the main control board.</p> <p>11. Remove the screws (2) and unfasten the hooks (4) to release the IPM board.</p> |  |

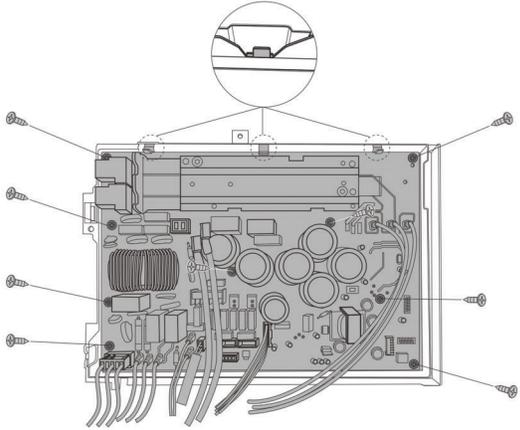
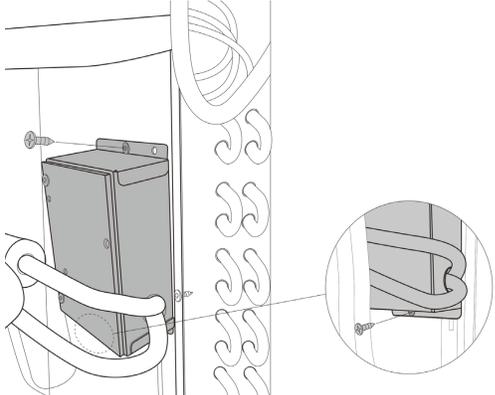
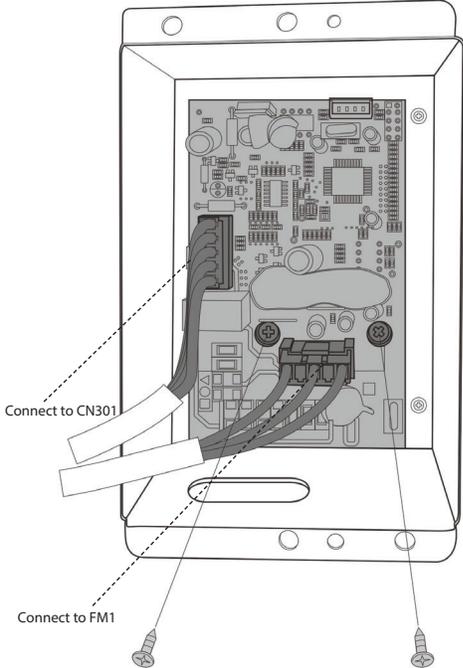
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 7

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Unfasten the hooks (4) and then open the electronic control box cover.</p> |  <p>The illustration shows the back of the electronic control box. A large, dark rectangular cover is being lifted away from the main unit. Four dashed circles indicate the locations of hooks that are being unfastened. The main unit's internal components and wiring are visible behind the cover.</p> |
| <p>2. Remove the screws (4) from the electronic control board and then turn over the electronic control board.</p> |  <p>The illustration shows the electronic control board, which is a rectangular printed circuit board (PCB) with various electronic components. It is being held in place by four screws. A large black curved arrow indicates that the board should be turned over. The board is shown within the open electronic control box.</p> |

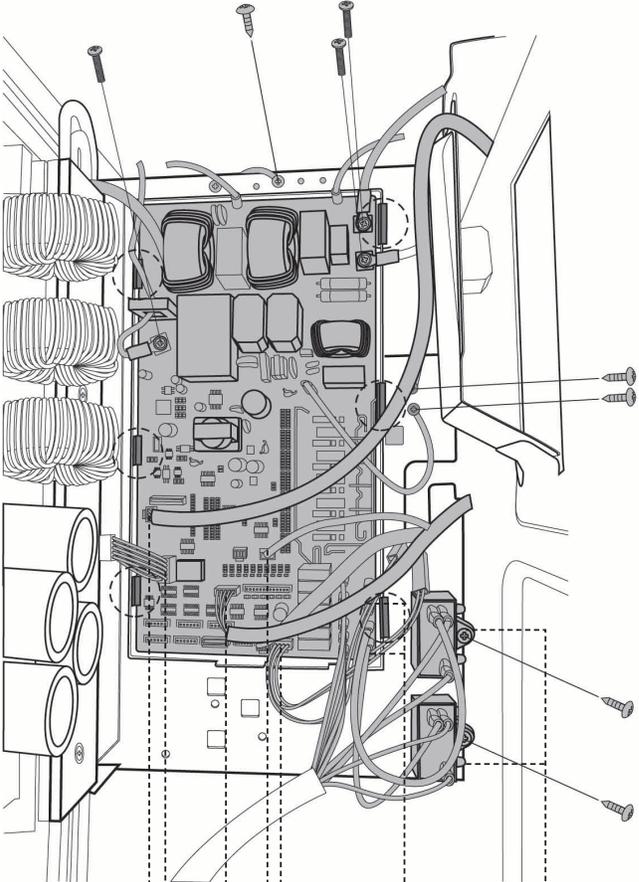
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 7

| PROCEDURES | ILLUSTRATION |
|---|--|
| <p>3. Remove the connectors.</p> <p>4. Remove the screws (9) and unfasten the hooks (3). Next, remove the electronic control board.</p> |  <p>The illustration shows the PCB board assembly with various components labeled. A circular callout at the top shows a close-up of a hook. Several screws are indicated by lines pointing to their locations on the board.</p> |
| <p>5. Remove the screws (2) and then remove the electronic control box subassembly on the partition board assembly.</p> |  <p>The illustration shows the electronic control box subassembly being removed from the partition board assembly. A circular callout shows a close-up of a screw being removed from the subassembly.</p> |
| <p>6. Remove the screws (2) and the connectors (2) and then remove the inverter control board.</p> |  <p>The illustration shows the inverter control board being removed from the PCB board assembly. Two connectors are labeled: "Connect to CN301" and "Connect to FM1". Two screws are also indicated by lines pointing to their locations on the board.</p> |

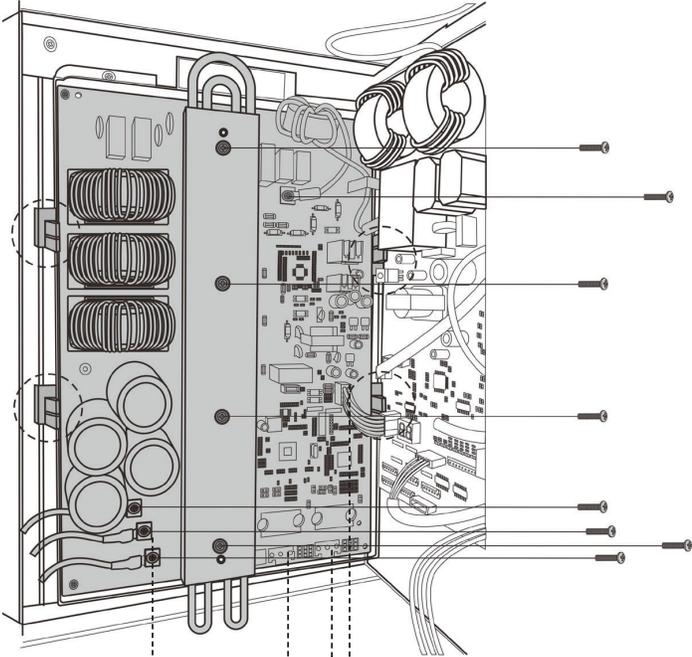
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 8

| PROCEDURES | ILLUSTRATION |
|---|--|
| <ol style="list-style-type: none">1. Remove the screws (2) to disconnect the supply wires.2. Remove the screws (3) to disconnect the ground wires.3. Disconnect the wires connected to the main control board.4. Disconnect the wires between the main control board and the IPM module board.5. Remove the screws (4) and unfasten the hooks (6) and then remove the main control board.6. Remove the screw (1) to remove the fan motor capacitor (1 screw for each capacitor). |  <p>connect to indoor unit T3&T4 TP AC Fan motors Fan motor capacitors</p> <p>connect to IPM low and high pressure switch</p> |

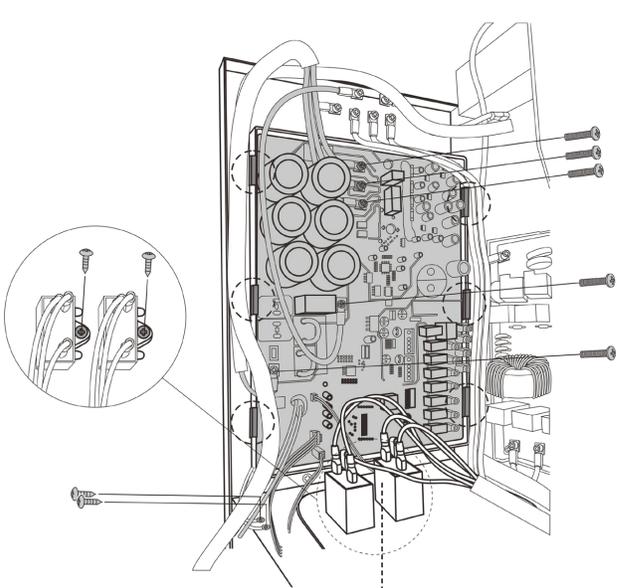
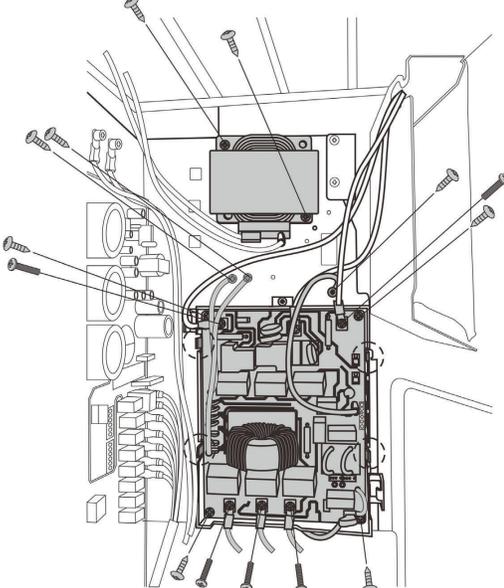
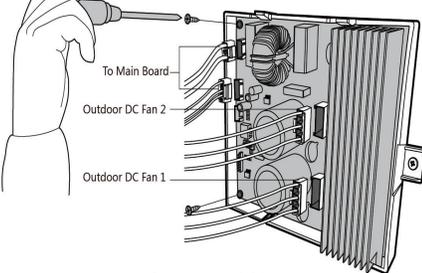
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 8 (CONT)

| PROCEDURES | ILLUSTRATION |
|---|---|
| <p>7. Remove the screws (2) to disconnect the power supply wires.</p> <p>8. Remove the screws (3) to disconnect the wires connected to the compressor.</p> <p>9. Remove the screws (3) to remove the radiator.</p> <p>10. Disconnect the wires between the IPM module board and the main control board.</p> <p>11. Remove the screws (4) and unfasten the hooks (4) and then remove the IPM module board.</p> |  <p>The illustration shows a detailed view of the PCB board assembly. It features a main control board with various components, including a compressor and DC fan motors. The assembly is held together by several screws and hooks. The illustration includes callouts for 'Compressor' and 'DC Fan motors connect to the main control board'. The screws are numbered 2, 3, and 4, corresponding to the disassembly steps. The hooks are also numbered 4. The illustration shows the board being disassembled from the left side, with the screws and hooks being removed to disconnect the power supply wires, compressor, and IPM module board.</p> |

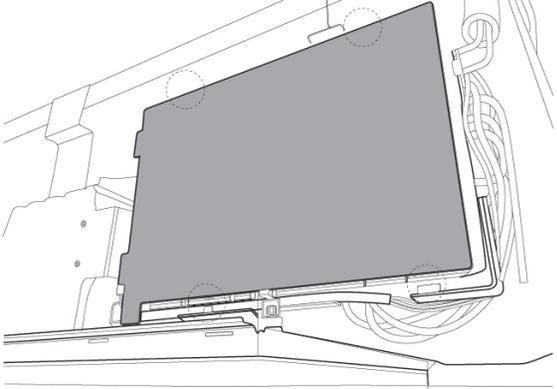
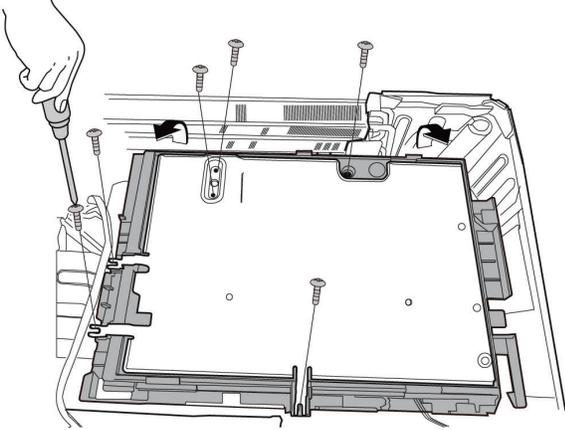
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 9

| PROCEDURES | ILLUSTRATION |
|---|--|
| <ol style="list-style-type: none">1. Remove the screws (3) to disconnect the wires connected to the compressor.2. Remove the screws (2) to disconnect the power supply wires.3. Disconnect the wires connected to the main control board.4. Remove the screws (4) and unfasten the hooks (6) and then remove the main control board.5. Remove the fan capacitor screw and then remove the fan capacitor (one screw for each capacitor). |  <p>Fan motor capacitors</p> |
| <ol style="list-style-type: none">6. Remove the screws (3) to disconnect the power supply wires.7. Remove the screws (3) to disconnect the ground wires.8. Disconnect the wires connected to the main control board.9. Remove the screws (4) and unfasten the hooks (4) to remove the filter board.10. Remove the reactor screws (2) and remove it. |  |
| <ol style="list-style-type: none">11. Disconnect the wires connected to the main control board.12. Remove the screws (2) and then remove the DC motor driver board. |  <p>To Main Board Outdoor DC Fan 2 Outdoor DC Fan 1</p> <p>(for some models)</p> |

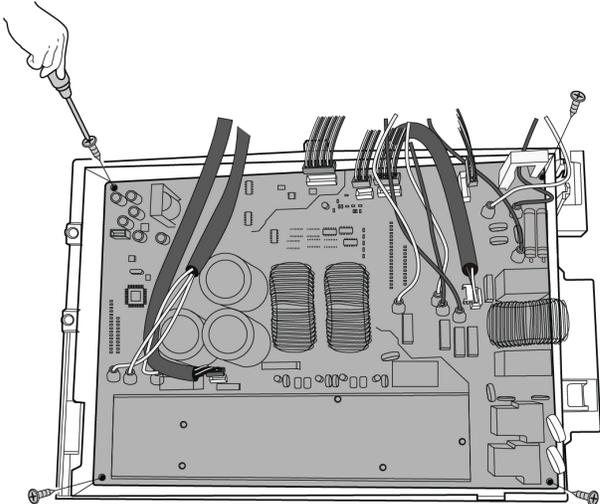
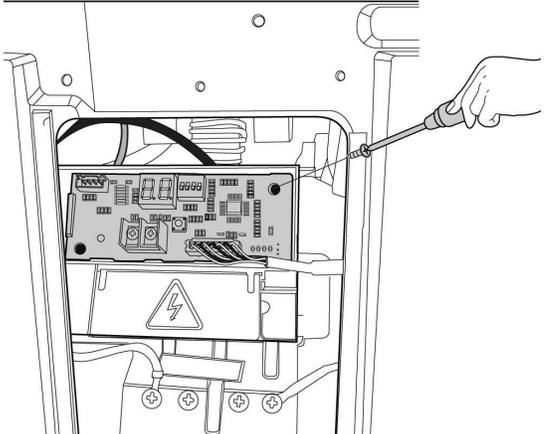
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 10

| PROCEDURES | ILLUSTRATION |
|--|---|
| <p>1. Unfasten the hooks (4) and then open the electronic control box cover.</p> |  A technical line drawing showing the electronic control box cover being lifted away from the chassis. The cover is a dark grey rectangular panel. Four dashed circles on the cover indicate the locations of hooks (4) that are being unfastened. The chassis below shows various components and wiring. |
| <p>2. Remove the screws (6) on the electronic control board and then turn over the electronic control board.</p> |  A technical line drawing showing a hand using a screwdriver to remove screws from the electronic control board. The board is shown from the back, with several screws (6) being removed. The board is mounted on a chassis, and the screws are being removed from the back side. The board is then shown being turned over. |

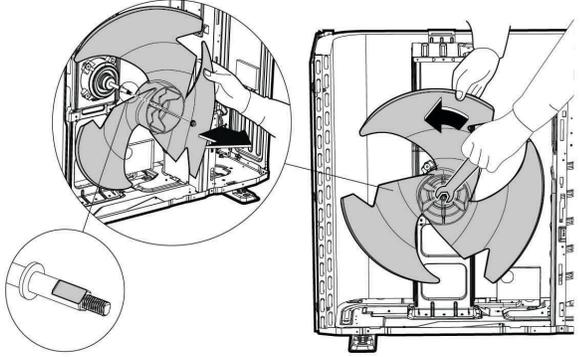
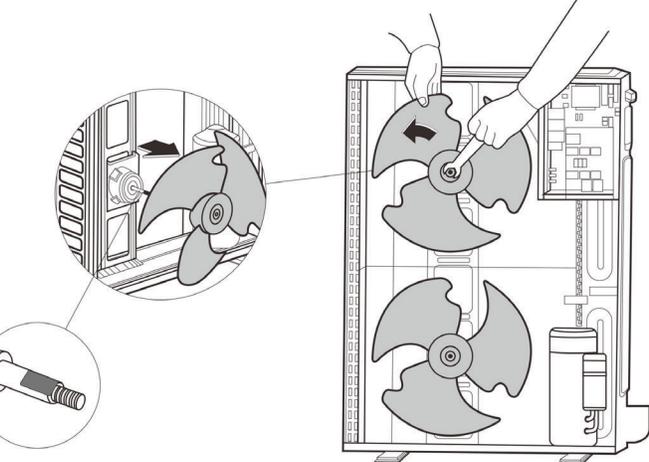
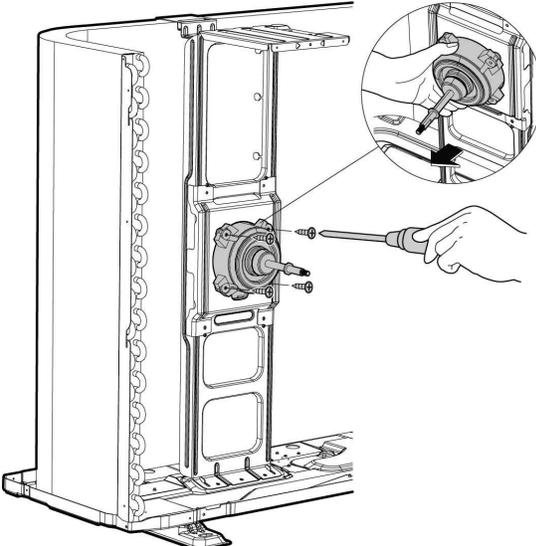
DISASSEMBLY INSTRUCTIONS (CONT)

PCB Board 10 (CONT)

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>3. Pull out the connectors.</p> <p>4. Remove the screws (4) and then remove the electronic control board.</p> |  A line drawing showing the back of a control panel. A hand is using a screwdriver to remove a screw from the top edge of the electronic control board. The board is populated with various components including capacitors, resistors, and connectors. Several thick black cables are connected to the board. |
| <p>5. Remove the connector. Remove one screw and then remove the key board assembly on the terminal board.</p> |  A line drawing showing a close-up of the terminal board area. A hand is using a screwdriver to remove a screw from the terminal board. The board has a lightning bolt warning symbol and several terminal points with '+' signs. |

DISASSEMBLY INSTRUCTIONS (CONT)

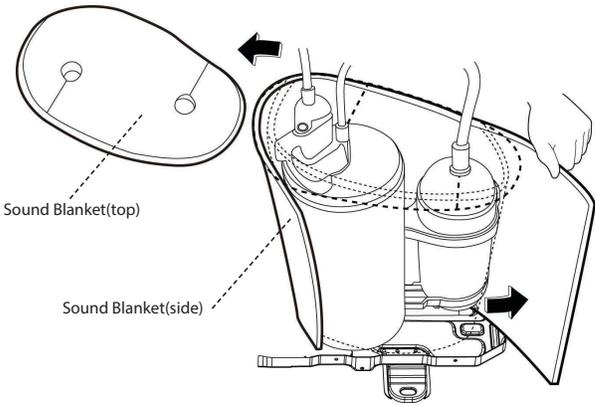
Fan Assembly

| PROCEDURES | ILLUSTRATION |
|---|--|
| <ol style="list-style-type: none"><li data-bbox="121 741 602 770">1. Remove the nut securing the fan with a spanner.<li data-bbox="121 770 315 800">2. Remove the fan. |   |
| <ol style="list-style-type: none"><li data-bbox="121 1598 589 1627">3. Remove the screws (4) securing the fan motor.<li data-bbox="121 1627 375 1656">4. Remove the fan motor. |  |

DISASSEMBLY INSTRUCTIONS (CONT)

Sound Blanket

NOTE: Remove the panel plate before disassembling the sound blanket.

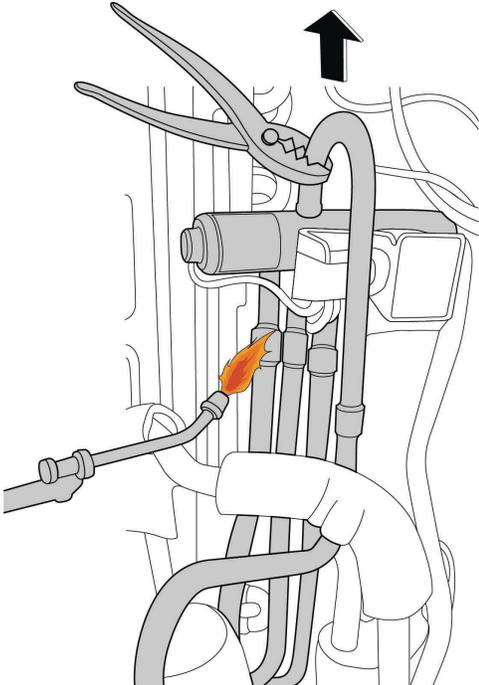
| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Remove the sound blanket (side and top).</p> |  <p>The illustration shows a side view of the unit's internal components. A hand is shown pulling a rectangular sound blanket away from the side of the unit. A separate oval-shaped sound blanket is shown above, with dashed lines indicating its position on top of the unit. Labels with dashed lines point to the 'Sound Blanket(top)' and 'Sound Blanket(side)'. Arrows indicate the direction of removal.</p> |

Four-way Valve (For Heat Pump Models)

⚠ WARNING

EVACUATE THE SYSTEM
Evacuate the system and confirm that there is no refrigerant remaining in the system before removing the four-way valve and the compressor.

NOTE: Remove the panel plate and the four-way valve connection before disassembling the sound blanket.

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>1. Heat up the brazed parts and then detach the four-way valve and the pipe. 2. Remove the four-way valve assembly with pliers.</p> |  <p>The illustration shows a close-up of the four-way valve assembly on the unit. A hand is using pliers to pull the valve away from the unit. A flame is shown heating the brazed connection point. An arrow points upwards, indicating the direction of removal.</p> |

DISASSEMBLY INSTRUCTIONS (CONT)

Compressor

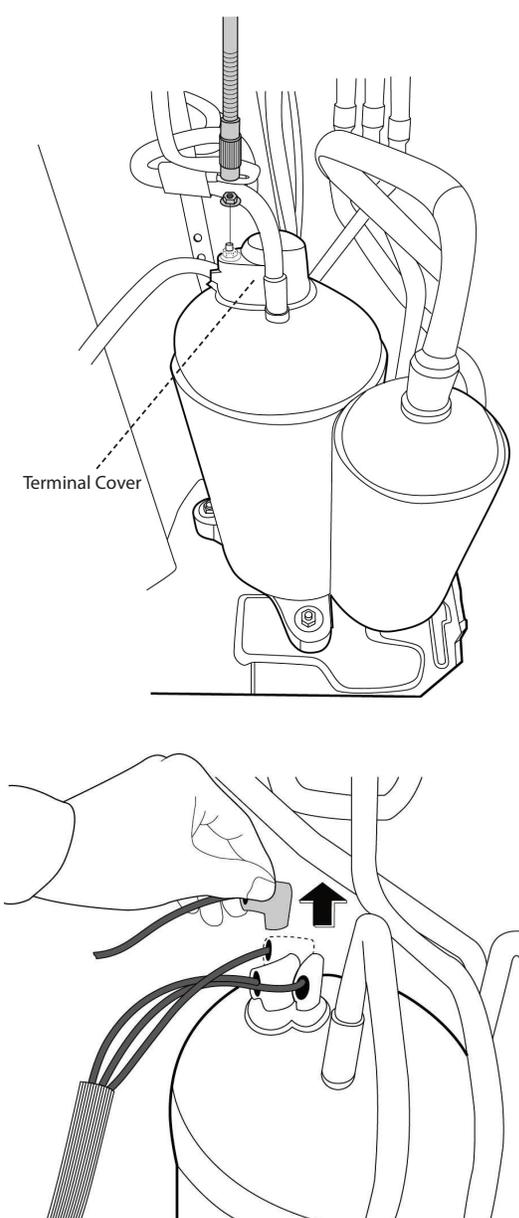


WARNING

EVACUATE THE SYSTEM

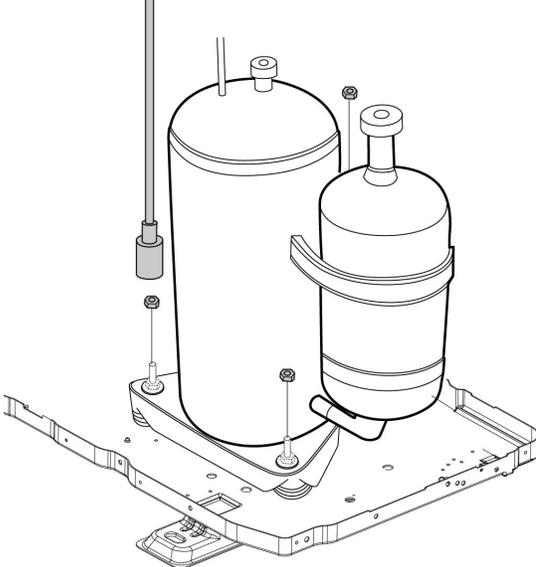
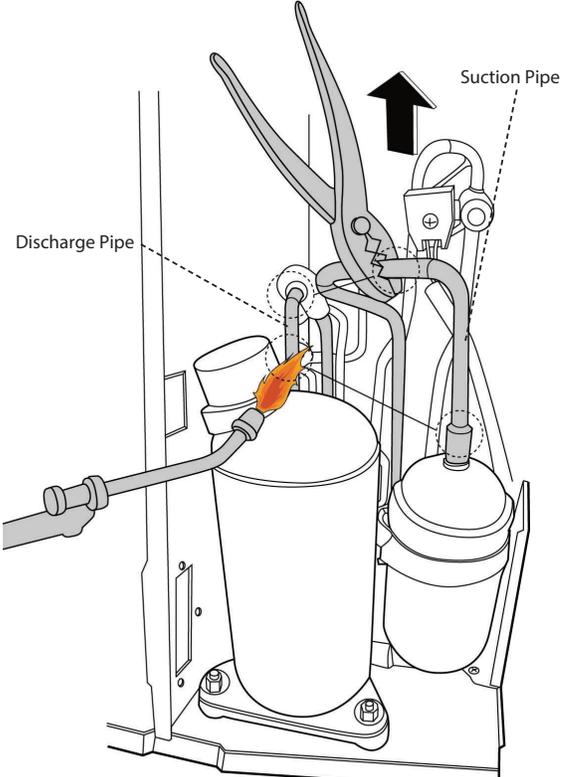
Evacuate the system and confirm that there is no refrigerant remaining in the system before removing the four-way valve and the compressor.

NOTE: Remove the panel plate and the compressor connection to the PCB before disassembling the sound blanket.

| PROCEDURES | ILLUSTRATION |
|---|---|
| <ol style="list-style-type: none">1. Remove the terminal cover flange nut and then remove the terminal cover.2. Disconnect the connectors. |  |

DISASSEMBLY INSTRUCTIONS (CONT)

Compressor

| PROCEDURES | ILLUSTRATION |
|--|--|
| <p>3. Remove the hex nuts and washers securing the compressor.</p> |  <p>The illustration shows a top-down view of a compressor unit mounted on a base pan assembly. Two hex nuts and washers are shown being removed from the base pan, one from the left side and one from the right side of the compressor unit.</p> |
| <p>4. Heat up the brazed parts and then remove the discharge pipe and the suction pipe. 5. Lift the compressor from the base pan assembly with pliers.</p> |  <p>The illustration shows a side view of the compressor unit on the base pan assembly. A torch is applied to the brazed joint between the discharge pipe and the compressor. The discharge pipe is labeled 'Discharge Pipe' and the suction pipe is labeled 'Suction Pipe'. An upward-pointing arrow indicates the direction to lift the compressor. Pliers are shown gripping the top of the compressor unit to lift it from the base pan assembly.</p> |