



Service Manual

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI



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Model List:

| No | Model | Product code | Indoor model | Indoor product code | Outdoor model | Outdoor product code | Remote Controller |
|----|-----------------|--------------|-------------------|---------------------|-------------------|----------------------|-------------------|
| 1 | GEH09AA-K6DNA1F | CV010002700 | GEH09AA-K6DNA1F/I | CV010N02700 | GEH09AA-K6DNA1F/O | CV010W02700 | YAA1FB8(WiFi) |
| 2 | | CV010002701 | | CV010N02701 | | | |
| 3 | GEH12AA-K6DNA1A | CV010002900 | GEH12AA-K6DNA1A/I | CV010N02900 | GEH12AA-K6DNA1A/O | CV010W02900 | |
| 4 | | CV010002901 | | CV010N02901 | | | |
| 5 | GEH18AA-K6DNA1F | CV010002800 | GEH18AA-K6DNA1F/I | CV010N02800 | GEH18AA-K6DNA1F/O | CV010W02800 | |
| 6 | | CV010002801 | | CV010N02801 | | | |

2. Specifications

2.1 Specification Sheet

| Parameter | | Unit | Value | |
|------------------------------------|--|-------------------|--|--|
| Model | | | GEH12AA-K6DNA1A | GEH09AA-K6DNA1F |
| Product Code | | | CV010002900/CV010002901 | CV010002700/CV010002701 |
| Power Supply | Rated Voltage | V ~ | 220-240 | 220-240 |
| | Rated Frequency | Hz | 50 | 50 |
| | Phases | | 1 | 1 |
| Power Supply Mode | | | Outdoor | Outdoor |
| Cooling Capacity(Min~Max) | | W | 3520(800~4400) | 2700(700~3400) |
| Heating Capacity(Min~Max) | | W | 3800(1100~4400) | 2900(600~3500) |
| Cooling Power Input(Min~Max) | | W | 1000(160~1500) | 720(170~1300) |
| Heating Power Input(Min~Max) | | W | 960(165~1500) | 730(130~1350) |
| Cooling Current Input | | A | 4.48 | 3.5 |
| Heating Current Input | | A | 4.30 | 3.6 |
| Rated Input | | W | 1500 | 1350 |
| Rated Current | | A | 6.72 | 6.0 |
| Air Flow Volume(SH/H/HM/M/LM/L/SL) | | m ³ /h | 600/520/480/440/400/360/280 | 500/430/410/370/330/280/250 |
| Dehumidifying Volume | | L/h | 1.2 | 0.8 |
| EER | | W/W | 3.52 | 3.75 |
| COP | | W/W | 3.96 | 3.97 |
| SEER | | W/W | 7.0 | 7.2 |
| SCOP(Average/Warmer/Colder) | | W/W | 4.1/5.3/- | 4.0/5.3/- |
| Application Area | | m ² | 16-24 | 12-18 |
| Indoor Unit | Indoor Unit Model | | GEH12AA-K6DNA1A/I | GEH09AA-K6DNA1F/I |
| | Indoor Unit Product Code | | CV010N02900/CV010N02901 | CV010N02700/CV010N02701 |
| | Fan Type | | Centrifugal | Centrifugal |
| | Fan Diameter Length(DXL) | mm | Φ370X80 | Φ370X80 |
| | Cooling Speed (SH/H/HM/M/LM/L/SL) | r/min | 750/650/600/550/500/450/350 | 650/560/530/480/430 /370/320 |
| | Heating Speed (SH/H/HM/M/LM/L/SL) | r/min | 750/650/600/550/500/450/350 | 650/560/530/480/430/370/320 |
| | Fan Motor Power Output | W | 30 | 30 |
| | Fan Motor RLA | A | 0.15 | 0.15 |
| | Fan Motor Capacitor | μF | / | / |
| | Evaporator Form | | Aluminum Fin-copper Tube | Aluminum Fin-copper Tube |
| | Evaporator Pipe Diameter | mm | Φ7 | Φ7 |
| | Evaporator Row-fin Gap | mm | 2-1.3 | 2-1.3 |
| | Evaporator Coil Length (LXDXW) | mm | 511X400X25.4 | 511X400X25.4 |
| | Swing Motor Model | | MP24EB/MP24AE | MP24EB/MP24AE |
| | Swing Motor Power Output | W | 1.5/1.5 | 1.5/1.5 |
| | Fuse Current | A | 3.15 | 3.15 |
| | Sound Pressure Level (SS/H/MH/M/ML/L/SL) | dB (A) | Cooling:44/40/38/36/33/29/25 Heating:44/40/38/36/33/29/25 | Cooling:39/36/33/31/29/26/23 Heating:38/36/32/30/28/25/22 |
| | Sound Power Level (SS/H/MH/M/ML/L/SL) | dB (A) | Cooling:54/50/48/46/43/39/35 Heating:54/50/48/46/43/39/35 | Cooling:50/48/45/44/42/38/34 Heating:50/48/45/44/42/38/34 |
| | Dimension (WXHXD) | mm | 700X600X215 | 700X600X215 |
| | Dimension of Carton Box (LXWXH) | mm | 785X280X682 | 785X280X682 |
| | Dimension of Package(LXWXH) | mm | 788X283X697 | 788X283X697 |
| Net Weight | kg | 15.5 | 15.5 | |
| Gross Weight | kg | 18.5 | 18.5 | |

| | | | | |
|--|---|-------------------|---------------------------------|----------------------------------|
| Outdoor Unit | Outdoor Unit Model | | GEH12AA-K6DNA1A/O | GEH09AA-K6DNA1F/O |
| | Outdoor Unit Product Code | | CV010W02900 | CV010W02700 |
| | Compressor Manufacturer | | ZHUHAI LANDA COMPRESSOR CO.,LTD | ZHUHAI LANDA COMPRESSOR CO., LTD |
| | Compressor Model | | QXF-A102zE190B | QXF-A079zE190A |
| | Compressor Oil | | FW68DA | FW68DA |
| | Compressor Type | | Rotary | Rotary |
| | Compressor LRA. | A | / | / |
| | Compressor RLA | A | 4.60 | 4.6 |
| | Compressor Power Input | W | 1023 | 790 |
| | Compressor Overload Protector | | HPC115/95U1/KSD115°C | HPC115/95U1/KSD115°C |
| | Throttling Method | | Electron expansion valve | Electron expansion valve |
| | Set Temperature Range | °C | 16~30 | 16~30 |
| | Cooling Operation Ambient Temperature Range | °C | -15~43 | -15~43 |
| | Heating Operation Ambient Temperature Range | °C | -22~24 | -22~24 |
| | Condenser Form | | Aluminum Fin-copper Tube | Aluminum Fin-copper Tube |
| | Condenser Pipe Diameter | mm | Φ7.94 | Φ7 |
| | Condenser Rows-fin Gap | mm | 1-1.4 | 1-1.4 |
| | Condenser Coil Length (LXDXW) | mm | 731X19.05X550 | 710X19.05X508 |
| | Fan Motor Speed | rpm | 900 | 900 |
| | Fan Motor Power Output | W | 30 | 30 |
| | Fan Motor RLA | A | 0.36 | 0.36 |
| | Fan Motor Capacitor | μF | / | / |
| | Outdoor Unit Air Flow Volume | m ³ /h | 2200 | 1600 |
| | Fan Type | | Axial-flow | Axial-flow |
| | Fan Diameter | mm | Φ438 | Φ400 |
| | Defrosting Method | | Automatic Defrosting | Automatic Defrosting |
| | Climate Type | | T1 | T1 |
| | Isolation | | I | I |
| | Moisture Protection | | IPX4 | IPX4 |
| | Permissible Excessive Operating Pressure for the Discharge Side | MPa | 4.3 | 4.3 |
| | Permissible Excessive Operating Pressure for the Suction Side | MPa | 2.5 | 2.5 |
| | Sound Pressure Level (H/M/L) | dB (A) | 52/-/- | 49/-/- |
| | Sound Power Level (H/M/L) | dB (A) | 62/-/- | 60/-/- |
| Dimension(WXHxD) | mm | 848X596X320 | 782X540X320 | |
| Dimension of Carton Box (LXWXH) | mm | 878X360X630 | 820X355X580 | |
| Dimension of Package(LXWXH) | mm | 881X363X645 | 823X358X595 | |
| Net Weight | kg | 30.5 | 27.5 | |
| Gross Weight | kg | 33.5 | 30 | |
| Refrigerant | | R32 | R32 | |
| Refrigerant Charge | kg | 0.75 | 0.55 | |
| Connection Pipe | Connection Pipe Length | m | 5 | 5 |
| | Connection Pipe Gas Additional Charge | g/m | 16 | 16 |
| | Outer Diameter Liquid Pipe | mm | Φ6 | Φ6 |
| | Outer Diameter Gas Pipe | mm | Φ9.52 | Φ9.52 |
| | Max Distance Height | m | 10 | 10 |
| | Max Distance Length | m | 20 | 20 |
| Note: The connection pipe applies metric diameter. | | | | |

The above data is subject to change without notice. Please refer to the nameplate of the unit.

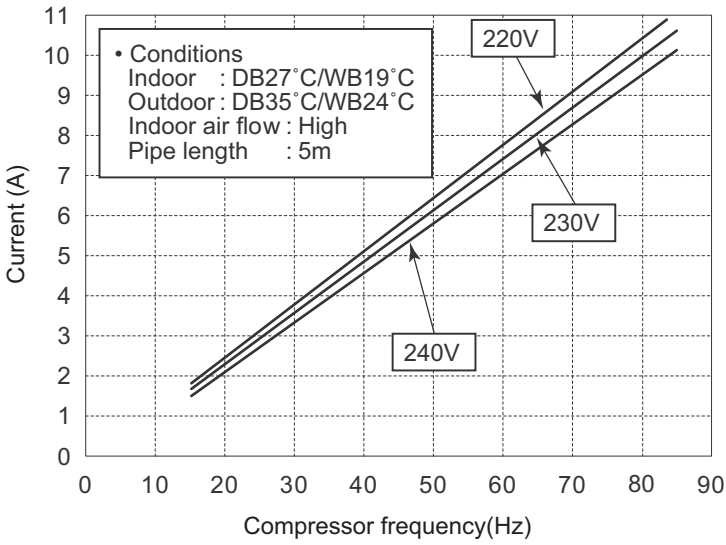
| Parameter | Unit | Value | |
|------------------------------------|---|-----------------------------|-----------------------------|
| Model | | GEH18AA-K6DNA1F | |
| Product Code | | CV010002800/CV010002801 | |
| Power Supply | Rated Voltage | V ~ 220-240 | |
| | Rated Frequency | Hz 50 | |
| | Phases | 1 | |
| Power Supply Mode | | Outdoor | |
| Cooling Capacity(Min~Max) | W | 5200(1260~6600) | |
| Heating Capacity(Min~Max) | W | 5330(1120~6800) | |
| Cooling Power Input(Min~Max) | W | 1550(380~2450) | |
| Heating Power Input(Min~Max) | W | 1500(350~2500) | |
| Cooling Current Input | A | 7.1 | |
| Heating Current Input | A | 6.7 | |
| Rated Input | W | 2500 | |
| Rated Current | A | 11.1 | |
| Air Flow Volume(SH/H/HM/M/LM/L/SL) | m ³ /h | 700/650/580/520/460/410/320 | |
| Dehumidifying Volume | L/h | 1.8 | |
| EER | W/W | 3.4 | |
| COP | W/W | 3.55 | |
| SEER | W/W | 6.6 | |
| SCOP(Average/Warmer/Colder) | W/W | / | |
| Application Area | m ² | 23-34 | |
| Indoor Unit | Indoor Unit Model | GEH18AA-K6DNA1F/I | |
| | Indoor Unit Product Code | CV010N02800/CV010N02801 | |
| | Fan Type | Centrifugal | |
| | Fan Diameter Length(DXL) | mm | Φ370X80 |
| | Cooling Speed (SH/H/HM/M/LM/L/SL) | r/min | 840/800/720/650/580/530/410 |
| | | | 810/770/690/620/550/500/380 |
| | Heating Speed (SH/H/HM/M/LM/L/SL) | r/min | 930/840/760/690/620/570/480 |
| | | | 850/800/720/650/580/530/470 |
| | Fan Motor Power Output | W | 30 |
| | Fan Motor RLA | A | 0.15 |
| | Fan Motor Capacitor | μF | / |
| | Evaporator Form | | Aluminum Fin-copper Tube |
| | Evaporator Pipe Diameter | mm | Φ7 |
| | Evaporator Row-fin Gap | mm | 2-1.3 |
| | Evaporator Coil Length (LXDXW) | mm | 511X400X25.4 |
| | Swing Motor Model | | MP24EB/MP24AE |
| | Swing Motor Power Output | W | 1.5/1.5 |
| | Fuse Current | A | 3.15 |
| | Sound Pressure Level (SS/H/MH/M/ML/L/SL) | dB (A) | 47/45/43/41/38/37/32 |
| | Sound Power Level (SS/H/MH/M/ML/L/SL) | dB (A) | 57/55/53/51/48/47/42 |
| | Dimension (WXHDX) | mm | 700X600X215 |
| Dimension of Carton Box (LXWXH) | mm | 785X280X682 | |
| Dimension of Package(LXWXH) | mm | 788X283X697 | |
| Net Weight | kg | 15.5 | |
| Gross Weight | kg | 18.5 | |

| | | | | |
|---------------------------------|---|-------------------|---------------------------------|--|
| Outdoor Unit | Outdoor Unit Model | | GEH18AA-K6DNA1F/O | |
| | Outdoor Unit Product Code | | CV010W02800 | |
| | Compressor Manufacturer | | ZHUHAI LANDA COMPRESSOR CO.,LTD | |
| | Compressor Model | | QXF-B141zF030A | |
| | Compressor Oil | | 68DA | |
| | Compressor Type | | Rotary | |
| | Compressor LRA | A | | 25 |
| | Compressor RLA | A | | 6.5 |
| | Compressor Power Input | W | | 1410 |
| | Compressor Overload Protector | | | 1NT11L-6233 or KSD115°C or HPC115/95U1 |
| | Throttling Method | | | Electron expansion valve |
| | Set Temperature Range | °C | | 16~30 |
| | Cooling Operation Ambient Temperature Range | °C | | -15~43 |
| | Heating Operation Ambient Temperature Range | °C | | -22~24 |
| | Condenser Form | | | Aluminum Fin-copper Tube |
| | Condenser Pipe Diameter | mm | | Φ7 |
| | Condenser Rows-fin Gap | mm | | 2-1.4 |
| | Condenser Coil Length (LXDXW) | mm | | 851X38.1X660 |
| | Fan Motor Speed | rpm | | 800 |
| | Fan Motor Power Output | W | | 60 |
| | Fan Motor RLA | A | | 0.4 |
| | Fan Motor Capacitor | μF | | / |
| | Outdoor Unit Air Flow Volume | m ³ /h | | 3200 |
| | Fan Type | | | Axial-flow |
| | Fan Diameter | mm | | Φ520 |
| | Defrosting Method | | | Automatic Defrosting |
| | Climate Type | | | T1 |
| | Isolation | | | I |
| | Moisture Protection | | | IPX4 |
| | Permissible Excessive Operating Pressure for the Discharge Side | MPa | | 4.3 |
| | Permissible Excessive Operating Pressure for the Suction Side | MPa | | 2.5 |
| | Sound Pressure Level (H/M/L) | dB (A) | | 57/-/- |
| Sound Power Level (H/M/L) | dB (A) | | 65/-/- | |
| Dimension(WXHXD) | mm | | 965X700X396 | |
| Dimension of Carton Box (LXWXH) | mm | | 1026X455X735 | |
| Dimension of Package(LXWXH) | mm | | 1029X458X750 | |
| Net Weight | kg | | 46 | |
| Gross Weight | kg | | 50.5 | |
| Refrigerant | | | R32 | |
| Refrigerant Charge | kg | | 0.95 | |
| Connection Pipe | Connection Pipe Length | m | 5 | |
| | Connection Pipe Gas Additional Charge | g/m | 16 | |
| | Outer Diameter Liquid Pipe | mm | Φ6 | |
| | Outer Diameter Gas Pipe | mm | Φ12 | |
| | Max Distance Height | m | 10 | |
| | Max Distance Length | m | 25 | |
| | Note: The connection pipe applies metric diameter. | | | |

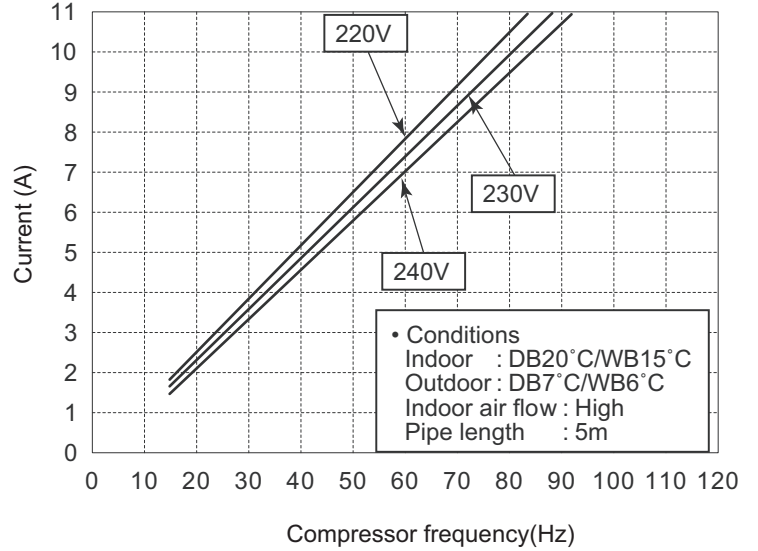
The above data is subject to change without notice. Please refer to the nameplate of the unit.

2.2 Operation Characteristic Curve

Cooling

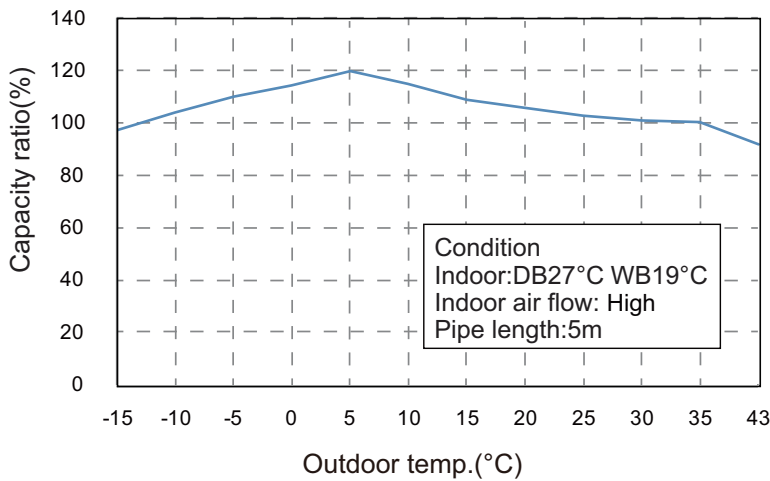


Heating

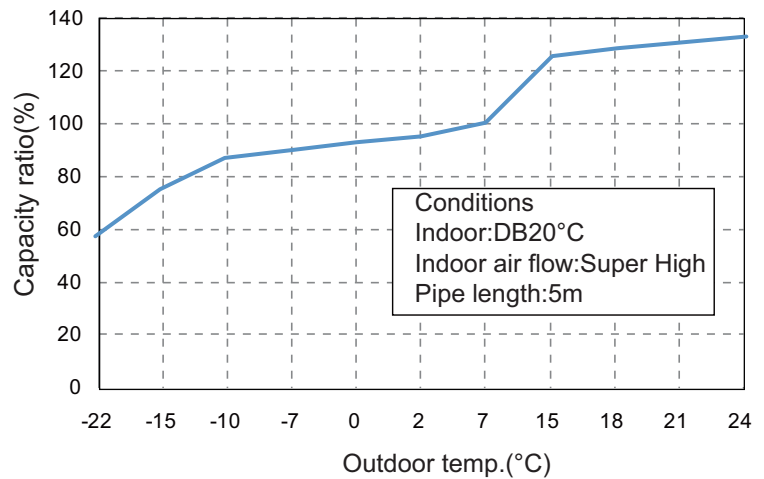


2.3 Capacity Variation Ratio According to Temperature

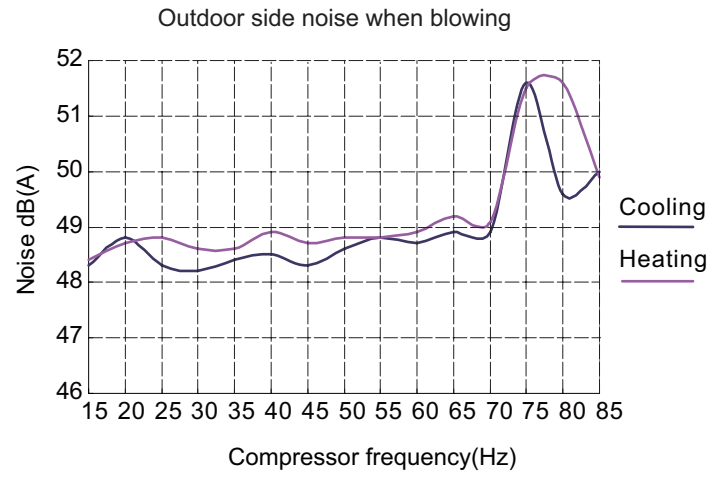
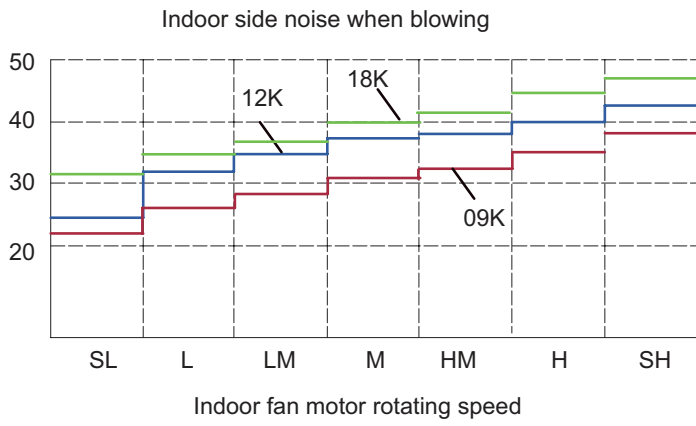
Cooling



Heating

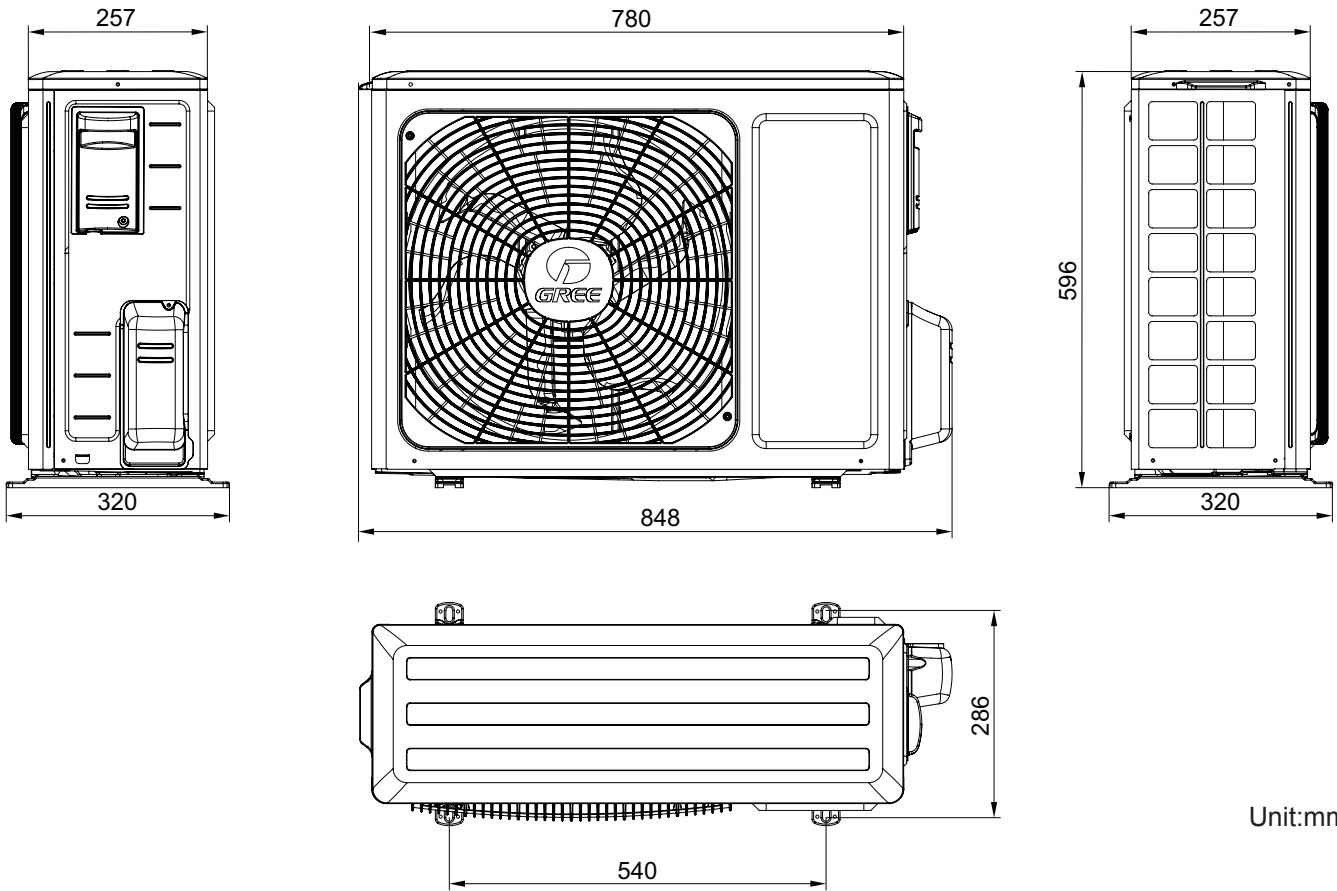


2.4 Noise Curve



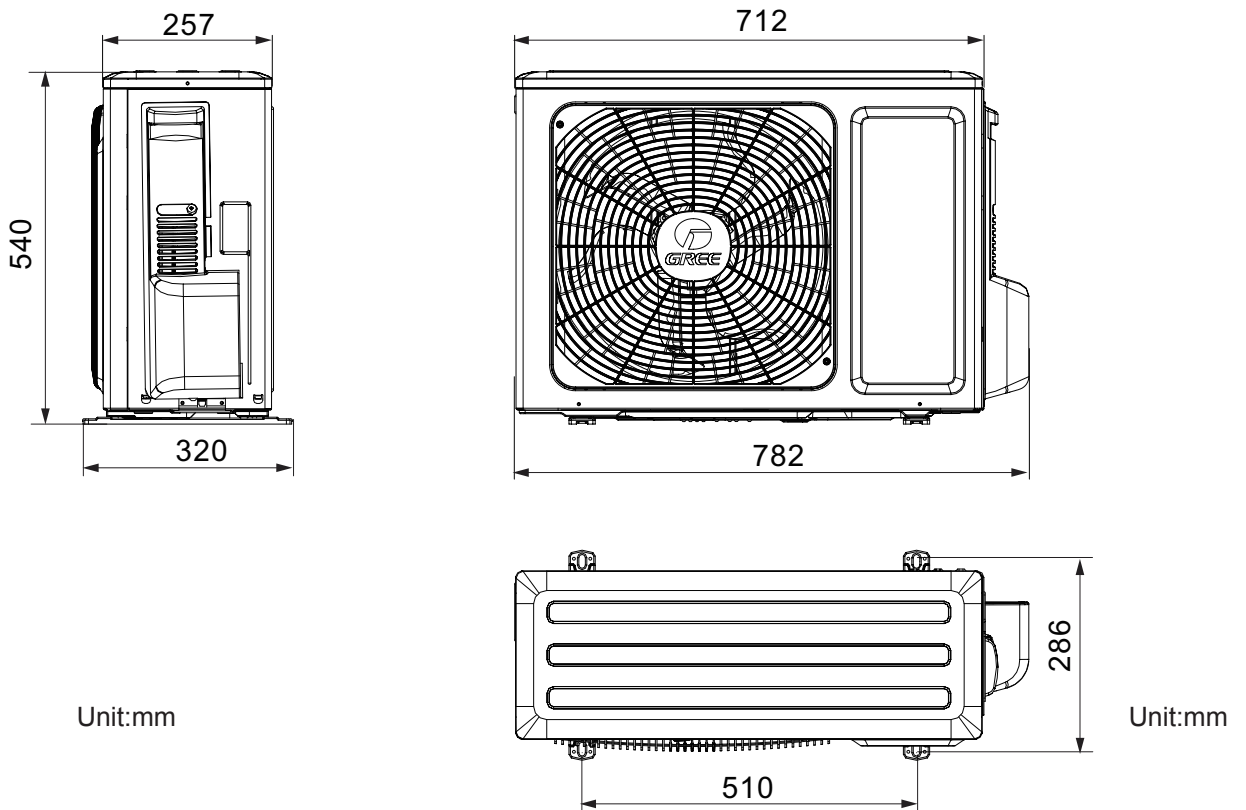
3.2 Outdoor Unit

GEH12AA-K6DNA1A/O



Unit:mm

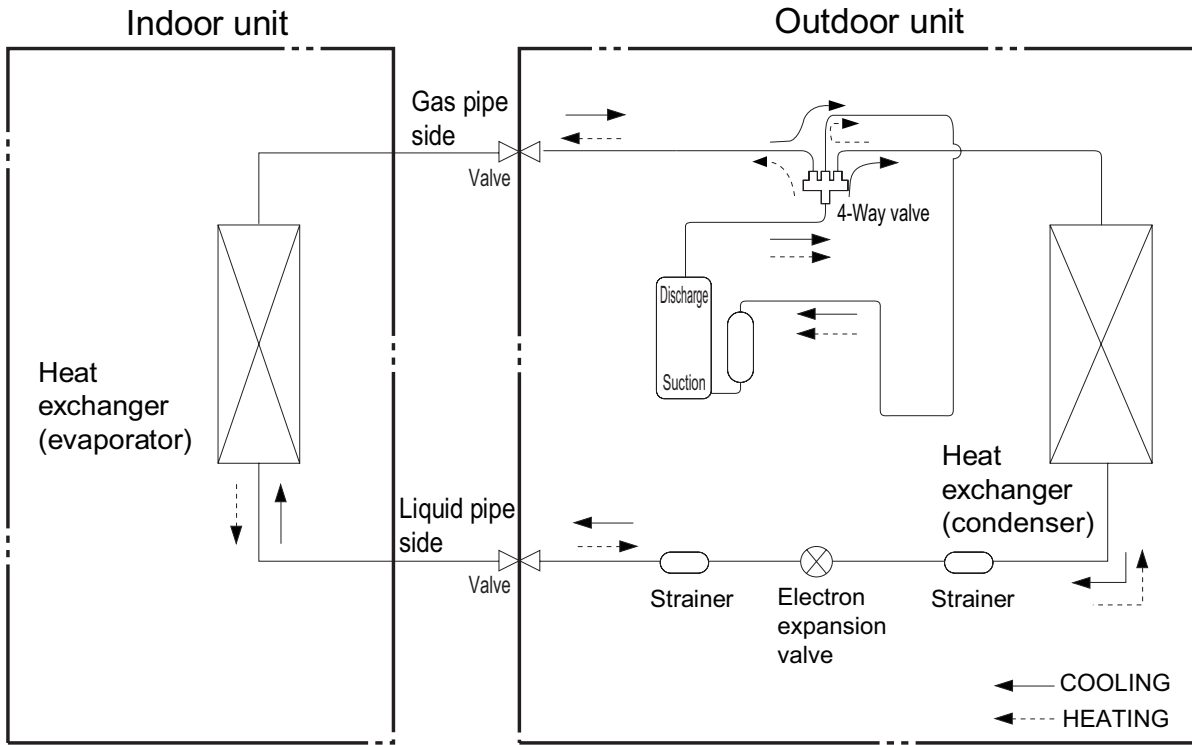
GEH09AA-K6DNA1F/O



Unit:mm

Unit:mm

4. Refrigerant System Diagram



Connection pipe specification:
 Liquid pipe: 1/4" (6mm)
 Gas pipe: 3/8" (9.52mm)(09/12K)
 Gas pipe: 1/2" (16mm)(18K)

5. Electrical Part

5.1 Wiring Diagram

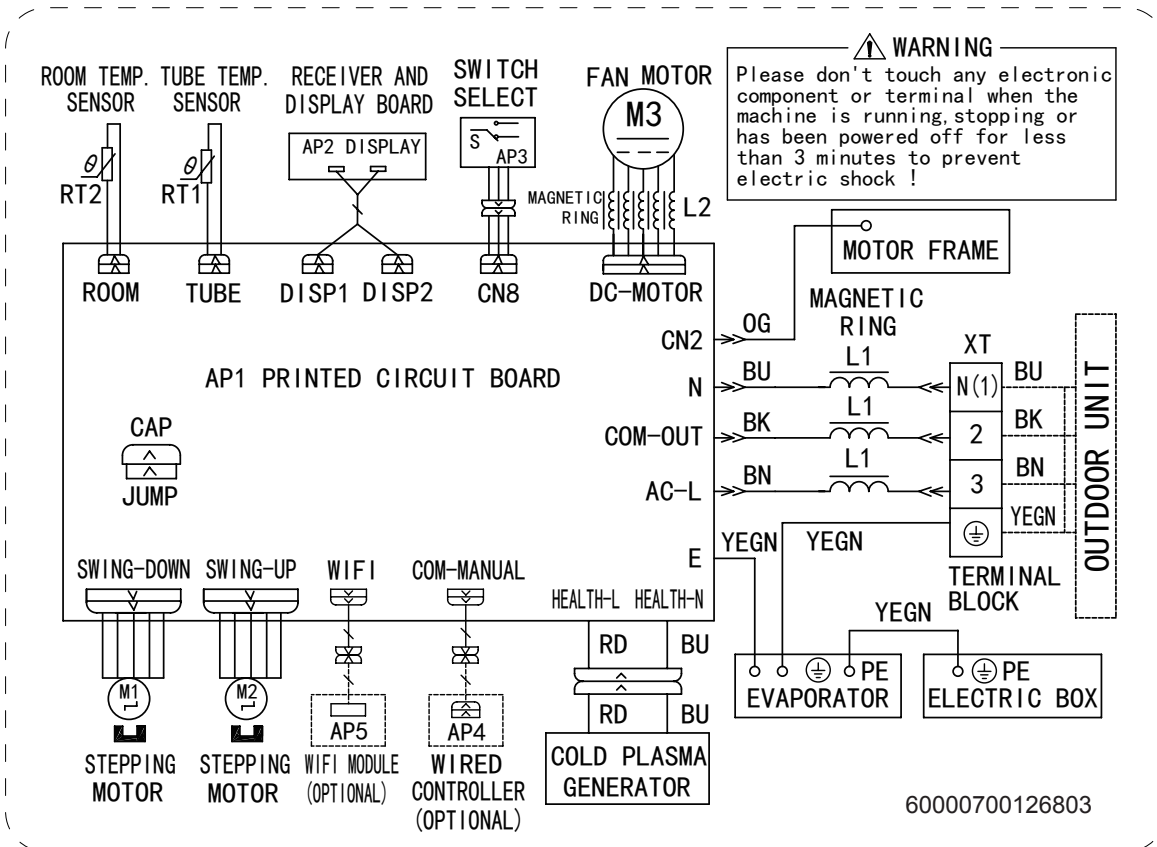
• Instruction

| Symbol | Symbol Color | Symbol | Symbol Color | Symbol | Name |
|--------|--------------|--------|--------------|--------|----------------|
| WH | White | GN | Green | CAP | Jumper cap |
| YE | Yellow | BN | Brown | COMP | Compressor |
| RD | Red | BU | Blue | | Grounding wire |
| YEGN | Yellow/Green | BK | Black | / | / |
| VT | Violet | OG | Orange | / | / |

Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

• Indoor Unit

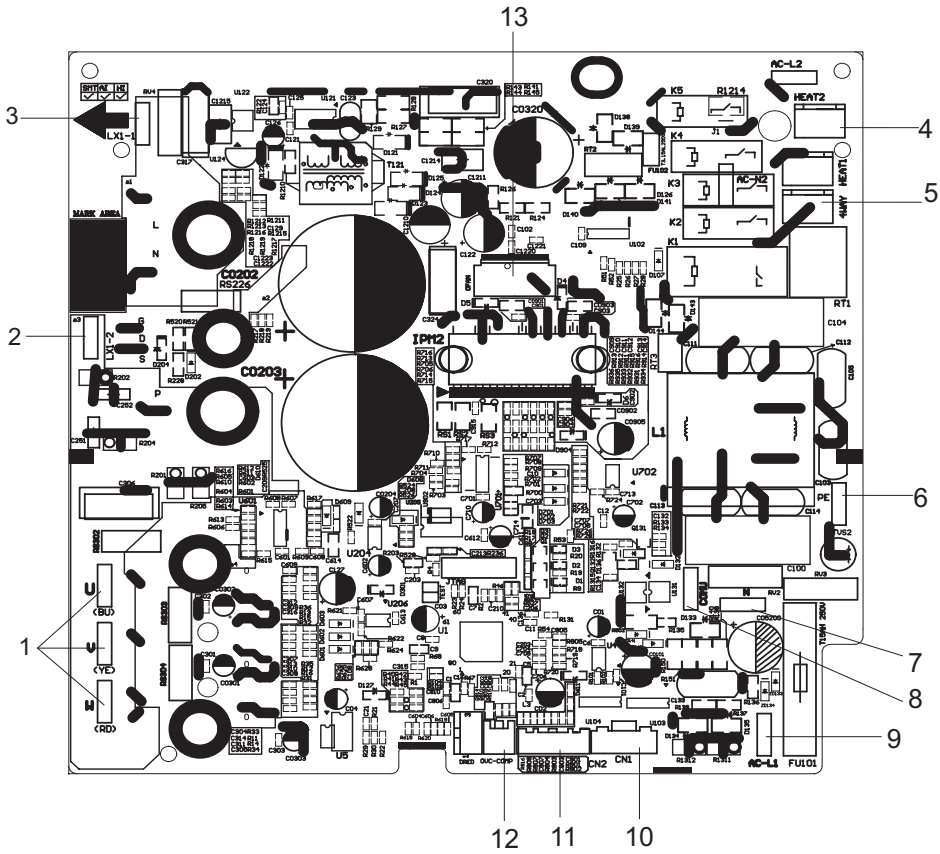
GEH12AA-K6DNA1A/I(CV010N02900) GEH18AA-K6DNA1F/I(CV010N02800)



Outdoor Unit

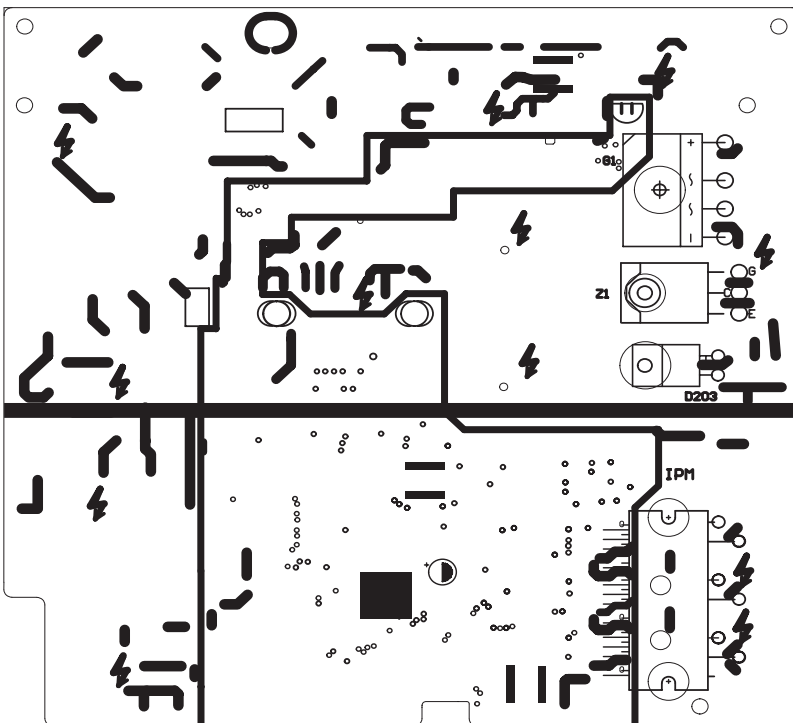
09/12K

• Top view



| No. | Name |
|-----|--|
| 1 | Interface of compressor wire |
| 2 | Reactor wiring terminal 2 |
| 3 | Reactor wiring terminal 1 |
| 4 | Terminal of chassis electric heater |
| 5 | 4-way valve terminal |
| 6 | Grounding wire |
| 7 | Neutral wire |
| 8 | Communication wire |
| 9 | Live wire |
| 10 | Terminal of electronic expansion valve |
| 11 | Interface of temperature sensor |
| 12 | Overload interface of compressor |
| 13 | Terminal of outdoor fan |

• Bottom view



6. Function and Control

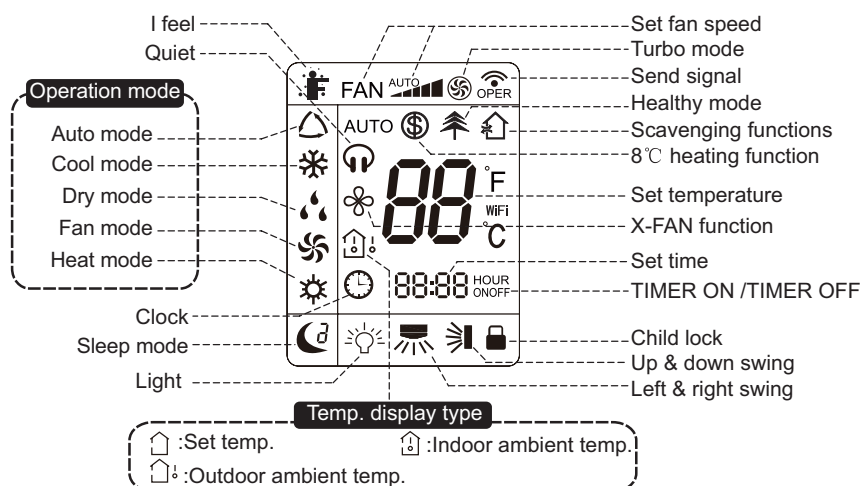
6.1 Remote Controller Introduction

Buttons on Remote Controller



- 1 ON/OFF button
- 2 +/- button
- 3 MODE button
- 4 FAN button
- 5 SWING button
- 6 I FEEL button
- 7 button
- 8 SLEEP button
- 9 TEMP button
- 10 QUIET button
- 11 CLOCK button
- 12 T-ON/T-OFF button
- 13 TURBO button
- 14 WiFi button
- 15 LIGHT button

Introduction for Icons on Display Screen



Introduction for Buttons on Remote Controller

Note:
This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.

- 1 **ON/OFF button**
Press this button to turn on the unit. Press this button again to turn off the unit.
- 2 **- button**
Press this button to decrease set temperature. Holding it down above 2 seconds rapidly decreases set temperature. In AUTO mode, set temperature is not adjustable.
- + button**
Press this button to increase set temperature. Holding it down above 2 seconds rapidly increases set temperature. In AUTO mode, set temperature is not adjustable.

3 MODE button

Each time you press this button , a mode is selected in a sequence that goes from AUTO,COOL, DRY, FAN, and HEAT * , as the following:

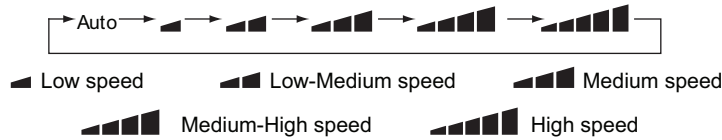


*Note:Only for models with heating function.

After energization, AUTO mode is defaulted. In AUTO mode, the set temperature will not be displayed on the LCD, and the unit will automatically select the suitable operation mode in accordance with the room temperature to make indoor room comfortable.(As for cooling only unit,it won't have any action when it receives the signal of heating operation.)

4 FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , , to , then back to Auto.



5 SWING button

Press this button to set up &down swing angle, which circularly changes as below:



This remote controller is universal. If any command , or is sent out, the unit will carry out the command as indicates the guide louver swings as:

6 I FEEL button

Press this button to turn on I FEEL function. The unit automatically adjust temperature according to the sensed temperature. Press this button again to cancel I FEEL function.

7 button

Press this button to achieve the on and off of healthy and scavenging functions in operation status. Press this button for the first time to start scavenging function; LCD displays "". Press the button for the second time to start healthy and scavenging functions simultaneously; LCD displays "" and "". Press this button for the third time to quit healthy and scavenging functions simultaneously. Press the button for the fourth time to start healthy function; LCD display "". Press this button again to repeat the operation above.

8 SLEEP button

- Press this button, can select Sleep 1 (), Sleep 2 (),Sleep 3 () and cancel the Sleep,circulate between these, after electrified, Sleep Cancel is defaulted.
- Sleep 1 is Sleep mode 1, in Cool mode: after run for one hour in sleep mode, the main unit setting temperature will increase 1℃ , after 2 hours, the setting temperature will increase 2℃ , but the maximal setting temperature is 30℃ , then the unit will run at this setting temperature all along; In Heat mode: after run for one hour in sleep mode, the setting temperature will decrease 1℃ after 2 hours the setting temperature will decrease 2℃ , but the minimal setting temperature is 16℃ , then the unit will run at this setting temperature all along.
- Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.
- Sleep 3- the sleep curve setting under Sleep mode by DIY:

(1) Under Sleep 3 mode, press "Turbo" button for a long time, remote control enters into user individuation sleep setting status, at this time, the time of remote control will display "1hour ",the setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink (The first entering will display according to the initial curve setting value of original factory);

(2) Adjust "+" and "-" button, could change the corresponding setting temperature, after adjusted, press "Trubo "button for confirmation;

(3) At this time, 1hour will be automatically increased at the timer position on the remote control, (that are "2hours " or "3hours " or "8hours "), the place of setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink;

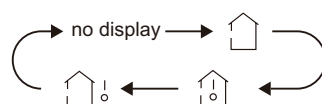
(4) Repeat the above step (2) ~ (3) operation, until 8hours temperature setting finished,sleep,curve setting finished, at this time, the remote control will resume the original timer display;temperature display will resume to original setting temperature.



Sleep3- the sleep curve setting under Sleep mode by DIY could be inquired:

- The user could accord to sleep curve setting method to inquire the presetting sleep curve,enter into user individuation sleep setting status, but do not change the temperature, press "Turbo" button directly for confirmation.Note: In the above presetting or enquiry procedure,if continuously within10s, there is no button pressed, the sleep curve setting within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "ON/OFF" button, "Mode" button, "Timer"button or "Sleep" button, the sleep curve setting or enquiry status will quit similarly.


9 TEMP button

Press this button, you can see indoor set temperature, indoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below:







When selecting "  " with remote controller or no display, temperature indicator on indoor unit displays set temperature; When selecting "  " with remote controller, temperature indicator on indoor unit displays indoor ambient temperature; 5s later or within 5s it receives other remote control signal that will return to display the setting temperature.



Caution:

- This model hasn't outdoor ambient temperature display function. While remote controller can operate "  " and indoor unit displays set temperature.
- It's defaulted to display set temperature when turning on the unit.
- Only for the models with temperature indicator on indoor unit.

10 QUIET button


Press this button, the Quiet status is under the Auto Quiet mode (display "  "signal)and Quiet mode (display "  " signal) and Quiet OFF (there is no signal of "  "displayed),after powered on, the Quiet OFF is defaulted. Note: the Quiet function cannot be set up in Fan and Dry mode;Under the Quiet mode (Display"  " Under the Quiet mode) the fan speed is not available.

11 CLOCK button

Press CLOCK button,blinking.  Within 5 seconds, pressing + or - button adjusts the present time. Holding down either button above 2 seconds increases or decreases the time by 1 minute every 0.5 second and then by 10 minutes every 0.5 second. During blinking after setting, press CLOCK button again to confirm the setting, and  then will be constantly displayed.

12 T-ON/T-OFF button

Press T-ON button to initiate the auto-ON timer. To cancel the auto-timer program, simply press this button again.

After press of this button,  disappears and "ON"blink s . 00:00 is displayed for ON time setting. Within 5 seconds, press + or - button to adjust the time value. Every press of either button changes the time setting by 1 minute. Holding down either button rapidly changes the time setting by 1 minute and then 10 minutes. Within 5 Seconds after setting, press TIMER ON button to confirm.

Press T-OFF button to initiate the auto-off timer. To cancel the auto-timer program, simply press the button again.TIMER OFF setting is the same as TIMER ON.

13 TURBO button



Press this button to activate / deactivate the Turbo function which enables the unit to reach the preset temperature in the shortest time. In COOL mode, the unit will blow strong cooling air at super high fan speed. In HEAT mode, the unit will blow strong heating air at super high fan speed.

14 WiFi button

Press "WiF" button to turn on or turn off WiFi function. When WiFi function is turned on, the "W i F i" icon will be displayed on remote controller; Under status of unit off, press "MODE" and "W i F i" buttons simultaneously for 1s, WiFi module will restore to factory default setting.

- This function is only available for some models.

15 LIGHT button

Press LIGHT button to turn on the display's light and press this button again to turn off the display's light. If the light is turned on,  is displayed. If the light is turned off,  disappears.



If "H1" is displayed on the remote controller while it's not operated by the professional person/after-sales person, it belongs to the misoperation.

Please operate it as below to cancel it. Under the OFF status of remote controller, hold the Mode button for 5s to cancel "H1" display.

Note:

- If remote controller displays "H1", it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. "H1" won't be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;
- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

Combination of "+" and "-" buttons: About lock

Press "+" and "-" buttons simultaneously to lock or unlock the keypad. If the remote controller is locked,  is displayed. In this case, pressing any button,  blinks three times.

Combination of "MODE" and "-" buttons: About switch between Fahrenheit and centigrade

At unit OFF, press "MODE" and "-" buttons simultaneously to switch between °C and °F.

Combination of "TEMP" and "CLOCK" buttons: About Energy-saving Function

Press "TEMP" and "CLOCK" simultaneously in COOL mode to start energy-saving function. Nixie tube on the remote controller displays "SE". Repeat the operation to quit the function.


Combination of "TEMP" and "CLOCK" buttons: About 8°C Heating Function

Press "TEMP" and "CLOCK" simultaneously in HEAT mode to start 8°C Heating Function Nixie tube on the remote controller displays "8" and a selected temperature of "8°C". (46°F if Fahrenheit is adopted). Repeat the operation to quit the function.

About Back-lighting Function

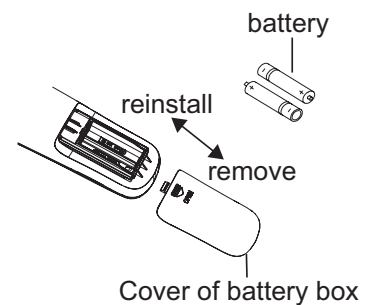
The unit lights for 4s when energizing for the first time, and 3s for later press.

Replacement of Batteries in Remote Controller

1. Press the back side of remote controller marked with  as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

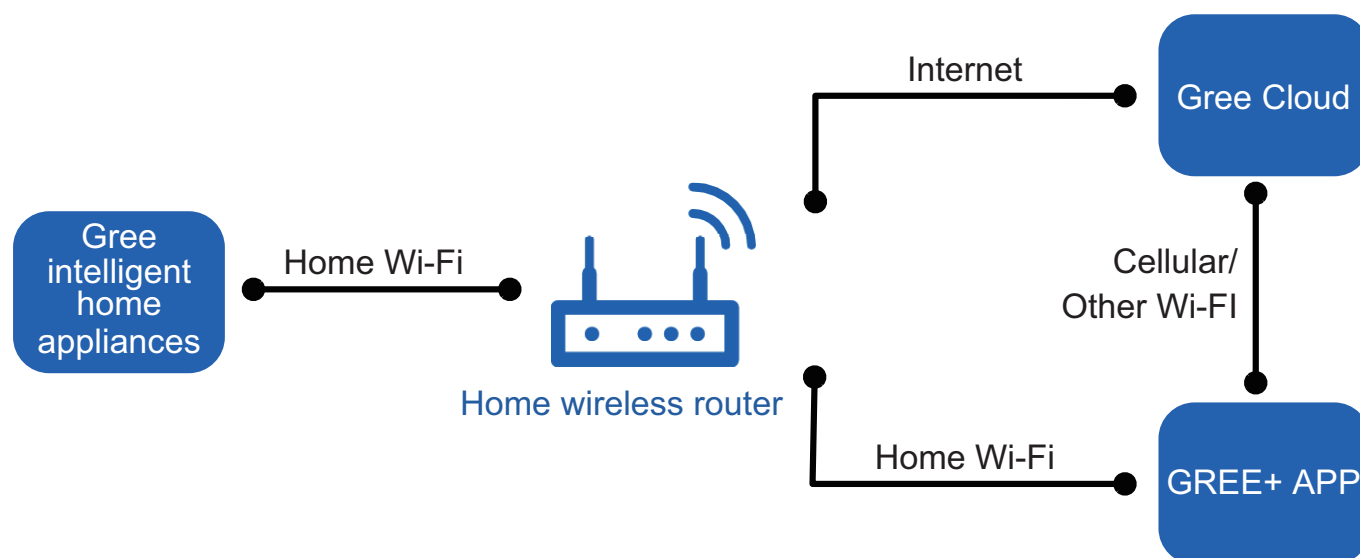
Note:

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.



6.2 GREE+ App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:



iOS system
Support iOS7.0 and
above version



Android system
Support Android 4.4 and
above version

Download and installation



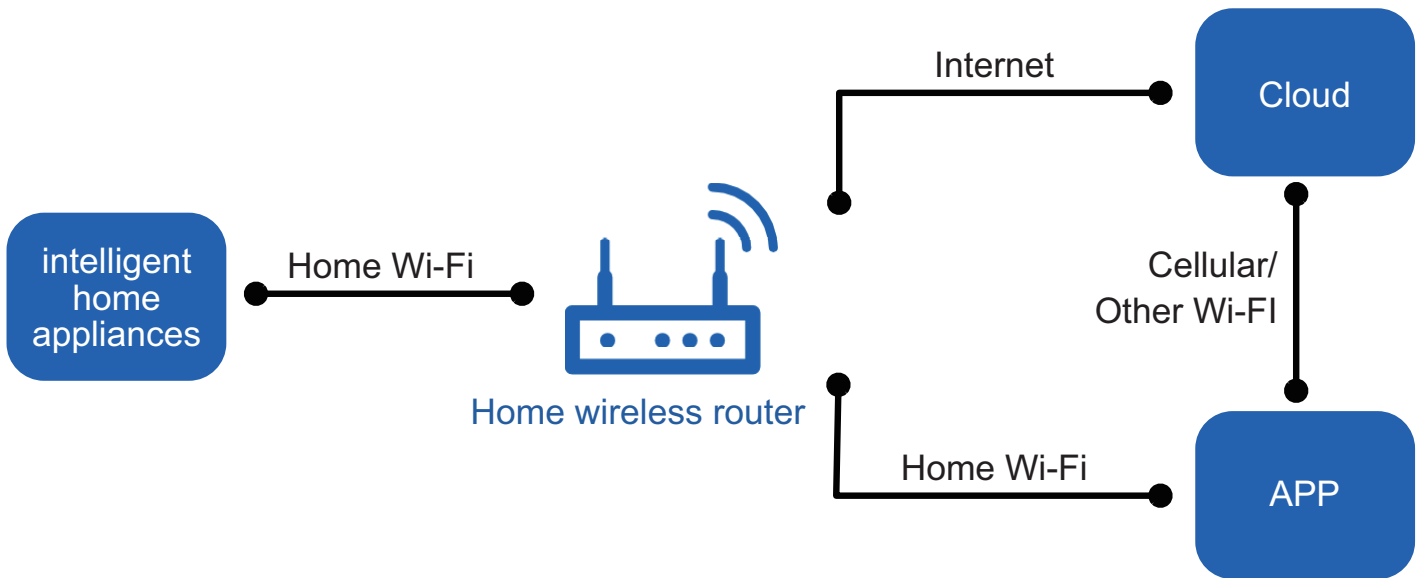
GREE+ App Download Linkage

Scan the QR code or search "GREE+" in the application market to download and install it. When "GREE+" App is installed, register the account and add the device to achieve long-distance control and LAN control of Gree smart home appliances.

For more information, please refer to "Help" in App.

6.3 Ewpe Smart App Operation Manual

Control Flow Chart



Operating Systems

Requirement for User's smart phone:



iOS system
Support iOS7.0 and above version



Android system
Support Android 4.4 and above version

Download and installation



App Download Linkage

Scan the QR code or search "Ewpe Smart" in the application market to download and install it. When "Ewpe Smart" App is installed, register the account and add the device to achieve long-distance control and LAN control of smart home appliances. For more information, please refer to "Help" in App.

6.4 Brief Description of Modes and Functions

1. Cooling mode

- (1) Under this mode, the fan and the up swing will operate at setting status. The temperature setting range is 16~30°C.
- (2) The unit is stopped because of malfunction of outdoor unit or protection. The indoor unit keeps original operation status and the error code is displayed.
- (3) Indoor unit is stopped due to mode shock.

2. Drying mode

- (1) Under this mode, the fan operates at low speed and the swing operates at setting status. The temperature setting range is 16~30°C.
- (2) The unit is stopped because of malfunction of outdoor unit or protection. The indoor unit keeps original operation status and the error code is displayed.

3. Heating mode

- (1) Under this mode, the temperature setting range is 16~30°C.
- (2) Working condition and process for heating

When the unit is turned on under heating mode, the indoor unit turns to cold air prevention status. When the unit is turned off and the indoor unit has been started up before, the indoor unit blows the residual heat.

- (3) Protection function: When the compressor is stopped due to malfunction under heating mode, the indoor unit blows the residual heat.
- (4) Blow residual heat

When the unit stops operation as it reaches the temperature point, indoor unit will continue to run for 60s. The fan speed cant be switched during blowing residual heat period. The upper horizontal louver will turn to the defaulted position in cooling. When the unit operates under heating mode or auto heating mode, compressor will be turned on and the corresponding electric expansion valve is more than 65 and the unit stops operation during the operation status of indoor unit. The upper horizontal louver will turn to the defaulted position in heating mode. The indoor unit operates at low speed for 10s and then the unit stops operation.

- (5) Defrosting, oil-returning

As it received the signal of defrosting and oil-returning from outdoor unit, the upper horizontal louver will turn to the minimum angle in cooling. 10s later, the in door fan stop operation. During defrosting and oil-returning process and they are quitted within 5mins, all malfunctions for indoor tube temperature sensor wont be detected.

4. Working process for AUTO mode (Mode judgment will be performed every 30s)

Under AUTO mode, standard cooling $T_{\text{preset}}=25^{\circ}\text{C}$ (77°F), standard heating $T_{\text{preset}}=20^{\circ}\text{C}$ (68°F), and standard fan $T_{\text{preset}}=25^{\circ}\text{C}$ (77°F).

- (1) When $T_{\text{amb}}\geq 26^{\circ}\text{C}$ (79°F), the unit operation in cooling mode;
- (2) Heating pump unit: When $T_{\text{amb}}\leq 19^{\circ}\text{C}$ (66°F), the unit operates in heating mode;
- (3) Cooling only unit: $T_{\text{amb}}\leq 19^{\circ}\text{C}$ (66°F), the unit operates in fanmode;
- (4) When $19^{\circ}\text{C} < T_{\text{indoor amb.}} < 26^{\circ}\text{C}$, if it turns to auto mode as the unit is turned on for the first time the unit will operates at auto fan mode. If it switch to auto mode from other modes, the unit will keep previous operation mode (when it turns to dry mode, the unit operates at auto fan mode).
- (5) Protection function

Protection function is the same as that in cooling or heating mode.

5. Fan mode

Under fan mode, only indoor fan and swing operates. When it operates at auto fan speed, it will operate according to auto fan speed condition in cooling.

6. Mode shock

If the mode shock is 1 which is received by indoor unit from outdoor unit, the loads of indoor unit (indoor unit, auxiliary heating, swing) stop operation and the error code is displayed. The mode sent to outdoor unit is still remote control receiving mode. The unit will be turned off during mode shock.

If timer ON is reached, and the mode shock is 1 which is received by indoor unit from outdoor unit, the loads of indoor unit (indoor unit, auxiliary heating, swing) stop operation and the error code is displayed. The mode sent to outdoor unit is still remote control receiving mode.

7. Other control

7.1 Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

7.2 Auto button

If this button is pressed, the unit will operate in AUTO mode and indoor fan will operate at auto speed; meanwhile, the swing motor operates. Press this button again to turn off the unit.

7.3 8 °C heating function

Under heating mode, press TEMP+CLOCK buttons simultaneously. Under this mode, "cold air prevention protection" will be shielded.

7.4 I FEEL function

When I FEEL command is received, the controller will operate according to the ambient temperature sent by the remote controller (For defrosting and cold blow prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will send ambient temperature data to the controller every 10min. When the data has not been received after 11mins, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not selected, the ambient temperature will be that sensed by the air conditioner. I FEEL function will not be memorized.

7.5 Timer function

General timer and clock timer functions are compatible by equipping remote controller with different functions.

(1) General Timer

Timer ON can be set at unit OFF. If selected ON time is reached, the unit will start to operate according to previous setting status. Time setting range is 0.5-24hr in 30-minute increments.

Timer OFF can be set at unit ON. If selected OFF time is reached, the unit will stop operation. Time setting range is 0.5-24hr in 30-minute increments.

(2) Clock Timer

Timer ON

If timer ON is set during operation of the unit, the unit will continue to operate. If timer ON is set at unit OFF, upon ON time reaches the unit will start to operate according to previous setting status.

Timer OFF

If timer OFF is set at unit OFF, the system will keep standby status. If timer OFF is set at unit ON, upon OFF time reaches the unit will stop operation.

Timer Change

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button of remote controller. You can also set the timer once again, and then the unit will operate according to the last setting. If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep operating at current status till OFF time reaches. If timer ON and timer OFF are set at the same time at unit OFF, the unit will keep stop till ON time reaches. In the future's every day, the system will operate according to presetting mode till OFF.

7.6 Sleep function

This mode is only valid in cooling and heating modes. The unit will select proper sleep curve to operate according to different set temperature.

7.7 Compulsory defrosting function

When the unit is turned on in heating by remote controller and the set temperature is 16°C, press "+,-,+,-,+,-" continuously within 5s, the indoor unit turns to compulsory defrosting setting and it will send compulsory defrosting mode to outdoor unit.

When indoor unit received the compulsory defrosting signal from outdoor unit, the indoor unit will quit from the compulsory defrosting setting and it will cancel to send compulsory defrosting mode to outdoor unit.

7.8 Refrigerant recovery function

Turn to Freon recovery mode: After the unit is energized for 5min, and the unit is turned on at 16°C under cooling mode, press light button on remote controller for 3 times successively within 3s to turn to Freon recovery mode. Fo is displayed and it will send Freon recovery mode to outdoor unit.

Quit from Freon recovery mode: After it turns to Freon mode, if it receives any signal from remote controller or it turns to Freon recovery mode for 25 mins, it will quit from Freon recovery mode.

Turn to the action for Freon recovery mode: indoor unit will be turned on in cooling mode. The fan speed is super-high fan speed and the set temperature is 16°C. The horizontal louver will turn to the minimum operation angle.

Quit the action for Freon recovery mode: The indoor fan operates at the previous set status by remote controller.

7.9 Pilot run function

When the set temperature is 30°C under cooling mode, press "+,-,+,-,+,-" continuously within 5s, the indoor unit turns to pilot run setting mode and it will send pilot run mode to outdoor unit.

Pilot run mode: it operates under cooling mode and "dd" is displayed.

Quit the pilot run mode and indoor unit cancels "dd" display. If it receives "wrong wire connection of malfunction of expansion valve" from outdoor unit, "dn" will be displayed.

Part II : Installation and Maintenance

7. Notes for Installation and Maintenance

Safety Precautions: Important!

Please read the safety precautions carefully before installation and maintenance.

The following contents are very important for installation and maintenance.

Please follow the instructions below.

- The installation or maintenance must accord with the instructions.
- Comply with all national electrical codes and local electrical codes.
- Pay attention to the warnings and cautions in this manual.
- All installation and maintenance shall be performed by distributor or qualified person.
- All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
- Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.



Warnings

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire cant be used for other purposes.
6. Must apply protective accessories such as protective boards, cable-cross loop and wire clip.
7. The live wire, neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. The power cord and power connection wires cant be pressed by hard objects.
9. If power cord or connection wire is broken, it must be replaced by a qualified person.

10. If the power cord or connection wire is not long enough, please get the specialized power cord or connection wire from the manufacture or distributor. Prohibit prolong the wire by yourself.

11. For the air conditioner without plug, an air switch must be installed in the circuit. The air switch should be all-pole parting and the contact parting distance should be more than 3mm.

12. Make sure all wires and pipes are connected properly and the valves are opened before energizing.

13. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.

14. Replace the fuse with a new one of the same specification if it is burnt down; dont replace it with a cooper wire or conducting wire.

15. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the indoor unit and outdoor unit, a sufficient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.
6. Make sure no foreign objects are left in the unit after finishing installation.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

Safety Precautions for Installing and Relocating the Unit:

To ensure safety, please be mindful of the following precautions.



Warnings

1. When installing or relocating the unit, be sure to keep the refrigerant circuit free from air or substances other than the specified refrigerant.

Any presence of air or other foreign substance in the refrigerant circuit will cause system pressure rise or compressor rupture, resulting in injury.

2. When installing or moving this unit, do not charge the refrigerant which is not comply with that on the nameplate or unqualified refrigerant.

Otherwise, it may cause abnormal operation, wrong action, mechanical malfunction or even series safety accident.

3. When refrigerant needs to be recovered during relocating or repairing the unit, be sure that the unit is running in cooling mode. Then, fully close the valve at high pressure side (liquid valve). About 30-40 seconds later, fully close the valve at low pressure side (gas valve), immediately stop the unit and disconnect power. Please note that the time for refrigerant recovery should not exceed 1 minute.

If refrigerant recovery takes too much time, air may be sucked in and cause pressure rise or compressor rupture, resulting in injury.

4. During refrigerant recovery, make sure that liquid valve and gas valve are fully closed and power is disconnected before detaching the connection pipe.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

5. When installing the unit, make sure that connection pipe is securely connected before the compressor starts running.

If compressor starts running when stop valve is open and connection pipe is not yet connected, air will be sucked in and cause pressure rise or compressor rupture, resulting in injury.

6. Prohibit installing the unit at the place where there may be leaked corrosive gas or flammable gas.

If there leaked gas around the unit, it may cause explosion and other accidents.

7. Do not use extension cords for electrical connections. If the electric wire is not long enough, please contact a local service center authorized and ask for a proper electric wire.

Poor connections may lead to electric shock or fire.

8. Use the specified types of wires for electrical connections between the indoor and outdoor units. Firmly clamp the wires so that their terminals receive no external stresses.

Electric wires with insufficient capacity, wrong wire connections and insecure wire terminals may cause electric shock or fire.

Safety Precautions for Refrigerant

● To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.

● Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozoneosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units therefore need a less filling.

WARNING:

● Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacture.

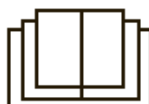
Should repair be necessary, contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance shall be stored in a room without continuously operating ignition sources. (for example: open flames, an operating gas appliance or an operating electric heater.)

● Do not pierce or burn.

● Appliance shall be installed, operated and stored in a room with a floor area larger than "X"m² (see table a). (only applies to appliances that are not fixed appliances).

● Appliance filled with flammable gas R32. For repairs, strictly follow manufacturer's instructions only. Be aware that refrigerants not contain odour.

● Read specialists manual.



Safety Operation of Flammable Refrigerant

Qualification requirement for installation and maintenance man

- All the work men who are engaging in the refrigeration system should bear the valid certification awarded by the authoritative organization and the qualification for dealing with the refrigeration system recognized by this industry. If it needs other technician to maintain and repair the appliance, they should be supervised by the person who bears the qualification for using the flammable refrigerant.
- It can only be repaired by the method suggested by the equipments manufacturer.

Installation notes

- The air conditioner is not allowed to use in a room that has running fire (such as fire source, working coal gas ware, operating heater).
- It is not allowed to drill hole or burn the connection pipe.
- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the nameplate or following table a.
- Leak test is a must after installation.

table a - Minimum room area(m²)

| Minimum room area(m ²) | Charge amount (kg) | ≤1.2 | 1.3 | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.9 | 2 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
|------------------------------------|--------------------|------|------|------|------|-----|------|------|------|------|------|------|------|------|------|
| | floor location | 4 | 14.5 | 16.8 | 19.3 | 22 | 24.8 | 27.8 | 31 | 34.3 | 37.8 | 41.5 | 45.4 | 49.4 | 53.6 |
| window mounted | 4 | 5.2 | 6.1 | 7 | 7.9 | 8.9 | 10 | 11.2 | 12.4 | 13.6 | 15 | 16.3 | 17.8 | 19.3 | |
| wall mounted | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.2 | 4.6 | 5 | 5.5 | 6 | |
| ceiling mounted | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | |

Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of the nameplate.
 - Its only allowed to be operated in the rooms that meet the requirement of the nameplate.
- Check whether the maintenance area is well-ventilated.
 - The continuous ventilation status should be kept during the operation process.
- Check whether there is fire source or potential fire source in the maintenance area.
 - The naked flame is prohibited in the maintenance area; and the “no smoking” warning board should be hanged.
- Check whether the appliance mark is in good condition.
 - Replace the vague or damaged warning mark.

Welding

- If you should cut or weld the refrigerant system pipes in the process of maintaining, please follow the steps as below:
 - a. Shut down the unit and cut power supply
 - b. Eliminate the refrigerant
 - c. Vacuuming
 - d. Clean it with N₂ gas
 - e. Cutting or welding
 - f. Carry back to the service spot for welding
- Make sure that there isnt any naked flame near the outlet of the vacuum pump and its well-ventilated.
- The refrigerant should be recycled into the specialized storage tank.

Filling the refrigerant

- Use the refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant wont contaminate with each other.
- The refrigerant tank should be kept upright at the time of filling refrigerant.
- Stick the label on the system after filling is finished (or havent finished).
- Dont overfilling.
- After filling is finished, please do the leakage detection before test running; another time of leak detection should be done when its removed.

Safety instructions for transportation and storage

- Please use the flammable gas detector to check before unload and open the container.
- No fire source and smoking.
- According to the local rules and laws.

8. Installation

8.1 Requirements for Electric Connection

1. Safety Precaution

- (1) Must follow the electric safety regulations when installing the unit.
- (2) If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- (3) According to the local safety regulations, use qualified power supply circuit and air switch.
- (4) A air switch having a contact separation of at least 3mm in all poles should be fixed in fixed wiring.
- (5) The appliance shall be installed in accordance with national wiring regulation.
- (6) The air switch must have the functions of magnetic tripping and heat tripping in order to prevent short circuit or overload. Please install the air switch with suitable capacity according to the sheet below.
- (7) Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction. Please install proper power supply cables before using the air conditioner.
- (8) Properly connect the live wire, neutral wire and grounding wire of power socket.
- (9) Be sure to cut off the power supply before proceeding any work related to electric safety.
- (10) Do not put through the power before finishing installation.

2. Grounding Requirement

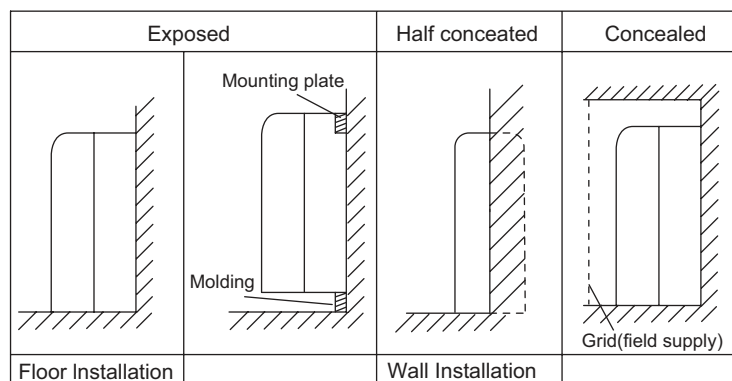
- (1) The air conditioner is first class electric appliance. It must be properly grounded with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
- (2) The yellow-green wire in air conditioner is grounding wire, which can't be used for other purposes.
- (3) The grounding resistance should comply with national electric safety regulations.

| Air-Conditioner | Air Switch Capacity |
|-----------------|---------------------|
| 09K | 10A |
| 12/18K | 16A |

8.2 Installation of indoor unit

1. Selection of Installation Location

- (1) Such a place where cool air can be distributed throughout the room.
- (2) Such a place where condensation water is easily drained out.
- (3) Such a place that can handle the weight of indoor unit.
- (4) Such a place which has easy access for maintenance.
- (5) The appliance shall not be installed in the laundry.



There are 2 styles of installation

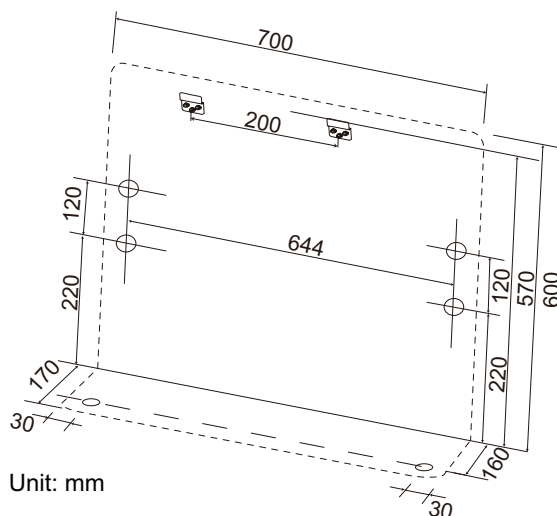
- Ceiling type
- Floor type

Each type is similar to the other as follows:

The indoor unit should be sited in a place where:

- (1) The restrictions on installation specified in the indoor unit installation drawings are met.
- (2) Both air intake and exhaust have clear paths met.
- (3) The unit is not in the path of direct sunlight.
- (4) The unit is away from the source of heat or steam.
- (5) There is no source of machine oil vapour (this may shorten indoor unit life).
- (6) Cool(warm) air is circulated throughout the room.
- (7) The unit is away from electronic ignition type fluorescent lamps (inverter or rapid start type) as they may shorten the remote controller range.
- (8) The unit is at least 1 metre away from any television or radio set(unit may cause interference with the picture or sound).

Location for securing the installation panel.

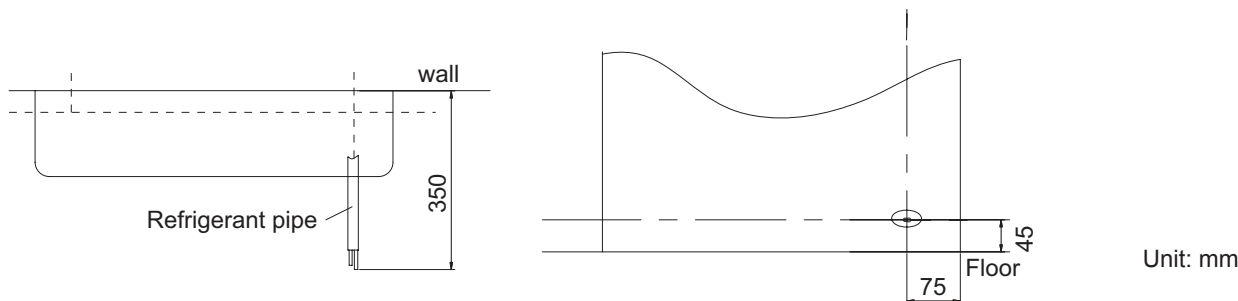


Unit: mm

⚠ CAUTION

Min.allowable length

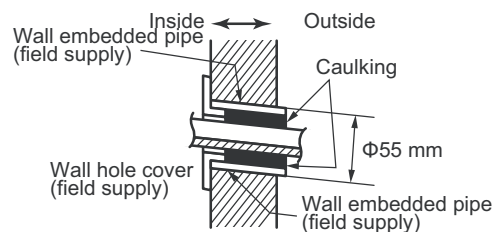
- The suggested shortest pipe length is 2.5m,in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)
- See the installation manual for the outdoor unit for the maximum pipe length.
- For multi-connections ,see the installation manual for the multi-outdoor unit.



4. Boring a Wall Hole and Installing Wall Embedded Pipe

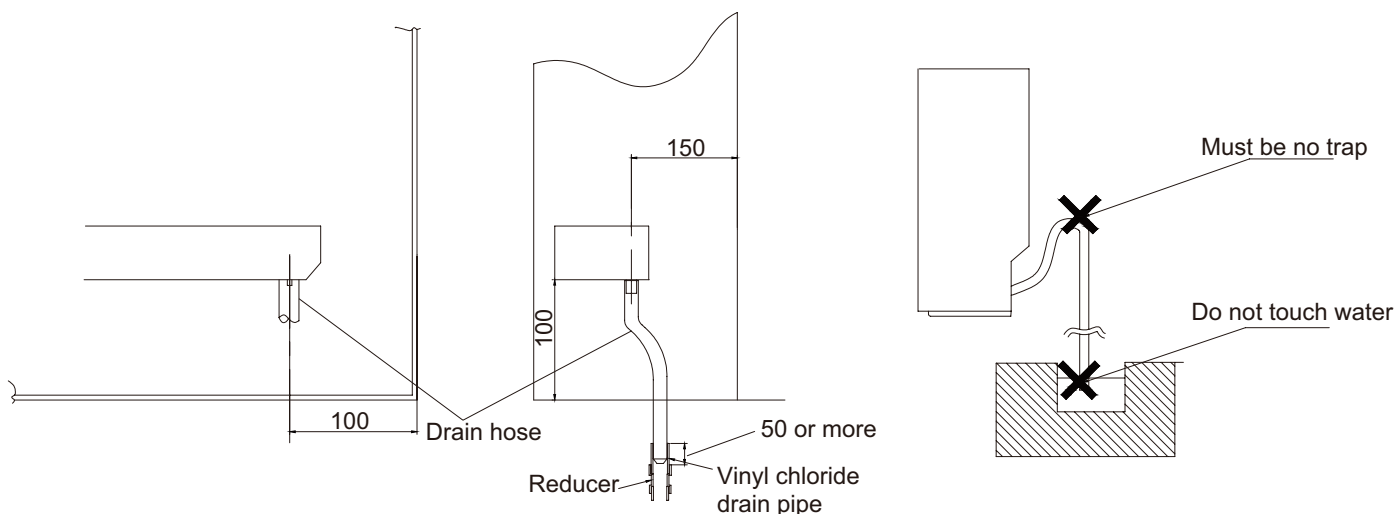
- For walls containing metal frame or metal board ,be sure to use a wall embedded pipe and wall cover in the feed-through hole to
- Be sure to caulk the gaps around the pipes with caulking material to prevent water leakage.

- (1) Bore a feed-through hole of 55mm in the wall so it has a down slope toward the outside.
- (2) Insert a wall pipe into the hole.
- (3) Insert a wall cover into wall pipe .
- (4) After completing refrigerant piping, wiring, and drain piping, caulk pipe hole gap with putty.



5. Drain Piping

- (1) Use commercial rigid polyvinyl chloride pipe general VP 20 pipe, outer diameter 26mm, inner diameter 20mm for the drain pipe.
- (2)The drain hose (outer diameter 18mm at connecting end, 220mm long)is supplied with the indoor unit. Prepare the drain pipe picture below position.
- (3) The drain pipe should be inclined downward so that water will flow smoothly without any accumulation.(Should not be trap.)
- (4) Insert the drain hose to this depth so it wont be pulled out of the drain pipe.
- (5) Insulate the indoor drain pipe with 10mm or more of insulation material to prevent condensation.
- (6) Remove the air filters and pour some water into the drain pan to check the water flows smoothly.



Unit: mm

6. Installing Indoor Unit

Preparation

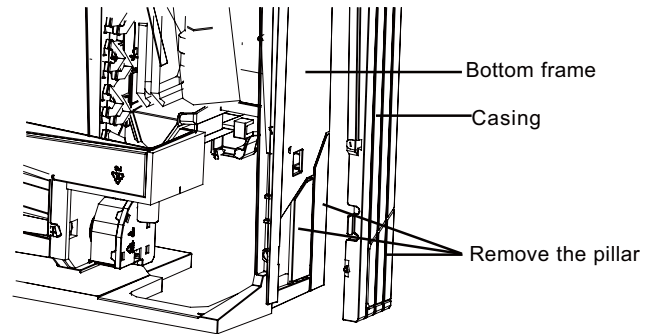
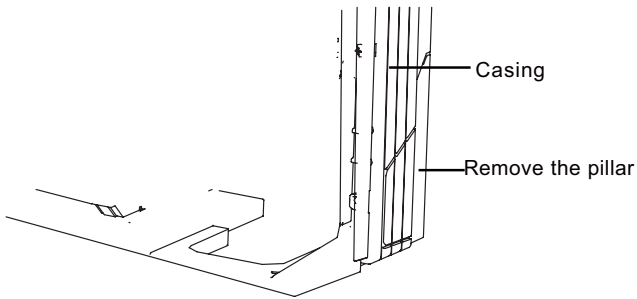
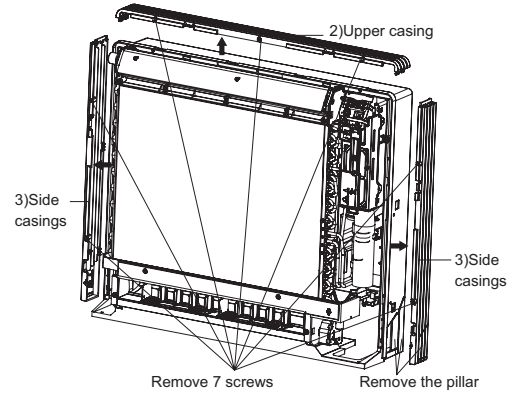
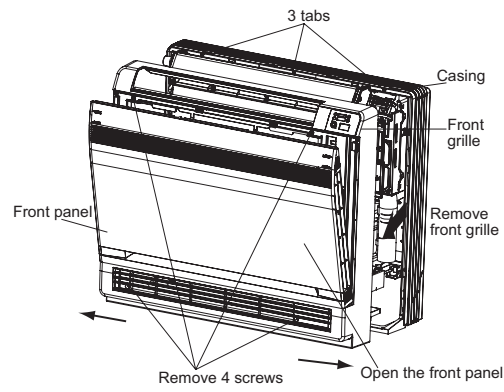
- Open the front panel, remove the 4 screws and dismount the front grille while pulling it forward.
- Follow the arrows to disengage the clasps on the front case to remove it.
- Follow the procedure below when removing the slit portions.

■ For Moldings

- Remove the pillars. (Remove the slit portions on the bottom frame using nippers.)

■ For Side Piping

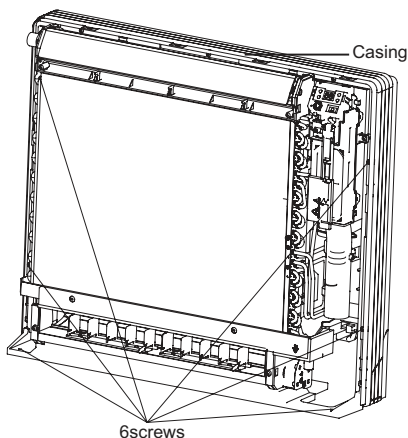
- Remove the pillars.
- (1) Remove the 7 screws.
 - (2) Remove the upper casing (2 tabs).
 - (3) Remove the left and right casings (2 tabs on each side).
 - (4) Remove the slit portions on the bottom frame and casings using nippers.
 - (5) Return by following the steps in reverse order (3>2>1).



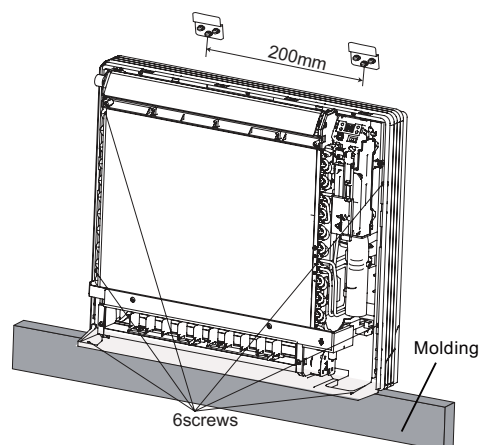
Installation

- Secure using 6 screws for floor installations. (Do not forget to secure to the rear wall.)
 - For wall installations, secure the mounting plate using 5 screws and the indoor unit using 4 screws. The mounting plate should be installed on a wall which can support the weight of the indoor unit.
- (1) Temporarily secure the mounting plate to the wall, make sure that the panel is completely level, and mark the boring points on the wall.
 - (2) Secure the mounting plate to the wall with screws.

Floor Installation



Wall Installation



- (3) Once refrigerant piping and drain piping connections are complete, fill in the gap of the through hole with putty. A gap can lead to condensation on the refrigerant pipe, and drain pipe, and the entry of insects into the pipes.
- (4) Attach the front panel and front grille in their original positions once all connections are complete.

7. Flaring the Pipe End

- (1) Cut the pipe end with a pipe cutter.
- (2) Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.
- (3) Fit the flare nut on the pipe.
- (4) Flare the pipe.
- (5) Check that the flaring is properly made.

⚠ CAUTION

- (1) **DO not use mineral oil on flared part.**
- (2) **Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.**
- (3) **Never use piping which had been used for previous installations. Only use parts which are delivered with the unit.**
- (4) **Do never install a drier to this R410A unit in order to guarantee its lifetime.**
- (5) **The drying material may dissolve and damage the system.**
- (6) **Incomplete flaring may cause refrigerant gas leakage.**

Cut exactly at right angles

Remove burrs

Flaring

Set exactly at the position shown below

| | Flare tool for R32 | Conventional flare tool | |
|---|--------------------|--------------------------|-------------------------------|
| | Clutch-type | Clutch-type (Rigid-type) | Wing-nut type (Imperial-type) |
| A | 0-0.5mm | 1.0-1.5mm | 1.5-2.0mm |

Flare's inner surface must be scratch-free

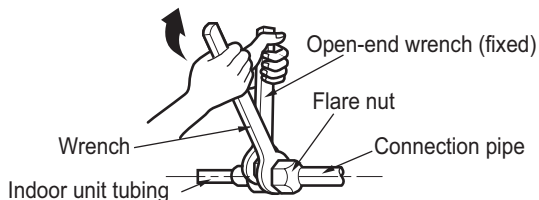
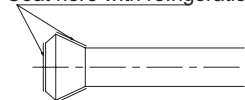
The pipe end must be evenly flared in a perfect circle

Make sure that the flare nut is fitted

8. Connecting the Refrigerant Pipe

- (1) Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and gas leaks.

Coat here with refrigeration oil

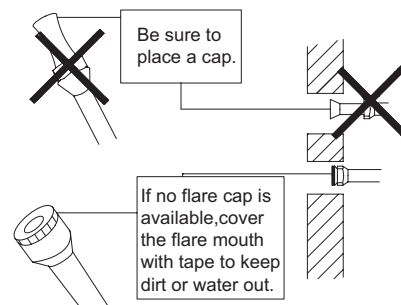


- (2) Align the centres of both flares and tighten the flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the torque wrenches.
- (3) To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces in the flare. (Use refrigeration oil for R410A.)

| Flare nut tightening torque | | |
|-----------------------------|-----------|-------------|
| Gas side | | Liquid side |
| 09/12K | 18K | 09/12K |
| 3/8 inch | 1/2 inch | 1/4 inch |
| 31-35 N.m | 50-55 N.m | 15-20 N.m |

Caution on Piping Handling

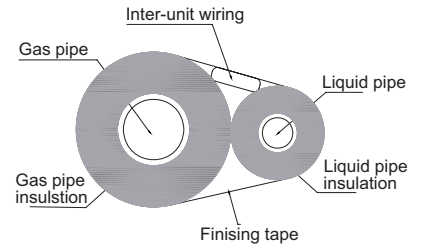
- (1) Protect the open end of the pipe against dust and moisture.
- (2) All pipe bends should be as gentle as possible. Use a pipe bender for bending. (Bending radius should be 30 to 40mm or larger.)



Selection of Copper and Heat Insulation Materials

When using commercial copper pipes and fittings, observe the following:

- (1) Insulation material: Polyethylene foam
Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/(mh°C)
Refrigerant gas pipes surface temperature reaches 110 max.
Choose heat insulation materials that will withstand this temperature.



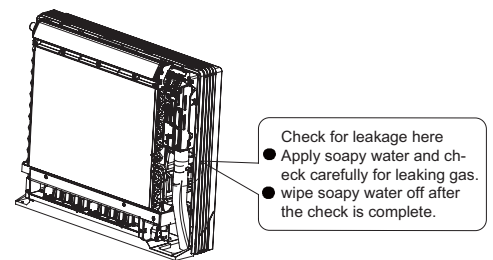
- (2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

| Gas side | | Liquid side | Gas pipe thermal insulation | | Liquid pipe thermal insulation |
|-----------------|-------------|-------------|-----------------------------|--------------|--------------------------------|
| 09/12K | 18K | | 09/12K | 18K | |
| O.D. 9.55mm | O.D. 12.7mm | O.D. 6.4mm | I.D. 12-15mm | I.D. 14-16mm | I.D. 8-10mm |
| Thickness 0.8mm | | | Thickness 10mm Min. | | |

- (3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

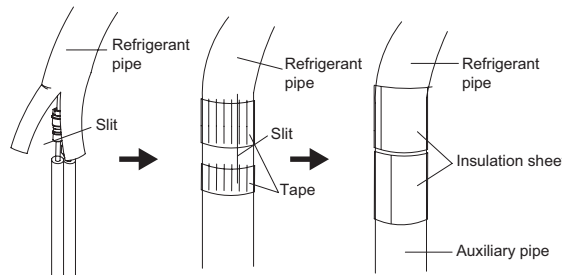
9. Checking for Gas Leakage

- (1) Check for leakage of gas after air purging
- (2) See the sections on air purges and gas leak checks in the installation manual for the outdoor unit.



10. Attaching the Connection Pipe

- Attach the pipe after checking for gas leakage, described above.
- (1) Cut the insulated portion of the on-site piping, matching it up with the connecting portion.
- (2) Secure the slit on the refrigerant piping side with the butt joint on the auxiliary piping using the tape, making sure there are no gaps.
- (3) Wrap the slit and butt joint with the included insulation sheet, making sure there are no gaps.

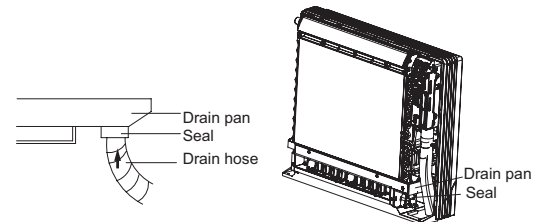


⚠ CAUTION

- (1) Insulate the joint of the pipes securely. Incomplete insulation may lead to water leakage.
- (2) Push the pipe inside so it does not place undue force on the front grille.

11. Connecting the Drain Hose

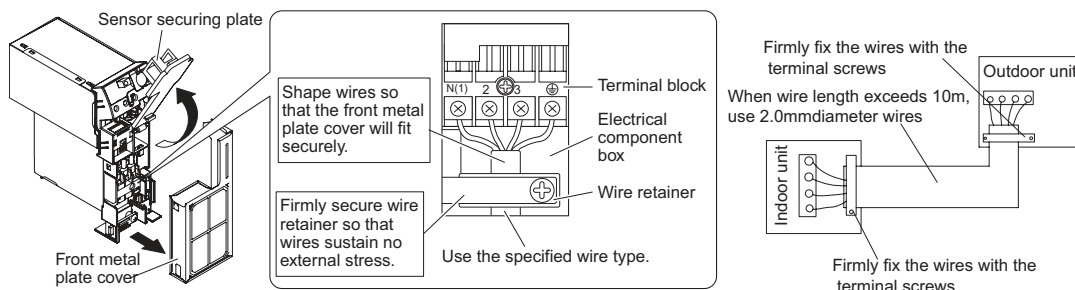
Insert the supplied C drain hose into the socket of the drain pan. Fully insert the drain hose until it adheres to a seat of the socket.



12. Wiring

With a Multi indoor unit, install as described in the installation manual supplied with the Multi outdoor unit.

- Live the sensor securing plate, remove the front metal plate cover, and connect the branch wiring to the terminal block.
- (1) Strip wire ends (15mm)
- (2) Match wire colours with terminal numbers on indoor and outdoor units terminal blocks and firmly screw wires to the corresponding terminals.
- (3) Connect the earth wires to the corresponding terminals.
- (4) Pull wires to make sure that they are securely latched up, then retain wires with wire retainer.
- (5) In case of connecting to an adapter system, Run the remote controller cable and attach the S21. (Refer to 11. When connecting go an system.)



CAUTION

- (1) Do not use tapped wires, stranded wires, extensioncords, or starburst connections, as they may cause overheating, electrical shock, or fire.
- (2) Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc, from the terminal block.) Doing so may cause electric shock or fire.)

8.3 Outdoor Unit Installation

1. Fix the Support of Outdoor Unit(Select it according to the actual installation situation)

- (1) Select installation location according to the house structure.
- (2) Fix the support of outdoor unit on the selected location with expansion screws.

CAUTION

- (1) Take sufficient protective measures when installing the outdoor unit.
- (2) Make sure the support can withstand at least four times the unit weight.
- (3) The outdoor unit should be installed at least 3cm above the floor in order to install drain joint.(As show in Fig.A)
- (4) For the unit with cooling capacity of 2300W~5000W, 6 expansion screws are needed; for the unit with cooling capacity of 6000W~8000W, 8 expansion screws are needed; for the unit with cooling capacity of 10000W~16000W, 10 expansion screws are needed.

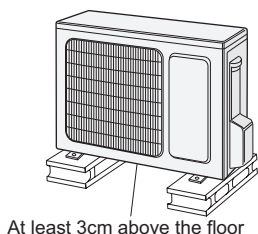


Fig.A

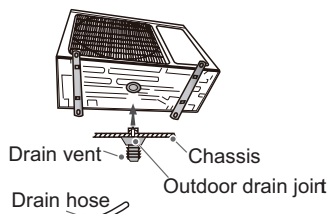


Fig.B

2. Install Drain Joint(Only for cooling and heating unit)

- (1) Connect the outdoor drain joint into the hole on the chassis.
- (2) Connect the drain hose into the drain vent.(As show in Fig.B)

3. Fix Outdoor Unit

- (1) Place the outdoor unit on the support.
- (2) Fix the foot holes of outdoor unit with bolts.(As show in Fig.C)

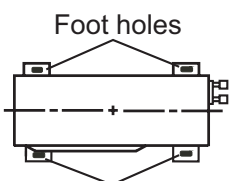


Fig.C

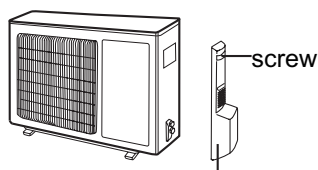


Fig.D

4. Connect Indoor and Outdoor Pipes

- (1) Remove the screw on the right handle of outdoor unit and then remove the handle.(As show in Fig.D)
- (2) Remove the screw cap of valve and aim the pipe joint at the bellmouth of pipe.(As show in Fig.E)

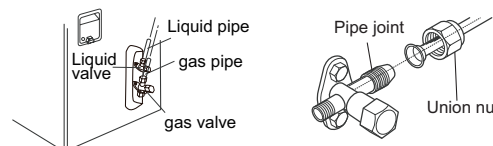


Fig.E

- (3) Pretightening the union nut with hand.
- (4) Tighten the union nut with torque wrench .

Refer to the following table for wrench moment of force:

| Hex nut diameter(mm) | Tightening torque(N·m) |
|----------------------|------------------------|
| Φ6 | 15~20 |
| Φ9.52 | 30~40 |
| Φ12 | 45~55 |
| Φ16 | 60~65 |
| Φ19 | 70~75 |

5. Connect Outdoor Electric Wire

- (1) Remove the wire clip; connect the power connection wire and signal control wire (only for cooling and heating unit) to the wiring terminal according to the color; fix them with screws.(As show in Fig.F)

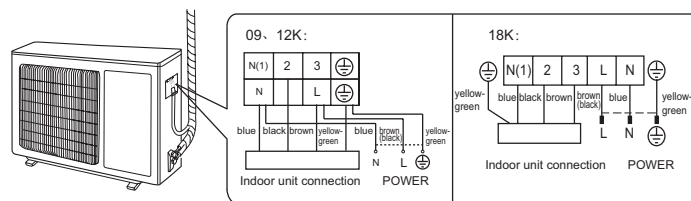


Fig.F

Note: the wiring board is for reference only, please refer to the actual one.

- (2) Fix the power connection wire and signal control wire with wire clip (only for cooling and heating unit).

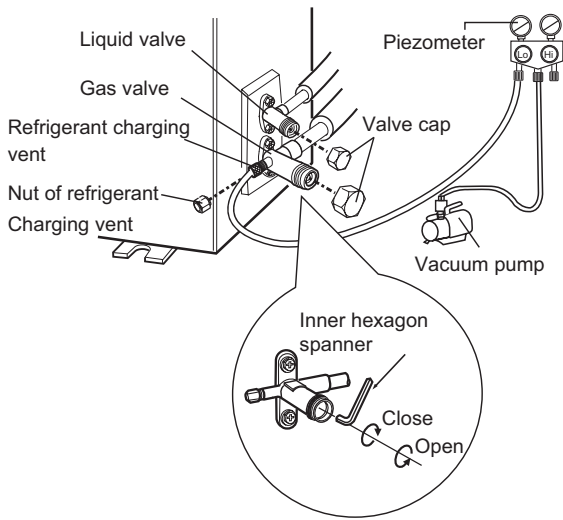
⚠ Note:

- (1) After tightening the screw, pull the power cord slightly to check if it is firm.
- (2) Never cut the power connection wire to prolong or shorten the distance.

8.4 Vacuum Pumping and Leak Detection

1. Use Vacuum Pump

- (1) Remove the valve caps on the liquid valve and gas valve and the nut of refrigerant charging vent.
- (2) Connect the charging hose of piezometer to the refrigerant charging vent of gas valve and then connect the other charging hose to the vacuum pump.
- (3) Open the piezometer completely and operate for 10-15min to check if the pressure of piezometer remains in -0.1MPa.
- (4) Close the vacuum pump and maintain this status for 1-2min to check if the pressure of piezometer remains in -0.1MPa. If the pressure decreases, there may be leakage.
- (5) Remove the piezometer, open the valve core of liquid valve and gas valve completely with inner hexagon spanner.
- (6) Tighten the screw caps of valves and refrigerant charging vent.



2. Leakage Detection

- (1) With leakage detector:
Check if there is leakage with leakage detector.
- (2) With soap water:
If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

8.5 Check after Installation and Test Operation

1. Check after Installation

Check according to the following requirement after finishing installation.

| NO. | Items to be checked | Possible malfunction |
|-----|--|---|
| 1 | Has the unit been installed firmly? | The unit may drop, shake or emit noise. |
| 2 | Have you done the refrigerant leakage test? | It may cause insufficient cooling (heating) capacity. |
| 3 | Is heat insulation of pipeline sufficient? | It may cause condensation and water dripping. |
| 4 | Is water drained well? | It may cause condensation and water dripping. |
| 5 | Is the voltage of power supply according to the voltage marked on the nameplate? | It may cause malfunction or damage the parts. |
| 6 | Is electric wiring and pipeline installed correctly? | It may cause malfunction or damage the parts. |
| 7 | Is the unit grounded securely? | It may cause electric leakage. |
| 8 | Does the power cord follow the specification? | It may cause malfunction or damage the parts. |
| 9 | Is there any obstruction in air inlet and air outlet? | It may cause insufficient cooling (heating) capacity. |
| 10 | The dust and sundries caused during installation are removed? | It may cause malfunction or damaging the parts. |
| 11 | The gas valve and liquid valve of connection pipe are open completely? | It may cause insufficient cooling (heating) capacity. |
| 12 | Is the inlet and outlet of piping hole been covered? | It may cause insufficient cooling (heating) capacity or waster electricity. |

2. Test Operation

- (1) Preparation of test operation
 - The client approves the air conditioner installation.
 - Specify the important notes for air conditioner to the client.
- (2) Method of test operation
 - Put through the power, press ON/OFF button on the remote controller to start operation.
 - Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
 - If the ambient temperature is lower than 16°C, the air conditioner cant start cooling.

9. Maintenance

9.1 Error Code List

| No. | Malfunction Name | Display Method of Indoor Unit | A/C status | Possible Causes |
|-----|--|-------------------------------|---|---|
| | | Dual-8 Code Display | | |
| 1 | High pressure protection of system | E1 | During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, the complete unit stops. | Possible reasons: 1. Refrigerant was superabundant; 2. Poor heat exchange (including filth blockage of heat exchanger and bad radiating environment); Ambient temperature is too high. |
| 2 | Low pressure protection of system | E3 | The Dual-8 Code Display will show E3 until the low pressure switch stop operation. | 1.Low-pressure protection 2.Low-pressure protection of system 3.Low-pressure protection of compressor |
| 3 | High discharge temperature protection of compressor | E4 | During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop. | Please refer to the malfunction analysis (discharge protection, overload). |
| 4 | Overcurrent protection | E5 | During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop. | 1. Supply voltage is unstable; 2. Supply voltage is too low and load is too high; 3. Evaporator is dirty. |
| 5 | Communication Malfunction | E6 | During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops. | Refer to the corresponding malfunction analysis. |
| 6 | High temperature resistant protection | E8 | During cooling operation: compressor will stop while indoor fan will operate. During heating operation, the complete unit stops. | Refer to the malfunction analysis (overload, high temperature resistant). |
| 7 | EEPROM malfunction | EE | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | Replace outdoor control panel AP1 |
| 8 | Limit/decrease frequency due to high temperature of module | EU | All loads operate normally, while operation frequency for compressor is decreased | Discharging after the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1. |
| 9 | Malfunction protection of jumper cap | C5 | Wireless remote receiver and button are effective, but can not dispose the related command | 1. No jumper cap insert on mainboard. 2. Incorrect insert of jumper cap. 3. Jumper cap damaged. 4. Abnormal detecting circuit of mainboard. |

| No. | Malfunction Name | Display Method of Indoor Unit | A/C status | Possible Causes |
|-----|--|-------------------------------|---|---|
| | | Dual-8 Code Display | | |
| 10 | Gathering refrigerant | Fo | When the outdoor unit receive signal of Gathering refrigerant ,the system will be forced to run under cooling mode for gathering refrigerant | Nominal cooling mode |
| 11 | Indoor ambient temperature sensor is open/short circuited | F1 | During cooling and drying operation, indoor unit operates while other loads will stop; during heating operation, the complete unit will stop operation. | <ol style="list-style-type: none"> 1. Loosening or bad contact of indoor ambient temp. sensor and mainboard terminal. 2. Components in mainboard fell down leads short circuit. 3. Indoor ambient temp. sensor damaged.(check with sensor resistance value chart) 4. Mainboard damaged. |
| 12 | Indoor evaporator temperature sensor is open/short circuited | F2 | AC stops operation once reaches the setting temperature. Cooling, drying: internal fan motor stops operation while other loads stop operation; heating: AC stop operation | <ol style="list-style-type: none"> 1. Loosening or bad contact of Indoor evaporator temp. sensor and mainboard terminal. 2. Components on the mainboard fall down leads short circuit. 3. Indoor evaporator temp. sensor damaged.(check temp. sensor value chart for testing) 4. Mainboard damaged. |
| 13 | Outdoor ambient temperature sensor is open/short circuited | F3 | During cooling and drying operating, compressor stops while indoor fan operates; During heating operation, the complete unit will stop operation | Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) |
| 14 | Outdoor condenser temperature sensor is open/short circuited | F4 | During cooling and drying operation, compressor stops while indoor fan will operate; During heating operation, the complete unit will stop operation. | Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) |
| 15 | Outdoor discharge temperature sensor is open/short circuited | F5 | During cooling and drying operation, compressor will sop after operating for about 3 mins, while indoor fan will operate; During heating operation, the complete unit will stop after operating for about 3 mins. | <ol style="list-style-type: none"> 1.Outdoor temperature sensor hasnt been connected well or is damaged. Please check it by referring to the resistance table for temperature sensor) 2.The head of temperature sensor hasnt been inserted into the copper tube |
| 16 | Limit/ decrease frequency due to overload | F6 | All loads operate normally, while operation frequency for compressor is decreased | Refer to the malfunction analysis (overload, high temperature resistant) |
| 17 | Decrease frequency due to overcurrent | F8 | All loads operate normally, while operation frequency for compressor is decreased | The input supply voltage is too low; System pressure is too high and overload |



| No. | Malfunction Name | Display Method of Indoor Unit | A/C status | Possible Causes |
|-----|--|-------------------------------|--|--|
| | | Dual-8 Code Display | | |
| 18 | Decrease frequency due to high air discharge | F9 | All loads operate normally, while operation frequency for compressor is decreased | Overload or temperature is too high; Refrigerant is insufficient; Malfunction of electric expansion valve (EKV) |
| 19 | Limit/decrease frequency due to antifreezing | FH | All loads operate normally, while operation frequency for compressor is decreased | Poor air-return in indoor unit or fan speed is too low |
| 20 | Voltage for DC bus-bar is too high | PH | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | 1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 265VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1) |
| 21 | Voltage of DC bus-bar is too low | PL | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | 1. Measure the voltage of position L and N on wiring board (XT), if the voltage is higher than 150VAC, turn on the unit after the supply voltage is increased to the normal range. 2.If the AC input is normal, measure the voltage of electrolytic capacitor C on control panel (AP1), if its normal, theres malfunction for the circuit, please replace the control panel (AP1) |
| 22 | Compressor Min frequency in test state | P0 | | Showing during min. cooling or min. heating test |
| 23 | Compressor rated frequency in test state | P1 | | Showing during nominal cooling or nominal heating test |
| 24 | Compressor maximum frequency in test state | P2 | | Showing during max. cooling or max. heating test |

| No. | Malfunction Name | Display Method of Indoor Unit | A/C status | Possible Causes |
|-----|--|-------------------------------|---|--|
| | | Dual-8 Code Display | | |
| 26 | Compressor intermediate frequency in test state | P3 | | Showing during middle cooling or middle heating test |
| 26 | Overcurrent protection of phase current for compressor | P5 | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor. |
| 27 | Charging malfunction of capacitor | PU | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | Refer to the part three—charging malfunction analysis of capacitor |
| 28 | Malfunction of module temperature sensor circuit | P7 | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | Replace outdoor control panel AP1 |
| 29 | Module high temperature protection | P8 | During cooling operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | After the complete unit is de-energized for 20mins, check whether the thermal grease on IPM Module of outdoor control panel AP1 is sufficient and whether the radiator is inserted tightly. If its no use, please replace control panel AP1. |
| 30 | Overload protection for compressor | H3 | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | 1. Wiring terminal OVC-COMP is loosened. In normal state, the resistance for this terminal should be less than 1ohm. 2.Refer to the malfunction analysis (discharge protection, overload) |
| 31 | IPM protection | H5 | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor. |
| 32 | Internal motor (fan motor) do not operate | H6 | Internal fan motor, external fan motor, compressor and electric heater stop operation,guide louver stops at present location. | 1. Bad contact of DC motor feedback terminal. 2. Bad contact of DC motor control end. 3. Fan motor is stalling. 4. Motor malfunction. 5. Malfunction of mainboard rev detecting circuit. |



| No. | Malfunction Name | Display Method of Indoor Unit | | A/C status | Possible Causes |
|-----|---|-------------------------------|--|---|---|
| | | Dual-8 Code Display | | | |
| 33 | Desynchronizing of compressor | H7 | | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis (IPM protection, loss of synchronism protection and overcurrent protection of phase current for compressor. |
| 34 | PFC protection | HC | | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Replace outdoor control panel AP1 or Reactor |
| 35 | Outdoor DC fan motor malfunction | L3 | | Outdoor DC fan motor malfunction lead to compressor stop operation, | DC fan motor malfunction or system blocked or the connector loosed |
| 36 | power protection | L9 | | compressor stop operation and Outdoor fan motor will stop 30s latter , 3 minutes latter fan motor and compressor will restart | To protect the electronical components when detect high power |
| 37 | Indoor unit and outdoor unit doesnt match | LP | | compressor and Outdoor fan motor cant work | Indoor unit and outdoor unit doesnt match |
| 38 | Failure start-up | LC | | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop operation. | Refer to the malfunction analysis |
| 39 | Anti-freezing protection for evaporator | E2 | | Not the error code. It's the status code for the operation. | |
| 40 | Undefined outdoor unit error | oE | | Cool: compressor and outdoor fan stops operation, while indoor fan operates; Heat: compressor, outdoor fan and indoor fan stop operation. | 1. Outdoor ambient temperature exceeds the operation range of unit (eg: less than -20oC or more than 60oC for cooling; more than 30oC for heating); 2. Failure startup of compressor? 3. Are wires of compressor not connected tightly? 4. Is compressor damaged? 5. Is main board damaged? |
| 41 | Malfunction of phase current detection circuit for compressor | U1 | | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | Replace outdoor control panel AP1 |
| 42 | Malfunction of voltage dropping for DC bus-bar | U3 | | During cooling and drying operation, compressor will stop while indoor fan will operate; During heating operation, the complete unit will stop | Supply voltage is unstable |

| No. | Malfunction Name | Display Method of Indoor Unit | A/C status | Possible Causes |
|-----|---|--|--|---|
| | | Dual-8 Code Display | | |
| 43 | Malfunction of complete units current detection | U5 | During cooling and drying operation, the compressor will stop while indoor fan will operate; During heating operating, the complete unit will stop operation. | Theres circuit malfunction on outdoor units control panel AP1, please replace the outdoor units control panel AP1. |
| 44 | The four-way valve is abnormal | U7 | If this malfunction occurs during heating operation, the complete unit will stop operation. | 1.Supply voltage is lower than AC175V; 2.Wiring terminal 4V is loosened or broken; 3.4V is damaged, please replace 4V. |
| 45 | Cold air prevention protection | E9 | Not the error code. It's the status code for the operation. | |
| 46 | Defrosting | Heating indicator off for 0.5s and then blinks for 10s | Not the error code. It's the status code for the operation. | |
| 47 | Refrigerant recovery mode | Fo | Refrigerant recovery. The Serviceman operates it for maintenance. | |
| 48 | Malfunction of zero-cross detection circuit | U8 | The complete unit stops | 1.Power supply is abnormal; 2.Detection circuit of indoor control mainboard is abnormal. |
| 49 | Malfunction of detecting plate(WIFI) | JF | Loads operate normally, while the unit can't be normally controlled by APP. | 1.Main board of indoor unit is damaged; 2.Detection board is damaged; 3.The connection between indoor unit and detection board is not good; |

Analysis or processing of some of the malfunction display:

1. Compressor discharge protection

Possible causes: shortage of refrigerant; blockage of air filter; poor ventilation or air flow short pass for condenser; the system has noncondensing gas (such as air, water etc.); blockage of capillary assy (including filter); leakage inside four-way valve causes incorrect operation; malfunction of compressor; malfunction of protection relay; malfunction of discharge sensor; outdoor temperature too high.

Processing method: refer to the malfunction analysis in the above section.

2. Low voltage overcurrent protection

Possible cause: Sudden drop of supply voltage.

3. Communication malfunction

Processing method: Check if communication signal cable is connected reliably.

4. Sensor open or short circuit

Processing method: Check whether sensor is normal, connected with the corresponding position on the controller and if damage of lead wire is found.

5. Compressor over load protection

Possible causes: insufficient or too much refrigerant; blockage of capillary and increase of suction temp.; improper running of compressor, burning in or stuck of bearing, damage of discharge valve; malfunction of protector.

Processing method: adjust refrigerant amount; replace the capillary; replace the compressor; use universal meter to check if the contactor of compressor is fine when it is not overheated, if not replace the protector.

6. System malfunction

ie overload protection. When tube temperature (Check the temperature of outdoor heat exchanger when cooling and check the temperature of indoor heat exchanger when heating) is too high, protection will be activated.

Possible causes: Outdoor temperature is too high when cooling; insufficient outdoor air circulation; refrigerant flow malfunction. please refer to the malfunction analysis in the previous section for handling method.

7. IPM module protection

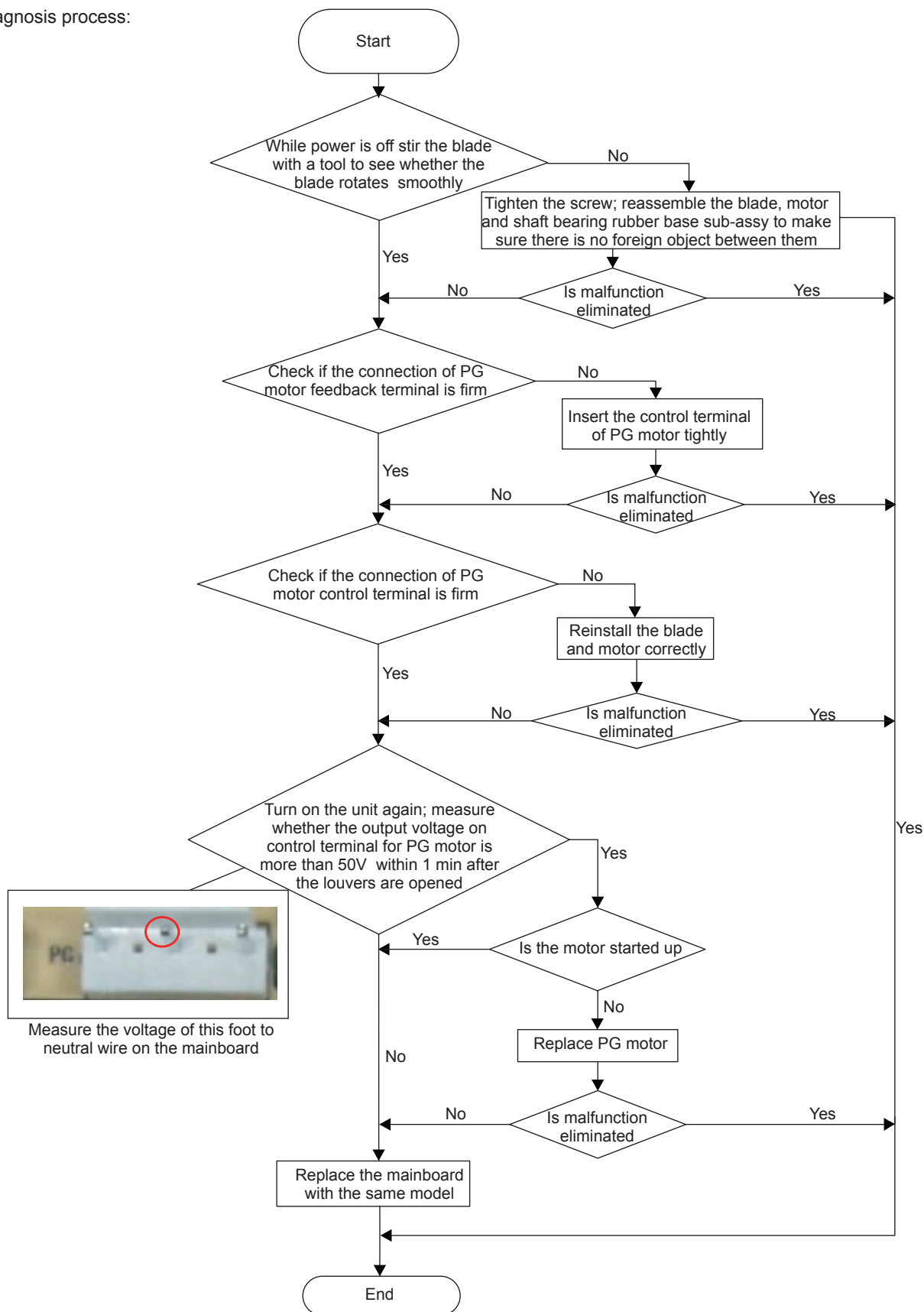
Processing method: Once the module malfunction happens, if it persists for a long time and can not be self-canceled, cut off the power and turn off the unit, and then re-energize the unit again after about 10 min. After repeating the procedure for several times, if the malfunction still exists, replace the module.

2. Malfunction of Blocked Protection of IDU Fan Motor

Main detection points:

- Smoothly is the control terminal of PG motor connected tightly?
- Smoothly is the feedback interface of PG motor connected tightly?
- The fan motor can't operate?
- The motor is broken?
- Detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:

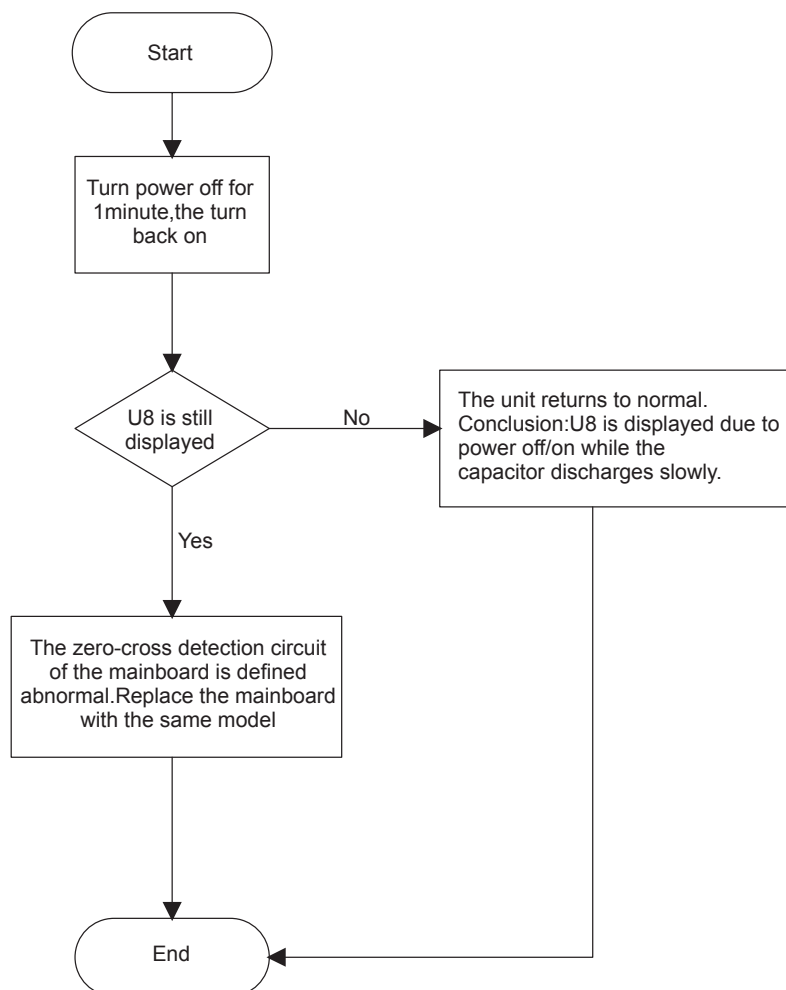


4. Malfunction of Zero-crossing Inspection Circuit Malfunction of the IDU Fan Motor

Main detection points:

- Instant energization after de-energization while the capacitor discharges slowly?
- The zero-cross detection circuit of the mainboard is defined abnormal?

Malfunction diagnosis process:



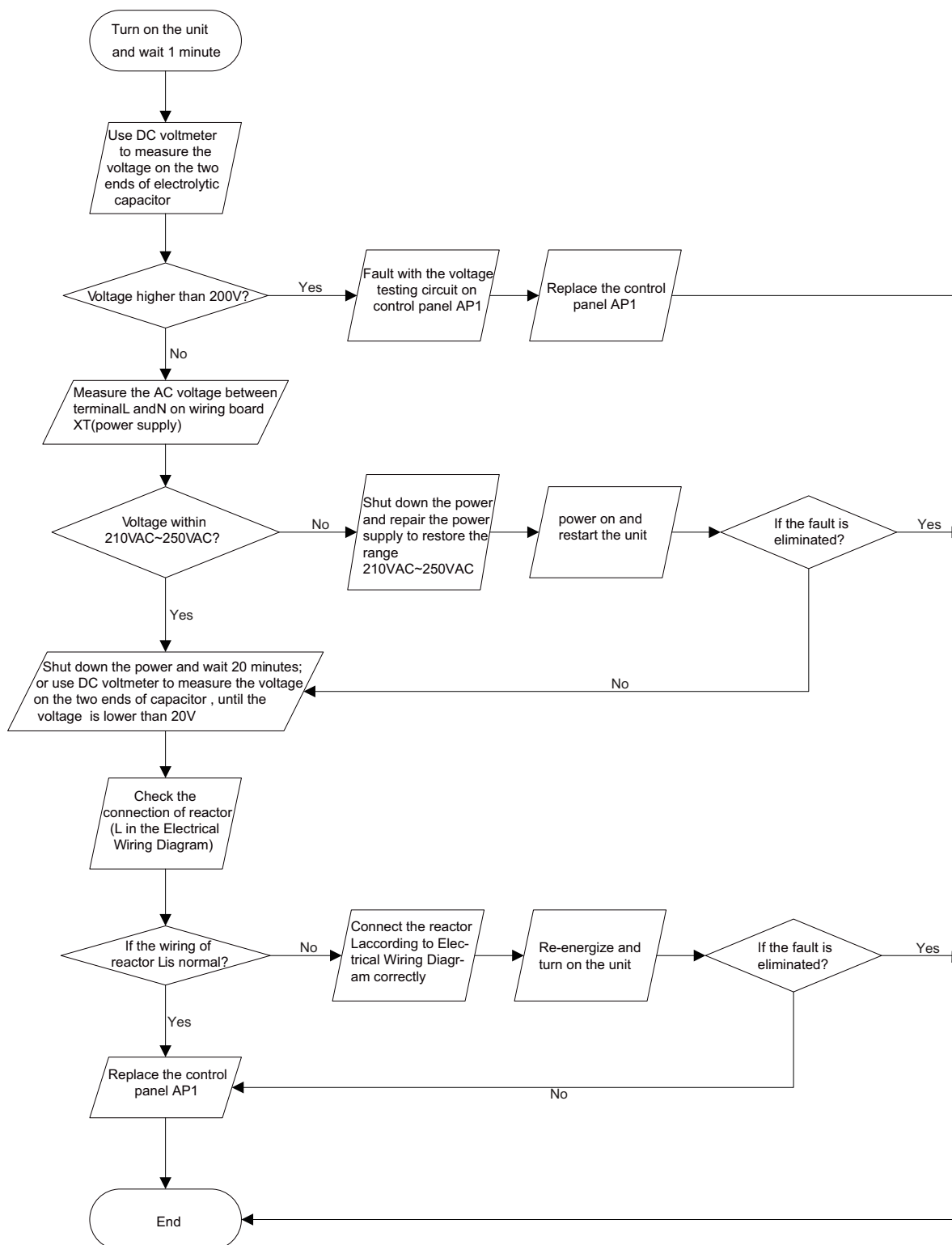
Outdoor unit

1. Capacitor charge fault (Fault with outdoor unit) (AP1 below refers to the outdoor control panel)

Main Check Points:

- Use AC voltmeter to check if the voltage between terminal L and N on the wiring board is within 210VAC~240VAC.
- Is the reactor (L) correctly connected? Is the connection loose or fallen? Is the reactor (L) damaged?

Fault diagnosis process:

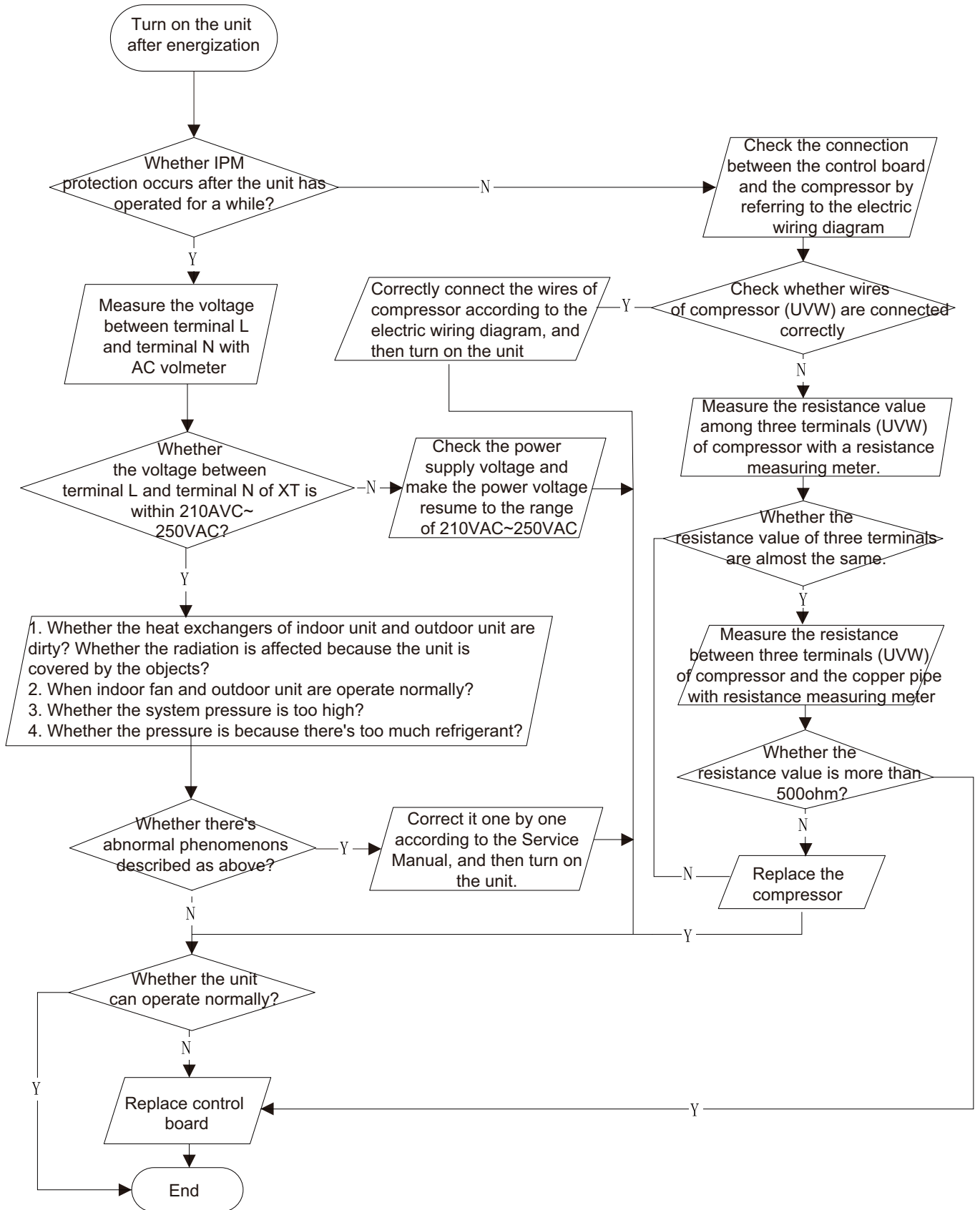


(2) IPM protection, phase current overcurrent (the control board as below indicates the control board of outdoor unit) H5/P5

Mainly detect:

- (1) Compressor COMP terminal (2) voltage of power supply (3) compressor
- (4) Refrigerant-charging volume (5) air outlet and air inlet of outdoor/indoor unit

Troubleshooting:

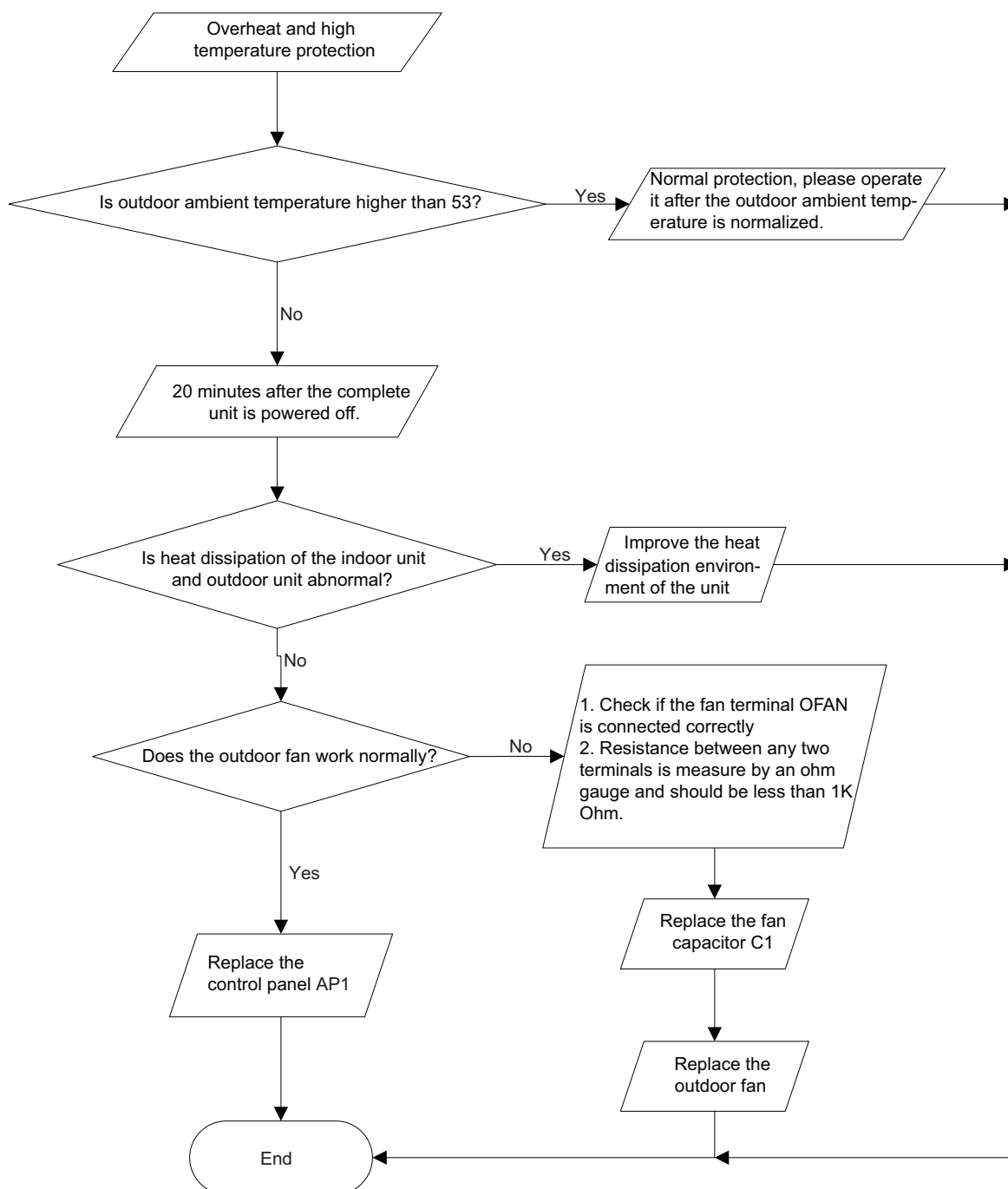


3. High temperature and overload protection diagnosis (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

- Is outdoor ambient temperature in normal range?
- Are the outdoor and indoor fans operating normally?
- Is the heat dissipation environment inside and outside the unit good?

Fault diagnosis process:

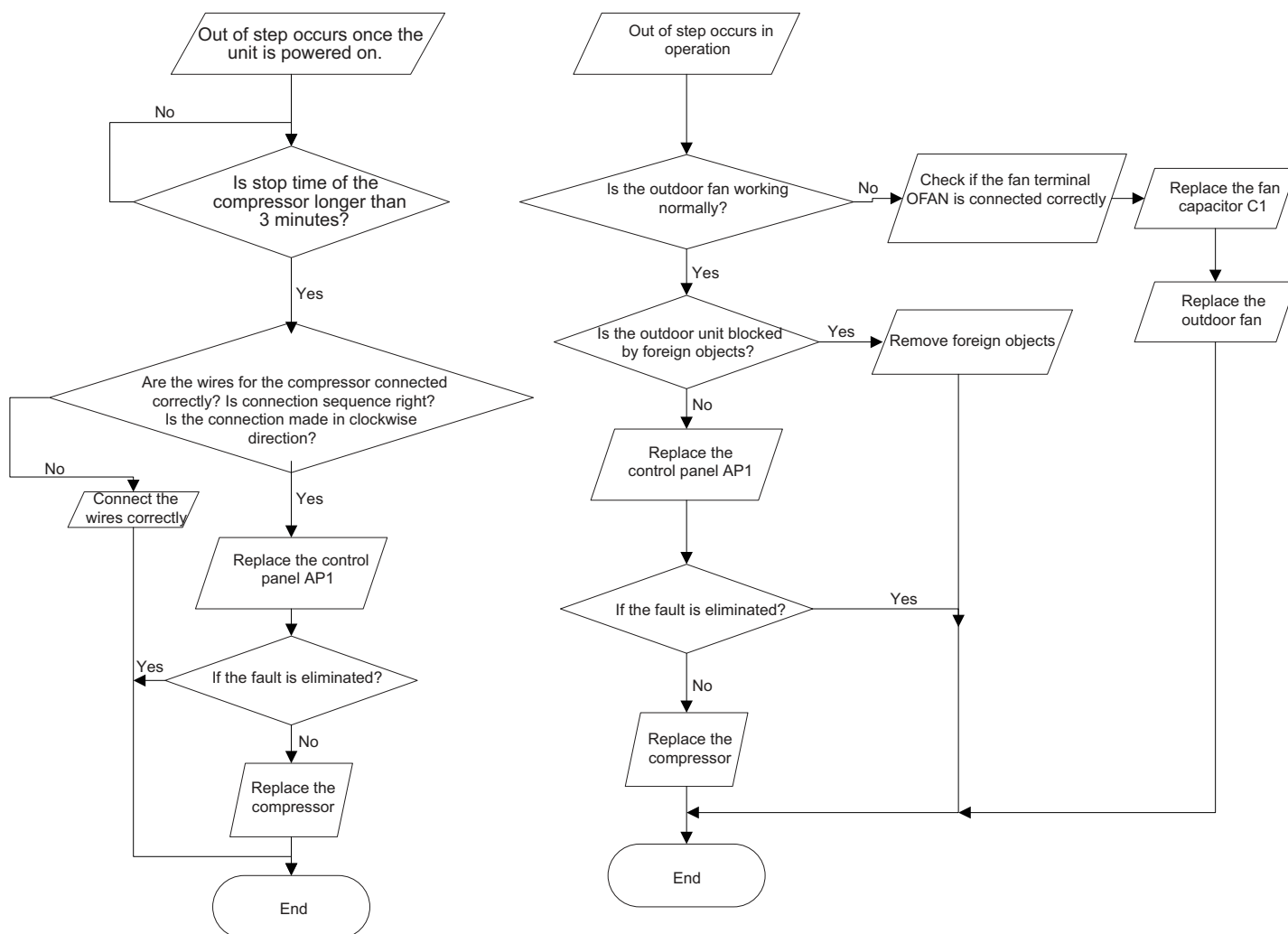


5. Out of step diagnosis for the compressor (AP1 hereinafter refers to the control board of the outdoor unit)

Mainly detect:

- Is the system pressure too high?
- Is the input voltage too low?

Fault diagnosis process:

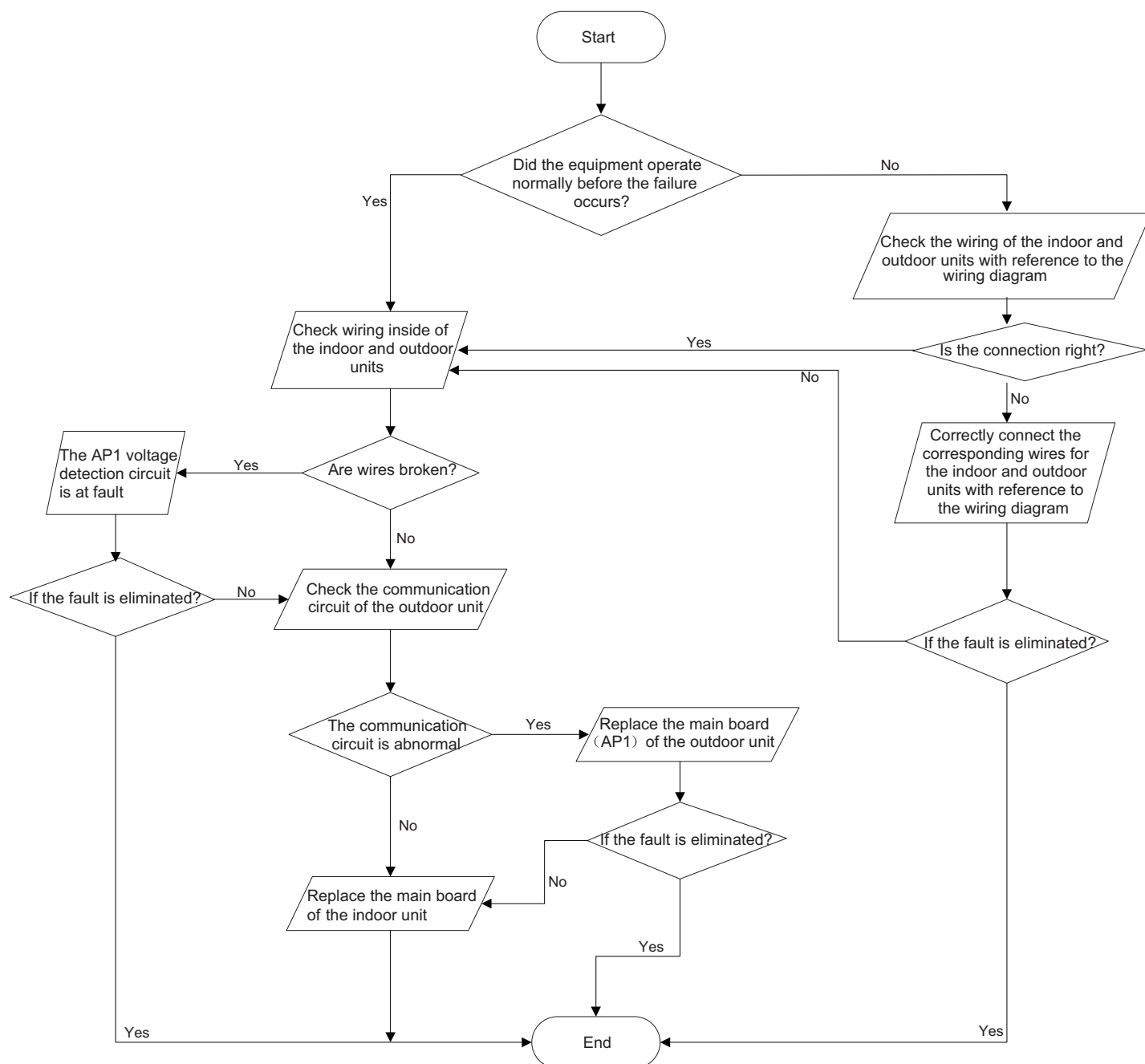


7. Communication malfunction: (following AP1 for outdoor unit control board)

Mainly detect:

- Is there any damage for the indoor unit mainboard communication circuit? Is communication circuit damaged?
- Detect the indoor and outdoor units connection wire and indoor and outdoor units inside wiring is connect well or not, if is there any damage?

Fault diagnosis process:

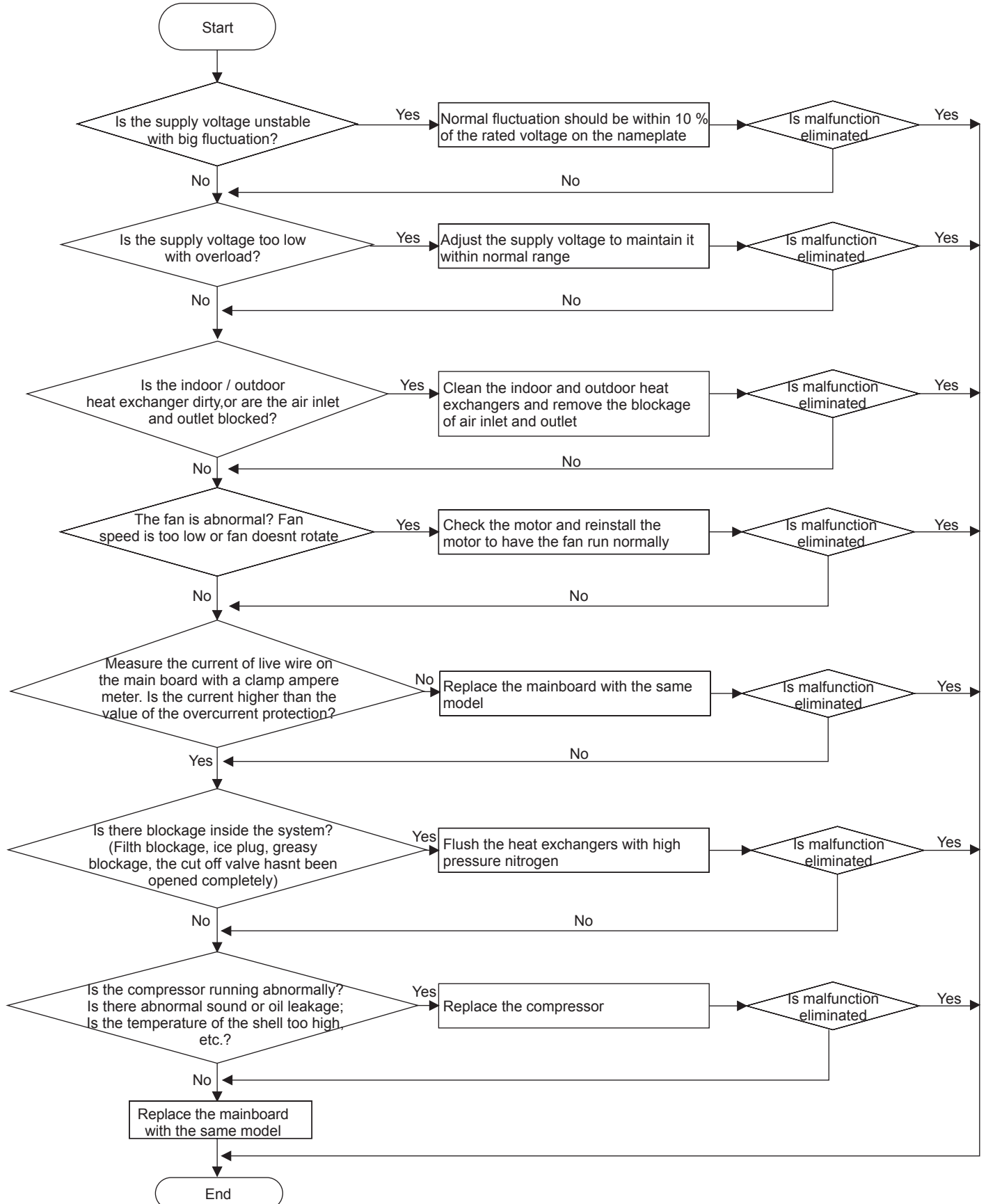


8. Malfunction of Overcurrent Protection

Main detection points:

- Is the supply voltage unstable with big fluctuation?
- Is the supply voltage too low with overload?
- Hardware trouble?

Malfunction diagnosis process:



9.3 Maintenance Method for Normal Malfunction

1. Air Conditioner Can't be Started Up

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

2. Poor Cooling (Heating) for Air Conditioner

| Possible Causes | Discriminating Method (Air conditioner Status) | Troubleshooting |
|--|---|---|
| Set temperature is improper | Observe the set temperature on remote controller | Adjust the set temperature |
| Rotation speed of the IDU fan motor is set too low | Small wind blow | Set the fan speed at high or medium |
| Filter of indoor unit is blocked | Check the filter to see it's blocked | Clean the filter |
| Installation position for indoor unit and outdoor unit is improper | Check whether the installation position is proper according to installation requirement for air conditioner | Adjust the installation position, and install the rainproof and sunproof for outdoor unit |
| Refrigerant is leaking | Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range | Find out the leakage causes and deal with it. Add refrigerant. |
| Malfunction of 4-way valve | Blow cold wind during heating | Replace the 4-way valve |
| Malfunction of capillary | Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unit's pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked | Replace the capillary |
| Flow volume of valve is insufficient | The pressure of valves is much lower than that stated in the specification | Open the valve completely |
| Malfunction of horizontal louver | Horizontal louver can't swing | Refer to point 3 of maintenance method for details |
| Malfunction of the IDU fan motor | The IDU fan motor can't operate | Refer to troubleshooting for H6 for maintenance method in details |
| Malfunction of the ODU fan motor | The ODU fan motor can't operate | Refer to point 4 of maintenance method for details |
| Malfunction of compressor | Compressor can't operate | Refer to point 5 of maintenance method for details |

3. Horizontal Louver Can't Swing

| Possible Causes | Discriminating Method (Air conditioner Status) | Troubleshooting |
|---|--|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Stepping motor is damaged | Stepping motor can't operate | Repair or replace stepping motor |
| Main board is damaged | Others are all normal, while horizontal louver can't operate | Replace the main board with the same model |

4. ODU Fan Motor Can't Operate

| Possible causes | Discriminating method (air conditioner status) | Troubleshooting |
|---|---|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Capacity of the ODU fan motor is damaged | Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor. | Replace the capacity of fan |
| Power voltage is a little low or high | Use universal meter to measure the power supply voltage. The voltage is a little high or low | Suggest to equip with voltage regulator |
| Motor of outdoor unit is damaged | When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat. | Change compressor oil and refrigerant. If no better, replace the compressor with a new one |

5. Compressor Can't Operate

| Possible causes | Discriminating method (air conditioner status) | Troubleshooting |
|---|---|--|
| Wrong wire connection, or poor connection | Check the wiring status according to circuit diagram | Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly |
| Capacity of compressor is damaged | Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor. | Replace the compressor capacitor |
| Power voltage is a little low or high | Use universal meter to measure the power supply voltage. The voltage is a little high or low | Suggest to equip with voltage regulator |
| Coil of compressor is burnt out | Use universal meter to measure the resistance between compressor terminals and it's 0 | Repair or replace compressor |
| Cylinder of compressor is blocked | Compressor can't operate | Repair or replace compressor |

6. Air Conditioner is Leaking

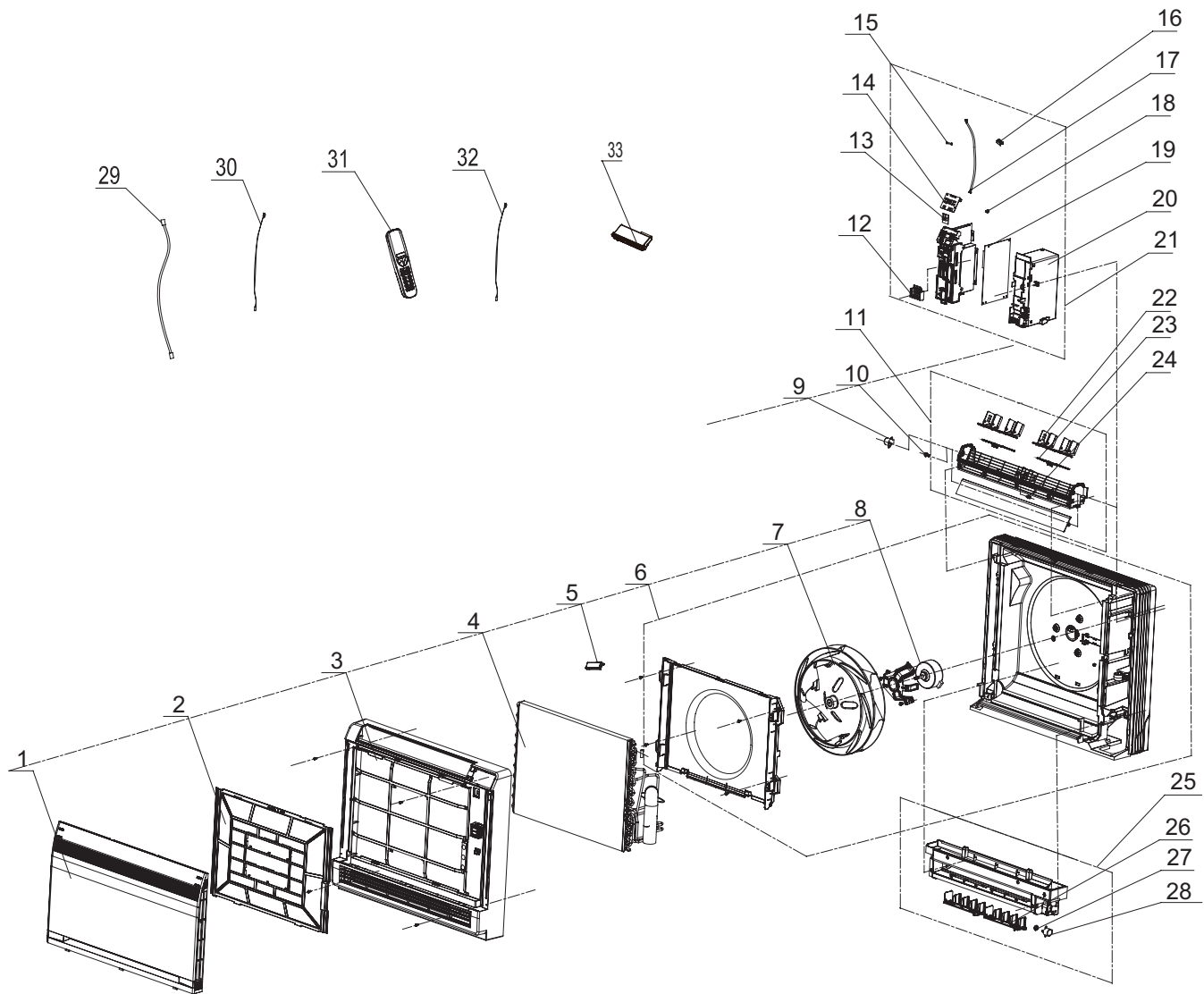
| Possible causes | Discriminating method (air conditioner status) | Troubleshooting |
|-----------------------|---|---|
| Drain pipe is blocked | Water leaking from indoor unit | Eliminate the foreign objects inside the drain pipe |
| Drain pipe is broken | Water leaking from drain pipe | Replace drain pipe |
| Wrapping is not tight | Water leaking from the pipe connection place of indoor unit | Wrap it again and bundle it tightly |

7. Abnormal Sound and Vibration

| Possible causes | Discriminating method (air conditioner status) | Troubleshooting |
|---|--|--|
| When turn on or turn off the unit, the panel and other parts will expand and there's abnormal sound | There's the sound of "PAPA" | Normal phenomenon. Abnormal sound will disappear after a few minutes. |
| When turn on or turn off the unit, there's abnormal sound due to flow of refrigerant inside air conditioner | Water-running sound can be heard | Normal phenomenon. Abnormal sound will disappear after a few minutes. |
| Foreign objects inside the indoor unit or there're parts touching together inside the indoor unit | There's abnormal sound fro indoor unit | Remove foreign objects. Adjust all parts' position of indoor unit, tighten screws and stick damping plaster between connected parts |
| Foreign objects inside the outdoor unit or there're parts touching together inside the outdoor unit | There's abnormal sound fro outdoor unit | Remove foreign objects. Adjust all parts' position of outdoor unit, tighten screws and stick damping plaster between connected parts |
| Short circuit inside the magnetic coil | During heating, the way valve has abnormal electromagnetic sound | Replace magnetic coil |
| Abnormal shake of compressor | Outdoor unit gives out abnormal sound | Adjust the support foot mat of compressor, tighten the bolts |
| Abnormal sound inside the compressor | Abnormal sound inside the compressor | If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances. |

10. Exploded View and Parts List

10.1 Indoor Unit



The component is only for reference; please refer to the actual product.

| NO. | Description | Part Code | | | Qty |
|-----|-------------------------|-------------------|-------------------|-------------------|-----|
| | | GEH12AA-K6DNA1A/I | GEH09AA-K6DNA1F/I | GEH18AA-K6DNA1F/I | |
| | Product Code | CV010N02900 | CV010N02700 | CV010N02800 | |
| 1 | Front Panel Assy | 20012756 | 20012756 | 20012756 | 1 |
| 2 | Filter Sub-Assy | 11122139 | 11122139 | 11122139 | 1 |
| 3 | Front Case Assy | 20012601 | 20012601 | 20012601 | 1 |
| 4 | Evaporator Assy | 01100100160 | 01100100160 | 01100100164 | 1 |
| 5 | Cold Plasma Generator | 1114001604 | 1114001604 | 1114001604 | 1 |
| 6 | Rear Case Assy | 000001060071 | 000001000051 | 000001060071 | 1 |
| 7 | Centrifugal Fan | 10312005 | 10312005 | 10312005 | 1 |
| 8 | Fan Motor | 1570410001201 | 1570410001201 | 1570410001201 | 1 |
| 9 | SteppingMotor | 1521210101 | 1521210101 | 1521210101 | 1 |
| 10 | Crank | 73012005 | 73012005 | 73012005 | 1 |
| 11 | Swing Assy | 10102042 | 10102042 | 000211060003 | 1 |
| 12 | Terminal Board | 422000000022 | 422000000022 | 422000000022 | 1 |
| 13 | Switch Board | 30112007 | 30112007 | 30112007 | 1 |
| 14 | Display Board | 30568131 | 30568131 | 30568131 | 1 |
| 15 | Fuse | 46010055 | 46010055 | 46010055 | 1 |
| 16 | Radiator | / | / | / | / |
| 17 | Signal Wire | 4003004202 | 4003004202 | 4003004202 | 1 |
| 18 | Jumper | 4202300112 | 4202300111 | 4202300114 | 1 |
| 19 | Main Board | 300002000631 | 300002000631 | 300002000631 | 1 |
| 20 | Electric Box | 20112116 | 20112116 | 20112116 | 1 |
| 21 | Electric Box Assy | 100002002951 | 100002002848 | 100002002386 | 1 |
| 22 | Air Louver (upper) | 10512143 | 10512143 | 10512143 | 2 |
| 23 | Swing Lever | 10582096 | 10582096 | 10582096 | 1 |
| 24 | Shaft of Guide Louver | 10542020 | 10542020 | 10542020 | 1 |
| 25 | Water Tray Assy | 20182141 | 20182141 | 20182141 | 1 |
| 26 | Air Louver (lower) | 10512144 | 10512144 | 10512144 | 1 |
| 27 | Axis (lower step motor) | 10542034 | 10542034 | 10542034 | 1 |
| 28 | SteppingMotor | 1521210805 | 1521210805 | 1521210805 | 1 |
| 29 | Connecting Cable | 4002052317 | 4002052317 | 4002052317 | 0 |
| 30 | Temperature Sensor | 3900004508 | 3900004508 | 3900004508 | 1 |
| 31 | Remote Controller | 305001000111 | 305001000111 | 305001000111 | 1 |
| 32 | Temperature Sensor | 390000591 | 390000591 | 3900004508 | 1 |
| 33 | Detecting Plate | 30110154 | 30110154 | 30110154 | 1 |

Above data is subject to change without notice.

| NO. | Description | Part Code | | | Qty |
|-----|-------------------------|-------------------|-------------------|-------------------|-----|
| | | GEH12AA-K6DNA1A/I | GEH09AA-K6DNA1F/I | GEH18AA-K6DNA1F/I | |
| | Product Code | CV010N02901 | CV010N02701 | CV010N02801 | |
| 1 | Front Panel Assy | 20012756 | 20012756 | 20012756 | 1 |
| 2 | Filter Sub-Assy | 11122139 | 11122139 | 11122139 | 1 |
| 3 | Front Case Assy | 20012601 | 20012601 | 20012601 | 1 |
| 4 | Evaporator Assy | 01100100160 | 01100100160 | 01100100164 | 1 |
| 5 | Cold Plasma Generator | / | / | / | / |
| 6 | Rear Case Assy | 000001060071 | 000001000051 | 000001060071 | 1 |
| 7 | Centrifugal Fan | 10312005 | 10312005 | 10312005 | 1 |
| 8 | Fan Motor | 1570410001201 | 1570410001201 | 1570410001201 | 1 |
| 9 | Stepping Motor | 1521210101 | 1521210101 | 1521210101 | 1 |
| 10 | Crank | 73012005 | 73012005 | 73012005 | 1 |
| 11 | Swing Assy | 10102042 | 10102042 | 000211060003 | 1 |
| 12 | Terminal Board | 422000000022 | 422000000022 | 422000000022 | 1 |
| 13 | Switch Board | 30112007 | 30112007 | 30112007 | 1 |
| 14 | Display Board | 30568131 | 30568131 | 30568131 | 1 |
| 15 | Fuse | 46010055 | 46010055 | 46010055 | 1 |
| 16 | Radiator | / | / | / | / |
| 17 | Signal Wire | 4003004202 | 4003004202 | 4003004202 | 1 |
| 18 | Jumper | 4202300112 | 4202300111 | 4202300114 | 1 |
| 19 | Main Board | 300002000630 | 300002000630 | 300002000630 | 1 |
| 20 | Electric Box | 20112116 | 20112116 | 20112116 | 1 |
| 21 | Electric Box Assy | 100002060178 | 100002060177 | 100002060176 | 1 |
| 22 | Air Louver (upper) | 10512143 | 10512143 | 10512143 | 2 |
| 23 | Swing Lever | 10582096 | 10582096 | 10582096 | 1 |
| 24 | Shaft of Guide Louver | 10542020 | 10542020 | 10542020 | 1 |
| 25 | Water Tray Assy | 20182141 | 20182141 | 20182141 | 1 |
| 26 | Air Louver (lower) | 10512144 | 10512144 | 10512144 | 1 |
| 27 | Axis (lower step motor) | 10542034 | 10542034 | 10542034 | 1 |
| 28 | Stepping Motor | 1521210805 | 1521210805 | 1521210805 | 1 |
| 29 | Connecting Cable | 4002052317 | 4002052317 | 4002052317 | 0 |
| 30 | Temperature Sensor | 3900004508 | 3900004508 | 3900004508 | 1 |
| 31 | Remote Controller | 305001000111 | 305001000111 | 305001000111 | 1 |
| 32 | Temperature Sensor | 3900004508 | 3900004508 | 3900004508 | 1 |
| 33 | Detecting Plate | 30110154 | 30110154 | 30110154 | 1 |

Above data is subject to change without notice.

| NO. | Description | Part Code | Qty |
|-----|-----------------------------------|-------------------|-----|
| | | GEH12AA-K6DNA1A/O | |
| | Product Code | CV010W02900 | |
| 1 | Left Side Plate | 01303200P | 1 |
| 2 | Fan Motor | 1501308511 | 1 |
| 3 | Motor Support | 01703136 | 1 |
| 4 | Condenser Assy | 011002060521 | 1 |
| 5 | Top Cover Sub-Assy | 000051060038 | 1 |
| 6 | Rear Grill | 01475014 | 1 |
| 7 | Clapboard Sub-Assy | 01233180 | 1 |
| 8 | Compressor and Fittings | 009001060066 | 1 |
| 9 | Compressor Gasket | 009012000027 | 3 |
| 10 | 4-Way Valve Assy | 030152060255 | 1 |
| 11 | Big Handle | 2623343106 | 1 |
| 12 | Valve Cover | 22243006 | 1 |
| 13 | Cut off Valve | 071302391 | 1 |
| 14 | Cut off Valve | 07130239 | 1 |
| 15 | Valve Support | 0171314201P | 1 |
| 16 | Front Grill | 22413047 | 1 |
| 17 | Cabinet | 01433033P | 1 |
| 18 | Axial Flow Fan | 10333011 | 1 |
| 19 | Chassis Sub-assy | 017000060080P | 1 |
| 20 | Electric Box Assy | 100002064438 | 1 |
| 21 | Electric Box | 20113034 | 1 |
| 22 | Main Board | 300027060573 | 1 |
| 23 | Reactor | 43130184 | 1 |
| 24 | Wire Clamp | 71010103 | 1 |
| 25 | Terminal Board | 422000060016 | 1 |
| 26 | Electrical Heater | / | / |
| 27 | Electrical Heater (Chassis) | 7651000414 | 1 |
| 28 | Electric Expansion Valve Sub-Assy | 030026060275 | 1 |

Above data is subject to change without notice.

| NO. | Description | Part Code | Qty |
|-----|-------------------------------|-------------------|-----|
| | | GEH09AA-K6DNA1F/O | |
| | | Product Code | |
| | | CV010W02700 | |
| 1 | Electric Box Assy | 10002064342 | 1 |
| 2 | Electric Box Sub-Assy | 017007060831 | 1 |
| 3 | Main Board | 300027060561 | 1 |
| 4 | Reactor | 43130184 | 1 |
| 5 | Terminal Board | 422000060016 | 1 |
| 6 | Wire Clamp | 71010103 | 1 |
| 7 | Front Grill | 22413049 | 1 |
| 8 | Front Panel | 01533034P | 1 |
| 9 | Axial Flow Fan | 10333004 | 1 |
| 10 | Chassis Sub-assy | 017000060298P | 1 |
| 11 | Fan Motor | 1501308511 | 1 |
| 12 | Small Handle | 26233100 | 1 |
| 13 | Top Cover Sub-Assy | 000051060006 | 1 |
| 14 | Motor Support | 01703104 | 1 |
| 15 | Condenser Assy | 011002060497 | 1 |
| 16 | Rear Grill | 01473009 | 1 |
| 17 | Electronic Expansion Valve | 07133821 | 1 |
| 18 | Cut off Valve | 071302391 | 1 |
| 19 | Big Handle | 262334332 | 1 |
| 20 | Valve | 07100003 | 1 |
| 21 | Valve Support | 0171314201P | 1 |
| 22 | Right Side Plate Sub-Assy | 00013006002001 | 1 |
| 23 | 4-Way Valve Assy | 030152060251 | 1 |
| 24 | Clapboard Sub-Assy | 0123338502 | 1 |
| 25 | Magnet Coil | 4300040050 | 1 |
| 26 | Compressor and Fittings | 009001060050 | 1 |
| 27 | Drainage Connector | 06123401 | 1 |
| 28 | Electrical Heater(Compressor) | 7651000414 | 1 |

Above data is subject to change without notice.

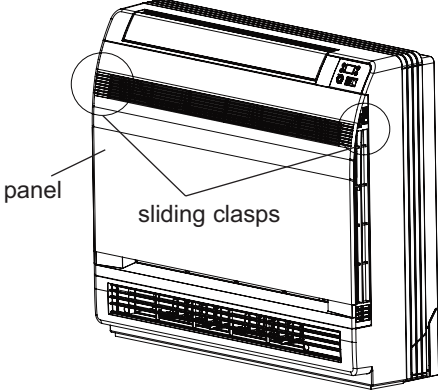
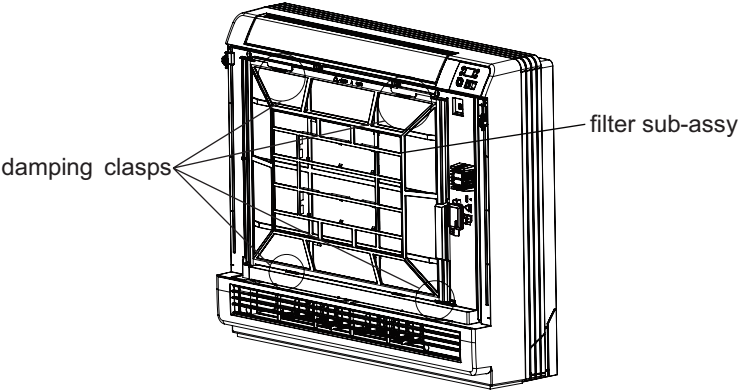
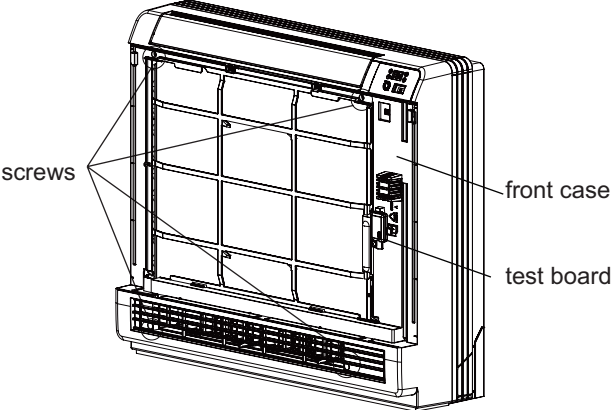
| NO. | Description | Part Code | Qty |
|-----|---|-------------------|-----|
| | | GEH18AA-K6DNA1F/O | |
| | | Product Code | |
| | | CV010W02800 | |
| 1 | Front Grill | 22413045 | 1 |
| 2 | Front Panel | 01535013P | 1 |
| 3 | Drainage Connector | 06123401 | 1 |
| 4 | Chassis Sub-assy | 02803270P | 1 |
| 5 | Drainage hole Cap | 06813401 | 1 |
| 6 | Compressor and fittings | 00103919G | 1 |
| 7 | Magnet Coil | 4300040087 | 1 |
| 8 | 4-Way Valve Assy | 030152060322 | 1 |
| 9 | Cut off Valve Assy 1/2 | 07133774 | 1 |
| 10 | Cut off Valve Sub-Assy | 07133058 | 1 |
| 11 | Valve support assy | 01715010P | 1 |
| 12 | Right Side Plate | 0130509402P | 1 |
| 13 | Valve cover | 22245002 | 1 |
| 14 | Handle | 26233053 | 1 |
| 15 | Wiring Clamp | 26115004 | 1 |
| 16 | Electronic Expansion Valve assy | 07133774 | 1 |
| 17 | Electric Expand Valve Fitting | 030174000058 | 1 |
| 18 | Rear Grill | 01473043 | 1 |
| 19 | Condenser Assy | 0116348702 | 1 |
| 20 | Reactor | / | / |
| 21 | Clapboard Assy | 01233153 | 1 |
| 22 | Coping | 012049000007P | 1 |
| 23 | Supporting Board(Condenser) | 01795010 | 1 |
| 24 | Motor Support Sub-Assy | 01705036 | 1 |
| 25 | Fan Motor | 1501506402 | 1 |
| 26 | Axial Flow Fan | 10335008 | 1 |
| 27 | Left Side Plate | 01305093P | 1 |
| 28 | left handle | 2623525404 | 1 |
| 29 | Electric Box Assy | 100002064320 | 1 |
| 30 | Wire Clamp | 71010003 | 1 |
| 31 | Terminal Board | 422000060009 | 1 |
| 32 | Electric Box | 20113027 | 1 |
| 33 | Radiator | 49013060 | 1 |
| 34 | Main Board | 300027060548 | 1 |
| 35 | Insulated Board (Cover of Electric Box) | 20113003 | 1 |
| 36 | Temperature Sensor | 3900030901 | 1 |

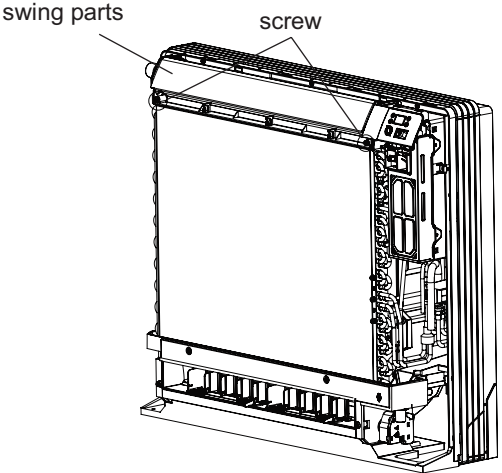
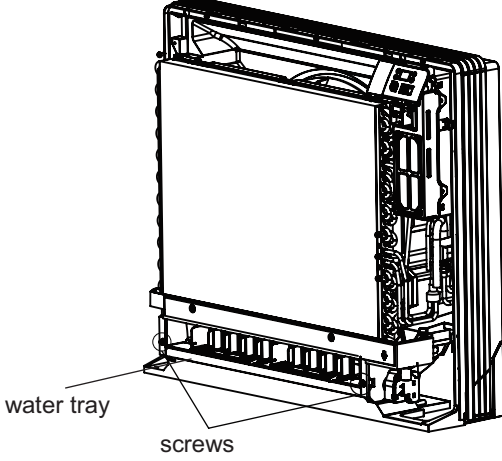
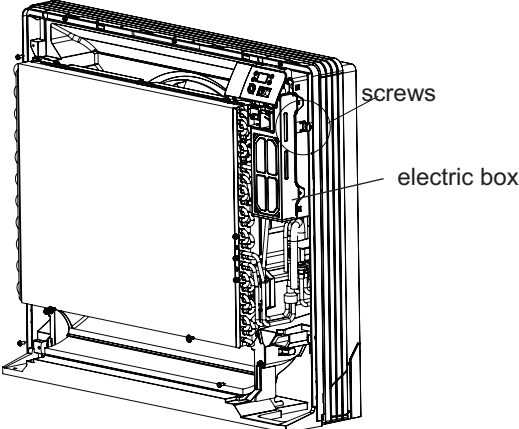
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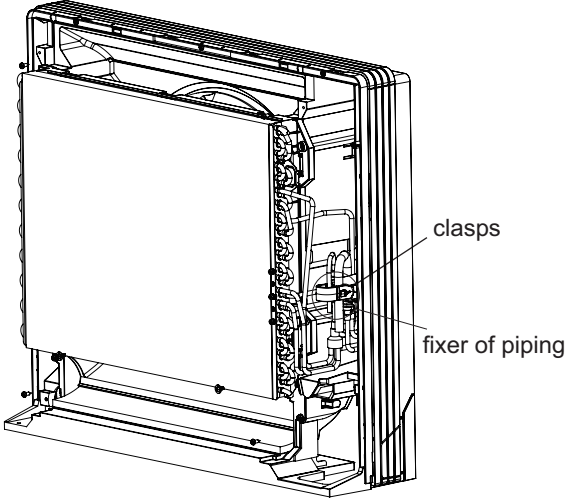
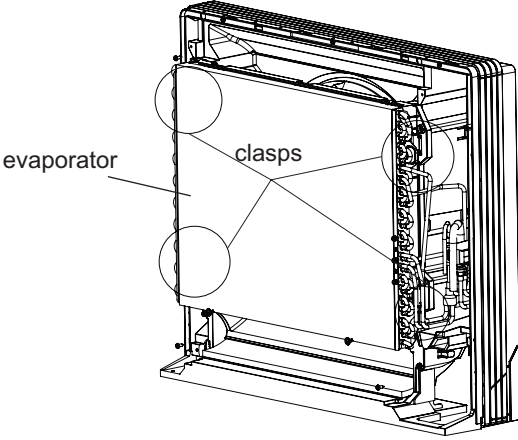
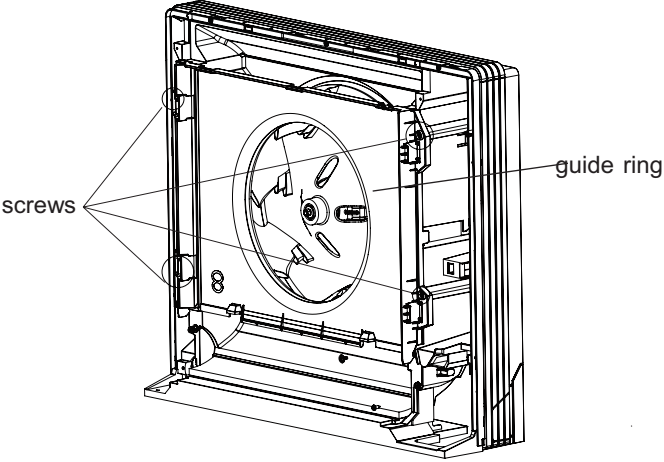
11. Removal Procedure

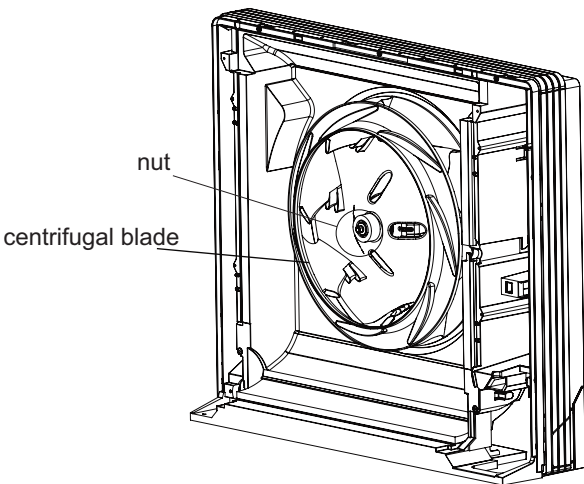
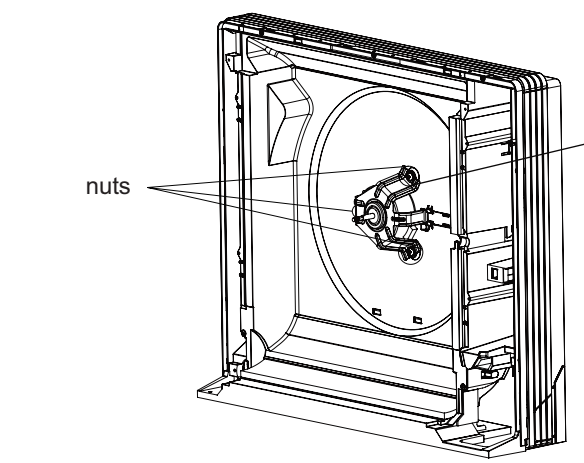
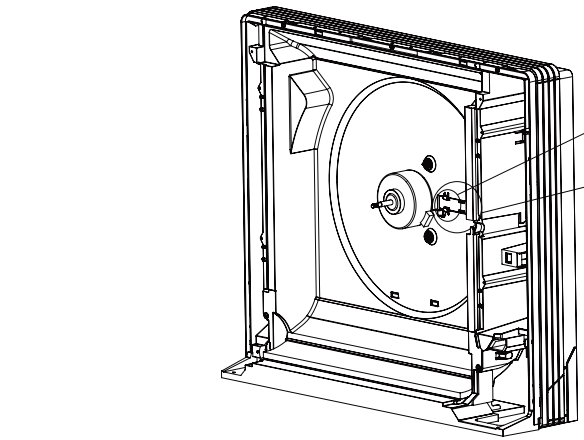
⚠ Warning: Be sure to wait for a minimum of 20 minutes after turning off all power supplies and discharge the refrigerant completely before removal.

11.1 Removal Procedure of Indoor Unit

| Steps | Procedure |
|--|--|
| <p>1. Remove panel</p> | <p>Pull sliding clasps at both sides of panel, pull out the panel outwards and then move the panel upwards to remove it.</p>  |
| <p>2. Remove filter sub-assy</p> | <p>Pull the damping clasps at upper/lower side of filter sub-assy, and then move the filter sub-assy outwards to remove it.</p>  |
| <p>3. Remove test board and front case</p> | <p>Remove one screws fixing the test board, and then pull the test board outwards to remove it.</p> <p>Remove 4 screws fixing the front case, and then pull the front case outwards to remove it.</p>  |

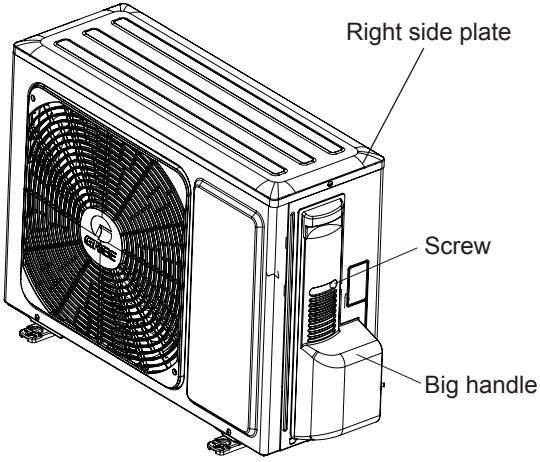
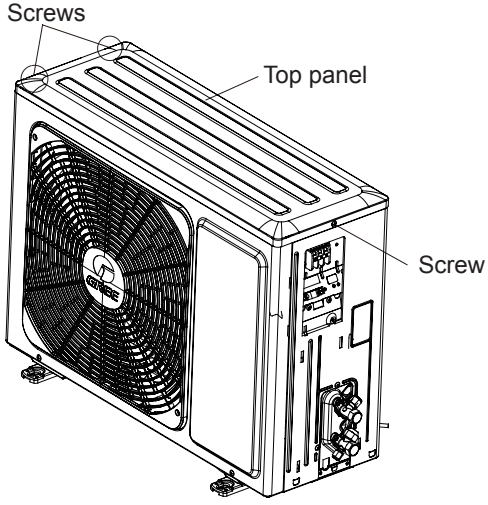
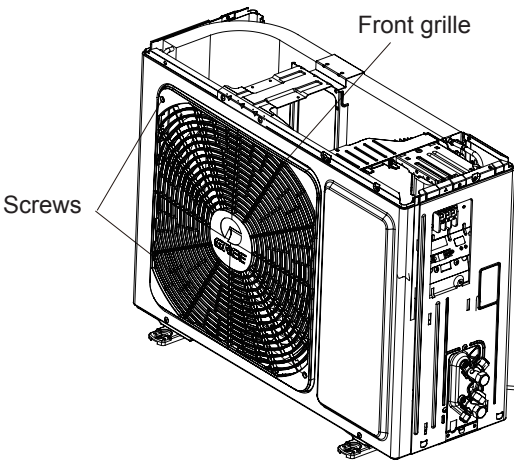
| Steps | Procedure | |
|-------------------------------|--|--|
| <p>4. Remove swing parts</p> | <p>Remove 2 screws fixing the swing parts, and then pull the swing parts outwards to remove it.</p> |  |
| <p>5. Remove water tray</p> | <p>Remove 2 screws fixing water tray, and then pull the water tray outwards to remove it.</p> |  |
| <p>6. Remove electric box</p> | <p>Remove one screw fixing the electric box, and then pull the electric box outwards to remove it.</p> |  |

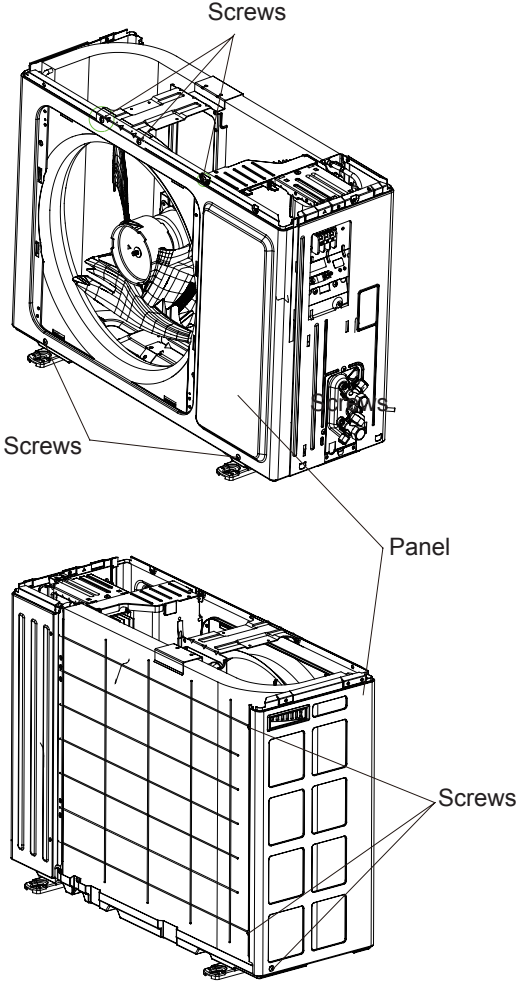
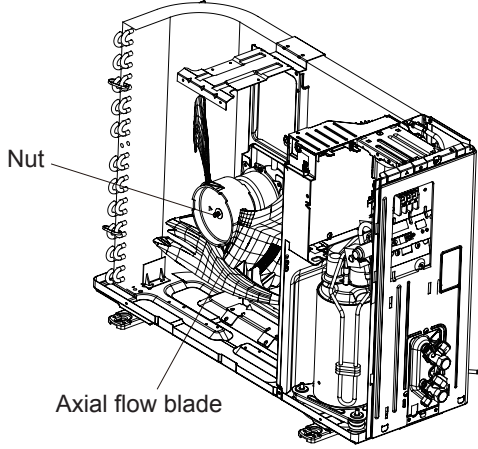
| Steps | Procedure |
|----------------------------------|--|
| <p>7. Remove fixer of piping</p> | <p>Pry out the clasps connecting fixer of piping and bottom case, and then pull the fixer of piping outwards to remove it.</p>  <p>The diagram illustrates the internal structure of the unit. A component labeled 'fixer of piping' is shown being pulled away from the bottom case. It is held in place by several 'clasps' that connect it to the case's frame.</p> |
| <p>8. Remove evaporator</p> | <p>Pry out the clasps connecting evaporator and bottom case, and then pull the evaporator outwards to remove it.</p>  <p>The diagram shows the evaporator being removed from the unit. It is held in place by 'clasps' that connect it to the bottom case. The evaporator is being pulled outwards.</p> |
| <p>9. Remove guide ring</p> | <p>Remove 4 screws fixing guide ring, and then pull the guide ring outwards to remove it.</p>  <p>The diagram depicts the guide ring being removed. It is secured to the bottom case by four 'screws'. The guide ring is being pulled outwards from the case.</p> |

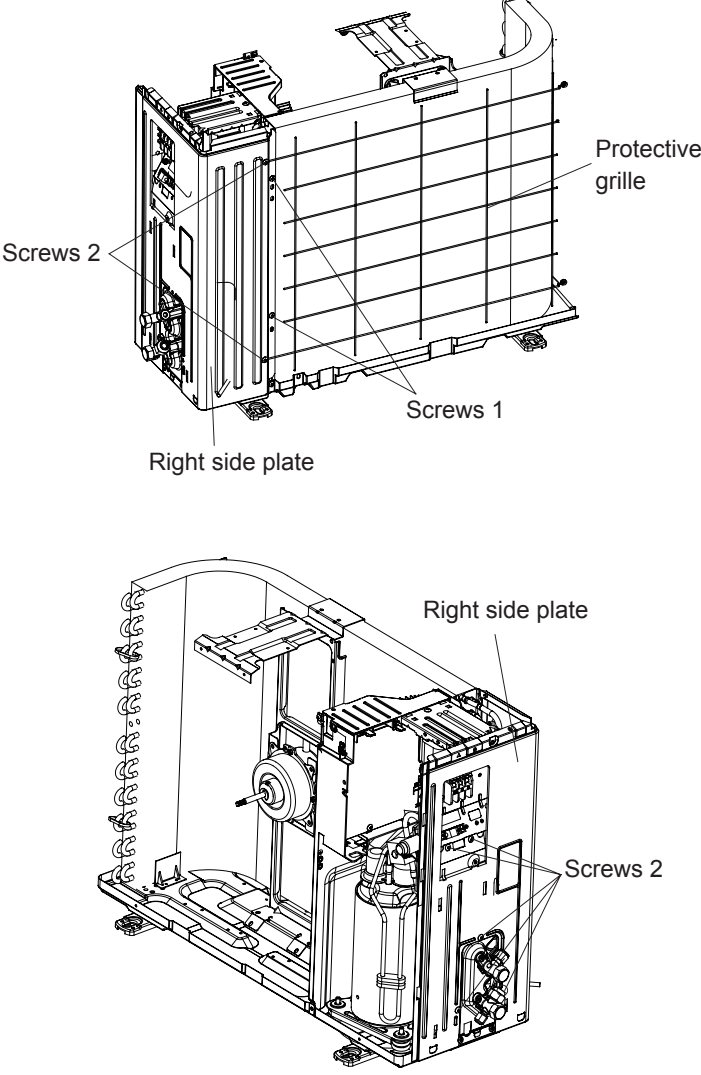
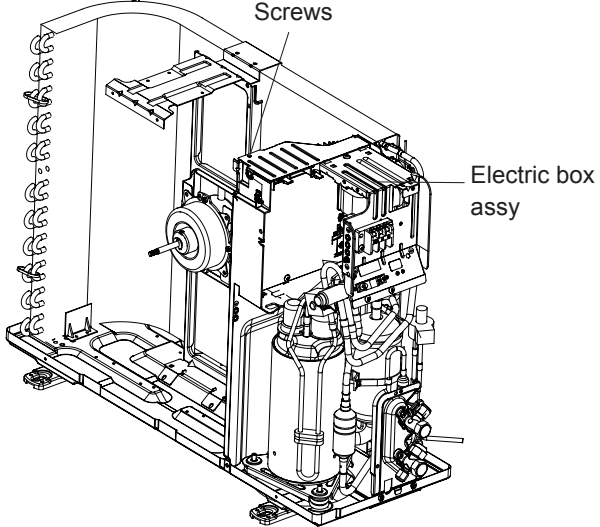
| Steps | Procedure |
|---|--|
| <p>10. Remove centrifugal blade</p> | <p>Remove one nut fixing the centrifugal blade, and then pull the centrifugal blade outwards to remove it.</p>  <p>The diagram shows a centrifugal blade assembly mounted on a motor. A single nut is shown being removed from the blade. Labels point to the 'nut' and the 'centrifugal blade'.</p> |
| <p>11. Remove fixing bracket of motor</p> | <p>Remove 3 nuts on fixing bracket of motor, and then pull the fixing bracket of motor outwards to remove it.</p>  <p>The diagram shows the motor's fixing bracket assembly. Three nuts are shown being removed from the bracket. Labels point to the 'nuts' and the 'fixing bracket of motor'.</p> |
| <p>12. Remove press plate of motor wire</p> | <p>Loosen clasps between press plate of motor wire and bottom case, and then pull the press plate of motor wire outwards to remove it.</p>  <p>The diagram shows the motor wire press plate assembly. Two clasps are shown being loosened between the press plate and the bottom case. Labels point to the 'clasps' and the 'press plate of motor wire'.</p> |

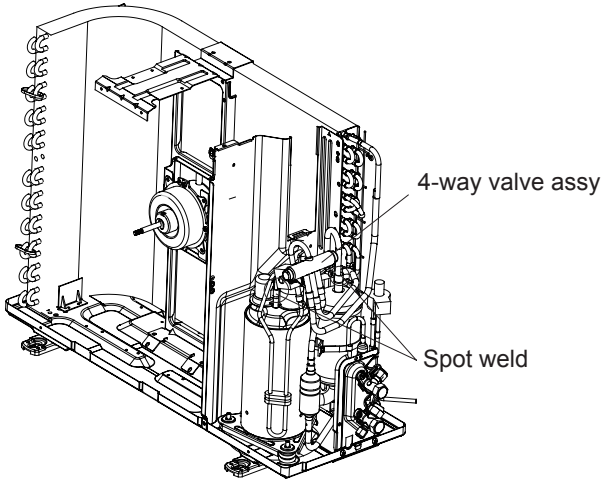
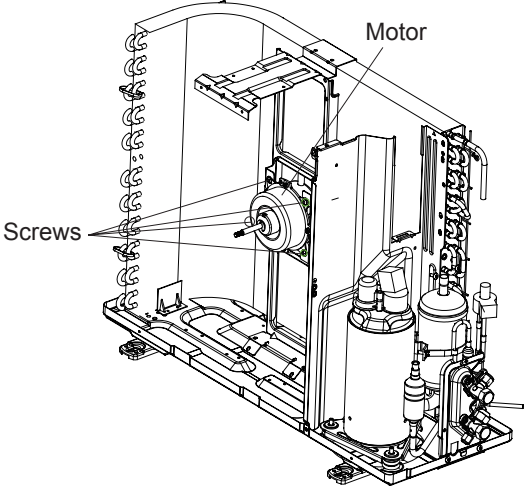
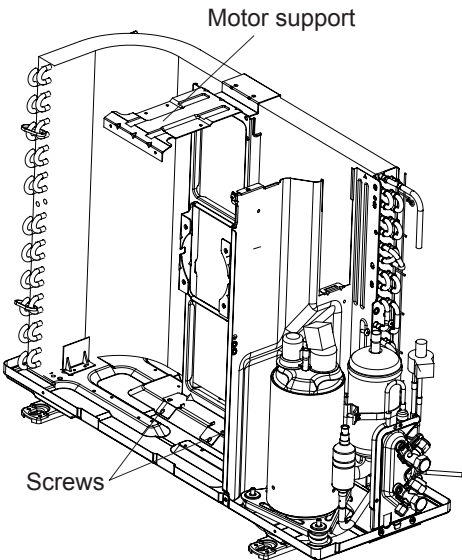
11.2 Removal Procedure of Outdoor Unit

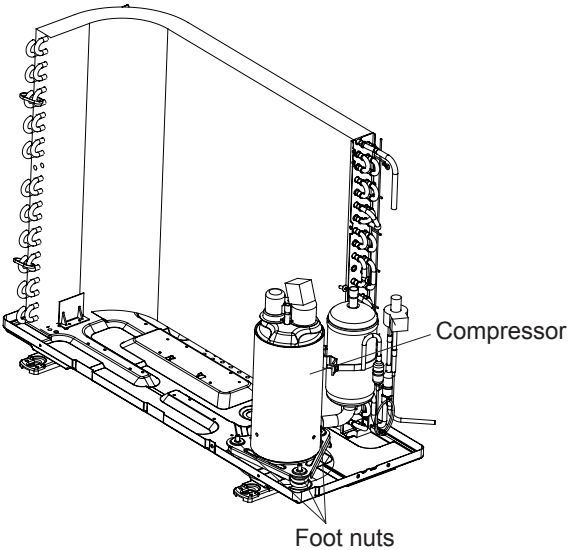
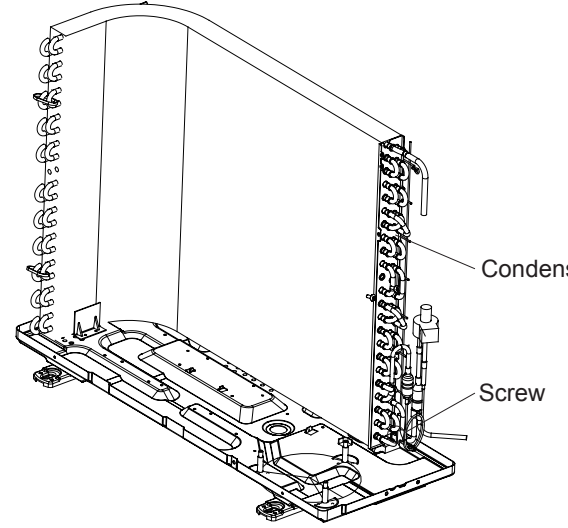
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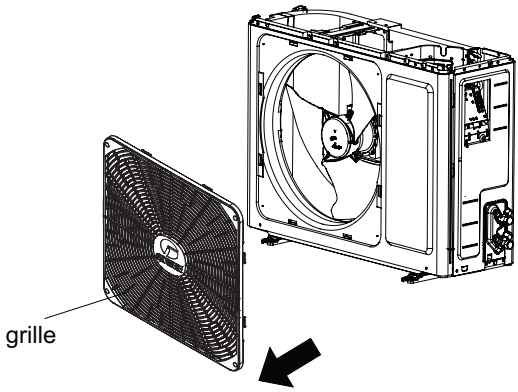
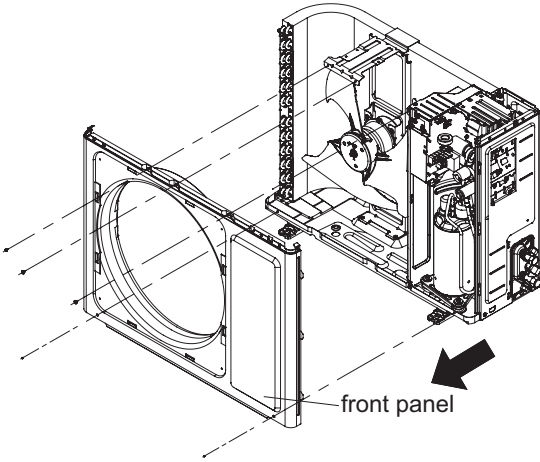
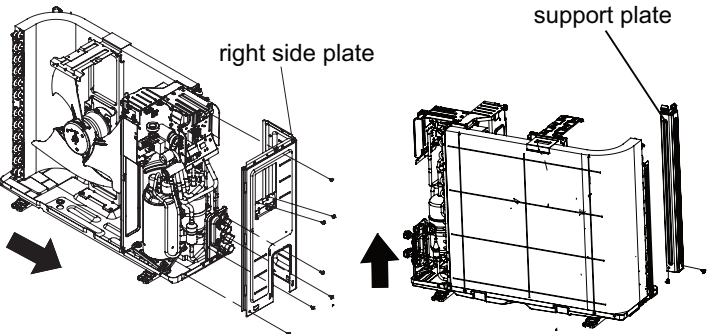
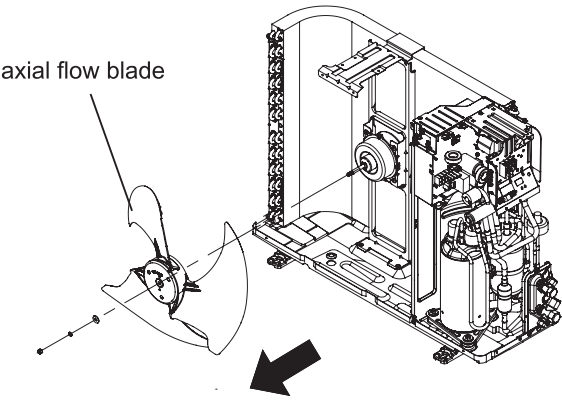
| Steps | Procedure |
|-------------------------------|--|
| <p>1. Remove big handle</p> | <p>Remove the screw fixing big handle; slide out the big handle upwards to make the clasp of big handle separate from the groove of right side plate, and then remove the big handle.</p>  |
| <p>2. Remove top panel</p> | <p>Remove the screws fixing top panel and then remove the top panel.</p>  |
| <p>3. Remove front grille</p> | <p>Remove connection screws between the front grille and the front panel. Then remove the front grille.</p>  |

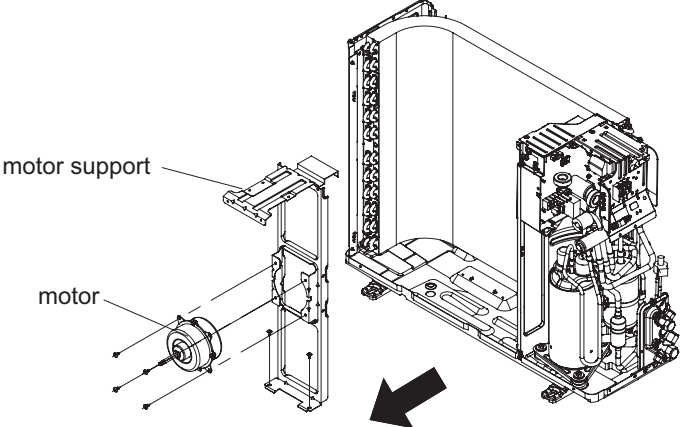
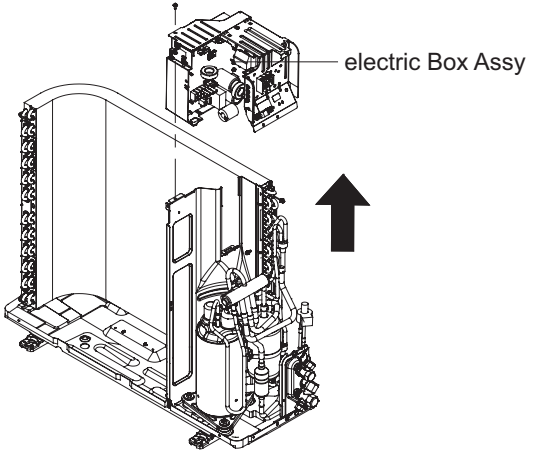
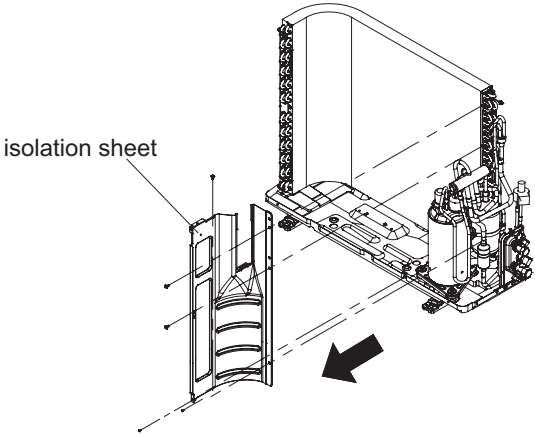
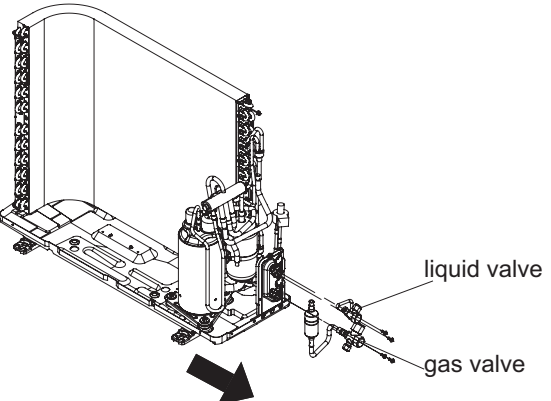
| Steps | Procedure |
|-----------------------------------|--|
| <p>4. Remove front panel</p> | <p>Remove the screws fixing front panel, and then remove the front panel.</p>  |
| <p>5. Remove axial flow blade</p> | <p>Remove the nut fixing axial flow blade and then remove the axial flow blade.</p>  |

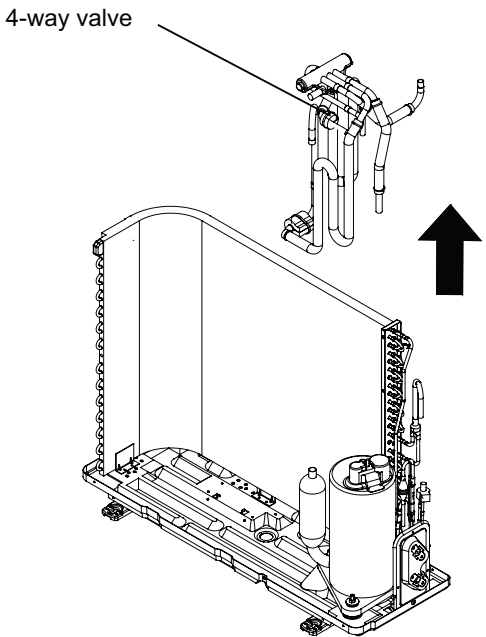
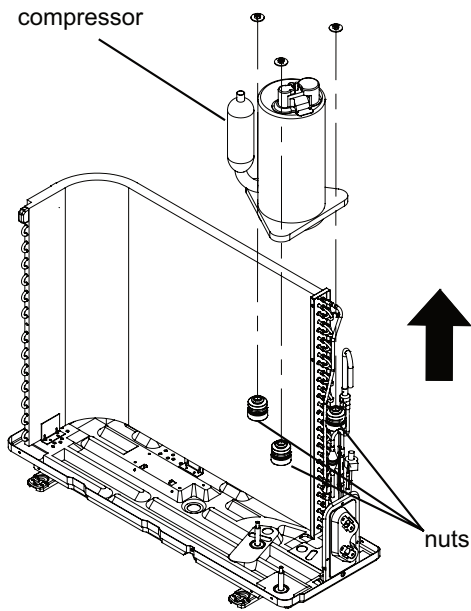
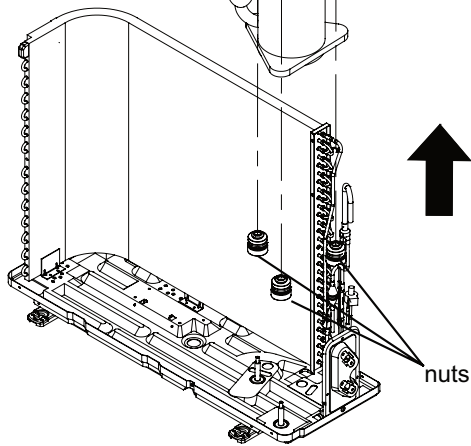
| Steps | Procedure |
|---|--|
| <p data-bbox="134 235 634 264">6. Remove protective grille and right side plate</p> <p data-bbox="240 395 695 482">Remove the screws 1 fixing protective grille and then remove the protective grille.</p> <p data-bbox="240 919 695 978">Remove the screws 2 fixing right side plate and then remove the right side plate.</p> |  <p data-bbox="792 541 894 570">Screws 2</p> <p data-bbox="1385 438 1495 497">Protective grille</p> <p data-bbox="1198 694 1300 722">Screws 1</p> <p data-bbox="938 749 1105 777">Right side plate</p> <p data-bbox="1214 897 1382 926">Right side plate</p> <p data-bbox="1360 1153 1463 1181">Screws 2</p> |
| <p data-bbox="134 1437 440 1465">7. Remove electric box assy</p> | <p data-bbox="240 1552 695 1640">Remove the screws fixing electric box assy ; pull out each wiring terminal; lift the electric box assy upwards to remove it.</p> <p data-bbox="240 1677 695 1808">Note: When pulling out the wiring terminal, pay attention to loose the clasp and don't pull it so hard.</p>  <p data-bbox="1141 1465 1227 1493">Screws</p> <p data-bbox="1360 1629 1490 1688">Electric box assy</p> |

| Steps | Procedure |
|-----------------------------------|---|
| <p>8. Remove 4-way valve assy</p> | <p>Unsolder the spot weld of 4-way valve assy, compressor and condenser, and then remove the 4-way valve assy .</p> <p>Note: When unsoldering the spot weld, wrap the 4-way valve with wet cloth completely to avoid damaging the valve due to high temperature.</p>  |
| <p>9. Remove motor</p> | <p>Remove the screws fixing motor and then remove the motor.</p>  |
| <p>10. Remove motor support</p> | <p>Remove the screws fixing motor support and then remove the motor support.</p>  |

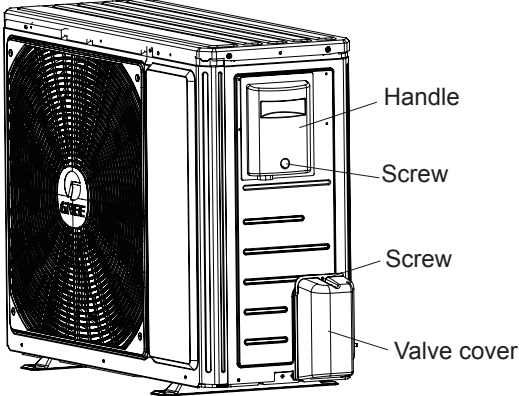
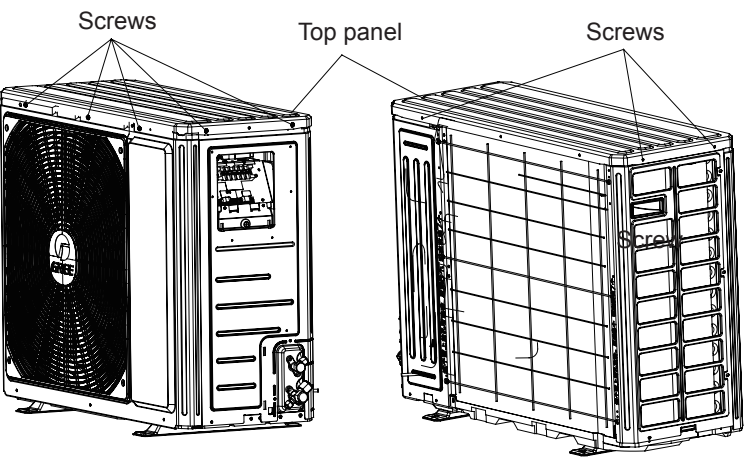
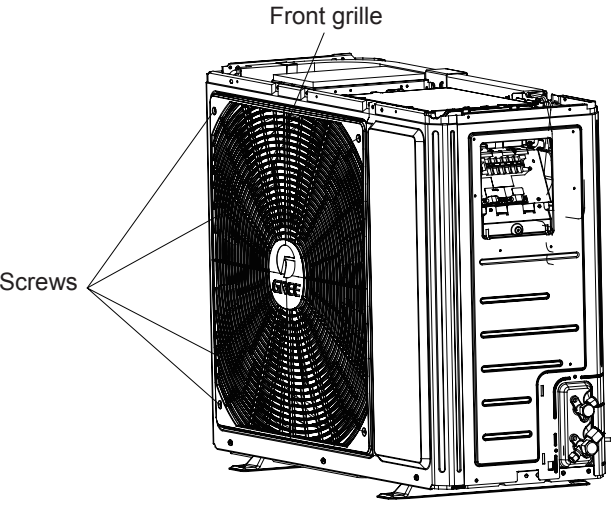
| Steps | Procedure |
|---|--|
| <p>14. Remove compressor</p> <p>Remove 3 foot nuts on compressor, and then remove the compressor.</p> <p>Note: Protect the ports of discharge pipe and suction pipe to avoid foreign objects to enter it.</p> |  <p>The diagram shows a compressor unit mounted on a base. Three foot nuts are indicated at the base of the unit. The compressor itself is a cylindrical component with various pipes and fittings. Labels 'Compressor' and 'Foot nuts' point to the respective parts.</p> |
| <p>15. Remove condenser</p> <p>Remove one screw fixing the condenser, then remove the condenser.</p> |  <p>The diagram shows a condenser unit mounted on a base. A screw is indicated at the base of the unit. The condenser is a vertical, finned component. Labels 'Condenser' and 'Screw' point to the respective parts.</p> |

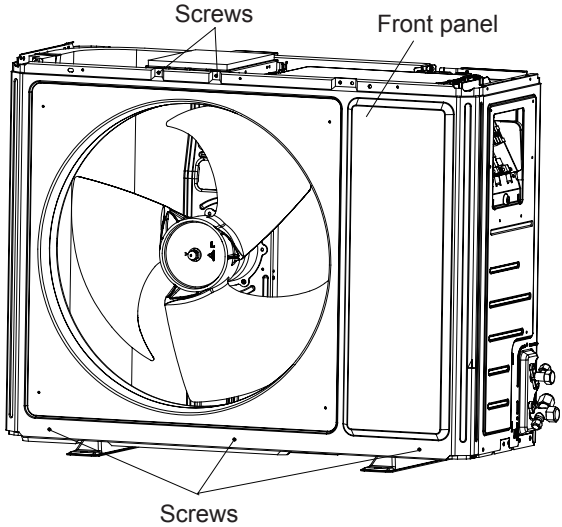
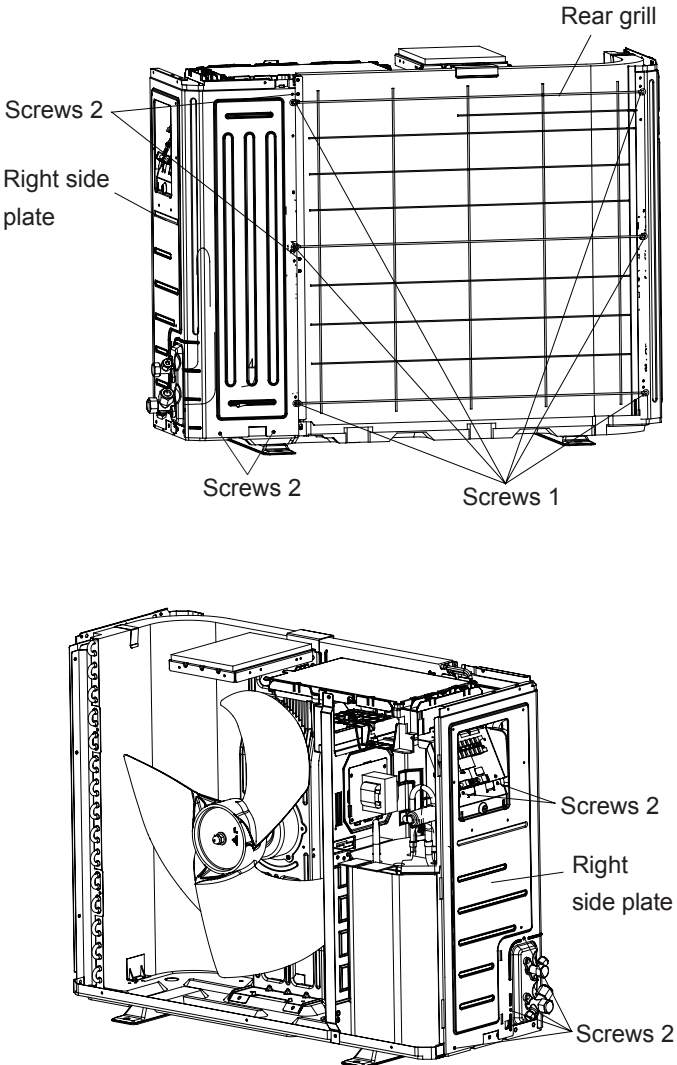
| Step | Procedure |
|--|--|
| <p>4. Remove grille</p> | <p>Remove connection screws between the front grille and the front panel. Then remove the grille.</p>  <p>grille</p> |
| <p>5. Remove front panel</p> | <p>Remove connection screws connecting the front panel with the chassis and the motor support and then remove the front panel.</p>  <p>front panel</p> |
| <p>6. Remove right side plate and support plate</p> | <p>Remove connection screws connecting the right side plate with the valve support and the electric box. Then remove the right side plate.</p> <p>Remove the two screws fixing the support plate and chassis, and then remove the support plate.</p>  <p>right side plate</p> <p>support plate</p> |
| <p>7. Remove axial flow blade</p> | <p>Remove the nut on the blade and then remove the axial flow blade.</p>  <p>axial flow blade</p> |

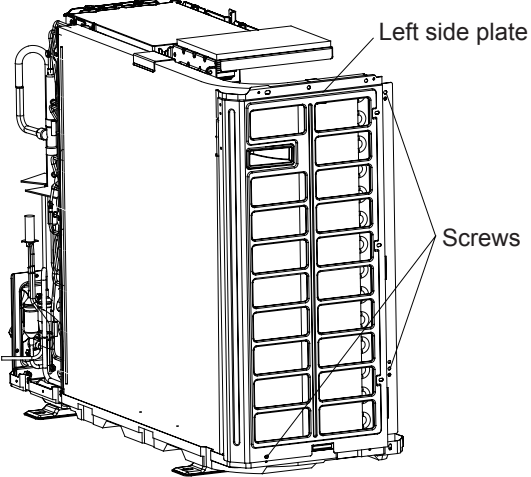
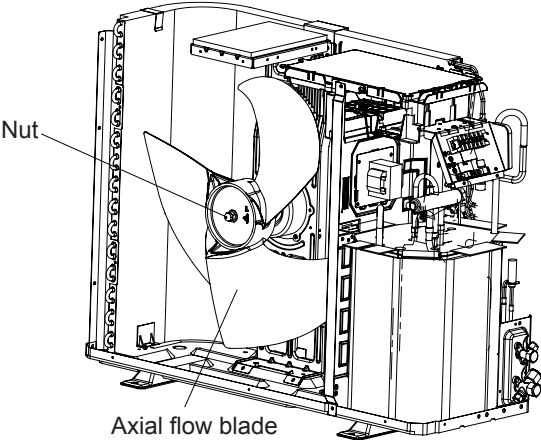
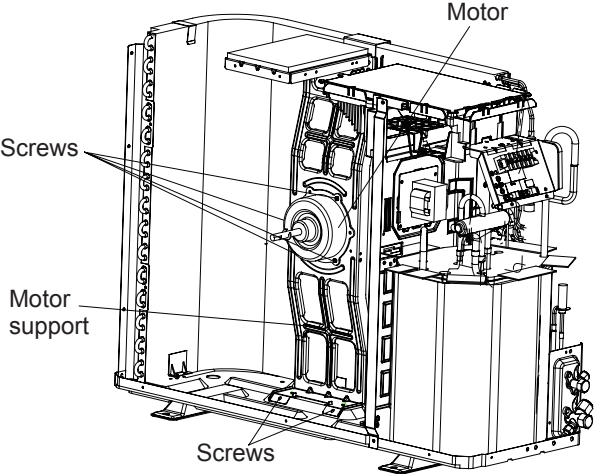
| Step | Procedure |
|---|---|
| <p>8. Remove motor and motor support</p> | <p>Remove the tapping screws fixing the motor and disconnect the leading wire insert of the motor. Then remove the motor.</p> <p>Remove the tapping screws fixing the motor support and lift the motor support to remove it.</p>  |
| <p>9. Remove Electric Box Assy</p> | <p>Remove screws fixing the electric box subassembly; loosen the wire bundle and unplug the wiring terminals. Then lift the electric box to remove it.</p>  |
| <p>10. Remove isolation sheet</p> | <p>Remove the screws fixing the isolation sheet and then remove the isolation sheet.</p>  |
| <p>11. Remove compressor</p> | <p>a Unsolder the welding joint connecting the capillary, valves and the outlet pipe of condenser to remove the capillary. Do not block the capillary with welding slag during unsoldering.</p>  |

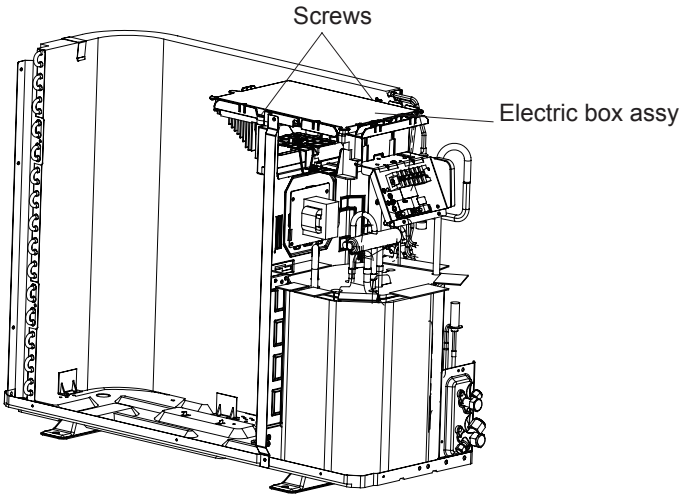
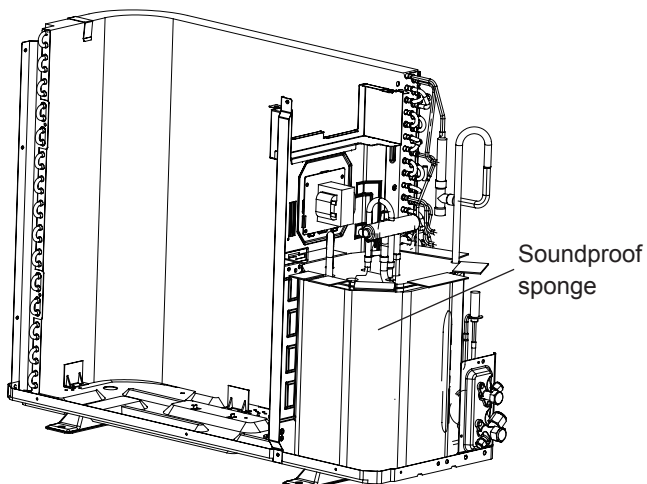
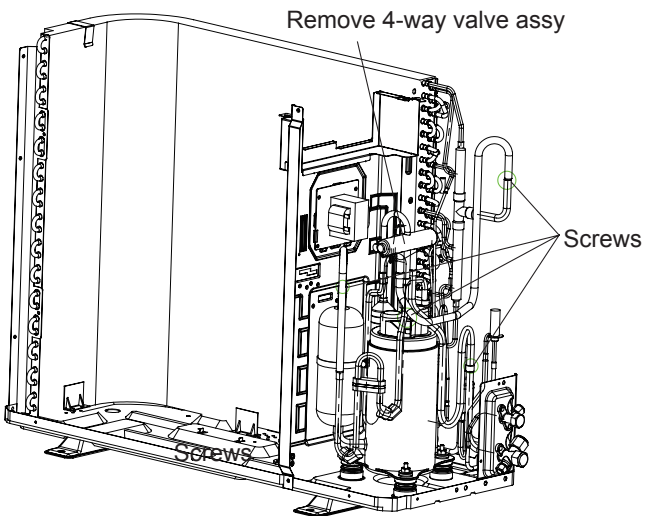
| Step | Procedure | |
|------|---|--|
| b | <p>Remove the 2 screws fixing the gas valve and unsolder the welding joint between the gas valve and the air-return pipe to remove the gas valve. (NOTE: Discharge the refrigerant completely before unsoldering; when unsoldering, wrap the gas valve with a wet cloth completely to avoid damage to the valve caused by high temperature).</p> <p>Remove the 2 screws fixing the liquid valve and unsolder the welding joint connecting the liquid valve to the Y-type pipe to remove the liquid valve.</p> |  |
| c | <p>Unsolder pipes connecting with compressor.</p> |  |
| d | <p>Remove the 3 foot nuts on the compressor and then remove the compressor.</p> |  |

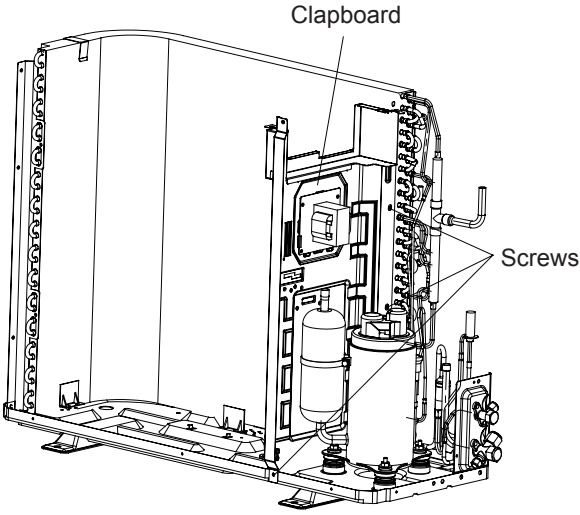
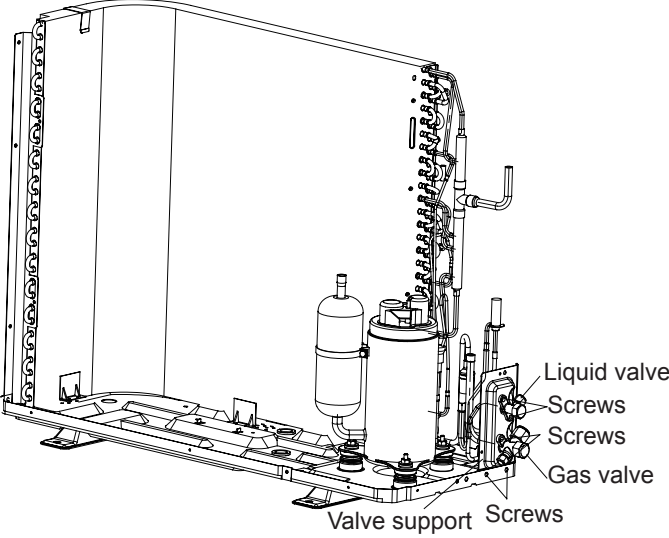
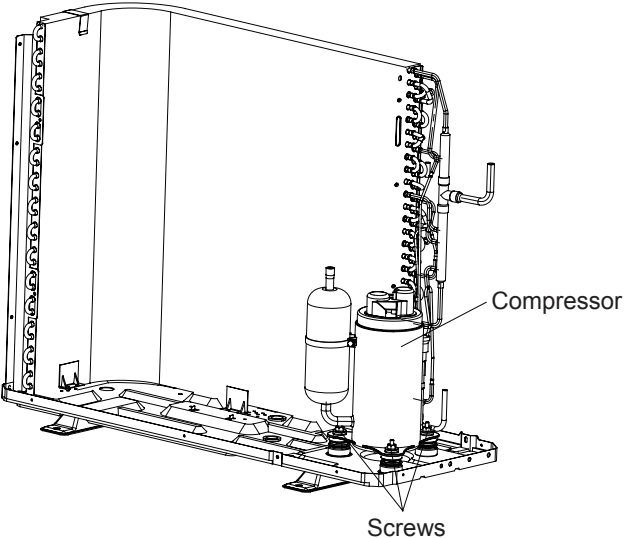
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| Steps | Procedure |
|---|---|
| <p>1. Remove handle and valve cover</p> | <p>Remove the screws used for fixing the handle and valve cover, pull the handle and valve cover up ward to remove them.</p>  |
| <p>2. Remove top panel</p> | <p>Remove the screws fixing top panel and then remove the top panel.</p>  |
| <p>3. Remove front grille</p> | <p>Remove connection screws between the front grille and the front panel. Then remove the front grille.</p>  |

| Steps | Procedure |
|---|---|
| <p>4. Remove front panel</p> <p>Remove the screws connecting the front panel with the chassis and the motor support, and then remove the front panel.</p> |  |
| <p>5. Remove rear grill and right side plate</p> <p>Remove the screws 1 connecting the left side plate and right side plate and then remove rear grill.</p> <p>Remove the screws 2 connecting the right side plate with the chassis, the valve support and the electric box, and then remove the right side plate .</p> |  |

| Steps | Procedure |
|-----------------------------------|---|
| 6. Remove left side plate | <p>Remove the screws connecting the left side plate and the chassis, and then remove the left side plate.</p>  <p>The diagram illustrates the left side plate of the unit. A label 'Left side plate' points to the top edge of the panel. Another label 'Screws' points to the fasteners along the right edge of the panel where it meets the chassis.</p> |
| 7. Remove axial flow blade | <p>Remove the nut fixing the blade and then remove the axial flow blade.</p>  <p>The diagram shows the axial flow blade assembly. A label 'Nut' points to the fastener on the blade's hub. Another label 'Axial flow blade' points to the main curved blade structure.</p> |
| 8. Remove motor and motor support | <p>Remove the screws fixing motor and then remove the motor. Remove the screws fixing motor support and then remove the motor support.</p>  <p>The diagram shows the motor and its support structure. Labels include 'Motor' pointing to the main cylindrical component, 'Screws' pointing to the fasteners on the support frame, and 'Motor support' pointing to the structural frame holding the motor.</p> |

| Steps | Procedure |
|-------------------------------------|---|
| <p>9. Remove electric box assy</p> | <p>Remove the screws fixing electric box assy ; pull out each wiring terminal; lift the electric box assy upwards to remove it.</p> <p>Note: When pulling out the wiring terminal, pay attention to loose the clasp and don't pull it so hard.</p>  |
| <p>10. Remove soundproof sponge</p> | <p>Since the piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully.</p>  |
| <p>11. Remove 4-way valve assy</p> | <p>Unsolder the spot weld of 4-way valve assy, compressor and condenser, and then remove the 4-way valve assy .</p> <p>Note: When unsoldering the spot weld, wrap the 4-way valve with wet cloth completely to avoid damaging the valve due to high temperature.</p>  |

| Steps | Procedure |
|--|---|
| 12. Remove clapboard | <p>Remove the screws fixing clapboard and then remove the clapboard.</p>  |
| 13. Remove gas valve ,liquid valve and valve support | <p>Since the piping ports on the soundproof sponge are torn easily, remove the soundproof sponge carefully.</p>  |
| 14. Remove compressor | <p>Remove 3 foot nuts on compressor, and then remove the compressor.</p> <p>Note: Protect the ports of discharge pipe and suction pipe to avoid foreign objects to enter it.</p>  |

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: $T_f = T_c \times 1.8 + 32$

Set temperature

| Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) |
|-------------------------------------|-----------------|--------------|-------------------------------------|-----------------|--------------|-------------------------------------|-----------------|--------------|
| 61 | 60.8 | 16 | 69/70 | 69.8 | 21 | 78/79 | 78.8 | 26 |
| 62/63 | 62.6 | 17 | 71/72 | 71.6 | 22 | 80/81 | 80.6 | 27 |
| 64/65 | 64.4 | 18 | 73/74 | 73.4 | 23 | 82/83 | 82.4 | 28 |
| 66/67 | 66.2 | 19 | 75/76 | 75.2 | 24 | 84/85 | 84.2 | 29 |
| 68 | 68 | 20 | 77 | 77 | 25 | 86 | 86 | 30 |

Ambient temperature

| Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) | Fahrenheit display temperature (°F) | Fahrenheit (°F) | Celsius (°C) |
|-------------------------------------|-----------------|--------------|-------------------------------------|-----------------|--------------|-------------------------------------|-----------------|--------------|
| 32/33 | 32 | 0 | 55/56 | 55.4 | 13 | 79/80 | 78.8 | 26 |
| 34/35 | 33.8 | 1 | 57/58 | 57.2 | 14 | 81 | 80.6 | 27 |
| 36 | 35.6 | 2 | 59/60 | 59 | 15 | 82/83 | 82.4 | 28 |
| 37/38 | 37.4 | 3 | 61/62 | 60.8 | 16 | 84/85 | 84.2 | 29 |
| 39/40 | 39.2 | 4 | 63 | 62.6 | 17 | 86/87 | 86 | 30 |
| 41/42 | 41 | 5 | 64/65 | 64.4 | 18 | 88/89 | 87.8 | 31 |
| 43/44 | 42.8 | 6 | 66/67 | 66.2 | 19 | 90 | 89.6 | 32 |
| 45 | 44.6 | 7 | 68/69 | 68 | 20 | 91/92 | 91.4 | 33 |
| 46/47 | 46.4 | 8 | 70/71 | 69.8 | 21 | 93/94 | 93.2 | 34 |
| 48/49 | 48.2 | 9 | 72 | 71.6 | 22 | 95/96 | 95 | 35 |
| 50/51 | 50 | 10 | 73/74 | 73.4 | 23 | 97/98 | 96.8 | 36 |
| 52/53 | 51.8 | 11 | 75/76 | 75.2 | 24 | 99 | 98.6 | 37 |
| 54 | 53.6 | 12 | 77/78 | 77 | 25 | | | |

Appendix 2: Configuration of Connection Pipe

- Standard length of connection pipe (More details please refer to the specifications)
- Min length of connection pipe For the unit with standard connection pipe of 5m, there is no limitation for them in length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.
- Max length of connection pipe (More details please refer to the specifications)
- The additional refrigerant oil and refrigerant charging required after prolonging connection pipe
 - After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.
 - The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):
 - Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See Sheet 2.
 - Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

| Additional refrigerant charging amount for R32 | | | | |
|--|----------------|---|-----------------------|-----------------------------|
| Diameter of connection pipe | | Indoor unit throttl | Outdoor unit throttle | |
| Liquid pipe | Gas pipe | Cooling only, cooling and heating (g / m) | Cooling only (g / m) | Cooling and heating (g / m) |
| Φ6 | Φ9.5 or Φ12 | 16 | 12 | 16 |
| Φ6 or Φ9.5 | Φ16 or Φ19 | 40 | 12 | 40 |
| Φ12 | Φ19 or Φ22.2 | 80 | 24 | 96 |
| Φ16 | Φ25.4 or Φ31.8 | 136 | 48 | 96 |
| Φ19 | / | 200 | 200 | 200 |
| Φ22.2 | / | 280 | 280 | 280 |

Note: The additional refrigerant charging amount in Sheet 2 is recommended value, not compulsory.

Appendix 4: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor Units(15K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -19 | 138.1 | 20 | 18.75 | 59 | 3.848 | 98 | 1.071 |
| -18 | 128.6 | 21 | 17.93 | 60 | 3.711 | 99 | 1.039 |
| -17 | 121.6 | 22 | 17.14 | 61 | 3.579 | 100 | 1.009 |
| -16 | 115 | 23 | 16.39 | 62 | 3.454 | 101 | 0.98 |
| -15 | 108.7 | 24 | 15.68 | 63 | 3.333 | 102 | 0.952 |
| -14 | 102.9 | 25 | 15 | 64 | 3.217 | 103 | 0.925 |
| -13 | 97.4 | 26 | 14.36 | 65 | 3.105 | 104 | 0.898 |
| -12 | 92.22 | 27 | 13.74 | 66 | 2.998 | 105 | 0.873 |
| -11 | 87.35 | 28 | 13.16 | 67 | 2.896 | 106 | 0.848 |
| -10 | 82.75 | 29 | 12.6 | 68 | 2.797 | 107 | 0.825 |
| -9 | 78.43 | 30 | 12.07 | 69 | 2.702 | 108 | 0.802 |
| -8 | 74.35 | 31 | 11.57 | 70 | 2.611 | 109 | 0.779 |
| -7 | 70.5 | 32 | 11.09 | 71 | 2.523 | 110 | 0.758 |
| -6 | 66.88 | 33 | 10.63 | 72 | 2.439 | 111 | 0.737 |
| -5 | 63.46 | 34 | 10.2 | 73 | 2.358 | 112 | 0.717 |
| -4 | 60.23 | 35 | 9.779 | 74 | 2.28 | 113 | 0.697 |
| -3 | 57.18 | 36 | 9.382 | 75 | 2.206 | 114 | 0.678 |
| -2 | 54.31 | 37 | 9.003 | 76 | 2.133 | 115 | 0.66 |
| -1 | 51.59 | 38 | 8.642 | 77 | 2.064 | 116 | 0.642 |
| 0 | 49.02 | 39 | 8.297 | 78 | 1.997 | 117 | 0.625 |
| 1 | 46.6 | 40 | 7.967 | 79 | 1.933 | 118 | 0.608 |
| 2 | 44.31 | 41 | 7.653 | 80 | 1.871 | 119 | 0.592 |
| 3 | 42.14 | 42 | 7.352 | 81 | 1.811 | 120 | 0.577 |
| 4 | 40.09 | 43 | 7.065 | 82 | 1.754 | 121 | 0.561 |
| 5 | 38.15 | 44 | 6.791 | 83 | 1.699 | 122 | 0.547 |
| 6 | 36.32 | 45 | 6.529 | 84 | 1.645 | 123 | 0.532 |
| 7 | 34.58 | 46 | 6.278 | 85 | 1.594 | 124 | 0.519 |
| 8 | 32.94 | 47 | 6.038 | 86 | 1.544 | 125 | 0.505 |
| 9 | 31.38 | 48 | 5.809 | 87 | 1.497 | 126 | 0.492 |
| 10 | 29.9 | 49 | 5.589 | 88 | 1.451 | 127 | 0.48 |
| 11 | 28.51 | 50 | 5.379 | 89 | 1.408 | 128 | 0.467 |
| 12 | 27.18 | 51 | 5.197 | 90 | 1.363 | 129 | 0.456 |
| 13 | 25.92 | 52 | 4.986 | 91 | 1.322 | 130 | 0.444 |
| 14 | 24.73 | 53 | 4.802 | 92 | 1.282 | 131 | 0.433 |
| 15 | 23.6 | 54 | 4.625 | 93 | 1.244 | 132 | 0.422 |
| 16 | 22.53 | 55 | 4.456 | 94 | 1.207 | 133 | 0.412 |
| 17 | 21.51 | 56 | 4.294 | 95 | 1.171 | 134 | 0.401 |
| 18 | 20.54 | 57 | 4.139 | 96 | 1.136 | 135 | 0.391 |
| 19 | 19.63 | 58 | 3.99 | 97 | 1.103 | 136 | 0.382 |

Resistance Table of Tube Temperature Sensors for Outdoor and Indoor(20K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -19 | 181.4 | 20 | 25.01 | 59 | 5.13 | 98 | 1.427 |
| -18 | 171.4 | 21 | 23.9 | 60 | 4.948 | 99 | 1.386 |
| -17 | 162.1 | 22 | 22.85 | 61 | 4.773 | 100 | 1.346 |
| -16 | 153.3 | 23 | 21.85 | 62 | 4.605 | 101 | 1.307 |
| -15 | 145 | 24 | 20.9 | 63 | 4.443 | 102 | 1.269 |
| -14 | 137.2 | 25 | 20 | 64 | 4.289 | 103 | 1.233 |
| -13 | 129.9 | 26 | 19.14 | 65 | 4.14 | 104 | 1.198 |
| -12 | 123 | 27 | 18.13 | 66 | 3.998 | 105 | 1.164 |
| -11 | 116.5 | 28 | 17.55 | 67 | 3.861 | 106 | 1.131 |
| -10 | 110.3 | 29 | 16.8 | 68 | 3.729 | 107 | 1.099 |
| -9 | 104.6 | 30 | 16.1 | 69 | 3.603 | 108 | 1.069 |
| -8 | 99.13 | 31 | 15.43 | 70 | 3.481 | 109 | 1.039 |
| -7 | 94 | 32 | 14.79 | 71 | 3.364 | 110 | 1.01 |
| -6 | 89.17 | 33 | 14.18 | 72 | 3.252 | 111 | 0.983 |
| -5 | 84.61 | 34 | 13.59 | 73 | 3.144 | 112 | 0.956 |
| -4 | 80.31 | 35 | 13.04 | 74 | 3.04 | 113 | 0.93 |
| -3 | 76.24 | 36 | 12.51 | 75 | 2.94 | 114 | 0.904 |
| -2 | 72.41 | 37 | 12 | 76 | 2.844 | 115 | 0.88 |
| -1 | 68.79 | 38 | 11.52 | 77 | 2.752 | 116 | 0.856 |
| 0 | 65.37 | 39 | 11.06 | 78 | 2.663 | 117 | 0.833 |
| 1 | 62.13 | 40 | 10.62 | 79 | 2.577 | 118 | 0.811 |
| 2 | 59.08 | 41 | 10.2 | 80 | 2.495 | 119 | 0.77 |
| 3 | 56.19 | 42 | 9.803 | 81 | 2.415 | 120 | 0.769 |
| 4 | 53.46 | 43 | 9.42 | 82 | 2.339 | 121 | 0.746 |
| 5 | 50.87 | 44 | 9.054 | 83 | 2.265 | 122 | 0.729 |
| 6 | 48.42 | 45 | 8.705 | 84 | 2.194 | 123 | 0.71 |
| 7 | 46.11 | 46 | 8.37 | 85 | 2.125 | 124 | 0.692 |
| 8 | 43.92 | 47 | 8.051 | 86 | 2.059 | 125 | 0.674 |
| 9 | 41.84 | 48 | 7.745 | 87 | 1.996 | 126 | 0.658 |
| 10 | 39.87 | 49 | 7.453 | 88 | 1.934 | 127 | 0.64 |
| 11 | 38.01 | 50 | 7.173 | 89 | 1.875 | 128 | 0.623 |
| 12 | 36.24 | 51 | 6.905 | 90 | 1.818 | 129 | 0.607 |
| 13 | 34.57 | 52 | 6.648 | 91 | 1.736 | 130 | 0.592 |
| 14 | 32.98 | 53 | 6.403 | 92 | 1.71 | 131 | 0.577 |
| 15 | 31.47 | 54 | 6.167 | 93 | 1.658 | 132 | 0.563 |
| 16 | 30.04 | 55 | 5.942 | 94 | 1.609 | 133 | 0.549 |
| 17 | 28.68 | 56 | 5.726 | 95 | 1.561 | 134 | 0.535 |
| 18 | 27.39 | 57 | 5.519 | 96 | 1.515 | 135 | 0.521 |
| 19 | 26.17 | 58 | 5.32 | 97 | 1.47 | 136 | 0.509 |

Resistance Table of Discharge Temperature Sensor for Outdoor(50K)

| Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) | Temp(°C) | Resistance(kΩ) |
|----------|----------------|----------|----------------|----------|----------------|----------|----------------|
| -29 | 853.5 | 10 | 98 | 49 | 18.34 | 88 | 4.75 |
| -28 | 799.8 | 11 | 93.42 | 50 | 17.65 | 89 | 4.61 |
| -27 | 750 | 12 | 89.07 | 51 | 16.99 | 90 | 4.47 |
| -26 | 703.8 | 13 | 84.95 | 52 | 16.36 | 91 | 4.33 |
| -25 | 660.8 | 14 | 81.05 | 53 | 15.75 | 92 | 4.20 |
| -24 | 620.8 | 15 | 77.35 | 54 | 15.17 | 93 | 4.08 |
| -23 | 580.6 | 16 | 73.83 | 55 | 14.62 | 94 | 3.96 |
| -22 | 548.9 | 17 | 70.5 | 56 | 14.09 | 95 | 3.84 |
| -21 | 516.6 | 18 | 67.34 | 57 | 13.58 | 96 | 3.73 |
| -20 | 486.5 | 19 | 64.33 | 58 | 13.09 | 97 | 3.62 |
| -19 | 458.3 | 20 | 61.48 | 59 | 12.62 | 98 | 3.51 |
| -18 | 432 | 21 | 58.77 | 60 | 12.17 | 99 | 3.41 |
| -17 | 407.4 | 22 | 56.19 | 61 | 11.74 | 100 | 3.32 |
| -16 | 384.5 | 23 | 53.74 | 62 | 11.32 | 101 | 3.22 |
| -15 | 362.9 | 24 | 51.41 | 63 | 10.93 | 102 | 3.13 |
| -14 | 342.8 | 25 | 49.19 | 64 | 10.54 | 103 | 3.04 |
| -13 | 323.9 | 26 | 47.08 | 65 | 10.18 | 104 | 2.96 |
| -12 | 306.2 | 27 | 45.07 | 66 | 9.83 | 105 | 2.87 |
| -11 | 289.6 | 28 | 43.16 | 67 | 9.49 | 106 | 2.79 |
| -10 | 274 | 29 | 41.34 | 68 | 9.17 | 107 | 2.72 |
| -9 | 259.3 | 30 | 39.61 | 69 | 8.85 | 108 | 2.64 |
| -8 | 245.6 | 31 | 37.96 | 70 | 8.56 | 109 | 2.57 |
| -7 | 232.6 | 32 | 36.38 | 71 | 8.27 | 110 | 2.50 |
| -6 | 220.5 | 33 | 34.88 | 72 | 7.99 | 111 | 2.43 |
| -5 | 209 | 34 | 33.45 | 73 | 7.73 | 112 | 2.37 |
| -4 | 198.3 | 35 | 32.09 | 74 | 7.47 | 113 | 2.30 |
| -3 | 199.1 | 36 | 30.79 | 75 | 7.22 | 114 | 2.24 |
| -2 | 178.5 | 37 | 29.54 | 76 | 7.00 | 115 | 2.18 |
| -1 | 169.5 | 38 | 28.36 | 77 | 6.76 | 116 | 2.12 |
| 0 | 161 | 39 | 27.23 | 78 | 6.54 | 117 | 2.07 |
| 1 | 153 | 40 | 26.15 | 79 | 6.33 | 118 | 2.02 |
| 2 | 145.4 | 41 | 25.11 | 80 | 6.13 | 119 | 1.96 |
| 3 | 138.3 | 42 | 24.13 | 81 | 5.93 | 120 | 1.91 |
| 4 | 131.5 | 43 | 23.19 | 82 | 5.75 | 121 | 1.86 |
| 5 | 125.1 | 44 | 22.29 | 83 | 5.57 | 122 | 1.82 |
| 6 | 119.1 | 45 | 21.43 | 84 | 5.39 | 123 | 1.77 |
| 7 | 113.4 | 46 | 20.6 | 85 | 5.22 | 124 | 1.73 |
| 8 | 108 | 47 | 19.81 | 86 | 5.06 | 125 | 1.68 |
| 9 | 102.8 | 48 | 19.06 | 87 | 4.90 | 126 | 1.64 |

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