

R32

ROYAL CLIMA INVERTER SERIES

PRESTIGIO MULTI FLEXI EU ERP

2022 SERVICE MANUAL

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Safety Precautions

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To prevent personal injury, or property or unit damage, adhere to all precautionary measures and instructions outlined in this manual. Before servicing a unit, refer to this service manual and its relevant sections.

Failure to adhere to all precautionary measures listed in this section may result in personal injury, damage to the unit or to property, or in extreme cases, death.

! **WARNING** indicates a potentially hazardous situation which if not avoided could result in serious personal injury, or death.

! **CAUTION** indicates a potentially hazardous situation which if not avoided could result in minor or moderate personal injury, or unit damage.

1. In case of Accidents or Emergency

! **WARNING**

- If a gas leak is suspected, immediately turn off the gas and ventilate the area if a gas leak is suspected before turning the unit on.
- If strange sounds or smoke is detected from the unit, turn the breaker off and disconnect the power supply cable.
- If the unit comes into contact with liquid, contact an authorized service center.
- If liquid from the batteries makes contact with skin or clothing, immediately rinse or wash the area well with clean water.
- Do not insert hands or other objects into the air inlet or outlet while the unit is plugged in.
- Do not operate the unit with wet hands.
- Do not use a remote controller that has previously been exposed to battery damage or battery leakage.

! **CAUTION**

- Clean and ventilate the unit at regular intervals when operating it near a stove or near similar devices.
- Do not use the unit during severe weather conditions. If possible, remove the product from the window before such occurrences.

2. Pre-Installation and Installation

! **WARNING**

- Use this unit only on a dedicated circuit.
- Damage to the installation area could cause the unit to fall, potentially resulting in personal injury, property damage, or product failure.
- Only qualified personnel should disassemble, install, remove, or repair the unit.
- Only a qualified electrician should perform electrical work. For more information, contact your dealer, seller, or an authorized service center.

! **CAUTION**

- While unpacking be careful of sharp edges around the unit as well as the edges of the fins on the condenser and evaporator.

3. Operation and Maintenance

! **WARNING**

- Do not use defective or under-rated circuit breakers.
- Ensure the unit is properly grounded and that a dedicated circuit and breaker are installed.
- Do not modify or extend the power cable. Ensure the power cable is secure and not damaged during operation.
- Do not unplug the power supply plug during operation.
- Do not store or use flammable materials near the unit.
- Do not open the inlet grill of the unit during operation.
- Do not touch the electrostatic filter if the unit is equipped with one.
- Do not block the inlet or outlet of air flow to the unit.
- Do not use harsh detergents, solvents, or similar items to clean the unit. Use a soft cloth for cleaning.
- Do not touch the metal parts of the unit when removing the air filter as they are very sharp.
- Do not step on or place anything on the unit or outdoor units.
- Do not drink water drained from the unit
- Avoid direct skin contact with water drained from the unit.
- Use a firm stool or step ladder according to manufacturer procedures when cleaning or maintaining the unit.

! **CAUTION**

- Do not install or operate the unit for an extended period of time in areas of high humidity or in an environment directly exposing it to sea wind or salt spray.
- Do not install the unit on a defective or damaged installation stand, or in an unsecure location.
- Ensure the unit is installed at a level position
- Do not install the unit where noise or air discharge created by the outdoor unit will negatively impact the environment or nearby residences.
- Do not expose skin directly to the air discharged by the unit for prolonged periods of time.
- Ensure the unit operates in areas water or other liquids.
- Ensure the drain hose is installed correctly to ensure proper water drainage.
- When lifting or transporting the unit, it is recommended that two or more people are used for this task.
- When the unit is not to be used for an extended time, disconnect the power supply or turn off the breaker.

Specifications

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1. Model Reference

Refer to the following table to determine the specific indoor and outdoor unit model number of your purchased equipment.

Indoor Unit Model	Capacity (Btu/h)	Power Supply
RCI-PX32HN	9k	220-240V~, 50Hz, 1Phase

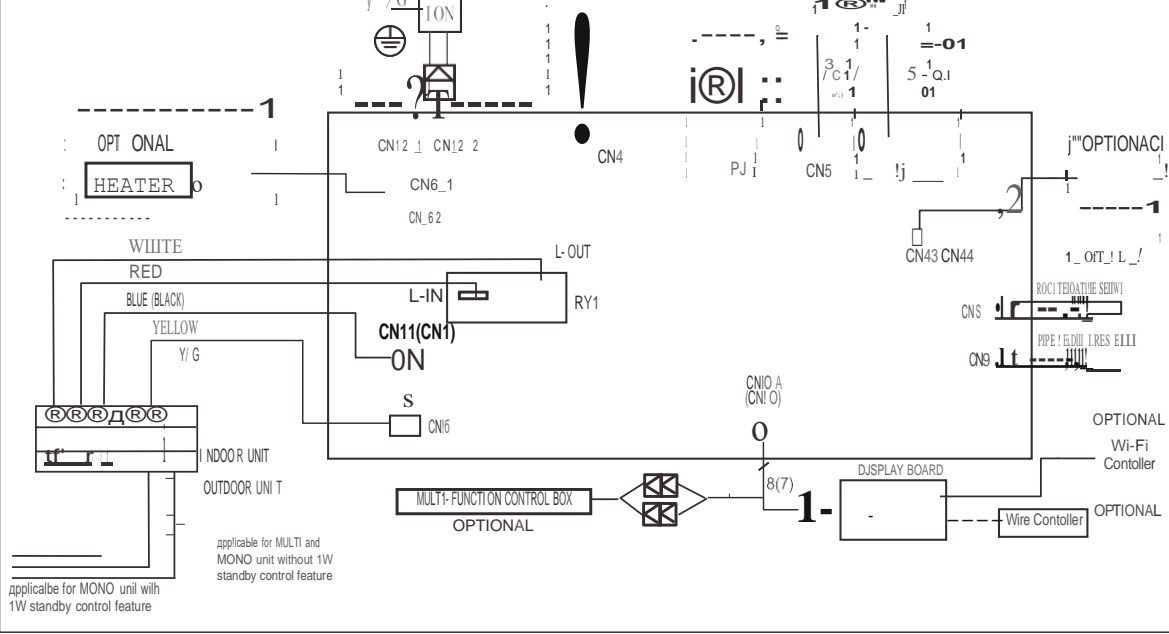
2. Electrical Wiring Diagrams

2.1 Indoor unit

Abbreviation	Paraphrase
Y/G	Yellow-Green Conductor
ION	Positive and Negative Ion Generator
CAP	Capacitor
PLASMA	Electronic Dust Collector
L	LIVE
N	NEUTRAL
Heater	The Electric Heating Belt of Indoor Unit
T1	Indoor Room Temperature
T2	Coil Temperature of Indoor Heat Exchanger

16022000003662

INDOOR WIRING DIAGRAM



Product Features

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1. Operation Modes and Functions

1.1 Abbreviation

Unit element abbreviations

Abbreviation	Element
T1	Indoor room temperature
T2	Coil temperature of evaporator
T3	Coil temperature of condenser
T4	Outdoor ambient temperature
TP	Compressor discharge temperature

1.2 Safety Features

Compressor three-minute delay at restart

Compressor functions are delayed for up to one minute upon the first startup of the unit, and are delayed for up to three minutes upon subsequent unit restarts.

Automatic shutoff based on fan speed

If the indoor fan speed registers below 300RPM for an extended period of time, the unit ceases operation and the corresponding error code is displayed on the indoor unit.

Inverter module protection

The inverter module has an automatic shutoff mechanism based on the unit's current, voltage, and temperature. If automatic shutoff is initiated, the corresponding error code is displayed on the indoor unit and the unit ceases operation.

Indoor fan delayed operation

- When the unit starts, the louver is automatically activated and the indoor fan will operate after a period of 7 seconds.
- If the unit is in heating mode, the indoor fan is regulated by the anti-cold wind function.

Sensor redundancy and automatic shutoff

- If one temperature sensor malfunctions, the air conditioner continues operation and displays the corresponding error code, allowing for emergency use.
- When more than one temperature sensor is malfunctioning, the air conditioner ceases operation.

1.3 Display Function

Unit display functions



Function	Display
Temperature	Set temperature value
Temperature (fan and Drying mode)	Room temperature
Activation of Timer ON, Fresh, Swing, Turbo, or Silent	(3s)
Cancellation of Timer OFF, Fresh, Swing, Turbo, or Silent	(3s)
Defrost	
Warming in heating mode	
Self-clean (available on select units only)	
Heating in room temperature under 8°C	
WiFi control (available on select units only)	
ECO function (available on select units only)	set temperature → gradually illuminates to in one second interval

1.4 Fan Mode

When fan mode is activated:

- The outdoor fan and compressor are stopped.
- Temperature control is disabled and no temperature setting is displayed.
- The indoor fan speed can be set to high, med, low, or auto.
- The louver operations are identical to those in cooling mode.

- Auto fan: In fan-only mode, AC operates the same as auto fan in cooling mode with the temperature set at 24°C.

1.5 Cooling Mode

1.5.1 Indoor Fan Control

- In cooling mode, the indoor fan operates continuously. The fan speed can be set to high, medium, low, or auto.
- If the compressor ceases operations when the configured temperature is reached, the indoor fan motor operates at the minimum or configured speed.

1.5.2 Outdoor Fan Control

- For different outdoor units, the fan speeds are different. the fan speed is controlled by T4.

1.5.3 Evaporator Temperature Protection

When evaporator temperature drops below a configured value, the compressor ceases operation.

1.6 Heating Mode (For heat pump models)


1.6.1 Indoor Fan Control:

- When the compressor is on, the fan speed can be set to high, medium, low, or auto.. And the anti-cold wind function has the priority.
- The indoor fan speed will adjust according to the value of T1-T5.

1.6.2 Outdoor Fan Control:

- For different outdoor units, the fan speeds are different. the fan speed is controlled by T4.

1.6.3 Defrosting mode

- The unit enters defrosting mode according to the value of temperature of T3 and the value range of temperature change of T3 as well as the compressor running time.
- In defrosting mode, the compressor continues to run, the indoor and outdoor motor will cease operation, the defrost light of the indoor unit will turn on, and the “” symbol is displayed.
- If any one of the following conditions is satisfied, defrosting ends and the machine switches to normal heating mode:
 - T3 rises above TCDE1°C.
 - T3 maintained above TCDE2°C for 80 seconds.
 - Unit runs for 15 minutes consecutively in defrosting mode.

1.6.4 Evaporator Temperature Protection

- When T2> 65°C, the compressor frequency will cease operation until T2< 48°C.

1.7 Auto-mode

- This mode can be selected with the remote controller.
- In auto mode, the machine selects cooling, heating, or fan-only mode on the basis of ΔT ($\Delta T = T1 - T_s$).

ΔT	Running mode
$\Delta T > 2^\circ\text{C}$	Cooling
$-2^\circ\text{C} \leq \Delta T \leq 2^\circ\text{C}$	Fan-only
$\Delta T < -2^\circ\text{C}$	Heating*

Heating*: In auto mode, cooling only models run the fan

- The louver operates same as in relevant mode.
- If the machine switches mode between heating and cooling, the compressor will keep stopping for 15 minutes and then choose mode according to T1-Ts.
- If the setting temperature is modified, the machine will choose running function again.

1.8 Drying mode

- Indoor fan speed is fixed at breeze and can't be changed. The louver angle is the same as in cooling mode.
- All protections are active and the same as that in cooling mode.

1.9 Forced operation function

- Forced cooling mode:

The compressor and outdoor fan continue to run and the indoor fan runs at low speed. After running for 30 minutes, the AC will switch to auto mode with a preset temperature of 24°C.

- Forced auto mode:

Forced auto mode operates the same as normal auto mode with a preset temperature of 24°C.

- When there's indoor unit running in forced cooling, it is the master forced cooling unit. Other indoor units will run at forced cooling mode too and they will be the slave forced cooling units. The slave forced cooling units can not quit forced cooling mode until the master forced cooling unit quit, and turn to cooling mode at low speed with 24°C setting temperature.
- The slave forced cooling units will not be controlled by other signals.

1.10 Timer function

- Timing range is 24 hours.
 - Timer on. The machine will turn on automatically when reaching the setting time.
 - Timer off. The machine will turn off automatically when reaching the setting time.
 - Timer on/off. The machine will turn on automatically when reaching the setting “on” time, and then turn off automatically when reaching the setting “off” time.
 - Timer off/on. The machine will turn off automatically when reaching the setting “off” time, and then turn on automatically when reaching the setting “on” time.
- The timer function will not change the AC current operation mode. Suppose AC is off now, it will not start up firstly after setting the “timer off” function. And when reaching the setting time, the timer LED will be off and the AC running mode has not been changed.
- The setting time is relative time.
- The AC will quit the timer function when it has malfunction.

1.11 Sleep function

- The sleep function is available in cooling, heating, or auto mode.
- The operational process for sleep mode is as follows:
 - When cooling, the temperature rises 1°C (to not higher than 30°C) every hour. After 2 hours, the temperature stops rising and the indoor fan is fixed at low speed.
 - When heating, the temperature decreases 1°C (to not lower than 17°C) every hour. After 2 hours, the temperature stops decreasing and the indoor fan is fixed at low speed. Anti-cold wind function takes priority.
- The operating time for sleep mode is 7 hours, after which, the unit exits this mode and switches off.
- The timer setting is available in this mode.

1.12 Auto-Restart function

- The indoor unit has an auto-restart module that allows the unit to restart automatically. The module automatically stores the current settings (not including the swing setting) and, in the case of a sudden power failure, will restore those setting automatically within 3 minutes after power returns.
- If the unit was in forced cooling mode, it will run in

this mode for 30 minutes and turn to auto mode with temperature set to 24°C.

- If there is a power failure while the unit is running, the compressor starts 3 minutes after the unit restarts. If the unit was already off before the power failure, the compressor starts 1 minute after the unit restarts.

1.13 Louver Position Memory Function

When starting the unit again after shutting down, its louver will restore to the angle originally set by the user, but the precondition is that the angle must be within the allowable range, if it exceeds, it will memorize the maximum angle of the louver. During operation, if the power fails or the end user shuts down the unit in the turbo mode, the louver will restore to the default angle.

1.14 8°C Heating(Optional)

In heating mode, the temperature can be set to as low as 8°C, preventing the indoor area from freezing if unoccupied during severe cold weather.

1.15 Follow me(Optional)

- If you press “Follow Me” on the remote, the indoor unit will beep. This indicates the follow me function is active.
- Once active, the remote control will send a signal every 3 minutes, with no beeps. The unit automatically sets the temperature according to the measurements from the remote control.
- The unit will only change modes if the information from the remote control makes it necessary, not from the unit’s temperature setting.
- If the unit does not receive a signal for 7 minutes or you press “Follow Me,” the function turns off. The unit regulates temperature based on its own sensor and settings.

1.16 Mode conflict

- The indoor units can not work cooling mode and heating at same time.
- Heating mode has a priority.

(1) Definition

	Cooling mode	Heating Mode	Fan	Off
Cooling mode	No	Yes	No	No
Heating Mode	Yes	No	Yes	No
Fan	No	Yes	No	No
Off	No	No	No	No

No: No mode conflict;

Yes: Mode conflict

(2) Unit action

- In case of one Indoor unit working in cooling mode or fan mode, and another indoor unit is set to heating mode, the indoor unit working in cooling mode or fan mode will change to off. The outdoor unit will change to heating mode after compressor stop 3 minutes. .
- In case of one Indoor unit working in heating mode, and another indoor unit is set to cooling mode or fan mode, the indoor unit setting to cooling mode or fan mode will change to stand by. The outdoor unit will continue working in heating mode.
- If heating mode stops (not including the indoor unit in heating mode reaching the set temperature), 3 minutes after the outdoor unit restarts and works in cooling mode or fan-only mode.

Disassembly

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1. Disassembly

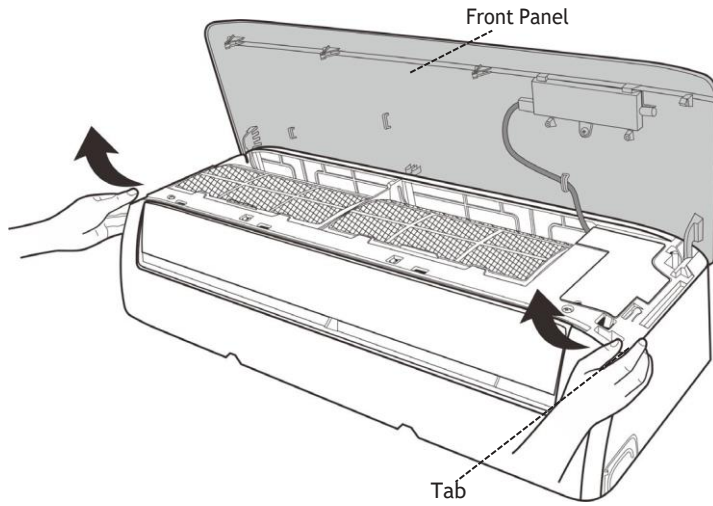
1.1 Indoor unit

1. Front Panel

Procedure

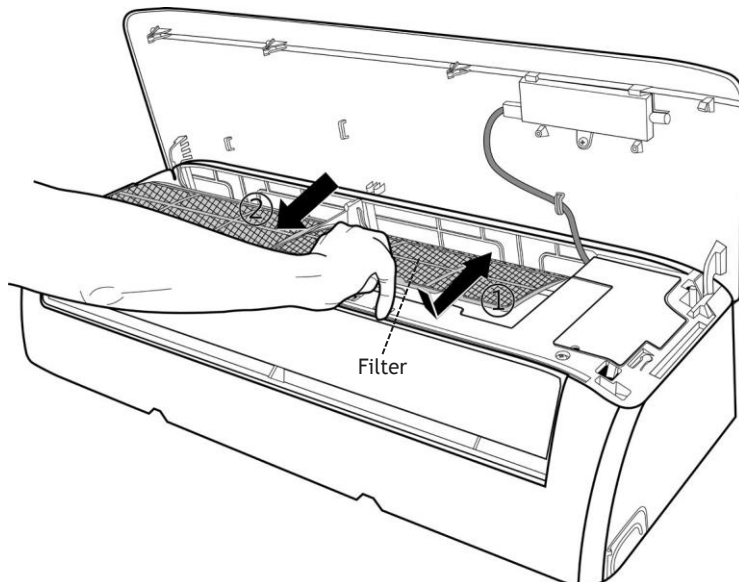
- 1) Hold the front panel by the tabs on the both sides and lift it (see CJ_AB_001).

Illustration



CJ_AB_001

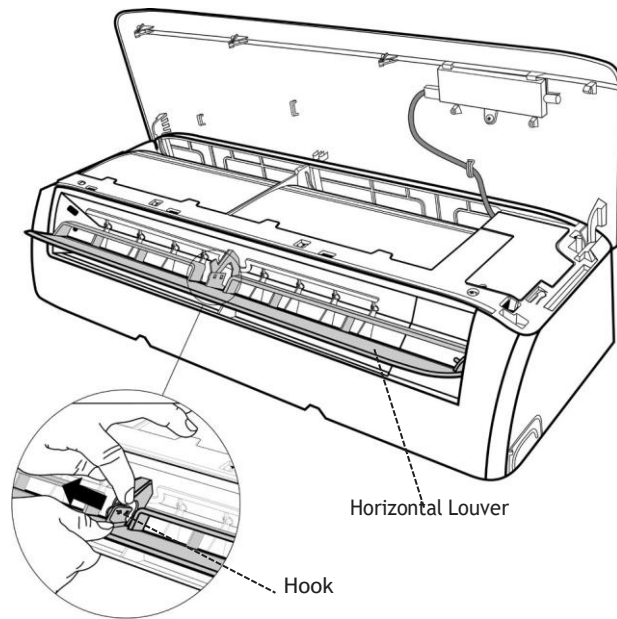
- 2) Push up the bottom of an air filter (step 1), and then pull it out downwards (step 2) (see CJ_AB_002).



CJ_AB_002

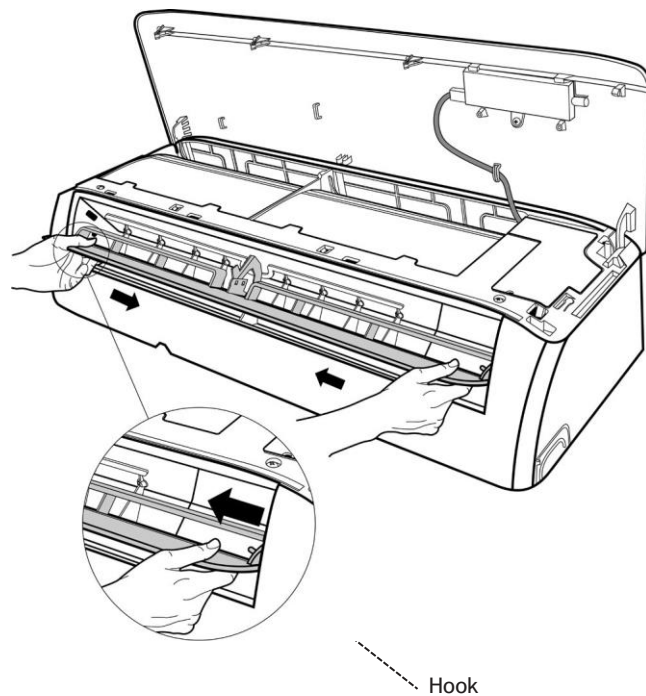
Note: This section is for reference only. Actual unit appearance may vary.

- 1) Open the horizontal louver and push the hook towards left to open it (see CJ_AB_003).



CJ_AB_003

- 2) Bend the horizontal louver lightly by both hands to loosen the hooks, then remove the horizontal louver (see CJ_AB_004).



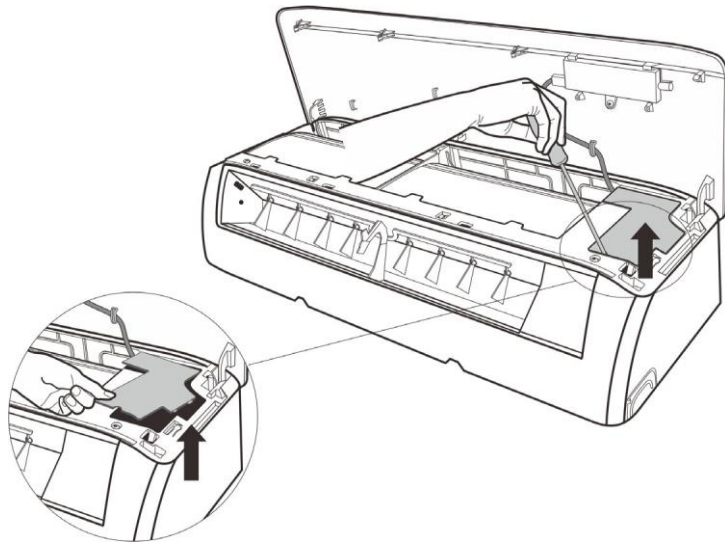
CJ_AB_004

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

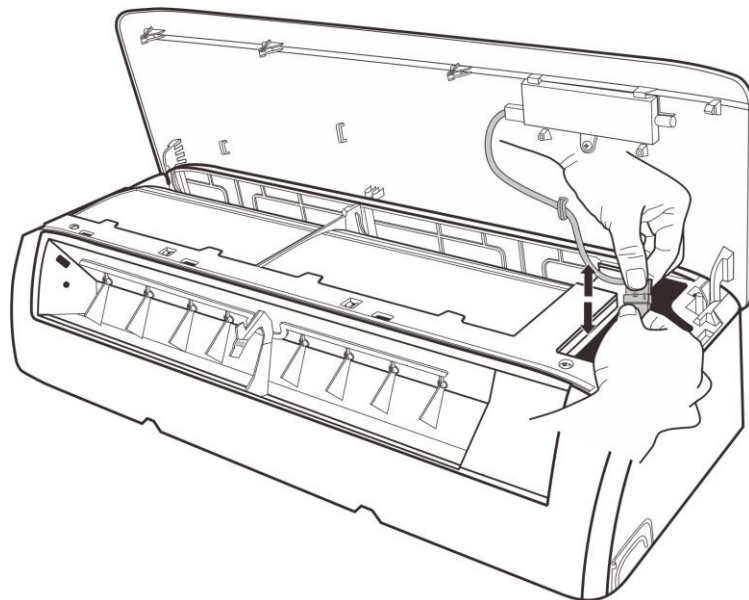
Illustration

- 1) Pry the electrical cover by a screw driver, and rotate it towards left, then remove it. (see CJ_AB_005).



CJ_AB_005

- 2) Disconnect the connector for display board. (see CJ_AB_006) .



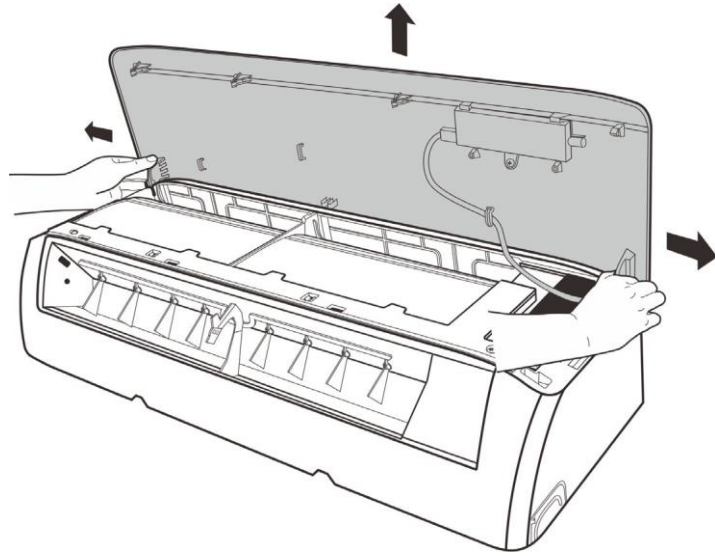
CJ_AB_006

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

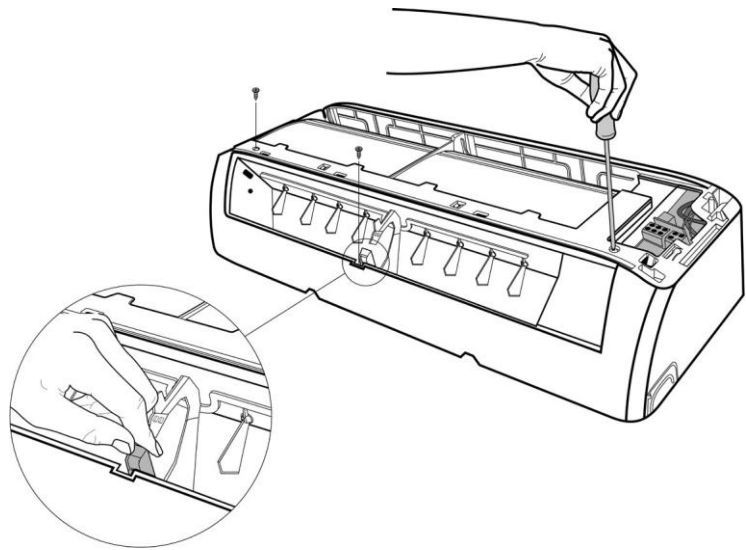
- 1) Slid the front panel side to side to release each axis (see CJ_AB_007)

Illustration



CJ_AB_007

- 2) Open the screw cap and then remove the 3 screws (see CJ_AB_008).



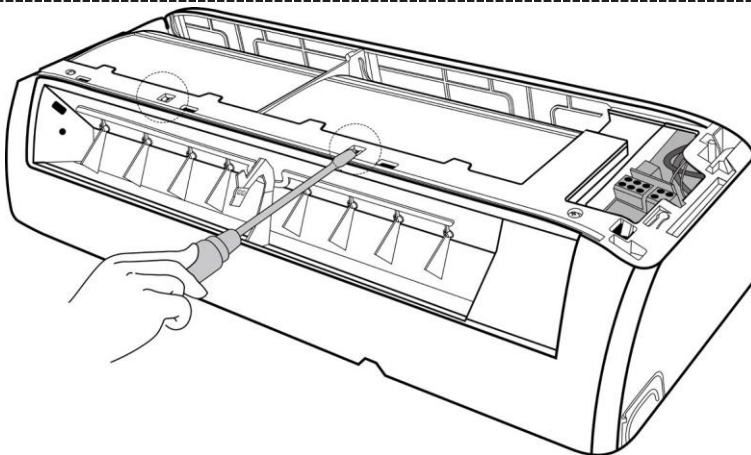
CJ_AB_008

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

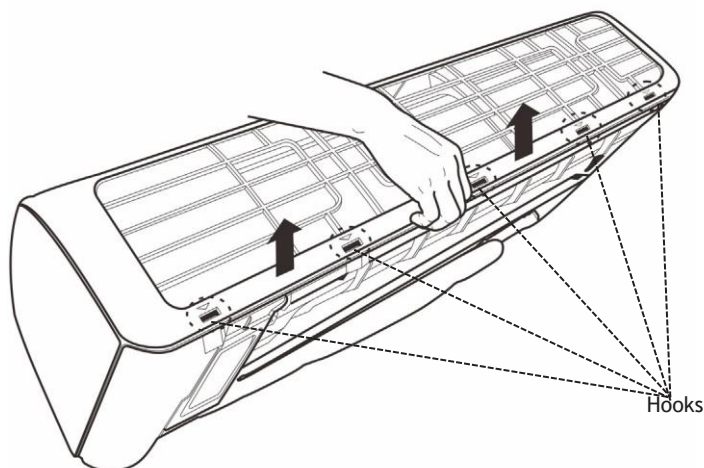
Illustration

- 1) Release the hooks with hands. (see CJ_AB_009)



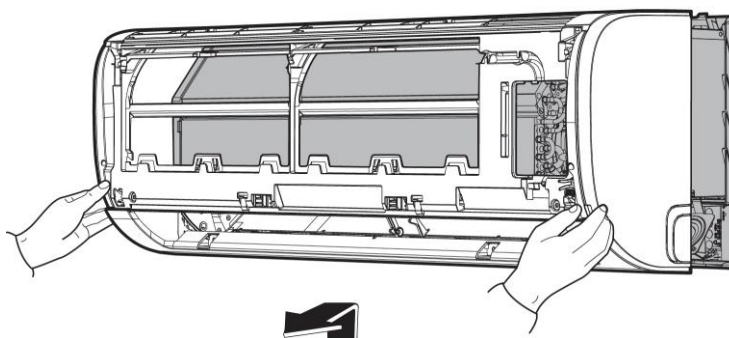
CJ_AB_009

- 2) Release the 5 hooks in the back (see CJ_AB_010).



CJ_AB_010

- 3) Pull out the panel frame while pushing the hook through a clearance between the panel frame and the heat exchanger. (see CJ_AB_011)



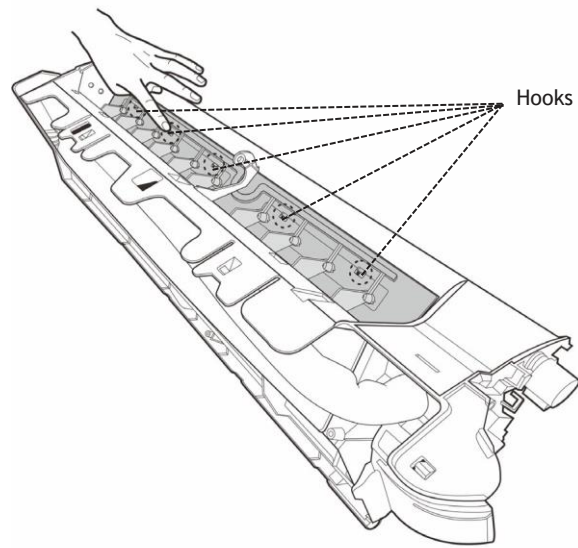
CJ_AB_011

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

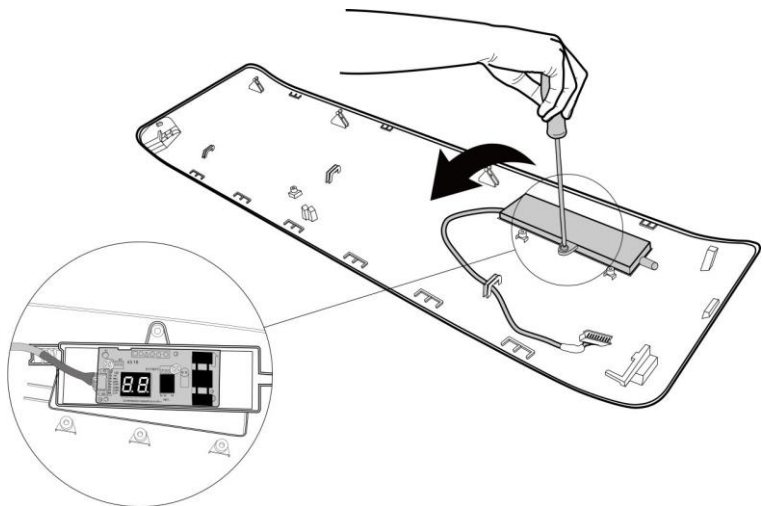
- 1) Release the 5 hooks of the vertical blades, then pull the vertical blades rightward and remove it (see CJ_AB_012).

Illustration



CJ_AB_012

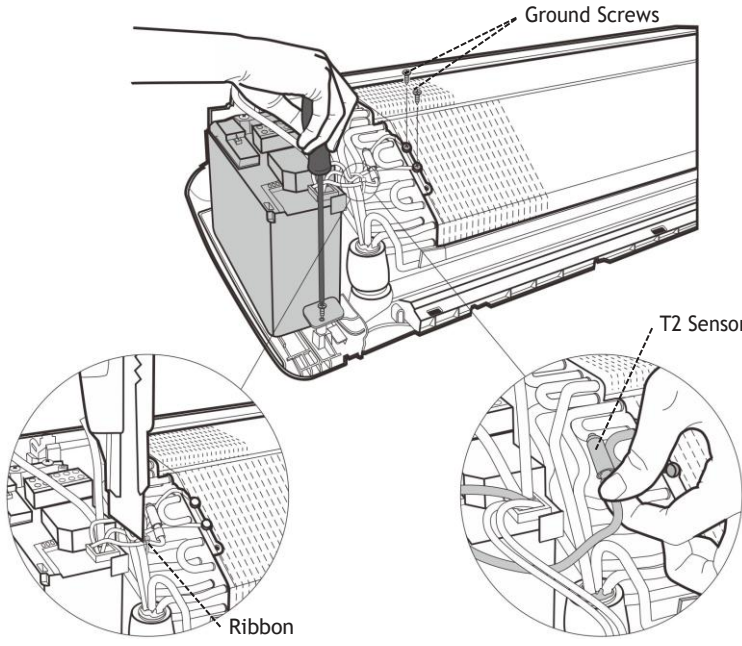
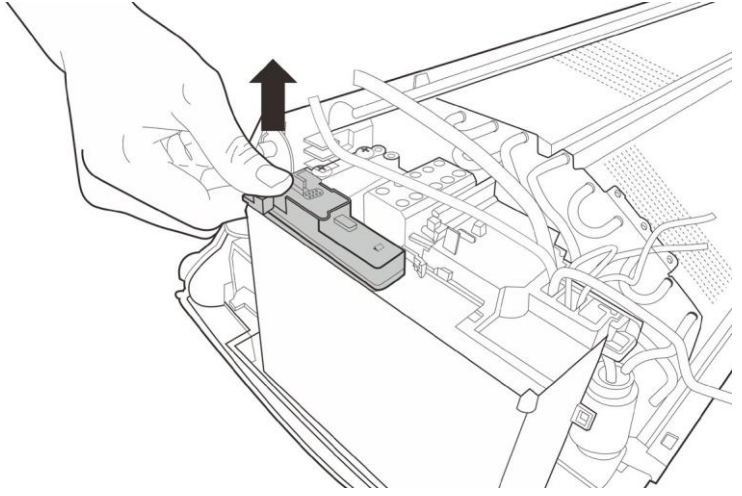
- 2) Remove 1 screw of the display board. (see CJ_AB_013).
- 3) Rotate the display board in the direction shown in the right picture. (see CJ_AB_013).



CJ_AB_013

Note: This section is for reference only. Actual unit appearance may vary.

Note: Remove the front panel (refer to 1. Front panel) before disassembling electrical parts.

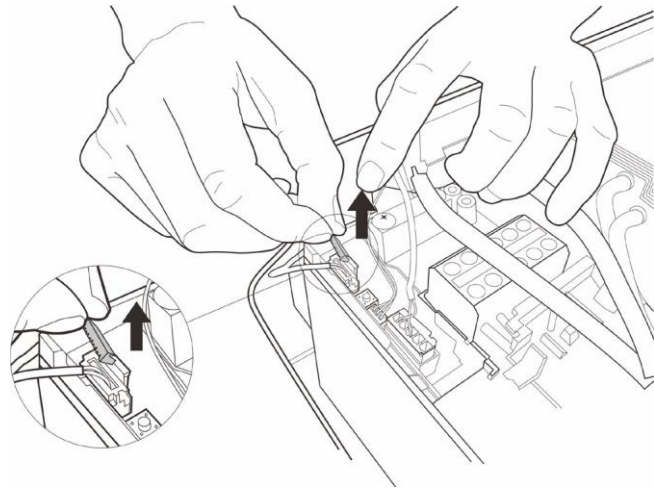
Procedure	Illustration
<ol style="list-style-type: none">1) Cut the ribbon by a shear, then pull out the coil temperature sensor (T2) (see CJ_AB_014).2) Remove one fixing screw of the electronic control box and two screws used for the ground connection (see CJ_AB_014).	 <p>CJ_AB_014</p>
<ol style="list-style-type: none">3) An upward force is maintained until the cover of electronic control box is removed (see CJ_AB_015).	 <p>CJ_AB_015</p>

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

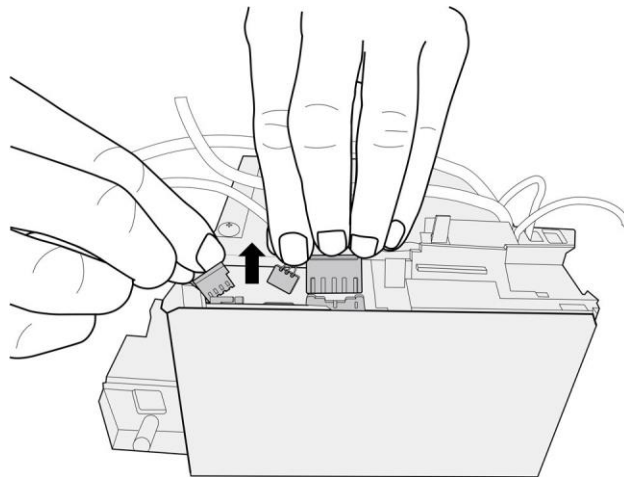
Illustration

- 1) Remove the fixed devices of the connectors (see CJ_AB_016).



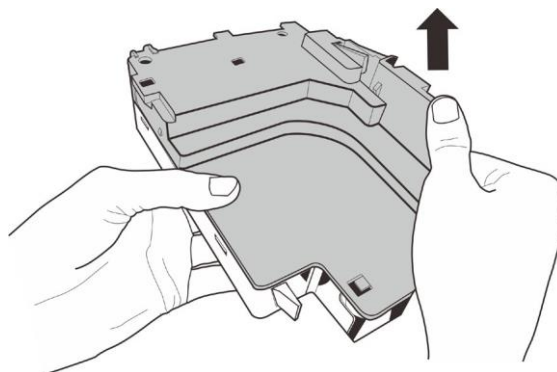
CJ_AB_016

- 2) Disconnect the connectors of fan motor, the step motor and the T2 sensor (see CJ_AB_017).



CJ_AB_017

- 3) Open the left side plate of electronic control box (see CJ_AB_018).



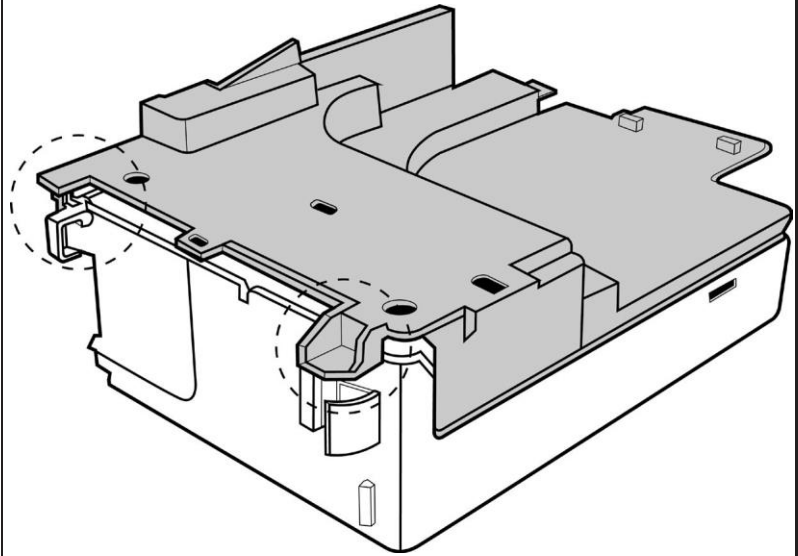
CJ_AB_018

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

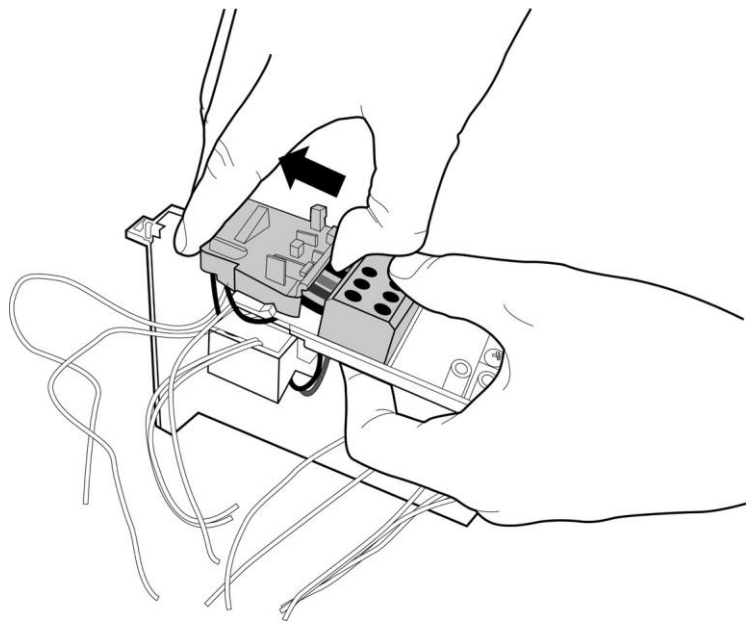
- 1) Open the two clips on the front of the electric box. (see CJ_AB_019)

Illustration



CJ_AB_019

- 2) Open the upper cover plate of electronic control box (see CJ_AB_020).



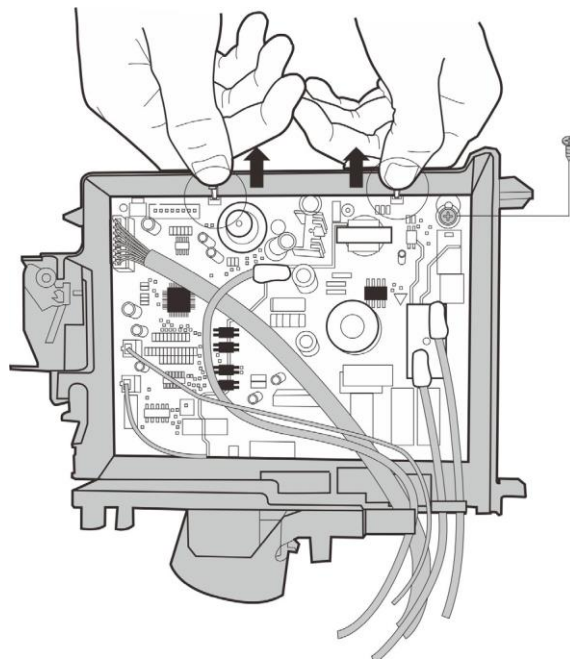
CJ_AB_020

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

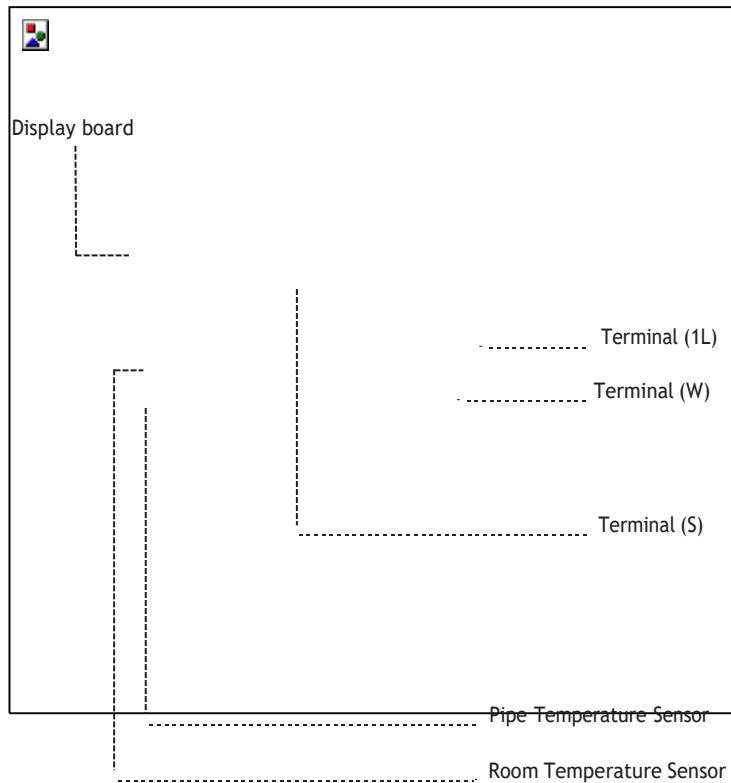
Illustration

- 1) Remove 1 screw and open the 2 clips along the direction indicated in right image (see CJ_AB_021).



CJ_AB_021

- 2) Pull out the electrical main board along the direction indicated in right image to remove it (see CJ_AB_022).

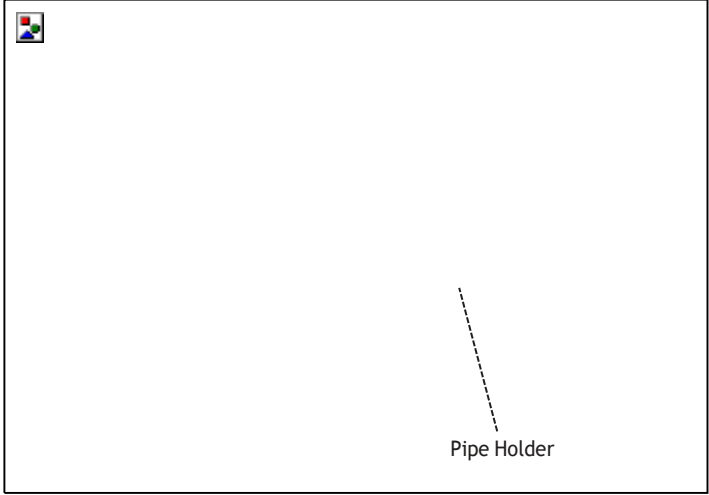
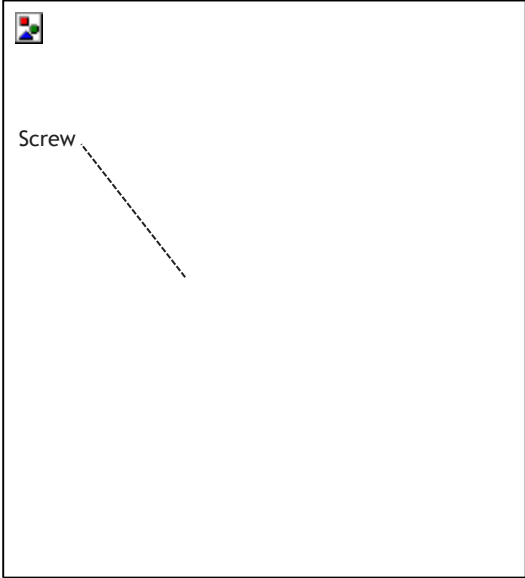


CJ_AB_022

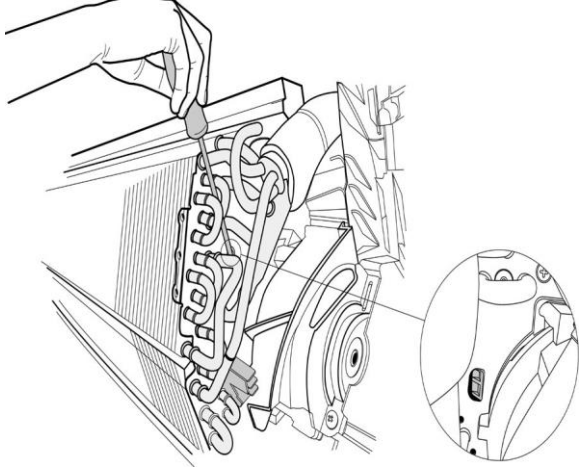
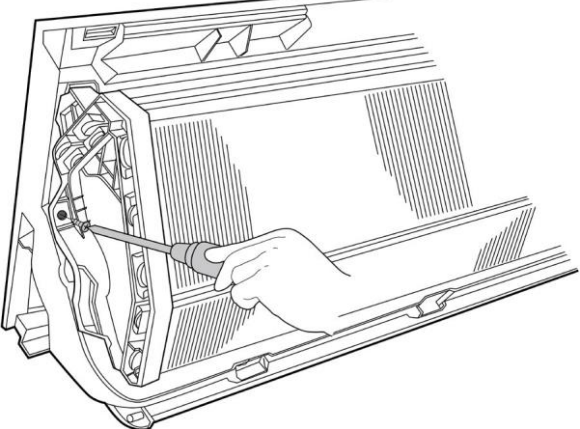
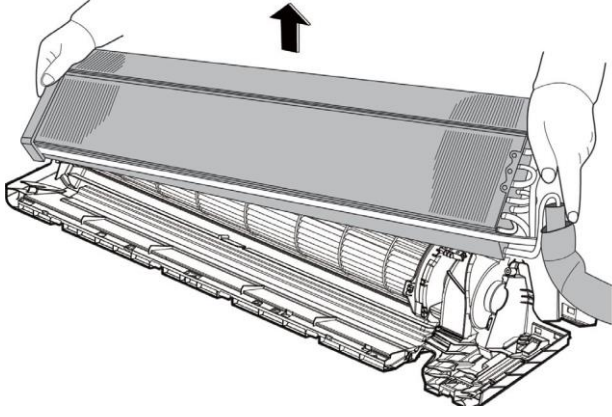
Note: This section is for reference only. Actual unit appearance may vary.

2. Evaporator

Note: Remove the front panel and electrical parts (refer to 1. Front panel and 2. Electrical parts) before disassembling evaporator.

Procedure	Illustration
1) Disassemble the pipe holder located at the rear of the unit (see CJ_AB_023).	 <p>The illustration shows a rectangular box with a small icon in the top-left corner. A dashed line points from the text 'Pipe Holder' to a specific part of the box.</p> <p style="text-align: center;">CJ_AB_023</p>
2) Remove the 1 screws on the evaporator located at the fixed plate (see CJ_AB_024).	 <p>The illustration shows a rectangular box with a small icon in the top-left corner. A dashed line points from the text 'Screw' to a specific part of the box.</p> <p style="text-align: center;">CJ_AB_024</p>

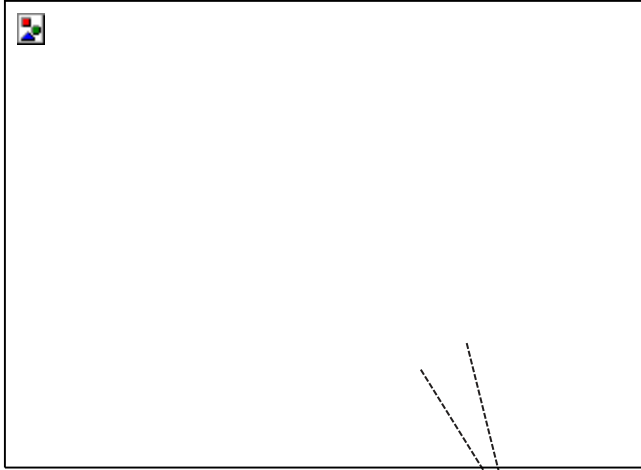
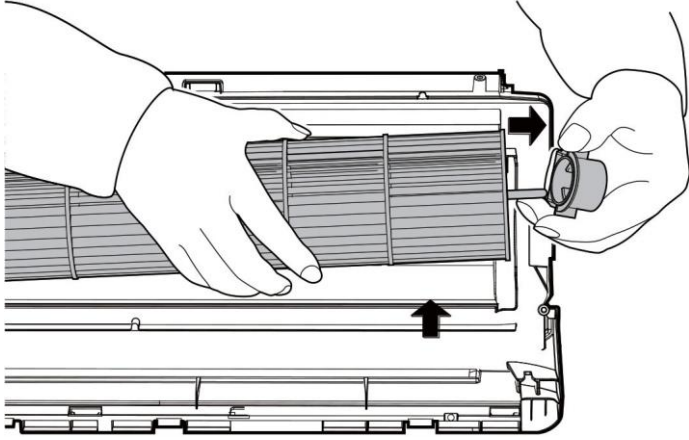
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
<p>1) Release the hook on the evaporator (see CJ_AB_025).</p>	 <p>CJ_AB_025</p>
<p>2) Remove the one screw on the evaporator located at the fixed plate (see CJ_AB_026).</p>	 <p>CJ_AB_026</p>
<p>3) Pull out the evaporator (see CJ_AB_027).</p>	 <p>CJ_AB_027</p>

Note: This section is for reference only. Actual unit appearance may vary.

3. Fan motor and fan

Note: Remove the front panel, electrical parts and evaporator (refer to 1. Front panel, 2. Electrical parts, and 3. Evaporator). before disassembling fan motor and fan.

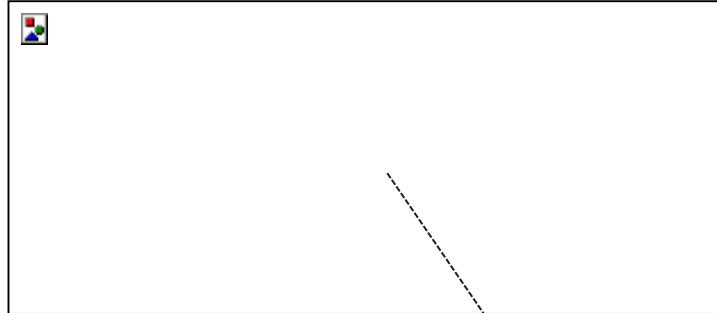
Procedure	Illustration
1) Remove the two screws and remove the fixing board of the fan motor (see CJ_AB_028).	 <p data-bbox="1193 992 1267 1016">Screws</p> <p data-bbox="967 1037 1118 1066">CJ_AB_028</p>
2) Remove the bearing sleeve (see CJ_AB_029).	 <p data-bbox="967 1738 1118 1767">CJ_AB_029</p>

Note: This section is for reference only. Actual unit appearance may vary.

Procedure

- 1) Remove the fixing screw (see CJ_AB_030).
- 2) Pull out the fan motor and fan assembly from the side.

Illustration



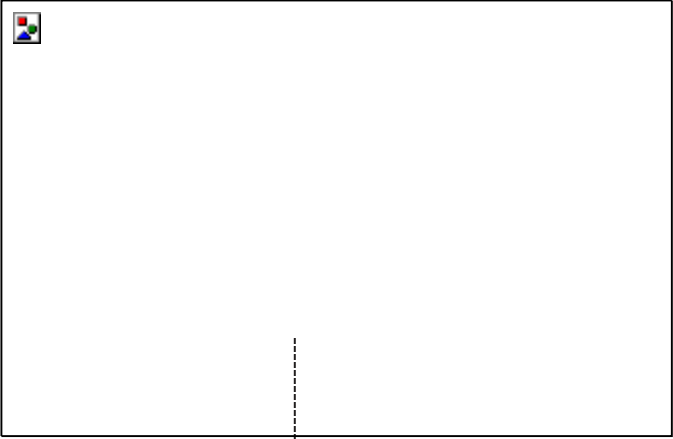
CJ_AB_030

Fixing Screw

Note: This section is for reference only. Actual unit appearance may vary.

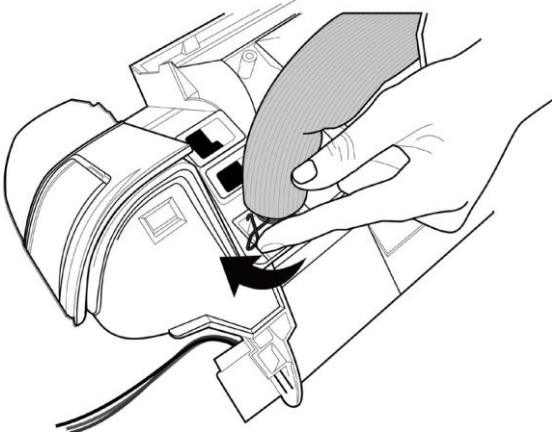
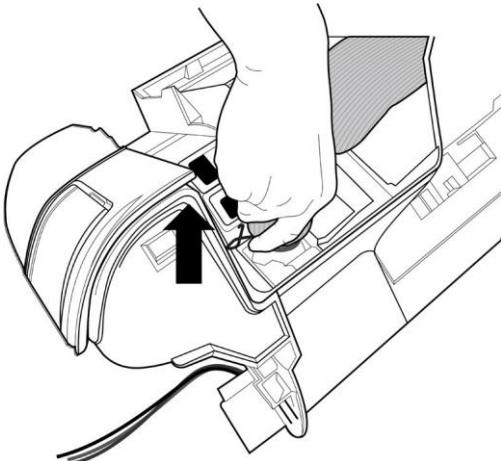
4. Step motor

Note: Remove the front panel and electrical parts (refer to 1. Front panel, 2. Electrical parts) before disassembling step motor.

Procedure	Illustration
1) Remove the two screws, then remove the stepping motor (see CJ_AB_031).	 <p data-bbox="938 898 1082 927">Stepping Motor</p> <p data-bbox="967 994 1114 1025">CJ_AB_031</p>

Note: This section is for reference only. Actual unit appearance may vary.

5. Drain Hose

Procedure	Illustration
1) Rotate the fixed wire clockwise indicated in right image (see CJ_AB_032).	 <p data-bbox="965 913 1117 952">CJ_AB_032</p>
2) Pull up the drain hose to remove it (see CJ_AB_033).	 <p data-bbox="965 1473 1117 1512">CJ_AB_033</p>

Note: This section is for reference only. Actual unit appearance may vary.