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MISSION2 3D INVERTER MULTI SERIES

2017 SERVICE MANUAL

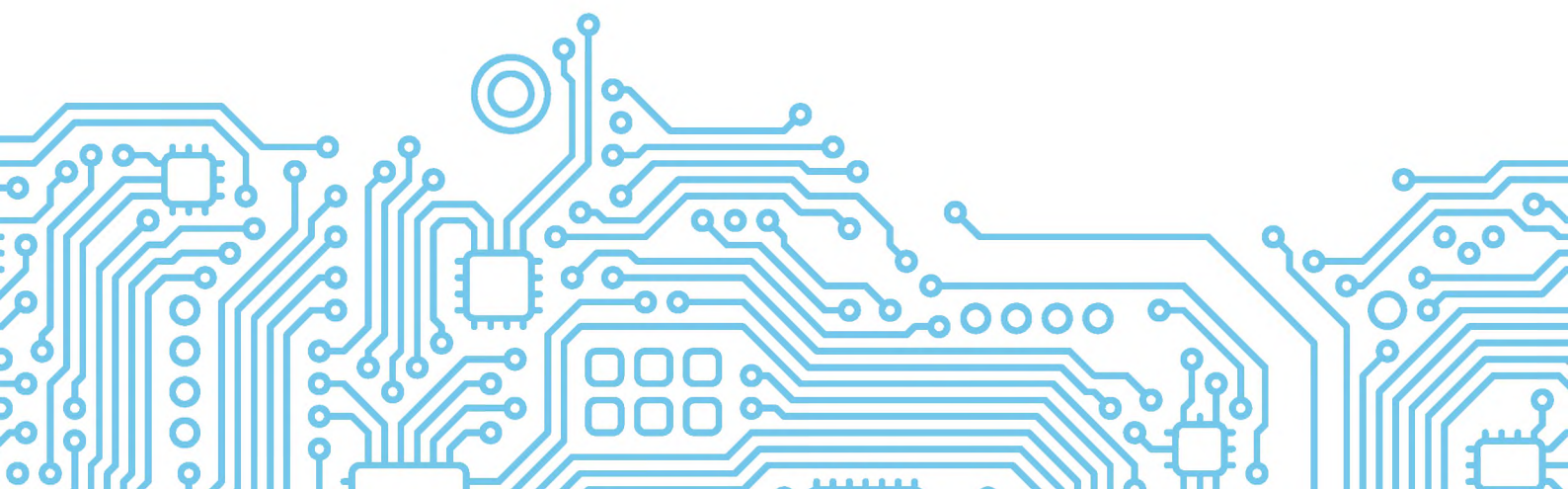
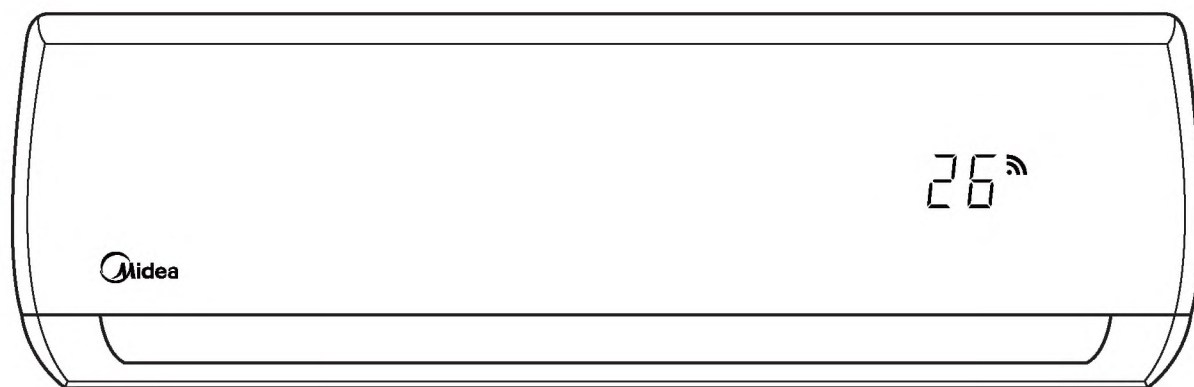


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Caution: Risk of fire/flammable material

Safety Precautions

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1. Precautions

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.

1.1 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.

1.2 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 Midea 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.

1.3 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.

2. Information servicing

2.1 Checks to the area

- Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised.
- For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.

2.2 Work procedure

- Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.

2.3 Work procedure

- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out.
- Work in confined spaces shall be avoided.
- The area around the work space shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

2.4 Checking for presence of refrigerant

- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.
- Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. no sparking, adequately sealed or intrinsically safe.

2.5 Presence of fire extinguisher

- If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand.
- Have a dry powder or CO₂ fire extinguisher adjacent to the charging area.

2.6 No ignition sources

- No person carrying out work in relation to a refrigeration system which involves exposing any pipe work that contains or has contained flammable refrigerant shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space.
- Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable

hazards or ignition risks.

- NO SMOKING signs shall be displayed.

2.7 Ventilated area

- Ensure that the area is in the open or that it is adequately ventilated before breaking into the
- system or conducting any hot work. A degree of ventilation shall continue during the period
- that the work is carried out. The ventilation should safely disperse any released refrigerant
- and preferably expel it externally into the atmosphere.

2.8 Checks to the refrigeration equipment

- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using flammable refrigerants:
 - the charge size is in accordance with the room size within which the refrigerant containing parts are installed;
 - the ventilation machinery and outlets are operating adequately and are not obstructed;
 - if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant; marking to the equipment continues to be visible and legible.
 - markings and signs that are illegible shall be corrected;
 - refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

2.9 Checks to electrical devices

- Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised. Initial safety checks shall include:

- that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- that there no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

2.10 Repairs to sealed components

- During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.
- Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.
 - Ensure that apparatus is mounted securely.
 - Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

NOTE: The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

2.11 Repair to intrinsically safe components

- Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use. Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.
- Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

2.12 Cabling

- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check

shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

2.13 Detection of flammable refrigerants

- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

2.14 Leak detection methods

- The following leak detection methods are deemed acceptable for systems containing flammable refrigerants. Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
 - If a leak is suspected, all naked flames shall be removed or extinguished.
 - If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

2.15 Removal and evacuation

- When breaking into the refrigerant circuit to make repairs or for any other purpose, conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration.
- The following procedure shall be adhered to:
 - remove refrigerant;
 - purge the circuit with inert gas;
 - evacuate;
 - purge again with inert gas;
 - open the circuit by cutting or brazing.

- The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be flushed with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task. Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.
- Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

2.16 Charging procedures

- In addition to conventional charging procedures, the following requirements shall be followed:
 - Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
 - Cylinders shall be kept upright.
 - Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
 - Label the system when charging is complete (if not already).
 - Extreme care shall be taken not to overfill the refrigeration system.
 - Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

2.17 Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken.

In case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

- Become familiar with the equipment and its operation.
- Isolate system electrically.

- Before attempting the procedure ensure that:
 - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
 - all personal protective equipment is available and being used correctly;
 - the recovery process is supervised at all times by a competent person;
 - recovery equipment and cylinders conform to the appropriate standards.
- Pump down refrigerant system, if possible.
- If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- Make sure that cylinder is situated on the scales before recovery takes place.
- Start the recovery machine and operate in accordance with manufacturer's instructions.
- Do not overfill cylinders. (No more than 80 % volume liquid charge).
- Do not exceed the maximum working pressure of the cylinder, even temporarily.
- When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

2.18 Labelling

- Equipment shall be labelled stating that it has been de-commissioned and emptied of
- refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

2.19 Recovery

- When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.
- When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct numbers of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order.

- Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.
- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order.
- Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.
- The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.
- If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

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.

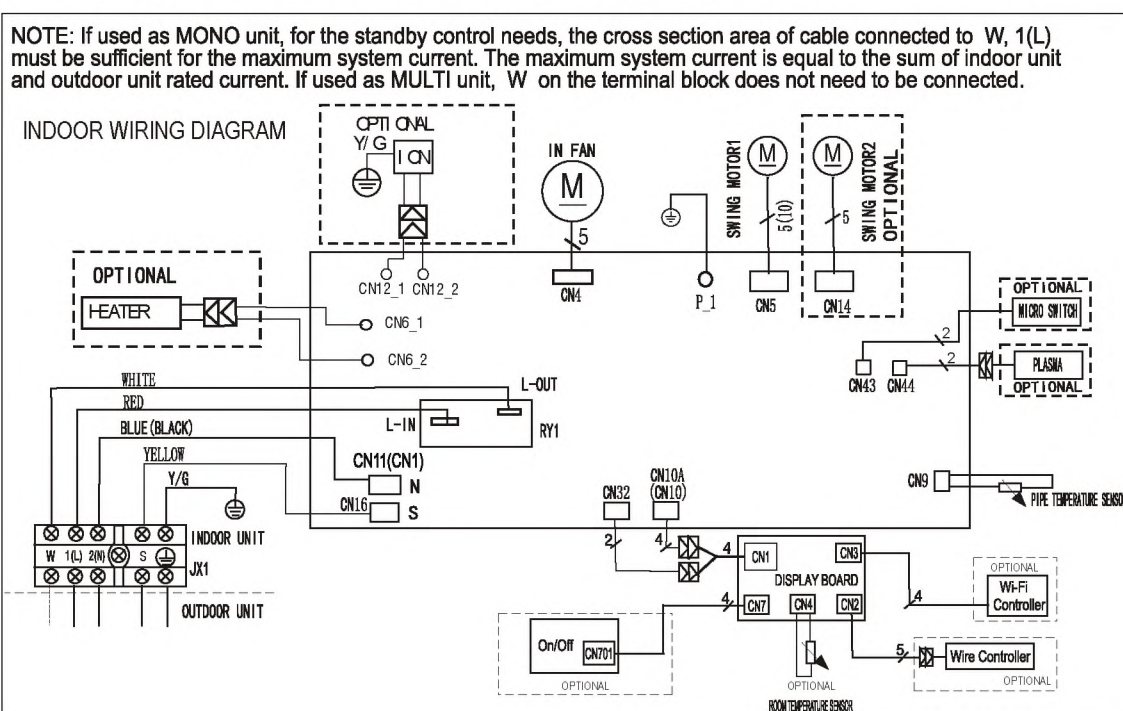
Indoor Unit Model	Capacity (Btu)	Power Supply
MB-09N8D0H-I	9k	220-240V~, 50Hz, 1Phase
MB-12N8D0H-I	12k	
MB-18N8D0H-I	18k	
MB-24N8D0H-I	24k	

1. Electrical Wiring Diagrams

1.1 Indoor unit

Abbreviation	Paraphrase
Y/G	Yellow-Green Conductor
ION	Positive and Negative Ion Generator
CAP	Capacitor
PLASMA	Electronic Dust Collector
to CCM Comm.Bus	Central Controller (for CAC)
L	LIVE
N	NEUTRAL
Heater	The Electric Heating Belt of Indoor Unit
T1	Indoor Room Temperature
T2	Coil Temperature of Indoor Heat Exchanger Middle

MSMBBU-09HRFN8-QRD6GW, MSMBBU-12HRFN8-QRD6GW, MSMBCU-18HRFN8-QRD0GW, MSMBDU-24HRFN8-QRD0GW (MB-09N8D0H-I, MB-12N8D0H-I, MB-18N8D0H-I, MB-24N8D0H-I)



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
Tsc	Adjusted setting temperature
TP	Compressor discharge temperature

1.2 Safety Features

Compressor three-minute delay at restart

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

Automatic shutoff based on discharge temperature

If the compressor discharge temperature exceeds 108°C for nine seconds, the compressor ceases operation.

Automatic shutoff based on fan speed

If the indoor fan speed registers below 200RPM or over 2100RPM 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 setting time or the louver is in place.
- If the unit is in heating mode, the indoor fan is regulated by the anti-cold wind function.

Compressor preheating

Preheating is automatically activated when T4 sensor is lower than setting temperature.

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	ON (3s)
Cancellation of Timer OFF, Fresh, Swing, Turbo, or Silent	OF (3s)
Defrost	dF
Warming in heating mode	cF
Self-clean (available on select units only)	SC
Heating in room temperature under 8°C or 12°C	FP
Fresh(available on select units only)	Leaf icon
ECO function (available on select units only)	eco
WiFi control (available on select units only)	WiFi icon
The current operation power(available on select units only)	kW

1.4 Fan Mode

When fan mode is activated:

- The outdoor fan and compressor are stopped.
- Temperature control is disabled and indoor room temperature is displayed.
- The indoor fan speed can be set to 1%~100%, 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. (Tsc = 24°C)

1.5 Cooling Mode

1.5.1 Compressor Control

Reach the configured temperature:

- 1) When the compressor runs continuously for less than 120 minutes.
 - If the following conditions are satisfied, the compressor ceases operation.
 - While calculated frequency(fb) is less than minimum limit frequency(FminC).
 - While protective time is more than or equal to ten minutes.
 - While T1 is lower than or equal to (Tsc-CDIFTEMP-0.5°C)
- 2) When the compressor runs continuously for more than 120 minutes.
 - If the following conditions are satisfied, the compressor ceases operation.
 - When calculated frequency(fb) is less than minimum limit frequency(FminC).
 - When protective time is more than or equal to ten minutes.
 - When T1 is lower than or equal to (Tsc-CDIFTEMP).

Note: CDIFTEMP is EEPROM setting parameter. It is 2°C usually.

Note: CDIFTEMP is EEPROM setting parameter. It is 2°C usually.

- 3) If one of the following conditions is satisfied, not judge protective time.
 - Compressor running frequency is more than test frequency.
 - When compressor running frequency is equal to test frequency, T4 is more than 15°C or no T4 or T4

fault.

- Change setting temperature.
- Turbo or sleep function on/off
- Various frequency limit shutdown occurs.

Note: CDIFTEMP is EEPROM setting parameter. It is 2°C usually.

1.5.2 Indoor Fan Control

- 1) In cooling mode, the indoor fan operates continuously. The fan speed can be set to 1%-100%, or auto.
- 2) Auto fan
 - Descent curve
 - When T1-Tsc is lower than or equal to 3.5°C, fan speed reduces to 80%;
 - -When T1-Tsc is lower than or equal to 1°C, fan speed reduces to 60%;
 - -When T1-Tsc is lower than or equal to 0.5°C, fan speed reduces to 40%;
 - -When T1-Tsc is lower than or equal to 0°C, fan speed reduces to 20%;
 - -When T1-Tsc is lower than or equal to -0.5°C, fan speed reduces to 1%.
 - Rise curve
 - When T1-Tsc is higher than 0°C, fan speed increases to 20%;
 - -When T1-Tsc is higher than 0.5°C, fan speed increases to 40%;
 - -When T1-Tsc is higher than 1°C, fan speed increases to 60%;
 - -When T1-Tsc is higher than 1.5°C, fan speed increases to 80%;
 - -When T1-Tsc is higher than 4°C, fan speed increases to 100%.

1.5.3 Outdoor Fan Control

- The outdoor unit will be run at different fan speed according to T4 and compressor running frequency..
- For different outdoor units, the fan speeds are different.

1.5.4 Condenser Temperature Protection

When the condenser temperature exceeds a configured value, the compressor ceases operations.

1.5.5 Evaporator Temperature Protection

When evaporator temperature drops below a configured value for some time, the compressor and outdoor fan ceases operations.

1.6 Heating Mode

1.6.1 Compressor Control

1) Reach the configured temperature

- If the following conditions are satisfied, the compressor ceases operation.
 - While calculated frequency(fb) is less than minimum limit frequency(FminC).
 - When protective time is more than or equal to ten minutes.
 - When T1 is higher than or equal to Tsc+ HDIFTEMP2.

Note: HDIFTEMP2 is EEPROM setting parameter. It is 2°C usually.

- If one of the following conditions is satisfied, not judge protective time.
 - Compressor running frequency is more than test frequency.
 - When compressor running frequency is equal to test frequency, T4 is more than 15°C or no T4 or T4 fault.
 - Change setting temperature.
 - Turbo or sleep function on/off.

2) When the current is higher than the predefined safe value, surge protection is activated, causing the compressor to cease operations.

1.6.2 Indoor Fan Control:

1) In heating mode, the indoor fan operates continuously. The fan speed can be set to 1%-100%, or mute.

2) Auto fan

- Rise curve
 - When T1-Tsc is higher than -1.5°C, fan speed reduces to 80%;
 - -When T1-Tsc is higher than 0°C, fan speed reduces to 60%;
 - -When T1-Tsc is higher than 0.5°C, fan speed reduces to 40%;
 - -When T1-Tsc is higher than 1°C, fan speed reduces to 20%.
- Descent curve
 - When T1-Tsc is lower than or equal to 0.5°C, fan speed increases to 20%;
 - -When T1-Tsc is lower than or equal to 0°C, fan speed increases to 60%;
 - -When T1-Tsc is lower than or equal to -1.5°C, fan speed increases to 80%;

- -When T1-Tsc is lower than or equal to -3°C, fan speed increases to 100%.

1.6.3 Outdoor Fan Control:

- The outdoor unit will be run at different fan speed according to T4 and compressor running frequency.
- For different outdoor units, the fan speeds are different.

1.6.4 Defrosting mode

- The unit enters defrosting mode according to changes in the temperature value of T3, T4 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 "df" 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.

1.6.5 Evaporator Temperature Protection

- Off: Compressor stops.
- Decrease: Decrease the running frequency to the lower level per 20 seconds.
- Hold: Keep the current frequency.
- Resume: No limitation for frequency.

1.7 Auto-mode

- This mode can be selected with the remote controller and the setting temperature can be changed between 16°C~30°C.
- In auto mode, the machine selects cooling, heating, auto-drying or fan-only mode on the basis of T1, Ts, T4 and relative humidity.
- If the setting temperature is modified, the machine selects a new running function.

1.8 Drying mode

In drying mode, AC operates the same as auto fan in cooling mode.

1) Mute function is active.

- All protections are activated and operate the same as they do that in cooling mode.

2) Low Room Temperature Protection

- If the room temperature is lower than 10°C, the compressor ceases operations and does not resume until room temperature exceeds 12°C.

1.9 Forced operation function

- Forced cooling mode:

The compressor and outdoor fan continue to run and the indoor fan runs at rated 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 any one of indoor units runs in forced cooling, it is designated as the master forced cooling unit. Other indoor units act as the slave forced cooling units. The slave forced cooling units cannot exit forced cooling mode until the master forced cooling unit does so. They then switch to cooling mode in low fan with the temperature set at 24°C.
- Forced defrosting mode:
 - In the forced cooling mode (single heat engine for forced auto mode), press and hold the forced key for 5 seconds after release, immediately enter the forced frosting mode.
 - When any one of indoor units runs in forced defrosting mode, the indoor fan is off and other indoor fans are off. The outdoor unit operates forced defrosting.

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 16°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 8 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 and, in the case of a sudden power failure, will restore those setting automatically within 3 minutes after power returns.
- 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 unit stands by.

1.13 Refrigerant Leakage Detection

The display area will show "EC" when the outdoor unit detects refrigerant leakage.

1.14 8°C Heating

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 ECO function

- Used to enter the energy efficient mode.
 - Under cooling mode, press ECO button, the remote controller will adjust the temperature automatically

to 24°C, fan speed of Auto to save energy (but only if the set temperature is less than 24°C). If the set temperature is more than 24°C and 30°C, press the ECO button, the fan speed will change to Auto, the set temperature will remain unchanged.

- When AC receives signals, such as switch off, Turbo operation, Silence operation, Self clean operation, Forced cooling operation, mode setting, Sleeping mode, or adjusting the set temperature to less than 24°C, it will quit the ECO operation.
- Operation time in ECO mode is 8 hours. After 8 hours the AC quits this mode.
- When there's any one temperature sensor in malfunction, the AC will quit ECO mode.
- Indoor fan will run at auto fan when enter into the ECO mode. The setting temperature and setting fan speed can be changed through remote controller signal.

1.16 Self clean(Optional)

- The indoor unit will run at low fan for 16 minutes, then turn off, if you press "Self Clean" when the unit is in cooling or drying mode.
- Self Clean keeps the indoor unit dry and prevents mold growth.

1.17 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.

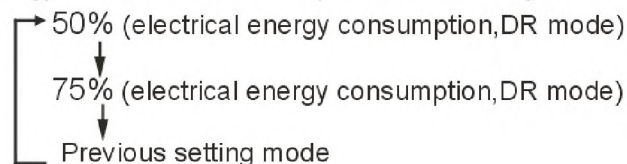
- The unit will only change modes if the information from the remote control makes it necessary, not from the unit's temperature setting.
- If the unit does not receive a signal for 7 minutes or you press "Follow Me," the function turns off. The unit regulates temperature based on its own sensor and settings.

1.18 Silence (Optional)

Press "Silence" on the remote control to enable the SILENCE function. While this function is active, the indoor unit will run at faint breeze(1% fan speed), which reduces noise to the lowest possible level.

1.19 Electrical energy consumption control function

Press the "Gear" button on remote controller to enter the energy efficient mode in a sequence of following:



Turn off the unit or activate ECO, sleep, Super cool, Silence or self clean function will quit this function.

1.20 Mode Conflict

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

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

Yes: Mode conflict No: No mode conflict

- Unit action
 - In cases of one indoor unit working in cooling mode or fan mode and another indoor unit set to heating mode, the indoor unit working in cooling mode or fan mode switches off. The outdoor unit changes to heating mode after the compressor stops for 3 minutes.
 - In cases of one indoor unit working in heating mode and another indoor unit set to cooling mode or fan mode, the indoor unit settings change from cooling mode or fan mode to stand by. The outdoor unit continues to work in heating mode.
 - If heating mode stops (excluding cases where the indoor unit in heating mode reaches a preset temperature), the outdoor unit restarts after 3 minutes and enters cooling or fan-only mode.

1.21 Information Inquiry

- To enter information inquiry status, complete the following procedure within ten seconds:
 - Press LED 3 times.
 - Press SWING 3 times.
- If you are successful, you will hear beeps for two seconds.
- Use the LED and SWING buttons to cycle through information displayed.
- Pressing LED will display the next code in the sequence. Pressing SWING will show the previous.
- The table shows information codes. The screen will display this code for two seconds, then the information for 25 seconds.

Displayed code	Explanation	Additional Notes
T1	T1	T1 temperature
T2	T2	T2 temperature
T3	T3	T3 temperature
T4	T4	T4 temperature
TP	TP	TP temperature
Targeted frequency	FT	Targeted Frequency
Actual frequency	TR	Actual Frequency
Compressor current	DL	N/A
Outdoor AC voltage	UO	N/A
Indoor capacity test	SN	N/A
Reserve	--	Running mode
Outdoor fan speed	PR	Outdoor fan speed
EXV opening angle	LR	EXV opening angle
Indoor fan speed	IR	Indoor fan speed
Indoor humidity	HU	N/A
Adjusted setting temperature	TT	N/A
Indoor dust concentrations	DT	N/A
WIFI signal strength	IF	N/A
GA algorithm frequency	OT	N/A

Disassembly

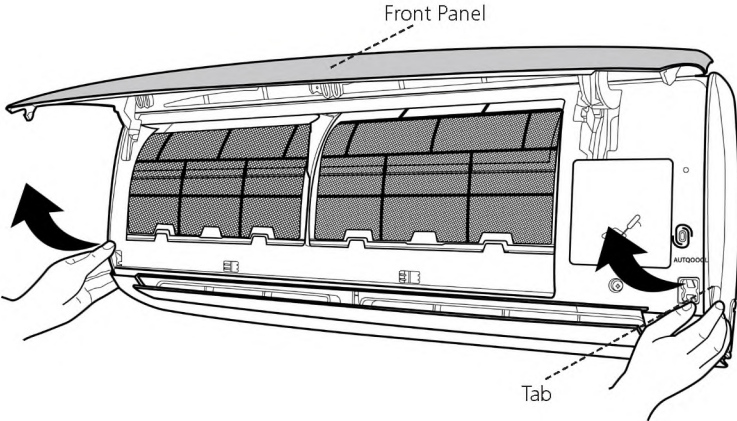
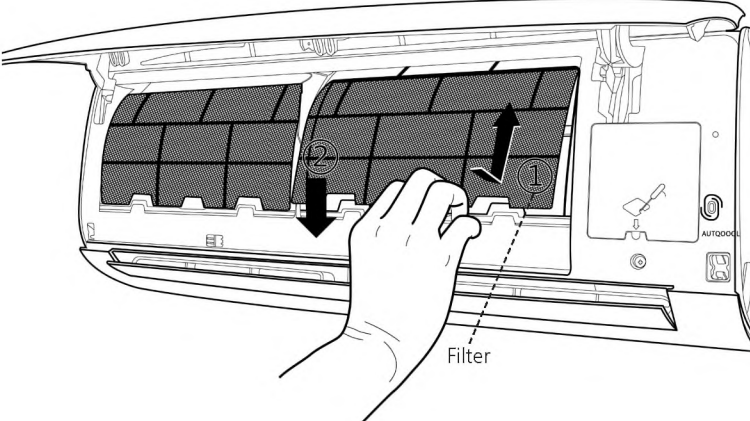
Contents

1.	Disassembly	20
2.1	Indoor Unit.....	20

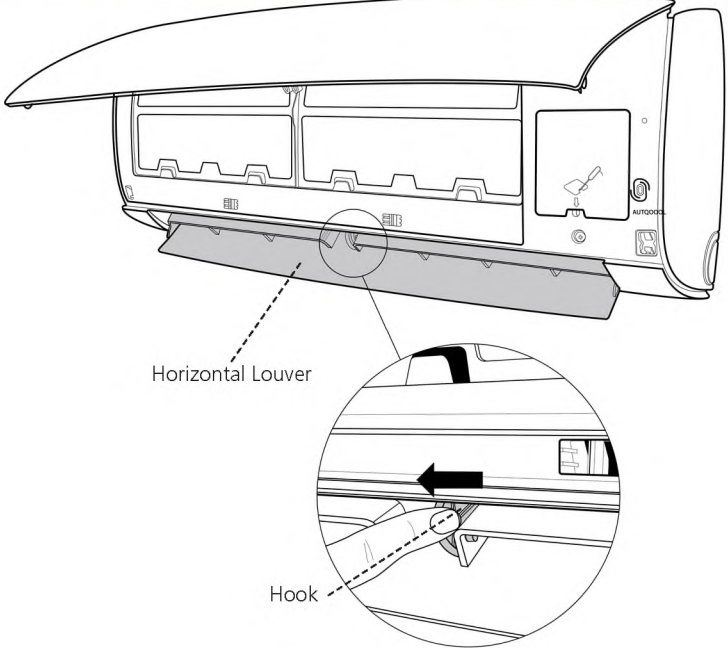
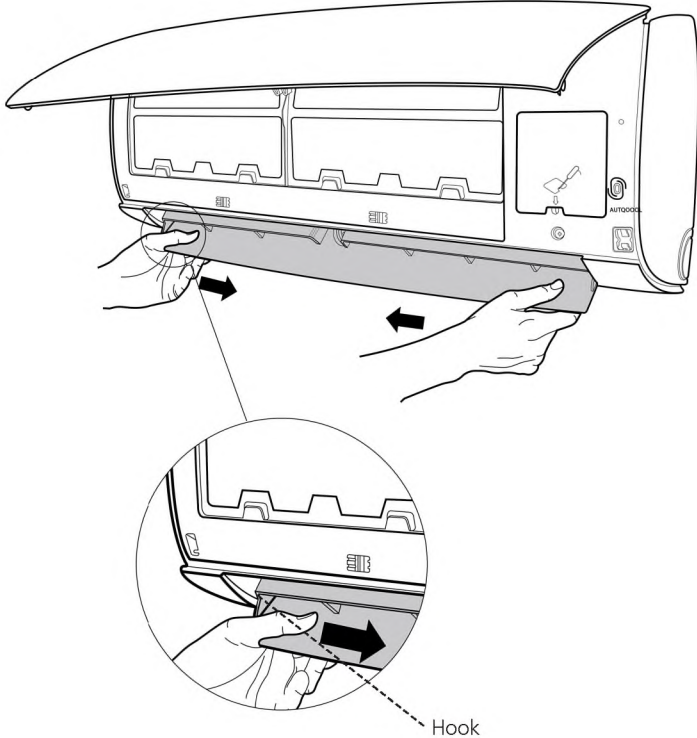
1. Disassembly

1.1 Indoor unit

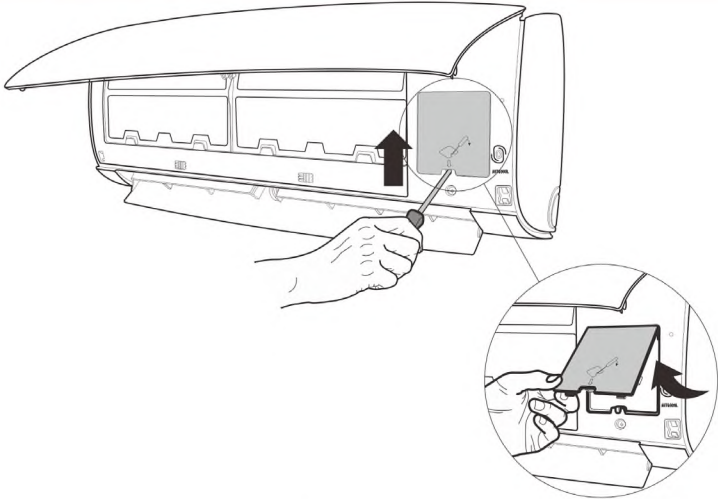
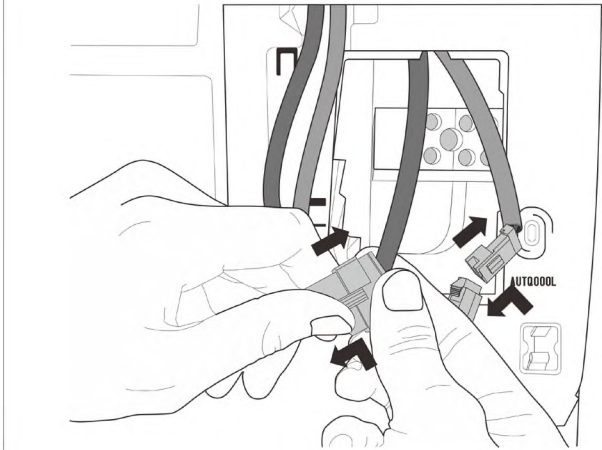
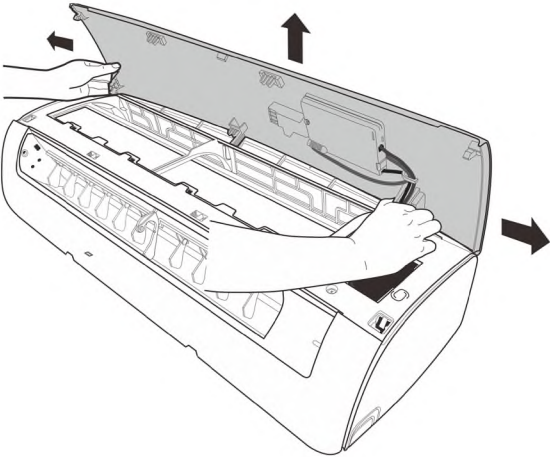
1. Front Panel

Procedure	Illustration
1) Hold the front panel by the tabs on the both sides and lift it (see CJ_MB1_INV_001).	 CJ_MB1_INV_001
2) Push up the bottom of an air filter (step 1), and then pull it out downwards (step 2) (see CJ_MB1_INV_002).	 CJ_MB1_INV_002

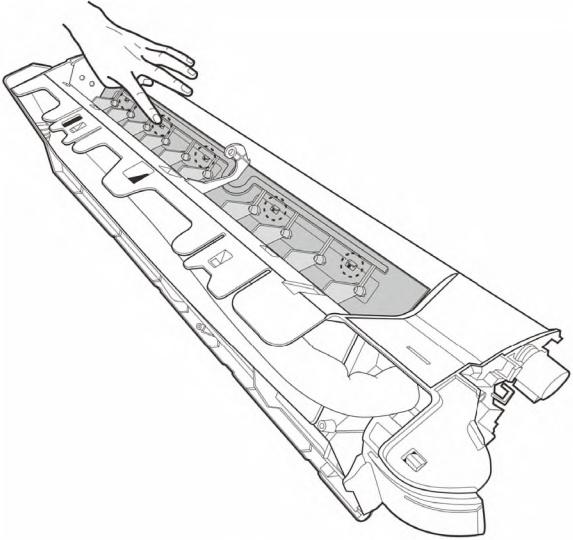
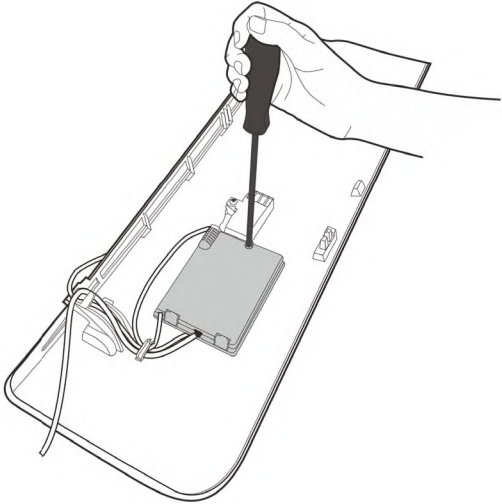
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Open the horizontal louver and push the hook towards left to open it (see CJ_MB1_INV_003).	 CJ_MB1_INV_003
2) Bend the horizontal louver lightly by both hands to loosen the hooks, then remove the horizontal louver (see CJ_MB1_INV_004).	 CJ_MB1_INV_004

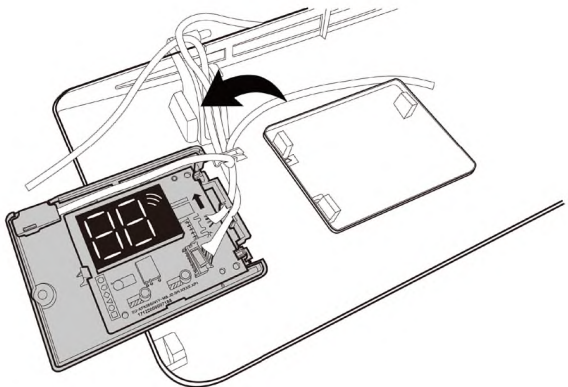
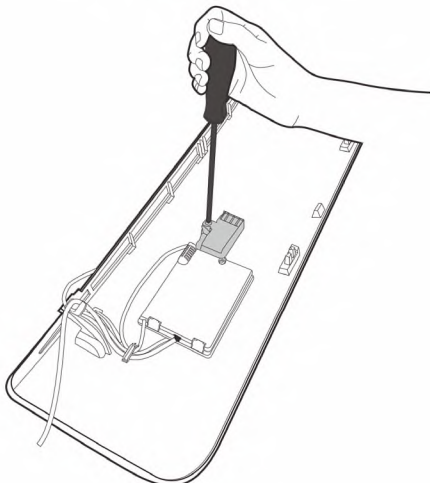
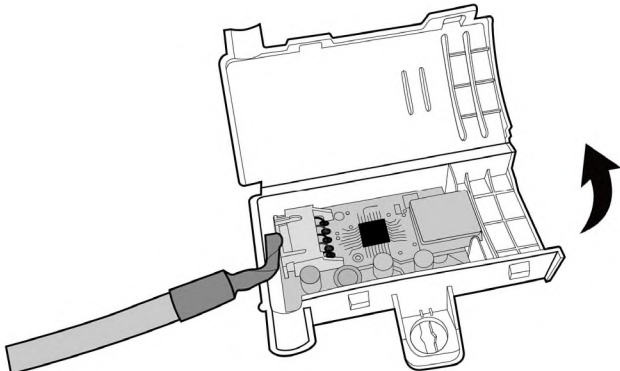
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Remove 1 screw and then remove the electrical cover(see CJ_MB1_INV_005).	 CJ_MB1_INV_005
2) Disconnect the two connectors for display board and wifi model. (see CJ_MB1_INV_006) .	 CJ_MB1_INV_006
3) Slid the front panel side to side to release each axis (see CJ_MB1_INV_007)	 CJ_MB1_INV_007

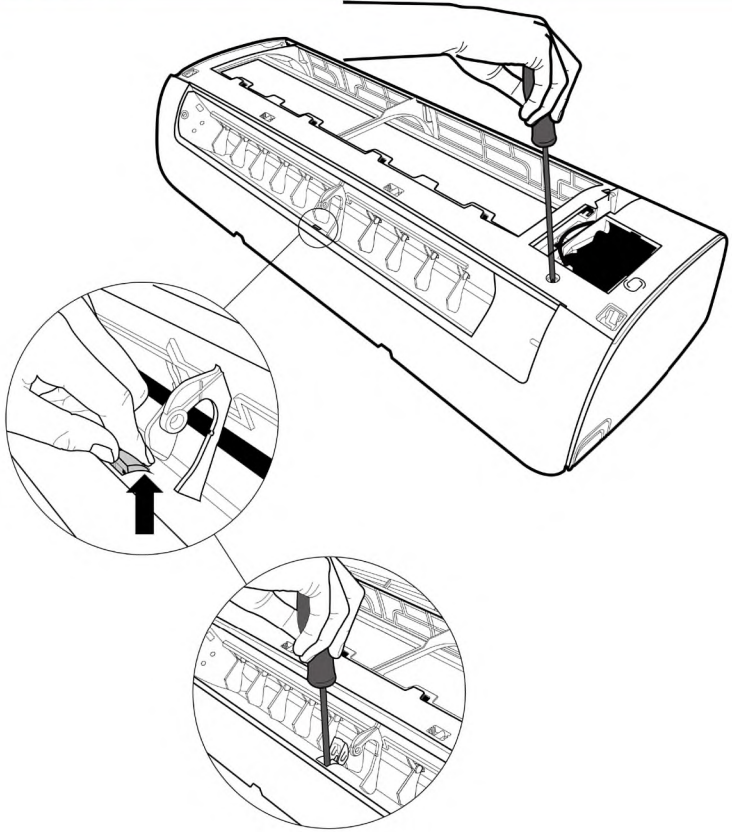
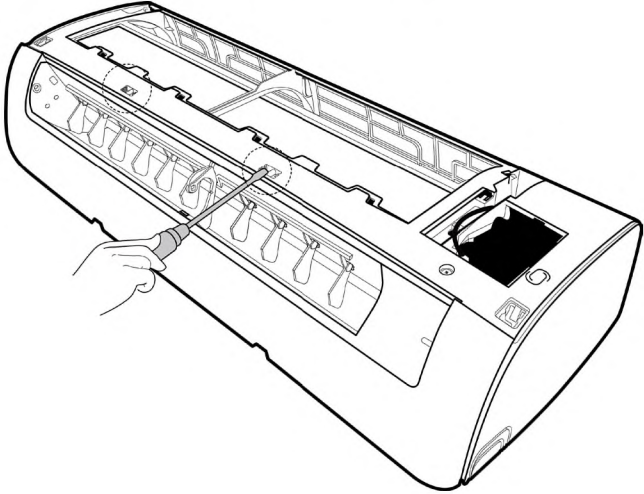
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Release the 6 hooks of the vertical blades, then pull the vertical blades rightward and remove it (see CJ_MB1_INV_008).	 CJ_MB1_INV_008  CJ_MB1_INV_009

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

Procedure	Illustration
1) Rotate the display board in the direction shown in the right picture. (see CJ_MB1_INV_010)	 CJ_MB1_INV_010
2) Remove 1 screw of the wifi model. (see CJ_MB1_INV_011).	 CJ_MB1_INV_011
3) Rotate the wifi model in the direction shown in the right picture. (see CJ_MB1_INV_012)	 CJ_MB1_INV_012

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

Procedure	Illustration
1) Open the screw cap and then remove the 2 screws (see CJ_MB1_INV_013).	 CJ_MB1_INV_013
2) Release the 2 hooks. (see CJ_MB1_INV_014)	 CJ_MB1_INV_014

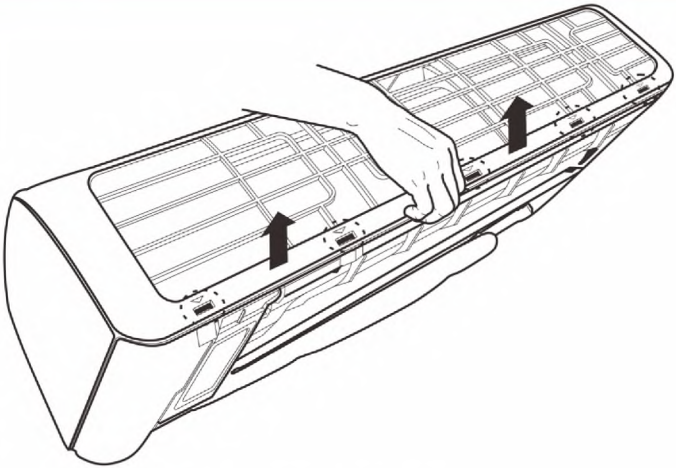
Note: This section is for reference only. Actual unit appearance may vary.

Procedure

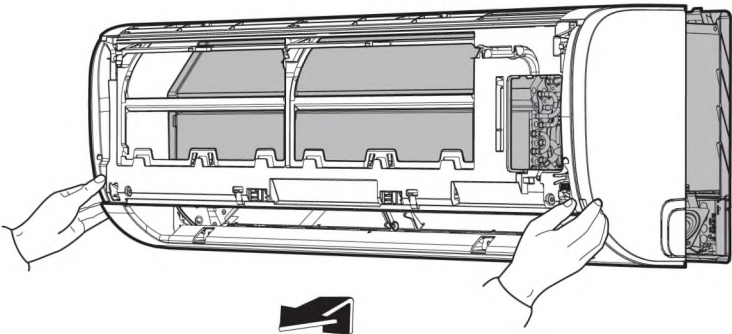
1) Release the 5 hooks in the back (see CJ_MB1_INV_015).

2) Pull out the panel frame while pushing the hook through a clearance between the panel frame and the heat exchanger. (see CJ_MB1_INV_016)

Illustration



CJ_MB1_INV_015

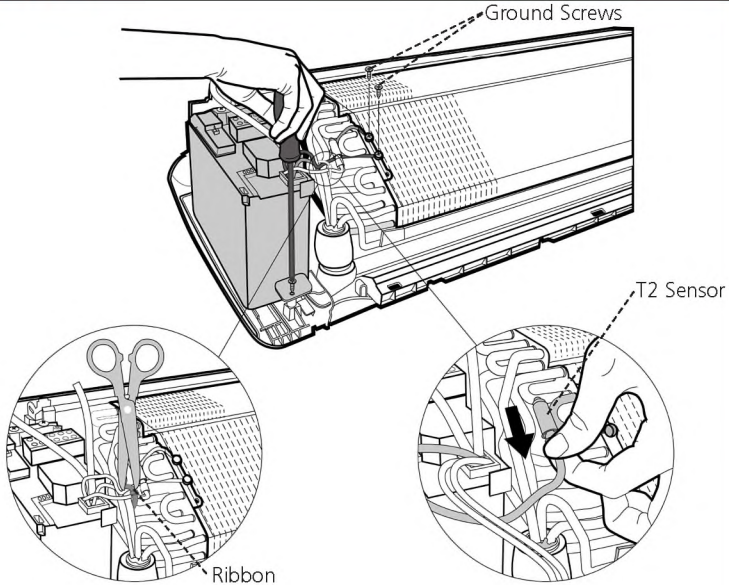
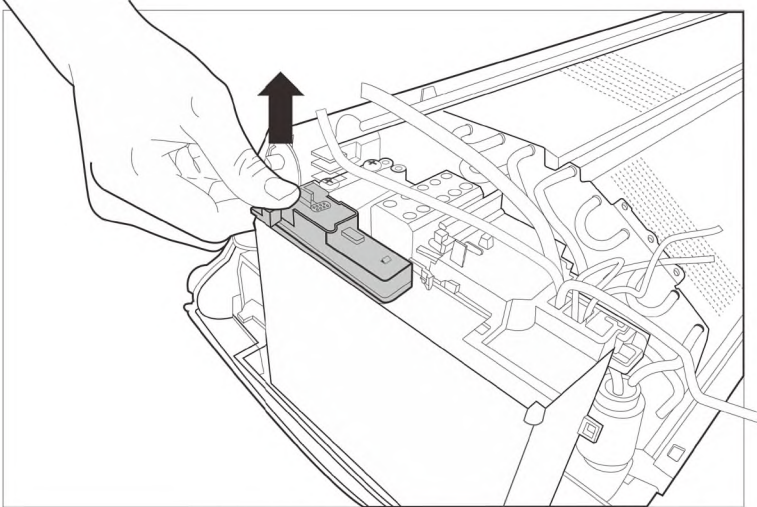


CJ_MB1_INV_016

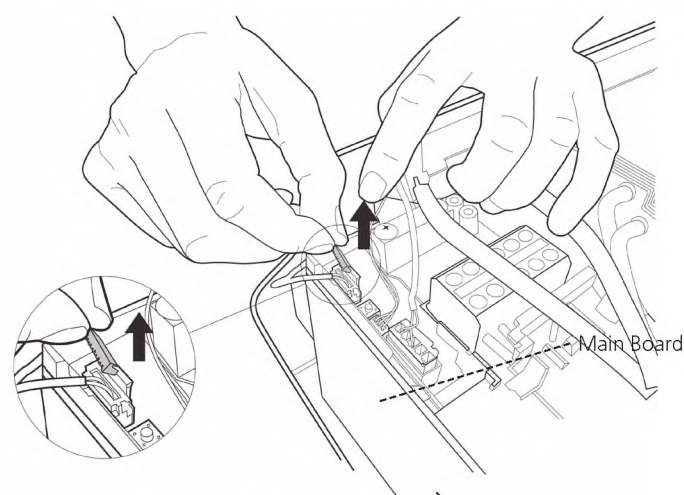
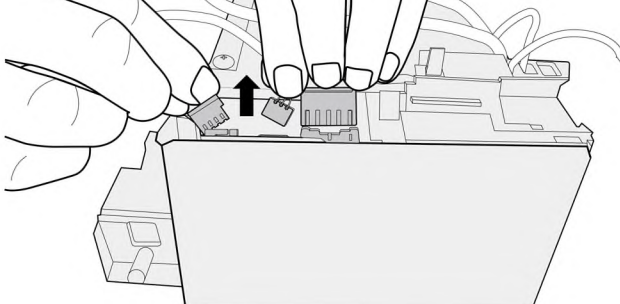
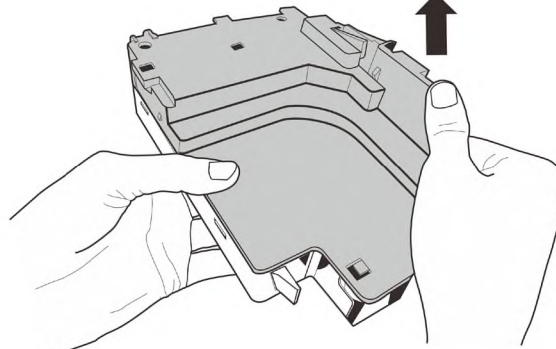
Note: This section is for reference only. Actual unit appearance may vary.

2. Electrical parts

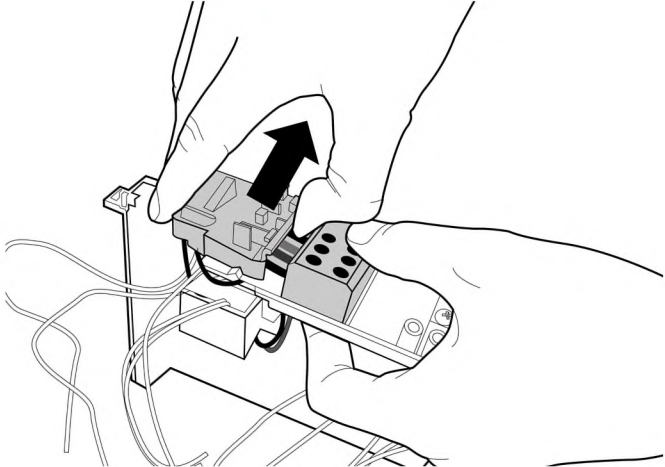
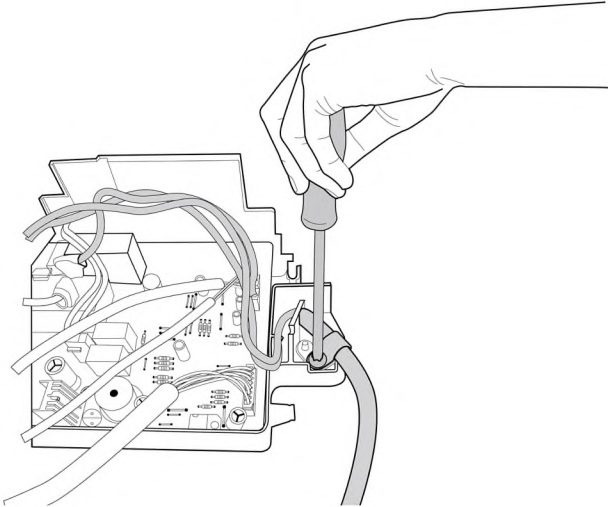
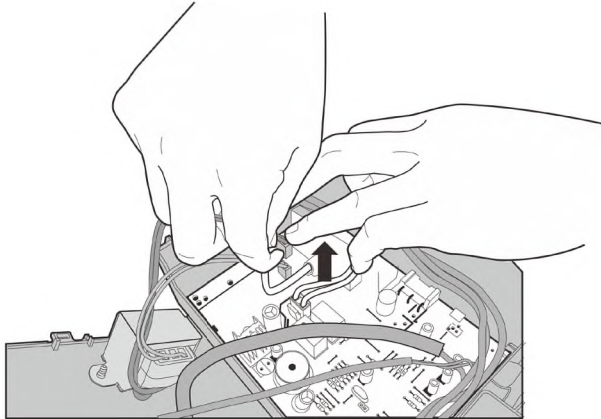
Note: Remove the front panel (refer to 1. Front panel) before disassembling electrical parts.

Procedure	Illustration
1) Cut the ribbon by a shear, then pull out the coil temperature sensor (T2) (see CJ_MB1_INV_017). 2) Remove one fixing screw of the electronic control box and two screws used for the ground connection (see CJ_MB1_INV_017).	 CJ_MB1_INV_017
3) An upward force is maintained until the cover of electronic control box is removed (see CJ_MB1_INV_018).	 CJ_MB1_INV_018

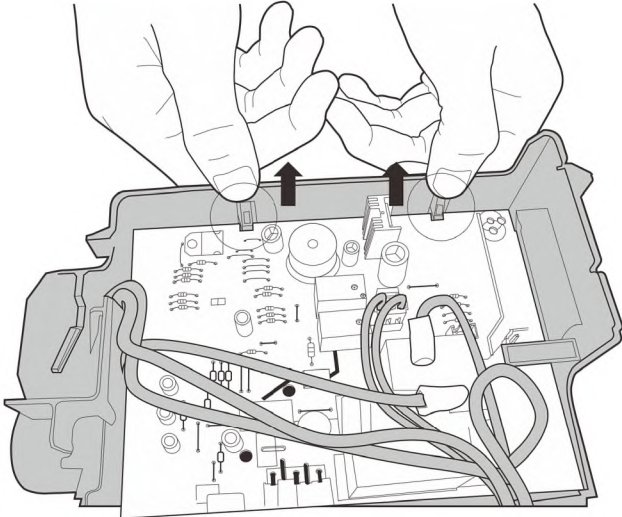
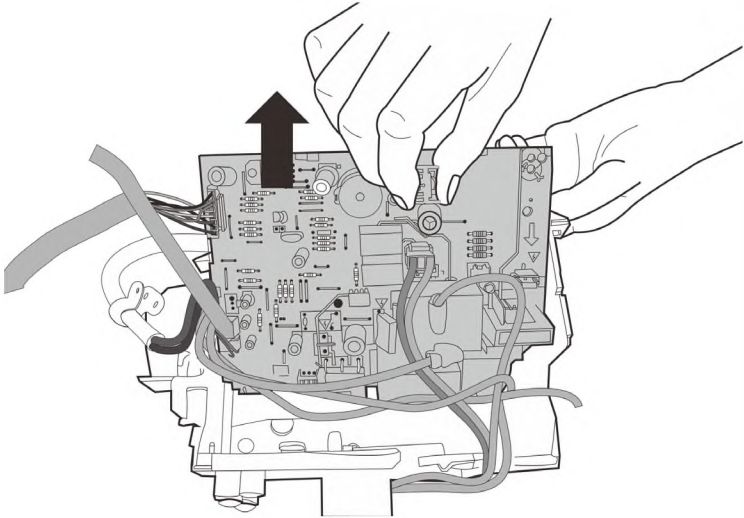
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Remove the fixed devices of the connectors (see CJ_MB1_INV_019).	 CJ_MB1_INV_019
2) Disconnect the connectors of fan motor, the step motor and the T2 sensor (see CJ_MB1_INV_020).	 CJ_MB1_INV_020
3) Open the left side plate of electronic control box (see CJ_MB1_INV_021).	 CJ_MB1_INV_021

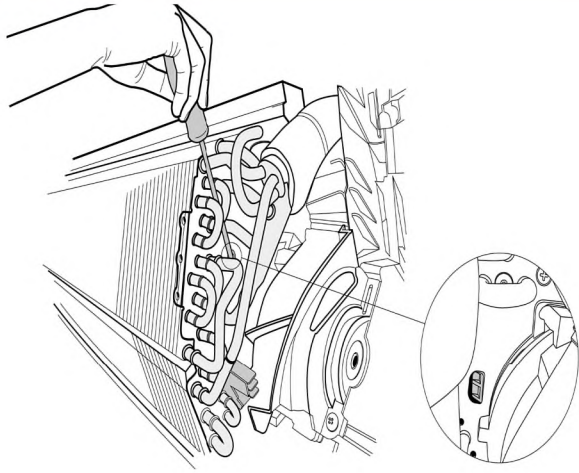
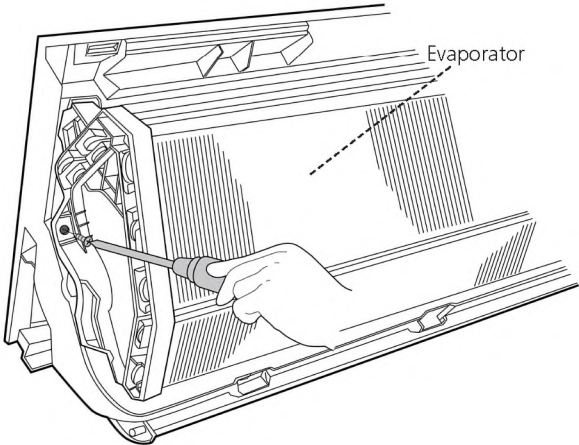
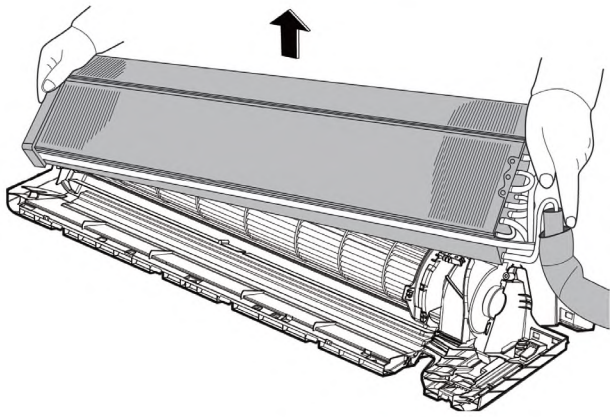
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Open the left side plate of electronic control box (see CJ_MB1_INV_022)	 CJ_MB1_INV_022
2) Remove 1 screw to take down the power wire (see CJ_MB1_INV_023)	 CJ_MB1_INV_023
3) Remove the two connectors of the transformer (see CJ_MB1_INV_024)	 CJ_MB_INV_024

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

Procedure	Illustration
1) Open the two clips along the direction indicated in right image (see CJ_MB1_INV_024).	 CJ_MB1_INV_024  CJ_MB1_INV_025

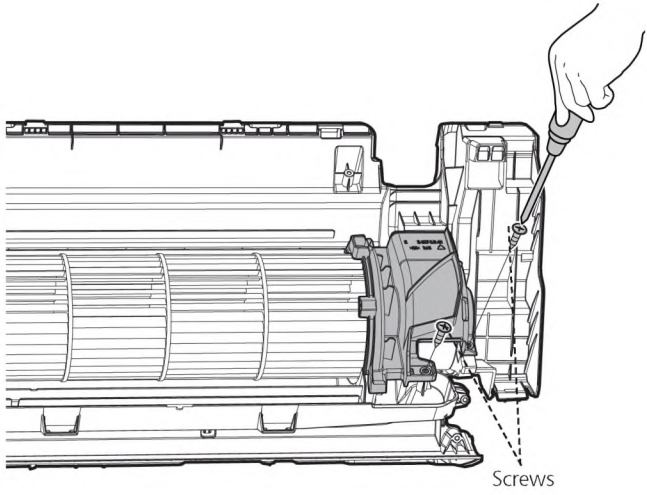
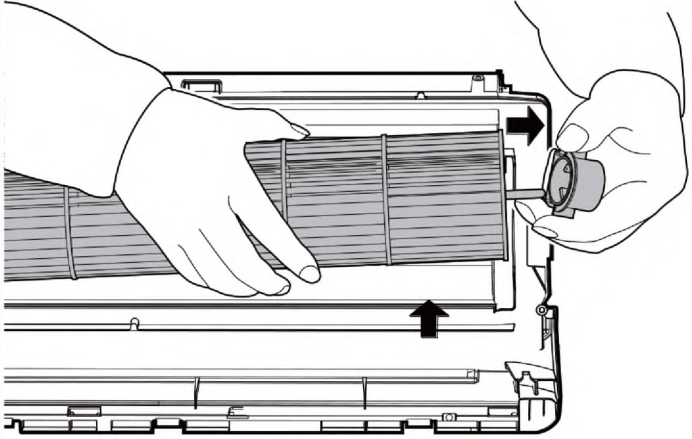
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Release the hook on the evaporator (see CJ_MB1_INV_028).	 CJ_MB1_INV_028
Remote the one screw on the evaporator located at the fixed plate (see CJ_MB1_INV_029).	 CJ_MB1_INV_029
2) Pull out the evaporator (see CJ_MB1_INV_030).	 CJ_MB1_INV_030

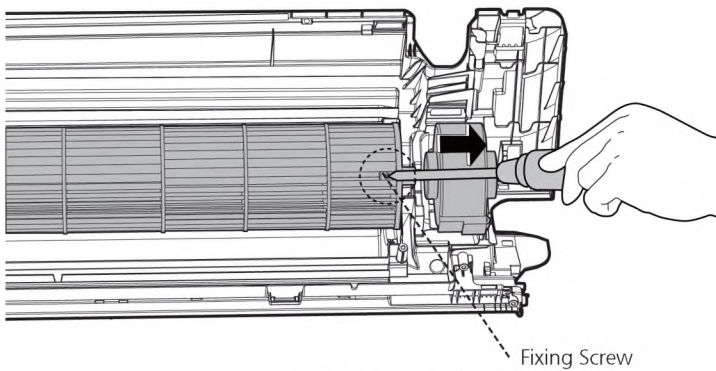
Note: This section is for reference only. Actual unit appearance may vary.

4. 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_MB1_INV_031).	 CJ_MB1_INV_031
2) Remove the bearing sleeve (see CJ_MB1_INV_032).	 CJ_MB1_INV_032

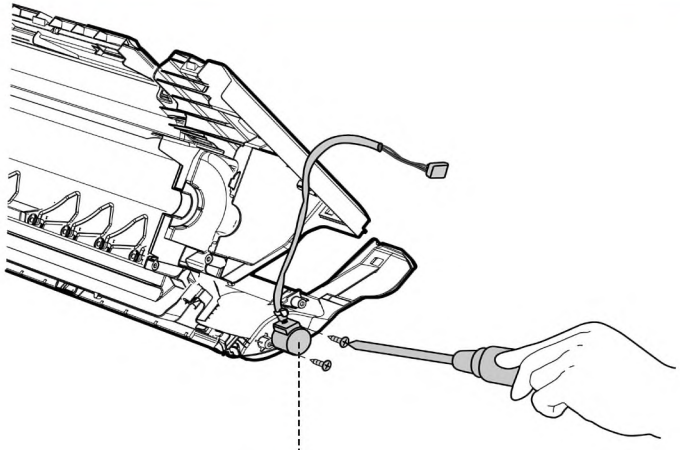
Note: This section is for reference only. Actual unit appearance may vary.

Procedure	Illustration
1) Remove the fixing screw (see CJ_OP_INV_020). 2) Pull out the fan motor and fan assembly from the side.	 CJ_OP_INV_021 Fixing Screw

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

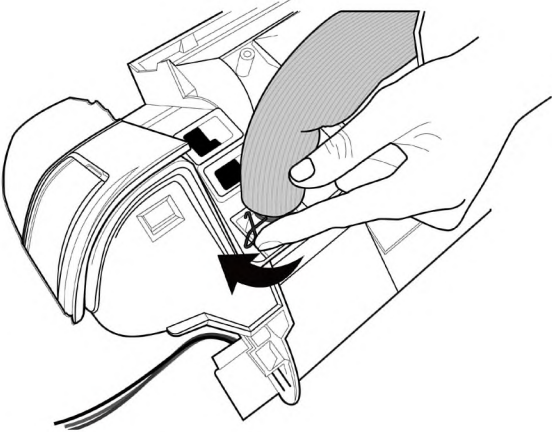
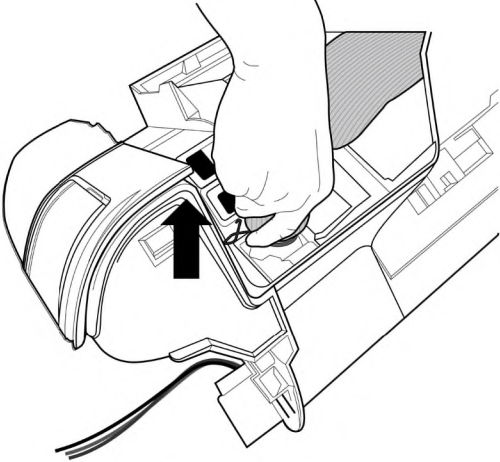
5. Step motor

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_OP_INV_021).	 Stepping Motor CJ_OP_INV_021

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

6. Drain Hose

Procedure	Illustration
1) Rotate the fixed wire clockwise indicated in right image (see CJ_MB1_INV_035).	 CJ_MB1_INV_035
2) Pull up the drain hose to remove it (see CJ_MB1_INV_036).	 CJ_MB1_INV_036

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