

Single Phase Outdoor Unit Base Pan Heater Installation Manual KEHJ5A160E

Read these Safety Considerations carefully before installing the drain pan heater. After completing the installation, check if the unit operates properly during the start-up operation.

Meaning of DANGER, WARNING and CAUTION

DANGER	Indicates an imminently hazardous situation which, if not avoided will result in death or serious injury.
WARNING	Indicates a potentially hazardous situation which, if not avoided will result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT!

- The purpose of this heater is to melt snow that blows in from the outside and to prevent frost growth on the bottom frame of the outdoor unit.
- Do not shut off the power supply of the ground fault circuit interrupter even while this heater is stopped.
- Increasing the size of a power supply wiring (leading wire) is required depending on the model of the indoor unit.
- This product cannot be used in combination with a central drain plug.
- At heavy snowfall regions, also install a snow protection hood or high stand.
- Inform users that they should store this installation manual for future reference.
- After completing the installation, make sure that the unit operates properly during the startup operation.
- All phases of the field installation, including, but not limited to, electrical, piping, and safety, must be done in accordance with manufacturer's instructions and must comply with national, state, provincial, and local codes.



WARNING

Only personnel that have been trained to install, adjust, service or repair (hereinafter, "service") the equipment specified in this manual should service the equipment. The manufacturer will not be responsible for any injury or property damage arising from improper service or service procedures. If you service this unit, you assume responsibility for any injury or property damage which may result. In addition, in jurisdictions that require one or more licenses to service the equipment specified in this manual, only licensed personnel should service the equipment.

Improper installation, adjustment, servicing or repair of the equipment specified in this manual, or attempting to install, adjust, service or repair the equipment specified in this manual without proper training may result in product damage, property damage, personal injury or death.



WARNING

For the transmission wiring and the power supply wiring, shape the wirings in such a way that service covers and other structures do not rise up, and securely install covers and panels. Incomplete installation of covers and panels may cause electric shock or fire.



DANGER

Do not touch the heater unit without wearing gloves. The temperature of the heater unit will become high when the heater is turned on. Touching the heater unit with bare hands will result in burns or injury.





WARNING

This equipment can be installed with a Ground-Fault Circuit Interrupter (GFCI). Although this is a recognized measure for additional protection, with the grounding system in North America, a dedicated GFCI is not necessary. Shut off the power supply before touching electrical parts.

There is the risk of electric shock if charged parts are touched.

For the transmission wiring and the power supply wiring, shape the wirings in such a way that service covers and other structures do not rise up and securely install covers and panels.

Incomplete installation of covers and panels may cause electric shock or fire. Use the specified wires, and firmly connect and secure the wires so that the force of the wires is not applied on the terminal connections.

Incomplete connection or fixing of wires may cause electric shock, generation of heat or fire.



WARNING

- **Request the dealer or an authorized technician to install the product.** Improper installation of the product could result in water leakage, an electric shock, or fire.
- **The product must be installed according to the instructions given in this manual.** Incomplete installation of the product could result in water leakage, an electric shock, or fire.
- **Use the supplied or specified installation parts.** Use of other parts could result in the unit becoming loose and falling, water leakage, electric shock, or fire.
- **Turn off the power supply at the time of installation.** Touching any electrical parts may with the power supply turned on could result in electric shock.
- **Use specified wires. Connect and fix the wires so that the wires will not put improper force on the terminal junctions.** Wires connected or fixed improperly could result in terminal overheating, an electric shock, or fire.
- **When wiring and connecting the indoor and outdoor units, carefully arrange the wiring so that they will not put improper force on the structures.** Install covers over the wires. Incomplete cover installation could result in terminal overheating, an electric shock, or fire.



CAUTION

Do not install the unit in the following locations:

1. Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.
2. Where corrosive gas, such as sulfurous acid gas is generated, where acidic or alkaline steam mist forms, and where salty atmosphere such as coastal areas. Corroding copper pipes or soldered parts may result in refrigerant leakage.
3. Near machinery emitting electromagnetic waves or where there are large voltage fluctuations such as factories. Abnormalities may occur in the control system which will prevent normal operation.
4. Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in air, or where volatile flammables such as thinner or gasoline are handled, and vehicles, marine vessels, etc. Any gas leaking and building up around the unit may cause combustion.
5. Do not install the product in places where there is danger of exposure to flammable gas leakage. If the gas leaks and builds up around the unit, it may catch fire.
6. Do not install the outdoor unit in places where small animals may nest in the outdoor unit. If small animals intrude and touch the internal parts of the outdoor unit, the outdoor unit may malfunction, generate smoke, or ignite. Advise the user to keep the place clean.



CAUTION

- Wear protective gloves at the time of installation. Touching the suction grille or aluminum fin of the outdoor unit may result in injury.
- Do not grab the top plate of the outdoor unit carelessly when removing the top plate. The sharp edge of the top plate may cause injury.

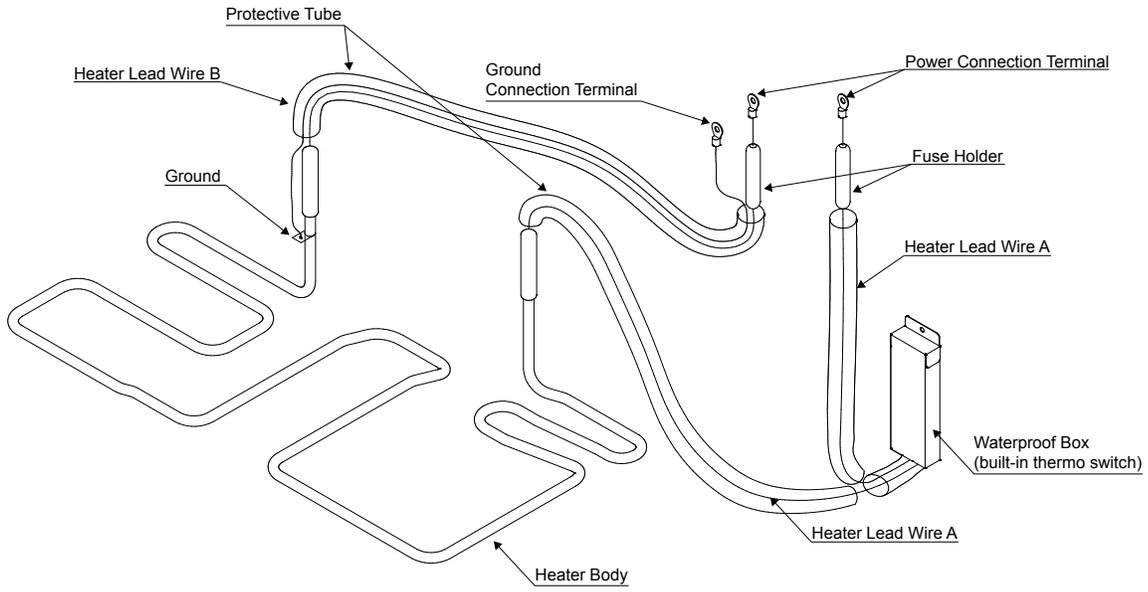
For details on applicable models, refer to the catalog or Technical Guide

Pre-installation Preparations

Name	Electric Heater	Metal Fixture	Protective Plate
Q'ty	1 pc	4 pcs	3 pc
Shape			

Name	Mounting Screw	Clamp	Caution Label
QTY	9 pc	5 pc	1 pc
Shape			

Name of heater body parts



Removing Outdoor Unit Body Parts



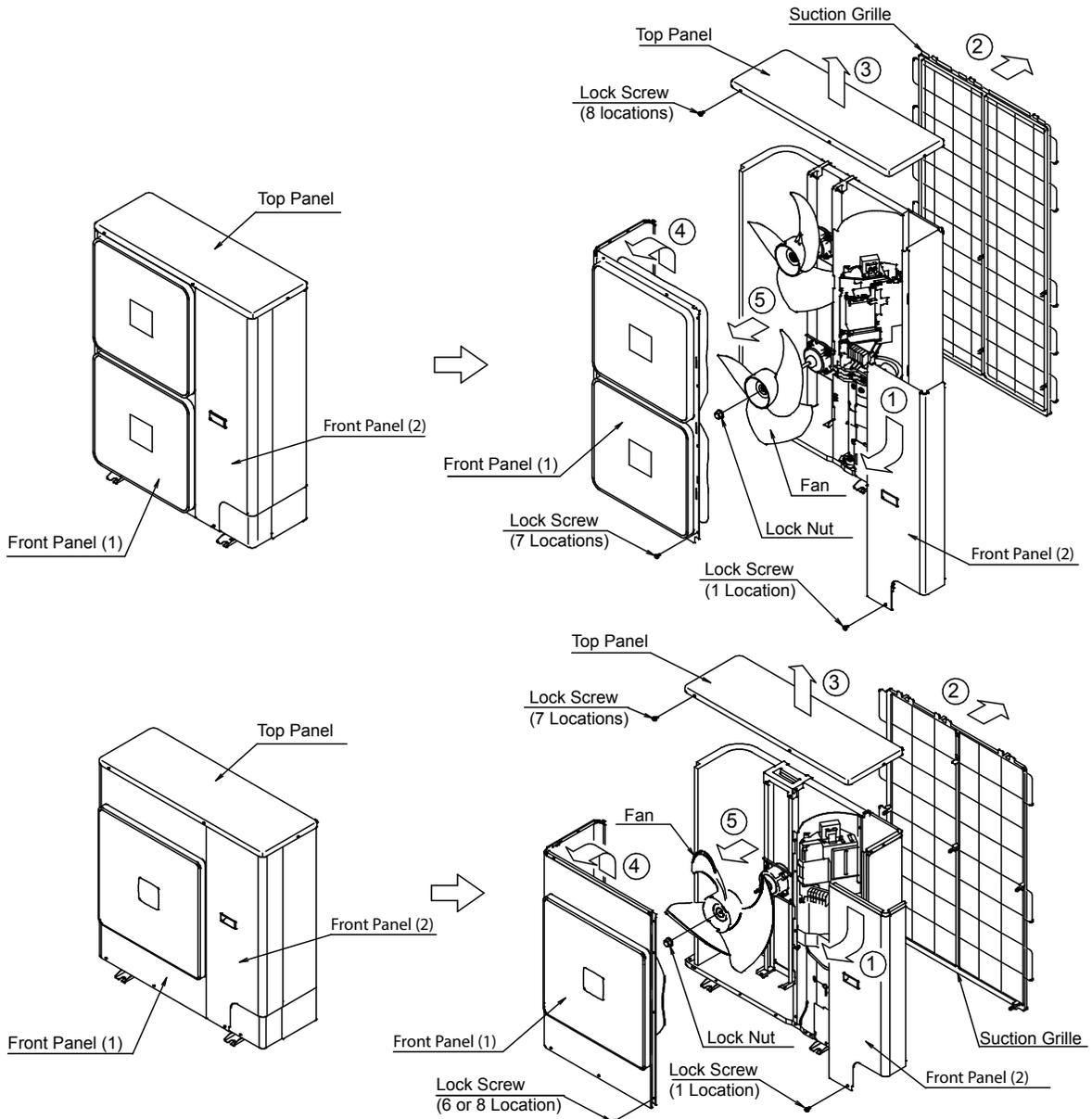
WARNING

Be sure to check that the power supply for the product body is shut off.

Also refer to the Installation Manual for the outdoor unit.

Top panel, front panels (1) and (2), suction grille and fan removal procedure:

1. Removal of front panel (2)
Remove the lock screws of front panel (2), and pull the panel downwards to remove to the front.
2. Removal of suction grille (only when necessary)
Draw out of the heat exchanger and the claws inserted into the top panel, and remove the suction grille.
-The suction grille is easily broken. Remove it with care.
3. Removal of top panel
Remove the lock screws of the top panel, and lift the panel upwards to remove.
4. Removal of front panel (1)
Remove the lock screws of front panel (1), and pull the panel upwards to remove to the front.
5. Removal of fan
Remove the fan lock nuts, and remove the fan to the front.
-Store removed parts carefully to prevent them from being damaged and take care not to lose lock screws.



Installing Drain Hole Protective Plate (only when necessary)



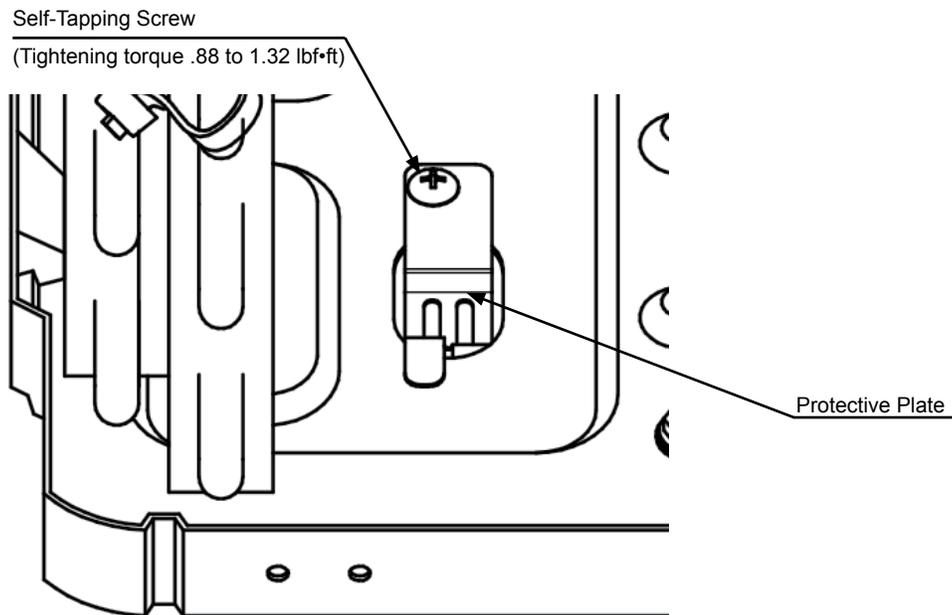
CAUTION

If there is the risk of direct contact with the electric heater from the drain hole in the bottom panel as a result of installing the outdoor unit at a high level, install the protective plate (supplied) according to the installation procedure below.

NOTE: If there is no risk of contact with the electric heater, there is no need to install the protective plate. Proceed to "Installing Electric Heater."

After removing outdoor unit body parts:

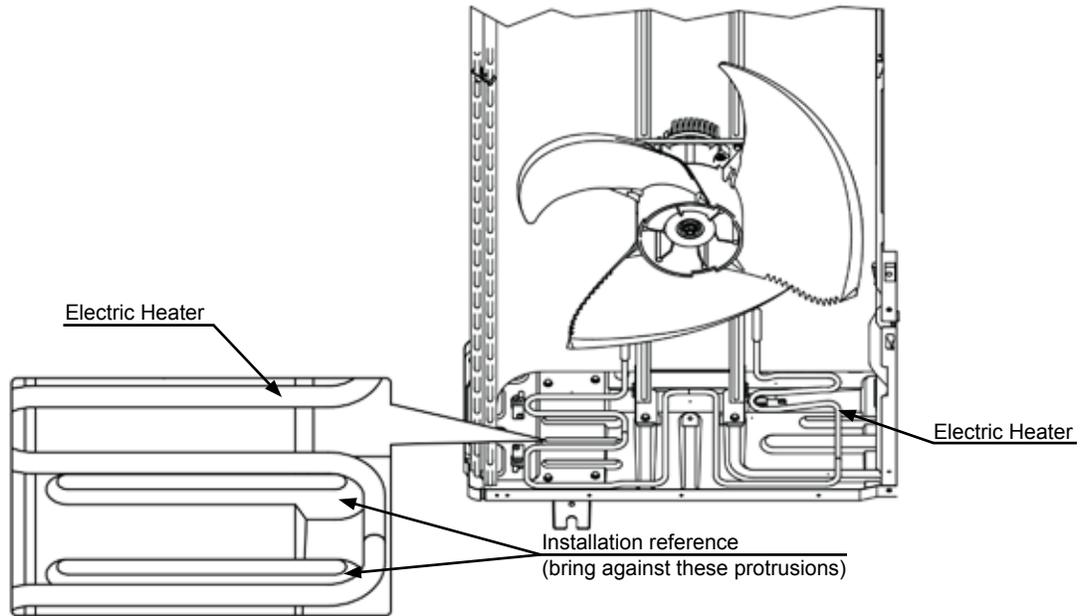
1. Use Self Taping screws (Provided) to install the protective plates on the base frame.
2. Install the protective plate using the Self-Tapping screws (supplied) from within the outdoor unit. (Tightening torque .88 to 1.32 lbf•ft)



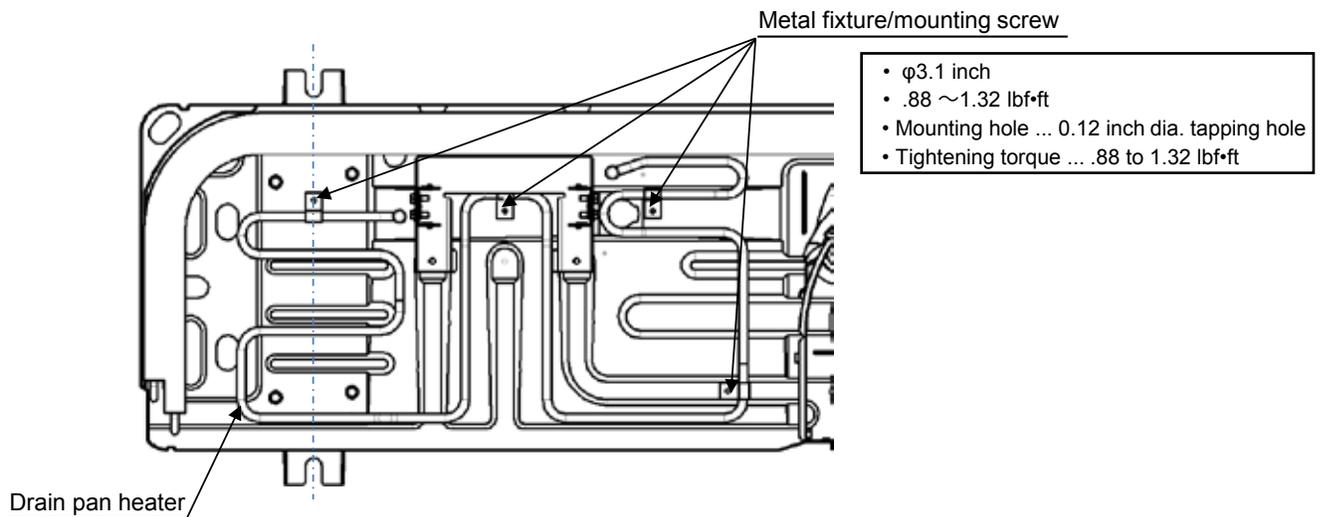
Installing Electric Heater

After removing outdoor unit body parts:

1. Install the electric heater referenced to the indentations and protrusions on the frame.

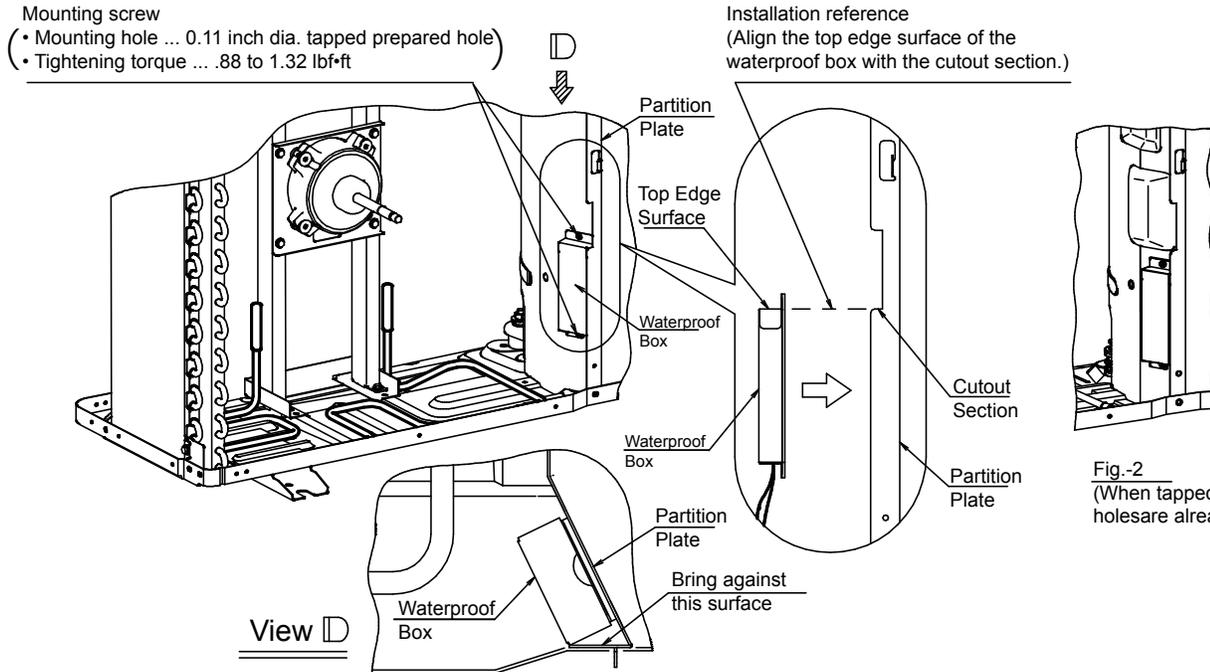


2. Align the center of the electric heater with the center of the drain hole on the base frame.
3. Temporarily place the two metal fixtures (supplied) within the metal fixture installation area and near to the center of the foundation bolt mounting legs, and decide on the installation positions.
 - Locate the metal fixtures on the straight piping section of the electric heater.
 - Locate the metal fixtures at positions where the mounting screws do not contact the foundation bolt mounting legs.
4. Align with the position of the metal fixture hole, and drill two tapped prepared holes (0.12 inch dia.) for installing the metal fixtures on the base frame.
5. Secure the electric heater in place with the metal fixture and mounting screws (supplied). (tightening torque .88 to 1.32 lbf•ft)
 - Secure the electric heater firmly.



Installing Waterproof Box

1. Bring the waterproof box against the partition plate as shown in view D, and align the top edge surface of the waterproof box with the installation reference at the cutout section of the partition plate.
Note: On some models, the tapped prepared holes that are to be drilled in step "2)" are already drilled. In that case, the installation position of the waterproof box is as shown in View D orientation; leads coming out of the bottom.
2. Align with the position of the waterproof box holes, and drill two tapped prepared holes (0.11 inch dia.) for installing the waterproof box on the partition plate.
 -This operation is not required on models that already have pre-fabricated tapped prepared holes.
 -When drilling the holes for installing the waterproof box, take sufficient care not to damage the compressor, piping, electric leads, and other parts located on the rear of the partition plate.
3. Secure the waterproof box in place with the metal fixture and mounting screws (supplied). (tightening torque .88 to 1.32 lbf•ft)



Electric Wiring Work



CAUTION

This equipment can be installed with a Ground-Fault Circuit Interrupter (GFCI). Although this is a recognized measure for additional protection, with the grounding system in North America, a dedicated GFCI is not necessary.

Ensure that the ground fault circuit interrupter can withstand harmonics on ground faults.

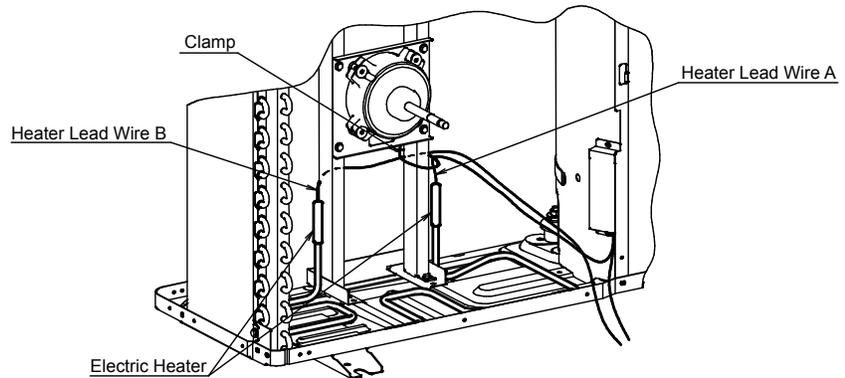
(This device is equipped with inverter apparatus. Use a ground fault circuit interrupter that can withstand harmonics to prevent the ground fault circuit interrupter itself from malfunctioning.)

Changes to electrical facilities and power contract

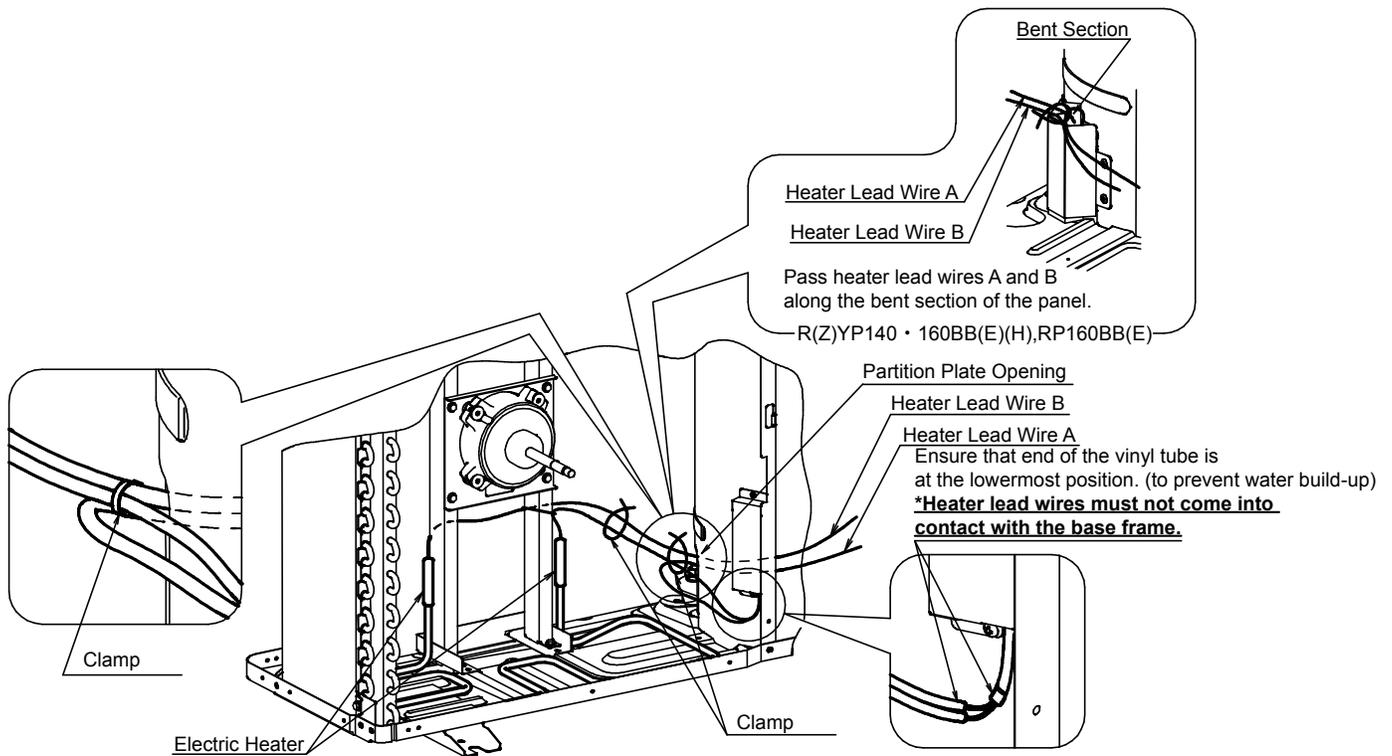
When using the electric heater, the voltage source capacity increases. For this reason, the capacity of the electrical facilities (leading wire and ground fault circuit interrupter) may be insufficient and may require changes to electrical facilities and power contract.

Wiring procedure

- Secure heater lead wires A and B to the fan motor base with the clamps.
 - Prevent the heater lead wires from coming into contact with the propeller fan
 - Use existing unit clamp to secure the lead wires - see image



- Lead heater lead wires A and B into the compressor side via the partition plate opening, and tie the lead wires with the clamps. (2 locations)
 - Prevent the heater lead wires from coming into contact with the electric heater heating element, base frame and propeller fan.
 - Lead the heater lead wires into the compressor side while making sure that there is no slack.
 - Ensure that the end of the vinyl tube is at the lowermost position to prevent water build-up in the vinyl tube of heater lead wire A.

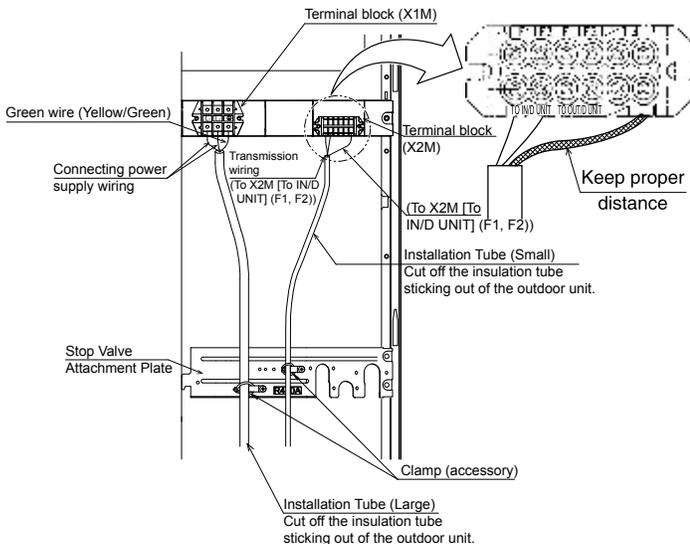
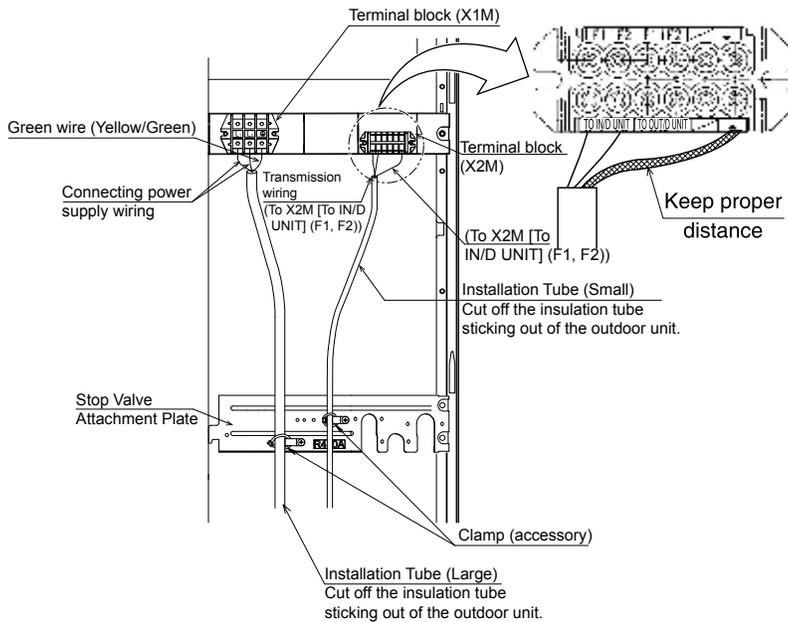


Cautions during connection of wiring

- When performing wiring, firmly connect the specified leads, and secure the wires so that no external force is applied on the terminals.
- Use an appropriate screwdriver for tightening the terminal screws.
- An inappropriately sized screwdriver damages screw heads and prevent screws from being tightened properly.
- Overtightening the terminal screws might damage the screws.
- For details on the tightening torque of the terminal screws, refer to the table on the right.

Tightening torque (lbf·ft)	
M4 (ground)	0.88 - 1.32
M5 (terminal block)	1.47 - 2.21

1. Connect heater lead wires A and B to the terminal block. (X1M)
-Connect heater lead wire A to terminal L1 (L) and heater lead wire B to terminal L2 (N).
2. Attach the ground wire to the terminal block mounting plate using the grounding screw (with spring washer).
3. Tie the heater lead wires and ground wire at the fuse holder with the local existing wiring bundles and clamps.
-Secure the wires so that no force is applied on the terminals.
-If there is surplus heater lead wire, bundle the wire on the vinyl tube section and tie it with clamps.
(If there is the risk of tied sections coming into contact with the front panel (2), push the tied sections into the space between the compressor and partition panel.)
-Prevent the heater lead wires from coming into contact with the exposed sections of the delivery pipe.



Installing Outdoor Unit Body Parts

Note: Also refer to the Installation Manual for the outdoor unit body.

Fan/front panel (1) and top panel installation procedure:

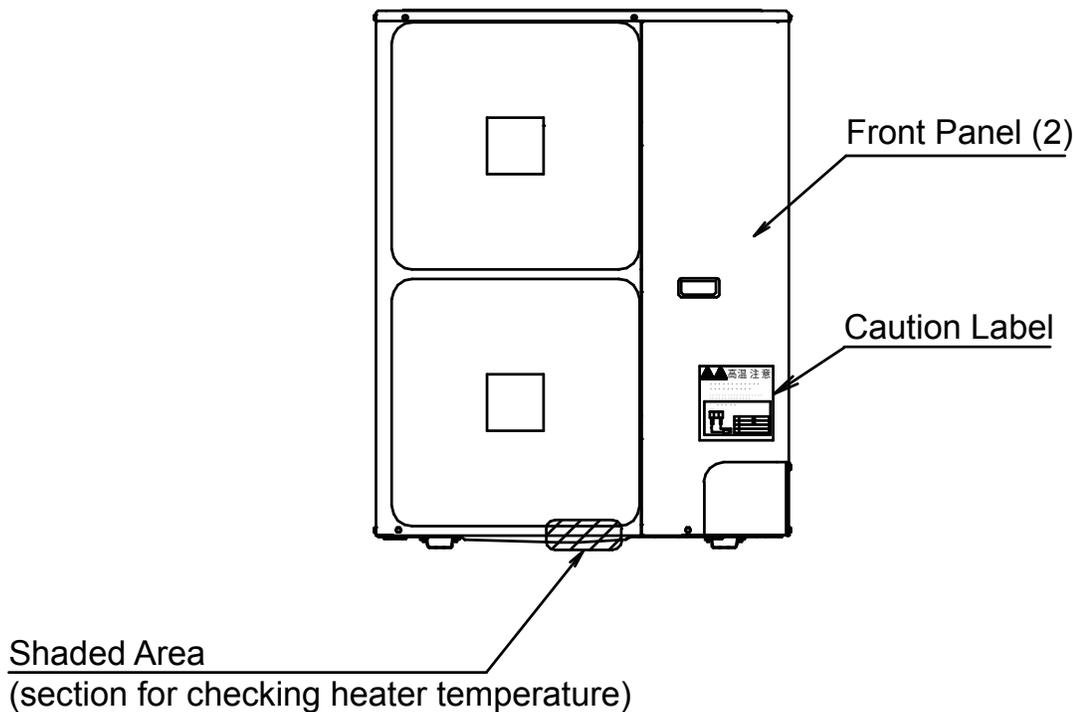
1. Installation of fan
Install the fan with the lock nut. (tightening torque 3.98 to 4.72 lbf•ft)
2. Referring to "Removing Outdoor Unit Body Parts," install the front panel (1) and top panel in the reverse order.

Test Run

1. Check that the electric wiring is correctly connected. **Ensure the fan propeller will not contact heater lead wires.**
2. Before turning the electric heater ON, check that the insulation resistance value is 1 MΩ or more.
-Measure the insulation resistance value across the electric heater connection terminal T (N) and the electric heater ground connection terminal with a 500 VDC insulation resistance meter.
3. Install front panel (2).
4. Turn the power ON, and check that the electric heater heats up.
-To check, touch near the shaded area of the outdoor unit in the figure below from the base.
-Power is not supplied to the heater when the outside air temperature is high. This is not an abnormality.
(thermo switch operation: ON at 35°F, OFF at 46°F)

Caution Label Attachment Procedure

Attach the caution label (supplied) at an easily visible position on the front of the outdoor unit.



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CUSTOMER FEEDBACK

Daikin is very interested in all product comments.

Please fill out the feedback form on the following link:

<https://daikincomfort.com/contact-us>

You can also scan the QR code on the right to be directed to the feedback page.



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