

Air-Conditioners For Building Application

OUTDOOR UNIT

RELAY BOX

PAC-BH02KTY-E

BASE HEATER

PAC-BH01EHT-E, PAC-BH02EHT-E, PAC-BH03EHT-E**INSTALLATION MANUAL**

For safe and correct use, please read this installation manual thoroughly before installing the air-conditioner unit.

INSTALLATIONSHANDBUCH

Zum sicheren und ordnungsgemäßen Gebrauch der Klimageräte das Installationshandbuch gründlich durchlesen.

MANUEL D'INSTALLATION

Veillez lire le manuel d'installation en entier avant d'installer ce climatiseur pour éviter tout accident et vous assurer d'une utilisation correcte.

MANUAL DE INSTALACIÓN

Para un uso seguro y correcto, lea detalladamente este manual de instalación antes de montar la unidad de aire acondicionado.

MANUALE DI INSTALLAZIONE

Per un uso sicuro e corretto, leggere attentamente questo manuale di installazione prima di installare il condizionatore d'aria.

INSTALLATIEHANDLEIDING

Voor een veilig en juist gebruik moet u deze installatiehandleiding grondig doorlezen voordat u de airconditioner installeert.

РУКОВОДСТВО ПО УСТАНОВКЕ

Для осторожного и правильного использования прибора необходимо тщательно ознакомиться с данным руководством по установке до выполнения установки кондиционера.

PŘÍRUČKA K INSTALACI

V zájmu bezpečného a správného používání si před instalací klimatizační jednotky důkladně pročtěte tuto příručku k instalaci.

NÁVOD NA INŠTALÁCIU

Pre bezpečné a správne použitie si pred inštalovaním klimatizačnej jednotky, prosím, starostlivo prečítajte tento návod na inštaláciu.

TELEPÍTÉSI KÉZIKÖNYV

A biztonságos és helyes használatához, kérjük, olvassa el alaposan ezt a telepítési kézikönyvet, mielőtt telepítené a légkondicionáló egységet.

PODRĘCZNIK INSTALACJI

W celu bezpiecznego i poprawnego korzystania należy przed zainstalowaniem klimatyzatora dokładnie zapoznać się z niniejszym podręcznikiem instalacji.

INSTALLATIONSHANDBOK

Läs den här installationshandboken noga innan luftkonditioneringsenheten installeras, för säker och korrekt användning.

MANUAL CU INSTRUCȚIUNI DE INSTALARE

Pentru o utilizare corectă și sigură, vă rugăm să citiți cu atenție acest manual înainte de a instala unitatea de aer condiționat.

GB

D

F

E

I

NL

RU

CZ

SV

HG

PO

SW

RO

Contents

1. Safety precautions	2	4. Preparation for installation	7
1.1. Before installation and electric work	2	5. Installation Procedures	9
1.2. Before installation	2	6. Heater Installation	10
1.3. Before installation (relocation) - electrical work	2	7. Electrical Wiring	33
1.4. Before starting the test run.....	3	8. Relay Box Installation	37
2. Parts List	4	9. Reassembly	41
3. Applicable models	6	10. Confirmation of proper operation	41

* For information not contained in this booklet, please refer to the Installation Manual of the outdoor unit.


- Consult your dealer for purchasing the Relay Box.
- The base heater is packaged separately from this product.


1. Safety precautions

1.1. Before installation and electric work





- ▶ Before installing the unit, make sure you read all the “Safety precautions”.
- ▶ The “Safety precautions” provide very important points regarding safety. Make sure you follow them.

Symbols used in the text

 **Warning:**
Describes precautions that should be observed to prevent danger of injury or death to the user.

 **Caution:**
Describes precautions that should be observed to prevent damage to the unit.

Symbols used in the illustrations

-  : Indicates an action that must be avoided.
-  : Indicates that important instructions must be followed.
-  : Indicates a part which must be grounded.
-  : Beware of electric shock. (This symbol is displayed on the main unit label.)
<Color: yellow>

-  **Warning:**
Carefully read the labels affixed to the main unit.

HIGH VOLTAGE WARNING:

- Control box houses high-voltage parts.
- When opening or closing the front panel of the control box, do not let it come into contact with any of the internal components.
- Before inspecting the inside of the control box, turn off the power, keep the unit off for at least 10 minutes, and confirm that the voltage between FT-P and FT-N on INV Board has dropped to DC20V or less. (It takes about 10 minutes to discharge electricity after the power supply is turned off.)

Warning:

- Ask the dealer or an authorized technician to install the air conditioner.
 - Improper installation by the user may result in water leakage, electric shock, or fire.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Use the specified cables for wiring. Make the connections securely so that the outside force of the cable is not applied to the terminals.
 - Inadequate connection and fastening may generate heat and cause a fire.
- Always use Relay Box and other accessories specified by Mitsubishi Electric.
 - Ask an authorized technician to install the accessories. Improper installation by the user may result in water leakage, electric shock, or fire.
- Never repair the unit. If the air conditioner must be repaired, consult the dealer.
 - If the unit is repaired improperly, water leakage, electric shock, or fire may result.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- To reduce the risk of electric shock, do not install the unit when it is raining.

- Never attempt to repair the unit without the proper qualifications. If the air conditioner must be repaired consult the dealer, contractor or qualified Refrigeration Engineer.
 - If the unit is repaired improperly, water leakage, electric shock, or fire may result.
- Have all electric work done by a licensed electrician according to the “Electric Facility Engineering Standard”, the “Wire Regulations in each area” and the instructions given in this manual and always use a dedicated power supply.
 - If the power source capacity is inadequate or electric work is performed improperly, electric shock and fire may result.
- Securely install the outdoor unit terminal cover (panel).
 - If the terminal cover (panel) is not installed properly, dust or water may enter the outdoor unit and fire or electric shock may result.
- When moving and reinstalling the air conditioner, consult the dealer or an authorized technician.
 - If the air conditioner is installed improperly, water leakage, electric shock, or fire may result.
- Do not reconstruct or change the settings of the protection devices.
 - If the pressure switch, thermal switch, fuse, or other protection device is shorted or operated forcibly, or parts other than those specified by Mitsubishi Electric are used, fire or explosion may result.
- To dispose of this product, consult your dealer.
- The installer and system specialist shall secure safety against leakage according to local regulation or standards.
 - Choose the appropriate wire size and the switch capacities for the main power supply described in this manual if local regulations are not available.
- Children should be supervised to ensure that they do not play with the appliance.

1.2. Before installation

Caution:

- Do not use the air conditioner in special environments.
 - Oil, steam, sulfuric smoke, etc. can significantly reduce the performance of the air conditioner or damage its parts.
- When installing the unit in a hospital, communication station, or similar place, provide sufficient protection against noise.
 - Inverter equipment, private power generator, high-frequency medical equipment, or radio communication equipment may cause the air conditioner to operate erroneously, or fail to operate. On the other hand, the air conditioner may affect such equipment by creating noise that disturbs medical treatment or image broadcasting.
- To reduce the risk of injury, wear protective gear when working on the controller.

1.3. Before installation (relocation) - electrical work

Caution:

- Ground the unit.
 - Do not connect the ground wire to gas or water pipes, lightning rods, or telephone ground lines. Improper grounding may result in electric shock.
- Install the power cable so that tension is not applied to the cable.
 - Tension may cause the cable to break and generate heat and cause a fire.
- Install a leak circuit breaker, as required.
 - If a leak circuit breaker is not installed, electric shock may result.
- Use power line cables of sufficient current carrying capacity and rating.
 - Cables that are too small may leak, generate heat, and cause a fire.
- Use only a circuit breaker and fuse of the specified capacity.
 - A fuse or circuit breaker of a larger capacity, or the use of a substitute simple steel or copper wire may result in a general unit failure or fire.
- Stop the operation and turn off the power before cleaning.
- Do not wash the air conditioner units.
 - Washing them may cause an electric shock.

- **Be very careful about transporting the product.**
 - One person should not carry the product. Its weight is in excess of 20 kg [45 LBS].
 - Some products use PP bands for packaging. Do not use any PP bands as a means of transportation. It is dangerous.
- **Safely dispose of the packing materials.**
 - Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
 - Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which has not been torn apart, they face the risk of suffocation.
- **Never connect in reverse phases.**
- **Install the power cable so that tension is not applied to the cable.**
- **Do not wash the air conditioner units.**

1.4. Before starting the test run



Caution:





- **Turn on the power at least 12 hours before starting operation.**
 - Starting operation immediately after turning on the main power switch can result in irreversible damage to internal parts. Keep the power switch turned on during the operational season. Make sure of the phase order of power supply and voltage between each phase.
- **Do not touch the switches with wet fingers.**
 - Touching a switch with wet fingers can result in an electric shock.
- **Do not touch the refrigerant pipes during and immediately after operation.**
 - During and immediately after operation, the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes.
- **Do not operate the air conditioner with the panels and guards removed.**
 - Rotating, hot, or high-voltage parts can cause injuries.
- **Do not turn off the power immediately after stopping operation.**
 - Always wait at least 5 minutes before turning off the power. Otherwise, drainage water leakage or mechanical failure of sensitive parts may occur.

2. Parts List

<PAC-BH02KTY-E>

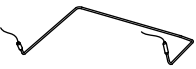
This kit contains the following parts.

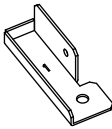
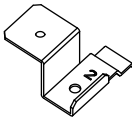
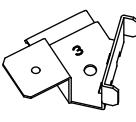


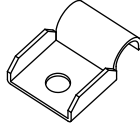
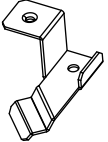
Parts name	Relay Box	Installation Manual
Shape		
Qty.	1	1



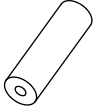
Parts name	Ⓐ Cable strap	Ⓑ M5 screw	Ⓒ Cable tie (black)	Ⓓ Wire seal
Shape				
Qty.	1	3	4	1

<PAC-BH01EHT-E>

This kit contains the following parts.

Parts name	Base Heater
Shape	
Qty.	1

Parts name	* Heater mounting brackets						
	①	②	③	④	⑤	⑥	⑦
Shape							
Qty.	1	1	1	1	1	1	1

Parts name	M5 screw	Cable tie (blue)	Pipe cover
Shape			
Qty.	5 (2 for spare)	5	1

* Use proper mounting brackets according to the outdoor unit model.

Refer to table "Heater mounting bracket list" in section 4. "Preparation for installation" on page 7.

<PAC-BH02EHT-E>

This kit contains the following parts.

Parts name	Base Heater
Shape	
Qty.	1

Parts name	* Heater mounting brackets					
	①	②	③	④	⑤	⑥
Shape						
Qty.	1	1	1	1	1	1

Parts name	* Heater mounting brackets					
	⑦	⑧	⑨	⑩	⑪	⑫
Shape						
Qty.	1	1	3	1	1	1

Parts name	M5 screw	Cable tie (blue)	Pipe cover
Shape			
Qty.	6	5	1

* Use proper mounting brackets according to the outdoor unit model.

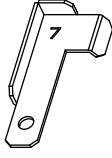
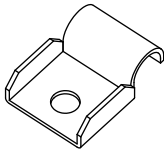
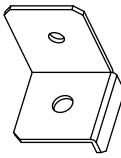
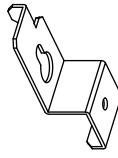
Refer to table "Heater mounting bracket list" in section 4. "Preparation for installation" on page 8.




<PAC-BH03EHT-E>

This kit contains the following parts.

Parts name	Base Heater
Shape	
Qty.	2

Parts name	* Heater mounting brackets					
	①	②	③	④	⑤	⑥
Shape						
Qty.	1	1	2	1	1	1

Parts name	* Heater mounting brackets		Wiring fixing brackets	
	⑦	⑧	⑨	⑩
Shape				
Qty.	1	3	1	1

Parts name	Cable strap	M5 screw	Cable tie (blue)
Shape			
Qty.	2	10 (2 for spare)	5

* Use proper mounting brackets according to the outdoor unit model.
Refer to table "Heater mounting bracket list" in section 4. "Preparation for installation" on page 9.

3. Applicable models

Unit model	Target sales area	Applicable models	Type		
			S module	L module	XL module
PAC-BH02KTY-E	Europe and other countries	PUHY-P○YHM-A	200, 250, 300	350, 400, 450	–
		PUHY-EP○YHM-A	200	250, 300	–
		PUHY-P○YJM-A	200, 250, 300	350, 400	450
		PUHY-EP○YJM-A	200	250	300
		PUHY-HP○YHM-A	200, 250	–	–
		PUHY-RP○YJM-A	200, 250, 300, 350	–	–
		PURY-P○YHM-A	200, 250, 300	350, 400	–
		PURY-EP○YHM-A	200	250, 300	–
		PURY-P○YJM-A	200, 250, 300	350, 400	450
		PURY-EP○YJM-A	200	250, 300	350
		PURY-RP○YJM-A	–	200, 250, 300	–

4. Preparation for installation

<PAC-BH01EHT-E>

- This base heater and the Relay Box must be installed by a dealer or certified technician.
- Refer to the table below for the required mounting brackets for the outdoor unit on which the base heater will be installed.

Heater mounting bracket list

Target sales area	Applicable models	Heater mounting bracket							Accumulator type		
		①	②	③	④	⑤	⑥	⑦	Large		Small
									With Oil tank	Non Oil tank	
Europe and other countries	PUHY-P200YHM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-P250YHM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-P300YHM-A	1	1	1	-	1	1	-	-	●	-
	PUHY-EP200YHM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-P200YJM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-P250YJM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-P300YJM-A	1	1	1	-	1	1	-	-	●	-
	PUHY-EP200YJM-A	1	1	1	1	-	1	-	-	-	●
	PUHY-HP200YHM-A	1	1	1	-	1	1	-	-	●	-
	PUHY-HP250YHM-A	1	1	1	-	1	1	-	-	●	-
	PUHY-RP200YJM-A	1	-	1	-	1	1	1	●	-	-
	PUHY-RP250YJM-A	1	-	1	-	1	1	1	●	-	-
	PUHY-RP300YJM-A	1	-	1	-	1	1	1	●	-	-
	PUHY-RP350YJM-A	1	-	1	-	1	1	1	●	-	-
	PURY-P200YHM-A	1	1	1	-	1	1	-	-	●	-
	PURY-P250YHM-A	1	1	1	-	1	1	-	-	●	-
	PURY-P300YHM-A	1	1	1	-	1	1	-	-	●	-
	PURY-EP200YHM-A	1	1	1	-	1	1	-	-	●	-
	PURY-P200YJM-A	1	1	1	-	1	1	-	-	●	-
	PURY-P250YJM-A	1	1	1	-	1	1	-	-	●	-
PURY-P300YJM-A	1	1	1	-	1	1	-	-	●	-	
PURY-EP200YJM-A	1	1	1	-	1	1	-	-	●	-	

* The numbers in the table indicate the number of parts to be used.

Specifications of the outdoor unit base heater

Output	[W]	181 (220)/198 (230)/216 (240)
	[W/m]	116 (220)/127 (230)/139 (240)
Power supply voltage	[V]	220, 230, 240
Heater length [mm (inch)]		1554 (62.2)
Heater diameter [mm (inch)]		ø8 (ø0.32)

- The following tools are required to install the base heater. These are field-supplied.
 - Phillips screwdriver (magnetic tip): Use to remove or install panels.
 - Phillips screwdriver (Minimum 40 cm, magnetic tip): Use to install or uninstall the mounting brackets, and to screw or unscrew the screws on the accumulator.
 - Ratchet, spanner: Use to fix the mounting brackets to the screw holes on the accumulator. Use when the screws on the accumulator are hard to remove.
 - Threaded rod (Minimum 60 cm, M5): Use to install the mounting brackets to the base.
 - Nippers: Use to cut cable ties.
 - Tester: Use to check the base heater for proper operation.
 - Gloves: Use to keep your hands out of direct contact with the heat exchanger fins, hot section, etc.
 - Helmet or cap: Use to keep your head protected when you bump your head against the outdoor unit fan motor.
 - Head light: Use when it is too dark to see the bracket mounting area.
- Check that the main power on the outdoor unit is turned off.
- Base heater installation requires many screws to be unscrewed. Do not lose these screws.
- Thoroughly remove the dust from the base of the unit.

<PAC-BH02EHT-E>

- This base heater and the Relay Box must be installed by a dealer or certified technician.
- Refer to the table below for the required mounting brackets for the outdoor unit on which the base heater will be installed.

Heater mounting bracket list

Target sales area	Applicable models	Heater mounting bracket												Accumulator type	
		①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	Vertical installation	Horizontal installation
Europe and other countries	PUHY-P350YHM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-P400YHM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-P450YHM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-EP250YHM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-EP300YHM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-P350YJM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-P400YJM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PUHY-EP250YJM-A	1	1	-	1	-	-	1	1	3	-	-	-	-	●
	PURY-P350YHM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-P400YHM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-EP250YHM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-EP300YHM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-P350YJM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-P400YJM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-EP250YJM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-EP300YJM-A	1	-	1	1	-	-	1	1	3	-	-	-	-	●
	PURY-RP200YJM-A	1	-	1	-	-	-	-	-	1	1	1	1	●	-
	PURY-RP250YJM-A	1	-	1	-	-	-	-	-	1	1	1	1	●	-
PURY-RP300YJM-A	1	-	1	-	-	-	-	-	1	1	1	1	●	-	

* The numbers in the table indicate the number of parts to be used.

Specifications of the outdoor unit base heater

Output	[W]	181 (220)/198 (230)/216 (240)
	[W/m]	89 (220)/98 (230)/107 (240)
Power supply voltage	[V]	220, 230, 240
Heater length [mm (inch)]		2024 (81.0)
Heater diameter [mm (inch)]		ø8 (ø0.32)

- The following tools are required to install the base heater. These are field-supplied.
 - Phillips screwdriver (magnetic tip): Use to remove or install panels.
 - Phillips screwdriver (Minimum 40 cm, magnetic tip): Use to install or uninstall the mounting brackets, and to screw or unscrew the screws on the accumulator.
 - Ratchet, spanner: Use to fix the mounting brackets to the screw holes on the accumulator. Use when the screws on the accumulator are hard to remove.
 - Threaded rod (Minimum 60 cm, M5): Use to install the mounting brackets to the base.
 - Nippers: Use to cut cable ties.
 - Tester: Use to check the base heater for proper operation.
 - Gloves: Use to keep your hands out of direct contact with the heat exchanger fins, hot section, etc.
 - Helmet or cap: Use to keep your head protected when you bump your head against the outdoor unit fan motor.
 - Head light: Use when it is too dark to see the bracket mounting area.
- Check that the main power on the outdoor unit is turned off.
- Base heater installation requires many screws to be unscrewed. Do not lose these screws.
- Thoroughly remove the dust from the base of the unit.

<PAC-BH03EHT-E>

- This base heater and the Relay Box must be installed by a dealer or certified technician.
- Refer to the table below for the required mounting brackets for the outdoor unit on which the base heater will be installed.

Heater mounting bracket list

Target sales area	Applicable models	Heater mounting bracket								Wiring fixing bracket	
		①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
Europe and other countries	PUHY-P450YJM-A	1	1	2	1	1	1	1	3	1	1
	PUHY-EP300YJM-A										
	PURY-P450YJM-A										
	PURY-EP350YJM-A										

* The numbers in the table indicate the number of parts to be used.

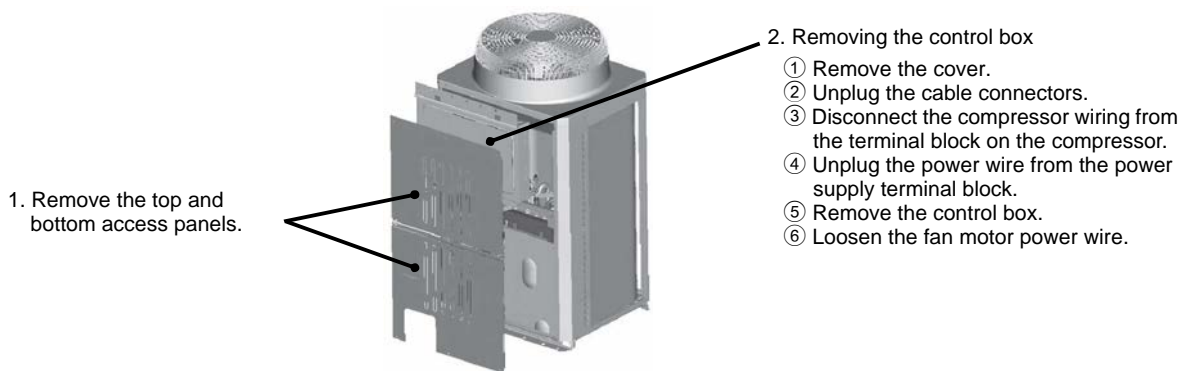
Specifications of the outdoor unit base heater

Output	[W]	362 (220)/396 (230)/432 (240)
	[W/m]	102 (220)/111 (230)/121 (240)
Power supply voltage	[V]	220, 230, 240
Heater length [mm (inch)]		1783 × 2 (71.3 × 2)
Heater diameter [mm (inch)]		ø8 (ø0.32)

- The following tools are required to install the base heater. These are field-supplied.
 - Phillips screwdriver (magnetic tip): Use to remove or install panels.
 - Phillips screwdriver (Minimum 40 cm, magnetic tip): Use to install or uninstall the mounting brackets, and to screw or unscrew the screws on the accumulator.
 - Ratchet, spanner: Use to fix the mounting brackets to the screw holes on the accumulator. Use when the screws on the accumulator are hard to remove.
 - Threaded rod (Minimum 60 cm, M5): Use to install the mounting brackets to the base.
 - Nippers: Use to cut cable ties.
 - Tester: Use to check the base heater for proper operation.
 - Gloves: Use to keep your hands out of direct contact with the heat exchanger fins, hot section, etc.
 - Helmet or cap: Use to keep your head protected when you bump your head against the outdoor unit fan motor.
 - Head light: Use when it is too dark to see the bracket mounting area.
- Check that the main power on the outdoor unit is turned off.
- Base heater installation requires many screws to be unscrewed. Do not lose these screws.
- Thoroughly remove the dust from the base of the unit.

5. Installation Procedures

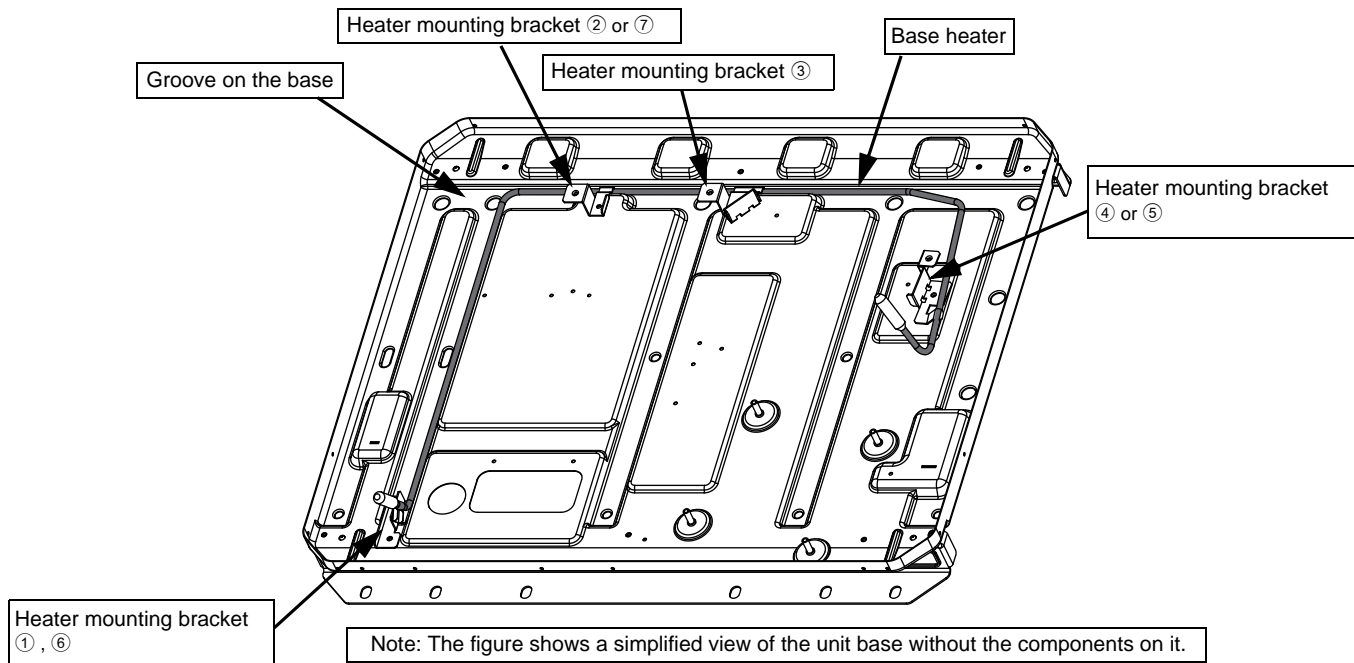
(1) Removing the panels and the control box



6. Heater Installation

<PAC-BH01EHT-E>

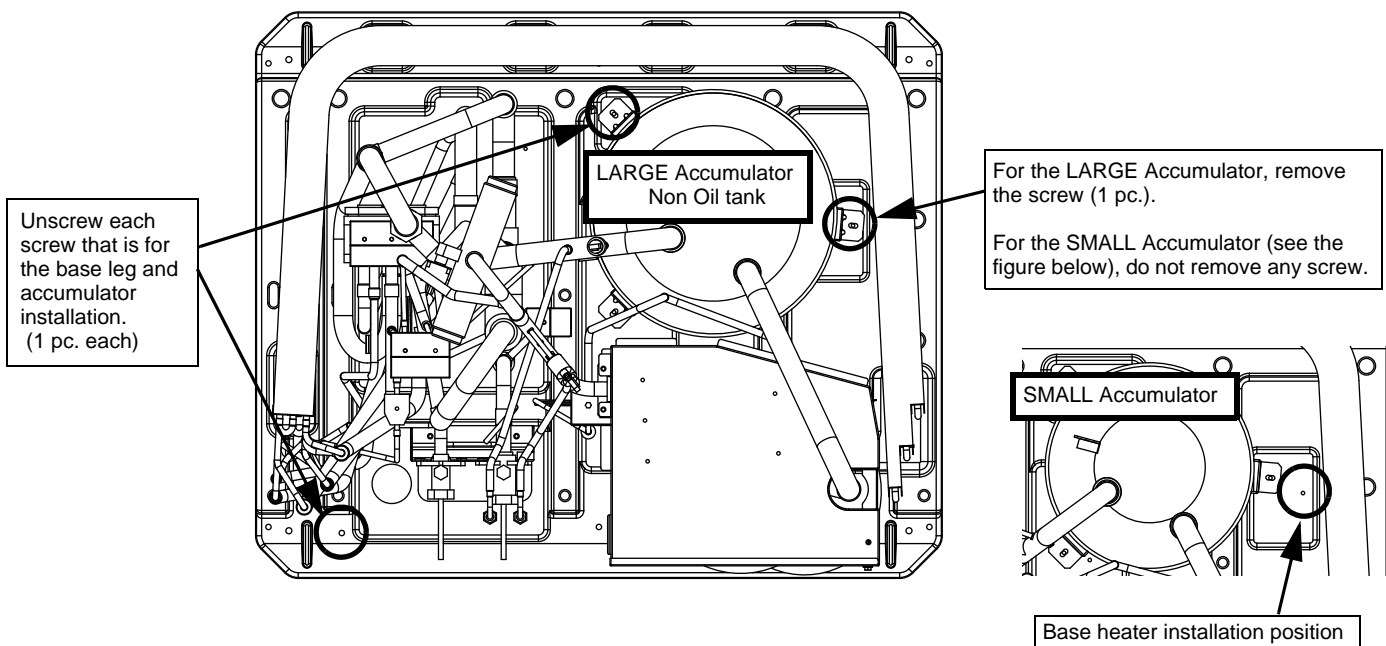
Run the base heater along the groove on the unit base.



- Install the base heater inside the unit by following the procedures (6)-1 through (6)-3 below.

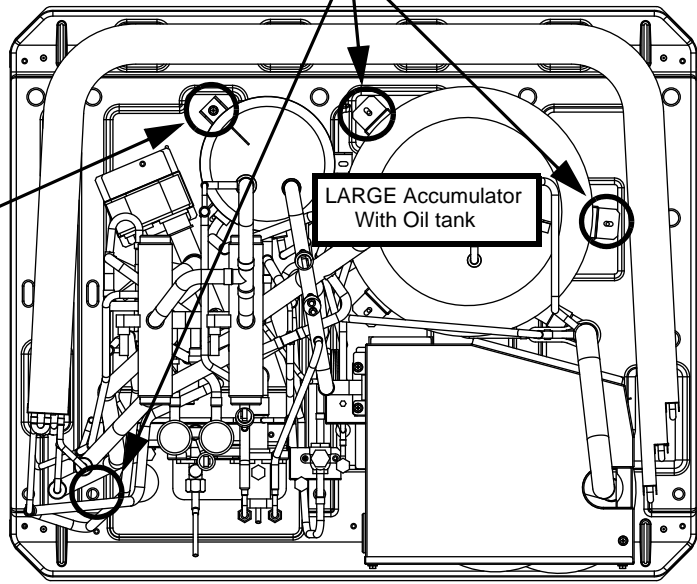
Caution: To reduce the risk of injury, wear protective gear when installing the base heater.

(6)-1 Unscrew the screws as shown in the figure below.

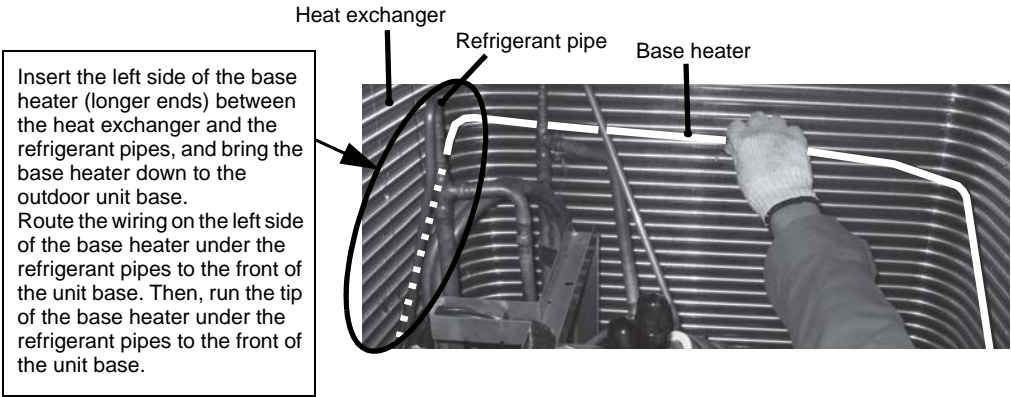


Unscrew each screw that is for the base leg and accumulator installation. (1 pc. each)

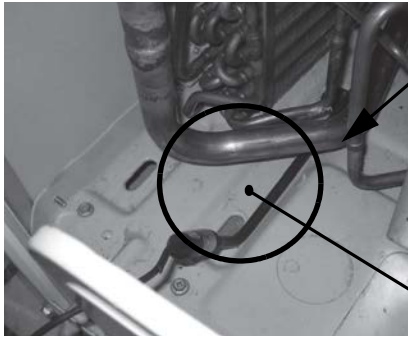
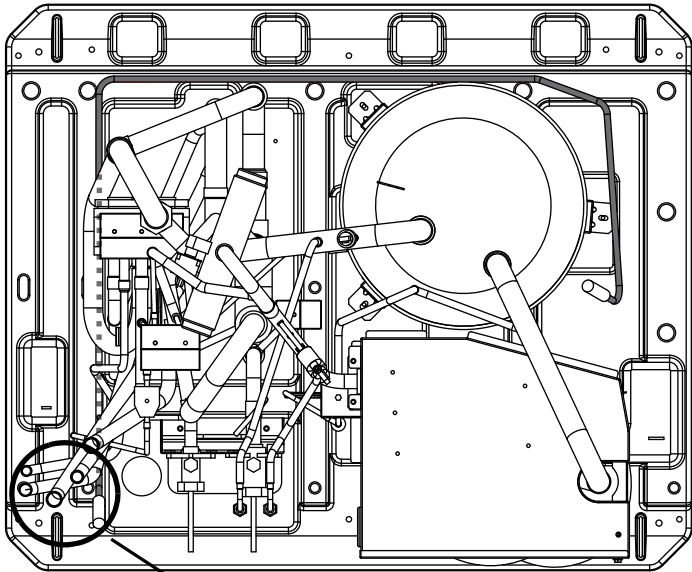
Unscrew a screw that is for the Oil tank installation.



(6)-2 Attach the base heater to the outdoor unit base.



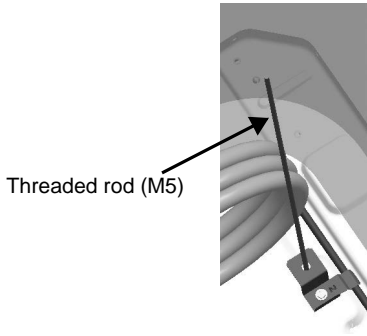
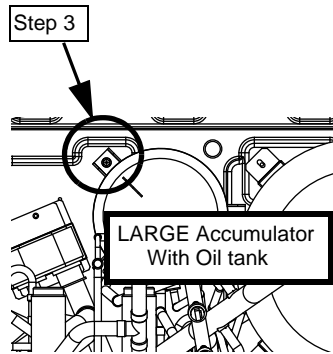
After the base heater is inserted (before the heater mounting brackets are installed)



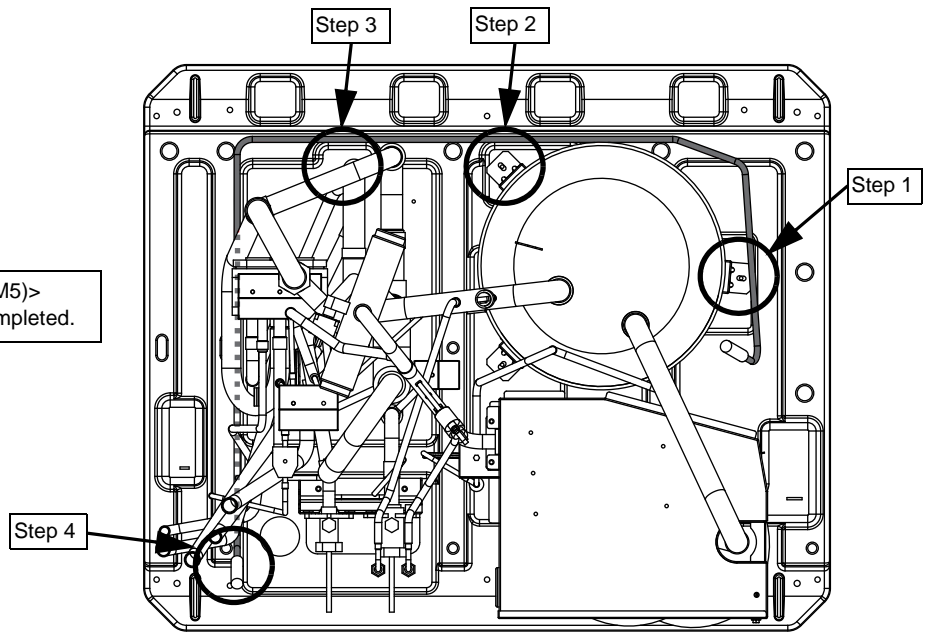
(6)-3 Install the heater mounting brackets.

* For easier installation of the heater mounting brackets ② through ⑤ and ⑦, use a threaded rod (M5).
Follow the steps below.

- Step 1: Install the heater mounting bracket ④ or ⑤.
- Step 2: Install the heater mounting bracket ③.
- Step 3: Install the heater mounting bracket ② or ⑦.
- Step 4: Install the heater mounting brackets ① and ⑥.



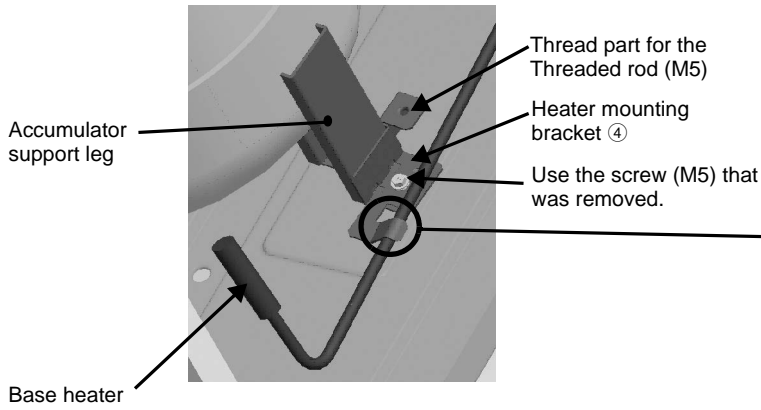
<Usage example of the Threaded rod (M5)>
* Remove the Threaded rod after the use is completed.



Step 1. Install the heater mounting bracket ④ or ⑤.

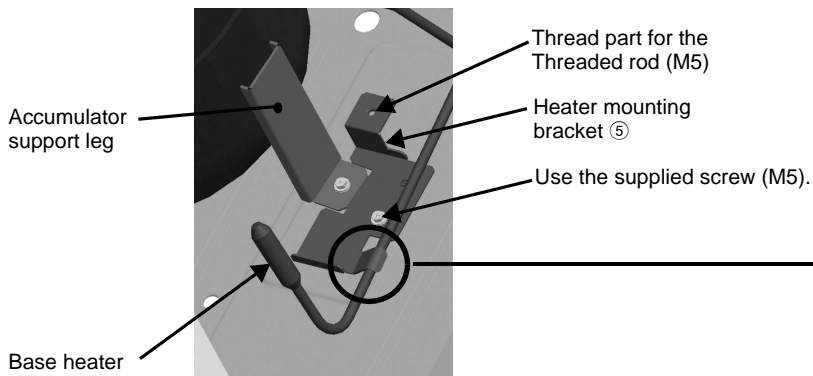
* When using the heater mounting bracket ④ or ⑤, refer to "Applicable models" on page 6 and "Heater mounting bracket list" on page 7.

For the LARGE Accumulator, install heater mounting bracket ④ as shown in the figure below.



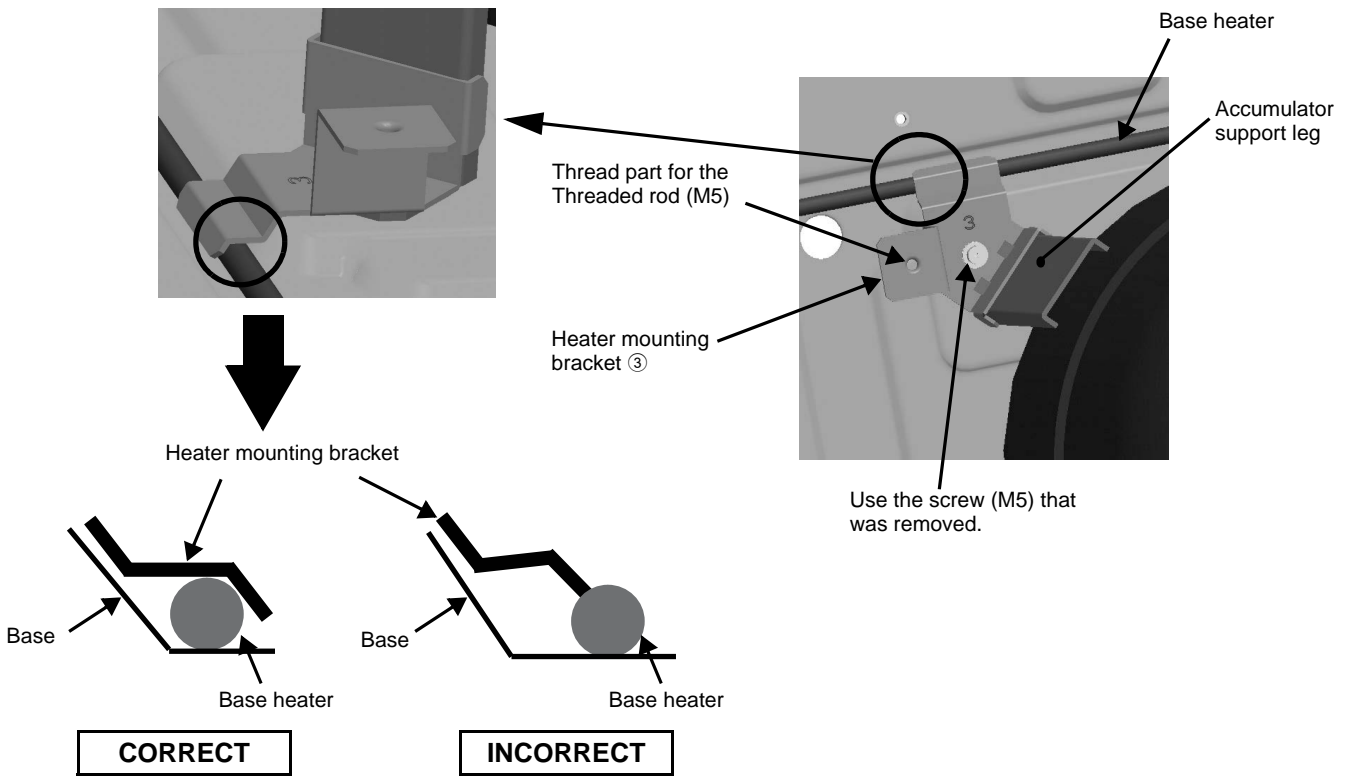
Tilt the heater mounting bracket ④ or ⑤ a little to attach it to the heater, slide it to the Accumulator support leg, and secure them together.

For the SMALL Accumulator, install heater mounting bracket ⑤ as shown in the figure below.



Step 2. Install the heater mounting bracket ③.

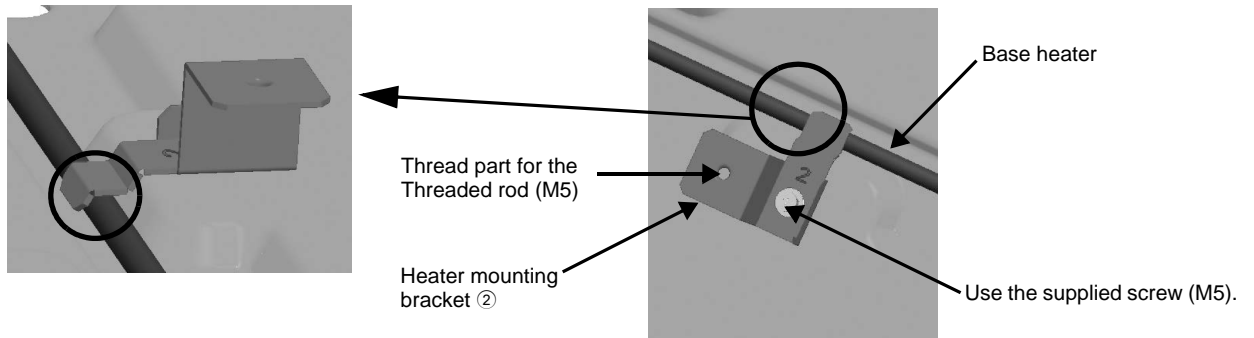
Note) As shown in the figures below, properly secure the base heater and the mounting bracket.



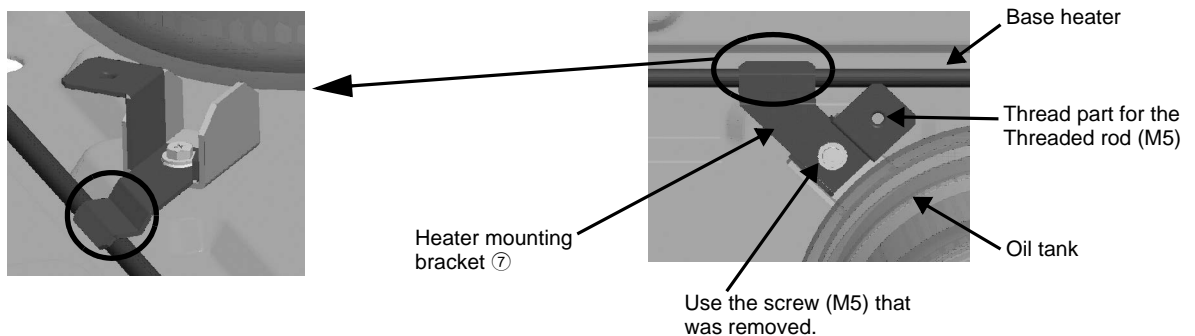
Step 3. Install the heater mounting bracket ② or ⑦.

Note) Properly secure the base heater and the mounting bracket.
 <Refer to "Note" in Step 2.>

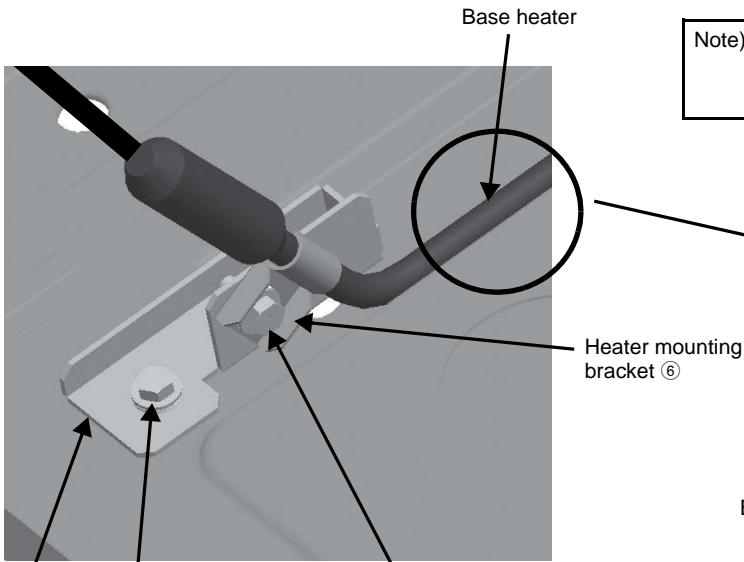
For the LARGE Accumulator (Non Oil tank) and the SMALL Accumulator, install heater mounting bracket ② as shown in the figure below.



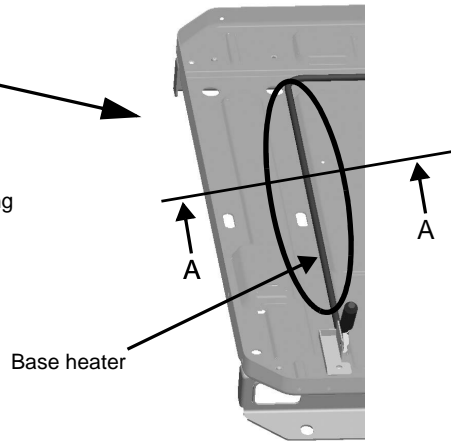
For the LARGE Accumulator (With Oil tank), install heater mounting bracket ⑦ as shown in the figure below.



Step 4. Install the heater mounting brackets ① and ⑥.

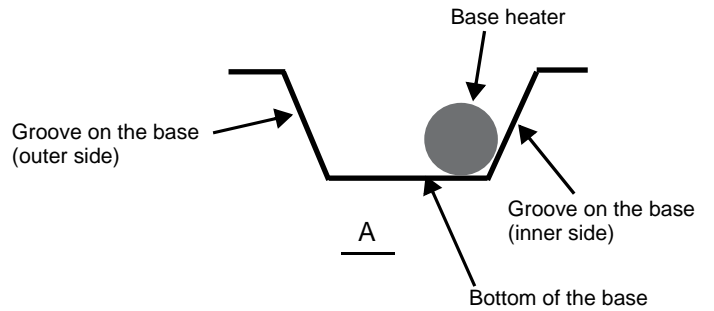


Note) Run the base heater along the inner side of the groove on the base, and fix the base heater with the mounting brackets ① and ⑥.



Heater mounting bracket ①
Use the screw (M5) that was removed.
Use the supplied screw (M5).

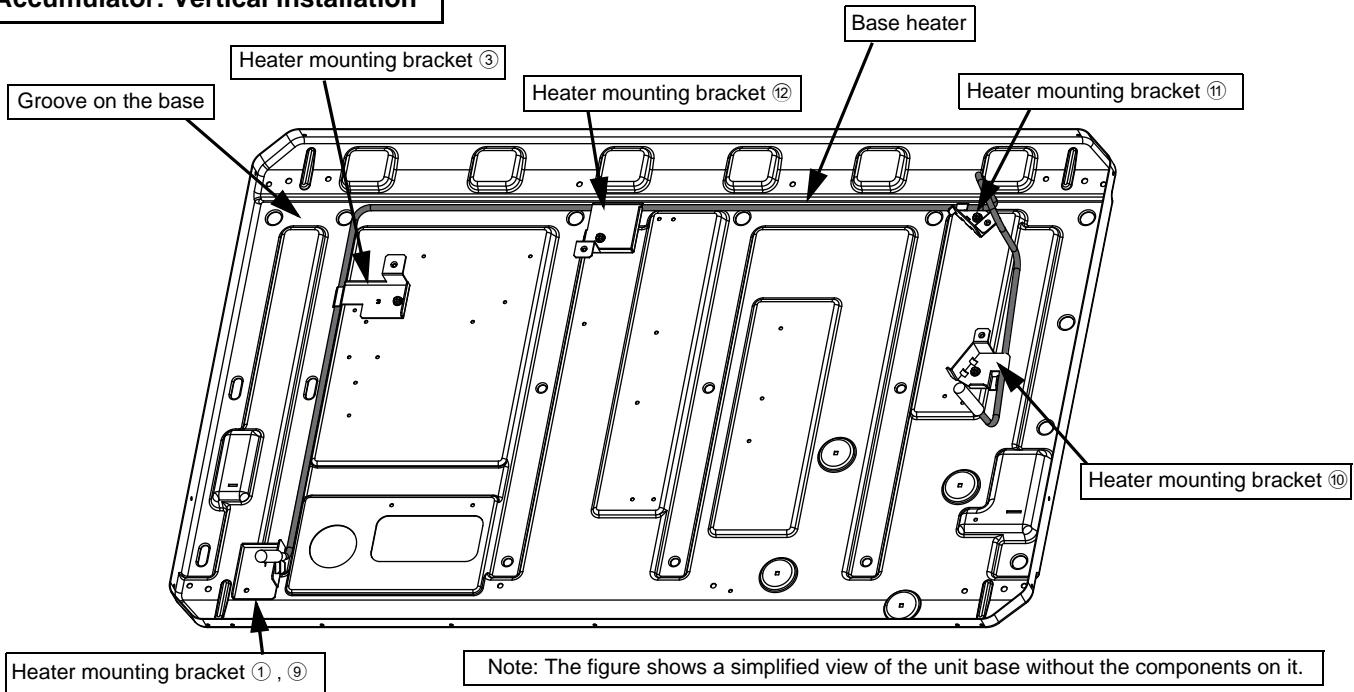
Note) Secure the base heater so that it touches the bottom of the base.



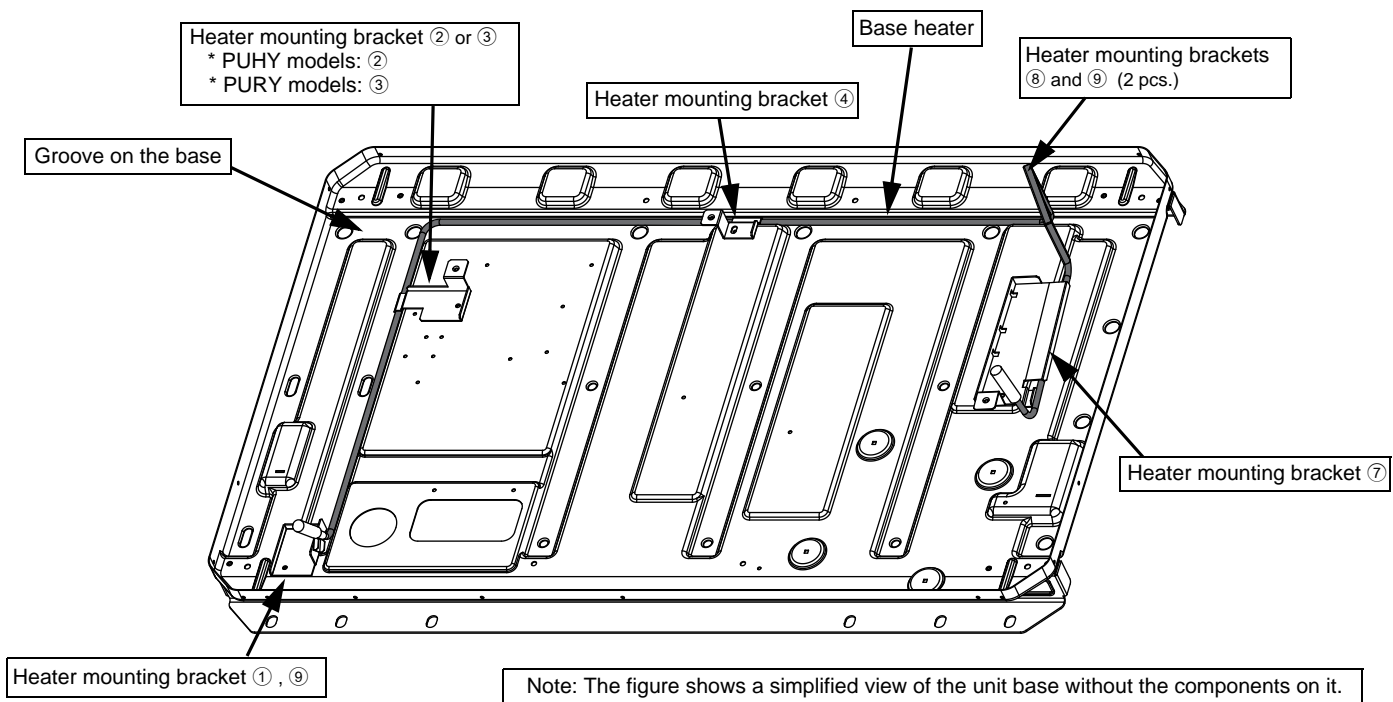
<PAC-BH02EHT-E>

Run the base heater along the groove on the unit base.

Accumulator: Vertical installation



Accumulator: Horizontal installation



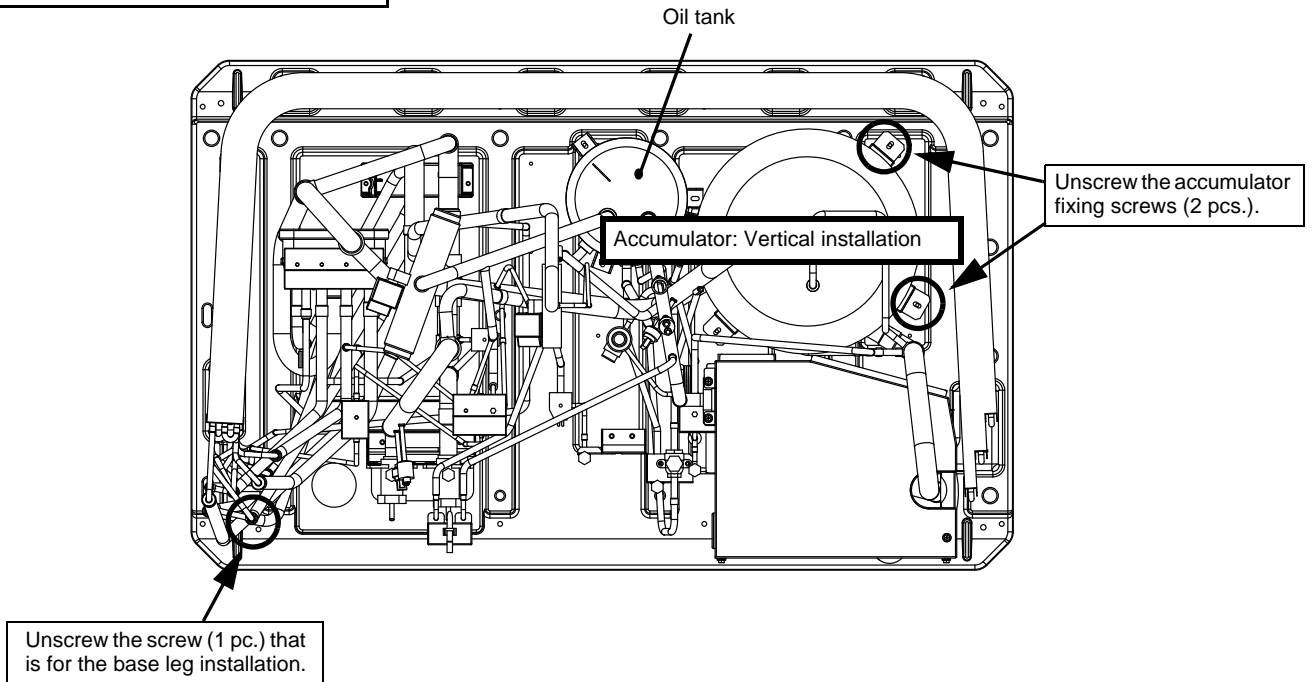
- Install the base heater inside the unit by following the procedures (6)-1 through (6)-4 below.

Caution: To reduce the risk of injury, wear protective gear when installing the base heater.

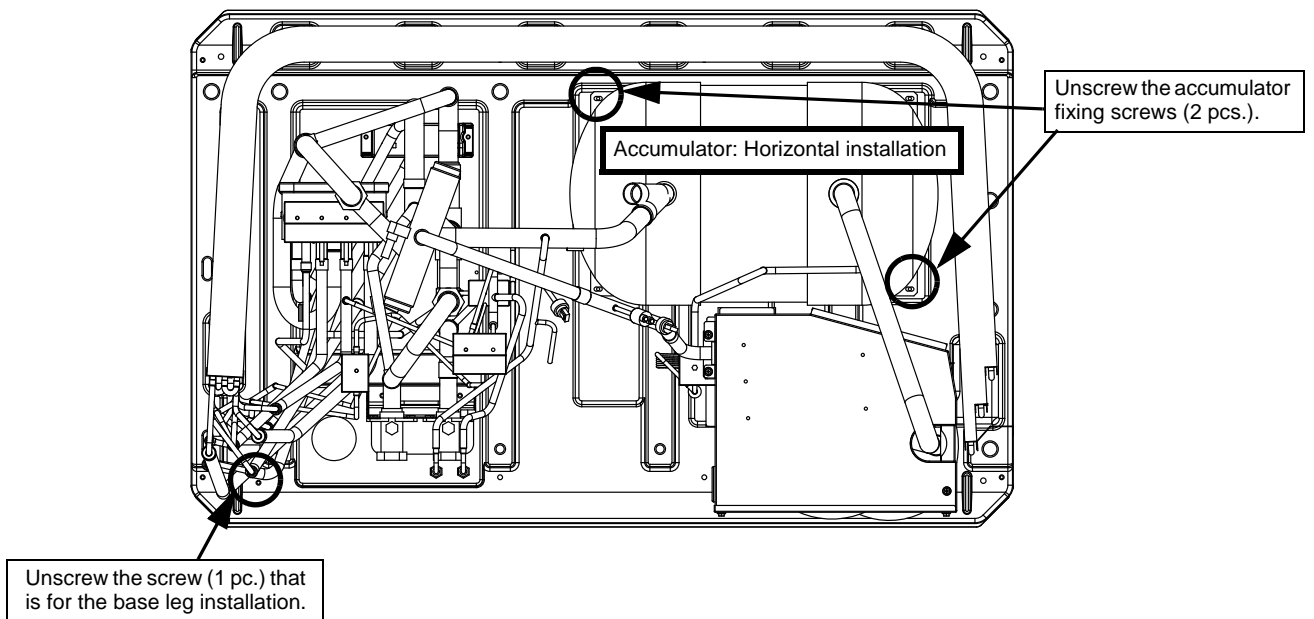
(6)-1 Unscrew the screws as shown in the figure below.

* Refer to table "Heater mounting bracket list" on page 8 for accumulator type.

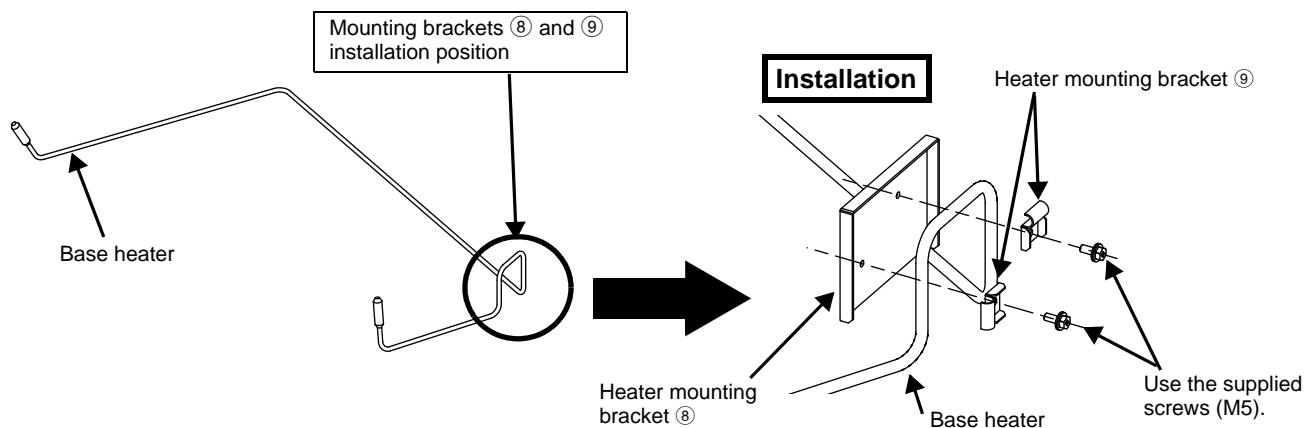
Accumulator: Vertical installation



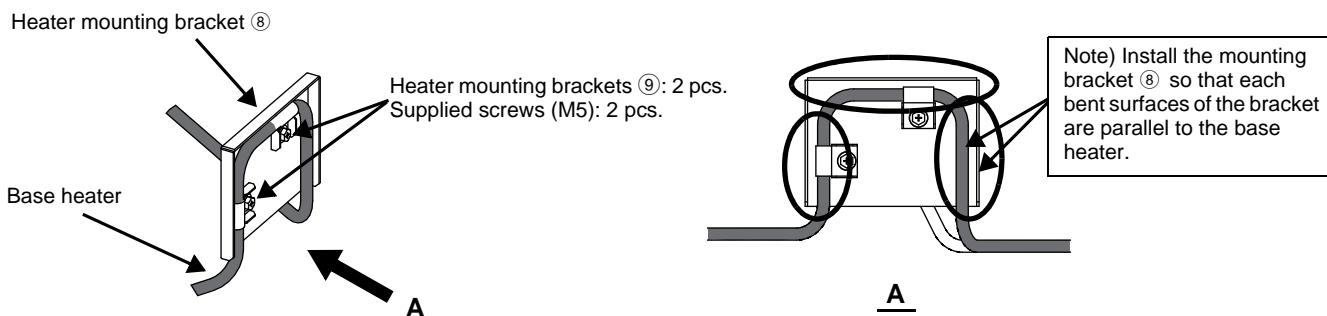
Accumulator: Horizontal installation



- (6)-2 Install the heater mounting brackets ⑧ and ⑨ to the base heater.
 * Only when the accumulator is installed horizontally



After installation



(6)-3 Attach the base heater to the outdoor unit base.

Heat exchanger
Refrigerant pipe
Base heater

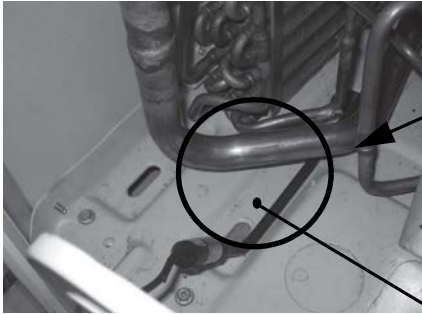
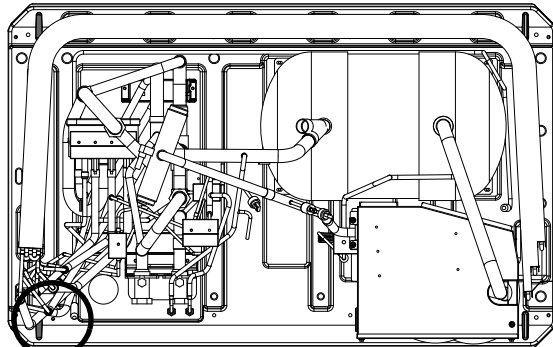
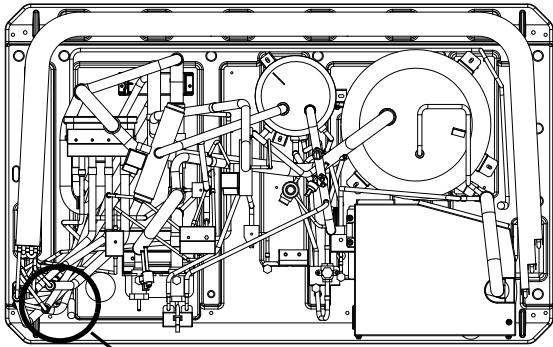
Insert the left side of the base heater (longer ends) between the heat exchanger and the refrigerant pipes, and bring the base heater down to the outdoor unit base. Route the wiring on the left side of the base heater under the refrigerant pipes to the front of the unit base. Then, run the tip of the base heater under the refrigerant pipes to the front of the unit base.



After the base heater is inserted (before the heater mounting brackets are installed)

Accumulator: Vertical installation

Accumulator: Horizontal installation



Run the base heater along the groove on the base to keep it out of contact with other pipes.

Groove on the base

(6)-4 Install the heater mounting brackets.

* For easier installation of the heater mounting brackets ② through ⑥, use a threaded rod (M5).

Follow the steps below.

Step 1: Install the heater mounting brackets ⑩ and ⑪, or ④.

<Accumulator: Vertical installation>

Install the heater mounting brackets ⑩ and ⑪.

<Accumulator: Horizontal installation>

Install the heater mounting bracket ④.

Step 2: Install the heater mounting bracket ⑫ or ⑦.

<Accumulator: Vertical installation>

Install the heater mounting bracket ⑫.

<Accumulator: Horizontal installation>

Install the heater mounting bracket ⑦.

Step 3: Install the heater mounting bracket ② or ③.

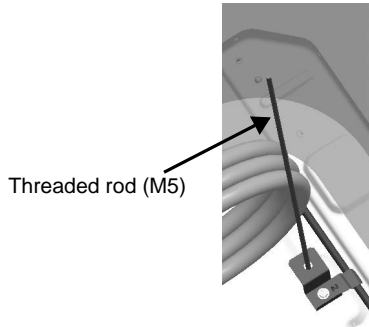
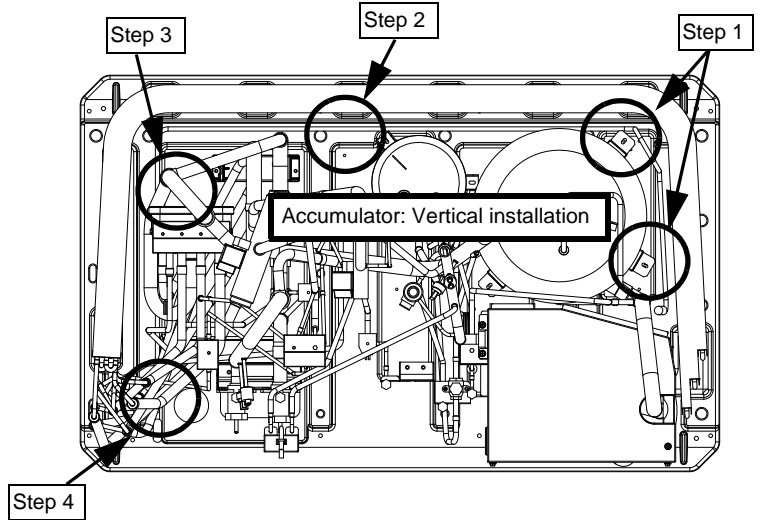
<PUHY models>

Install the heater mounting bracket ②.

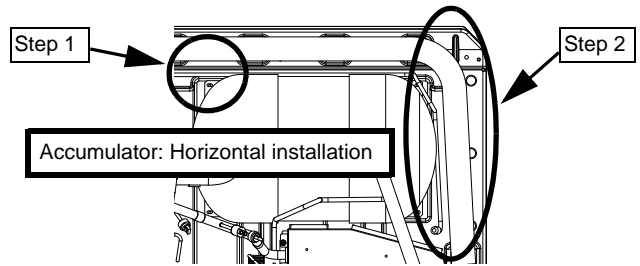
<PURY model>

Install the heater mounting bracket ③.

Step 4: Install the heater mounting brackets ① and ⑨.



Threaded rod (M5)

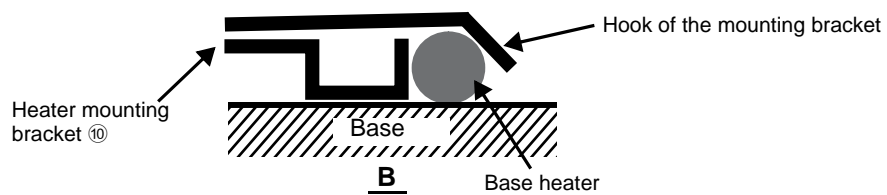
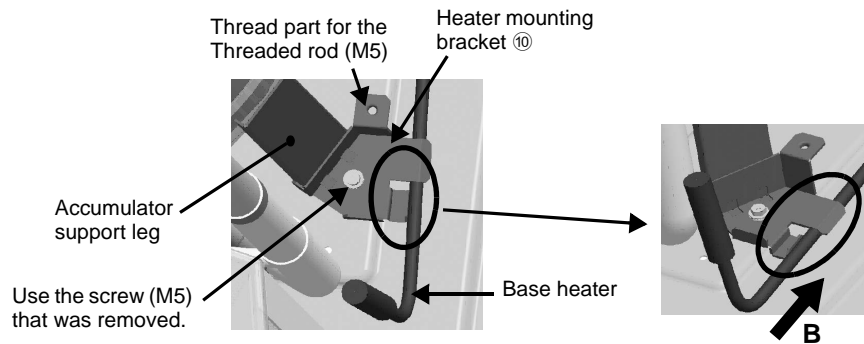
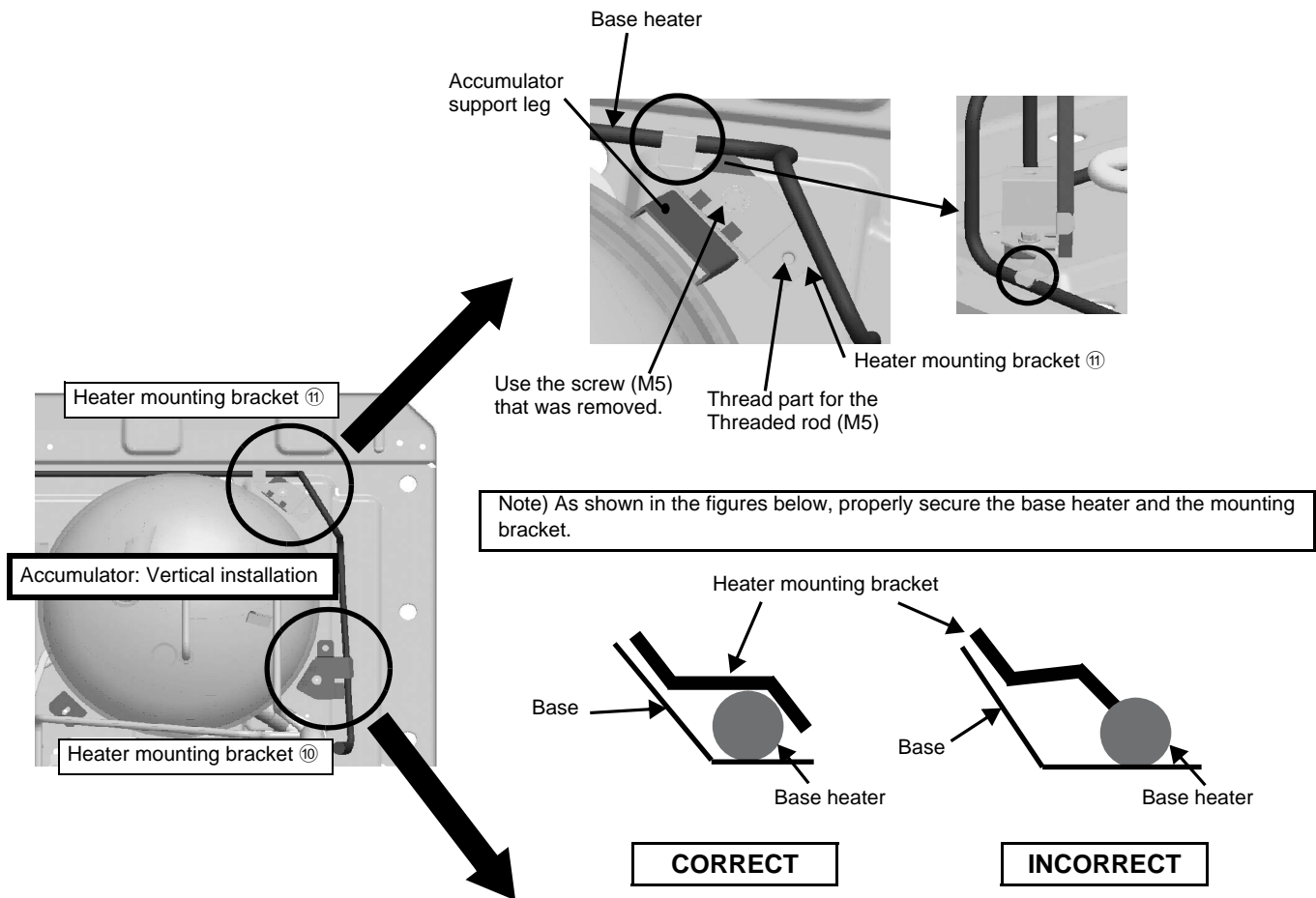


<Usage example of the Threaded rod (M5)>
* Remove the Threaded rod after the use is completed.

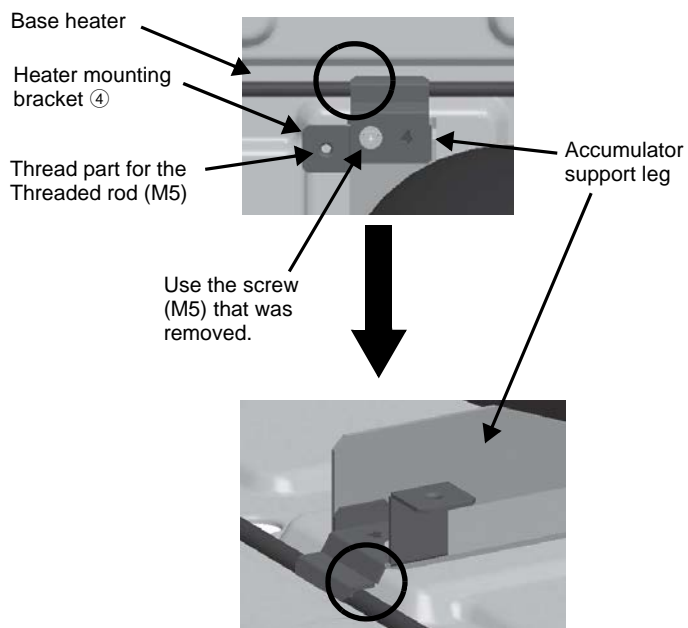
Step 1. Install the heater mounting brackets ⑩ and ⑪, or ④.

* When using the heater mounting brackets ⑩ and ⑪ or ④, refer to "Heater mounting bracket list" on page 8.

For the accumulator vertical installation, install heater mounting brackets ⑩ and ⑪.



For the accumulator horizontal installation, install heater mounting bracket ④.

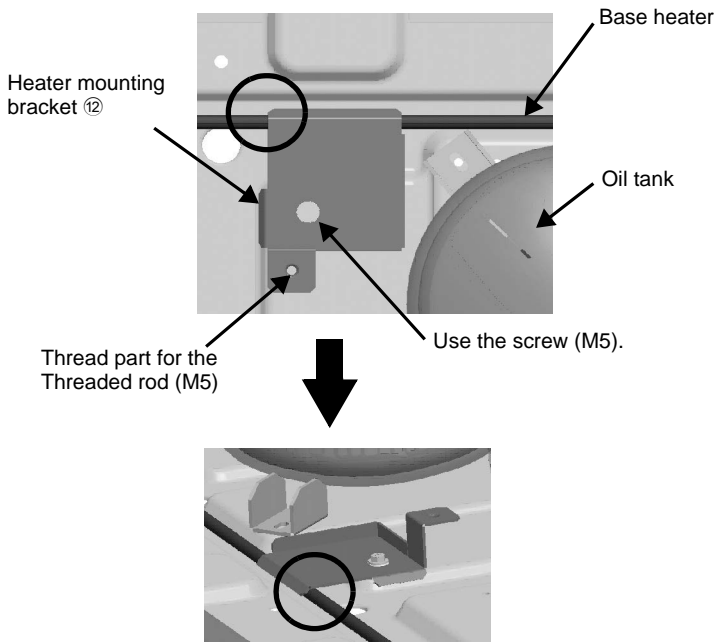


Note) Properly secure the base heater and the mounting bracket. <Refer to "Note)" in Step 1.>

Step 2. Install the heater mounting bracket ⑫ or ⑦.

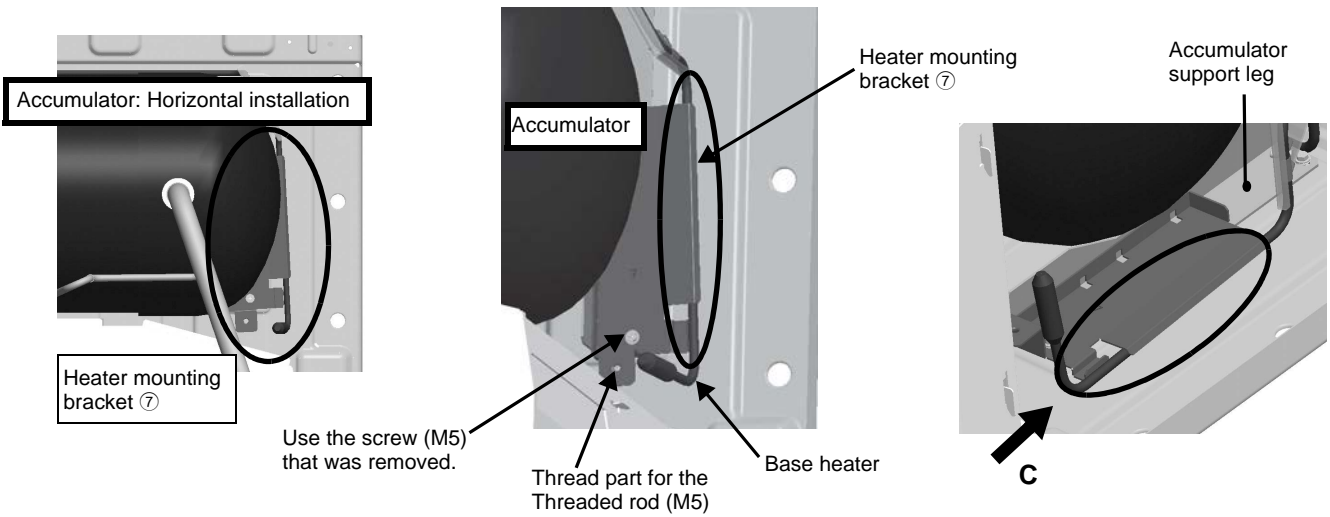
* When using the heater mounting bracket ⑫ or ⑦, refer to "Heater mounting bracket list" on page 8.

For the accumulator vertical installation, install heater mounting bracket ⑫.

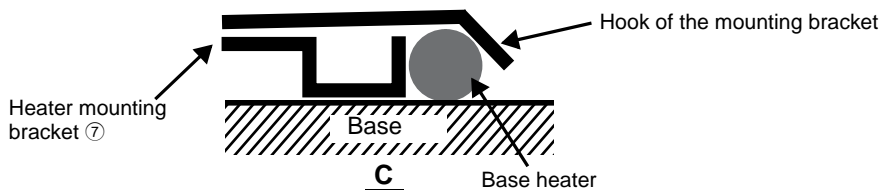


Note) Properly secure the base heater and the mounting bracket. <Refer to "Note)" in Step 1.>

For the accumulator horizontal installation, install heater mounting bracket ⑦.



Note) As shown in the figure below, hook the base heater in the hook of the mounting bracket ⑦, slide the bracket toward the Accumulator support leg, and properly secure them together.

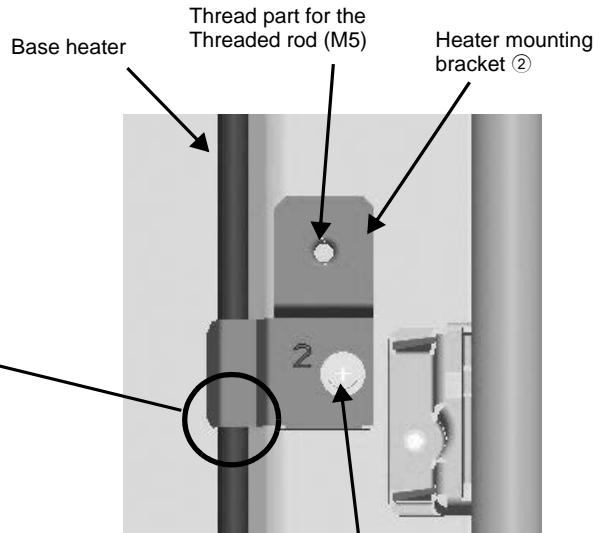
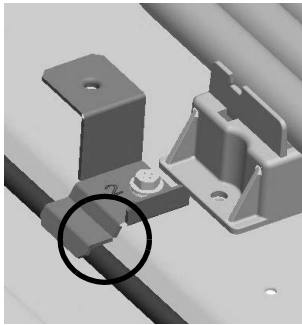


Step 3. Install the heater mounting bracket ② or ③.

* When using the heater mounting bracket ② or ③, refer to "Heater mounting bracket list" on page 8.

For PUHY models, install heater mounting bracket ② .

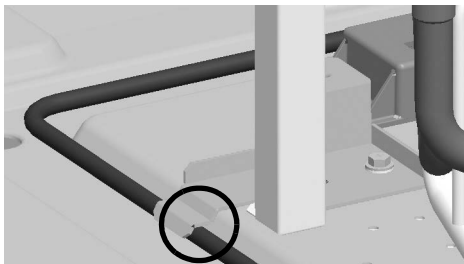
Note) Properly secure the base heater and the mounting bracket.
<Refer to "Note)" in Step 1.>



Use the supplied screw (M5).

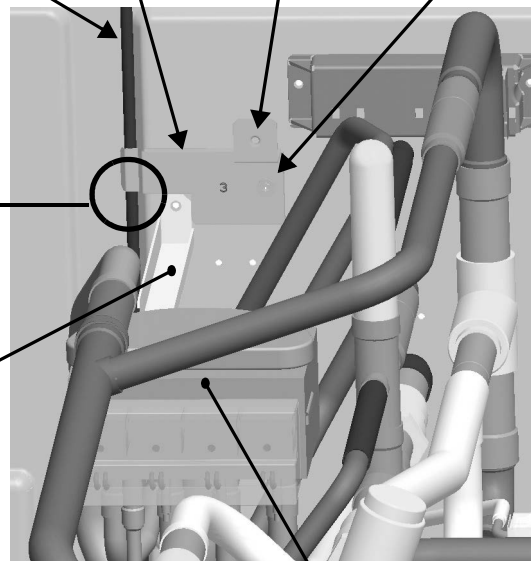
For PURY models, install heater mounting bracket ③.

Note) Properly secure the base heater and the mounting bracket.
<Refer to "Note)" in Step 1.>



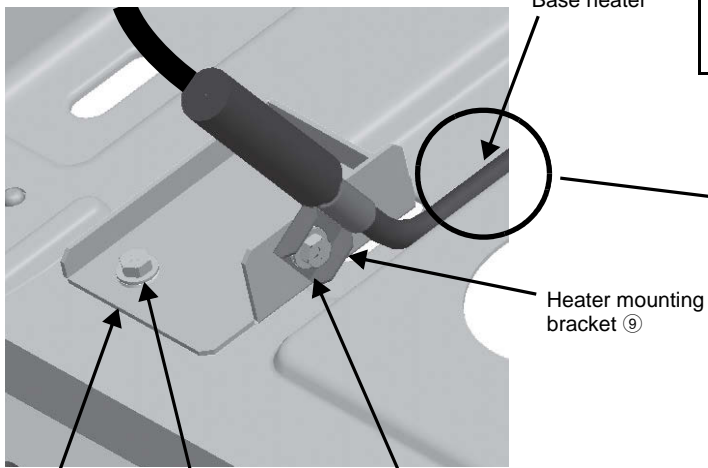
Heater mounting bracket ③
Base heater
Thread part for the Threaded rod (M5)
Use the supplied screw (M5).

Solenoid valve block mounting plate

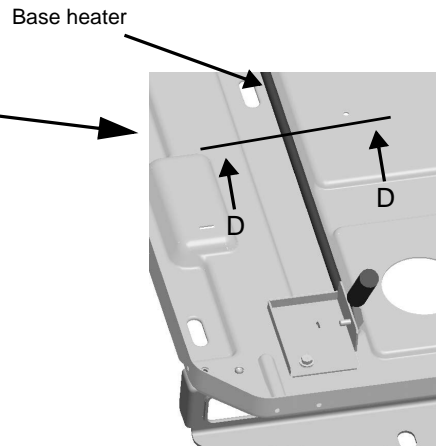


Solenoid valve block

Step 4. Install the heater mounting brackets ① and ⑨.



Note) Run the base heater along the inner side of the groove on the base, and fix the base heater with the mounting brackets ① and ⑨.



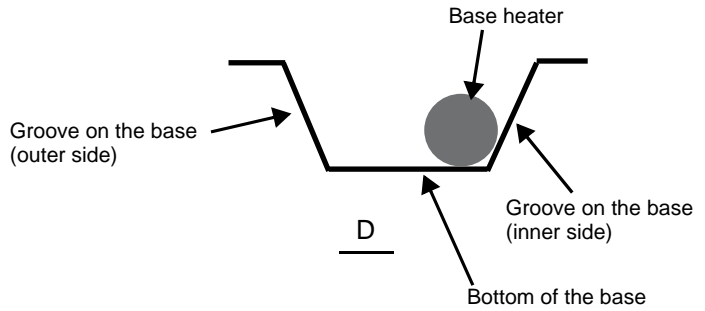
GB

Heater mounting bracket ①

Use the screw (M5) that was removed.

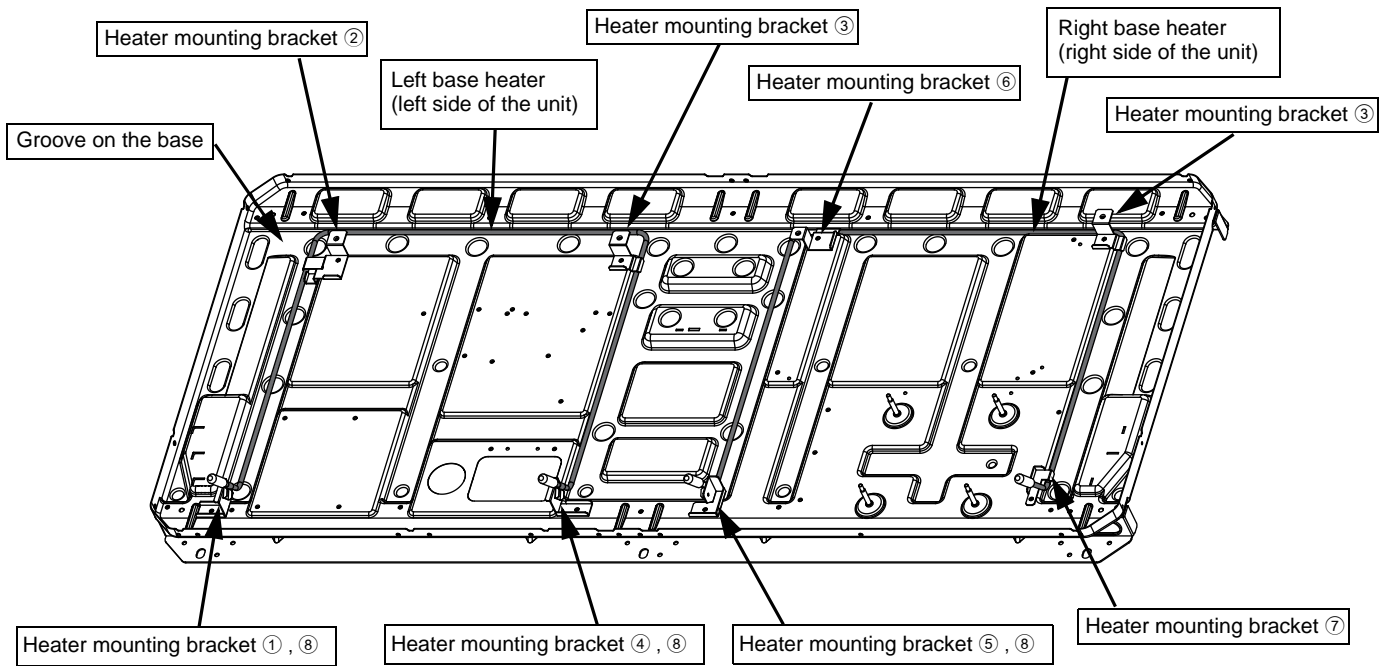
Use the supplied screw (M5).

Note) Secure the base heater so that it touches the bottom of the base.



<PAC-BH03EHT-E>

Run the base heater along the groove on the unit base.

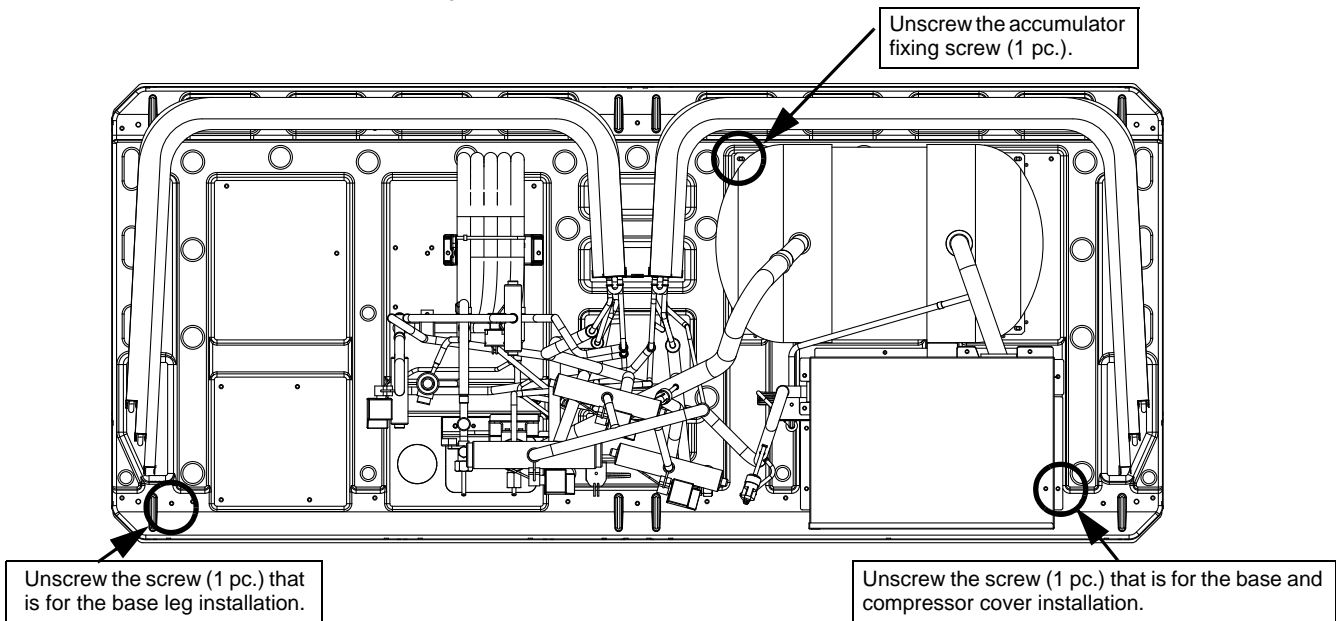


Note: The figure shows a simplified view of the unit base without the components on it.

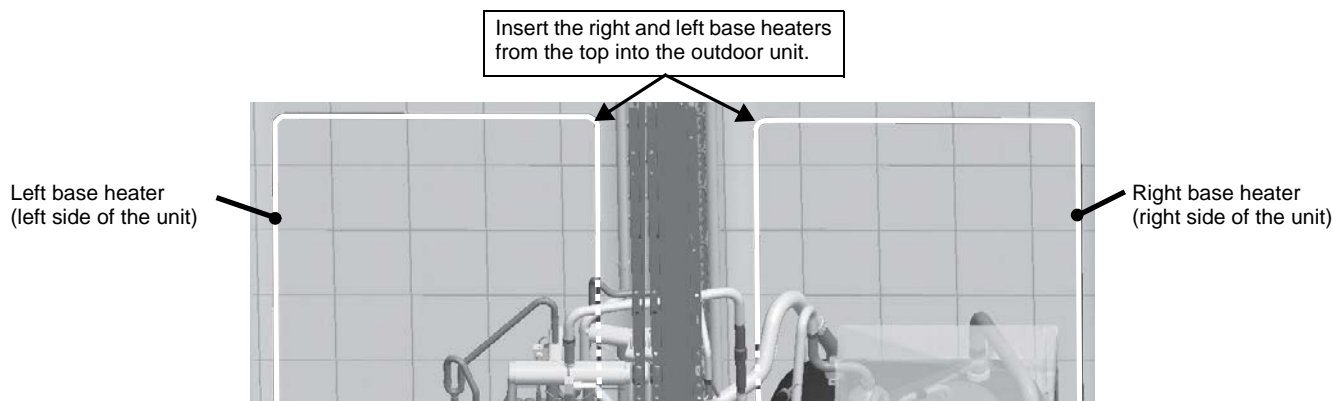
- Install the base heater inside the unit by following the procedures (6)-1 through (6)-3 below.

Caution: To reduce the risk of injury, wear protective gear when installing the base heater.

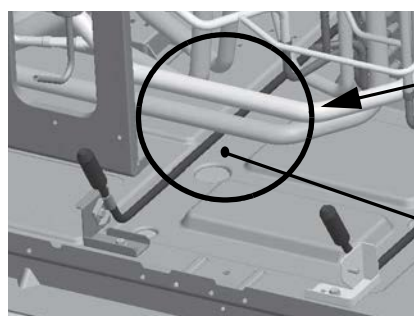
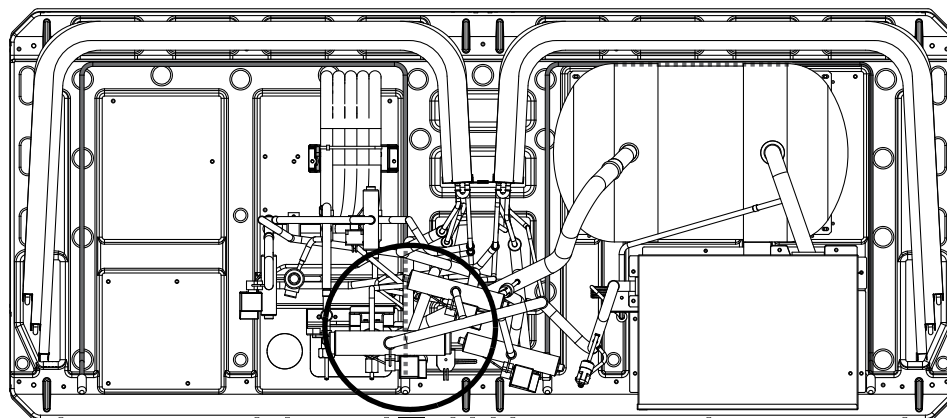
(6)-1 Unscrew the screws as shown in the figure below.



(6)-2 Attach the base heater to the outdoor unit base.



After the base heater is inserted (before the heater mounting brackets are installed)



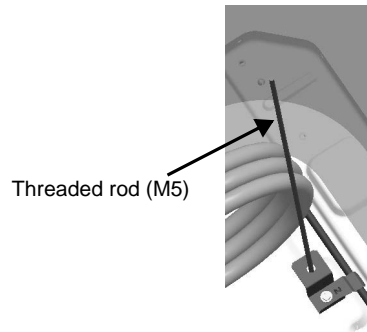
Run the base heater along the groove on the base to keep it out of contact with other pipes.

Groove on the base

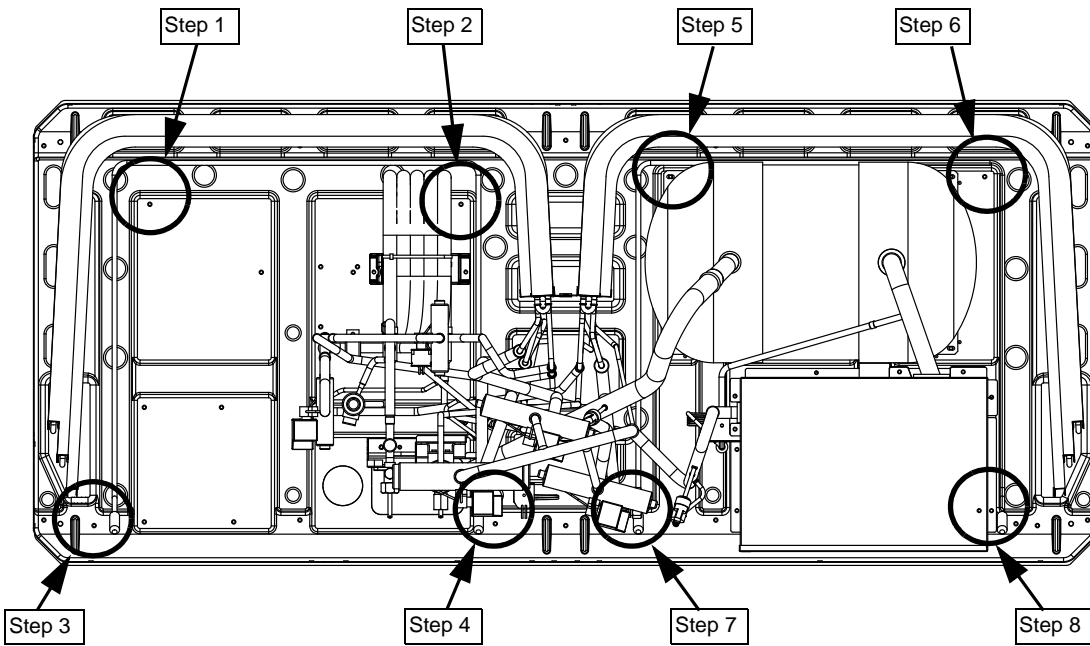
(6)-3 Install the heater mounting brackets.

* For easier installation of the heater mounting brackets ②, ③, and ⑥, use a threaded rod (M5).
Follow the steps below.

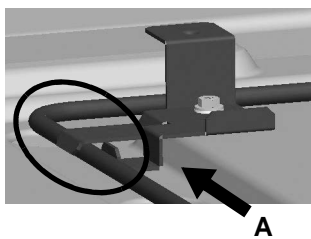
- Step 1: Install the heater mounting bracket ②.
- Step 2: Install the heater mounting bracket ③.
- Step 3: Install the heater mounting brackets ① and ⑧.
- Step 4: Install the heater mounting brackets ④ and ⑧.
- Step 5: Install the heater mounting bracket ⑥.
- Step 6: Install the heater mounting bracket ③.
- Step 7: Install the heater mounting brackets ⑤ and ⑧.
- Step 8: Install the heater mounting bracket ⑦.



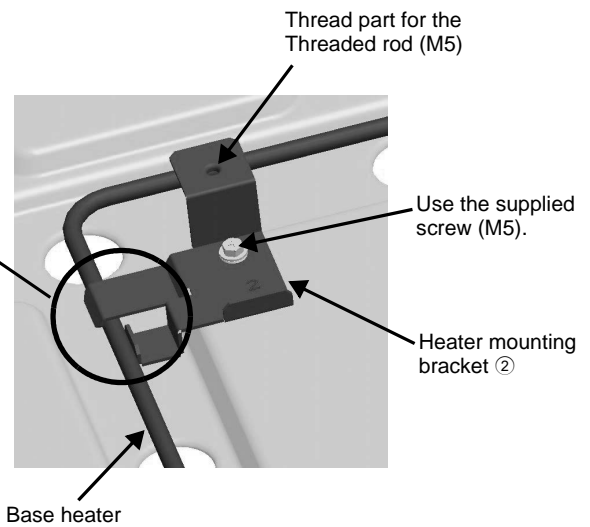
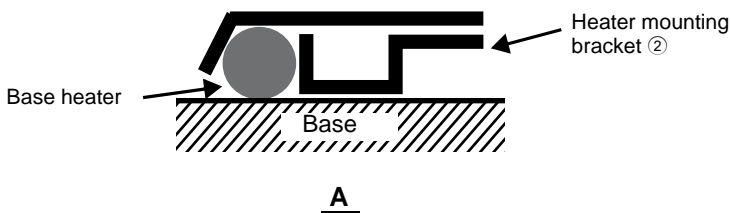
<Usage example of the Threaded rod (M5)>
* Remove the Threaded rod after the use is completed.



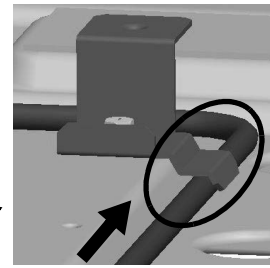
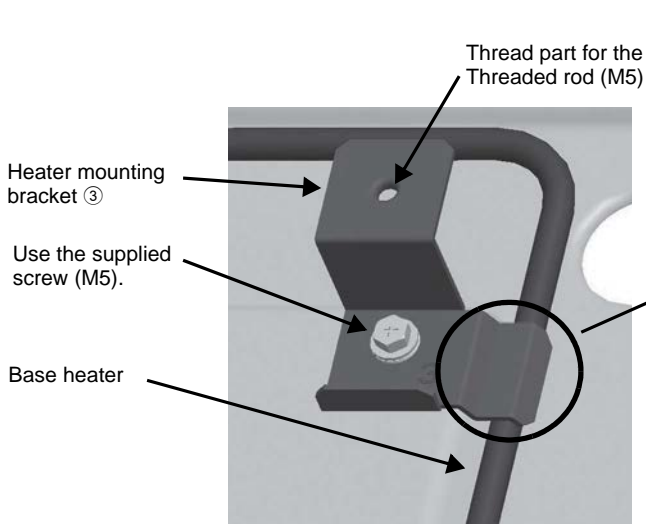
Step 1. Install the heater mounting bracket ②.



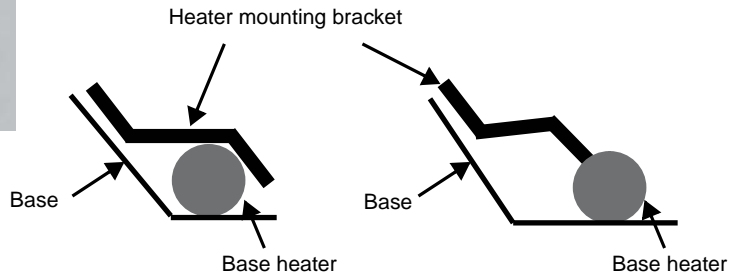
Note) As shown in the figure below, properly secure the base heater and the mounting bracket ②.



Step 2. Install the heater mounting bracket ③.



Note) As shown in the figures below, properly secure the base heater and the mounting bracket.

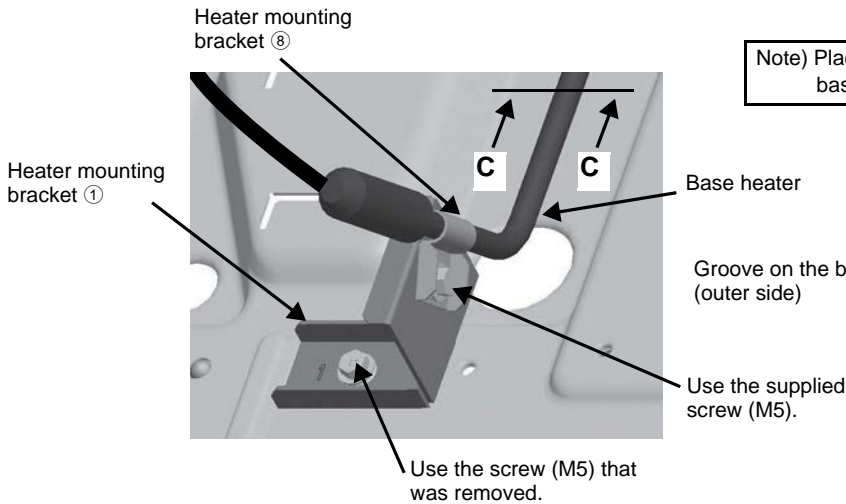


CORRECT

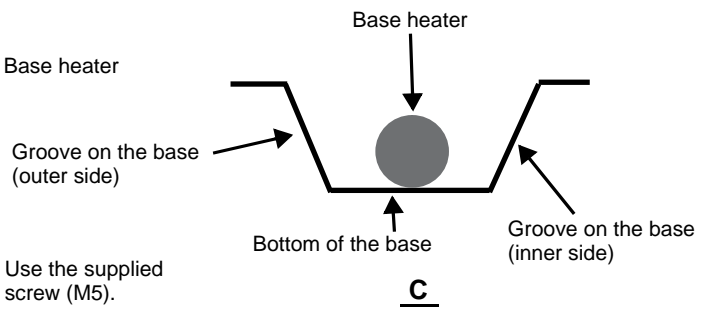
INCORRECT

B

Step 3. Install the heater mounting brackets ① and ⑧.



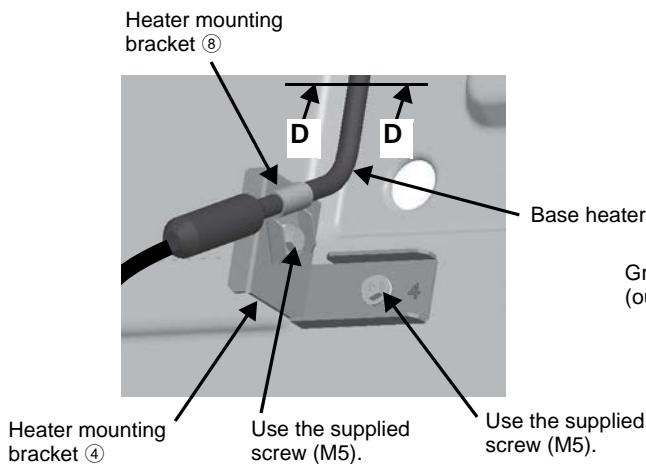
Note) Place the base heater in the middle of the base, and fix the base heater with mounting brackets ① and ⑧.



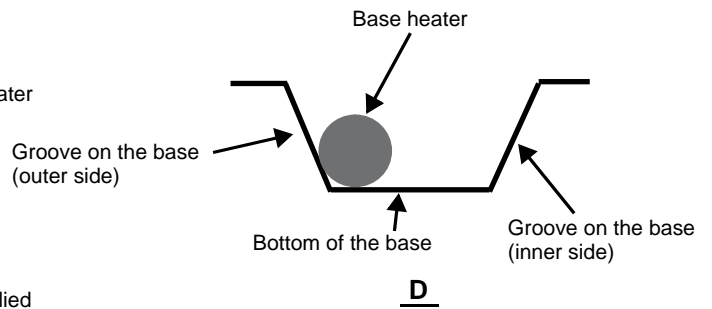
Note) Secure the base heater so that it touches the bottom of the base.

C

Step 4. Install the heater mounting brackets ④ and ⑧.



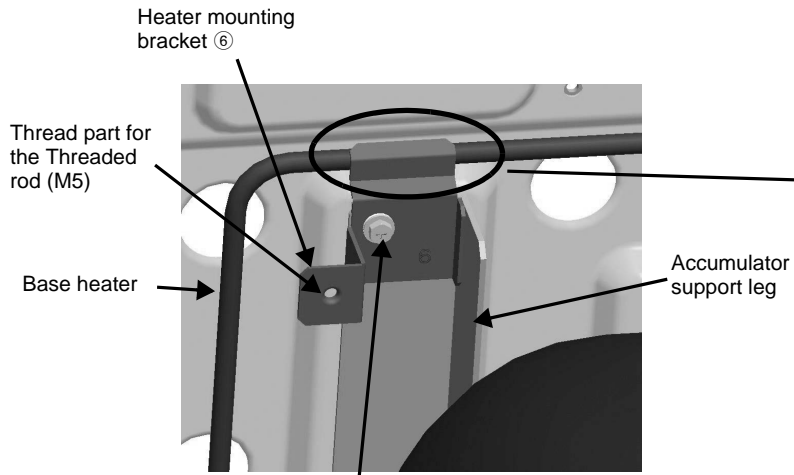
Note) Run the base heater along the outer side of the groove on the base, and fix the base heater with the mounting brackets ④ and ⑧.



Note) Secure the base heater so that it touches the bottom of the base.

D

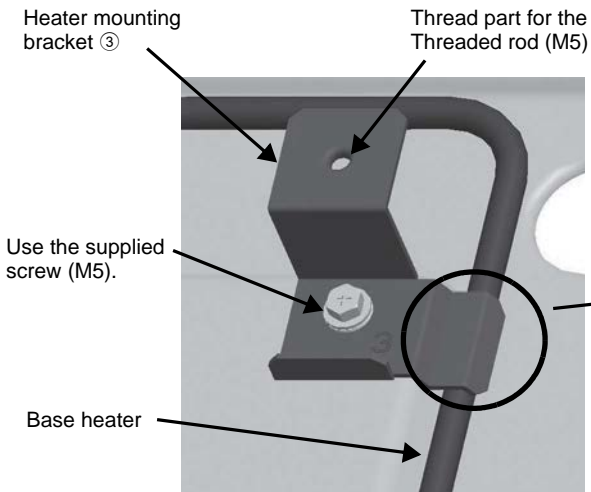
Step 5. Install the heater mounting bracket ⑥.



Use the screw (M5) that was removed.
(Screw down the accumulator support leg as well.)

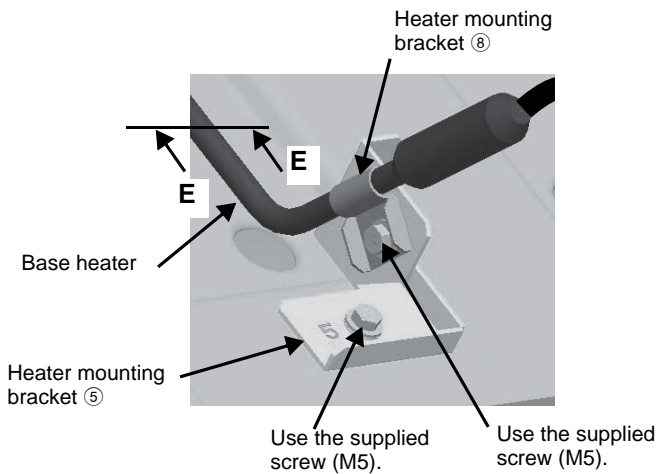
Note) Properly secure the base heater and the mounting bracket.
<Refer to "Note)" in Step 2.>

Step 6. Install the heater mounting bracket ③.

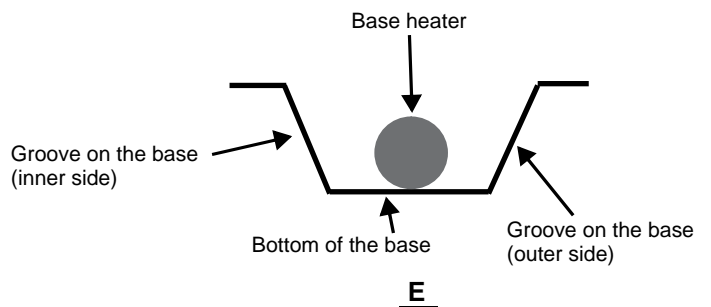


Note) Properly secure the base heater and the mounting bracket.
<Refer to "Note)" in Step 2.>

Step 7. Install the heater mounting brackets ⑤ and ⑧.



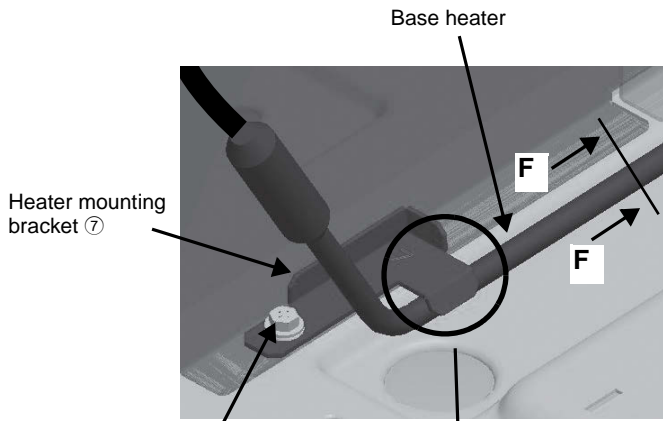
Note) Place the base heater in the middle of the base, and fix the base heater with mounting brackets ⑤ and ⑧.



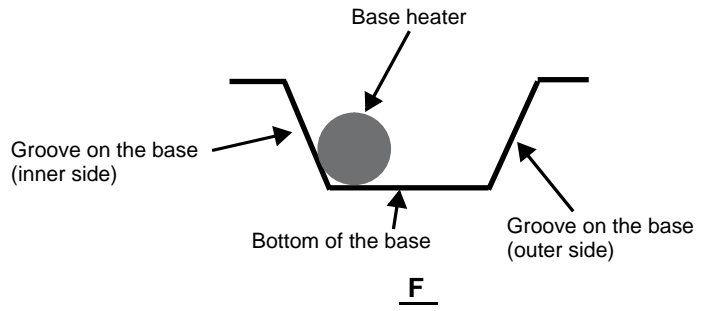
Note) Secure the base heater so that it touches the bottom of the base.

Step 8. Install the heater mounting bracket ⑦.

Note) Run the base heater along the inner side of the groove on the base, and fix the base heater with mounting bracket ⑦.



Use the screw (M5) that was removed. (Screw down the accumulator support leg as well.)



Note) Secure the base heater so that it touches the bottom of the base.

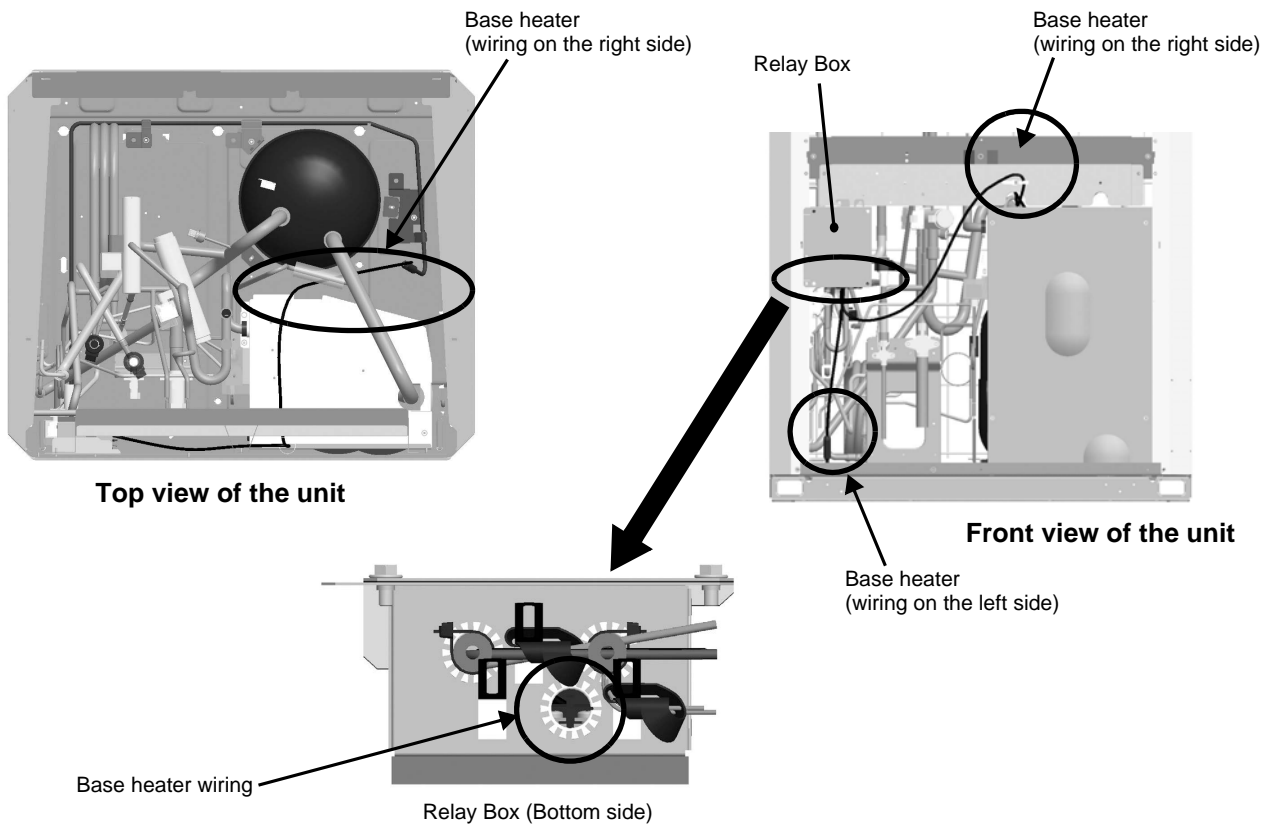


Note) Properly secure the base heater and the mounting bracket. <Refer to "Note)" in Step 2.>

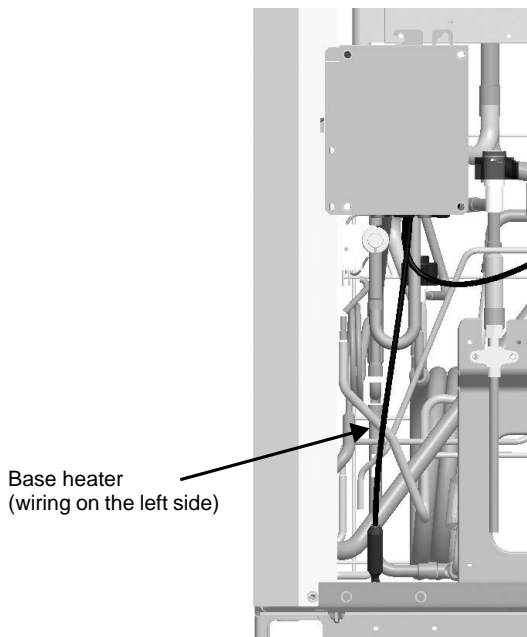
7. Electrical Wiring

<PAC-BH01EHT-E>

Connect the base heater wiring to the Relay Box as shown in the figures below.
Install the Relay Box after connecting the base heater wiring.

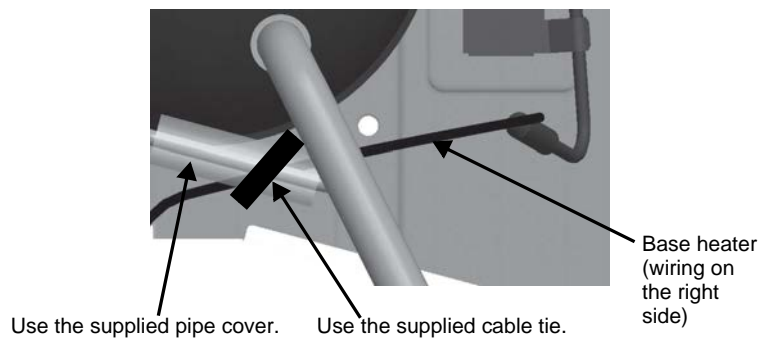


i) Wiring on the left side of the Relay Box

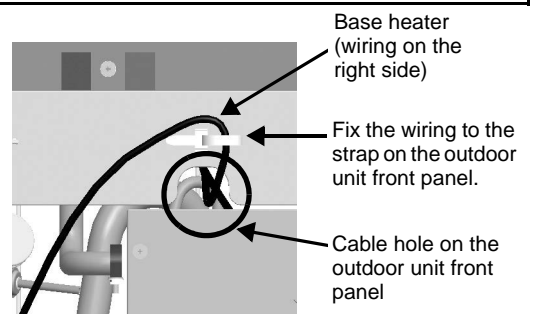


ii) Wiring on the right side of the Relay Box

With the supplied pipe cover, wrap the pipe that branches out from the pipe between the compressor and accumulator. Fix the pipe cover and the base heater wiring (right side) with the supplied cable tie.

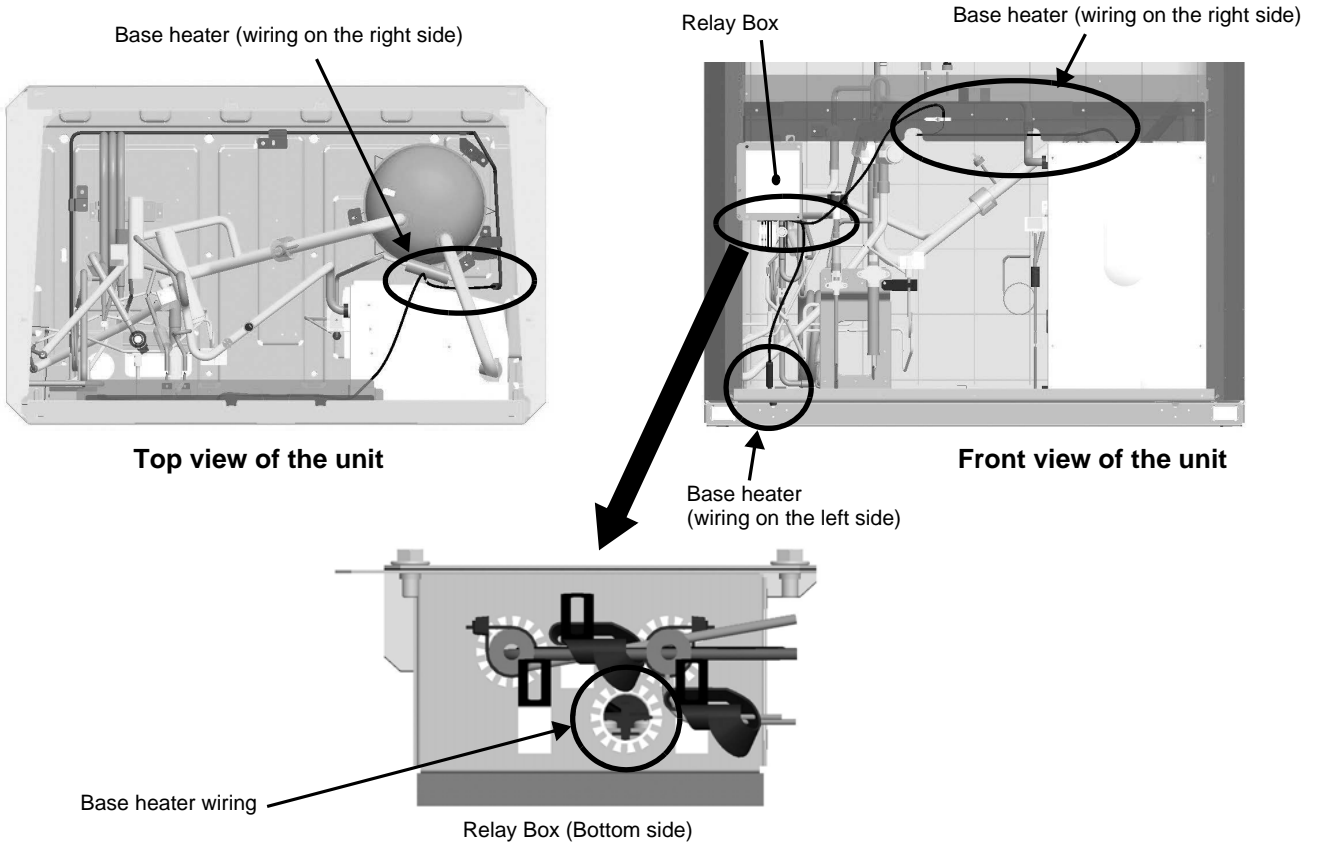


Take out the base heater wiring (right side) from the cable hole on the outdoor unit front panel, then fix the wiring to the strap.

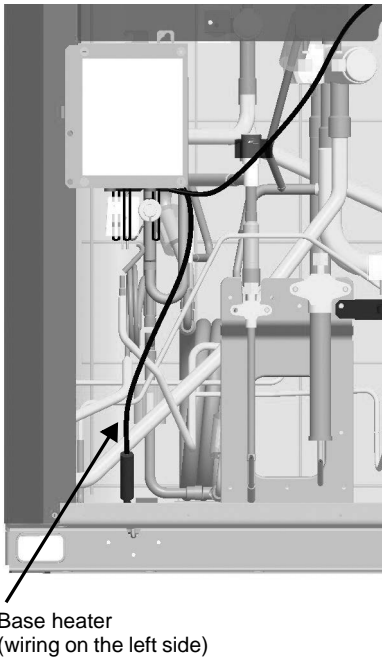


<PAC-BH02EHT-E>

Connect the base heater wiring to the Relay Box as shown in the figures below.
Install the Relay Box after connecting the base heater wiring.

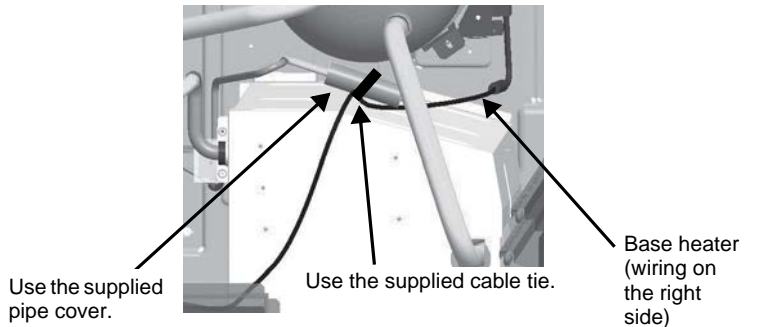


i) Wiring on the left side of the Relay Box

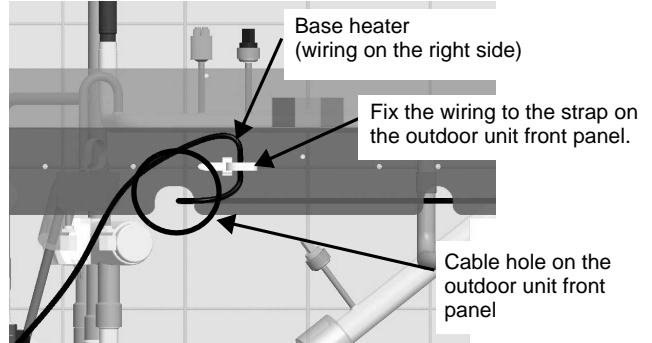


ii) Wiring on the right side of the Relay Box

With the supplied pipe cover, wrap the pipe that branches out from the pipe between the compressor and accumulator. Fix the pipe cover and the base heater wiring (right side) with the supplied cable tie.



Take out the base heater wiring (right side) from the cable hole on the outdoor unit front panel, then fix the wiring to the strap.

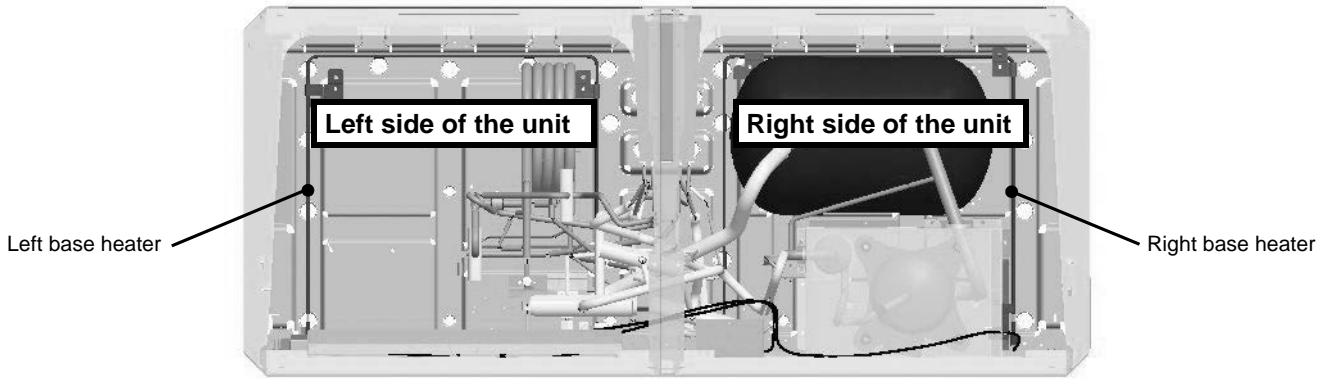


<PAC-BH03EHT-E>

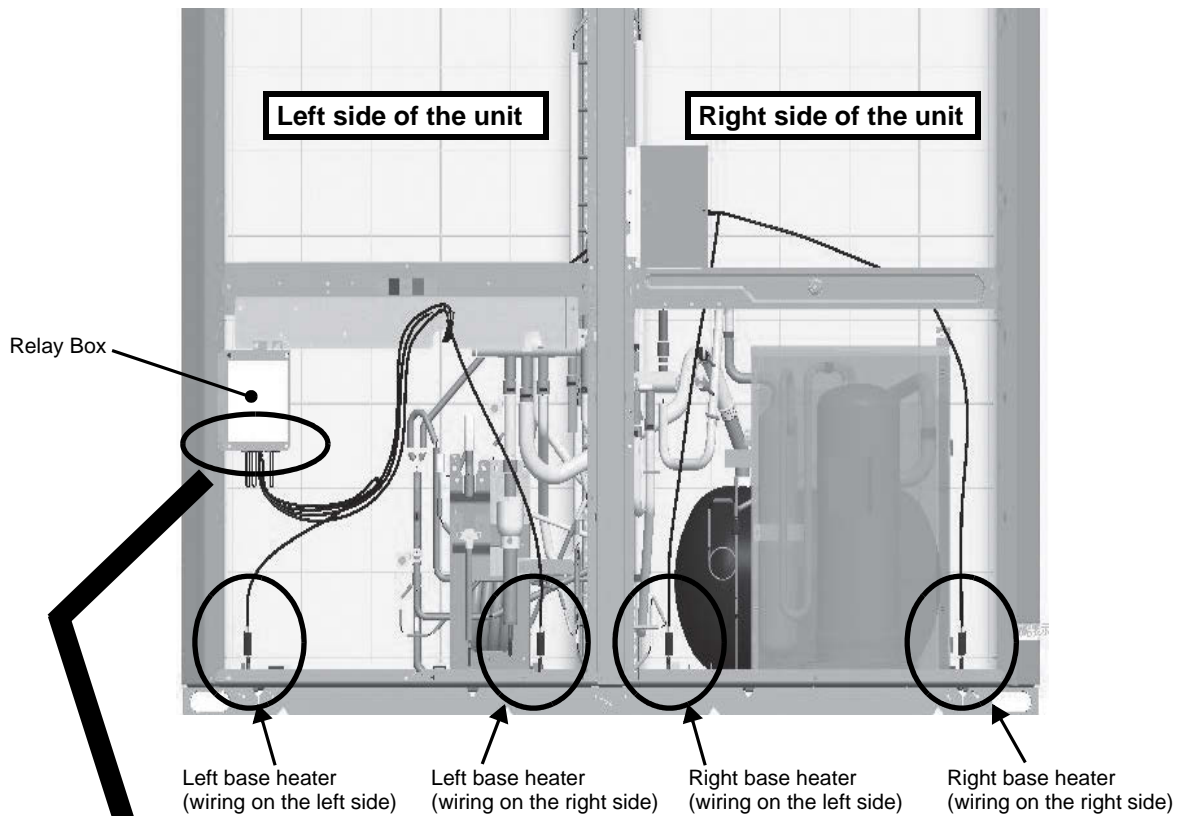
Connect the base heater wiring to the Relay Box as shown in the figures below.

Perform wiring work of the base heater on the right side of the unit first.

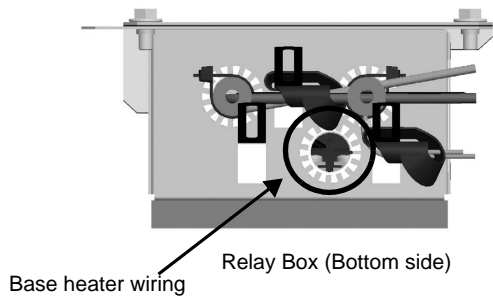
Install the Relay Box after connecting the base heater wiring.



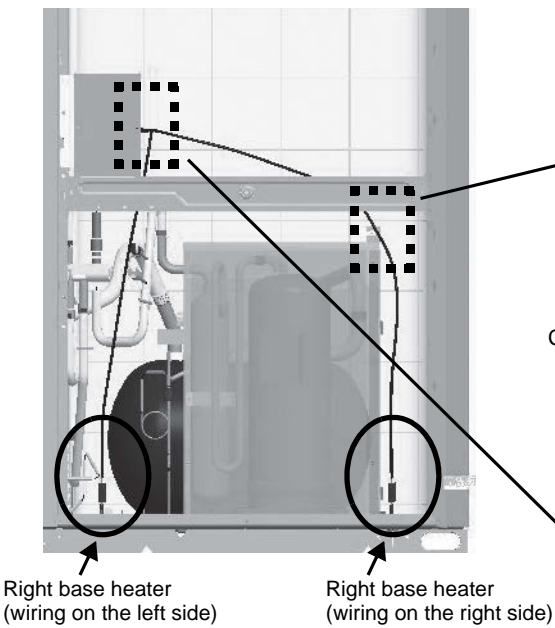
Top view of the unit



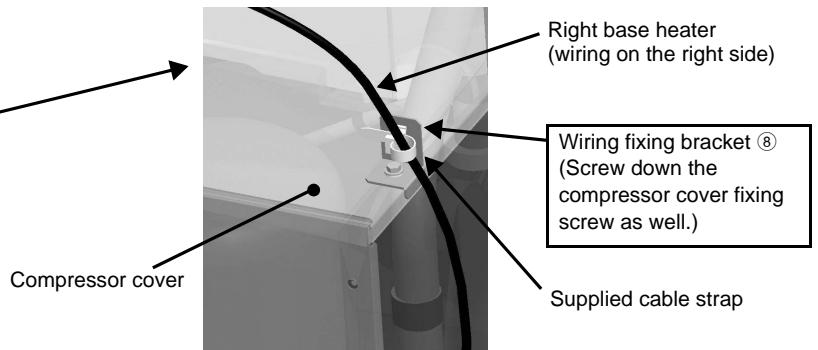
Front view of the unit



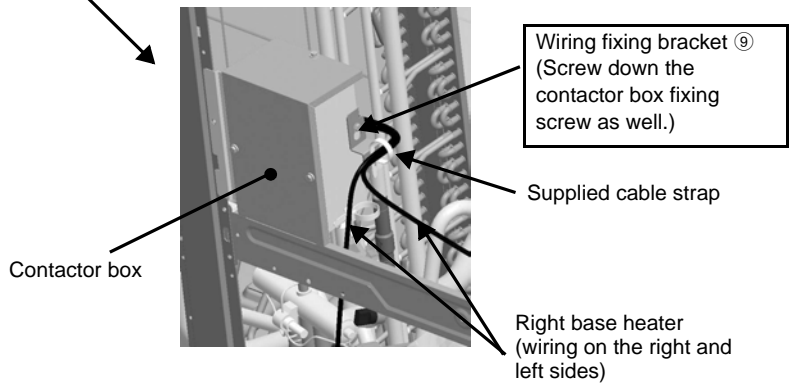
i) Right base heater wiring (right side of the unit)



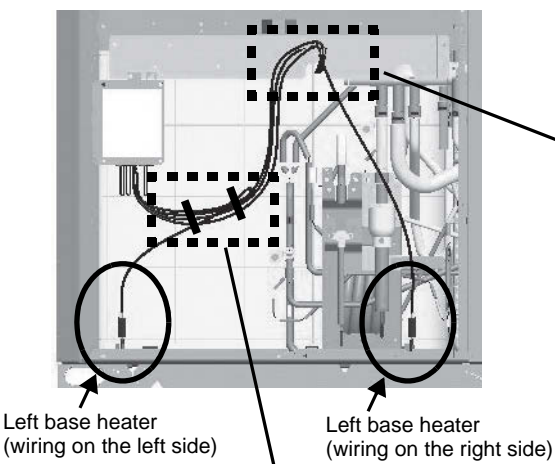
To install the wiring fixing bracket ⑧ to the compressor cover as shown in the figure below, fix the wiring on the right side of the right base heater to the wiring fixing bracket ⑧ with the supplied cable strap.



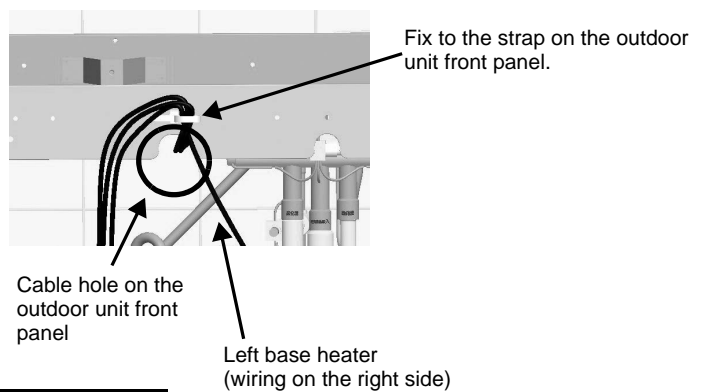
To install the wiring fixing bracket ⑨ to the contactor box as shown in the figure below, fix the wiring on the right and left sides of the right base heater to the wiring fixing bracket ⑨ with the supplied cable strap. Route the wiring behind the contactor box into the cable hole on the outdoor unit front panel.



ii) Left base heater wiring (left side of the unit)



Fix the wiring on the right and left sides of the right base heater and the wiring on the right side of the left base heater (three wires in total) to the strap on the outdoor unit front panel.



As marked in the figure above, use the supplied cable ties (2 pcs.) to fix the excess wiring on the right and left sides of the left base heater and the wiring on the right and left sides of the right base heater together.

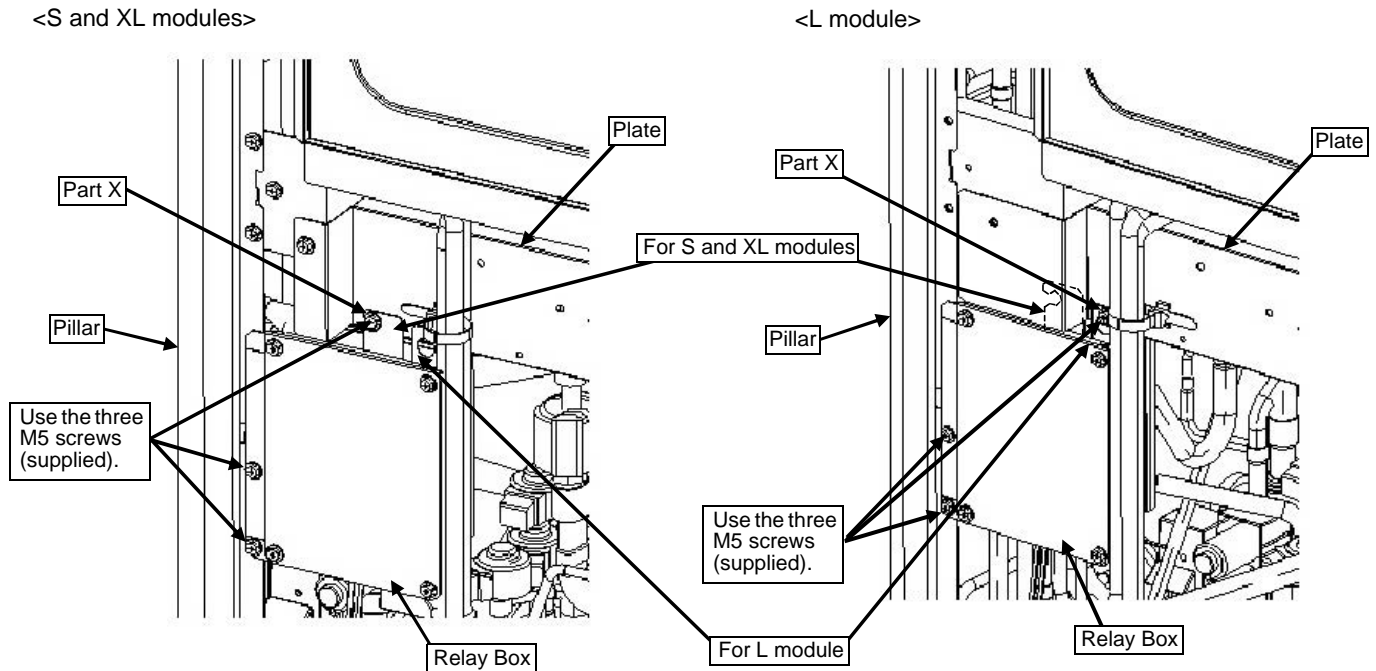
8. Relay Box Installation

Before installing the Relay Box, replace the control box and wiring as they were.

* Insert the cable connectors until they click.

Attach the Relay Box to the pillar on the left side of the unit and the plate under the control box, using the three supplied M5 screws. The screw labeled X in the figure is there to keep the Relay Box from falling. When performing maintenance, only loosen (but not remove) this screw.

Remove the cable strap attached to the pillar. Then, attach the removed cable strap to the hole on the bending parts of the Relay Box cover.

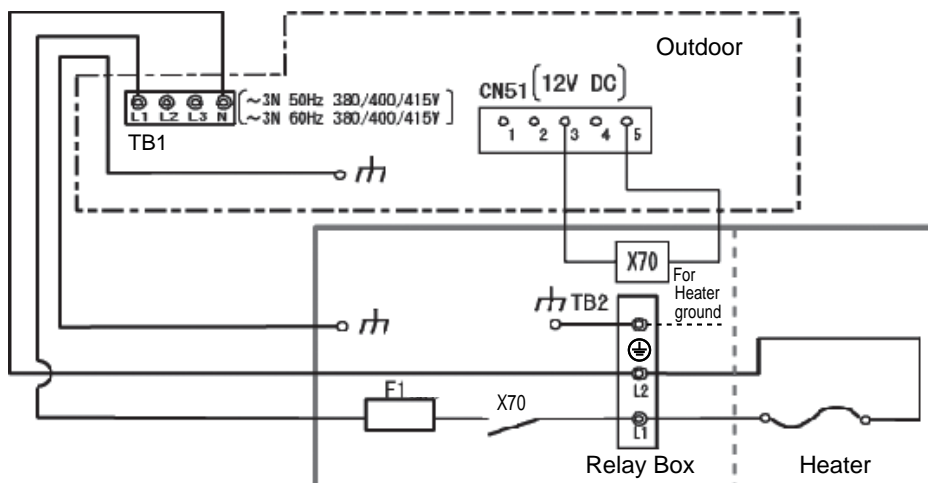


- Secure the cables and lead wires in place.
(Referring to the electrical diagram below, connect the lead wires.)

<Electrical wiring diagram>

<PAC-BH01, 02EHT-E>

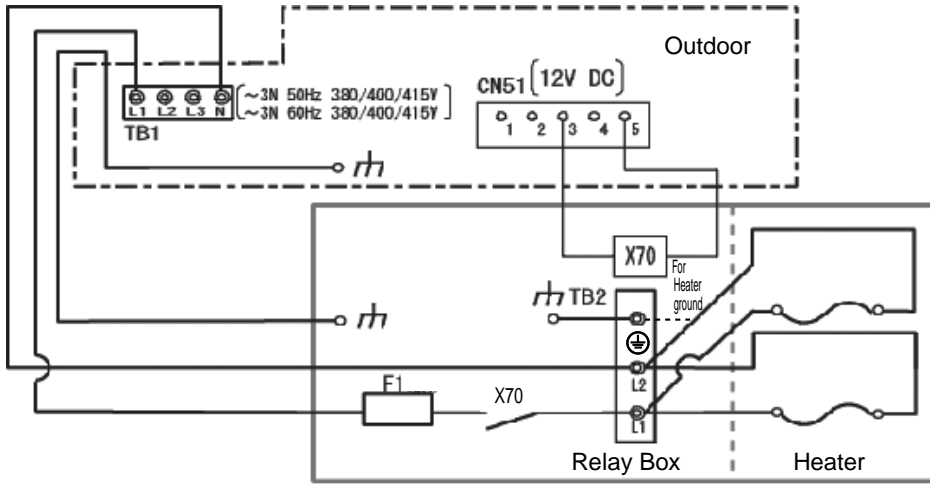
* Neither of PAC-BH01, 02EHT-E base heaters have a ground connection.



SYMBOL	EXPLANATION
TB1	Terminal block
TB2	Terminal block
CN51	Connector (on the outdoor unit controller board)
X70	Relay
F1	Fuse

<PAC-BH03EHT-E>

* PAC-BH03EHT-E base heater does not have a ground connection.



SYMBOL	EXPLANATION
TB1	Terminal block
TB2	Terminal block
CN51	Connector (on the outdoor unit controller board)
X70	Relay
F1	Fuse

a. When PAC-BH01EHT-E or PAC-BH02EHT-E is installed, connect the base heater power wires to terminals L1 and L2 on the Relay Box.

When PAC-BH03EHT-E is installed, connect the two base heater power wires that have a white line to terminal L1, and connect the other two base heater power wires to terminal L2.

Never connect the base heater power wire (L1 or L2) to \oplus of the terminal block on the Relay Box.

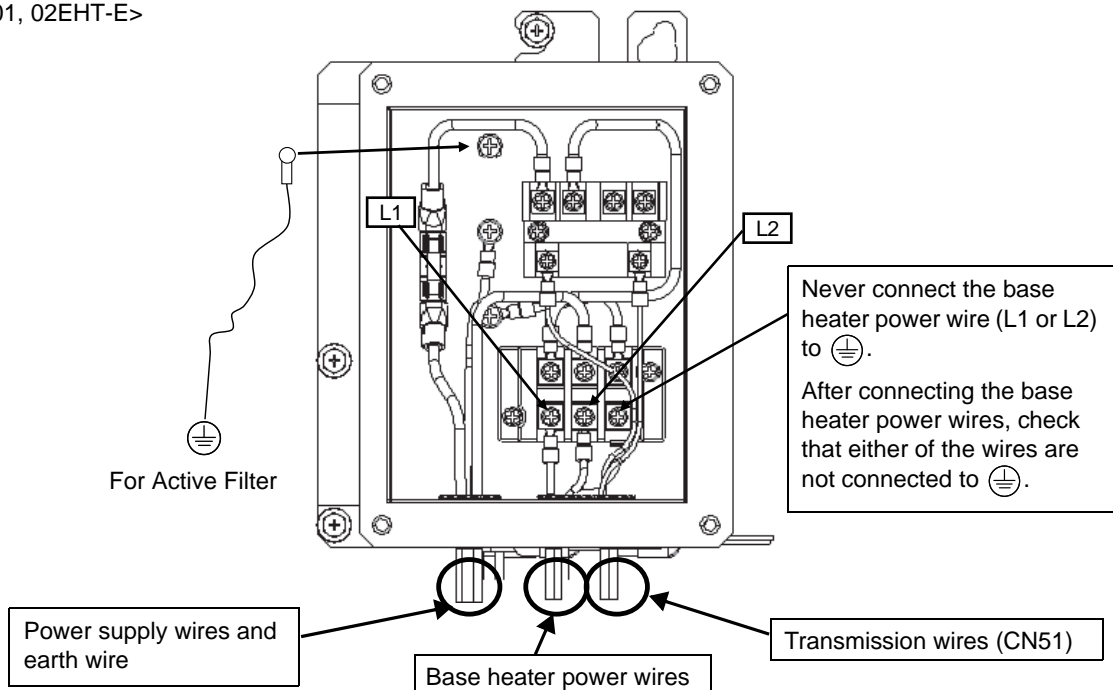
Using a wire seal (Ⓧ) and a black cable tie (Ⓞ), water-proof the base heater power wire that was passed through the access hole for the Relay Box wire.

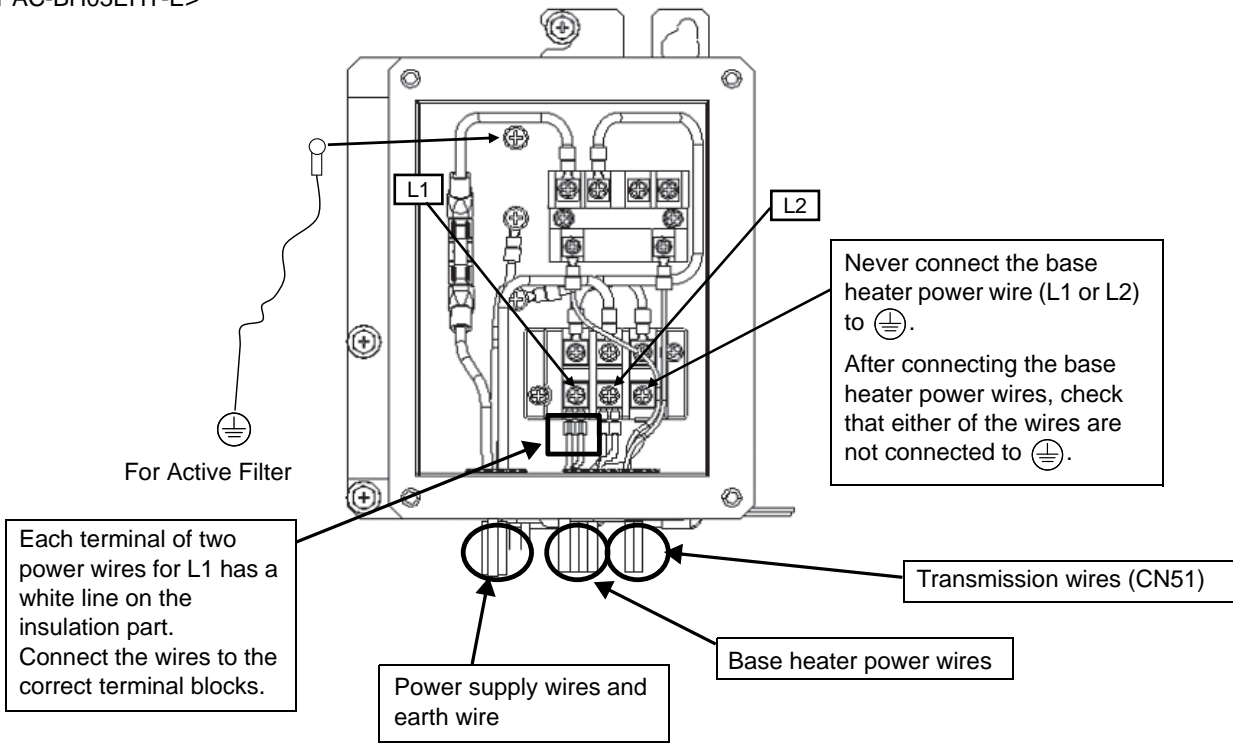
* If the diameter of the wire, once it has been wrapped in wire seal, is too large to pass through the Relay Box holes, cut back the wire seal. Leave enough wire seal to keep the Relay Box water proof. (The recommended width of wire seal is 70 mm for the four base heater power wires.)

Clamp down the base heater power wire at the outlet of the Relay Box with the supplied clamp.

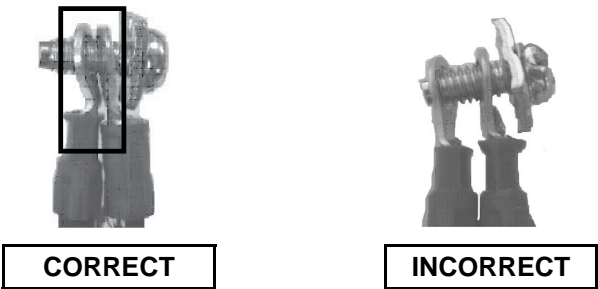
If an active filter is installed, disconnect the earth wire of the active filter from the control box, and screw it down as shown in the figure below.

<PAC-BH01, 02EHT-E>

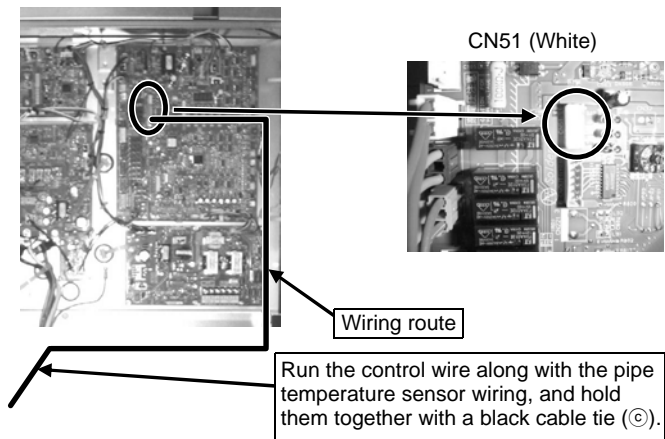




When screwing the terminals together, arrange them back to back so that there will be no gap left between them as shown in the figures below.

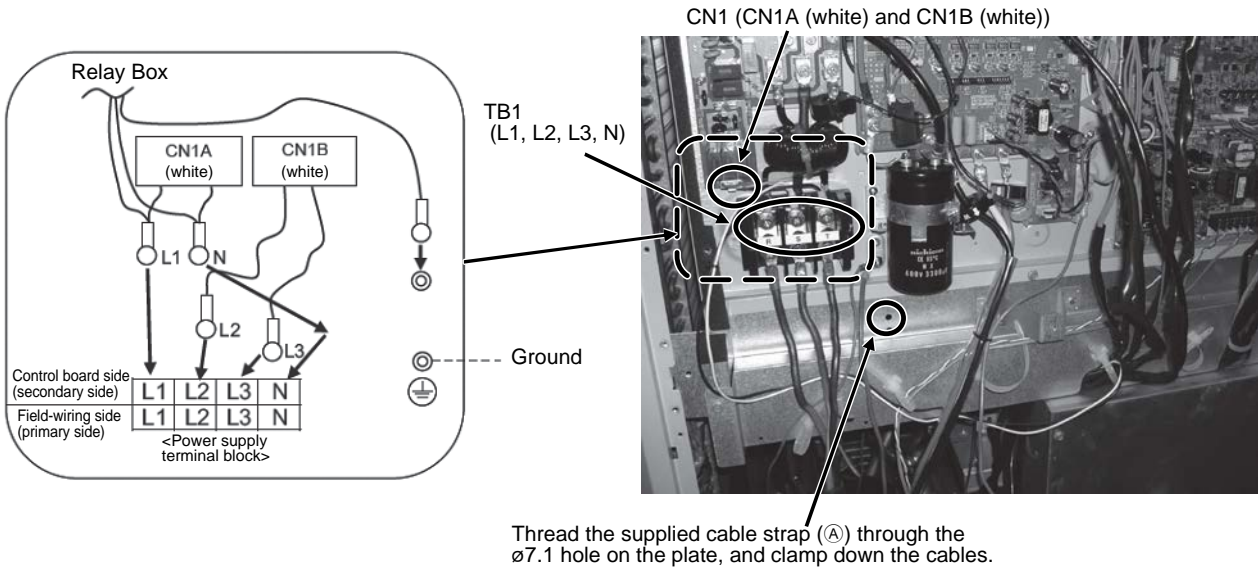


b. Connect the control wire (CN51: white 5-pin) from the Relay Box as shown in the figure below. Hold the control cable together with the pipe temperature sensor wiring with a black cable tie (©). Do not run it along with a high voltage wires.



c. Wiring the power wire and earth wire

- Disconnect the round terminal connector <TB1-CN1> inside the control box from the connector CN1A (white) and CN1B (white), and from the secondary side of the power supply terminal block.
- Connect the power wires (round terminal L1, L2, L3, N) from the Relay Box to the L1, L2, L3, N phase of the power supply terminal block (secondary side) inside the control box together with the existing wires. Connect the connector CN1A and CN1B from the Relay Box instead of the connector <TB1-CN1> as located in the figure below.
- Screw down the earth wire from the Relay Box on the earth terminal inside the control box.
- Thread the supplied cable strap (A) through the $\varnothing 7.1$ hole on the plate, and clamp down the cables.



GB

d. Make sure that the base heater is properly installed and that the power wires are properly connected.

e. Bundle the excess wires with a cable tie and keep them inside the box.

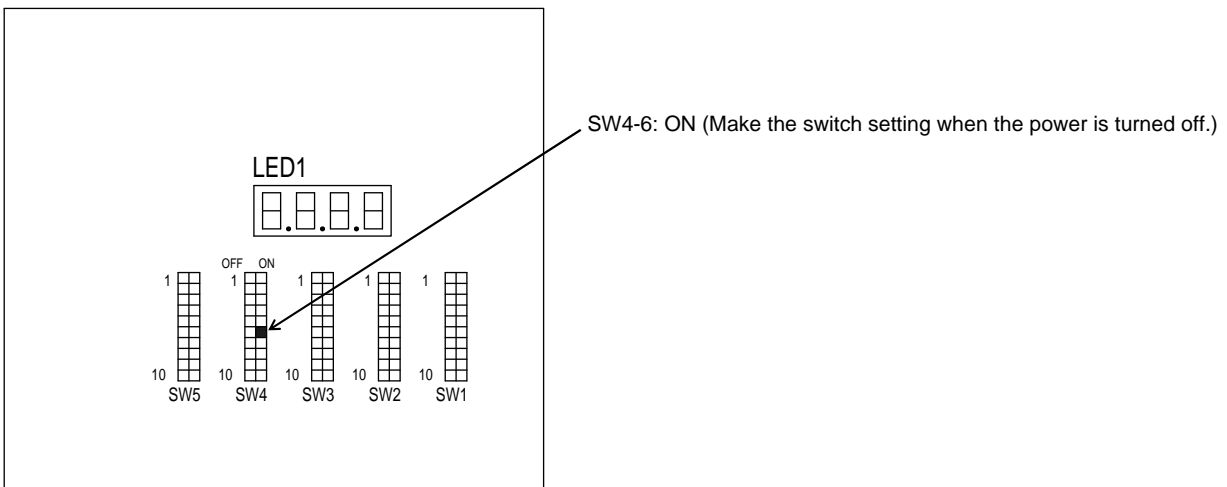
f. When done, place the cover, being careful not to pinch any wire, and then screw down the cover with the screw that was unscrewed in the previous step.

g. Fix the outdoor unit power wires in place with the cable strap attached to the cover.

h. To use the base heater, set SW4-6 on the control board in the outdoor unit control box to ON.

Note the following when doing so.

- Be sure to turn off the outdoor unit when setting SW4-6. If SW4-6 is set to ON from the OFF position while the outdoor unit is turned on, the cumulative operation time of the compressor will be cleared. To stop using the base heater, make sure to turn off the outdoor unit first, set SW4-6 to OFF, remove CN51 from the outdoor unit circuit board, and then remove the Relay Box and the heater.
- When the cumulative operation time of the compressor is cleared while the outdoor unit is turned on, make sure to set SW4-6 to OFF from the ON position. If the power to the outdoor unit is turned back on when SW4-6 is set to ON, the base heater setting will be ON regardless of whether the base heater is actually connected or not.



9. Reassembly

Reinstall the parts in the reverse order in which they were removed.

10. Confirmation of proper operation

Checking the base heater for normal operation

(1) Use a tester to check that the heater wire is not broken for proper operation.

(2) Check the output voltage for proper circuit operation.

- Base heater energizing conditions*1: Heating mode, outside temperature of 4°C or below, and the compressor is in operation

*1 To meet the above conditions, cool the outdoor temperature sensor (TH7) using a cold spray. When cooling the sensor, make sure to close the control box panel and Relay Box panel to keep the cold spray from getting on the board inside of the control box or inside of the Relay Box.

This product is designed and intended for use in the residential,
commercial and light-industrial environment.

The product at hand is
based on the following
EU regulations:

- Low Voltage Directive 2006/95/EC
- Electromagnetic Compatibility Directive
2004/108/EC

Please be sure to put the contact address/telephone number on
this manual before handing it to the customer.

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN