

# Duct Type SPLIT TYPE AIR CONDITIONER INSTALLATION INSTRUCTION SHEET (PART NO. 9374318193)

## CAUTION R410A REFRIGERANT

This Air Conditioner contains and operates with refrigerant R410A and Polyol Ester oil.  
THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL.  
Refer to Commonwealth, State, Territory and local legislation, regulations, codes, installation & operation manuals, before the installation, maintenance and/or service of this product.

Indoor unit is an appliance not accessible to the general public.

For authorized service personnel only.

<b>DANGER</b>	This mark indicates procedures which, if improperly performed, are most likely to result in the death of or serious injury to the user or service personnel.
<b>WARNING</b>	This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user.
<b>CAUTION</b>	This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property.

### DANGER

Never touch electrical components immediately after the power supply has been turned off. Electrical shock may occur. After turning off the power, always wait 5 minutes or more before touching electrical components.

### This air conditioner uses new refrigerant HFC (R410A).

The basic installation work procedures are the same as conventional refrigerant models. However, pay careful attention to the following points:

- Since the working pressure is 1.6 times higher than that of conventional refrigerant models, some of the piping and installation and service tools are special. (See the table below.) Especially, when replacing a conventional refrigerant model with a new refrigerant R410A model, always replace the conventional piping and flare nuts with the R410A piping and flare nuts.
- Models that use refrigerant R410A have a different charging port thread diameter to prevent erroneous charging with conventional refrigerant and for safety. Therefore, check beforehand. [The charging port thread diameter for R410A is 1/2 UNF 20 threads per inch.]
- Be more careful that foreign matter (oil, water, etc.) does not enter the piping than with refrigerant models. Also, when storing the piping, securely seal the openings by pinching, taping, etc.
- When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

### Special tools for R410A

Tool name	Contents of change
Gauge manifold	Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended the gauge with seals -0.1 to 5.3 MPa (-76 cmHg to 53 kgf/cm <sup>2</sup> ) for high pressure. -0.1 to 3.8 MPa (-76 cmHg to 38 kgf/cm <sup>2</sup> ) for low pressure.
Charge hose	To increase pressure resistance, the hose material and base size were changed.
Vacuum pump	A conventional vacuum pump can be used by installing a vacuum pump adapter.
Gas leakage detector	Special gas leakage detector for HFC refrigerant R410A.

### Copper pipes

It is necessary to use seamless copper pipes and it is desirable that the amount of residual oil is less than 40 mg/10m. Do not use copper pipes having a collapsed, deformed or discolored portion (especially on the interior surface). Otherwise, the expansion valve or capillary tube may become blocked with contaminants. As an air conditioner using R410A incurs pressure higher than when using conventional refrigerant, it is necessary to choose adequate materials. Thicknesses of copper pipes used with R410A are as shown in the table. Never use copper pipes thinner than that in the table even when it is available on the market.

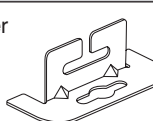

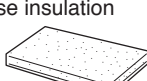

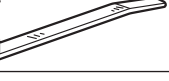


### Thicknesses of Annealed Copper Pipes (R410A)

Pipe outside diameter	Thickness
6.35 mm (1/4 in.)	0.80 mm
9.52 mm (3/8 in.)	0.80 mm
12.70 mm (1/2 in.)	0.80 mm
15.88 mm (5/8 in.)	1.00 mm

## STANDARD PARTS

The following installation parts are furnished. Use them as required.

### INDOOR UNIT ACCESSORIES

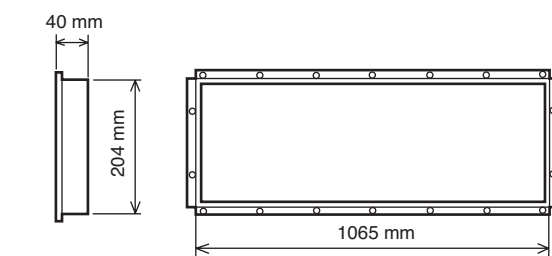
Name and Shape	Q'ty	Application	Name and Shape	Q'ty	Application
 Hanger	4	For suspending the indoor unit from ceiling	 Coupler heat insulation (large)	1	For indoor side pipe joint (large pipe)
 Drain hose insulation	1	Insulates the drain hose and vinyl hose	 Coupler heat insulation (small)	1	For indoor side pipe joint (small pipe)
			 Binder	1 (large)	For fixing the drain hose
			 Special nut A (large flange)	4	For suspending the indoor unit from ceiling
			 Special nut B (small flange)	4	

## OPTIONAL PARTS

When connecting the square duct and round duct, use the optional square flange or round flange and flexible duct.

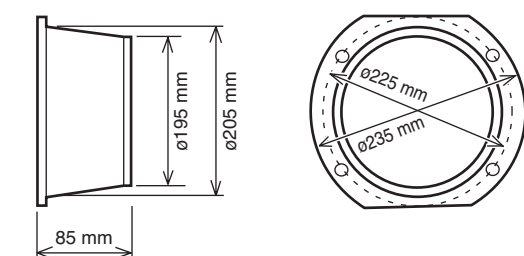
### Square flange

Model name : UTD-SF045T (P/N 9098180007)



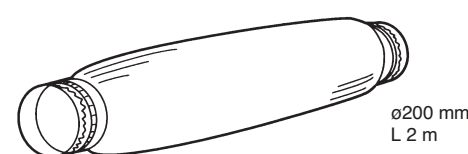
### Round flange

Model name : UTD-RF204 (P/N 9093160004)



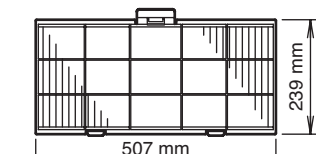
### Flexible duct

Model name : UTD-RD202 (P/N 9074165004)



### Long-life filter

Model name : UTD-LF25NA (P/N9079892004)



For authorized service personnel only.

- WARNING**
- For the air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.
  - Connect the indoor unit and outdoor unit with the air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
  - Installation work must be performed in accordance with national wiring standards by authorized personnel only.
  - If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.
  - Do not use an extension cord.
  - Do not turn on the power until all installation work is complete.

### CAUTION

This installation instruction sheet describes how to install the indoor unit only. To install the outdoor unit, refer to the installation instruction sheet included with the outdoor unit.

- Be careful not to scratch the air conditioner when handling it.
- After installation, explain correct operation to the customer, using the operating manual.
- Let the customer keep this installation instruction sheet because it is used when the air conditioner is serviced or moved.

## SELECTING THE MOUNTING POSITION

### WARNING

Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not topple or fall.

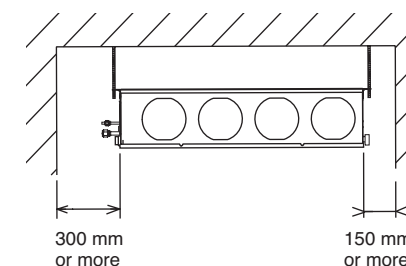
### CAUTION

- Do not install where there is the danger of combustible gas leakage.
- Do not install the unit near heat source of heat, steam, or flammable gas.
- If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.
- Take precautions to prevent the unit from falling.

Decide the mounting position with the customer as follows:

### INDOOR UNIT

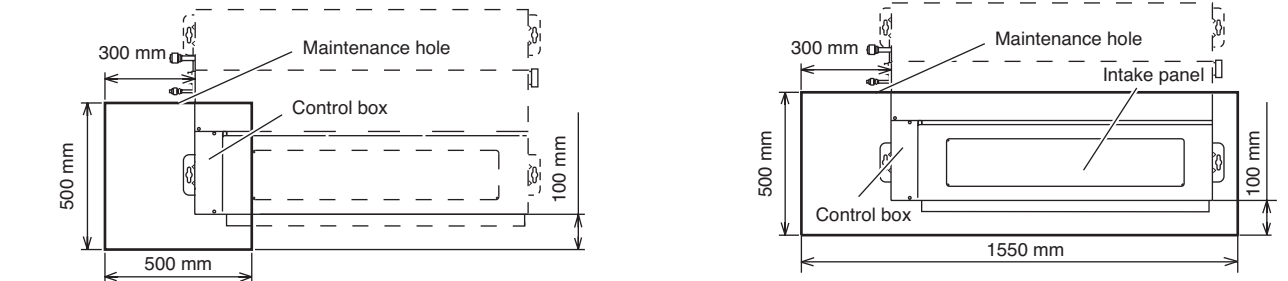
- Install the indoor unit on a place having a sufficient strength so that it withstand against the weight of the indoor unit.
- The inlet and outlet ports should not be obstructed; the air should be able to blow all over the room.
- Leave the space required to service the air conditioner.
- Install the unit where the drain pipe can be easily installed.
- Providing as much space as possible between the indoor unit and the ceiling will make work much easier.
- If installing in a place where its humidity exceeds 80%, use heat insulation to prevent condensation.



### Maintenance hole dimension

It shall be possible to install and remove the control box.

It shall be possible to install and remove the control box, fan units and filter.



## INSTALLATION PROCEDURE

Install the air conditioner as follows:

### 1 INDOOR UNIT INSTALLATION

#### WARNING

- Install the air conditioner in a location which can withstand a load of at least five times the weight of the main unit and which will not amplify sound or vibration. If the installation location is not strong enough, the indoor unit may fall and cause injuries.
- If the job is done with the panel frame only, there is a risk that the unit will come loose. Please take care.

#### CAUTION

For installation, refer to the technical data.

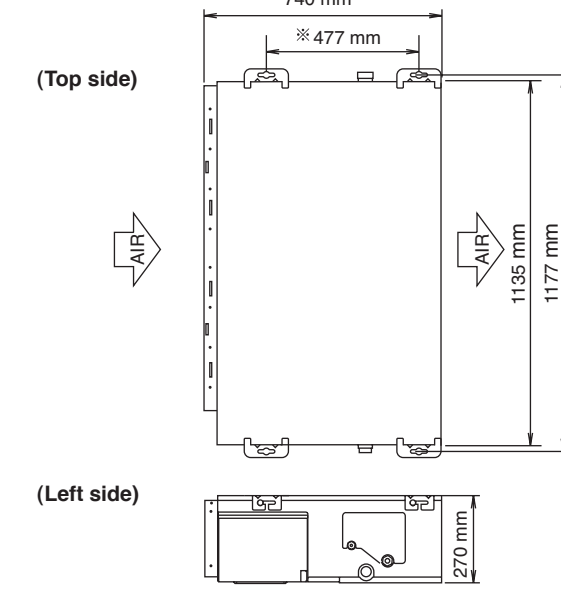
### 1. INSTALLING THE HANGERS

#### WARNING

When fastening the hangers, make the bolt positions uniform.

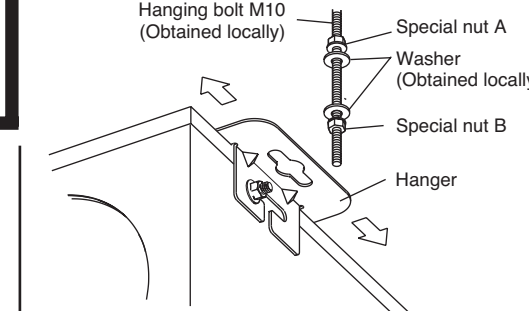
Hanging bolt installation diagram.

(Example)



The distance of ⌀ is adjustable according to the place of the hanging bolts. (MAX : 550 mm, MIN : 410 mm)

Slide the unit in the arrow direction and fasten it.



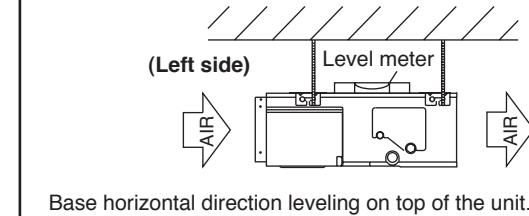
Bolt Strength 9.81 to 14.71 N·m (100 to 150 kgf·cm)

#### WARNING

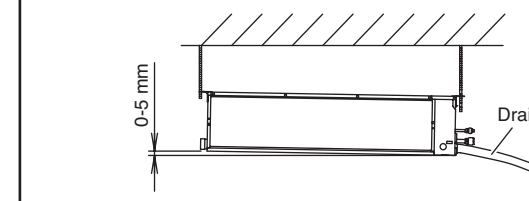
Fasten the unit securely with special nuts A and B.

### 2. LEVELING

Base vertical direction leveling on the unit (right and left).



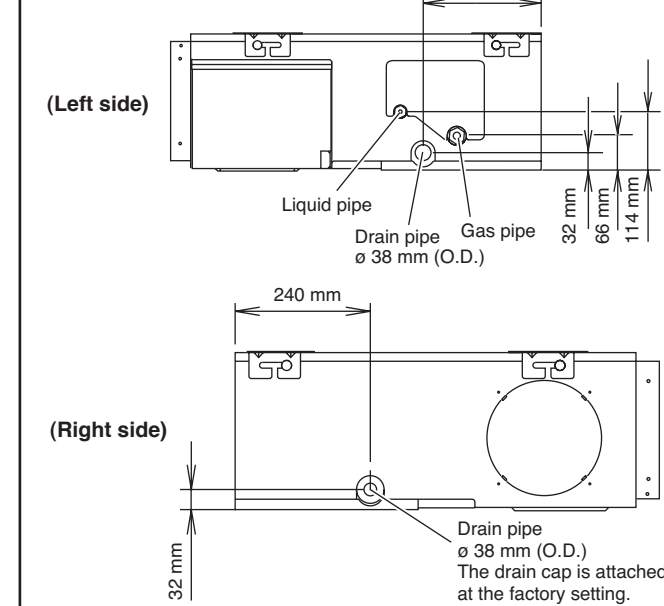
Base horizontal direction leveling on top of the unit.



Give a slight tilt to the side to which the drain hose is connected. The tilt should be in the range of 0 mm to 5 mm.

### 3. INSTALLING DRAIN HOSE

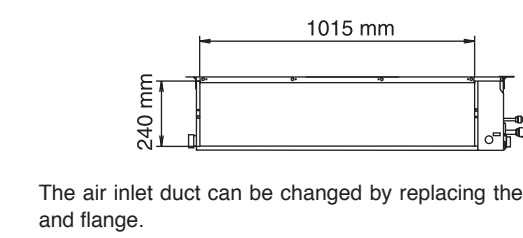
Install the drain hose according to the measurements given in the following figure.



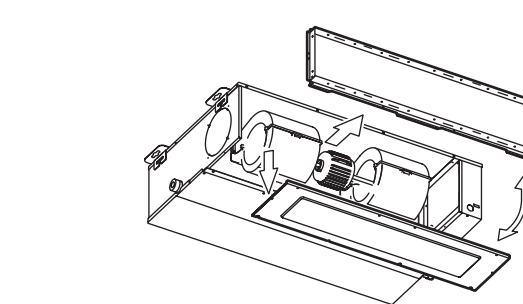
The distance of ⌀ is adjustable according to the place of the hanging bolts. (MAX : 550 mm, MIN : 410 mm)

### 4. INTAKE DUCT CONNECTION

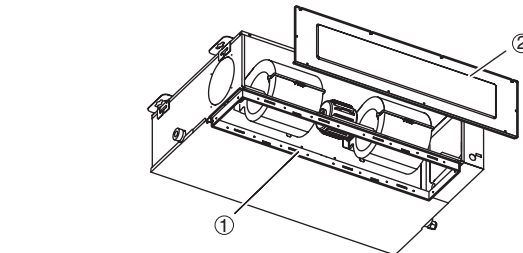
Follow the procedure in the following figure to the ducts.



The air inlet duct can be changed by replacing the intake grille and flange.



For the bottom air intake, follow the procedure of ① → ② for installation. (The factory setting is back air intake.)

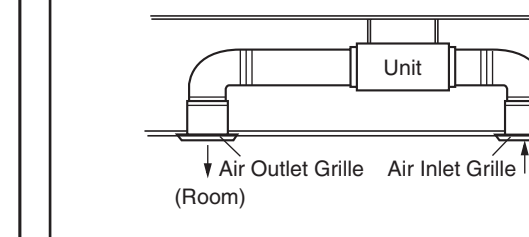


#### CAUTION

When air is taken in from the bottom side, the operating sound of the product will easily enter the room. Install the product and intake grille where the affect of the operating sound is small.

#### CAUTION

- If an intake duct is installed, take care not to damage the temperature sensor.
- Be sure to install the air inlet grille and the air outlet grille for air circulation. The correct temperature cannot be detected.



Grills must be fixed so that man cannot touch indoor unit fan, and cannot be removed by only hand operation without tool.

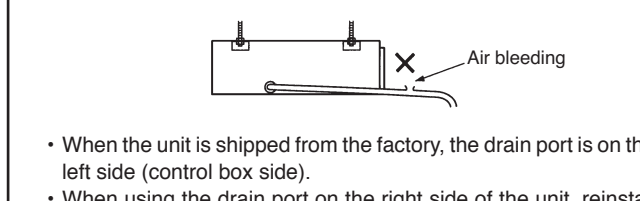
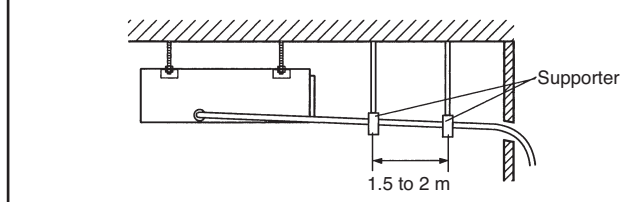
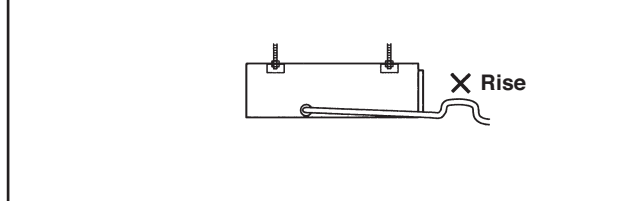
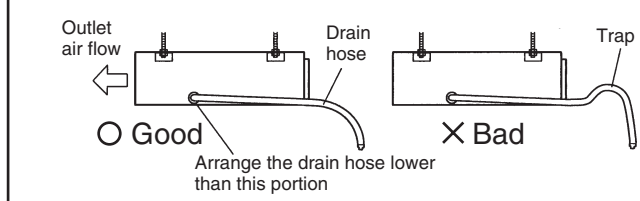
- Be sure to install the air filter in the air inlet. If the air filter is not installed, the heat exchanger may be clogged and its performance may decrease.

#### CAUTION

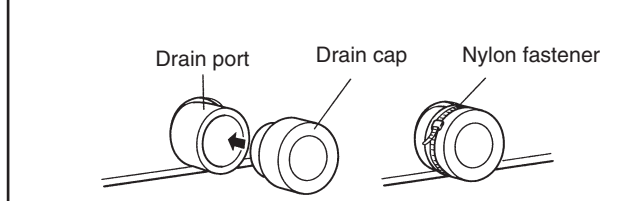
Install the drain hose in accordance with the instructions in this installation instruction sheet and keep the area warm enough to prevent condensation. Problems with the piping may lead to water leaks.

#### NOTE: INSTALL THE DRAIN HOSE

- Install the drain hose with downward gradient (1/50 to 1/100) and so there are no rises or traps in the hose.
- Use general hard polyvinyl chloride pipe (VP25) (outside diameter 38mm) and connect it with adhesive (polyvinyl chloride) so that there is no leakage.
- When the hose is long, install supporters.
- Do not perform air bleeding.
- Always heat insulate the indoor side of the drain hose.



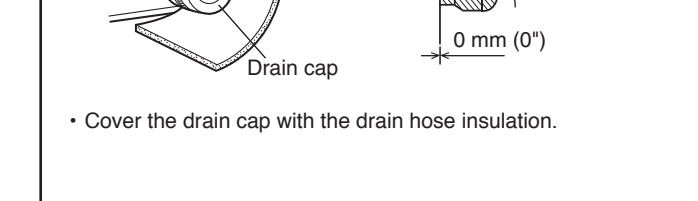
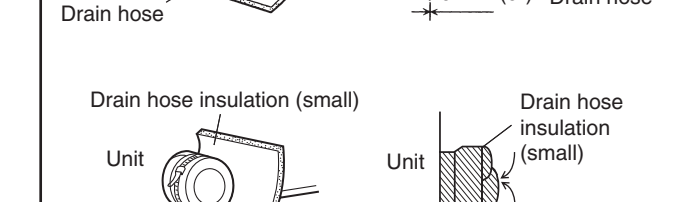
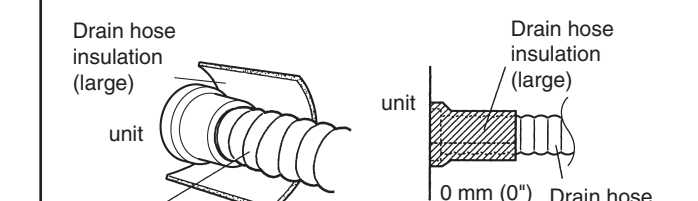
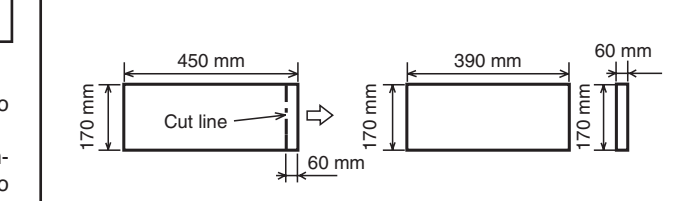
- When the unit is shipped from the factory, the drain port is on the left side (control box side).
- When using the drain port on the right side of the unit, reinstall the drain cap to the left side drain port.



#### CAUTION

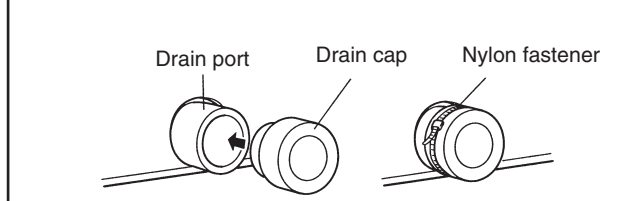
Always check that the drain cap is installed to the unused drain port and is fastened with the nylon fastener. If the drain cap is not installed, or is not sufficiently fastened by the nylon fastener, water may drip during the cooling operation.

- Cut the drain hose insulation at a position approximately 60 mm from the end with cutters, etc.
- Stick the large drain hose insulation at the drain hose installation side.
- Stick the small drain hose insulation at the drain cap side.



- Cover the drain cap with the drain hose insulation.

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