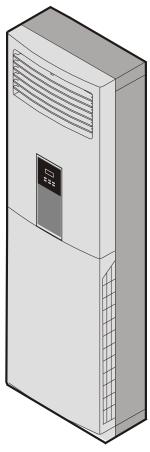
AIR CONDITIONER OWNER' S MANUAL



SAF(FSX) 24/45 RAF(FSX) 24/45 R22/R410A

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Thank you for selecting super quality Air Conditioner. To ensure satisfactory operation for many years to come, this Owner's Manual should be read carefully before using your air conditioner. After Reading, store it in a safe place. Please refer to the manual for questions on use or in the event that any irregularities Occur. This Air Conditioner should be used for household use.

Safety precautions

Symbols in this Use and Care Manual are interpreted as shown below.

Be sure not to do.

The feature of the appliance, instead of a fault.

Pay attention to such a situation.

Be sure to follow this instruction.

Grounding is essential.

Warning: Incorrect handling could cause a serious hazard, such as death, serious injury, etc.



Use correct power supply in accordance with the rating plate requirement.

Otherwise, serious faults or hazard may occur or a fire maybe break out.



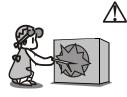
Keep the power supply circuit breaker from dirt and connect the power supply cord with it firmly and correctly, lest electric shock or fire be caused by a wrong wiring.



Do not clean the appliance with gasoline, basic or acid detergent.



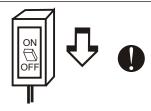
Do not knit, pull or press the power supply cord, lest the power supply cord be broken. An electric shock or fire is probably caused by a broken power supply cord.



Never insert a stick or similar obstacle to the unit. Since the fan rotates at high speed, this may cause an injury.



It is harmful to your health if the cool air reaches you for a long time. It is advisable to let the air flow be deflected to all the room.



Stop the appliance and then turn off the power supply circuit breaker immediately when something is wrong during operation



It is advisable to install, repair or move the appliance by a licenced person.



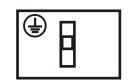
Prevent the air flow from reaching the gas burners and stove.



Do not employ the appliance to dry clothes or cool food, etc.



Do not put any objects on the outdoor unit.



It is the user's responsibility to make the appliance be grounded according to local codes or ordinances by a licenced technician.

Teatures and Functions

LENGTHWAYS AIR SWING

Automatic swing of supply air in horizontal direction. The flap moves automatically in left and right direction to spread the conditioned air evenly throughout the room.

IONIZER (Optional)

The IONIZER can make the air more fresh and more comfortable. Important notice: The IONIZER will turn ON or OFF automatically when the unit turns ON or OFF. It can't be control independently by remote controller.

AUTO CHANGE OVER

The operation mode (cooling,dry,heating) is switched automatically to maintain the set temperature, and the set temperature is kept constant at all times. For more detail, please refer to FEEL model operation procedure.

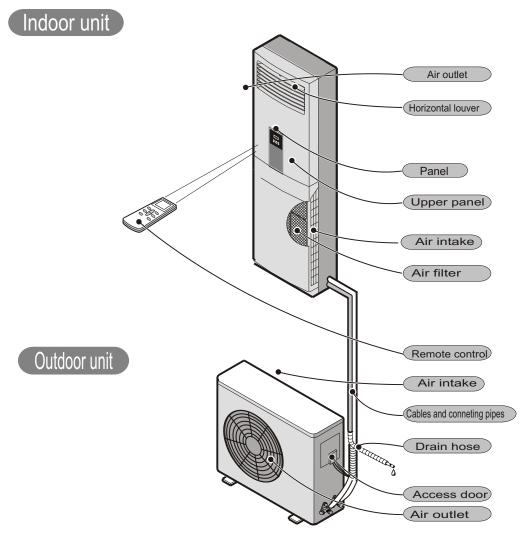
SLEEP TIME

When the SLEEP button is pressed during heating mode, the air conditioner's thermostat setting is gradually lowered during the period of operation; throughout cooling mode, the thermostat setting is gradually raised during the period of operation. When the set time is reached, the unit automatically turns off.

WIRELESS REMOTE CONTROL UNIT

The wireless remote control unit allows convenient control of air conditioner operation.

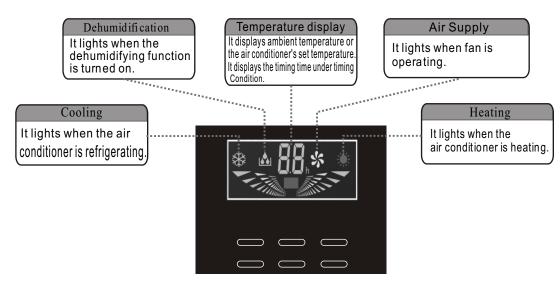
ldentification of parts



This figure is based on the external view of a standard model.

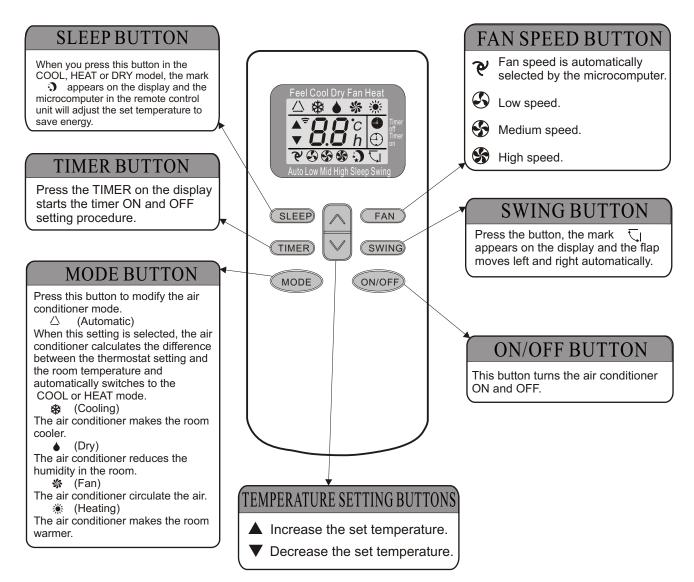
Consequently, the shape may differ from that of the air conditioner you have selected.

Control panel



Note: About the button description detail on the panel, please refer to the remote controller button description on next page.

Remote Controller



- When inserting the batteries for the first time or each time the batteries are replaced as they are discharged, the remote controller makes a short "Auto-Test": all the symbols can be displayed are shown on the screen and keep 2 seconds, then the symbol will flash from "COOL" to "HEAT" alternatively. For cooling only air condition, please press any button when the cooling symbol is flashing, the remote controller has been set as cooling only. For cooling and heating air condition, please press any button when the heating symbol is flashing, then the remote controller has been set as cooling and heating. If none of the button is pressed within 10 seconds, the remote controller will be set as cooling and heating automatically. Cooling only air condition can use the remote controller which has cooling and heating function, but do not have the function of heating. Although the air condition is not running, remote controller still have some display.
- ✓ The light of the remote controller will be turned on by pressing any button for 1.5~3 seconds, and it will be turned off automatically if no button is pressed within 10 seconds.

Remote controller

How to Insert the Batteries

Remove the battery cover according to the arrow direction.

Insert new batteries making sure that the (+) and (-) of battery are matched correctly.

Reattach the cover by sliding it back into position.

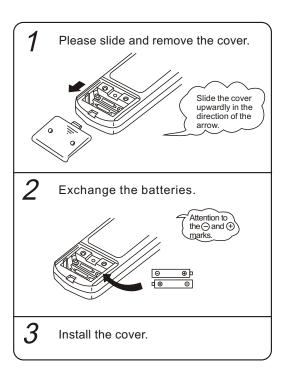
Note.

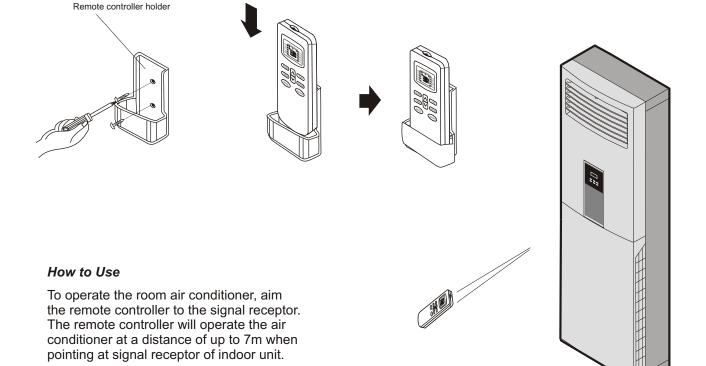
Use 2 LR03 AAA(1.5volt) batteries. Do not use rechargeable batteries. Replace batteries with new ones of the same type when the display becomes dim.

Storage and Tips for Using the Remote Controller

The remote controller may be stored mounted on a wall with a holder.

Note: The remote controller holder is an optional part.





Picture above is only for reference, please subject to the substantiality.

FEEL mode operation procedure

FEEL operates the unit automatically in following operation modes (HEATING, DRY, FAN, COOLING) depending on the room temperature at starting.

With the remote controller pointing toward the air conditioner.

Turning on

Press onloss button, when the appliance receives the signal, the RUN indicator of the indoor unit lights up.



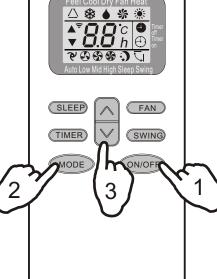
When the unit is not at FEEL mode.

Selecting FEEL mode

Press the MODE select button.

Move the MODE to the FEEL position.





Operation mode and temperature are determined by indoor temperature

Indoor temperature	Operation mode	Target temperature
Less than 20°C	HEATING FOR HEAT PUMP TYPE FAN FOR COOL ONLY TYPE	23℃
20°C~26°C	DRY	18°C
Over 26°C	COOLING	23°C

Air temperature adjustment is possible even during FEEL operation. There are 6 levels of adjustment possible with the

→ button or the

✓ button.

Setting temperature

Press the ▲ button or the ➤ button.

When the \wedge button is pushed, the temperature add 1°C .

After temperature add 2°C, the indicator did not change.

When the \checkmark button is pushed, the temperature reduce 1°C .

After temperature reduce 2 °c, the indicator did not change.





Air is not blown out at during operation.

Change mode during operation, sometimes

it can not run at once.

The operation of the AUTO mode can be performed by simply pressing the ON/OFF button for next times.



 If you wish a different running mode from FEEL mode operation, change to HEATING, DRY or COOLING.

TIMER mode

It is convenient to set the timer with **TIMER** button when you go out in the morning so that you can achieve a comfortable room temperature by the time you get home. You can also set timer off at night to enjoy a good sleep.

TIME ON

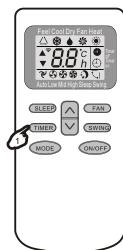
① To set the automatic switching-on of the air conditioner at the desired time.

To program the automatic start, the appliance should be off. Press TIMER, set the desired temperature by pressing the key \triangle or ∇ , press the key several times until the remote control displays the time in hours which passes between the programming and the automatic start.

IMPORTANT!

Before proceeding with the automatic start: program the working mode (COOL, HEAT, DRY, FAN) with the key MODE and the fan speed with the key FAN.

Note: To cancel the setted function, press the TIMER button again. Note: In case of power off, it is necessary to set TIMER ON again.



TIME OFF

To set the automatic switching-off of the air conditioner at the desired time.

The automatic stop is programmed when the appliance is on. Press TIMER, set the time by pressing the key \triangle or ∇ , press the key several times until the remote control displays the time in hours which passes between the programming and the timed stop.

Note: To cancel the setted function, press the TIMER button again. Note: In case of power off, it is necessary to set TIMER OFF again.

Note: THE TIMER function has a minimum setting time of 30 minutes.

FUNCTION OF SWING

The lengthways louvers will swing automatically when pressing the swing key of remote controller or the swing key on the display PCB when power is on.

The vanes will stop swinging and stay statically if press the swing key again.

Note: The transverse louvers can choose the optimal position manually only, it can't swing automatically.

FUNCTION OF KEYBOARD LOCKING

The Display PCB will be in the function of keyboard locking if pressing the key for wind speed for 5 seconds or more and no operation is valid in the status. This function will be off if repeating this operation. (The operations on remote control will still be valid under this function)

EMERGENCY RUNNING

EMERGENCY RUNNING: Used the ON/OFF button of the indoor unit to control the unit when the remote controller is out of work.

Maintain the indoor unit

Stop the appliance by pressing ON/OFF button, and then switch off the power supply circuit breaker.



Wipe the appliance with a soft and dry cloth.

The water temperature should be below 40°C.



Rever use volatile substance

such as gasoline and polishing powder to clean the appliance.



4

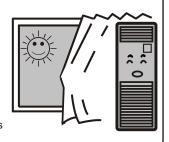
Never sprinkle water to the indoor unit.





Dry the appliance.

Operate the appliance at FAN ONLY mode on a sunny day for about half a day to dry the internal components of the indoor unit.



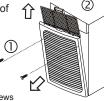
Clean the air filter

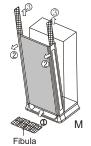
Switch off the power supply circuit and remove air filter as following.

 Remove the two screws which hold the air intake grille, and then remove the air intake grille as ①.
 Pull the air filter out from the back of

air intake grille as ②.
Take the low temperature catalyst

 Take the low temperature catalyst (LTC)* out of its filter frame.





- Press down the fibula of filter(as showed) and then pull off the filter a little down aslant in the direction of arrow key 1
- Hold the edges on both sides of the low board and pull off the board slightly in the direction of arrow key 2 to counteract the magnetic force.
- Pull the filters for both left and right sides in the direction of arrow key 3
- * Low temperature catalyst (LTC) filter is an optional part.



Clean air filter

Wipe the air filter with a soft cloth or pat it lightly, or clean it with a dust arrester or warm water containing neutral detergent when it is very dirty.

Then dry it in a shaded and cool place.





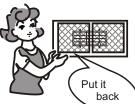
*LTC filter maintenance

- Put the LTC back to the cleaned filter.
- Pat the filter together with its the frame lightly for several times.
- It is not necessary to clean or replace the LTC, it can be used for ten years.
- Handle the LTC with care, do not rub it with hands or other tools.

*LTC filter is an optional part.



Put the air filter back to the unit.



Clean the air filter when the appliance has operated for over 300 hours.



Operating condition

Temperature Range:

R410A & R407C		Indoor		Outdoor	
		DB[°C]	WB[°C]	DB[°C]	MB[_c C]
Cooling	Upper Limit	32	23	46	NA
	Lower Limit	21	15	21	NA
Heating	Upper Limit	27	NA	24	18
	Lower Limit	10	NA	-9	-10

R22		Indoor		Outdoor	
		DB[°C]	WB[°C]	DB[°C]	WB[°C]
1Coolina	Upper Limit	32	23	46	NA
	Lower Limit	21	15	21	NA
Heating	Upper Limit	27	NA	24	18
	Lower Limit	15	NA	-5	-6

Noise pollution

- Install the air conditioner at a place that can bear its weight in order to operate more quietly.
- Install the outdoor unit at a place where the air discharged and the operation noise would not annoy your neighbors.
- Do not place any obstacles in front of the air outlet of the outdoor unit lest it increases. the noise level.

Features of protector



The protective device will work at following

- Restarting the unit after operation stops or changing mode during operation, you need to wait 3 minutes.
- Connect to power supply and turn on the unit, it may start 20 seconds later.



- If all operation has stopped, press ON/OFF button again to restart.
- Timer should be set again if it has been canceled.

Inspection

After using for long time, the air conditioner should be inspected on the following items.

- · Overheat of the power supply cord and plug or even a burned smell.
- Abnormal operating sound or vibration.
- · Water leakage from indoor unit.
- Metal cabinet electrified.
- Stop the air conditioner if above trouble occurs. It is advisable to have a detail inspection after using it for 5 years even if none above occurs.

Features of HEATING mode

Preheat

At the beginning of **HEATING** operation, the airflow from indoor unit is discharged 2-5 minutes later.

Afterheat

After the finishing of **HEATING** operation, the airflow from indoor unit is discharged 2-5 minutes.

Defrost

In **HEATING** operation the appliance will defrost (de-ice) automatically to raise efficiency. This procedure usually lasts 2-10 minutes. During defrosting, fans stop operation. After defrosting completes, it returns to **HEATING** mode automatically.

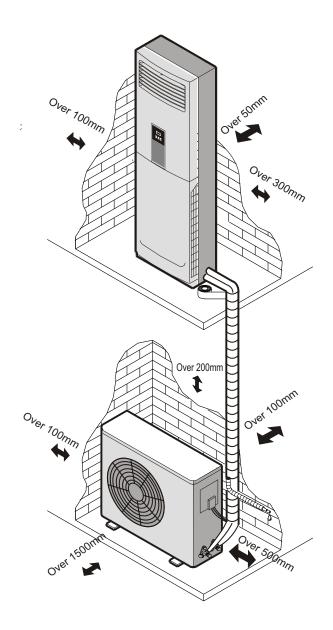
Note: Heating is NOT available for cooling only air conditioner models.

Troubleshooting

The following cases may not always be a malfunction, please check it before asking for service.

Trouble	Analysis
Does not run	 If the protector trips or fuse is blown. If the leakage breaker trips. If the plug loosened. Sometimes it stops working to protect the appliance.
Not cool or warm enough	 Is the air filter dirty? Are the intakes and outlets of the air conditioner blocked? Is the temperature set properly?
Ineffective control	• If strong interference (from excessive static electricity discharge, power supply voltage abnormality) presents, sometimes operation will be affected. In this case, switch off the breaker and switch on it again 2~3 seconds later.
Does not operate immediately	Shifting to other modes during operation, wait 3 minutes to start.
Peculiar odor	Odor may come from sources such as furniture or cigarette and blown out by the unit.
A sound of running-water	Caused by the flow of refrigerant inside the air conditioner, not a failure.
A"pi-pa" sound can be heard	Caused by the expansion or contraction of the internal components due to temperature changes. That is not a failure.
Blow mist from the outlet	Room air is cooled down by the cold air blown out from the unit and mist thus form during "COOLING" or "DRY" mode when humidity is too high inside.

Installation diagram of air conditioner



Please install the air conditioner according to international rules. Above figure is only a simple presentation of the unit, it may not match the external appearance of the unit you purchased.

了Installation instructions

Installation location

Location for installing indoor unit **Ensure:**

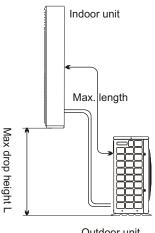
- 1. No obstacle around the air outlet so that air flow can spread to the whole room.
- 2. It is easy to arrange connection pipe and drill a wall hole.
- 3. Keep a required distance from the ceiling and wall as illustrated on the figure of the previous page.
- 4. Keep required distance to take down and install the air filter.
- 5. Keep the unit a distance of over 1 meter away from a TV set, radio, etc. that may arouse interference.
- 6. Do not put anything around the air intake.
- 7. Install it at a place that can bear the weight of it and would not increase noise and vibration during operation.
- 8. Avoid installing it where there is much oily smoke, salty, sulfide gas, dust and direct sunlight.

Location for installing outdoor unit

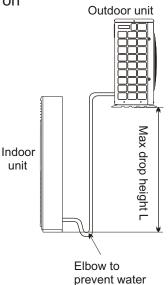
- 1. Install it at a place where it is convenient for installation and well ventilated.
- 2. Keep the required distance away from the wall as regiured on the previous page when carrying on installation.
- 3. Pipe length and drop height should comply with the scope required below.

Model	24000Btu/h R22/R410A	45000Btu/h R410A	45000Btu/h R22
Max pipe length	15m	50m	50m
Max drop height	7m	25m	20m

- 4. When operating at a special place, for example, a place of greasy dirt, vulcanization gas or high-salty seashore, make sure to adopt an effective isolation measure.
- 5. Avoid installing it on the roadside where there is a risk of muddy water.
- 6. Install it where your neighbors would not be annoyed by operating noise or discharged hot air.
- 7. Install it on a fixed shelf that is not subject to increasing noise.
- 8. Install it at a place without blockage for air outlet.

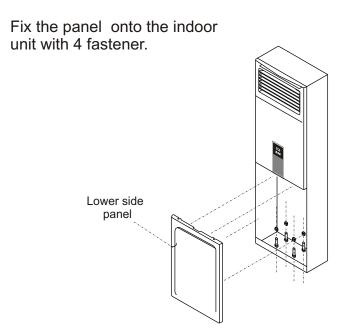






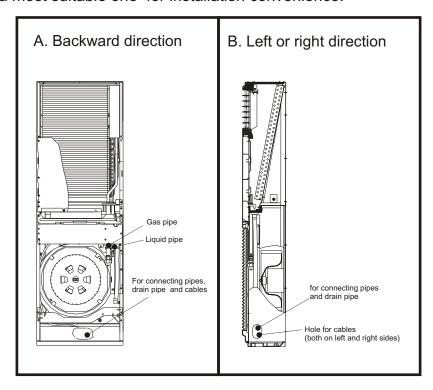
from entering room

Indoor unit installation



Piping direction

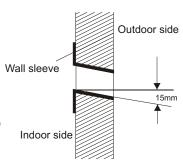
Indoor piping, drainage and wiring can be arrange at 3 optional directions. Select a most suitable one for installation convenience.



Tinstallation instructions

Wall hole

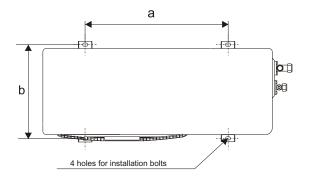
- 1. The hole should slide down towards outside for easy drainage.
- Install the wall sleeve into the wall hole to prevent the pipes and cables from being damaged.
- 3. Put on the attached wall sleeve and sleeve cap to keep the wall tidy and clean.



Outdoor unit installation

- Fix the outdoor unit with 4 bolts,
 4 washers and 4 nuts to prevent it from noise and vibration.
- 2. The installation dimensions are as actual following.

<u> </u>					
а	b				
545mm	330mm				
706mm	357mm				
572mm	378mm				
705mm	363mm				
	545mm 706mm 572mm				



Pipes connection

1. Remove the air intake grille.

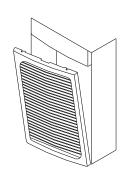
- a. Loosen the two screws and remove the air intake grille.
- b. Reinstall the air intake grille after piping connection of indoor unit has been finished.

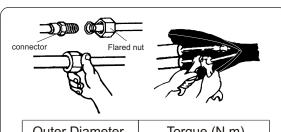
2. Remove the two flared nuts attached on indoor pipes.

- a. A little protective gas will blowout while loosening the nuts to prevent them from getting rusty.
- b. Draw the connecting pipes from outside of the indoor unit cabinet to inside, and take away the plastic seal caps from their ends.
- c. It is convenient to connect to the indoor unit connector with a L-shape pipe.

3. Connect the connecting pipes to indoor unit connectors.

- Make sure to keep the indoor pipes and connecting pipes at the same axial line while connecting.
- b. Turn the flared nuts clockwise with your hands at first, then tighten with torque wrenches.
- c. Pay attention to the allowed torque as shown on right table to prevent the pipes, connectors and flared nuts from being deformed and damaged.





Outer Diameter	Torque (N.m)	
Ф6.35 mm or 1/4 inch	12~20	
Ф9.53 mm or 3/8 inch	35 ~ 40	
Ф12.7 mm or 1/2 inch	60 ~ 65	
Ф15.88 mm or 5/8 inch	73 ~ 78	
Ф19.05 mm or 3/4 inch	90 ~ 95	

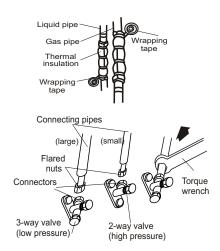
ি Installation instructions

4. Thermal insulation for connecting joints.

It is advisable to wrap the connecting joints, lest condensate generates and drips. The liquid and gas pipes should be wrapped respectively.

5. Connect the connecting pipes to the outdoor unit.

- a. Remove the flared nuts from 2-way valve and 3-way valve.
- b. Take away the plastic seal caps from the connecting pipes.
- c. Tighten the flared nuts with your hands at first, and then with torque wrenches, making sure connectors and the pipes are kept on the same axial line. Pay attention to the torque required.

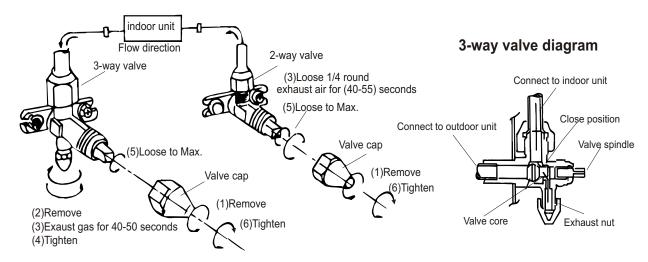




Air and moisture remains inside the refrigeration system, may has the following bad effects:

- Rise of pressure inside the refrigeration system.
- Decrease of cooling (or *heating) effect.
- Moisture frozen and blocking the refrigeration system.
- Rusting of certain parts of the system.

After connecting the indoor and outdoor units, it is necessary to exhaust the air inside the pipes completely as follows:



Air exhaust process:

- (1). Remove the valve cap.
- (2). Remove the exhaust nut of 3-way valve.
- (3). Loosen the spindle and core of 2-way valve for 1/4 round to discharge air for 40~55 seconds.
- (4). Tighten the exhaust nut of 3-way valve.
- (5). Loosen the spindle and core to Maximum.
- (6). Tighten the valve caps again.

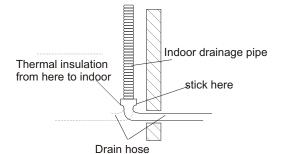
After exhausting, use electronic leakage detector or soapsuds to check all pipe connecting portions of outdoor and indoor units.

Additional charge

The refrigerant charge volume for the unit is based on the nameplate of outdoor unit.

The additional refrigerant should be charged from the service port of the 3-way valve when the appliance is operating in cooling mode.

Do not allow air enter the refrigeration system while charging refrigerant.

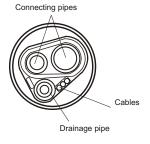


Drainage arrangement

- Arrange the drainage pipe from wall to outdoor.
- Slide down the drainage pipe for easy drainage.
- Connect the attached drain hose to indoor drainage pipe and stick them well to prevent condensate from leaking.
- Wrap the indoor part of drainage pipe with thermal insulation material.

Wrap the piping

- Wrap the connecting pipes and cables together with tape, but not including the drainage pipe. Drainage pipe can be fixed along them separately.
- Wrapping from the joint of outdoor unit to that of indoor unit, each round of tape should cover half of its previous one.



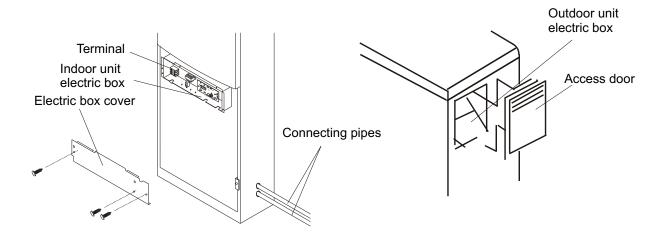
Wiring connection

1. Important notice

- (1). It is the user's responsibility to make external wiring connection be finished correctly.
- (2). The external wiring must be conducted by a licensed electrician and complies with local codes or ordinances.
- (3). Special attention must be paid to the power supply (as per rating plate).
- (4). The suitable power supply of your appliance has been shown on rating label.
- (5). The appliance must ground correctly. The earth wire should be prepared by user.
- (6). Never change the internal wiring of your appliance randomly.

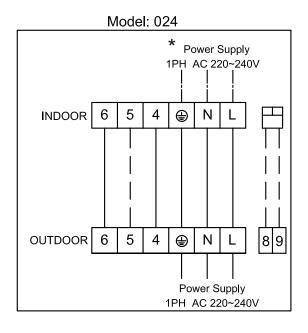
2. Steps of external wiring connection

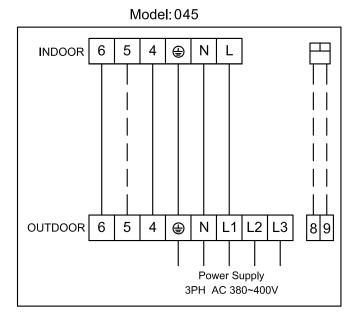
- (1). Remove air intake grille and electric box cover of indoor unit.
- (2). Remove access door of outdoor unit.
- (3). Connect the power supply connecting cable, the control connecting cable and defrost connecting cable between indoor and outdoor unit. (The defrost connecting cable is not applicable for heat pump models.) Please refer to the following pages for details.
- (4). Make sure the cables being fixed well with an effective anchorage after connecting.
- (5). Grounding work must be carried out for indoor and outdoor units.
- (6). Install the components removed back to the unit.



Picture above is only for reference, please subject to the substantiality.

3. Diagram for installation of interconnection cable





Note:1. — — — Connection only for heat pump model
2. * Option, Power supply from outdoor or indoor unit

4. Cable specification

	Model	024	045
Power	Power input cable	3 x 2.5 mm ²	N/A
supply from indoor	Cable between indoor and outdoor unit(ST model)	2 x 1.5 mm ² (Terminal "4","6") 3 x 2.5 mm ² (Terminal "L","N","\(\)")	N/A
unit	Cable between indoor and outdoor unit(RC model)	3 x 1.5 mm ² (Terminal "4","5","6") 3 x 2.5 mm ² (Terminal "L","N","�)")	N/A
Power	Power input cable	3 x 2.5 mm ²	5 x 2.5 mm ²
supply from outdoor	Cable between indoor and outdoor unit(ST model)	2 x 1.5 mm ² (Terminal "4","6") 3 x 2.0 mm ² (Terminal "L","N","*)")	2 x 1.5 mm ² (Terminal "4","6") 3 x 2.0 mm ² (Terminal "L","N","⊕")
unit	Cable between indoor and outdoor unit(RC model)	3 x 1.5 mm ² (Terminal "4","5","6") 3 x 2.0 mm ² (Terminal "L","N","�)")	3 x 1.5 mm ² (Terminal "4","5","6") 3 x 2.0 mm ² (Terminal "L","N","⊕")
Low voltage cable(OCT option)		2 x 0.5 mm ²	

Note: RC model: Heating pump model ST model: Cooling only model

Tinstallation instructions



Before testing

- a. Check if piping, drainage and external wiring have been finished correctly.
- b. Check if the power supply complies with requirements; if there is refrigerant leakage; If all wires and cables are correctly connected and well fixed.

Function test

- a. After checking, energize your appliance and press the buttons on the control panel to see if the buttons function;
- b. If LCD screen displays normally.



- 1. Please read this operating and installation instructions carefully.
- 2. Do not let air in or refrigerant out of the refrigerant system during installing or reinstalling the appliance.
- 3. Test run the air conditioner after finishing installation and keep the record.
- 4. Type of fuse for controller of indoor unit is 50T, rated specification is T 5 A, 250V. Fuse for the whole unit is not supplied by the manufacturer, so the installer must employ a suitable fuse or other over-current protective device for the power supply circuit according to the maximum power input as required.
- 5. The air conditioner operates safely when ambient static pressure is 0.8~1.05 standard atmosphere pressure.