



INSTALLATION AND OPERATION MANUAL

English

SPLIT SYSTEM Air Conditioners

MODELS

Ceiling-mounted Multi Flow cassette type See English

FFFQ50CV16

FFFQ60CV16

CAREFULLY READ THESE INSTRUCTIONS BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.



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The English text is the original instruction. Other languages are translations of the original instructions.

Important information regarding the refrigerant used

This product contains fluorinated greenhouse gases.

Do not vent gases into the atmosphere.

Refrigerant type: R32

GWP⁽¹⁾ value: 675

⁽¹⁾GWP = global warming potential

The refrigerant quantity is indicated on the unit name plate.

1. SAFETY PRECAUTIONS



Read the precautions in this manual carefully
before operating the unit.



This appliance is filled with R32.

■ FOR INSTALLATION

Please read the these "SAFETY PRECAUTIONS" carefully before installing air conditioning unit and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained.

Also, inform customers that they should store this installation manual along with the operation manual for future reference. This product comes under the term "appliances not accessible to the general public".

- This manual classifies the precautions into **WARNINGS** and **CAUTIONS**.

Be sure to follow all the precautions below: They are all important for ensuring safety.

 **WARNING**Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 **CAUTION**Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- After the installation is completed, test the air conditioner and check if the air conditioner operates properly. Give the user adequate instructions concerning the use and cleaning of the indoor unit according to the Operation Manual. Ask the user to keep this manual in a handy place for future reference.

 **WARNING**

- Ask your local dealer or qualified personnel to carry out installation work. Improper installation may result in water leakage, electric shocks or a fire.
- The appliance must be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- Floor area required for installation of the equipment, refer to the installation manual of the outdoor unit.
- Comply with national gas regulations.
- Perform installation work in accordance with this installation manual.

Improper installation may result in water leakage, electric shocks or a fire.

- Consult your local dealer regarding what to do in case of refrigerant leakage.

When the air conditioner is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage.

Otherwise, this may lead to an accident due to oxygen deficiency.

- Be sure to use only the specified parts and accessories for installation work.

Failure to use the specified parts may result in the air conditioner falling down, water leakage, electric shocks, a fire, etc.

- Install the air conditioner on a foundation that can withstand its mass.

Insufficient strength may result in the air conditioner falling down and causing injury.

In addition, it may lead to vibration of indoor units and cause unpleasant chattering noise.

- Carry out the specified installation work in consideration of strong winds, typhoons, or earthquakes.

Improper installation may result in an accident such as air conditioner falling.

- Make certain that all electrical work is carried out by qualified personnel according to the applicable legislation (Note 1) and this installation manual, using a separate circuit. In addition, even if the wiring is short, make sure to use a wiring that has sufficient length and never connect additional wiring to make the length sufficient. Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shocks or a fire. (Note 1) applicable legislation means "All international, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain".
- Earth the air conditioner. Do not connect the earth wiring to gas or water piping, lightning conductor or telephone earth wiring. Incomplete earthing may cause electric shocks or a fire.
- Be sure to install an earth leakage breaker. Failure to do so may cause electric shocks and a fire.
- Disconnect the power supply before touching the electric components. If you touch the live part, you may get an electric shocks.
- Make sure that all wiring is secure, using the specified wirings and ensuring that external forces do not act on the terminal connections or wirings. Incomplete connection or fixing may cause an overheat or a fire.
- When wiring between the indoor and outdoor units, and wiring the power supply, form the wirings orderly so that the control box lid can be securely fastened. If the control box lid is not in place, overheat of the terminals, electric shocks or a fire may be caused.
- If refrigerant gas leaks during installation work, ventilate the area immediately. Toxic gas may be produced if refrigerant gas comes into contact with a fire.
- After completing the installation work, check to make sure that there is no leakage of refrigerant gas. Toxic gas may be produced if refrigerant gas leaks into the room and comes into contact with a source of a fire, such as a fan heater, stove or cooker.
- Never directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.
- When installing or relocating the air conditioner, be sure to bleed the refrigerant circuit to ensure it is free of air, and use only the specified refrigerant (R32). The presence of air or other foreign matter in the refrigerant circuit causes abnormal pressure rise, which may result in equipment damage and even injury.
- When flared joints are reused indoors, the flare part shall be re-fabricated.

— CAUTION —

- Do not allow children to climb on the outdoor unit and avoid placing objects on the unit. Injury may result if the unit becomes loose and falls.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.
- Install in a machine room that is free of moisture. The unit is designed for indoor use.
- Disposal requirements. Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.

- Install drain piping according to this installation manual to ensure good drainage, and insulate the piping to prevent condensation. Improper drain piping may cause water leakage, make the furniture get wet.
- Install the air conditioner, power supply wiring, remote controller wiring and transmission wiring at least 1 m away from televisions or radios to prevent image interference or noise. (Depending on the radio waves, a distance of 1 m may not be sufficient to eliminate the noise.)
- Install the indoor unit as far as possible from fluorescent lamps. If a wireless remote controller kit is installed, the transmission distance may be shorter in a room where an electronic lighting type (inverter or rapid start type) fluorescent lamp is installed.
- Do not install the air conditioner in places such as the following:
 - 1 Where there is mist of oil, oil spray or vapour for example a kitchen. Resin parts may deteriorate, and cause them to fall out or water to leak.
 - 2 Where corrosive gas, such as sulfurous acid gas, is produced. Corrosion of copper pipings or brazed parts may cause the refrigerant to leak.
 - 3 Where there is machinery which emits electromagnetic waves. Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
 - 4 Where flammable gases may leak, where carbon fibre or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled. If the gas should leak and remained around the air conditioner, it may cause ignition.
- Pay attention to product transportation. Carry by hold the handle position that display on packing material. In case of hold PP hand, PP band will get loose, it will be dangerous.

SPECIAL NOTICE PRODUCT

- The refrigerant R32 requires that strict precautions be observed for keeping the system clean, dry and tightly sealed.
 - Clean and dry Strict measures must be taken to keep impurities (including SUNISO oil and other mineral oils as well as moisture) out of the system.
 - Tightly sealed R32 contains no chlorine, does not destroy the ozone layer and so does not reduce the earth's protection against harmful ultraviolet radiation. R32 will contribute only slightly to the greenhouse effect if released into the atmosphere.
- Only qualified personnel can handle, fill, purge and dispose of the refrigerant.

■ FOR OPERATION

To gain full advantage of the air conditioner's functions and to avoid malfunction due to mishandling, please read this operation manual carefully before use. Read the precautions thoroughly to avoid misuse of the equipment. This product comes under the term "appliances not accessible to the general public".

- This manual classifies the precautions into **WARNINGS** and **CAUTIONS**. Be sure to follow all the precautions below: They are all important for ensuring safety.
- There are two kinds of safety precautions and tips listed in the following.

⚠ WARNINGIndicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTIONIndicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

- **After reading, keep this manual in a convenient place so that you can refer to it whenever necessary. If the equipment is transferred to a new user, be sure also to hand over the manual.**

— ⚠ WARNING —

- Be aware that prolonged, direct exposure to cool or warm air from the air conditioner, or to air that is too cool or too warm can be harmful to your physical condition and health.
- The appliance must be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- **Do not pierce or burn.**
- Be aware that refrigerants may not contain an odour.
- Floor area required for installation of the equipment, refer to the installation manual of the outdoor unit.
- When the air conditioner is malfunctioning (giving off a burning odor, etc.), turn off the power to the air conditioner and contact your local dealer. Continued operation under such circumstances may result in a failure, electric shocks or a fire.
- **Consult your local dealer about installation work.** Doing the work yourself may result in water leakage, electric shocks or a fire.
- **Consult your local dealer regarding modification, repair and maintenance of the air conditioner.** Improper workmanship may result in water leakage, electric shocks or a fire.
- **Do not place objects, including rods, your fingers, etc., in the air inlet or outlet.** Injury may result due to contact with the air conditioner's high-speed fan blades.
- **Beware of a fire in case of refrigerant leakage.** If the air conditioner is not operating correctly, i.e. not generating cool or warm air, refrigerant leakage could be the cause. Consult your local dealer for assistance. The refrigerant used for the air conditioner is safe and normally does not leak. However, if the refrigerant leaks and gets in contact with a naked burner, heater or cooker, it may generate hazardous compounds. Turn off the air conditioner and call your local dealer. Turn on the air conditioner after the qualified service person makes sure to confirm that the leakage is repaired.

- **Consult your local dealer regarding what to do in case of refrigerant leakage.**

When the air conditioner is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.

- **Contact professional personnel about attachment of accessories and be sure to use only accessories specified by the manufacturer.**

If a defect results from your own workmanship, it may result in water leakage, electric shocks or a fire.

- **Consult your local dealer regarding relocation and installation of the air conditioner. (Do not do installation of the air conditioner by yourself.)**

Improper installation work may result in leakage, electric shocks or a fire.

- **Be sure to use fuses with the correct ampere reading.**

Do not use improper fuses, copper or other wiring as a substitute, as this may result in electric shocks, a fire injury or damage to the air conditioner.

- **Be sure to earth the air conditioner.**

Do not earth the air conditioner to a utility piping, lightning conductor or telephone earth lead.

Imperfect earthing may result in electric shocks or a fire. A high surge current from lightning or other sources may cause damage to the air conditioner.

- **Be sure to install an earth leakage breaker.**

Failure to install an earth leakage breaker may result in electric shocks or a fire.

- **Consult your local dealer if the air conditioner submerges owing to a natural disaster, such as a flood or typhoon.**

Do not operate the air conditioner in that case, or otherwise malfunction, electric shocks, or a fire may result.

- **Do not start or stop operating the air conditioner with the power supply breaker turned ON or OFF.**

Otherwise, fire or water leakage may result. Furthermore, the fan will rotate abruptly if power failure compensation is enabled, which may result in injury.

- **Do not use the air conditioner in the atmosphere contaminated with oil vapor, such as cooking oil or machine oil vapor.**

Oil vapor may cause crack damage to the air conditioner, electric shocks, or a fire.

- **Do not use the air conditioner in places with excessive oily smoke, such as cooking rooms, or in places with flammable gas, corrosive gas, or metal dust.**

Using the air conditioner in such places may cause a fire or air conditioner failures.

- **Do not relocation and reinstallation of the air conditioner by yourself.**

Improper installation work may result in leakage, electric shocks or a fire. Please consult your local dealer.

- **Do not use flammable materials (e.g., hairspray or insecticide) near the air conditioner.**

- **Do not clean the air conditioner with organic solvents such as paint thinner.**

The use of organic solvents may cause crack damage to the air conditioner, electric shocks, or a fire.

- **Do not place burners or heaters in places exposed to the air flow from the unit as this may impair combustion of the burner or heater.**

- **Do not wipe the controller panel with benzene or other organic solvent.**
This will cause discoloration and/or peeling. If the panel needs cleaning, use a damp cloth with some water-diluted neutral detergent. Wipe with a dry cloth afterwards.
- **Do not operate with the control panel lid open.**
If water gets inside the panel, it may result in equipment failure or electric shock.
- **Be sure to use a dedicated power supply for the air conditioner.**
The use of any other power supply may cause heat generation, a fire, or air conditioner failures.
- **Consult your local dealer regarding cleaning the inside of the air conditioner.**
Improper cleaning may cause breakage of plastic parts, water leakage and other damage as well as electric shocks.

— **! CAUTION** —

- **Do not use the air conditioner for purposes other than those for which it is intended.**
Do not use the air conditioner for cooling precision instruments, food, plants, animals or works of art as this may adversely affect the performance, quality and/or longevity of the object concerned.
- **Do not remove the outdoor unit's outlet side grille.**
The guard protects against the unit's high-speed fan, which may cause injury.
- **To avoid oxygen depletion, ensure that the room is adequately ventilated if equipment such as a burner is used together with the air conditioner.**
- **After prolonged use, check the unit stand and its mounts for damage.**
If left in a damaged condition, the unit may fall and cause injury.
- **Do not place flammable sprays or operate spray containers near the air conditioner as this may result in a fire.**
- **Do not put flammable containers, such as spray cans, within 1 m from the air outlet.**
The containers may explode because the warm air from the indoor or outdoor unit will affect them.
- **When maintenance, be sure to stop the air conditioner operation, turn the power circuit breaker off.**
Otherwise, an electric shocks and injury may result.
- **To avoid electric shocks, do not operate with wet hands.**
- **Do not place objects that are susceptible to moisture directly beneath the indoor or outdoor units.**
Under certain conditions, condensation on the unit or refrigerant piping, air filter dirt or drain blockage may cause dripping, resulting in fouling or failure of the object concerned.
- **Do not place appliances that produce naked flames in places exposed to the airflow from the air conditioner as this may impair combustion of the burner.**
- **Do not place heaters directly below the indoor unit, as resulting heat can cause deformation.**
- **Do not allow a child to mount on the outdoor unit or avoid placing any object on it.**
Falling or tumbling may result in injury.

- **Do not sit or place objects on the outdoor unit.**
Falling yourself or falling objects could cause injury.
- **Be sure that children, plants or animals are not exposed directly to airflow from the indoor unit, as adverse effects may ensue.**
- **Do not wash the air conditioner with water, as this may result in electric shocks or a fire.**
- **Do not place flammable sprays near the unit as this can cause explosions.**
- **Arrange the drain hose to ensure smooth drainage.**
Imperfect drainage may cause wetting of the building furniture etc.
- **Arrange the drain hose to ensure smooth drainage.**
Imperfect drainage may cause wetting.
- **Ensure that the remote controller is not exposed to direct sunlight.**
This will cause discoloration of the LCD display with resulting loss of readability.
- **Never operate remote controller buttons with hard, pointed objects.**
This may result in remote controller damage.
- **Do not pull or twist the remote controller cord.**
This may cause malfunctioning.
- **Do not operate the air conditioner when using a room fumigation type insecticide.**
Fumigation chemicals deposited in the unit could endanger the health of those who are hypersensitive to touch chemicals.
- **Do not place water containers (flower vases, etc.) on the indoor unit, as this may result in electric shocks or a fire.**
- **Do not install the air conditioner at any place where there is a danger of flammable gas leakage.**
In the event of a gas leakage, build-up of gas near the air conditioner may result in a fire.
- **Arrange the drain to ensure complete drainage.**
If proper drainage from the outdoor drain pipe does not occur during air conditioner operation, there could be a blockage due to dirt and debris build-up in the pipe. This may result in a water leakage from the indoor unit. Under these circumstances, stop air conditioner operation and consult your dealer for assistance.
- **The appliance is not intended for use by unattended young children or infirm persons.**
Impairment of bodily functions and harm to health may result.
- **Children should be supervised to ensure that they do not play with the unit or its remote controller.**
Accidental operation by a child may result in impairment of bodily functions and harm health.
- **To avoid injury, do not touch the air inlet or aluminum fins of the air conditioner.**
- **Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.**
Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or a fire when making contact with electrical parts.
- **Do not block air inlets nor outlets.**
Impaired airflow may result in insufficient performance or trouble.
- **Do not let children play on or around the outdoor unit.**
If they touch the unit carelessly, injury may be caused.

- **Turn off the main power switch when the air conditioners is not to be used for prolonged periods.**
When the main power switch is left on, some electrical power (watts) is still consumed even if the air conditioner is not operating. Therefore, switch off the main power switch to save energy. When resuming operation, to ensure smooth running, turn on the main power switch 6 hours before operating the air conditioner again.
- **Never touch the internal parts of the controller.**
Do not remove the front panel. Touching certain internal parts will cause electric shocks and damage to the unit. Please consult your local dealer about checking and adjustment of internal parts.
- **Do not leave the remote controller wherever there is a risk of wetting.**
If water gets into the remote controller there is a risk of electrical leakage and damage to electronic components.
- **Take care of scaffolding and exercise caution when working high above ground level.**
- **Before cleaning, be sure to stop unit operation, turn the breaker off or remove the power cord.**
Otherwise, an electric shock and injury may result.
- **Watch your steps at the time of air filter cleaning or inspection.**
High-place work is required, to which utmost attention must be paid.
If the scaffold is unstable, you may fall or topple down, thus causing injury.

INSTALLATION SITE

Regarding places for installation

- **Is the air conditioner installed at a well-ventilated place where there are no obstacles around?**
- **Do not use the air conditioner in the following places.**
 - Filled with much mineral oil such as cutting oil
 - Where there is much salt such as a beach area
 - Where sulfured gas exists such as a hot-spring resort
 - Where there are considerable voltage fluctuations such as a factory or plant
 - Vehicles and vessels
 - Where there is much spray of oil and vapor such as a cookery, etc.
 - Where there are machines generating electromagnetic waves
 - Filled with acid and/or alkaline steam or vapor

Regarding wiring

- **All wiring must be performed by an qualified personnel.**
To do wiring, ask your local dealer. Never do it by yourself.
- **Make sure that a separate power supply circuit is provided for this air conditioner and that all electrical work is carried out by qualified personnel according to local laws and regulations.**

Pay attention to running noises, too

- **Are the following places selected?**
 - A place that can sufficiently withstand the mass of the air conditioner with less running noises and vibrations.
 - A place where the hot wind discharged from the air outlet of the outdoor unit and the running noises do not cause a nuisance to neighbours.
- **Are you sure that there are no obstacles near the air outlet of the outdoor unit?**
Such obstacles may result in declined performance and increased running noises.
- **If abnormal noises occur in use, stop the operation of the air conditioner, consult your local dealer.**

Regarding drainage of drain piping

- **Is the drain piping carried out properly to ensure complete drainage?**
If drain piping is not carried out properly, dirt and debris may be accumulated in the drain piping and cause water leakage. If it occurs, stop the air conditioner and consult with your local dealer for assistance.
- **Draining water or motor rotation sound after the indoor unit stop.**
This sound is heard when cooling operation stop, the drain pump operates and then stop. Wait approximately 5 minutes.

System relocation

- **Consult your Daikin dealer about remodelling and relocation.**

2. BEFORE INSTALLATION

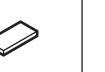
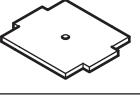
- Leave the unit inside its packaging until you reach the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, this to avoid damage or scratches to the unit. When unpacking the unit or when moving the unit after unpacking, be sure to lift the unit by holding on to the hanger bracket without exerting any pressure on other parts, especially on refrigerant piping, drain piping and other resin parts.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Caution concerning refrigerant series R32:
The connectable outdoor units must be designed exclusively for R32.

2-1 PRECAUTIONS

- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
- Children shall not play with the appliance.
- Cleaning and user maintenance shall not be made by children without supervision.
- If the supply cord is damaged, it must be replaced by the manufacturer, a service agent or similarly qualified persons in order to avoid a hazard.
- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.
- Do not install or operate the unit in rooms mentioned below.
 - Places with mineral oil, or filled with oil vapour or spray like in kitchens. (Plastic parts may deteriorate.)
 - Where corrosive gas like sulphurous gas exists. (Copper tubing and brazed spots may corrode.)
 - Where volatile flammable gas like thinner or gasoline is used.
 - Where machines generating electromagnetic waves exist. (Control system may malfunction.)
 - Where the air contains high levels of salt such as air near the ocean and where voltage fluctuates a lot (e.g. in factories). Also in vehicles or vessels.
- When selecting the installation site, use the supplied paper pattern for installation.
- Do not install accessories on the casing directly. Drilling holes in the casing may damage electrical wires and consequently cause fire.

2-2 ACCESSORIES

Check if the following accessories are included with your unit.

| | | | | |
|----------|---|---|---|---|
| Name | Metal clamp | Drain hose | Washer for hanger bracket | Screw |
| Quantity | 1 pc. | 1 pc. | 8 pcs. | 4 pcs. |
| Shape |  |  |  |  |
| Name | Clamp | Insulation for fitting for gas pipe | Insulation for fitting for liquid pipe | |
| Quantity | 7 pcs. | 1 pc. | 1 pc. | |
| Shape |  |  |  | |
| Name | Large sealing pad | Medium 1 sealing pad | Medium 2 sealing pad | Small sealing pad |
| Quantity | 1 sheet | 1 sheet | 1 sheet | 1 sheet |
| Shape |  |  |  |  |
| Name | Paper pattern for installation (cut out from upper part of packing) | | | |
| Quantity | 1 sheet | | | |
| Shape |  | | | |

2-3 OPTIONAL ACCESSORIES

- There are two types of remote controllers: wired and wireless. Select a remote controller according to customers request and install in an appropriate place.
Refer to catalogues and technical literature for selecting a suitable remote controller.
- This indoor unit requires installation of an optional decoration panel.

CARRY OUT THE WORK GIVING CAUTION TO THE FOLLOWING ITEMS AND AFTER THE WORK IS COMPLETED CHECK THESE AGAIN.

1. Items to be checked after the installation work is completed

| Items to be checked | In case of defective | Check column |
|--|---|--------------|
| Are the indoor and outdoor units rigidly fixed? | Drop · vibration · noise | |
| Have you carried out a leakage test with the test pressure specified in the outdoor unit installation manual? | It may result in insufficient cooling or insufficient heating | |
| Is the insulation of refrigerant piping and drain piping completely carried out? | Water leakage | |
| Does the drain flow out smoothly? | Water leakage | |
| Is the power supply voltage identical to that stated in the manufacturer's label on the air conditioner? | The unit may malfunction or the components burn out | |
| Are you sure that there is no wrong wiring or piping or no loose wiring? | The unit may malfunction or the components burn out | |
| Is unit safety grounded? | It may result in electric shock | |
| Are the sizes of electric wiring according to the specification? | The unit may malfunction or the components burn out | |
| Is any of air outlets or inlets of the indoor and outdoor units blocked with obstacles? (It may lead to capacity drop due to fan speed drop or malfunction of equipment.) | It may result in insufficient cooling or insufficient heating | |
| Have you recorded the refrigerant piping length and the refrigerant charge added? | Refrigerant charge amount is not clear | |

Make sure to recheck the items of "SAFETY PRECAUTIONS".

2-4 NOTES TO THE INSTALLER

- Read this manual carefully to ensure correct installation. Be sure to instruct the customer how to properly operate the system and show him/her the enclosed operation manual.
- Explain to the customer what system is installed on the site. Be sure to fill out the appropriate installation specifications in the chapter "What to do before operation" of the outdoor unit operation manual.

3. SELECTING INSTALLATION SITE

When the conditions in the ceiling are exceeding 30°C and a relative humidity of 80%, or when fresh air is inducted into the ceiling, an additional insulation is required (minimum 10 mm thickness, polyethylene foam).

For this unit you can select different air flow directions. It is necessary to purchase an optional blocking pad kit to discharge the air in 3 or 4 (closed corners) directions.

Install the unit so that air vents, lights, or machines near the unit do not interfere with the air flow.

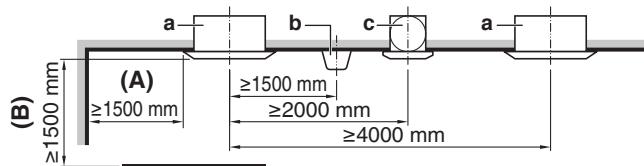


Fig. 1

a Indoor unit

b Lighting

The figure describes about a ceiling lighting, but a recessed ceiling light is not restricted.

c Air fan

A If the air outlet is closed, space marked (A) should be 500 mm at least. In addition, if both the right and left corner of this air outlet are closed, space marked (A) should be 200 mm at least.

B ≥1500 mm from any static volume

(1) Select an installation site where the following conditions are fulfilled and that meets your customer's approval.

- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate water can be properly drained.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where there is no risk of flammable gas leaking.
- The equipment is not intended for use in a potentially explosive atmosphere.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)
- Keep indoor unit, outdoor unit, inter unit wiring and remote controller wiring at least 1 m away from televisions and radios. This is to prevent image interference and noise in those electrical appliances. (Noise may be generated depending on the conditions under which the electric wave is generated, even if 1 m is kept.)
- When installing the wireless remote controller kit, the distance between wireless remote controller and indoor unit might be shorter if there are fluorescent lights who are electrically started in the room. The indoor unit must be installed as far as possible away from fluorescent lights.

(2) Ceiling height

This indoor unit may be installed on ceilings up to 3.5 m in height. However, it becomes necessary to make field settings using the remote controller when installing the unit at a height over 2.7 m.

To avoid accidental touching, it is recommended to install the unit higher than 2.5 m.

Refer to "12. FIELD SETTINGS" on page 16 and to the decoration panel installation manual.

(3) Air flow directions

Select the air flow directions best suited to the room and point of installation. For air discharge in 3 directions, it is necessary to make field settings by means of the remote controller and to close the air outlet(s). Refer to the installation manual of the optional blocking pad kit and to "12. FIELD SETTINGS" on page 16. (See Fig. 2)

(\uparrow : air flow direction)

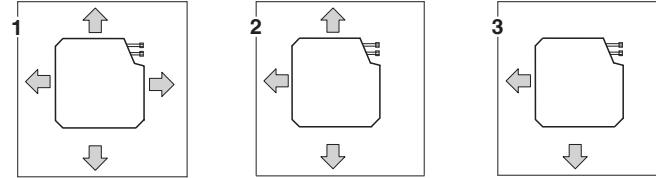


Fig. 2

1 All-round air discharge

2 Air discharge in 3 directions

3 Air discharge in 2 directions

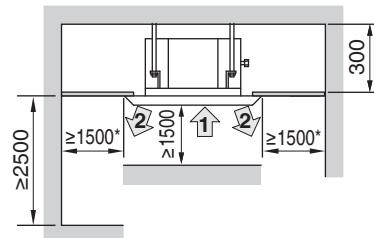
NOTE

Air flow directions as shown in Fig. 2 merely serve as examples of possible air flow directions.

(4) Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the indoor unit. If there is a risk, reinforce the ceiling before installing the unit.

(The installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.) Space required for installation see Fig. 3

(\uparrow : air flow direction)



(unit: mm)

Fig. 3

1 Air discharge

2 Air inlet

NOTE

Leave 200 mm or more space where marked with *, on sides where the air outlet is closed.

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of ceiling opening to unit and suspension bolt position.
In case of decoration panel

BYFQ60C (FOR GRID CEILING CASE)

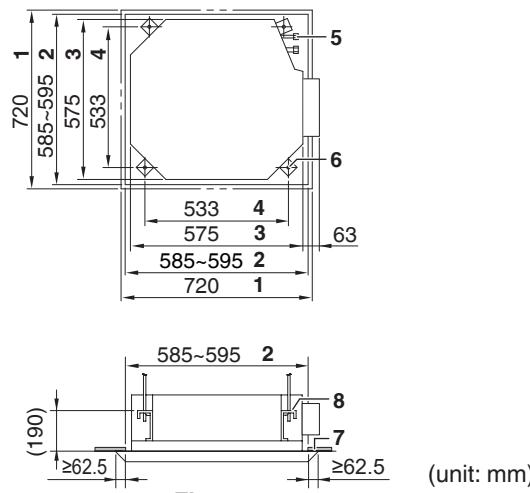


Fig. 4.1

BYFQ60C (FOR GYPSUM CEILING CASE)

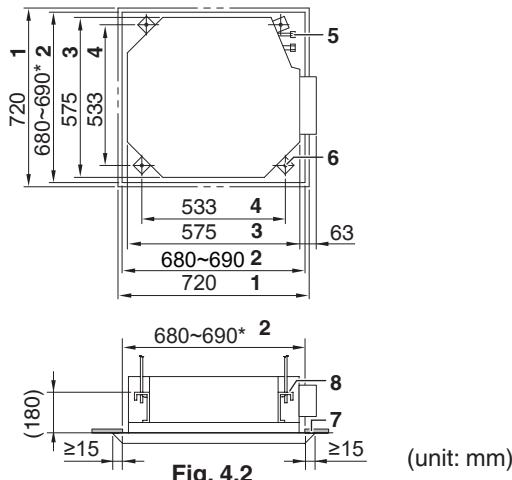


Fig. 4.2

- 1 Decoration panel dimensions
- 2 Ceiling opening dimensions
- 3 Indoor unit dimensions
- 4 Suspension bolt pitch dimensions
- 5 Refrigerant piping
- 6 Suspension bolt (x4)
- 7 False ceiling
- 8 Hanger bracket

- Install the inspection opening on the control box side where maintenance and inspection of the control box and drain pump are easy.

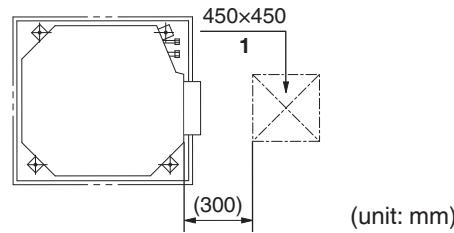


Fig. 5

1 Inspection opening

In case of decoration panel BYFQ60C

NOTE

Installation is possible with a ceiling dimension of 660 mm (marked with*). However, to achieve a ceiling panel overlapping dimension of 20 mm, the spacing between the ceiling and the unit should be 45 mm or less. If the spacing between ceiling and the unit is over 45 mm, attach ceiling material to the part or recover the ceiling.

(2) Make the ceiling opening needed for installation where applicable. (For existing ceilings.)

- Refer to the paper pattern for installation for the ceiling opening dimensions.
- Create the ceiling opening required for installation. From the side of the opening to the casing outlet or inspection opening, implement the refrigerant and drain piping and wiring for remote controller (unnecessary for wireless type). Refer to each piping or wiring section.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

(3) Install the suspension bolts. (Use either a M8~M10 size bolt.) Use anchors for existing ceilings, and a sunken insert, sunken anchors or other field supplied parts for new ceilings to reinforce the ceiling in order to bear the weight of the unit. Adjust clearance from the ceiling before proceeding further. Installation example (See Fig. 6)

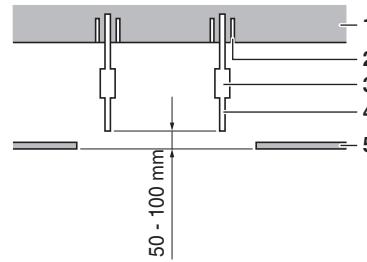


Fig. 6

- 1 Ceiling slab
- 2 Anchor
- 3 Long nut or turn-buckle
- 4 Suspension bolt
- 5 False ceiling

NOTE

- All the above parts are field supplied.
- For other installation than standard installation, contact your dealer for details.

5. INDOOR UNIT INSTALLATION

When installing optional accessories (except for the decoration panel), read also the installation manual of the optional accessories.

Depending on the field conditions, it may be easier to install optional accessories before the indoor unit is installed. However, for existing ceilings, always install fresh air intake kit before installing the unit.

(1) Install the unit in the ceiling opening.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket.
- Securing the hanger bracket (See **Fig. 7**)

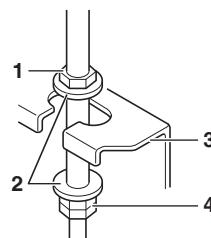
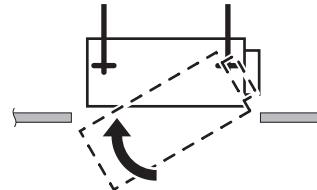


Fig. 7

- 1 Nut (field supply)
- 2 Washer (supplied with the unit)
- 3 Hanger bracket
- 4 Double nut (field supply, tighten)



(2) Fix the paper pattern for installation. (For new ceilings only.)

- The paper pattern for installation corresponds with the measurements of the ceiling opening. Consult the builder for details.
- The centre of the ceiling opening is indicated on the paper pattern for installation. The centre of the unit is indicated on the unit casing.
- The printing pattern can be rotated by 90° to be able to indicate the correct dimensions on all 4 sides.
- After cutting of the printing pattern for installation from packing, attach the paper pattern for installation to the unit with the attached screws as shown in **Fig. 8**.

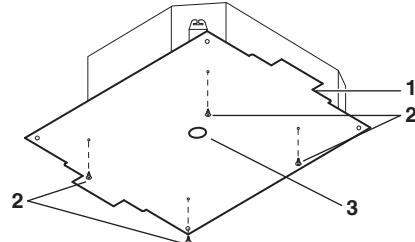


Fig. 8

- 1 Paper pattern for installation
- 2 Screws (supplied with the unit)
- 3 Centre of the ceiling opening

(3) Adjust the unit to the right position for installation.
(See “4. PREPARATIONS BEFORE INSTALLATION” on page 8.)

(4) Check if the unit is horizontally levelled.

- Do not install the unit tilted. The indoor unit is equipped with a built-in drain pump and float switch. (If the unit is tilted against the direction of the condensate flow (the drain piping side is raised), the float switch may malfunction and cause water to drip.)
- Check if the unit is levelled at all four corners with a water level or a water-filled vinyl tube as shown in **Fig. 9**.

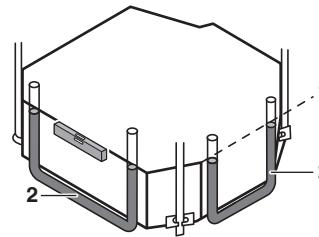


Fig. 9

- 1 Water level
- 2 Vinyl tube

(5) Remove the paper pattern for installation.
(For new ceilings only.)

- Only use accessories, optional equipment and spare parts made or approved by DAIKIN.

6. REFRIGERANT PIPING WORK

For refrigerant piping of outdoor unit, refer to the installation manual supplied with the outdoor unit.

Execute heat insulation work completely on both sides of the gas piping and liquid piping. Otherwise, this can sometimes result in water leakage.

Before rigging tubes, check which type of refrigerant is used.

— **CAUTION** —

Installation shall be done by a licensed refrigeration technician, the choice of materials and installation shall comply with the applicable national and international codes.

- Use a pipe cutter and flare suitable for R32 refrigerant.
- To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end, or cover it with tape.
- The outdoor unit is charged with refrigerant.
- To prevent water leakage, execute heat insulation work completely on both sides of the gas and liquid piping.

- Be sure to use both a spanner and torque wrench together when connecting or disconnecting pipes to/from the unit.

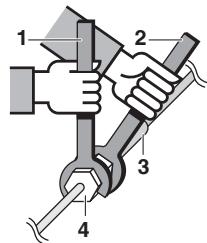


Fig. 10

- 1 Torque wrench
- 2 Spanner
- 3 Piping union
- 4 Flare nut

- Do not mix anything other than the specified refrigerant, such as air, etc. inside the refrigerant circuit.
- Only use annealed material for flare connections.
- Refer to Table 1 for the dimensions of flare nut spaces and the appropriate tightening torque. (Overtightening may damage the flare and cause leaks.)

Table 1

| Pipe gauge | Tightening torque | Flare dimension A (mm) | Flare shape |
|------------|-------------------|------------------------|-------------|
| Ø6.4 | 15.7±1.5 N·m | 8.9±0.2 | |
| Ø9.5 | 36.3±3.6 N·m | 13.0±0.2 | |
| Ø12.7 | 54.9±5.4 N·m | 16.4±0.2 | |
| Ø15.9 | 68.6±6.8 N·m | 19.5±0.2 | |

- When connecting the flare nut, coat the flare inner surface with ether oil or ester oil and initially tighten 3 or 4 turns by hand before tightening firmly.



Fig. 11

- If the refrigerant gas leaks during the work, ventilate the area. A toxic gas is emitted by the refrigerant gas being exposed to a fire.
- Make sure there is no refrigerant gas leak. A toxic gas may be released by the refrigerant gas leaking indoor and being exposed to flames from an area heater, cooking stove, etc.
- Finally, insulate as shown in **Fig. 12** (use the supplied accessory parts)

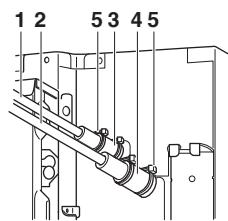


Fig. 12

- 1 Liquid pipe
- 2 Gas pipe
- 3 Insulation for fitting for liquid pipe
- 4 Insulation for fitting for gas pipe
- 5 Clamps (use 2 clamps per insulation)

Piping insulation procedure

Gas piping

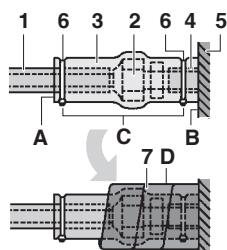


Fig. 13

Liquid piping

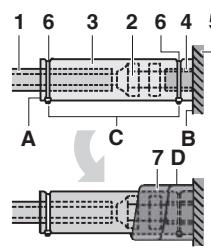


Fig. 14

- 1 Piping insulation material (field supply)

- 2 Flare nut connection

- 3 Insulation for fitting (delivered with the unit)

- 4 Piping insulation material (main unit)

- 5 Main unit

- 6 Clamp (field supply)

- 7 Medium 1 sealing pad for gas piping (delivered with the unit)

- Medium 2 sealing pad for liquid piping (delivered with the unit)

A Turn seams up

B Attach to base

C Tighten the part other than the piping insulation material

D Wrap over from the base of the unit to the top of the flare nut connection

CAUTION

- For local insulation, be sure to insulate local piping all the way into the pipe connections inside the unit. Exposed piping may cause condensation or may cause burns when touched.
- Make sure that no oil remains on plastic parts of the decoration panel (optional equipment). Oil may cause degradation and damage to plastic parts.
- Protect or enclose refrigerant tubing to avoid mechanical damage.

Cautions for brazing

- Be sure to carry out a nitrogen blow when brazing. Brazing without carrying out nitrogen replacement or releasing nitrogen into the piping will create large quantities of oxidized film on the inside of the pipes, adversely affecting valves and compressors in the refrigerating system and preventing normal operation.
- When brazing while inserting nitrogen into the piping, nitrogen must be set to 0.02 MPa with a pressure-reducing valve (=just enough so that it can be felt on the skin).

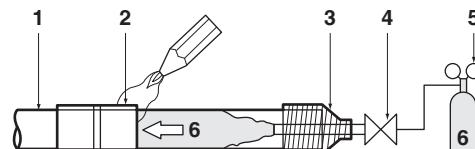


Fig. 15

- 1 Refrigerant piping

- 2 Part to be brazed

- 3 Taping

- 4 Hands valve

- 5 Pressure-reducing valve

- 6 Nitrogen

7. DRAIN PIPING WORK

Installation of drain piping

Install the drain piping as shown in the figure and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

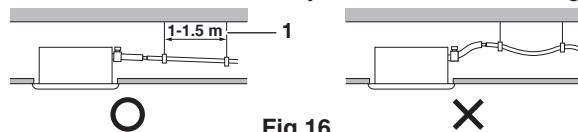


Fig. 16

- 1 Hanging bar
- Allowed
- ✗ Not allowed

- Install the drain pipes.

- Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
- Keep pipe size equal to or greater than that of the connecting pipe (vinyl pipe of 20 mm nominal diameter and 26 mm outer diameter).
- Push the supplied drain hose as far as possible over the drain socket.

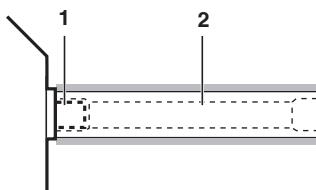


Fig. 17

- 1 Drain socket (attached to the unit)
- 2 Drain hose (supplied with the unit)

- Tighten the metal clamp as indicated in the illustration.
- After the testing of drain piping is finished, attach the drain sealing pad (4) supplied with the unit over the uncovered part of the drain socket (= between drain hose and unit body).

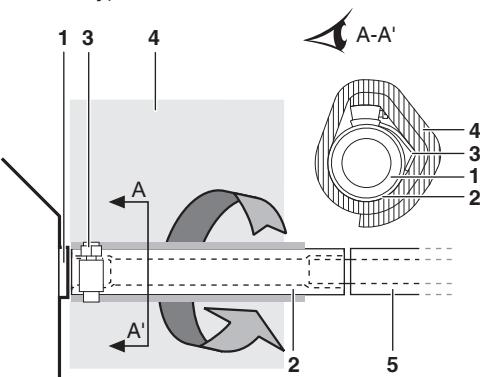


Fig. 18

- 1 Drain socket (attached to the unit)
- 2 Drain hose (supplied with the unit)
- 3 Metal clamp (supplied with the unit)
- NOTE: Bend the tip of the metal clamp without tearing the sealing.
- 4 Large sealing pad (supplied with the unit)
- 5 Drain piping (field supply)

- Wrap the supplied large sealing pad over the metal clamp and drain hose to insulate and fix it with clamps.
- Insulate the complete drain piping inside the building (field supply).
- If the drain hose cannot be sufficiently set on a slope, fit the hose with drain raising piping (field supply).

- How to perform piping (See Fig. 19)

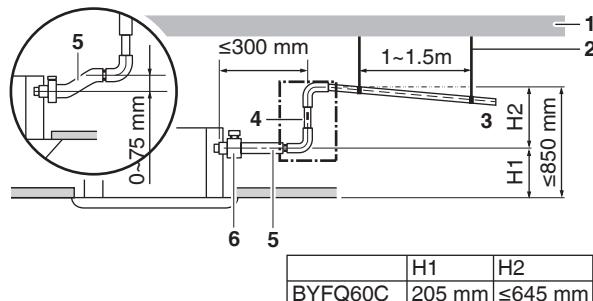


Fig. 19

- 1 Ceiling slab
- 2 Hanger bracket
- 3 Adjustable range
- 4 Drain raising pipe (nominal diameter of vinyl pipe = 20 mm)
- 5 Drain hose (supplied with the unit)
- 6 Metal clamp (supplied with the unit)

- Connect the drain hose to the drain raising pipes, and insulate them.
- Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the clamp.

- Precautions

- Install the drain raising pipes at a height of less than H2.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300 mm from the unit.
- To prevent air bubbles, install the drain hose level or slightly tilted up (≤75 mm).
- Drain pump mounted in this unit is high lift type. Characteristic of this pump is that the higher pump is the lower drainage sound becomes. Therefore drain pump height of 300 mm is recommended.

| Decoration panel | H2 |
|------------------|--------|
| BYFQ60C | 645 mm |

NOTE

The incline of attached drain hose should be 75 mm or less so that the drain socket does not have to withstand additional force. To ensure a downward slope of 1:100, install hanging bars every 1 to 1.5 m. When unifying multiple drain pipes, install the pipes as shown in Fig. 20. Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

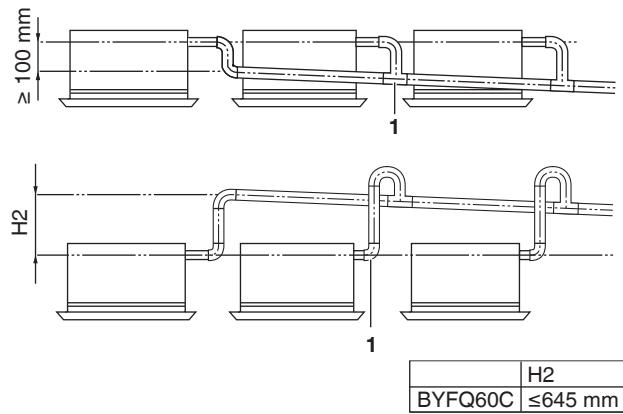


Fig. 20

- 1 T-joint converging drain pipes

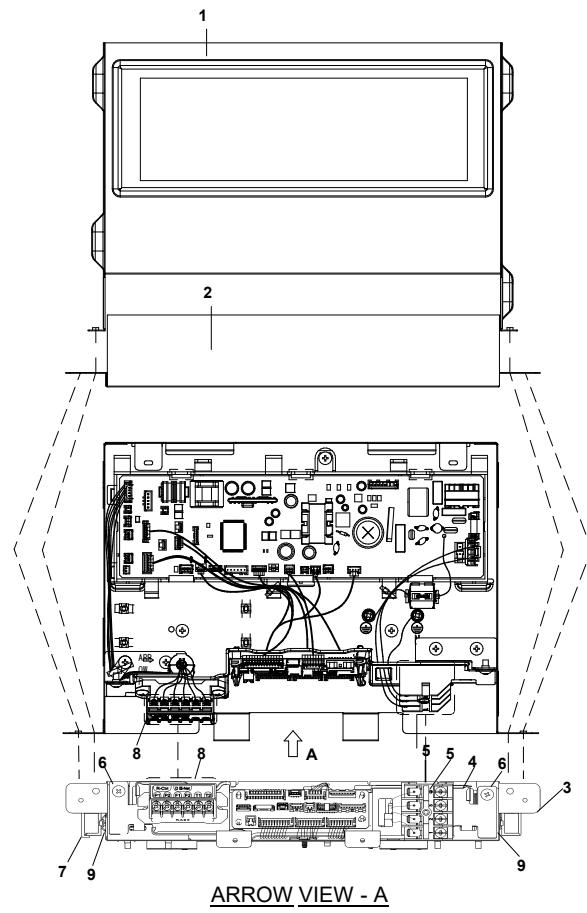
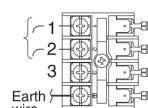


Fig. 21

- 1 Control box lid
- 2 Control box bottom lid
- 3 Inter unit wiring
- 4 Earth cable
- 5 Terminal block for power supply
- 6 Clamp
- 7 Remote controller wiring
- 8 Terminal board for transmission wiring
- 9 Opening for cables

Terminal block for power supply (4)



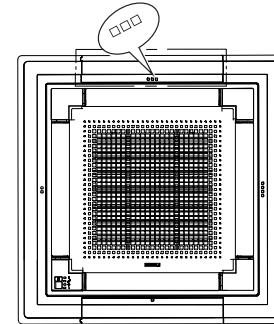
- Confirm the drain operation looking at the drain socket.
- After checking the drainage flow, turn off power, remove the control box lid and disconnect the single phase power supply from the inter unit wiring terminal block again. Attach the control box lid as before.
- In case of main PCB access During Service.
- Open the 2 screws after that need to remove control box bottom lid & front lid for main PCB access during service.

8. EL. COMPO BOX OPENING PROCESS FOR ACCESS OF MAIN PCBA & TRANSMISSION PCBA

8-1 Panel Opening Cover

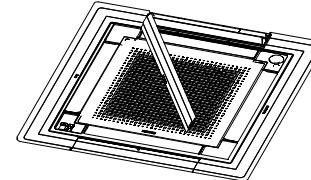
- The highlighted area is for panel opening cover. EL. COMPO. BOX Is Inside the cover.

- Use Screw driver or some other instrument (-Ve bit type) and need to insert in (black highlighted area) for opening cover.

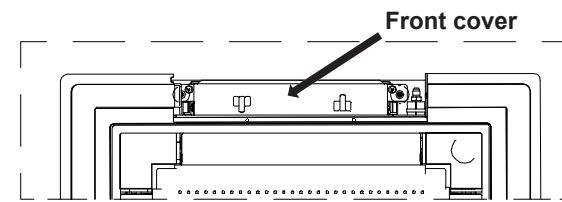


8-2 Carefully open cover

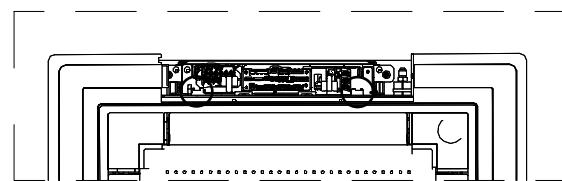
- Opening cover will be hang from one end by lock provided in right side.



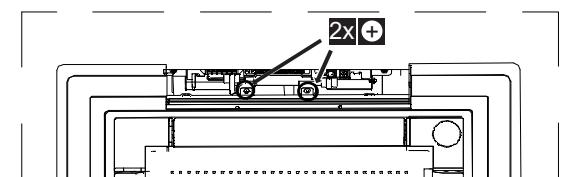
- after opening cover need to be open front cover EL.COMP. BOX.
- The highlighted screw need to open.



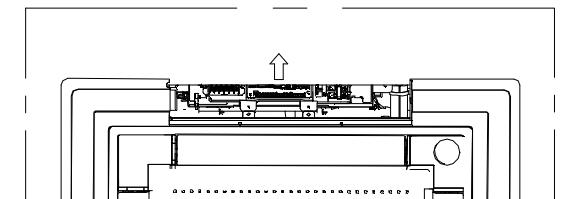
- screw opening access is from the front side for opening front cover.



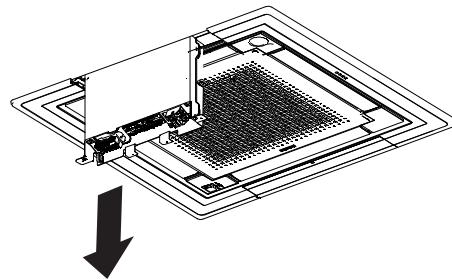
- For complete EL. COMP. BOX opening (If need to change and work on main PCBA).Can open 2 screws b/w front plate of body and EL.COMPO.BOX.



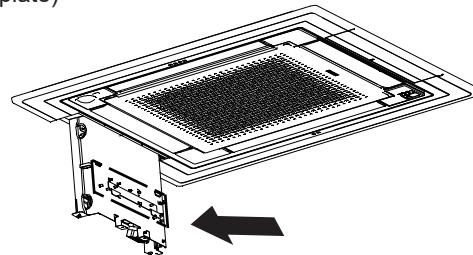
- Hold El comp. box from two ends then shift it 8~10mm towards ceiling and slide it in downward direction.



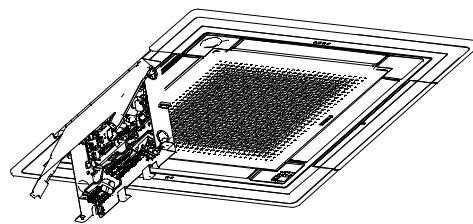
- Refer to Image for sliding EL.COMPO. BOX In downward directions. It will be come with front cover.
- As per given image, ensure other wires will remain connected except panel and optional accessories in EL comp. box



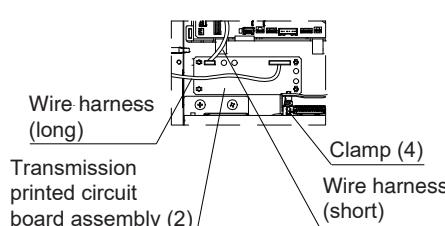
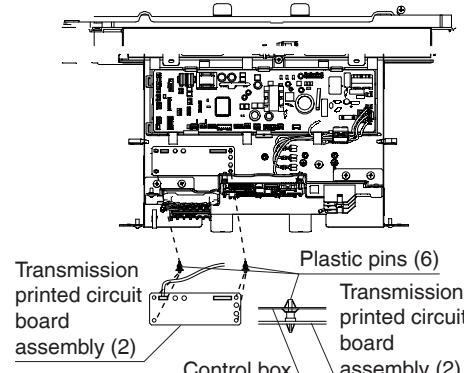
- There Is a lock (Highlighted) In main EL.COMPO.BOX for the additional safety purposes (After opening s crews EL.COMPO.BOX. Will be hanging on body front plate)



- After it towards downside can access the front cover of EL.COMPO.BOX. Need to open front cover to access main PCBA.



- After opening front cover main PCBA easily accessible and rework can done accordingly.
- Note: Need to revise same process in descending order for reassembly (Refer to Image of after completion the process.)



9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- All field wiring and components must be installed by a licensed electrician and must comply with relevant national regulations.
- Use copper wire only.
- Follow the "Wiring diagram" mention in the manual to wire the outdoor unit, indoor units and the remote controller. For details on hooking up the remote controller, refer to the "Installation manual of the remote controller".
- All wiring must be performed by an authorized electrician.
- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with relevant local and national legislation. Note that the operation will restart automatically if the main power supply is turned off and then turned back on again.
- Refer to the installation manual for the size of power supply electric wire connected to the outdoor unit, the capacity of the earth leakage circuit breaker and fuse, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not connect the ground wire to:
 - gas pipes: might cause explosions or fire if gas leaks.
 - telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lightning storms.
 - plumbing pipes: no grounding effect if hard vinyl piping is used.
- Be sure that the shape of the power supply cable and any other cable, before entering unit, should be as shown in **Fig. 23**.
- Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps.

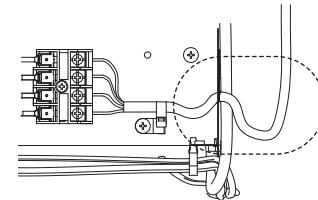


Fig. 22

9-2 ELECTRICAL CHARACTERISTICS

| Model | Power supply | | Indoor Fan motor | |
|------------------|--------------|-----|------------------|------|
| | MCA | MFA | KW | FLA |
| FFFQ/RZFFQ50CV16 | 08 | 20 | 0.05 | 0.31 |
| FFFQ/RZFFQ60CV16 | 12 | 20 | 0.05 | 0.37 |

MCA: Min. circuit Amps (A)

MFA: Max. Fuse Amps (A)

KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps (A)

NOTE

For details, refer to "Electrical data".

9-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

| | Wire | Size (mm ²) | Length |
|------------------------|---|-------------------------|-------------|
| Wiring the units | H05VV – U4G (NOTE 1, 2) | 2.5 | – |
| Remote controller cord | Vinyl cord with sheath or cable NOTE 3 (2 wire) | 0.75 – 1.25 | Max. 500m * |

* This will be the total extended length in the system when doing group control.

NOTE

- Shows only in case of protected pipes. Use H05RN-F in case of no protection.
- Supply cords shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57).
- Vinyl cord with sheath or cable (Insulated thickness : 1 mm or more).

10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

10-1 HOW TO CONNECT WIRING (See Fig. 21)

- Power supply wiring
Remove the control box lid (1) and connect the wires to the power supply terminal block inside (L, N) and connect the ground wire to the grounding terminal. While doing this, pull the wires inside through the hole in the casing and clamp the wires along with other wires using a clamp as indicated in the figure.
- Unit transmission wiring and remote controller wiring
Remove the control box lid (1) and pull the wires inside through the hole in the casing and connect to the terminal block for unit transmission wiring (F1, F2) and remote controller wiring (P1, P2). Securely fix the wiring using a clamp as indicated in the figure.
- After connection
Attach the small sealing (supplied with the unit) around the cables to prevent infiltrating of water from the outside into the unit. If two or more cables are used, divide the small sealing into the required number of pieces and wrap them around all the cables.
- Attach the control box lid.

Precautions

- Observe the notes mentioned below when wiring to the power supply terminal block.
 - Use a round crimp-style terminal for insulation sleeve for connection to the terminal block for wiring the units. When none are available, follow the instructions below.

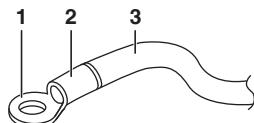


Fig. 23

- 1 Round crimp-style terminal
- 2 Attach insulation sleeve
- 3 Wiring

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
- When clamping wiring, use the clamps (delivered with the unit) to prevent outside pressure being exerted on the wiring connections. Tie up firmly. When doing the wiring, make sure the wiring is neat and does not cause the control box to stick up. Close the cover firmly.
- When connecting wires of the same gauge, connect them according to the figure.



Fig. 24

Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal. Use torques according to the table below.

| | Tightening torque (N·m) |
|--|-------------------------|
| Terminal block for unit transmission and remote controller | 0.88±0.08 |
| Terminal block for power supply | 1.20±0.12 |

- When attaching the control box lid, make sure not to pinch any wires.
- After all wiring connections are done, fill in any gaps in the casing wiring holes with putty or insulation material (field supply) thus to prevent small animals or dirt from entering the unit from outside and causing short circuits in the control box.

- Keep total current of crossover wiring between indoor units less than 12 A. Branch the line outside the terminal block of the unit in accordance with electrical equipment standards, when using two power wiring of a gauge greater than 2 mm² (Ø1.6).

The branch must be sheathed in order to provide an equal or greater degree of insulation as power supply wiring itself.

- Do not connect wires of different gauge to the same grounding terminal. Looseness in the connection may deteriorate the protection.
- Remote controller wiring and unit transmission wiring should be located at least 50 mm away from power supply wiring. Not following this guideline may result in malfunction due to electrical noise.
- For the remote controller wiring, refer to the "Installation manual of the remote controller" supplied with the remote controller.

NOTE

The customer has the ability to select the remote controller thermistor.

- Never connect the power supply wiring to the terminal block for transmission wiring. This mistake could damage the entire system.
- Use only specified wires and tightly connect wires to the terminals. Be careful that wires do not place external stress on the terminals. Keep wiring in neat order so that they do not obstruct other equipment such as popping open the service cover. Make sure the cover closes tight. Incomplete connections could result in overheating, and in the worse case, electric shock or fire.

10-2 WIRING EXAMPLE

Fit the power supply wiring of each unit with a switch and fuse as shown in **Fig. 25**.

CAUTION

Be sure to install an earth leakage breaker to the outdoor unit. This is to avoid electric shocks or a fire.

For the wiring of outdoor units, refer to the installation manual attached to the outdoor units. Confirm the system type.

- **Pair type:**

1 remote controller controls 1 indoor unit (standard system). (Refer to **Fig. 25**)

- **Group control:**

1 remote controller controls up to 16 indoor units (All indoor units operate according to the remote controller). (Refer to **Fig. 26**)

Pair type

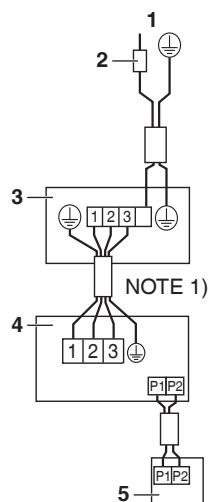


Fig. 25

- 1 Power supply
- 2 Earth leakage breaker
- 3 Outdoor unit
- 4 Indoor unit
- 5 Remote controller (Optional accessory)

NOTE

1. Terminal numbers of outdoor and indoor units must be matched.
- 2-1. Connect the remote controller only to the master unit.
- 2-2. The indoor temperature sensor is effective only for indoor units to which the remote controller is connected.
- 2-3. The length of wiring between the indoor unit and the outdoor unit varies depending on the connected model, the number of connected units, and the maximum piping length.

For details, refer to the technical documents.

Group control

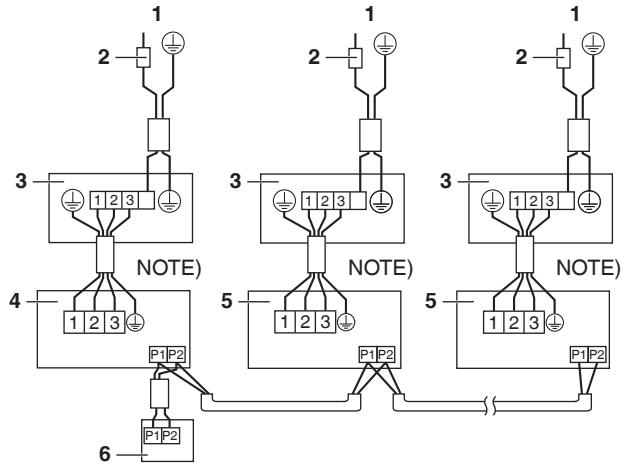


Fig. 26

- 1 Power supply
- 2 Earth leakage breaker
- 3 Outdoor unit
- 4 Indoor unit (Master)
- 5 Indoor unit
- 6 Group control remote controller (Optional accessory)

NOTE

- Terminal numbers of outdoor and indoor units must be matched.

When implementing group control

- When using as a pair unit, you may carry out simultaneous start/stop (group) control up to 16 units with the remote controller. (Refer to **Fig. 27**)
- In this case, all the indoor units in the group will operate in accordance with the group control remote controller.
- Select a remote controller which matches as many of the functions (airflow direction, etc.) in the group as possible.

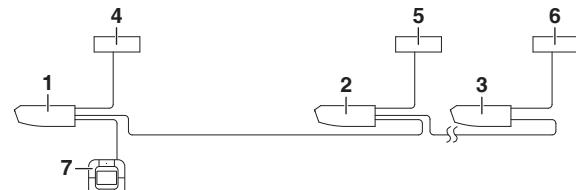


Fig. 27

- 1 Indoor unit 1
- 2 Indoor unit 2
- 3 Indoor unit 16
- 4 Outdoor unit 1
- 5 Outdoor unit 2
- 6 Outdoor unit 16
- 7 Group control remote controller

Wiring Method

- (1) Remove the control box lid. (Refer to "9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER".)
- (2) Connect crossover wiring between the terminals (P1, P2) inside the control box for the remote controller. (There is no polarity.) (Refer to **Fig. 27**)

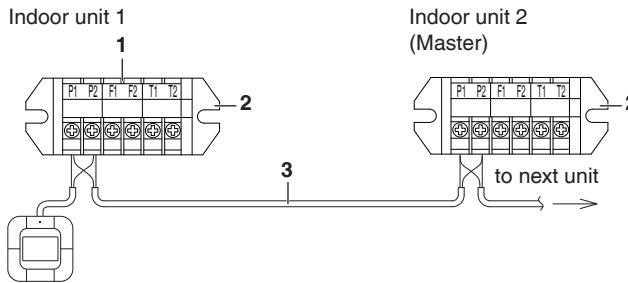


Fig. 28

- 1 Terminal for remote controller wiring (P1, P2)
- 2 Terminal block (X1M)
- 3 Crossover wiring

10-3 FOR CONTROL WITH 2 REMOTE CONTROLLERS (TO CONTROL 1 INDOOR UNIT WITH 2 REMOTE CONTROLLERS)

- For control with 2 remote controllers, set one remote controller as Main and the other remote controller as Sub.

[Changeover method from Main to Sub and vice versa]

Refer to the installation manual attached to the remote controller.

[Wiring method]

- (1) Remove the control box lid.
- (2) Connect the wiring to the terminals for remote controller 2 (Sub) in the control box.

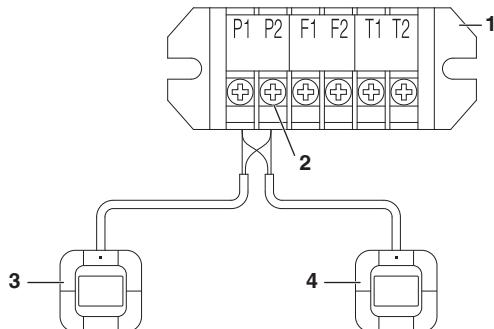
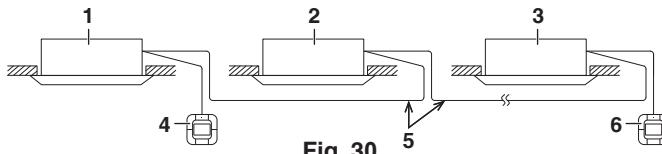


Fig. 29

- 1 Terminal block (X1M)
- 2 Terminal for remote controller wiring (P1, P2) (No polarity)
- 3 Remote controller 1 (Main)
- 4 Remote controller 2 (Sub)

— ! CAUTION —

- When using the group control and the 2 remote controllers control at the same time, connect the remote controller 2 (Sub) to the indoor unit at the end of the crossover wiring (the largest No.). (Refer to Fig. 30)



- 1 Indoor unit 1
- 2 Indoor unit 2
- 3 Indoor unit largest No.
- 4 Remote controller 1 (Main)
- 5 Crossover wiring (Remote controller)
- 6 Remote controller 2 (Sub)

10-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

- (1) Wire specifications and how to perform wiring
 - Connect the input from outside to terminals T1 and T2 of the terminal block (6P) for remote controller.

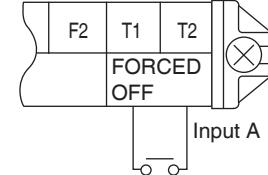


Fig. 31

| | | |
|--------------------|--|--|
| Wire specification | Sheathed vinyl cord or cable (2 wire) | |
| Gauge | 0.75-1.25mm ² | |
| Length | Max. 100m | |
| External terminal | Contact that can ensure the minimum applicable load of 15V DC, 1 mA. | |

(2) Actuation

- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

| FORCED OFF | ON/OFF OPERATION |
|--|--------------------------------|
| Input "ON" stops operation (impossible by remote controllers). | Input OFF → ON turns ON unit. |
| Input "OFF" enables control by remote controller. | Input ON → OFF turns OFF unit. |

(3) How to select FORCED OFF and ON/OFF OPERATION

- Turn the power on and then use the remote controller to select operation.
- Set the remote controller to the field set mode. For details, refer to the "HOW TO SET IN THE FIELD", in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to "1". Then set second code (position) No. to "01" for FORCED OFF and "02" for ON/OFF OPERATION. (FORCED OFF at factory set)

10-5 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. INSTALLATION OF THE DECORATION PANEL

Refer to the installation manual delivered with the decoration panel.

After installing the decoration panel, ensure that there is no space between the unit body and decoration panel.

Otherwise air may leak through the gap and cause dewdrop.

12. OPERATION RANGE

If the temperature or the humidity is beyond the following conditions, safety devices may work and the air conditioner may not operate, or sometimes, water may drop from the indoor unit.

COOLING

| OUTDOOR UNIT | INDOOR | | OUTDOOR | |
|----------------|-------------|----------|--------------|--------|
| | TEMPERATURE | HUMIDITY | TEMPERATURE | |
| RZFFQ50/60CV16 | D B | 19 to 35 | 80% or below | D B |
| | W B | 14 to 24 | | |

DB: Dry bulb temperature (°C)

WB: Wet bulb temperature (°C)

The setting temperature range of the remote controller is 18°C to 32°C.

13. FIELD SETTINGS

— CAUTION —

- Check if all the installation and piping works for the air conditioner are completed.
- Check if the control box lids of the air conditioner are closed.

< FIELD SETTING >

<<After turn on the power supply, carry out field setting from the remote controller according to the installation state.>>

- Carry out setting at 3 places, "Mode No.", "FIRST CODE No." and "SECOND CODE No.". The settings shown by "  " in the table indicate those when shipped from the factory.
- The method of setting procedure and operation is shown in the installation manual attached to the remote controller. (Note) Though setting of "Mode No." is carried out as a group, if you intend to carry out individual setting by each indoor unit or confirmation after setting, carry out setting with the Mode No. shown in the parenthesis ().
- Ask your customer to keep the manual attached to the remote controller together with the operation manual.
- Do not carry out settings other than those shown in the table.
- Set the SECOND CODE No. according to the ceiling height as shown in the table below.

13-1 SETTING CEILING HEIGHT

- Set the SECOND CODE No. according to the ceiling height as shown in the table below.

| | Ceiling height (m) | Mode No. Note 1 | FIRST CODE No. | SECOND CODE No. |
|-----------------------------|--------------------|-----------------|----------------|-----------------|
| Standard · All round outlet | ≤2.7 | 13 (23) | 0 | 01 |
| High ceiling 1 | 2.7 - 3 | | | 02 |
| High ceiling 2 | 3 - 3.5 | | | 03 |

NOTE

- "Mode No." setting is done in a batch for the group. To make or confirm settings for an individual unit, set the internal mode number in parentheses.
- The figure of the ceiling height is for the all round outlet. For the settings for four-direction (part of corner closed off), three-direction and two-direction outlets, see the installation manual and technical guide supplied with the separately sold closure material kit.

13-2 SETTING AIR DISCHARGE DIRECTION

- Refer to the installation manual attached to the sealing material of air discharge outlet sold separately and engineering data book, for ceiling height settings for four-direction (part of corner closed off) and three-direction. (The SECOND CODE No. is factory set to "01" (all round outlet) before shipping.)

13-3 SETTING WHEN AN OPTIONAL ACCESSORY IS ATTACHED

- For setting when attaching an optional accessory, refer to the installation manual attached to the optional accessory.

13-4 WHEN USING WIRELESS REMOTE CONTROLLER

- When using a wireless remote controller, it is necessary to set the wireless remote controller address. Refer to the installation manual attached to the wireless remote controller.

13-5 SETTING FAN SPEED DURING THERMOSTAT OFF

- Set the fan speed according to the using environment after consultation with your customer.
- When the fan speed is changed, explain the set fan speed to your customer.

Table 2

| Setting | Mode No. | FIRST CODE No. | SECOND CODE No. |
|--|-------------|----------------|-----------------|
| Fan operates / stops during thermo OFF (Cooling · heating) | Operates | 11 (21) | 01 |
| | Stops | | 02 |
| Fan speed during cooling thermostat OFF | (Extra low) | 12 (22) | 01 |
| | Setting | | 02 |
| Fan speed during heating thermostat OFF | (Extra low) | 12 (22) | 01 |
| | Setting | | 02 |

13-6 SETTING FILTER SIGN

- A message to inform the air filter cleaning time will be indicated on the remote controller.
- Set the SECOND CODE No. shown in the "Table 3" according to the amount of dust or pollution in the room.
- Though the indoor unit is equipped with the long life filter, it is necessary to periodically clean the filter to avoid clogging of the filter. Please also explain the set time to the customer.
- The periodical filter cleaning time can be shortened depending on the environment.

Table 3

| Contamination | Hours until indication | Mode No. | FIRST CODE No. | SECOND CODE No. | |
|-------------------|------------------------|----------|----------------|-----------------|--|
| Normal | Approx. 2500 hrs | 10 (20) | 0 | 01 | |
| More contaminated | Approx. 1250 hrs | | | 02 | |
| With indication | | | 3 | 01 | |
| No indication* | | | | 02 | |

* Use "No indication" setting when cleaning indication is not necessary such as the case of periodical cleaning being carried out.

14 TEST OPERATIONS

Refer to the installation manual attached to the remote controller.

- Check that wiring work of the indoor unit and the outdoor unit is completed.
- Check that control box lid of the indoor unit and the outer panel and piping cover of the outdoor unit are closed.
- After refrigerant piping, drain piping and electric wiring are completed, clean the inside of the indoor unit and decoration panel.
- Perform the test operation according to following procedure.

(1) To protect the compressor, turn on the power to the outdoor unit at least 6 hours prior to test operation.

(2) Confirm that stop valves of both liquid side and gas side are opened.

— CAUTION —

Make sure that outer panel and piping cover are closed before operation (danger of electric shock).

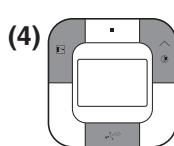
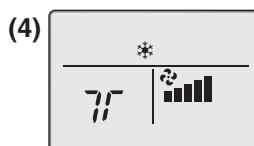
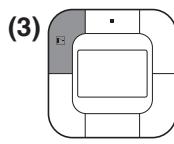
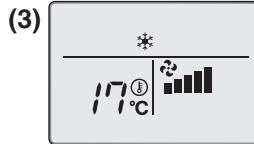
- After air purge by vacuum pump, refrigerant pressure may not rise even though the stop valve is opened. The reason is that refrigerant system of the outdoor unit is blocked by electric expansion valve or the like. Operation is no problem.

(3) Press the Mode Selector button () to select Cool mode.

(4) Press and hold 3 buttons --the Mode Selector button (), the Airflow Direction Adjustment button (), and the Temperature Setting (up) button ()-- for 4 seconds or longer to enter Test operation.

" " is displayed on the basic screen.

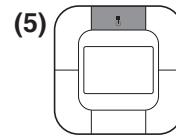
[Basic screen]



Press and hold 3 buttons for 4 seconds or longer.

(5) Check the operation status of the remote controller by checking if the green lamp on the ON/OFF button lights up or not.

- If the remote controller is ON (Green lamp lights up), continue to step (6).
- If the remote controller is OFF (Green lamp doesn't light up), press the ON/OFF button within 10 seconds after " " is displayed on the basic screen.

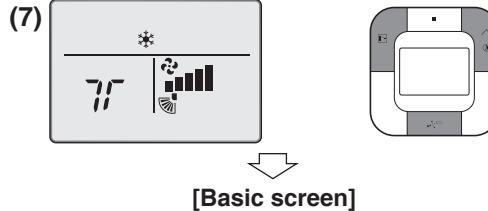


(6) Check the operation of the buttons by pressing the following buttons.

- Press the Airflow Direction Adjustment button () for setting airflow.
- Press the Mode Selector button () for setting operation mode.
- Press the Fan Speed Control button () for setting fan speed.

(7) Press and hold 3 buttons --the Mode Selector button (), the Airflow Direction Adjustment button (), and the Temperature Setting (up) button ().

The basic screen returns and normal operation is conducted.



[Basic screen]

NOTE

Test operation will automatically finish in 30 minutes.

— CAUTION —

- If the interior finish work is not completed when the test operation is finished, for protection of the air conditioner ask the customer not to operate the air conditioner until the interior finish work is completed. If the air conditioner is operated, the inside of the indoor units may be polluted by substances generated from the coating and adhesives used for the interior finish work and cause water splash and leakage.

15 MAINTENANCE

— CAUTION —

- Only a qualified service person is allowed to perform maintenance.
- Before obtaining access to terminal devices, all power supply circuits must be interrupted.
- To clean the air conditioner, be sure to stop operation and turn the power switch off. Otherwise, an electric shock and injury may result.
- Do not wash the air conditioner with water. Doing so may result in an electric shock.
- Be careful with scaffoldings. Caution must be exercised when working in high places.
- After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and cause injury.

- Do not touch the heat exchanger fins. The fins are sharp and could result in cutting injuries.
- When cleaning the heat exchanger, be sure to remove the control box, fan motor, drain pump and float switch. Water or detergent may deteriorate the insulation of electronic components and result in burn-out of these components.

HOW TO CLEAN THE AIR FILTER

Clean the air filter when the display shows “” (TIME TO CLEAN AIR FILTER).

Increase the frequency of cleaning if the unit is installed in a room where the air is extremely contaminated.
(As a yardstick for yourself, consider cleaning the filter once a half year.)

If dirt becomes impossible to clean, change the air filter.
(Air filter for exchange is optional.)

NOTE

- Do not wash the air filter with hot water of more than 50°C. Doing so may result in discoloration and/or deformation.
- Do not expose the unit to fire. Doing so may result in burning.

In case of decoration panel BYFQ60C see figures marked A

(1) Open the suction grille.

- Push the 2 catches away from you and slowly open the suction grille. (To close, perform the steps in reverse.)

Type A

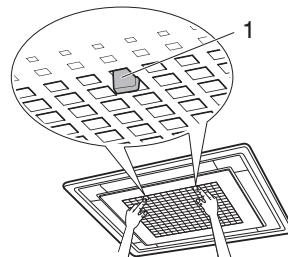


Fig. 32

1 Catch

(2) Remove the air filter.

- Pull the knobs of the air filter downward to disconnect the hooks, and remove the air filter.

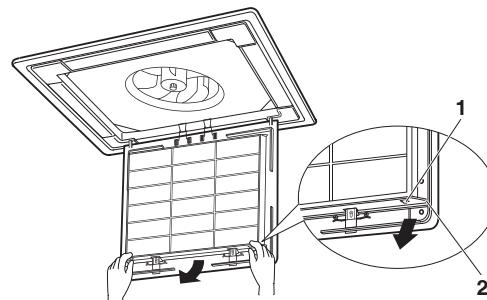


Fig. 33

1 Hook

2 Knob

(3) Clean the air filter.

Use vacuum cleaner or wash the air filter with water. When the air filter is very dirty, use soft brush and neutral detergent.



Fig. 34

(4) Remove water and dry in the shade.

(5) Reattach the air filter.

1. Hook one side of the air filter on to the protrusions on the suction grille.
2. Push the other side of the air filter into place.

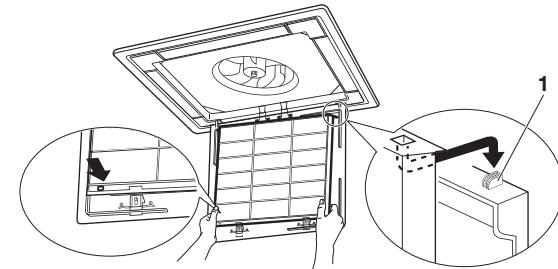


Fig. 35

1 Protrusion

(6) Close the suction grille.

- Refer to step (1).

(7) After turning on the power, reset the filter sign in accordance with the instructions in the operation manual for the wired remote controller or wireless remote controller.

- The air filter cleaning time indicator lamp on the decoration panel turns off or “TIME TO CLEAN AIR FILTER” disappears from the display on the wired remote controller.

NOTE

Do not remove the air filter except when cleaning. Unnecessary handling may damage the filter.

HOW TO CLEAN THE SUCTION GRILLE

Type A

(1) Open the suction grille.

- Push the 2 catches away from you and slowly open the suction grille. (To close, perform the steps in reverse.)

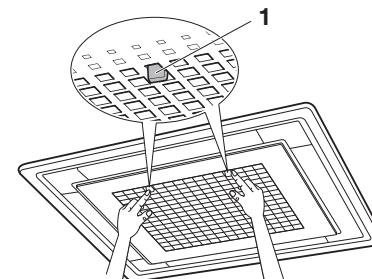


Fig. 36

1 Catch

(2) Remove the suction grille.

- Open the suction grille so that it hangs by the hinges at 90 degrees to the ceiling.
- Pinch the wire catches inward as shown in the figure.

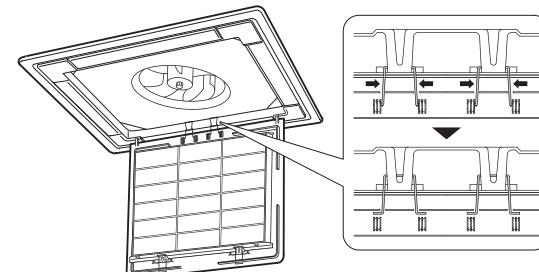


Fig. 37



(3) Remove the air filter.

- Refer to step (2) of “HOW TO CLEAN THE AIR FILTER”.

(4) Clean the suction grille.

Wash with a soft bristle brush and neutral detergent or water, and dry thoroughly.



Fig. 38

NOTE

- When the suction grille is very dirty, use a typical kitchen cleaner and let it sit for about 10 minutes. Then, wash it with water.
- Do not wash the suction grille with hot water of more than 50°C. Doing so may result in discoloration and/or deformation.

(5) Reattach the air filter.

- Refer to step (5) of “HOW TO CLEAN THE AIR FILTER”.

(6) Reattach the suction grille.

- Refer to step (2).

(7) Close the suction grille.

- Refer to step (1).



Split System Air Conditioner

INSTALLATION MANUAL <FOR OUTDOOR UNIT>

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.

NEW REFRIGERANT (R32) SERIES
RZFFQ50CV16, RZFFQ60CV16

Note : Read the precautions in this manual carefully before operating the unit.
 This appliance is filled with R32.

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WARNING THERE IS A RISK OF EXPLOSION OR FIRE

- Do not mix air in the refrigerating cycle during pump down operation.
- Do not use oxygen for air tight test.
- Do not use refrigerant other than the specified one or flammable material (e.g. propane) in the refrigerant cycle. They may cause over pressure in the refrigerating cycle and result in explosion, fire or injury. Our company assumes no responsibility for failure or malfunction caused by filling or mixing of anything other than the specified refrigerant.



CAUTION ABOUT ISOLATING RESISTANCE OF COMPRESSOR

If refrigerant accumulates in the compressor after completing installation, the insulation resistance can drop, but if it at least 1 MΩ, then the unit will not break down.

- Connect the power supply to the unit and after 6 hours check if the insulation resistance of the compressor rises. (Energize and heat the compressor to vaporize the refrigerant accumulated in the compressor.)
- If the earth leakage breaker actuates, check if the earth leakage breaker is equipped with a device to cope with high harmonics. To prevent wrong actuation of the earth leakage breaker due to the inverter, make sure to adopt an earth leakage breaker equipped with a device to cope with high harmonics.

1. Please make sure to confirm that R32 (new refrigerant) is used in installation work in advance.
(It may not operate normally, if refrigerant type is different.)
2. The refrigerant R32 requires that strict precautions be observed for keeping the system clean, dry and tightly sealed.
 - Clean and dry
Strict measures must be taken to keep impurities (Including SUNISO oil and other mineral oils as well as moisture) out of the system.
 - Tightly sealed
R32 contains no chlorine, does not destroy the ozone layer and so does not reduce the earth's protection against harmful ultraviolet radiation. R32 will contribute only slightly to the greenhouse effect if released into the atmosphere. Therefore, sealing tightness is particularly important in installation.
Carefully read the chapter **5 REFRIGERANT PIPING WORK** and strictly observe the correct procedures.
3. The design pressure of this unit : High/Low pressure area are shown in the right table.
The refrigerant piping is a high pressure area,
Use the refrigerant piping which supports the design pressure.
The piping specifications, please refer to chapter **5 REFRIGERANT PIPING WORK**
4. Be sure to connect the indoor unit, which is dedicated to R32. See the catalog for indoor unit models which can be connected.
(Normal operation is not possible when connected to other units.)

| Outdoor Unit | Design Pressure | |
|--------------|-----------------|------|
| RZFFQ50CV16 | High | 4.17 |
| RZFFQ60CV16 | Low | 2.76 |

(Units: MPa)

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION

- This manual classifies the precautions into **WARNINGS** and **CAUTIONS**.

Be sure to follow all the precautions below. They are all important for ensuring safety.



WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



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

- After the installation is completed, test the air conditioner and check if the air conditioner operates properly.

Given the user adequate instructions concerning the use and cleaning of the indoor unit according to the operation manual. In particular, make sure to explain with regard to "SAFETY PRECAUTIONS" and "Not malfunction of the air conditioner".

Ask the user to keep this manual and the operation manual together in a handy place for future reference.

- This air conditioner comes under the term "appliances not accessible to the general public".

⚠ WARNING

- Ask your local dealer or qualified personnel to carry out installation work. Improper installation may result in water leakage, electric shocks or a fire.
- Perform installation work in accordance with this installation manual. Improper installation may result in water leakage, electric shocks or a fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage. When the indoor unit is installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen deficiency.
- Be sure to use only the specified parts and accessories for installation work. Failure to use the specified parts may result in the air conditioner fall down, water leakage, electric shocks, a fire, etc.
- Install the air conditioner on a foundation that can withstand its mass. Insufficient strength may result in the air conditioner fall down and causing injury.
- Carry out the specified installation work in consideration of strong winds, typhoons, or earthquakes. Improper installation may result in an accident such as the air conditioner falling.
- Make certain that all electric work is carried out by qualified personnel according to the applicable legislation (note 1) and this installation manual, using a separate circuit. In addition, even if the wiring is short, make sure to use a wiring that has sufficient length and never connect additional wiring to make the length sufficient. Insufficient capacity of the power supply circuit or improper electric construction may lead to electric shocks or a fire.
- (note 1) Applicable legislation means "All international, national and local directives, laws, regulations and/or codes which are relevant and applicable for a certain product or domain."
- Earth the air conditioner.
 - Do not connect the earth wiring to gas or water piping, lightning conductor or telephone earth wiring. 
 - Incomplete earthing may cause electric shocks or a fire.
- Be sure to install an earth leakage circuit breaker. Failure to do so may cause electric shocks or a fire.
- The appliance must be stored in a room without continuously operating ignition sources (for example : open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerant may not contain an odor.
- Comply with national gas regulations.
- Be sure to switch off the unit before touching any electrical parts. Touching a live part may result in electric shocks.
- Make sure that all wiring is secure, using the specified wiring and ensuring that external forces do not act on the terminal connections or wiring. Incomplete connection or fixing may cause overheating terminals or fire.
- When wiring between the outdoor and indoor units, and wiring the power supply, from the wiring orderly so that the structural parts such as a cover can be securely fastened. If the cover is not in place, electric shocks or a fire may be caused.
- Do not add wiring. It may result in heat generation. Electric shocks or fire.
- When installing or relocating the air conditioner, be sure to bleed the refrigerant circuit to ensure, it is free of air, and use only the specified refrigerant (R32). The presence of air or other foreign matter in the refrigerant circuit causes abnormal pressure rise, which may result in equipment damage and even injury.
- If refrigerant gas leaks during installation work, ventilate the area immediately. Toxic gas may be produced if refrigerant gas comes into contact with a fire.
- After completing the installation work, check to make sure that there is no leakage of refrigerant gas. Toxic gas may be produced if refrigerant gas leaks into the room and comes into contact with a source of a fire, such as a fan heater, stove or cooker.
- Never directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.
- Do not stand on the outdoor unit or put things on it. The unit may fall down or drop, and cause accidents.
- Do not charge any refrigerant into the refrigeration cycle other than the designated refrigerant. It may cause an explosion or a fire due to leakage or a burst due to abnormally high pressure in the refrigeration cycle.
- Do not extend wiring on the way. It may cause heat generation, electric shocks or fire.
- At the installation work, install the refrigerant piping firmly before operating the compressor. If the compressor is operated without installing firmly and the service valve is in open condition, it sucks the air, etc., and the pressure inside the refrigerant circle becomes abnormally high. It may cause injury and breakage.
- At pump down work, stop the compressor before removing the refrigerant piping. If removing the refrigerant piping when the compressor is operated with its service valve in open condition, it sucks the air, etc., and the pressure inside the refrigerant circle become abnormally high, which may cause injury and breakage.
- The appliance (RZFFQ50/60CV16) shall be installed operated and stored in a room with floor area larger 1.84 m².
- When flared joints are reused, the flare part shall be re-fabricated.

CAUTION

- Install drain piping according to this installation manual to ensure good drainage, and insulate the piping to prevent condensation. Improper drain piping may cause water leakage, make the furniture get wet.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radio to prevent picture interference and noise. (Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Install the indoor unit as far as possible from fluorescent lamps.
- In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
- Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.
- Disposal requirements
Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.
- Only qualified personnel can handle, fill, purge and dispose of the refrigerant.
- Do not install the air conditioner in places such as following:
 - Where there is mist of oil, oil spray or vapor for example a kitchen.
Resin parts may deteriorate, and cause them to fall out or water to leak.
 - Where corrosive gas, such as sulfuric acid gas, is produced.
Corrosion of copper pipings or brazed parts may cause the refrigerant to leak.
 - Where there is machinery which emits electromagnetic waves.
Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
 - Where flammable gases may leak, where carbon fiber or ignitable dust is suspended in the air or where volatile flammables, such as thinner or gasoline, are handled. If the gas should leak and remain around the air conditioner, it may cause ignition.
 - The place that the vibration or the voltage fluctuation give influence. Vehicles, vessels, etc.
The vibration may cause a damage and the voltage fluctuation may cause an abnormal operation.
 - Where small animals may build a nest, fallen leaves are accumulated, or weeds are overgrown.
If small animals touch the electrical parts inside, this may cause malfunction, smoke or a fire.

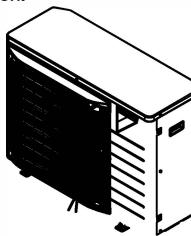
■ Important information regarding the refrigerant used
This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent gases into the atmosphere.
Refrigerant type: R32
GWP⁽¹⁾ value: 675
• ⁽¹⁾GWP = global warming potential
The refrigerant quantity is indicated on the unit name plate.

1 BEFORE INSTALLATION

CAUTION

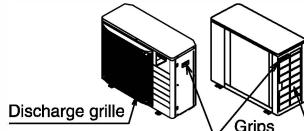
- Read these instructions carefully before installation.
For installation of the indoor unit, refer to the indoor unit installation manual.

RZFFQ50CV16
RZFFQ60CV16

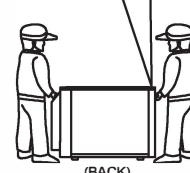
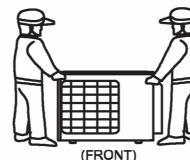


HANDLING

As shown in the figure, bring the unit slowly by grabbing the left and right grips.
(Take care not to let hands or objects come in contact with rear fins.)



Place your hands on the corner instead of holding the suction inlet in the side of the casing, otherwise the casing could be deformed.



INSTALLATION CONSTRUCTION ACCESSORIES

Be sure only to use accessories made by DAIKIN which are specifically designed for use with the equipment.

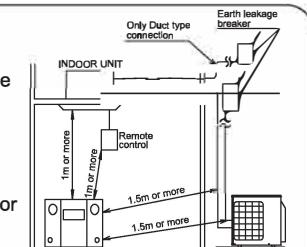
CAUTION

Work in a team of at least two people when carrying the outdoor unit

2 SELECTING INSTALLATION SITE (1/2)

(1) Select the installation location that meets the following conditions and get approval of the customer.

- Places where there is no risk of flammable gas leakage.
- Places where the outdoor unit does not bother next-door neighbors.
- Safe places which can withstand the unit's mass and vibration and where the air conditioner can be installed level.
- Places that are well-ventilated and where servicing space can be well ensured.
The minimum required space is shown in chapter ③ INSTALLATION SERVICE SPACE
- Where the piping length between the indoor and the outdoor units is ensured within the allowable piping length. Please see chapter ⑤ REFRIGERANT PIPING WORK
- Do not allow wind from the same direction to blow frequently toward the outlet or inlet of the outdoor unit. If the wind is likely to blow as mentioned above, make sure to keep a sufficient service space and install a wind protective shield.

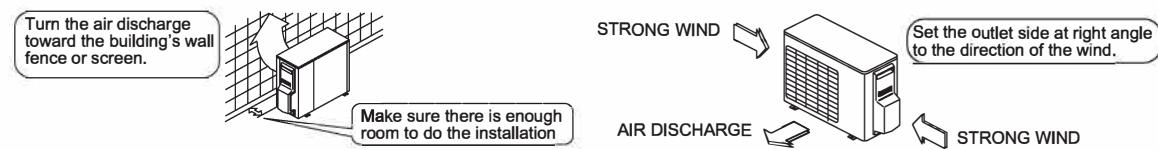


Inverter air conditioners may cause noise to occur in electrical appliances. As shown in the right drawing, select an installation site well away from radios, PCs, and stereos.
Especially in the areas where the incoming signal strength is weak, keep the indoor remote controller 3 meter or more from electrical appliances.
Put the power supply and transmission wiring in a metal piping and ground the metal piping.

2 SELECTING INSTALLATION SITE (2/2)

CAUTION

- 1) In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
- 2) When installing the unit in a place exposed to strong wind, pay special attention to the following. Strong winds of 5 m/sec or more blowing against the outdoor unit's air outlet causes short circuit (suction of discharge air) and this may have the following consequences:
 - Deterioration of the operational capacity.
 - Disruption of operation due to rise of high pressure.
 - When a strong wind blows continuously on the face of the unit, the fan can start rotating very fast until it breaks. Refer to the figures for installation of this unit in a place where the wind direction can be foreseen.
- 3) Following the installation place, it is expected that the influence of the strong wind is great.
 - The flat area which receives the adverse wind such as typhoon directly since there is no obstacles such as buildings and mountains. (Including coast line, shoreline of lake and mountain region.)
 - The installation place that no obstacles around the outdoor unit to prevent the adverse wind, for example, walls and buildings that are higher than the applicable outdoor unit, etc. Please take measures when installing especially on a rooftop.
 - Since the outdoor unit may fall down, attach the fixture for preventing overturning(option).



- 4) Prepare a water drainage channel around the foundation, to drain waste water from around the unit.
- 5) If the water drainage of the unit is not easy, please build up the unit on a foundation of concrete blocks, etc. (the height of the foundation should be maximum 150 mm).
- 6) If you install the unit on a frame, please install a waterproof plate within 150 mm of the underside of the unit in order to prevent the invasion of water from the lower direction.

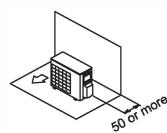
3 INSTALLATION SERVICE SPACE (1/3)

- The installation servicing spaces shown in these drawings are based on the outdoor unit inlet area temperature of 35°C for COOLING operation.
- If the planned inlet area temperature exceeds 35°C(DB), or if the heat load of all outdoor units is increased significantly and exceeds the maximum operating capacity, secure a larger space than that indicated by the inlet dimensions in these drawings.
- For installation, consider both pedestrian and air flow paths and choose a suitable pattern from these drawings to match the space available field. (If the number of units to be installed exceeds the patterns in these drawings, consider there is no short-circuits.)
- Regarding the front space, position the units with consideration to the space required for the refrigerant piping work. (Consult your dealer if the work conditions do not match those in the drawings.)
- Secure appropriate space when using a side piping outlet.

STAND-ALONE INSTALLATION

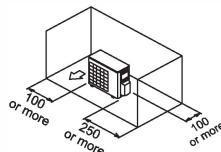
No Obstacle above

- 1) Obstacle on the suction side only

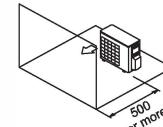


- To secure service space, more than 250 mm of each products at right side in needed. (Units: mm)

- 2) Obstacle on both sides and suction side, too

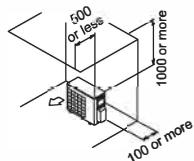


- 3) Obstacle on the discharge side only

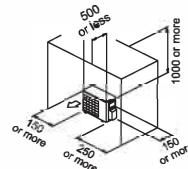


Obstacle above, too

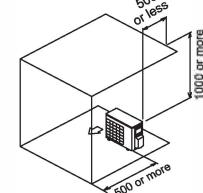
- 1) Obstacle on the suction side, too



- 2) Obstacle on both sides and suction side, too



- 3) Obstacle on the discharge side only, too

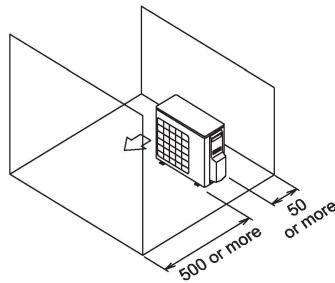


3 INSTALLATION SERVICE SPACE (2/3)

When there are obstacles on both suction and discharge sides

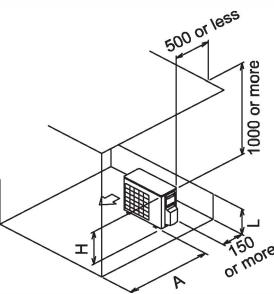
Pattern 1 When the obstacle on the discharge side is higher than the unit

1) No obstacle above (There is no limit for the height of obstructions on the suction side.) 2) Obstacle above, too
The relations between H, A and L are as follows.



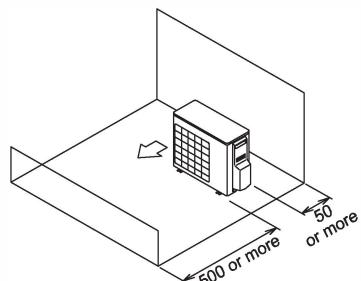
| | L | A |
|-------|-------------------------|--------------|
| L ≤ H | L ≤ 0.5H | 750 or more |
| | 0.5H < L ≤ H | 1000 or more |
| L > H | Set the stand as: L ≤ H | |

※ - Close the bottom of the stand to prevent the discharged air from being bypassed.
- The limitation of facilities connection is until 2 unit only.
- In case of more than dimension in (), It is no need to establish the stand although L > H



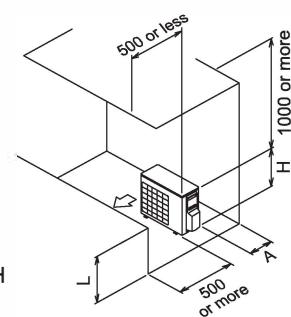
Pattern 2 When the obstacle on the discharge side is lower than the unit

1) No obstacle above (There is no limit for the height of obstructions on the suction side.) 2) Obstacle above, too
The relations between H, A and L are as follows.



| | L | A |
|-------|-------------------------|-------------|
| L ≤ H | L ≤ 0.5H | 50 or more |
| | 0.5H < L ≤ H | 100 or more |
| L > H | Set the stand as: L ≤ H | |

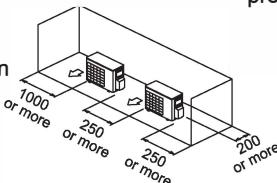
※ - Close the bottom of the stand to prevent the discharged air from being bypassed.
- The limitation of facilities connection is until 2 unit only.
- In case of more than dimension in (), It is no need to establish the stand although L > H



SERIES INSTALLATION (2 OR MORE)

No obstacle above

1) Obstacle on the suction side and both sides

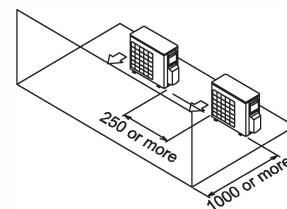


※ Inside extraction, please provide the space of piping.

• To secure service space, more than 250 mm of each products at right side is needed.

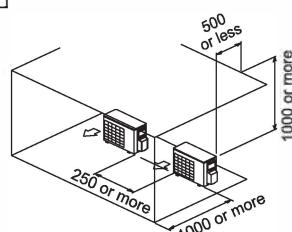
(Units: mm)

2) Obstacle on the discharge side only

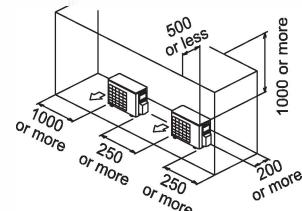


Obstacle above, too

1) Obstacle on the discharge side



2) Obstacle on the suction side and both sides

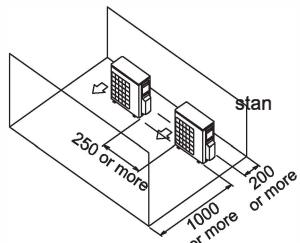


3 INSTALLATION SERVICE SPACE (3/3)

When there are obstacles on both suction and discharge sides

(Pattern 1) When the obstacles on the discharge side is higher than the side unit

1) No obstacle above (There is no limit for the height of obstructions on the suction side.)

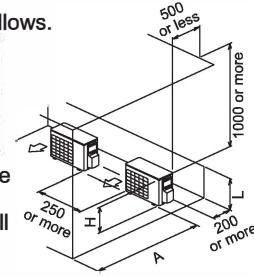


2) Obstacle above, too

The relations between H, A and L are as follows.

| | L | A |
|-------|--------------|--------------|
| L ≤ H | L ≤ 0.5H | 1000 or more |
| | 0.5H < L ≤ H | 1250 or more |
| L > H | Set the | as: L ≤ H |

- To secure service space, more than 250 mm of each products at right side is needed.



※ - Close the bottom of the stand to prevent the discharged air from being bypassed.

- The limitation of facilities connection is until 2 unit only.

- In case of more than dimension in (), It is no need to establish the stand although L > H

(Pattern 2) When the obstacle on the discharge side is lower than the unit

1) No obstacle above
(There is no limit for the height of obstructions on the suction side.)

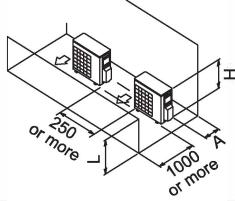
2) Obstacle above, too

(Units: mm)

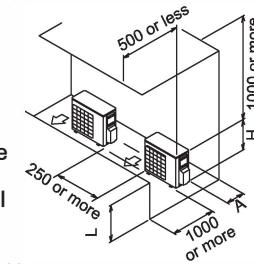
The relations between H, A and L are as follows. The relations between H, A and L are as follows.

| L | A |
|--------------|-------------|
| L ≤ 0.5H | 150 or more |
| 0.5H < L ≤ H | 200 or more |

| L | A | |
|-------|-------------------------|-------------|
| L ≤ H | L ≤ 0.5H | 150 or more |
| | 0.5H < L ≤ H | 200 or more |
| L > H | Set the stand as: L ≤ H | |



- Close the bottom of the stand to prevent the discharged air from being bypassed.
- The limitation of facilities connection is until 2 unit only.
- In case of more than dimension in (), It is no need to establish the stand although L > H

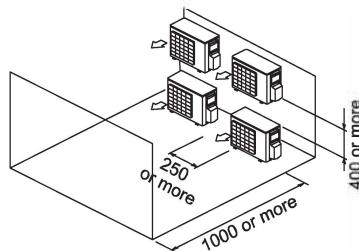


DOUBLE-DECKER INSTALLATION

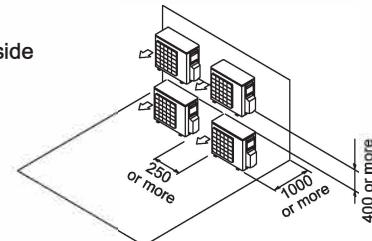
- Do not stack more than two unit.
- The drain piping construction size of upper side outdoor unit is needed about 100 mm.
- In side extraction, please provide the space of piping.

(Units: mm)

1) Obstacle on the discharge side

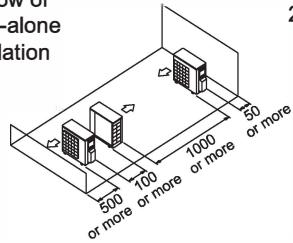


2) Obstacle on the suction side



MULTIPLE ROWS OF SERIES INSTALLATION (ON THE ROOFTOP, ETC.)

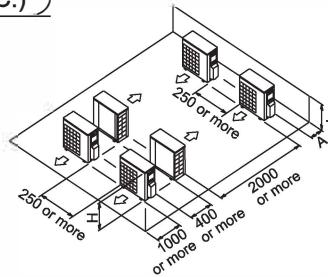
1) One row of stand-alone installation



2) Rows of series installation (2 or more)

The relations between H, A and L are as follows.

| L | A | |
|-------|----------------------|-------------|
| L ≤ H | L ≤ 0.5H | 150 or more |
| | 0.5H < L ≤ H | 200 or more |
| L > H | Can not be installed | |



4 PRECAUTIONS ON INSTALLATION

- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing in Fig. 1, fix the unit securely by means of the foundation bolts. (Prepare 4 sets of M12 foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 20 mm from the foundation surface.
- Fix the outdoor unit to the foundation bolts using nuts with resin washers. (See the left-hand of Fig. 1 drawing)
If the coating on the fastening area is stripped off, the nuts rust easily.

〈Drain pipe disposal〉

- If drain pipe disposal from the outdoor unit causes trouble, (for example, if the drain water may splash on people) provide the drain piping by using of the drain plug (optional).
- Then, coat the area around the bored holes with rust preventive coating to cover the metal exposure.
- Make sure the drain works properly.

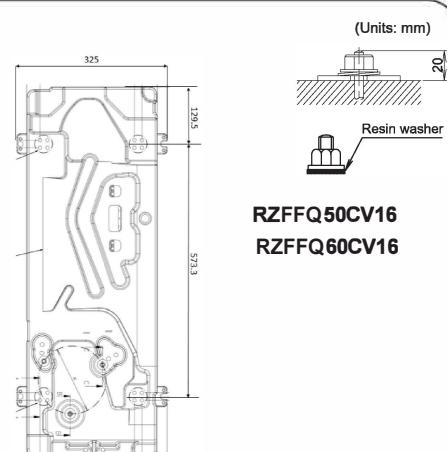


Fig. 1 BOTTOM VIEW

5 REFRIGERANT PIPING WORK (1/4)

⚠ CAUTION

To plumbing person

- Important information regarding the refrigerant used. This product contains fluorinated greenhouse gases covered by the Kyoto Protocol.
Do not vent gases into the atmosphere.
GWP (global warming potential) of R32 refrigerant type = 675.
- Use R32 as additional for charging.
- Do not use flux when brazing refrigerant piping.
Use phosphor copper brazing filler metal (BCuP-2:JIS Z 3264/B-Cu93P-710/795:ISO 3677) that does not require flux.
(If chlorinated flux is used, the piping will be corroded and, in addition if fluorine is contained, the refrigerant oil will be deteriorated and the refrigerant circuit will be affected badly.)
- After chapter 7 (CHARGING REFRIGERANT) is completed, be sure to open the stop valves before performing 9 (LOCAL SETUP).
(Operating the unit with the valve shut will break the compressor.)

〈Precaution when reuse existed refrigerant pipe〉

Please keep below points in order to reuse existed pipe, failure may caused if have a fault.

- Below are pipes shall always make new construction, do not reuse piping.
 - When removed from indoor unit or outdoor unit for a long time.
(Moisture entry to internal pipe, wastes entry can be occurred.)
 - When copper tube is corroded.
 - When pipe thickness is insufficient (refer to (5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH))
 - Do not reuse flare for refrigerant leak protection, please make flare processing.
 - Do not reuse flare nut, please use flare nut in product accessories.
 - Make sure to do refrigerant leak check in case there is brazing area while perform field piping.
 - If insulation is deteriorate, make sure to exchange to new one.

5-1 INSTALLATION TOOLS

Be sure to use the dedicated tools to ensure sufficient pressure resistance and prevent the entry of any impurities.

| | |
|----------------|---|
| Manifold gauge | To ensure sufficient pressure resistance and prevent the entry of any impurities (mineral oils such as Suniso oil and liquids), use the R410A or R32 dedicated item (the screw specifications for R410A or R32 differ). |
| Vacuum pump | Be extremely careful not to flow the pump oil backward to inside the piping when the pump is stopped. Use a pump which enables vacuuming to -0.1 MPa(-755mmHg) of the gauge pressure. |

5-2 SELECTION OF PIPING MATERIAL

- Use the piping whose inside and outside are clean and with no harmful substances for use such as sulphur, oxide, dust, dust from cutting, grease, or liquid (contamination) is attached.
- For the refrigerant piping, use the following material.
Material: Deoxidised phosphorous seamless copper piping
Temper grade: Use piping with temper grade in function of piping diameter as listed in the table on section (5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH)

Size: Decide based on section (5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH)

Thickness: Comply with applicable legislation. The minimal piping thickness for R32 piping must be in accordance with the table on section (5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH)

- Be sure to perform piping work using measurements within the maximum allowable length and height difference described on section (5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH)

5 REFRIGERANT PIPING WORK (2/4)

<Please refer to installation manual of indoor unit about indoor unit's refrigerant piping>

5-3 CARE OF PIPE

- Prevent contamination or moisture from getting into the piping.
- Pay special attention when running the copper piping through the through-hole or when leading the edge of the piping outside the room.
- Refrigerant piping must be protected from physical damage. Install a plastic cover or equivalent.

| PLACE | INSTALLATION PERIOD | PROTECTION METHOD | PLACE | INSTALLATION PERIOD | PROTECTION METHOD |
|---------|---------------------|--------------------|--------|---------------------|--------------------|
| OUTDOOR | More than a month | Pinch the pipe | INDOOR | Unquestioned | Pinch or tape pipe |
| | Less than a month | Pinch or tape pipe | | | |

5-4 REFRIGERANT PIPE SIZE AND ALLOWABLE PIPE LENGTH

- One way maximum allowable piping length means the maximum length of liquid side piping or gas side piping.
- Equivalent length is the pressure loss due to L joints, traps, and so on along the refrigerant piping converted to a straight piping length of the same size and added to the overall value.
- Please see the Engineering Data for calculation of equivalent length.
- Please give the vertical interval between the indoor and outdoor as 20m or less.

CAUTION

This unit is chargeless specification. Due to chargeless length and allowable piping length will be different depend on field pipe size.

Piping bend radius

(Units : mm)

| Piping diameter | Pipe thickness (Material) | Bend radius |
|-----------------|---------------------------|----------------|
| Ø6.4 mm | 0.6 mm (C1220T-O, Type O) | 30 mm or above |
| Ø12.7 mm | 1.0 mm (C1220T-O, Type O) | 50 mm or above |
| Ø15.88 mm | 1.0 mm (C1220T-O, Type O) | 50 mm or above |

Refrigerant pipe size and chargeless length

| Outdoor unit type | Liquid pipe size (type) | Chargeless length |
|----------------------------|-------------------------------|-------------------|
| RZFFQ5OCV16 RZFFQ6OCV16 | Ø 6.4mm x t 0.6mm (type O) | 10m |

WARNING

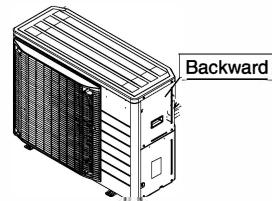
- When flared joints are reused in indoors, the flared part shall be re-fabricated.

CAUTION

- Use dedicated piping cutters and flaring tools for R410A or R32.
- When making a flare connection, apply ether or ester oil only to the flare inner surface.
- Use only the flare nuts attached to the unit. If other flare nuts are used, it may cause refrigerant leakage.
- To prevent contamination, dust or moisture from getting into the piping, take measures such as pinching or taping the piping.

5-5 CONSTRUCTION OF REFRIGERANT PIPING

- Field pipes can be installed in Back - side connection. <Fig.2>
- Do not allow any substances other than the specified refrigerant such as air to mix into the refrigerant circuit.



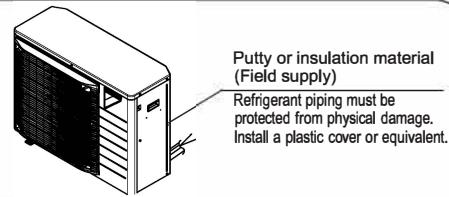
<Fig. 2>

5 REFRIGERANT PIPING WORK (3/4)

<Please refer to installation manual of indoor unit about indoor unit's refrigerant piping>

PREVENTING FOREIGN OBJECTS FROM ENTERING

- Plug the pipe through-holes with putty or insulating material (field supply) to cover all gaps, as shown in the figure.
- Insects or small animals entering the outdoor unit may cause a short circuit in the electrical box.

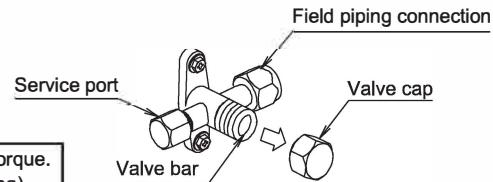


CAUTIONS FOR HANDLING STOP VALVE

DO NOT OPEN THE STOP VALVE UNTIL 7 CHARGING REFRIGERANT FINISHED.

- The stop valves for indoor-outdoor connecting piping are closed at shipment from the factory. The names of parts are shown in figure on the right.
- Since the side boards may be deformed if only a torque wrench is used when loosening or tightening flare nuts, always lock the stop valve with a wrenches and then use a torque wrench.

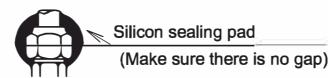
When tightening the flare of the stop valves, make sure to tighten by the rated torque. The rated torque is shown on (CAUTION FOR FLARE CONNECTION) (Following)



DO NOT APPLY FORCE ON THE VALVE CAP, THIS MAY RESULT IN A REFRIGERANT LEAK.

- For cooling operation under low ambient temperature or any other operation under low pressure, apply silicon pad or similar to prevent freezing of the gas stop valve flare nut (see figure).

Freezing of the flare nut may cause refrigerant leak.



How to operate the stop valve

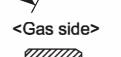
Use hexagonal wrenches 5mm.

Opening the valve 1. Place the hex wrench on the valve bar and turn counter-clockwise.

2. Stop when the valve bar no longer turns. (It is now open.)

Closing the valve 1. Place the hex wrench on the valve bar and turn clockwise.

2. Stop when the valve bar no longer turns. (It is now close.)



CAUTIONS FOR HANDLING VALVE CAP

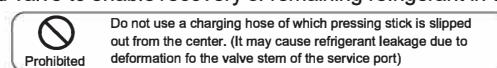
- A seal is attached to the point indicated by the arrow. Take care not to damage it.
- Be sure to tighten the valve cap securely after operating the valves.

| Valve size (mm) | Tightening torque(N·m) | Valve size (mm) | Tightening torque(N·m) | | |
|-----------------|------------------------|-----------------|------------------------|-----------|----------|
| Liquid side | Ø6.4 | 15.7 ± 1.5 N·m | Gas side | Ø 15.88mm | 68.6±6.8 |

Stop valve (cap attachment)

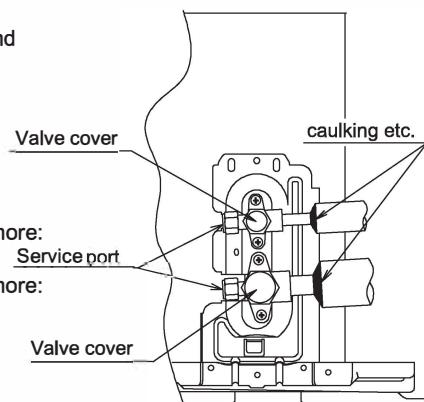
CAUTIONS FOR HANDLING SERVICE PORT

- Always use a flexible charge hose with a push-rod and valve to enable recovery of remaining refrigerant in the charge hose.
- After the work, tighten the valve cap in place.
- Tightening torque: $12.7 \pm 1.2 \text{ N}\cdot\text{m}$



PRECAUTIONS FOR CONNECTING PIPING

- Take caution so that the refrigerant piping between the outdoor and indoor may not touch and sound proof cover and the plate as shown figure.
- If installing the outdoor unit higher than the indoor unit, caulk the space around insulation and tubes because condensation on the stop valves can seep through to the indoor unit side.



PRECAUTIONS REGARDING INSULATION

Enhance the insulation of the refrigerant piping according to the installation conditions. If this is not done, condensation may form on the surface of the insulation. Please refer to the target values shown below.

- When the temperature and humidity conditions are 30°C and RH 75% or more: thickness of the insulation is 15 mm or more.
- When the temperature and humidity conditions are 30°C and RH 80% or more: thickness of the insulation is 20 mm or more.
- Be sure to insulate the liquid and gas sides interunit piping. It may become the cause of refrigerant leakage if it is not insulated. (Be sure to use insulating material which can resistant.)

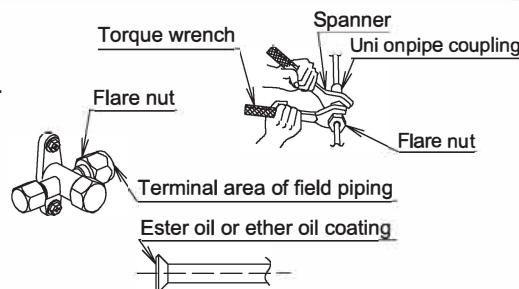


Insulation of interunit piping must be carried out up to the connection inside the casing. If the piping is exposed to the atmosphere, it may cause sweating or burn due to touching the piping, electric shocks or a fire due to the wiring touching the piping.

5 REFRIGERANT PIPING WORK (4/4)

CAUTION FOR FLARE CONNECTION

- Please be sure to remove a flare nut with a two-dish spanner, and to bind after connection of piping using a spanner and a torque wrench.
- Refer to the following table for a flare part processing size.
- When connecting the flare nut, apply refrigerating machine oil to the flare (inside) and at first screw the nut 3 or 4 turns by hand. Coat here with ether or ester oil.
- Refer to the table for the dimensions for processing flares and for the tightening torques. (Too much tightening will end up in splitting of the flare.)
- After completing the installation, carry out a gas leak inspection of the piping connections with nitrogen and such.



| PIPING SIZE (mm) | TIGHTENING TORQUE | A DIMENSIONS FOR PROCESSING FLARES (mm) | FLARE SHAPE |
|------------------|-------------------|---|-------------|
| 06.4 | 15.7 ± 1.5 N·m | 8.9 ± 0.2 | |
| 09.5 | 36.3 ± 3.6 N·m | 13.0 ± 0.2 | |
| 012.7 | 54.9 ± 5.4 N·m | 16.4 ± 0.2 | |
| 015.9 | 68.6 ± 6.8 N·m | 19.5 ± 0.2 | |
| 019.1 | 108.0 ± 10.8 N·m | 23.8 ± 0.2 | |

- If a torque wrench is not available, be aware that the tightening torque may increase suddenly. Do not tighten nuts any further than to the angle as listed.
- When work is completed, be sure to check that there is no gas leakage.
 - A flare nut is bound tight with a spanner to the position whose torque with a bundle increases suddenly.
 - Only the angle of a right table is further bound tight from the position.

| PIPING SIZE (mm) | FURTHER TIGHTENING ANGLE | RECOMMENDED ARM LENGTH OF TOOL |
|------------------|--------------------------|--------------------------------|
| 06.4 | 60 to 90 degrees | About 150 mm |
| 09.5 | 60 to 90 degrees | About 200 mm |
| 012.7 | 30 to 60 degrees | About 250 mm |
| 015.9 | 30 to 60 degrees | About 300 mm |
| 019.1 | 20 to 35 degrees | About 450 mm |

PRECAUTIONS WHEN BRAZING THE REFRIGERANT PIPINGS

- When brazing the refrigerant piping, carry out brazing work (NOTE 2) after substituting nitrogen for air (flow nitrogen into the piping and substitute nitrogen for air (NOTE 1) (see the drawing below)).

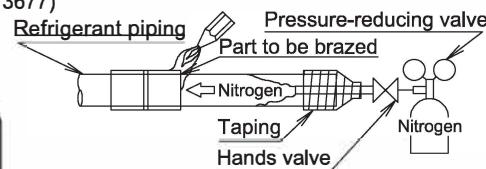
NOTES

- The proper pressure for having nitrogen flow through the piping is approximately 0.02MPa, a pressure that makes one feel like breeze and can be obtained through a pressure reducing valve.
- Do not use flux when brazing refrigerant piping. Use phosphor copper brazing filler metal (BCuP-2:JIS Z 3264/B-Cu93P-710/795:ISO 3677) that does not require flux. (If chlorinated flux is used, the piping will be corroded and, in addition if fluorine is contained, the refrigerant oil will be deteriorated and the refrigerant circuit will be affected badly.)



Do not use anti-oxidants when brazing the piping joints.
(Residue can clog pipes and break equipment.)

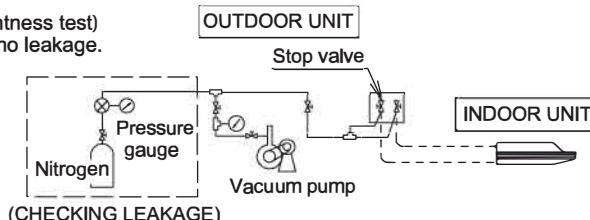
<Do not reuse joint which have been used once already>



6 AIRTIGHTNESS TEST AND AIR-PURGE

AIRTIGHTNESS TEST

- Perform a refrigerant leakage check using nitrogen gas (airtightness test) with the outdoor unit stop valve close, to make sure there are no leakage.
- For the airtightness test, raise the pressure to the design pressure in the high pressure section (4.17 MPa) For the airtightness test, the unit passes the test if the pressure in the high pressure section does not drop for 24 hours after increasing to the design pressure. A correction is required since the pressure decreases approx. 0.01Mpa when the ambient temperature of 1°C decreases.
- If the pressure drop is confirmed, perform the airtightness test again after checking and modifying the leakage points.



AIR-PURGE

- Evacuate by the vacuum pump for more than 2 hours until the internal pressure decreases below -0.1MP. After that, leave it with -0.1MPa or less for more than one hour and confirm that the value of vacuum gauges does not increase.
- If the value of vacuum gauge increases, there is moisture inside the refrigerant piping or there are leakage points. Perform evacuation again after checking and improving the leakage points.

NOTE

After doing an air-purge with a vacuum pump, the refrigerant pressure may not rise even if the stop valves are opened. This is because the refrigerant piping path is closed off by the outdoor unit electronic expansion valve, etc. There are no problems if the outdoor unit is running.

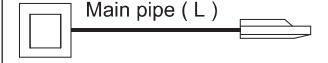
7 CHARGING REFRIGERANT (1/2)

Be sure to use R32 as refrigerant.

ADDITIONAL REFRIGERANT CHARGING

This model is chargeless type, so it is not necessary to charge additionally if pipe does not exceed the maximum allowable length without additional charge.

Please refer to the following table about the maximum allowable length without additional charge.

| Liquid piping size | Length for which additional charging is not required | ONE INDOOR UNIT TYPE (PAIR) |
|--------------------|--|---|
| ø6.4mm x t 0.6mm | 10m |  |

When piping length exceeds its of a top table,

or only when you perform recharging, Please be correctly charged according to the following.

For future servicing, please describe the amount of additional refrigerant charging, or the amount of recharging in the collective label in accessory set or back side of right side plate.

• In case of additional refrigerant charging

Please select the amount of additional refrigerant which suited piping length from the following table, and add it from the service port of liquid stop valve.

| Outdoor units type | Liquid piping size | Length for which additional charging is not required | Length of piping exceeding the length for which additional charging is not required, R32 additional amount (kg) |
|--------------------|--------------------|--|---|
| | | | 20m or less |
| RZFFQ50/60CV16 | ø6.4mm x t 0.6mm | 10m | 20 g per meter (For Piping Length Exceeding 10 m) |

• Total refrigerant charging (When recharging due to exchange compressor, etc.)

Please charge refrigerant base on pipe length mentioned on the following table.

| Outdoor units type | Liquid piping size | Piping length, R32 complete additional amount (kg) | |
|--------------------|--------------------|--|-------------|
| | | 5m~10m | 20m or less |
| RZFFQ50CV16 | ø 6.4 mm | 0.79 | 0.99 |
| RZFFQ60CV16 | ø 6.4 mm | 1.04 | 1.24 |

7 CHARGING REFRIGERANT (2/2)

Precautions when adding R32

Charging a cylinder with an attached siphon



Stand the cylinder upright at charging.

(There is a siphon piping inside, so that cylinder need not be upside-down to charge with liquid.)

- Before charging, check whether the cylinder has a siphon attached or not.
- To prevent entry of any impurities and ensure sufficient pressure resistance, always use the special tools dedicated for R410A or R32.
- The refrigerant should be charged from the service port of the liquid side stop valve.

Charging other cylinders



Stand the cylinder upside-down and charge.

(Turn the cylinder upside-down at charging.)

WARNING

To persons incharge of piping work

- Please be sure to open a stop valve after a refrigerant charging end (if it operates shut, a compressor will break down).
- After complete charging of refrigerant carry out refrigerant leak check and heat insulation work.
- Please do not emit a refrigerant into the atmosphere indiscriminately.

8 ELECTRICAL WIRING WORK (1/3)

WARNING

- Install the earth leakage circuit breaker. (A duty of installation of a earth leakage circuit breaker is imposed for an electric shock and fire accident prevention.)

The inverter is provided in the air conditioner. In order to prevent malfunction of the earth leakage breaker itself, use a breaker resistant to higher harmonics.

- Electrical wiring must be carried out by qualified personnel.
- Before obtaining access to terminal devices, all supply circuits must be interrupted.

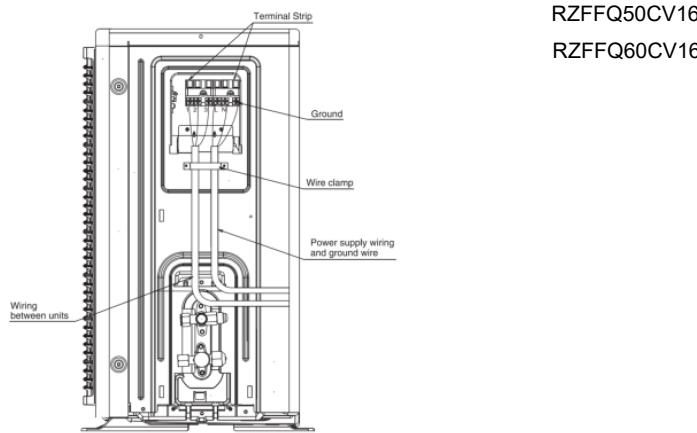
CAUTION

To the electrician

- Make sure to install a current balance type earth leakage breaker coping with high harmonics.
(This unit is equipped with an inverter device. Use an earth leakage breaker coping with high harmonics to prevent wrong actuation.)
- Do not run the unit until the refrigerant charging is complete. (Operating the unit before the completion will break the compressor.)
- Do not remove the thermistors or sensors when the power supply and transmission wiring are connected.
(Operating the unit with the thermistors and sensors removed will break the compressor.)
- Make certain that all electric wiring work is carried out by qualified personnel according to the applicable legislation and this installation manual, using a separate circuit. Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shocks or a fire.
- An insufficient power supply capacity or improper electric work may lead to electric shocks or a fire.
- The wiring between the indoor unit and outdoor unit must be for 230V.
- For electric wiring work, refer to also the "WIRING DIAGRAM" on page no. - 42,43.
- When doing the electrical wiring, always shut off the power source before working, and do not turn on the branch switch until all work is complete.
- Make sure to earth the air conditioner. Earthing resistance should be according to applicable legislation.
- Do not connect the earth wiring to gas or water piping, lightning conductor or telephone earth wiring.
 - Gas piping.....Ignition or explosion may occur if the gas leaks.
 - Water piping.....Hard vinyl tubes are not effective earths.
 - Lightning conductor or telephone earth wiring.....Electric potential may rise abnormally if struck by a lightning bolt.
- The earth is needed in order to reduce the noise generated by the unit's inverter and influence on other appliances and to release the charged electric charge on the outdoor unit surface by leaked current.
- Do not install a phase advance capacitor for improvement of power factor. Since this unit is mounted with an inverter device, the effect of power factor improvement not only cannot be expected, but also there is a risk of the capacitor getting abnormally overheated due to harmonics.
- Be sure to use earth leakage breaker dedicated for earth leakage protection in combination with the load break switch with fuse or breaker for wiring.
- In case of three-phase, Machine, electric wiring must be connected in normal phase connection.
- For wiring, use the designated power supply wiring and connect firmly, then secure to prevent external force being exerted on the terminal attachment (power supply wiring, transmission wiring, earth wiring).
- Left-over wiring should not be wrapped and stuffed into the outdoor unit.
- To prevent the power wiring from being damaged by the knock hole edges, put it in a wiring piping or use insulated bush, etc. to protect it.
- To prevent the wiring from coming in contact with piping (particularly the high-pressure piping), secure it with the included clamping material as shown page 45.
- When wiring, form the wiring so that the front plate does not float and make sure the front plate is securely fastened.
- Fix the power supply wiring, the earth wiring and the transmission wiring by clamps as shown in the figure.

8 ELECTRICAL WIRING WORK (2/3)

- As shown in the following figure, please fix power supply wiring, field wiring and ground wire by clamp material.

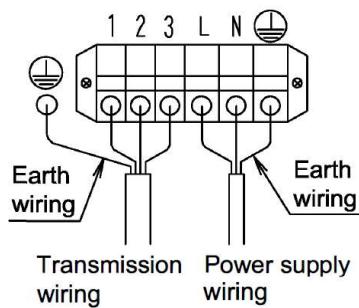


RZFFQ50CV16

RZFFQ60CV16

- Carry out insulated processing of attaching an insulated sleeve.
Power supply wiring, wiring between units and ground tying with clamp as shown below.

⚠ Do not connect power supply to terminal block of transmission wiring. All system may get damaged.



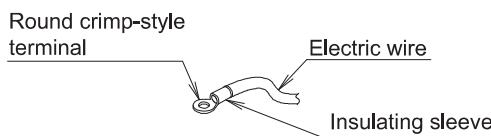
RZFFQ50CV16

RZFFQ60CV16

Connection of wiring

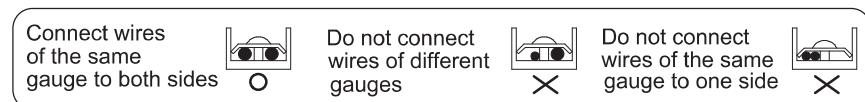
Precautions on wiring

- Use a round crimp-style terminal for connection to the power supply terminal board.
In case it cannot be used due to unavoidable reasons, be sure to observe the following instruction.
- Do not connect wires of different gauge to the same power supply terminal.
(Looseness in the connection may cause overheating.)



8 ELECTRICAL WIRING WORK (3/3)

When connecting wires of the same gauge, connect them according to the below figure.

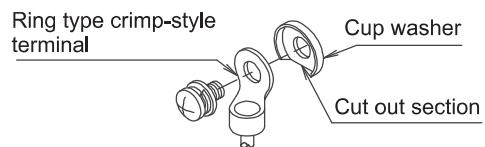


- Never use the stranded wiring which is soldered.
(Slack in the electric wiring may cause abnormal heat.)
- Use the required wirings, connect them securely and fix these wirings so that external force may not apply to the terminals.
- Use a proper screw driver for tightening the terminal screws.
If an improper screw driver is used, it may damage the screw head and a proper tightening cannot be carried out.
- If a terminal is over tightened, it may be damaged. Refer to the table shown below for tightening torque of terminals.

| Tightening torque (N·m) | |
|--|-----------|
| M4 (Wire between units terminal board) | 1.50±0.30 |
| M4 (Power supply terminal board) | 1.50±0.30 |
| M4 (Ground wire between units) | 1.69±0.25 |
| M5 (Ground wire between units) | 3.55±0.50 |

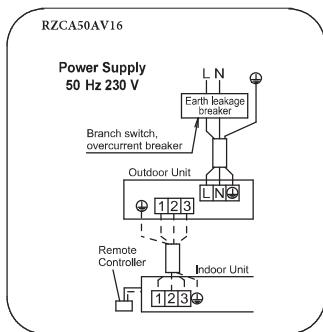
Precautions on connecting terminal of grounding

- Ground wiring should be taken out from the cut out section of a cup washer.
(Otherwise, contact of ground wiring is inadequate and it is ineffective.)



WIRING OF POWER SUPPLY AND THE UNITS

For details on the wiring of the indoor unit and wiring between units refer to the installation manual of the indoor unit.



• SPECIFICATIONS OF STANDARD WIRING COMPONENTS

| Outdoor Unit | Power supply | | | Wire type of wiring between the units |
|----------------------------|------------------------|---------------|---|---------------------------------------|
| | Recommended field fuse | Wire type (*) | Size | |
| RZFFQ50CV16 RZFFQ60CV16 | 20 A | H05VV-U3G | Wiring size and length must comply with local codes or [IEC 60335-1 (Table 11)] | H05VV-U4G2.5 |

(*) Only in protected piping, use H07RN-F when protected pipes are not used.
(Supply cords shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57))

NOTES

- Select and install the power supply wiring in accordance with [IEC 60335-1 (Table 11)] or local laws and regulations. The maximum current of the outdoor and indoor units are shown on each name plate.
- When installing wiring in a location that can easily come in contact with people, be sure to install an earth leakage breaker coping with high harmonics to prevent electric shock.
- Breaker type and capacity shall be selected in accordance with local laws and regulations.

CAUTION

TO PERSONS INCHARGE OF ELECTRICAL WIRING WORK

- Do not operate the unit until the refrigerant charging is completed. (Running it before the piping is ready will break the compressor.)

9 CHECK ITEMS BEFORE TEST OPERATION AND FIELD SETTINGS

PRE-RUN CHECKS

| | ITEM TO CHECK | CHECK |
|------------------------|--|-------|
| Power supply Wiring | Is the wiring as mentioned on the wiring diagram? make sure no wiring has been forgotten and that there are no missing phases or reverse phases. | |
| | Does wiring between units put in and changed in continuation installation? | |
| | Is the unit properly grounded? | |
| | Are any of the wiring attachment screws loose? | |
| | Is the insulation resistance at least $1M\Omega$? <ul style="list-style-type: none"> • Use a 500V mega-tester when measuring insulation • • Do not use a mega-tester to low voltage circuit except 220-240V. | |
| | Is an earth leakage circuit breaker used as a current operated type which is compatible to the higher harmonic wave? | |
| | Does the earth leakage circuit breaker have appropriate rated current? | |
| Refrigerant piping | Is the size of the piping appropriate? | |
| | Is the insulation material for the piping attached securely? | |
| | Are both the liquid and gas pipes insulated? | |
| Extra refrigerant | Are the stop valves for both the liquid side and the gas side open? | |
| | Did you write down the extra refrigerant and the refrigerant piping length? | |
| Indoor unit | Is the indoor unit fully installed? When the test run is started, the fan automatically begins turning. | |

WARNING

- When a power supply is switched on, when you leave from the outdoor unit, be sure to close the cover plate.
(It becomes the cause of an electric shock.)

In field setting for an outdoor unit, make sure to shut down the power and check that there is no residual voltage before start installing. (It may cause an electric shock.)

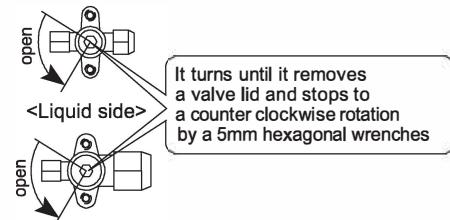
10 TEST OPERATION

⚠ WARNING

- Never perform a test operation with the discharge piping thermistor(R2T) and suction piping thermistor(R3T) removed, as this might break the compressor.
- If the technician must leave the outdoor unit for some reason, switch places with another installation technician or close the plates. (It may cause electric shocks.)

HOW TO TEST OPERATION After the indoor and outdoor unit installation, be sure to perform the test operation in accordance with the following procedure.

1. Open the stop valve cover and check that the liquid and gas sides of the stop valves are open.
<Be sure to close the front plate before the operation (there is a risk of electric shock)>
Note: After doing an air-purge with a vacuum pump, the refrigerant pressure may not rise even if the stop valves are opened. This is because the refrigerant piping path is closed off by the outdoor unit electronic expansion valve, etc. There are no problems if the unit is run.
2. Attach the stop valve cover to the outdoor unit and turn the power on at least 6 hours before operating the outdoor unit to protect the compressor.
3. Set to COOLING operation with the remote controller.
4. Perform the test operation
 - When doing trial operation, it may take about 1 minute until the compressor begins to function, but this is not abnormal.
 - When using the system the first time after installation, even if heating operation is selected, cooling operation will take place for about 3 to 5 minutes.
Thereafter, it will change to heating operation, but this is not abnormal.
(In this case, the remote controller display will continue to display "heating operation.") This is in order to detect if someone has forgotten to open the stop valve during trial operation.
 - If the outside air temperature is about 24°C or more, even if HEATING operation is set, the system may not operate, but this is not abnormal.
5. Operate normally.
6. Confirm function of the indoor and outdoor units according to the operation manual.



⚠ CAUTION

To persons incharge of piping work and electric work

- Please check having attached the front board and the piping cover after a test run end when giving production over to customer.

11 CAUTION (RZFFQ50CV16)

THIS IS NECESSARY FOR AFTER SERVICE, SO PLEASE REQUEST CUSTOMER TO KEEP THIS MANUAL.

CAUTION (NEW REFRIGERANT (R32 SERIES))



WARNING



ELECTRIC SHOCK CAUTION

Caution about electric shock when do service inspection

1. After intercept power supply, do not open outside panel for 10 minutes.
2. Follow manufacturing label on electric box cover, please take off outdoor fan motor connector to confirm voltage and body static electricity discharge.

General caution items when do service inspection

Caution to confirm compressor and fan motor running

Do not directly connect power input (3 Phase 50Hz) to compressor and fan motor. (If not connect to print board (PCB), compressor and fan motor will be burned out.)

Caution when recharge refrigerant

1. To prevent the mixing of impurities, pressure resistance and contamination mix, please use manifold gauge especially for R32.
2. Make sure to do Nitrogen blow if brazing when flare connection. Apply ether oil or ester oil at inside flare only.
3. Do air tight test at 4.17Mpa.
4. Do dry vacuum, make sure to charge refrigerant in liquid condition from liquid side service port. (Compressor will be broken if charge from gas side service port.)

Caution when use outdoor PCB

Make sure to touch earth terminal and earthed metal before touch pcb, to prevent electric shock

Caution when break down diagnosis from letter code in remote control

Please refer to service guide or outdoor unit installation manual.

Charging refrigerant

Charging the system with refrigerant

(For more information such as calculation method of additional refrigerant charge, additional charge method, refrigerant charge caution, refer to the installation manual and technical Guide.)



- For refrigerant charge, be sure to charge from the service port of the liquid side stop valve in liquid states. (If you charge from the service port of the gas side stop valve, it may break the compressor.)
- Never charge other than the specified refrigerant. (It may cause fire and bursting.)

Table 1. Chargeless piping length

| Liquid piping size | Pipe length which is not required additional charging |
|--------------------|---|
| Ø 6.4 mm x 10.6mm | 10m |

1. In case of additional refrigerant charging

Please add refrigerant amount according to the following table.

| Outdoor | Liquid piping size | Pipe length which is not required additional charging | Pipe length over charge-less. R32 additional amount (kg) |
|-------------|--------------------|---|--|
| RZFFQ50CV16 | Ø 6.4 x 10.6mm | 10 m | 0.200 |

2. Total refrigerant charging (Details please see service guide)

1. Please recover the refrigerant until becoming 0.09MPa (gauge pressure:-0.01MPa) or less by the refrigerant recovery machine from stop valve service port (liquid-gas side) at the same time.
2. Exchange service parts, modify leak point.
3. Perform airtightness test, air-purge.

Please refer Installation manual of outdoor unit or service guide.

4. Charge refrigerant amount selected by table 2 from liquid stop valve service port.

Caution Do not turn on power during evacuation. The motor may be damaged due to vacuum discharge.

Table 2. Charge refrigerant amount (After a leak, etc...)

| Outdoor | Liquid piping size | Piping length, R32 complete additional amount (kg) | |
|-------------|--------------------|--|-------------|
| | | 5~10m | 20m or less |
| RZFFQ50CV16 | Ø 6.4 x 10.6mm | 0.79 | 0.99 |

Making a record of the added refrigerant charge amount

Be sure to record the piping length and added refrigerant charge amount or refrigerant recharge amount with an oil-based or other indelible marker so the figures will not fade over time. This information is necessary for after service and maintenance.

| Liquid piping size | Ø 6.4 mm x 10.6mm |
|---------------------------------|-------------------|
| Refrigerant piping length | m |
| Additional refrigerant charging | kg |
| Recharge of refrigerant | kg |

How to execute a pumping-down

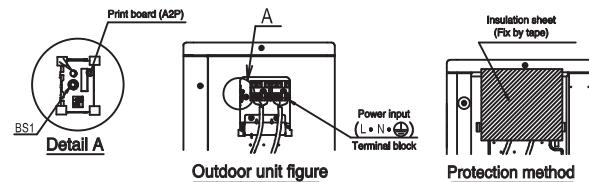
(for example, when moving or reinstalling an indoor or outdoor unit)

Caution

- It is not allowed to let the refrigerant out into air. The refrigerant should be recovered completely.
- Although pumping-down operation allows most of the refrigerant to be recovered in a short period of time, some refrigerant will remain inside the indoor unit and the refrigerant piping. Using a refrigerant recovery machine, recover remaining refrigerant from the stop valve service port until the pressure falls to 0.09MPa (gauge pressure:-0.01MPa) or less
- Be sure to execute the pumping-down before refrigerant piping and wiring is taking off.

For pumping-down operation

1. Please follow the [caution about electric shock when service inspection] which attached on Top panel (Caution: Do not take off the connector X106A)
2. To prevent electric shock, please protect power input terminal block by insulation sheet refer to below figure.
3. Turn on the power supply and carry out forced cooling operation to enable pump down.



Caution To prevent electric shock when inspection, protect by use insulation sheet on power input terminal block and print board (A2P)

For Forced Cooling Operation

Caution Do not remove the indoor unit until pump down operation finish.
(It is dangerous when indoor fan automatically starts the operation.)

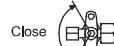
Perform Forced Cooling Operation using the following procedure.

| Procedure | Precaution |
|--|--|
| 1 Confirm that stop valves both on the liquid and gas sides are open | - |
| 2 Push the pumping-down (BS1) on the PC board of the outdoor unit for 10 seconds. | Compressor and outdoor unit fan will start operation automatically. Indoor fan may automatically start running. Pay attention to this. |
| 3 Close the stop valve on the liquid side securely about 2 minutes after the compressor started operation. | <ul style="list-style-type: none"> • Do never leave the outdoor unit unattended with opened front plate when power supply is on. • In case the stop valve on the liquid side is not securely closed during compressor operation, pumping-down operation cannot be executed |
| 4 Turn off the Power Supply to exit from forced cooling operation. | When you work alone, carry out after closing the front plate. After turning the power supply off, remove the insulation sheet. |

- If after finishing pumping-down operation the outdoor unit does not operate, even when the remote controller switched on, the remote controller may or may not indicate "U4". But it is not a malfunction.

- To force of operation, turn off the main power supply and turn it on again. Make sure that stop valves both on liquid and gas sides are open and be sure to operate the unit in cooling operation during test run.

Liquid stop valve



Gas stop valve



Caution When installing and relocating, be sure to install the earth leakage breaker to protect from the electric shock disaster and fire due to leakage of electricity. For installing the earth leakage breaker, request to the qualified electrician.

11.CAUTION (RZFFQ60CV16)

THIS IS NECESSARY FOR AFTER SERVICE, SO PLEASE REQUEST CUSTOMER TO KEEP THIS PAPER.

CAUTION (NEW REFRIGERANT R32 SERIES)



WARNING



ELECTRIC SHOCK CAUTION

Caution about electric shock when do service inspection.

1. After intercept power supply, do not open outside panel for 10 minutes.
2. Follow manufacturing label on electric box cover, please take off outdoor fan motor connector to confirm voltage and body static electricity discharge.

General caution items when do service inspection

Caution to confirm compressor and fan motor running

Do not directly connect power input (3 Phase 50Hz) to compressor and fan motor. (If not connect to print board (PCB), compressor and fan motor will be burned out.)

Caution when recharge refrigerant

1. To prevent the mixing of impurities, pressure resistance and contamination mix, please use manifold gauge especially for R32.
2. Make sure to do Nitrogen blow if brazing when flare connection. Apply ether oil or ester oil at inside flare only.
3. Do air tight test at 4.17MPa
4. Do dry vacuum, make sure to charge refrigerant in liquid condition from liquid side service port. (Compressor will be broken if charge from gas side service port.)

Caution when use outdoor PCB

Make sure to touch earth terminal and earthed metal before touch pcb, to prevent electric shock.

Caution when break down diagnosis from letter code in remote control

Please refer to service guide or outdoor unit installation manual.

Charging refrigerant

Charging the system with refrigerant

(For more information such as calculation method of additional refrigerant charge, additional charge method, refrigerant charge caution, refer to the Installation Manual and Technical Guide.)



- For refrigerant charge, be sure to charge from the service port of the liquid side stop valve in liquid states. (If you charge from the service port of the gas side stop valve, it may break the compressor.)
- Never charge other than the specified refrigerant. (It may cause fire and bursting.)

Table 1. Chargeless piping length

| Liquid piping size | Pipe length which is not required additional charging |
|--------------------|---|
| Φ6.35 x 10.8mm | 10m |

1. In case of additional refrigerant charging

Please add refrigerant amount according to the following table.

| Outdoor | Liquid piping size | Pipe length which is not required additional charging | Additional ref. amount above 10mtr. | Max. Pipe Length |
|-------------|--------------------|---|-------------------------------------|------------------|
| RZFFQ60CV16 | Φ6.35 x 10.8mm | 10m | 20gm/mtr | 20mtr |

2. Total refrigerant charging (Details please see service guide)

1. Please recover the refrigerant until becoming 0.09 Mpa (gauge pressure: -0.011MPa) or less by the refrigerant recovery machine from stop valve service port (liquid+gas side) at the same time.
2. Exchange service parts · Modify leak point.

3. Perform airtightness test air-purge.

Please refer installation manual of outdoor unit or service guide.

4. Charge refrigerant amount selected by table 2 from liquid stop valve service port.

Caution Do not turn on power during evacuation. The motor may be damaged due to vacuum discharge.

Table 2. Charge refrigerant amount (After a leak etc...)

| Outdoor | Liquid piping size | Piping length: R32 complete additional amount (kg) | |
|-------------|--------------------|--|------|
| | | 5~10m | 20m |
| RZFFQ60CV16 | Φ6.35 x 10.8mm | 1.04 | 1.24 |

Making a record of the added refrigerant charge amount

Be sure to record the piping length and added refrigerant charge amount or refrigerant recharge amount with an oil-based or other indelible marker so the figures will not fade over time. This information is necessary for after service and maintenance.

| | |
|---------------------------------|-------------------|
| Liquid piping size | Φ6.35 mm x 10.8mm |
| Refrigerant piping length | m |
| Additional refrigerant charging | kg |
| Recharge of refrigerant | kg |

How to execute a pumping-down

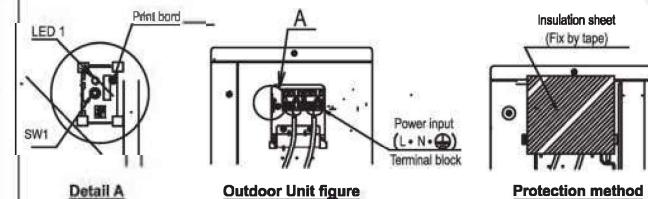
(for example, when moving or reinstalling an indoor or outdoor unit)

The outdoor unit is equipped with a high pressure switch to protect the compressor.
Caution Never short-circuit the high pressure switch during pump-down operation.

- It is not allowed to let the refrigerant out into the air. The refrigerant should be recovered completely.
- Although pumping-down operation allows most of the refrigerant to be recovered in a short period of time, some refrigerant will remain inside the indoor unit and the refrigerant piping. Using a refrigerant recovery machine, recover remaining refrigerant from the stop valve service port until the pressure falls to 0.09MPa (gauge pressure: -0.011MPa) or less.
- Be sure to execute the pumping-down before refrigerant piping and wiring is taken off.

For pumping-down operation

1. Please follow the [caution about electric shock when service inspection] which attached on Top panel (Caution : Do not take off the connector X106A)
2. To prevent electric shock, please protect power input terminal block by insulation sheet refer to below figure.
3. Turn on the power supply and carry out pumping-down operation according to the following procedure.



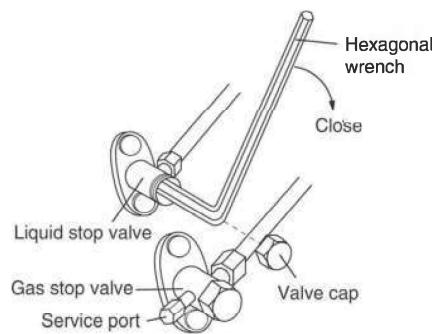
Caution To prevent electric shock when inspection, protect by use insulation sheet on power input terminal block and print board (A2P).

For pumping-down operation procedure

1. Remove the valve caps from the liquid stop valve and the gas stop valve.
2. By Long Pressing Switch button (SW1) on PCB for 5 sec then unit will go on pump down operation & LED continuous fast blinking on PCB (A2P).
3. Close the liquid stop valve with a hexagonal wrench.
4. After 2 to 3 minutes, close the gas stop valve and Turn off the main power supply this will automatically deactivate the Pump Down operation.

Pump down operation is allowed on below 2 conditions:-

- (1)The outdoor unit is not abnormal and not in the 3-minute standby mode.
- (2)The outdoor unit is not operating.



Caution When installing and relocating, be sure to install the earth leakage breaker to protect from the electric shock disaster and fire due to leakage of electricity. For installing the earth leakage breaker, request to the qualified electrician.

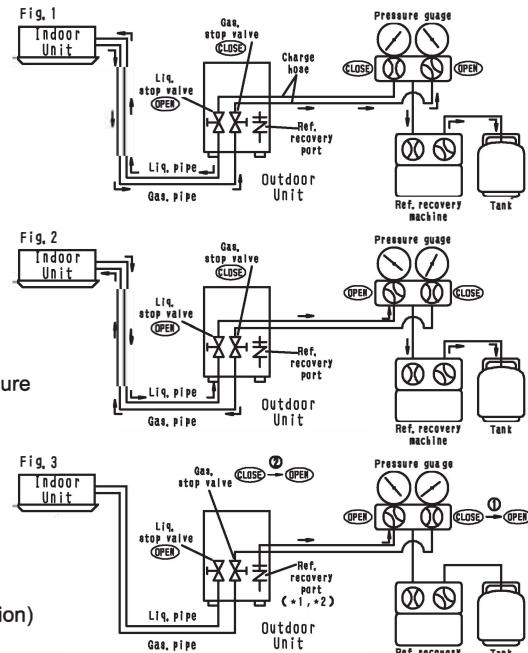
12 REFRIGERANT RECOVERY

[Working procedure]

1. Recovery retaining oil in existing pipe Approx. 1 min
Close gas stop valve (liquid stop valve: open) and recovery refrigerant from gas stop valve port. (Fig.1)
2. Recovery retaining oil in existing liquid pipe Approx. 1 min
Recovery refrigerant from liquid stop valve port. (Fig.2)
3. Recovery refrigerant in outdoor unit Approx. 2-3 min
Recovery refrigerant from outdoor unit refrigerant recovery port *1. (Fig.3)
NOTE 1 Can be omit this procedure if there is no refrigerant recovery port
4. Recovery refrigerant in accordance with Fluorocarbons Recovery and Destructive Law
If refrigerant recovery port *2 pressure become lower than gas stop valve port pressure, refrigerant will recover at the simultaneous from the gas stop valve port, open gas stop valve (Fig.3- 1) gradually to avoid from pressure rising rapidly. (Fig.3- 2)
NOTE 1 Can be omit this procedure if there has no refrigerant recovery port simultaneously if there has no refrigerant recovery port.

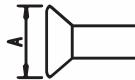
Retaining oil recovery amount improved approx. 5 times from regular refrigerant recovery method

(pipe length, height difference, pipe path etc. is difference by installation condition)



ABOUT FLARE PROCESSING

- Flare connection area of existed piping will cause processing deterioration, make sure to do newly re-processing.
- Flare processing [Unit: mm]



| Piping outside diameter | A (+0, -0.4) |
|-------------------------|--------------|
| Φ 6.4 | 9.1 |
| Φ 12.7 | 16.4 |
| Φ 15.88 | 19.4 |

- Please use flare nut which attached with product (Do not use existed flare nut)
- Flare nut [Unit: mm]



| Piping outside diameter | B (+0, -0.6) |
|-------------------------|--------------|
| Φ 6.4 | 15 |
| Φ 12.7 | 22 |
| Φ 15.88 | 29 |

REFRIGERANT PIPE SIZE TABLE

| Outdoor Unit | | Existing pipe size | 4 / 12.7 | Design Pressure (High Pressure) |
|--------------|------------|------------------------|----------|---------------------------------|
| RZFFQ50CV16 | 64 / 15.88 | Standard pipe length | 7.5 m | 4.17 MPa |
| | | Max. pipe length | 20m | |
| | | Chargeless pipe length | 10m | |

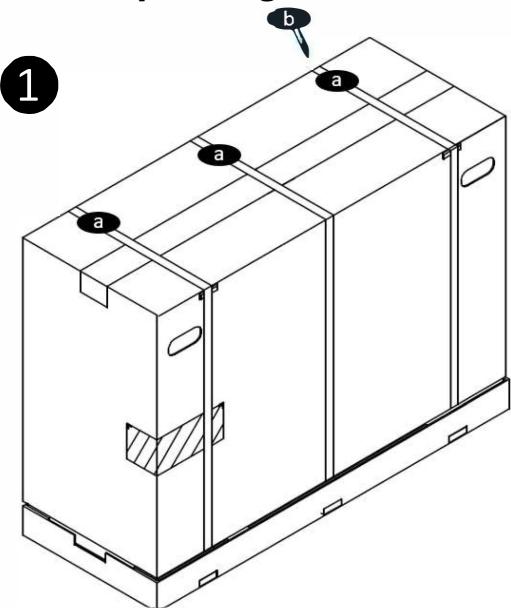
- Refer to the installation manual for details other than those mentioned above table such as additional refrigerant charge amount.
- Clean the existing piping if it length is exceed 30m.
- Clean the existing pipe if chargeless length is exceed limit of existing pipe pump down refrigerant recovery.

■ Standard pipe (R32)

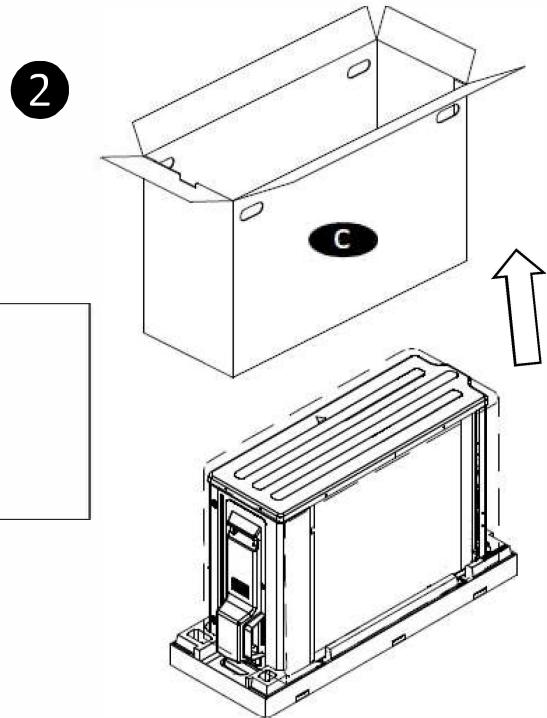
| | | | |
|----------------|-------|--------|---------|
| Pipe size (mm) | Φ 6.4 | Φ 12.7 | Φ 15.88 |
| Thickness (mm) | t 0.6 | t 1.0 | t 1.0 |

13. Unpacking & Packing of the Outdoor Unit

13-1 Unpacking

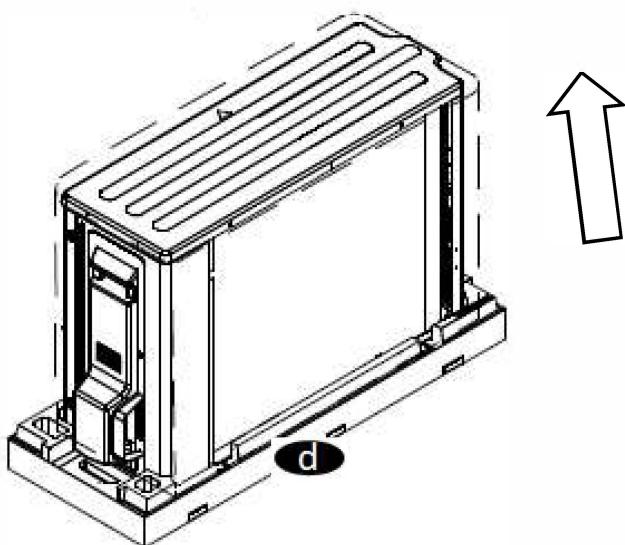


- Cut all the straps (a) from the unit using strap cutter(b) as shown in figure.



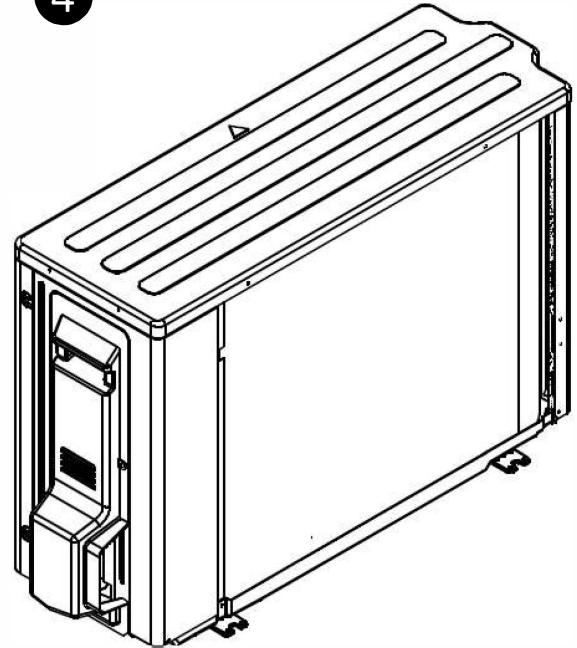
- Remove the cardboard box(c) from the unit after opening it and pulling it up as shown in figure.

3



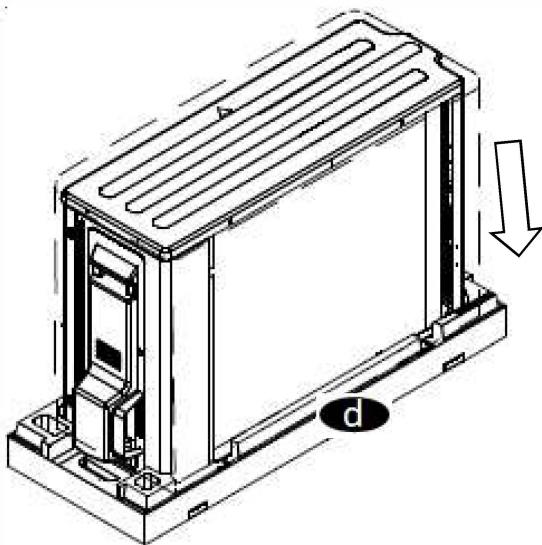
- Remove the bottom skid(d) with EPS by pulling the unit up, then remove the polythene product cover by pulling it up

4

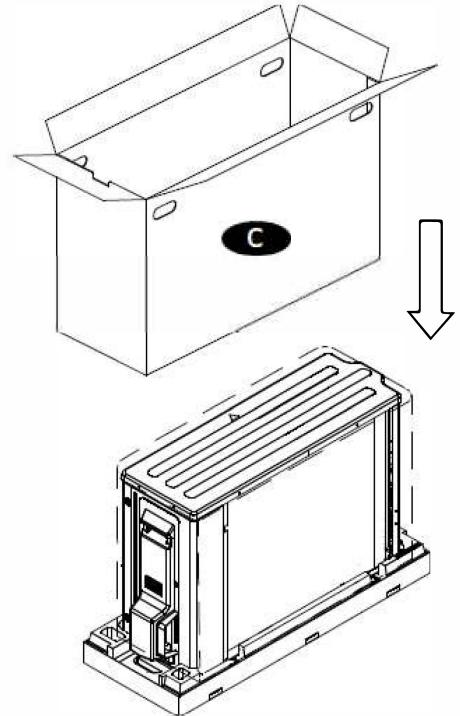


13-2 Packing

1



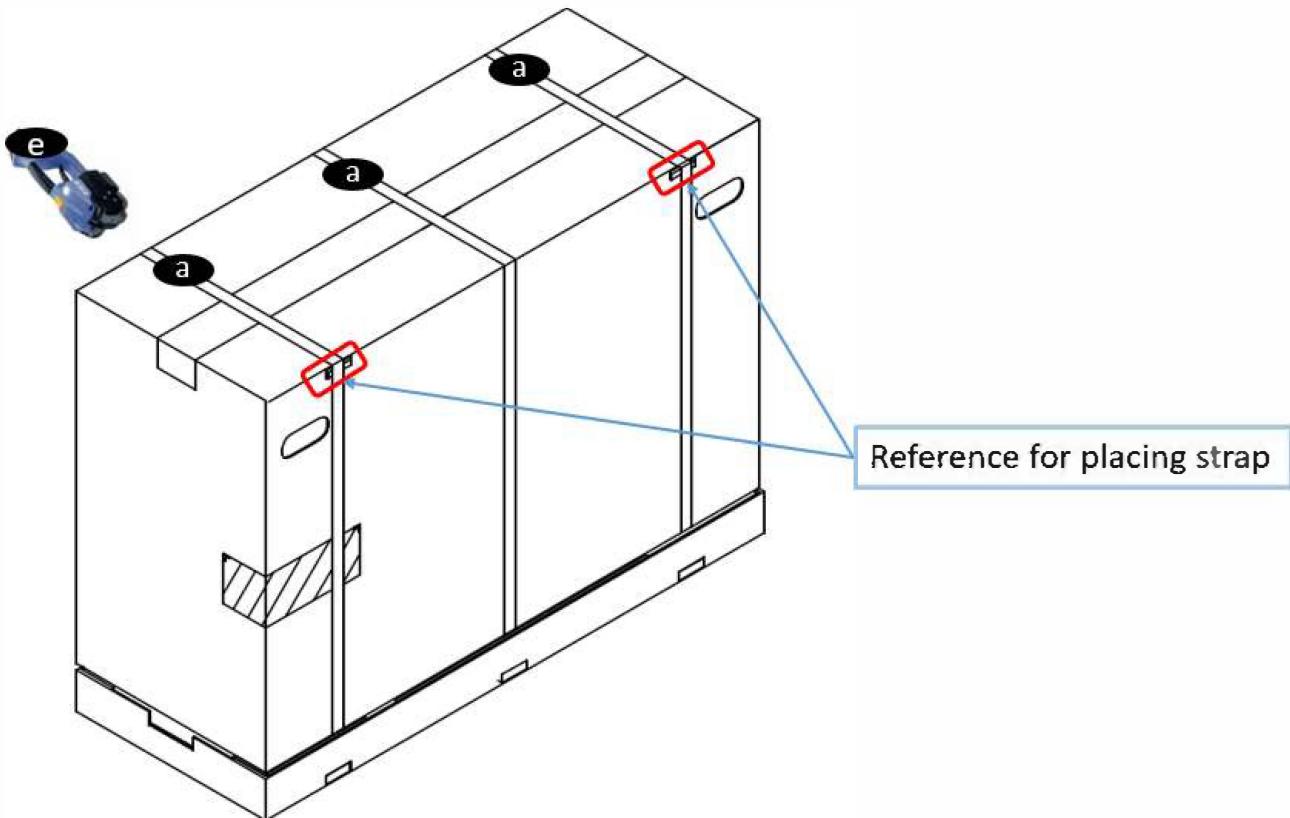
2



- Cover the unit with polythene product cover, then pick the unit up and settle it down on the bottom skid(d) as shown in figure.

- Put the cardboard box (c) upon the unit as shown in figure.

3



- Fix the straps (a) on the unit by using portable strap fixing machine as shown in figure.(Use marked reference for placing straps)

PROTECT THE ENVIRONMENT FROM E-WASTE (GUIDELINES)

Meaning of E-waste under E-Waste (Management) Rules,2022 (E-waste Rules)

-Waste electrical and electronic equipment, whole or in part of reject from their manufacturing and repair process, which are intended to be discarded.

Our product is RoHS compliant.



Don't dump Electrical and Electronic Products in Garbage Bins

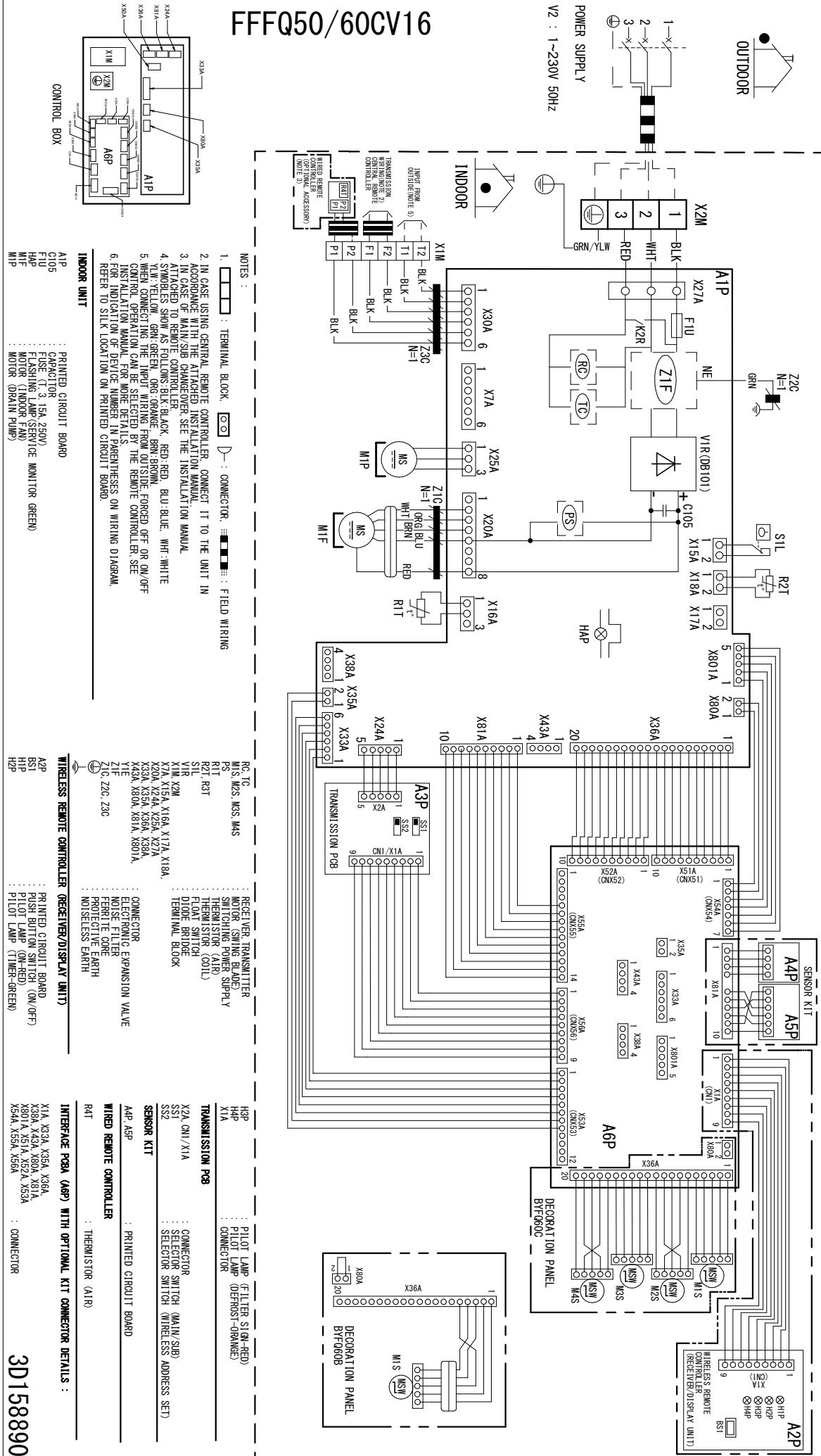
DO'S & DONT'S

| DO'S | |
|--|---|
| Run and maintain the air conditioner as per the instructions given in the operation / instruction manual | ✓ |
| Ensure that an authorised person repairs your air conditioner | ✓ |
| Call our local authorised dealer or our toll free number to dispose your air conditioner | ✓ |
| Contact an authorised dealer in case of installation or de-installation | ✓ |
| Consult our local authorised dealer or our toll free number on the life span of the air conditioner | ✓ |

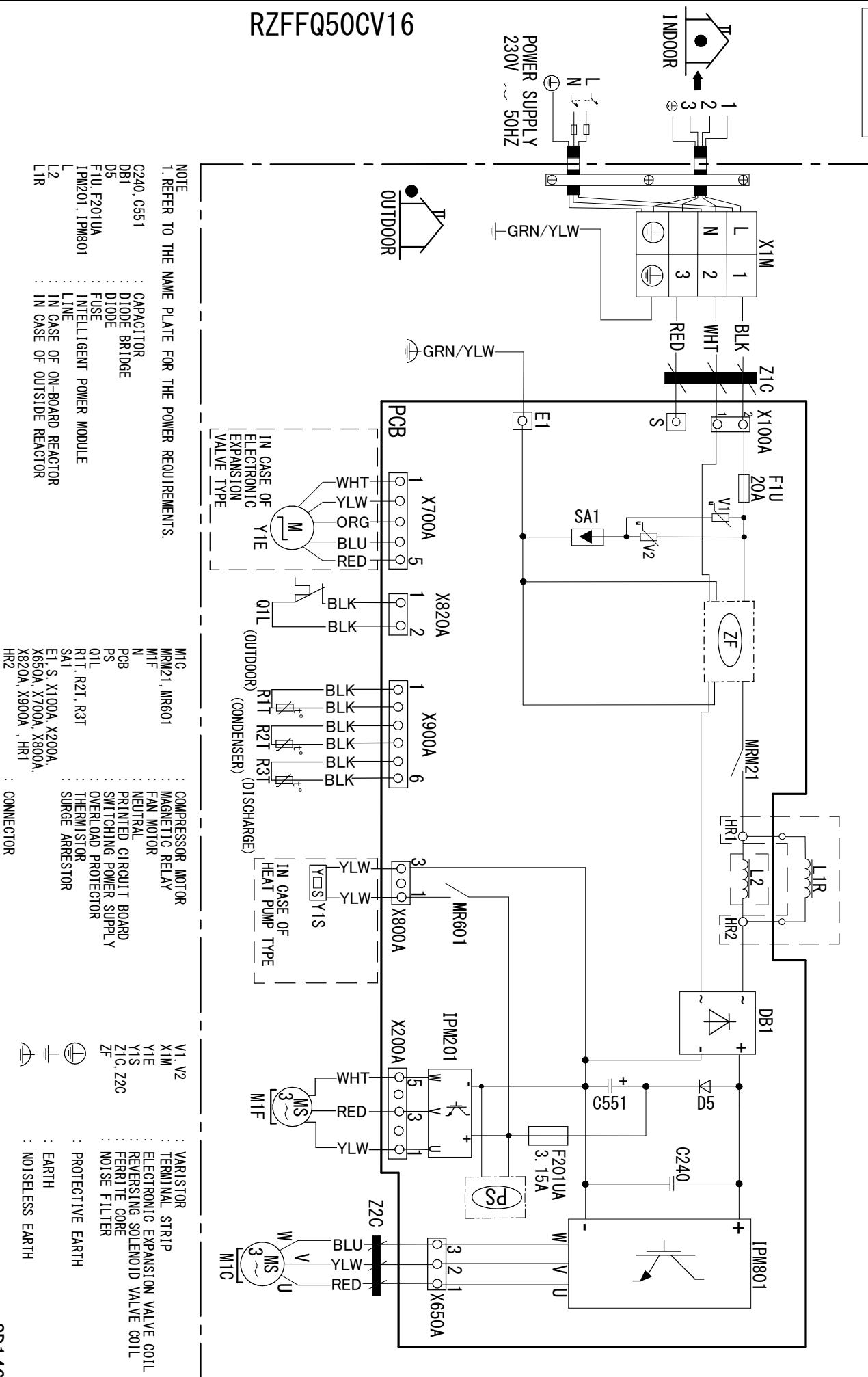
| DONT'S | |
|--|---|
| Do not try to repair your air conditioner on your own | ✗ |
| Do not sell or dispose your air conditioner or parts to an unauthorised Kabbadi wala / Scrap Dealer / Ragpickers | ✗ |
| Do not dismantle your air conditioner on your own | ✗ |
| Do not get your air conditioner or any parts repaired by an unauthorised person | ✗ |
| Do not dispose off the E-waste in landfills | ✗ |
| Do not use the air conditioner as furniture after its use | ✗ |

Customer Contact Center : 011-4031 9300/1860-180-3900
 For further information visit us at www.daikinindia.com

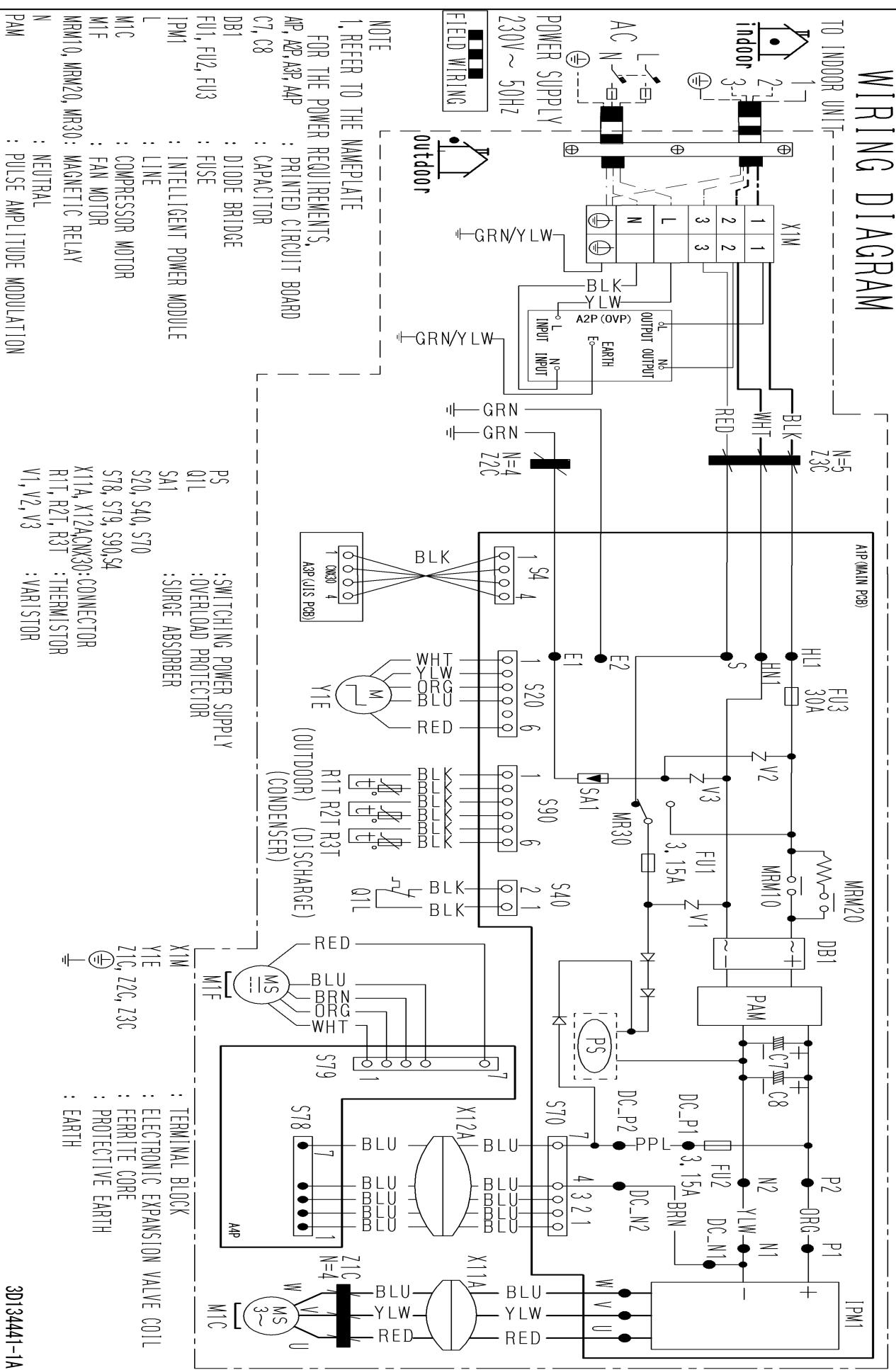
WIRING DIAGRAM



RZFFQ50CV16



WIRING DIAGRAM



- In the event that there is any conflict in the interpretation of this manual and any translation of the same in any language, the English version of this manual shall prevail.
- The manufacturer reserves the right to revise any of the specification and design contained herein at any time without prior notification.

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