DAIKIN

INSTALLATION MANUAL

SPLIT SYSTEM Air Conditioners

MODEL

FLOOR STANDING (R32 Split type air conditioner)

FVFS24AV16
FVFS36AV16
FVFS48AV16

English

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

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CONTENTS

1. SAFETY PRECAUTIONS

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

Please read these “SAFETY PRECAUTIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation.
After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.
This air conditioner comes under the term “appliances not accessible to the general public”.
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.

Meaning of WARNING and CAUTION notices.

⚠ **WARNING** ..... Failure to follow these instructions properly may result in personal injury or loss of life.

⚠ **CAUTION** ..... Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

⚠ WARNING

- Ask your dealer or qualified personnel to carry out installation work.
  Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
  Improper installation may result in water leakage, electric shocks or fire.
- Be sure to use only the specified accessories and parts for installation work.
  Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
  A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
  Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
  An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.
  Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the wiring between the indoor and outdoor units, position the wires so that the control box lid can be securely fastened.
  Improper positioning of the control box lid may result in electric shocks, fire or overheating terminals.

- If refrigerant gas leaks during installation, ventilate the area immediately.
  Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
  Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- 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.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Be sure to earth the air conditioner.
  Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
  Imperfect earthing may result in electric shocks or 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 fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage. When the air coditioner is to be 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.
- 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.
- The appliance must be stored in a room without continuosly 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 odour.
- Floor area required for installation of the equipment, refer to the installation manual of the outdoor unit.
- Comply with national gas regulations.
- When flared joints are reused indoors, the flare part shall be re-fabricated.

⚠ CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
  Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
  (Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit as far away from fluorescent lamps as possible.
- 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.
- 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.
- The refrigerant R32 requires that strict precautions be observed for keeping the system clean, dry and tightly sealed.
  A. 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.
  B. 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.
- Do not install the air conditioner in the following locations:
  1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
  Plastic parts will deteriorate, parts may fall off and water leakage could result.
  2. Where corrosive gas, such as sulphurous acid gas, is produced.
  Corroding of copper pipes or soldered parts may result in refrigerant leakage.
  3. Near machinery emitting electromagnetic radiation.
  Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
  4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
  Operating the unit in such conditions may result in fire.
- The air conditioner is not intended for use in a potentially explosive atmosphere.
- Only qualified personnel can handel, fill, purge and dispose of the refrigerant.

■ 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.
  *This value is based on F gas regulation (842/2006).

⚠ WARNING

Prior to installation, ensure risk of ignition is minimised and avoid working in confined space.
Ensure adequate ventilation is available by opening windows or doors.

- When flared joints are reused indoors, the flare part shall be re-fabricated.
- Avoid installation of the air conditioner in a place where there is danger of exposure to continuously operating open flames (for example an operating electric heaters).
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
- **Checking for presence of refrigerant**

The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. nonsparking, adequately sealed or intrinsically safe.

- **Presence of fire extinguisher**

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO^2 fire extinguisher adjacent to the charging area.

- **No ignition sources**

All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which flammable refrigerant can possibly be released to the surrounding space. “No Smoking” signs shall be displayed.

- **The following checks shall be applied to installations:**
  - marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
  - refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.
- **Initial safety checks shall include:**
  - that capacitors are discharged, this shall be done in a safe manner to avoid possibility of sparking
  - there shall be no live electrical components and wiring are exposed while charging, recovering or purging the system;
- **Repair to intrinsically safe components**

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.
Replace components only with parts specified by the manufacturer.

- **Leak detection methods**

Ensure that the detector is not a potential source of ignition (for example a halide torch) and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant (for R32, LFL is 13%) and shall be calibrated to the refrigerant employed and the appropriate percentage of gas (25 % maximum) is confirmed.

Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

- **Removal and evacuation**

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:

- remove refrigerant;
- purge the circuit with inert gas;
- evacuate;
- purge again with inert gas;
- open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be "flushed" with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task. Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place. Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

- **Labelling**

This unit shall be labelled 'de-commissioned and emptied of refrigerant'. This label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

- **Charging procedures**

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept upright.
- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigeration system.

Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

a) Become familiar with the equipment and its operation.
b) Isolate system electrically.
c) Before attempting the procedure ensure that:
    - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
    - all personal protective equipment is available and being used correctly;
    - the recovery process is supervised at all times by a competent person;
    - recovery equipment and cylinders conform to the appropriate standards.
d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with manufacturer's instructions.
h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

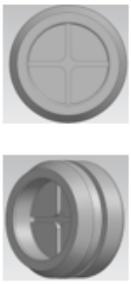
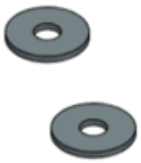
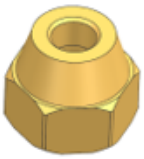
2. BEFORE INSTALLATION

Do not exert pressure on the resin parts when opening the unit or when moving it after opening. Be sure to check the type of R32 refrigerant to be used before doing any work. (Using an incorrect refrigerant will prevent normal operation of the unit.)

- When opening the unit or moving it after opening, be sure to lift it by holding on to the hanger bracket without exerting any pressure on other parts, especially, drain piping, and other resin parts.
- Leave the unit inside its packaging while moving, until reaching the installation site. Use a sling of soft material, where unpacking is unavoidable or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Do not dispose of any parts necessary for installation until the installation is complete.
- In order to protect the indoor unit from damage, use packing materials to protect the unit after carrying until the installation starts.
- When selecting installation site, refer to the paper pattern.
- Do not use the unit in locations with high salt content in the air such as beachfront property, locations where the voltage fluctuates such as factories, or in automobiles or marine vessels.
- Do not install accessories on the casing directiy. Drilling holes in the casing may damage electrical wires and consequently cause fire.

2-1. ACCESSORIES

Check the following accessories are included with your unit.

(A) Wireless remote controller 	1 no.	(B) Rubber holder 	2 nos.	(C) Plastic gitti & Long screw 	2 nos.
(D) Washer 	2 nos.	(E) Flare nut 	1 no.	(F) Rubber pad 	1 no.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor unit and outdoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the outdoor unit fully installed?	The unit may malfunction or the components burn out.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery

* Also review the "**1. SAFETY PRECAUTIONS**"

Items to be checked	Check
Has the field setting done (as necessary)?	
Did you hand the installation manual to customer?	
Does the cold air blow properly during the cooling operation?	
Did you explain about operations while showing the instruction manual to your customer?	
Did you hand the operation manual to customer?	

Points for explanation about operations

The items with ⚠ WARNING and ⚠ CAUTION marks in the instruction manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the instruction manual.

2-3. NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

- Before choosing the installation site, obtain user approval.

Indoor Unit

The indoor unit should be sited in a place where:

- The restrictions on installation specified in the indoor unit installation drawing are met.
- The foundation is strong enough to support the weight of the unit and the floor is flat to prevent vibration and noise generation.
- The space around the unit is adequate for servicing and the minimum space for air inlet and air outlet is available.
- Drain water can be properly drained.
- Both air intake and exhaust have clear paths met.
- The unit is not in the path of direct sunlight.
- The unit is away from the sources of heat or steam.
- There is no source of machine oil vapour (this may shorten indoor unit life).
- Cool air is circulated through out the room.
- The unit is away from electronic ignition type flourescent lamps (inverter or rapid start type). As these may shorten the remote controller range.
- The unit is at least 1 metre away from any television or radio set (unit may cause interference with the picture or sound).
- Do not install the units at or near doorway.
- Do not operate any heating apparatus too close to the air conditioner unit or use in room where mineral oil, oil vapour or oil, steam exist, this may cause plastic part to melt or deform as a result of excessive heat or chemical reaction.
- When the unit is used in kitchen, keep fl our away from going into suction of the unit.
- This unit is not suitable for factory used where cutting oil mist or iron powder exist or voltage fluctuates greatly.
- A place where drainage can be easily done.
- Do not install the units at area like hot spring or oil refinery plant where sulphide gas exists.
- Ensure the color of wires of the outdoor unit and the terminal markings are same to the indoors respectively.
- IMPORTANT : DO NOT INSTALL OR USE THE AIR CONDITIONER UNIT IN A LAUNDRY ROOM.
- Do not use joined and twisted wires for incoming power supply.
- The equipment is not intended for use in a potentially explosive atmosphere.
- The piping length between indoor unit and outdoor unit is within the allowable limit.

Wireless Remote Controller

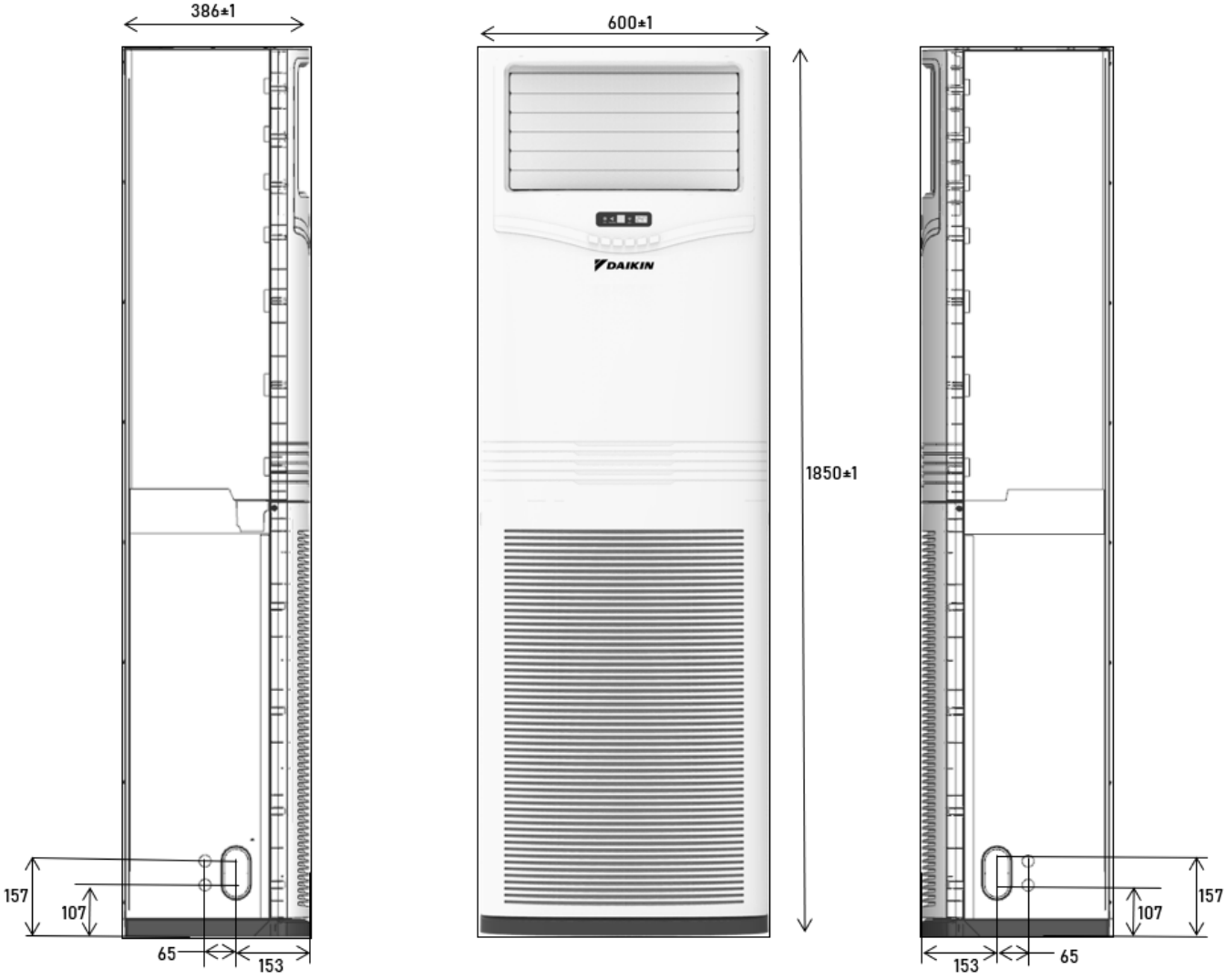
- Do not expose the remote controller to direct sunlight (this will hinder receiving signals from the indoor unit).
- Turn on all the fluorescent lamps in the room, if any, and find the site where remote controller signals are properly received by the indoor unit (within 7 metres).

⚠ CAUTION
Do not install the unit at altitude over 2000m for both indoor and outdoor.

4. PREPARATIONS BEFORE INSTALLATION

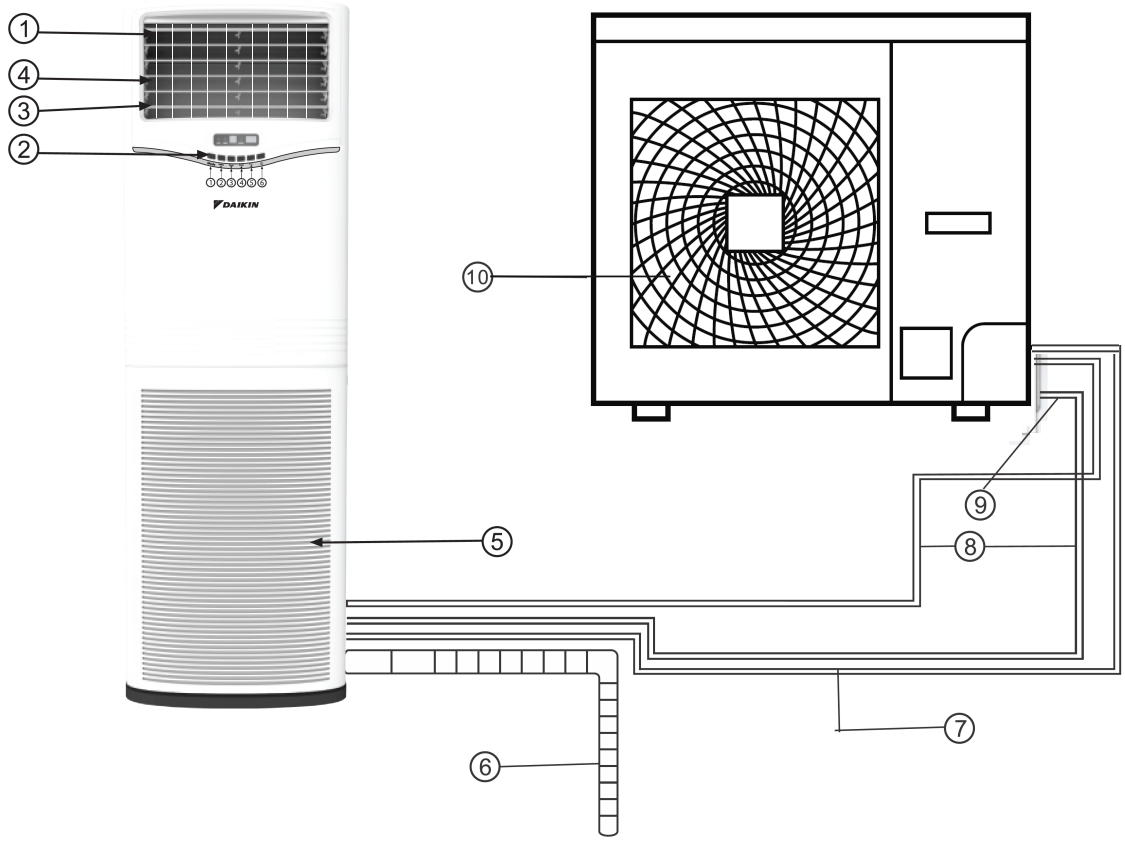
4-1. OUTLINE DIMENSION

All dimensions are in mm



4-2. INSTALLATION DIAGRAM

Note: Instruction in this manual are for explanatory purpose. the actual shape of your indoor unit may be slightly different. the actual shape shall prevail.

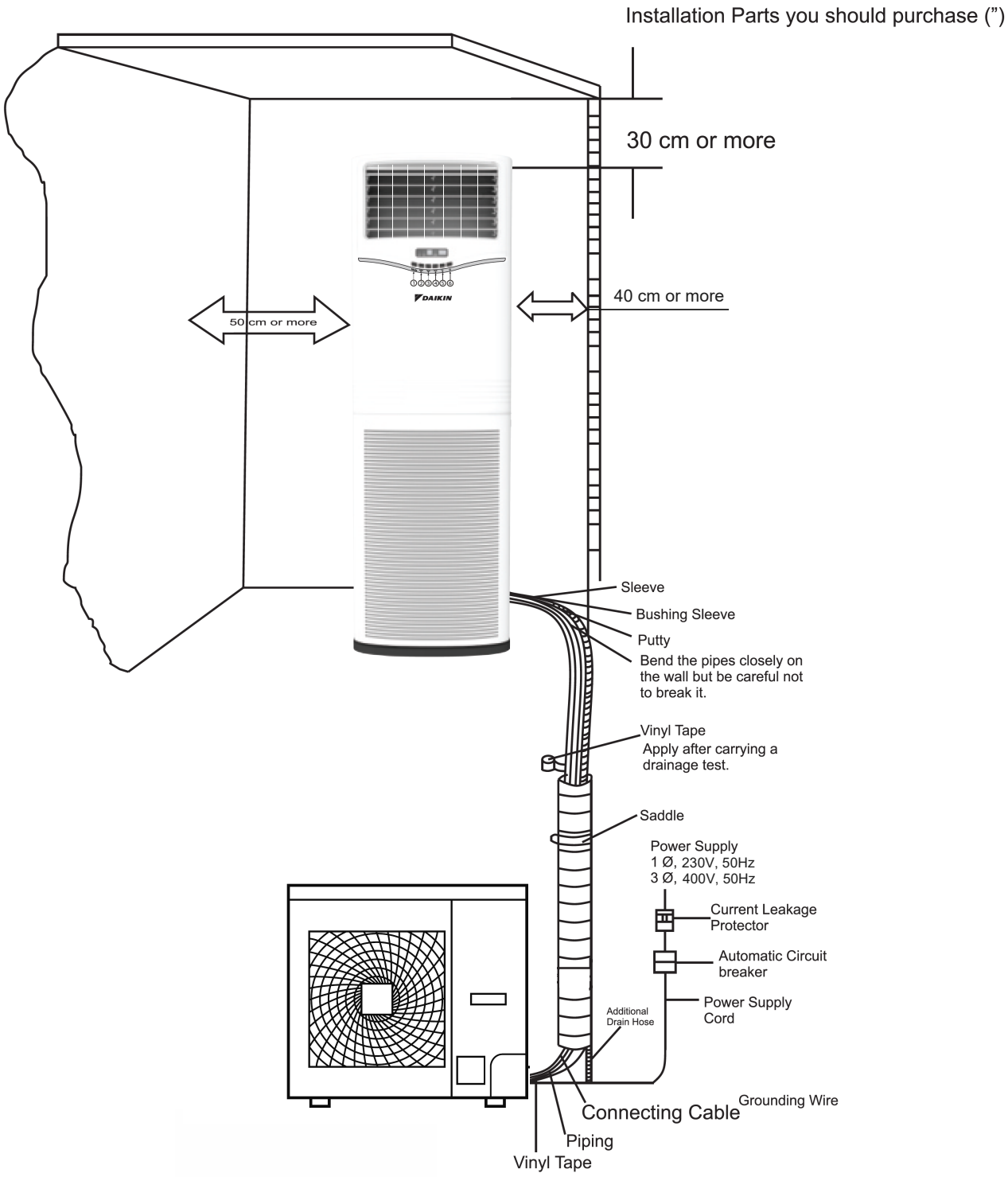


Description

① Air outlet
② Operation panel
③ Horizontal airflow control louver
④ Vertical airflow control louver (Behind horizontal louver)
⑤ Air inlet
⑥ Drain pipe,
⑦ Connection cable
⑧ Connection pipe
⑨ Refrigerant pipe port
⑩ Air outlet

5. INDOOR UNIT INSTALLATION

5-1. INSTALLATION INSTRUCTION



5-2. FIXING PROCEDURE

<Method>

Fix the bracket to the wall surface with the help of gitti, screws and washers as shown in Fig-2.
for bracket dimensions refer Fig-1.

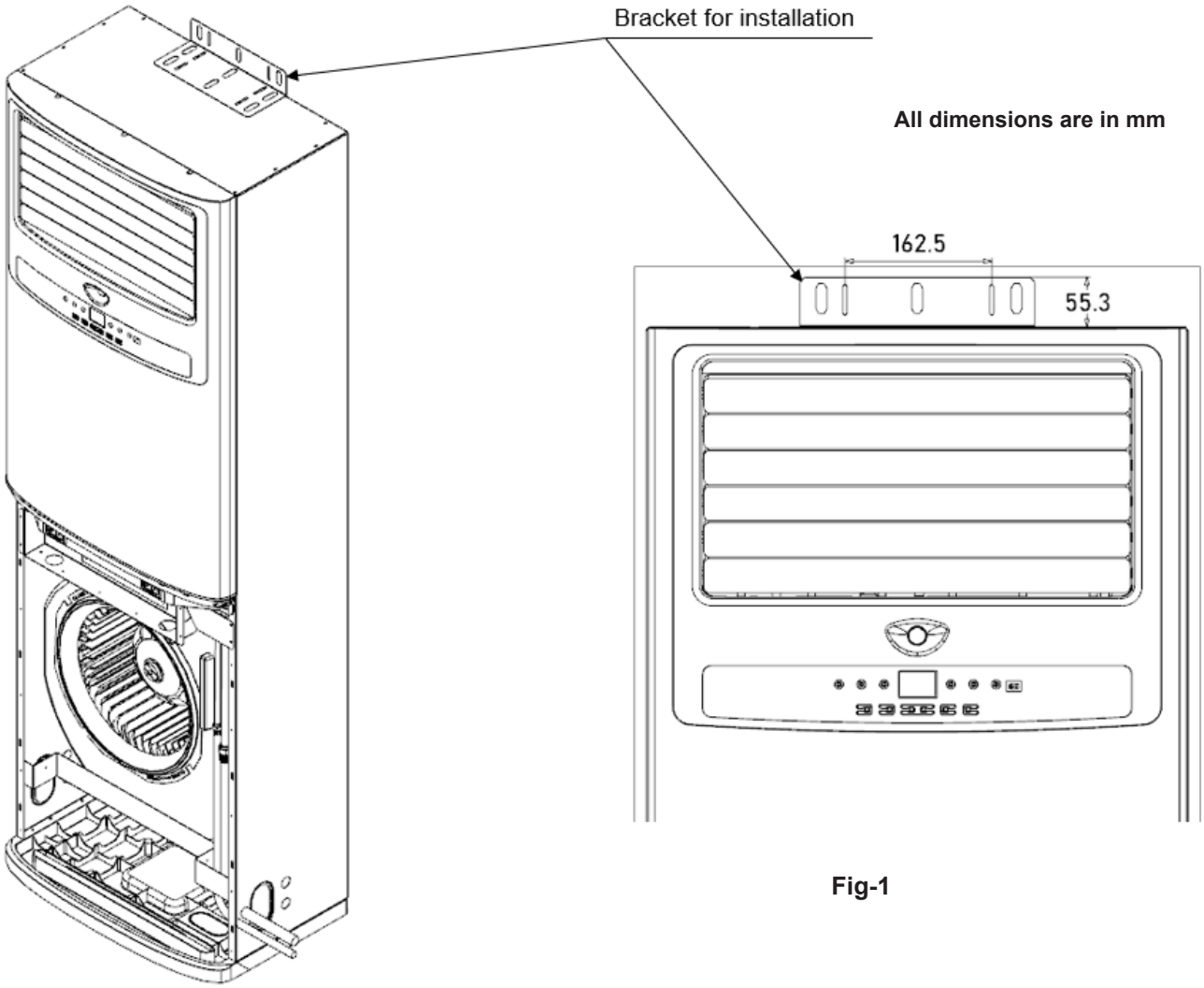


Fig-1

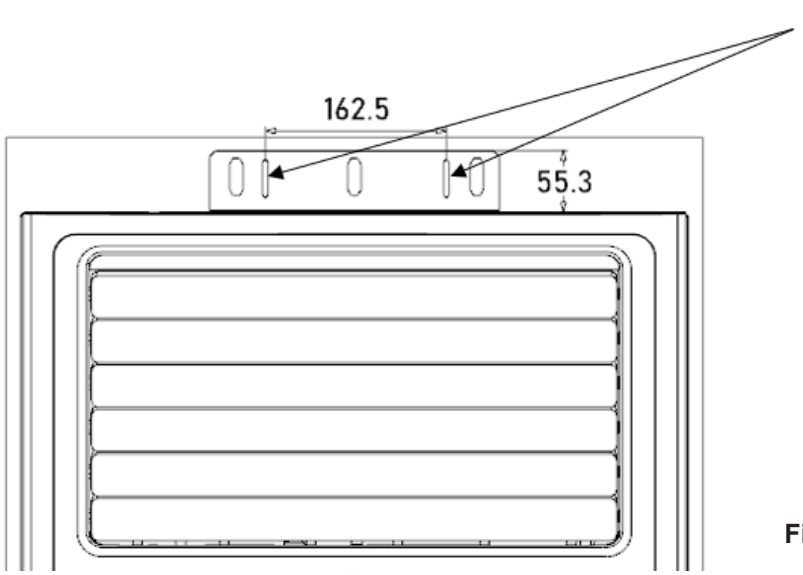


Fig-2

5-3. DETACH THE AIR INTAKE GRILL.

Remove the screw (Right and Left side, total 2) for opening the grill as shown in fig-3. Then, lean the grill forward you, and pull upward for removing the intake grill as shown in Fig-4.

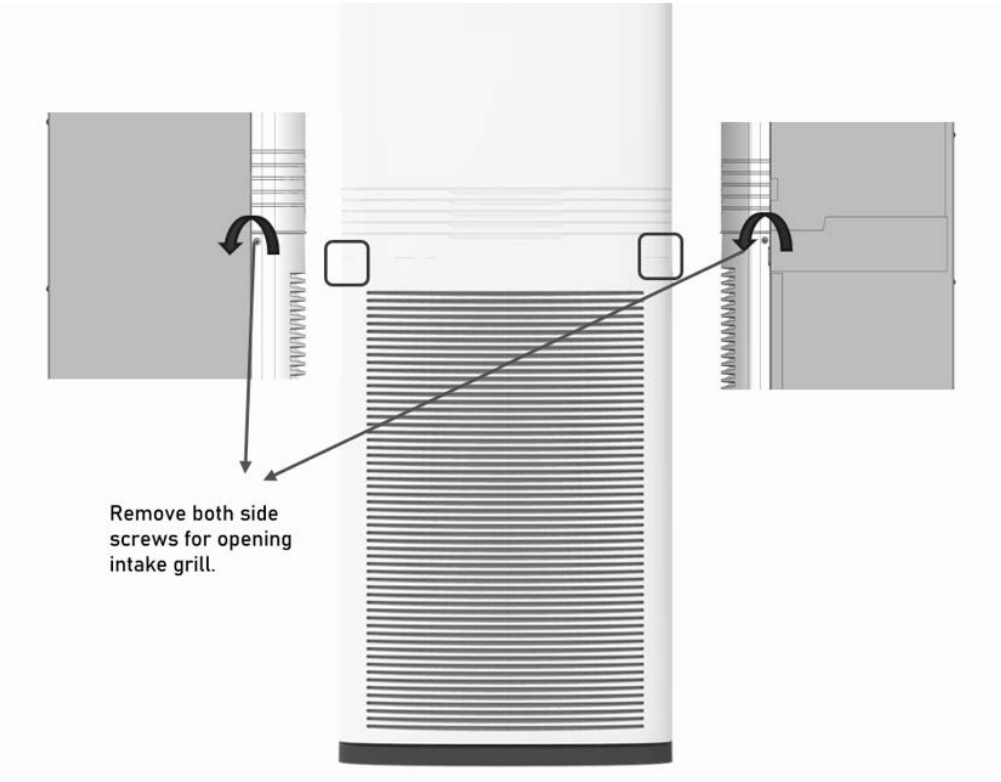


Fig-3

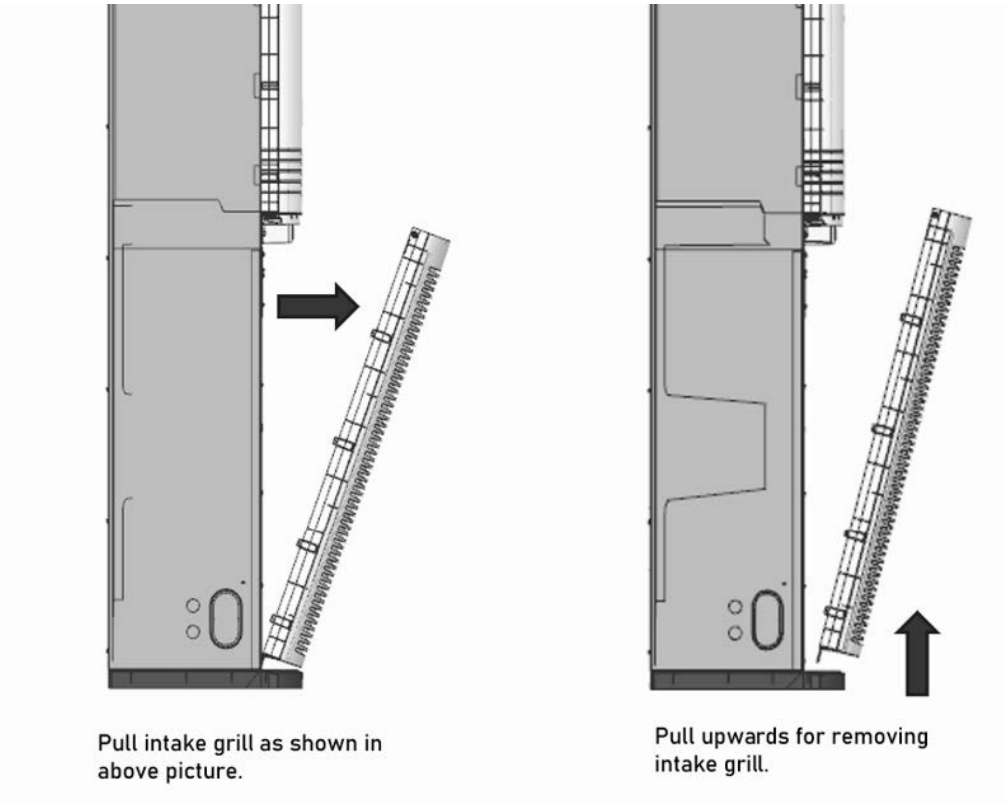


Fig-4

5-4. INSTALLATION OF AIR INTAKE GRILL.

For installation of intake grill. fit bottom of grill to the slot in the base. Then, close the intake grill toward the unit. after that fix the intake grill by fixing the screws. refer Fig-5.

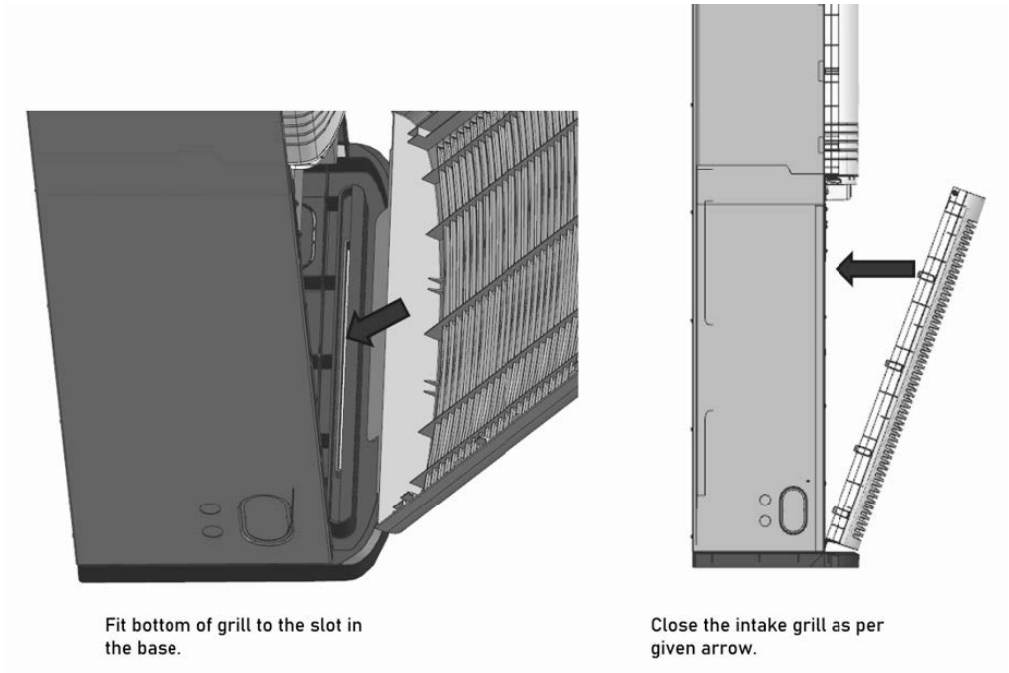


Fig-5

5-5. To drill a hole in the wall and install a sleeve of piping.

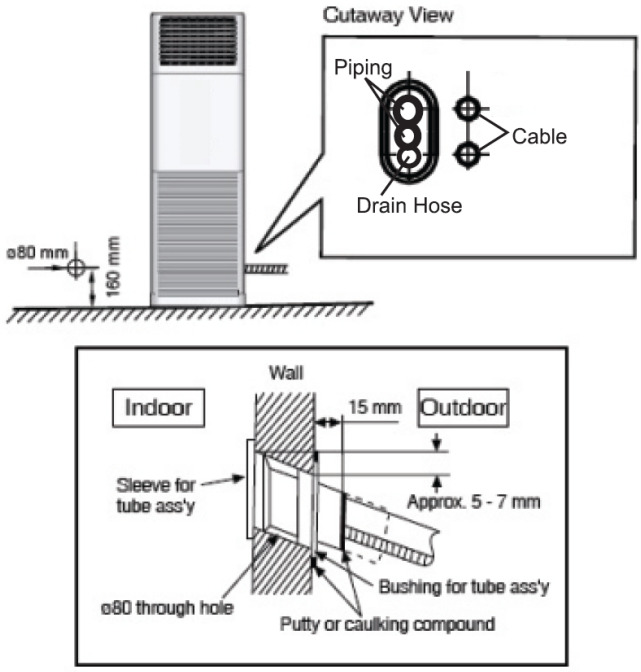
There are three piping arrangements: left, right and right rear piping.

1. Drill a hole as shown in the right figure.
2. Insert the piping sleeve into the hole.
3. Fix the bushing to the sleeve.
4. Cut the sleeve until it extrudes about 15 mm from the wall.

CAUTION

When the wall is hollow, please be sure to use the sleeve for tube assembly to prevent dangers caused by mice biting the connecting cable.

5. Finish by sealing the sleeve with putty or caulking compound at the final stage.



To connect the drain hose

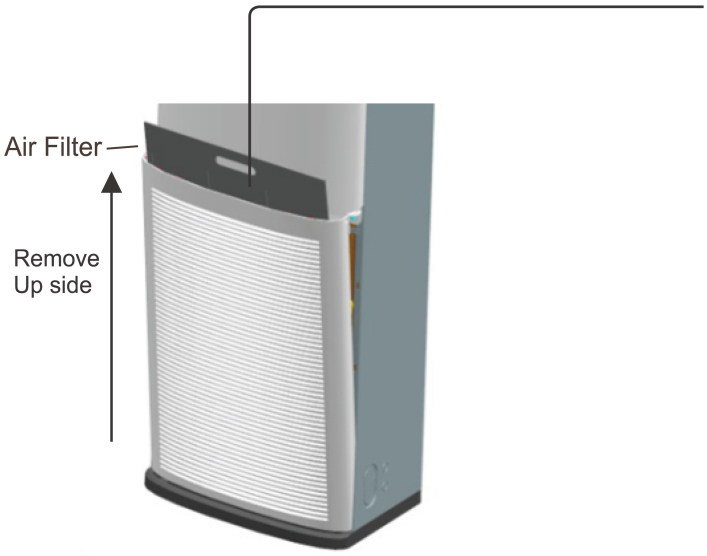
1. The drain hose should be insulated.
2. The drain hose should be sloped down. Any upturn is not permitted.
3. The foamed plastic around the air inlet duct should not be touched by the dra·1n hose.
4. A drainage test should be carried out to assure a good drainage.

5-6. CLEANING INSTRUCTION

To ensure optimal performance of the unit, cleaning has to be carried out at regular intervals. Dirty unit may cause malfunction. Please consult authorised dealer.

- Switch off the power supply and unplug before cleaning.
- Do not touch the aluminium fin, sharp parts may cause injury.
- Do not use benzine, thinner or scouring powder.
- Use only soap (≃ pH 7) or neutral household detergent.
- Do not use water hotter than 40 °C.

Air Filter Removal



Safety Caution

During removal of Air Filter, prevention of access to electrical and mechanical parts should be followed.

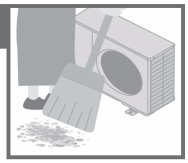
Air Filter Maintenance

1. A clogged air conditioner can reduce the cooling efficiency of your unit ,and can also be bad for your health. Make sure to clean the filter once every two weeks.

Detachable intake grille

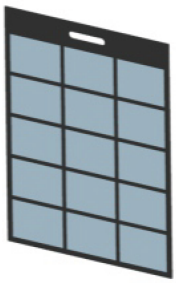
Outdoor unit

Clear debris that surrounds the unit.
Clear any blockage from drain pipe.

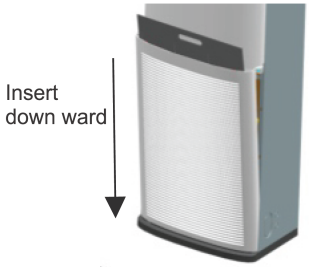


Air Filter Installation

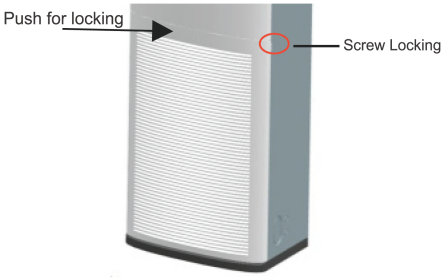
① Air Filter



② Slowly bring down in the intake grille



③ Firmly press lock intake grille and fixed the side screws.



6. REFRIGERANT PIPING WORK

- For the outdoor unit refrigerant piping, refer to the installation manual of the outdoor unit.
- Carry out insulation of both gas and liquid refrigerant piping securely. If not insulated, it may cause water leakage. For gas piping, use insulation material of which heat resistant temperature is not less than 120°C. For use under high humidity, strengthen the insulation material for refrigerant piping. If not strengthened, the surface of insulation material may sweat.
- Before installation work, make sure that the refrigerant is R32. (Unless the refrigerant is R32, the normal operation cannot be expected.)

⚠ WARNING

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

⚠ CAUTION

This air conditioner is a dedicated model for new refrigerant R32. Make sure to meet the requirements shown below and carry out installation work.

- **Use dedicated piping cutters and flaring tools for R32 and R410A.**
- **When making a flare connection, coat the flared inner surface only with ether oil or ester oil.**
- **Use only the flare nuts attached to the air conditioner. If other flare nuts are used, it may cause refrigerant leakage.**
- **To prevent contamination or moisture from getting into the piping, take measures such as pinching or taping the pipings.**
  Do not mix substance other than the specified refrigerant such as air into the refrigeration circuit.
  If the refrigerant leaks during the work, ventilate the room.

- The refrigerant is pre-charged in the outdoor unit.
- When connecting the pipings to the air conditioner, make sure to use a spanner and a torque wrench as shown in **Fig.6.**
- For the dimension of flared part and the tightening torque, refer to the **Table 3**.

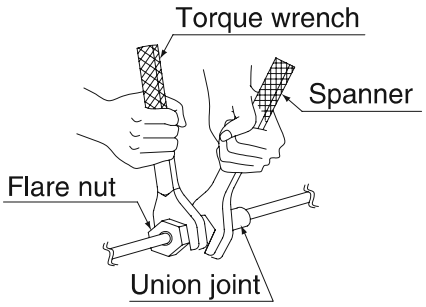


Fig.6

- 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.

Design pressure	Cooling
High	4.17
Low	2.21

(Units: MPa)

- When making a flare connection, coat the flared inner surface only with ether oil or ester oil. **(Refer to Fig. 7)** Then, turn the flare nut 3 to 4 times with your hand and screw in the nut.

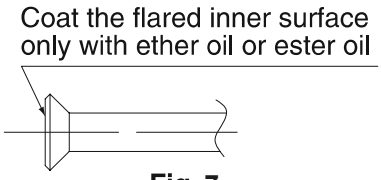
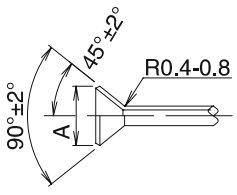


Fig. 7

Table 3

Piping size (mm)	Tightening torque (N·m)	Dimension for processing flare A (mm)	Flare shape
ϕ 6.4	15.7 ± 1.5	8.9 ± 0.2	
ϕ 9.5	36.3 ± 3.6	13.0 ± 0.2	
ϕ 12.7	54.9 ± 5.4	16.4 ± 0.2	
ϕ 15.9	68.6 ± 6.8	19.5 ± 0.2	

⚠ CAUTION

Do not have oil adhere to the screw fixing part of resin parts.
If oil adheres, it may weaken the strength of screwed part.
Do not tighten flare nuts too tight.
If a flare nut cracks, the refrigerant may leak.

- If there is no torque wrench, use **Table 4** as a rule of thumb.
  When tightening a flare nut with a spanner harder and harder, there is a point where the tightening torque suddenly increases.
  From that position, tighten the nut additionally the angle shown in **Table 4**.
  After the work is finished, check securely that there is no gas leak.
  If the nut is not tightened as instructed, it may cause slow refrigerant leak and result in malfunction (such as does not cool or heat).

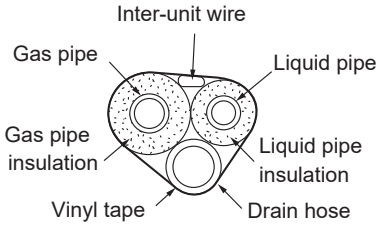
Table 4

Piping size (mm)	Tightening angle	Recommended arm length of tool used
ϕ 6.4	60° - 90°	approx. 150 mm
ϕ 9.5	60° - 90°	approx. 200 mm
ϕ 12.7	30° - 60°	approx. 250 mm
ϕ 15.9	30° - 60°	approx. 300 mm

- **Cautions on pipe handling**
  1) Protect the open end of the pipe against dust and moisture.
  2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.

- **Selection of copper and heat insulation materials**
  When using commercial copper pipes and fittings, observe the following:
  1) Insulation material: Polyethylene foam
     Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/(mh •˚C))
     Refrigerant gas pipe's surface temperature reaches 110˚C max.
     Choose heat insulation materials that will withstand this temperature.
  2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Piping size, mm (in)	Minimum bend radius	Piping thickness	Thermal insulation size	Thermal insulation thickness
6.4 (1/4")	30mm or more	0.8mm (C1220T-O)	I.D. 8-10mm	10mm Min.
9.5 (3/8")	30mm or more		I.D. 12-15mm	
12.7 (1/2")	40mm or more		I.D. 14-16mm	
15.9 (5/8")	50mm or more	1.0mm (C1220T-O)	I.D. 16-20mm	
19.1 (3/4")	50mm or more		I.D. 20-24mm	



  3) Use separate thermal insulation pipes for gas and liquid refrigerant pipes.

PIPING WORK PROCEDURE

First, open the plate by removing the screws before doing the piping work as shown in Fig-8.

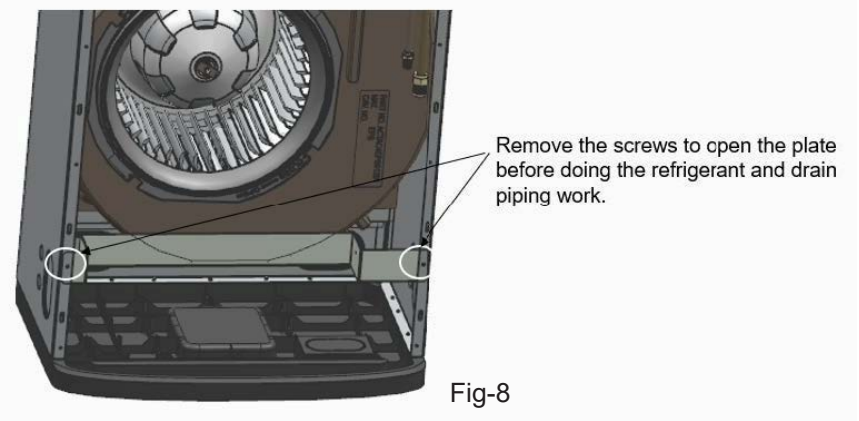


Fig-8

- Refrigerant piping can be install in three direction (Left, Right & Back side) as shown in Fig-9.

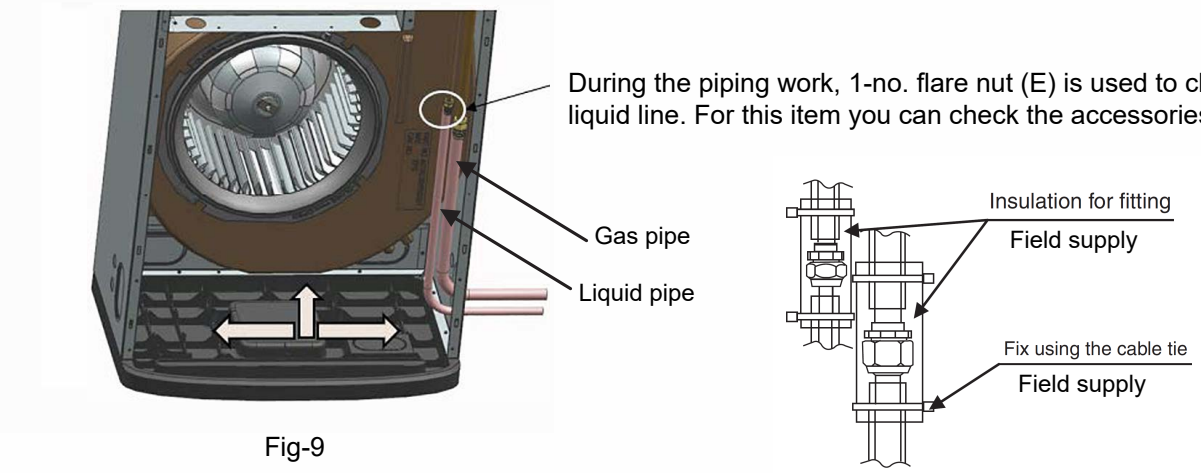


Fig-9

- Copper pipe should be inside the Plate as shown in Fig-10.

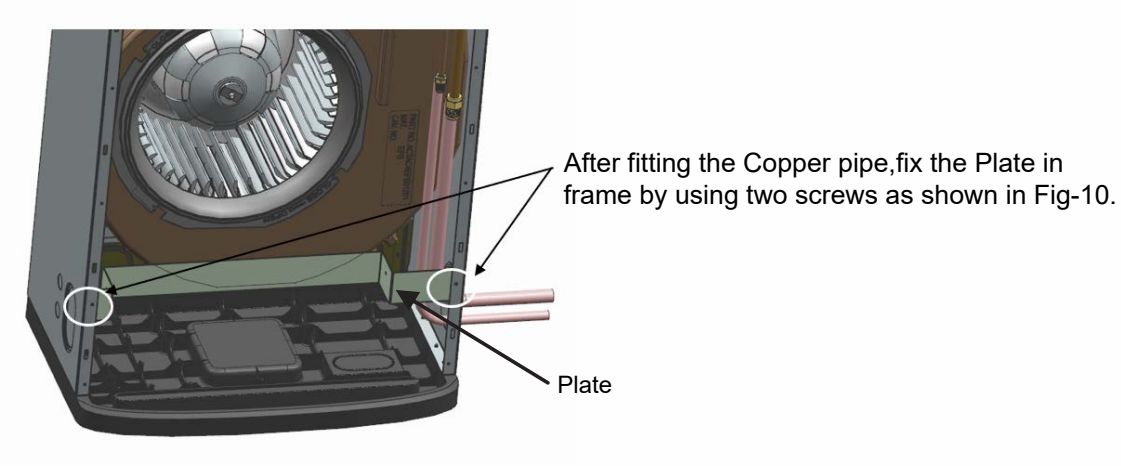


Fig-10

- Rubber pad & Rubber holder should be placed at location refer in Fig-11.

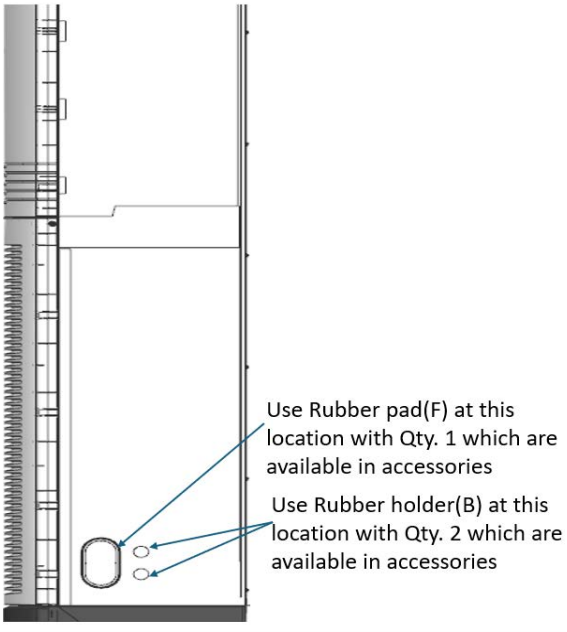


Fig-11

7. DRAIN PIPING WORK

1. Rig the drain piping.

Rig the drain line to ensure proper drainage. Also, observe the following to prevent leaks.

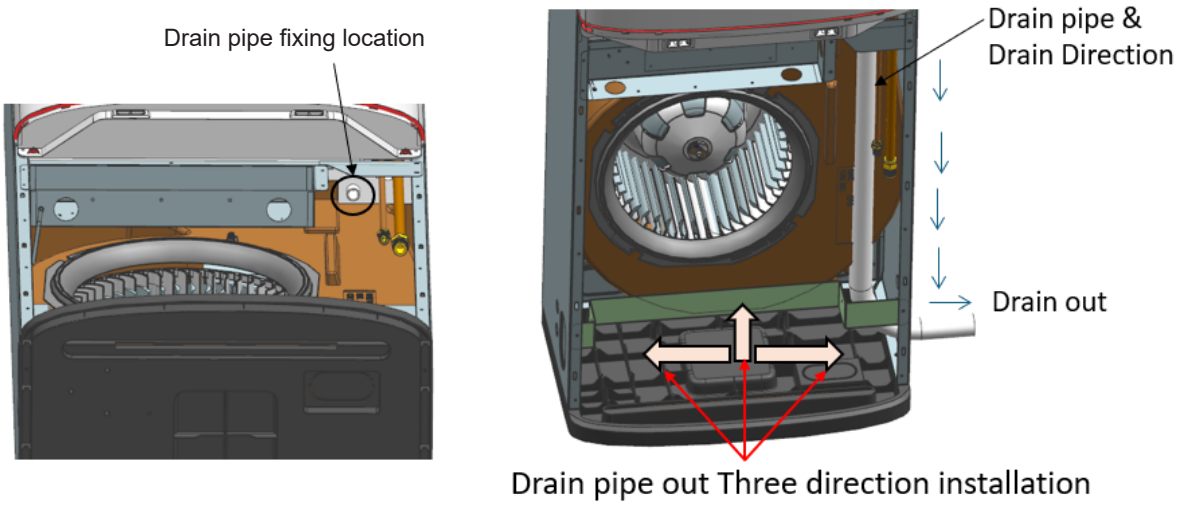


Figure-12

- Drain pipe can be install in three directions such as left side, right side and rear side as shown in Fig-12. Keep the drain hose sloping at a minimum 1/100 gradient, to prevent air pockets.
- Condensate can form on the hose and leak from the unit. Therefore, definitely insulate the hose in at least the below two places.
  - All hose in the room and inside the unit.
  - At connection between the unit's drain hose and building drain pipe.

- **After rigging the drain hose, check that drainage flows smoothly and that water does not leak from connections.**
  - Carefully pour approximately 1,000cc of water through the air discharge outlet so that it falls directly onto the heat exchanger at an angle without splashing. **(Refer to Figure-13)**.

* If water is poured too fast or it water pressure is too high, the water will pass through the heat exchanger and drip on the fan motor below it.

* If water gets on the inner front wall, it will leak onto the floor.

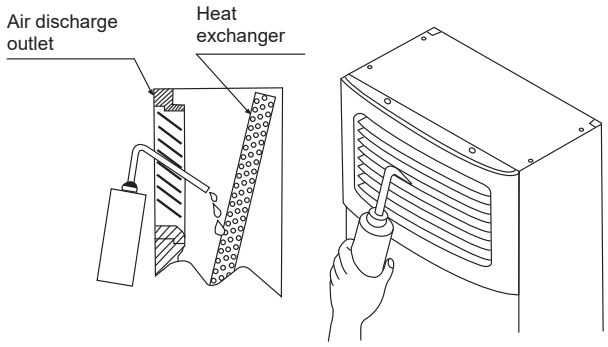


Figure-13

8. ELECTRIC WIRING WORK

- Electric wiring work must be conducted by electrician authorized by power companies. (Only licensed electrician can conduct electric work and earth connections.)
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Be sure to install an earth leakage circuit breaker to the outdoor unit.
  (This installation of an earth leakage circuit breaker is mandatory for the prevention of electric shocks and fire disasters.)
- Make sure that 230V is specified wiring between the indoor and outdoor units and between indoor units.
- Do not turn on the power supply (of the indoor unit) until all the installation work is completed.
- Be sure to ground the air conditioner.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Do not connect the earth wire to gas pipes, plumbing pipes, lightning rods, or telephone earth wires.
  - Gas pipes: might cause explosions or fire if gas leaks.
  - Plumbing pipes: no earth effect if hard vinyl piping is used.
  - Telephone earth wires or lightning rods: might cause abnormally high electric potential in the earth during lighting storms.
- For electric wiring work, refer to also “WIRING DIAGRAM” attached to the control box lid.
- Do not touch the printed circuit board ASSY during the wiring work. Otherwise, it may cause damage.

- **Specifications for field wire**

Refer to the installation manual attached to the outdoor unit regarding the detail of standard accessories for the outdoor unit.

Wiring specifications are shown on the condition that the wiring has a voltage drop of 2%.

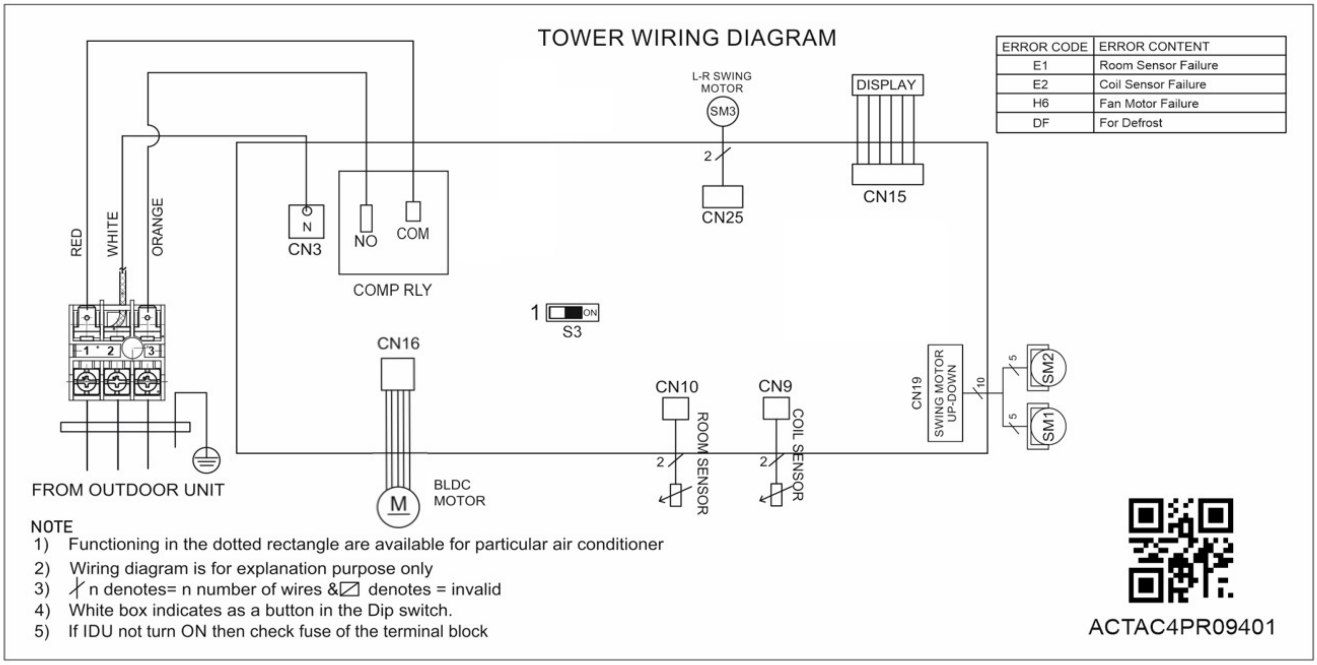
Table 5

	Wire	Size (mm^2)	Length
Wiring the units	H05VV – U4G (NOTE 1, 2)	2.5 / 4.0	–

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

NOTE

1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
2. Supply cords shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57)



⚠ CAUTION

- Shape the wires and attach the control box lid securely so that wires will not be caught. (Caught wires and risen lid may cause an electric shock or fire.)

Precautions to be taken for power supply wiring

Use a round crimp-style terminal for connection to the power supply terminal block.
In case it cannot be used due to unavoidable reasons, be sure to observe the following instructions.
(Refer to Fig. 14)

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.) **(Refer to Fig.15)**
- When connecting wires of the same gauge, connect them according to. **(Refer to Fig.15)**
- In wiring, make certain that prescribed wires are used, carry out complete connections, and fix the wires so that external forces are not applied to the terminals.

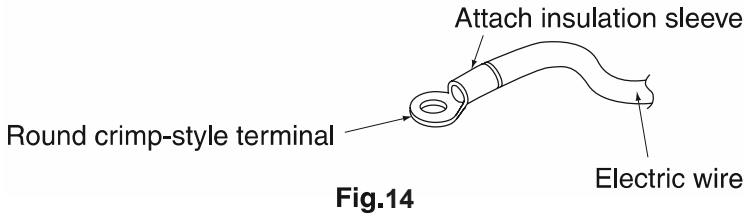


Fig.14

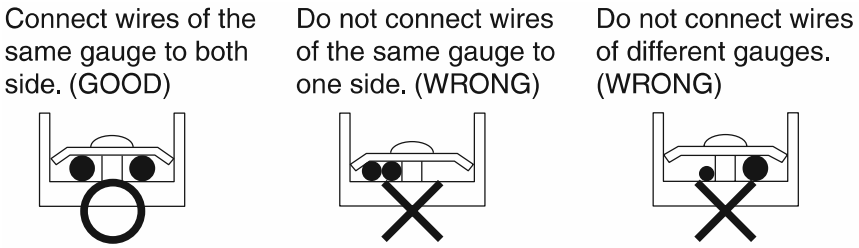


Fig. 15

Tightening torque for the terminal screws.

- Use the correct screw driver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.

Refer to the table below for the tightening torque of the terminal screws.

Tightening torque (N·m)	
Terminal block for wiring the units	1.47±0.14
Earth terminal	1.47±0.14

- If the strand wire is used, do not solder it. (Abnormal heating may occur if the wirings are not tightened securely.)

9. CAUTIONS FOR SERVICING

The following symptoms do not indicate malfunction.

Symptom	Cause
Compressor operation is delayed a few minutes after restarting.	• The delay is a protection to the unit's compressor.
Operation (outdoor) does not stop immediately after pressed the OFF/ON button.	• Discharging heat is in process. Operation will stops automatically after approximately 30 seconds.
Operation starts after power resumes.	• Auto restart is in function and operates under previous setting.
The room has a peculiar odour.	• This may be due to damp smell emitted by the wall, carpet, furniture or clothing.
Cracking sound during operation.	• Changes of temperature cause the expansion/ contraction of the unit.
Water flowingsound during operation.	• Refrigerant flow inside the unit.
Mist emerges from indoor unit.	• Condensation effect due to cooling process.
Outdoor unit emits water/steam.	• Condensation or evaporation occurs on pipes.
Unit switch to FAN operation and air become humid.	• This happens when the room temperature reaches the set temperature, operation switches to FAN mode and the humidity increase.
During dry mode, cold air blow out.	• The unit is running cooling operation with low fan speed to dehumidify the room.
Discoloration of some plastic parts.	• Discoloration is subject to material types used in plastic parts, accelerated when exposed to heat, sun light, UV light or environmental factor.

Check the following before calling for servicing.

Symptom	Check
Operation in COOL mode is not working efficiently.	• Set the temperature correctly. • Close all doors and windows. • Clean or replace the filters. • Clear any obstruction at the air inlet and air outlet vents.
Noisy during operation.	• Check if the unit has been installed at an incline. • Close the intake grill properly.
Remote control does not work. (Wireless remote control display is dim or transmission signal is weak.)	• Insert the batteries correctly. • Replace weak batteries.
The unit does not work.	• Check if the circuit breaker is tripped. • Check if timers have been set.
The unit does not receive the signal from the remote control.	• Make sure the receiver is not obstructed. • Make sure the address is set correctly. • Make sure the remote control signal transmission is within the range. • Certain fluorescent lights may interfere with signal transmitter. Please consult authorised dealer.

9-1 MALFUNCTION CODE LIST

- Depending on the type of indoor or outdoor unit, the Malfunction code may or may not be displayed

	IDU Error Code
--	No Fault
E1	Indoor Fan Motor Fault
E3	Indoor Evaporator temp. sensor fault
E4	Indoor room air temp. sensor fault
E5	Refrigeration cycle abnormality
E6	Indoor to Outdoor communication fault

10. SERVICE AND MAINTENANCE

⚠ CAUTION

- Always **TURN OFF** your AC system and disconnect its power supply before cleaning or maintenance.

Cleaning Your Indoor Unit

⚠ CAUTION

Only use a soft, dry cloth to wipe the unit clean. If the unit is especially dirty, you can use a cloth soaked in warm water to wipe it clean.

Do not use chemicals or chemically treated cloths to clean the unit.

Do not use water hotter than 40°C (104°F) to clean the front panel. This can cause the panel to deform or become discolored.

Do not expose Air filter to direct sunlight when drying. It can shrink the filter.

Do not use benzene, paint thinner, polishing powder or other solvents to clean the unit. They can cause the plastic surface to crack or deform.

Do not use water to clean the inside of the indoor unit. This can destroy insulation and cause electrical shock.

Any maintenance and cleaning of outdoor unit should be performed by an authorized dealer or a licensed service provider.
Any unit repairs should also be performed by an authorized dealer or a licensed service provider.

⚠ WARNING

DO NOT remove or clean the Air filter by yourself, it can be dangerous to your health or cause you injury.

NOTE

- In households with animals, you will have to periodically wipe down the grille to prevent animal hair blocking airflow.
- If the air filter becomes clogged, the performance will decrease and electricity consumption will be on higher side.

Maintenance your AC.

Maintenance – Long Periods of Non-Use

If you plan not to use your air conditioner for an extended period of time, do the following:

Turn off the unit and disconnect the power

Turn on FAN function until unit dries out completely

Remove batteries from remote control

Maintenance – Pre-Season Inspection

After long periods of non-use, or before periods of frequent use, do the following:

Check for refrigerant leaks

Check for leaks

Replace batteries

Make sure nothing is blocking all air inlets and outlets

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Split System Air Conditioner

INSTALLATION MANUAL <FOR OUTDOOR UNIT>

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.

NEW REFRIGERANT (R32) SERIES

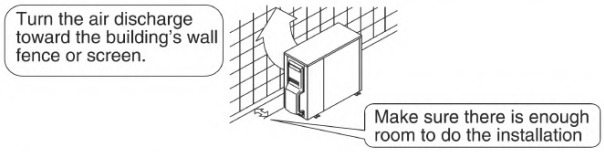
RGFS24AV16 / RGFS36AV16 / RGFS48AY16

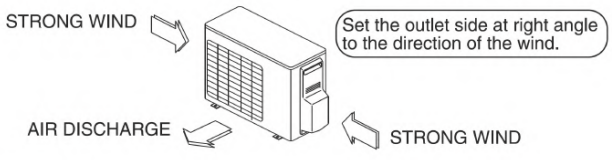
CONTENTS

1. SELECTING INSTALLATION SITE

⚠ 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.

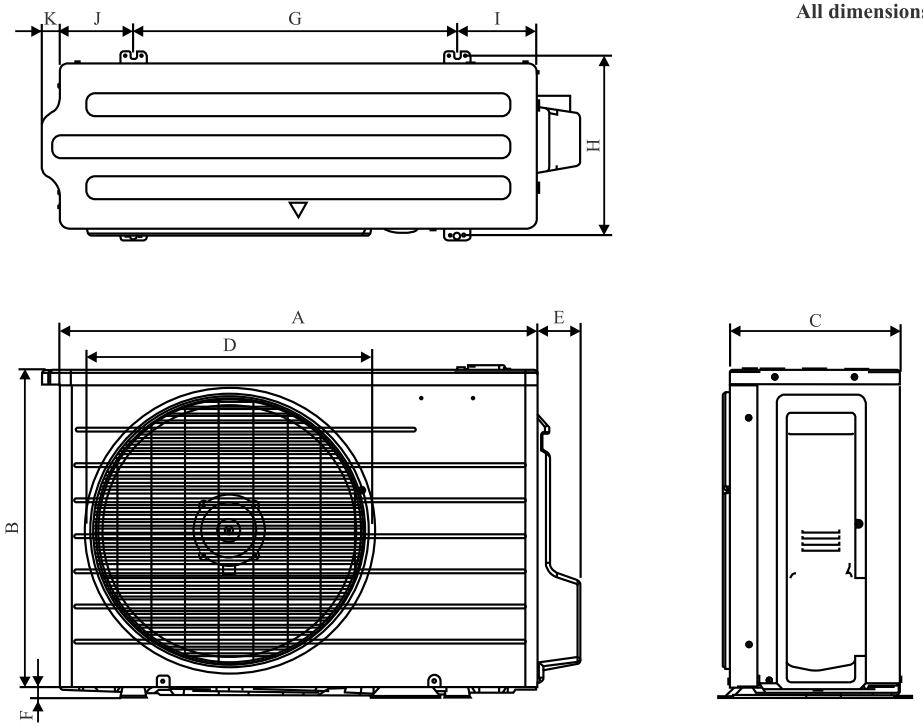
2. OUTDOOR UNIT INSTALLATION

RGFS24AV16 / RGFS36AV16 / RGFS48AY16

Outdoor Unit

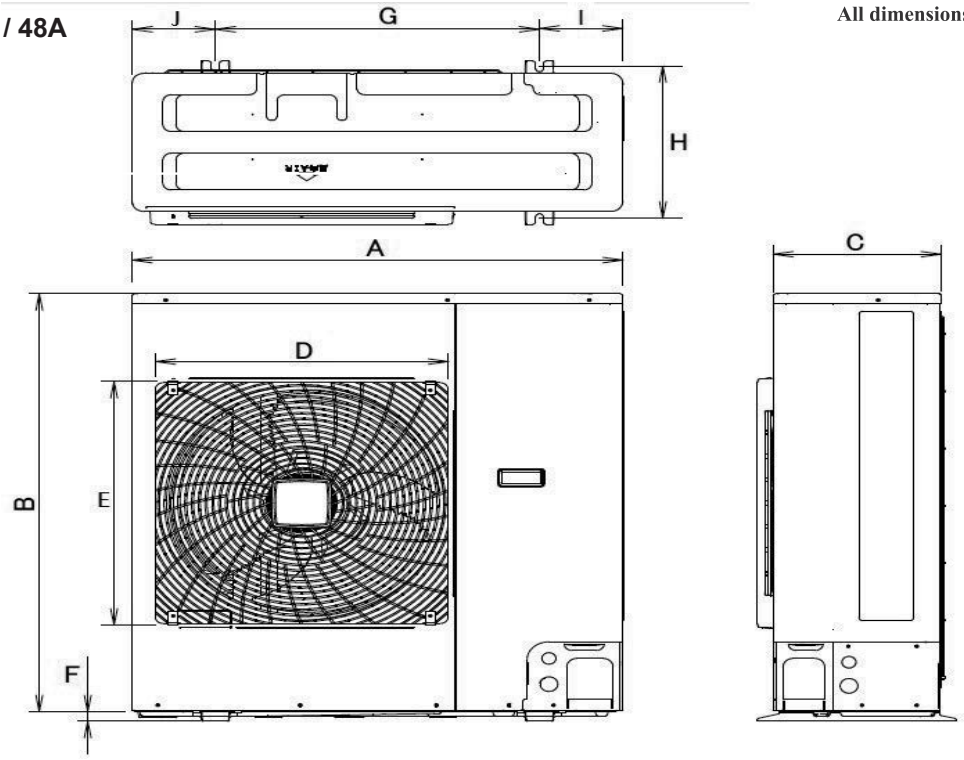
24A

All dimensions are in mm



36A / 48A

All dimensions are in mm

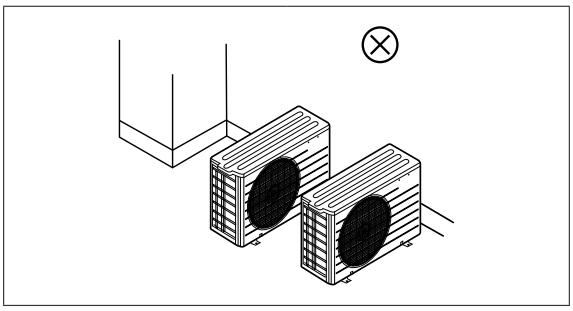


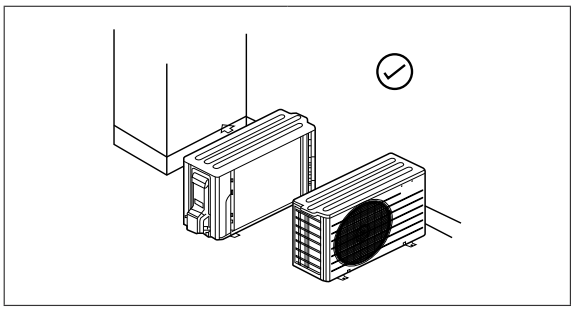
Dimension / Model	A	B	C	D	E	F	G	H	I	J	K
24A	845	575	302	505	77	20	573	326	140	131	30
36A / 48A	940	970	320	560	580	20	620	338	160	160	-

INSTALLATION OF THE OUTDOOR UNIT

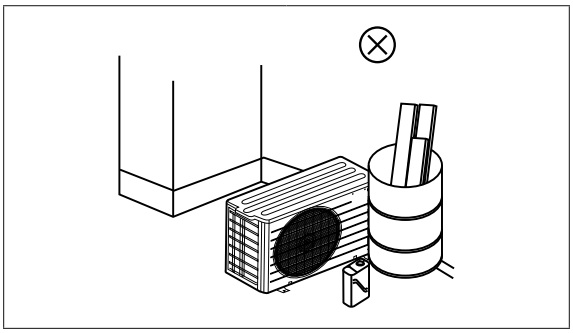
As condensing temperature rises, evaporating temperature rises and cooling capacity drops. In order to achieve maximum cooling capacity, the location selected for outdoor unit should fulfill the following requirements:

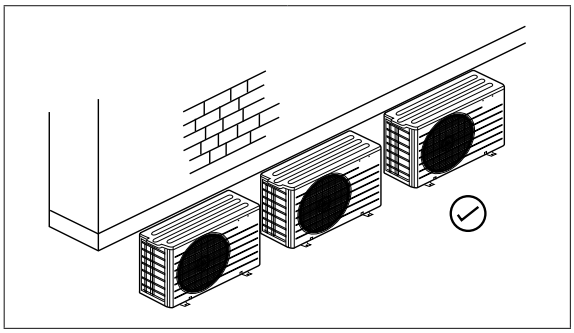
- Install the condensing (outdoor) unit in a way such that the hot air distributed by the outdoor condensing unit cannot be drawn in again (as in the case of short circuit of hot discharge air). Allow sufficient space for maintenance around the unit.



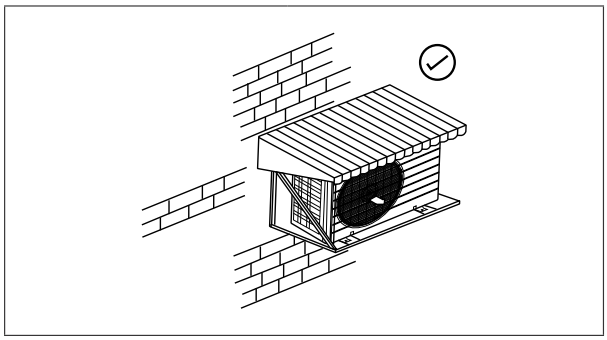


- Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or discharge.
- The location must be well ventilated, so that the unit can draw in and distribute plenty of air thus lowering the condensing temperature.





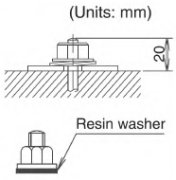
- A place capable of bearing the weight of the outdoor unit and isolating noise and vibration.
- A place protected from the direct sunlight. Otherwise use an awning for protection, if necessary.

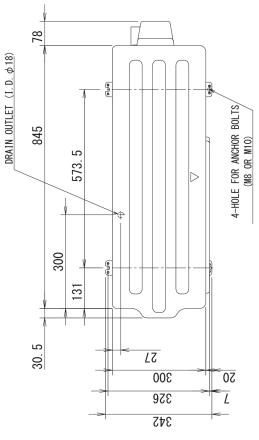


- The location must not be susceptible to dust or oil mist.

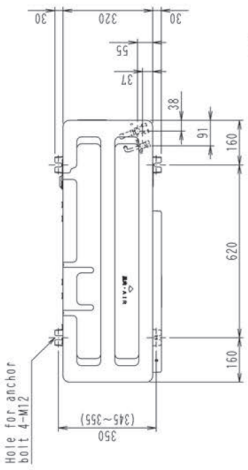
PRECAUTIONS ON INSTALLATION

- 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 M8 or M10, 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.





RGFS24AV16

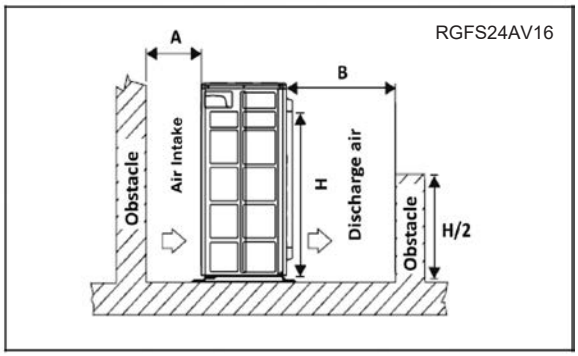


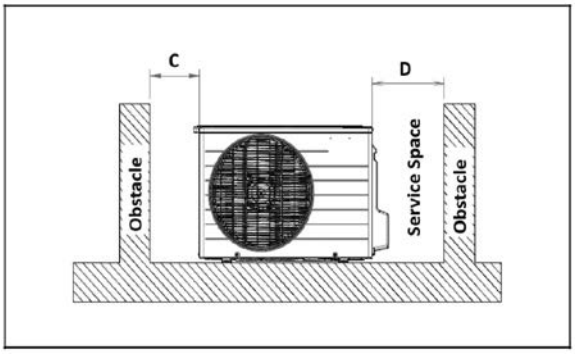
RGFS36AV16
RGFS48AY16

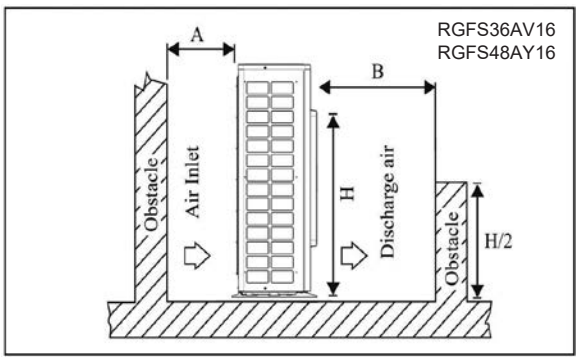
Fig-1

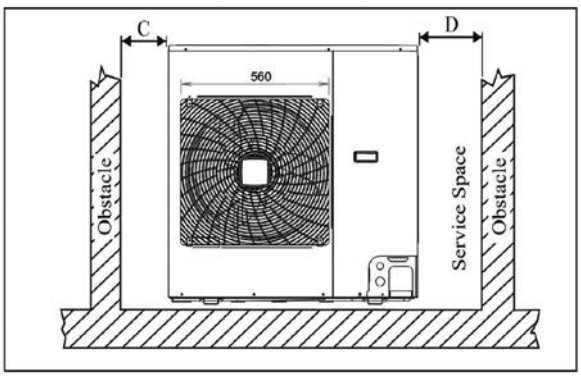
INSTALLATION CLEARANCE

When two or more outdoor units are installed in a location, they must be positioned such that one unit will not be taking the hot discharge air from another to avoid hot air short circuiting.This also applies when two or more units are installed one above the other. Below are the installation clearance guidelines:





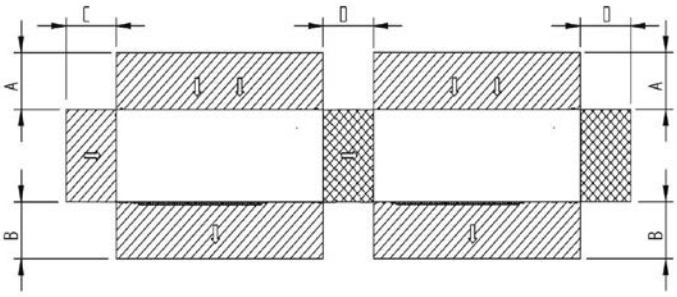


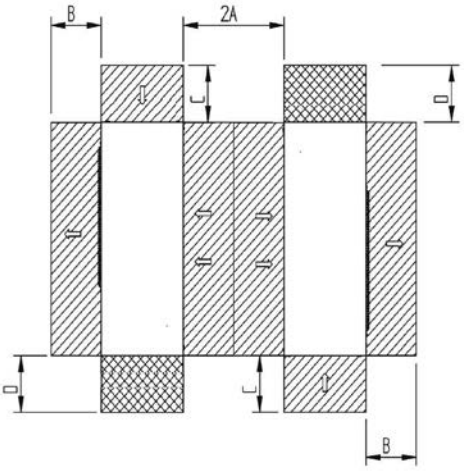


	Minimum Distance (mm)			
Models	A	B	C	D
RGFS24AV16	300	1000	300	500
RGFS36AV16 / RGFS48AY16	500	1000	1200	1000

NOTE: If there is any obstacle higher than half, of the unit's height (H), please allow more space than the figure indicated in the above table.

Horizontal air discharge





LEGEND

SPACE FOR AIR FLOW

SPACE FOR SERVICE

3. REFRIGERANT PIPING WORK

- For the outdoor unit refrigerant piping, refer to the installation manual attached to the outdoor unit.
- Carry out insulation of both gas and liquid refrigerant piping securely. If not insulated, it may cause water leakage. For gas piping, use insulation material of which heat resistant temperature is not less than 120°C. For use under high humidity, strengthen the insulation material for refrigerant piping. If not strengthened, the surface of insulation material may sweat.
- Before installation work, make sure that the refrigerant is R32. (Unless the refrigerant is R32, the normal operation cannot be expected.)

⚠ WARNING

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

⚠ CAUTION

This air conditioner is a dedicated model for new refrigerant R32. Make sure to meet the requirements shown below and carry out installation work.

- **Use dedicated piping cutters and flaring tools for R32 and R410A.**
- **When making a flare connection, coat the flared inner surface only with ether oil or ester oil.**
- **Use only the flare nuts attached to the air conditioner. If other flare nuts are used, it may cause refrigerant leakage.**
- **To prevent contamination or moisture from getting into the piping, take measures such as pinching or taping the pipings.**
  Do not mix substance other than the specified refrigerant such as air into the refrigeration circuit.
  If the refrigerant leaks during the work, ventilate the room.

- The refrigerant is pre-charged in the outdoor unit.
- When connecting the pipings to the air conditioner, make sure to use a spanner and a torque wrench as shown in **Fig. 2** .
- For the dimension of flared part and the tightening torque, refer to the **Table 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.

Design pressure	Cooling
High	4.17
Low	2.21

(Units: MPa)

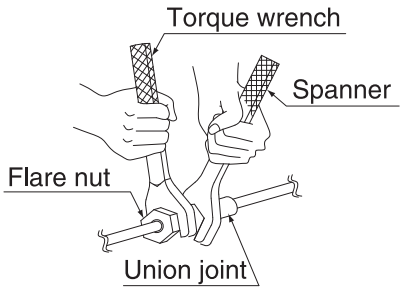


Fig. 2

- When making a flare connection, coat the flared inner surface only with ether oil or ester oil. **(Refer to Fig. 3)**
  Then, turn the flare nut 3 to 4 times with your hand and screw in the nut.

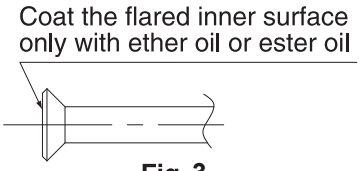
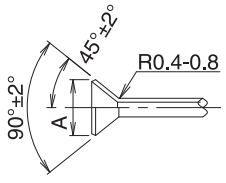


Fig. 3

Table 3

Piping size (mm)	Tightening torque (N·m)	Dimension for processing flare A (mm)	Flare shape
ϕ 6.4	15.7 ± 1.5	8.9 ± 0.2	
ϕ 9.5	36.3 ± 3.6	13.0 ± 0.2	
ϕ 12.7	54.9 ± 5.4	16.4 ± 0.2	
ϕ 15.9	68.6 ± 6.8	19.5 ± 0.2	

⚠ CAUTION

Do not have oil adhere to the screw fixing part of resin parts.
If oil adheres, it may weaken the strength of screwed part.
Do not tighten flare nuts too tight.
If a flare nut cracks, the refrigerant may leak.

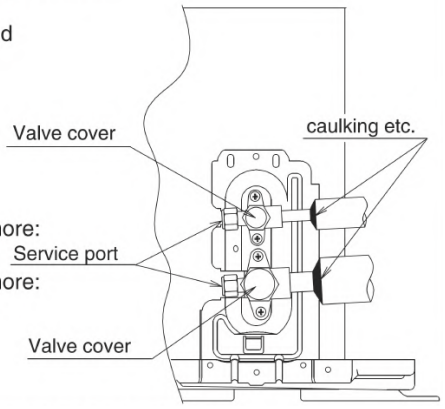
PRECAUTIONS FOR CONNECTING PIPING

- 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 dose not insulate. (Be sure to use insulating material which can resistant.)



REFRIGERANT PIPING

Allowable Pipe Length and Elevation

If the piping is too long, both the capacity and reliability of unit will drop. As the number of bends increase, resistance to flow of refrigerant system increases, thus lowering cooling capacity and as a result the compressor may become defective.

Always choose the shortest path and follow the recommendation as tabulated below.

Model	Indoor	24A	36A	48A
	Outdoor	24A	36A	48A
Max. allowable length, m		20	20	30
Max. Allowable elevation, m		10	10	15
Liquid pipe size, mm/(in)		6.35 (1/4")	9.52 (3/8")	9.52 (3/8")
Gas pipe size, mm/(in)		15.88 (5/8")	15.88 (5/8")	15.88 (5/8")

Equivalent length for various fitting (meter)

Pipe Size	L joint	Trap bend
3/8" (OD9.52mm)	0.18	1.3
1/2" (OD12.7mm)	0.20	1.5
5/8" (OD15.9mm)	0.25	2.0
3/4" (OD19.1mm)	0.35	2.4
7/8" (OD22.2mm)	0.40	3.0
1" (OD25.4mm)	0.45	3.4
1 1/8" (OD28.6mm)	0.50	3.7
1 3/8" (OD34.9mm)	0.60	4.4

Notes:
1. Equivalent piping length is obtained with actual length of gas piping.
2. 90° bend of piping is equivalent to L joint.

Bending must be carefully made so as not to crush the pipe. Use a pipe bender to bend a pipe where possible.

- Selection of copper and heat insulation materials
  When using commercial copper pipes and fittings, observe the following:
  1) Insulation material: Polyethylene foam
     Heat transfer rate: 0.041 to 0.052W/mK (0.035 to 0.045kcal/(mh •°C))
     Refrigerant gas pipe's surface temperature reaches 110°C max.
     Choose heat insulation materials that will withstand this temperature.
  2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

Piping size, mm (in)	Minimum bend radius	Piping thickness	Thermal insulation size	Thermal insulation thickness
6.4 (1/4")	30mm or more	0.8mm (C1220T-O)	I.D. 8-10mm	10mm Min.
9.5 (3/8")	30mm or more		I.D. 12-15mm	
12.7 (1/2")	40mm or more		I.D. 14-16mm	
15.9 (5/8")	50mm or more	1.0mm (C1220T-O)	I.D. 16-20mm	
19.1 (3/4")	50mm or more		I.D. 20-24mm	

ADDITIONAL CHARGE

The refrigerant is pre-charge in the outdoor unit. If the piping length is more than 7.5m then use the additional charge value as indicated in the table.

Additional refrigerant charge [g] per additional 1m length as tabulated (for R32 models)

Indoor	24A	36A	48A
Outdoor	24A	36A	48A
Additional charge [g/m]	20	25	25

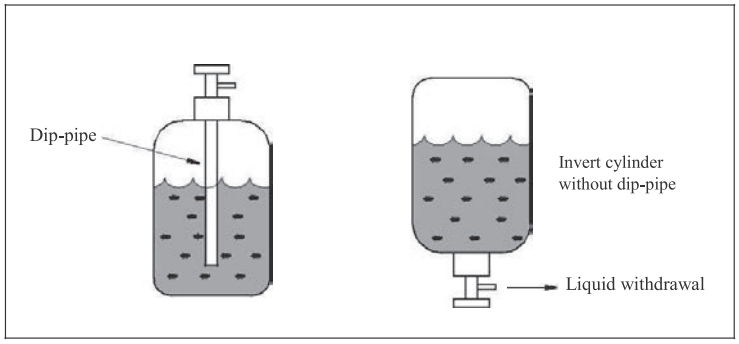
Example:
FVFS24 & RGFS24 with 13m piping length, additional piping length is 5.5m. Thus,
Additional charge = 5.5[m] x 20[g/m]
= 110[g]

***Keep minimum 5m pipe length during installation.**

1. Charging procedures – Single phase compressors

Evacuate the system to -760mmHg. To reduce evacuation time, use short, large diameter hoses and connect to unrestricted service ports on the system. Quality of vacuum cannot be determined by time – a reliable vacuum gauge must be used. (etc. electronic vacuum gauge)

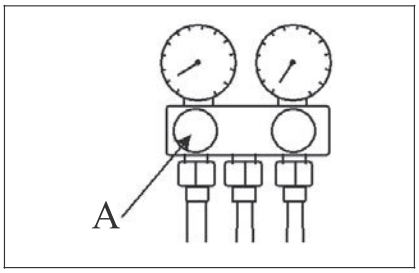
Ensure that the refrigerant cylinder is in the correct orientation (see Figure F), purge the charging hose and charge liquid through the liquid line charging port until refrigerant no longer flows or until the correct charge has been weighed in. If additional charge is required start the system and slowly bleed liquid into the suction side until the system is full.



<u>It recommends charging liquid in a CONTROLLED manner into the suction side until the system is full.</u>

This recommendation does not hold true for reciprocating compressors where liquid charging into the suction side could cause severe damage.

Carefully monitor the suction and discharge pressures – ensure that the suction pressure does not fall below 25 psig (1.7 bar) at any time during the charging process.



There are many ways of charging liquid in a “controlled manner” into the suction side:-

1. Use valve A on the manifold gauge set
2. Use the valve on the refrigerant cylinder
3. Charge through a Shredder valve
4. Use a hose with a Shredder valve depressor
5. Charge into the suction side at some distance from the compressor
6. All of the above

SPECIAL PRECAUTIONS WHEN DEALING WITH R32 UNIT

R32 is a new HFC refrigerant which does not damage the ozone layer. The working pressure of this new refrigerant is 1.7 times higher than conventional refrigerant (R22), thus proper installation / servicing is essential.

- Never use refrigerant other than R32 in an air conditioner which is designed to operate with R32.
- POE-SP32/RM-LP56EG oil is used as lubricant for R32 compressor, which is different from the mineral oil used for R22 compressor. During installation or servicing, extra precaution must be taken not to expose the R32 system too long to moist air. Residual oil in the piping and components can absorb moisture from the air.
- To prevent mischarging, the diameter of the service port on the flare valve is different from that of R22.
- Use tools and materials exclusively for refrigerant R32. Tools exclusively for R32 are manifold valve, charging hose, pressure gauge, gas leak detector, flare tools, torque wrench, vacuum pump and refrigerant cylinder.
- As an R32 air conditioner incurs higher pressure than R22 units, it is essential to choose the copper pipes correctly.
- If the refrigerant gas leakage occurs during installation / servicing, be sure to ventilate fully. If the refrigerant gas comes into contact with fire, a poisonous gas may occur.
- When installing or removing an air conditioner, do not allow air or moisture to remain in the refrigerant cycle.

VACUUMING AND CHARGING

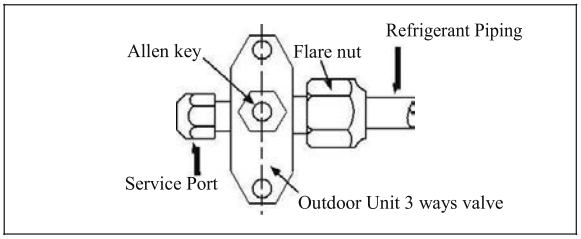
Vacuum The Piping And The Indoor Unit

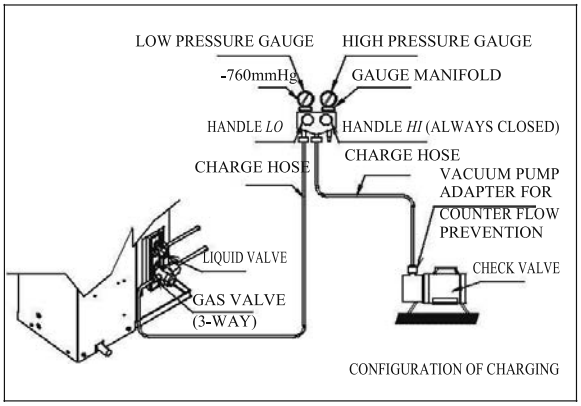
Except for the outdoor unit which is pre-charged with refrigerant, the indoor unit and the refrigerant connection pipes must be vacuumed because the air containing moisture that remains in the refrigerant cycle may cause malfunction of the compressor.

- Remove the caps from the valve and the service port.
- Connect the center of the charging gauge to the vacuum pump.
- Connect the charging gauge to the service port of the 3-way valve.
- Start the vacuum pump. Evacuate for approximately 30 minutes. The evacuation time varies with different vacuum pump capacity. Confirm that the charging gauge needle has moved towards -760mmHg.

Caution

- If the gauge needle does not move to -760mmHg, be sure to check for leakage at flare type connection of the indoor and outdoor unit and repair the leak before proceeding to the next step.
- Close the valve of the changing gauge and stop the vacuum pump.
- In RGFS24A, open the suction valve and liquid valve (in anti-clockwise direction) with 5mm key whereas in RGFS36A/48A open the suction valve and liquid valve (in anti-clockwise direction) with 6mm and 4mm key respectively for hexagon sacked screw.

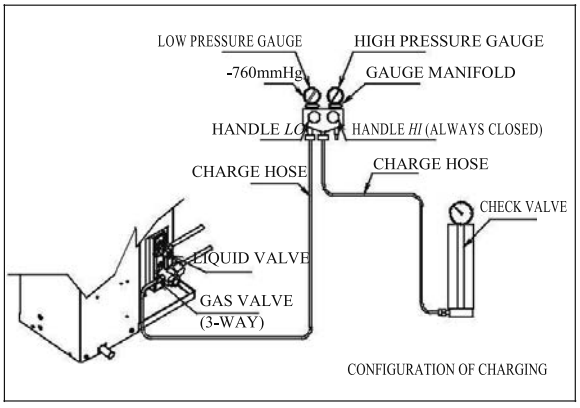




Charge Operation

This operation must be done by using a gas cylinder and a precise weighing machine. The additional charge is topped-up into the outdoor unit using the suction valve via the service port.

- Remove the service port cap.
- Connect the low pressure side of the charging gauge to the suction service port center of the cylinder tank and close the high pressure side of the gauge. Purge the air from the charging hose.
- Start the air conditioner unit.
- Open the gas cylinder and low pressure charging valve.
- When the required refrigerant quantity is pumped into the unit, close the low pressure side and the gas cylinder valve.
- Disconnect the service hose from service port. Put back the service port cap.



3-2. REFRIGERANT RECOVERY METHOD

REFRIGERANT RECOVERY METHOD

[Working procedure]

1.Recovery retaining oil in existing gas 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 has no refrigerant recovery port.

4.Recovery refrigerant in accordance with Fluorocarbons Recovery and Destruction Law
If refrigerant recovery port *2 pressure became 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 * 2 Recovery refrigerant from liquid valve port and stop valve port simultaneous 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)

Fig 1

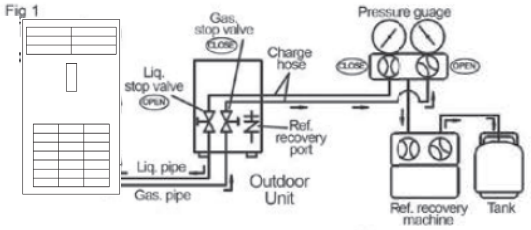


Fig 2

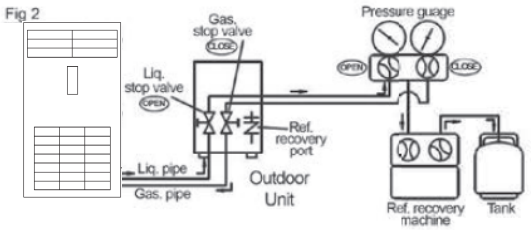
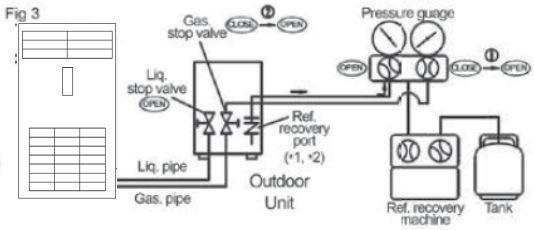


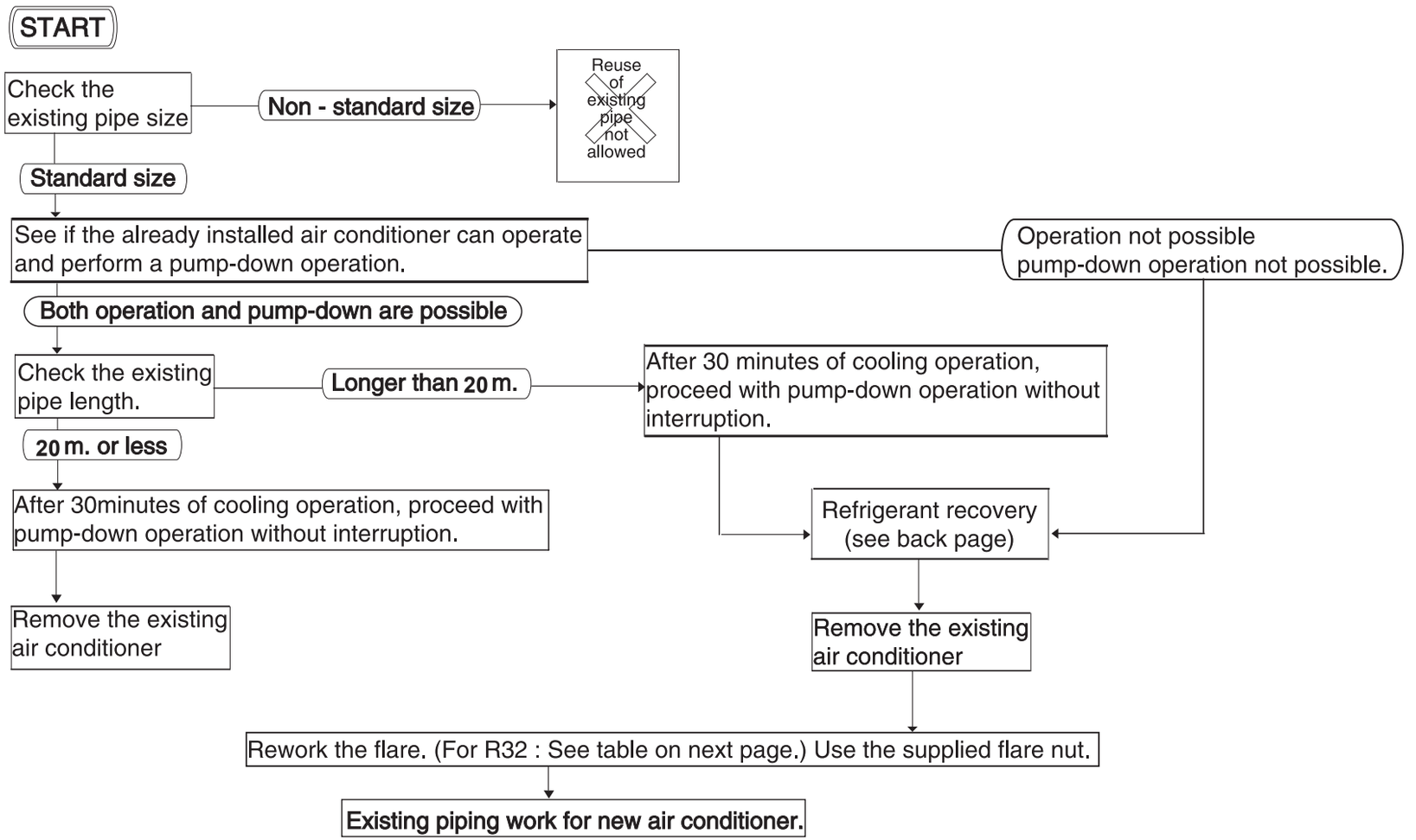
Fig 3



REFRIGERANT PIPE SIZE TABLE

Outdoor unit		Existing pipe size	6.4/9.5/12.7/15.9	Height difference	Design pressure (High pressure)
RGFS24AV16	6.4/15.9	Standard Pipe length	7.5 m	Max. 10 m	4.17 Mpa
		Max. pipe length	20 m		
		Chargeless length	7.5 m		
RGFS36AV16	9.5/15.9	Standard Pipe length	7.5 m	Max. 10 m	4.17 Mpa
		Max. pipe length	20 m		
		Chargeless length	7.5 m		
RGFS48AY16	9.5/15.9	Standard Pipe length	7.5 m	Max. 15 m	4.17 Mpa
		Max. pipe length	30 m		
		Chargeless length	7.5 m		

- Refer to the installation manual for details other than those mentioned above table such as additional refrigerent charge amount.
- clean the existing pipe if it's length exceeds 20m.
- clean the existing pipe if chargeless length is exceed limit of existing pipe pump down refrigerant recovery.



PRECAUTIONS ON REFRIGERANT PIPING

- Clean pipe if existing air conditioner is heat pump type contains leftover oil.
- Clean pipe if used compressor oil in existing air conditioner is other than [SUNISO, MS, HAB, Barrel freeze, JOMO, Ethereal oil, Ester oil]. Clean pipe
- if existing indoor and outdoor unit is disconnected.
- Change new pipe if refrigerant leakage or it should adding refrigerant.
- Change new heat insulation if existing part is peeling off.

(Note)

1. Clean the pipe if refrigerant leakage and unit has not service port on gas-liquid stop valve.
2. If indoor unit equipped with EV valve, open that valve before recovery refrigerant.
3. **Maximum pipe length as per specified on backpage.**

4. ELECTRIC WIRING WORK

- Electric wiring work must be conducted by electrician authorized by power companies. (Only licensed electrician can conduct electric work and earth connections.)
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Be sure to install an earth leakage circuit breaker to the outdoor unit.
  (This installation of an earth leakage circuit breaker is mandatory for the prevention of electric shocks and fire disasters.)
- Make sure that 230V is specified wiring between the indoor and outdoor units and between indoor units.
- Do not turn on the power supply (of the indoor unit) until all the installation work is completed.
- Be sure to ground the air conditioner.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Do not connect the earth wire to gas pipes, plumbing pipes, lightning rods, or telephone earth wires.
  - Gas pipes: might cause explosions or fire if gas leaks.
  - Plumbing pipes: no earth effect if hard vinyl piping is used.
  - Telephone earth wires or lightning rods: might cause abnormally high electric potential in the earth during lighting storms.
- For electric wiring work, refer to also “WIRING DIAGRAM” attached to the control box lid.
- Do not touch the printed circuit board ASSY during the wiring work. Otherwise, it may cause damage.

- **Specifications for field wire**

The cord should be procured locally. Refer to the **Table 5** when preparing one.
Wiring specifications are shown on the condition that the wiring has a voltage drop of 2%.

Table 5

			(Indoor-Outdoor)		
Model	Indoor		24A	36A	48A
	Outdoor		24A	36A	48A
Voltage Range	Indoor		230V/1 Ph/50 Hz/ ⏚		
	Outdoor		230V/1 Ph/50 Hz/ ⏚		400V/3 Ph/50 Hz/ ⏚
Power supply cable size		sq. mm	2.5	4.0	4.0
Number of conductors			3	3	5
Interconnection cable size		sq. mm	1.5	1.5	1.5
Number of conductors			4	4	4
Recommended fuse/circuit breaker		A	20	32	32

NOTE

1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
2. Supply cords shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57)
3. Vinyl cord with sheath or cable (Insulated thickness : 1 mm or more)

- SPECIFICATIONS OF STANDARD WIRING COMPONENTS

Outdoor Unit	Power supply		Wire type of wiring between the units
	Wire type (*)	Size	
RGFS24AV16 RGFS36AV16 RGFS48AY16	H05VV-U3G	Wiring size and length must comply with local codes or [IEC 60335-1 (Table 11)]	H05VV-U4G

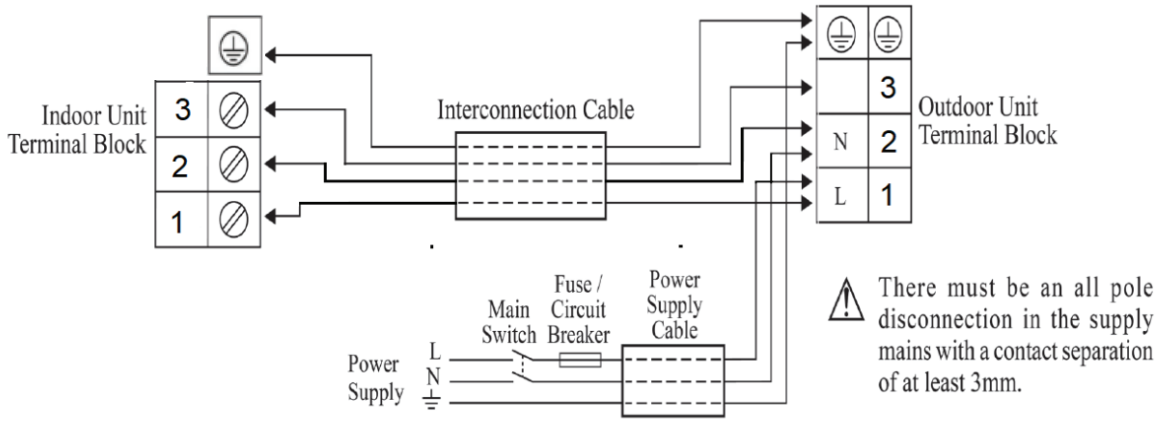
(*) Only in protected piping, use H07RN-F when protected pipes are not used.
(Supply cords shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57))

NOTES

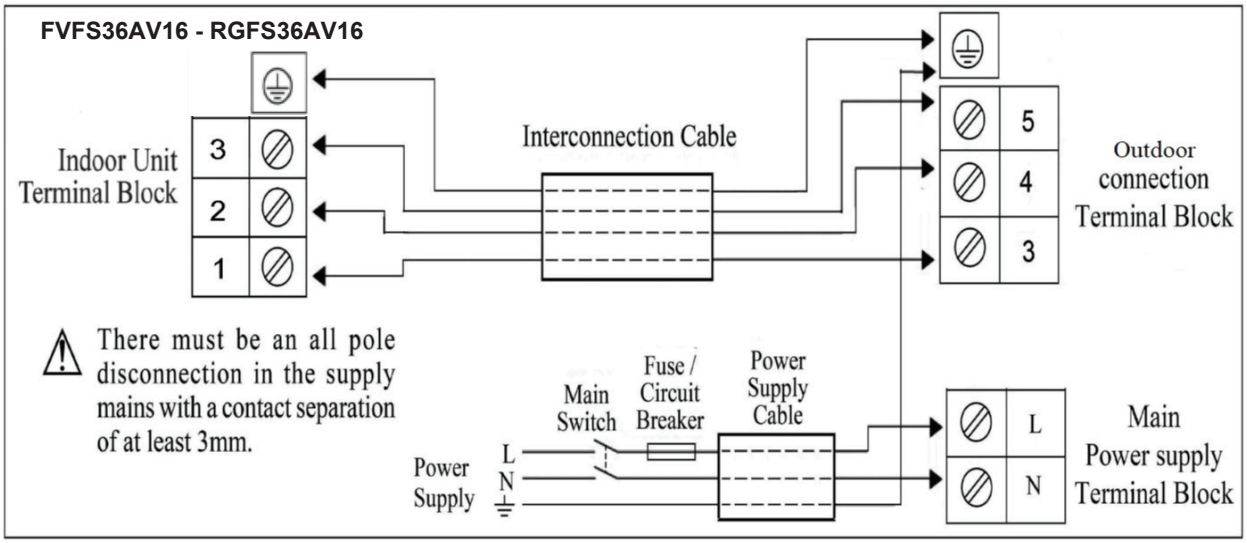
1. Select and install the power supply wiring in accordance with [IEC 60335-1 (Table 11)] or local laws and regulations. The maximum current of the outdoor and indoor units are shown on each name plate.
2. When installing wiring in a location that can easily come in contact with people, be sure to install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

5. WIRING EXAMPLE

FVFS24AV16 - RGFS24AV16



FVFS36AV16 - RGFS36AV16



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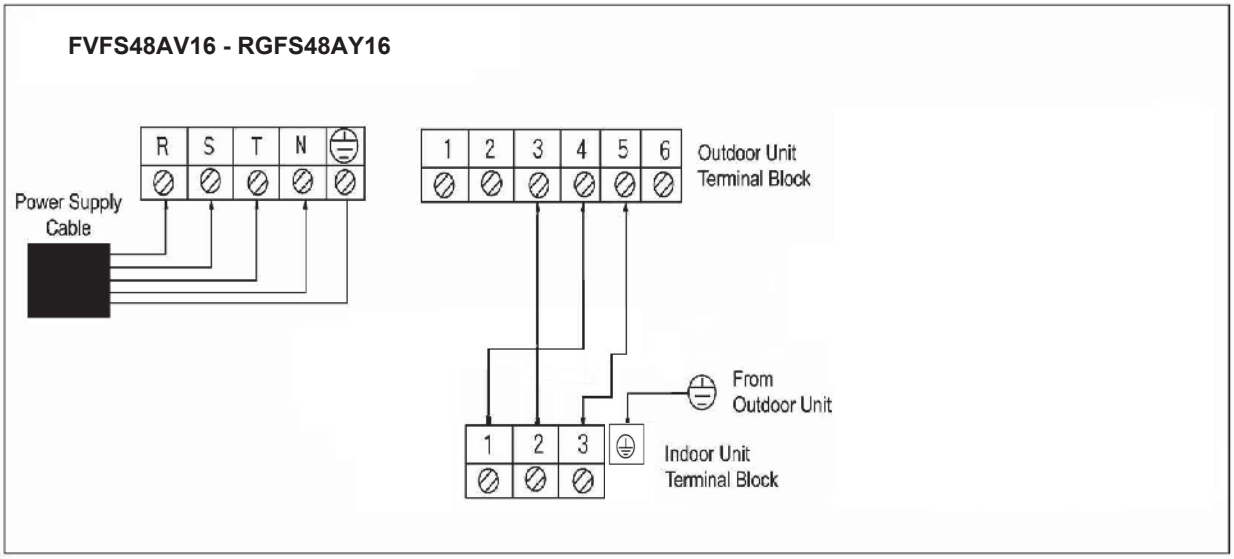
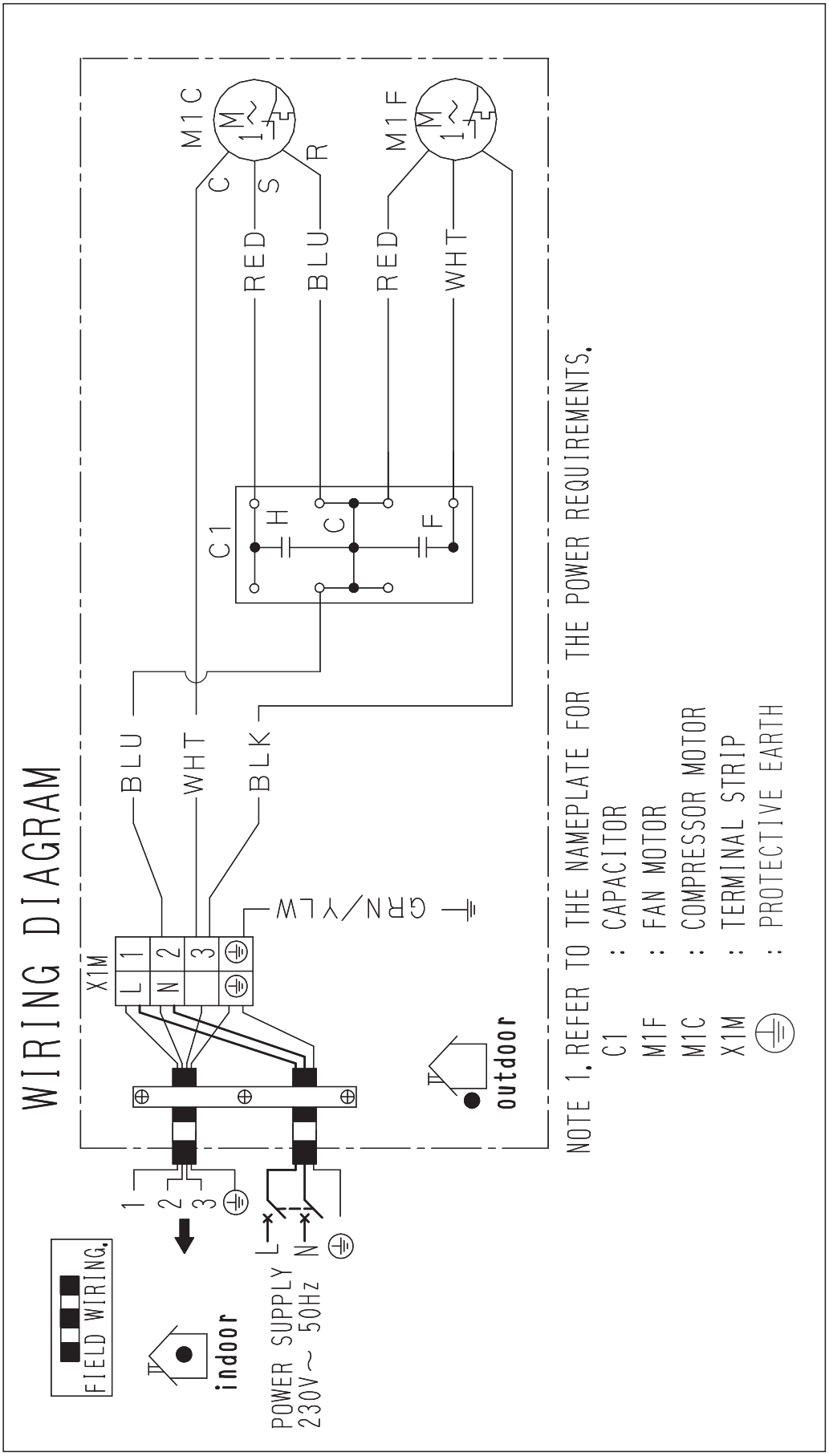
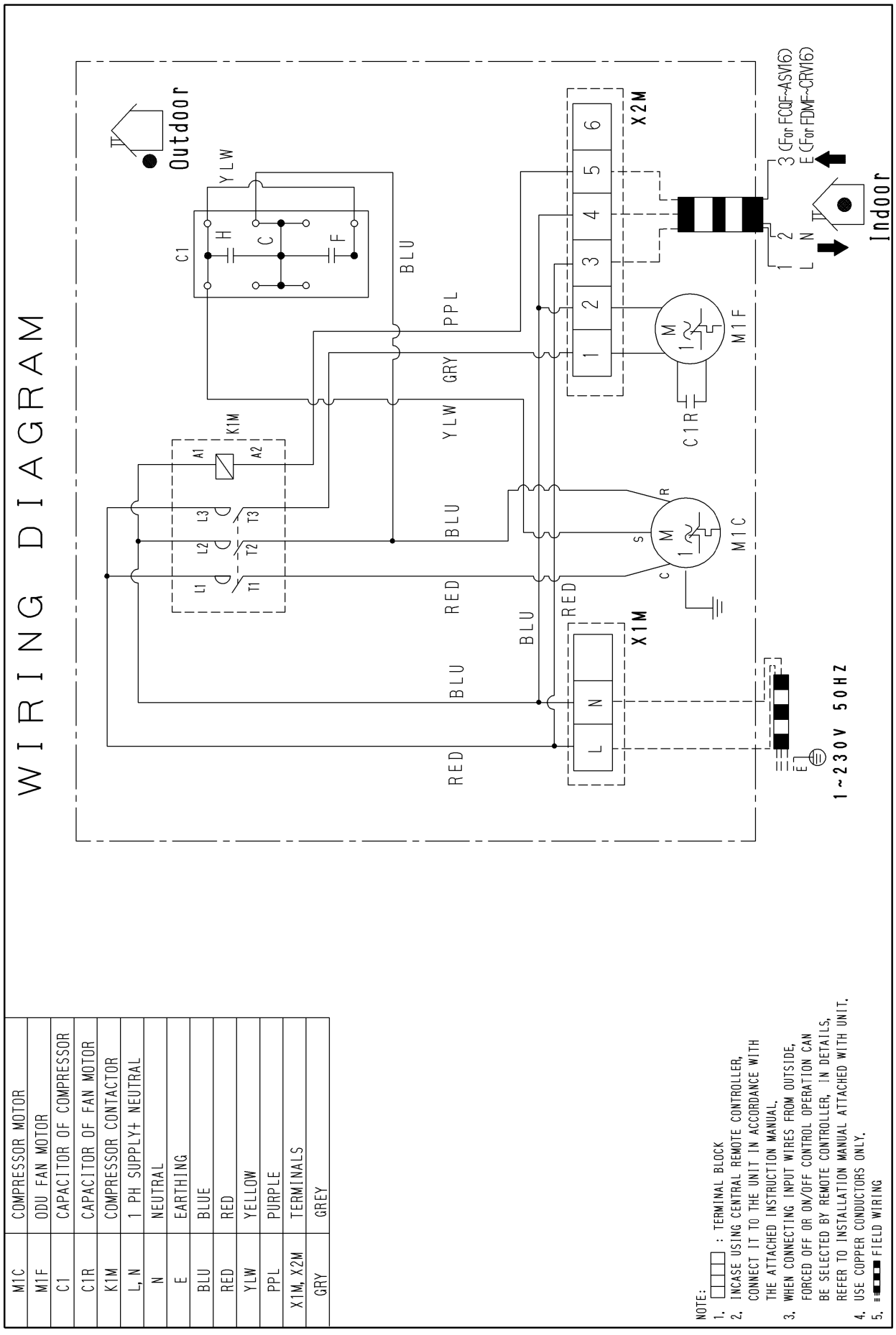


WIRING DIAGRAM
RGFS24AV16



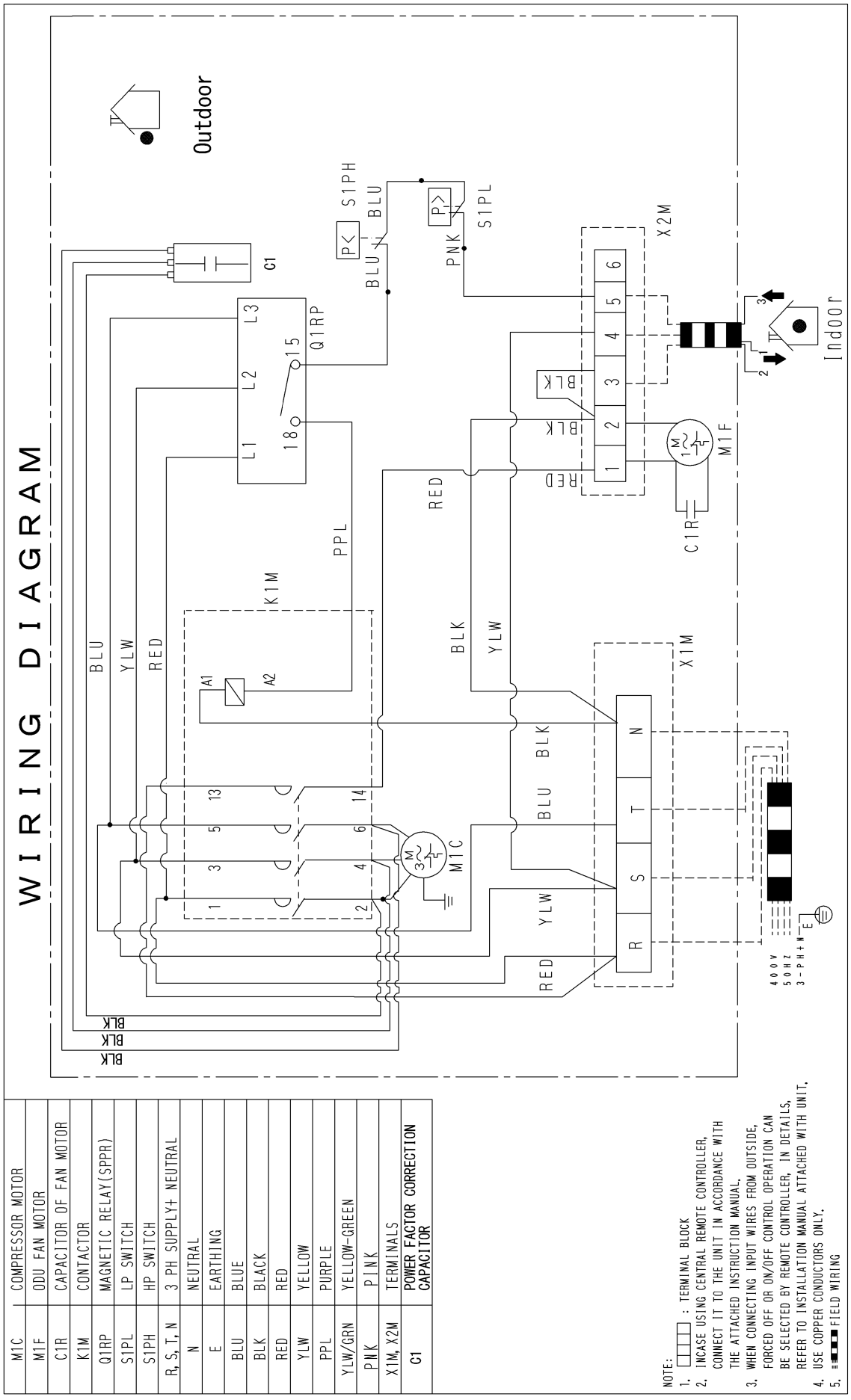
WIRING DIAGRAM
RGFS36AV16



M1C	COMPRESSOR MOTOR
M1F	ODU FAN MOTOR
C1	CAPACITOR OF COMPRESSOR
C1R	CAPACITOR OF FAN MOTOR
K1M	COMPRESSOR CONTACTOR
L, N	1 PH SUPPLY+ NEUTRAL
N	NEUTRAL
E	EARTHING
BLU	BLUE
RED	RED
YLW	YELLOW
PPL	PURPLE
X1M, X2M	TERMINALS
GRY	GREY

NOTE:
1. □□□□ : TERMINAL BLOCK
2. INCASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
3. WHEN CONNECTING INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER, IN DETAILS, REFER TO INSTALLATION MANUAL ATTACHED WITH UNIT.
4. USE COPPER CONDUCTORS ONLY.
5. ▬▬ FIELD WIRING

WIRING DIAGRAM
RGFS48AY16



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DAIKIN

OPERATION MANUAL

SPLIT SYSTEM Air Conditioners

MODEL

FLOOR STANDING (R32 Split type air conditioner)

FVFS24AV16
FVFS36AV16
FVFS48AV16

English

Thank you for purchasing this Daikin air conditioner.
Carefully read this operation manual before using the air conditioner. It will tell you how to use the unit properly and help you if any trouble occurs. This manual explains about the indoor unit only. Use it along with the operation manual for the outdoor unit. After reading the manual, file it away for future reference.

■ DISPOSAL REQUIREMENTS

Disposal requirements

Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.
Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation.
Air conditioners must be treated at a specialized treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.
Batteries must be removed from the remote controller and disposed of separately in accordance with relevant local and national legislation.

CONTENTS

1. SAFETY PRECAUTIONS

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

This appliance is filled with R32.

To gain full advantage of the air conditioner's functions and to avoid malfunction due to mishandling, we recommend that you read this instruction manual carefully before use.
This air conditioner is classified under "appliances not accessible to the general public".

- **Read the precautions thoroughly to avoid misuse of the equipment.**
- **The precautions described herein are classified as WARNING and CAUTION. They both contain important information regarding safety. Be sure to observe all precautions without fail.**
- **There are two kinds of safety precaution and tips listed in the following.**

⚠ **WARNING**.....Failure to follow these instructions properly may result in personal injury or loss of life.

⚠ **CAUTION**.....Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

- **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

- **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.**
- **Be aware that prolonged, direct exposure to cool air from the air conditioner, or to air that is too cool can be harmful to your physical condition and health.**
- **When the air conditioner is malfunctioning (giving off a burning odour, etc.) turn off power to the unit and contact your local dealer.**
  Continued operation under such circumstances may result in a failure, electric shocks or fire hazards.
- **Consult your local dealer about installation work.**
  Doing the work yourself may result in water leakage, electric shocks or fire hazards.
- **Consult your local dealer regarding modification, repair and maintenance of the air conditioner.**
  Improper workmanship may result in water leakage, electric shocks or fire hazards.
- **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 fire in case of refrigerant leakage.**
  If the air conditioner is not operating correctly, i.e. not generating cool air, refrigerant leakage could be the cause.
  Consult your dealer for assistance.
  The refrigerant within the air conditioner is safe and normally does not leak.
  However, in the event of a leakage, contact with a naked burner, heater or cooker may result in generation of noxious gas.
  Do not longer use the air conditioner until a qualified service person confirms that the leakage has been repaired.
- **Consult your local dealer regarding what to do in case of refrigerant leakage.**
  When the air conditioner is to be 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 leaks, electric shock or fire.
- **Consult your local dealer regarding relocation and reinstallation of the air conditioner.**
  Improper installation work may result in leakage, electric shocks or fire hazards.
- **Be sure to use fuses with the correct ampere reading.**
  Do not use improper fuses, copper or other wires as a substitute, as this may result in electric shock, fire, injury or damage to the unit.
- **Be sure to earth the unit.**
  Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks or 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 fire.
- **Consult the 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 a malfunction, electric shock, or 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 product in the atmosphere contaminated with oil vapor, such as cooking oil or machine oil vapor.**
  Oil vapor may cause crack damage, electric shocks, or fire.
- **Do not use the product in places with excessive oily smoke, such as cooking rooms, or in places with flammable gas, corrosive gas, or metal dust.**
  Using the product in such places may cause fire or product failure.

- **Do not place water containers (flower vases, etc.) on the unit, as this may result in electric shocks or fire.**
- **Do not operate with the control panel lid open.**
  If water gets inside the panel, it may result in equipment failure or electric shock.
- **Do not use flammable materials (e.g., hairspray or insecticide) near the product.**
- **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.
- **Be sure to use a dedicated power supply for the air conditioner.**
  The use of any other power supply may cause heat generation, fire, or product failures
- **Consult your 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 fan guard.**
  The guard protects against the unit's high speed fan, which may cause injury.
- **Do not place objects that are susceptible to moisture directly beneath the indoor or outdoor units.**
  Under certain conditions, condensation on the main unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping, resulting in fouling or failure of the object concerned.
- **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 unit as this may result in fire.**
- **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.
- **To avoid electric shocks, do not operate with wet hands.**
- **Do not place appliances that produce naked flames in places exposed to the air flow from the unit as this may impair combustion of the burner.**
- **Do not place heaters directly below the 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.
- **Do not block air inlets or outlets.**
  Impaired air flow may result in insufficient performance or trouble.
- **Be sure that children, plants or animals are not exposed directly to airflow from the unit, as adverse effects may ensue.**
- **Do not wash the air conditioner with water, as this may result in electric shocks or fire.**
- **Arrange the drain hose to ensure smooth drainage.**
  Imperfect drainage may cause wetting of the building, furniture etc
- **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 flammable sprays near the unit as this can cause explosions.**
- **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 fire hazards.
- **Do not put flammable containers, such as spray cans, within 1 m from the blow-off mouth.**
  The containers may explode because the warm air output of the indoor or outdoor unit will affect them.
- **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.
- **Do not let children play on or around the outdoor unit.**
  If they touch the unit carelessly, injury may be caused.
- **To avoid injury, do not touch the air inlet or aluminium fins of the unit.**
- **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 fire when making contact with electrical parts.
- **Turn off the main power switch when the air conditioner 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 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.
- **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.
- **This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- **Children should be supervised to ensure that they do not play with the appliance.**
- **Take care of scaffolding and exercise caution when working high above ground level.**

2. OPERATION INSTRUCTIONS

Control Panel

Control Panel Operation

The control panel on the indoor unit can be used to operate the unit in case when the remote control has been misplaced or is out of batteries.

LED INDICATION PANEL

COOL	Cooling operation Indication
TIMER	ON/OFF timer operation Indication
POWER	ON/OFF Power operation Indication
24°C 7 Segment Module	7 Segment module operation Indication

BUTTON OPERATION PANEL

Mode	Operation Mode entering button
Swing	Left-Right Air Swing operation button
Temp	Down temperature operation button
Temp	Up temperature operation button
Fan	Fan Speed operation button
Power	ON/OFF Power operation button

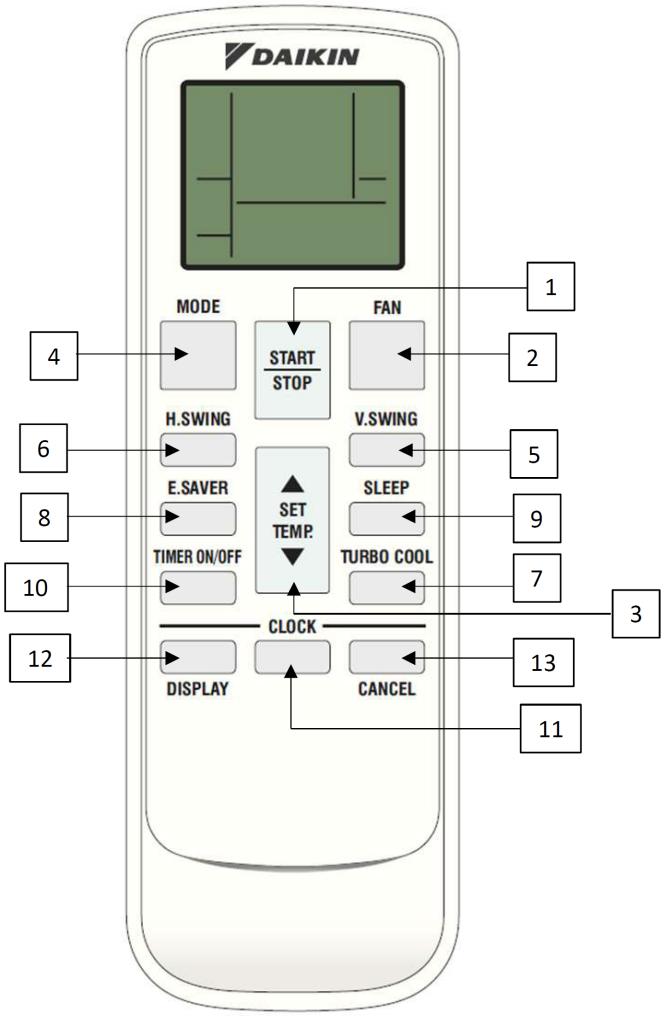
NOTE: If the unit is turned off by remote control under COOL mode with the set temperature less than 24°C, the set temperature will be automatically set 24°C when you turn on the unit again.

	Operation buttons	Description
1	**Mode**	Press this button to select the appropriate operating mode. Each time the button is pressed, the operation mode is shifted in the direction of the arrow: COOL → DRY → FAN → AUTO
2	**Swing**	This button operates ON/OFF swing operation from left to right direction.

	Operation buttons	Description
3	**Temp**	Temperature adjust:- Press the Adjust Up or Down button to adjust the temperature in a range o 16°C to 30°C.
4	**Fan**	This key is used to select desired fan speed. Each time you press the button, fan speed will change in following sequence → LOW → MED → HIGH → AUTO →
5	**Power**	Operation starts when this button is pressed and stops when you press the button again.

3. REMOTE CONTROL OPERATION

Use remote control within 7 m from the remote control receiver of the indoor unit.



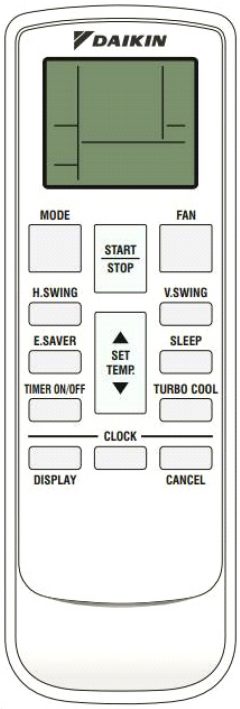
1. START / STOP BUTTON
   This button will be used to turn ON/ OFF the machine.
2. FAN BUTTON
   Used to select fan speed in sequence low, medium, high & auto.
3. SET TEMPERATURE SETTING BUTTONS
   Used to set temperature and timer.
4. MODE BUTTON
   Press this button to select the operation mode.
5. V.SWING
   Press this button to adjust air flow in up and down direction.
6. H.SWING
   Press this button to adjust air flow in left and right direction.
7. TURBO COOL
   Turbo button is used to quickly cool the room.
8. E. SAVER
   Used in cooling mode to set temperature range from 24°C - 30°C keeping the fan speed medium.
9. SLEEP
   Used to set or cancel Sleep Mode operation.
10. TIMER ON/OFF button
    Used to set or cancel the timer operation.
11. CLOCK BUTTON
    Used to set the current time.
12. DISPLAY BUTTON
    This key is used to activate/deactivate light feature. Long press display key to check room temperature on IDU display.
13. CANCEL BUTTON
    Used to cancel the set time.

4. GENERAL FEATURE

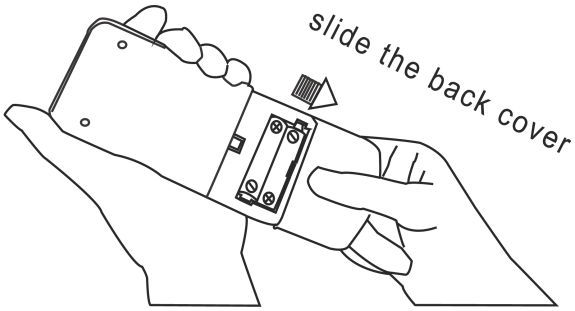
General Feature & Replacement of Batteries

The remote controller has following features.

- Display: Dual digit display with LCD indicators.
- Preset temperature setting from 16°C to 30°C.
- Different Fan Speeds: Low, Medium, High, Auto & Turbo
- Timer can be set in hour/minute to turn ON/OFF the machine.



- When the signal from the remote controller becomes weak and the indoor unit cannot receive it properly; or the indications on the display screen becomes blurred, please slide the back cover and replace with the new batteries.
- The positive and negative poles must match the installation portions.
- New batteries of the same type have to be used for replacement.
- If the remote controller is not to be used for long time, take out the batteries so as to prevent the leakage of the electrolyte from damaging the controller.
- If the remote controller is at abnormal state, you can take out the batteries to clear off the display.



REMOTE CONTROLLER

NOTE FOR 24°C SETTING

During Cooling mode when user switch OFF & switch ON the unit from remote handset, 24°C set temperature must appear on remote & corresponding IR must transmit at handset turn ON condition.
Case 1. If user set temperature is between 16°C~23°C during switching OFF the unit by handset then during switching ON the unit from handset, set temperature must be 24°C & respective IR transmit.
Case 2. If user set temperature is equal or above 24°C during switching OFF the unit by handset then during switching ON the unit from handset, set temperature remains unchanged.

5. OPERATION CHARACTERISTICS

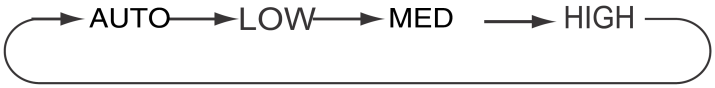
Introduction for Buttons on Remote Controller

1. START/STOP BUTTON

This button is nominated by **"ON/OFF"** on remote control unit. It is used to turn ON/OFF the machine and temperature 24°C is displayed on remote LCD after inserted AAA batteries.

2. FAN BUTTON

Pressing this button can set fan speed circularly as: auto (AUTO), low (LOW), Middle (MED), High (HIGH). Applicable in Cool & Auto mode.



Note:
- Fan speed under dry mode is low.
- Fan speed under fan mode is low, medium & high.

3. SET TEMPERATURE SETTING BUTTONS

- After each pressing of "∧"or"∨" button, it can increase or decrease set temperature by 1°C on remote controller.
  Temperature indicator on indoor unit will also change accordingly.
- Under TIMER ON, TIMER OFF or Clock setting, you can press "∧"or"∨" button to adjust time. (Refer to TIMER button on Page No. 12)

4. OPERATING MODES

- Auto Mode
- Cool Mode
- Dry Mode
- Fan Mode

AUTO MODE :

1. Temperature can't be adjusted in Auto mode.
2. Fan speed can be varied by pressing fan speed key in the sequence of LOW > MID > HIGH > AUTO (in cyclic way).
3. Sleep function can't set by pressing sleep key.
4. Turbo cool function can't be set.
5. Display function can be Enable / Disable by pressing Display key.
6. Swing function can be Enable / Disable by pressing Swing key. (V.Swing / H. Swing)
7. Clock can be set.
8. Timer off can be Enable / Disable by pressing Timer off key.
9. Timer ON will not enable. Timer ON will enable in case of remote control OFF condition.
10. E. SAVER can't set by pressing E. SAVER KEY.
11. CANCEL Key will work.

COOL MODE :

1. Temperature will be 24°C and it can be varied by pressing temperature up & down key.
2. Fan speed can be varied by pressing fan speed key in the sequence of LOW > MID > HIGH > AUTO (in cyclic way).
3. Sleep function can be Enable / Disable by pressing sleep key.
4. Turbo function can be Enable / Disable by pressing Turbo key.
5. Display function can be Enable / Disable by pressing Display key.
6. Swing can be Enable / Disable by pressing Swing key. (V.Swing / H. Swing)
7. Clock can be set.
8. Timer off can be Enable / Disable by pressing Timer off key.
9. Timer ON will not enable. Timer ON will enable in case of remote control OFF condition.
10. E. SAVER Can Be Enable / Disable by pressing E. SAVER KEY and FAN will be set at medium speed.
11. CANCEL Key will work.

DRY MODE :

1. Temperature can't be changed in Dry mode.
2. Fan speed will be fixed LOW, and it can't be varied by pressing FAN KEY.
3. Sleep mode can't be set by pressing sleep key.
4. Turbo cool mode can't be set.
5. Display can be Enable / Disable by pressing Display key.
6. Swing can be Enable / Disable by pressing Swing key. (V.Swing / H. Swing)
7. Clock can be set.
8. Timer off can be Enable / Disable by pressing Timer off key.
9. Timer ON will not enable. Timer ON will enable in case of remote control OFF condition.
10. E. SAVER can't set by pressing E. SAVER KEY.
11. CANCEL Key will work.

FAN MODE :

1. Temperature will not show on display and can't be varied.
2. Fan speed can be varied by pressing fan speed key in the sequence of LOW > MID > HIGH (in cyclic way).
3. Sleep function can't be set by pressing sleep key.
4. Turbo cool function can't be set.
5. Display can be Enable / Disable by pressing Display key.
6. Swing can be Enable / Disable by pressing Swing key. (V.Swing / H. Swing)
7. Clock can be set.
8. Timer off can be Enable / Disable by pressing Timer off key.
9. Timer ON will not enable. Timer ON will enable in case of remote control OFF condition.
10. E. SAVER can't set by pressing E. SAVER KEY.
11. CANCEL Key will work.

5. VERTICAL SWING BUTTON

Press this button to adjust air flow in up and down direction.

6. HORIZONTAL SWING BUTTON

- Press this button to adjust air flow in left and right direction.

7. TURBO COOL BUTTON

Turbo Function can be Enable/Disable by pressing Turbo key. In Turbo Mode Fan will run on Turbo speed and Fan speed can't be changed.

Note:- Turbo operate only in cool mode.

8. E. SAVER BUTTON

- This button is nominated by E.SAVER on remote control unit. Energy consumption is reduced" when Eco mode function is set to air-conditioner (indoor unit) to reduce the power consumption and prevent overloading. It only operates in cool mode.
- On LCD display of remote-control unit along with 24°-30° temperature, MED fan speed will run
- Press again E.SAVER button to stop the energy saver function. On LCD of remote-control unit, recall the previous setting of remote control.

9. SLEEP BUTTON

This button is nominated by SLEEP on remote control unit.

NOTE :

• Sleep will be active when we press sleep key in cool mode from remote. In other modes, sleep can't be enabled.

10. TIMER ON/OFF BUTTON

- This button is nominated by TIMER OFF on remote control unit. "Stop after a certain time" when Timer OFF function is set to air-conditioner (indoor unit). Timer OFF can be set in interval of 10 minutes and it can be set in 24 hours format (AM / PM) by the pressing Temp up & down key.

  If pressed Timer Off button, IR transmit after 2 second to set the Timer off and beep sound will come. It operated only in remote on condition.
  When holding "∧"or"∨ " button, 2s later, the time will change quickly until it reach to your required time.

  Beep Sound will come and "OFF TIME" won't flash again.

  Note : To Cancel the "Timer Off" Press Cancel key

- This button is nominated by TIMER ON on remote control unit. "Start after a certain time" when Timer ON function is set to air-conditioner (indoor unit). Timer ON can be set in interval of 10 minutes and it can be set in 24 hours format (AM / PM) by the pressing Temp up & down key. If pressed Timer ON button, IR transmit after 2 second to set the Timer ON and beep sound will come. It will operate only in remote off condition

When holding " ∧ "or" ∨ " button, 2s later, the time will change quickly until to reach to your required time.

Beep Sound will come and "ON TIME" won't flash again.

Note : To Cancel the "Timer On" Press Cancel key.

11. CLOCK BUTTON

- This button is nominated by CLOCK on remote control unit.
  It shows the real time clock on remote display, and it will be set by pressing set temp up or down key.

12. DISPLAY BUTTON

Press this button to turn off all the LED's of indoor unit's display. Press this button again to turn on the LED of indoor unit's display. Long press display key to check room temperature on IDU display.

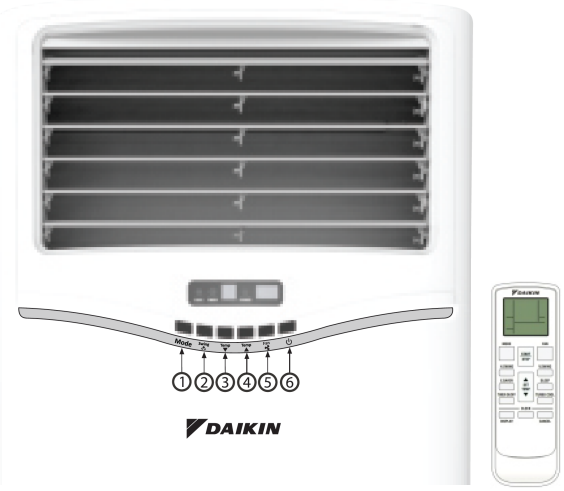
13. CANCEL BUTTON

It is used to cancel the on / off timer function.

6. WIND DIRECTION ADJUSTMENT

❖ How to adjust the Left and Right wind direction

* To adjust the left and right wind directions, use the corresponding keys on the remote control. Do not pull the left and right Vertical louvers by hand, otherwise damage will be caused.
* To select automatic wind direction, press the wind direction button on the remote control, and the left and right Vertical louvers will automatically swing back and forth. If you want the left and right Vertical louvers to be fixed so that the blow air can be adjusted to the position you want, you can press the wind direction button on the remote control again, and the Vertical louvers will be fixed. Press the wind direction key again to automatically adjust the left and right vertical louvers, and so on.



7. 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	
	TEMPERATURE		HUMIDITY		
RGFS	DB	21 to 35	80% or below	DB	21 to 48
	WB	14 to 24			

DB: Dry bulb temperature (°C)
WB: Wet bulb temperature (°C)
The setting temperature range of the remote controller is 16°C to 30°C.

8. TROUBLESHOOTING

The following symptoms do not indicate malfunction.

Symptom	Cause
Compressor operation is delayed a few minutes after restarting.	• The delay is a protection to the unit's compressor.
Operation (outdoor) does not stop immediately after pressed the OFF/ON button.	• Discharging heat is in process. Operation will stops automatically after approximately 30 seconds.
Operation starts after power resumes.	• Auto restart is in function and operates under previous setting.
The room has a peculiar odour.	• This may be due to damp smell emitted by the wall, carpet, furniture or clothing.
Cracking sound during operation.	• Changes of temperature cause the expansion/ contraction of the unit.
Water flowingsound during operation.	• Refrigerant flow inside the unit.
Mist emerges from indoor unit.	• Condensation effect due to cooling process.
Outdoor unit emits water/steam.	• Condensation or evaporation occurs on pipes.
Unit switch to FAN operation and air become humid.	• This happens when the room temperature reaches the set temperature, operation switches to FAN mode and the humidity increase.
During dry mode, cold air blow out.	• The unit is running cooling operation with low fan speed to dehumidify the room.
Discoloration of some plastic parts.	• Discoloration is subject to material types used in plastic parts, accelerated when exposed to heat, sun light, UV light or environmental factor.

Check the following before calling for servicing.

Symptom	Check
Operation in COOL mode is not working efficiently.	• Set the temperature correctly. • Close all doors and windows. • Clean or replace the filters. • Clear any obstruction at the air inlet and air outlet vents.
Noisy during operation.	• Check if the unit has been installed at an incline. • Close the intake grill properly.
Remote control does not work. (Wireless remote control display is dim or transmission signal is weak.)	• Insert the batteries correctly. • Replace weak batteries.
The unit does not work.	• Check if the circuit breaker is tripped. • Check if timers have been set.
The unit does not receive the signal from the remote control.	• Make sure the receiver is not obstructed. • Make sure the address is set correctly. • Make sure the remote control signal transmission is within the range. • Certain fluorescent lights may interfere with signal transmitter. Please consult authorised dealer.

9. MAINTENANCE (FOR SERVICE PERSONNEL)

⚠ CAUTION

- Always **TURN OFF** your AC system and disconnect its power supply before cleaning or maintenance.

Cleaning Your Indoor Unit

⚠ CAUTION

Only use a soft, dry cloth to wipe the unit clean. If the unit is especially dirty, you can use a cloth soaked in warm water to wipe it clean.

Do not use chemicals or chemically treated cloths to clean the unit.

Do not use water hotter than 40°C (104°F) to clean the front panel. This can cause the panel to deform or become discolored.

Do not expose Air filter to direct sunlight when drying. It can shrink the filter.

Do not use benzene, paint thinner, polishing powder or other solvents to clean the unit. They can cause the plastic surface to crack or deform.

Do not use water to clean the inside of the indoor unit. This can destroy insulation and cause electrical shock.

Any maintenance and cleaning of outdoor unit should be performed by an authorized dealer or a licensed service provider.
Any unit repairs should also be performed by an authorized dealer or a licensed service provider.

⚠ WARNING

DO NOT remove or clean the Air filter by yourself, it can be dangerous to your health or cause you injury.

NOTE

- In households with animals, you will have to periodically wipe down the grille to prevent animal hair blocking airflow.
- If the air filter becomes clogged, the performance will decrease and electricity consumption will be on higher side.

Maintenance your AC.

Maintenance – Long Periods of Non-Use

If you plan not to use your air conditioner for an extended period of time, do the following:

Turn off the unit and disconnect the power

Turn on FAN function until unit dries out completely

Remove batteries from remote control

Maintenance – Pre-Season Inspection

After long periods of non-use, or before periods of frequent use, do the following:

Check for refrigerant leaks

Check for leaks

Replace batteries

Make sure nothing is blocking all air inlets and outlets

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