Required tools for Installation Works

| Ι_ | rioquirou toolo loi motamation tromo | | | | |
|-----|--|---------------------|--------------------|----------------------|--|
| 1 | Philips screw driver | 7 Reamer | 13 Multimeter | 65 N•m (6.6 kgf.m) | |
| 2 | Level gauge | 8 Knife | 14 Torque wrench | 100 N•m (10.2 kgf.m) | |
| 3 | Electric drill, hole core drill (ø70 mm) | 9 Gas leak detector | 18 N•m (1.8 kgf.m) | 15 Vacuum pump | |
| 4 | Hexagonal wrench (4 mm) | 10 Measuring tape | 42 N•m (4.3 kgf.m) | 16 Gauge manifold | |
| 5 | Spanner | 11 Thermometer | 55 N•m (5.6 kgf.m) | | |
| ١ - | _i | | | | |

SAFETY PRECAUTIONS

Read the following "SAFETY PRECAUTIONS" carefully before installation.

Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
 The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

MARNING This indication shows the possibility of causing death or serious injury. AUTION This indication shows the possibility of causing injury or damage to properties only.

The items to be followed are classified by the symbols:

 \Diamond Symbol with white background denotes item that is PROHIBITED. Symbol with dark background denotes item that must be carried out.

Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

⚠ WARNING

Do not install outdoor unit near handrail of veranda. When installing air-conditioner unit on veranda of a high rise building, child may climb up to outdoor unit and cross over the handrail causing an accident.

Do not use unspecified cord, modified cord, joint cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances Poor contact, poor insulation or over current will cause electrical shock or fire.

Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen

Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury. Do not sit or step on the unit, you may fall down accidentally.

Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth and prevent breathing.

When installing or relocating air conditioner, do not let any substance other than the specified refrigerant, eg. air etc. mix into refrigeration cycle (piping). Mixin of air etc. will cause abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

Do not add or replace refrigerant other than specified type. It may cause product damage, burst and injury etc.

For R410A model, use piping, flare nut and tools which is specified for R410A refrigerant. Using of existing (R22) piping, flare nut and tools may cause abnormally high pressure in the refrigerant cycle (piping), and possibly result in explosion and injury.

Thickness or copper pipes used with R410A must be more than 0.8 mm. Never use copper pipes thinner than 0.8 mm.

It is desirable that the amount of residual oil less than 40 mg/10 m. Engage authorized dealer or specialist for installation. If installation done by the user is incorrect, it will cause water leakage, electrical shock or fire.

nstall according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire

se the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock.

stall at a strong and firm location which is able to withstand weight of the set. If the strength is not enough or installation is not properly done, the set wi rop and cause injury. oner shall be installed in accordance with National Wiring Regulations. An independent circuit and single outlet must be used

electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.

o not use joint cable for indoor/outdoor connection cable. Use the specified indoor/outdoor connection cable, refer to instruction © CONNECT THE CABLE

O THE INDOOR UNIT and connect tightly for indoor/outdoor connection. Clamp the cable so that no external force will have impact on the terminal. If
onnection or fixing is not perfect, it will cause heat up or fire at the connection.

fire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed perfectly, it will cause fire or electrics

rended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it may his equipment is strongly recommended to be installed with Earth Leakage Circuit Breaker (ELCB) or Residual Current Device (RCD). Otherwise, it ma ause electrical shock and fire in case of equipment breakdown or insulation breakdown. uring installation, install the refrigerant piping properly before running the compressor. Operation of compressor without fixing refrigeration piping and valve t opened condition will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

uring pump down operation, stop the compressor before removing the refrigeration piping. Removal of refrigeration piping while compressor is operating and alves are opened will cause suck-in of air, abnormal high pressure in refrigeration cycle and result in explosion, injury etc.

ghten the flare nut with torque wrench according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause trigorant according to specified method. If the flare nut is over-tightened, after a long period, the flare may break and cause trigorant according to specified method.

efrigerant gas leakage. After completion of installation, confirm there is no leakage of refrigerant gas. It may generate toxic gas when the refrigerant contacts with fire.

entilate if there is refrigerant gas leakage during operation. It may cause toxic gas when the refrigerant contacts with fire.

is equipment must be properly earthed. Earth line must not be connected to gas pipe, water pipe, earth of lightning rod and telephone. Otherwise, it may use electrical shock in case of equipment breakdown or insulation breakdown.

⚠ CAUTION

Do not install the unit in a place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire. Do not release refrigerant during piping work for installation, re-installation and during repairing refrigeration parts. Take care of the liquid refrigerant, it may

Do not install this appliance in a laundry room or other location where water may drip from the ceiling, etc.

Do not touch the sharp aluminium fin, sharp parts may cause injury.

Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water may enter the room and damage the furniture. Select an installation location which is easy for maintenance.

Indoor/Outdoor Unit Installation Diagram

(Left and right are identical)

nsulation of piping connections

Attaching the remote control holder to the wall

× Vinyl tape

Remote control holder 5

Length of power supply cor-

should purchase (*)

Apply after carrying

remove the air filters and pour water into

the heat exchanger

dditional drain hos

Liquid side piping (※

Gas side piping (*)

Control board cove

1. To cut

Saddle (X)

out a drainage tes

ower supply connection to the room air conditioner

ower supply connection to the room air conditioner.

nonecting the power supply cord of the air conditioner to the mains using one of the following method.

ower supply point should be in easily accessible place for power disconnection in case of emergency.

some countries, permanent connection of this air conditioner to the power supply is prohibited.

Power supply connection to the receptacle using power plug.

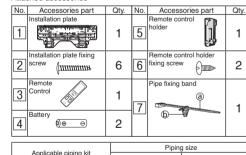
Use an approved 15/16A (1.0-1.5HP) power plug with earth pin for the connection to the socket.

Power supply connection to a circuit breaker for the permanent connection.

Use an approved 16A (1.0-1.5HP) circuit breaker for the permanent connection. It must be a double pole switch with a minimum 3.0 mm contact gap.

Liquid

Installation work. It may need two people to carry out the installation work



9.52 mm (3/8") SELECT THE BEST LOCATION

INDOOR UNIT Do not install the unit in excessive oil fume area such as kitchen

workshop and etc.

There should not be any heat source or steam near the unit. ☐ There should not be any obstacles blocking the air circulatio
☐ A place where air circulation in the room is good.
☐ A place where drainage can be easily done.
☐ A place where noise prevention is taken into consideration.

 Do not install the unit near the door way.
 Ensure the spaces indicated by arrows from the wall, ceiling, fence or other obstacles.

Recommended installation height for indoor unit shall be at least 2.5 m.

OUTDOOR UNIT

If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
There should not be any animal or plant which could be affected by hot

air discharged.

Reep the spaces indicated by arrows from wall, ceiling, fence or other

 Do not place any obstacles which may cause a short circuit of the discharged air.

If piping length is over the [piping length for additional gas], additional refrigerant should be added as shown in the table.

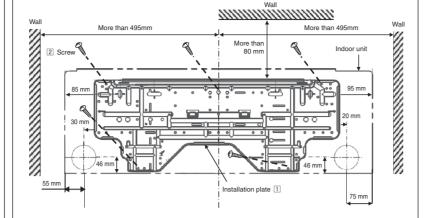
VE12*** 1.5HP (3/8")

Example: For VE9** Example: For VE9 If the unit is installed at 12 m distance, the quantity of additional refrigerant should be 90 g (12-7.5) m x 20 g/m = 90 g.



HOW TO FIX INSTALLATION PLATE

The mounting wall shall be strong and solid enough to prevent it from the vibration.



he center of the installation plate should be at more than 495 mm at right and left of the wall. he distance from installation plate edge to ceiling should more than 80 mm.

From installation plate left edge to unit's left side is 85 mm. From installation plate right edge to unit's right is 95 mm.

Mount the installation plate on the wall with 5 screws or more (at least 5 screws).

(If mounting the unit on the concrete wall, consider using anchor bolts.)

• Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.

2. Drill the piping plate hole with ø70 mm hole-core drill.
The hole center of the right pipe is the meeting point of the following two lines, the 20 mm offset line from the vertical edge of the installation plate and the horizontally extended line of the side arrow on the plate. • The hole centre of the left pipe is the meeting point of the following two lines, the 30mm offset line from

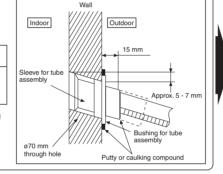
Drill the piping hole at either the right or the left and the hole should be slightly slanted to the outdoor side.

TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

Insert the piping sleeve to the hole. f. Fix the bushing to the sleeve. . Cut the sleeve until it extrudes about 15 mm from

⚠ CAUTION

When the wall is hollow, please be sure to use the sleeve for tube assembly to prevent dangers caused by mice biting the connection cable. 4. Finish by sealing the sleeve with putty or caulking compound at the final stage



1 2 3

Indoor & outdoor connection cable

CONNECT THE CABLE TO THE INDOOR

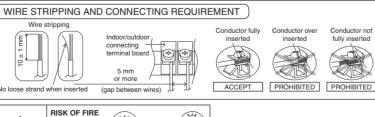
The inside and outside connection cable can be connected without removing the front grille. Connection cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 4 x 1.5 mm² flexible cord, type designation 245 IEC 57 or heavier cord. Bind all the indoor and outdoor connection cable with tape and

route the connection cable via the escapement. . Remove the tapes and connect the connection cable between indoor unit and outdoor unit according to the diagram below.

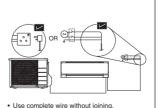
Terminals on the indoor unit Colour of wires Terminals on the outdoor unit 1 2 3 length (mm) 30 30 40 ⚠ WARNING

This equipment must be properly earthed.

Secure the connection cable onto the control board with the holder (clamper).
Ensure the colour of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reason. WIRE STRIPPING AND CONNECTING REQUIREMENT



JOINING OF WIRES
MAY CAUSE
OVERHEATING MAY CAUSE OVERHEATING AND FIRE.

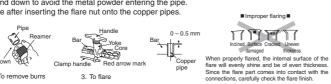


· Use approved socket and plug with earth pi Wire connection in this area must follow to national wiring rules.

CUTTING AND FLARING THE PIPING

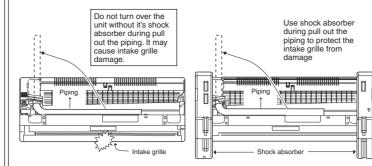
Please cut using pipe cutter and then remove the burrs.
 Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused Turn the piping end down to avoid the metal powder entering the pipe.

Please make flare after inserting the flare nut onto the copper pipes



INDOOR UNIT INSTALLATION

INDOOR UNIT



. FOR THE RIGHT REAR Right Rear piping ape it with piping Pull out the Indoor -0 Step-2 Install the Indoor Unit Cover for the Cover for the bottom piping Step-3 Secure the Indoor Unit How to keep the cover case of the cover is cut, sert the connection

keep the cover at the rear

Piping

Install the indoor unit

Hook the indoor unit

with the upper edge of

Ensure the hooks are

roperly seated on the

oving it in left and right.

Secure the Indoor Unit

Press the lower left and

engages with their slot

right side of the unit

against the installa

THE

Indoor unit

To take out the unit, push the 押す marking at the bottom unit, and pull it

slightly towards you to

disengage the hooks from the unit.

piping hole

of chassis as shown in

the illustration for future (Left, right and 2 bottom covers for piping.) 2. FOR THE RIGHT AND RIGHT BOTTOM PIPING Right and Right Bottom piping

Pull out the Indoor Step-2 Install the Indoor Unit

nsert the connection

Step-4 Secure the Indoor Unit

3. FOR THE EMBEDDED **PIPING**

Step-1 Replace the drain hose

Bend the embedded Step-2 oiping

> Pull the connection able into Indoor Unit

> > emoving the front grille.

Step-6 Connect the piping

Step-8 Secure the Indoor Unit

Insert a drain cap into the

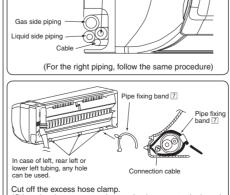
Cut and flare the embedded piping When determining the dimen

of the piping, slide the unit all the way to the left on the installation Refer to the section "Cutting and 押す marking Step-5 Install the Indoor Unit

Insert the connection cable



. In case of left piping how to insert the Exchange the drain hose and Drain hose When inserting a drain cap into the unit, do not use a lubricant (such as refrigerating oil This may cause damage and water leakage



(Otherwise, it may cause abnormal noise or water leakage.)

(This can be used for left rear piping and bottom piping also.)

 How to pull the piping and drain hose out, in case of the embedded piping More than 400 mm Indoor unit PVC tube (VP-65) for piping PVC tube for drain hose (VP-30 55 mm PVC tube for drain hose (VP-20)

OUTDOOR UNIT

SELECT THE BEST LOCATION

INSTALL THE OUTDOOR UNIT

After selecting the best location, start installation according to Indoor/Outdoor Unit

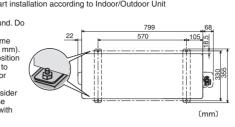
Installation Diagram.

Install at least 3 cm above the ground. Do

not install the unit on the floor.

Fix the unit on concrete or rigid frame firmly and horizontally by bolt (ø10 mm). nstall the outdoor unit in a level position and do not block the holes. Failure to

do so may result in water leakage or When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt or nails.



CONNECT THE PIPING

Connecting The Piping to Indoor Unit Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto

the copper pipe.
(In case of using long piping) Connect the piping

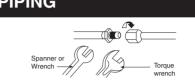
• Align the center of piping and sufficiently tighten the flare nut with fingers.

• Further tighten the flare nut with torque wrench

in specified torque as stated in the table Connecting The Piping to Outdoor Unit Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge.

Make flare after inserting the flare nut (locate at

valve) onto the copper pipe. Align center of piping to valves and then tighten with torque wrench to the specified torque as stated in the table



| Do not overtighten, overtightening may cause gas leakage. | | | | |
|---|------------------------|--|--|--|
| Piping size | Torque | | | |
| 6.35 mm (1/4") | [18 N•m (1.8 kgf.m)] | | | |
| 9.52 mm (3/8") | [42 N•m (4.3 kgf.m)] | | | |
| 12.7 mm (1/2") | [55 N•m (5.6 kgf.m)] | | | |
| 15.88 mm (5/8") | [65 N•m (6.6 kgf.m)] | | | |
| 19.05 mm (3/4") | [100 N•m (10.2 kgf.m)] | | | |
| | | | | |

Cross-section of the

jumper cable

Cut at these two places with

The "B" setting is established whe it is cut.

PIPING INSULATION

Please carry out insulation at pine connection portion as mentioned in Indoor/Outdoor Unit ation Diagram. Please wrap the insulated piping end to prevent water from going inside the

. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.

Change of the signal code on remote controller

A switching mechanism is present in order to prevent errors in the operation of one of the air conditioners that might be caused by using the This mechanism is factory set to "A"

Set the other air conditioner and its remote control

Set the remote control to "B". Slide the cover open on the back of the remote control and cut the umper cable with a pair of nippers. Set the air conditioner to "B". ① Press the "MENU" button of the remote control for at least 10 second

→ "REMOTE B" to the display unit is displayed on the remote control. ② Press the "SET' button of the remote control.

③ Check that the air conditioner set to "B" is operated by the remote control set to "B".

To change the air discharge settings according to installation position of indoor unit

. Press menu button to enter the setting. "CENTER 📉 " will be displayed on the remote control display unit.

"CENTER

T

LEFT

RIGHT

T

T

3. Press "SET" button to confirm.

Factory default setting is "CENTER 7"

BOTTOM LEFT CORNER

HOW TO REMOVE THE

remove the front grilles.

Make sure that the top edge of the front grille be tightly hooked to fastening rib 2 point of the indoor unit.

AUTO SWITCH OPERATION

The below operations will be performed by pressing the "AUTO" switch. . AUTO OPERATION MODE

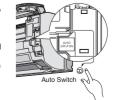
The Auto operation will be activated immediately once the Auto Switch is pressed and release before 5 sec. TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE)
The Test Run operation will be activated if the Auto Switch is pressed

continuously for more than 5 sec. to below 8 sec. A "pep" sound will occur at the fifth sec., in order to identify the starting of Test Run operation.

HOW TO TAKE OUT FRONT GRILLE

1. Remove the 5 mounting screws 2. Pull the lower section of the front grille towards you to

If an error may occur during the above operation, the Beep sound(beep,-,-,-) will be heard.



CHECK ITEMS

Has the heat insulation been carried out at flare nut connection?

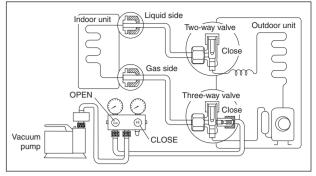
Is the connection cable being fixed to termina board firmly?

Are there any Beep sounds (beep,_,_,) during testing operation?

If an error may occur during the above operation the Beep sound (beep,__,_) will be heard.

EVACUATION OF THE EQUIPMENT

WHEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDOOR



. Connect a charging hose with a push pin to the Low side of a charging set and the service port of the

• Be sure to connect the end of the charging hose with the push pin to the service port.

Connect the center hose of the charging set to a vacuum pump. Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa). Then evacuate the air approximately ten mi

. Close the Low side valve of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately five minutes.

Note: BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.

Disconnect the charging hose from the vacuum pump and from the service port of the 3-way valve. Tighten the service port caps of the 3-way valve at a torque of 18 N•m with a torque wrench. Remove the valve caps of both of the 2-way valve and 3-way valve. Position both of the valves to

OPEN" using a hexagonal wrench (4 mm). . Mount valve caps onto the 2-way valve and the 3-way valve. Be sure to check for gas leakage.

If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa), in step ③ above take the following measure:

If the leak stops when the piping connections are tightened further, continue working from step 3. If the leak does not stop when the connections are retightened, repair location of leak.

Do not release refrigerant during piping work for installation and reinstallation.
 Take care of the liquid refrigerant, it may cause frostbite.

CONNECT THE CABLE TO THE **OUTDOOR UNIT**

emove the control board cover from the unit by loosening the screw . Connection cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 4 x 1 .5 mm² flexible cord, type designation 245 IEC 57 or heavier cord.

Connect the connection cable between indoor unit and outdoor unit

Terminals on the indoor unit

according to the diagram below.

Terminals on the outdoor unit 1 2 3 Secure the connection cable onto the control board

with the holder.

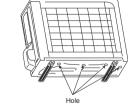
Attach the control board cover back to the original position with screw. For wire stripping and connection requirement, refer to instruction ⑤ of indoor unit.



Isolating Devices (Disconnecting means) should have minimum 3.0 mm contact gap.
 Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for

OUTDOOR UNIT DRAIN WATER)

 Water will drip from the basepan hole area during defros To avoid water dripping, do not stand or place objects



Indoor Unit

CHECK THE DRAINAGE

at this area.

(Drainage checking can be carried out without removir the front grille.) Open front panel and remove air filters. Pour a glass of water into the drain tray-styrofoam



EVALUATION OF THE PERFORMANCE

Operate the unit at cooling/heating operation mode for

Operate the unit at cooling/neating operation mode for fifteen minutes or more.

Measure the temperature of the intake and discharge air.

Ensure the difference between the intake temperature and the discharge is more than 8°C during Cooling operation or more than 14°C during Heating operation.



Is there any gas leakage at flare nut

____ Is the connection cable being clamped firmly? Is the drainage ok?
(Refer to "Check the drainage" section)

Is the thermostat operation normal? Is the remote control's LCD operation normal?

Is the earth wire connection properly done?

Is the power supply voltage complied with rated

Is the cooling/heating operation normal?

Is the indoor unit properly hooked to the

Is there any abnormal sound?

installation plate?

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ENGLISH