MULTI TYPE ROOM AIR CONDITIONER
INSTALLATION INSTRUCTION SHEET

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

(PART NO. 9373421016-03)

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

This air conditioner uses new refrigerant HFC (R410A).

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

(1) Since the working pressure is 1.6 times higher than that of conventional refrigerant models, some of the piping and installation and service tools are special. (See the table below.) Especially, when replacing a conventional refrigerant model with a new refrigerant R410A model, always replace the conventional piping and flare nuts with the R410A piping and flare nuts.

(2) Models that use refrigerant R410A have a different charging port thread diameter to prevent erroneous charging with conventional refrigerant and for safety. Therefore, check beforehand. [The charging port thread diameter for R410A is 1/2 UNF 20 threads per inch.]

(3) Be more careful that foreign matter (oil, water, etc.) does not enter the piping than with conventional refrigerant models. Also, when storing the piping, securely seal the openings by pinching, taping, etc.

(4) When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

Special tools for R410A

Tool name	Contents of change
Gauge manifold	Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended the gauge with seals –0.1 to 5.3 MPa (–76 cmHg to 53 kgf/cm²) for high pressure. –0.1 to 3.8 MPa (–76 cmHg to 38 kgf/cm²) for low pressure.
Charge hose	To increase pressure resistance, the hose material and base size were changed.
Vacuum pump	A conventional vacuum pump can be used by installing a vacuum pump adapter.
Gas leakage detector	Special gas leakage detector for HFC refrigerant R410A.

Copper pipes

It is necessary to use seamless copper pipes and it is desirable that the amount of residual oil is less than 40 mg/10 m. Do not use copper pipes having a collapsed, deformed or discolored portion (especially on the interior surface). Otherwise, the expansion valve or capillary tube may become blocked with contaminants.
As an air conditioner using R410A incurs pressure higher than when using R22, it is necessary to choose adequate materials.
Thicknesses of copper pipes used with R410A are as shown in Table 1. Never use copper pipes thinner than 0.8 mm even when it is available on the market.

Table 1 Thicknesses of Annealed Copper Pipes

Nominal diameter (inch)	Outer diameter (mm)	Thickness (mm)
1/4	6.35	0.80
3/8	9.52	0.80

⚠ WARNING

① **Do not use the existing (for conventional refrigerant) piping and flare nuts.**
· If the existing materials are used, the pressure inside the refrigerant cycle will rise and cause breakage, injury, etc. (Use the special R410A materials.)

② **When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R410A) to enter the refrigerant cycle.**
· If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.

For authorized service personnel only.

⚠ DANGER

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

⚠ WARNING

① **For the room air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.**
② **Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.**
③ **Installation work must be performed in accordance with national wiring standards by authorized personnel only.**
④ **Also, do not use an extension cord.**
⑤ **Do not turn on the power until all installation work is complete.**
⑥ **Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.**
⑦ **There is not extra refrigerant in the outdoor unit for air purging.**
⑧ **Use a vacuum pump for R410A exclusively.**
⑨ **Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.**
⑩ **Use a clean gauge manifold and charging hose for R410A exclusively.**
⑪ **If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.**

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

SELECTING THE MOUNTING POSITION

⚠ WARNING

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

⚠ CAUTION

① **Do not install where there is the danger of combustible gas leakage.**
② **Do not install near heat sources.**
③ **If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.**

STANDARD ACCESSORIES

The following installation accessories are supplied. Use them as required.

INDOOR UNIT ACCESSORIES (7000, 9000 and 12000 BTU Wall Mounted type)

Name and Shape	Q'ty	Use
Wall hook bracket	1	For indoor unit installation
Wall cap-B	1	For through hole connection pipe protection
Remote control unit	1	Use for air conditioner operation
Battery (penlight)	2	For remote control unit
Remote control unit holder	1	Use as remote control unit holder
Cloth tape	1	For indoor unit installation
Tapping screw (big) (ø4 x 25)	8	For wall hook bracket installation
Tapping screw (small) (ø3 x 12)	2	For remote control unit holder installation
Air cleaning filter	2	For indoor unit
Air cleaning filter frame	2	For indoor unit

OUTDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Use
Drain pipe (Heat & Cool model (Reverse cycle) only)	1	For outdoor unit drain piping work
Drain cap (Heat & Cool model (Reverse cycle) only)	1	For outdoor unit drain piping work
Adapter D (1/2" → 3/8") 12.7 mm → 9.52 mm	1	For connecting the connection pipe to valve.

This installation manual refers to following installation parts.

Name	Q'ty
Connection pipe assembly	2
Connection cord (4-conductor) (Heat & Cool model (Reverse cycle) only)	2
Wall pipe	2
Decorative tape	2
Vinyl tape	2
Wall cap	2
Saddle	2 sets
Drain hose	2
Tapping screws	2 sets
Power supply cord	1

ELECTRICAL REQUIREMENT

- Electric wire size and fuse capacity:

Table 2

Power supply cord (mm²)	MAX.	3.5
	MIN.	2.0
Connection cord (mm²)	MAX.	2.5
	MIN.	1.5
Fuse capacity (A)		20

Always make the air conditioner power supply a special branch circuit and provide a special switch and receptacle. Do not extend the power cord.

CONNECTION PIPE REQUIREMENTS

⚠ CAUTION

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.
Use heat insulation with heat resistance above 120 °C. (Reverse cycle model only)
In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 15 mm or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm or thicker.
If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation.
In addition, use heat insulation with heat conductivity of 0.045 W/(m·K) or less (at 20 °C).

Connect the connection pipes according to "5 CONNECTING THE PIPING" in this installation instruction sheet.

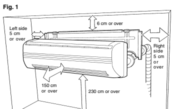
Model		7000, 9000, and 12000 BTU models only
Diameter	Small	6.35 mm (1/4 in.)
	Large	9.52 mm (3/8 in.)

Decide the mounting position with the customer as follows:

1. INDOOR UNIT

(1) Install the indoor unit level on a strong wall which is not subject to vibration.
(2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.
(3) Do not install the unit where it will be exposed to direct sunlight.
(4) Install the unit where connection to the outdoor unit is easy.
(5) Install the unit where the drain pipe can be easily installed.
(6) Take servicing, etc. into consideration and leave the spaces shown in (Fig. 1). Also install the unit where the filter can be removed.

Fig. 1



2. OUTDOOR UNIT

(1) If possible, do not install the unit where it will be exposed to direct sunlight. (If necessary, install a blind that does not interfere with the air flow.) Install the unit near an electric outlet or special branch circuit.
(2) Do not install the unit where a strong wind blows or where it is very dusty.
(3) Do not install the unit where people pass.
(4) Take your neighbors into consideration so that they are not disturbed by air blowing into their windows or by noise.
(5) Provide the space shown in Fig. 2 so that the air flow is not blocked. Also for efficient operation, leave open three of the four directions front, rear, and both sides.
(6) Since the drain water flows from the outdoor unit during heating operation, when it is installed at a high place, install the drain pipe as shown in (Fig. 3) and connect it to a 16 mm (inside diameter) hose available anywhere. (Heat & Cool model (Reverse cycle) only)
(7) When installing the drain pipe, fill the holes other than the hole for the drain pipe in the bottom of the outdoor unit with drain cap to prevent water leakage. (Fig. 3) (Heat & Cool model (Reverse cycle) only)

Fig. 2

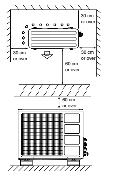
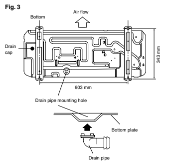


Fig. 3

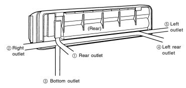


NOTE:
Installation in cold regions. Do not use the accessory drain pipe.
(If the drain pipe is used, the drain water in the pipe may freeze in extremely cold weather.)

INSTALLATION PROCEDURE

1 INDOOR UNIT INSTALLATION

The piping can be connected in the five directions indicated by ①, ②, ③, ④, and ⑤. When the piping is connected in direction ② or ⑤, cut along the piping groove in the side of the front cover with a hacksaw. When connecting the piping in direction ③, cut a notch in the thin wall at the front bottom of front cover.



1. INSTALLING THE WALL HOOK BRACKET

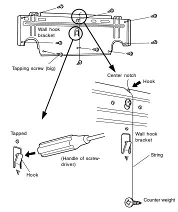
⚠ CAUTION

Install the wall hook bracket horizontally and perpendicularly. If the wall hook bracket is tilted, water will drip to the floor.

Install the wall hook bracket so that it is strong enough to withstand the weight of an adult.

[Installation directly to a wall]

Before fastening the wall hook bracket to the wall with the screws, level it by tapping the hook at the center of bracket to the wall with the handle of a screwdriver.
- Fasten the wall hook bracket to the wall with 6 or more screws through the holes near the outer edge of the bracket.
- Check that there is no rattle at the wall hook bracket.

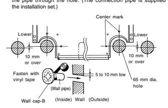


2. CUTTING THE HOLE IN THE WALL FOR THE CONNECTING PIPING

⚠ WARNING

If the wall pipe is not used, the cord interconnecting the indoor and outdoor units may touch metal and cause electric leakage.

(1) Cut a 65 mm diameter hole in the wall at the position shown in.
(2) When cutting the wall hole at the inside of the installation frame, cut the hole to a point of intersection of center marks.
When cutting the wall hole at the outside of the installation frame, cut the hole at least 10 mm below less.
(3) Cut the hole so that the outside end is lower (5 to 10 mm) than the inside end.
(4) Always align the center of the wall hole. If misaligned, water leakage will occur.
(5) Cut the wall pipe to match the wall thickness, stick it into the accessory wall cap-B, fasten the cap with vinyl tape, and stick the pipe through the hole. (The connection pipe is supplied in the installation set.)



(6) For ⑤ left piping and ② right piping, cut the hole a little lower so that drain water will flow freely.

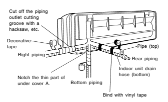
3. FORMING THE DRAIN HOSE AND PIPE

⚠ CAUTION

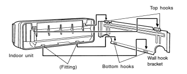
① **Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.**
② **To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 70 mm or over.**
③ **If the pipe is bent repeatedly at the same place, it will break.**

[① Rear piping, ② Right piping, ③ Bottom piping]

- Install the indoor unit piping in the direction of the wall hole and bind the drain hose and pipe together with vinyl tape.
- Install the piping so that the drain hose is at the bottom.



- Perform "3 INDOOR UNIT WIRING" before performing this piping.
- Wrap the pipes of the indoor unit that are visible from the outside with decorative tape.
- After passing the indoor piping and drain hose through the wall hole, hang the indoor unit on the hooks at the top and bottom of the wall hook bracket.

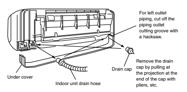


After hooking the indoor unit to the top hook, hook the fittings of the indoor unit to the two bottom hooks while lowering the unit and pushing it against the wall.

[For ④ Left rear piping, ⑤ Left piping]

Interchanging the drain hose

Interchange the drain cap and the drain hose.

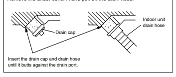


Removing the drain hose

⚠ CAUTION

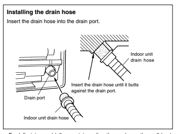
After removing the drain hose, do not forget to install the drain cap.

Remove the under cover A and pull off the drain hose.

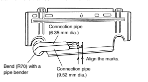


Installing the drain hose

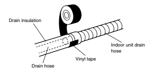
Insert the drain hose into the drain port.



- For left piping and left rear piping, align the marks on the wall hook bracket and shape the connection pipe.
- Bend the connection piping at a bend radius of 70 mm or more and install no more than 35 mm from the wall.



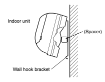
- When extending the drain hose at the indoor unit, install the accessory drain insulation.



- Place the indoor unit drain hose behind the piping.

[Installing the indoor unit]

- Hang the indoor unit from the hooks at the top of the wall hook bracket.
- Insert the spacer, etc. between the indoor unit and the wall hook bracket and separate the bottom of the indoor unit from the wall.



INDOOR UNITS-OUTDOOR UNIT CONNECTIONS

⚠ CAUTION

The total capacity of the indoor units connected must be between 14,000 and 30,000 BTU. (Refer to Table 3.)

- If the indoor units are connected with a capacity outside of the recommended range, the indoor units will not function and the indoor unit lamps will flash in the following error patterns.
  18 type: OPERATION LAMP (red) .... flashes fast, SWING LAMP (orange) .... flashes 4 times slowly and goes off repeatedly
  12, 9, 7 type: OPERATION LAMP (red) ... flashes fast, TIMER LAMP (green) .... flashes 4 times slowly and goes off repeatedly
- To connect a 18 type indoor units, refer to the installation instruction sheet provided with the unit.
- Two indoor units must be connected to the outdoor unit.

Fig. 4

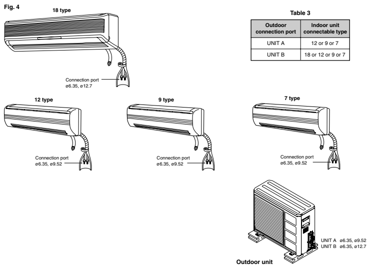


Table 3

Outdoor connection port	Indoor unit connectable type
UNIT A	12 or 9 or 7
UNIT B	18 or 12 or 9 or 7

HOW TO USE ADAPTER (Connections port of outdoor unit)

- When using the ADAPTER, be careful not to overtighten the nut, or the smaller pipe may be damaged.
- Apply a coat of refrigeration oil to the threaded connection port of the outdoor unit where the flare nut comes in.
- Use an appropriate wrenches to avoid damaging the connection thread by overtightening the flare nut.
- Apply wrenches on both of flare nut (local part), and ADAPTER to tighten them.

Fig. 5

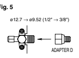


Table 4 ADAPTER tightening torque

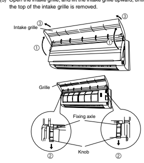
ADAPTER TYPE	Tightening torque
ø12.7 → ø9.52 (1/2" → 3/8")	50 to 62 N·m (500 to 620 kgf·cm)

2 FRONT PANEL AND UNDER COVER REMOVAL

FRONT PANEL REMOVAL AND INSTALLATION

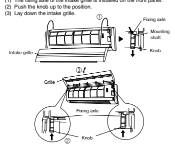
THE INTAKE GRILLE REMOVAL

(1) Open the intake grille.
(2) Pull down the knob.
(3) Open the intake grille, and lift the intake grille upward, until the axle at the top of the intake grille is removed.



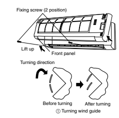
THE INTAKE GRILLE INSTALLATION

(1) The fixing axle of the intake grille is installed on the front panel.
(2) Push the knob up to the position.
(3) Lay down the intake grille.



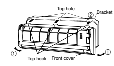
THE FRONT PANEL REMOVAL

(1) Turn the wind guide and remove two screws at two sides of air outlet.
(2) Take out the air outlet part of the front panel, then lift the whole front panel up to remove it.



THE FRONT PANEL INSTALLATION

(1) Firstly fit the lower part of the front panel to the air outlet part and insert its lower edge into the slot of the lower cover.
(2) Insert three hooks on the upper side of the front panel into the slot of bracket.
(3) Turn the wind guide, tighten the screws, and then turn the wind guide back to its original position.

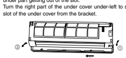


THE UNDER COVER REMOVAL AND INSTALLATION

The under cover removal should be done after the panel has been removed beforehand, or the parts may be damaged.
The under cover should be installed before the fixing of the panel, or it may result in poor installation.

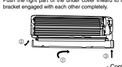
THE UNDER COVER REMOVAL

(1) While pressing the joint part between the right part of the under cover and the bracket, pull it out of the slot.
(2) Hold two sides of the under cover and slide it to the left. Make sure its under part getting out of the slot.
(3) Turn the right part of the under cover under-left to separate the left slot of the under cover from the bracket.



THE UNDER COVER INSTALLATION

(1) Hold two sides of the under cover and align it to the side of the bracket. Firstly match the left slot on the under cover to the bracket.
(2) Make five slots on the under cover fit into the fixing plate of the body, then slide it to the right until the left side of the under cover align to the bracket.
(3) Push the right part of the under cover inward to make the slot and bracket engaged with each other completely.



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3 INDOOR UNIT WIRING

⚠ CAUTION

① **Before starting work, check that power is not being supplied to indoor units and the outdoor unit.**

② **Match the terminal block numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.**

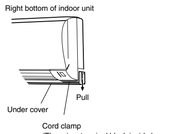
③ **Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.**

④ **Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)**

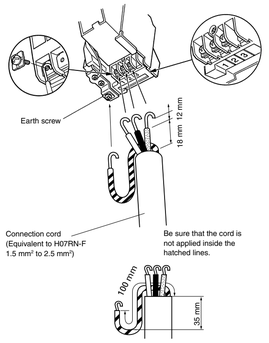
⑤ **Always connect the ground wire.**

(1) Remove the front panel. (To remove the front panel, refer to "■ FRONT PANEL AND UNDER COVER REMOVAL" in this installation instruction sheet.)
(2) Remove the under cover.

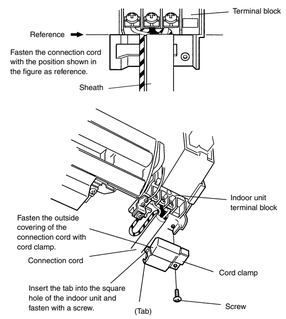
Removing the UNDER COVER



(3) Remove the cord clamp.
(4) Bend the end of the connection cord as shown in the figure.
(5) Connect the end of the connection cord fully into the terminal block.



(6) Fasten the connection cord with a cord clamp.



4 OUTDOOR UNIT INSTALLATION

⚠ WARNING

① **Install the unit where it will not be tilted by more than 5°.**

② **When installing the outdoor unit where it may exposed to strong wind, fasten it securely.**

- Set the unit on a strong stand, such as one made of concrete blocks to minimize shock and vibration.
- Do not set the unit directly on the ground because it will cause trouble.

5 CONNECTING THE PIPING

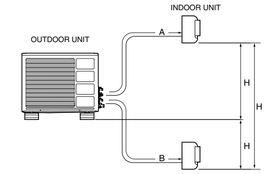
⚠ CAUTION

The maximum lengths of this product are shown in Table 5-1. If the units are further apart than this, correct operation can not be guaranteed.

1. LIMITATION OF REFRIGERANT PIPING LENGTH

Table 5-1

Total max length (A+B)	30 m (98 ft)
Max length for each indoor unit (A or B)	20 m (66 ft)
Max height difference (H)	10 m (33 ft)



2. FLARING

(1) Cut the connection pipe to the necessary length with a pipe cutter.
(2) Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.
(3) Insert the flare nut (always use the flare nut attached to the indoor and outdoor units respectively) onto the pipe and perform the flare processing with a flare tool.
Use the special R410A flare tool, or the conventional flare tool.

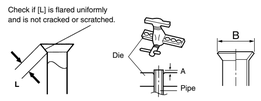


Table 5-2 Flaring dimension: B

Pipe outside diameter	B $^{0}_{-4}$ (mm)
6.35 mm (1/4 in.)	9.1
9.52 mm (3/8 in.)	13.2
12.7 mm (1/2 in.)	16.6

When using conventional flare tools to flare R410A pipes, the dimension A should be approximately 0.5 mm more than indicated in Table 5-3 (for flaring with R410A flare tools) to achieve the specified flaring. Use a thickness gauge to measure the dimension A.

Table 5-3 Pipe outside diameter

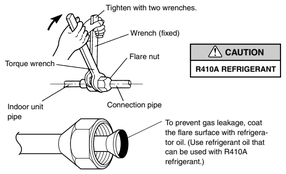
Pipe outside diameter	A (mm)
	Flare tool for R410A, clutch type
6.35 mm (1/4 in.)	0 to 0.5
9.52 mm (3/8 in.)	0 to 0.5
12.7 mm (1/2 in.)	0 to 0.5

3. BENDING

(1) When bending the pipe, be careful not to crush it.
(2) To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 70 mm or over.
(3) If the copper pipe is bent or pulled to often, it will become stiff. Do not bend the pipe more than three times at one place.

4. CONNECTION

(1) Install the outdoor unit wall cap (supplied with the optional installation set or procured at the site) to the wall pipe.
(2) Connect the outdoor unit and indoor unit piping.
(3) After matching the center of the flare surface and tightening the nut hand tight, tighten the nut to the specified tightening torque with a torque wrench. (Tighten the flare nut of the outdoor unit 3-way valve after air purging.)



⚠ CAUTION
R410A REFRIGERANT

Table 5-4 Flare nut tightening torque

Flare nut	Tightening torque
6.35 mm dia.	16 to 18 N·m (160 to 180 kgf-cm)
9.52 mm dia.	30 to 42 N·m (300 to 420 kgf-cm)
12.7 mm dia.	50 to 62 N·m (500 to 620 kgf-cm)

Do not remove the cap from the connection pipe before connecting the pipe.

6 VACUUM PROCESS

⚠ CAUTION

① **Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation! There is no extra refrigerant in the outdoor unit for air purging!**

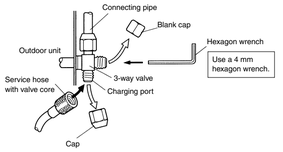
② **Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.**

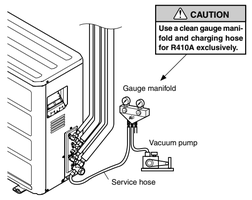
③ **Charging of additional refrigerant (R410A) according to the piping length is unnecessary.**

1. VACUUM

(1) Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
(2) Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates −0.1 MPa (−76 cmHg).
(3) When −0.1 MPa (−76 cmHg) is reached, operate the vacuum pump for at least 15 minutes.
(4) Disconnect the service hoses and fit the cap to the charging valve to the specified torque.
(5) Remove the blank caps, and fully open the spindles of the 2-way and 3-way valves with a hexagon wrench (Torque : 6 to 7 N·m (60 to 70 kgf-cm)).
(6) Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque.

	Tightening torque
Blank cap	20 to 25 N·m (200 to 250 kgf-cm)
Charging port cap	13 to 16 N·m (125 to 160 kgf-cm)





7 GAS LEAKAGE INSPECTION

⚠ CAUTION

After connecting the piping, check the joints for gas leakage with gas leak detector.

8 RECHARGING THE REFRIGERANT

(1) When moving and installing the air conditioner, do not mix gas other than the specified refrigerant (R410A) inside the refrigerant cycle.
(2) When charging the refrigerant R410A, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).
(3) When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

(4) Add refrigerant from the charging valve after the completion of the work.

9 OUTDOOR UNIT WIRING

⚠ WARNING

① **Before starting work, check that power is not being supplied to the outdoor unit.**

② **Match the terminal block numbers and connection cord colors with those of the indoor unit side. Erroneous wiring may cause burning of the electric parts.**

③ **Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.**

④ **Always fasten the outside covering of the connection cord with cord clamps. (If the insulator is clamped, electric leakage may occur.)**

⑤ **Always connect the ground wire.**

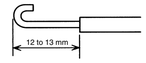
⚠ CAUTION

① **The power cord is not supplied with the outdoor unit. Use 2.0 mm² to 3.5 mm² H07RN-F or equivalent as the connection cord.**

② **Select power cable matched to the fuse capacity. (Install in a accordance with standard.)**

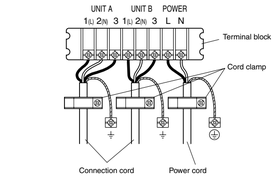
(1) Process the end of the connection cords to the dimension shown in (Fig. 9-2) and bend the end of each cord as shown in (Fig. 9-1).

Fig. 9-1 Stripped length



(2) Connect the end of the power cord and connection cord fully into the terminal block.
(3) Fasten the sheath with a cord clamp.

Fig. 9-2



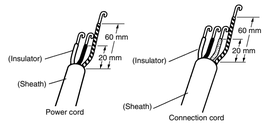
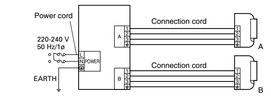


Fig. 9-3

Indoor and outdoor wire connection



(4) Pass the connection cord and power cord through the hole of the 3-way valve bracket and run them to the outside of the cabinet.
Do not block the ventilation slots in the cabinet when wiring the power cord and connection cords.
(5) Install the valve cover as shown in (Fig. 9-5). Pass the power cord and connections cords through the valve cover when wiring them.

Fig. 9-4

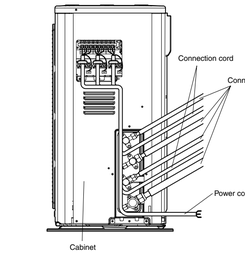
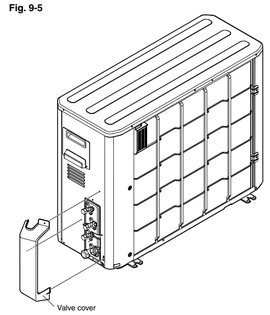
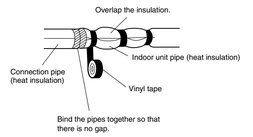


Fig. 9-5

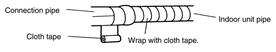


10 FINISHING

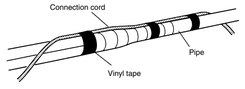
(1) Insulate between pipes.
- For rear, right, and bottom piping, overlap the connection pipe heat insulation and indoor unit pipe heat insulation and bind them with vinyl tape so that there is no gap.
- For left and left rear piping, butt the connection pipe heat insulation and indoor unit pipe heat insulation together and bind them with and vinyl tape so that there is no gap.



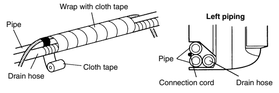
- For left and left rear piping, wrap the area which accommodates the rear piping housing section with cloth tape.



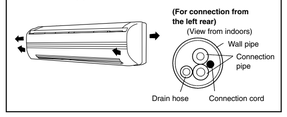
- For left and left rear piping, bind the connection cord to the top of the pipe with vinyl tape.



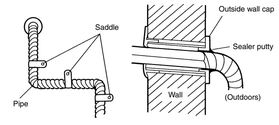
- For left and left rear piping, bundle the piping and drain hose together by wrapping them with cloth tape over the range within which they fit into the rear piping housing section.



Check that:
- The top and bottom hooks are hooked firmly and the indoor unit does not move to the front and rear or left and right.
- The indoor unit is accurately positioned horizontally and vertically.
- When connected from the left rear, the drain hose is at the bottom left of the wall pipe.

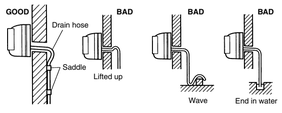


(2) Temporarily fasten the connection cord along the connection pipe with vinyl tape. (Wrap to about 1/3 the width of the tape from the bottom of the pipe so that water does not enter.)
(3) Fasten the connection pipe to the outside wall with a saddle, etc.
(4) Fill the gap between the outside wall pipe hole and the pipe with sealer so that rain water and wind cannot blow in.



(5) Fasten the drain hose to the outside wall, etc.

Check the following:



11 POWER

⚠ WARNING

① **The rated voltage of this product is 230 V A.C. 50 Hz.**

② **Before turning on the verify that the voltage is within the 198 V to 264 V range.**

③ **Always use a special branch circuit and install a special receptacle to supply power to the room air conditioner.**

④ **Use a circuit breaker and receptacle matched to the capacity of the room air conditioner. (Fuse • breaker rating: 25 A)**

⑤ **The circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole.**

⑥ **Perform wiring work in accordance with standards so that the room air conditioner can be operated safely and positively.**

⑦ **Install a leakage circuit breaker in accordance with the related laws and regulations and electric company standards.**

⚠ CAUTION

① **The power source capacity must be the sum of the room air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.**

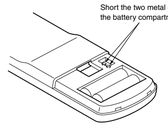
② **When the voltage is low and the air conditioner is difficult to start, contact the power company to have the voltage raised.**

12 TEST RUNNING

⚠ CAUTION

Always turn on the power 4 hours prior to the start of the operation in order to ensure compressor protection.

- Perform test operation and check items 1 and 2 below.
- For the operation method, refer to the operating manual.
- The outdoor unit may not run, depending on the room temperature. In this case, the 'TEST RUN' signal is received during air conditioner operation (use a metallic object to short the two metal contacts under the battery compartment lid and send the 'TEST RUN' signal from the remote control unit).



Operation can be checked by lighting and flashing of the display section OPERATION and TIMER lamps.
Perform judgement in accordance with the following.

- Test running

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION and TIMER lamps flash slowly at the same time.

- Error

The OPERATION, TIMER and SWING lamps operate as follows according to the error contents.

INDOOR UNIT (12, 9 and 7 Type)

Error contents	Error display		
	OPERATION (RED)	TIMER (GREEN)	SWING (ORANGE)
Indoor unit circuit board error	○	○	—
Room temperature thermistor or piping thermistor error (wire disconnected or broken)	2 times ●	○	—
Indoor unit-outdoor unit miswiring	5 times ●	○	—
Indoor unit fan error	6 times ●	○	—

○ : Fast flashing ● : Slow flashing — : Off

CHECK ITEMS

(1) INDOOR UNIT

(1) Is operation of each button on the remote control unit normal?
(2) Does each lamp light normally?
(3) Do not air flow direction louvers operate normally?
(4) Is the drain normal?
(5) Is there any abnormal noise and vibration during operation?

(2) OUTDOOR UNIT

(1) Is there any abnormal noise and vibration during operation?
(2) Will noise, wind, or drain water from the unit disturb the neighbors?
(3) Is there any gas leakage?

- Do not operate the air conditioner in the test running state for a long time.
- For the operation method, refer to the operating manual and perform operation check.

13 CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating manual:
(1) Starting and stopping method, operation switching, temperature adjustment, timer, air flow switching, and other remote control unit operations.
(2) Air filter removal and cleaning, and how to use the air louvers.
(3) Give the operating and installation instruction sheets to the customer.

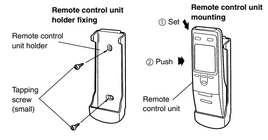
14 REMOTE CONTROL UNIT HOLDER INSTALLATION

⚠ CAUTION

① **Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder.**

② **Select the remote control unit holder selection site by paying careful attention to the following:**
Avoid places in direct sunlight.
Select a place that will not be affected by the heat from a stove, etc.

Install the remote control unit holder to a wall or pillar with the tapping screws.



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