INSTALLATION MANUAL

AIR CONDITIONER

Read this installation manual thoroughly before installing the appliance and keep it handy for reference at all times.

TYPE: WALL MOUNTED

ENGLISH ESPAÑOL FRANÇAIS

ENERGY STAR ENERGY STAR COLD CLIMATE

MFL72153505
Rev.04_102124

REFRIGERANT **R32** A2L

www.lg.com

TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

Safety Messages

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and follow all safety messages.

This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or injure you and others. All safety messages will follow the safety alert symbol and either the word WARNING or CAUTION.

These words mean:

WARNING

You may be killed or seriously injured if you do not follow instructions.

CAUTION

You may be injured or cause damage to the product if you do not follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what may happen if the instructions are not followed.

Notes for Flammable Refrigerant

The following symbols are displayed on units.

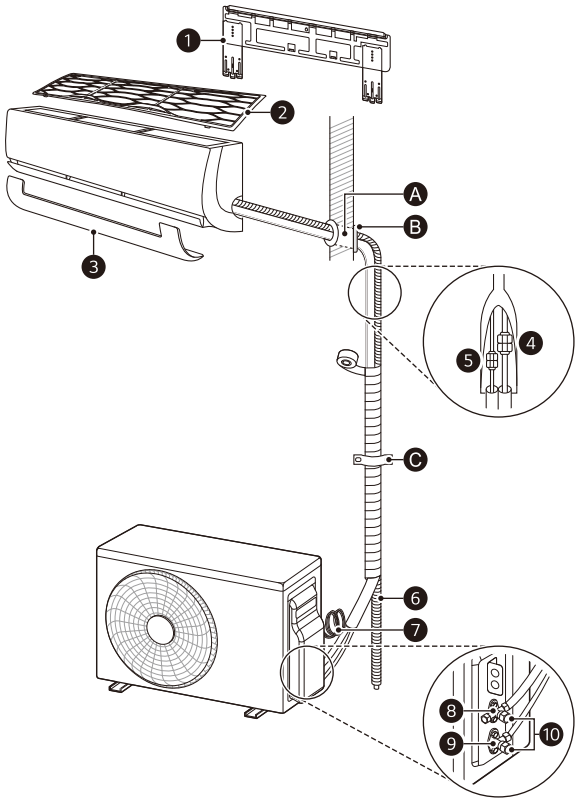
This symbol indicates that this appliance uses a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.

This symbol indicates that the Owner's Manual should be read carefully.

This symbol indicates that service personnel should be handling this equipment with reference to the Installation Manual.

This symbol indicates that information is available in the Owner's Manual or Installation Manual.

PRODUCT OVERVIEW



Parts

1. Installation Plate
2. Air Filter
3. Decor
4. Gas Pipe (Larger Pipe)
5. Liquid Pipe (Smaller Pipe)
6. Drain Hose
7. Power Supply Cable
8. Gas Service Valve
9. Liquid Service Valve
   - This feature could be different depending on models.
10. (Gas/Liquid) Service Valve Cap

NOTE

- The feature may be changed according to the type of model.
- If needed, additional pipes, drain hoses, and power cables must be purchased separately.

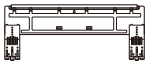
Local Purchases

It is highly recommended that you install the following parts:

- A Sleeve
- B Sealant
- C Clamp

Installation Parts

Installation Plate
(Type B)



Installation Plate
(Type C)

Remote Control Holder
(Optional)

Bracket

Type ‘A’ Screws
(for Installation Plate)

Type ‘B’ Screws
(Optional)
(for Remote Control Holder)

Type ‘C’ Screws
(for Chassis)

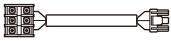
Type ‘D’ Screws
(for Bracket)

Type ‘E’ Screw
(Optional)
(for Drain Hose)

Installation Parts (Optional)

Connectors

Cloth Tape



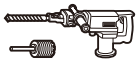
Terminal

Installation Tools

Phillips Screwdriver

Standard Screwdriver

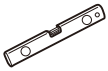
Electrical Drill



Hole Core Drill

Adjustable Wrench

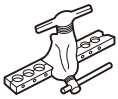
Torque Wrench



Spirit Level

Tape Measure

Tube Cutter



Tube Expander

Reamer

Cutting Knife

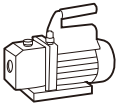
Hexagon Wrench

Thermometer

Gas Leak Detector (R32)

Current Meter

Manifold Gauge (R32)



Vacuum Pump (R32)

Reclaim Unit (R32)

Ventilation Equipment (R32)

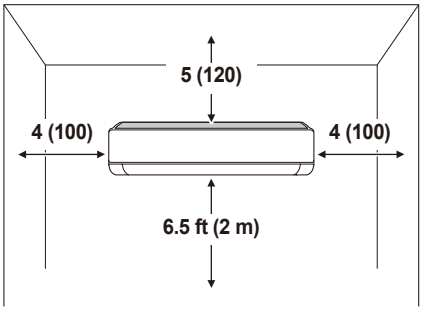
NOTE

- Leakage detector which is confirmed rated for use with R32, should be used when you are checking for leaks.
- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.
- Ventilation Equipment: For AC system using R32 (A2L gases) a ventilation equipment with “Ex” mark only should be used when a system design exceeds the Lower Flammable Limit if the gas was to escape from a system.

INSTALLATION PLACE

Indoor Unit

- Install the indoor unit on a strong and hard wall.
- Install the indoor unit in a spot with good drainage and good accessibility to the pipe connected to the outdoor unit.
- Maintain a clearance of at least 4 inches (100 mm) from the right and left sides of the indoor unit.
- Maintain a clearance of at least 5 inches (120 mm) between the top of the indoor unit and the ceiling.
- Maintain a clearance of at least 6.5 ft (2 m) between the bottom of the indoor unit and the floor.



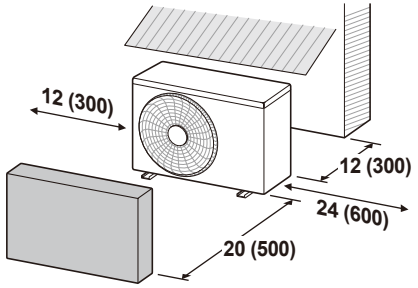
Unit: inch (mm)

NOTE

- Do not install the indoor unit near heaters or heating apparatuses.
- Do not install the indoor unit near an obstacle that hinders airflow.
- Do not install the indoor unit near an exit.
- Do not install the indoor unit where it can be exposed to direct sunlight.
- Do not install the indoor unit in the laundry room.

Outdoor Unit

- Install the outdoor unit in a location where the floor is firm and even.
- Install the outdoor unit where hot wind or noise will not disturb neighbor.
- Install the outdoor unit somewhere the technician can easily access it for repairs or maintenance.
- Maintain a clearance of 12 inches (300 mm) from the left and the back (air inlet) sides and 24 inches (600 mm) from the right sides of the outdoor unit.
- If there is an obstacle in front of the air vent, keep the outdoor unit at a distance of at least 20 inches (500 mm) from the obstacle.

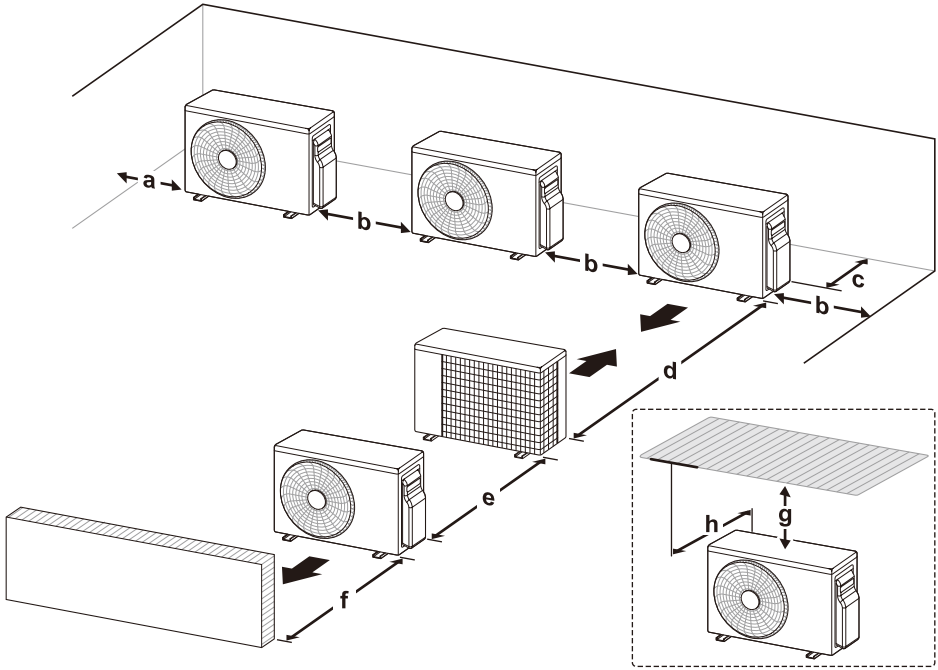


Unit: inch (mm)

NOTE

- Do not install the outdoor unit where a location is unstable or may vibrate.
- Do not install the outdoor unit in a location exposed to saline conditions, such as coastal areas, or sulfuric steam, such as near a hot spring.
- Do not install the outdoor unit in a location exposed to high winds.
- Do not install the outdoor unit somewhere exposed to direct sunlight. (Otherwise, make sure to put up a protective awning.)
- Do not keep any animals or plants near the air vent.

Outdoor Unit Clearances



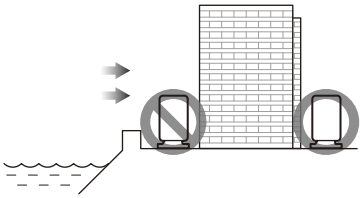
	Standard		Minimum	
	inch	mm	inch	mm
a	12	300	4	100
b	24	600	10	250
c	12	300	4	100
d	-	-	79	2 000
e	24	600	8	200
f	20	500	14	350
g	-	-	40	1 000
h	-	-	20 or less	500 or less

NOTE

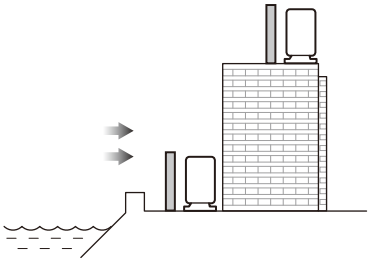
- Ensure that the coil side of the outdoor unit is installed no less than 4 inches (100 mm) close to a structure to allow for access to the rear viewing window.
- If the outdoor unit is installed between standard and minimum clearances, capacity decreases approximately 10 %.

Precautions for Installation in Coastal Areas

- Do not install the appliance in an area where it is directly exposed to sea air (salt spray).
  - Saline conditions are a cause of corrosion. (Particularly, corrosion of the condenser and evaporator can damage the appliance or impair its performance.)



- Set up windbreak in front of the outdoor unit if installing it in coastal areas.
  - Avoid direct exposure to salt winds.
  - Install a firm and stiff concrete-wind shield that can withstand salt winds.



NOTE

- If you have to set up the outdoor unit in a coastal area, unless the installation conditions are able to satisfy the above precautions, call an LG Electronics Customer Service Center to find out about alternatives.

Precautions for Installation in Special Regions (Snowfall, Strong Winds, Area with Severely Cold or Humid Weather)

- Install the outdoor unit where the airflow fans are protected from being buried under snow. Accumulated snow could cause the device to malfunction by clogging the airflow.
- Install the outdoor unit on a platform at least 20 inches (500 mm) above the ground where a location has heavier snowfall than the annual average. (The size of the platform should correspond with the size of the outdoor unit. If the platform is wider or longer than the outdoor unit, snow may accumulate.)
- Put a snow-protective cover on the outdoor unit.
- Place the inlet and outlet for the outdoor unit in opposite directions to direct airflow and to prevent snow and rain from flowing into the equipment.
- Install the outdoor unit in a spot that is well lit and well ventilated in highly humid areas (near sea or fresh water bodies).

Refrigerant (for R32 Only)

⚠ WARNING

- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- The appliance shall be stored in a room without continuously operating open flames (for example an operating gas appliance) and ignition sources (for example an operating electric heater).
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- Pipe-work shall be protected from physical damage.

Minimum Floor Area

Refer the minimum floor area depending on the installation height. If outdoor units are installed indoors, outdoor units also meet the minimum floor area.

- m: Total refrigerant amount in the system
- Total refrigerant amount: Factory refrigerant charge + Additional refrigerant amount
- A_min: minimum area for installation

UL 60335-2-40: 2019 Edition 3

Minimum Floor Area			
m		A_min	
oz	kg	ft²	m²
≤ 64.97	≤ 1.842	Without restriction	
65.01	1.843	129.24	12.01
67.02	1.9	133.23	12.38
70.55	2.0	140.25	13.03
74.08	2.1	147.26	13.68
77.60	2.2	154.27	14.33
81.13	2.3	161.28	14.98
84.66	2.4	168.30	15.64
88.18	2.5	175.31	16.29
91.71	2.6	182.32	16.94
95.24	2.7	189.33	17.59
98.77	2.8	196.34	18.24
102.29	2.9	203.36	18.89
105.82	3.0	210.37	19.54
112.88	3.2	224.39	20.85
119.93	3.4	238.42	22.15
126.99	3.6	252.44	23.45

UL 60335-2-40: 2022 Edition 4

Minimum Floor Area			
m		A_min	
oz	kg	ft²	m²
≤ 64.76	≤ 1.836	Without restriction	
64.80	1.837	64.62	6.00
67.02	1.9	66.83	6.21
70.55	2.0	70.35	6.54
74.08	2.1	73.87	6.86
77.60	2.2	77.39	7.19
81.13	2.3	80.91	7.52
84.66	2.4	84.42	7.84
88.18	2.5	87.94	8.17
91.71	2.6	91.46	8.50
95.24	2.7	94.98	8.82
98.77	2.8	98.49	9.15
102.29	2.9	102.01	9.48
105.82	3.0	105.53	9.80
112.88	3.2	112.56	10.46
119.93	3.4	119.60	11.11
126.99	3.6	126.63	11.76

NOTE

- The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
- The ventilation machinery and outlets are operating adequately and are not obstructed.
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.
- 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.

Altitude adjustment

- The minimum room area of A_min shall be corrected by multiplying by the altitude adjustment Factor (AF) in the below table based on for building site ground level altitude (H_{alt}) in feet (meters).

Altitude adjustment		
H_{alt}		AF
ft	m	
-	-	1.00
656.2	200	1.00
1312.3	400	1.00
1968.5	600	1.00
2624.7	800	1.02
3280.8	1 000	1.05
3937.0	1 200	1.07
4593.2	1 400	1.10
5249.3	1 600	1.12
5905.5	1 800	1.15
6561.7	2 000	1.18

PREPARATION WORK

Fixing the Installation Plate

To securely fasten the indoor unit, fix the installation plate onto a wall.

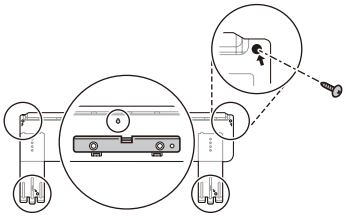
1 Separate the installation plate equipped on the back of the indoor unit.

2 Confirm the location where you will place the installation plate.

- Choose a strong and hard wall that can withstand the weight of the indoor unit.

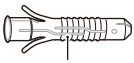
3 Securely fix the installation plate onto the wall with type 'A' screws.

- Tighten a screw into the center hole (⏁) of the installation plate.
- Ensure the installation plate is horizontal using a spirit level.
- Tighten the remaining screws into the holes indicated by the arrow on the installation plate.



NOTE

- If the installation plate is set unevenly, water may not drain smoothly and result in leakage into the room.
- Do not use nails and/or screws to attach indoor units to sheetrock, drywall, plasterboard, tile, plywood, or similar material types without proper anchors. Indoor units must be securely, and properly mounted and anchored or damage and/or injury may result from improper installation.



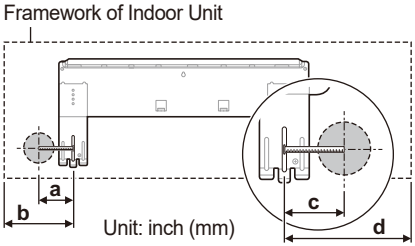
Anchor	Screw
inch (mm)	inch (mm)
15/64 x 1 3/16 (6 x 30)	5/32 x 1 31/32 (4 x 50)

Making a Hole in the Wall

Put a hole into the wall to connect the power cable, drain hose, and pipes attaching the indoor device to the outdoor one.

1 Confirm the location of the hole you are going to add.

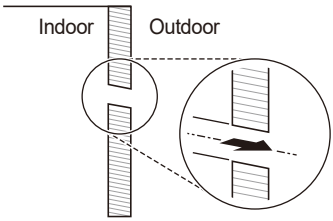
- Measure the distance from the installation plate.
  - Refer to the measure indicated on the installation plate.



	a	b	c	d
Type B	8 5/8 (219)	10 15/32 (266)	6 27/64 (163)	8 25/64 (213)
Type C	3 25/64 (86)	5 5/32 (131)	6 19/64 (160)	8 25/64 (213)

2 Make a hole in the wall by Ø 2 9/16 inches (Ø 65 mm) hole core drill.

- To facilitate drainage flow, drill the hole at an oblique angle from the inside going outside.
  - The inclination of the hole could be different depending on the specific conditions.



Preparing the Pipe and Cable

Once the gap between the indoor unit and the outdoor unit one has been measured, cut the pipe and cable to the proper length.

- Cut the pipe slightly longer than the measurement.
- Cut the cable 4.9 ft (1.5 m) longer than the pipe.

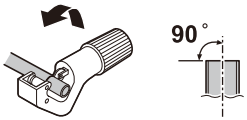
NOTE

- If you purchase the pipe separately, do not use thinner pipe than the specified value.
- Use the deoxidized copper as piping materials to install.

Flare Work

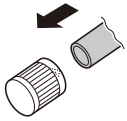
Flaring must be performed accurately to prevent any gas leakage.

1 Cut the pipe with a copper tube cutter.

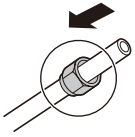


2 Remove the burrs using a reamer.

- Hold the edge of the cut pipe so it is pointing downward and remove the burrs. This helps prevent metal powder from getting into the pipe.



3 Put the flare nut onto the pipe (burr is removed).



4 After inserting the pipe into the tube expander, begin flaring.

- As seen in diagram “a”, put the pipe slightly above the upper side of the Bar.

Piping Size	a (Wing Nut)	Thickness
inch (mm)	inch (mm)	inch (mm)
Ø 1/4 (Ø 6.35)	0.043~0.051 (1.1~1.3)	0.028 (0.7)
Ø 3/8 (Ø 9.52)	0.059~0.067 (1.5~1.7)	0.031 (0.8)
Ø 1/2 (Ø 12.70)	0.063~0.071 (1.6~1.8)	0.031 (0.8)
Ø 5/8 (Ø 15.88)	0.063~0.071 (1.6~1.8)	0.039 (1.0)

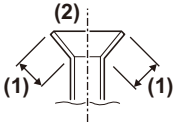
NOTE

- a (Clutch): 0~0.02 inch (0.0~0.5 mm)
- Temper grade of pipe: Annealed

5 Check out the condition of the flare.

- Check that the flared section of the pipe (1) was flared evenly in its curved surface and thickness.
- Make sure all flared surfaces (2) have been flared smoothly.

Example of Correct Flaring



Example of Incorrect Flaring

NOTE

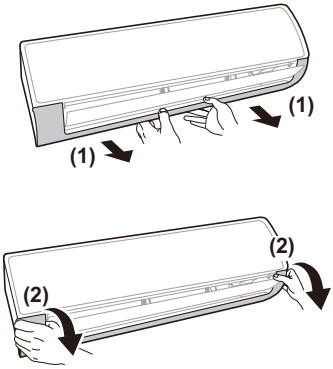
- If the expanded pipe has tilting, surface damage, cracks, or a thickness imbalance, perform the flaring operation again.

INSTALLING THE INDOOR UNIT

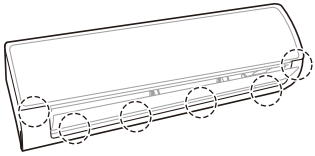
Bending the Pipe

1 Pull out the decor at the bottom of the indoor unit.

- Hold the center of the decor (1) and pull it towards you. Then, pull both sides of the decor out (2).



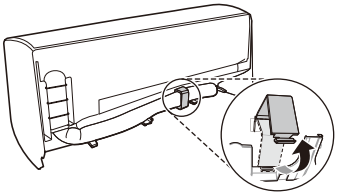
Position of Hooks



NOTE

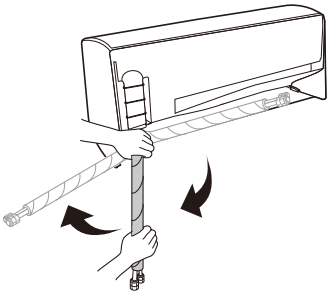
- The quantity and position of the hooks could be different depending on models.

2 Open the tubing holder at the back of the indoor unit.

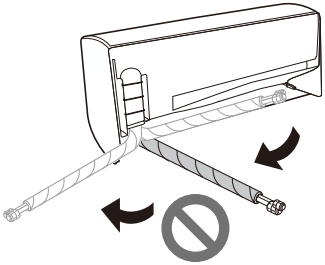


3 After straightening the pipe gradually downward, bend it to the direction to be installed.

Correct Example of Bending the Pipe



Incorrect Example of Bending the Pipe



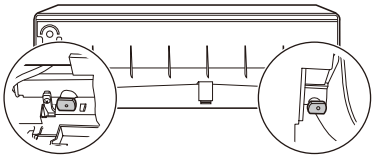
NOTE

- The pipe can be damaged if you bend it directly from right to left.

Connecting the Drain Hose

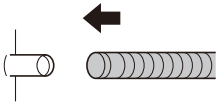
1 Remove the drain cap where you are going to connect the drain hose.

- If you do not use the other drain hose hole, block it with a drain cap.

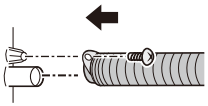


2 Insert the drain hose.

Type 1

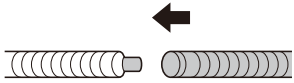


Type 2

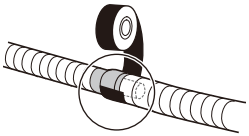


Extending the Drain Hose

1 Insert the extending hose into the drain hose joint.



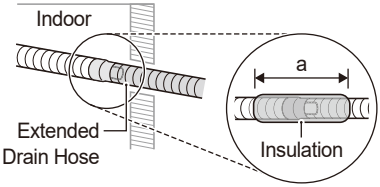
2 Wrap the joint area with vinyl tape at least 10 times.



NOTE

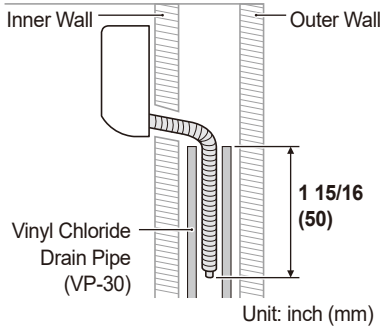
- The indoor extended drain hose should be wrapped in insulation so that dripping from sweating (condensation) could not damage furniture or floors.

Insulation Length (a)	Insulation Thickness
More than 11 13/16 inch (300 mm)	More than 0.28 inch (7 mm)



Precautions for Drain Hose Installation in Wall Embedded Piping

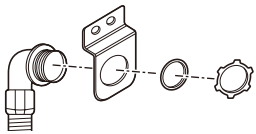
- Insert the drain hose more than 1 15/16 inches (50 mm) into the installed vinyl chloride drain pipe so it won't be pulled out of the drain pipe.



Connecting the Conduit

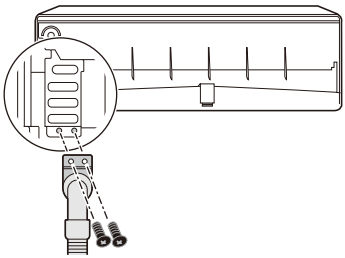
1 Assemble the elbow type conduit and bracket.

- Use the bracket included in the accessory kit.



2 Fix the assembled it on the indoor unit using screws.

- Use the black screws included in the accessory kit.



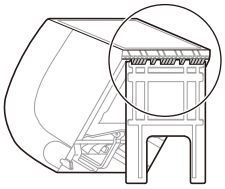
NOTE

- Use the elbow type conduit to protect and safely connect the cable.
- You can adjust the elbow type conduit in the desired direction.

Installing the Indoor Unit on the Installation Plate

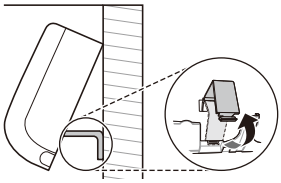
Put the indoor unit onto the installation plate fixed on the wall.

- Check if the hook on top of the rear part of the indoor unit is securely fastened onto the installation plate.



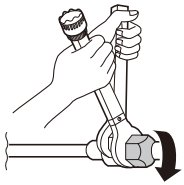
Connecting the Indoor Unit Pipe

1 By reclining the tubing holder, make a space between the bottom of the indoor unit and the wall.



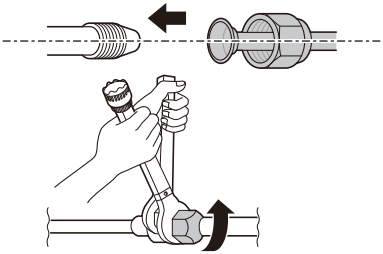
2 Remove each of the flare nuts attached to the pipes of the indoor unit.

- First, secure the pipe with an adjustable wrench and then, loosen the flare nut using a torque wrench.



3 Tighten the flare nut after inserting the pipe engaged with the flare nut through the center of the indoor unit's pipe.

- After fixing the pipe with the help an adjustable wrench, securely tighten the flare nut using a torque wrench.

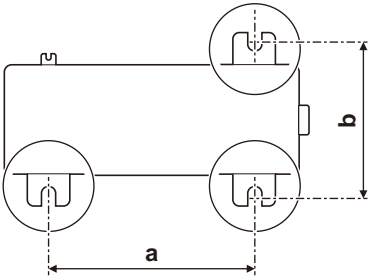


Piping Size		Torque		
inch	mm	kgf•cm	N•m	lbf•ft
Ø 1/4	Ø 6.35	180~250	17.6~24.5	13~18
Ø 3/8	Ø 9.52	340~420	33.3~41.2	25~30
Ø 1/2	Ø 12.70	550~660	53.9~64.7	40~48
Ø 5/8	Ø 15.88	630~820	61.7~80.4	45~59

INSTALLING THE OUTDOOR UNIT

Fixing the Outdoor Unit

Fix the outdoor unit firmly to prevent it from falling and dropping.



- Refer to the measurements for “a” and “b”, depending on the type of chassis. (Chassis type is marked inside the top of the outdoor unit packing box.)

Name of Chassis	a		b	
	inch	mm	inch	mm
U12A (UA3)	18 15/64	463	10 5/64	256
U18A (UL2)	21 31/32	558	12 61/64	329
U24A	23 5/64	586	14 13/32	366
U30A (UE1+)	21 1/2	546	13 25/64	340
U36A (U4)	24 13/32	620	14 11/64	360

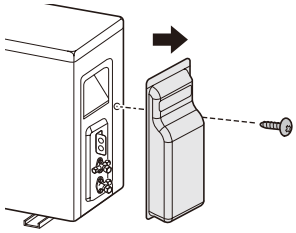
NOTE

- If you install the outdoor unit on a wall, roof, or rooftop, make sure it’s mounted on a suitable frame.
- If the outdoor unit vibrates excessively, secure it using anti-vibration rubber between the unit’s feet and the mounting frame.

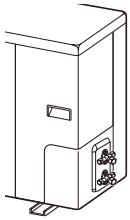
Connecting the Outdoor Unit Pipe

1 Open the tubing cover.

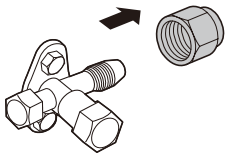
Type 1



Type 2

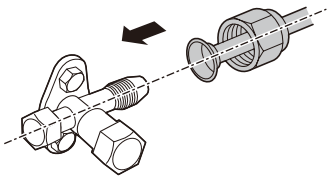


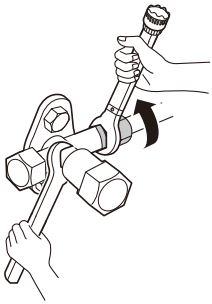
2 Remove each of the flare nuts attached to the valves of the outdoor unit.



3 Tighten the flare nut after inserting the pipe engaged with the flare nut through the center of the outdoor unit's valve.

- After fixing the valve with the help an adjustable wrench, securely tighten the flare nut using a torque wrench.



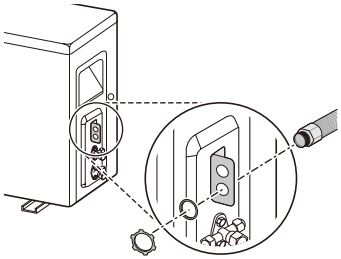


Piping Size		Torque		
inch	mm	kgf•cm	N•m	lbf•ft
Ø 1/4	Ø 6.35	180~250	17.6~24.5	13~18
Ø 3/8	Ø 9.52	340~420	33.3~41.2	25~30
Ø 1/2	Ø 12.70	550~660	53.9~64.7	40~48
Ø 5/8	Ø 15.88	630~820	61.7~80.4	45~59

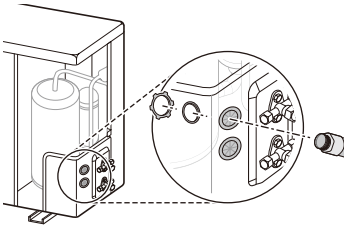
Connecting the Conduit

Connect the conduit at the bracket (Type 1) or control cover hole (Type 2) on the outdoor unit.

Type 1



Type 2

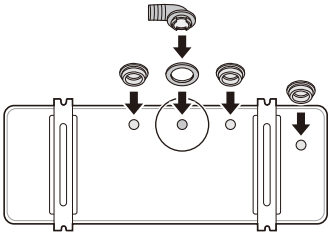


Connecting the Drain Plug

If you need to install a drain hose onto an outdoor unit, connect the drain hose after inserting the drain plug with drain washer through the drain hole on the bottom of the outdoor unit.

Accessories

Drain Plug Drain Cap Drain Washer



NOTE

- If the hole is not in use, block it with the drain cap.
- The quantity and position of the drain cap could be different depending on models.
- In cold areas, do not use the drain hose on the outdoor unit because the water drained out from the drain hose can freeze, which may cause malfunctioning by damaging the heat exchanger.

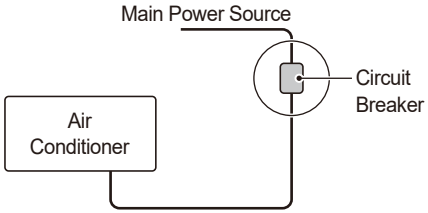
CONNECTING THE POWER CABLE

⚠ CAUTION

- The power cord connected to the outdoor unit should be complied with following specifications (UL recognized and CSA certified).
- All communication and power wiring must be connected to the terminals using UL certified connector.
- All power wiring/communication cables must comply with applicable local and national codes.
- Field wiring shall be done such that the currentcarrying conductors become taut before the earthing conductor if the cord slips out of the cord anchorage.
- The earth wire should be longer than the common wires.
- When the connection line between the indoor unit and outdoor unit is over 40 m, connect the telecommunication line and power line separately.

Circuit Breaker

Between the power and the appliance, install a certified circuit breaker. The interrupting device should be equipped to properly block all power sources.



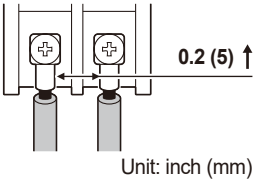
	Capacity (kBtu/h)
Circuit Breaker	15 / 18 / 24 / 30 / 36
	30 A

NOTE

- Check whether the current capacity of the selected cable and wiring exceeds the rated capacity of the recommended circuit breaker.

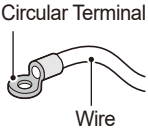
Connecting the Wires

- The distance between wires should be more than 0.2 inches (5 mm).



Unit: inch (mm)

- Connect the wire after inserting the circular terminal.



⚠ CAUTION

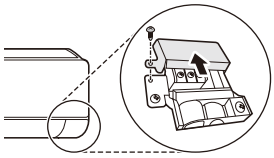
- Without exception, install an independent power circuit specifically designed for the appliance. Refer to the circuit diagram attached inside the control cover for where to connect the cable.
- Screw connections in the appliance's control box can vibrate loose during transporting and operating the appliance. Check that all the connections in the appliance are securely fixed at all times. (If they have loosened, both the wire and the termination can be broken.)

NOTE

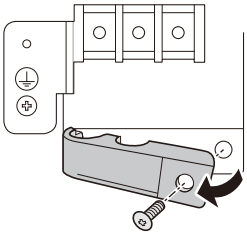
- Circuit diagrams may be altered by the manufacturer without any notification.

Indoor Unit

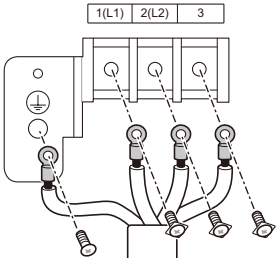
1 After loosening the screw that is holding the cover in place, pull the cover up.



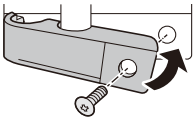
2 Open the clamp cord.



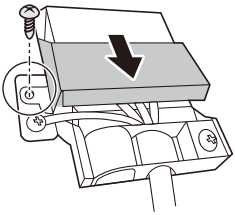
3 After pairing both wires and the ground wire with the terminal block, fasten them securely by tightening the screws.



4 Close the clamp cord again and secure it with a screw.



5 Close the cover again and secure it with the screw.



⚠ WARNING

- Loose screws may cause electrical sparks, injury, and death.

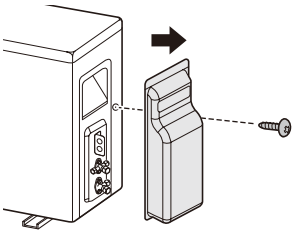
NOTE

- The feature may be changed according to the type of model.

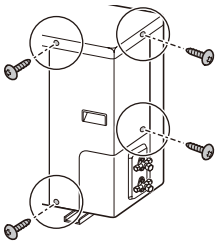
Outdoor Unit

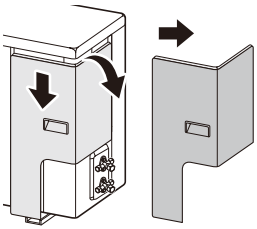
1 Open the tubing cover (Type 1) or the side panel (Type 2).

Type 1



Type 2



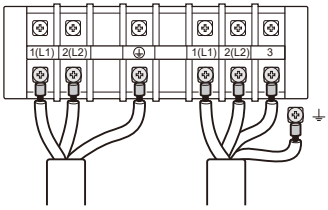


2 Open the clamp cord.

3 After pairing both the wires and the ground wire with the terminal block, fasten them securely by tightening the screws.

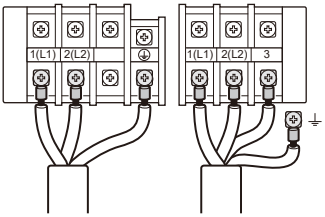
- The color of the wire for the outdoor unit and the terminal number should be the same as that of the indoor unit.

Type 1



Power Supply Cable Inter-Connecting Cable

Type 2



Power Supply Cable Inter-Connecting Cable

4 Close the clamp cord again and secure it with a screw.

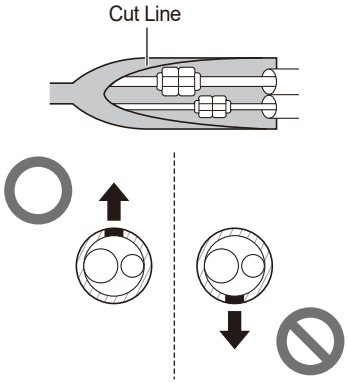
5 After closing the tubing cover or control cover, secure them with screw.

FINALIZING INSTALLATION

Wrap of Pipe Connection with Insulation

Bind the pipe connecting area with insulator and securely tie with vinyl tape.

- Wrap up the pipes with insulator to prevent gaps between them.
- Make the cutting line of the insulator wrapping the pipe face the upper direction.

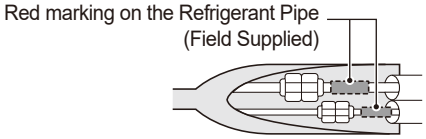


Checking the safe handling

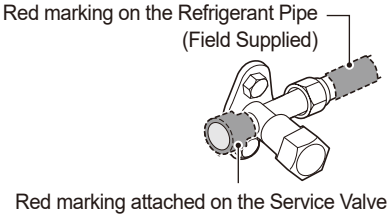
Mark refrigerant pipes with red Pantone® Matching System (PMS) #185 or RAL 3020 after flare fittings or brazing. This marking must extend a minimum of 1 inch (25 mm) in both directions and shall be replaced if removed.

- Return all labels, especially red marking, to their original condition to ensure the next consumer or servicer is aware of the presence of a flammable refrigerant.
- Ensure that the red marking for flammable refrigerant identification in the process tube area is visible following servicing.

Indoor Unit



Outdoor Unit



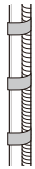
NOTE

- When installing or servicing, remove the red marking attached on the service valve. Reattach after installation or service.

Wrapping Up the Pipe, Drain Hose, and Cable

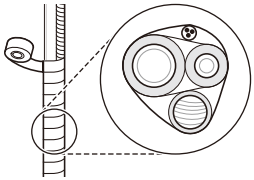
If the Outdoor Unit is Placed Below the Indoor Unit

1 Partially tie up the overlapping lines of pipe, drain hose, and cable using thin vinyl tape.



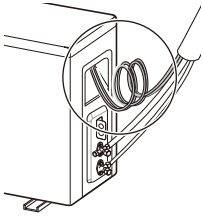
2 Use wide vinyl tape to fully tie up all the lines (pipe, drain hose, and cable).

- Start winding from the bottom up.



3 Trap the cable.

- This can prevent the electrical components from coming into contact with water.



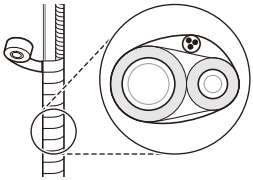
4 Close the tubing cover.

If the Outdoor Unit is Above the Indoor Unit

1 Partially tie up the overlapping lines of pipe, and cable using thin vinyl tape.

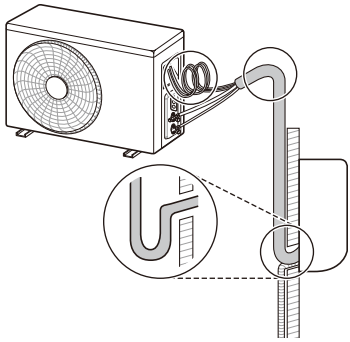
2 Use wide vinyl tape to fully tie up all the lines (pipe, and cable).

- Start winding from the bottom up.



3 Trap both the pipe and the cable.

- This can prevent the room and the electrical components from coming into contact with water.



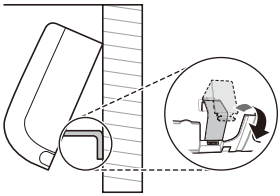
4 Close the tubing cover.

NOTE

- Apply sealant around the pipe going through the hole in the wall. This sealant can prevent the indoor air from being contaminated by outdoor air and foreign substances.

Finalizing the Indoor Unit Installation

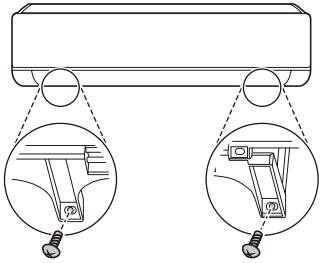
1 Close the tubing holder.



2 Push both sides (right and left) of the indoor unit toward the installation plate.

3 Fix the indoor unit on the installation plate using 'C' type screws.

- Unless the indoor unit is fixed onto the installation plate securely, it may fall. Tighten the screws firmly to avoid a gap between the indoor unit and the installation plate.

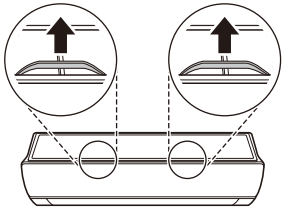


4 Reassemble the separated decor to the indoor unit.

Checking the Drainage

1 Remove the filter.

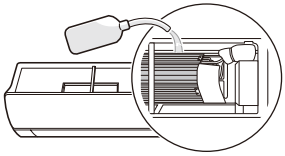
- Pull the filter up and out towards you.



NOTE

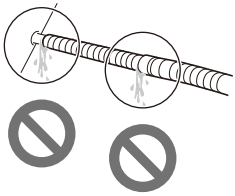
- Do not touch the metal part of the appliance when removing the filter.

2 Pour a cup of water into the back of the evaporator.



3 Check the drainage condition.

- Check whether there is any leakage from either the drain hose joint or the extended hose joint.



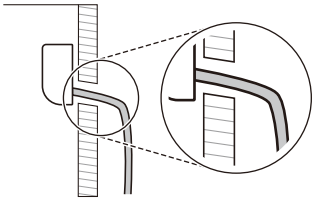
- Check the water is flowing out through the drain hose.

NOTE

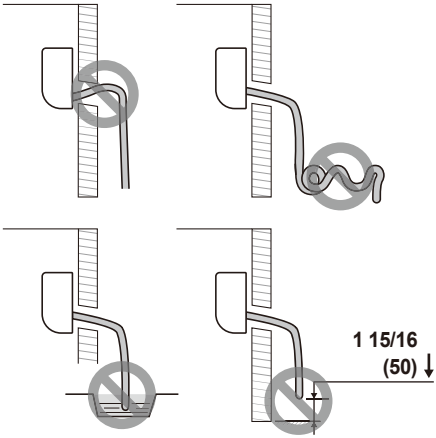
- If there is no leakage, but no water is flowing, pour a proper amount of water again.

4 Insert the filter again.

Example of Correct Drain Hose Installation



Example of Incorrect Drain Hose Installation



Unit: inch (mm)

NOTE

- If the drain hose is not installed properly, water can leak indoors.
  - If the drain hose is installed at a higher position than the indoor unit
  - If the drain hose is entangled or kinked
  - If the end of the drain hose is dipped in water
  - If the gap between the end of the drain hose and the bottom is lower than 1 15/16 inches (50 mm)

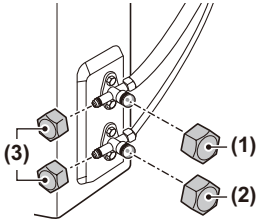
CHECK AFTER INSTALLATION

Vacuum

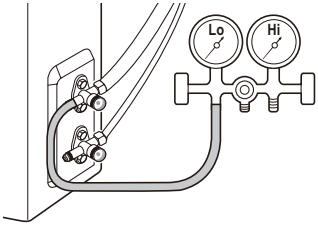
Residual air or vapor in the refrigerant system can lower appliance performance. To increase cooling and heating performance, remove air or vapor remaining in the refrigerant system using the vacuum pump.

- Work the vacuuming through the gas service valve (larger pipe).

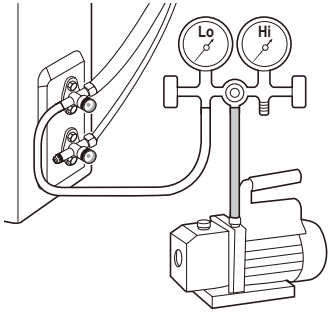
1 Remove the caps from the gas service valve (1), the liquid service valve (2), and the core valves (3) in the outdoor unit.



2 Connect the low-pressure hose of the manifold gauge to the core valve of the gas service valve.

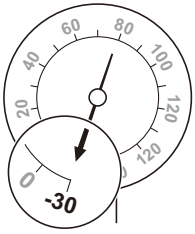


3 Connect the charging hose of the manifold gauge to the vacuum pump.



4 Open the low-pressure valve of the manifold gauge, and operate the vacuum pump.

- Operate the vacuuming until the pressure gauge is at -30 inHg (-76 cmHg).



NOTE

- The time for vacuuming could be different depending on pipe lengths.

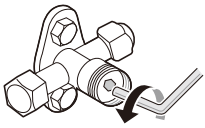
If the pipe is shorter than 33 ft (10 m)	If the pipe is longer than 33 ft (10 m)
Longer than 10 minutes	Longer than 15 minutes

- Make sure to check for gas leakage unless the vacuuming works for a long time.

5 After completing the vacuum operation, close the low-pressure valve of the manifold gauge.

6 Open fully both the gas service valve and liquid service valve of the outdoor unit.

- Rotate the valves to counter-clockwise using a hexagon wrench.



Check-Up for Gas Leakage

Gas leakage can damage the appliance's performance. Check for gas leakage by applying soapy water on the outdoor unit pipe connected to the indoor unit pipe's joint.

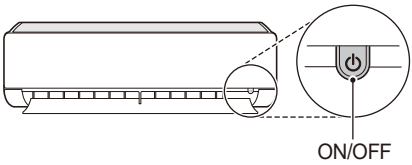
- If there is gas leakage, bubbling will occur.
- In case of bubbling, check the cause of the gas leakage.

NOTE

- Electronic leak detectors shall be used to detect flammable refrigerants, but the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.)
- Leak detection equipment shall be set at a percentage of the LFL (Lower flammable limit) of the refrigerant 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 be purged through the system both before and during the brazing process.

Test-Running

Press the **ON/OFF** button for 3 to 5 seconds for test operation.



NOTE

- Make sure that the pipe and the power cable are connected properly.
- For the operating the appliance, check whether both the gas service valve and the liquid service valve of the outdoor unit are fully opened.
- The feature and position of the button could be different depending on models.

Checking the Performance

After operating the appliance for 15-18 minutes, check the list below;

1 Check the pressure of the gas service valve.

Outdoor Temperature	Pressure of Service Valve (Gas)
68 °F (20 °C)~ 95 °F (35 °C)	8.4~9.5 kgf/cm^2 G (120~135 psi)
95 °F (35 °C)~ 104 °F (40 °C)	9.5~10.5 kgf/cm^2 G (135~150 psi)
104 °F (40 °C)~ 113 °F (45 °C)	10.5~11.6 kgf/cm^2 G (150~165 psi)
113 °F (45 °C)~ 118 °F (48 °C)	11.6~12.3 kgf/cm^2 G (165~175 psi)

NOTE

- If the actual pressure is higher than shown, the refrigerant system is most likely overcharged, and charge should be removed. If the actual pressure are lower than shown, the refrigerant system is most likely undercharged, and charge should be added.

2 Measure the temperature of the inlet and the outlet of the indoor unit.

- A difference of 14.4 °F (8 °C) between the inlet and the outlet indicates that the cooling performance is in normal.

3 Separate the low-pressure hose of the manifold gauge from the outdoor unit.

4 Close the core valve cap of the gas service valve.

- Tighten the core valve cap securely with an adjustable wrench.

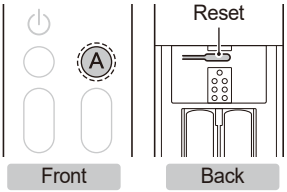
SETTING THE MODE

Setting the Cooling / Heating Only Mode

1 Supply the power to the appliance.

2 Reset the appliance.

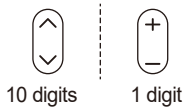
- Press the **(A)** button and **Reset** button at once.



3 Setting the code number then, press ⏻ button.

Mode	Code Number
Cooling	45
Heating	47

- You can set the code by pressing the **Temp.** and **Fan Speed** button.



- Check if buzzer beeps.

4 Cut the power to the appliance.

5 Turn back on the power to the appliance after 30 seconds.

Canceling the Cooling / Heating Only Mode

Follow the same procedure as 'Setting the Cooling / Heating Only Mode'. Please set the code number.

Mode	Code Number
Cooling	46
Heating	48

NOTE

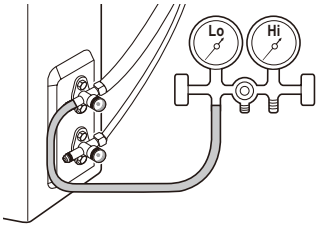
- Once the Cooling Only Mode is set, Heating, Auto Changeover can not be used.
- Once the Heating Only Mode is set, Cooling, Dehumidification, Auto Changeover can not be used.
- Once the function is canceled, it will returns to the normal state.
- The code can not be set while the appliance is operating. You can set the code when the appliance is turned off.
- If the code is not set while the appliance is turned off, the function will not operate.
- At Heating Only Mode, if the appliance gets turned off while the wireless remote control is set at other than Heating / Fan mode, the product will not get turned back on. Turn off the product after the wireless remote control is set at Heating / Fan mode and then turn back on.

CHARGING THE REFRIGERANT

If the amount of refrigerant level is low, the appliance would provide low performance. Charge the refrigerant for proper operation.

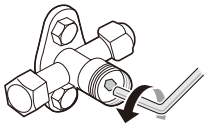
- Refer to the label attached to the side of the appliance to confirm the type and amount of refrigerant.
- Charge the refrigerant through the gas service valve (larger pipe).
- Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.

1 Connect the low-pressure hose of the manifold gauge to the core valve of the gas service valve.



2 Open both the gas service valve and the liquid service valve of the outdoor unit.

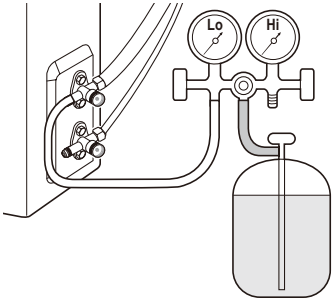
- Rotate the valves to counter-clockwise using a hexagon wrench.



3 Connect the charging hose of the manifold gauge to the refrigerant cylinder.

Charge Using the Refrigerant Cylinder with a Siphon

- This is usually applied to R32. Charge the refrigerant (gas phase) by standing the refrigerant cylinder.



4 Charge the refrigerant by adjusting the low-pressure valve of the manifold gauge.

- Refer to ‘Suggested Amount of Refrigerant Charge’.

5 After charging the refrigerant, close the low-pressure valve of the manifold gauge and separate the connected low-pressure hose from the outdoor unit.

NOTE

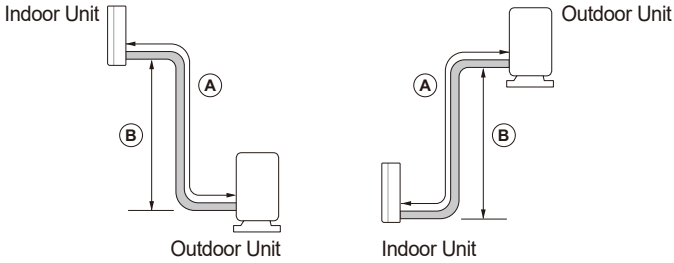
- Ensure that contamination of different refrigerants does not occur when using charging equipment.
- Extreme care shall be taken not to overfill the refrigerant system.
- Prior to recharging the system it shall be pressure tested with oxygen free nitrogen (OFN). The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.
- The handling of the refrigerant must comply with national regulations.

Suggested Amount of Refrigerant Charge

The amount of supplementary refrigerant can be different based on either appliance capacity or pipe length. Charge the proper amount of refrigerant based to the reference below.

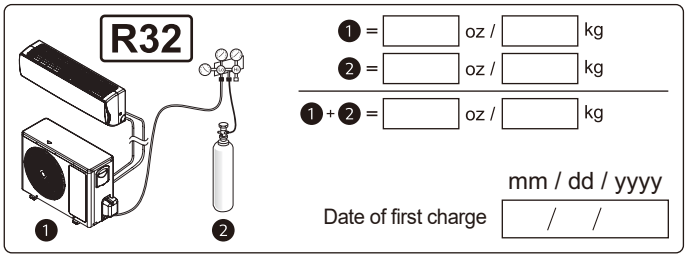
Capacity (kBtu/h)	Piping Size			
	Gas		Liquid	
	inch	mm	inch	mm
15 / 18 / 24 / 30 / 36	Ø 5/8	Ø 15.88	Ø 3/8	Ø 9.52

Capacity (kBtu/h)	Standard Length		Ⓐ Maximum Length		Ⓐ Minimum Length		Ⓑ Maximum Elevation		Refrigerant Charge at Maximum Pipe Length		Amount of Additional Refrigerant	
	ft	m	ft	m	ft	m	ft	m	oz	kg	oz/ft	g/m
15 / 18 / 24	24.6	7.5	164	50	9.8	3	98.4	30	110.2	3.125	0.32	30
30 / 36	24.6	7.5	164	50	9.8	3	98.4	30	115.5	3.275	0.32	30



NOTE

- The amount of refrigerant charged is based on the standardized pipe length. If the installed pipe is longer than the standard length, extra refrigerant needs to be added.
- Reliability cannot be guaranteed if the pipe is longer than the maximum length.
- It may cause reliability, performance, noise, and vibration problems, if piping limitations are not met. Ensure there's a minimum piping length, by making loops if necessary, if the indoor unit and outdoor unit are too close.
- Maximum Communication Cable Length (m) = Ⓐ Maximum Length (m) x 1.1
- Note down all of the following information on the label, especially the resulting total REFRIGERANT CHARGE for each REFRIGERATING SYSTEM.



❶ Refrigerant charge of the precharged part of the appliance

❷ Refrigerant charge added during installation

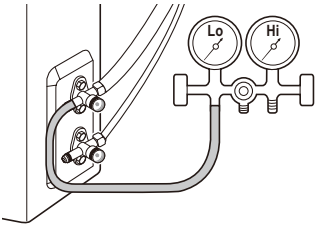
PUMP DOWN

In case of appliance relocation and repair of the refrigerant system, operate the pump down process that brings the refrigerant from the indoor unit and pipes it to the outdoor unit to avoid refrigerant loss.

- Operate the pump down process in the cooling mode.

1 Remove the caps from the gas service valve, the liquid service valve, and the core valves in the outdoor unit.

2 Connect the low-pressure hose of the manifold gauge to the core valve of the gas service valve.

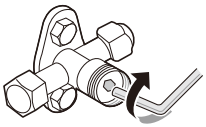


3 Operate the appliance in the cooling mode.

- Operate the appliance more than 10 minutes after checking whether the compressor of the outdoor unit is operating properly.

4 Close the liquid service valve in the outdoor unit.

- Rotate the valve clockwise using a hexagon wrench.



5 Close the gas service valve in the outdoor unit at a pressure of 0.5 kgf/cm^2 (7.1 to 14.2 psi).

- Rotate the valve clockwise using a hexagon wrench.

6 Turn off the appliance.

NOTE

- Do not operate the appliance for a long time. It may cause damage to the compressor.

7 Separate the low-pressure hose of the manifold gauge and the pipe connected to the outdoor unit.

- Use a torque wrench and adjustable wrench.

8 Close the caps from the gas service valve, the liquid service valve, and the core valves.

- Tighten all the caps by using an adjustable wrench and torque wrench.

NOTE

- Block the outdoor valve by screwing a flare nut through the pipe after welding the end of the separated pipe. This can protect the appliance from air, vapor, and foreign substances.

⚠ WARNING

- After pump down, power must be turned off before removing the pipe. It may cause explosion or injury.
- Operating the appliance while it is disconnected to the pipe could result in explosion and damage. Use the appliance after connecting it to the pipe once the appliance has been relocated and the refrigerant circuit repaired.