daitsu

Installation and Operation Manual
Outdoor Unit Multi FM DHW

IM En

Serie
MULTI FREE MAX KDT/ACS
Edition
09/25
Models
DOSM-27KDT/ACS

CONTENTS

SAFETY PRECAUTIONS

SAFETY RULES AND RECOMMENDATIONS FOR THE INSTALLER

1. Read this guide before installing and using the appliance.
2. During the installation of the indoor and outdoor units, access to the working area should be forbidden to children. Unforeseeable accidents could happen.
3. Make sure that the base of the outdoor unit is firmly fixed.
4. Check that air cannot enter the refrigerant system and check for refrigerant leaks when moving the air conditioner.
5. Carry out a test cycle after installing the air conditioner and record the operating data.
6. Protect the indoor unit with a fuse of suitable capacity for the maximum input current or with another overload protection device.
7. Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.
8. Check that the socket is suitable for the plug , otherwise have the socket changed.
9. The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under "over voltage category III conditions", and these means must be incorporated in the fixed wiring in accordance with the wiring rules.
10. The air conditioner must be installed by professional or qualified persons.
11. Do not install the appliance at a distance of less than 50 cm from inflammable substances (alcohol, etc.) Or from pressurized containers (e.g. spray cans).
12. If the appliance is used in areas without the possibility of ventilation, precautions must be taken to prevent any leaks of refrigerant gas from remaining in the environment and creating a danger of fire.
13. The packaging materials are recyclable and should be disposed of in the separate waste bins.Take the air conditioner at the end of its useful life to a special waste collection center for disposal.
14. Only use the air conditioner as instructed in this booklet. These instructions are not intended to cover every possible condition and situaion. As with any electrical household appliance, common sense and cauion are therefore always recommended for installation, operation and maintenance.
15. The appliance must be installed in accordance with applicable national regulaions.
16. Before accessing the terminals, all the power circuits must be disconnected from the power supply.
17. The appliance shall be installed in accordance with naional wiring regulaions.
18. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and under stand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
19. Do not try to install the conditioner alone, always contact specialized technical personnel.
20. Cleaning and maintenance must be carried out by specialized technical personnel. In any case disconnect the appliance from the mains electricity supply before carrying out any cleaning or maintenance.
21. Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep

the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.

22. Do not pull out the plug to switch off the appliance when it is in operation, since this could create a spark and cause a fire, etc.

23. This appliance has been made for air conditioning domestic environments and must not be used for any other purpose, such as for drying clothes, cooling food, etc.

24. Always use the appliance with the air filter mounted. The use of the conditioner without air filter could cause an excessive accumulation of dust or waste on the inner parts of the device with possible subsequent failures.

25. The user is responsible for having the appliance installed by a qualified technician, who must check that earthing/grounding is done in accordance with current legislation and insert a thermos magnetic circuit breaker.

26. The batteries in the remote controller must be recycled or disposed of properly. For disposal of scrap batteries, please discard the batteries as sorted municipal waste at the accessible collection point.

27. Never remain directly exposed to the flow of cold air for a long time. The direct and prolonged exposition to cold air could be dangerous for your health. Particular care should be taken in the rooms where there are children, old or sick people.

28. If the appliance gives off smoke or there is a smell of burning, immediately cut off the power supply and contact the Service Center.

29. The prolonged use of the device in such conditions could cause fire or electrocution.

30. Have repairs carried out only by an authorised Service Center of the manufacturer. Incorrect repair could expose the user to the risk of electric shock, etc.

31. Unhook the automatic switch if you foresee not to use the device for a long time. The airflow direction must be properly adjusted.

32. The flaps must be directed downwards in the heating mode and upwards in the cooling mode.

33. Ensure that the appliance is disconnected from the power supply when it will remain inoperative for a long period and before carrying out any cleaning or maintenance.

34. Selecting the most suitable temperature can prevent damage to the appliance.

SAFETY RULES AND PROHIBITIONS

1. Do not bend, tug or compress the power cord since this could damage it. Electrical shocks or fire are probably due to a damaged power cord. Specialized technical personnel only must replace a damaged power cord.

2. Do not use extensions or gang modules.

3. Do not touch the appliance when barefoot or parts of the body are wet or damp.

4. Do not obstruct the air inlet or outlet of the indoor or the outdoor unit. The obstruction of these openings causes a reduction in the operative efficiency of the conditioner with possible consequent failures or damages.

5. In no way alter the characteristics of the appliance.

6. Do not install the appliance in environments where the air could contain gas, oil or sulphur or near sources of heat.

7. This appliance is not intended for use by persons (including children) with reduced physical,sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

8. Do not climb onto or place any heavy or hot objects on top of the appliance.

9. Do not leave windows or doors open for long when the air conditioner is operating.
10. Do not direct the airflow onto plants or animals.
11. A long direct exposition to the flow of cold air of the conditioner could have negative effects on plants and animals.
12. Do not put the conditioner in contact with water. The electrical insulation could be damaged and thus causing electrocution.
13. Do not climb onto or place any objects on the outdoor unit.
14. Never insert a stick or similar object into the appliance. It could cause injury.
15. Children should be supervised to ensure that they do not play with the appliance. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

INSTRUCTION FOR SERVICING(R32)

1. Check the information in this manual to find out the dimensions of space needed for proper installation of the device, including the minimum distances allowed compared to adjacent structures.
2. Appliance shall be installed, operated and stored in a room with a floor area larger than $4m^2$.
3. The installation of pipe-work shall be kept to aminimum.
4. The pipe-work shall be protected from physical damage, and shall not be installed in an unventilated space if the space is smaller than $4m^2$.
5. The compliance with national gas regulations shall be observed.
6. The mechanical connections shall be accessible for maintenance purposes.
7. Follow the instructions given in this manual for handling, installing, cleaning, maintaining and disposing of the refrigerant.
8. Make sure ventilation openings clear of obstruction.
9. Notice: The servicing shall be performed only as recommended by the manufacturer.
10. Warning: The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
11. Warning: 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).
12. The appliance shall be stored so as to prevent mechanical damage from occurring.
13. It is appropriate that anyone who is called upon to work on a refrigerant circuit should hold a valid and up-to-date certificate from an assessment authority accredited by the industry and recognizing their competence to handle refrigerants, in accordance with the assessment specification recognized in the industrial sector concerned. Service operations should only be carried out in accordance with the recommendations of the equipment manufacturer. Maintenance and repair operations that require the assistance of other qualified persons must be conducted under the supervision of the person competent for the use of flammable refrigerants.
14. Every working procedure that affects safety means shall only be carried out by competent persons.
15. Warning:

* Do not use any means to accelerate the defrosting process or clean the frost on your own.Follow the recommended guidelines from the manufacturer.
* The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.
* Do not pierce or burn.
* Be aware that refrigerants may not contain an odor.

Caution:Risk of fire

Read operator's manual

Operating instructions

Read technical manual

16. Information on servicing:

1) Checks to the area

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system,the following precautions shall be complied with prior to conducting work on the system.

2) Work procedure

Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

3) General work area

All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided. The area around the workspace shall be sectioned off. Ensure that the conditions within the area have been made safe by control of flammable material.

4) Checking for presence of refrigerant

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

5) Presence of fire extinguisher

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

6) No ignition sources

No person carrying out work in relation to a refrigeration system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

7) Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any work that will produe heat. A degree of ventilation shall continue during the period that the work is carried out.The ventilation should safely disperse anyreleased refrigerant and preferably expel it externally into the atmosphere.

8) Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed.

If in doubt consult the manufacturer's technical department for assistance.

The following checks shall be applied to instllations using flammable refrigerants:

-- The charge size 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.

9) Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

-- That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;

-- That no live electrical components and wiring are exposed while charging, recovering or purging the system;

-- That there is continuity of earth bonding.

17. Repairs to sealed components

1) During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

2) Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive nu mber of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc. Ensure that apparatus is mounted securely. Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

NOTE: The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components d o not have to be isolated prior to working on them.

18. Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer . Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

19. Cabling

Check that cabling will not be subject to wear,corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into

account the effects of aging or continual vibration from sources such as compressors or fans.

20. Detection of flammable refrigerants

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.

21. Leak detection methods

The following leak detection methods are deemed acceptable for systems containing flammable refrigerants.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.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equiment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrierant employed and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/ extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Oxygen free nitrogen (OFN) shall then be purged through the system both before and during the brazing process.

22. Removal and evacuation

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

-- Remove refrigerant;
-- Purge the circuit with inert gas;
-- Evacuate;
-- Purge again with inert gas;
-- Open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be flushed with OFN to render the unit safe. This process may need to be repeated several times.

Compressed air or oxygen shall not be used for this task.

Flushing shall be achieved by breaking the vacuum in the system with OFN and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final OFN charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.

Ensure that the outlet for the vacuum pump is not close to any ignition sources and there is ventilation available.

23. Decommissioning

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

that electrical power is available before the task is commenced.

a)Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure,ensure that:

. mechanical handling equipment is available,if required,for handling refrigerant cylinders;

. all personal protective equipment is available and being used correctly;

. the recovery process is supervised at all times by a competent person;

. recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system,if possible.

e) If a vacuum is not possible,make a manifold so that refrigerant can be removed from various parts of the system.

f) Make sure that cylinder is situated on the scales before recovery takes place.

g) Start the recovery machine and operate in accordance with manufacturer's instructions.

h) Do not overfill cylinders.(No more than 80% volume liquid charge).

i) Do not exceed the maximum working pressure of the cylinder,even temporarily.

j) When the cylinders have been filled correctly and the process completed,make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.

k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

24. Labeling

Equipment shall be labled stating that it has been de-commissioned and emptied of refrigerant.

The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

25. Recovery

When removing refrigerant from a system,either for servicing or decommissioning,it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders,ensure that only appropriate refrigerant recovery cylinders are employed.Ensure that the correct number of cylinders for holding the total system charge are available.All cylinders to be used are designated for the recovered refrigerant and labled for that refrigerant(i.e.Special cylinders for he recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.

Empty recovery cylinders are evacuated and,if possible,cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appriate refrigerants includeing,when applicable,flammable refrigerants.In addition,a set of calibrated weighing scales shall be available and in good working order.Hoses shall be complete with leak-free disconnect couplings and in good condition.Before using the recovery machine,check that it is in satisfactory working order,has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release.Consult manufacturer if in doubt.The recovered refrigerant shall be returned to the refrigerant supplier in the correct recover cylinder,and the relevant waste transfer note arranged.Do not mix refrigerants in recovery units and especiallly not in cylinders.If compressors or compressor oils are to be removed,ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.The evacuation process shall be carried out prior to returning

the compressor to the suppliers.Only electric heating to the compressor body shall be employed to accelerate this process.When oil is drained from a system,it shall be carried out safely.

Important Considerations

1. The air conditioner must be installed by professional personnel and the Installation manual is used only for the professional installation personnel! The installation specifications should be subject to our after-sale service regulations.
2. When filling the combustible refrigerant, any of your rude operations may cause serious injury or injuries to human body and objects.
3. A leak test must be done after the installation completed.
4. It is a must to do the safety inspection before maintaining or repairing an air conditioner using combustible refrigerant in order to ensure that the fire risk is reduced to minimum.
5. It is necessary to operate the machine under a controlled procedure in order to ensure that any risk arising from the combustible gas or vapor during the operation is reduced to minimum.
6. Requirements for the total weight of filled refrigerant and the area of a room to be equipped with an air conditioner (are shown as in the following Tables GG.1 and GG.2)

The maximum charge and the required minimum floor area

$m_1 = (4m^3) \times LFL, m_2 = (26m^3)) \times LFL, m_3 = (130m^3) \times LFL$

Where LFL is the lower flammable limit in kg/m^3,R32 LFL is $0.306kg/m^3$.

For the appliances with a charge amount $m_1 < M = m_2$:

The maximum charge in a room shall be in accordance with the following:

$m_{max} = 2.5 \times (LFL)^{(5/4)} \times h_0 \times (A)^{1/2}$

The required minimum floor area A min to install an appliance with refrigerant charge M(kg) shall be in accordance with following: $A_{min} = (M/ (2.5 \times (LFL)^{(5/4)} \times h_0))^2$

Where:

Table GG.1 - Maximum charge (kg)

Category	LFL (kg/m^3)	h_0(m)	Floor area (m^2)						
			4	7	10	15	20	30	50
R32	0.306	1	1.14	1.51	1.8	2.2	2.54	3.12	4.02
		1.8	2.05	2.71	3.24	3.97	4.58	5.61	7.254
		2.2	2.5	3.31	3.96	4.85	5.6	6.86	8.85

Table GG.2 - Minimum room area (m^2)

Category	LFL (kg/m^3)	h_0(m)	Charge amou nt (M) (kg) Minimum room area (m^2)						
			1.224kg	1.836kg	2.448kg	3.672kg	4.896kg	6.12kg	7.956kg
R32	0.306	0.6		29	51	116	206	321	543
		1		10	19	42	74	116	196
		1.8		3	6	13	23	36	60
		2.2		2	4	9	15	24	40

Installation Safety Principles

1. Site Safety		
		

Open Flames Prohibited	Ventilation Necessary

2. operation safety			
			
Mind Static Electricity	Must wear protective clothing and anti-static gloves		Don`t use mobile phone

3. Installation Safety

Refrigerant Leak Detector

Appropriate Installation Location

The left picture is the schematic diagram of a refrigerant leak detector.

Please note that:

1) The installation site should be well-ventilated.

2) The sites for installing and maintaining an air conditioner using Refrigerant R32 should be free from open fire or welding, smoking, drying oven or any other heat source higher than 548 which easily produces open fire.

3) When installing an air conditioner, it is necessary to take appropriate anti-static measures such as wear anti-static clothing and/or gloves.

4) It is necessary to choose the site convenient for installation or maintenance wherein the air inlets and outlets of the indoor and outdoor units should be not surrounded by obstacles or close to any heat source or combustible and/or explosive environment.

5) If the indoor unit suffers refrigerant leak during the installation, it is necessary to immediately turn off the valve of the outdoor unit and all the personnel should go out till the refrigerant leaks completely for 15 minutes. If the product is damaged, it is a must to carry such damaged product back to the maintenance station and it is prohibited to weld the refrigerant pipe or conduct other operations on the user's site.

6) It is necessary to choose the place where the inlet and outlet air of the indoor unit is even.

7) It is necessary to avoid the places where there are other electrical products, power switch plugs and sockets, kitchen cabinet, bed, sofa and other valuables right under the lines on two sides of the indoor unit.

Suggested Tools

Tool	Picture	Tool	Picture	Tool	Picture
Standard Wrench		Pipe Cutter		Vacuum Pump	
Adjustable/ Crescent Wrench		Screw drivers (Phillips & Flat blade)		Safety Glasses	

Torque Wrench		Manifold and Gauges		Work Gloves	
Hex Keys or Allen Wrenches		Level		Refrigerant Scale	
Drill & Drill Bits		Flaring tool		Micron Gauge	
Hole Saw		Clamp on Amp Meter			

NAME OF PARTS

WARNING

• Be sure to cut off the power supply before cleaning the air conditioner; otherwise electric shock might happen.

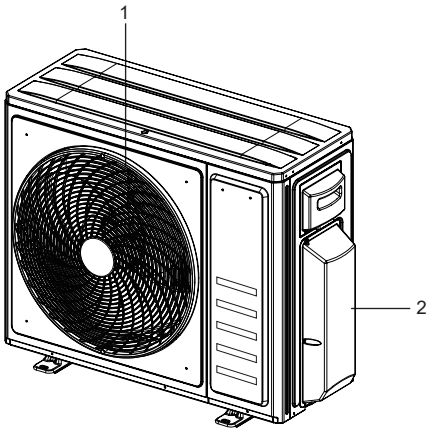
• Wetting of air c onditioner m ay ca use the risk of electric shoc k .Make sure not to wash your air conditioner in any case.

• Volatile liquids such as thinner or gasoline will cause damage to the appearance of air conditioner. (Only use soft dry cloth moist cloth clean the air conditioner cabinet).

• This product must not be disposed together with the domestic waste.This product has to be disposed at an authorized electronic appliances.

• The temperature of refrigerant circuit will be high,please keep the interconnection cable away from the copper tube.

OUTDOOR UNIT	
No.	Description
1	Air outlet grille
2	Valve cover

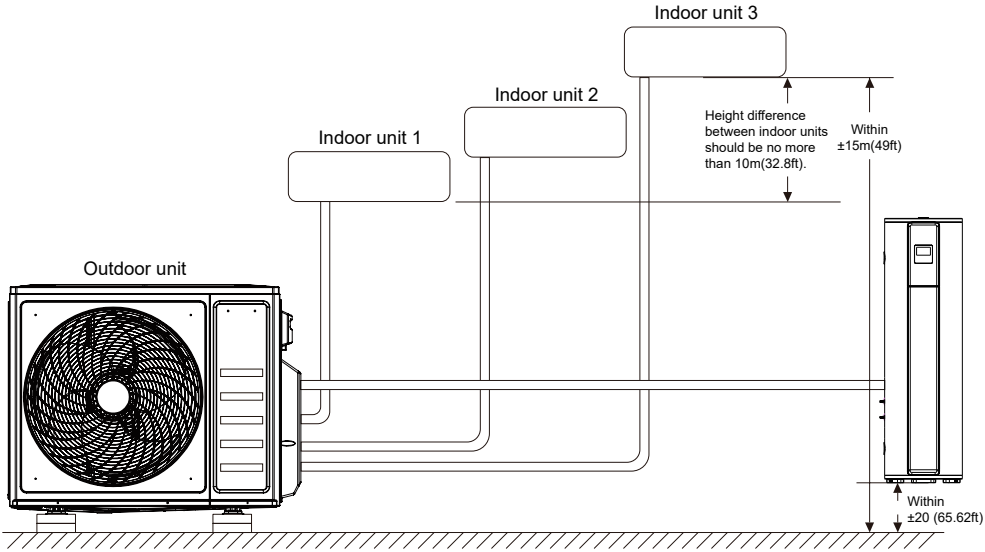


Note: 1.The above figures are only intended to a simple diagram of the appliance and may not correspond to the appearance of the units that tave been purchased.
2.The prototype runs for a total of 8 hours.After shutting down,the fan will romate 70s backwards to remove and clean the heat exchanger.

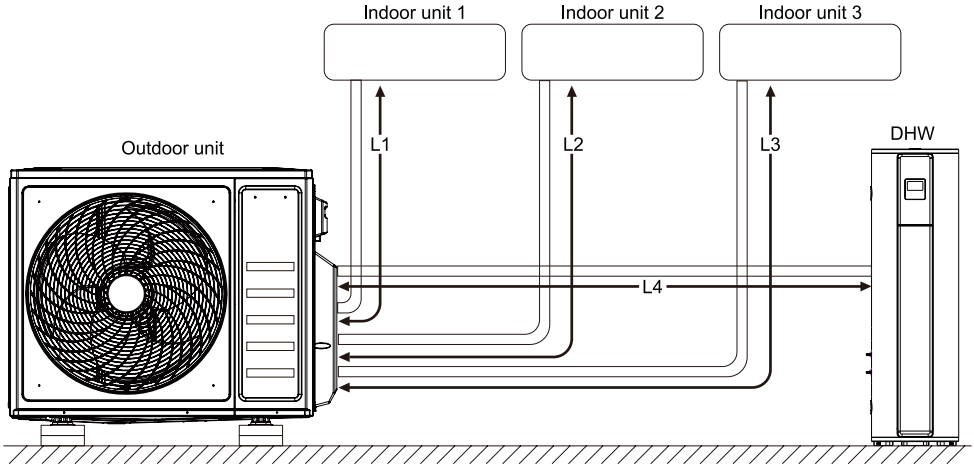
INSTALLATION PRECAUTIONS

SPECIFICATIONS

NOTE: For multi-split type air conditioners, one outdoor unit can be matched to different types of indoor units. All of the pictures in this manual are for demonstration purposes only. Your air conditioner may be slightly different, if similar in shape. The following pages introduce several kinds of indoor units that can be matched with the outdoor units.



When installing multiple indoor units with a single outdoor unit, ensure that the length of the refrigerant pipe and the drop height between the indoor and outdoor units meet the requirements illustrated in the next page diagram:



Piping length

L1/L2/L3/L4: Piping length is the one-way length of liquid piping.

L1+L2+L3+L4= Maximum 80m

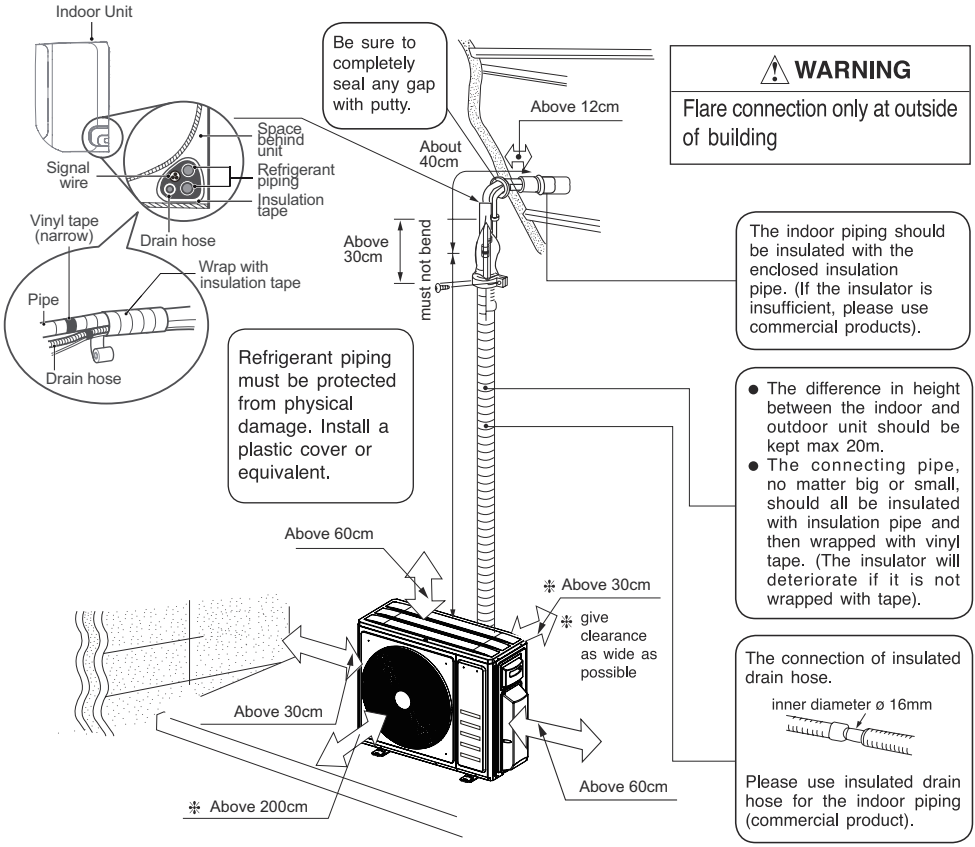
Minimum piping length for each indoor unit is 3m(5m for DHW).
Maximum piping length for each indoor unit is 30m(25m for DHW).

⚠ CAUTION

- The standard pipe length is 5m.
- The product can be used with one DHW.
- The product can be used with an Air Conditioner unit.
- The product can be used with both a DHW and an Air Conditioner.

NOTE: See the technical manual or ask your local service provider for details of the specific internal machine combinations.

INSTALLATION PRECAUTIONS



NOTE: The installation must be performed in accordance with the requirement of local and national standards. The installation may be slightly different in different areas.

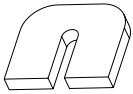
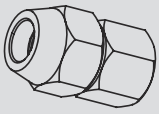
CAUTION

- To prevent wall damage, use a stud finder to locate studs.
- A minimum pipe run of 3 metres is required to minimise vibration & excessive noise.
- Two of the A, B, and C air circulation pathways must be free from obstructions at all times.
- This illustration is for demonstration purposes only.
- The actual shape of your air condtioner may be slightly different.
- Copper lines must be independently insulated.

PRODUCTION INSTALLATION

ACCESSORIES

The air conditioning system comes with the following accessories. Use all of the installation parts and accessories to install the air conditioner. Improper installation may result in water leakage, electrical shock and fire, or cause the equipment to fail. The items are not included with the air conditioner must be purchased separately.

Name of Accessories	Q'ty(pc)	Shape	Name of Accessories	Q'ty(pc)	Shape
Manual	1~4		Drain spout (Optional)	1	
Installation plate (somemodels)	1		Drain pipe (Optional)	1	
Plastic expansion sheath (some models)	5-8 (depending on models)		Safety Foot Pad	4	
Self-Tapping Screw A (some models)	5-8 (depending on models)				
Transfer connector (packed with the indoor or outdoor unit,depending on models) NOTE:Pipe size may differ from appliance to appliance.To meet different pipe size uirements,sometimes the pipe connections need a transfer connector installed on the outdoor unit.	Optional part (one piece/one indoor unit) Optional part (1-5 pieces for outdoor unit,depending on models)		Cord protection rubber ring(If the cord clamp cannot fasten on a small cord,use the cord protection rubber ring [supplied with accessories] to wrap around the cord.Then fix it in place with the cord clamp.) (some models)	1	

Optional accessories

There are two types of remote controls: wired and wireless.

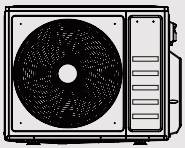
Select a remote controller based on customer preferences and requirements and install in an appropriate place.

Refer to catalogues and technical literature for guidance on selecting a suitable remote controller.

Name	Shape		Quantity(PC)
Connecting pipe assembly	Liquid side	Φ6.35(1/4 in)	Parts you must purchase separately. Consult the dealer about the proper pipe size of the unit you purchased.
	Gas side	Φ9.52(3/8 in)	
		Φ12.7(1/2 in)	
		Φ16(5/8 in)	

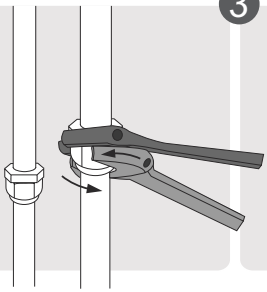
INSTALLATION SUMMARY

1



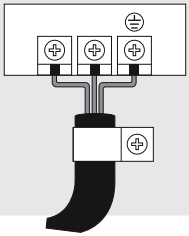
Install the outdoor unit

2



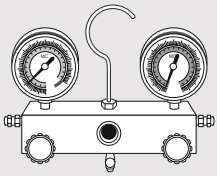
Connect the refrigerant pipes

3



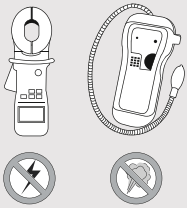
Connect the wires Connect

4



Evacuate the refrigeration system

5



Perform a test run

INSTALL YOUR OUTDOOR

1.Select installation location

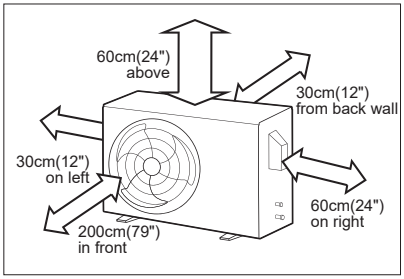
WARNING

Installation shall be done by an installer, the choice of materials and installation shall comply with the applicable legislation. In Europe, EN378 is the applicable standard.

NOTE:PRIOR TO INSTALLATION

Before installing the outdoor unit, you must choose an appropriate location. The following are standards that will help you choose an appropriate location for the unit.

Proper installation locations meet the following standards:



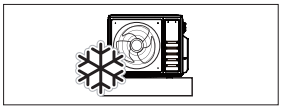
☑ Meets all spatial requirements shown in Installation Space Requirements above.

☑ Good air circulation and ventilation.

☑ Firm and solid—the location can support the unit and will not vibrate.

☑ Noise from the unit will not disturb other people.

☑ Protected from prolonged periods of direct sunlight or rain.



☑ Where snowfall is anticipated, take appropriate measures to prevent ice buildup and coil damage.

NOTE

Install the unit by following local codes and regulations , there may be differ slightly between different regions.

The outdoor unit is designed for outdoor installation only, and for ambient temperatures within the following ranges (unless otherwise specified in the operation manual of the connected indoor unit):

DX operation range	
Cooling mode	**Heating mode**
–15~53℃	–20~30℃

DHW operation range
–15~43℃

CAUTION

SPECIAL CONSIDERATIONS FOR EXTREME WEATHER

If the unit is exposed to heavy wind:

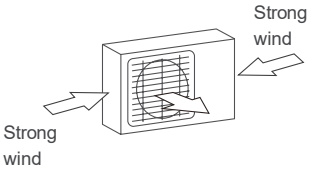
Install unit so that air outlet fan is at a 90° angle to the direction of the wind. If needed, build a barrier in front of the unit to protect it from extremely heavy winds. See Figures below.

If the unit is frequently exposed to heavy rain or snow:

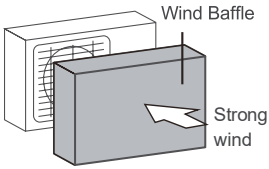
Build a shelter above the unit to protect it from the rain or snow. Be careful not to obstruct air flow around the unit.

If the unit is frequently exposed to salty air(seaside):

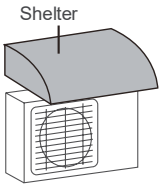
Use outdoor unit that is specially designed to resist corrosion.



90° angle to the direction of the wind



Build a wind Baffle to protect the unit



Build a shelter to protect the unit

DO NOT install unit in the following locations:

- ⊘ Near an obstacle that will block air inlets and outlets.
- ⊘ Near animals or plants that will be harmed by hot air discharge.
- ⊘ In a location that is exposed to large amounts of dust
- ⊘ Near a public street, crowded areas, or where noise from the unit will disturb others.
- ⊘ Near any source of combustible gas.
- ⊘ In a location exposed to a excessive amounts of salty air.

3. Anchor Outdoor Unit

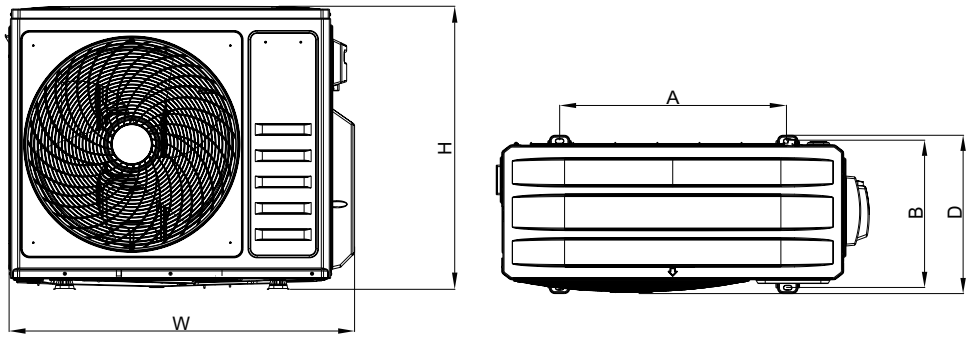
WARNING

WHEN DRILLING INTO CONCRETE, EYE PROTECTION IS RECOMMENDED AT ALL TIME.

• The outdoor unit can be anchored to the ground or to a wall-mounted bracket with bolt(M10). Prepare the installation base of the unit according to the dimensions below.

• The following is a list of different outdoor unit sizes and the distance between their mounting feet.Prepare the installation base of the unit according to the dimensions below.

Outdoor Unit Types and Specifications (Split Type Outdoor Unit)

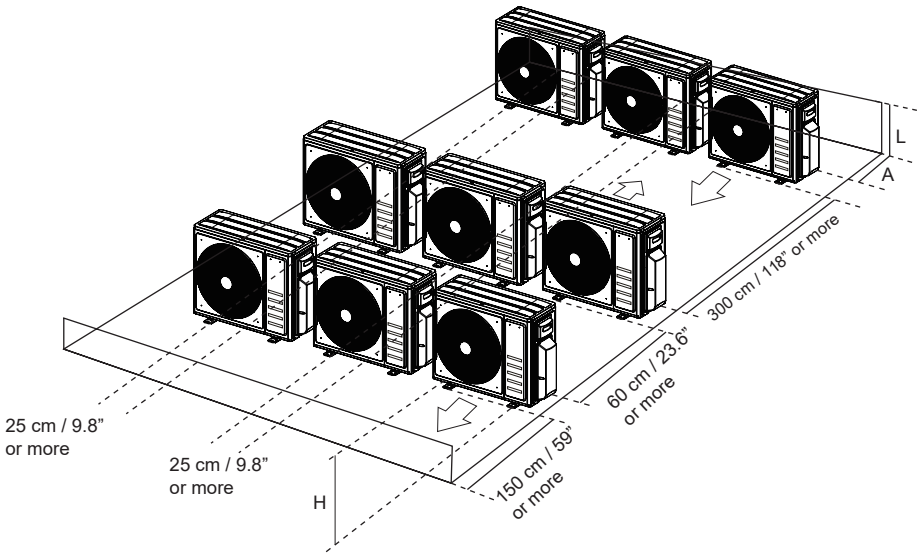


Outdoor Model	Outdoor Unit Dimensions mm (in.)	Mounting Dimensions mm (in.)	
	W x H x D	A	B
27K	982 x 804 x 421(38.7 x 31.7 x 16.6)	607(20.3)	390(15.4)

Rows of series installation

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

	L	A
L ≤ H	L 1/2H	25 cm / 9.8” or more
	1/2H < L H	30 cm / 11.8” or more
L > H	Can not be installed	



Notes On Drilling Hole In Wall

You must drill a hole in the wall for the refrigerant piping, and the signal cable that will connect the indoor and outdoor units.

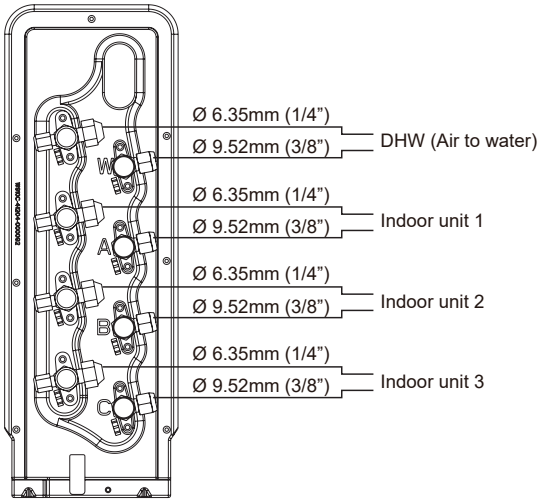
1. Determine the location of the wall hole based on the location of the outdoor unit.
2. Using a 65-mm (2.5”) core drill, drill a hole in the wall.

NOTE: When drilling the wall hole, make sure to avoid wires, plumbing, and other sensitive components.

3. Place the protective wall cuff in the hole. This protects the edges of the hole and helps seal it when you finish the installation process.

(unit: inch)

Indoor Unit capacity(Btu/h)	Liquid	Gas
7K/12K/18K (25-52)	1/4	3/8
24K (71)	3/8	5/8



Outdoor unit pipe connection port

CAUTION

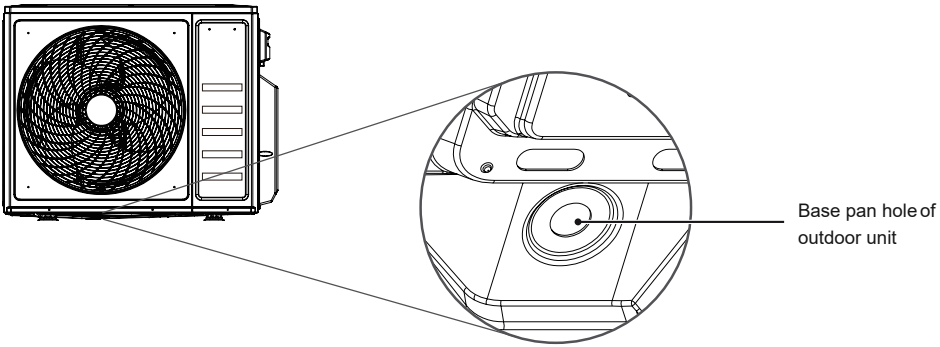
• The pipe connection ports of the outdoor unit and connectable indoor units are shown above.

2.Install drain joint(Heat pump unit only)

NOTE : PRIOR TO INSTALLATION

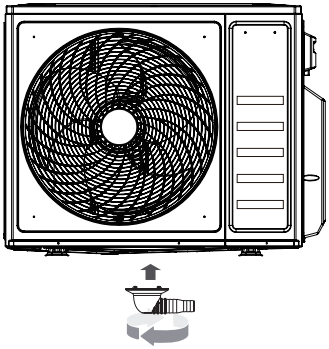
Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit.

For the units with base pan built-in with multiple holes for proper draining during defrost, the drain joint is no need to be installed.



Step 1:

Find out the base pan hole of outdoor unit.



Step 2:

• Insert the drain joint into the hole in the base pan of the unit. The drain joint will click in place.

• Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

IN COLD CLIMATES

In cold climates, make sure that the drain hose is as vertical as possible to ensure swift water drainage. If water drains too slowly, it can freeze in the hose and flood the unit.

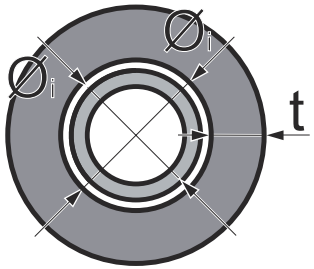
REFRIGERANT PIPING CONNECTION

When connecting refrigerant piping, **DO NOT** let substances or gases other than the specified refrigerant enter the unit. The presence of other gases or substances will lower the unit's capacity,and can cause abnormally high pressure in the refrigeration cycle. This can cause explosion and injury.

Refrigerant piping insulation

- Use polyethylene foam as insulation material:
  - with a heat transfer rate between 0.041 and 0.052 W/mK (0.035 and 0.045 kcal/mh℃)
  - with a heat resistance of at least 120℃
- Insulation thickness.

Pipe outer diameter ($Ø_p$)	Insulation inner diameter ($Ø_i$)	Insulation thickness (t)
6.35 mm (1/4")	8~10 mm	⩾ 10 mm
9.52 mm (3/8")	12~15 mm	⩾ 13 mm
12.7 mm (1/2")	14~16 mm	⩾ 13 mm



If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

Use separate thermal insulation pipes for the gas and liquid refrigerant piping.

Connection Instructions—Refrigerant Piping

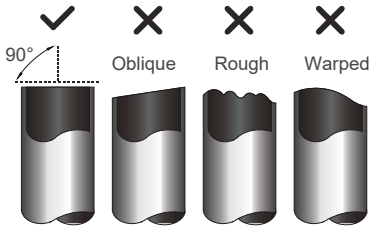
⚠ CAUTION

- The branching pipe must be installed horizontally. An angle of more than 10° may cause malfunction.
- **DO NOT** install the connecting pipe until both indoor and outdoor units have been installed.
- Insulate both the gas and liquid piping to prevent condensation.

Step 1: Cut pipes

When preparing refrigerant pipes, take extra care to cut and flare them properly. This will ensure efficient operation and minimize the need for future maintenance.

- Measure the distance between the indoor and outdoor units.
- Using a pipe cutter, cut the pipe a little longer than the measured distance.
- Make sure that the pipe is cut at a perfect 90° angle.



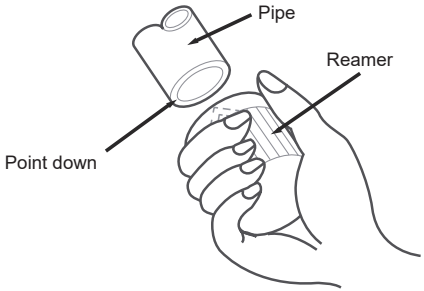
DO NOT DEFORM PIPE WHILE CUTTING

Be extra careful not to damage, dent, or deform the pipe while cutting. This will drastically reduce the heating.

Step 2: Remove burrs

Burrs can affect the air-tight seal of refrigerant piping connection. They must be completely removed.

- Hold the pipe at a downward angle to prevent burrs from falling into the pipe.
- Using a reamer or deburring tool, remove all burrs from the cut section of the pipe.



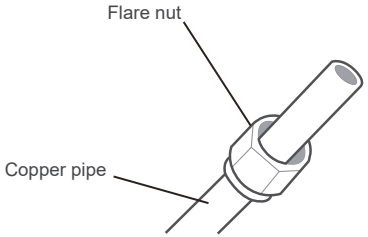
Step 3: Flare pipe ends

Proper flaring is essential to achieve an airtight seal.

• After removing burrs from cut pipe, seal the ends with PVC tape to prevent foreign materials from entering the pipe.

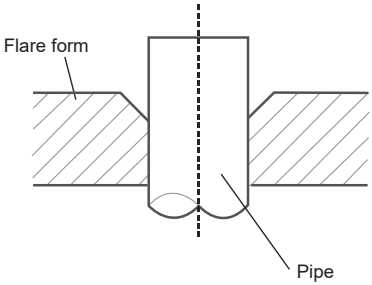
• Sheath the pipe with insulating material.

• Place flare nuts on both ends of pipe. Make sure they are facing in the right direction, because you can't put them on or change their direction after flaring.



• Remove PVC tape from ends of pipe when ready to perform flaring work.

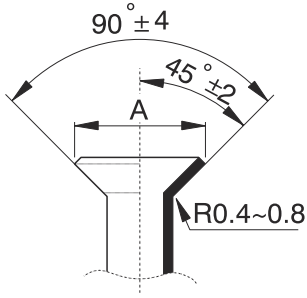
• Clamp flare from on the end of the pipe. The end of the pipe must extend beyond the flare form.



• Place flaring tool onto the form.

• Turn the handle of the flaring tool clockwise until the pipe is fully flared.

PIPING EXTENSION BEYOND FLARE FORM

Pipe gauge	Tightening torque	Flare dimension(A) (Unit:mm/Inch)		Flare shape
		Min.	Max.	
Ø 6.35 (Ø 1/4")	15-20 N.m (1.5-2kgf.m)	8.4/0.33	8.7/0.34	
Ø 9.52 (Ø 3/8")	31-35 N.m (3.2-3.6kgf.m)	13.2/0.52	13.5/0.53	
Ø12 (Ø1/2")	45-50 N.m (4.6-5.1kgf.m)	16.2/0.64	16.5/0.65	
Ø 15.88 (Ø 5/8")	60-65 N.m (6.1-6.6kgf.m)	19.2/0.76	19.7/0.78	

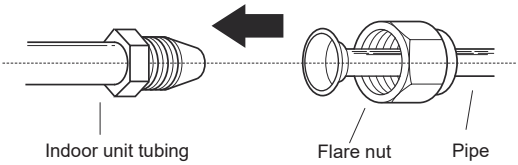
• Remove the flaring tool and flare form, then inspect the end of the pipe for cracks and even flaring.

Step 4: Connect pipes

Connect the copper pipes to the indoor unit first,then connect it to the outdoor unit. You should first connect the low-pressure pipe, then the highpressure pipe.

• When connecting the flare nuts, apply a thin coat of refrigeration oil to the flared ends of the pipes.

• Align the center of the two pipes that you will connect.



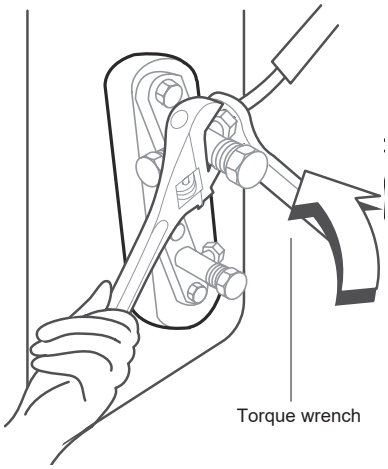
• Tighten the flare nut snugly by hand.

• Using a wrench, grip the nut on the unit tubing.

• While firmly gripping the nut, use a torque wrench to tighten the flare nut according to the torque values in above table.

NOTICE

Use both a spanner and a torque wrench when connecting or disconnecting pipes to/ from the unit.



CAUTION

Ensure to wrap insulation around the piping. Direct contact with the bare piping may result in burns or frostbite.

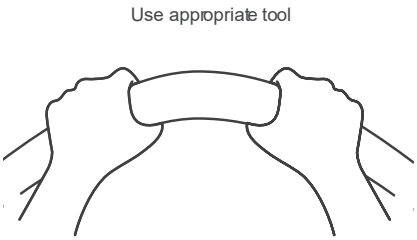
• Make sure the pipe is properly connected. Over tightening may damage the bell mouth and under tightening may lead to leakage.

CAUTION

MINIMUM BEND RADIUS

Carefully bend the tubing in the middle according to the diagram below.

DO NOT bend the tubing more than 90° or more than 3 times.



• After connecting the copper pipes to the indoor unit, wrap the power cable, signal cable and the piping together with binding tape.

NOTICE

DO NOT intertwine signal cable with other wires. While bundling these items together.

DO NOT intertwine or cross the signal cable with any other wiring.

WIRING PRECAUTIONS

⚠ WARNING

BEFORE PERFORMING ANY ELECTRICAL WORK, READ THESE WARNINGS.

• All wiring must comply with local and national electrical codes, regulations and must be installed by a licensed electrician.

• All electrical connections must be made according to the Electrical Connection Diagramlocated on the panels of the indoor and outdoor units.

• If there is a serious safety issue with the power supply, stop work immediately. Explain your reasoning to the client, and refuse to install the unit until the safety issue is properly resolved.

• Power voltage should be within 90-110% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.

• Installation of an external surge suppressor at the outdoor disconnect is recommended.

• If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8in (3mm) must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.

• Only connect the unit to an individual branch circuit. Do not connect another appliance to that outlet.

• Make sure to properly ground the air conditioner.

• Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.

• Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.

• If the unit has an auxiliary electric heater, it must be installed at least 1 meter (40in) away from any combustible materials.

• To avoid getting an electric shock, never touch the electrical components soon after the power supply has been turned off. After turning off the power, always wait 10 minutes or more before you touch the electrical components.

• Make sure that you do not cross your electrical wiring with your signal wiring.

• This may cause distortion, interference or possibly damage to circuit boards.

• No other equipment should be connected to the same power circuit.

• Connect the outdoor wires before connecting the indoor wires.

OUTDOOR UNIT WIRING

⚠ WARNING

Before performing any electrical or wiring work, turn off the main power to the system.

1. 1.Prepare the cable for connection

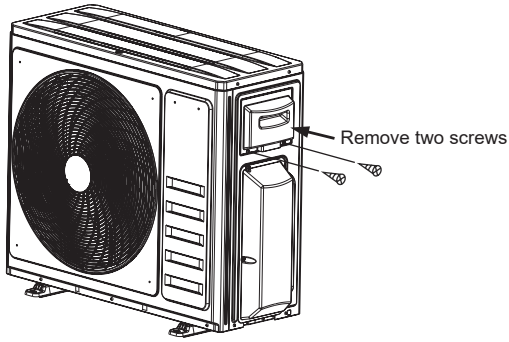
a. You must first choose the right cable size. Be sure to use H07RN-F cables.

Minimum Cross-Sectional Area of Power and Signal Cables-For reference (Not applicable for North America)

Rated Current of Appliance (A)	Nominal Cross-Sectional Area (mm)
> 3 and ≤ 6	0.75
> 6 and ≤ 10	1
> 10 and ≤ 16	1.5
> 16 and ≤ 25	2.5
> 25 and ≤ 32	4
> 32 and ≤ 40	6

NOTE: When connecting the wires,strictly follow the wiring diagram found inside the electrical box cover.

2. Unscrew the electrical wiring cover and remove it.
3. Unscrew the cable clamp below the terminal block and place it to the side.
4. Connect the wire according to the wiring diagram, and firmly screw the u-lug of each wire to its corresponding terminal.
5. After checking to make sure every connection is secure, loop the wires around to prevent rain water from flowing into the terminal.
6. Using the cable clamp, fasten the cable to the unit. Screw the cable clamp down tightly.
7. Insulate unused wires with PVC electrical tape. Arrange them so that they do not touch any electrical or metal parts.
8. Replace the wire cover on the side of the unit, and screw it in place.



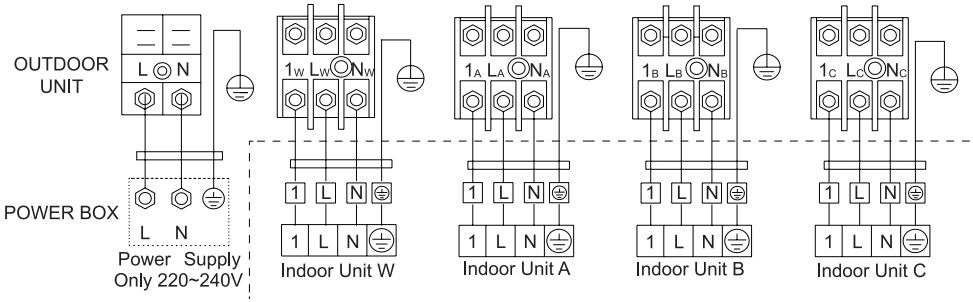
Wiring Figure

⚠ CAUTION

Cable Connection Between IDU To ODU

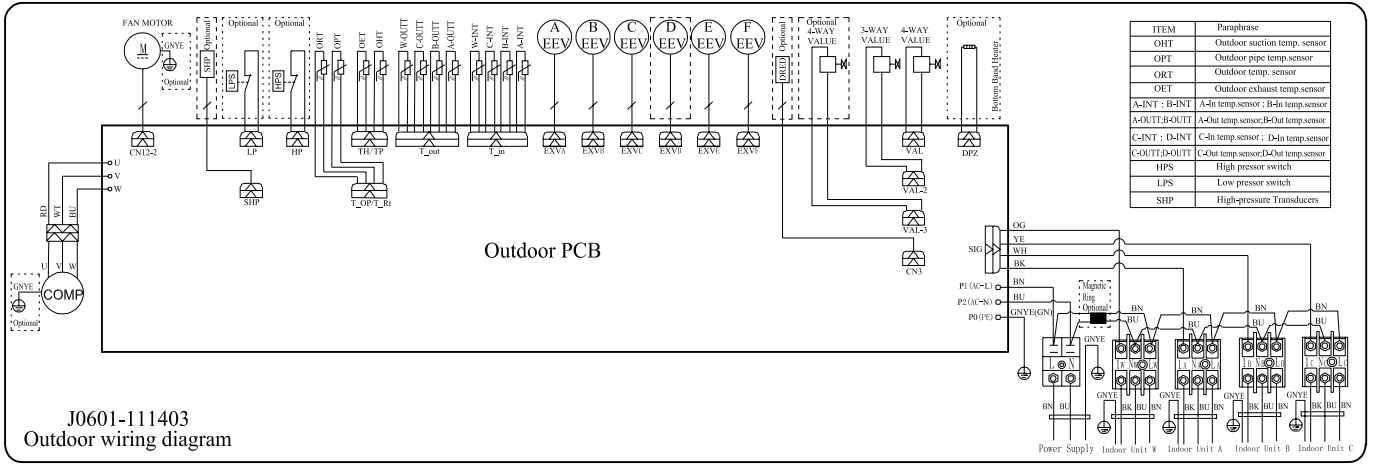
⚠ Note:Plug the connective cables to the corrersponding terminals,as shown.For example,Terminal(A) of the ourdoor unit must connect with Terminal (A) on the indoor unit.

Note:1）1:Connect to internal and external communication lines. 2）L:Connect the Live line. 3）N:Connect the Neutral line.



⚠ Prepare a dedicated circuit breaker with a capacity of 25A.

⚠ Note:Inset the connective cables to the corresponding terminals,as shown.



ITEM	Paraphrase
OHT	Outdoor suction temp. sensor
OPT	Outdoor pipe temp.sensor
ORT	Outdoor temp. sensor
OET	Outdoor exhaust temp.sensor
A-INT ; B-INT	A-In temp.sensor ; B-In temp.sensor
A-OUTT;B-OUTT	A-Out temp.sensor;B-Out temp.sensor
C-INT ; D-INT	C-In temp.sensor ; D-In temp.sensor
C-OUTT;D-OUTT	C-Out temp.sensor;D-Out temp.sensor
HPS	High pressor switch
LPS	Low pressor switch
SHP	High-pressure Transducers

J0601-111403
Outdoor wiring diagram

CAUTION

After confirmation of the above conditions, follow these guidelines when performing wiring:

- Always have an individual power circuit specifically for the air conditioner.
- Always follow the circuit diagram posted on the inside of the control cover.
- Screws fastening the wiring in the casing of electrical fittings may come loose during transporation. Because loose screws may cause wire burn-ou, check that the screws are tightly fastened.
- Check the specifications for the power source.
- Confirm that electrical capacity is sufficient.
- Confirm that starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- Confirm that the cable thickness is as specified in the power source specifications.
- Always install an earth leakage circuit breaker in wet or moist areas.
- The following can be caused by a drop in voltage: vibration of a magnetic switch,damaging the contact point, broken fuses, and disturbance of normal functioning.
- Disconnection from a power supply must be incorporated into the fixed wiring.
- It must have an air gap contact separation of at least 3mm in each active (phase) conductors.
- Before accessing terminals, all supply circuits must be disconnected.

AIR EVACUATION

NOTICE

When opening valve stems, turn the hexagonal wrench until it hits against the stopper. Do not try to force the valve to open further.

Preparations and precautions

Air and foreign matter in the refrigerant circuit can cause abnormal rises in pressure, which can damage the air conditioner, reduce its efficiency, and cause injury. Use a vacuum pump and manifold gauge to evacuate the refrigerant circuit, removing any non-condensable gas and moisture from the system. Evacuation should be performed upon initial installation and when unit is relocated.

BEFORE PERFORMING EVACUATION

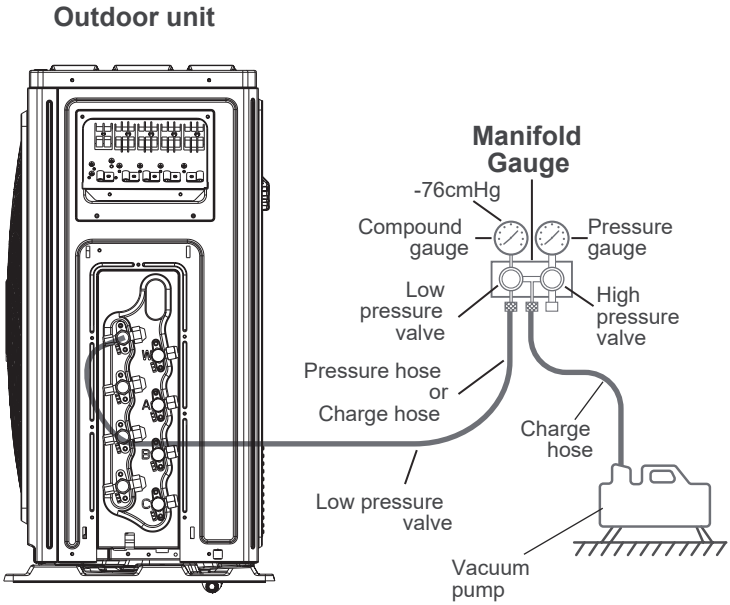
☑ **Check to make sure the connective pipes between the indoor and outdoor units are connected properly.**

☑ **Check to make sure all wiring is connected properly.**

Evacuation Instructions

1. Connect the charge hose of the manifold gauge to service port on the outdoor unit's low pressure valve.
2. Connect another charge hose from the manifold gauge to the vacuum pump.
3. Open the Low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.

5. Run the vacuum for at least 15 minutes and the Compound Meter reads -76cmHG(-10^5Pa).



6. Close the Low Pressure side of the manifold gauge, and turn off the vacuum pump.

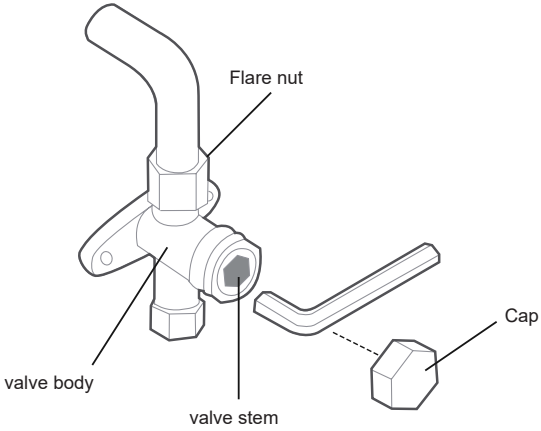
7. Wait for 5 minutes, then check that there has been no change in system pressure.

8. If there is a change in system pressure, refer to Gas Leak Check section for information on how to check for leaks. If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve).

9. Insert hexagonal wrench into the packed valve (high pressure valve) and open the valve by turning the wrench in a 1/4 counterclockwise turn. Listen for gas to exit the system, then close the valve after 5 seconds.

10. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. The Pressure Gauge should read slightly higher than atmospheric pressure.

11. Remove the charge hose from the service port.

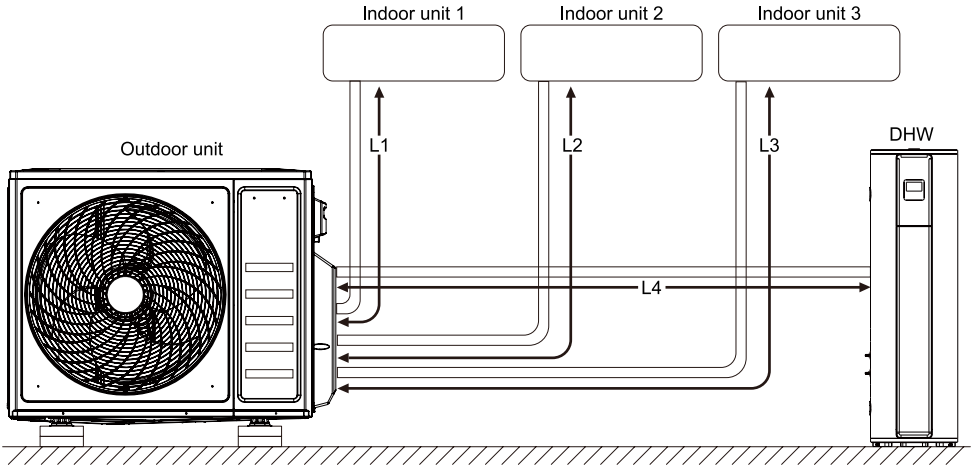


12. Using hexagonal wrench, fully open both the high pressure and low pressure valves.
13. Tighten valve caps on all three valves (service port, high pressure, low pressure) by hand. You may tighten it further using a torque wrench if needed.
14. Follow the above steps one system at a time.

NOTE ON ADDING REFRIGERANT

⚠ CAUTION

- Refrigerant charging must be performed after wiring, vacuuming, and the leak testing.
- DO NOT exceed the maximum allowable quantity of refrigerant or overcharge the system. Doing so can damage the unit or impact it's functioning.
- Charging with unsuitable substances may cause explosions or accidents. Ensure that the appropriate refrigerant is used.
- Refrigerant containers must be opened slowly. Always use protective gear when charging the system.
- DO NOT mix refrigerants types.
- For the R32 refrigerant model, make sure the condtions within the area have been made safe by control of flammable material when the refrigerant added into air conditioner.



NOTE: The standard length of a single pipe length is 5m and the standard length of the total pipe length is 20m.

Refrigerant charge		
Standard pipe length (L1+L2+L3+L4)	m	20
	ft	65.6
Additional refrigerant charge	kg	0.15x((L1+L2+L3+L4)-20)

Safety And Leakage Check

Electrical safety check Perform the electrical safety check after completing installation. Cover the following areas:

1. Insulated resistance

The insulated resistance must be more than 2MΩ.

2. Grounding work

After finishing grounding work, measure the grounding resistance by visual detection and using the grounding resistance tester. Make sure the grounding resistance is less than 4Ω.

3. Electrical leakage check (performing during test while unit is on)

During a test operation after completed installation, the use the electroprobe and multimeter to perform an electrical leakage check. Turn off the unit immediately if leakage happens. Try and evaluate different solutions until the unit operates properly.

To charge additional refrigerant

⚠ WARNING

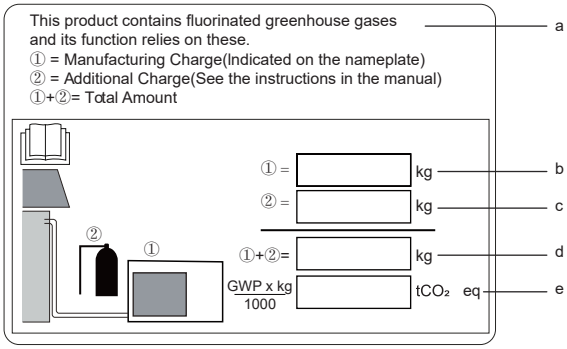
- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

Prerequisite: Before charging refrigerant, make sure the refrigerant piping is connected and checked (leak test and vacuum drying).

1. Connect the refrigerant cylinder to the service port.
2. Charge the additional refrigerant amount.
3. Open the gas stop valve.

To fix the fluorinated greenhouse gases label

1. Fill in the label as follows:



a If a multilingual fluorinated greenhouse gases label is delivered with the unit (see accessories), peel off the applicable language and stick it on top of a.

b Factory refrigerant charge: see unit name plate.

c Additional refrigerant amount charged.

d Total refrigerant charge.

e Quantity of fluorinated greenhouse gases of the total refrigerant charge expressed as tonnes CO2 equivalent.

GWP = Global warming potential

NOTE: Applicable legislation on fluorinated greenhouse gases requires that the refrigerant charge of the unit is indicated both in weight and CO_2 equivalent.

Formula to calculate the quantity in CO_2 equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000.

Use the GWP value mentioned on the refrigerant charge label.

2. Fix the label on the inside of the outdoor unit near the gas and liquid stop valves.

Gas leak check

1) Soap water method:

Apply a soap-water solution or a liquid neutral detergent on the indoor unit connection or outdoor unit connections with a soft brush to check for leakage of the connecting points of the piping. If bubbles emerge, the pipes are experiencing leakage.

2) Leak detector

Use the leak detector to check for leakage.

NOTE: The illustration is for example purposes only. The actual order of A, B, C, and D on the machine may be slightly different from the unit you purchased but the general shape will remain the same.

TEST RUN

CAUTION

Failure to perform the test run may result in unit damage, property damage, or personal injury.

Before Test Run

For DHW tank test run procedure, refer to installation manual of DHW tank unit. If the unit runs into an error during commissioning, see the service manual for the detailed troubleshooting guidelines. A test run must be performed after the entire system has been completely installed. Confirm the following points before performing the test:

a) The indoor, tank and outdoor units are properly installed.

b) Refrigerant/water piping and wiring are properly connected.

c) No obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.

d) The refrigeration system does not leak.

e) Drainage system is unimpeded and draining to a safe location.

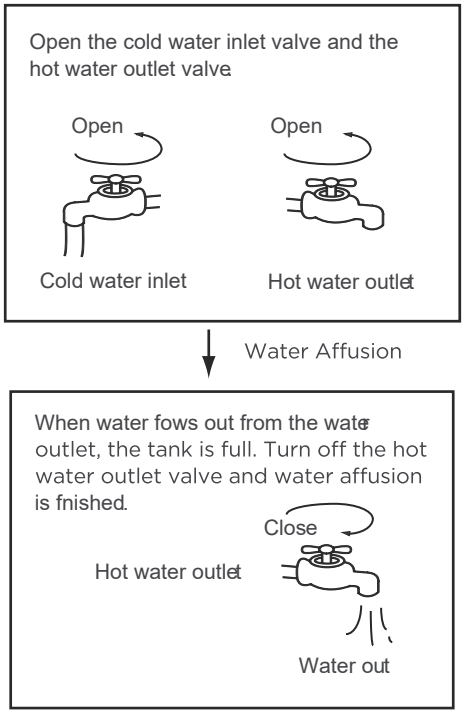
f) The heating insulation is properly installed.

g) The grounding wires are properly connected.

h) Length of the piping and additional refrigerant stow capacity have been recorded.

i) The power voltage is the correct voltage for the air conditioner.

j) Please make sure that the tank is full of water before turning on the power as shown as below.



Test Run Instructions

1. Open both the liquid and gas stop valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode, and set the tank to Hybrid mode
4. For the Indoor Unit

a. Ensure the remote control and its buttons work properly.
b. Ensure the louvers move properly and can be changed using the remote control.
c. Double check to see if the room temperature is being registered correctly.
d. Ensure the indicators on the remote control and the display panel on the indoor unit work properly.
e. Ensure the manual buttons on the indoor unit works properly.
f. Check to see that the drainage system is unimpeded and draining smoothly.
g. Ensure there is no vibration or abnormal noise during operation.

6. For the Outdoor Unit

a. Check to see if the refrigeration system is leaking.
b. Make sure there is no vibration or abnormal noise during operation.

6. For the DHW

a. Condensate draining smoothly well. insulation work for all hydraulic part.
b. Correct power supply.
c. No air in the water pipeline and all valves opened.
d. Effective electric leakage protector installation.
e. Sufficient inlet water pressure (between 0.15 Mpa and 0.65 Mpa).
c. Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.

NOTE: If the unit malfunctions or does not operate according to your expectations, please refer to the Troubleshooting section of the Owner's Manual before calling customer service.

⚠ CAUTION

Mode Conflict Protection of indoor unit

When the setting mode is different of different indoor unit, the unit runs in below status: a. The mode of the first operating indoor unit is the basic mode, then compare the mode of the other indoor units to see if there is a conflict. Cooling mode (dry mode) is in conflict with heating mode. b. Fan mode is in conflict with heating mode and the heating mode is the basic mode. No matter which indoor unit operates first, the unit will run in heating mode.

NOTE: The above priority levels are valid only between air conditioners.

Air Conditioning or domestic hot water priority

When multiple indoor units are connected to the outdoor unit (refer to Installer Reference Guide for details), the user can set on the user interface whether to put DHW or Air Conditioning(A/C) as priority. This will determine how the outdoor unit will react in case multiple indoor units requested operation at the same time:

• If DHW is set as priority, outdoor unit can decide to operate only for DHW, while A/C operation is put on hold. In this case, once DHW operation is finished, outdoor unit can switch to A/C operation.

• If A/C is set as priority, outdoor unit can decide to operate only A/C, in which case booster heater can start for DHW production. Once A/C operation is finished, outdoor unit can switch to DHW.

OPERATION INSTRUCTIONS

Features

Protection of the air conditioner

Compressor protection

• The compressor cannot restart for 3 minutes after it stops.

Anti-cold air (Cooling and heating models only)

• The unit is designed not to blow cold air on HEAT mode, when the indoor heat exchanger is in one of the following three situations and the set temperature has not been reached.

A) When heating has just started.

B) During defrosting.

C) Low temperature heating.

• The indoor or outdoor fan stop running when defrosting (Cooling and heating models only).

Defrosting (Cooling, heating, and DHW models only)

• Frost may be generated on the outdoor unit during a heat cycle when outdoor temperature is low and humidity is high resulting in lower heating efficiency in the air conditioner.

• Under these conditions, the air conditioner will stop heating operations and start defrosting automatically.

• The time to defrost may vary from 4 to 10 minutes, depending the outdoor temperature and the amount of frost buildup on the outdoor unit.

Auto-Restart (some models)

In case of power failure, the system will immediately stop. When power returns, the Operation light on the indoor unit will flash. To restart the unit, press the ON/OFF button on the remote control. If the system has an auto restart function, the unit will restart using the same settings.

The air conditioner turns to FAN ONLY mode from COOL or HEAT (for cooling and heating models only) mode.

When the indoor temperature reaches the set temperature setting, the compressor will stop automatically, and the air conditioner turns to FAN only mode. The compressor will start again when the indoor temperature rises on COOL mode or falls on HEAT mode to the set point.

Droplets of water may form on the surface of the indoor unit when cooling occurs in relatively high humidity (defined as higher than 80%). Adjust the horizontal louver to the maximum air outlet position and select HIGH fan speed.

White mist emerging from the indoor unit

• A white mist may be generated due to a large temperature difference between air inlet and air outlet on COOL mode in places with high relative humidity.

• A white mist may be generated due to moisture created in the defrosting process when the air conditioner restarts in HEAT mode operation after defrosting.

Noise coming from the air conditioner

• You may hear a low hissing sound when the compressor is running or has just stopped running. This sound is the sound of the refrigerant flowing or coming to a stop.

• You may also hear a low "squeaking" sound when the compressor is running or has just stopped running. This is caused by tempera heat expansion and cold contraction of the plastic parts in the unit when the temperature is changing.

• A noise may be heard due to the louver restoring itself to its original position when power is first turned on. Dust blowing out from the indoor unit. This is happens when the air conditioner has not been used for a long time or during its first use.

Smell emitting from the indoor unit.

This is caused by the indoor unit giving off smells permeated from building materials, furniture,or smoke.

Heating mode (For cooling and heating models only)

The air conditioner draws in heat from the outdoor unit and releases it via the indoor unit during heating. When the outdoor temperature falls, heat drawn in by the air conditioner decreases accordingly. At the same time, heat loading of the air conditioner increases due to larger difference between indoor and outdoor temperature. If a comfortable temperature cannot be achieved with the air conditioner alone, it is recommended that you use a supplementary heating device. Lightning or a car wireless telephone operating nearby may cause the unit to malfunction. Disconnect the unit from its power source and then re-connect the unit with the power source again. Push the ON/OFF button on the remote controller to restart operations.

Energy Saving Tips

• DO NOT set the unit to excessive temperature levels.

• While cooling, close the curtains to avoid direct sunlight.

• Doors and windows should be kept closed to keep cool or warm air in the room.

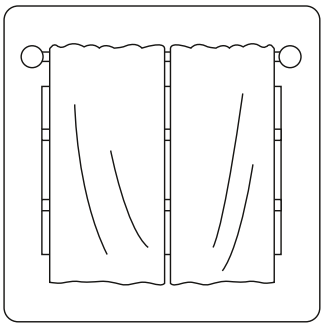
• DO NOT place objects near the air inlet and outlet of the unit. This will reduce the efficiency of the unit.

• Set a timer and use the built-in SLEEP/ECONOMY mode if applicable.

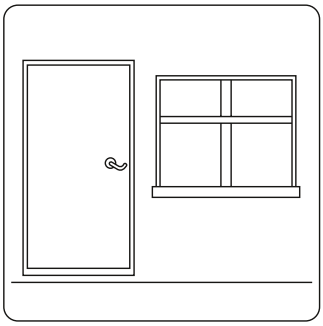
• If you don’t plan to use the unit for a long time, remove the batteries from the remote control.

• Clean the air filter every two weeks. A dirty filter can reduce cooling or heating efficiency.

• Adjust louvers properly and avoid direct airflow.



Closing curtains during heating also helps keep the heat inD



oors and windows should be kept closed

MANUAL OPERATIONS & MAINTENANCE

Maintenance

If you plan to leave the unit idle for a long time,
perform the following tasks:

1. Clean the indoor unit and air filter.
2. Select FAN ONLY mode and let the indoor fan run for a time to dry the inside of the unit.
3. Disconnect the power supply and remove the battery from the remote control.
4. Check components of the outdoor unit periodically. Contact a local dealer or a customer service centre if the unit requires servicing.

NOTE: Before you clean the air conditioner, be sure to switch off the unit and disconnect the power supply plug.

Optimal operation

To achieve optimal performance, please note the following:

- Adjust the direction of the air flow so that it is notblowing directly on people.
- Adjust the temperature to achieve the highest possible level of comfort. Do not adjust the unit to excessive temperature levels.
- Close doors and windows in COOL mode or HEAT mode.
- Use the TIMER ON button on the remote controller to select a time you want to start your air conditioner.
- Do not place any object near the air inlet or air outlet, as the efficiency of the air conditioner may be reduced and the air conditioner may stop running.
- Clean the air filter periodically, otherwise cooling or heating per formance may be reduced.
- Do not operate unit with horizontal louvre in closed position.

Suggestion:

For units that feature an electric heater, when the outside ambient temperature is below 0°C (32°F), it is strongly recommended that you to keep the machine plugged in so as to guarantee smooth operation.

When the air conditioner is to be used again:

Use a dry cloth to wipe off the dust accumulated on the rear air intake grille in order to avoid the dust being dispersed from the indoor unit.

- Check that the wiring is not broken off or disconnected.
- Check that the air filter is installed.
- Check if the air outlet or inlet is blocked after the air conditioner has not been used for a long time.

TROUBLESHOOTING

⚠ CAUTION

If any of the following conditions occurs, turn off your unit immediately!

- The power cord is damaged or abnormally warm
- You smell a burning odor
- The unit emits loud or abnormal sounds
- A power fuse blows or the circuit breaker frequently trips
- Water or other objects fall into or out of the unit

DO NOT ATTEMPT TO FIX THESE YOURSELF! CONTACT AN AUTHORIZED SERVICE PROVIDER IMMEDIATELY.

Common Issues

The following problems are not a malfunction and in most situations will not require repairs.

Issue	Possible Causes
Unit does not turn on when pressing ON/OFF button	The Unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.
	Cooling and Heating Models: If the Operation light and PRE-DEF (Pre-heating/ Defrost) indicators are lit up, the outdoor temperature is too cold and the unit's anti-cold wind is activated in order to defrost the unit.
	In Cooling-only Models: If the "Fan Only" indicator is lit up, the outdoor temperature is too cold and the unit's anti-freeze protection is activated in order to defrost the unit.

The unit changes from COOL/HEAT mode to FAN mode	The unit may change its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating in the previously selected mode again.
	The set temperature has been reached, at which point the unit turns off the compressor. The unit will continue operating when the temperature fluctuates again.
The indoor unit emits white mist	In humid regions, a large temperature difference between the room's air and the conditioned air can cause white mist.
Both the indoor and outdoor units emit white mist	When the unit restarts in HEAT mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.
The indoor unit makes noises	A squeaking sound is heard when the system is OFF or in COOL mode. The noise is also heard when the drain pump (optional) is in operation.
	A squeaking sound may occur after running the unit in HEAT mode due to expansion and contraction of the unit's plastic parts.
Both the indoor unit and outdoor unit make noises	A low hissing sound may occur during operation.This is normal and is caused by refrigerant gas flowing through both the indoor and outdoor units.
	A low hissing sound may be heard when the system starts,has just stopped running or is defrosting. This noise is normal and is caused by the refrigerant gas stopping or changing direction.

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