

FMA Cassette

Multi-Split System Air Conditioner



User&Installation Manual

Models:

FMA-12CRD/DVI;
FMA-18CRD/DVI



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other languages



Before operating this product,
please read instructions carefully
and keep this manual for the
future use.

Safety Notice

 A2L	The air conditioner is charged with inflammable refrigerant R32.
	Before using the air conditioner, please first read the instruction manual.
	Before installing the air conditioner, please first read the instruction manual.
	Before repairing the air conditioner, please first read the technical service manual.

Compared with common refrigerant, R32 is an environmental-friendly refrigerant that has no harm to the ozone layer and weak greenhouse effect. Its GWP is 675. Because of its thermodynamic characteristics, R32 requires a smaller charging quantity to reach high energy efficiency. It is inflammable and odourless, but may cause explosion under certain circumstances.

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PRECAUTION

- Read the following "PRECAUTIONS" carefully before installation.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

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

NOTE:

1. Injury means causing harmed, burned, electrical shocked, but not serious for hospitalization.
 2. Damage of property means disrepair of property, material.
- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

 WARNING
• Engage dealer or specialist for installation. If installation done by user is defective, it will cause water leakage, electrical shock or fire. • Install according to this installation instruction strictly. If installation is defective, it will cause water leakage, electrical shock or fire. • Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, water leakage, fire or electrical shock. • Install at a strong and firm location which is able to withstand the set's weight. If the strength is not enough or installation is not properly done, the set will drop and cause injury. • For electrical work, follow the local national wiring standard, regulation and this installation instructions. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire. • When carrying out piping connection, take care not to let air or other substances other than the specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnormal high pressure in the refrigeration cycle, explosion and injury. • Grounding is necessary. It may cause electrical shock if grounding is not perfect. • Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire. • The appliance is not to be used 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. • Children being supervised not to play with the appliance. • The appliance shall be installed in accordance with national wiring regulations. • 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 understand the hazards involved. • Children shall not play with the appliance. • Cleaning and user maintenance shall not be made by children without supervision.

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 a minimum.
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

A2L



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 potential flammable atmospheres. Ensure that the leak detection 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 CO₂ fire 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 produce heat. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released 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 installation using flammable refrigerant:

- 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 number 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.

NOTICE

The use of silicon sealant may inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do 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 equipment shall be set at a percentage of the LFL 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 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.

- 1) Become familiar with the equipment and its operation.
- 2) Isolate system electrically.
- 3) 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.
- 4) Pump down refrigerant system,if possible.
- 5) If a vacuum is not possible,make a manifold so that refrigerant can be removed from various parts of the system.
- 6) Make sure that cylinder is situated on the scales before recovery takes place.
- 7) Start the recovery machine and operate in accordance with manufacturer's instructions.
- 8) Do not overfill cylinders.(No more than 80% volume liquid charge).
- 9) Do not exceed the maximum working pressure of the cylinder,even temporarily.
- 10) 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.
- 11) 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 the recovery of refrigerant).Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order.

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

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of 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 especially not in cylinders.

If compressors or compressor oils are to be removed,ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant.

The evacuation process shall be carried out prior to returning the compressor to the suppliers.

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

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.

Operating condition	
The protective device maybe trip and stop the unit within temp range listed below:	
HEATING	Outdoor air temperature is over 30 °C
	Outdoor air temperature is below -20 °C
	Room temperature is below 30 °C
COOLING	Outdoor air temperature is over 53 °C
	Outdoor air temperature is below -15 °C
	Room temperature is below 17 °C
DRY	Room temperature is below 17 °C
If the air conditioner runs for a long time in "COOLING" or "DRY" mode at air relative humidity higher than 80% (doors or windows opened), dew may generate and drip near air outlet.	

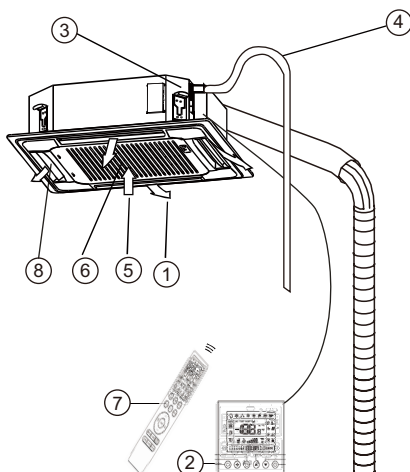
Noise pollution
• Install the air conditioner in a place that can bear its weight in order to operate more quietly. • Install the outdoor unit in a place where the air discharged and the operation noise do not annoy your neighbors. • Do not place any obstacles in front of the outlet of the outdoor unit for fear it affects operation and increases the noise level.

Features of Protector	Inspection
1. The protective device will trip at following cases. • Stop the appliance and restart it at once or change other modes during operation, you have to wait 3 minutes before restarting. • After switching on the power circuit breaker and then turn on the air conditioner at once, you have to wait about 20 seconds. 2. In case all operations have stopped, you need. • Press "ON/OFF" button again to restart it. • Set TIMER once again if it has been canceled.	After a long time of operation, the air conditioner should be inspected for the following items. • Abnormal heating of the power supply cord and plug or even a burnt smell. • Abnormal operating noise or vibration. • Water leakage from indoor unit. • Metal cabinet electrified . • Stop using the air conditioner if above problem happened. • It is advisable that the air conditioner should be given a detail check-up after using for five years even if none of the above happen.

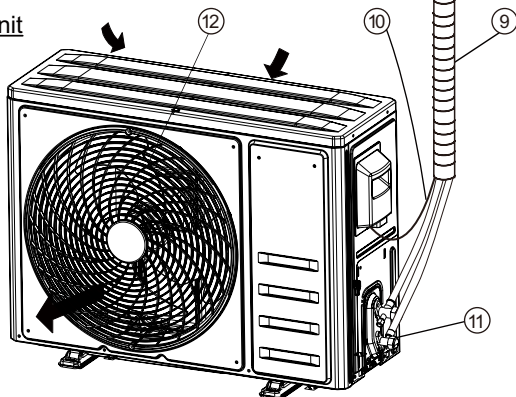
Features of HEATING mode
Preheat 2-5 minutes are necessary to preheat the indoor heat exchanger at the beginning of "HEATING" operation, lest cold air be discharged. Defrost In "HEATING" operation the appliance will defrost automatically. This procedure lasts 2~10 minutes, then returns to "HEATING" mode automatically. During defrosting, indoor fan stop running and return to heating mode operation automatically when defrosting has finished.

PARTS AND FUNCTIONS

Indoor Unit



Outdoor Unit



- ① Air Outlet
- ② Wire controller
- ③ PUMP
- ④ Drainage Pipe
- ⑤ Air Return
- ⑥ Filter
- ⑦ Remote controller
- ⑧ AIR FLOW LOUVER
- ⑨ Refrigerant connection pipe
- ⑩ Connecting cord
- ⑪ Cut-off valve
- ⑫ Air Outlet grille

Requirements

- The air conditioner cannot be started up until it is powered on for 2 hours. Furthermore, in case of a shutdown lasting for about one day only, please do not cut off the electricity supply.
- Notice that the air inlet/outlet must not be choked up. If chokeup takes place, the air conditioner behavior may be affected, or air conditioner cannot run because of actuation of protector.

FUNCTION AND OPERATION OF PANEL'S PARTS

⚠ NOTICE

Please adjust room temperature properly especially when the oldmen,children,patients stay at house.

Lightning and other electromagnetic radiation may cause faulty effect.

If it is,please plug off the power switch,and replugin,then restart the unit.

Do not block the inlet of door unit or outlet of outdoor unit,any of blocks will reduce cooling or heating efficiency.

CONSTITUTION OF PANEL

1. It suits for Body dimension :

Compact cassette(9K/12K/18K):570mm×260mm×570mm;

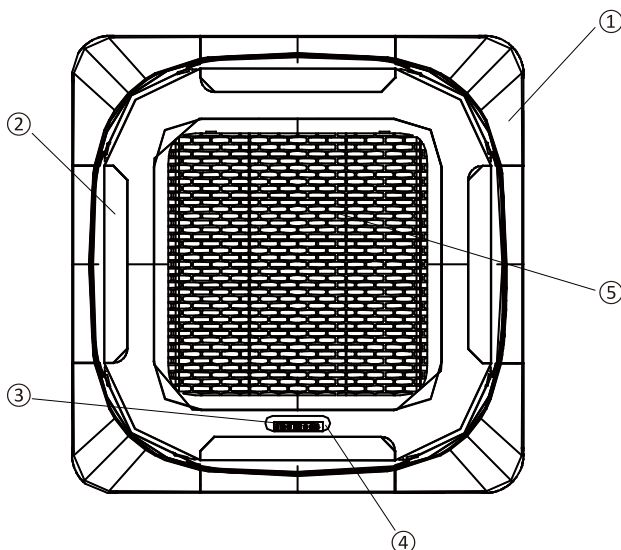
cassette(24K/28K) : 838mm×254mm×838mm;

(36K/42K/48K/55K) : 838mm×299mm×838mm cooling and heating pump type.

2. It suits for Panel dimension:

Compact cassette(9K/12K/18K):650mm×57mm×650mm,

cassette(24k/28k/36k/42k/48k/55k):950mm×45mm×950mm.



① PANEL

② AIR FLOW LOUVER

③ INFRARED SIGNAL
RECEIVER

④ DISPLAY PANEL

⑤ Air-Return GRILLE

DISPLAY PANEL

Infrared signal receiver : receive of signal from the remote controller.

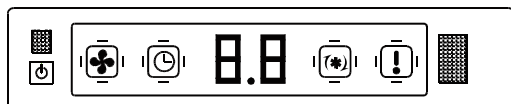
To make your remote controller operation more efficient, please let remote controller emit or aim at infrared signal receiver.

Buzzer: firstly power supplied or any of remote controller operations will make the buzzer sound once. Some obstacles occurring in the system will be recognized by intelligent recognition system of unit, lighting on the DISPLAY PANEL flashing show the type of obstacles.

DISPLAY PANEL

1. It suits for Body dimension :838mmX254mmX838mm or 838mmX299mmX838mm cooling and heating pump type

The first panel of this housing size.



Buzzer		Nixie tube	
Manual Switch		Defrosting/preheat light	
Running light		Warning light	
Timing light		Infrared signal receiver	

Second panel for this housing size.



Buzzer		Nixie tube	
Manual Switch		Defrost	
Running light		Trouble light	
Timing light		Infrared signal	

2. It suits for compact cassette body dimension :570mmX260mmX570mm cooling and heating pump type



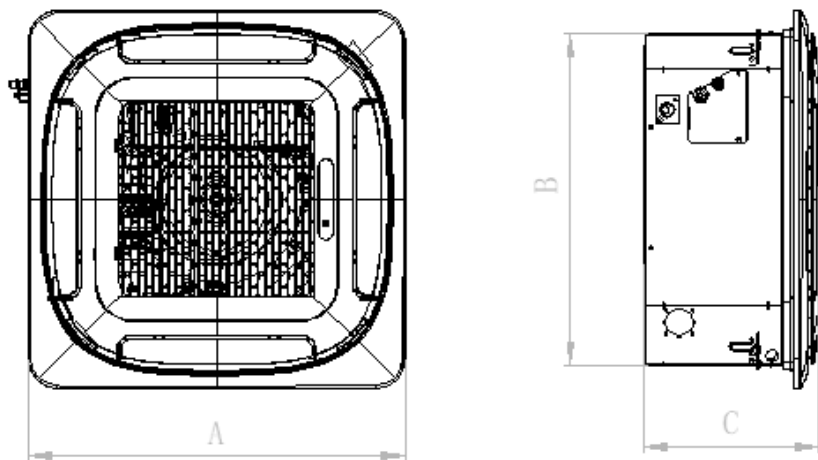
Buzzer		Nixie tube	
Manual Switch		Timing light	
Running light		Defrost	
		Infrared signal receiver	

INDOOR UNIT INSTALLATION

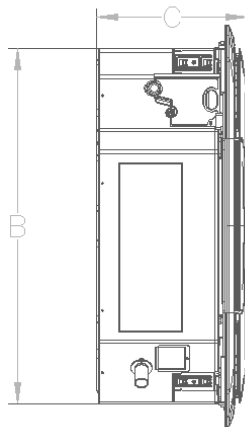
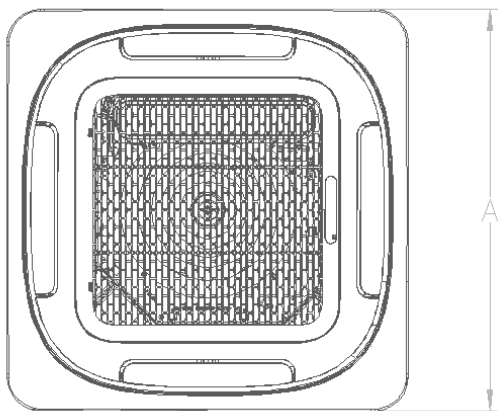
(Please select the space to install indoor unit according to the dimension show above), then install correctly, and have enough space for maintenance.

Select installation location considering piping and wiring connection after the Indoor Unit has been hanged. Then decide the piping wiring leading direction.

- Be sure to lead the refrigerant pipes, drain pipes and connection wires out to its connection location before hanging the unit if the opening on the ceiling has been decided.
- Confirm sizes of the indoor unit and ceiling opening with the attached installation paper pattern. (Please fix the paper pattern below the body with M5X16 screws (4)).



Model	Indoor unit		
	A	B	C
9K	650	570	303
12K	650	570	303
18K	650	570	303



Model	Indoor unit		
	A	B	C
24K	950	838	327
28K	950	838	327
36K	950	838	355
42K	950	838	355
48K	950	838	355
55K	950	838	355

INSTALLATION LOCATIONS

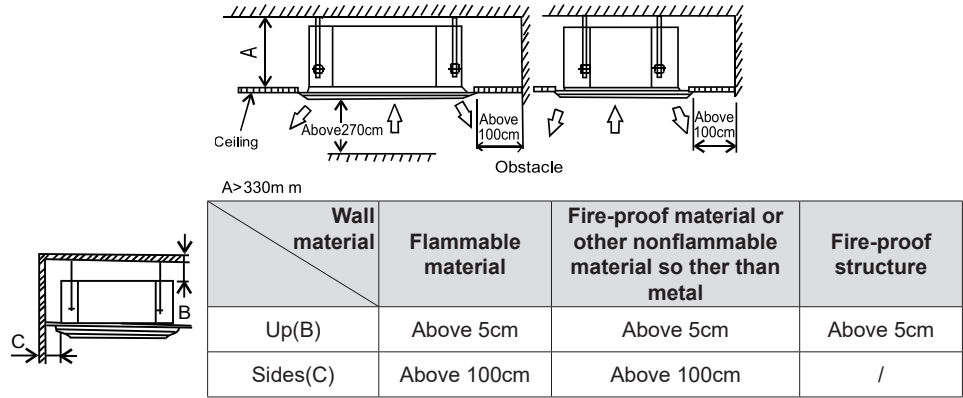
CAUTIONS

1. Location in the following places may cause malfunction of the machine. (If unavoidable, please consult your local dealer)

- 1) A place where there is flammable gas leakage.
- 2) There is salty air surrounding (near the coast).
- 3) There is caustic gas (the sulfide, for example) existing in the air (near a hot spring).
- 4) A place where can not bear the weight of the machine.
- 5) In kitchen where it is full of oil gas.
- 6) There is strong electromagnetic wave existing.
- 7) There is acid or alkaline liquid evaporating.
- 8) A place where air circulation is not enough.
- 9) The appliance shall not be installed in the laundry

2. Electrical Insulation must be done on the air conditioner and the building complying to National Regulations.

INSTALLATION SPACE



HEIGHT BETWEEN CEILING AND FLOOR

The installation height between ceiling and floor must be 2.7m~3.2m.

CEILING HOLE AND THE HOOK INSTALLATION

Preparation Work on the Ceiling

- Installation method should be changed under the different construction structure. Please consult the professional for the detailed information.
- After opening a hole,the ceiling should be horizontal taland strong to prevent vibration.
 - 1) Cut the beams at the hole and remove them.
 - 2) Reinforcing the beams that have been cut and the beams fixing the ceiling.

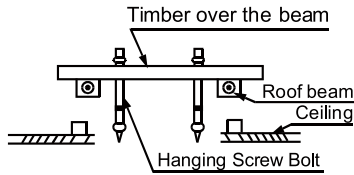
Installation of the hanging screw bolt

Bolt with M10 whorl is to be used. The center distance between the bolts is decided by the size of the unit.

Use the following method to install:

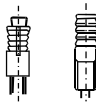
Wooden construction

Put the square timber over the roof beam, then install the hanging screw bolts.



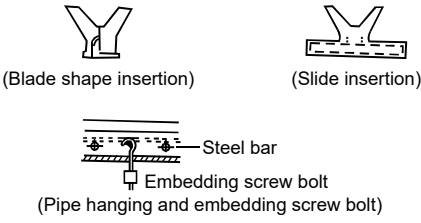
For finished concrete bricks

Install the hanging hook with expansible bolt into the concrete deep to 45~50mm to prevent loose.



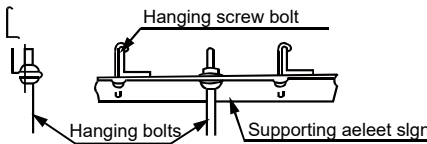
New Concrete Bricks

Inlaying or embedding the screw bolts.



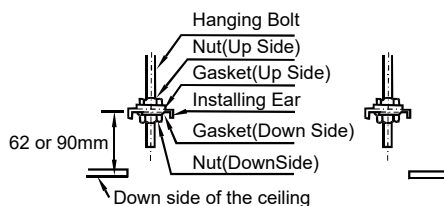
Steel roof beam structure

Install the supporting angle steel.

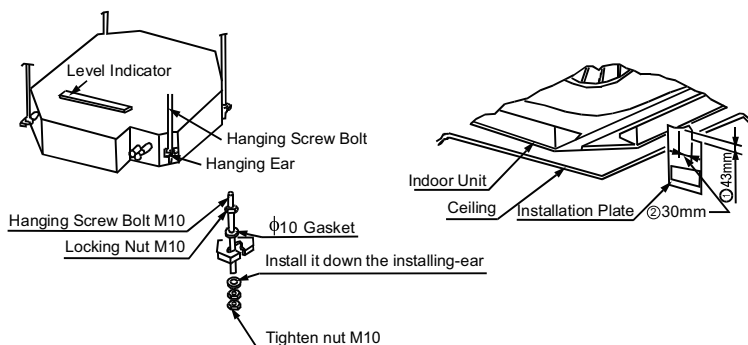


Overhanging the indoor unit

Adjust the gasket (down side) to 90mm over the ceiling.



- Install the hanging bolt into T groove of the hanging tool.
Over hang the indoor unit and ensure it is level using a level indicator.



PANEL INSTALLATION

- Panel installation should be done after piping and wiring.
- Be sure that the indoor unit and ceiling hole installation size is right before installation.

CAUTION

Be sure to seal the connection parts between the panel - the ceiling and the panel - the indoor unit, or even small gaps may cause wind/water leakage or condensing water.

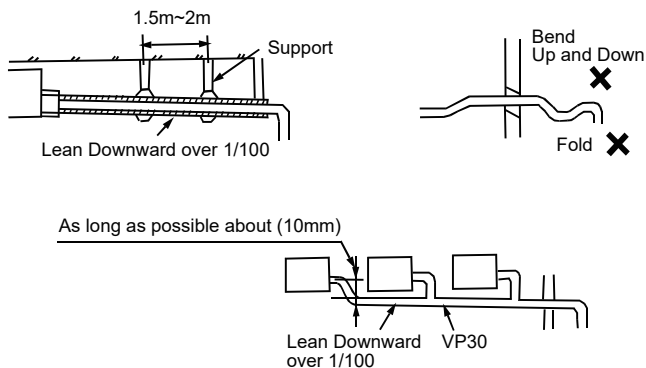
DRAINAGE PIPE CONNECTION

CAUTION

Be sure to follow Installation Manual during drainage installation, the drainage pipe must have the heat insulation to prevent condensing.

⚠ CAUTIONS

- The drain pipe of indoor unit must have the heat insulation , or it will condense dew, as well as the connections of the indoor unit.
- The declivity of the drain pipe downwards should be over 2/100, and no winding and bending.
- The total length of the drain pipe when pulled out transversely shall not exceed 20m , when the pipe is over long, a prop stand must be installed every 1.5 to 2m to prevent winding.
- Refer to the following figures about the installation of the pipes.
- Do not impose any pressure on the connection part of the drainage pipe.



Drainage Pipe Material, Heat-insulating Material

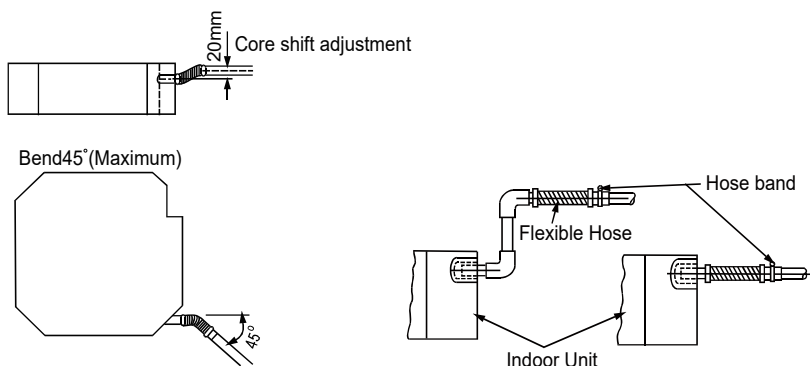
The listed material should be used:

Drainage Pipe Material	Polyvinyl chloride pipe (φ32mm outer diameter)
Heat Insulation Material	Foamed polyethylene insulation plate (10mm thickness)

Flexible Hose

Measure diameter of the hard pipe using cutting method, and adjust the joining angle.

- Pull out the flexible hose, do not over deform than illustrated below.
- Be sure to bind it with the attached band.
- Please place the flexible hose horizontally.



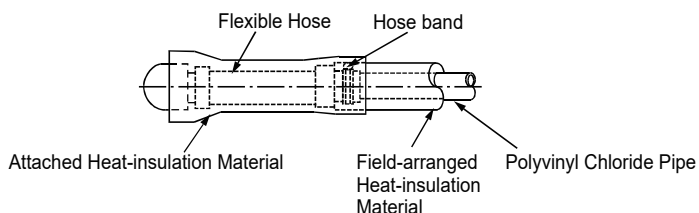
Connexion Procedure

Connect the transparent pipe with the polyvinyl chloride pipe.

- Use polyvinyl chloride glue at the connection part of the drainage pipe, be sure no water leakage.
- Paste glue at the front 40mm of the polyvinyl chloride pipe, insert it into the transparent pipe.
- It needs 10 minutes for the glue to dry. Do not impose pressure on the connection during the drying period.

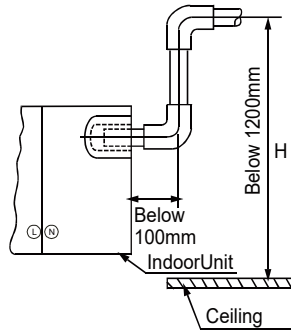
Heat Insulation

Wrap the flexible hose carefully with the attached heat insulation material from the start to the end (to indoor part)



Drainage Upward

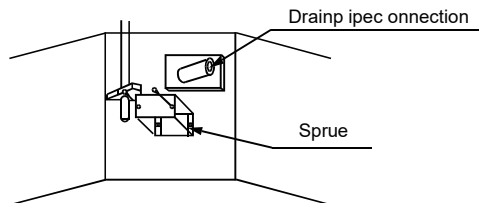
To make sure that the drainage pipe would not be slanted downward, lead it upward to height H maximum, then downward lead it.



Drainage Test

Check whether the drain pipe is unhindered before testing.

- 1) Stow water from sprue to check.
- 2) Stow 600cc water with pot or hose from sprue slowly, preventing touching the drain pump motor.
- 3) After the preparation work, disconnect the water level switch, power 220-240V to AC of terminal board, and the drain pump start up immediately.
- 4) After drain pump run 2 min, reset the water level pin, and the drain pump motor will stop after running 22min.



Motor Sound Test

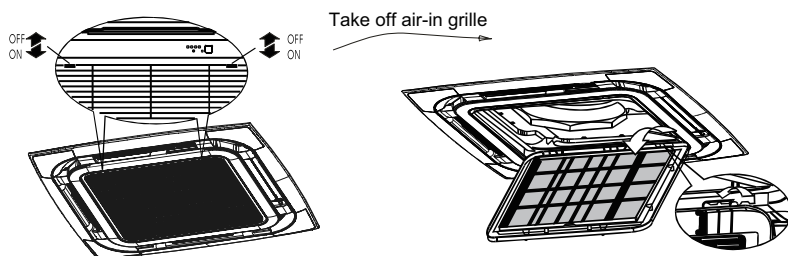
- The drainage test is doing during checking the drain pump motor running sound.
- Reset the water level switch connection to the original position after the drainage test.

INSTALLATION OF PANEL

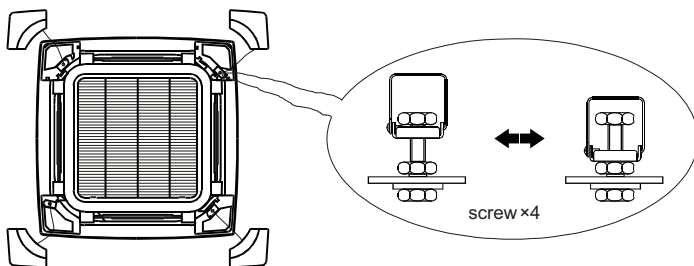
BODY DIMENSION:950X950X45

Unit: mm

Unload air-in grille

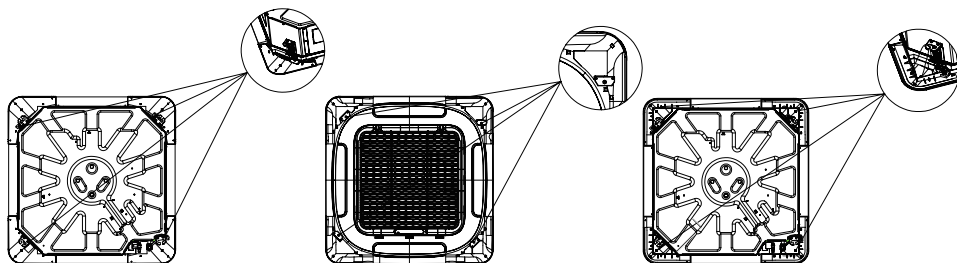


Unload panel installation cap



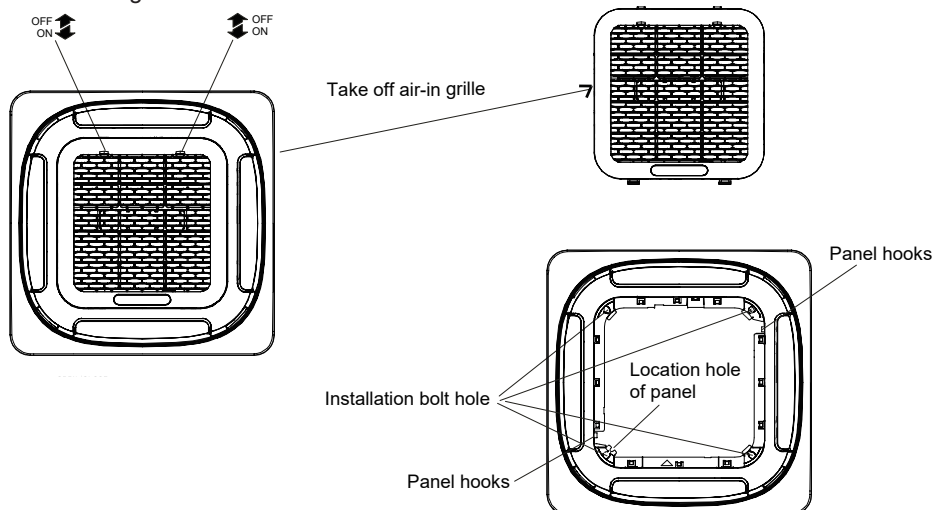
INSTALLATION OF PANEL

1. First, remove the installation caps from the four corners.
2. Insert the four clamps into the hooks on the panel.
3. Then, secure the panel by tightening the four bolts on the clamps.
4. Reattach the installation caps to the four corners of the panel.
5. Finally, hang the panel's hanging rope onto the fixed bracket.



BODY DIMENSION:650X650X30

Unload air-in grille



INSTALLATION OF PANEL

1. First, by toggling the two fasteners of the ventilation grille, then loosen the screws to remove the ventilation grille, which is suspended from the panel by a hanging cord.
2. Use four M10 washers and MG*20 bolts to secure the panel to the ceiling base.
3. Hang the two steel cables from the panel onto the panel hooks.
4. Finally, fasten the ventilation grille back onto the panel by tightening the screws and snapping it into place.

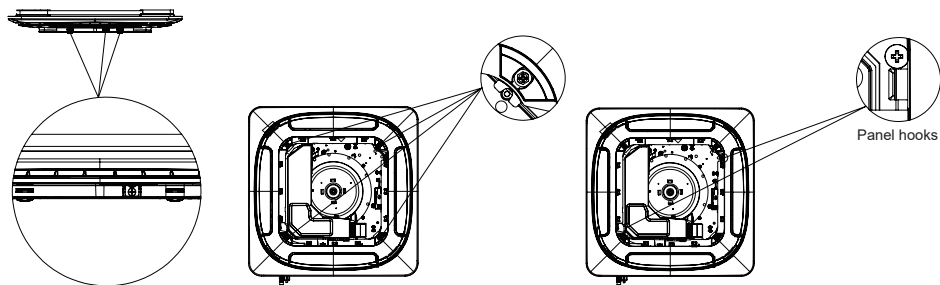
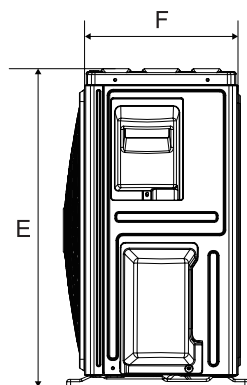
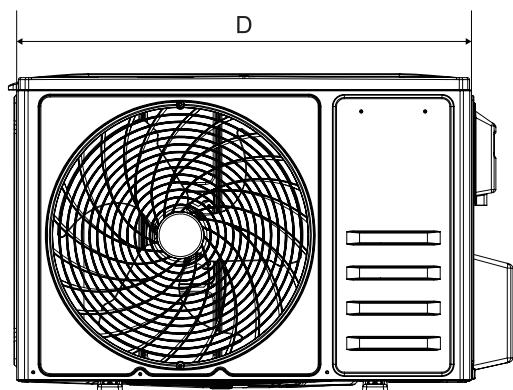
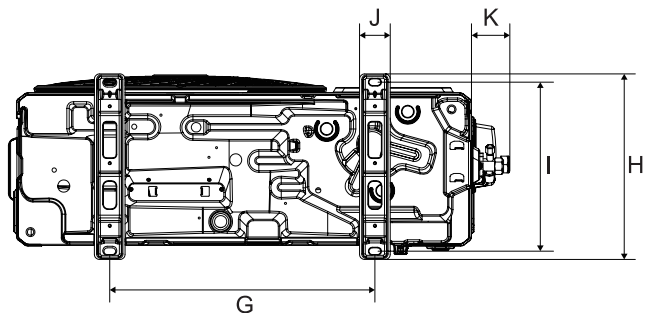


FIGURE OF BODY SIZE

Split type outdoor unit

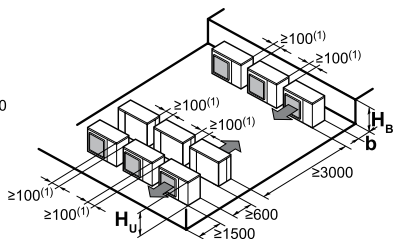
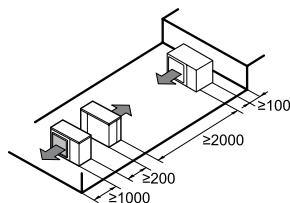
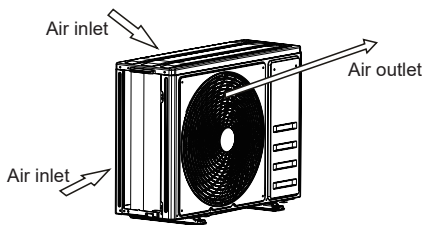


Model	Outdoor unit								With Valve Cover
	D	E	F	G	H	I	J	K	
9/12K	712	499	238	415	290	265	48	60	773
18K	780	602	288	516	349	314	54	51	863
24/28K	845	699	326	586	375	347	59	66	927
36/42K	910	804	353	607	421	390	63	49	993
48/55K	1010	858	410	660	494	462	80	47	1079

Move outdoor unit

-
- Steel bar
- Baffle

1. After leaving repair space as illustrated below, install the outdoor unit with power supply equipment installed at the side of the outdoor unit. Please refer to ELECTRIC SUPPLY INSTALLATION MANUAL for the installation method.
2. Please make sure necessary space for installation and repair.



$H_B \ H_U$	$b \text{ (mm)}$
$H_B \leq \frac{1}{2} H_U$	$b \geq 250$
$\frac{1}{2} H_U < H_B \leq H_U$	$b \geq 300$
$H_B > H_U$	/

Low-pressure valve

High-pressure valve

Gas side

Liquid side

INSTALLATION

Pre-installation precautions

- Please confirm that the installation personnel are qualified in relevant installation service. If the air conditioner was installed by persons without special skills, normal operations would not be ensured, even the personal and estate safety would be affected.

User guideline

- The user's installation site should be provided with regular power supply in conformity with that indicated in nameplate of the air conditioner, and its voltage should be within a range 90 %- 110 % of the rated voltage value.
- Power circuit should be equipped with protector, such as electricity leakage protector or air switch, which should possess a capacity greater than 1.5 times the maximum current value of the air conditioner.
- Never fail to adopt personal circuit and effectively-grounded socket compatible with the attached plug of the air conditioner. The attached plug is equipped with grounding pin, and it must not be modified as desired.
- Please adopt the fuse or circuit breaker prescribed in Installation Instructions.
- Only qualified electrician is allowed to carry out wiring tasks strictly according to electric safety requirements.
- Do ensure good earth of air conditioner, in other words, the main power switch of air conditioner must be connected to reliable ground wire.

Precautions

- The air conditioner should be installed securely; otherwise poor installation may lead to abnormal noises and vibration.
- Outdoor unit should be installed at a spot ensuring that its air outlet noises and hot exhaust will not violate your neighbors.

Unit body installation

Please confirm the indoor unit dimension according to the picture below M10 whorl is to be installed. (4 sets)

- please refer to the following for the center distance between the bolts
 - M 10 whorl is used
 - please consult professional for your specific ceiling arrangement.
1. Dismantle scale of the ceiling.....please keep ceiling its level. Strengthen the beam to avoid vibration.
 2. Break the beam of the ceiling
 3. Strengthen the breaking point of the ceiling and reinforce the ceiling beam.
- After the main body hanging is finished, arrangement of pipe and line will be done in the ceiling. The direction of the pipe is determined after the installation location is chosen. If the ceiling has existed, please arrange the refrigerant pipe, drainage pipe, indoor and outdoor connecting line.
 - Installation of the hanging screw bolt

REFRIGERANT PIPE INSTALLATION

Pipe dimension and ways of installation

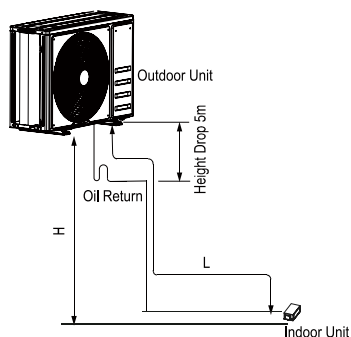
Outdoor pipe dimension and ways of install (in sequence of cooling capacity)

Pipe Material		Copper Pipe for Air Conditioner	
Model		9/12/18K	24/28/36/42/48/55K
Size(mm)	Liquid side	Φ6.35 (1/4inch)	Φ9.52(3/8inch)
	Gas side	Φ9.52(1/2inch)	Φ15.88(5/8inch)

Conventional pipe		9/12/18K	24/28K	36/42/48/55K
Liquid side(L)		25m	30m	75m
Maximum Height drop	Height drop between indoor and outdoor unit H	10m	15m	30m

Please refer to refrigerant pipe connection for detail

Allowed length and height drop



Remove objects and water

- Use high-pressure nitrogen to clean the pipe instead of outdoor refrigerant.
- Before installing refrigerant pipe, please clean the pipe in case of foreign objects.

Additional refrigerant charge

The additional charge is base on the diameter and length of outlet/inlet liquid type.

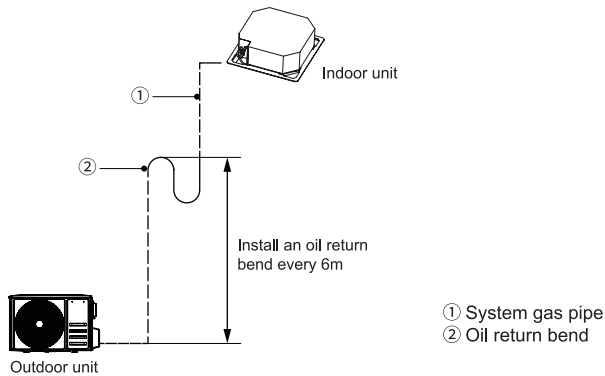
This AC has been charged with that for 5m pipe, those beyond 5 m should recharge as follows.

Liquid pipe diameter	9/12K	18/24/28K	36/42/48K	55K
Additional charge for 1m pipe(R32)	0.015kg	0.025kg	0.032kg	0.040kg

Non-return bend and oil return bend

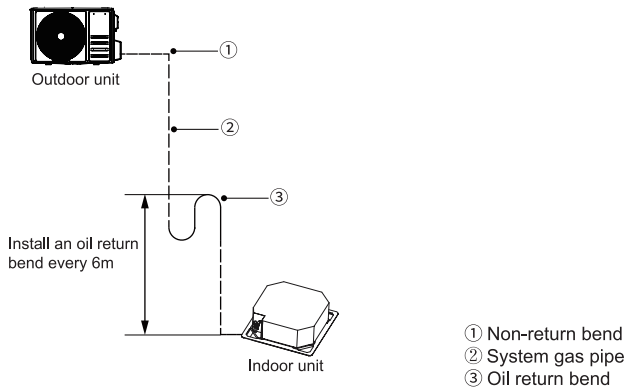
1) Outdoor unit is beneath the indoor unit.

There's no need to add non-return bend at the lowest or highest position of the vertical pipe, as shown below:

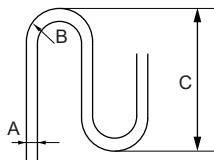


2) Outdoor unit is above the indoor unit.

It's necessary to add oil return bend and non-return bend at the lowest and highest position of the vertical pipe, as shown below:



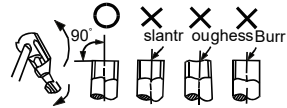
Dimensions for the making of oil return bend are as follows:



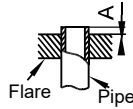
A(inch)	B(mm)	C(mm)
Φ3/8	≥20	≤150
Φ1/2	≥26	≤150
Φ5/8	≥33	≤150

FIARING

1. Cut the refrigerant pipr off with pipe cutter.



2. Flaring after putting the pipe intoconnection nut.



Outside Diameter	A(mm)	
	MAX	MIN
Φ1/4"	8.7	8.3
Φ3/8"	12.4	12.0
Φ1/2"	15.8	15.4
Φ5/8"	19.0	18.6
Φ3/4"	23.3	22.9

Stop valve operation item

- Open the valve rod til to the position rod. Do not trey to open larger.
- Fasten the bonnet with spanner or similar tools.
- Fasten the bonnet of valve rod.

Liquid side(Φ3/8", Φ1/2"):1180N·cm(120kgf.cm)

gas side(Φ5/8", Φ3/4"):1180N·cm(120kgf.cm)

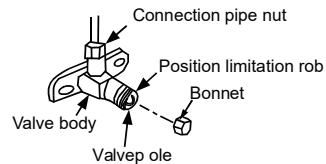
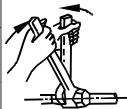
Junction fixture

- Aim at connection pipe fix the nut of connection pipe, then tighten as the following diagram with spanner

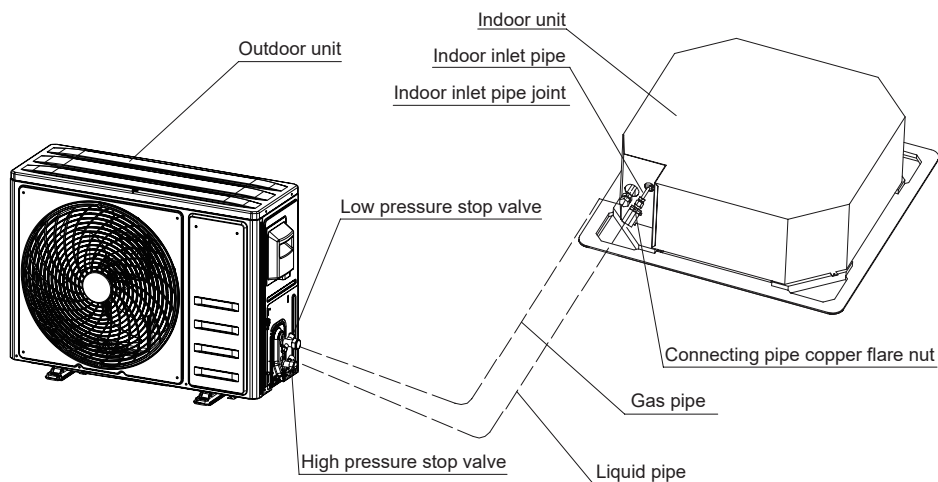
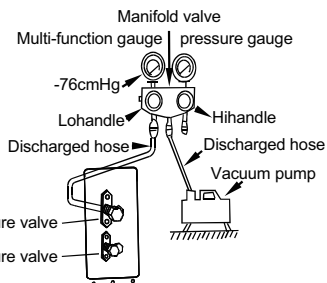
⚠ Notice

According to installation conditions, overlarge wrenched torch will destroy the nut. (Unit. N.cm)

Outside Diameter	Stengthen to fasten the torch
Φ1/4"	1420~1720N cm (144~176kgf.cm)
Φ3/8"	3270~3990N cm (333~407kgf.cm)
Φ1/2"	4950~6030N cm (504~616kgf.cm)
Φ5/8"	6180~7540N cm (630~770kgf.cm)
Φ3/4"	9720~11860N cm (990~1210kgf.cm)



- When vacuum pump is used, each low-pressure valve must be manipulated as follows. Please refer to operation manual for the usage of manifold valve.
1. Connect the recharged hose to lower pressure valve junction (low/high pressure valve must be tightened.)
 2. Connect the charged hose junction with vacuum pump.
 3. Open the low pressure handler of manifold fully.
 4. Start vacuumizing with vacuum pump. When vacuumizing begins, loosen the nut of low pressure valve a bit. Check if the air enters (noise of vacuum pump changes, the all-purpose meter indication changes from negative to zero), then tighten the nut of connection pipe.
 5. After vacuumizing finishing, tighten the low pressure handler of manifold valve fully and stop the vacuum pump. When vacuumizing is carried out for over 15 minutes, please confirm if the all-purpose meter points at $-1.0 \times 10^5 \text{ Pa}$ (-76 cmHg).
 6. Open the high/low pressure valve fully.
 7. Dismantle the recharged hose from charge gap of low pressure valve.
 8. Tighten the bonnet of low-pressure valve.
- The following figure only shows the assembly relationship of the indoor unit, outdoor unit and refrigerant pipes.
 - Please refer to the following figures to install.



NOTE

- The throttle subassembly has been installed in the outdoor unit.
- Use two spanners to connect the pipe with indoor/outdoor pipes to avoid the copper pipe cracking.
- Please pay attention to the connection orientation when connecting.

AIR PURGING

Use a vacuum pump, to vacuum from the gas side refrigerant adding mouth of the outdoor unit.

Air and moisture remains inside the refrigeration system, may has the following bad effects:

- Rise of pressure inside the refrigeration system;
- Decrease of cooling effect;
- Moisture frozen and blocking the refrigeration system;
- Rusting of certain parts of the system
- Don't use the refrigerant of the outdoor unit to do the vacuum. (A certain volume of refrigerant had been added into the outdoor unit in factory.)

ELECTRIC WIRING

WARNING



Specified power cables should be used. Do not apply any pressure on the terminals used to connect. Improper connection may cause fire.



Grounding must be properly done.

The grounding wire should be away from gas pipes, water pipes, telephone, lightning rods or other grounding wires. Improper grounding may cause electric shock.



Electric Wiring must be done by professionals. Use a separate circuit according to national regulations.

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

If the wiring capacity is not enough, electric shock or fire may occur.

If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

CAUTION

Be sure to Install Current Leakage Protection Switch. Or electric shock may occur.

The appliance must be positioned so that the plug is accessible.

The appliance shall be installed in accordance with national wiring regulations

- Power cord is to be selected according to national regulations.
- Outdoor unit power cord should be selected and connected according to the outdoor unit installation manual.
- Wiring should be away from high temperature components, or the insulation layer of the wires may melt down.
- Use wire clamp to fix the wires and terminal block after connection.
- Control wire should be wrapped together with heat insulated refrigerant pipes.
- Connect the indoor unit to power only after the refrigerant has been vacuumed.
- Don't connect the power wire to the signal wire connection end

Panel Wiring

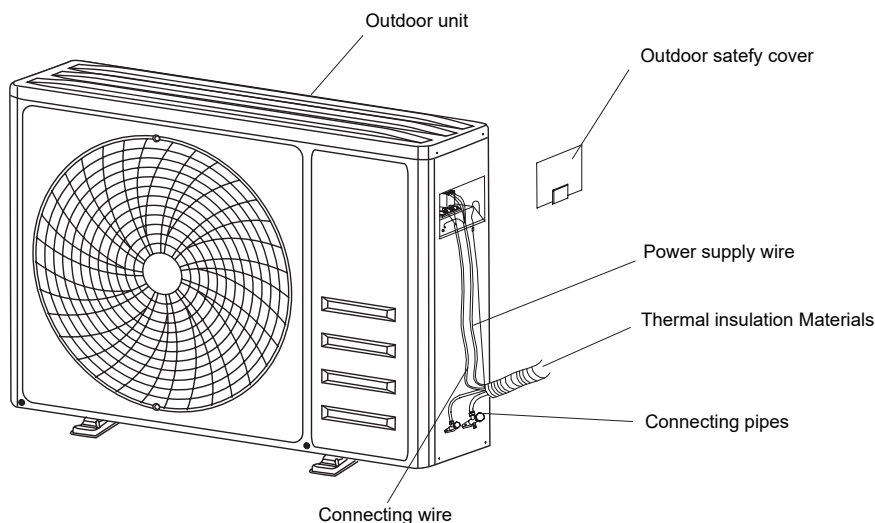
Connect the Swing Motor terminal block according to cassette indoor unit wiring diagram.

Terminal Board Diagram

Please refer to cassette indoor unit wiring for the wiring.

Steps of external wiring connection

1. Remove air intake grille and electric box cover of indoor unit.
2. Remove access door of outdoor unit.
3. Connect the Connection wiring between indoor and outdoor unit.
4. Make sure the cables being fixed well with an effective anchorage after connecting.
5. Grounding work must be carried out for indoor and outdoor units.
6. Install the components removed back to the unit.

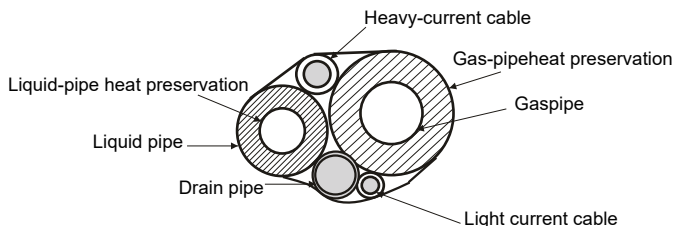


Binding treatment

Once the connecting wires have been properly connected, bind the connecting tubing, connecting wire and drain pipe by binding tapes. After binding treatment, the cross section is shown in the figure below:

Notice: Drain pipe must not be flattened during binding treatment.

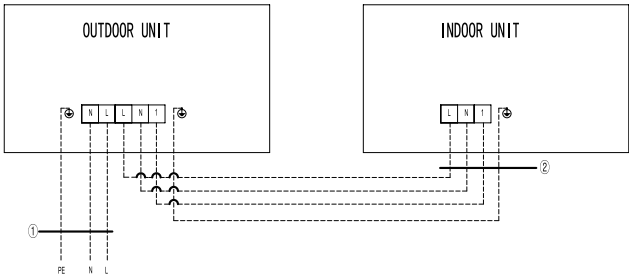
Drain pipe outlet should be led to a place that can avoid affecting the environment.



- If situations as follow occur, please cut off the electric power before contacting the dealer.
- Open or close incorrectly.
 - Fuse or electric leakage protector breaks for several times.
 - Objects or water into the AC

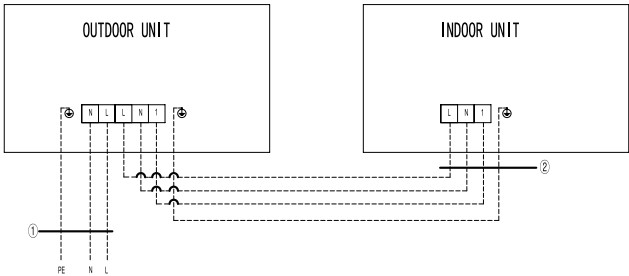
External wiring diagrams

The following wiring diagram is for use with 9/12/18/24/28/36/42K single-phase models.



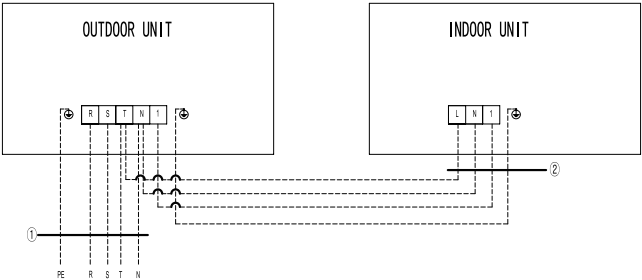
	9/12/18K	24/28/36/42K
① Power cords	3x1.5mm ²	3x2.5mm ²
② Connection wiring	4x0.75mm ²	4xAmm ²

The following wiring diagram is suitable for 48K single-phase model.



	48K
① Power cords	3x4.0mm ²
② Connection wiring	4xAmm ²

The following wiring diagram is suitable for 48/55K three-phase models.



	48/55K
① Power cords	5x1.5mm ²
② Connection wiring	4xAmm ²

NOTES:

Communication Range	A
L<30m	0.75
L≥30m	1.5

For lengths less than 30 meters, use 0.75 mm² indoor-outdoor unit connecting wire; for lengths of 30 meters or more, use 1.5 mm² indoor-outdoor unit connecting wire.

TEST RUN

Before testing

- 1. Check if piping, drainage and external wiring have been finished correctly.
- 2. Check if the power supply complies with requirements; if there is refrigerant leakage; if the all wires and cables are correctly connected and well fixed.

Function test

- 1. After checking, energize your appliance and press the buttons on the control panel to see if the buttons function;
- 2. If LCD screen displays normally.

Notes

- 1. Please read this operating and installation instructions carefully.
- 2. Do not let air in or refrigerant out during installing or reinstalling the appliance.
- 3. Test run the air conditioner after finishing installation and keep the record.
- 4. Type of fuse for controller of indoor unit is 50T, rated specification is T 5 A, 250V. Fuse for the whole unit is not supplied by the manufacturer, so the installer must employ a suitable fuse or other over-current protective device for the power supply circuit according to the maximum power input as required.
- 5. The air conditioner operates safely when ambient static pressure is 0.8~1.05 standard atmosphere pressure.

CHECKS BEFORE OPERATION

⚠ CAUTIONS

1. Check that the wiring is not broken off or disconnected.
2. Check that the air filter is installed. (Some air-conditioners have no air filters)
3. Check that the outdoor unit air outlet or inlet is not blocked.
Before you clean the air conditioner, be sure to disconnect the power supply plug.
4. Check the access control and dry contact interfaces on the electrical control board—they cannot be connected simultaneously. Only one should be connected at a time.

Clean the air filter

- The air filter can prevent the dust or other particulate from going inside. In case of blockage of the filter, the working efficiency of the air conditioner may greatly decrease. Therefore, the filter must be cleaned once two weeks during long time usage.
- If the air conditioner is positioned in a dust place, the cleaning frequency of the air filter must be increased.
- If the accumulated dust is too heavy to be cleaned, please replace the filter with a new one (replaceable air filter is an optional fitting).

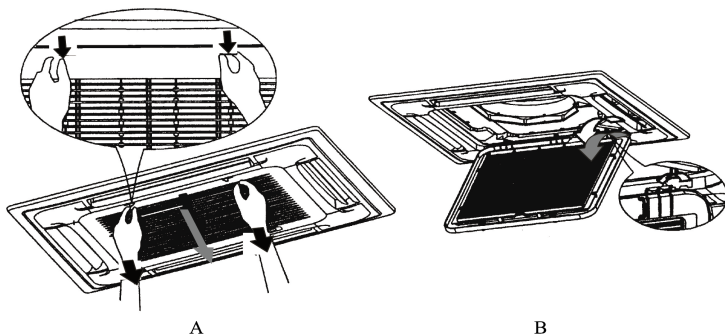
Cassette Type

1. Open the air-in grill

Push the grill switches towards the middle simultaneously as indicated in sketch A. Then pull down the air-in grill.

Caution:

The control box cables, which are originally connected with the main body electrical terminators must be pulled off before doing as indicated below.



2. Take out the air-in grill (together with the air filter shown in Sketch B) Pull the air-in grill down at 45 ° and lift it up to take out the grill.
3. Dismantle the air filter.
4. Clean the air filter (Vacuum cleaner or pure water may be used to clean the air filter. If the dust accumulation is too heavy, please use soft brush and mild detergent to clean it and dry out in cool place).

ADJUSTING AIR FLOW DIRECTION

Cassette Type

While the unit is in operation, you can adjust the air flow louver to change the flow direction and naturalize the room temperature evenly.

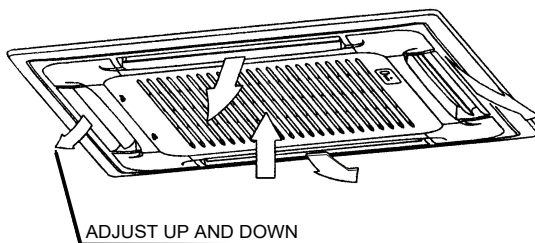
Thus you can enjoy it more comfortably.

1. Set the desired air flow direction.

Push the SWING button to adjust the louver to the desired position and push this button again to maintain the louver at this position.

2. Adjust the air flow direction automatically.

Push the SWING button, the louver will swing automatically.



While this function is set, the swing fan of indoor unit runs; otherwise, the swing fan does not run.

When the air conditioner is not in operation (including when TIMER ON is set), the SWING button will be disabled.

MAINTAIN

⚠ WARNING

Before you clean the air conditioner, be sure to disconnect the power supply plug.

Cleaning the indoor unit and remote controller.

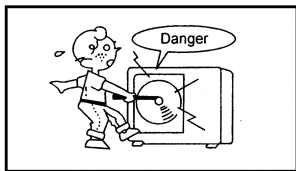
⚠ CAUTIONS

1. Use a dry cloth to wipe the indoor unit and remote controller.
2. A cloth dampened with cold water may be used on the indoor unit if it is very dirty.
3. Never use a damp cloth on the remote controller.
4. Do not use a chemically-treated duster for wiping or leave such material on the unit for long, because it may damage or fade the surface of the unit.
5. Do not use benzine, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or deform.

If you do not plan to use the unit for at least 1 month.

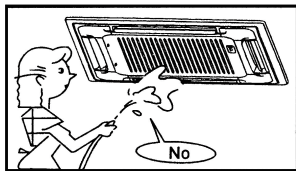
1. Operate the fan for about half a day to dry the inside of the unit.
2. Stop the air conditioner and disconnect power.
3. Remove the batteries from the remote controller.

IMPORTANT SAFETY INFORMATION



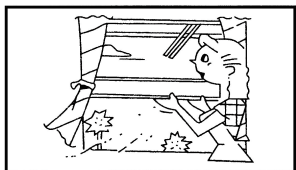
⚠ CAUTION

Do not attempt to install this unit by yourself. This unit requires installation by qualified persons.



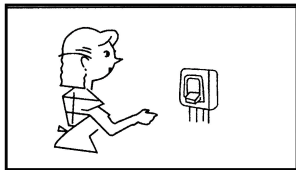
⚠ DANGER

Do not attempt to service the unit yourself. This unit has no user serviceable components. Opening or removing the cover will expose you to dangerous voltage. Turning off the power supply will not prevent potential electric shock.



⚠ DANGER

Never put hands or objects into the air outlet of indoor or outdoor units. These units are installed with a fan running at high speed. To touch the moving fan will cause serious injury.



⚠ DANGER

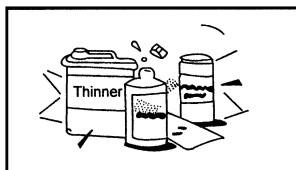
To avoid the risk of serious electrical shock. Never sprinkle or spill water or liquids on unit.

⚠ WARNING

Ventilate the room regularly while the air conditioner is in use, especially if there is also a gas appliance in use in this room. Failure to follow these directions may result in a loss of oxygen in the room.

⚠ WARNING

To prevent electric shock, turn off the power or disconnect the power supply plug before beginning any cleaning or other routine maintenance.

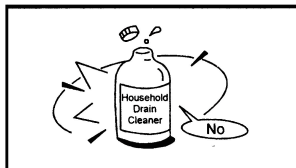


⚠ WARNING

Do not use liquid cleaners or aerosol cleaners, use a soft and dry cloth for cleaning the unit. To avoid electric shock, never attempt to clean the units by sprinkling water.

⚠ CAUTION

Do not use caustic household drain cleaners in the unit. Drain cleaners can quickly destroy the unit components (drain pan and heat exchanger coil etc).



⚠ NOTE

For proper performance, operate the unit in temperature and humidity ranges indicated in this owner's manual. If the unit is operated beyond these conditions, it may cause malfunctions of the unit or dew dripping from the unit.

TROUBLESHOOTING

Error Code	Error Content	Error History Times	Error Definition and Protection
E0	Indoor and outdoor communication failure	1	Hardware Error
E1	Indoor ambient temperature sensor failure	2	Hardware Error
E2	Indoor fancoil temperature sensor failure	3	Hardware Error
E3	Outdoor fancoil temperature sensor failure	4	Hardware Error
E4	Abnormal system malfunction (lack of fluorine)	5	Hardware Error
E5	Model configuration error	6	Hardware Error
E6	Indoor PG/DC fan failure	7	Hardware Error
E7	Outdoor ambient temperature sensor failure	8	Hardware Error
E8	Outdoor exhaust temperature sensor failure	9	Hardware Error
E9	Outdoor IPM module failure/compressor drive failure	10	Hardware Error
EA	Outdoor current sensor failure	11	Hardware Error
Eb	PCB and display screen communication failure	12	Hardware Error
EC	Outdoor modules Communication failure	13	Hardware Error
EE	Outdoor EEPROM fault	14	Hardware Error
EF	Outdoor DC fan failure	15	Hardware Error
EH	Outdoor suction sensor failure	16	Hardware Error
EP	Outdoor compressor casing top failure	17	Hardware Error
EU	Outdoor voltage sensor failure	18	Hardware Error
Ej	Outdoor central coil temperature sensor failure	30	Hardware Error
En	Outdoor air pipe temperature sensor failure	31	Hardware Error
Ey	Outdoor liquid pipe temperature sensor failure	32	Hardware Error
P0	IPM module protection	19	Others Error
P1	Overvoltage and undervoltage protection	20	Others Error

Error Code	Error Content	Error History Times	Error Definition and Protection
P2	Overcurrent protection	21	Others Error
P3	Other protections	22	Others Error
P4	Protection against excessive outdoor exhaust temperature	23	Others Error
P5	Cooling protection against overcooling	24	Others Error
P6	Cooling and anti overheating protection	25	Others Error
P7	Heating and anti overheating protection	26	Others Error
P8	Protection against high or low outdoor temperature	27	Remote control display adjustment
P9	Compressor drive protection (abnormal load)	28	Others Error
PA	Communication failure/mode conflict	29	Others Error
F0	Infrared human sensing sensor failure	33	Remote control display adjustment
F1	Battery module failure	34	Remote control display adjustment
F2	Exhaust temperature sensor failure protection	35	Others Error
F3	Failure protection of outer tube temperature sensor	36	Others Error
F4	Abnormal protection of refrigerant circulation	37	Others Error
F5	PFC protection	38	Others Error
F6	Compressor missing/reverse phase protection	39	Others Error
F7	Module temperature protection	40	Others Error
F8	Abnormal commutation of four-way valve	41	Others Error
F9	Module temperature sensor circuit malfunction	42	Hardware Error
FA	Compressor phase current detection fault	43	Hardware Error
Fb	Cooling and heating overload protection limit frequency reduction	44	Remote control display adjustment
FC	High power protection limit/frequency reduction	45	Remote control display adjustment
FE	Module current (compressor phase current) protection limit/frequency reduction	46	Remote control display adjustment
FF	Module temperature protection limit/ frequency reduction	47	Remote control display adjustment

Error Code	Error Content	Error History Times	Error Definition and Protection
FH	Drive protection limit/frequency reduction	48	Remote control display adjustment
FP	Anti condensation protection limit/ frequency reduction	49	Remote control display adjustment
FU	Anti freezing protection limit/frequency reduction	50	Remote control display adjustment
Fj	Exhaust protection limit/frequency reduction	51	Remote control display adjustment
Fn	External AC current protection limit/ frequency reduction	52	Remote control display adjustment
Fy	Fluorine deficiency protection	53	Others Error
H1	High pressure switch malfunction	54	Hardware Error
H2	Low pressure switch malfunction	55	Hardware Error
bf	TVOC sensor failure	56	Remote control display adjustment
bc	PM2.5 sensor failure	57	Remote control display adjustment
bj	Humidity sensor failure	58	Remote control display adjustment
bE	CO2 sensor malfunction	59	Hardware Error
bd	Fresh air fan failure	60	Hardware Error
d4	Water full protection	61	Others Error
d5	Access control protection	62	Hardware Error

REFRIGERANT NOTICE/CONCENTRATION

This air conditioner uses R32 refrigerant. The construction area for installation, operation and storage of the air conditioner must be larger than the minimum construction area. The minimum area for installation is determined by:

1. Refrigerant charging quantity for the entire system (ex-factory charging quantity + additional charging quantity);
2. Checking out in the applicable tables:
 - 1) For indoor unit, confirm the model of indoor unit and check the corresponding table.
 - 2) For outdoor unit that is installed or placed indoors, select the corresponding table according to the height of the room.

Height of the room	Select the applicable table
<1.8m	Floor standing type
≥1.8m	Wall mounted type

3. Refer to the following table to check out the minimum construction area.

Ceiling type	
Weight(kg)	Area (m ²)
<1.224	-
1.224	0.956
1.4	1.25
1.6	1.63
1.8	2.07
2.0	2.55
2.2	3.09
2.4	3.68
2.6	4.31
2.8	5.00
3.0	5.74
3.2	6.54
3.4	7.38
3.6	8.27
3.8	9.22
4.0	10.2
4.2	11.3

Wall mounted type	
Weight(kg)	Area (m ²)
<1.224	-
1.224	1.43
1.4	1.87
1.6	2.44
1.8	3.09
2.0	3.81
2.2	4.61
2.4	5.49
2.6	6.44
2.8	7.47
3.0	8.58
3.2	9.76
3.4	11.0
3.6	12.4
3.8	13.8
4.0	15.3
4.2	16.8

Floor standing type	
Weight(kg)	Area (m ²)
<1.224	-
1.224	12.9
1.4	16.8
1.6	22.0
1.8	27.8
2.0	34.3
2.2	41.5
2.4	49.4
2.6	58.0
2.8	67.3
3.0	77.2
3.2	87.9
3.4	99.2
3.6	111
3.8	124
4.0	137
4.2	151

4.4	12.4
4.6	13.5
4.8	14.7
5.0	16.0
5.2	17.3
5.4	18.6
5.6	20.0
5.8	21.5
6.0	23.0
6.2	24.5
6.4	26.1
6.6	27.8
6.8	29.5
7.0	31.3
7.2	33.1
7.4	34.9
7.6	36.9
7.8	38.8
8.0	40.8

4.4	18.5
4.6	20.2
4.8	22.0
5.0	23.8
5.2	25.8
5.4	27.8
5.6	29.9
5.8	32.1
6.0	34.3
6.2	36.6
6.4	39.1
6.6	41.5
6.8	44.1
7.0	46.7
7.2	49.4
7.4	52.2
7.6	55.1
7.8	58.0
8.0	61.0

4.4	166
4.6	182
4.8	198
5.0	215
5.2	232
5.4	250
5.6	269
5.8	289
6.0	309
6.2	330
6.4	351
6.6	374
6.8	397
7.0	420
7.2	445
7.4	470
7.6	496
7.8	522
8.0	549

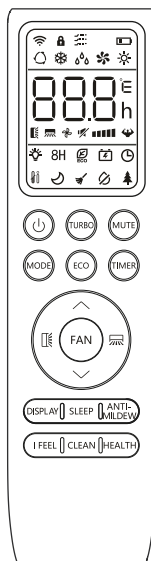
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REMOTE CONTROL

Remote control DISPLAY

No.	Symbols	Meaning
1		Battery indicator
2		Auto Mode
3		Cooling Mode
4		Dry Mode
5		Fan only Mode
6		Heating Mode
7		ECO Mode
8		Timer
9		Temperature indicator
10		Fan speed: Auto/ low/ low-mid/ mid/ mid-high/ high
11		Mute function
12		TURBO function
13		Up-down auto swing
14		Left-right auto swing
15		SLEEP function
16		Health function
17		I FEEL function
18		8°Heating function
19		Signal indicator
20		Gentle wind
21		Child-Lock
22		Display ON/OFF
23		GEN function
24		Self-Clean function
25		Anti-Mildew



The display and some functions of the remote control may vary according to the model.

REMOTE CONTROL

No.	Button	Function
1		To turn on/off the air conditioner .
2	^	To increase temperature, or Timer setting hours.
3	∨	To decrease temperature, or Timer setting hours.
4	MODE	To select the mode of operation (AUTO, COOL, DRY, FAN, HEAT).
5	ECO	To activate/deactivate the ECO function.
		Long press to activate/deactivate the 8 °Heating function (depending on models).
6	TURBO	To activate/deactivate the TURBO function.
7	FAN	To select the fan speed of auto/mute/low/low-mid/mid/mid-high/high/turbo.
8	TIMER	To set the time for timer on/off.
9	SLEEP	To switch-on/off the function SLEEP.
10	DISPLAY	To switch-on/off the LED display.
11		To stop or start horizontal louver movement or set the desired up/down air flow direction.
12		To stop or start horizontal louver movement or set the desired left/right air flow direction.
13	I FEEL	To switch-on/off the I FEEL function.
14	MUTE	To switch-on/off the MUTE function.
		Long press to activate/deactivate the GEN function (depending on models).
15	MODE + TIMER	To activate/deactivate the CHILD-LOCK function.
16	CLEAN	To activate/deactivate the SELF-CLEAN function (depending on models).
17	FAN + MUTE or GENTLE WIND	To activate/deactivate the GENTLE WIND function (depending on models)(The function is not available for this series of products).
18	HEALTH	To activate/deactivate the HEALTH function (depending on models).
19	ANTI-MILDEW	To activate/deactivate the ANTI-MILDEW function.

⚠ The display and some functions of the remote control may vary according to the model.

⚠ The shape and position of buttons and indicators may vary according to the model, but their function is the same.

⚠ The unit confirms the correct reception of each button with the beep.

REMOTE CONTROL

Replacement of Batteries

Remove the battery cover plate from the rear of the remote control, by sliding it in direction as the arrow.

Install the batteries according the direction (+ and -) shown on the Remote Control.

Reinstall the battery cover by sliding it into place.

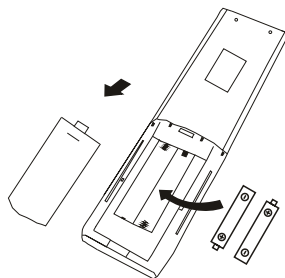
⚠ Use 2 pieces LRO3 AAA (1.5V) batteries.

Do not use rechargeable batteries.

Replace the old batteries with new ones of the same type when the display is no longer legible.

Do not dispose batteries as unsorted municipal waste.

Collection of such waste separately for special treatment is necessary.



Battery Disposal

Do not dispose of batteries as unsorted municipal waste. Refer to local laws for proper disposal of batteries.

Batteries may have a chemical symbol at the bottom of the disposal icon.

This chemical symbol means that the battery contains a heavy metal that exceeds a certain concentration. Appliances and used batteries must be treated in a specialized facility for reuse, recycling and recovery.

By ensuring correct disposal, you will help avoid possible negative consequences for the environment and human health.



⚠ For some models, each time when insert the batteries in the remote controller for the first time, you can set the Cooling only or Heating pump control type. As soon as you insert the batteries, turn off the remote controller, and operate as below.

1. Long press the **MODE** button, until the (❄) icon flash, to set the Cooling only type.
2. Long press the **MODE** button, until the (🔥) icon flash, to set the Heating pump type.

Note: If you set the remote control in cooling mode, it will not be possible to activate the heating function in units with a heating pump. If you need to reset, take out the batteries and install again.

Recommendations for locating and using the remote controller holder (if present).

The remote controller be kept in a wall-mounted holder.

⚠ For some models of the remote controller, you can program the temperature display between °C and °F.

1. Press and hold the **TURBO** button over 5 seconds to get into the change mode;
2. Press and hold the **TURBO** button, until it switch to C° and F°;
3. Then release the pressing and wait for 5 seconds, the function will be selected.

Note:

1. Direct the remote control toward the Air conditioner.
2. Check that there are no objects between the remote control and the Signal receptor in the indoor unit.
3. Never leave the remote control exposed to the rays of the sun.
4. Keep the remote control at a distance of at least 1m from the television or other electrical appliances.

OPERATING MANUAL

COOLING MODE

COOL ❄️

The cooling function allows the air conditioner to cool the room and reduce Air humidity at the same time.

To activate the cooling function (COOL), press the **[MODE]** button until the symbol ❄️ appears on the display.

With the button ▼ or ▲ set a temperature lower than that of the room.

FAN MODE (Not FAN button)

FAN 🌀

Fan mode, air ventilation only.

To set the FAN mode, press **[MODE]** until 🌀 appears on the display.

DRY MODE

DRY ☀️

This function reduces the humidity of the air to make the room more comfortable.

To set the DRY mode, Press **[MODE]** until ☀️ appears in the display. An automatic function of pre-setting is activated.

AUTO MODE

AUTO 🔄

Automatic mode.

To set the AUTO mode, press **[MODE]** until 🔄 appears on the display.

In AUTO mode the run mode will be set automatically according to the room temperature.

HEATING MODE

HEAT 🔥

The heating function allows the air conditioner to heat the room.

To activate the heating function (HEAT), press the **[MODE]** button until the symbol 🔥 appears on the display.

With the button ▼ or ▲ set a temperature higher than that of the room.

⚠️ In HEATING operation, the appliance can automatically activate a defrost cycle, which is essential to clean the frost on the condenser so as to recover its heat exchange function. This procedure usually lasts for 2-10 minutes. During defrosting, indoor unit fan stop operation. After defrosting, it resumes to HEATING mode automatically.

⚠️ (For North American market)
If necessary, you can press ECO button 10 times within 8 seconds under heating mode to start the forced defrosting. It will defrost the outdoor ice much faster.

FAN SPEED function (FAN button)

FAN 🌀
■■■■

Change the operating fan speed.

Press **[FAN]** button to set the running fan speed, it can be set to AUTO/ MUTE/ LOW/ LOW-MID / MID/ MID-HIGH/ HIGH/ TURBO speed circularly.



Child-Lock function

1. Long press **[MODE]** and **[TIMER]** button together to active this function, and do it again to deactivate this function.
2. Under this function, no single button will active.

OPERATING MANUAL

TIMER function ---- TIMER ON



To automatic switch on the appliance.

When the unit is switch-off, you can set the TIMER ON.

To set the time of automatic switch-on as below:

1. Press **[TIMER]** button first time to set the switch-on, and will appear on the remote display and flashes.
2. Press $\wedge$ or $\vee$ to button to set desired Timer-on time. Each time you press the button, the time increases/decreases by half an hour between 0 and 10 hours and by one between 10 and 24 hours.
3. Press **[TIMER]** button second time to confirm.
4. After Timer-on setting, set the needed mode (Cool/ Heat/ Auto/ Fan/ Dry), by press the **[MODE]** button. And set the needed fan speed, by press **[FAN]** button. And press $\wedge$ or $\vee$ to set the needed operation temperature.

CANCEL it by press **[TIMER]** button.

TIMER function ---- TIMER OFF



To automatic switch off the appliance.

When the unit is switch-on, you can set the TIMER OFF.

To set the time of automatic switch-off, as below:

1. Confirm the appliance is ON.
2. Press the **[TIMER]** button at first time to set the switch-off.
Press $\wedge$ or $\vee$ to set the needed timer.
3. Press **[TIMER]** button at the second time to confirm.

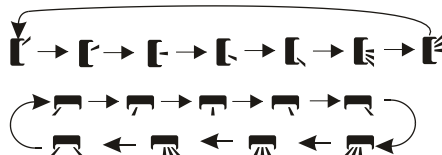
CANCEL it by press **[TIMER]** button.

Note: All programming should be operated within 5 seconds, otherwise the setting will be cancelled.

SWING function



1. Press the button **SWING** to activate the louver,
 - 1.1 Press to activate the horizontal flaps to swing from up to down, the will appear on the remote display.
 - 1.2 Press to active the vertical deflectors to swing from left to right, the will appear on the remote display.
 - 1.3 Do it again to stop the swing movement at the current angle.
2. If the vertical deflectors are positioned manually which placed under the flaps, they allow to move the air flow direct to rightward or leftward.
3. Long press or over 3 seconds to select more angles of the airflow direction.



- ⚠ Never position “Flaps” manually, the delicate mechanism might seriously damaged!
- ⚠ Never put fingers, sticks or other objects into the air inlet or outlet vents. Such accidental contact with live parts might cause unforeseeable damage or injury.

TURBO function



To activate turbo function, press the **[TURBO]** button, and will appear on the display.

Press again to cancel this function.

In COOL/ HEAT mode, when you select TURBO feature, the appliance will turn to quick COOL or quick HEAT mode, and operate the highest fan speed to blow strong airflow.

OPERATING MANUAL

MUTE function



1. Press **[MUTE]** button to active this function, and  will appears on the remote display. Do it again to deactivate this function.
2. When the MUTE function runs, the remote controller will display the auto fan speed, and the indoor unit will operate at lowest fan speed to be quiet feeling.
3. When press FAN/ TURBO button, the MUTE function will be cancel. MUTE function can not be activated under dry mode.

SLEEP function



Pre-setting automatic operating program.

Press **[SLEEP]** button to activate the SLEEP function, and  appears on the display. Press again to cancel this function.

After 10 hours running in sleep mode, the air conditioner will change to the previous setting mode.

I FEEL function (Optional)



Press **[I FEEL]** button to active the function, the  will appear on the remote display. Do it again to deactivate this function.

This function enables the remote control to measure the temperature at its current location, and send this signal to the air conditioner to optimize the temperature around you and ensure the comfort.

ECO function



In this mode the appliance automatically sets the operation to save energy.

Press the **[ECO]** button, the  appears on the display, and the appliance will run in ECO mode. Press again to cancel it.

Note: The ECO function is available in both COOLING and HEATING modes.

DISPLAY function (Indoor display)



Switch ON/OFF the LED display on panel.

Press **[DISPLAY]** button to switch off the LED display on the panel. Press again to switch on the LED display.

GEN function (Optional)



1. Turn on the indoor unit at first, and long press **[MUTE]** button 3 seconds to active, and do it again to deactivate this function.
2. Under this function, short press **[MUTE]** button to select the General type L3 - L2 - L1 - OF.
3. Select OF and wait 2 seconds to exit it.

OPERATING MANUAL

SELF-CLEAN function (Optional)

Only optional for some heating pump inverter appliance.

To active this function, turn off the indoor unit at first, then press **[CLEAN]** button then you will hear a beep, **[AC]** will appear on the indoor LED, and  will appear on the remote display .

1. This function helps carry away the accumulated dirt, bacteria, etc from the indoor evaporator
2. This function will run about 30 minutes, and it will return to the pre-setting mode. You can press  button to cancel this function during the process.

You will hear 2 beeps when it's finished or cancelled.

 It's normal if there is some noise during this function process, as plastic materials expand with heat and contract with cold.

 We suggest operating this function at the following ambient conditions to avoid certain safety protection features.

Indoor unit	Temp < 86°F (30°C)
Outdoor unit	41°F (5°C) < Temp < 86°F (30°C)

 It's suggested to utilize this function every 3 months.

8°C Heating function (Optional)

1. Long press **[ECO]** button over 3 seconds to active this function, and **[8°C]** (**[46°F]**) will appear on the remote display.
Do it again to deactivate this function.
2. This function will auto start the heating mode when the room temperature is lower than 8°C (46°F), and it will return to standby if the temperature reaches 18°C(64° H=F).

Health function (Optional)

1. Turn on the indoor unit at first, press **[HEALTH]** to active this function,  will appear on the display.
Do it again to deactivate it.
2. When the HEALTH function is initiated, the Ionizer/ Plasma/ Bipolar Ionizer/ UVC Lights (depending on models) will be energized and running.

ANTI-MILDEW function (Optional)



Press **[ANTI-MILDEW]** button to activate the ANTI-MILDEW function,  will appear on the display. Do it again to deactivate this function. After running COOL/ DRY for more than 30 minutes, you can operate this function, the unit will blow airflow for about 15 minutes to dry the inner parts to avoid mildew, then shuts off the unit.

Note: ANTI-MILDEW function only available in DRY/COOLING mode.

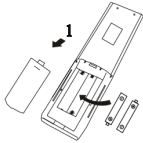
REMOTE CONTROL USE PRECAUTIONS

Batteries replacing procedure

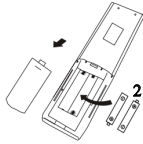
Following cases signify dead batteries. Replace the dead batteries with new ones.

- Receiving sound is not emitted from the unit when signal is transmitted.
- Indicator becomes indistinct.

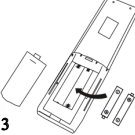
- Please slide and remove the cover



Slide the cover upwardly in the direction of the arrow
- Exchange the batteries.



Attention to the  and  marks.
- Install the cover.

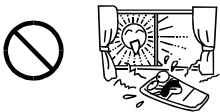

- Set it to the present time.



NOTE

- Do not use an old battery together with a new one.
- Remove batteries when the remote controller is not used for a long period.
- The life of a battery made in conformity to JIS or IEC is 6 to 12 months in normal use. If it is used longer or an unspecified cell is used, a liquid leaks from the battery, causing the remote controller inoperative.
- Guideline of the life time is printed on the battery. The battery life may be shorter than that of the air conditioner depending on the date of manufacture.
- However, the battery may be alive even after the nominal life time expired

Note of remote controller handling

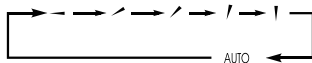
• A place with high temperature such as near an electric carpet or a stove. 	• A place unprotected from direct sunlight or strong lighting. 	• It will be damaged if fallen. Be careful. 
• Do not put obstacles between the remote controller and the unit. 	• Protect the remote controller from being splashed with water, etc. 	• Do not put weights on the remote controller. 

REMOTE CONTROL USE PRECAUTIONS

■ Air flow direction adjustment procedure

Adjusting air flow direction

- Up/down direction can be adjusted by using the AIRFLOW button on the remote controller.
This button, each time pressed, changes the mode in the following sequence:



- Push the LOUVER button, changes the mode to swing louver.
Push the button, to stop swing.

NOTE

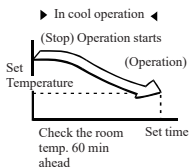
- When the room temperature controller (thermostat) trips in the heating mode or when the defrosting operation is conducted, the blow flap changes automatically to the horizontal position.
- When the heating operation has just started and the room temperature is still low, it may take a little time before the flap moves to the above sway operation angle.
- The flap may stop at the tilted down-blow position during the "Sway operation" in the heating mode.

■ About TIMER operation

About Amenity reservation

Amenity reservation function is provided to start the operation a little earlier so that the room temperature is near the optimum temperature at the timer ON time in case of starting the operation by TIMER ON/OFF.

- Mechanism
Checking of the room temperature starts 60 minutes ahead of the timer ON time. Depending on the temperature at that time, operation starts 5 to 60 minutes ahead of the timer ON time.
- Amenity reservation is the function only for COOL and HEAT operation mode (including AUTO); it does not actuate in DRY mode.



About SLEEP Operation

When the SLEEP operation is selected, the room temperature is auto-matically controlled with elapsed time so that the room isn't too cool during cooling or too warm during heating.

■ About power-off memory function

- When the air conditioner disconnect the power suddenly, restart it, the air conditioner operates at the mode it did before power suddenly failed.
- The wire controller don't have this function