Cassette

TITAN SERIES

User Manual

Models

36K **60K**

CONTENTS

PRECAUTIONS

- 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 instructions 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.
- It suits for 18000～60000Btu/h cooling and heating capacity type.When the outdoor temperature is lower than 6℃,the system should be electrified over 12 hours.

Operating condition

The protective device maybe trip and stop the unit within temp range listed below:

Cooling	Outside temp	5℃ above 43℃ below
	Room temp	17℃ above
	Dry	Room temperature is below 18℃
Heating	Extertal temp	-7℃ above 21℃ below
	Room temp	31℃ below

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

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.

Inspection

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.

FUNCTION AND OPERATION OF PANEL'S PARTS

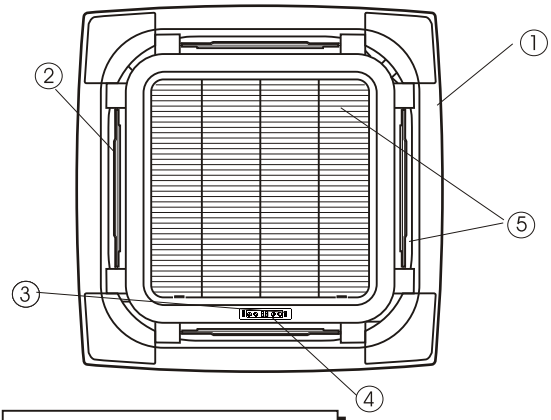
NOTICE

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

Lightning and other electromagnetic radiation may cause ill effect .If it is ,please plug off the power switch ,and replug in ,then restart the unit.

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

CONSTITUTION OF PANEL



1.PANEL

2.AIR FLOW LOUVER

3.INFRARED SIGNAL RECEIVER

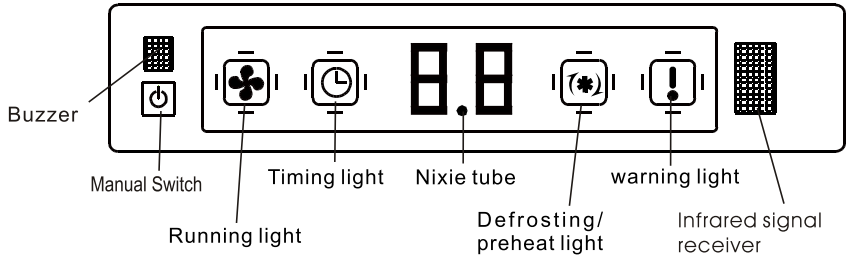
4.DISPLAY PANEL

5.AIR-IN GRILLE

DISPLAY PANEL

Infrared signal receiver: receive the signal from the remote controller.
To make your remote controller operation more efficient, please letremote controller emittor aim at infrared signal receiver.
Buzzer: firstly power supplied or any of remote controller operations will make the buzzer sound once.
Some obstacles occuring 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



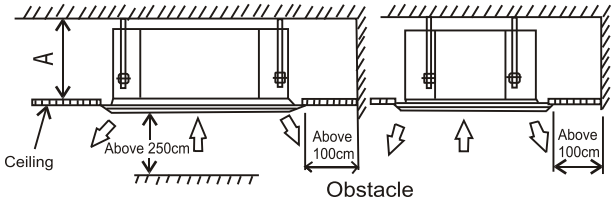
INDOOR UNIT INSTALLATION

INSTALLATION LOCATIONS

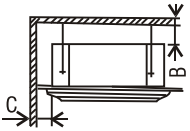
⚠ CAUTIONS

1.Location in the following places may cause malfunction of the machine. (If unavoidable, please consult your local dealer)
a. A place where there is flammable gas leakage.
b. There is salty air surrounding(near the coast).
c. There is caustic gas(the sulfide, for example) existing in the air (near a hot spring).
d. A place where can not bear the weight of the machine.
e. In kitchen where it is full of oil gas
f. There is strong electromagnetic wave existing.
g. There is acid or alkaline liquid evaporating.
h. A place where air circulation is not enough.
I.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



A>330mm



Wall material	Flammable material	Fire-proof material or other nonflammable materials other than metal	Fire-proof structure
Up(B)	Above 5cm	Above 5cm	Above 5cm
Sides(C)	Above 100cm	Above 100cm	Above 100cm

HEIGHT BETWEEN CEILING AND FLOOR

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

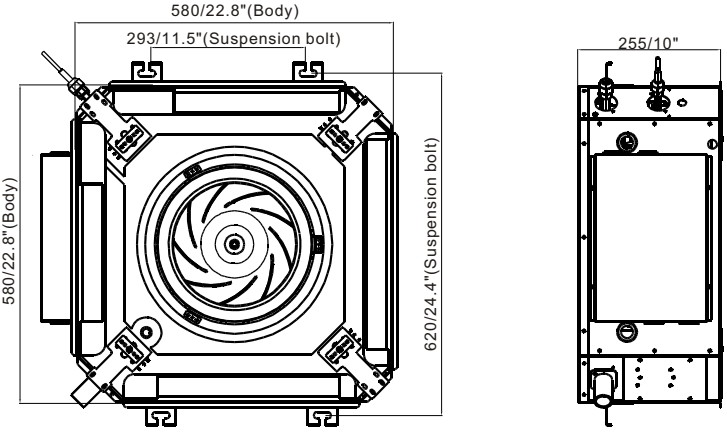
■ INDOOR UNIT INSTALLATION

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

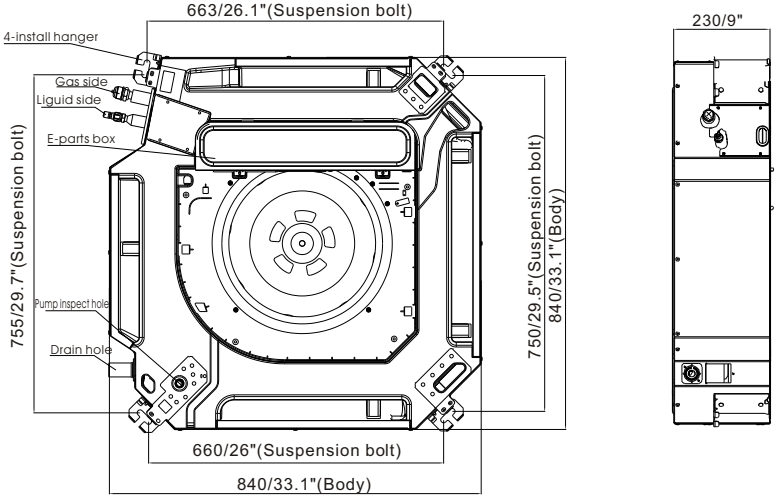
Select installation location considering piping and wiring connection after the Indoor Unit has been hanged. Then decide the piping wiring leading direction.

- 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).

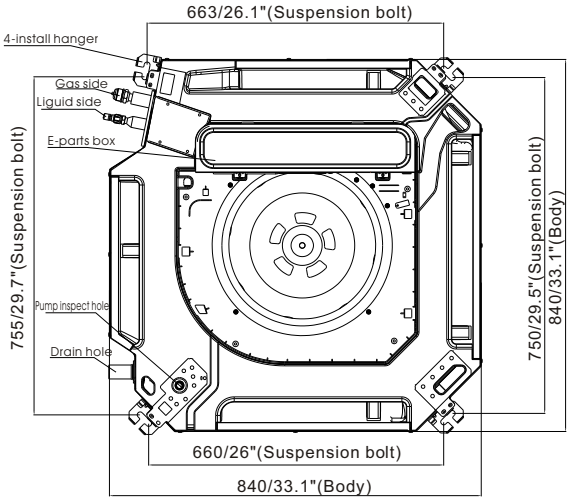
18k(Q4) (Body dimension :580X255X580)

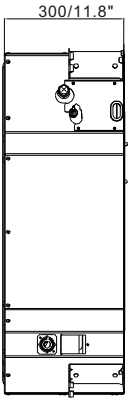


18k-24k (Body dimension:840X230X840)



36k-60k (Body dimension: 840X300X840)





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 and strong to prevent vibration.

① Cut the beams at the hole and remove them.

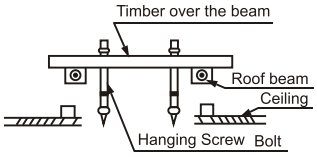
② Reinforcing the beams that have been cut and the beams fixing the ceiling .

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:

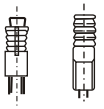
Wooden construction

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



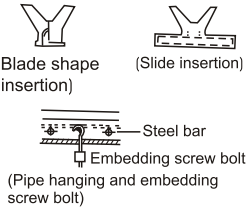
For finished concrete bricks

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



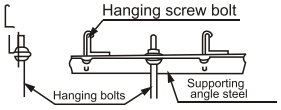
New Concrete Bricks

Inlaying or embedding the screw bolts.



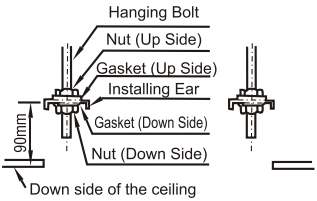
Steel roof beam structure

Install the supporting angle steel.

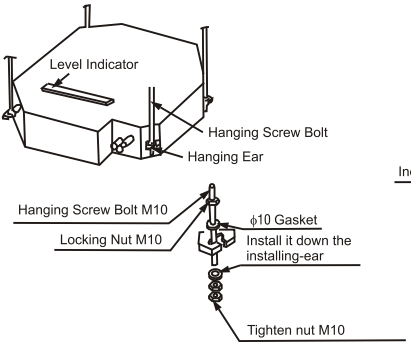


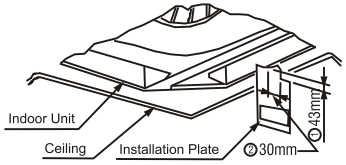
Overhanging the indoor unit

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



- Install the hanging bolt into T groove of the hanging tool. Overhang 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.

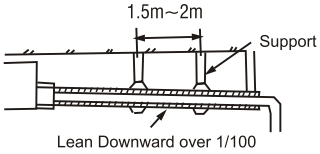
DRAINAGE PIPE INSTALLATION

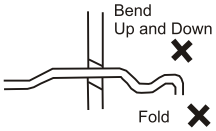
CAUTION

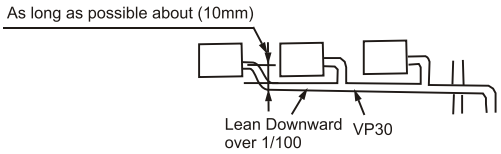
Be sure to follow Installation Manual during drainage installation,
the drainage pipe must have the heat insulation to prevent condensing.

CAUTION

- 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 shouid be over 1/100, and no winding and bending.
- The total length of the drain pipe when pulled out traversely 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

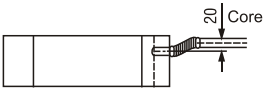
The listed material should be used:

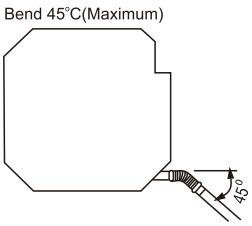
Drainage Pipe Material	Polyvinyl chloride pipe (ϕ32mm outer diameter)
Heat Insulation Material	Foamed polyethylene insulation plate (10mm thickness)

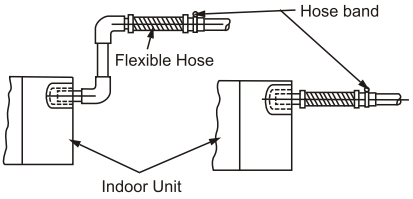
Flexible Hose

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.







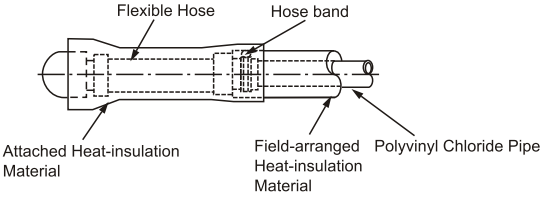
Connection Procedure

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.

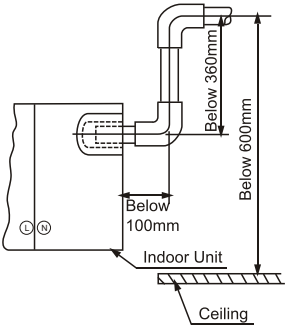
Heat Insulation

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 a height 360mm 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 220-240VAC to 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 1 min..

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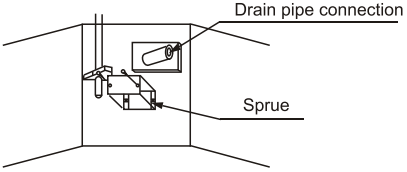


Motor Sound Test

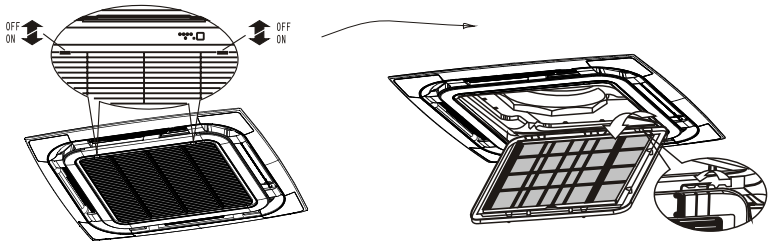
- The drainage test is doing during checking the drain pump motor running sound .
- Reset the water level switch connection to the original position after the drainage test .

INSTALLATION OF PANEL

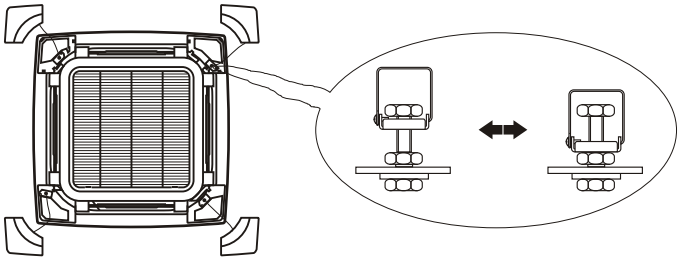
BODY DIMENSION:

Unload air-in grille

Take off air-in grille

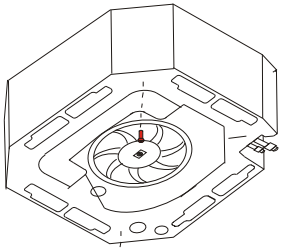


Unload panel installation cap



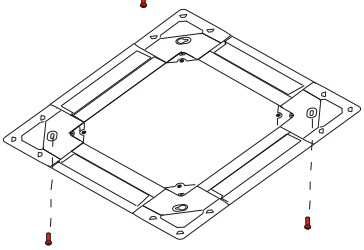
INSTALLATION OF PANEL

1.Please screw M10 gasket and M6*20 bolt at the corner of indoor unit ,before screwing them fasten ,screw other two additional bolts which locates red bolt showing as figure and notice that the direction of red arrow on the electrical box aligns the one on the panel.



2.Please connect step motor wire,display board wire to the electrical box according to ELECTRIC WIRING DIAGRAM on the electrical box.

3.Then screw the other two M6*20 bolt with M10 gasket through the hole of panel into outdoor unit



4.Adjust the location and direction of panel to tally louver of panel with outlet of outdoor,screw all the bolts fasten to make the panel and outdoor unit pressed together.

5.Return the air-in grille and panel back to the outdoor unit.

OUTDOOR UNIT INSTALLATION

1.Choose installation location

1.1 Inspection

As soon as a unit is received ,it should be inspected for possible damage during transit .if damage is evident ,the extent of the damage should be noted on the carrier's delivery receipt .a separate request for in inspection by the carrier's agent should be made in writing .see local distributor for more information.

Requirements for installing/servicing R410A Equipment.

Gauge sets ,hoses , refrigerant containers , and recovery system must be designed to handle the POE or PVE type oils.

Manifold sets should be 800 PSIG high side and 250PSIG low side with 550 PSIG low side restart.

All hoses must have a 700 PSIG service pressure rating.

Leak detectors should be designed to detect refrigerant.

Recovery equipment(including refrigerant recovery containers) must be specifically designed to handle R410A.

A liquid-line filter drier is Required on every unit .

Do not use an R-22TXV.

See the Fig.1

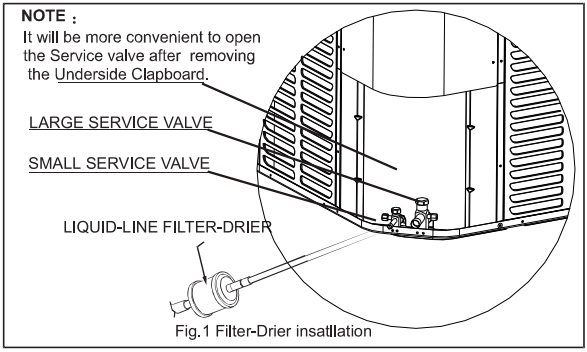


Fig.1 Filter-Drier insatllation

1.2 Limitations

The unit should be installed in accordance with all National, State and local safety Codes and the limitations listed below:

1.Limitations for the indoor unit, coil and appropriate accessories must also be observed.

2.The outdoor unit must not be installed with any duct work in the air stream. The outdoor fan is the propeller type and is not designed to operate against any additional external static pressure.

3.The maximum and minimum conditions for operation must be observed to assure a system that will give maximum performances and minimum services.

4.This unit is not designed to operate with a low ambient kit. Do not modify the control system to operate with any kind of low ambient kit.

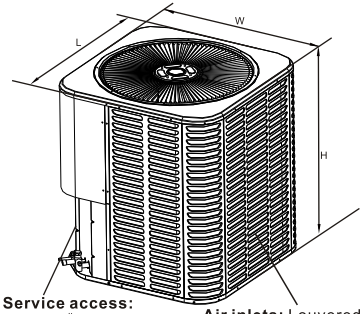
5.The maximum allowable line length for thi**s product is 166 feet (just for 48K/55K/60K).**

2.0 General

The outdoor units are designed to be connected to a matching indoor coil with sweat connect lines .Sweat connect units are factory charged with refrigerant for a matching indoor coil plus 25 feet of field supplied lines.

Matching indoor coils are available with a thermostatic expansion value or an orifice for most common usage. The orifice size and /or refrigerant charge may need to be changed for some

Air discharge: Allow 60" minimum clearance.



Note: grill appearance may vary.

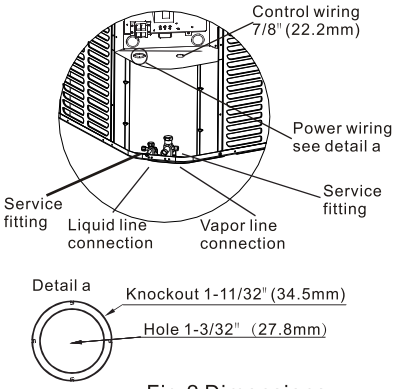


Fig.2 Dimensions

Dimensional data

Unit Model(Btu/h)	Dimensions(Inches)			Refrigerant Connection Service Valve Size	
	W(in.)(mm)	L(in.)(mm)	H(in.)(mm)	Liquid in.	Vapor in.
18K	21-7/8(554)	21-7/8(554)	24-15/16(633)	3/8	5/8
24K	23-5/8(600)	23-5/8(600)	24-15/16(633)	3/8	5/8
36K	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	3/4
48K	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	3/4
55K	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	7/8
60K	29-1/8(740)	29-1/8(740)	33-3/16(843)	3/8	7/8

3.0 Unit installation

3.1 Location

Before starting the installation, select and check the suitability of the location for both the indoor and outdoor unit. Observe all limitations and clearance requirements. The outdoor unit must have sufficient clearance for air entrance to the condenser coil, for air discharge and for service access. See Fig.2

NOTE:For multiple unit installations, units must be spaced a minimum of 18 inches apart.(Coil face to coil face.)

If the unit is to be installed on a hot sun exposed roof or a black-topped ground area, the unit should be raised sufficiently above the roof or ground to avoid taking the accumulated layer of hot air in to the outdoor unit.
Provide an adequate structural support.

3.2 Ground installation

The unit may be installed on a solid base that will not shift or settle, causing strain on the refrigerant lines and possible leaks. Maintain the clearances shown in Fig.2 and install the unit in a level position.
Normal operation sound levels may be objectionable if the unit is placed directly under windows of certain rooms(bedrooms, study, etc.)
Top of unit discharge area must be unrestricted for at least 60 inches above the unit.

WARNING

The outdoor unit should not be installed in an area where mud or ice could cause personal injury.

Elevate the unit sufficiently to prevent any blockage of the air entrances by snow in areas where there will be snow accumulation. Check the local weather bureau for the expected snow accumulation. Check the local weather bureau for the expected snow accumulation in your area. Isolate the unit from rain gutters to avoid any possible wash out of the foundation.

3.3 Roof installation

When installing units on a roof, the structure must be capable of supporting the total weight of unit, including a padded frame unit, rails, etc. which should be used to minimize the transmission of sound or vibration into the conditioned space.

3.4 Unit placement

1.Provide a base in the pre-determined location.
2.Remove the shipping carton and inspect for possible damage.
3.Compressor tie-down bolts should remain tightened.
4.Position the unit on the base provided.

CAUTION

This system uses R410A refrigerant which operates at higher pressure than R-22. No other refrigerant may be used in this system. Gauge sets, hoses, refrigerant containers, and recovery system must be designed to handle R410A.If you are unsure, consult the equipment manufacturer.

The outdoor unit must be connected to the indoor coil using field supplied refrigerant grade copper tubing that is internally clean and dry .units should be installed only with the tubing sizes for approved system combinations. The charge given is applicable for total tubing lengths up to 25 feet.

NOTE

Using a larger than specified line size could result in oil return problems. Using too small a line will result in loss of capacity and other problems caused by insufficient refrigerant flow. Slope horizontal vapor lines at least 1 every 20 feet toward the outdoor unit to facilitate proper oil return.

3.5 Precautions during line installation

1.Install the lines with as few bends as possible. Care must be taken not to damage the couplings or kink the tubing. use clean hard drawn Copper tubing where no appreciable amount of bending around obstruction is necessary, if soft copper must be used, care must be taken to avoid sharp bends which may cause a restriction.

2.The lines should be installed so that they will not obstruct services access to the coil, air handling system or filter.

3.Care must also be taken to isolate the refrigerant lines to minimize noise transmission from the equipment to the structure.

4.The vapor line and liquid line must be insulated with a minimum of 1/2 foam rubber insulation (Armafiex or equivalent). Tape and suspend the refrigerant lines as shown. DO NOT allow tube metal-to-metal contact. See Fig.3

5.Use PVC piping as a conduit for all underground installation as shown in Fig.4 Buried lines should be kept as short as possible to minimize the build up of liquid refrigerant in the vapor line during long periods of shutdown.

6.Pack fiberglass insulation and a sealing material such as perma gum around refrigerant lines where they penetrate a wall to reduce vibration and retain some flexibility.

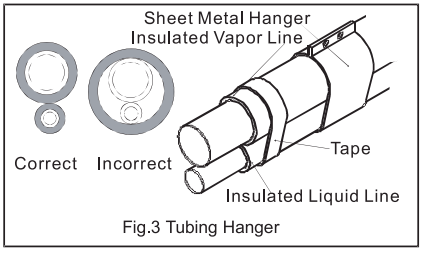


Fig.3 Tubing Hanger

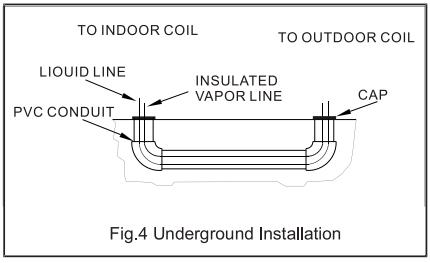


Fig.4 Underground Installation

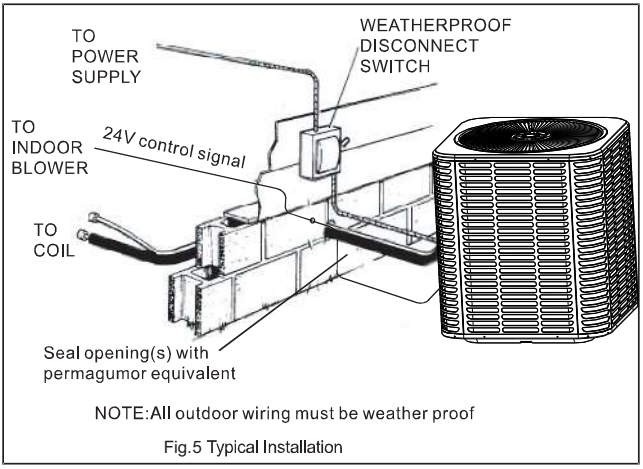


Fig.5 Typical Installation

3.6 Precautions during brazing of lines

All outdoor unit evaporator coil connections are copper-to-copper and should be brazed with a phosphorous-copper alloy material such as SIfos-5 or equivalent. DO NOT use soft solder. The outdoor units have reusable service valves on both the liquid and vapor connections. The total system refrigerant charge is retained within the outdoor unit during shipping and installation. The reusable service valves are provided to evacuate and charge per this instruction.

Serious service problems can be avoided by taking adequate precautions to assure an internally clean and dry system.

⚠ CAUTION

Dry nitrogen should always be supplied through the tubing while it is being brazed, because the temperature required is high enough to cause oxidation of the copper unless an inert atmosphere is provide. The flow of dry nitrogen should continue until the joint has cooled. Always use a pressure regulator and safety valve to insure that only low pressure dry nitrogen is introduced into the tubing. Only a small flow is necessary to displace air and prevent oxidation.

3.7 Precautions during brazing service valve

Precautions should be taken to prevent heat damage to service valve by wrapping a wet rag around it as shown in Fig.6. Also, protect all painted surfaces, insulation, during brazing. after brazing cool joint with wet rag.

Valve can be opened by removing the plunger cap and fully inserting a hex wrench into the stem and backing out counter-clockwise until valve stem just touches the chamfered retaining wall.

Connect the refrigerant lines using the following procedure:

1.Remove the cap and Schrader core from both the liquid and vapor service valve service ports at the outdoor unit .Connect low pressure nitrogen to liquid line service port.

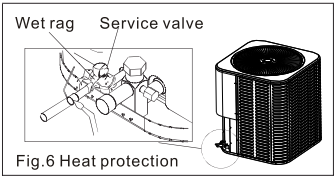


Fig.6 Heat protection

2.Braze the liquid line to the liquid valve at the outdoor unit. Be sure to wrap the valve body with a wet rag. Allow the nitrogen to continue flowing. Refer to the Tabular Data Sheet for proper liquid line sizing.
3.Carefully remove the rubber plugs from the evaporator liquid and vapor connections at the indoor coil.
4.Braze the liquid line to the evaporator liquid connection. Nitrogen should be flowing through the evaporator coil.
5.Slide the plastie cap away from the vapor connection at the indoor coil. braze the vapor line to the evaporator connection. Refer to the table 1 for proper vapor line sizing.
6.Protect the vapor valve with a wet rag and braze the vapor line connection to the outdoor unit .The nitrogen flow should be exiting the system from the vapor service port connection. After this connection has cooled, remove the nitrogen source from the liquid fitting service port.
7.Replace the Schrader core in the liquid and vapor valves.
8.Leak test all refrigerant piping connections including the service port flare caps to be sure they are leak tight. DO NOT OVER TIGHTEN(between 40 and 60 inch-lbs. maximum).
9.Evacuate the vapor line ,evaporator and the liquid line, to 500 microns or less.

Table1: Refrigerant Connections and Recommended Liquid and Vapor Tube Diameters(In.)

UNIT	LIQUID	VAPOR	LIQUID(LONG-LINE)
SIZE	Tube Diameter	Tube Diameter	Tube Diameter
18K	3/8	**5/8**	**5/8**
24K	3/8	5/8	5/8
36K	3/8	3/4	3/4
48K	3/8	3/4	3/4
55/60K	3/8	7/8	3/4

10.Replace cap on service ports. Do not remove the flare caps from the service ports except when necessary for servicing the system.

CAUTION

Do not connect manifold gauges un less trouble is suspected. Approximately 3/4 ounce of refrigerant will be lost each time a standard manifold gauge is connected.

11.Release the refrigerant charge into the system. Open both the liquid and vapor valves by removing the plunger cap and with an hex wrench back out counter-clockwise until valve stem just touches the chamfered retaining wall.
12.Replace plunger cap finger tight an additional 1/12 turn(1/2hex flat).Cap must be replaced to prevent leaks.

WARNING

Never attempt to repair any brazed connections while the system is under pressure. Personal injury could result.

See "System Charge" section for checking and recording system charge.

3.8 Unit mounting

If elevating the heat pump ,either on a flat roof or on a slab, observe the following guidelines.

1.The base pan provided elevating a unit on a flat roof or on a slab, observe the following guidelines.

2.If elevating a unit on a flat roof, use 4"×4"(or equivalent)stringers positioned to distribute unit weight evenly and prevent noise and vibration(See fig.7)

NOTE: Do not block drain openings shown in fig.7

3.If unit must be elevated because of anticipated snow fall ,secure unit and elevating stand such that until and/or stand will not tip over or fall off.

NOTE: Do tie down unit, see 3.9

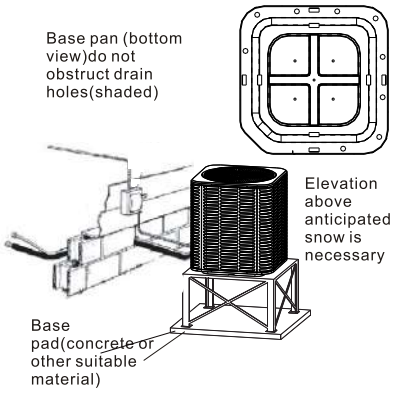


Fig.7 Recommended elevated installation

3.9 Factory-preferred tie-down method

Step 1:prior to installing clear pad of debris.

IMPORTANT

Then cement pad must be made of HVAC-approved materials and must be the proper thickness to accommodate fasteners.

step2:Center and level unit on to pad.

Step3: Using L-shaped bracket to locate holes on concrete and drill pilot holes which is at least1/4 deeper than fastener being used.

IMPORTANT

self drilling screws to base pan should not exceed 3/8 long to avoid damaging coil.

step4:Using conventional practices to install brackets, tighten concrete fasteners and self-tapping screws(See Fig.8).

NOTE:1.One bracket for each side .For extra stability, 2brackets for each side.

2.Do not over-tighten the concrete fastener to avoid weakening the concrete.

IMPORTANT NOTE:

These instructions are intended to provide a method to tie-down system to cement slab as a securing procedure for high wind areas. It is recommended to check Local Codes for tie-down methods and protocols.

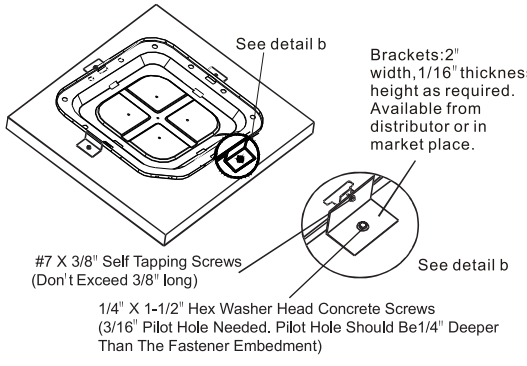


Fig.8 Factory-preferred tie-down method

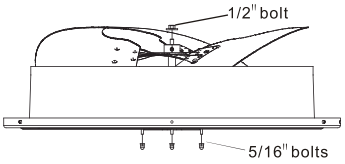
3.10 Removing the top panel and motor

When motor requires changing follow the steps below:

Step1: Go in to electrical panel, disconnect motor power lines.

IMPORTANT NOTE

Disconnect main power to unit. Severe burns and electrical shock will occur if you do not disconnect main power.



NOTE: Damage will occur to condenser unit if you remove fan bolts prior to cover removal.

Fig.9 Cover and fan

Step2: Remove cover (be careful of motor wires)

Step3: Be sure to place fan cover unit on the ground as indicated in Fig.9

IMPORTANT NOTE

Do not place or lean fan blades on the ground against surface.

Step4: Remove fan motor by removing 5/16" bolts from cover.

Step5: Remove fan blade from motor by removing 1/2" bolt and place fan on the ground

Step6: Reverse removal process to reinstall to the fan and motor.

IMPORTANT NOTE

When connecting motor wires be sure to check motor direction.

4.0 Electrical connections

4.1 General information & grounding

Check the electrical supply to be sure that it meets the values specified on the unit nameplate and wiring label.

Power wiring, control(low voltage) wiring, disconnect switches and over current protection must be supplied by the installer. Wire size should be sized per requirements.

CAUTION: All field wiring must USE COPPER CONDUCTORS ONLY and be in accordance with Local, National Fire, Safety & Electrical Codes. This unit must be grounded with a separate ground wire in accordance with the above codes.

The complete connection diagram and schematic wiring label is located on the inside surface of the unit service access panel and this instruction.

4.2 Field connections power wiring

1. Install the proper size weatherproof disconnect switch outdoors and within sight of the unit.
2. Remove the screws at the side of the corner cover. Slide corner down and remove from unit. See Fig.10.
3. Run power wiring from the disconnect switch to the unit.
4. Route wires from disconnect through power wiring opening provided and into the unit control box.
5. Install the proper size time-delay fuses or circuit breaker, and make the power supply connections.

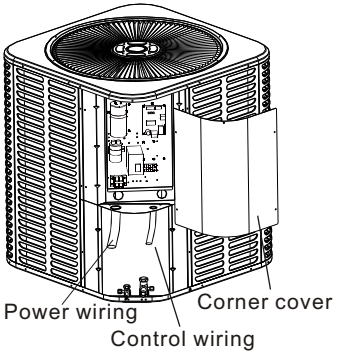


Fig.10 Typical Field Wiring

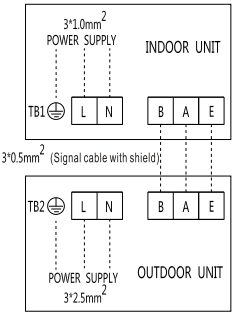
6. Energize the crankcase heater if equipped to save time by preheating the compressor oil while the remain installation is completed.

NOTE: When changing the motor, remove top cover first

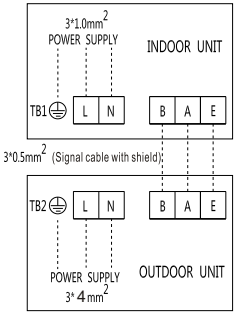
4.3 Wiring Diagram

CAUTION: These units must be wired and installed in accordance with all national and local safety codes.

1、For 18K/24K/36K model



2、For 48K/55K/60K model



5.0 Evacuation

It will be necessary to evacuate the system to 500 microns or less. If a leak is suspected, leak test with dry nitrogen to locate the leak. Repair the leak and test again. To verify that the system has no leaks, simply close the vacuum pump suction to isolate the pump and hold the system under vacuum. Watch the micron gauge for a few minutes. If the micron gauge indicates a steady and continuous rise, it's an indication of a leak. if the gauge shows a rise ,then levels off after a few minutes and remains fairly constant, its an indication is leak free but still contains moisture and may require further evacuation if the reading is above 500 microns.

6.0 Interconnecting tubing

6.1 Vapor and liquid lines

Keep all lines sealed until connection is made.

Make connections at the indoor coil first.

Refer to Line Size Information in Tables 2 and 3 for correct size and multipliers to be used to determine capacity for various vapor line diameters and lengths of run. The losses due to the lines being exposed to outdoor conditions are not included.

The factory refrigerant charge in the outdoor unit is sufficient for 5m of interconnecting lines.

For different lengths, adjust the charge **as indicated below.**

Specification of Liquid pipe	R410A
ϕ6.35	**(L-5m)X0.022kg**
ϕ9.52	**(L-5m)X0.054kg**
ϕ12.7	**(L-5m)X0.11kg**

6.2 Maximum length of lines

The maximum length of inerconnecting line is 100 feet for 24-36K and166 feet for 48-60K.

Always use the shortest length possible with a minimum number of bends,additional compressor oil is not required for any length up to 166 feet.

NOTE: Excessively long refrigerant lines cause loss of equipment capacity.

6.3 Vertical separation

Keep the vertical separation to a minimum. use the following guidelines when installing the unit:

1.DO NOT exceed the vertical separations as indicated on Table 3.

2.It is recommended to use the smallest liquid line size permitted to minimize system charge which will maximize compressor reliability.

3. Table 3 may be used for sizing horizontal runs.

7.0 Protection function introduction

> °
> °

>

>

8.0 Three phase compressor rotation

CAUTION
Use care when handling scroll compressor. Dome temperature can be hot.

Three phase scrolls are power phase dependent and can compress in more than one direction

Verify proper rotation for three phase compressor by ensuring the suction pressure drops and discharge pressure rises when the compressor is energized.

NOTE: when operated in reverse, a three phase scroll compressor is noisier and its current draw is substantially reduced compared to marked rated values, please check the compressor wiring; when connected to the power but the compressor does not work, the LED indicator on the PCB board of the condensing unit will flash rapidly. To correct, exchange any two of the power input terminals among the L1, L2 or L3 and this should correct problem.

When the power code connection is error, the LED indicator flashes rapidly.

When the system is in stand-by mode, the LED indicator flashes slowly

When the system is working in normal mode, LED indicator will stay lite.

9. Checking refrigerant charge

Charge for all systems should be checked against the charging chart inside the access panel cover.

IMPORTANT: Do not operate the compressor without charge in system. Addition of R-410A will raise pressures (vapor, liquid and discharge).

If adding R-410A raise both vapor pressure and temperature, the unit is over-charged.

IMPORTANT: Use industry-approve charging methods to ensure proper system charge.

9.1 Charging by liquid pressure

The liquid pressure method is used for charging systems in the cooling and heating mode. The service port on the liquid (small valve) and suction (large valve) is used for this purpose.

Verify that the outdoor unit is running and the indoor air mover is delivering the maximum airflow for this system size. Read and record the outdoor ambient temperature； Read and record the liquid and suction pressures at the ports on the liquid and suction valves.
If refrigerant lines are sized using the nameplate charge, the correct liquid pressure is found at the intersection of the suction pressure and the outdoor ambient.
1.Remove refrigerant charge if the liquid pressure is above the chart value.
2.Add refrigerant charge if the liquid pressure is below the chart value.

9.2 Charging by weight

For a new installation, evacuation of interconnecting tubing and indoor coil is adequate; otherwise, evacuate the entire system. Note that charge value includes charge required for 15 ft. of standard size interconnecting liquid line. Calculate actual charge required with installed liquid line size and length using:

1/4" O.D. = .3 oz./ft.
5/16" O.D.= .4oz./fl
3/8" O.D. = .6 oz./ft
1/2" O.D. = 1.2 oz./ft

With an accurate scale (+/-1 oz.) or volumetric charging device, adjust charge difference between that shown on the unit data plate and that calculated for the new system Installation, if the entire system has been evacuated, add the total calculated charge.

9.3 Final leak testing

After the unit has been properly evacuated and charged, a halogen leak detector should be used to detect leaks in the system. All piping within the condensing unit, evaporator, and interconnecting tubing should be checked for leaks. If a leak is detected, the refrigerant should be recovered before repairing the leak. The Clean Air Act prohibits releasing refrigerant into the atmosphere.

10.0 Instructing the owner

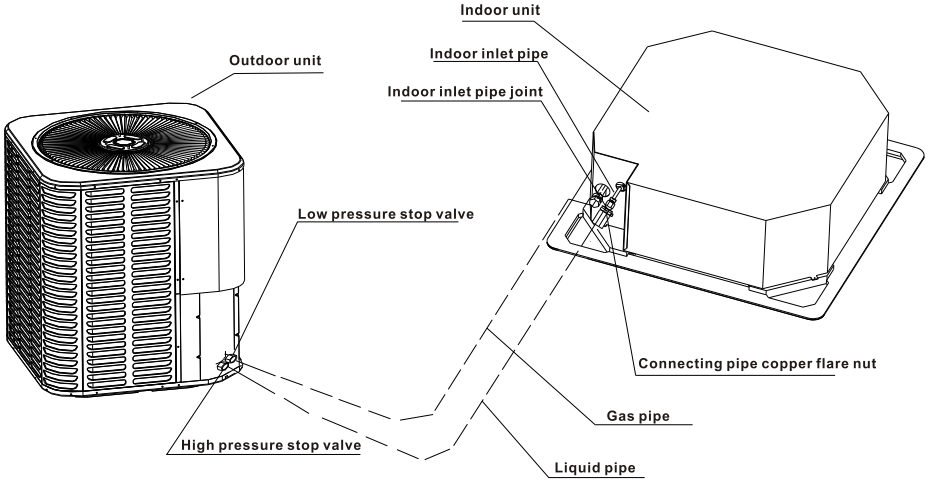
Assist owner with processing Warranty cards and/or online registration. Review Owners Guide and provide a copy to the owner and guidance on proper operation and maintenance. Instruct the owner or the operator how to start, stop and adjust temperature setting. The installer should instruct the owner on proper operation and maintenance of all other system components.

10.1 Maintenance

1. Dirt should not be allowed to accumulate on the outdoor coils or other parts in the air circuit. Clean as often as necessary to keep the unit clean. Use a brush, vacuum cleaner attachment, or other suitable means.
2.The outdoor fan motor is permanently lubricated and does not require periodic oiling.
3.If the coil needs ta be cleaned, it should be washed with Calgon Coilclean (mix one part Coilclean to seven parts water). Allow solution to remain on coil for 30 minutes before rinsing with clean water. Solution should not be permitted to come in contact with painted surfaces.
4.Refer to the furnace or air handler instructions for filter and blower motor maintenance.
5.The indoor coil and drain pan should be inspected and cleaned regularly to assure proper drainage.

CAUTION: It is unlawful to knowingly vent, release or discharge refrigerant into the open air during repair, service, maintenance or the final disposal of this unit. When the system is functioning properly and the owner has been fully instructed, secure the owner's approval.

- 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 is placed in the indoor unit as an accessory.**
- 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 (or *heating) 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.)

CHARGE ADDITIONAL REFRIGERANT

Refrigerant Volume to Be Added

Refrigerant volume to be added is calculated according to outdoor unit installation manual.
Be sure to add refrigerant measuring by a scale.

CAUTION

- If the added refrigerant volume is inadequate (too much or insufficient), the compressor malfunction will be caused. Be sure to calculate the refrigerant volume carefully.
- The service man should write down the piping length and the added refrigerant volume in the nameplate, which is on the electric control box cover of outdoor unit, for diagnosing the compressor and refrigeration circulation malfunction.

The refrigerant charge volume for the unit is based on using a 5m connecting pipe. If the connecting pipe's length is longer than 5m , it is advisable to charge additional refrigerant for the unit in order to achieve better operation.

Specification of Liquid pipe	R410A
ϕ6.35	**(L-5)X0.022kg**
ϕ9.52	**(L-5)X0.054kg**
ϕ12.7	**(L-5)X0.11kg**

(* "L" refers to length of connection pipe.)

The additional refrigerant should be charged from the service port of the 3-way valve when the appliance is operating in cooling mode.
Do not allow air enter the refrigeration system while charging refrigerant.

Open/Close the valves

Open/Close the spools or the valves of outdoor unit with a ϕ5mm hexagon spanner.

TEST RUN

■ Before testing

a. Check if piping, drainage and external wiring have been finished correctly.
b. 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

a. After checking, energize your appliance and press the buttons on the control panel to see if the buttons function;

b. If LCD screen displays normally.

■ Notes

1. Please read this operating and installation instructions carefully.

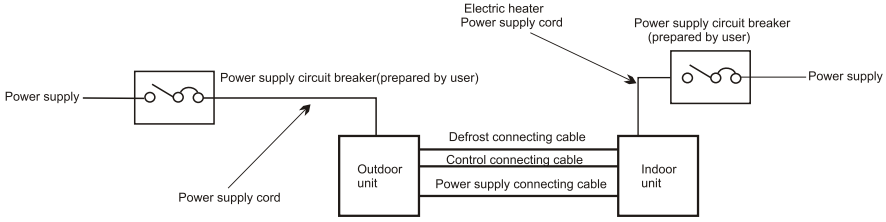
2. Do not let air in or refrigerant out during installing or reinstalling the appliance.

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 10 A, 270V. 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.

6. External wiring diagrams

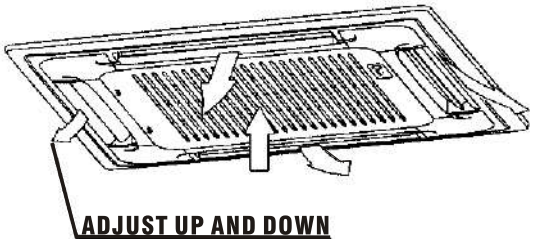


ADJUSTING AIR FLOW DIRECTION

■ 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 doesn't run.The swing scale of every side is 30°.When the air conditioner isn't in operation(including when TIMER ON is set),the SWING button will be disabled.

MAINTENANCE

⚠WARNING

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

Cleaning the indoor unit and remote controller

⚠CAUTIONS

- Use a dry cloth to wipe the indoor unit and remote controller.
- A cloth dampened with cold water may be used on the indoor unit if it is very dirty.
- Never use a damp cloth on the remote controller.
- 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.
- 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.

Checks before operation

⚠CAUTIONS

- Check that the wiring is not broken off or disconnected.
- Check that the air filter is installed.(Some air-conditioners have no air filters)
- 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.

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).

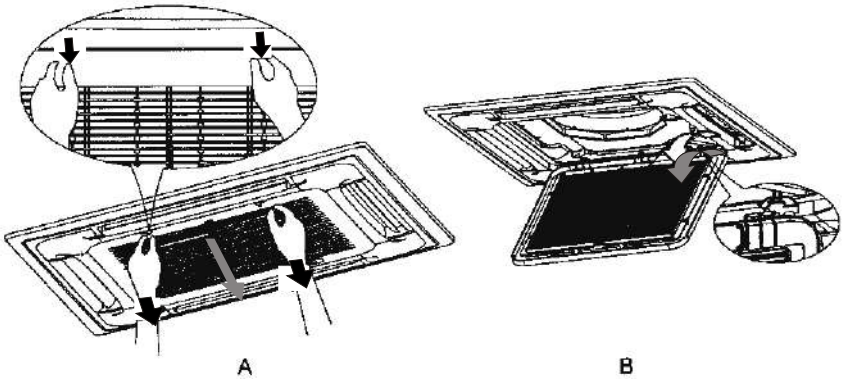
■ Cassette Type

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:

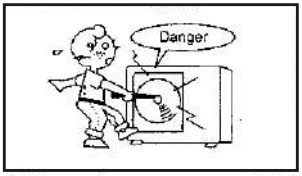
The control box cables,which are originally connected with the main body electrical terminators must be pulled off before doing as indicated below.



A B

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).

IMPORTANT SAFETY INFORMATION

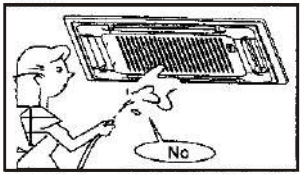


⚠CAUTION

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

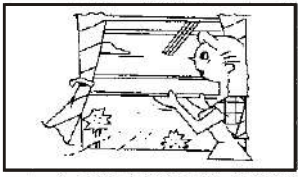
⚠DANGER

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.Turn 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.

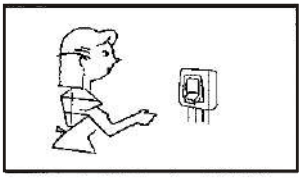


⚠DANGER

To avoid the risk of serious electrical shock,never sprinkle or spill water or liquid on unit.

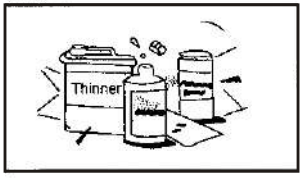
⚠WARNING

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.

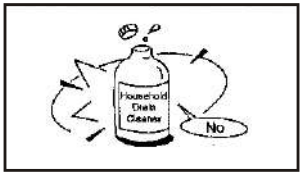


⚠WARNING

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.

These are not failures

Room air is smelly.

A bad odor comes from the air conditioner.

- Smells impregnated in the wall,carpet,furniture,clothing,or furs,are coming out. A white mist of chilled air or water is generated from the outdoor unit.

⚠CAUTION

If any of the following conditions occur,stop the air conditioner immediately,set off the power switch, and contact the dealer.

- The indicator lamps flash rapidly(five times per second),you disconnect the unit with the power and then connect the unit with the power again after two or three minutes but the lamps still flash.
- Switch operations are erratic.
- The fuse is blown frequently or the circuit breaker is tripped frequently.
- Foreign matter or water has fallen inside the air conditioner.
- Any other unusual condition is observed.

TROUBLES AND CAUSES (CONCERNING REMOTE CONTROLLER)

Before you ask for service or repairs,check the following points.

Setting Change is impossible		
Symptoms	Causes	Reason and Disposal
The fan speed can not be changed.	● Check whether the MODE indicated on the display is "AUTO"	When the automatic mode is selected ,the air conditioner automatically selects the fan speed
	● Check whether the MODE indicated on the display is "DRY"	When dry operation is selected, the air conditioner automatically select the fan speed .The fan speed can be selected during "COOL" and "FAN ONLY" and "HEAT" mode.

The Transmission Indicator ▲ Never Comes On		
Symptoms	Causes	Reason and Disposal
The remote control signal is not transmitted even when the ON/OFF button is pushed.	● Check whether the batteries in the remote controller are exhausted.	The remote control signal is not transmitted,because the power supply is off.

The Display never comes on		
Symptoms	Causes	Reason
The TEMP.indicator does not come on.	●Check whether the MODE indicated on the display is "FAN ONLY"	The temperature cannot be set during fan only operation.

HAND OVER TO CUSTOMERS

INSTALL MANUAL of indoor and outdoor unit must be handed over to the customers.

Please narrate the manual to the customers in detail.

Error code

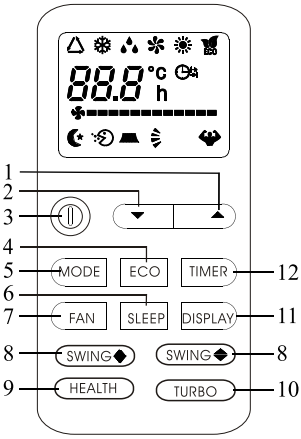
The display content of indoor LED	The definition of failure or protection
E0	The indoor-outdoor communication goes wrong.
E1	The Room Temperature Sensor T1 goes wrong.
E2	The Internal Coil Temperature sensor T2 goes wrong.
E3	The External Temperature Sensor T3 goes wrong.
E4	The outdoor unit goes wrong.
E5	The model configuration processing goes wrong.
E6	The indoor fan goes wrong and/or the communication between the indoor DC fan and the indoor main control panel goes wrong.
E7	The Outdoor Temperature Sensor T4 goes wrong.
E8	The exhaust temperature sensor (TP1 of variable-frequency compressor) goes wrong
E9	The variable-frequency module goes wrong.
EC	The outdoor communication goes wrong.
EE	The EEPROM goes wrong (The E2 of the outdoor unit goes wrong).
EF	The outdoor fan goes wrong.
Ed	The EEPROM of main control panel goes wrong.
d3	Water full protection
C5	The communication between the indoor unit and the wire controller goes wrong.

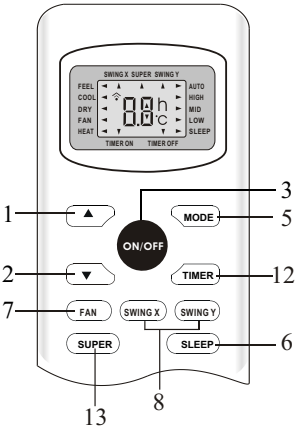
Error code

The display content of indoor LED	The definition of failure or protection
P0	Module protection
P1	Over/Under-voltage protection
P2	Over-current protection (Variable-frequency compressor)
P3	Outdoor unit protection
P4	Exhaust high-temperature protection (Variable-frequency compressor or Slave F3)
P5	Under-cooling protection in the cooling mode (Indoor unit coil temperature protection)
P6	Over-heating protection in the cooling mode (Condenser high-temperature protection)
P7	Over-heating protection in the heating mode (Indoor unit coil temperature protection)
P8	Outdoor high/low-temperature protection
P9	Drive protection (load abnormal)
PA	The modes conflict and the top air-out board communication goes wrong.
PH	Exhaust temperature sensor failure protection of outdoor unit
PC	Coil temperature sensor failure protection of outdoor unit
H1	High pressure switch protection
H2	Low pressure switch protection
H6	Insufficient of refrigerant protection
HE	Phase sequence protection

REMOTE CONTROLLER

No.	Button	Function
1	▲ (TEMP UP)	Increase the temperature or time by 1 unit
2	▼ (TEMP DN)	Decrease the temperature or time by 1 unit
3	ON/OFF	To switch the conditioner on and off.
4	ECO	In cooling mode,press this button ,the temperature will increase 2℃ on the base of setting temperature In heating mode, press this button, the temperature will decrease 2℃ on the base of setting temperature
5	MODE	To select the mode of operation
6	SLEEP	To activate the function “SLEEP”
7	FAN	To select the fan speed of auto/low/mid/high
8	SWING	To activate or deactivate of the movement of the “DEFLECTORS”.
9	HEALTH	To switch - on /off HEALTHY funtion.It is a button which controls the ionizer or plasma generator only for inverter type.
10	TURBO	In cooling mode, press this button, the unit will give the maximum cooling temperature with 16℃ In heating mode, press this button, the unit will give the maximum heating temperature with 31℃
11	DISPLAY	To switch on/off the LED display (if present)
12	TIMER	To set automatic switching-on/off
13	SUPER	In cooling mode, press this button, the unit will give the maximum cooling temperature with 16℃ In heating mode, press this button, the unit will give the maximum heating temperature with 31℃



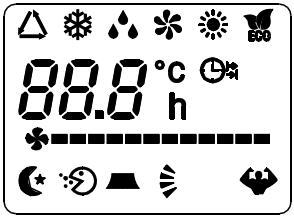


⚠ *The outlooking and some function of remote control may vary according to the model.*

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

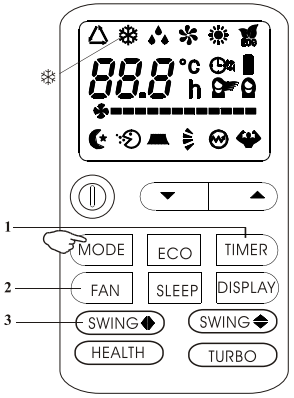
The unit confirms the correct reception of each press button with a beep.

Remote control DISPLAY
Meaning of symbols on the liquid crystal display



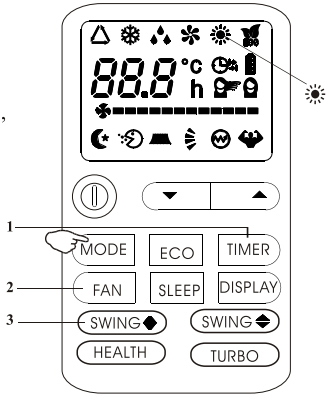
No.	Symbols	Meaning	No.	Symbols	Meaning
1		FEEL mode indicator	10		MIDDLE FAN SPEED indicator
2		COOLING indicator	11		HIGH FAN SPEED indicator
3		DEHUMIDIFYING indicator	12		SLEEP indicator
4		FAN ONLY OPERATION indicator	13		SUPER indicator
5		HEATING indicator	14		HEALTHY indicator
6		TIMER OFF indicator	15	ECO	ECO indicator
7		TIMER ON indicator	16		BATTERY indicator
8		AUTO FAN indicator	17		BATTERY indicator
9		LOW FAN SPEED indicator	18	88:8	CLOCK indicator

COOLING MODE



The cooling function allows the air conditioner to cool the room and at the same time reduces the humidity in the air.
To activate the cooling function (COOL) , press the MODE button until the symbol ❄ appears on the display.
The cooling cycle is activated by setting the keys ▲ or ▼ at a temperature lower than that of the room.
To optimize the functioning of the conditioner, adjust the temperature (1) , the speed (2) and the direction of the air flow (3) by pressing the keys indicated

HEATING MODE



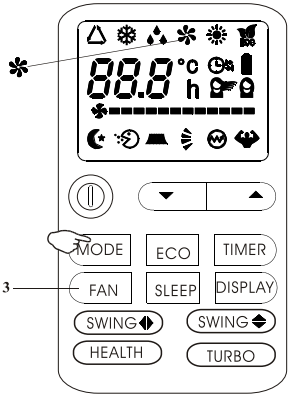
The heating function allows the air conditioner to produce hot air.
To activate the heating function (HEAT) , press the MODE button until the symbol appears on the display.
With the keys ▲ or ▼ set a temperature higher than that of the room..
To optimize the functioning of the conditioner adjust the temperature (1), the speed (2) and the direction of the air flow (3) by pressing the keys indicated

⚠ The appliance is fitted with a Hot Start function, which delays appliance to startup in a few seconds to ensure an immediate output of hot air.

⚠ In HEATING operation, the appliance can automatically activate a defrost cycle, which is essential to free the condenser from an excessive deposit of frost .This procedure usually lasts for 2-10 minutes during defrosting,fans stop operation. After defrosting ,it returns to HEATING mode automatically.

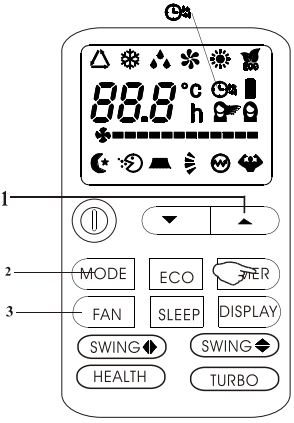
FAN MODE

The conditioner works in only ventilation.
To set the FAN mode , Press MODE untill appears in the display.
Whith pressing FAN button the speed changes in the following sequence: LOW/ MEDIUM/HIGH /AUTO in FAN mode.
The remote control also stores the speed that was set in the previous mode of operation.
In FEEL mode (automatic) the air conditioner automatically chooses the fan speed and the mode of operation (COOLING or HEATING).



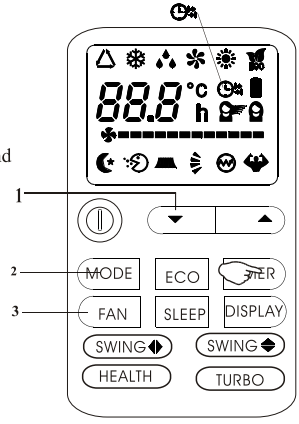
TIMER MODE----TIMER ON

To set the automatic switching on of the air conditioner.
To program the time start,the appliance should be off.
Press TIMER , Set the temperature with pressing the key ▲ or ▼,Press TIMER Again , set the time with pressing the key ▲ or ▼, Press the key more times till on the display you can read the time which passes between the programming and the timed start.
IMPORTANT!
Before proceeding with the timed start : program the working mode with the key MODE(2) and the fan speed with the key FAN(3) . Switch the conditioner off (with the key ON/OFF).
Note:To cancel the setted function ,press the TIMER button again.
Note:In case of power off,it is necessary to set TIMER ON again.



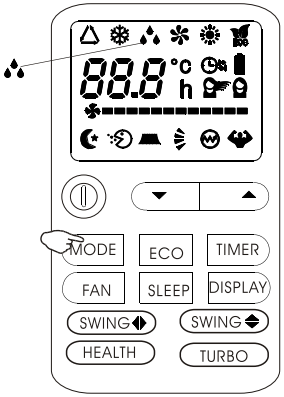
TIMER MODE----TIMER OFF

To set the automatic switching-off of the air conditioner.
The timed stop is programmed with the appliance on.
Press TIMER ,Set the time pressing the key ▲ or ▼, Press the key more times till on the display you can read the time which passes between the programming and the timed stop.
Note:To cancel the setted function, press the TIMER button again.
Note:In case of power off,it is necessary to set TIMER OFF again.
Note: While the time was right settled, the TIMER function of this remote(clock function) can set by half hours.



DRY MODE

This function reduces the humidity of the air to make the room more comfortable.
To set the DRY mode , Press MODE untill appears in the display . An automatic function of alternating cooling cycles and air fan is activated.

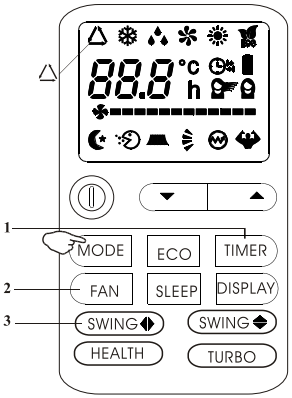


FEEL MODE

To activate the FEEL (automatic) mode of operation, press the MODE button on the remote control until the symbol △ appears in the display.
In the FEEL mode the fan speed and the temperature are set automatically according to the room temperature (tested by the probe which is incorporated in the indoor unit)to ensure user comfort.

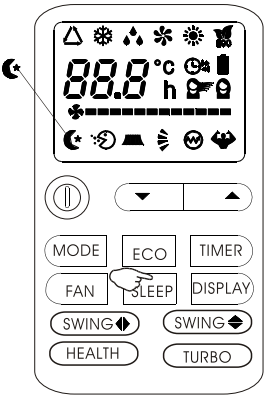
Ambient temp	Operation mode	Auto temp.
＜ 20℃	HEATING (FOR HEAT PUMP TYPE) FAN (FOR COOL ONLY TYPE)	23℃
20℃~ ℃	DRY	18~ ℃
＞ 26℃	COOL	23℃

To optimize the working of the conditioner, adjust the temperature(only±2℃)(1), the speed (2) and the direction of the air flow (3) by pressing the buttons indicated .



SLEEP MODE

To activate the SLEEP mode of operation, press the SLEEP button on the remote control until the symbol (AUTOQUIET) appears in the display.
The function “SLEEP” automatically adjusts the temperature to make the room more comfortable during the night sleep . In cooling or dry mode , the set temperature will automatically raise by 1 ℃ every 60 minutes, to achieve a total rise of 3 ℃ during the first 3 hours of work.
In heating mode the set temperature is gradually decreased by 3 ℃ during the first 3 hours of work.



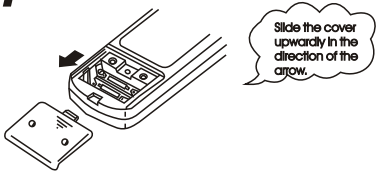
■ Remote controller handling procedure

Batteries replacing procedure

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

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

1 Please slide and remove the cover.



2 Exchange the batteries.

3 Install the cover.

4 Set it to the present time.

NOTE

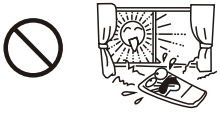
- **Do not use an old battery together with a new one.**
- **Remove cells when the remote controller is not used for a long period.**
- **The life of a cell made in conformity to JIS or IEC is 6 to 12 months in normal use.If it is used longer or an unspecified cell is used,a liquid leaks from the cell,causing 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 wlth 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.

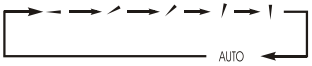
- Protect the remote controller from being splashed with water,etc.

- Do not put weights on the remote controller.

■ 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

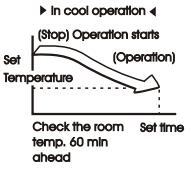
- **When the room temperature controller(thermostat)trips in the heating mode or when the defrosting operation is conducted,the blow flap changes automatically to the horizontal position.**
- **When the heating operation has just started and the room temperature is still low,it may take a little time 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 automatically controlled with elapsed time so that the room isn't too cool during cooling or too warm during heating.

- **During cooling and dry:Present temperature is raised 1℃ in an hour (when the timer is set),and 2℃ raise in two hours.Then the temperature dosen't change ever.**
- **During heating:Present temperature is lowered 1℃ in an hour (when the timer is set),and 2℃ lower in two hours.Then the temperature dosen't change ever.**

■ About FAN SPEED

■ **Capacity of the air conditioner can be selected by your choice.During heating or cooling.**

Operation capacity by your choice	FAN SPEED
Set automatically by microcomputer	**AUTO**
Powerful operation with high capacity	**HI**
Standard operation	**MED**
Energy-saving operation	Lo

■ 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 controll don't have this function