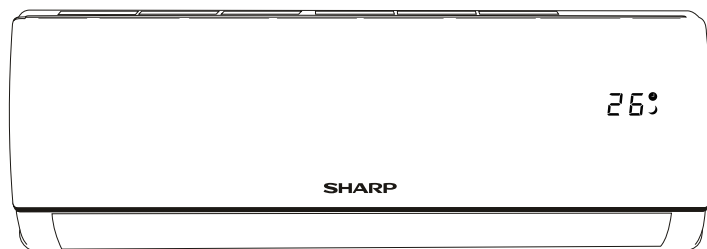


SHARP®

SPLIT TYPE AIR-CONDITIONER OWNER'S MANUAL

AY-X9XEJ / AE-X9XEJ
AY-X12XEJ / AE-X12XEJ



Please read this manual carefully before using the product.
This manual should be kept in a safe place for handy reference.

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INTRODUCTION TO REFRIGERANTS R32 and R290

■ Introduction to Refrigerants R32 and R290

The refrigerants used for air conditioners are environmentally friendly hydrocarbons R32 and R290. The two kinds of refrigerants are combustible and odorless. Moreover, they can burn and explode under certain condition. However, there will be no risk of burning and explosion if you comply with the following table to install your air conditioner in a room with an appropriate area and use it correctly.

Compared with ordinary refrigerants, Refrigerants R32 and R290 are environmentally friendly and do not destroy the ozone sphere and that their values of greenhouse effect are also very low.

■ Room area requests for air conditioner with Refrigerants R32 and R290

Category	LFL (kg/m ³)	h ₀ (m)	Charge amount (M) (kg)						
			Minimum room area (m ²)						
R290	0. 038		0.152kg	0.228 kg	0.304 kg	0.456 kg	0.608 kg	0.76 kg	0.988 kg
		0.6		82	146	328	584	912	1514
		1		30	53	118	210	328	555
		1.8		9	16	36	65	101	171
		2.2		6	11	24	43	68	115
R32	0. 306		1.224 kg	1.836 kg	2.448 kg	3.672 kg	4.896 kg	6.12 kg	7.956 kg
		0.6		29	51	116	206	321	543
		1		10	19	42	74	116	196
		1.8		3	6	13	23	36	60
		2.2		2	4	9	15	24	40

Warnings

- Please read the manual before installation, using, maintenance.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not pierce or burn the appliance.
- The appliance shall be stored in a room without continuously operating sources (for example: open flames, an operating ignition gas appliance or an operating electric heater.)
- Please contact the nearest after-sale service center when maintenance is necessary. At the time of maintenance, the maintenance personnel must strictly comply with the Operation Manual provided by the corresponding manufacturer and any non-professional is prohibited to maintain the air conditioner.
- It is necessary to comply with the provisions of gas-related national laws and regulations.
- It is necessary to clear away the refrigerant in the system when maintaining or scrapping an air conditioner.



Warning: Combustible
& Dangerous



Read the user manual



Read the installation
manual



Read the service
manual

SAFETY RULES AND RECOMMENDATIONS FOR THE INSTALLER

⚠ Read this guide before installing and using the appliance.

⚠ During the installation of the indoor and outdoor units the access to the working area should be forbidden to children. Unforeseeable accidents could happen.

⚠ Make sure that the base of the outdoor unit is firmly fixed.

⚠ Check that air cannot enter the refrigerant system and check for refrigerant leaks when moving the air conditioner.

⚠ Carry out a test cycle after installing the air conditioner and record the operating data.

⚠ Protect the indoor unit with a fuse of suitable capacity for the maximum input current or with another overload protection device.

⚠ Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.

⚠ Check that the socket is suitable for the plug, otherwise have the socket changed.

⚠ The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions, and these means must be incorporated in the fixed wiring in accordance with the wiring rules.

⚠ The air conditioner must be installed by professional or qualified persons.

⚠ Do not install the appliance at a distance of less than 50 cm from inflammable substances (alcohol, etc.) or from pressurised containers (e.g. spray cans).

⚠ If the appliance is used in areas without the possibility of ventilation, precautions must be taken to prevent any leaks of refrigerant gas from remaining in the environment and creating a danger of fire.

⚠ The packaging materials are recyclable and should be disposed of in the separate waste bins. Take the air conditioner at the end of its useful life to a special waste collection centre for disposal.

⚠ Only use the air conditioner as instructed in this booklet. These instructions are not intended to cover every possible condition and situation. As with any electrical household appliance, common sense and caution are therefore always recommended for installation, operation and maintenance.

⚠ The appliance must be installed in accordance with applicable national regulations.

⚠ Before accessing the terminals, all the power circuits must be disconnected from the power supply.

⚠ 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.

SAFETY RULES AND RECOMMENDATIONS FOR THE USER

⚠ Do not try to install the conditioner alone; always contact specialized technical personnel.

⚠ Cleaning and maintenance must be carried out by specialised technical personnel. In any case disconnect the appliance from the mains electricity supply before carrying out any cleaning or maintenance.

⚠ Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.

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

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

⚠ The packaging materials are recyclable and should be disposed of in the separate waste bins. Take the air conditioner at the end of its useful life to a special waste collection centre for disposal.

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

⚠ The user is responsible for having the appliance installed by a qualified technician, who must check that it is earthed in accordance with current legislation and insert a thermomagnetic circuit breaker.

⚠ The batteries in remote controller must be recycled or disposed of properly.
Disposal of Scrap Batteries --- Please discard the batteries as sorted municipal waste at the accessible collection point.

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

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

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

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

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

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

⚠ Only use the air conditioner as instructed in this booklet. These instructions are not intended to cover every possible condition and situation. As with any electrical household appliance, common sense and caution are therefore always recommended for installation, operation and maintenance.

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

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

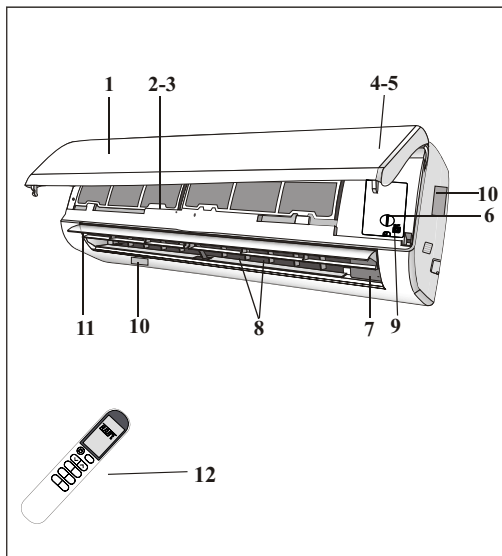
SAFETY RULES AND PROHIBITIONS

- ⊖ Do not bend, tug or compress the power cord since this could damage it. Electrical shocks or fire are probably due to a damaged power cord. Specialized technical personnel only must replace a damaged power cord.
 - ⊖ Do not use extensions or gang modules.
 - ⊖ Do not touch the appliance when barefoot or parts of the body are wet or damp.
 - ⊖ Do not obstruct the air inlet or outlet of the indoor or the outdoor unit.
The obstruction of these openings causes a reduction in the operative efficiency of the conditioner with possible consequent failures or damages.
 - ⊖ In no way alter the characteristics of the appliance.
 - ⊖ Do not install the appliance in environments where the air could contain gas, oil or sulphur or near sources of heat.
 - ⊖ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- ⊖ Do not climb onto or place any heavy or hot objects on top of the appliance.
 - ⊖ Do not leave windows or doors open for long when the air conditioner is operating.
 - ⊖ Do not direct the airflow onto plants or animals.
 - ⊖ A long direct exposition to the flow of cold air of the conditioner could have negative effects on plants and animals.
 - ⊖ Do not put the conditioner in contact with water.
The electrical insulation could be damaged and thus causing electrocution.
 - ⊖ Do not climb onto or place any objects on the outdoor unit.
 - ⊖ Never insert a stick or similar object into the appliance. It could cause injury.
 - ⊖ Children should be supervised to ensure that they do not play with the appliance. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

NAMES OF PARTS

INDOOR UNIT

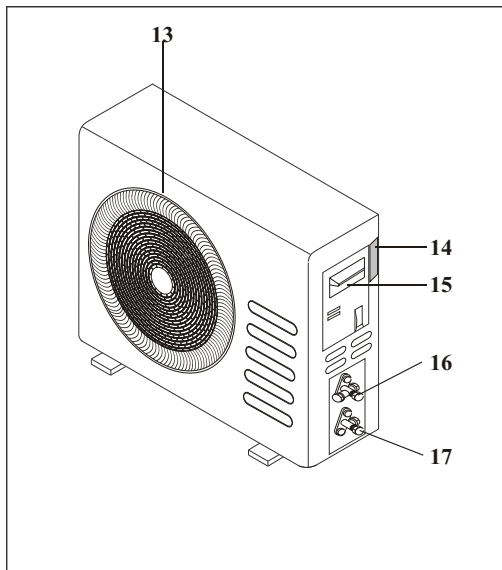
No.	Description
1	Front panel
2	Air filter
3	Optional filter (if installed)
4	LED Display
5	Signal receiver
6	Terminal block cover
7	Ionizer generator(Not equipped on this model)
8	Deflectors
9	Emergency button
10	Indoor unit rating label (Stick position optional)
11	Airflow direction louver
12	Remote controller



Note: The deflectors are positioned manually and placed under the flap. They are allowed to direct the airflow rightward and leftward manually.

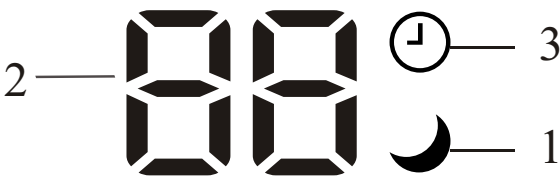
OUTDOOR UNIT

No.	Description
13	Air outlet grill
14	Outdoor unit rating label
15	Terminal block cover
16	Gas valve
17	Liquid valve




Note: The above figures are only intended to be a simple diagram of the appliance and may not correspond to the appearance of the units that have been purchased.

INDOOR UNIT DISPLAY



No.	Led		Function
1	SLEEP		SLEEP mode
2	Temperature display (if present) /Error code		(1) Lights up during Timer operation when the air conditioner is operational (2)Displays the malfunction code when fault occurs.
3	TIMER		Lights up during Timer operation.

 The shape and position of switches and indicators may be different according to the model, but their function is the same.

According to the model, it may only show 2 numbers on the indoor display though there are 3 numbers on display of the remote controller .(Example: it is 28.5 on the display of the remote controller but 28 on the indoor display)

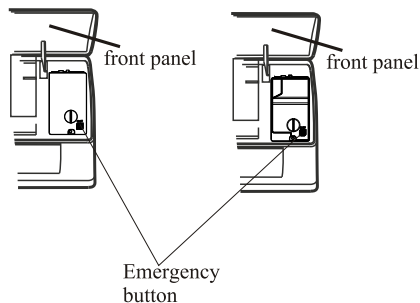
EMERGENCY FUNCTION & AUTO-RESTART FUNCTION

EMERGENCY FUNCTION

If the remote controller fails to work or maintenance necessary, proceed as follows:

Open and lift the front panel up to an angle to reach the emergency button.


1. One press of the emergency button (one beep) will lead to the forced COOLING operation
2. Two press of the emergency button within 3 sec (two beeps) will lead to the forced HEATING operation.
3. To switch off the unit , you just need to press the button again (a single long beep) .
4. After 30 minutes in forced operation, the air conditioner will automatically start working at 23°C in cooling mode/heating mode, the fan speed will adjust according to the room temperature automatically.







The emergency button in some models could be on the right part of the unit under the front panel.

AUTO-RESTART FUNCTION

The appliance is preset auto - restart function by manufacturer. In case of a sudden power failure, the module memorizes the setting conditions before the power failure. When the power restores, the unit restarts automatically with all the previous settings preserved by the memory function.

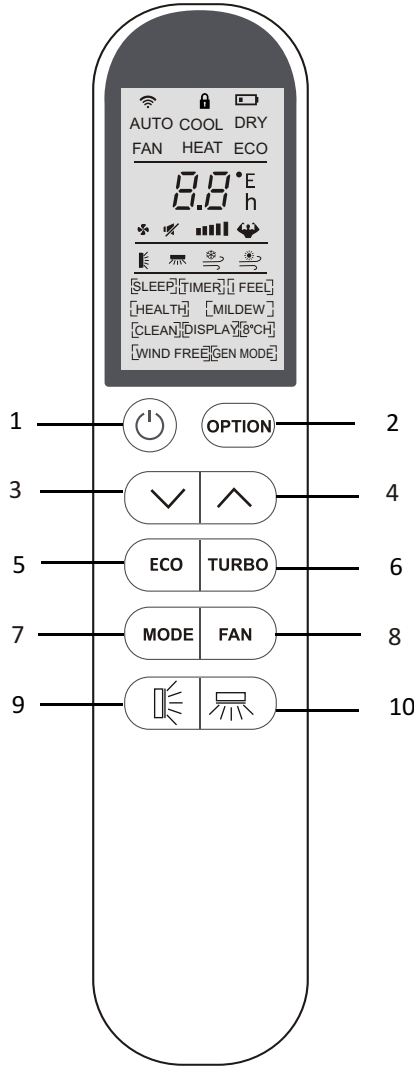
 *The shape and position of the emergency button may be different according to the model, but their function is the same.*


REMOTE CONTROLLER

No.	Button	Function
1		To turn on or off the air conditioner .
2	OPTION	To activate or deactivate optional function(Check below table).
3	▼	To decrease temperature, time setting or choose the function.
4	▲	To increase temperature , time setting or choose the function.
5	ECO	Press this button to activate/deactivate the ECO function .
6	TURBO	Press this button to activate/deactivate the Super function which enables the unit to reach the preset temperature in the shortest time.
7	MODE	To select the mode of operation(AUTO COOL DRY FAN HEAT)
8	FAN	To select the fan speed of auto/mute/low/mid-low/mid/mid-high/high/turbo , cycle as below. 
9		To activate the swing of horizontal flap(up/down) or deactivate it.
10		To activate the swing of deflector flap(left/right) or deactivate it. This function is not available with this model.

ON/OFF	Mode	OPTIONS
ON	AUTO	TIMER DISPLAY I FEEL 8°C H
	COOL	TIMER DISPLAY SLEEP MILDEW I FEEL 8°C H
	DRY	TIMER DISPLAY MILDEW I FEEL 8°C H
	FAN	TIMER DISPLAY I FEEL 8°C H
	HEAT	TIMER DISPLAY SLEEP I FEEL 8°C H
OFF	AUTO	CLEAN TIMER DISPLAY I FEEL 8°C H
	COOL	CLEAN TIMER DISPLAY SLEEP I FEEL 8°C H
	DRY	CLEAN TIMER DISPLAY I FEEL 8°C H
	FAN	CLEAN TIMER DISPLAY I FEEL 8°C H
	HEAT	CLEAN TIMER DISPLAY SLEEP I FEEL 8°C H

REMOTE CONTROLLER



 You will hear a beep when you press the following buttons or select the following optional functions, though the actual model does not have this function.

HEALTH (Optional Function)








MILDEW (Optional function)

 SWING (LEFT/RIGHT)

REMOTE CONTROLLER

Remote controller DISPLAY

Meaning of symbols on the liquid crystal display

No.	Symbols	Meaning
1		Signal indicator
2		Child Lock function indicator
3		Battery indicator
4	AUTO	Mode Auto function indicator
5	COOL	Mode Cooling indicator
6	DRY	Mode Dry indicator
7	FAN	Mode Fan indicator
8	HEAT	Mode Heating indicator
9	23h [TIMER]	Timer indicator
10	28°C	Temperature indicator
11	Flashing 	Fan speed indicator: Auto/low/mid-low/mid/mid-high/high
12		Mute indicator
13		TURBO indicator
14		Flap swing angle indicator
15	[SLEEP]	MODE SLEEP indicator
16	[TIMER]	MODE TIMER indicator
17	[CLEAN]	MODE CLEAN indicator
18	[8°C]	Mode 8°C HEATING indicator
19	[DISPLAY]	INDOOR UNIT DISPLAY indicator
20	[I FEEL]	I FEEL indicator.

REMOTE CONTROLLER

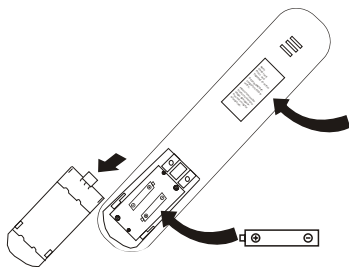
Replacement of Batteries

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

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

Reinstall the battery cover by sliding it into place.

- ⚠ Use 2 LR 03 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.



Note
Child-lock: Press \vee and \wedge together to active.

Display ON/OFF:
Long press ECO button.

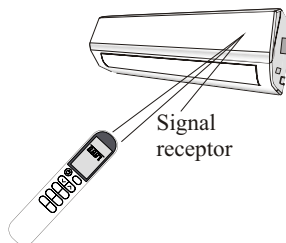
Please remove batteries to avoid leakage damage when not using for a long time.

- ⚠ When you insert the batteries for the first time in the remote controller or if you change them, you can program the remote controller of only cooling or cooling and heating.
1. Long press MODE button over 5s to get into the change mode within 3minutes;
 2. Press MODE button to change COOL or HEAT.

NOTE: If you adjust the remote controller in cooling mode, it will not be possible to activate the heating function in units with heating pump . You need to take out the batteries and repeat the procedure described above.

- ⚠ When you insert the batteries for the first time in the remote controller or if you change them, you can program the temperature display switchover function between $^{\circ}\text{C}$ and $^{\circ}\text{F}$.
1. Long press TURBO button over 5s to get into the change mode within 3minutes;
 2. Press TURBO button to change $^{\circ}\text{C}$ and $^{\circ}\text{F}$.

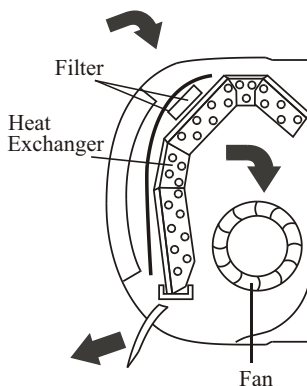
- ⚠
1. Direct the remote controller toward the air conditioner.
 2. Check that there are no objects between the remote control and the signal receptor in the indoor unit.
 3. Never leave the remote controller exposed to the rays of the sun.
 4. Keep the remote controller at a distance of at least 1m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




OPERATING INSTRUCTIONS

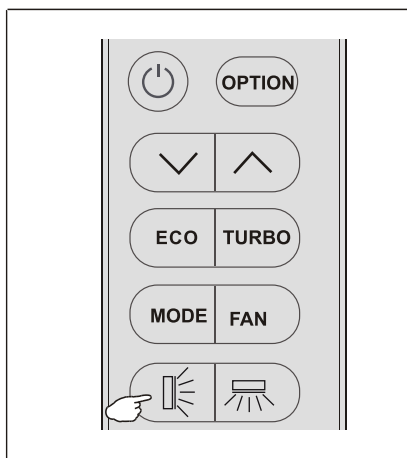
The air sucked by the fan enters from the grill and passes through the filter, then it is cooled/dehumidified or heated through the heat exchanger.

The direction of the air outlet is motorized up and down by flaps, and manually moved right and left by the vertical deflectors, for some models, the vertical deflectors could be controlled by motor as well.



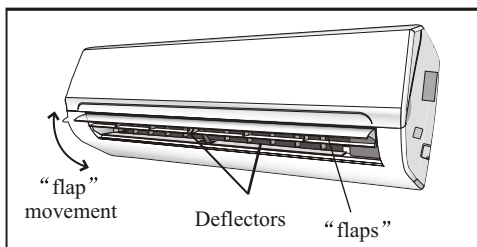
“SWING” CONTROL OF THE AIR FLOW

1. Press the button  to activate the “FLAP” .
2. Press the button again when the “FLAP” is at your desired airflow direction. The swing motion will be deactivated.



The deflectors are positioned manually and placed under the flaps .They allow to direct the air flow rightward or leftward.

- ⚠ *This adjustment must be done while the appliance is switched off.*
- ⚠ *Never position “Flaps” manually, the delicate mechanism might seriously damaged!*
- ⚠ *Never poke fingers, sticks or other objects in the air inlet or outlet vents. Such accidental contact with live parts might cause unforeseeable damage or injury.*



OPERATING INSTRUCTIONS

COOLING MODE

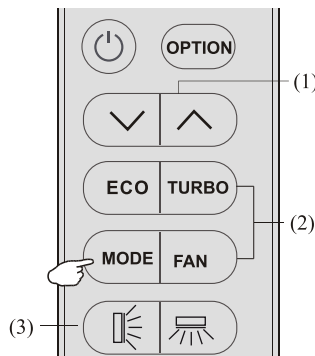
COOL

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

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

The cooling function is activated by setting the button ∇ or \blacktriangle at a temperature lower than that of the room.

To optimize the function of the air conditioner, adjust the temperature (1), the speed (2) and the direction of the air flow (3) by pressing the button indicated.



HEATING MODE

HEAT

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

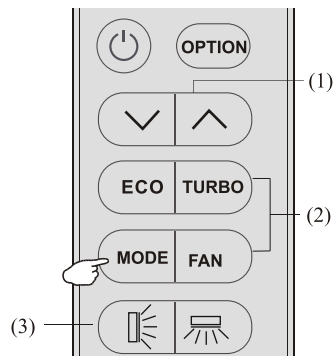
To activate the heating function (HEAT), press the **MODE** button until the symbol HEAT appears on the display.

With the button ∇ or \blacktriangle set a temperature higher than that of the room..

To optimize the function of the Air conditioner adjust the temperature (1), the speed (2) and the direction of the air flow (3) by pressing the button indicated.



In HEATING operation, the appliance can automatically activate a defrost cycle, which is essential to clean the frost on the outdoor heat exchanger 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.

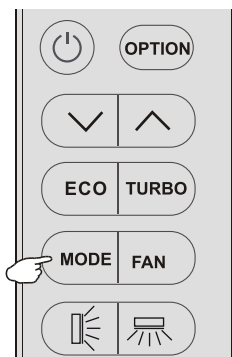


DRY MODE

DRY

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

To set the DRY mode, Press **MODE** until DRY appears on the display. An automatic function of alternating cooling cycles and air fan is activated.



OPERATING INSTRUCTIONS

FAN MODE(Not FAN button)

FAN

The air conditioner works in only circulation.

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

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

AUTO MODE

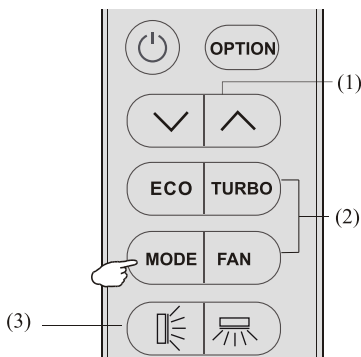
AUTO

Automatic mode.

To activate the AUTO mode of operation, press the **[MODE]** button on the remote controller until the symbol AUTO appears on the display.

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

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

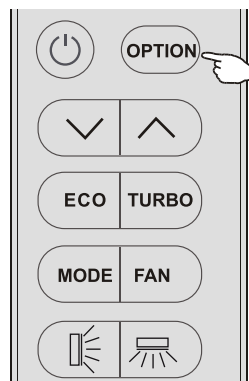


DISPLAY function (Indoor display)

[DISPLAY]

Switch on/off the LED display on panel.

Press **[OPTION]** at the first time, select the DISPLAY by pressing the button \wedge or \vee until symbol DISPLAY is flashing; Press **[OPTION]** again to switch off the LED display on the panel, and **[DISPLAY]** appears on the remote controller display. Do it again to switch on the LED display.



SLEEP function

[SLEEP]

Press **[OPTION]** at the first time, select the SLEEP by pressing the button \wedge or \vee until symbol SLEEP is flashing; Press **[OPTION]** again to activate the SLEEP function, and **[SLEEP]** appears on the display. Do it again to deactivate this function.

When the SLEEP button is pressed, the air conditioner operates as following:

1. The sleep lamp is on, the display of temperature will become dark.
2. When selecting COOLING/DRY operation with SLEEP mode, the set temperature will be raised by 1°C 1 hour later and by 2°C 2 hour later.
3. When selecting HEATING operation with SLEEP mode, the set temperature will be dropped by 1°C 1 hour later and 2°C 2 hours later.
4. After the System operates in SLEEP mode for 10 hours, it will be cancelled automatically.

OPERATING INSTRUCTIONS

ECO function

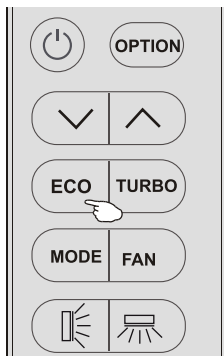
ECO

In this mode the appliance automatically sets the operation to achieve energy savings.

1. Press the "ON / OFF" button to turn on appliance and select a COOLING / HEATING mode.
2. Press the "ECO" button, the appliance will run in ECO mode.
3. Press the "ECO" button again will cancel the mode, "ECO" will no longer be shown on the display.


NOTE:

The ECO function is available in COOLING and HEATING modes.



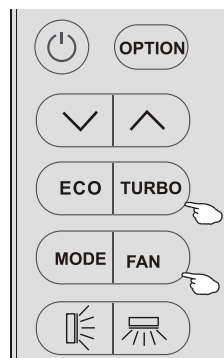
Turbo function



To activate turbo function, press the button TURBO or press the button FAN until symbol  appears on the display.

To cancel this function, press the FAN to switch other fan speed or press the TURBO button again.

In AUTO/HEAT/COOL/FAN mode, when you select TURBO feature, it will use the highest fan setting to blow strong airflow.



I FEEL FUNCTION

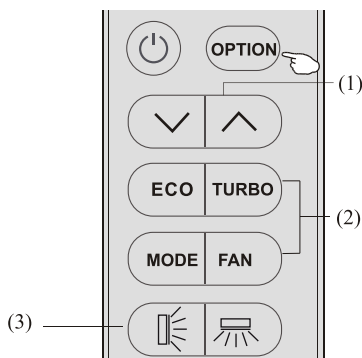
I FEEL

To activate the I FEEL function, press the **OPTION** button on the remote controller until the symbol **I FEEL** appears on the display.

In I FEEL function, the fan speed and the temperature are set automatically according to the room temperature (tested by the temperature sensor which is incorporated in the indoor unit).

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

To optimize the function of the air conditioner, adjust the temperature (only $\pm 2^{\circ}\text{C}$) (1), the speed (2) and the direction of the air flow (3) by pressing the buttons indicated.



OPERATING INSTRUCTIONS

TIMER function



To set the automatic switch-on /off of the air conditioner.

Timer setting/change/cancel:

1. Press **OPTION** at the first time , select the Timer by pressing the button \wedge or \vee until symbol **TIMER** is flashing;
2. Press **OPTION** again, the data symbol like 5.5_h and **TIMER** will be flashing;
3. To set the timer or change the timer:
 - (1) Press the button \wedge or \vee to set the expected timer (Increase or decrease at half-hour intervals) the symbols h and **TIMER** both are flashing.
 - (2) Press **OPTION** or wait for 5 seconds without any operation to confirm the timer , the pre-setting timer like 5.5_h and symbol **TIMER** will be on the display.
4. To cancel the timer(if **TIMER** is on) Repeat step 1, step 2, then press **OPTION** or wait for 5 seconds without any operation to cancel the timer .

A sample for the Timer-on as Figure1, Timer-off as Figure2

Note:

All process should be operated in 5 seconds, otherwise the process will be cancelled.

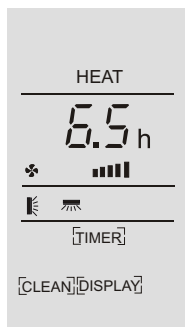
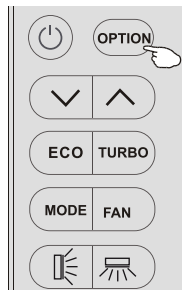


Figure1,Timer-on when switch off

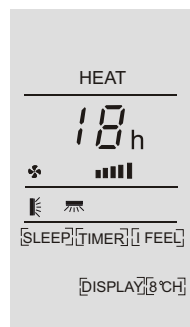


Figure2,Timer-off when switch on

OPERATING INSTRUCTIONS

SELF-CLEAN function

[CLEAN]

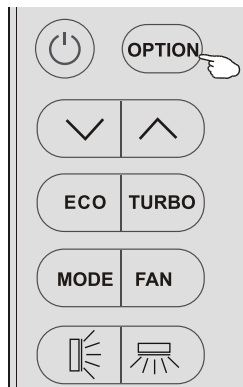
This function helps carry away the accumulated dirt, bacteria, etc from the indoor heat exchanger.

Press [OPTION] at the first time while air conditioner is turned off, select the CLEAN by pressing the button \wedge or \vee until symbol [CLEAN] is flashing; Press OPTION again to activate the CLEAN function, and [CLEAN] appears on the display. Do it again to deactivate this function.

1. This function help carry away the accumulated dirt, bacteria, etc from the evaporator.
2. This function will run about 30 minutes, and it will return to the pre-setting mode .You can press \odot to cancel this function during the process. You will hear 2 beeps when it's finished or cancelled.
3. It's normal if there are some noise during this function process, as plastic materials expand with heat and contract with cold.
4. We suggest operating this function in the following ambient condition to avoid certain safety protection features.

Room temp	Temp<30°C
Outdoor temp	5°C<Temp<30°C

5. We suggest operating this function per 3 months.



8°C heating function

[8°C H]

It can be set in Cool/Heat/Dry/Fan/Auto mode, but you need to turn off the unit to activate it.

1. Press [OPTION] at the first time , select the 8°C H by pressing the button \wedge or \vee until symbol 8°C H is flashing; Press OPTION again to choose the 8°C heating function, and [8°C H] appears on the display. Do it again or change the mode to deactivate this function.
2. If the air conditioner is standby, this function enable the air conditioner automatically start heating when the indoor temperature is equal or lower than 8°C, it will return standby if the temperature is equal or higher than 18°C.

PROTECTION

Operating Temperature

The air conditioner is programmed for comfortable and suitable living conditions as below if used outside the conditions, certain safety protection features might come into effect.

Inverter air conditioner:

MODE Temperature	Cooling operating	Heating operating	Drying operating
Room temperature	17°C ~32°C	0°C ~30°C	10°C~32°C
Outdoor temperature	15°C ~55°C	-20°C~30°C	0°C~50°C



The unit does not operate immediately if it is turned on after being turned off or after changing the mode during operation. This is a normal self-protection action, you need waiting for about 3 minutes.



The capacity and efficiency are according to the test conducted at full-load operation.*

**The highest speed of indoor fan motor and the maximum open angle of the flaps and deflectors are requested.*

INSTALLATION MANUAL---Important considerations

■ Important Considerations

- The air conditioner you buy 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.
- When filling the combustible refrigerant, any of your rude operations may cause serious injury or injuries to human body or bodies and object or objects.
- A leak test must be done after the installation is completed.
- 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.
- 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.
- Requirements for the total weight of filled refrigerant and the area of a room to be equipped with an air conditioner (are shown as in the following Tables GG.1 and GG.2)



INSTALLATION MANUAL---Important considerations

■ The maximum charge and the required minimum floor area

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

Where *LFL* is the lower flammable limit in kg/ m³, R290 LFL is 0.038 kg/ m³, R32 LFL is 0.306 kg/ m³.

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

The maximum charge in a room shall be in accordance with the following: $m_{\max} = 2.5 \times (\text{LFL})^{(5/4)} \times h_0 \times (A)^{1/2}$

The required minimum floor area *A*_{min} to install an appliance with refrigerant charge *M* (kg)

shall be in accordance with following: $A_{\min} = (M / (2.5 \times (\text{LFL})^{(5/4)} \times h_0))^2$

Where:

*m*_{max} is the allowable maximum charge in a room, in kg;

M is the refrigerant charge amount in appliance, in kg;

*A*_{min} is the required minimum room area, in m²;

A is the room area, in m²;

LFL is the lower flammable limit, in kg/m³;

*h*₀ is the installation height of the appliance, in meters for calculating *m*_{max} or *A*_{min}, 1.8 m for wall mounted;

Table GG.1 – Maximum charge (kg)

Category	LFL (kg/m ³)	<i>h</i> ₀ (m)	Floor area (m ²)						
			4	7	10	15	20	30	50
R290	0.038	0.6	0.05	0.07	0.08	0.1	0.11	0.14	0.18
		1	0.08	0.11	0.13	0.16	0.19	0.2	0.3
		1.8	0.15	0.2	0.24	0.29	0.34	0.41	0.53
		2.2	0.18	0.24	0.29	0.36	0.41	0.51	0.65
R32	0.306	0.6	0.68	0.9	1.08	1.32	1.53	1.87	2.41
		1	1.14	1.51	1.8	2.2	2.54	3.12	4.02
		1.8	2.05	2.71	3.24	3.97	4.58	5.61	7.24
		2.2	2.5	3.31	3.96	4.85	5.6	6.86	8.85

Table GG.2 – Minimum room area (m²)

Category	LFL (kg/m ³)	<i>h</i> ₀ (m)	Charge amount (<i>M</i>) (kg)						
			Minimum room area (m ²)						
R290	0.038		0.152kg	0.228 kg	0.304 kg	0.456 kg	0.608 kg	0.76 kg	0.988 kg
		0.6		82	146	328	584	912	1514
		1		30	53	118	210	328	555
		1.8		9	16	36	65	101	171
		2.2		6	11	24	43	68	115
R32	0.306		1.224 kg	1.836 kg	2.448 kg	3.672 kg	4.896 kg	6.12 kg	7.956 kg
		0.6		29	51	116	206	321	543
		1		10	19	42	74	116	196
		1.8		3	6	13	23	36	60
		2.2		2	4	9	15	24	40

INSTALLATION MANUAL---Important considerations

■ Installation Safety Principles

1. Site Safety



Open Flames Prohibited



Ventilation Necessary

2. Operation Safety

Open Flames Prohibited



Mind Static Electricity



Must wear protective clothing and anti-static gloves



Don't use mobile phone

3. Installation Safety

- Refrigerant Leak Detector
- Appropriate Installation Location



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

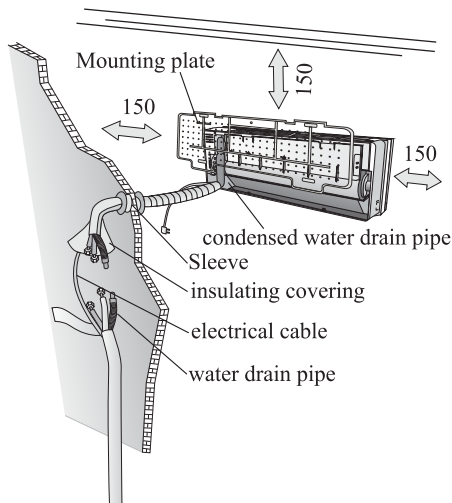
Please note that:

1. The installation site should be in a well-ventilated condition.
2. The sites for installing and maintaining an air conditioner using Refrigerant R32 should be free from open fire or welding, smoking, drying oven or any other heat source higher than 548℃ which easily produces open fire.
3. When installing an air conditioner, it is necessary to take appropriate anti-static measures such as wear anti-static clothing and/or gloves.
4. It is necessary to choose the site convenient for installation or maintenance wherein the air inlets and outlets of the indoor and outdoor units should be not surrounded by obstacles or close to any heat source or combustible and/or explosive environment.
5. If the indoor unit suffers refrigerant leak during the installation, it is necessary to immediately turn off the valve of the outdoor unit and all the personnel should go out till the refrigerant leaks completely for 15 minutes. If the product is damaged, it is a must to carry such damaged product back to the maintenance station and it is prohibited to weld the refrigerant pipe or conduct other operations on the user's site.
6. It is necessary to choose the place where the inlet and outlet air of the indoor unit is even.
7. It is necessary to avoid the places where there are other electrical products, power switch plugs and sockets, kitchen cabinet, bed, sofa and other valuables right under the lines on two sides of the indoor unit.

INSTALLATION MANUAL---Selecting the Installation Place

INDOOR UNIT

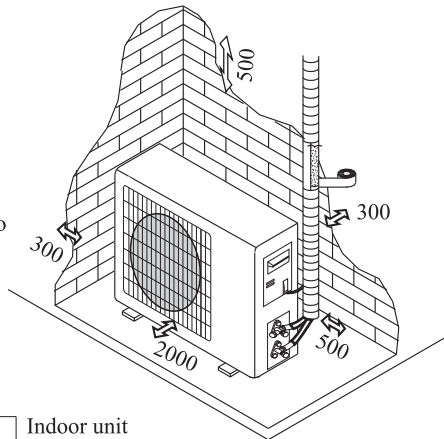
- Install the indoor unit on a strong wall that is not subject to vibrations.
- The inlet and outlet of the unit should not be obstructed: the air should be able to blow all over the room.
- Do not install the unit near a source of heat, steam, or flammable gas.
- Install the unit near an electric socket or private circuit.
- Do not install the unit where it will be exposed to direct sunlight.
- Select a site where the condensed water can be easily drained out, and where it is easily connected to outdoor unit.
- Check the machine operation regularly and reserve the necessary spaces as shown in the picture.
- Select a place where the filter can be easily taken out.



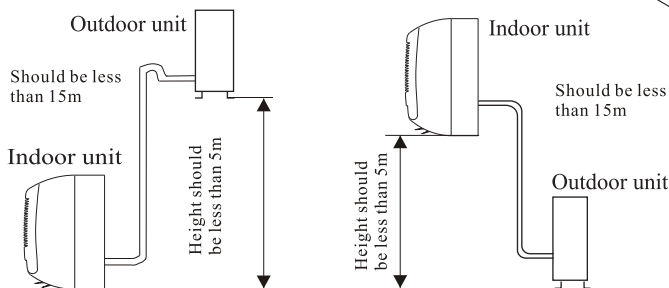
OUTDOOR UNIT

- Do not install the outdoor unit near sources of heat, steam or flammable gas.
- Do not install the unit in too windy or dusty places.
- Do not install the unit where people often pass. Select a place where the air discharge and operating sound will not disturb the neighbours.
- Avoid installing the unit where it will be exposed to direct sunlight (otherwise use a protection, if necessary, that should not interfere with the air flow).
- Reserve the spaces as shown in the picture for the air to circulate freely.
- Install the outdoor unit in a safe and solid place.
- If the outdoor unit is subject to vibration, place rubber gaskets onto the feet of the unit..

minimum space to be reserved (mm) showing in the picture



Installation Diagram



The purchaser must ensure that the person and/or company who is to install, maintain or repair this air conditioner has qualifications and experience in refrigerant products.

INSTALLATION MANUAL---Installation of the Indoor unit

Before starting installation, decide on the position of the indoor and outdoor units, taking into account the minimum space reserved around the units.

- ⚠ Do not install your air conditioner in a wet room such as a bathroom or laundry etc.
- ⚠ The installation site should be 250cm or more above the floor.

To install, proceed as follows:

Installation of the mounting plate

- 1 Always mount the rear panel horizontally and vertically.
2. Drill 32 mm deep holes in the wall to fix the plate.
3. Insert the plastic anchors into the hole.
4. Fix the rear panel on the wall with provided tapping screws.
5. Be sure that the rear panel has been fixed firmly enough to withstand the weight.

Note : The shape of the mounting plate may be different from the one above, but installation method is similar .

Drilling a hole in the wall for the piping

1. Make the piping hole ($\Phi 50$) in the wall at a slight downward slant to the outdoor side.
2. Insert the piping-hole sleeve into the hole to prevent the connection piping and wiring from being damaged when passing through the hole.

- ⚠ The hole must slope downwards towards the exterior.

Note : Keep the drain pipe down towards the direction of the wall hole, otherwise leakage may occur.

Electrical connections---Indoor unit

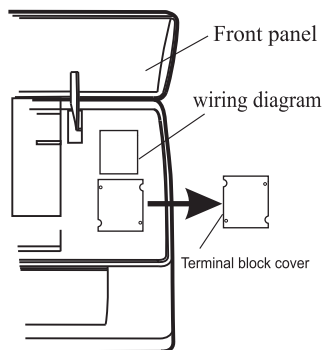
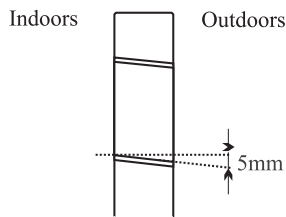
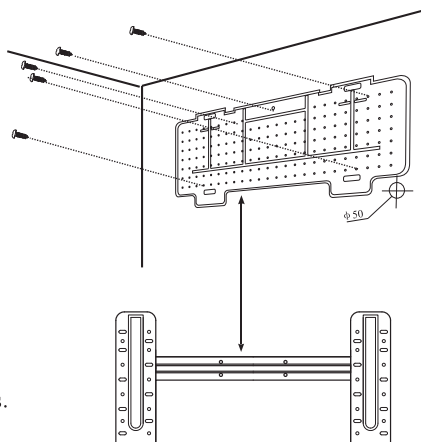
1. Open the front panel.
2. Take off the cover as indicated in the picture (by removing a screw or breaking the hooks).
3. For the electrical connections, see the circuit diagram on the right part of the unit under the front panel.
4. Connect the cable wires to the screw terminals by following the numbering . Use wire size suitable to the electric power input (see name plate on the unit) and according to all current national safety code requirements.

- ⚠ The cable connecting the outdoor and indoor units must be suitable for outdoor use.

- ⚠ The plug must be accessible also after the appliance has been installed so that it can be pulled out if necessary.

- ⚠ An efficient earth connection must be ensured.

- ⚠ If the power cable is damaged, it must be replaced by an authorised Service Centre.



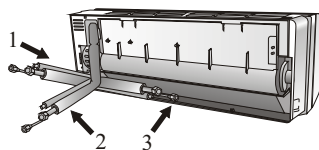
INSTALLATION MANUAL---Installation of the Indoor unit

Refrigerant piping connection

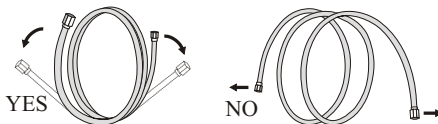
The piping can be run in the 3 directions indicated by numbers in the picture. When the piping is run in direction 1 or 3, cut a notch along the groove on the side of the indoor unit with a cutter.

Run the piping in the direction of the wall hole and bind the copper pipes, the drain pipe and the power cables together with the tape with the drain pipe at the bottom, so that water can flow freely.

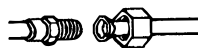
- Do not remove the cap from the pipe until connecting it, to avoid dampness or dirt from entering.
- If the pipe is bent or pulled too often, it will become stiff. Do not bend the pipe more than three times at one point.
- When extending the rolled pipe, straighten the pipe by unwinding it gently as shown in the picture.



Shape the connection pipe

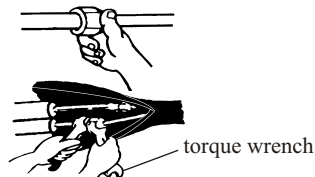


Extending the rolled pipe



Connections to the indoor unit

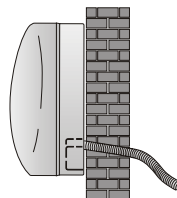
1. Remove the indoor unit pipe cap (check that there is no debris inside).
2. Insert the flare nut and create a flange at the extreme end of the connection pipe.
3. Tighten the connections by using two wrenches working in opposite directions.



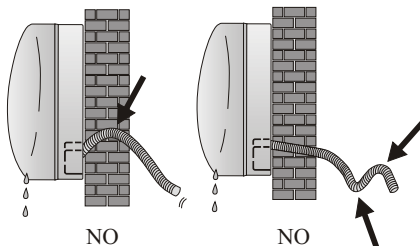
Indoor unit condensed water drainage

The indoor unit condensed water drainage is fundamental for the success of the installation.

1. Place the drain hose below the piping, taking care not to create siphons.
2. The drain hose must slant downwards to aid drainage.
3. Do not bend the drain hose or leave it protruding or twisted and do not put the end of it in water. If an extension is connected to the drain hose, ensure that it is lagged when it passes into the indoor unit.
4. If the piping is installed to the right, the pipes, power cable and drain hose must be lagged and secured onto the rear of the unit with a pipe connection.
 - 1) Insert the pipe connection into the relative slot.
 - 2) Press to join the pipe connection to the base.



YES



NO

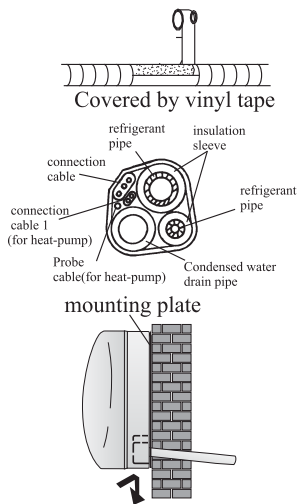
NO

INSTALLATION MANUAL---Installation of the Indoor unit

INSTALLATION OF THE INDOOR UNIT

After having connected the pipe according to the instructions, install the connection cables. Now install the drain pipe. After connection, lag the pipe, cables and drain pipe with the insulating material.

1. Arrange the pipes ,cables and drain hose well.
2. Lag the pipe joints with insulating material , securing it with vinyl tape.
3. Run the bound pipe, cables and drain pipe through the wall hole and mount the indoor unit onto the upper part of the mounting plate securely.
4. Press and push the lower part of the indoor unit tightly against the mounting plate.



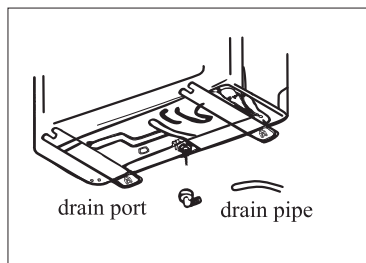
INSTALLATION MANUAL---Installation of the outdoor unit

- The outdoor unit should be installed on a solid wall and fastened securely.
- The following procedure must be observed before connecting the pipes and connecting cables : decide which is the best position on the wall and leave enough space to be able to carry out maintenance easily.
- Fasten the support to the wall using screw anchors which are particularly suited to the type of wall.
- Use a larger quantity of screw anchors than normally required for the weight they have to bear to avoid vibration during operation and remain fastened in the same position for years without the screws becoming loose.
- The unit must be installed following the national regulations.

Outdoor unit condensed water drainage (only for heat pump models)

The condensed water and the ice formed in the outdoor unit during heating operation can be drained away through the drain pipe.

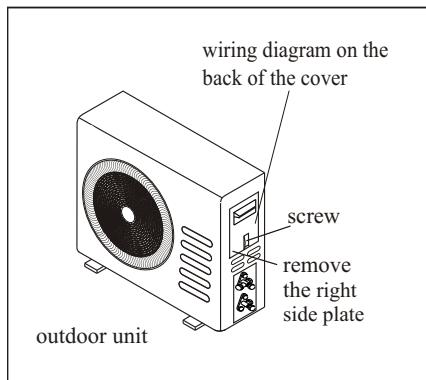
1. Fasten the drain port in the 25mm hole placed in the part of the unit as shown in the picture.
 2. Connect the drain port and the drain pipe.
- Pay attention that water is drained in a suitable place.



INSTALLATION MANUAL---Installation of the outdoor unit

ELECTRICAL CONNECTIONS

1. Remove the handle on the right side plate of outdoor unit.
2. Connect the power connection cord to the terminal board.
Wiring should fit that of indoor unit.
3. Fix the power connection cord with wire clamp.
4. Confirm if the wire has been fixed properly.
5. An efficient earth connection must be ensured.
6. Recover the handle.

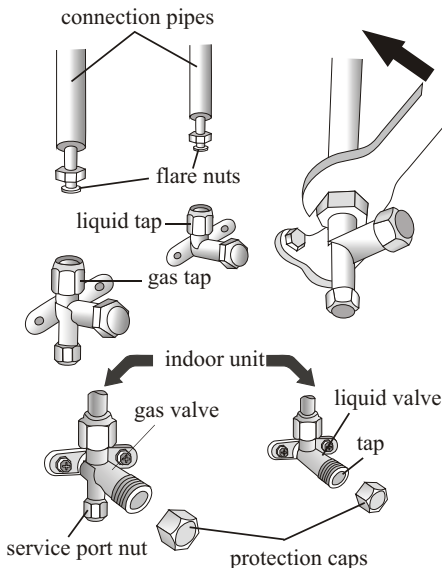


CONNECTING THE PIPES

Screw the flare nuts to the outdoor unit coupling with the same tightening procedures described for the indoor unit.

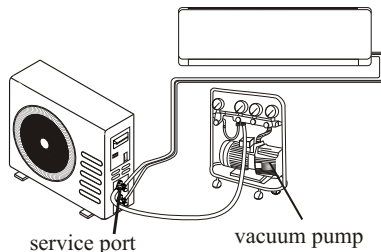
To avoid leakage, pay attention to the following points:

1. Tighten the flare nuts using two wrenches. Pay attention not to damage the pipes.
2. If the tightening torque is not sufficient, there will probably be some leakage. With excessive tightening torque there will also be some leakage, as the flange could be damaged.
3. The surest system consists in tightening the connection by using a fix wrench and a torque wrench: in this case use the table on page 28.



BLEEDING

Air and humidity left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit by using a vacuum pump.



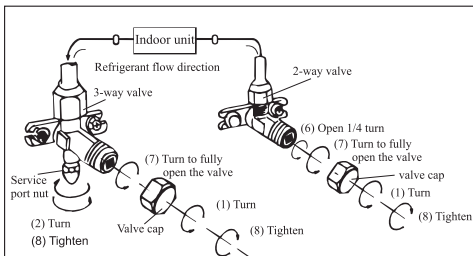
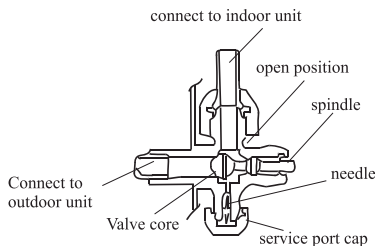
INSTALLATION MANUAL---Installation of the outdoor unit

BLEEDING

The air and humidity left inside the refrigerant circulation can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circulation using a vacuum pump.

- (1) Unscrew and remove the caps from the 2 - way and 3-way valves.
- (2) Unscrew and remove the cap from the service port.
- (3) Connect the vacuum pump hose to the service port.
- (4) Operate the vacuum pump for 10 - 15 minutes until an absolute vacuum of 10 mm Hg has been reached.
- (5) With the vacuum pump still in operation, close the low - pressure knob on the vacuum pump coupling. Stop the vacuum pump.
- (6) Open the 2 - way valve by 1/4 turn and then close it after 10 seconds. Check all the joints for leaks using liquid soap or an electronic leak device.
- (7) Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- (8) Replace and tighten all the caps on the valves.

3-way valve diagram



INSTALLATION MANUAL--- operation test

1. Wind insulating covering around the joints of the indoor unit and fix it with insulating tape.
2. Fix the exceeding part of the signal cable to the piping or to the outdoor unit.
3. Fix the piping to the wall (after having coated it with insulating tape) using clamps or insert them into plastic slot.
4. Seal the hole in the wall through which the piping is passed so that no air or water can go through.

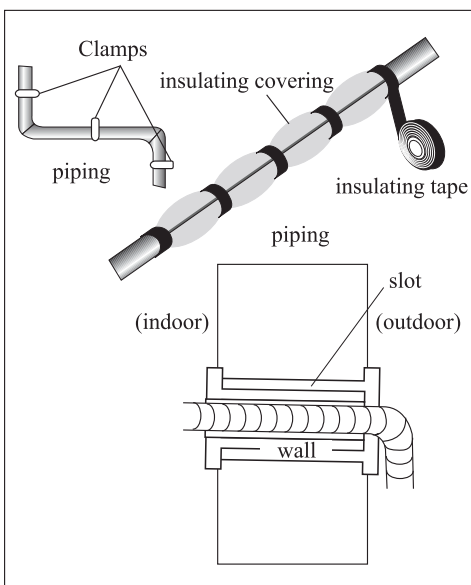
Indoor unit test

- Do the ON/OFF and FAN operate normally?
- Does the MODE operate normally?
- Do the set point and TIMER function properly?
- Does each LED display normally?
- Do the flap for air flow direction operate normally?
- Is the condensed water drained regularly?

Outdoor unit test

- Is there any abnormal noise or vibration during operation?
- Could the noise, the air flow or the condensed water drainage disturb the neighbours?
- Is there any refrigerant leakage?

Note: The electronic controller allows the compressor to start only three minutes after voltage has reached the system.



INSTALLATION MANUAL---Information for the installer

INVERTER TYPE MODEL capacity (Btu/h)	9k	12k	18k	24k
Liquid pipe diameter	1/4 " (φ 6)	1/4 " (φ 6)	1/4 " (φ 6)	1/4 " (φ 6)
Gas pipe diameter	3/8 " (φ 9.52)	1/2 " (φ 12)	1/2 " (φ 12)	5/8 " (φ 15.88)
Length of pipe with standard charge	3m	4m	5m	5m
Maximum distance between indoor and outdoor unit	15m	15m	15m	15m
Additional refrigerant charge	20g/m	20g/m	30g/m	30g/m
Max. diff. in level between indoor and outdoor unit	5m	5m	5m	5m
Type of refrigerant(1)	R32	R32	R32	R32

(1) Refer to the data rating label stuck on the outdoor unit.

TIGHTENING TORQUE FOR PROTECTION CAPS AND FLANGE CONNECTION

PIPE	TIGHTENING TORQUE [N x m]	CORRESPONDING STRESS (using a 20 cm wrench)		TIGHTENING TORQUE [N x m]
1/4 " (φ 6)	15 - 20	wrist strength	Service port nut	7 - 9
3/8 " (φ 9.52)	31 - 35	arm strength	Protection caps	25 - 30
1/2 " (φ 12)	35 - 45	arm strength		
5/8 " (φ 15.88)	75 - 80	arm strength		

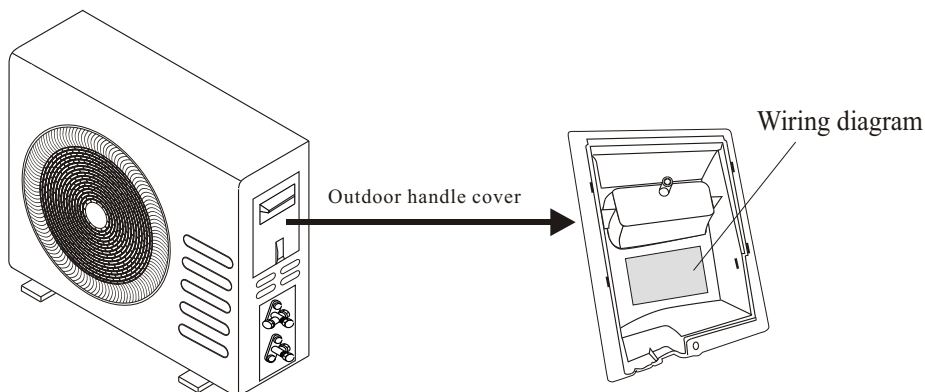
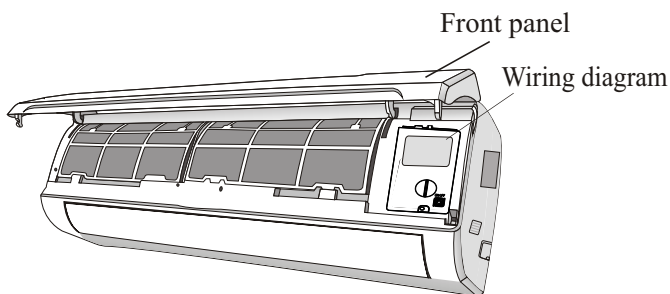
INSTALLATION MANUAL---Information for the installer

WIRING DIAGRAM

For different models, the wiring diagram may be different. Please refer to the wiring diagrams pasted on the indoor unit and outdoor unit respectively.



On indoor unit, the wiring diagram is pasted under the front panel;

On outdoor unit, the wiring diagram is pasted on the backside of the outdoor handle cover.



INSTALLATION MANUAL---Information for the installer

CABLE WIRES SPECIFICATION

INVERTER TYPE MODEL capacity (Btu/h)		9k	12k	18 k	24k
		sectional area			
Power supply cable	N	1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.5mm ² AWG16	2.5mm ² AWG14
	L	1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.5mm ² AWG16	2.5mm ² AWG14
		1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.0mm ² (1.5mm ²) AWG18 (AWG16)	1.5mm ² AWG16	2.5mm ² AWG14
Connection supply cable	N	1.0mm ² (1.5mm ²)	1.0mm ² (1.5mm ²)	1.5mm ²	2.5 mm ²
	L	1.0mm ² (1.5mm ²)	1.0mm ² (1.5mm ²)	1.5mm ²	2.5 mm ²
	1	1.0mm ² (1.5mm ²)	1.0mm ² (1.5mm ²)	1.5mm ²	2.5 mm ²
	2	1.0mm ² (1.5mm ²)	1.0mm ² (1.5mm ²)	1.5mm ²	2.5 mm ²
		1.0mm ² (1.5mm ²)	1.0mm ² (1.5mm ²)	1.5mm ²	2.5 mm ²

220V , 9K , 12K , 18K , 24K , air conditioner indoor unit fuse parameter is 50T, 3.15A

MAINTENANCE

Periodic maintenance is essential for keeping your air conditioner efficient.

Before carrying out any maintenance , disconnect the power supply by taking the plug out from the socket.

INDOOR UNIT

ANTIDUST FILTERS

1. Open the front panel following the direction of the arrow.
2. Keeping the front panel raised with one hand, take out the air filter with the other hand.
3. Clean the filter with water ; if the filter is soiled with oil, it can be washed with warm water (not exceeding 45°C).
Leave to dry in a cool and dry place.
4. Keeping the front panel raised with one hand , insert the air filter with the other hand.
5. Close.

The electrostatic and the deodorant filter (if installed) cannot be washed or regenerated and must be replaced with new filters after every 6 months.

CLEANING THE HEAT EXCHANGER

1. Open the front panel of the unit and lift it till its greatest stroke and then unhooking it from the hinges to make the cleaning easier.
2. Clean the indoor unit using a cloth with the water (not higher than 40°C) and neutral soap . Never use aggressive solvents or detergents.
3. If the outdoor unit is clogged , remove the leaves and the waste and remove the dust with air jet or a bit of water.

END OF SEASON MAINTENANCE

1. Disconnect the automatic switch or the plug.
2. Clean and replace the filters.
3. On a sunny day let the conditioner work in ventilation for some hours , so that the inside of the unit can dry completely.

REPLACING THE BATTERIES

When:

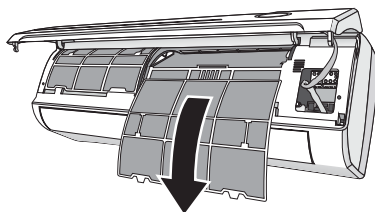
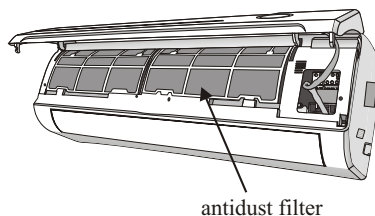
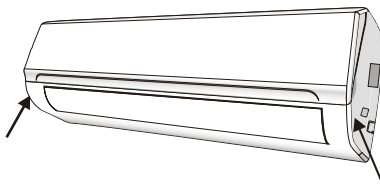
- There is no confirmation beep heard from the indoor unit.
- The LCD doesn't act.

How:

- Take off the cover at back.
- Place the new batteries respecting the symbols + and - .

N.B: Use only new batteries. Remove the batteries from the remote controller when the conditioner is not in operation.

WARNING ! Do not throw batteries into common rubbish , they should be disposed of in the special containers situated in the collection points.



TROUBLESHOOTING

MALFUNCTION	POSSIBLE CAUSES
The appliance does not operate	Power failure/plug pulled out
	Damaged indoor/outdoor unit fan motor
	Faulty compressor thermomagnetic circuit breaker
	Faulty protective device or fuses.
	Loose connections or plug pulled out
	It sometimes stops operating to protect the appliance.
	Voltage higher or lower than the voltage range
	Active TIMER-ON function
	Damaged electronic control board
Strange odour	Air filter dirty
Noise of running water	Back flow of liquid in the refrigerant circulation
A fine mist comes from the air outlet	This occurs when the air in the room becomes very cold, for example in the “COOLING” or “DEHUMIDIFYING/DRY” modes.
A strange noise can be heard	This noise is made by the expansion or contraction of the front panel due to variations in temperature and does not indicate a problem.
Insufficient airflow, either hot or cold	Inappropriate temperature setting.
	Air inlet or outlet of indoor or outdoor unit has been blocked.
	Air filter is blocked.
	Fan speed set at minimum.
	Other sources of heat in the room.
The appliance does not respond to commands	No refrigerant.
	Remote control is not near enough to indoor unit.
	Battery in Remote controller may have been exhausted.
The display is off	Obstacles between remote control and signal receiver in indoor unit.
	Inactive LED function
	Power failure

Switch off the air conditioner immediately and cut off the power supply in the event of:

Strange noises during operation.

Faulty electronic control board.

Faulty fuses or switches.

Spraying water or objects inside the appliance.

Overheated cables or plugs.

Very strong smells coming from the appliance.

ERROR SIGNALS ON THE DISPLAY

In case of error, the display on the indoor unit shown the following error codes:

LED	Description of the trouble
E1	The fault of indoor temperature sensor
E2	The fault of indoor pipe temperature sensor
E6	Malfunction of indoor fan motor.
E4	Refrigerant leakage

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