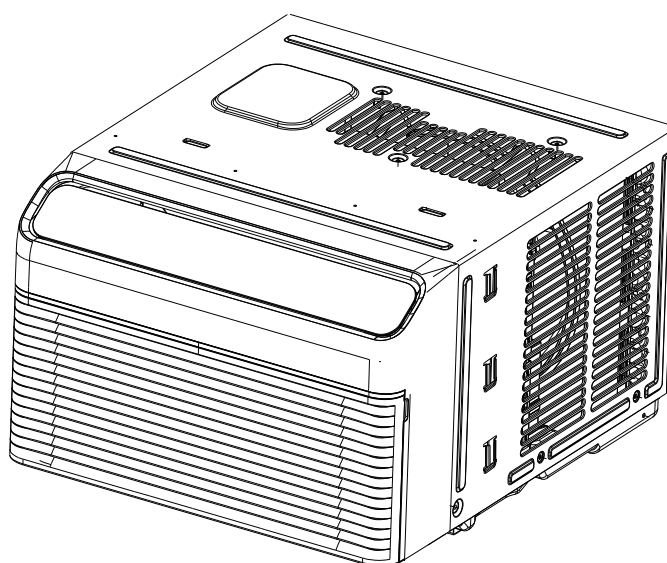


WINDOW AIR CONDITIONER

Keystone[®]

USER'S MANUAL



Model: KSTAW08INV-HC, KSTAW12INV-HC

Before using your air conditioner, please read this manual carefully and keep it for future reference.

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REV 11/04

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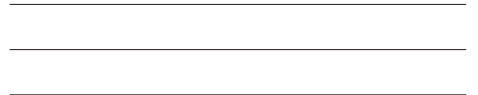
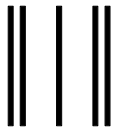
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Important Safety Instructions

READ THIS MANUAL

Inside you will find many helpful hints on how to use and maintain your air conditioner properly. Just a little preventive care on your part can save you a great deal of time and money over the life of your air conditioner. You'll find many answers to common problems in the chart of troubleshooting tips. If you review our chart of Troubleshooting Tips first, you may not need to call for service at all.

To prevent injury to the user or other people and property damage, the following instructions must be followed. Incorrect operation due to ignoring of instructions may cause harm or damage. The seriousness is classified by the following indications.

 DANGER	This symbol indicates the probability of death or serious injury.		
 WARNING	This symbol indicates the possibility of death or serious injury .		
 CAUTION	This symbol indicates the possibility of injury or damage to property.		
NOTICE	Indicates information considered important, but not hazard-related.		
 Never do this.		Always do this.	

DANGER

⓪ Plug in power plug properly.

- Otherwise, it may cause electric shock or fire due to excess heat generation.

⓪ Do not operate or stop the unit by inserting or pulling out the power plug.

- It may cause electric shock or fire due to heat generation.

⓪ Do not damage or use an unspecified power cord.

- It may cause electric shock or fire.
- If the power cord is damaged, it must be replaced by the manufacturer or an authorised service centre or a similarly qualified person in order to avoid a hazard.

⓪ Always ensure effective grounding.

- Incorrect grounding may cause electric shock.

⓪ Do not operate with wet hands or in damp environment.

- It may cause electric shock .

⓪ Do not allow water to run into electric parts.

- It may cause failure of machine of electric shock.

⓪ Do not modify power cord length .

- It may cause electric shock or fire due to heat generation.

⓪ Do not use the socket if it is loose or damaged.

- It may cause fire and electric shock.

⓪ Unplug the unit if strange sounds, smell, or smoke comes from it.

- It may cause fire and electric shock.

⚠ DANGER

- | | |
|---|---|
| <ul style="list-style-type: none"> ⊘ Do not disassemble or modify unit. <ul style="list-style-type: none"> • It may cause failure and electric shock. | <ul style="list-style-type: none"> ⊘ Do not open the unit during operation. <ul style="list-style-type: none"> • It may cause electric shock. |
|---|---|

⚠ WARNING

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> ⊘ Always install circuit breaker and a dedicated power circuit. <ul style="list-style-type: none"> • Incorrect installation may cause fire and electric shock. | <ul style="list-style-type: none"> ⊘ Do not direct airflow at room occupants only. <ul style="list-style-type: none"> • This could damage your health. | <ul style="list-style-type: none"> ⊘ Do not use the power cord near flammable gas or combustibles, such as gasoline, benzene, thinner, etc. <ul style="list-style-type: none"> • It may cause an explosion or fire. |
| <ul style="list-style-type: none"> ⊘ Keep firearms away. <ul style="list-style-type: none"> • It may cause fire. | <ul style="list-style-type: none"> ⊘ Do not use the power cord close to heating appliances. <ul style="list-style-type: none"> • It may cause fire and electric shock. | |
| <ul style="list-style-type: none"> ⊘ Ventilate room before operating air conditioner if there is a gas leakage from another appliance. <ul style="list-style-type: none"> • It may cause explosion, fire and, burns. | | |

⚠ CAUTION

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ⊘ When the air filter is to be removed, do not touch the metal parts of the unit. <ul style="list-style-type: none"> • It may cause an injury. | <ul style="list-style-type: none"> ⊘ Do not put a pet or house plant where it will be exposed to direct air flow. <ul style="list-style-type: none"> • This could injure the pet or plant. | <ul style="list-style-type: none"> ⊘ Ventilate the room well when used together with a stove, etc. <ul style="list-style-type: none"> • An oxygen shortage may occur. |
| <ul style="list-style-type: none"> ⊘ Do not use strong detergent such as wax or thinner but use a soft cloth. <ul style="list-style-type: none"> • Appearance may be deteriorated due to change of product color or scratching of its surface. | <ul style="list-style-type: none"> ⊘ Do not clean the air conditioner with water. <ul style="list-style-type: none"> • Water may enter the unit and degrade the insulation. It may cause an electric shock. | <ul style="list-style-type: none"> ⊘ Do not use for special purposes. <ul style="list-style-type: none"> • Do not use this air conditioner to preserve precision devices, food, pets, plants, and art objects. It may cause deterioration of quality, etc. |

⚠ CAUTION

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> ⓪ Stop operation and close the window in storm or hurricane. | <ul style="list-style-type: none"> ⓪ When the unit is to be cleaned, switch off, and turn off the circuit breaker. | <ul style="list-style-type: none"> ⓪ Ensure that the installation bracket of the outdoor appliance is not damaged due to prolonged exposure. |
| <ul style="list-style-type: none"> • Operation with windows opened may cause wetting of indoor and soaking of household furniture. | <ul style="list-style-type: none"> • Do not clean unit when power is on as it may cause fire and electric shock, it may cause an injury. | <ul style="list-style-type: none"> • If bracket is damaged, there is concern of damage due to falling of unit. |
| <ul style="list-style-type: none"> ⓪ Always insert the filters securely. Clean filter once every two weeks. | <ul style="list-style-type: none"> ⓪ Hold the plug by the head of the power plug when taking it out. | <ul style="list-style-type: none"> ⓪ Turn off the main power switch when not using the unit for a long time. |
| <ul style="list-style-type: none"> • Operation without filters may cause failure. | <ul style="list-style-type: none"> • It may cause electric shock and damage. | <ul style="list-style-type: none"> • It may cause failure of product or fire. |
| <ul style="list-style-type: none"> ⓪ Do not place obstacles around air-inlets or inside of air-outlet. | <ul style="list-style-type: none"> ⓪ Do not place heavy object on the power cord and ensure that the cord is not compressed. | <ul style="list-style-type: none"> ⓪ Do not drink water drained from air conditioner. |
| <ul style="list-style-type: none"> • It may cause failure of appliance or accident. | <ul style="list-style-type: none"> • There is danger of fire or electric shock. | <ul style="list-style-type: none"> • It contains contaminants and could make you sick. |
| <ul style="list-style-type: none"> ⓪ Use caution when unpacking and installing. Sharp edges could cause injury. | | <ul style="list-style-type: none"> ⓪ If water enters the unit, turn the unit off at the power outlet and switch off the circuit breaker. Isolate supply by taking the power-plug out and contact a qualified service technician. |

⚠ CAUTION

- This appliance is not intended for use by people (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.
- Children should be supervised to ensure that they do not play with the appliance.
- If the power cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified person in order to avoid a hazard.
- The appliance shall be installed in accordance with national wiring regulations.
- Do not operate your air conditioner in a wet room such as a bathroom or laundry room.
- The appliance with electric heater shall have at least 1 meter of space to the nearest combustible material.
- Contact the authorized service technician for repair or maintenance of this unit.

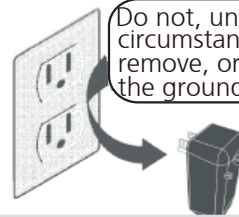
📌 NOTICE:

The power supply cord with this air conditioner contains a current detection device designed to reduce the risk of fire. Please refer to the section Operation of Current Device for details. In the event that the power cord is damaged, it cannot be repaired – it must be replaced with a cord from the product manufacturer.

⚠️ WARNING

Avoid fire hazard or electric shock. Do not use an extension cord or an adapter plug. Do not remove any prongs from the power cord.

Grounding type wall receptacle



Power supply cord with 3-prong grounding plug and current detection device.

⚠️ DANGER

For Your Safety

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

⚠️ DANGER

Prevent Accidents

To reduce the risk of fire, electrical shock, or injury when using your air conditioner, follow basic precautions, including the following:

- Be sure the electrical service is adequate for the model you have chosen. This information can be found on the serial plate, which is located on the side of the the cabinet and behind the grille.
- It is recommended to clean both sides of the window glass first. If the window has a screen panel included on the lower portion, the screen panel should be removed before installation.
- Be sure the air conditioner has been securely and correctly installed according to the installation instructions in this manual. Save this manual for possible future use in removing or installing this unit.
- When handling the air conditioner, be careful to avoid cuts from the sharp metal fins on the front and rear coils.

⚠️ WARNING

Electrical Information

The complete electrical rating of your new room air conditioner is stated on the serial plate. Refer to the rating when checking the electrical requirements.

- Be sure the air conditioner is properly grounded. To minimize shock and fire hazards, proper grounding is important. The power cord is equipped with a three-prong grounding plug for protection against shock hazards.
- Your air conditioner must be used in a properly grounded wall receptacle. If the wall receptacle you intend to use is not adequately grounded or protected by a time delay fuse or circuit breaker, have a qualified electrician install the proper receptacle. Ensure the receptacle is accessible after the unit installation.
- Do not run air conditioner without side protective cover in place. This could result in mechanical damage within the air conditioner.
- **Do not use an extension cord or an adapter plug.**

Operation of Current Device (Applicable to only units with a current detection device)

The power supply cord contains a current device that senses damage to the power cord. To test your power supply cord do the following:

1. Plug in the Air Conditioner.
2. The power supply cord will have TWO buttons on the plug head. Press the TEST button, you will notice a click as the RESET button pops out.
3. Press the RESET button, again you will notice a click as the button engages.
4. The power supply cord is now supplying electricity to the unit. On some products, this is also indicated by a light on the plug head.

NOTICE:

- Do not use this device to turn the unit on or off.
- Always make sure the RESET button is pushed in for correct operation.
- The power supply cord must be replaced if it fails to reset when either the TEST button is pushed or if it cannot be reset. A new one can be obtained from the product manufacturer.
- If power supply cord is damaged, it cannot be repaired. It MUST be replaced by one obtained from the product manufacturer.

NOTE: This air conditioner can not be as a primary heat source;

This air conditioner is designed to be operated under the following conditions:

Cooling operation	Outdoor temp:	64-109°F/18-43°C (64-125°F/18-52°C for special tropical models)
	Indoor temp:	60-90°F/16-32°C
Heating operation	Outdoor temp:	41-75°F/5-24°C
	Indoor temp:	41-80°F/5-27°C

Note: Performance may be reduced outside of these operating temperatures.

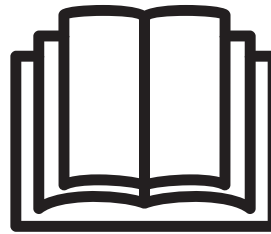
WARNING: (for using R290/R32 refrigerant only)

- Do not try to accelerate the defrosting process or methods of cleaning that are not recommended by the manufacturer.
- The appliance shall be stored in a room without a continuously operating ignition source (for example, open flames or an operating gas appliance) or an ignition source (for example, an operating electric heater) close to the appliance. The appliance shall also be stored in a room without ignition sources.
- Do not pierce or burn.
- Be aware that the refrigerants may not contain an odor.
- Compliance with national gas regulations shall be observed.
- Keep ventilation openings clear of obstruction.
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- A warning that the appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.

- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
- DO NOT modify the length of the power cord or use an extension cord to power the unit. DO NOT share a single outlet with other electrical appliances. Improper power supply can cause fire or electrical shock.
- Please follow the instruction carefully to handle, install, clean, service the air conditioner to avoid any damage or hazard. Flammable Refrigerant R32 is used within air conditioner. When maintaining or disposing of the air conditioner, the refrigerant (R32 or R290) shall be recovered properly, ensuring not to discharge it to the air directly.
- No open fire or devices that generate spark/arcing shall be around the air conditioner to avoid causing ignition of the flammable refrigerant used. Please follow the instructions carefully to store or maintain the air conditioner to prevent mechanical damage from occurring.
- Flammable refrigerant (R32) is used in this air conditioner. Please follow the instructions carefully to avoid any hazards.







Caution: Risk of fire/
flammable materials
(Required for R32/R290 units only)



IMPORTANT NOTE: Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.

Explanation of symbols displayed on the unit (since the unit uses R32/R290 refrigerant):

	WARNING	This symbol shows that this appliance used a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	CAUTION	This symbol shows that the operation manual should be read carefully.
	CAUTION	This symbol shows that a service personnel should be handling this equipment with reference to the installation manual.
	CAUTION	This symbol shows that information is available such as the operating manual or installation manual.

⚠ WARNINGS (for using R290/R32 refrigerant only)

1. Transport of equipment containing flammable refrigerants

See transport regulations

2. Marking of equipment using signs

See local regulations

3. Disposal of equipment using flammable refrigerants

See national regulations.

4. Storage of equipment/appliances

The storage of equipment should be in accordance with the manufacturer's instructions.

5. Storage of packed (unsold) equipment

Storage package protection should be constructed such that mechanical damage to the equipment inside the package will not cause a leak of the refrigerant charge.

The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

6. Information on servicing

1) Checks to the area

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

2) Work procedure

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

3) General work area

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

4) Checking for presence of refrigerant

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

5) Presence of fire extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

6) No ignition sources

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

⚠ WARNINGS (for using R290/R32 refrigerant only)

7) Ventilated area

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

8) Checks to the refrigeration equipment

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

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

The charge size is in accordance with the room size within which the refrigerant containing parts are installed;

The ventilation machinery and outlets are operating adequately and are not obstructed;

If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

Refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

9) Checks to electrical devices

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

Initial safety checks shall include:

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

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

That there is continuity of earth bonding.

7. Repairs to sealed components

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

2) Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that apparatus is mounted securely.

⚠ WARNINGS (for using R290/R32 refrigerant only)

Ensure that seals or sealing materials have not degraded such that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

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

8. Repair to intrinsically safe components

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

9. Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

10. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

11. Leak detection methods

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

12. Removal and evacuation

When breaking into the refrigerant circuit to make repairs or for any other purpose conventional procedures shall be used. However, it is important that best practice is followed since flammability is a consideration. Opening of the refrigeration systems shall not be done by brazing. The following procedure shall be adhered to:

- Remove refrigerant;
- Purge the circuit with inert gas;
- Evacuate;
- Purge again with inert gas;

⚠ WARNINGS (for using R290/R32 refrigerant only)

Open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders. The system shall be flushed with OFN to render the unit safe. This process may need to be repeated several times. Compressed air or oxygen shall not be used for this task.

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

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

13. Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed. Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.

Cylinders shall be kept upright.

Ensure that the refrigeration system is earthed prior to charging the system with refrigerant.

Label the system when charging is complete (if not already).

Extreme care shall be taken not to overfill the refrigeration system.

Prior to recharging the system it shall be pressure tested with OFN. The system shall be leak tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

14. Decommissioning

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

a) Become familiar with the equipment and its operation.

b) Isolate system electrically.

c) Before attempting the procedure ensure that:

Mechanical handling equipment is available, if required, for handling refrigerant cylinders;

All personal protective equipment is available and being used correctly;

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

Recovery equipment and cylinders conform to the appropriate standards.

d) Pump down refrigerant system, if possible.

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

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

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

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

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

⚠ WARNINGS (for using R290/R32 refrigerant only)

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

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

15. Labeling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. Ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

16. Recovery

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

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

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant Waste Transfer Note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Installation Instructions

! WARNING - Before You Begin

Read these instructions completely and carefully.

- IMPORTANT - Save these instructions.
- IMPORTANT - Observe all governing codes and ordinances.

We recommend that two people install this product.

Proper installation is the responsibility of the installer.

Product failure due to improper installation is not covered under the Limited Warranty. You MUST use all supplied parts and use proper installation procedures as described in these instructions when installing this air conditioner.

Do not, under any circumstances, cut or remove the third (ground) prong from the power cord.

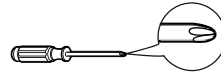
Do not change the plug on the power cord of the air conditioner.

Aluminum house wiring may present special problems - consult a qualified electrician.

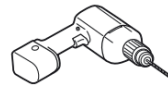
When handling the air conditioner, be careful to avoid cuts from sharp metal edges and aluminum fins on front and rear coils. Please wear cut-resistant gloves.

Bracket should only be used for its intended purpose. If not, the warranty will be voided.

Tools You Will Need











Philips Screwdriver



Drill
(If pilot holes are needed)

Installation Hardware

	1/2 " screws	7
	lock frame (For Wooden windows)	2
	lock frame (For Vinyl-Clad windows)	2
	sash lock	1
	Weather stripping (10 " x 1 1/2 " x 1/6 ")	2
	Window sash seal foam	1
	3/8 " Screws	4
	Top Rail	1

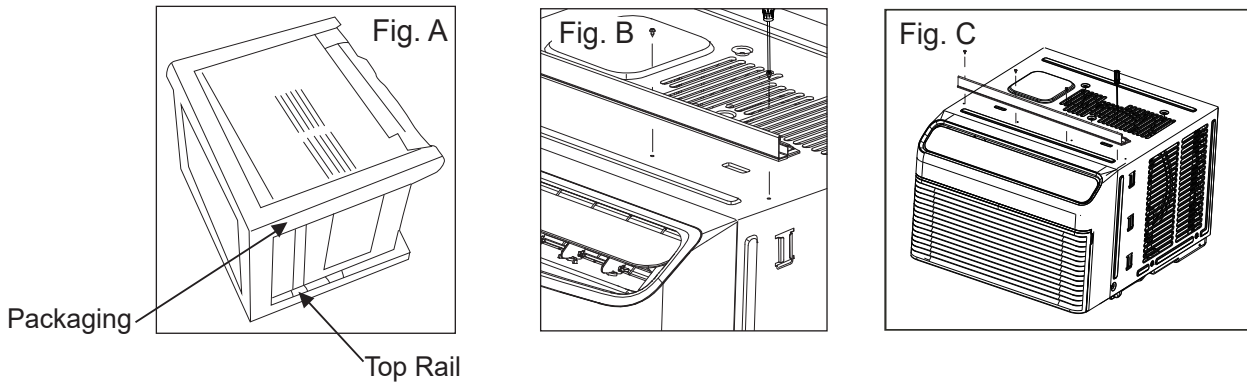
Some assembly is required. Please read these instructions carefully.

! NOTE:

- SAVE CARTON and these INSTALLATION INSTRUCTIONS for future reference. The carton is the best to store unit during winter, or when not in use.
- DO NOT USE ANY SCREWS OTHER THAN THOSE SPECIFIED HERE.
- FOR SAFETY REASONS, THE TOP RAIL MUST BE SECURELY FASTENED WITH ALL FOUR (4) SCREWS.

Before installing, the top rail must be assembled on the unit.

- A. Remove the air conditioner from the carton and place on a flat surface.
- B. Remove top rail from the rear of the packaging material as shown in Fig.A
- C. Align the hole in the top rail with those on the top of the unit as shown in Fig. B
- D. Secure the top rail to the unit with the 3/8" Screws as shown in Fig. C



Installation

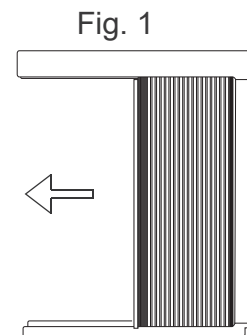
LEFT + RIGHT FILLER PANEL ASSEMBLY

NOTE: Top Rail and Side Panels at each side are offset to provide the proper pitch to the rear of (5/16"). This is necessary for proper condensed water utilization and drainage. If you are not using the Side Panels for any reason, this pitch to the rear must be maintained!

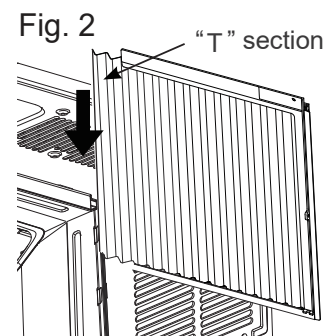
1. Install Side Filler Panels

Place unit on floor, a bench or a table. There is a Left and Right side Filler Panels - be sure to use the proper panel for each side. When installed, the flange for securing the panel in place to the window sill will be facing into the room.

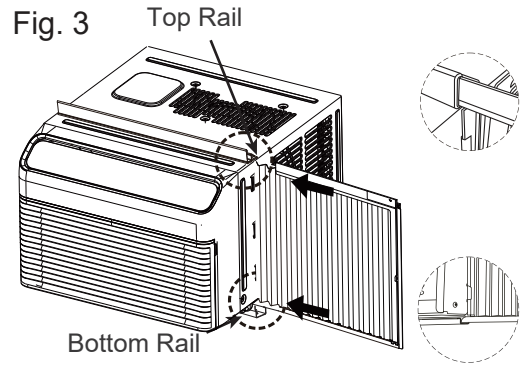
- A. Hold the side Panel in one hand and gently pull back the center to free the open end. See Fig. 1.



- B. Slide the free end "T" section of the panel directly into the cabinet as shown in Fig. 2. Slide the panel down. Be sure to leave enough space to slip the top and bottom of the frame into the rails on the cabinet.

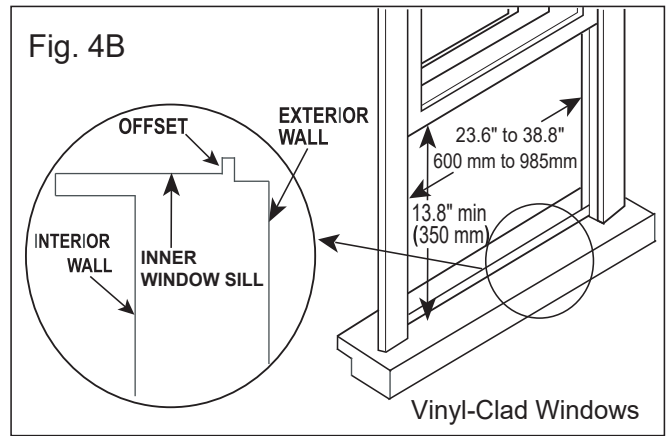
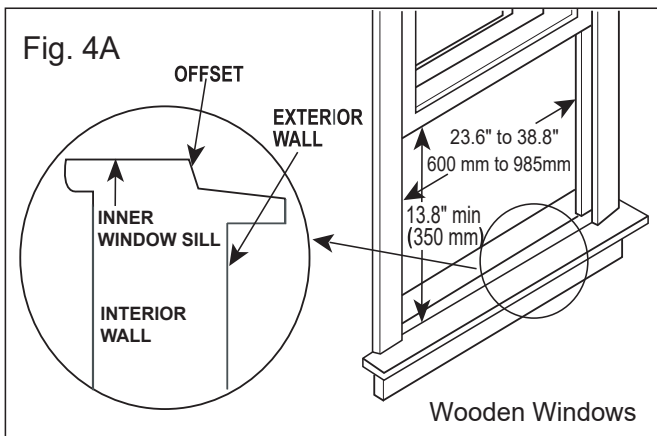


C. Once the panel has been installed on the side of the cabinet, make sure it sits securely inside the frame channel by making slight adjustments. Slide the top and bottom ends of the frame into the top and bottom rails of the cabinet. See Fig. 3.

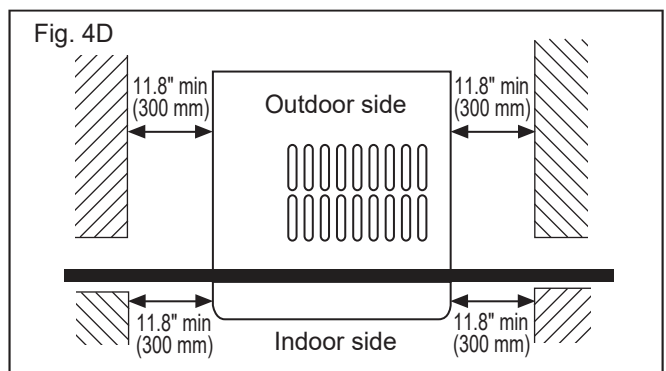
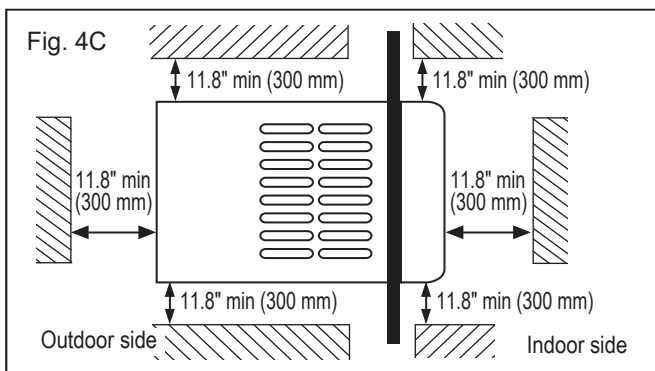


D. Slide the panel all the way in and repeat on the other side.

Your air conditioner is designed to install in standard double hung windows with opening widths of 23.6 to 38.8 inches (600 mm to 985mm) (Fig. 4A, Fig. 4B). Lower sash must open sufficiently to allow a clear vertical opening of 13.8 inches (350 mm). Lower sash must open sufficiently to allow a clear vertical opening of 13.8 inches (350 mm).



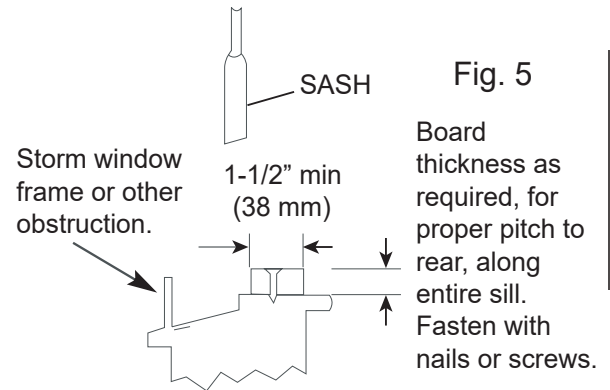
Side louvers and the rear of the air conditioner must have clear air space to allow enough airflow through the condenser, for heat removal. The rear of the unit must be outdoors, not inside a building or garage. There should be at least 11.8 inches (300mm) clearance around the unit. See Fig. 4C & Fig. 4D.



2. Storm Window

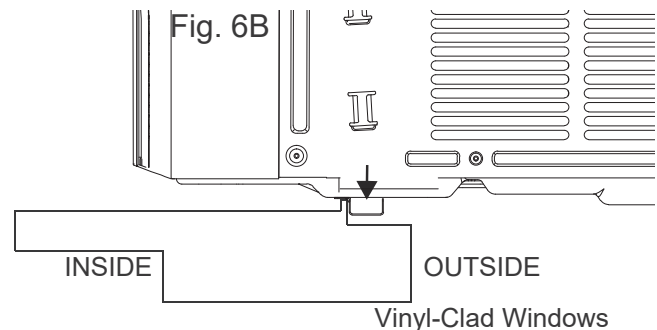
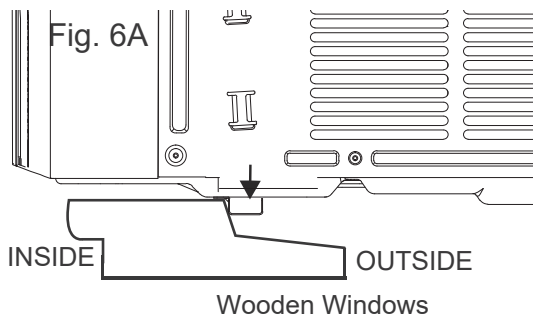
If the air conditioner is blocked by Storm Window, add wood as shown in Fig. 5, or remove storm window before air conditioner is installed.

If Storm Window Frame must remain, be sure the drain holes or slots are not caulked or painted shut. Accumulated Rain Water or Condensation must be allowed to drain out.



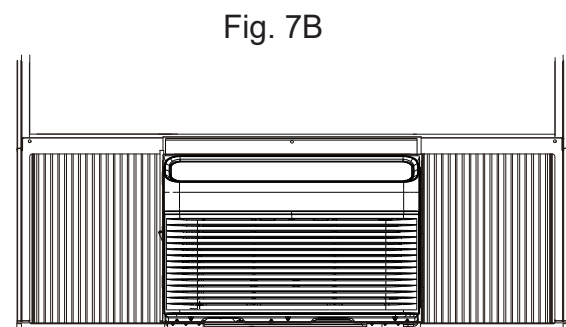
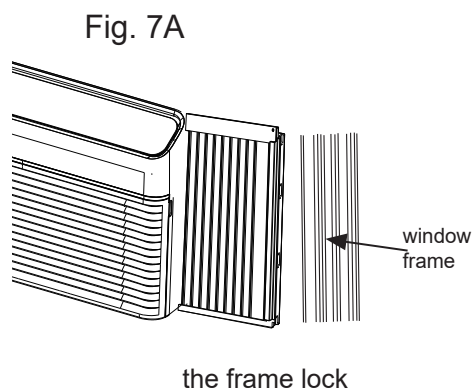
3. Place the unit into the window

Keep a firm grip on the air conditioner, carefully place the unit into the window opening so the bottom of the air conditioner frame is against the window sill (Fig. 6A & Fig. 6B). Carefully close the window behind the top rail of the unit.



4. Extend the side panels

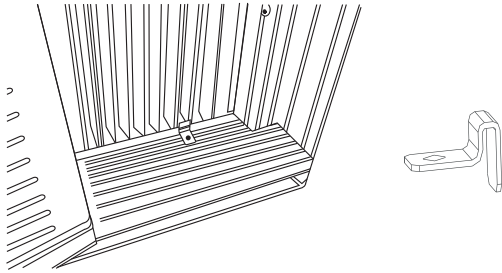
Extend the side panels out against the window frame (Fig. 7A for wooden windows), (Fig. 7B for Vinyl-Clad windows).



5. Install the frame lock

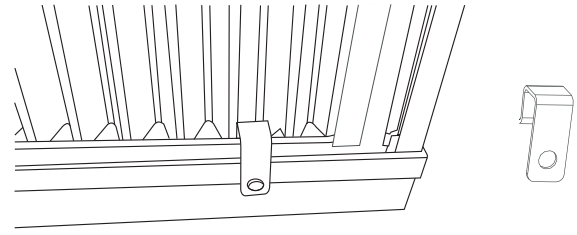
Place the frame lock between the frame extensions and the window sill as shown (Fig. 8A for wooden windows), (Fig. 8B for Vinyl-Clad windows).

Fig. 8A



wooden windows:

Fig. 8B



Vinyl-Clad windows:

6. Drive locking screws

A: For wooden windows:

Drive 1/2" (12.7 mm) locking screws through the frame lock and into the window sash (Fig. 9B).

NOTE: Before driving the screws, use a drill to drill 5 holes through the holes in the frame lock and frame extensions into the windows sash as shown (Fig. 9B).

B: For Vinyl-Clad windows:

Drive 1/2" (12.7 mm) locking screws through the frame lock and into the sill (Fig. 9A).

NOTE: To prevent window sill from splitting, drill 1/8" (3mm) pilot holes before driving screws. Drive 1/2" (12.7 mm) locking screws through frame holes into window sash (Fig. 9B).

Fig. 9A

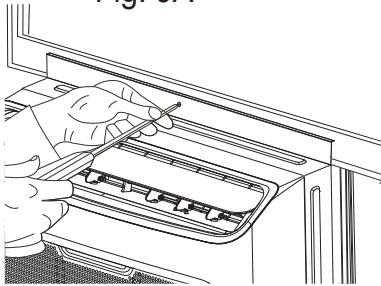
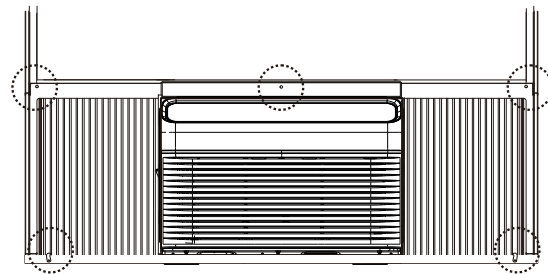


Fig. 9B



7. secure lower sash

A: To secure lower sash in place, attach right angle sash lock with 1/2"(12.7 mm) screw as shown (Fig. 10).

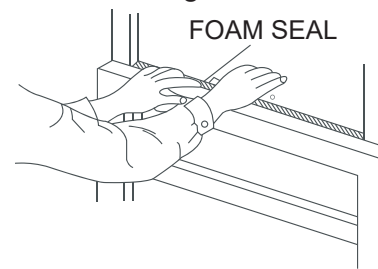
NOTE: It is difficult to lock the windows with the sash lock for Vinyl-Clad windows, so you can use lock by window itself.

Fig. 10



Fig. 11

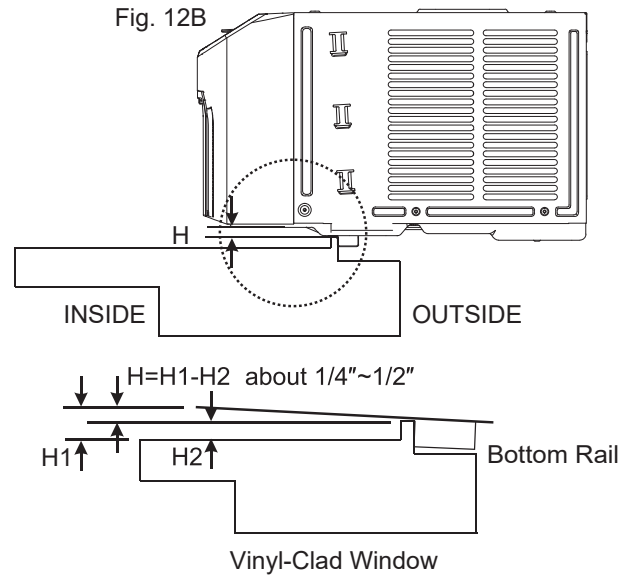
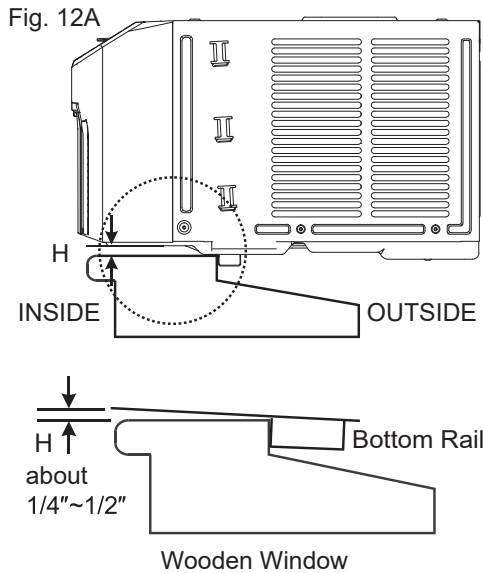
FOAM SEAL



B: Cut foam window seal and insert it into the space between the upper and lower sashes (Fig. 11).

8. Check Installation

Check that air conditioner is tilted back about 1/4" to 1/2" (tilted about 2° to 4° downward to the outside, see Fig. 12A&Fig. 12B). After proper installation, condensate should not drain from the overflow drain hole during normal use, correct the slope otherwise.

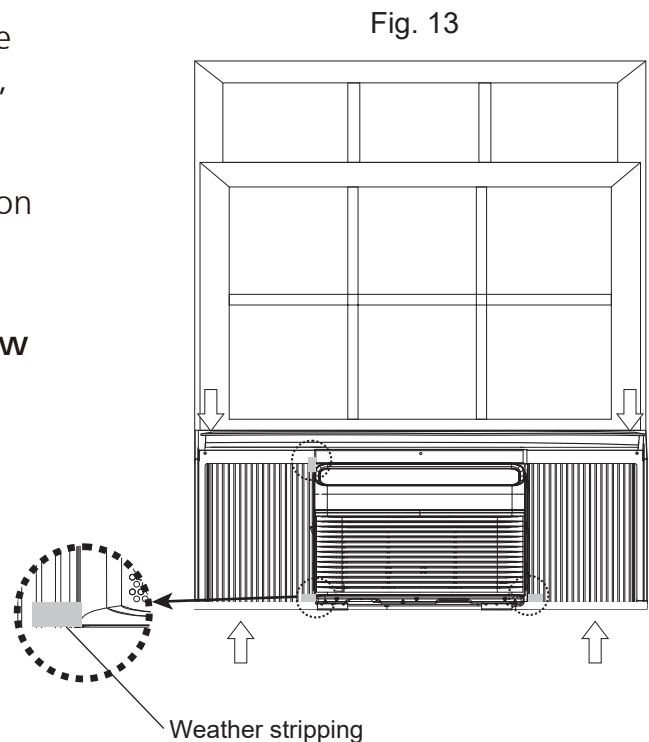


9. Suitable Weather Stripping

In order to minimize air/light leaks between the room air conditioner and the window opening, suitable weather stripping(trim the provided weather stripping into suitable size) should be applied in case of any gaps found at the location as indicated by the arrows in Fig. 13.

Removing the air conditioner From Window

- Turn the air conditioner off, and disconnect power cord.
- Remove sash seal from between windows, and unscrew sash lock.
- Remove screws installed through frame and framelock.
- Remove the insulation panel and close (slide) side panels into frame.
- Keeping a firm grip on air conditioner, raise sash and carefully remove.
- Be careful not to spill any condensate water while lifting unit from window. Store parts WITH air conditione.



Normal Sounds

NOTICE: The unit you purchased may look like one of the followings:

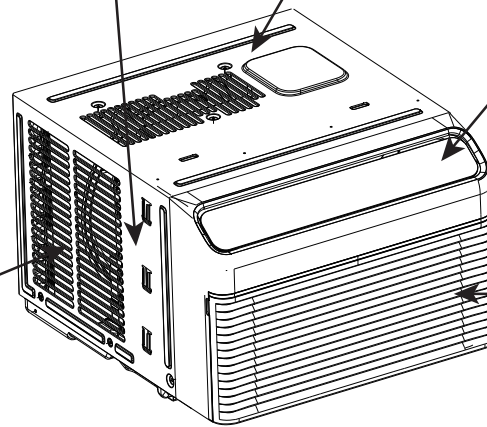
Normal Sounds/
Sound Performance

Vibration

Unit may vibrate and make noise because of poor wall or window construction or incorrect installation.

Trickling Sound

Droplets of water hitting condenser during normal operation may cause a trickling sound.



High Pitched Chatter

High efficiency compressors may have a high pitched sound during cooling cycle.

Sound of Rushing Air

In front of the unit, you may hear the sound of rushing air being moved by the fan.

Gurgle/Hiss

Gurgling or hissing noises may be heard due to refrigerant flowing through evaporator during normal operation.

NOTICE

All the illustrations in this manual are for explanation purpose only. The actual installation may vary.

Air Conditioner Features

⚠ WARNING

To reduce the risk of fire, electrical shock, or injury to people or property, read the SAFETY PRECAUTIONS before operating this appliance.

Cooling Operation	Outdoor temp.: 64°F ~ 109°F / 18°C ~ 43°C
	Indoor temp.: 60°F ~ 90°F / 16°C ~ 32°C
Heating Operation	Outdoor temp.: 41°F ~ 75°F / 5°C ~ 24°C
	Indoor temp.: 41°F ~ 80°F / 5°C ~ 27°C

NOTICE

- The relative humidity of the room should be less than 80%. If the unit is used in a condition with a relative humidity over 80%, there will be condensed water on the surface of the unit.
- Performance may be reduced outside of these operating temperatures.

NOTICE

Always wait 3 minutes when turning the unit off and then on again, or when changing from cool to fan and back to cool. This prevents damage from occurring to the compressor.

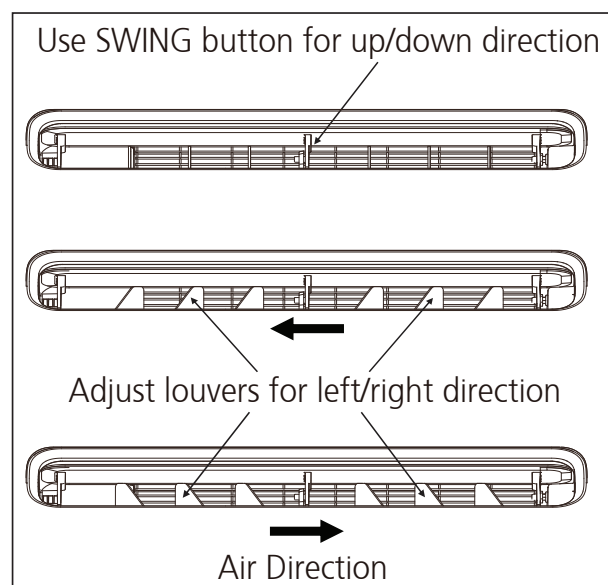
To begin operating the air conditioner, follow these steps:

1. Plug in the air conditioner (be sure to follow the power cord instructions).
2. Turn the power on to the air conditioner, using the ON/OFF button.
3. Set the thermostat to the coldest temperature setting.
4. Select the Cool mode setting.
5. Adjust the louver for comfortable air flow (see Air Directional Louvers).
6. Once the room has cooled, adjust the thermostat to the setting you find most comfortable.
7. Make sure the air flow inside and outside is not obstructed by anything

Air Directional Louvers

The louvers will allow you to direct the air flow up or down (on some models) and left or right throughout the room as needed. Use the SWING button until the desired up/down direction is obtained.

Move the louvers from side to side until the desired left/right direction is obtained.

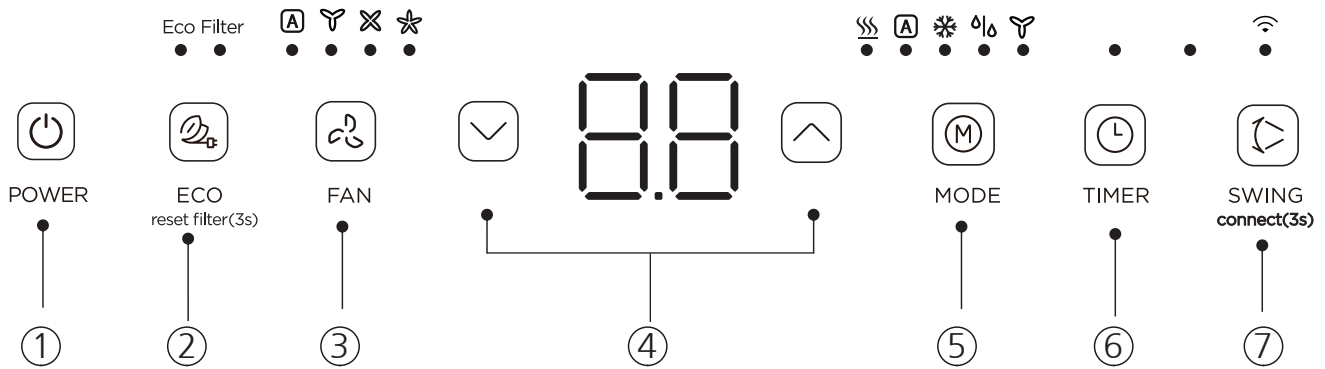


ELECTRONIC CONTROL OPERATING INSTRUCTIONS

NOTICE:

Different models have different control buttons and indicator lights. Not all the control buttons and indicator lights describing below are available for the unit you purchased. Please check the control panel of the unit you purchased.

The unit can be controlled by the unit control or with the remote.



Operation buttons

① POWER button

Press POWER button to turn unit on or off.

NOTE: The unit will automatically initiate the Energy Saver function under cool, Dry, and Auto modes.

② ECO button

Press ECO button to initiate this function. This function is available on COOL, DRY, and AUTO (only AUTO-COOLING and AUTO-FAN) modes. The fan will continue to run for 3 minutes after the compressor shuts off. The fan then cycles on for 2 minutes at 10 minute intervals until the room temperature is above the set temperature, at which time the compressor turns back on and Cooling Starts.

Press ECO button for 3 seconds to initiate the filter feature. This feature is a reminder to clean the Air Filter for more efficient operation. The LED(the light above the button) will illuminate after 250 hours of operation.

③ FAN button

Press Fan button to select the Fan Speed in four steps-Auto, Low, Med or High. Each time the button is pressed, the fan speed mode is shifted. For some models, the fan speed can not be adjusted.

④ button

Press or button to change temperature setting.

NOTE: Press or hold either or button until the desired temperature is shown on the display. This temperature will be automatically maintained anywhere between 60°F(16°C) and 86°F(30°C). If you want the display to read the actual room temperature, see "To Operate on Fan Only" section."

⑤ MODE button

To choose operating mode, press the MODE button. Each time you press the button, a mode is selected in a sequence that goes from Heat, Auto, Cool, Dry and Fan. The indicator light beside the button will be illuminated and will remain on once that mode is selected. The unit will automatically initiate the Energy Saver function under Cool, Dry, and Auto (only Auto-Cooling and Auto-Fan) modes.

1. To operate on Auto feature :

- When you set the air conditioner to Auto mode, it will automatically select cooling, heating or fan only operation, depending on what temperature you have selected and the current room temperature.
- The air conditioner will control the room temperature automatically based on the temperature you set.

- In this mode, the fan speed cannot be adjusted, it starts automatically at a speed according to the room temperature.

2. To operate on COOL mode :

- Choose Cool Mode to set the cooling function. Use the Up and Down buttons to choose the desired temperature. When Cool Mode is selected, the fan speed can be adjusted by pressing the fan button.

3. To operate on Dry mode :

- In this mode, the air conditioner will generally operate as a dehumidifier. Since the conditioned space is a closed or sealed area, some degree of cooling will continue. On Dry mode, the fan speed is not adjustable.

4. To operate on Fan Only :

- Use this function only when cooling is not desired, such as for room air circulation or to exhaust stale air(on some models). (Remember to open the vent during this function, but keep it closed during cooling for maximum cooling efficiency.) You can choose any fan speed you prefer.

- In Fan only mode, the temperature is not adjusted.

5. To operate on HEAT mode (Cooling models without):

- Choose Heat Mode to set the heating function. Use the Up and Down buttons to choose the desired temperature. When Heat Mode is selected, the fan speed can be adjusted by pressing the fan button.
- If the outdoor side temperature is lower than 41°F, the machine will stop running and display 'LO'.

⑥ **TIMER** button

- Press Timer button, the TIMER indicator light illuminates. It indicates the Auto Start or Auto Stop program is initiated. For some units, continuing to press the Timer button will cancel the timer settings.
- Press or hold the UP or DOWN button to change the Auto time by 0.5 hour increments, up to 10 hours, then at 1 hour increments up to 24 hours. The control will count down the time remaining until start.

- The selected time will register in 5 seconds, and the system will automatically revert back to display the previous temperature setting or room temperature when the unit is on. When the unit is off, there is no display.

- Turning the unit ON or OFF at any time or adjusting the timer setting to 0.0 will cancel the Auto Start/Stop timed program.

⑦ **SWING** button

Used to initiate the Auto swing feature. When the operation is ON, pressing the SWING button can stop the louver at the desired angle.

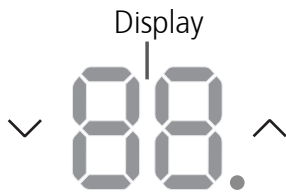
Wireless operation(on some models):

- For the first time to use Wifi function, press the SWING button for 3 seconds to initiate the Wifi connection mode. The LED DISPLAY shows 'AP' to indicate you can set Wifi connection. If connection (router) is successful within 8 minutes, the unit will exit Wifi connection mode automatically and the Wireless indicator illuminates. If connection is failure within 8 minutes, the unit exits Wifi connection mode automatically. After Wifi connection is successful, you can press and hold SWING and DOWN(⏏) buttons at the same time for 3 seconds to turn off Wifi function and the LED DISPLAY shows 'OF' for 3 seconds, press SWING and UP(⏏) buttons at the same time to turn on Wifi function and the LED DISPLAY shows 'On' for 3 seconds.

DISPLAYS

LED DISPLAYS:

Shows the set temperature in " °C " or " °F " and the Auto-timer settings. While on Fan only mode, it shows the room temperature. If the room temperature is too high or low, it will display " HI " or " LO ". The control is capable of displaying temperature in degrees Fahrenheit or degrees Celsius. To convert from one to the other, press and hold the Up and Down buttons at the same time for 3 seconds.



Error codes:

The unit may stop operation due to malfunction with the unit. If this occurs, an error code may appear on the display like below.

Wait 10 minutes as the problem may resolve itself. If not, disconnect the power, then connect it again. Turn the unit on.

If the problem persists, disconnect the power and contact customer service.

Error code appears and begins with the letters as the following in the window display of indoor unit: EH(xx), EL(xx), EC(xx), PH(xx), PL(xx), PC(xx).

NOTICE:

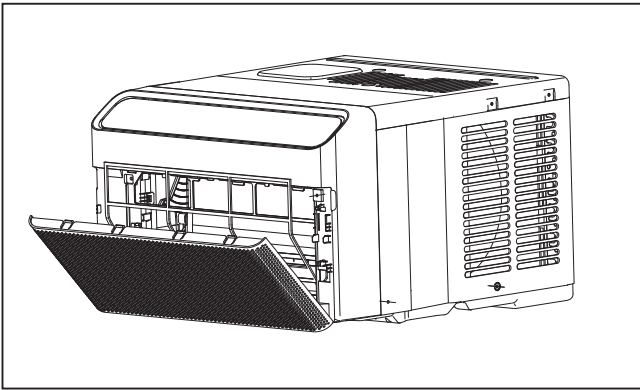
If the unit turns off unexpectedly due to the power being cut, it will automatically restart with the previous function setting when the power resumes.

Care and Cleaning

CAUTION

Clean your air conditioner occasionally to keep it looking new. Be sure to unplug the unit before cleaning to prevent shock or fire hazards.

Air Filter Cleaning



The air filter should be checked at least once every two weeks to see if cleaning is necessary. Trapped particles in the filter can build up and cause an accumulation of frost on the cooling coils and reduce performance.

- Grasp the filter by the center and pull up and out.
- Wash the filter using warm water. Rinse filter thoroughly
- Gently shake excess water from the filter. Be sure the filter is thoroughly dry before replacing.
- Instead of washing, you may also vacuum the filter clean rather than washing.

NOTICE:

Never use hot water over 104°F (40°C) to clean the air filter. Never attempt to operate the unit without the air filter.

Cabinet Cleaning

- Be sure to unplug the air conditioner to prevent shock or fire hazard. The cabinet and front may be dusted with an oil-free cloth or washed with a cloth dampened in a solution of warm water and mild liquid dishwashing detergent. Rinse thoroughly and wipe dry.
- Never use harsh cleansers, wax, or polish on the air conditioner.
- Be sure to wring excess water from the cloth before wiping around the controls. Excess water in or around the controls will cause damage to the air conditioner.
- Plug in air conditioner.

Winter Storage

If you plan to store the air conditioner during the winter, remove it carefully from the window according to the installation instructions. Be careful not to spill any potentially standing water from the unit's base pan. If water is present, carefully drain it. Cover the unit with plastic or return it to the original carton.

TROUBLESHOOTING TIPS

Before calling for service, review this list. It may save you time and money. This list includes common occurrences that are not the result of defective workman-ship or materials in this appliance.

Problem	Solution
Air conditioner does not start	Wall plug disconnected. Push plug firmly into wall outlet.
	House fuse blown or circuit breaker tripped. Replace fuse with time delay type or reset circuit breaker.
	Plug Current Device Tripped. Press the RESET button.
	Power is OFF. Turn power ON.
Air from unit does not feel cold enough	Room temperature below 60°F(16°C). Cooling may not occur until room temperature rises above 60°F(16°C).
	Temperature sensor behind the air filter is touching the cold coil. Try to move it so it does not contact the cold coil.
	Set to a lower temperature.
	Compressor stopped when changing modes. Wait for 3 minutes after set to the COOL mode
	Check for potential obstructions blocking the outdoor intake/exhaust. Clear any obstructions.
Air conditioner cooling, but room is too warm- ice forming on cooling coil behind air filter.	Outdoor temperature below 64°F(18°C). To defrost the coil, set FAN ONLY mode.
	Air filter may be dirty. Clean filter. Refer to Care and Cleaning section. To defrost, set to FAN ONLY mode.
	Thermostat set too cold for night-time cooling. To defrost the coil, set to FAN ONLY mode. Then, set temperature to a higher setting.
Air conditioner cooling, but room is too warm- NO ice forming on cooling coil behind air filter.	Dirty or restricted air filter. Clean air filter. Refer to Care and Cleaning section.
	Temperature is set too high, then, set temperature to a lower setting.
	Air directional louvers positioned improperly. Position louvers for better air distribution.
	Front of units is blocked by drapes, blinds, furniture, etc. - restricts air distribution. Clear blockage in front of unit.
	Any open doors, windows, or registers may allow cold air to escape. Close any doors, windows, or registers.
	The room may be too warm. Allow additional time to remove "stored heat" from walls, ceiling, floor, and furniture.
	Dirty or restricted air filter. Clean air filter.
Air conditioner turns on and off rapidly	Outside temperature extremely hot. Set FAN speed to a higher setting to bring air past cooling coils more frequently.
	Check for potential obstructions blocking the outdoor intake/exhaust. Clear any obstructions.
Noise when unit is cooling	It is normal to hear the airflow. If too loud, set to a slower FAN setting.
	Window vibration - poor installation. Refer to installation instructions or check with installer.

Troubleshooting Tips

Problem	Solution
Water dripping INSIDE when unit is cooling.	Improper installation. Tilt air conditioner slightly to the outside to allow water drainage. Refer to installation instructions - check with installer.
Water dripping OUTSIDE when unit is cooling.	Unit removing large quantity of moisture from humid room. This is normal during excessively humid days.
Remote Sensing Deactivating Prematurely (some models)	Remote control not located within range. Place remote control within 20 feet and pointed in the general direction of the air conditioner unit.
	Remote control signal obstructed. Remove obstruction.
Room too cold	Set temperature too low. Increase set temperature.
Noise when unit starts	A "da-da" sound may occur for thirty seconds when the unit is turned on due to the compressor starting. It is normal.
in Heating mode , Unit stops running and displays "LO"	When the outside ambient temperature rises above 43°F, the unit can automatically restart the heating mode.

The design and specifications are subject to change without prior notice for product improvement. Any updates to the manual will be uploaded to the Midea website (www.midea.com/us), please check for the current version.