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*Comfort-Caire*®

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# **OWNER'S MANUAL**

**Room Air Heat Pump  
with R-32:  
RAH-183R**



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## 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.

### CAUTION

Contact the authorized service technician for repair or maintenance of this unit.  
Contact the installer for installation of this unit.  
The air conditioner is not intended for use by young children or infirm persons without supervision.  
Young children should be supervised to ensure that they do not play with the air conditioner.  
If the power cord is to be replaced, replacement work must be performed by authorized personnel only.  
Installation work must be performed in accordance with the national wiring standards by authorized personnel only.

## Explanation of Symbols



Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



Indicates important but not hazard-related information, used to indicate risk of property damage.



Indicates a hazard that would be assigned a signal word WARNING or CAUTION.

## Exception Clauses

Manufacturer will bear no responsibilities when personal injury or property loss is caused by the following reasons.

1. Damage the product due to improper use or misuse of the product;
2. Alter, change, maintain or use the product with other equipment without abiding by the instruction manual of manufacturer;
3. After verification, the defect of product is directly caused by corrosive gas;
4. After verification, the defects are due to improper operation during transportation of product;
5. Operate, repair, maintain the unit without abiding by instruction manual or related regulations;
6. After verification, the problem or dispute is caused by the quality specification or performance of parts and components that produced by other manufacturers;
7. The damage is caused by natural calamities, bad using environment or force majeure.

If it needs to install, move or maintain the air conditioner, please contact dealer or local service center to conduct it at first. Air conditioner must be installed, moved or maintained by appointed unit. Otherwise, it may cause serious damage or personal injury or death.

When refrigerant leaks or requires discharge during installation, maintenance, or disassembly, it should be handled by certified professionals or otherwise in compliance with local laws and regulations.

## The refrigerant

|  |   |
|--|---|
|  A2L<br>Appliance filled with flammable gas R32.          |  Before install the appliance, read the installation manual first. |
|  Before use the appliance, read the owner's manual first. |  Before repair the appliance, read the service manual first.       |

- To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.
- Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozoneosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units there fore need a less filling.

### WARNING

- Appliance filled with flammable gas R32
- Appliance shall be installed, operated and stored in a room with a floor area larger than 4m<sup>2</sup>.
- The appliance shall be stored in a room without continuously operating ignition sources. (for example: open flames, an operating gas appliance or an operating electric heater.)
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Ducts connected to an appliance shall not contain an ignition source.
- Keep any required ventilation openings clear of obstruction.
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odour.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Servicing shall be performed only as recommended by the manufacturer.

- Should repair be necessary, contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous.
- Compliance with national gas regulations shall be observed.
- Read specialist's manual.



## Safety precautions

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- 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.
- Before operation, please confirm whether power specification complies with that on nameplate.
- Before cleaning or maintaining the air conditioner, please turn off air conditioner and pull out the power plug.
- Make sure the power cord hasn't been pressed by hard objects.
- Do not pull or drag the power cord to pull out the power plug or move the air conditioner.
- Do not insert or pull out the power plug with wet hands.
- Please use the grounded power. Make sure the grounding is reliable.
- 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.
- If abnormal condition occurs (e.g. burned smell), please disconnect power at once and then contact local dealer.
- When nobody is taking care of the unit, please turn it off and remove the power plug or disconnect power.
- Do not splash or pour water on air conditioner. Otherwise, it may cause short circuit or damage to air conditioner.
- Prohibit operating heating equipment around the air conditioner.
- Prohibit operating the unit in the bathroom or laundry room.
- Far away from fire source, inflammable and explosive objects.
- Children and disabled people are not allowed to use the portable room air conditioner without supervision.
- Keep children from playing or climbing on the air conditioner.
- Do not put or hang dripping objects above the air conditioner.
- Do not repair or disassemble the air conditioner by yourself.
- Do not block air outlet or air inlet.

## Safety precautions



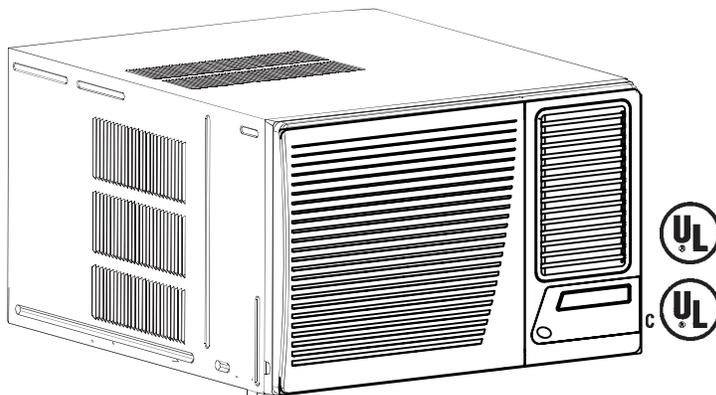
### WARNING

- Prohibit inserting any objects into the air conditioner.
- Do not through sundries into the air duct. If there are sundries get into the air duct, please contact the professionals to deal with it.
- Do not use an extension cord.
- Specification of fuse on the main board:T3.15AH250V, the maximum current passes through.
- The appliance shall be installed in accordance with national wiring regulations.
- The external static pressure is 0MPa for the air conditioner at the test position.
- The minimum clearance from the appliance to combustible surface:1.5m.
- As for the mode with electric heating, the electric heater is installed at the back side of indoor evaporator.Please refer to the Service Manual for details.
- If a STATIONARY APPLIANCE is not fitted with a SUPPLY CORD and a plug,an all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

## Operation environment

| Operating Temperature Range |                          |                           |
|-----------------------------|--------------------------|---------------------------|
|                             | Indoor side DB/WB(°F/°C) | Outdoor side DB/WB(°F/°C) |
| Maximum Cooling             | 90/73(32.2/22.8)         | 110/78(43.3/25.6 )        |
| Maximum RC Heating          | 80/- (26.7/ - )          | 75/65 (23.9/18.3)         |
| Maximum Electric Heating    | 77/ - (25/-)             | 77/ - (25/-)              |

Ambient temperature range (outdoor temperature) for cooling is 64-110°F(18-43.3°C),  
Ambient temperature range (outdoor temperature) for heat pump is 55-75°F(13-24°C),  
Ambient temperature range (outdoor temperature) for Electric Heating is 19-77°F(-7-25°C).



## Introduction

Room air conditioners cool, dehumidify, and filter air inside your home. Heat pump and electric heat models offer both heating and cooling. Opening sections of manual provide general information for all room air conditioner models. Operating Controls section describes operation of controls for each model. After reading the opening sections, turn to Operating Controls section and find the panel layout that matches the model of your unit.

Read entire manual thoroughly before beginning installation and operation of your new room air conditioner. Be sure you have all necessary tools and materials on hand for the job. Study illustrations to familiarize yourself with important details of the installation process. Review manual for operating instructions.

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. Children should be supervised to ensure that they do not play with the appliance.

## Safety Information

Be sure electrical service is adequate for chosen model of air conditioner. Complete electrical rating for unit is found on serial plate located behind front grille. Electrical outlet must be close enough to unit for power cord to reach without strain. Air conditioner should be the only appliance on individual circuit.

For personal safety and to avoid possible damage to appliance or home, observe all safety instructions highlighted by symbol shown below.

## NOTICE:

1. Mechanical experience is required to install air conditioner.
2. Installation can take from 1 to 3 hours, depending on installer's knowledge and skill.
3. If you encounter problems during installation, call our consumer information line at (86-756) 8617555. If your problem cannot be resolved by phone, contact an authorized GREE® brand servicer. Contact and service will be at your expense.
4. Do not install or place anything in the air inlet and air outlet of window type unit, in order to avoid affecting performance.



## RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.

After installing unit, reread instructions to ensure each step is complete and that all parts are fastened in place. For best results and to minimize installation time, perform all procedures in the order shown.

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.



## WARNING

Instructions for installation and use of this product are provided by the manufacturer.

To prevent heat related illness or death, do not use this device for unattended cooling of persons or animals unable to react to product failure. Failure of unattended air conditioner may result in extreme heat in area intended for cooling, causing heat-related illness or death of persons or animals.



## WARNING

### HIGH TEMPERATURE STRESS HAZARD

This room air conditioner is not meant to provide unattended cooling or life support for persons or animals that are unable to react to failure of the product.

The failure of an unattended air conditioner may result in extreme heat in the conditioned space causing overheating or death of persons or animals.

Precautions must be taken to ward off or guard against such an occurrence.

## Unpacking

Unpack and visually inspect the unit. Report any damage to the delivering carrier immediately. Remove and discard all packing material.



## WARNING

Do NOT operate unit with shipping foam blocks in place. Always remove prior to running unit.

On some models the air conditioner front and/or mounting kit hardware may be packed separately.

Record the model, serial and manufacturing numbers of your unit in the space provided below. This information is found on a nameplate visible after the front of the air conditioner has been removed. The rated voltage, amperage and capacity for your specific model can also be found on this nameplate.

Read the warranty packaged with the unit. Keep the warranty and a copy of your sales receipt for future reference. You may also want to record in the space provided the date purchased and the selling dealer.

## OWNER'S PRODUCT IDENTIFICATION

MODEL NUMBER

SERIAL NUMBER

MANUFACTURING NUMBER

Owner's Name

Address

City State Zip

/ /

Date of Purchase

Authorized Dealer

Address

City State Zip

( )

Phone Number



## WARNING

To avoid death, personal injury or property damage due to electrical shock:

- Observe all local codes and ordinances.
- Disconnect electrical power to unit before servicing.
- Ground appliance properly.
- Check with a qualified electrician if you are not sure this appliance is properly grounded.
- DO NOT ground to gas line.
- DO NOT ground to cold water pipe if pipe is interrupted by plastic, non-metallic gaskets, or other insulating (non-conducting) materials.
- DO NOT modify plug on power cord. If plug does not fit electrical outlet, have proper outlet installed by qualified electrician.
- DO NOT have a fuse in the neutral or ground circuit. A fuse in the neutral or ground circuit could result in an electrical shock.
- DO NOT use an extension cord with this appliance.
- DO NOT use an adapter plug with this appliance.
- DO NOT pinch power cord.
- DO NOT REMOVE warning tag from power cord.

## Electrical Requirements

### Grounding Instructions

This appliance is equipped with a three-prong grounding plug for protection against possible shock hazards. If a two-prong

| Unit Plug Type  | Receptacle Required   | Circuit Rating, Breaker, Time Delay Fuse | Voltage Rating On Nameplate                                  |
|---|---|--|--|
| NEMA No. 5-15P<br> | NEMA No. 5-15R<br> | 125V-15AMP                               | 115V   |
| NEMA No. 6-15P<br> | NEMA No. 6-15R<br> | 250V-15AMP                               | 230/208V rated at 12 amperes or less                         |
| NEMA No. 6-20P<br> | NEMA No. 6-20R<br> | 250V-20AMP                               | 230/208V rated over 12 amperes, but not more than 16 amperes |
| NEMA No. 6-30P<br> | NEMA No. 6-30R<br> | 250V-30AMP                               | 208V rated over 16 amperes, but not more than 24 amperes     |

When a two-prong wall receptacle is encountered, the customer is required to contact a qualified electrician and have the two-prong wall receptacle replaced with a properly grounded three-prong wall receptacle in accordance with the National Electrical Code.

Room air conditioners are designed to operate according to requirements on the nameplate and as shown in Table 1. Fuse or circuit breaker ratings must be according to the fuse instruction label and as shown in Table 1. Do not plug models marked "Use on Single Outlet Circuit Only" into a circuit with another appliance or light fixture.

#### Receptacle Wiring

Receptacle wiring must be of adequate size for unit. Refer to unit identification plate for exact power requirements. Minimum size of wiring, based on power requirements, is:

Units up to 20 amps: 12 gauge  
20–30 amp units: 10 gauge

#### LCDI or AFCI Power Cords

Underwriters Laboratories (UL) and the National Electric Code (NEC) now require power cords that sense current leakage and can open the electrical circuit to the unit. In the event, the unit does not operate, check the reset button located on or near the head of the power cord as part of the normal troubleshooting procedure.

Use copper wire only. Consumer's responsibility is to provide proper and adequate receptacle wiring that conforms to all applicable codes. All wiring should be installed by qualified electrician.

#### Installation

Complete step-by-step installation instructions are furnished with your unit. These instructions will be found on a separate

page included with this manual or in the mounting kit assembly. Follow these instructions carefully. Keep these instructions with this manual for future reference. Your unit will be one of the following three designs:

- Unit with a window mounting kit  
These models are designed for mounting through an opening in a wall. These units can be adapted to window installation by using the optional window mounting kit supplied with your unit.
- Unit without a window mounting kit  
No window mounting kit is supplied with the unit. These models are designed for mounting through an opening in a wall. These units can be adapted to window installation by purchasing an optional window mounting kit. Consult your dealer to choose the kit that is appropriate for your model and installation.

#### Room Heat Pumps

Heat pumps work by moving heat instead of creating it. In the summer, the cool indoor coil absorbs heat from your room and moves it outdoors, providing cooling. In the winter, heat pumps reverse this operation. By lowering the temperature of the outdoor coil below the outdoor temperature, the heat pump absorbs the heat from outdoors and moves it inside your house. This heat transferring process is very efficient. For example, at 45°F outdoor temperature, a heat pump can provide 2 ½ watts of heat for every watt of electricity it consumes.

As outdoor temperatures drop, the heating capacity and efficiency of the heat pump declines. At temperatures below 45°F, it is likely that ice will form on the outdoor coil. Heat pump units are designed to operate as a heat pump above approximately 40°F. Below 40°F, these units switch automatically from reverse cycle heat pump to auxiliary electric heating. No defrost is required. There is no minimum operating temperature.

#### Normal Care and Maintenance



#### CAUTION

Installing an air conditioner through a wall requires extensive carpentry and/or masonry experience. Thru-wall installations performed by inexperienced or unqualified individuals can result in costly damage to home.

#### Annual Inspection

It is suggested that your unit be inspected by your dealer or servicer once a year. It is advisable to have the outer case removed and the unit thoroughly cleaned.

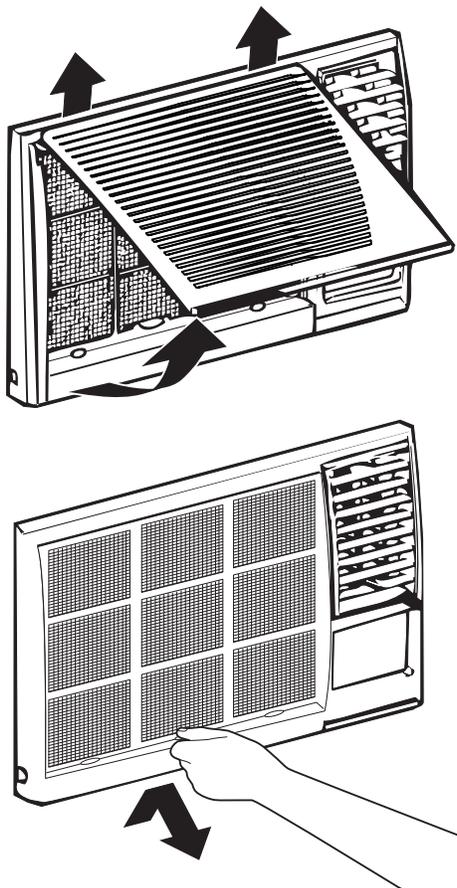
**NOTICE:** The life of your unit may be greatly reduced if you live in a salt air or other corrosive type environment. Under these conditions, the unit should be removed from its case and completely cleaned at least once a year. At that time any scratches or blisters on the painted surfaces should be sanded and repainted. Placing an algaecide tablet in the outdoor side of the unit's basepan is suggested in humid areas where algae formation is common.

#### Front Grille and Filter Removal

The front contains a removable grille that provides easy access to the air filter. To clean the filter use one of the following methods for filter removal:

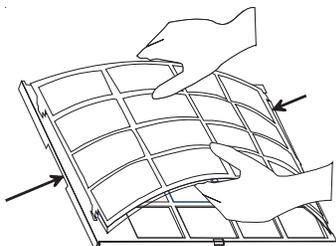
#### METHOD ONE

Grasp filter handle and slide filter out of unit.



#### Optional Air Filter Installation

Remove air filter from plastic bag. Insert three tabs on right side of filter into three slots on filter frame. Carefully bow middle of filter until two tabs on filter can be inserted into two slots on filter frame. Relax bow.



Reinstall air filter and grille by reversing removal procedure.

#### Front Grille and Cabinet Cleaning

Grille and cabinet may be cleaned with warm water and mild soap or detergent. Cleaning and polishing compounds are not recommended, as they may damage plastic surfaces.

#### Air Filter Cleaning

A dirty air filter reduces operating efficiency of unit. Filter should be inspected at least once every week during operation. Clean filter with vacuum cleaner or wash in warm water and mild detergent. Filter should be thoroughly dried before replacing in unit. Do not operate unit without filter in place.

#### Fan Motor Care

The fan motor is permanently lubricated for long life. There is no need to oil the motor.

#### Slide-out Chassis Removal from Outer Case

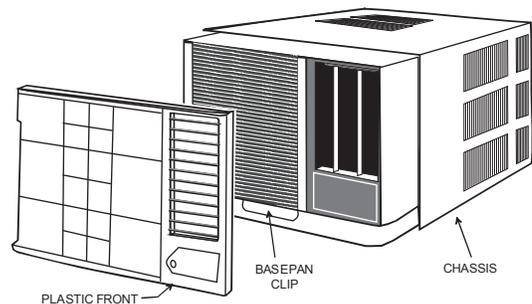
1. Remove front grille by sliding grille to left and pulling out.
2. Remove air filter by sliding to left.
3. Remove four screws holding plastic front to unit and remove front.
4. If the unit has a screw holding the basepan clip to the chassis, remove the screw.



#### CAUTION

To reduce the risk of personal injury be sure to have sufficient help when moving your unit. A room air conditioner can weigh between 70 and 240 pounds.

5. Using basepan handle, pull chassis straight out, slowly and evenly, until approximately 9-12 inches extends from outer case. Use both hands to grasp basepan and pull remaining chassis from outer case.



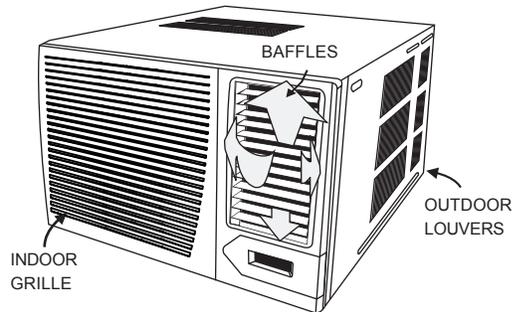
**NOTE:** Basepan clip is shipped in plastic bag with mounting screw and condensate drain cup. Install clip after reinserting chassis into outer case to prevent accidental chassis removal.

## General Operating Instructions

While operation of all units is similar, controls vary slightly from model to model. Operating Controls section shows control panel of unit purchased and gives detailed information about operation of controls.

## Initial Start-Up and Cooling

Select the highest fan speed and set temperature control to its coldest position. When the desired temperature is reached, slowly move the temperature control toward a warmer setting until the compressor shuts off. The thermostat will then cycle the compressor on and off to maintain this selected temperature. Adjust the fan speed for desired air circulation.



## Changing Airflow Direction Baffles

Airflow on unit may be diverted left or right from center by baffles. Upward and downward air discharge is provided by tilting louvers. Adjust baffles and tilt louvers for desired airflow pattern.

## Airflow Around Unit

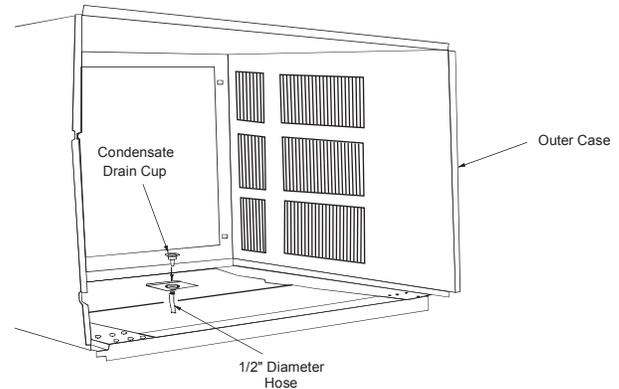
Check the indoor grille and outdoor louvers for obstructions to airflow. Do not block the airflow to and from the unit. If air is obstructed and/or deflected back into the unit, the air conditioner's compressor may cycle on and off rapidly. This could damage your unit.

## Drain Cup Installation and Use (on some models)

Your air conditioner uses a system where the water removed from the indoor air (condensate) is channeled to the outdoor side of the unit. The outdoor fan blade has a "slinger" ring attached to it that dips into the water and slings the water onto the outdoor coil surface. This is the sound of water you hear during normal operation. The water quickly evaporates on this warm surface and improves the efficiency of your air conditioner. In normal conditions the unit can evaporate the water as fast as it is removed from the indoor air.

However, in very humid conditions excess amounts of water may drip off the unit chassis. If this proves to be a problem, install the condensate drain cup included with the unit to route excess water where it would not be a problem (see illustration below).

To install, remove the unit chassis from the outer case. Insert the condensate drain cup through the recessed  $\frac{1}{2}$ " hole on the right side bottom flange of the outer case. Once inserted, place a  $\frac{1}{2}$ " diameter hose or tube on the drain cup bottom spout. The hose allows you to route where you want the excess water to go. Reinsert the unit chassis into the outer case. The unit basepan overflow hole will be positioned directly above the drain cup and will catch any water that might run out.



# Installation Requirements

## IMPORTANT SAFETY INSTRUCTIONS

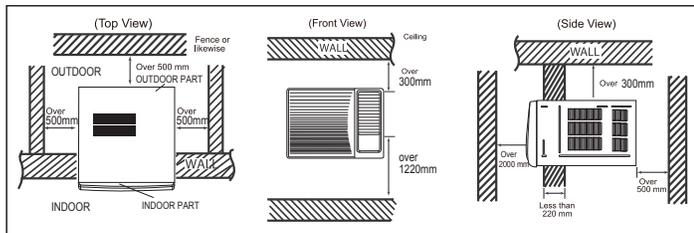
**⚠ WARNING:** To reduce the risk of fire, electrical shock or injury when using your air conditioner, follow these basic precautions:

- Plug into a grounded 3 prong outlet.
- Do not remove ground prong.
- Do not use an adapter.
- Do not use an extension cord.
- Unplug air conditioner before servicing.
- Use two or more people to move and install air conditioner.

SAVE THESE INSTRUCTIONS

### How to install:

Choose a location where there are no any obstacle surrounding the unit, and the plug is accessible. Choose the installation space according to the following diagram.



The distance between the air conditioner 300mm and the around obstacles should meet the requirement as below:

- over 300mm(upper side), over 1220mm(downdside),
- over 500mm(left side), over 500mm(right side),
- over 2000mm(front side) and over 500mm(rear side).



## BEFORE YOU BEGIN

Read these instructions completely and carefully.

- **IMPORTANT** — Save these instructions for local inspector's use.
- **IMPORTANT** — Observe all governing codes and ordinances.
- Note to Installer — Be sure to leave these instructions with the Consumer.
- Note to Consumer — Keep these instructions for future reference.
- Skill level — Installation of this appliance requires basic mechanical skills.
- Completion time — Approximately 1 hour
- 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 Warranty.

## I ELECTRICAL REQUIREMENTS

The 3-prong grounding plug minimizes the possibility of electric shock hazard. If the wall outlet you plan to use is only a 2-prong outlet, it is your responsibility to have it replaced with a properly grounded 3-prong wall outlet.



Some models require 230/208-volt a.c., protected with a time delay fuse or circuit breaker. These models should be installed on their own single branch circuit for best performance and to prevent overloading house or apartment wiring circuits, which could cause a possible fire hazard from overheating wires.



## CAUTION

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 this air conditioner.

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

## TOOLS YOU WILL NEED



Adjustablewrench



Phillips head screwdriver



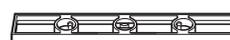
Flat-bladescrewdriver



Pencil



Ruler or tapemeasure



Level

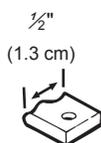


Scissors or knife

Power cord includes a current interrupter device. A test and reset button is provided on the plug case. The device should be tested on a periodic basis by first pressing the TEST button and then the RESET button. If the TEST button does not trip or if the RESET button will not stay engaged, discontinue use of the air conditioner and contact a qualified service technician.



- 208/230-volt (198min. - 253 max.)
- 0-16 amps
- 20-amp time-delay fuse or circuit breaker
- Use on single outlet circuit only.



- 230-volt (207 min. - 253 max.)
- 0-24 amps
- 30-amp time-delay fuse or circuit breaker
- Use on single outlet circuit only.

## Electrical Requirements

### ⚠ WARNING



#### Electrical Shock Hazard

- Plug into a grounded 3 prong outlet.**
- Do not remove ground prong.**
- Do not use an adapter.**
- Do not use an extension cord.**
- Failure to follow these instructions can result in death, fire, or electrical shock.**

Ground wire must be connected to ground screw located in lower right corner of air conditioner when air conditioner is in cabinet.

The electrical ratings for your air conditioner are listed on the model and serial number label. The model and serial number label is located behind the front panel on the flange below the control panel area.

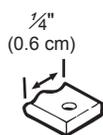
Specific electrical requirements are listed in the chart below. Follow the requirements for the type of plug on the power supply cord.

#### Power supply cord

#### Wiring requirements



- 115-volt (103.5 min. - 126.5 max.)
- 0-12 amps
- 15-amp time-delay fuse or circuit breaker
- Use on single outlet circuit only.



- 230-volt (207 min. - 253 max.)
- 0-12 amps
- 15-amp time-delay fuse or circuit breaker
- Use on single outlet circuit only.

#### Recommended grounding method

This air conditioner must be grounded. This air conditioner is equipped with a power supply cord having a grounded 3 prong plug. To minimize possible shock hazard, the cord must be plugged into a mating, grounded 3 prong outlet, grounded in accordance with all local codes and ordinances. If a mating outlet is not available, it is the customer's responsibility to have a properly grounded 3 prong outlet installed by a qualified electrical installer.

It is the customer's responsibility:

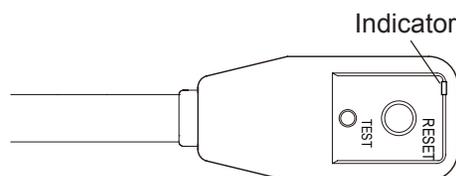
- To contact a qualified electrical installer.
- To assure that the electrical installation is adequate and in conformance with National Electrical Code, ANSI/NFPA 70 - latest edition, and all local codes and ordinances.

Copies of the standards listed may be obtained from:

National Fire Protection Association  
One Batterymarch Park  
Quincy, MA 02269

#### Power Supply Cord

**NOTICE:** Your unit's device may differ from the ones shown.



This room air conditioner is equipped with a power supply cord required by UL. This power supply cord contains state-of-the-art electronics that sense leakage current. If the cord is crushed, the electronics detect leakage current and power will be disconnected in a fraction of a second.

## **WARNING**



### Electrical Shock Hazard

Plug into a grounded 3 prong outlet.

Do not remove ground prong.

Do not use an adapter.

Do not use an extension cord.

Failure to follow these instructions can result in death, fire, or electrical shock.

To test your power supply cord:

1. Plug power supply cord into a grounded 3 prong outlet.
2. Press RESET.
3. Press TEST (listen for click; Reset button will trip and pop out).
4. Press and release RESET (listen for click; Reset button will latch and remain in). The power supply cord is ready for operation.

### **NOTICE:**

- The Reset button must be pushed in for proper operation.
- The power supply cord must be replaced if it fails to trip when the test button is pressed or fails to reset.
- Do not use the power supply cord as an off/on switch. The power supply cord is designed as a protective device.
- A damaged power supply cord must be replaced with a new power supply cord obtained from the product manufacturer and must not be repaired.
- The power supply cord contains no user serviceable parts. Opening the tamper-resistant case voids all warranty and performance claims.

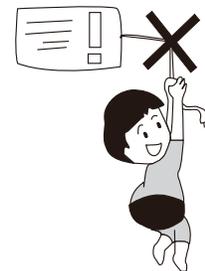
## Requirements for Electric Connection

### Safety precaution

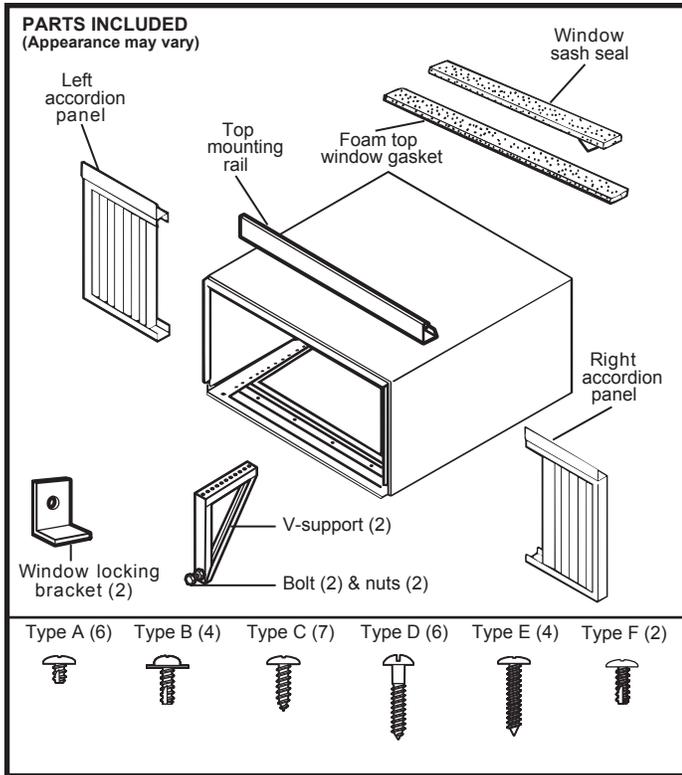
1. Must follow the electric safety regulations when installing the unit.
2. According to the local safety regulations, use qualified power supply circuit and air switch.
3. Make sure the power supply matches with the requirement of air conditioner. Unstable power supply or incorrect wiring may result in electric shock, fire hazard or malfunction.
4. Please make sure the power supply complies with the requirement of air conditioner. Unstable power supply or wrong wiring may lead to electric shock, fire hazard or malfunction.
5. Properly connect the live wire, neutral wire and grounding wire of power socket.
6. Be sure to cut off the power supply before proceeding any work related to electricity and safety.
7. Do not put through the power before finishing installation.
8. The air conditioner is first class electric appliance. It must be properly grounding with specialized grounding device by a professional. Please make sure it is always grounded effectively, otherwise it may cause electric shock.
9. The yellow-green wire or green wire in air conditioner is grounding wire, which can't be used for other purposes.
10. The grounding resistance should comply with national electric safety regulations.

### Electric wiring

- Must connect with ground reliably.
- The exclusive circuit must be used. But removable socket can't be used because poor contact of it can cause over heat or fire.
- Don't pull the power cord strongly.
- Connecting method between air conditioners and power cord and interconnecting method of each individual element with one another should accord with wiring diagram on the unit.
- The air conditioner should be installed in accordance with national wiring regulation.
- An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- Air switch (thermal-magnetic breaker) should be installed in the circuit.

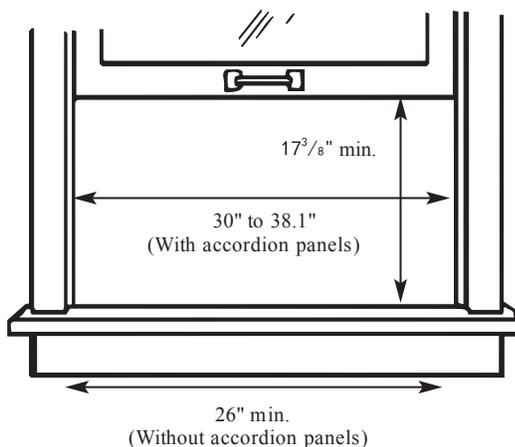


# Installation Instructions



## 1 WINDOW REQUIREMENTS

- These instructions are for a standard double-hung window. You will need to modify them for other types of windows.
- The air conditioner can be installed without the accordion panels if needed to fit in a narrow window. See the window opening dimensions.
- All supporting parts must be secured to firm wood, masonry or metal.
- The electrical outlet must be within reach of the power cord.



## 2 STORM WINDOW REQUIREMENTS

A storm window frame will not allow the air conditioner to tilt toward the outside, and will keep it from draining properly. To adjust for this, attach a piece of wood to the stool.

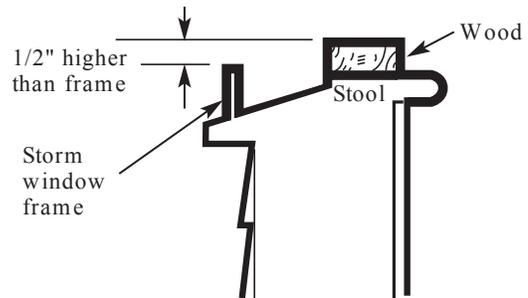
### WOOD PIECES-

WIDTH: 2"

LENGTH: Long enough to fit inside the window frame.

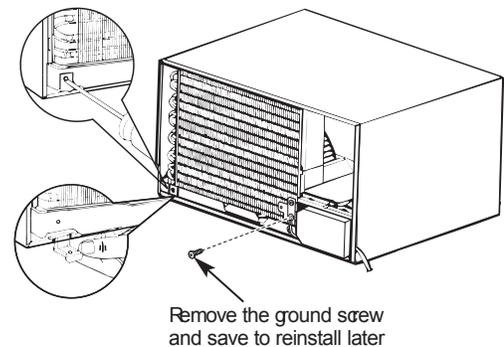
THICKNESS : To determine the thickness, place a piece of wood on the stool to make it 1/2" higher than the top of the storm window frame.

Attach securely with nails or screws provided by the installer.

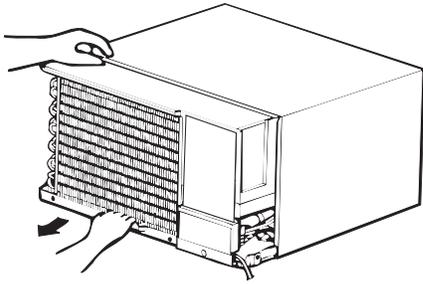


## 3 REMOVE THE AIR CONDITIONER FROM THE CASE

- A Remove the locking screw and locking bracket from the lower frame. Save to reinstall later.
- B Remove the ground screw and save to reinstall later.

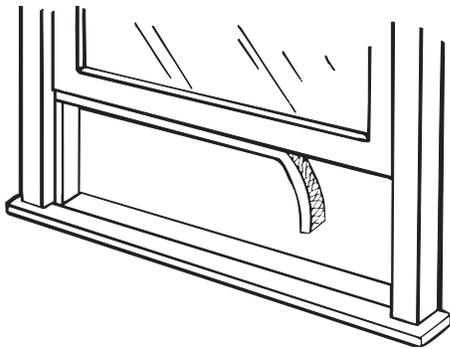


- C Slide the air conditioner from the case by gripping the base pan handle and pulling forward while bracing the case.



#### 4 PREPARE THE WINDOW

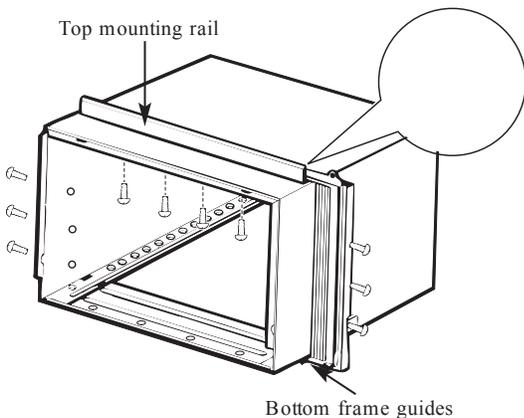
Cut the window sash seal to the proper length. Peel off the backing and attach the seal to the underside of the window sash.



#### 5 PREPARE THE CASE

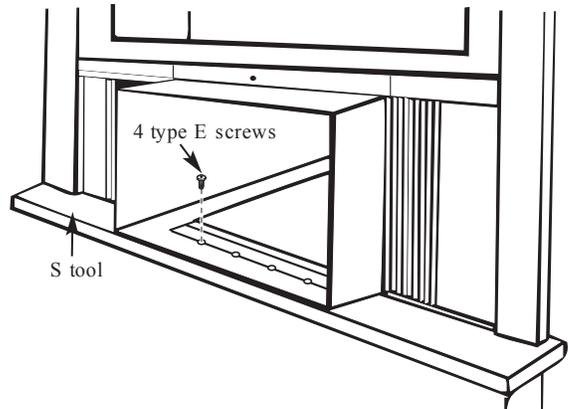
- A Install the top mounting rail with 4 type B screws from the inside of the case.
- B Insert the frames for the accordion panels into the top mounting rail and the bottom frame guides. Attach the accordion panels to the side of the case using 3 type A screws on each side.

**Note:** When attaching the accordion panels, make sure to only screw the inner panels to the case sides.

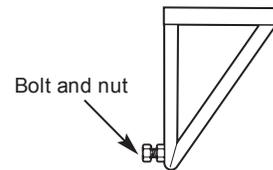


#### 6 INSTALL THE CASE IN THE WINDOW

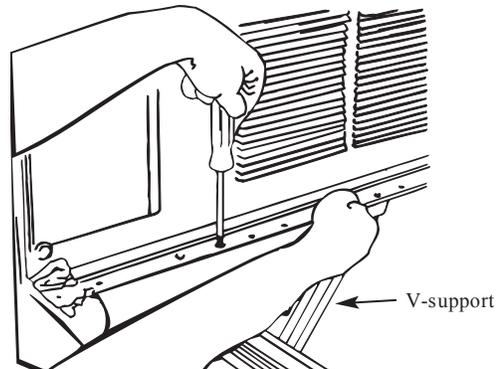
- A Carefully slide the case into the window and center the case. Lower the window behind the top mounting rail. Pull the bottom of the case forward so that the bottom mounting rail is tight against the back of the window stool. Mount the case to the window sill using 4 type E screws. Drill pilot holes, if necessary.



- B Make sure the bolts and nuts are all of the way in both the left and right V-supports.

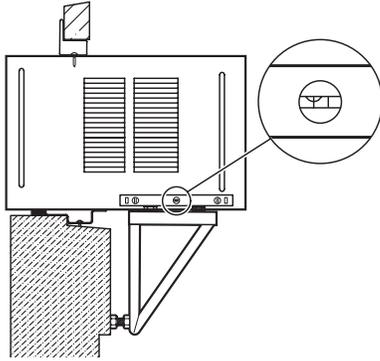


- C Position the V-supports on the case bottom so that they will be near the outside wall. Attach a V-support to each side of the bottom of the case using type C screws, 3 on each side.

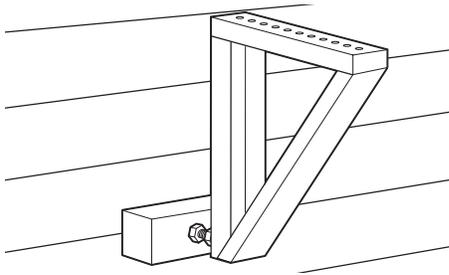


**6** INSTALL THE CASE  
IN THE WINDOW (cont.)

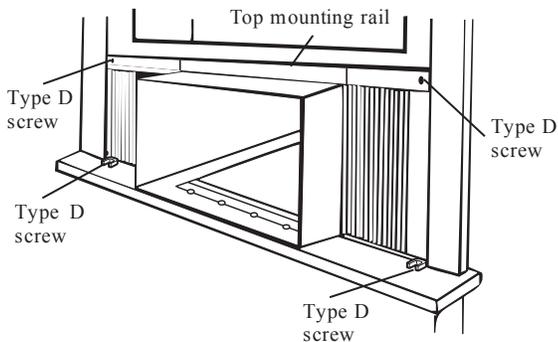
**D** Adjust the leveling bolts and nuts against the outside wall so that the case has a slight tilt to the outside. Tighten nuts with an adjustable wrench. Use a level; about a 1/2 bubble will be the correct case slant to the outside.



**E** Use a wood block (obtained locally) between the leveling bolts and the wall if the wall is weak or if the weight of the air conditioner falls between the studs in the wall.

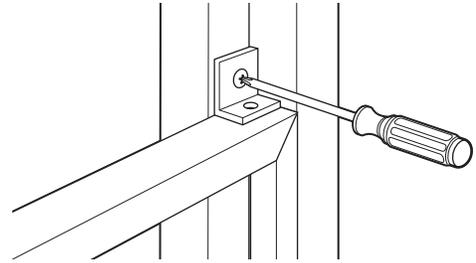


**F** Extend the left and right accordion panels to the vertical window sashes. Drill pilot holes and attach the top and bottom corners with 4 type D screws.



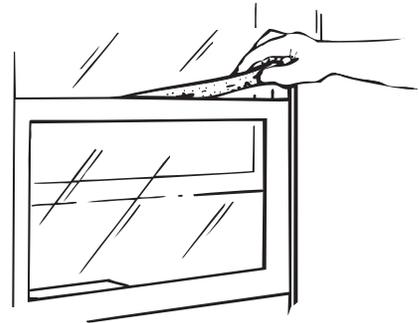
**7** INSTALL SUPPORT BRACKETS  
AND THE FOAM TOP WINDOW  
GASKET

**A** Attach the support brackets with two type D screws, one on each side.



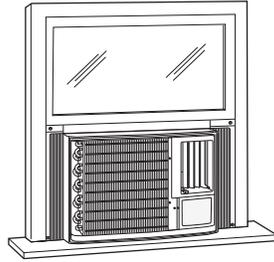
**B** Cut the foam top window gasket to the window width.

**C** Stuff the foam between the glass and the window to prevent air and insects from getting into the room.

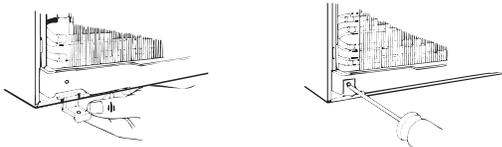


## 8 INSTALL THE AIR CONDITIONER IN THE CASE

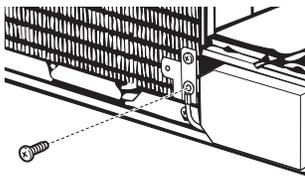
- A** Slide the air conditioner into the case. Do not push on the controls or the finned coils. Make sure the air conditioner is firmly seated.



- B** Reinstall the locking bracket and screw removed earlier.

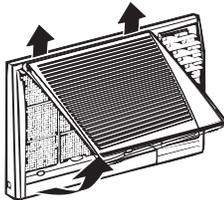


- C** Reconnect the ground wire to the air conditioner using the screw removed earlier. **IMPORTANT:** The ground wire must be reinstalled to ensure a proper ground.

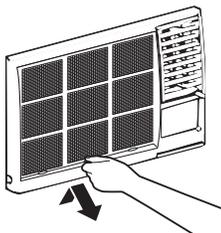


- D** Remove the front grille from its box and remove the shipping tape.

- E** Grasp the inlet grille at the bottom corners and pull it forward. Unhook it from its top hinges and set it aside.

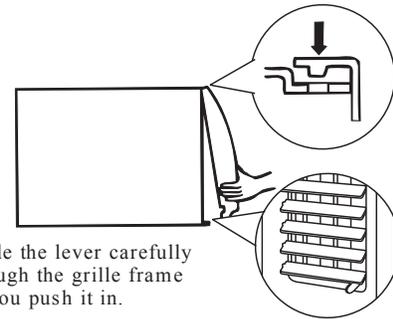


- F** Using the tab, pull up slightly on the filter to release it and pull it down and out.

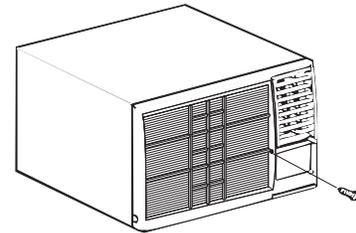


## 8 INSTALL THE AIR CONDITIONER IN THE CASE (cont.)

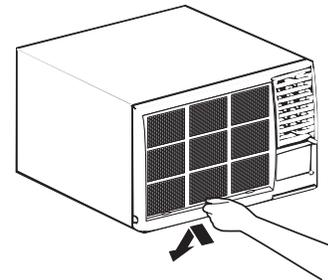
- G** Pull the coiled power cord from its shipped position in the air discharge area. Attach the front grille frame to the case by inserting the tabs on the grille frame into the slots on the front top of the case. Push the grille frame in. And install the 2 type F screws at bottom left and right side of front panel.



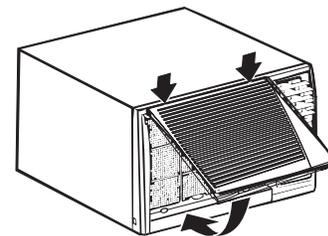
- H** Secure the front grille frame to the case with one type C screw.



- I** Reinstall the filter.



- J** Reinstall the inlet grille. Connect power.



## Operating Controls(For Electronic units)

Operating your air conditioner properly helps you to obtain the best possible results.

This section explains proper air conditioner operation.

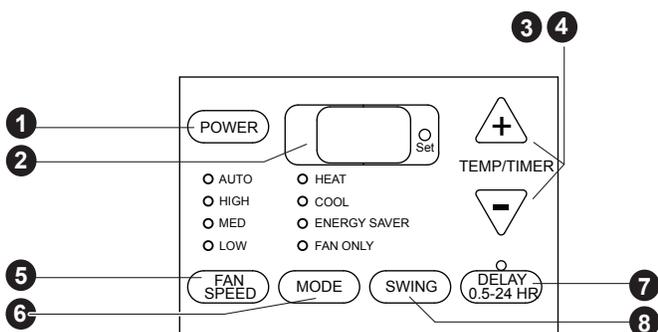
### IMPORTANT:

- If you turn off the air conditioner, wait at least 3 minutes before turning it back on. This prevents the air conditioner from blowing a fuse or tripping a circuit breaker.
- Do not try to operate your air conditioner in the cooling mode when outside temperature is below 61°F (16°C). Do not try to operate your air conditioner in the heating mode when outside temperature is over 86°F (30°C). The inside evaporator coil will freeze up, and the air conditioner will operate properly.

**NOTICE:** In the event of a power failure, your air conditioner will operate at the previous settings when the power is restored.

Lights next to the touch pads on the air conditioner control panel indicate the selected settings.

The display shows the set temperature when in Heat/Cool/Energy Saver mode. Shows time remaining on the delay timer. Shows the room temperature when in Fan Only mode.



**Air Conditioner Controls**

## Controls

### 1 Power Pad

Turns air conditioner on and off.

### 2 Display

Shows the set temperature when in Heat/Cool/Energy Saver mode. Shows time remaining on the delay timer. Shows the room temperature when in Fan Only mode. The Set light will turn on while setting.

### 3 Temp Increase▲/Decrease▼Pads

Use to set temperature when in Heat (on some models)/Cool/Energy Saver. The **Set** light will turn on while setting. Press **Increase(+)** and **Decrease(-)** Pads at the same time for 3 seconds, Temperature display will change between °F and °C.

### 4 Delay Timer Increase▲(+)/Decrease▼(-) Pads

Each touch of the **Increase▲/Decrease▼** pads on the unit will set the delay time when using the **Delay 0.5–24hr** timer (⌚).

The **Set** light will turn on while setting.

### 5 Fan Speed Pads

Use to set the fan speed to **Low, Med, High** or **Auto** on the unit.

### 6 Mode Pad

Use to set the air conditioner to **Cool, Energy Saver, Fan Only** or **Heat** (on some models) mode.

### 7 Delay Pads

**Delay ON**—When the air conditioner is off, it can be set to automatically come on in 0.5 to 24 hours at its previous mode and fan settings.

**Delay OFF**—When the air conditioner is on, it can be set to automatically turn off in 0.5 to 24 hours.

#### How to set:

Press the **Delay 0.5–24hr** pad on the unit or the ⌚ pad on the remote control. Each touch of the **Increase▲/Decrease▼** pads on the unit will set the timer in 0.5 hour or 1 hour intervals (the intervals is 0.5 hour as the delay timer below 10 hours; the intervals is 1 hour as the delay timer above 10 hours). The **Set** light will turn on while setting.

To review the remaining time on the **Delay 0.5-24hr** timer, press the **Delay 0.5-24hr** pad on the unit. Use the **Increase▲/Decrease▼** pads on the unit to set a new time if desired.

To **cancel the timer**, press the **Delay 0.5-24hr** and until the light on the **Delay 0.5-24hr** and goes off.

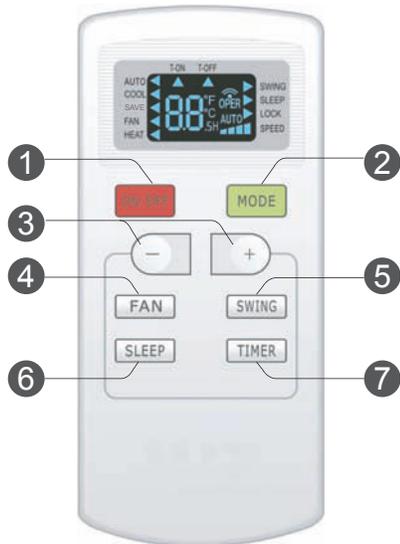
### 8 Swing Pad

Under swing status, press swing button to cancel swing function; under non-swing status, press swing button to set swing function.

If set swing function when the fan is operating, the swing motor will operate.

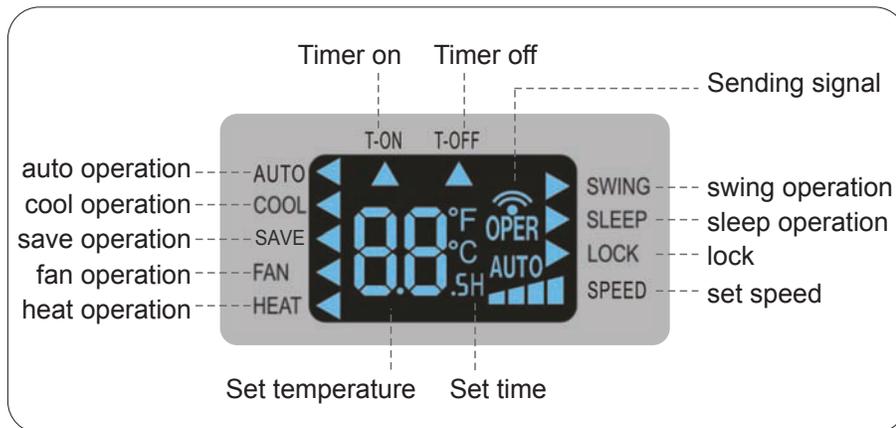
If the unit is swinging under heat-blowing status, swing and the fan will operate simultaneously. If the fan is at OFF status, swing function can't be started up even by pressing swing button.

## Buttons on remote controller



- ① ON/OFF button
- ② MODE button
- ③ +/- button
- ④ FAN button
- ⑤ SWING button
- ⑥ SLEEP button
- ⑦ TIMER button

## Introduction for icons on display screen



## Introduction for buttons on remote controller

### NOTICE:

- This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model doesn't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- When power is connected(stand by condition), you can operate the air conditioner through the remote controller.
- When unit is on, each time you press the button on remote controller, the sending signal icon "📶" on the display of remote controller will blink once. If the air conditioner gives out a beep sound, it means the signal has been sent.
- When unit is off, set temperature will be displayed on the remote controller (If the light of indoor unit display is turned on, the corresponding icon will be displayed); When unit is on, it will display the icon of the on-going function.

### 1 ON/OFF button

Press this button to turn unit on/off.

### 2 MODE button

Pressing this button once can select your required mode circularly as below (the corresponding icon "◀" will be lit up after the mode is selected):



- When selecting auto mode, air conditioner will operate automatically according to ambient temperature. Set temperature can't be adjusted and won't be displayed either. Press FAN button to adjust fan speed. (The auto mode is not available for this model.)
- When selecting cool mode, air conditioner will operate under cool mode. Then press + or - button to adjust set temperature. Press FAN button to adjust fan speed.
- When selecting save mode, air conditioner will operate under save mode.
- When selecting fan mode, air conditioner will operate in fan mode only. Then press FAN button to adjust fan speed.
- When selecting heat mode, air conditioner will operate under heat mode. Then press + or - button to adjust set temperature. Press FAN button to adjust fan speed. (Cooling only unit can't receive heating mode signal. If set HEAT mode by remote controller, press ON/OFF button can't turn on the air conditioner.)

### 3 + / - button

- Pressing + or - button once will increase or decrease set temperature by 1°F(°C). Hold + or - button for 2s, set temperature on remote controller will change quickly. Release the button after your required set temperature is reached.
- When setting Timer On or Timer Off, press + or - button to adjust the time. (See TIMER Button for setting details)

### 4 FAN button

Pressing this button can select fan speed circularly as: AUTO, SPEED 1 (▲), SPEED 2 (▲▲), SPEED 3 (▲▲▲), SPEED 4 (▲▲▲▲).



#### NOTICE:

- Under Auto speed, air conditioner will select proper fan speed automatically according to ambient temperature.
- There are 3 speeds for the Fan Speed of this model.

### 5 SWING button

Press this button to turn on left&right air swing.

Notice: Swing operation only designed for 18K models, if press the swing operation button on the remote controller, the 9K,12K unit will keep the original running status.

### 6 SLEEP button

Under Cool, Heat mode, press this button to turn on Sleep function. Press this button to cancel Sleep function. Under Fan and Auto mode, this function is unavailable.

### 7 TIMER button

- When unit is on, press this button to set Timer Off. T-OFF and H icon will be blinking. Within 5s, press + or - button to adjust the time for Timer Off. Pressing + or - button once will increase or decrease the time by 0.5h. Hold + or - button for 2s, time will change quickly. Release the button after your required set time is reached. Then press TIMER button to confirm it. T-OFF and H icon will stop blinking.
- When unit is off, press this button to set Timer On. T-ON and H icon will be blinking. Within 5s, press + or - button to adjust the time for Timer On. Pressing + or - button once will increase or decrease the time by 0.5h. Hold + or - button for 2s, time will change quickly. Release the button after your required set time is reached. Then press TIMER button to confirm it. T-ON and H icon will stop blinking.
- Cancel Timer On/Off: If Timer function is set up, press TIMER button once to review the remaining time. Within 5s, press TIMER button again to cancel this function.

#### NOTICE:

- Range of time setting is: 0.5~24h
- The interval between two motions can't exceed 5s, otherwise the remote controller will exit setting status.

## Function introduction for combination buttons

### Child lock function

Press "+" and "-" buttons simultaneously can turn on or turn off child lock function. When child lock function is started up, LOCK indicator on remote controller is ON. If you operate the remote controller, remote controller won't send signal.

### Temperature display switchover function

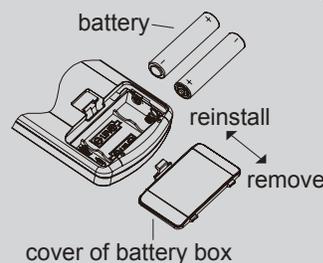
Under OFF status, press "-" button and "MODE" button simultaneously can switch between °C and °F.

## Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, SAVE, FAN, HEAT.
3. Press "+" or "-" button to set your required temperature. (Temperature can't be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "SWING" button to select fan blowing angle.

## Replacement of batteries in remote controller

1. Press the back side of remote controller on the spot marked with "", and then push out the cover of battery box along the arrow direction.
2. Replace two No.7 (AAA 1.5V) dry batteries and make sure the positions of + and- polar are correct.
3. Reinstall the cover of battery box.



### NOTICE

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

# Preventative Maintenance

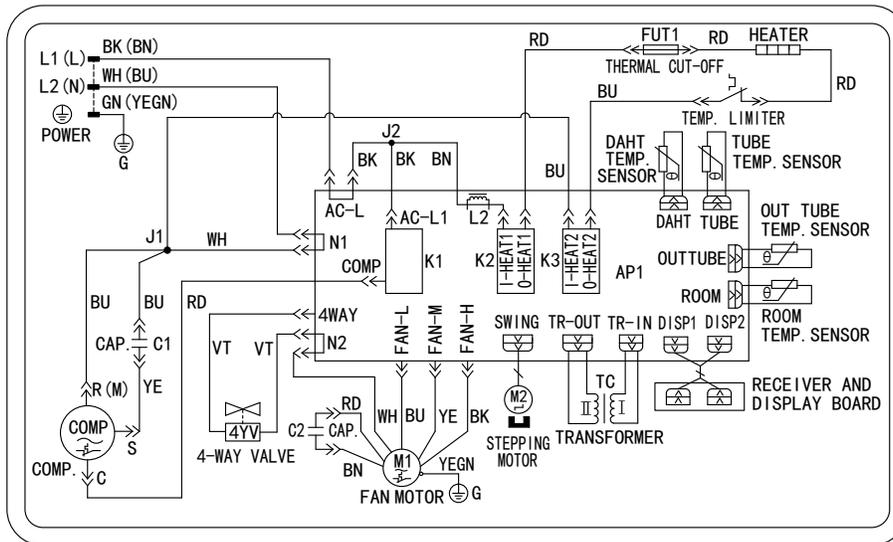
## Qualification of workers

Qualification of the working personnel for maintenance, service and repair operations should according to UL 60335-2 -40, CAN/CSA-C22.2 No. 60335-2-40-19 Annex HH.. Every working procedure that affects safety means shall only be carried out by competent persons according to Annex HH. Special training additional to usual refrigerating equipment repair procedures is required when equipment with FLAMMABLE REFRIGERANTS is affected.

## Electric schematic diagram

The electric schematic diagram are subject to change without notice. Please refer to which one on the unit.

RAH-183R



## Before Calling Service



### WARNING

**To reduce the risk of electric shock, personal injury, or death, turn the fan control to the off position and remove the unit plug from the wall outlet before doing any inspection or maintenance work.**

The following is a list of problems that are sometimes encountered when using a room air conditioner. Possible cause and suggested remedies are given for each problem.

If the problem cannot be fixed using the suggested remedies, see WHEN SERVICE IS REQUIRED section.

| PROBLEM  | POSSIBLE CAUSE  | SUGGESTED REMEDY   |
|--|---|--|
| UNIT WILL NOT RUN  | No power to unit  | Push reset button on power cord.<br>Set Fan Control to position other than OFF.<br>Make sure plug is firmly seated in outlet.<br>Check for blown fuses, tripped circuit breakers.  |
| LITTLE OR NO COOLING<br>LITTLE OR NO HEATING<br>(fan and compressor run) | Fresh air/exhaust damper open<br>Obstructed indoor or outdoor airflow<br>Dirty air filters<br>Unit undersized for application   | Set vent to CLOSED.<br>Remove obstruction from indoor grille or outdoor louvers.<br>Dirty air filter. Clean or replace, as needed.<br>Check with dealer to determine proper capacity unit for application.                             |
| LITTLE OR NO COOLING<br>LITTLE OR NO HEATING<br>(only fan runs)          | Temperature Control not set properly  | For cooling, turn Temperature Control to cooler setting.<br>For heating, turn Temperature Control to warmer setting.   |
| NOISY UNIT   | Loose front on mounting assembly<br>Weak building construction<br>Water hitting fan blade<br>Unit oversized for application:<br>compressor cycles on and off frequently | Tighten any loose parts.<br>Provide additional support for unit.<br>Normal in high humidity. Stop noise by removing drain plug or adding condensate drain cup.<br>Check with dealer to determine proper capacity unit for application. |
| MOUNTING SUPPORT NOT INSTALLED   | Storm window frame installed in window  | Some models require removal of storm window frame before installation.   |
| FROST ON INDOOR COIL   | Dirty air filter<br>Normal for low outdoor temperatures   | Clean air filter by vacuuming or washing with water and mild soap.<br>Turning Temperature Control to warmer setting reduces occurrence and duration of frost.  |
| FROST ON OUTDOOR COIL<br>(heat pump models only)                         | Normal for outdoor temperatures at or below 45°F  | Call for service only if unit does not heat room and you have checked all problems and remedies listed under LITTLE OR NO HEATING.   |
| ODORS IN COOLING   | Mold, mildew, or algae formation on wet surfaces  | To reduce algae growth, use algacide tablet in base pan; remove drain plug; add condensate drain cup and hose. Thoroughly clean unit.  |
| ODORS IN HEATING   | Normal for first time electric heater is used each season   | Caused by dust accumulation during unused months.<br>Odor dissipates quickly with heater use.  |

### When Service Is Required

Your room air conditioner dealer can give you the name of your nearest Authorized Service Center. Help them give you prompt service by providing:

- An accurate description of problem.
- Complete model, serial, and manufacturing (P) numbers from serial plate.
- Proof of purchase (sales receipt) upon request.

Repair by unauthorized servicer that results in subsequent failure of unit voids warranty. Warranty details are contained in warranty certificate enclosed with unit.

Keep accurate records of service calls, including what was done, servicer's name, and date of service.

### Any Questions?

Most questions can be answered by your local dealer. If you have other matters that cannot be resolved locally, or you need additional information regarding other heating and cooling products offered by us - please call:

#### CONSUMER INFORMATION LINE

**Tel: (86-756) 8617555 (Customer Service Center)**

**Web Site: <http://www.gree.com.cn>**

# Thru-wall Installation Instructions

## Kit RS100 for GREE® brand Compact Room Air Conditioner

### Introduction

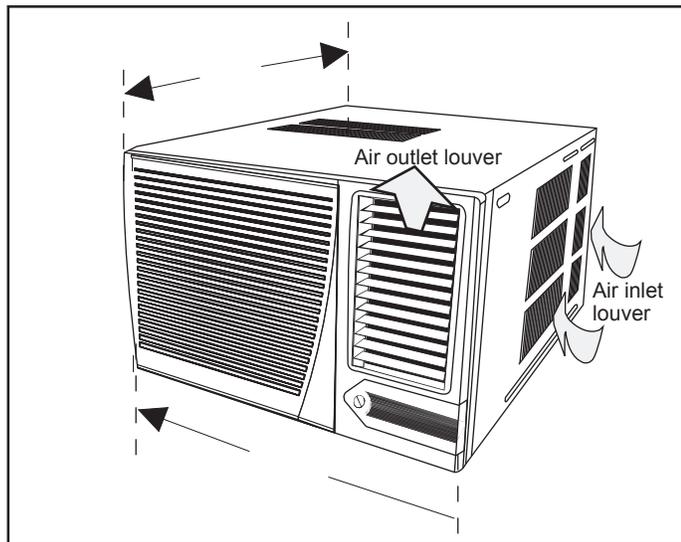
This instruction sheet provides guidelines for installing a compact air conditioner through an outside wall.

### CAUTION

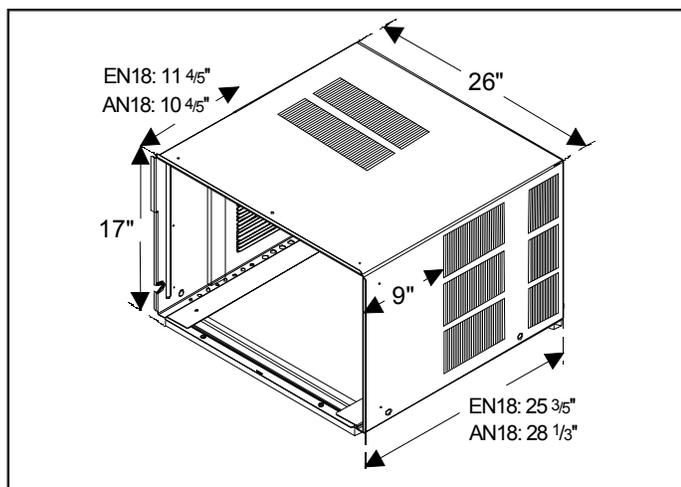
Installing an air conditioner through a wall requires extensive carpentry and/or masonry experience. Thru-wall installations performed by inexperienced or unqualified individuals can result in costly damage to home.

### Air Conditioner Dimensions

The following figures show the outside dimensions of air conditioner with chassis installed, and dimensions of outer case with chassis removed.



Air Conditioner Dimensions  
(with chassis installed)



Outer Case Dimensions  
(chassis removed)

### General Instructions

All GREE® brand Compact Room Air Conditioners feature a slide-out chassis. Chassis and front cover must be removed from outer case for installation.

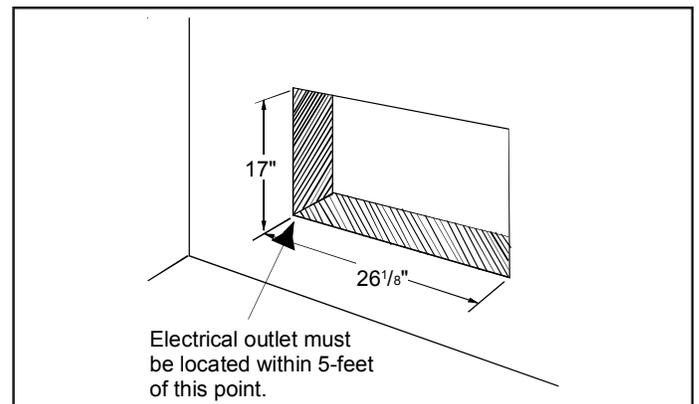
### CAUTION

In order to reinstall the chassis and reattach the air conditioner front cover, the installed outer case must be square and level from side to side. Use wood shims between sides of case and finished opening—especially where case is secured to opening—to prevent warping or distorting. Check installed case for distortion using carpenter's square.

Do not install or place anything in the air inlet and air outlet of window type unit, in order to avoid affecting performance.

A finished opening 26<sup>1</sup>/<sub>8</sub>-inches wide x 17-inches high is recommended. The lower left inside corner of opening must be within 5 feet of an appropriate electrical outlet (see Use and Care manual for electrical requirements.)

When wall thickness exceeds 9 -inches, opening must be modified to allow air to enter side louvers on case (see special instructions on back ). Do not install air conditioner in walls thicker than 11<sup>2</sup>/<sub>5</sub>-inches.



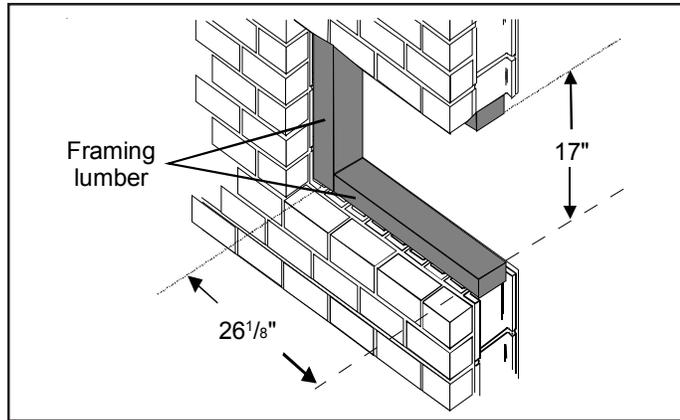
Dimensions of Finished Opening

### Masonry Construction

**See CAUTION under General Instructions.** In masonry walls, cut or build a finished opening 17-inches high by 26<sup>1</sup>/<sub>8</sub>-inches wide. When case is properly positioned in opening, secure it in place with mortar or concrete nails driven through holes in sides of outer case (shim case and predrill holes before securing with nails).

## Brick Veneer or Frame Wall Construction.

**See CAUTION under General Instructions.** Cut or build rough opening large enough to allow a framed, finished opening 17-inches high and 26<sup>1</sup>/<sub>8</sub>-inches wide. When case is properly positioned in opening, secure it to framing material with nails or screws driven through holes in sides of outer case (shim case and predrill holes before securing).



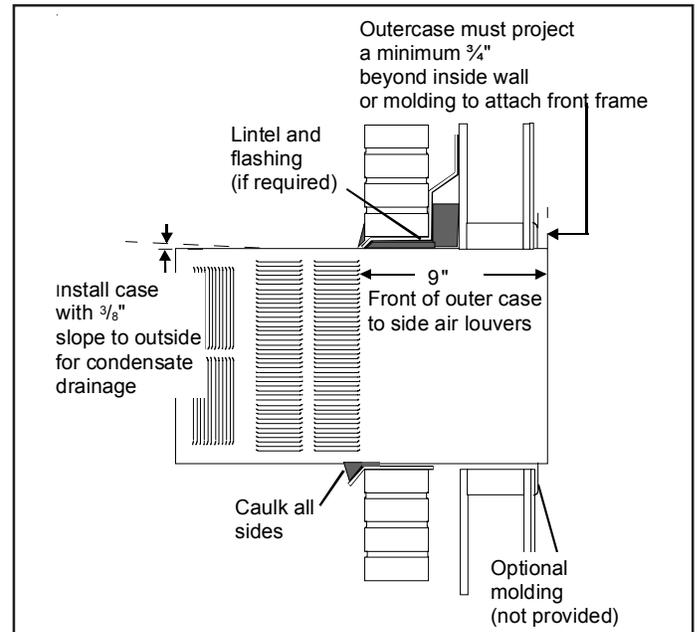
Framed/Finished Opening  
(brick veneer or frame wall construction)

## Placement of Outer Case in Opening

Place outer case in opening, flush against one side of opening. Use carpenter's level and ensure case is level from side to side and has a <sup>3</sup>/<sub>8</sub>-inch slope from front to back (back of case must be <sup>3</sup>/<sub>8</sub>-inch lower than front to ensure proper condensate drainage). If needed, use shims to level case (from side to side) and to obtain proper back slope.

Front of case must project <sup>3</sup>/<sub>4</sub>-inch (minimum) beyond inside wall in order to attach air conditioner front frame. If framing indoor side of opening with wood molding (or other decorative material), extend outer case <sup>3</sup>/<sub>4</sub>-inch beyond molding.

When case is properly positioned in opening, use wood shims to fill any gaps between case and finished opening, especially in area where case will be secured to opening. **Take care not to warp or distort case when installing shims.** For condensate drainage, install drainage cup in drain hole on baseplate of case.

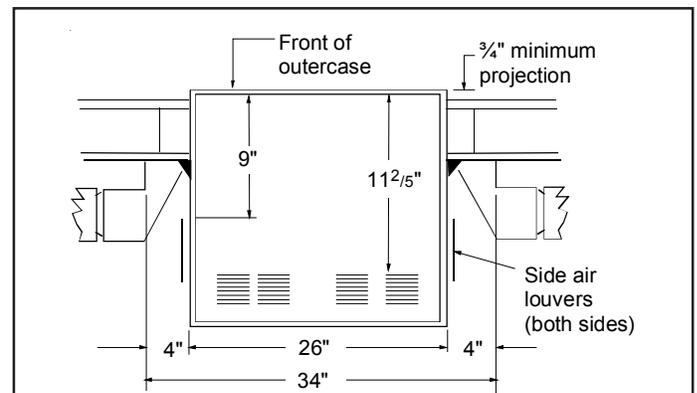


Installed Case  
(brick veneer or frame wall construction shown)

## Installation in Wall Thicker Than 9-inches

The side louvers in outer case provide ventilation to air conditioner compressor and fan motor and must not be blocked. When installing unit in a wall over 9-inches thick, provisions must be made in wall opening to ensure free air flow to the side louvers. This can be accomplished by chamfering the vertical portions of the outside opening as shown.

Ventilation louvers on top of case must not be obstructed. Do not attempt to install unit in walls thicker than 11<sup>2</sup>/<sub>5</sub>-inches.



Chamfering Walls Thicker Than 9-inches

# Specialist's manual

## Aptitude requirement for maintenance man (repairs should be done only by specialists).

- a. 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 authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
- b. 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.

## Safety preparation work

The maximum refrigerant charge amount is shown on the following table a.

(Note: Please refer to the nameplate for the charging quantity of R32).

| Minimum room area (m <sup>2</sup> ) | Charge amount (kg) | ≤0.921 | 1.3  | 1.4  | 1.5  | 1.6 | 1.7  | 1.8  | 1.9  | 2    | 2.1  | 2.2  | 2.3  | 2.4  | 2.5  |
|-------------------------------------|--------------------|--------|------|------|------|-----|------|------|------|------|------|------|------|------|------|
|                                     | floor location     | /      | 14.5 | 16.8 | 19.3 | 22  | 24.8 | 27.8 | 31   | 34.3 | 37.8 | 41.5 | 45.4 | 49.4 | 53.6 |
| window mounted                      | /                  | 5.2    | 6.1  | 7    | 7.9  | 8.9 | 10   | 11.2 | 12.4 | 13.6 | 15   | 16.3 | 17.8 | 19.3 |      |
| wall mounted                        | /                  | 1.6    | 1.9  | 2.1  | 2.4  | 2.8 | 3.1  | 3.4  | 3.8  | 4.2  | 4.6  | 5    | 5.5  | 6    |      |
| ceiling mounted                     | /                  | 1.1    | 1.3  | 1.4  | 1.6  | 1.8 | 2.1  | 2.3  | 2.6  | 2.8  | 3.1  | 3.4  | 3.7  | 4    |      |

table a - Maximum charge (kg)

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.

- 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.

- 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

- 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 toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

- Presence of fire extinguisher

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

- No ignition sources

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

- 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.

- 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 actual refrigerant charge 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

## Specialist's manual

are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

- Checks to electrical devices

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

Initial safety checks shall include:

- That capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;
- That no live electrical components and wiring are exposed while charging, recovering or purging the system;
- That there is continuity of earth bonding.

### Repairs to sealed components

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.

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 the apparatus is mounted securely.
- Ensure that seals or sealing materials have not degraded to the point 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.

### 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.

Note :

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

### 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.

### 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.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, 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 also 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.

NOTE Examples of leak detection fluids are

- bubble method,
- fluorescent method agents.

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. Removal of refrigerant shall be according to Clause Removal and evacuation.

### Removal and evacuation

When breaking into the refrigerant circuit to make repairs – or for any other purpose –conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be

## Specialist's manual

followed, since flammability is a consideration. The following procedure shall be adhered to:

- a) safely remove refrigerant following local and national regulations;
- b) purge the circuit with inert gas;
- c) evacuate (optional for A2L);
- d) purge with inert gas (optional for A2L);
- e) open the circuit by cutting or brazing.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

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

### 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 in an appropriate position according to the instructions.
- 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 the appropriate purging gas.

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.

### 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 reuse of reclaimed refrigerant. It is essential that electrical power is available before the task is commenced.

- a) Become familiar with the equipment and its operation.
- b) Isolate system electrically.
- c) Before attempting the procedure, ensure that:
  - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
  - all personal protective equipment is available and being used correctly;
  - the recovery process is supervised at all times by a competent person;
  - recovery equipment and cylinders conform to the appropriate standards.
- d) Pump down refrigerant system, if possible.
- e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
- f) Make sure that cylinder is situated on the scales before recovery takes place.
- g) Start the recovery machine and operate in accordance with manufacturer's instructions.
- h) Do not overfill cylinders. (No more than 80 % volume liquid charge).
- i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
- j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- k) Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

### Labelling

Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

### 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

## Specialist's manual

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that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge are available. All cylinders to be used are designated for the recovered refrigerant and 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 all appropriate refrigerants including, when applicable, flammable refrigerants. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct 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.

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## LIMITED EXPRESS WARRANTY

Congratulations on purchasing your new HVAC equipment. It's been designed for long life and reliable service, and is backed by one of the strongest warranties in the industry. Your unit automatically qualifies for the warranty coverage listed below, providing you keep your proof of purchase (receipt) for the equipment and meet the warranty conditions.

### LIMITED ONE (1) YEAR EXPRESS WARRANTY

Comfort-Aire warrants this Room Air Conditioner to be free from defects in workmanship and materials for normal use and maintenance for one (1) year from the date of purchase by the original consumer. This Express Limited Warranty applies only when the Room Air Conditioner is installed and operated per Comfort-Aire installation and operating instructions for normal use.

### EXCEPTIONS

The Limited Express Warranty does not cover normal maintenance. Comfort-Aire recommends that regular inspection/maintenance be performed at least once a season. Additionally, labor charges, diagnostic charges, transportation charges for replacement of refrigerant or filters, and any other service calls/repairs are not covered by this Limited Warranty. It also does not cover any portion or component of the system that is not supplied by Comfort-Aire, regardless of the cause of failure of such portion or component.

### CONDITIONS FOR WARRANTY COVERAGE

Unit must be operated according to Comfort-Aire operating instructions included with the unit and cannot have been subjected to accident, alteration, improper repair, neglect or misuse, or an act of God (such as a flood)

- Serial numbers and/or rating plate have not been altered or removed
- Performance cannot be impaired by use of any product not authorized by Comfort-Aire, or by any adjustments or adaptations to components
- Damage has not been a result of inadequate wiring or voltage conditions, use during brown-out conditions, or circuit interruptions
- Air flow around any section of the unit has not been restricted
- Unit remains in the original installation

### DURATION OF WARRANTY & REGISTRATION

The warranty begins on the date of purchase by the original consumer. The consumer must retain a receipted bill of sale as proof of warranty period. Without this proof, the express warranty begins on the date of shipment from the factory.

### REMEDY PROVIDED BY THE LIMITED EXPRESS WARRANTY

The sole remedy under the Limited Warranty is replacement of the defective unit. Labor to diagnose and replace the defective unit is not covered by this Limited Express Warranty. If for any reason the replacement product is no longer available during the warranty period, Comfort-Aire shall have the right to allow a credit in the amount of the current suggested retail price of the product instead of providing replacement.

### LIMITATION OF LIABILITY

1. There are no other express or implied warranties. Comfort-Aire makes no warranty of merchantability. We do not warrant that the unit is suitable for any particular purpose or can be used in buildings or rooms of any particular size or condition except as specifically provided in this document. There are no other warranties, express or implied, which extend beyond the description in this document.
2. All warranties implied by law are limited in duration to the one-term of the warranty. **We will not be liable for any consequential or incidental damages caused by any defect in this unit.**
3. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Some states do not allow limitation on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.
4. No warranties are made for units sold outside the continental United States and Canada. Your distributor or final seller may provide a warranty on units sold outside these areas.
5. Comfort-Aire will not be liable for damages if our performance regarding warranty resolution is delayed by events beyond our control including accident, alteration, abuse, war, government restrictions, strikes, fire, flood, or other acts of God.

### HOW TO SUBMIT A WARRANTY CLAIM

If you have a warranty claim, notify your installer or dealer promptly.



Please visit  
[www.marsdelivers.com](http://www.marsdelivers.com)  
to register your new product

### KEEP THIS INFORMATION AS A RECORD OF YOUR PURCHASE

#### PRODUCT IDENTIFICATION

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

Date of Purchase \_\_\_\_\_

#### INSTALLATION

Installer Name (if used) \_\_\_\_\_

Phone Number/Contact Information \_\_\_\_\_

Date Installation Completed \_\_\_\_\_

Remember to retain your bill of sale as proof of warranty period.

Comfort-Aire\_5-2023

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website, please check for the latest version.

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Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.

Incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

*Comfort-Cire*<sup>®</sup>



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