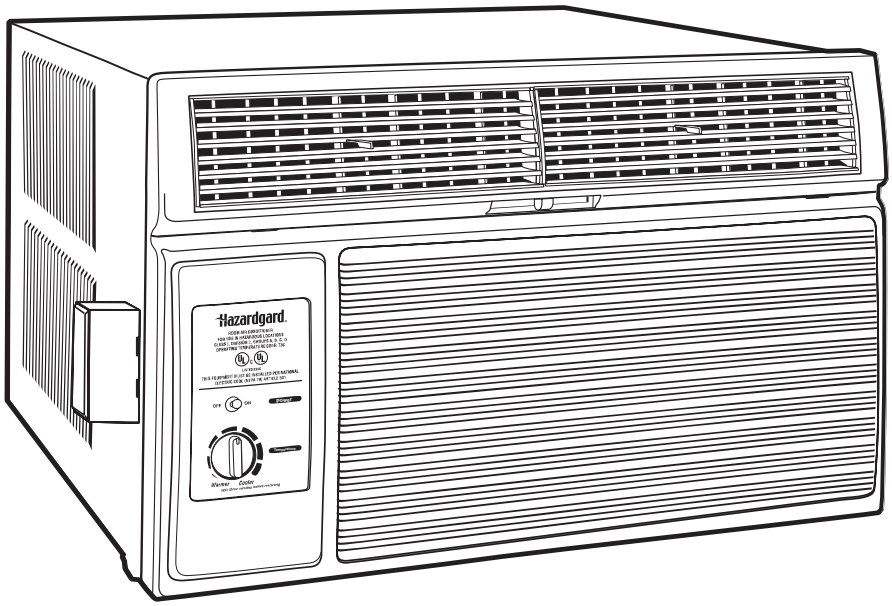
Installation and Operation Manual

FRIEDRICH

Hazardgard®

Hazardous Duty Room Air Conditioners



Standard Chassis Models Using R-32 Refrigerant

North America	60 HZ 208/230-Volt:	HCS15A30A, HCM20A30A, HCM24A30A
International	50 HZ 220/240 Volt	HCM20A50A

THE EXPERTS IN ROOM AIR CONDITIONING

92000068_01

RECOGNIZE THIS SYMBOL AS AN INDICATION OF IMPORTANT SAFETY INFORMATION!

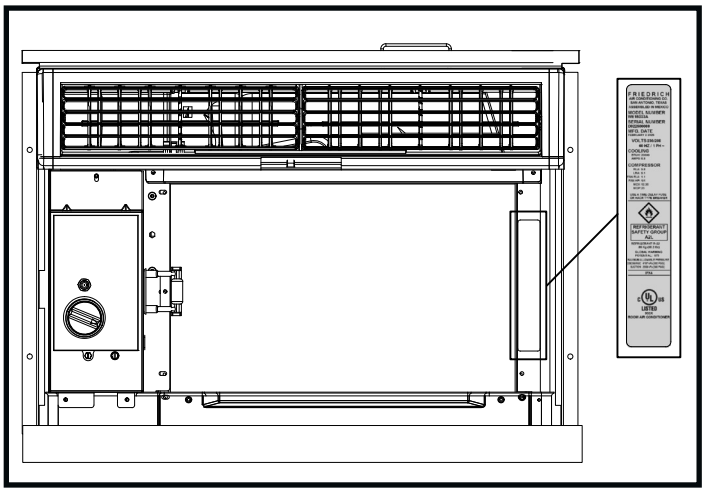
⚠WARNING

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO QUALIFIED SERVICE PERSONNEL FOR PROPER INSTALLATION, ADJUSTMENT AND OPERATION OF THIS UNIT. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION OR OPERATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION, ADJUSTMENT, SERVICE OR MAINTENANCE, POSSIBLY RESULTING IN FIRE, ELECTRICAL SHOCK, CARBON MONOXIDE POISONING, EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

⚠WARNING

PROPOSITION 65 WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

DO NOT DESTROY THIS MANUAL. PLEASE READ CAREFULLY AND KEEP IN A SAFE PLACE FOR FUTURE REFERENCE BY A SERVICEMAN.



Model Nameplate Location

c UL us LISTED

LOW GWP Refrigerant

Register your Air Conditioner

Model information can be found on the name plate. Please complete and mail the owner registration card furnished with this product, or register online at www.friedrich.com.

For your future convenience, record the model information in Section R, information for the owner.

A. IMPORTANT SAFETY AND GENERAL INFORMATION 3
- A.1 Introduction 3
- A.2 · Safety Symbols 3
- A.3 · Safety Warnings 4
- A.4 Unpacking Instructions 5
- A.5 Importance of a Quality Installation 6
- A.6 Packing List 7

B. SPECIFICATIONS 8
- B.3 Outdoor Use 8

C. INSTALLATION OF THE UNIT 9
- C.1 Pre-Installation Checkpoints 9
- C.2 Tools Required 9
- C.3. Choosing a Location 9
- C.4 Chassis Wiring Preparation 10
- C.5 Window Installation 10
- C.5.1 Shell Cabinet Installation 10
- C.5.2 Shell Cabinet Installation (Thick Wall) 12
- C.5.3 Wingboard Panels 12
- C.6 Thru-the-wall Installation 14
- C.6.1 Shell Cabinet Installation 14
- C.7 Chassis Installation 17

E. ELECTRICAL 19
- E.1 Electrical Safety Information 19

J. STARTUP AND OPERATION 19
- J.2 Control Panel 19
- J.3 Operation tips 20

M. TROUBLESHOOTING 20

R . INFORMATION FOR THE OWNER 21
- R.1 Room air conditioner unit performance test data sheet 21
- R.2 Routine Maintenance 21

A. IMPORTANT SAFETY AND GENERAL INFORMATION

A.1 Introduction

This booklet contains the installation and operating instructions for your Air Conditioning unit. There are some precautions that should be taken to ensure proper operation. Improper installation can result in unsatisfactory operation or dangerous conditions.

Read this booklet and any instructions packaged with separate equipment required to make up the system prior to installation. Give this booklet to the owner and explain its provisions. The owner should retain this booklet for future reference.

A.2 • Safety Symbols

SAFETY IS IMPORTANT

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is a safety Alert symbol. This symbol alerts you to potential hazards that may harm you and could potentially lead to death.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what may happen if the instructions are not followed.

All safety messages will follow the safety alert symbol with the word “WARNING” or “CAUTION”. These words mean:

WARNING Indicates a hazard which, if not avoided, can result in severe personal injury or death and damage to product or other property.

CAUTION Indicates a hazard which, if not avoided, can result in personal injury and damage to product or other property.

NOTICE Indicates property damage can occur if instructions are not followed.



This symbol indicates that this appliance uses a flammable refrigerant. If the refrigerant is leaked and is exposed to an external ignition source, there is a risk of fire.



This symbol indicates that the Operation Manual should be read carefully.



This symbol indicates that service personnel should be handling this equipment with reference to the installation manual.



This symbol indicates that information is available such as the Installation and Operation manual, or the Service Manual.

A. IMPORTANT SAFETY AND GENERAL INFORMATION

A.3 • Safety Warnings

⚠WARNING: The manufacturer's warranty does not cover any damage or defect to the air conditioner caused by the attachment or use of any components, accessories or devices (other than those authorized by the manufacturer) into, onto or in conjunction with the air conditioner. You should be aware that the use of unauthorized components, accessories or devices may adversely affect the operation of the air conditioner and may also endanger life and property. The manufacturer disclaims any responsibility for such loss or injury resulting from the use of such unauthorized components, accessories or devices.

⚠WARNING: 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.

⚠WARNING: The maximum altitude for this appliance is 2,000 meters(6,562 feet).

Do not use above 2,000 meters(6,562 feet).

⚠WARNING: Electrical Shock Hazard



Disconnect all power to the unit before starting maintenance. All electrical connections and wiring MUST be installed by a qualified electrician and conform to the National Code and all local codes which have jurisdiction. Failure to do so can result in property damage, severe electrical shock or death.

⚠WARNING: Read Installation Manual



Read this manual thoroughly prior to equipment installation or operation. It is the installer's responsibility to properly apply and install the equipment. Installation must be in conformance with the NFPA 70-2023 national electric code or current edition, International Mechanic code 2021 or current edition, and any other local or national codes.

⚠WARNING: Safety First

Do not remove, disable, or bypass this unit's safety devices. Doing so may cause fire, injuries, or death.

⚠WARNING: This Product uses R-32 Refrigerant

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

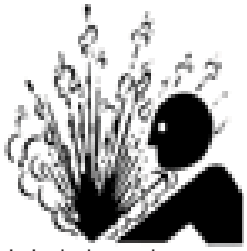
Do not pierce or burn.

Be aware that refrigerants may not contain an odor.



Refrigerant Safety Group A2L

⚠WARNING: Refrigeration System under High pressure



Do not puncture, heat, expose to flame or incinerate. Only certified refrigeration technicians should service this equipment. R32 systems operate at higher pressures than R22 equipment. Appropriate safe service and handling practices must be used.

⚠CAUTION: Do Not Operate Equipment During Active Stages Of Construction

To ensure proper operation, Friedrich requires that all equipment is not operated during active construction phases. This includes active stages of completing framing, drywalling, spackling, sanding, painting, flooring, and moulding in the equipment's designated conditioning space. The use of this equipment during construction could result in premature failure of the components and/or system and is in violation of our standard warranty guidelines. The operation of newly installed equipment during construction will accelerate the commencement and/or termination of the warranty period.

⚠WARNING: Keep all air circulation and ventilation openings free from obstruction.

⚠WARNING: The unit should not be in contact with any equipment that will transmit vibration to the unit. Any excessive vibration or pulsation to the unit could result in damage to the refrigerant tubing.

A. IMPORTANT SAFETY AND GENERAL INFORMATION

A.4 Unpacking Instructions

STEP 1 Remove decorative plastic return air grille to a safe area away from the unit.
STEP 2 Remove the installation hardware, wingboard and two (one lighter colored and one dark colored) gaskets from beside the unit, and place them in a safe area away from the unit.
STEP 3 Remove the chassis retainer by removing the far right screw in the basepan (see Figure A); save this screw to reattach the chassis retainer after installation. Also, remove and discard the two retainer screws and plastic bushings located at the rear of the unit.
STEP 4 While an assistant holds the cabinet stationary, use the hand pull at the front of the base pan (see Figure A.4.1) to pull the chassis out of the cabinet.

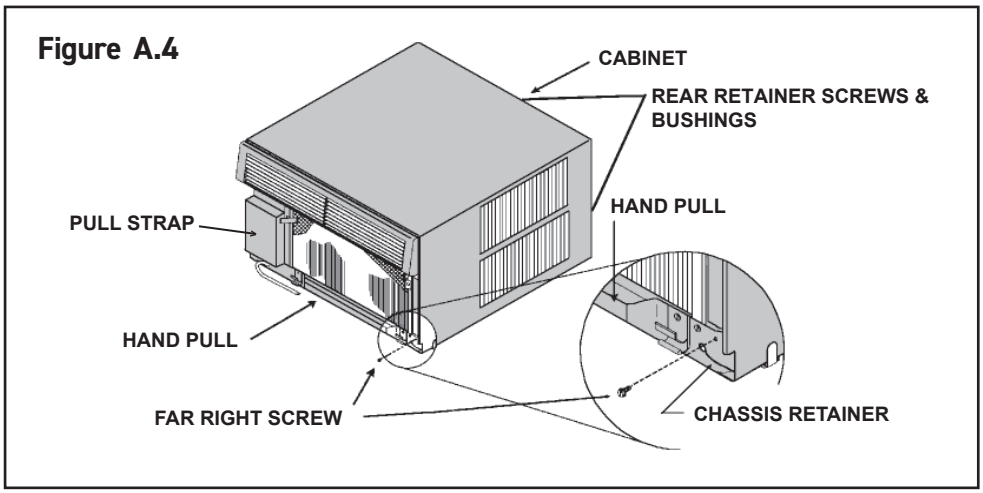


Figure A.4.1

A. IMPORTANT SAFETY AND GENERAL INFORMATION

A.5 Importance of a Quality Installation

Optimal system performance and longevity depend upon a quality and proper installation. Failure to properly install this unit could result in undesirable operation and subsequent faults and potential failures.

Carefully follow all guidelines listed in the manual and industry best practices. Conform to all local code requirements. Contact your local technical representative with any questions or concerns.

Upon receiving the unit, inspect it for any damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. IMPORTANT: Check the unit model number, Cooling size, electrical characteristics, and accessories to determine if they are correct.

⚠ WARNING: Check the unit power cord and make sure the cord is protected from wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects. It is recommended that the cord is checked for any potential damage when filter maintenance is performed. 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.

⚠ WARNING: If the unit appears damaged, or if a refrigerant leak is suspected, do not install. Contact a licensed repair person to perform a leak check on the unit.



⚠ WARNING: 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.

⚠ WARNING: Service of this product (aside from filter maintenance) shall only be performed by trained service personnel. This includes:

Opening of any tubing or refrigerant circuit work

Opening of any sealed components

Enclosures beyond the hinged door for filter cleaning

Scan this QR code to be linked to the Friedrich professional support page where you can locate the Service Manual.
This include decommisioning and disposal of the unit.





A.6 Packing List

ITEM No.	DESCRIPTION	QTY.
	SHELL MOUNTING PARTS	
1	SUPPORT BRACKET	2
2	SCREW, 10 - 24 x 1" HEX HEAD	4
3	10 - 24 FLAT WELDNUT	4
4	SCREW, SHEET METAL #12A x 2"	7
	WINGBOARD ANGLE MOUNTING	
5	WINGBOARD ANGLE, TOP	1
6	WINGBOARD ANGLE, SIDE	2
7	SCREW, SHEET METAL #8A x 3/8"	2
	WINGBOARD MOUNTING PARTS	
8	WINGBOARD (MASONITE) - (NOT SHOWN)	1
9	"J" TYPE SPEED NUT	4
10	WINGBOARD CLIP (SPRING STEEL)	4
11	SCREW. #8A x 1/2" PHILLIPS TRUSS HD.	4
	WINDOW SEALING	
12	WINDOW SEAL GASKET (DARK FOAM)	1
13	CHASSIS SEAL GASKET (LIGHT FOAM)	1

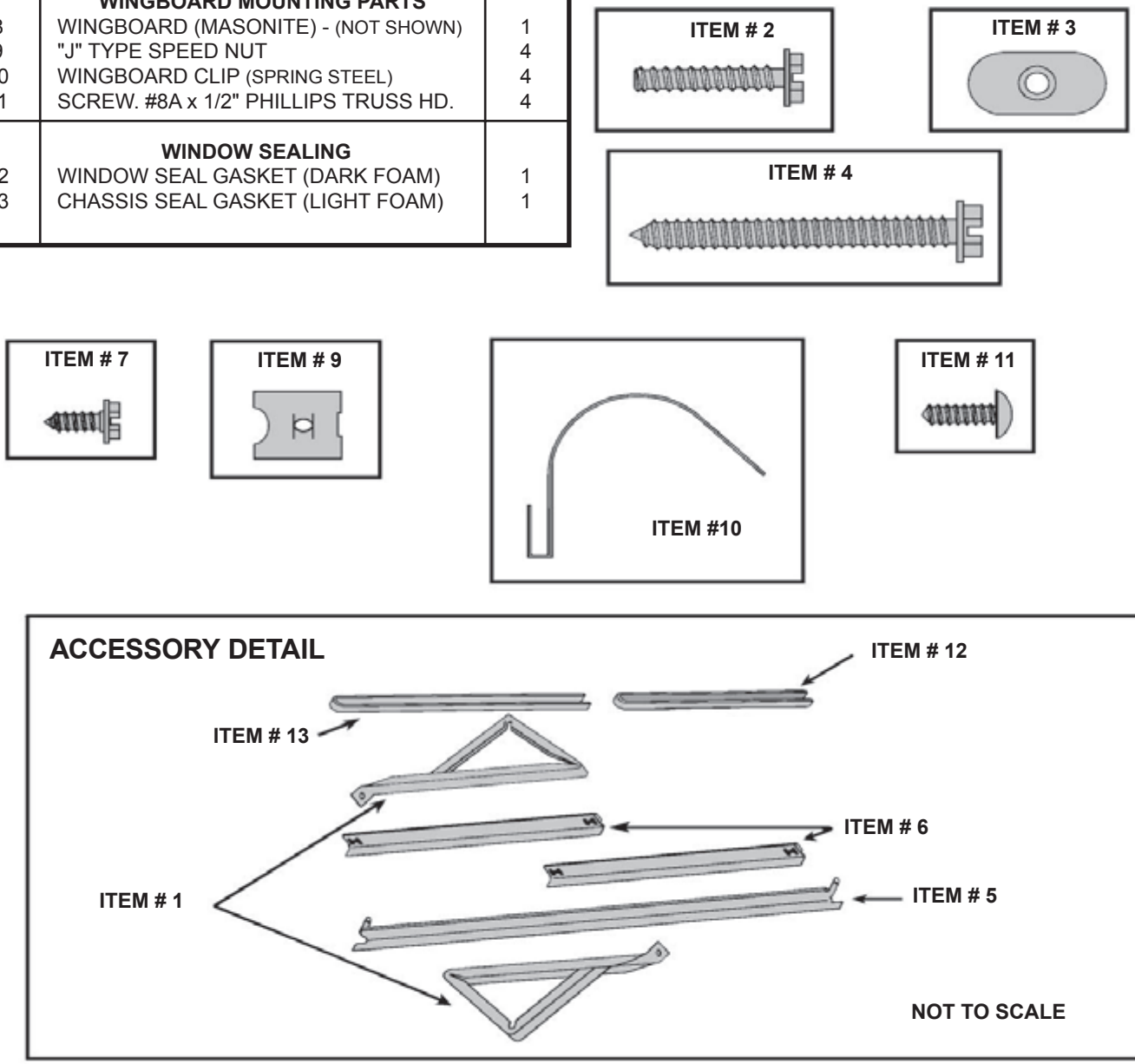


Figure A.6 (Packing List)

B. SPECIFICATIONS

B.1 Product Data

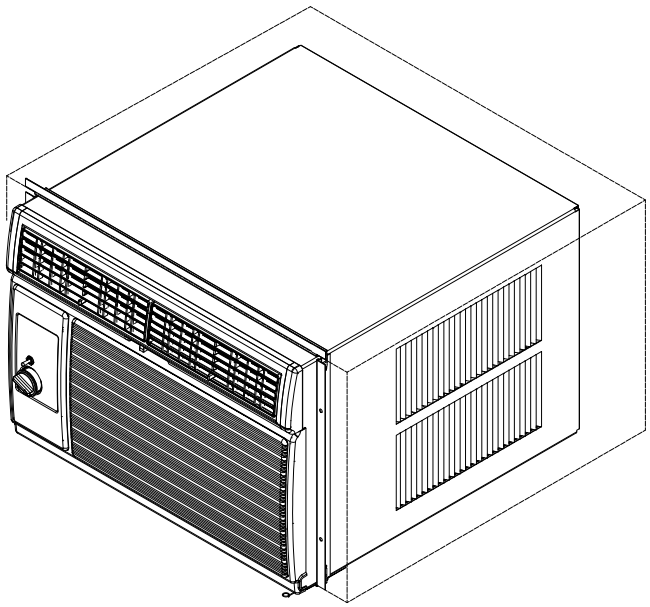
- Permanent Split-Capacitor, totally enclosed fan motor to assure operation even under adverse electrical conditions. Motor has a special stainless steel shaft to resist corrosion and a hermetically sealed overload for arc-free operation.
- High capacity compressor with internal hermetically sealed overload.
- Contains transient voltage suppressor to protect controls against transient voltage spikes. Provides solid state switches for arc-free operation.
- Hot gas bypass low ambient control to permit operation without freezing at outdoor ambient temperatures as low as 45°F (7°C).
- Polyester powder finish, oven-baked for an attractive, long lasting finish.
- Copper tubing/aluminum hydrophillic coated fin coils.
- Galvanized steel cabinet and base pan, all bonderized.
- Slide-out chassis for easy installation in window or through–the–wall.
- Extra insulation inside, including completely insulated plenum chamber for quieter, more efficient cooling.
- Entire unit test run in environmental chamber before crating.
- Condensate drain with exclusive mosquito trap.
  15amp or 20amp circuit with time-delay fuse required.
- Accommodates direct wiring.
- Friedrich leads with first class UL listed Room Air Conditioners. designed to cool living quarters and other enclosures situated in hazardous locations where specific volatile liquids or gases are handled or used with enclosed containers or systems.
- Friedrich Hazardgard room air conditioners are designed to meet the National Electrical Code, Article 500 requirements for Class I, Division 2, Groups A,B,C,D Hazardous locations, CERTIFIED BY UNDERWRITERS LABORATORIES FOR USE IN CLASS 1, DIVISION 2, GROUPS A,B,C,D HAZARDOUS LOCATIONS.

B.2 Cabinet Sizes

SMALL CHASSIS HCS 15	15 15/16" x 25 15/16" x 27 3/8" (405 mm x 660 mm x 695 mm)
MEDIUM CHASSIS HCM 20, HCM 24	17 15/16" x 25 15/16" x 27 3/8" (455 mm x 660 mm x 695 mm)

B.3 Outdoor Use

The only section of this air conditioner acceptable for outdoor use is designated by the dotted area in the image below. To ensure the protection of parts not acceptable for outdoor use please follow the installation instructions as shown in this document. Please note that junction and electrical boxes are not acceptable for outdoor use.



C. INSTALLATION OF THE UNIT

C.1 Pre-Installation Checkpoints

Before attempting any installation, carefully consider the following points:

- Clearances and provision for servicing. Install this unit in accordance with local and national standards. Any and all work must be done by authorized personnel.
- IMPORTANT: Before you begin the actual installation of your air conditioner, check your local electrical codes and the information below. Your air conditioner must be connected to a power source with the same alternating current (A.C.) voltage and amperage as marked on the name plate located on the chassis. Only A.C. can be used. Direct Current (D.C.) cannot be used.
- CIRCUIT PROTECTION – Use on single outlet circuit only. An overloaded circuit will invariably cause malfunction or failure of an air conditioner; therefore, it is necessary that the electrical protection is adequate. Due to momentary high current demand when the air conditioner starts, use a "TIME DELAY" fuse or a HACR type circuit breaker. Consult your dealer or power company if in doubt.
- Refer to the electrical name plate located on the air conditioner chassis (see Table E.1 to determine the correct fuse or circuit breaker amperage for your model.
- Check there is sufficient space for the cabinet (See table B.2), and proper clearance(see section C.3

C.2 Tools Required

⚠WARNING



Electrical Shock Hazard

Make sure your electrical receptacle has the same configuration as your air conditioner's plug. If different, consult a Licensed Electrician.

Do not use plug adapters.
Do not use an extension cord.
Do not remove ground prong.

Always plug into a grounded 3 prong outlet. Failure to follow these instructions can result in death, fire, or electrical shock.

1. Power Drill
2. 5/32" Drill Bit
3. Gloves
4. Carpenters Level
5. 5/16" Wrench
6. 1/4" Wrench
7. #2 Phillips Screw Driver
8. Putty Knife or (wood stir stick)
9. 1/4" Nut Driver
10. Flat Head Screw Driver
11. Measuring Tape
12. Utility Knife

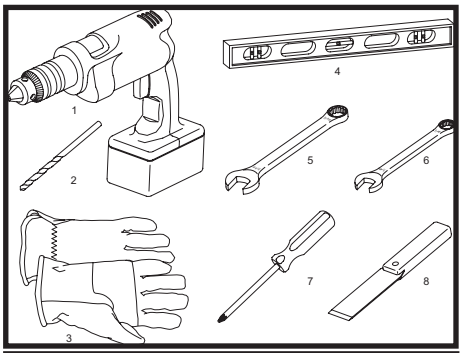


Figure C.2 (Tools)

C.3. Choosing a Location

Installation Clearances

Improper installation of the Air Conditioner can cause poor performance and premature wear of the unit.
Ensure that the unit is installed with proper clearances as described below.
Ensure no obstructions or enclosures are within clearances limits to allow for proper airflow.
Ensure no open flames, or surfaces that will exceed 1200 degrees fahrenheit are within clearances limits.

⚠WARNING



Refrigeration System Under High Pressure

Do not puncture, heat, expose to flame or incinerate.
Only certified refrigeration technicians should service this equipment.
R410A and R32 systems operate at higher pressures than R22 equipment.
Appropriate safe service and handling practices must be used.
Only use gauge sets designed for use with R410A or R32.
Do not use standard R22 gauge sets..

Clearances

Top and Bottom of Unit - One (1) foot
Sides of Unit - One (1) foot
Front of Unit - Three (3) feet
Rear of Unit - Three (3) feet

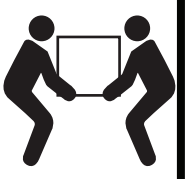
⚠CAUTION



Moving Parts Hazard

Do not operate unit out of sleeve or with front grille removed.
Do not place hands in blower or fan blade areas.
Failure to do so can result in serious injury

⚠CAUTION



Excessive Weight Hazard

Use two or more people when installing your air conditioner.
Failure to do so can result in back or other injury.

C. INSTALLATION OF THE UNIT

C.4 Chassis Wiring Preparation

STEP 1

Remove the junction box, cover and screw from the shipping position underneath the fan motor. Install one junction box mounting leg in the upper left position facing the rear of the junction box. (See Figure C.4.1)

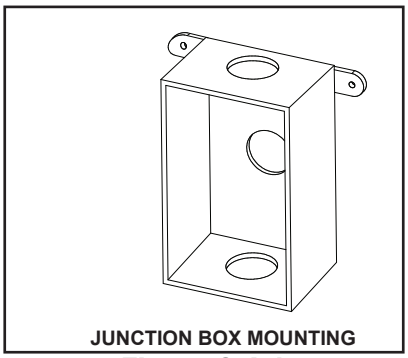


Figure C.4.1

PROVIDED HARDWARE

1 JUNCTION BOX
2 MOUNTING LEGS
2 LEG SCREWS
2 HOLE COVERS
1 STAINLESS STEEL GROUND SCREW
2 SCREWS
1 SHEET METAL SCREW

Figure C.4.2

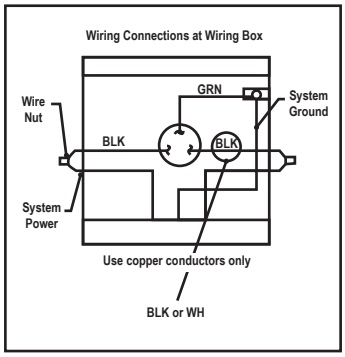


Figure C.4.3

STEP 2

Remove and discard the threaded bushing wire protector from the conduit connector on the side panel of the control compartment. Install field supplied cable gland as required. Strip the wires only, approximately 1/2 inch (13 mm).

STEP 3

Insert all wires into the rear of the junction box and thread the box onto the Cable Gland until tight. Back off counter clockwise until the junction box is vertical with the mounting leg at the upper-right position facing the box opening. Be sure that the shell can slide between this box and the chassis. NOTE: Field wiring conductors to be copper and a minimum of 12 AWG. Complete junction box wiring and cover to prevent ingress from dust and moisture. All wiring connections to the junction box are to be made with cable glands.

C.5 Window Installation

C.5.1 Shell Cabinet Installation

STEP 1. It will be necessary to relocate the sill plate of the cabinet 2" back from it's shipping position, and the shell guides 4" forward, to the forward-most hole in the shell rail.

STEP 2. Discard the chassis retainer wire disconnected in Section A, the junction box mounting leg from Section C, and the field-installed conduit will retain the chassis to the shell.

STEP 3. With the wide flange and pilot holes of the sill plate forward, put the screws/nuts in the rear holes of the sill plate and third shell hole from the front (the center of three square holes). Anchor the side angles (Item#6) by engaging the tabs at each end of the sill plate with the bottom loops of the side angle. Engage the tabs at each end of the top angle (Item#5)with the top loops of the side angle. Install two (2) screws (Item #7) to secure the top angle tabs and the side angle to the rear-most holes in the side of the cabinet (See Figure C.5.1, below).

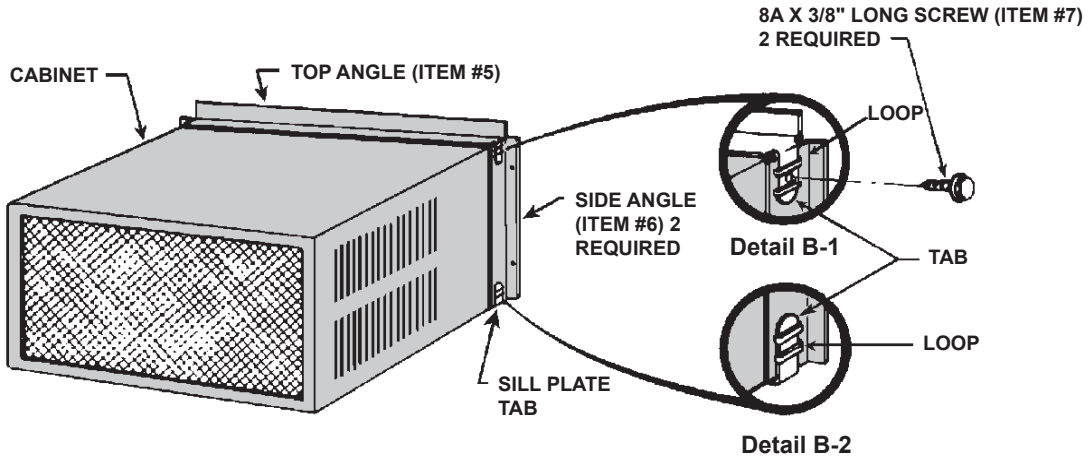


Figure C.5.1

C.5 Window Installation

C.5.1 Shell Cabinet Installation (Continued)

STEP 4. Check the window sill and frame to be sure they are in good condition and firmly anchored to the wall. Repair if necessary.
STEP 5. . CABINET MOUNTING: Raise the lower window sash 1/4" more than the height of the cabinet. Carefully slide the cabinet through the open window until the sill plate channel rests behind the window sill and the top support angle rests against the window (See Figure D). Center the cabinet side to side and drill three (3) 5/32" diameter pilot holes into the window sill using the holes in the cabinet sill plate as a guide. Install three (3) #12A x 2" long screws (Item #4) (See Figure C.5.2).
STEP 6. OUTSIDE SUPPORT MOUNTING: Assemble the support brackets (Item #1) to the bottom rails of the cabinet with four (4) 10-24 1" long screws (Item #2) and four (4) 10–24 flat nuts (Item #3). Adjust the support brackets to bring the bottom pads in contact with the wall surface. (See Figure C.5.3)
A 1" x 4" or 2" x 4" SPACER SHOULD BE USED BETWEEN THE WALL AND THE SUPPORT BRACKETS WHEN INSTALLED ON ALUMINUM OR VINYL SIDING). Drill 5/32" (4 mm) dia. pilot holes, and secure the brackets to the wall with two (2) #12A x 2" long screws (Item #4). Adjust the support brackets to provide an approximate 3/8" (10 mm) down slope towards the outside for drainage. Tighten all screws. (See Figure C.5.3).

⚠WARNING



Fire Hazard

A2L refrigerant is classified as mildly flammable. Do not install unit next open flame sources, or surfaces that will exceed 1200 degrees fahrenheit.

⚠WARNING



Falling Object Hazard

Not following Installation Instructions for mounting your air conditioner can result in property damage, injury, or death.

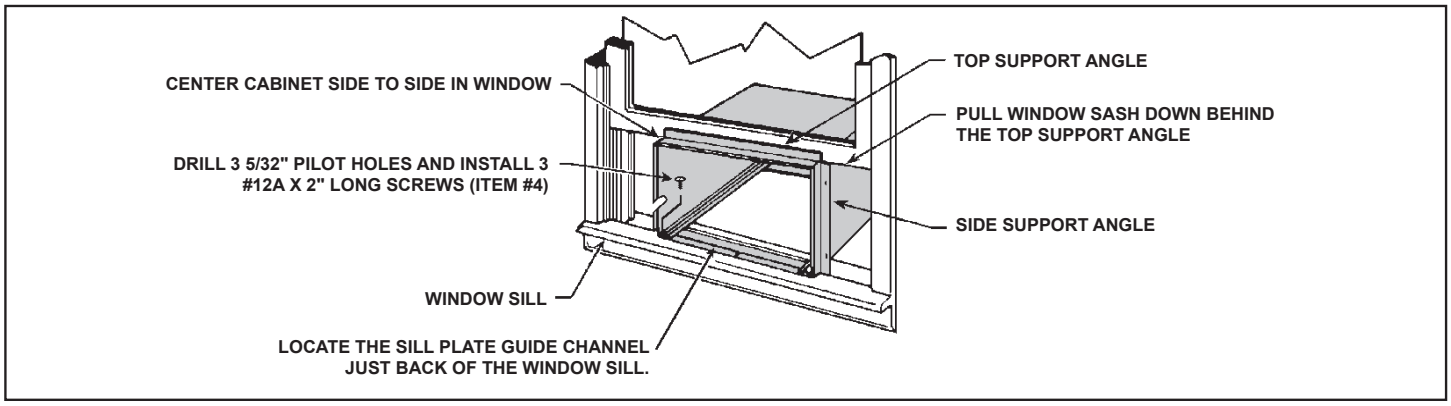


Figure C.5.2

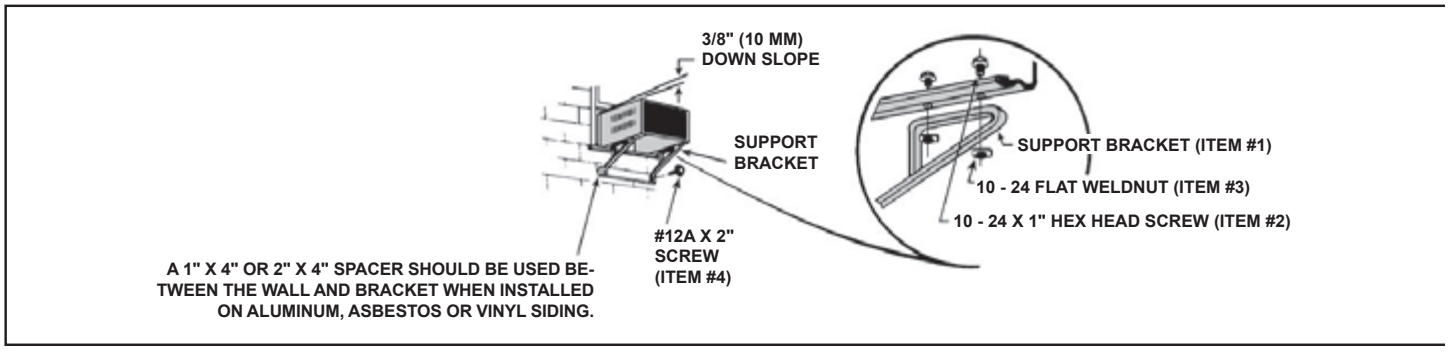


Figure C.5.3

C. INSTALLATION OF THE UNIT

C.5 Window Installation

C.5.2 Shell Cabinet Installation (Thick Wall)

The illustrations below show a standard frame construction installation as well as some suggested ways of adapting the support bracket to thick walls and large brick ledges.

NOTICE

Instructions for mounting sleeve with slope must be observed to prevent entry of water into room.
Failure to follow instructions can result in property damage.

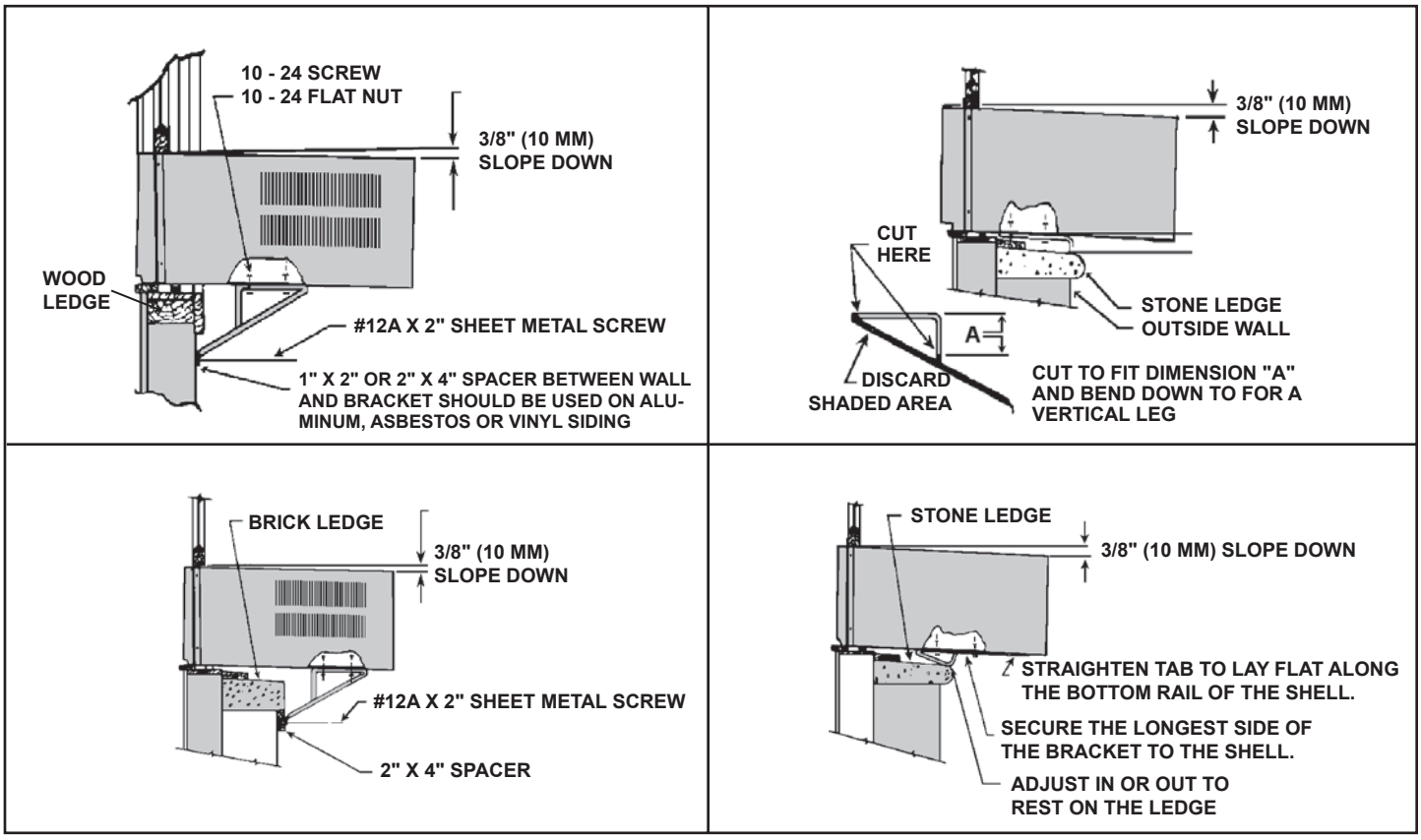


Figure C.5.4

C.5.3 Wingboard Panels

STEP 7. Measure and cut the wingboard panels from the supplied masonite (Item #8) to fit the spaces between the side window channels and the sides of the cabinet (See Figure C.5.5).

NOTE: AFTER CUTTING PANELS, MAKE A TRIAL TEST TO SEE IF THEY FIT THE SPACE WITH ABOUT 1/8" CLEARANCE BEFORE GOING TO STEP

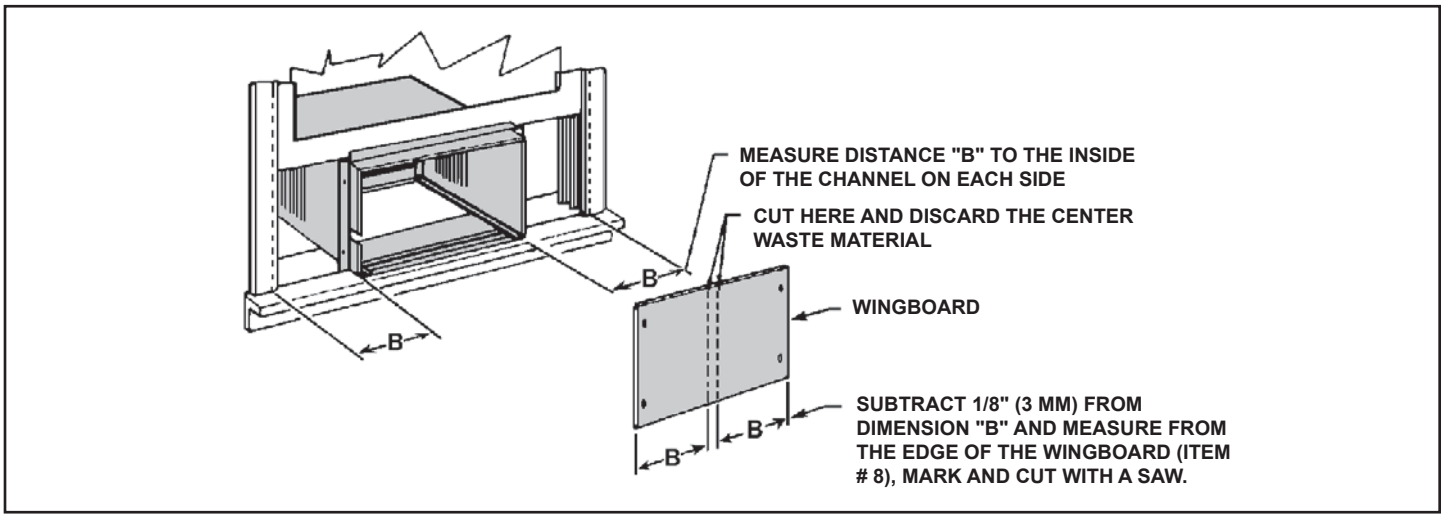


Figure C.5.5

C.5 Window Installation
C.5.3 Wingboard Panels(Cont)

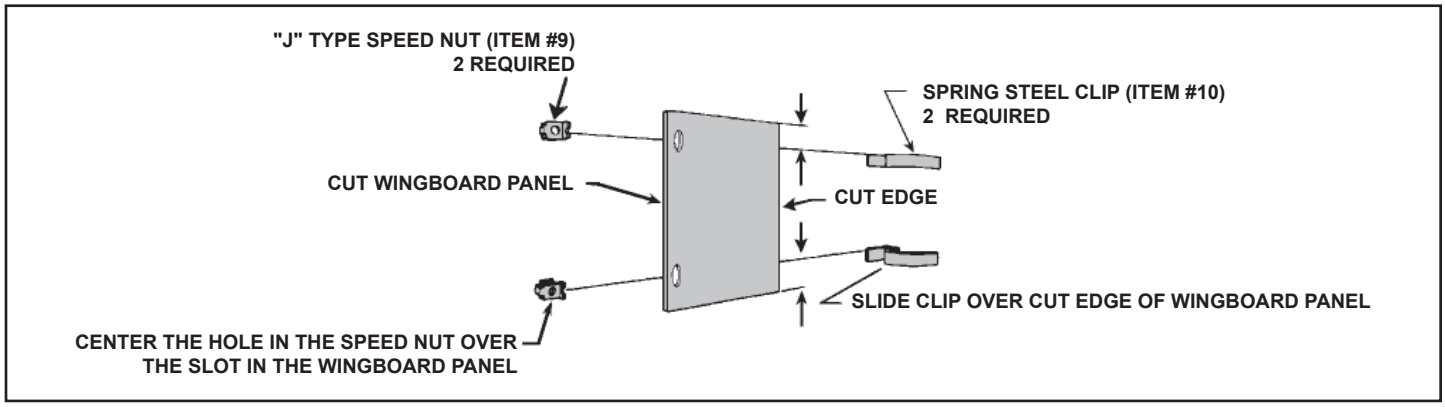


Figure C.5.6

Step 8. ASSEMBLE CLIPS TO WINGBOARD PANELS: Assemble "J" type speed nuts (Item #9) and spring steel clips (Item #10) to the edges of the cut wingboard panels (See Figure C.5.6).

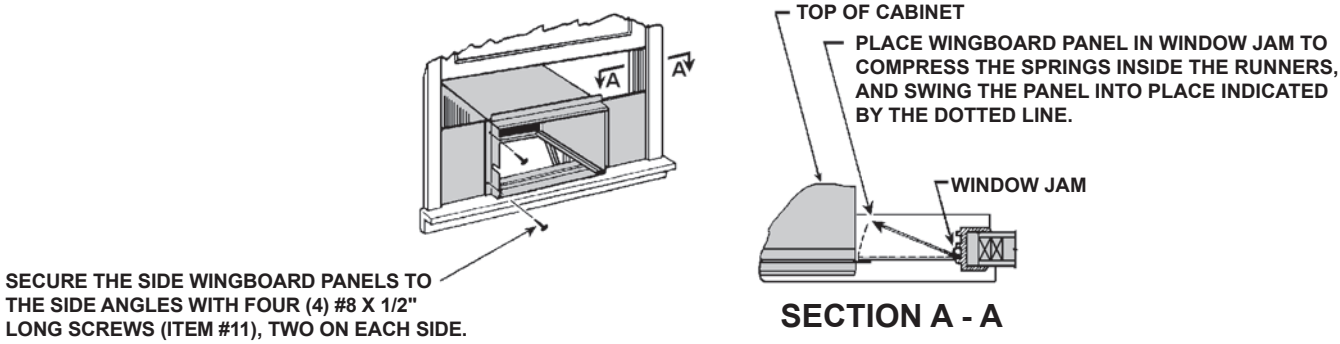


Figure C.5.7

Step 9. INSTALL SIDE WINGBOARD PANELS: Be sure that the cabinet has been secured to the window sill and the outside support brackets have been installed as shown in Figures C.5.2 and C.5.3. Raise the window sash and install the right and left side wingboard panels (See Figure C.5.7).

Step 10. INSTALL WINDOW SEALING GASKETS: Measure and cut the dark foam window seal gasket (Item#12) and install it between the upper glass panel and the top part of the lower sash (See Figure C.5.8).

NOTE: FOR REASONS OF SECURITY , THE CUSTOMER MUST PROVIDE A MEANS OF PREVENTING THE WINDOW FROM OPENING.

STEP 11. When possible, caulk the outside of the installation with industrial type caulking to prevent air and water leaks.

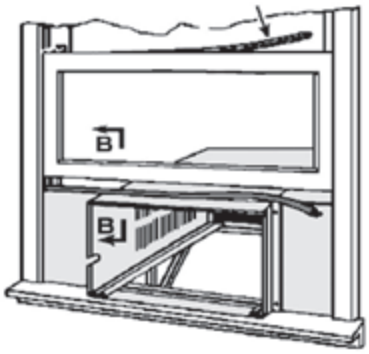


Figure C.5.8 (FOAM WINDOW SEAL GASKET (ITEM #12)

C. INSTALLATION OF THE UNIT

C.6 Thru-the-wall Installation

C.6.1 Shell Cabinet Installation

Wall Preparation

The maximum wall thickness permissible without special construction is determined by the model size to be installed. THE OUTSIDE CABINET CONDENSER AIR INTAKE LOUVERS MUST NOT BE BLOCKED BY EXTENDING INSIDE THE WALL AREA. Observe the maximum wall thickness shown as dimension "A" in Figure C.6.1.

Special Instructions For Extra Thick Walls

For installation in walls exceeding the maximum thickness shown as dimension A, the following suggested construction may apply. (See Figure C.6.1).

⚠WARNING



Falling Object Hazard

Not following Installation Instructions for mounting your air conditioner can result in property damage, injury, or death.

⚠WARNING



Fire Hazard

A2L refrigerant is classified as mildly flammable. Do not install unit next open flame sources, or surfaces that will exceed 1200 degrees fahrenheit.

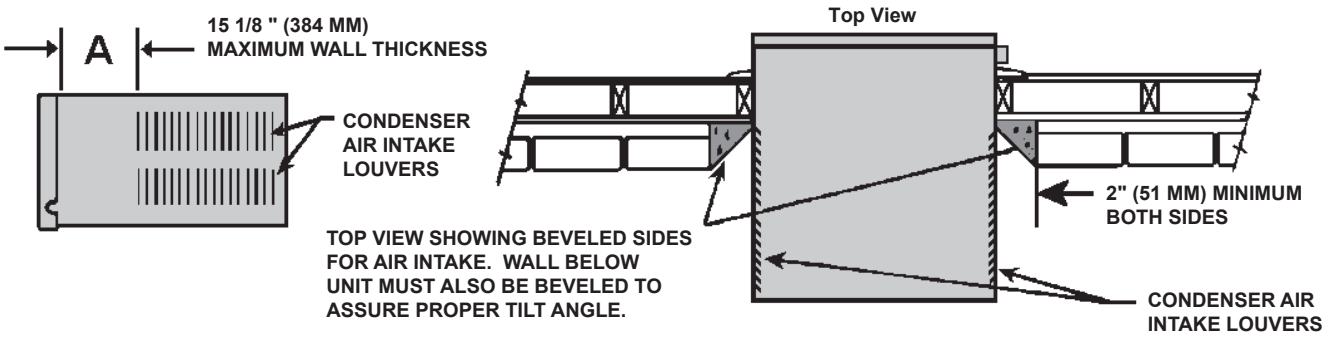
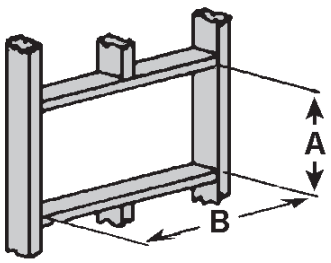


Figure C.6.1

Step 1. CHECKING WIRING AND PLUMBING: Check all wiring and plumbing inside and outside the wall to be sure none will be broken where the hole is to be cut.

Step 2. HOLE CONSTRUCTION: Depending on the size of the unit to be installed, layout the hole dimensions in accordance with the chart below (See Figure C.6.2) Cut and frame in the hole to the finished dimensions. Use 2" x 4" material for framing and follow the suggested typical installations in Figures C.6.3)

NOTE: IF THE WALL CONSTRUCTION IS TYPICAL FRAME OR 2 X 4 STUDDING WITH BRICK OR STONE VENEERS, LOCATE THE HOLE NEXT TO ONE OF THE STUDS. FOR MASONRY, CONCRETE OR CINDER BLOCK WALLS, LOCATE THE HOLE FOR CONVENIENCE.



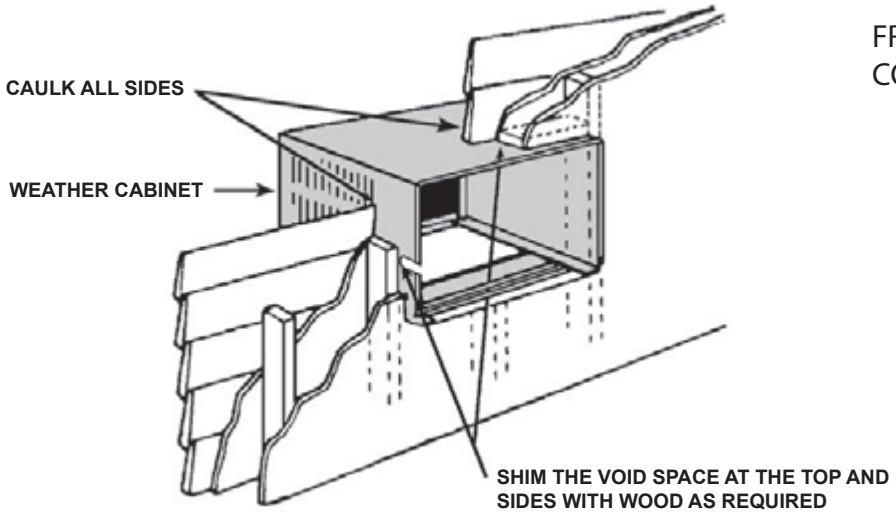
HOLE SIZE REQUIREMENTS

FINISHED DIMENSION	HCM 15 CHASSIS	HCM20, HCM24 CHASSIS
A	16-3/16"	18-3/16"
B	26-3/16"	26-3/16"

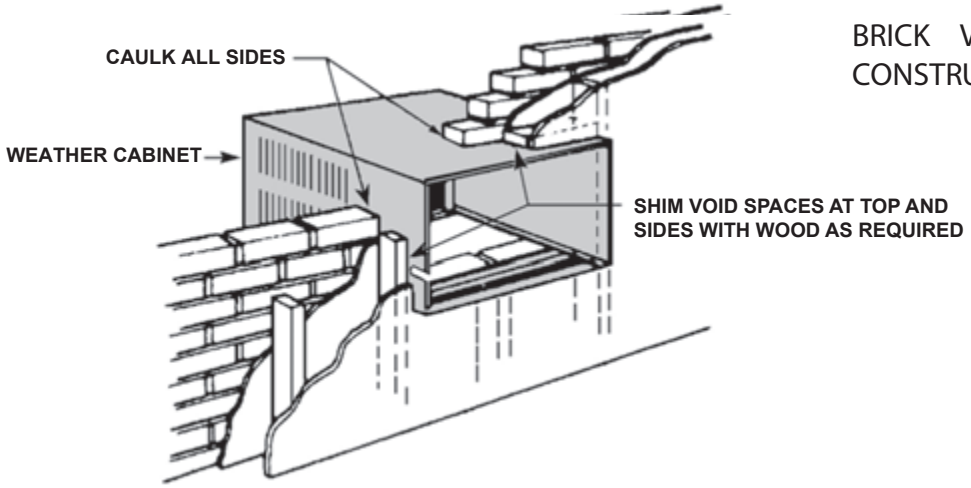
NOTE: THESE DIMENSIONS ARE FOR FINISHED HOLE SIZE

Figure C.6.2

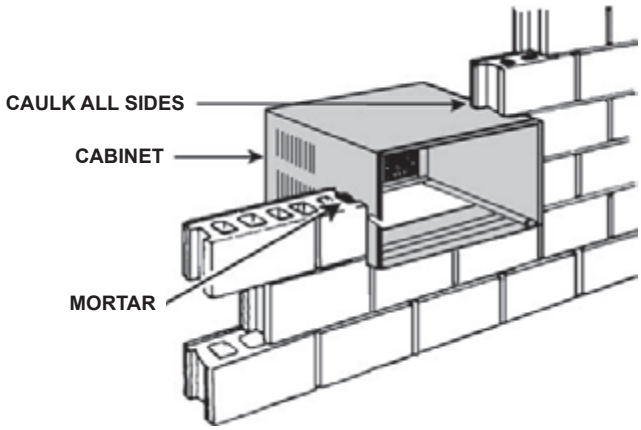
C.6 Thru-the-wall Installation (Continued)



FRAME WALL
CONSTRUCTION



BRICK VENEER
CONSTRUCTION



SOLID MASONRY
CONSTRUCTION

Figure C.6.3

C. INSTALLATION OF THE UNIT

C.6 Thru-the-wall Installation (Continued)

STEP 3. Slide the cabinet into the hole far enough to allow the guide-channel of the sill plate to contact the inside wall surface (See Figure C.6.4).

STEP 4. Drill three (3) 5/32" diameter pilot holes through holes in sill-plate into the framing and install three (3) #12 x 2" long screws (Item #4) (See Figure C.6.4).

NOTICE

Instructions for mounting sleeve with slope must be observed to prevent entry of water into room.
Failure to follow instructions can result in property damage.

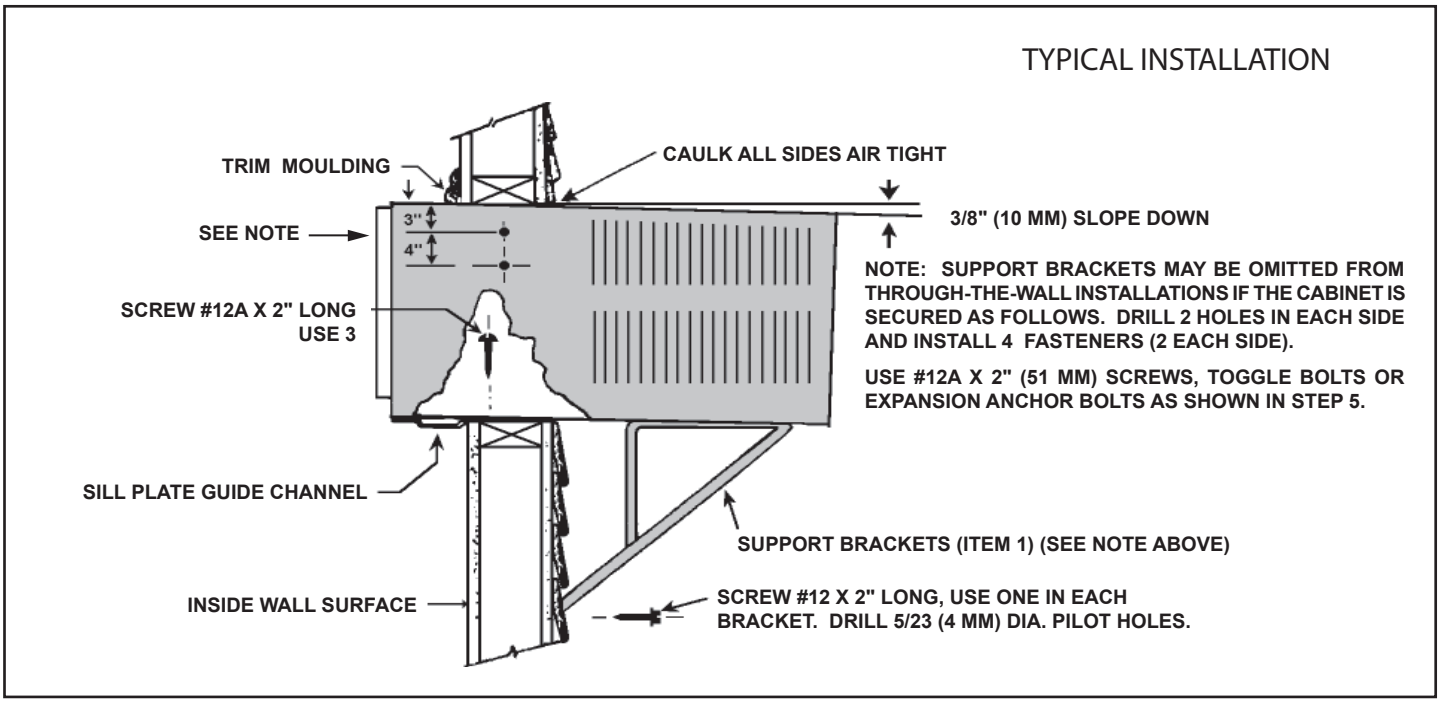


Figure C.6.4

NOTE: ALTERNATE FASTENERS WHICH MAY BE USED FOR SECURING THE SILL PLATE IN THE WALL, AND THE SUPPORT BRACKETS TO THE OUTSIDE WALL ARE NOT FURNISHED, BUT ARE AVAILABLE AT A LOCAL HARDWARE STORE.



Figure C.6.5

5. Drill two (2) 5/32" (4 mm) dia. pilot holes in each side at the locations shown (See Figure C.6.4) and install four (4) #12 x 2" screws (Item #4). If the hole construction in Step 2 provides a sturdy mount with solid vertical studs, no support brackets are required. The installation must support the weight of the unit plus an additional weight of 400 pounds (185 kg) on the rear of the cabinet. The support brackets may be used for through-the-wall installations as shown in Figure C.6.4, for additional support.

6. If desired, trim around the cabinet on the room side with a suitable frame molding furnished by the installer (See Figure C.6.4).

C.7 Chassis Installation

STEP 7. Slide the chassis into the cabinet stopping approximately 3" from full insertion. Stuff the chassis seal gasket (Item #14) one inch deep between the chassis and the cabinet (See Figure C.7.1). Begin at either bottom corner and go up the side, across the top, and down the opposite side. Make sure that the gasket is behind the conduit connector (furthest from you). Push the chassis into the shell the remaining distance so that the plastic front shrouds the front edge of the shell. Fasten the junction box mounting foot to the shell with the sheet metal screw.

NOTE: If chassis seal gasket is not installed, the operation of the unit will be negatively affected. Also, the operation noise and outside noise will be amplified.

NOTE: Field wiring must be provided to this junction box in accordance with NATIONAL ELECTRIC CODE (NFPA 70, 2008 or current edition) ARTICLE 501. Field and equipment grounds are to be terminated at the post in the junction box with the green screw provided. Equipment power leads are to be connected with the field supply by means of wire nuts (not provided). Install the gasket and cover plate onto the junction box.

⚠WARNING



Fire Hazard

A2L refrigerant is classified as mildly flammable. Do not install unit next open flame sources, or surfaces that will exceed 1200 degrees fahrenheit.

⚠WARNING



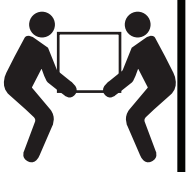
Electrical Shock Hazard

Make sure your electrical receptacle has the same configuration as your air conditioner's plug. If different, consult a Licensed Electrician.

Do not use plug adapters.
Do not use an extension cord.
Do not remove ground prong.

Always plug into a grounded 3 prong outlet. Failure to follow these instructions can result in death, fire, or electrical shock.

⚠CAUTION



Excessive Weight Hazard

Use two or more people when installing your air conditioner. Failure to do so can result in back or other injury.

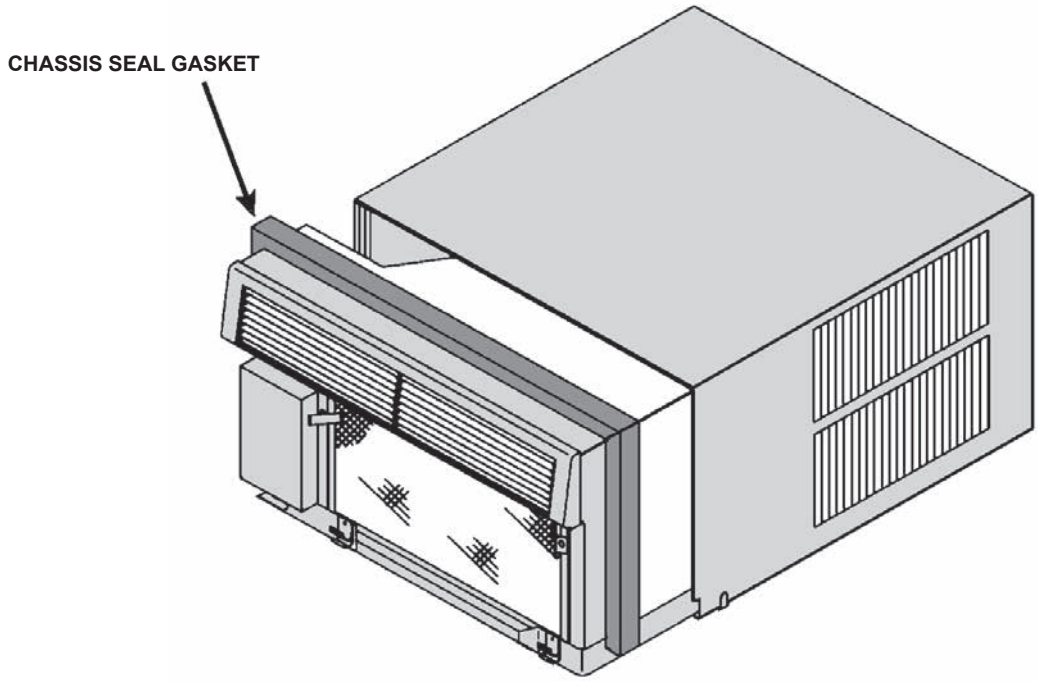


Figure C.7.1

C. INSTALLATION OF THE UNIT

C.7 Chassis Installation (Cont)

2. Be sure that the filter is in place then install the return air grille (See Figure C.7.2). The top of the return air grille can be butted against the bottom of the discharge plenum. Snap the grille into place by pushing the grille up and onto the unit's latches at the bottom. (See Detail 4).

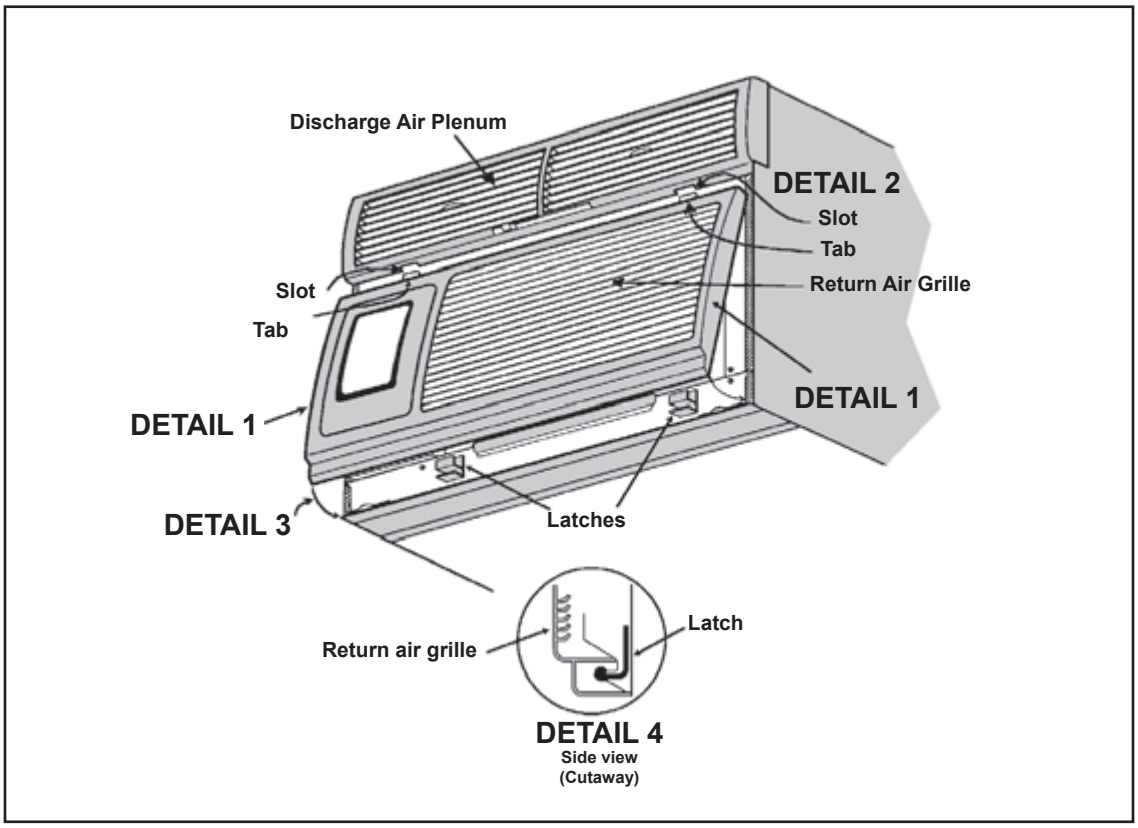


Figure C.7.2

3. You have completed your installation. Conduct a review of your installation to insure that the unit is safely and securely installed. Se section J for final inspection and operation review

E. ELECTRICAL

E.1 Electrical Safety Information

Make sure the wiring is adequate for your unit.

If you have fuses, they should be of the time delay type. Before you install or relocate this unit, be sure that the amperage rating of the circuit breaker or time delay fuse does not exceed the amp rating listed in Table E.1.

⚠WARNING



Explosion Hazard



Electrical Shock Hazard

Electrically connect unit in accordance with NEC Code Article 501. Failure to do so can result in death, explosion, fire, or electrical shock.

Electrical Requirements

ALL FIELD WIRING MUST MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) ARTICLE 501.

THE FIELD-PROVIDED CIRCUIT PROTECTION DEVICE (HACR CIRCUIT BREAKER OR TIME DELAY FUSE) MUST NOT EXCEED THE AMPACITY INDICATED ON THE PRODUCT NAMEPLATE.

IMPORTANT: Before you begin the actual installation of your air conditioner, check local electrical codes and the information below.

Your air conditioner must be connected to a power supply with the same A.C. voltage and frequency (hertz) as marked on the name plate located on the chassis. Only alternating current (A.C.), no direct current (D.C.), can be used.

An overloaded circuit will invariably cause malfunction or failure of the air conditioner; therefore, it is extremely important that the electrical power is adequate. Consult y**our dealer or power company if in doubt.**

Model Number	Plug Type	Circuit Rating Time Delay Fuse
HCS15	Junction Box	250V-15 Amp
HCM20, HCM24	Junction Box	250V-20 Amp

J. STARTUP AND OPERATION

J.1 Final Inspection

- Inspect and ensure that all components and accessories have been installed properly and that they have not been damaged during the installation progress.
- Check the condensate water drain(s) to ensure that they are adequate for the removal of condensate water, and that they meet the approval of the end user.
- Ensure that all installation instructions concerning clearances around the unit have been adhered to. Check to ensure that the unit air filter, indoor coil, and outdoor coil are free from any obstructions.
- Inspect the unit for any damage to the coils and tubing that could cause a leak.
- Ensure that the circuit breaker(s) or fuse(s) and supply circuit wire size have been sized correctly. If the unit was supplied with a power supply cord, insure that it is stored properly.
- Ensure that the entire installation is in compliance with all applicable national and local codes and ordinances having jurisdiction.
- Secure components and accessories, such as a decorative front cover.
- Start the unit and check for proper operation of all components in each mode of operation.
- Instruct the owner or operator of the units operation, and the manufacturer's Routine Maintenance.

NOTE: A log for recording the dates of maintenance and/or service is recommended.

J.2 Control Panel

Function Control (Power)
This switch is a double pole, single throw toggle switch.
On - Turns everything on.

Off - Turns everything off.

Temperature Control

The knob at the bottom is the thermostat which is a cross ambient type used to maintain the desired comfort level. The thermostat reacts only to a change in temperature at the bulb location - turn the knob clockwise to set cooler, counterclockwise for warmer. See Figure J.2

J. STARTUP AND OPERATION

J.3 Operation tips

1. Carefully read and follow the installation instructions.
2. Make sure the unit is the right capacity for the area to be cooled. An undersized unit makes the unit work too hard, using more electricity than needed and increases wear. An oversized unit will cycle on and off too rapidly, and therefore cannot control humidity very well.
3. When you first turn on your Friedrich, set the thermostat to its coldest position to cool the room. When the desired temperature is reached, turn the thermostat control toward the "warmer" position until you hear a click and the compressor goes off. The thermostat will then cycle the compressor to maintain the selected temperature.
4. Clean the filter frequently (See Filter Information, Section R)
5. Do not block the air flow to and from the unit. Make sure the louvers are directed to give even distribution of air throughout the room. Caution: If air directed into a restricted area such as a corner, this may cause the unit to cycle on and off rapidly, which could damage your unit.
6. A dirty filter or improperly set controls can affect the cooling ability of the unit.
7. If cooling is weak and you have verified that the filter is clean and the controls are properly set, the unit may be low on refrigerant, and you should call your Friedrich service provider to check the unit.
8. Keep blinds, shades and drapes closed on the sunny side of the room being cooled.
9. Proper room insulation helps your unit maintain the desired inside temperature.
10. Whenever possible, shade west-facing windows with awnings , trees, or window tinting.
11. Keep window treatments away from the unit to provide free air flow.

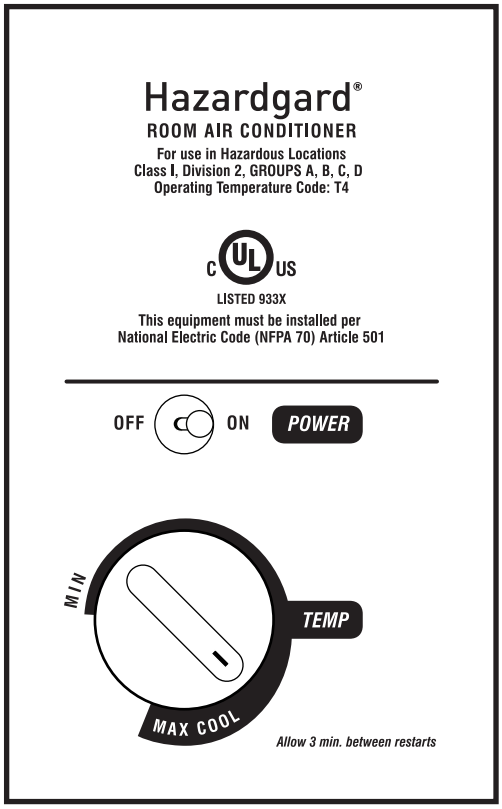


Figure J.2

M. TROUBLESHOOTING

M.1. Troubleshooting Tips

Won't Cool

If the unit operates, but doesn't cool, check to see that the controls are properly set. Inspect the filter and if needed, clean it thoroughly. Check to see if the chassis seal gasket is installed (refer to installation instructions).

Won't Run

If the unit does not operate at all, check that the power supply connections are present and tight. Check for blown fuses or tripped circuit breakers. Replace blown fuses with the proper size time-delay fuse. The nameplate on the unit shows the proper fuse size. After restoring power, wait three minutes before restarting the unit.

Inside Coil Freezes Up

Your Friedrich Hazardgard is designed not to freeze with outdoor temperatures as low as 45°F (7°C). Freezing should only occur when the outside air is damp and below 45°F (7°C). If the indoor coil should ice over while cooling, set the thermostat to the warm-est position until the ice on the coil is gone. Setting the thermostat to a slightly warmer position will probably keep ice from forming on the coil. A dirty filter will contribute to coil icing.

R . INFORMATION FOR THE OWNER

Present the owner or operator of the equipment with the Installation & Operation Manual, all accessory installation instructions, and the name, address, and telephone number of the Authorized Friedrich Warranty Service Company in the area for future reference if necessary. Inspect the unit for any damage to the coils and tubing that could cause a leak.

R.1 Room air conditioner unit performance test data sheet

Job name_____
Tech's name_____

Date_____

Model#_____serial #_____

Check the installation	acceptable Yes	not acceptable no
Is a chasis gasket installed?	_____	_____
Is a friedrich sleeve installed?	_____	_____
Is a friedrich outdoor grille installed?	_____	_____
Is maintenance being performed?	_____	_____
Electrical		
Line voltage (static)	_____ volts	
Start up voltage	_____ volts	
Amperage draw (cool)	_____ amps	
Amperage draw (heat)	_____ amps	
Compressor		
Locked rotor amps	_____ amps	
Running amperage draw	_____ amps	
Indoor conditions		
Indoor ambient temperature		_____ f
Relative humidity (rh) indoor		_____%
Discharge air temperature (indoor)(cool)		_____f
Discharge air temperature (indoor)(heat)		_____f
Return air temperature (indoor)(cool)		_____f
Return air temperature (indoor) (heat)		_____f
Outdoor temperature		
Outdoor ambient temperature		_____f
Rh outdoor relative humidity		_____%
Discharge air temperature (outdoor)(cool)		_____f
Discharge air temperature (outdoor)(heat)		_____f
Intake air temperature (outdoor)(cool)		_____f
Intake air temperature (outdoor)(heat)		_____f

Cooling or heating area
Area w_____ * l_____ = feet squared

For a general guide refer to sizing guide to the right

For exact load calculations consult manual j or m.

Air Conditioned Area	Cooling BTUs Required	Air Conditioned Area	Cooling BTUs Required
100 - 150	5000	550 - 700	14000
150 - 250	6000	700 - 1000	18000
250 - 300	7000	1000 - 1200	21000
300 - 350	8000	1200 - 1400	23000
350 - 400	9000	1400 - 1500	24000
400 - 450	10000	1500 - 2000	30000
450 - 550	12000	2000 - 2500	34000

R.2 Routine Maintenance

Decorative Front

Use a damp (not wet) cloth when cleaning the control area to prevent water from entering the unit, and possibly damaging the electronic control.



The decorative front and the cabinet can be cleaned with warm water and a mild liquid detergent. Do NOT use solvents or hydrocarbon based cleaners such as acetone, naphtha, gasoline, benzene, etc.

The indoor coil can be vacuumed with a dusting attachment if it appears to be dirty. DO NOT BEND FINS. The outdoor coil can be gently sprayed with a garden hose.

Air Filter

The air filter should be inspected weekly and cleaned if needed by vacuuming with a dust attachment or by cleaning in the sink using warm water and a mild dishwashing detergent. Dry the filter thoroughly before reinstalling. Use caution, the coil surface can be sharp.

⚠WARNING: Service of this product (aside from filter maintenance) shall only be performed by trained service personnel. Refer to the Service Manual for procedures on how to inspect and maintain the interior of the unit and its components. A QR code is located in section A.5 which will help you locate the service manual online.

Coils & Chassis

The indoor coil and outdoor coils and base pan should be inspected periodically (annually or semi-annually) and cleaned of all debris (lint, dirt, leaves, paper, etc.) as necessary. Under extreme conditions, more frequent cleaning may be required.

Wall Sleeve

Inspect the inside of the wall sleeve and drain system periodically (annually or semi-annually) and clean as required. Under extreme conditions, more frequent cleaning may be necessary.

Blower Wheel / Housing / Condensor Fan / Shroud

Inspect the indoor blower and its housing, evaporator blade, condenser fan blade and condenser shroud periodically (yearly or bi-yearly) and clean of all debris (lint, dirt, mold, fungus, etc.).