

Installation and Operation Manual



F R I E D R I C H

PTAC
Packaged Terminal Air
Conditioners & Heat Pumps

ZoneAire®

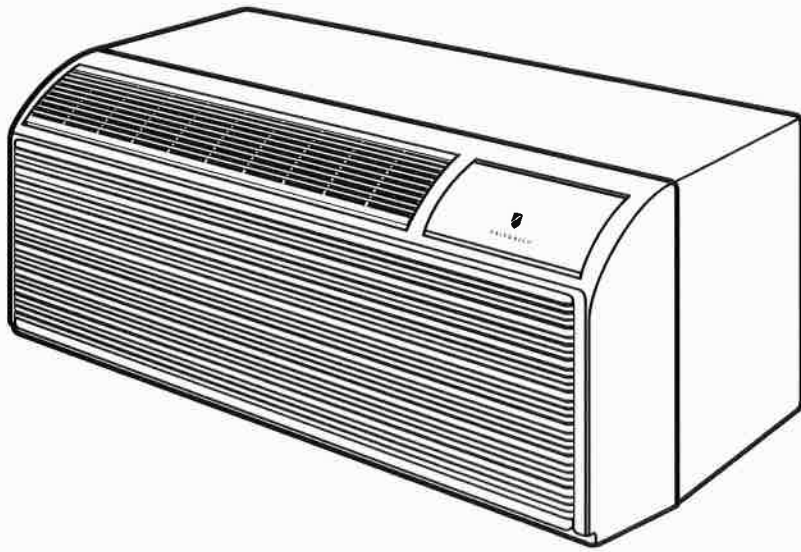


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NOTE:



All PTAC 7K,9K,12K units come with a standard 3.6KW electric heater (20A power cord).All PTAC 15K units come with a standard 5KW electric heater(30A power cord) .

Congratulations

Thank you for your decision to purchase Friedrich. Your new Friedrich has been carefully engineered and manufactured to give you many years of dependable, efficient operation, maintaining a comfortable temperature and humidity level. Many extra features have been built into your unit to assure quiet operation, the greatest circulation of cool, dry air, and the most economic operation.

General Instructions

This Installation and Operation Manual has been designed to insure maximum satisfaction in the performance of your unit. For years of trouble-free service, please follow the installation instructions closely. We cannot overemphasize the importance of proper installation.



 WARNING	
	<p>Refrigeration system under high pressure</p> <p>Do not puncture, heat, expose to flame or incinerate.</p> <p>Only certified refrigeration technicians should service this equipment.</p> <p>R410A systems operate at higher pressures than R22 equipment. Appropriate safe service and handling practices must be used.</p> <p>Only use gauge sets designed for use with R410A. Do not use standard R22 gauge sets.</p>




Here are some suggestions to help you use your new Friedrich most efficiently:

- Carefully read and follow the installation instructions.
- Make sure the unit is the right capacity for the area being 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 as well.
- Clean the filter frequently (See Routine Maintenance, Page 26).
- Do not block the air flow to and from the unit.
- A dirty filter or improperly set controls can affect the cooling ability of the unit.
- If cooling is weak and you have verified that the filter is clean

and the controls are properly set, the unit may need service and you should call your Friedrich service provider to check the unit.

- Keep blinds, shades and drapes closed on the sunny side of the room being cooled to reduce radiant heat.
- Proper insulation helps your unit maintain the desired inside temperature.
- Whenever possible, shade south and west facing windows.
- Keep window coverings away from the unit to provide free air flow.

 WARNING	
	<p>Read Installation Operation Manual</p> <p>Please read this manual thoroughly prior to equipment installation or operation.</p> <p>It is the installer's responsibility to properly apply and install the equipment. Installation must be in conformance with the NFPA 70 -2008 National Electric Code or current edition, International Mechanic Code 2009 or current edition and any other applicable local or national codes.</p> <p>Failure to do so can result in property damage, personal injury or death.</p>

Your safety and the safety of others are very important.	
We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.	
	<p>This is a safety Alert symbol.</p> <p>This symbol alerts you to potential hazards that can kill or hurt you and others.</p> <p>All safety messages will follow the safety alert symbol with the word "WARNING" or "CAUTION". These words mean:</p>
 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.
All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what will happen if the instructions are not followed.	
NOTICE	Indicates property damage can occur if instructions are not followed.

General Specifications

Typical Unit Components and Dimensions

PDXWS Wall Sleeve
 Dimensions: 16" H x 42" W x 13-3/4" D
 Front Cover Dimensions: 16" H x 42" W x 7-3/4" D
Cut-Out Dimensions: 16-1/4" x 42-1/4"

PTAC/PTHP Model Identification Guide

MODEL NUMBER	PZ	H	07	K	3	S	B
Series PZ = Friedrich Digital PTAC							Engineering Digit
System E = Cooling with electric heat H = Heat Pump with Auxiliary Heat							Design Series
Nominal Capacity 07 = 7,000 Btuh 12 = 12,000 Btuh 09 = 9,000 Btuh 15 = 15,000 Btuh							Chassis S = Standard
Voltage K = 230/208V - 1 Ph. - 60 Hz. R = 265V - 1 Ph. - 60 Hz.							Nominal Heater Size (230V or 265V) 3 = 3 KW * 5.0 kw only available on 15,000 BTU models

Installation Checklist

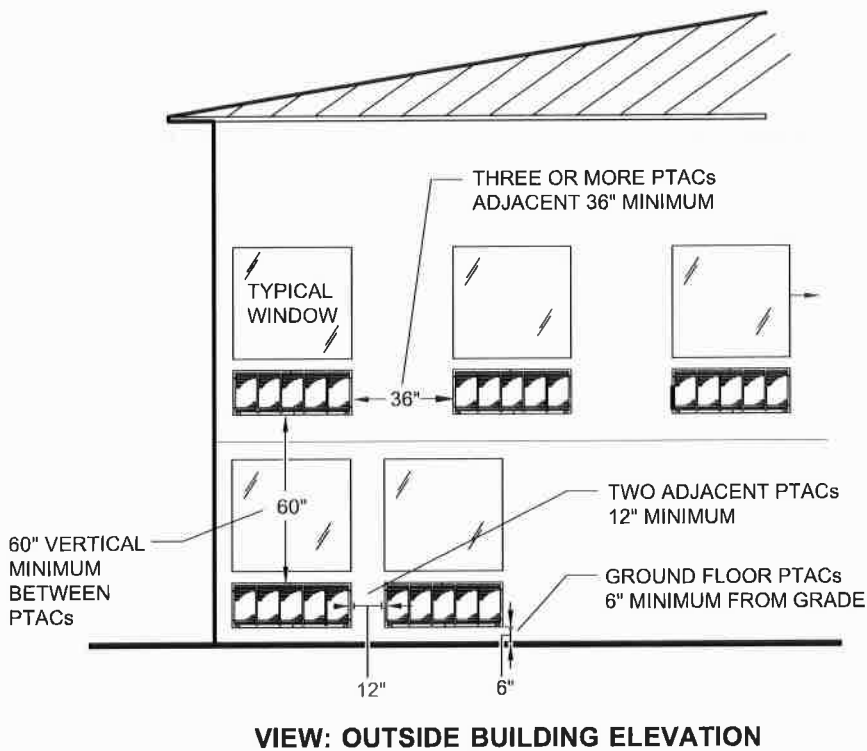
- Inspect all components and accessories for damage before and after installation.
- Remove the cardboard wall sleeve support and grill weatherboard.
- Check for proper wall sleeve installation in accordance with the wall sleeve installation instructions.
- Check for a subbase kit or other means of structural support which is required for ALL installations projecting more than 8" into room.
- Install the recommended Condensate Drain Kits for complete condensate removal.
- Ensure that the chassis is installed in a 16" high x 42" wide wall sleeve that is no deeper than 13 3/4". A baffle kit is required if the sleeve exceeds that depth.
- Ensure that chassis and chassis front cover are installed and secured properly.
- Ensure that drapes, bed, bedspread, furniture, etc. DO NOT block either return or discharge air grilles.
- Inspect the condenser air inlet and outlet for any obstructions (shrubby, etc).
- Ensure that 'reset' button is pressed on LCD device (only on cord connected models).

PTAC Installation Recommendations

For proper PTAC unit performance and maximum operating life refer to the minimum installation clearances below:

Figure 1

PTAC units should be installed no closer than 12" apart when two units are side by side. If three or more PTAC units are to operate next to one another allow a minimum of 36" between units. Also, a vertical clearance of 60" should be maintained between units installed. In the interior of the room the unit should be located a minimum of 1/4" from the floor and a minimum of 36" from the ceiling.

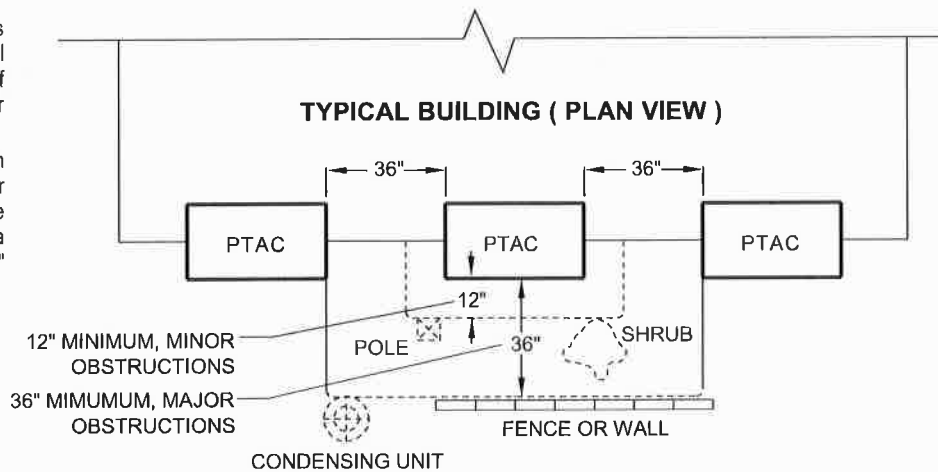


FRP001

For PTACs on the ground floor or anytime obstructions are present, use the following guidelines:

Figure 2

- For minor obstructions such as lamp poles or small shrubbery a clearance of 12" from the outdoor louver should be maintained.
- For major obstructions such as a solid fence, wall or other heat rejecting device like a condensing unit, a minimum distance of 36" should be kept.



FRP002

The above suggestions are for reference only and do not represent all possible installations. Please contact Friedrich for information regarding affects of other installation arrangements. By following these simple recommendations you can be confident that your Friedrich PTAC will provide years of worry free operation.

Wall Sleeve Installation Instructions (PDXWSA)

NOTE: Insure that the unit is only installed in a wall structurally adequate to support the unit including the sleeve, chassis and accessories. If the sleeve projects more than 8" into the room, a subbase or other means of support **MUST** be used. Please read these instructions completely before attempting installation.

⚠ WARNING	
	<p>Falling Object Hazard</p> <p>Not following Installation Instructions for mounting your air conditioner can result in property damage, injury, or death.</p>

NOTICE	
<p>DO NOT allow any pitch toward the inside.</p> <p>Flashing on all 4 sides of the opening is recommended.</p> <p>Potential property damage can occur if instructions are not followed.</p>	

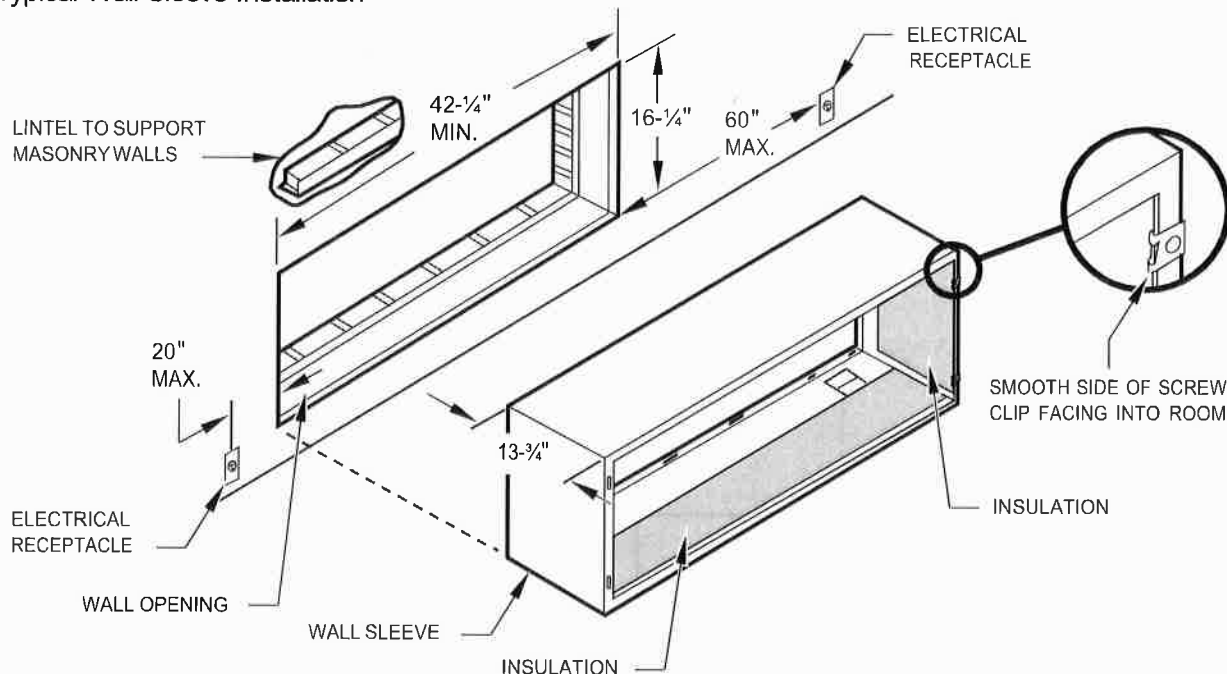
For Deep Wall Installation (Greater than 13 1/4")
See Page 9

The following instructions apply **ONLY** to walls less than 13 1/4" in depth.

1. The PXDR10 Drain Kit, (optional for new construction) see page 10 if applicable, must be installed before the wall sleeve is installed into the wall.
2. The External Drain (for new construction or unit replacement) see page 11 if applicable, must be installed before the wall sleeve is installed into the wall.

3. From inside the building, position the wall sleeve in the opening and push it into the wall until it protrudes at least 1/4" on the outside (See Figure 9, Page 8).
4. Position the wall sleeve with a slight tilt towards the outside to facilitate condensate drainage. It should be level side-to-side and the front should be 1/4" higher than the back.

Figure 3
Typical Wall Sleeve Installation

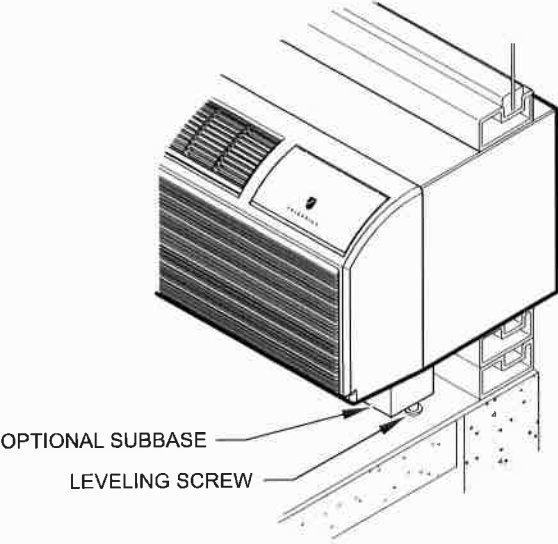


NOTE: All 230/208V units are manufactured with a 60" power cord and all 265V units with a 18" power cord.

FRP003

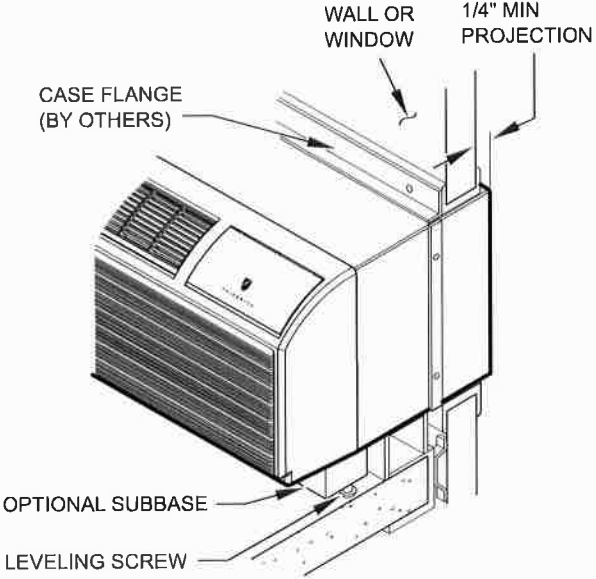
Alternate Wall Instalations

Figure 4
Panel Wall



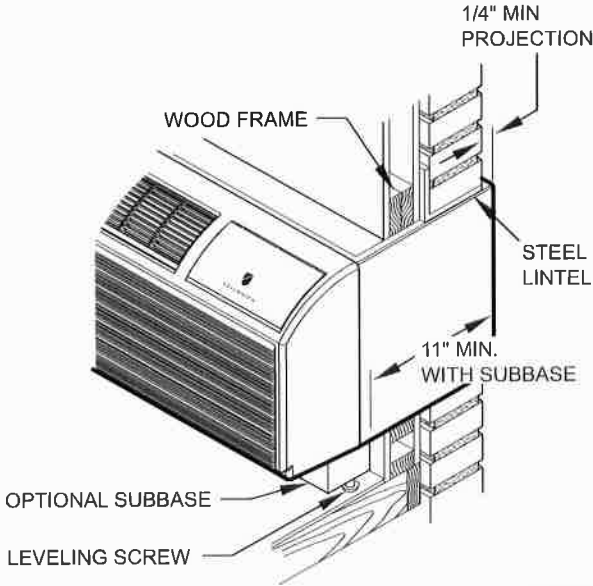
FRP004

Figure 6
Curtain Wall



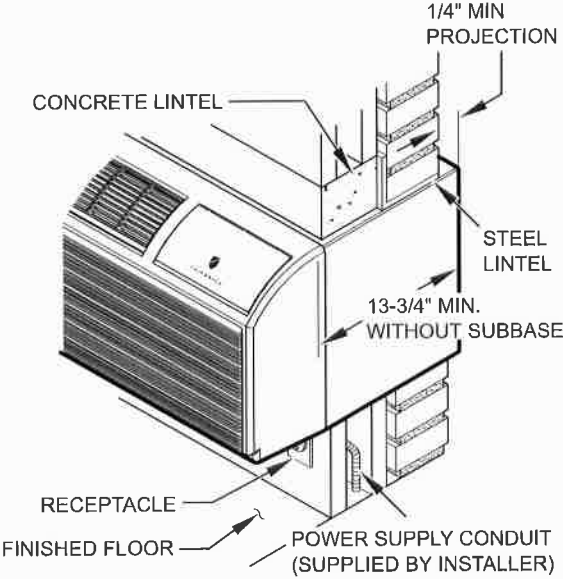
FRP006

Figure 5
Frame and Brick Veneer



FRP005

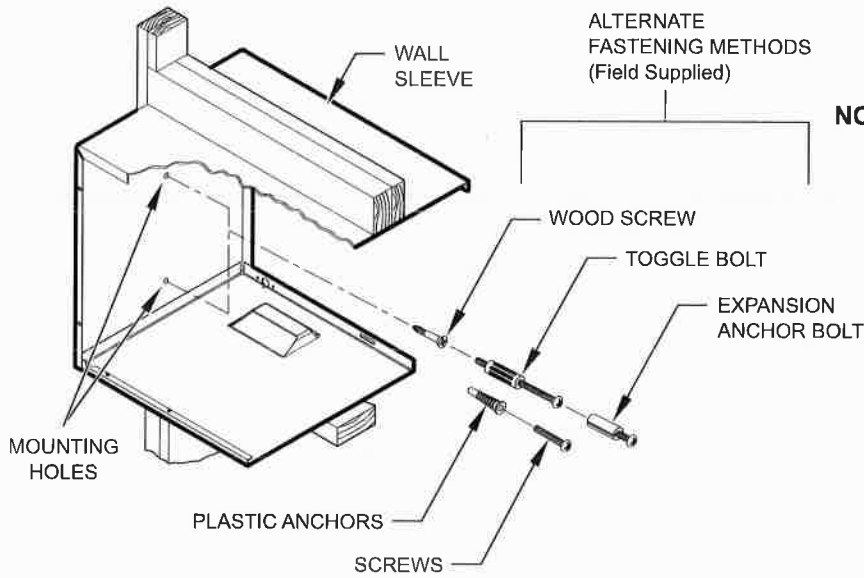
Figure 7
Block and Brick Veneer



FRP007

NOTE: Follow all wall system manufacturer installation instructions. For sunrooms and modular buildings, adhere to their installation instructions for supporting and sealing sleeve to their frames. All wall and window/wall installations must provide for proper drainage. In applications where the drain holes on the PTAC wall sleeve are not exposed beyond the wall an internal drain system is recommended. It is the installer's responsibility to ensure there is adequate drainage for the PTAC unit.

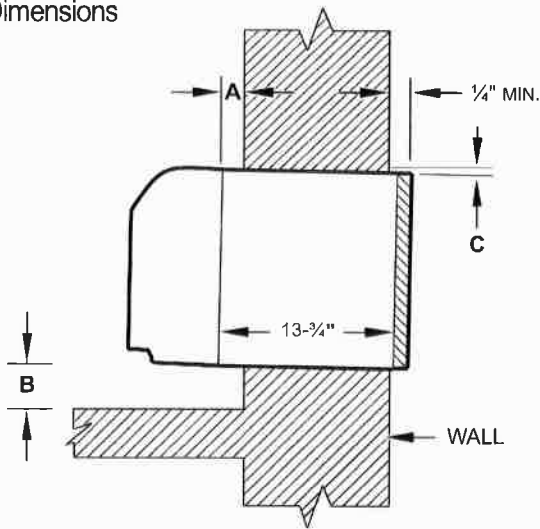
Figure 8
Wall Sleeve Attachment



NOTE: The Wall Sleeve must be horizontally level (side-to-side) and pitched 1/4" bubble to the outside when installed in an opening. The mounting hole location should be approximately 2-4" from the top and bottom of the sleeve.

FRP008

Figure 9
Dimensions



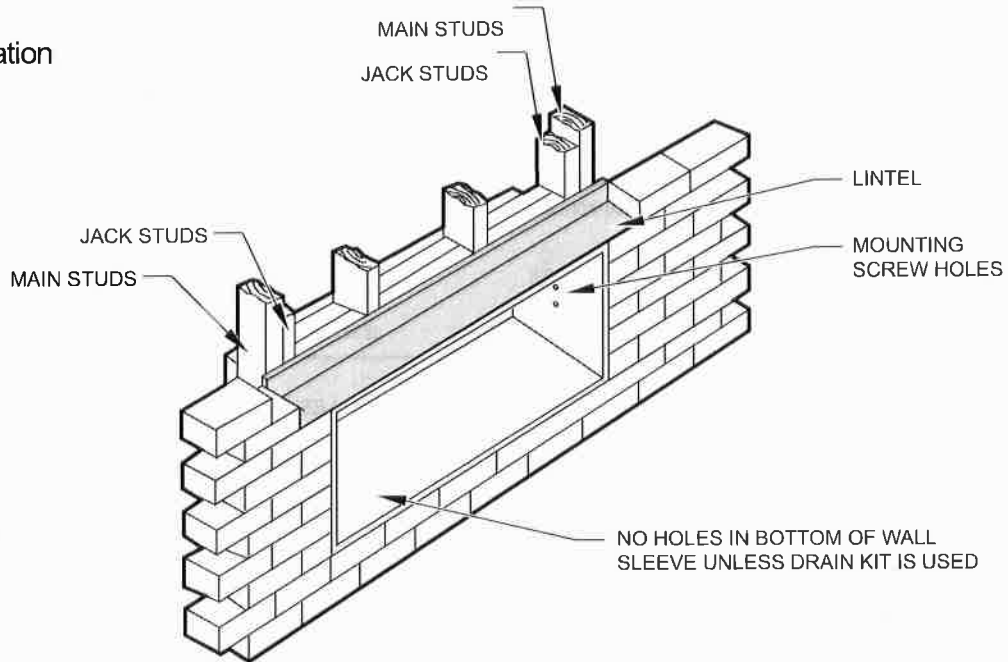
Dimension*	A	B		C
	Allow for wall finishing (Minimum)	Allow for floor finishing Min.	Max.	Allow for proper drainage (Front-to-Back)
No Accessories	1/4"	1/4"	---	---
With Subbase	1-3/4"	3-1/2"	5"	---
With Lateral Duct	3/4"	1/4"	---	---
Wall Sleeve Tilt	---	---	---	1/4"

* If more than one accessory is to be used, use the maximum dimension. If the wall thickness is more than 13-3/4" - (A+ 1/4"), a sleeve extension must be used.

FRP009

5. Drill two 3/16" holes through each side of the sleeve approximately 4" from top and 4" from bottom of sleeve. Screw four #10 x 1" screws (included) or appropriate fasteners for your installation, through the holes in the sides of the wall sleeve.
6. Apply sealant around the wall sleeve where it projects through the inside and outside wall surfaces. Apply the sealant to the screw heads or the tops of the fasteners used in Step #5.
7. If the chassis and exterior grille are to be installed later, leave the weatherboard and center support in place, otherwise remove and dispose of them. (See Figure 13, Page 12).
8. Provide a support lintel if the wall sleeve is installed in a concrete or masonry wall (See Figure 10, Page 9).

Figure 10
Lintel Installation



NOTE: Construct wall opening to comply with all applicable building codes.

FRP010

One-Piece Deep Wall Sleeve Installation (PDXWSEXT)

If the wall is thicker than 13 1/4" a deep wall sleeve or wall sleeve extension **MUST** be used. The deep wall sleeve may be special ordered through your Sales Representative.

PXDR10 Drain Kit Installation Instructions (optional for new construction)

NOTE: Determine whether drain will be located within the wall, on the indoor side, or will drain to the exterior of the building. Follow appropriate instructions below depending on your particular type of installation.

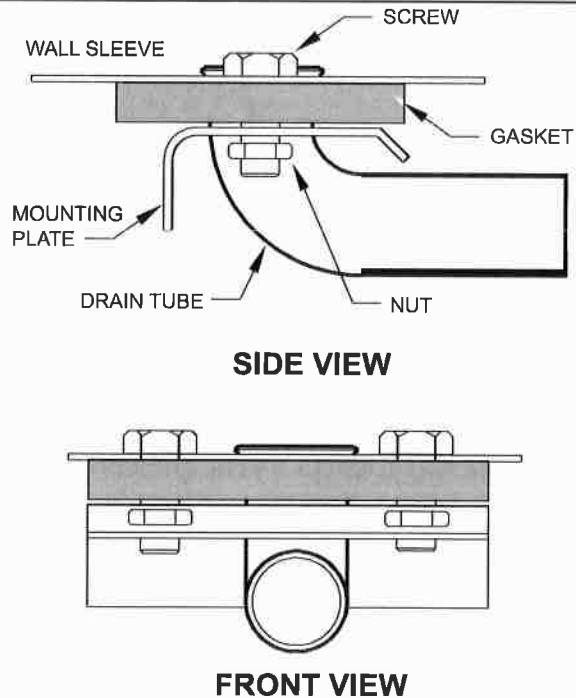
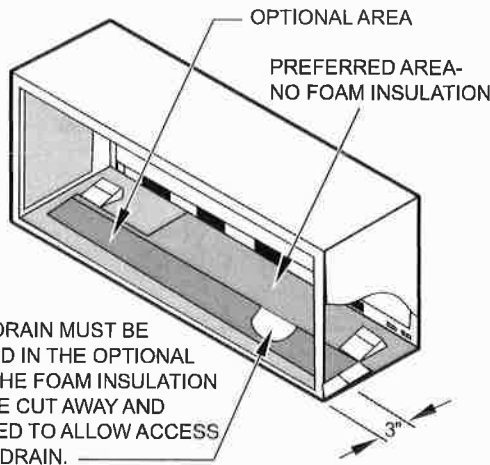
Internal Drain

NOTE: If installing an internal drain, you **MUST** install a drain kit on the wall sleeve before the wall sleeve is installed.

1. Refer to Figure 11 and locate the drain within the "Preferred" area of best drainage. Maintain at least a 1/2" clearance from the embossed area.
2. Using the mounting plate with the 1/2" hole as a template, mark and drill two, 3/16" mounting holes and a 1/2" drain hole in the sleeve bottom.

3. Remove the backing from the gasket and mount it on the flat side of the mounting plate. (See Figure 12, Page 11). Insert the drain tube through the hole in the gasket and mounting plate so the tube flange will be against the wall sleeve.
4. Position the assembly beneath the drilled holes and secure it with #10-24x 1/2" machine screws and lock nuts provided. Seal the tops of the screws with silicone caulking.
5. Use 1/2" ID copper tube, PVC pipe, or vinyl hose (obtained locally) to connect the internal drain tube to the drain system in the building.
6. Referring to Figure 12, Detail A, Page 11, locate and assemble the two cover plates and gaskets over the drain holes at the rear of the wall sleeve. Attach them with the #10 sheet metal screws provided. Make certain that the four overflow slots at the rear of the wall sleeve are not blocked (See drawing of the back of the sleeve Figure 12, Page 11).
7. If a deep wall extension (PDXWSEXT) is used, after installing the field supplied flashing, caulk as required. Be sure to caulk around the flashing and the wall sleeve where the hole was drilled for the drain tube.

Figure 11
Drain Kit Location and Installation



FRP011

PXDR10	
QUANTITY	DESCRIPTION
2	COVER PLATES
1	MOUNTING PLATE
1	DRAIN TUBE
3	MOUNTING PLATE GASKET
4	#10 X 1/2" SHEET METAL SCREWS
2	#10-24 X 1/2" MACH. SCREWS
2	#10-24 X 1/2" LOCKNUTS

External Drain (for new construction or unit replacement)

When using an external drain system, the condensate is removed through either of two drain holes on the back of the wall sleeve. Select the drain hole which best meets your drainage situation and install the drain kit. Seal off the other with a cover plate.

Drain Tube Installation (See Figure 12)

1. Peel the backing tape off the gaskets and apply the sticky side to one cover plate and one mounting plate as shown in Details A and B.
2. Place the drain tube through the gasket and the mounting plate with the flange toward the wall sleeve.
3. Attach the drain tube assembly to one of the two drain holes at the rear of the wall sleeve. The large flange on the mounting plate is positioned at the bottom of the sleeve facing toward the sleeve, Detail B. When the drain tube is positioned at the desired angle, tighten the screws.

Cover Plate Installation

4. Mount the foam gasket to the cover plate. Using two #10 x 1/2" sheet metal screws (provided), attach the cover plate to the remaining drain hole. Make certain the large flange on the plate is positioned at the bottom of the sleeve.
5. Discard the additional cover plate, gasket, machine screws, and locknuts.

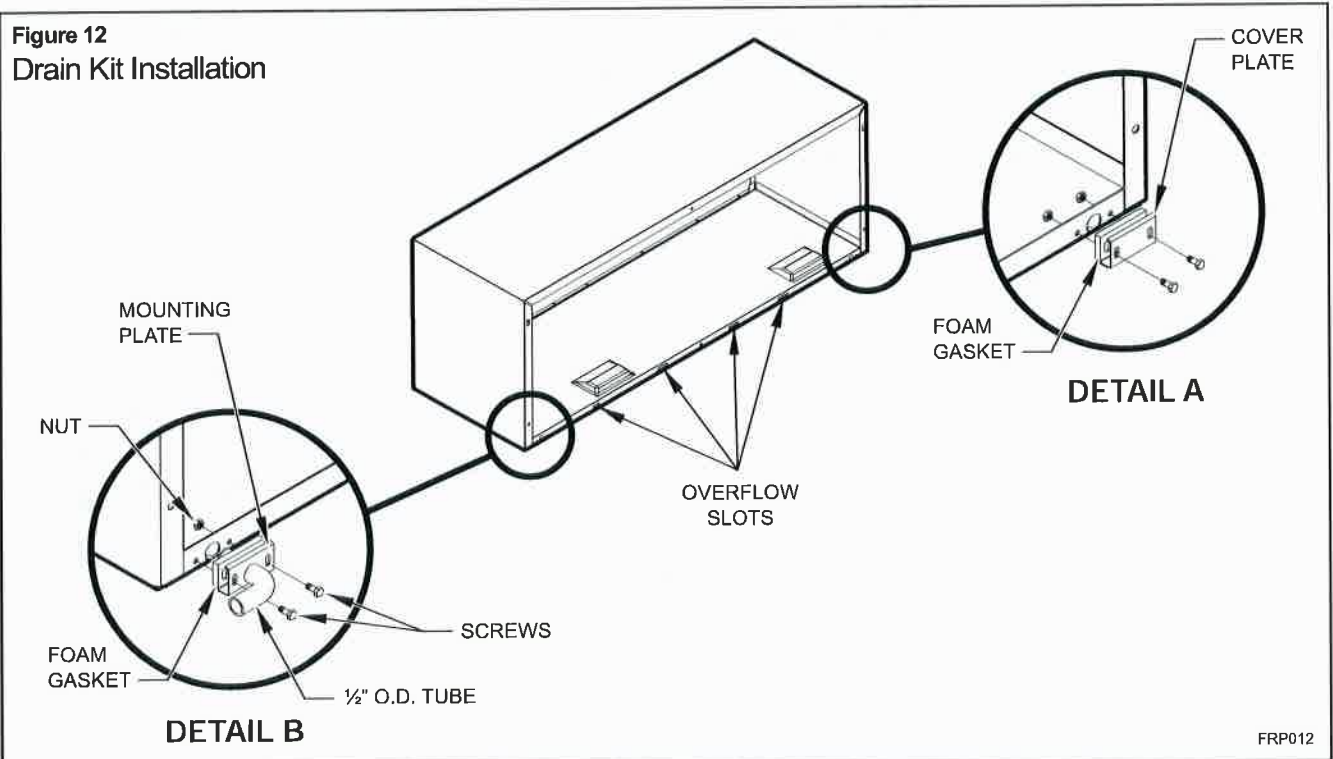
NOTICE

If the wall sleeve has not been installed, the drain tube must be rotated to a horizontal position until after the sleeve is installed. Tighten the mounting plate screws when the tube is in the proper position. Make certain that the four overflow slots at the rear of the wall sleeve are not blocked (See Figure 12).

When sealing the sleeve on the outside of the building, be careful NOT to let the sealant block the two condensate drain holes or the four overflow slots at the bottom flange of the sleeve.

Potential property damage can occur if instructions are not followed.

Figure 12
Drain Kit Installation



NOTE: The large flange on the mounting plate is positioned at the bottom of the sleeve facing toward the sleeve. The drain tube must be rotated to a horizontal position to allow for the wall sleeve to be installed into the wall. Once the wall sleeve is installed, return the drain tube to a downward angle.

PXGA Standard Grille Installation Instructions

1. Remove the center support and weatherboard if still installed in the sleeve.
2. Insert six plastic grommets into the grille openings from the outside of the grille as shown in Figure 13.
3. Insert two #8 x 3/8" sheet metal screws (provided) in the top two outside edge plastic grommets, and tighten them half way into the grommets.
4. Grasp the grille by the attached plastic handles. Position it with the condensate drain knockouts facing down.

From inside the building, maneuver the grille through the wall sleeve and pull toward you until the screw heads are inserted into the keyhole slots at the top of the wall sleeve. Tighten the two screws completely.

5. Insert the remaining screws into the remaining holes and tighten securely.

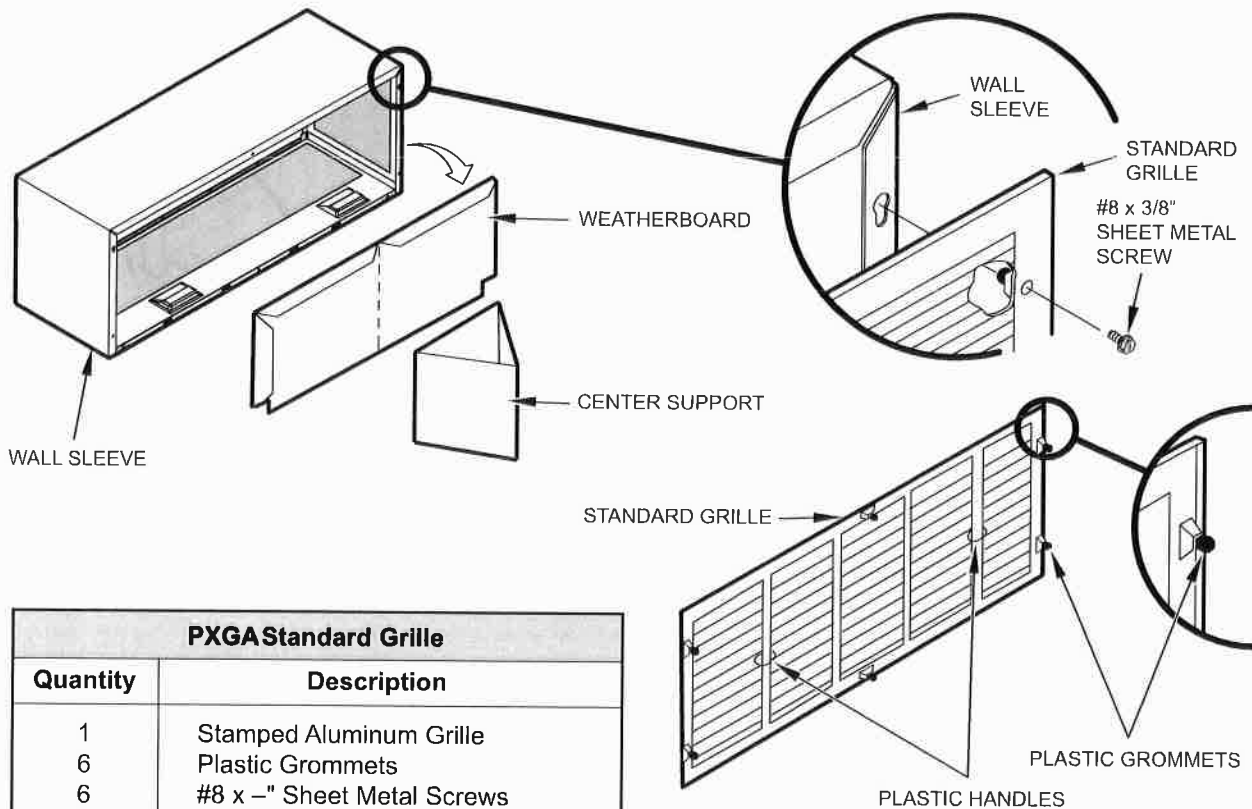
⚠ WARNING



Falling Object Hazard

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

Figure 13
Standard Grille






PXGA Standard Grille	
Quantity	Description
1	Stamped Aluminum Grille
6	Plastic Grommets
6	#8 x -" Sheet Metal Screws

FRP013

A. Electrical Rating Tables


All units are equipped with standard power cords.

NOTE: Use Copper Conductors ONLY. Wire sizes are per NEC, check local codes for overseas applications.

Voltage	230V		265V
	Amps	20	30
Heater Size	3.6kw	5kw	3.6kw
Receptacles			
NEMA# Receptacle	6-20R	6-30R	7-20R
NEMA# Plug	6-20P	6-30P	7-20P

FUSE/CIRCUIT BREAKER	Use ONLY type and size fuse or HACR circuit breaker indicated on unit's rating plate. Proper current protection to the unit is the responsibility of the owner. NOTE: A time delay fuse is provided with 265V units.
GROUNDING	Unit MUST be grounded from branch circuit through service cord to unit, or through separate ground wire provided on permanently connected units. Be sure that branch circuit or general purpose outlet is grounded. The field supplied outlet must match plug on service cord and be within reach of service cord. Refer to Table 1 for proper receptacle and fuse type. Do NOT alter the service cord or plug. Do NOT use an extension cord.
RECEPTACLE	The field supplied outlet must match plug on service cord and be within reach of service cord. Refer to Table 1 for proper receptacle and fuse type. Do NOT alter the service cord or plug. Do NOT use an extension cord.

⚠ WARNING



Electrical Shock Hazard

Turn off electrical power before service or installation.

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, personal injury and/or death.

B. Power Cord Information (230/208V models only)

All Friedrich 230/208V PTAC units are shipped from the factory with a Leakage Current Detection Interrupter (LCDI) equipped power cord. The LCDI device meets the UL and NEC requirements for cord connected air conditioners effective August 2004.

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 trips and pops out).
4. Press and release RESET (listen for click; Reset button latches and remains in). The power supply cord is ready for operation.

NOTE: The LCDI device is not intended to be used as a switch. Once plugged in the unit will operate normally without the need to reset The LCDI device.

If the LCDI device fails to trip when tested or if the power supply cord is damaged it must be replaced with a new supply cord obtained from the product manufacturer, and must not be repaired.

Figure 14
Typical LCDI Devices

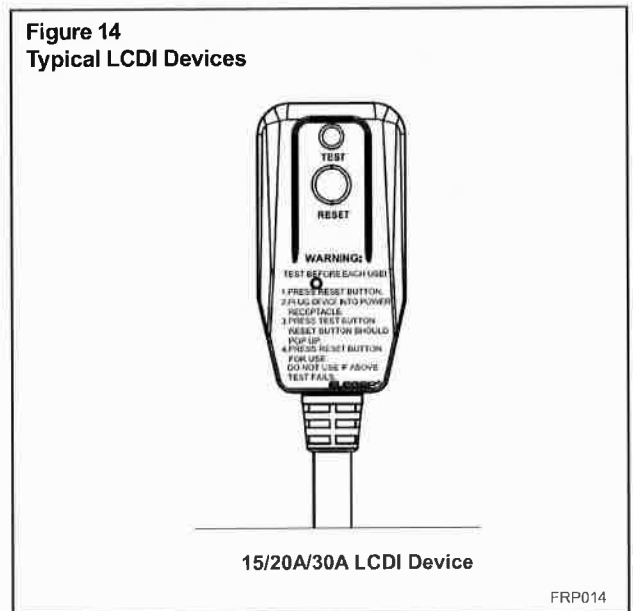


TABLE 2					
MODEL	HEATER kW	Power Cord Kit	Voltage	Amperage	Receptacle
PZE / PZH07K	3.6	STD	230/208	20	NEMA 6-20r
PZE / PZH09K	3.6	STD	230/208	20	NEMA 6-20r
PZE / PZH12K	3.6	STD	230/208	20	NEMA 6-20r
PZE / PZH15K	5.0	STD	230/208	30	NEMA 6-30r
PZE / PZH09R	3.6	STD	265	20	NEMA 7-20r
PZE / PZH12R	3.6	STD	265	20	NEMA 7-20r

Electrical Wiring for 265 Volt Models

Power Cord Installation

All 265V PTAC/PTHP units come with a factory installed non-LCDI power cord for use in a subbase. If the unit is to be hard-wired refer to the instructions below.

NOTE: It is recommended that the PXSJ subbase assembly, the PXCJA conduit kit (or equivalent) be installed on all hardwire units. If installing a flush-floor mounted unit, make sure the chassis can be removed from the sleeve for service and maintenance.

To install the line voltage power leads and conduit to chassis, follow the instructions below.

1. Follow the removal process of the chassis's junction box.
2. Prepare the 265V (or 230V) power cord for connection to the chassis' power cord connector by cutting the cord to the appropriate length. Power cord harness selection shown on Table 2 on page 14.



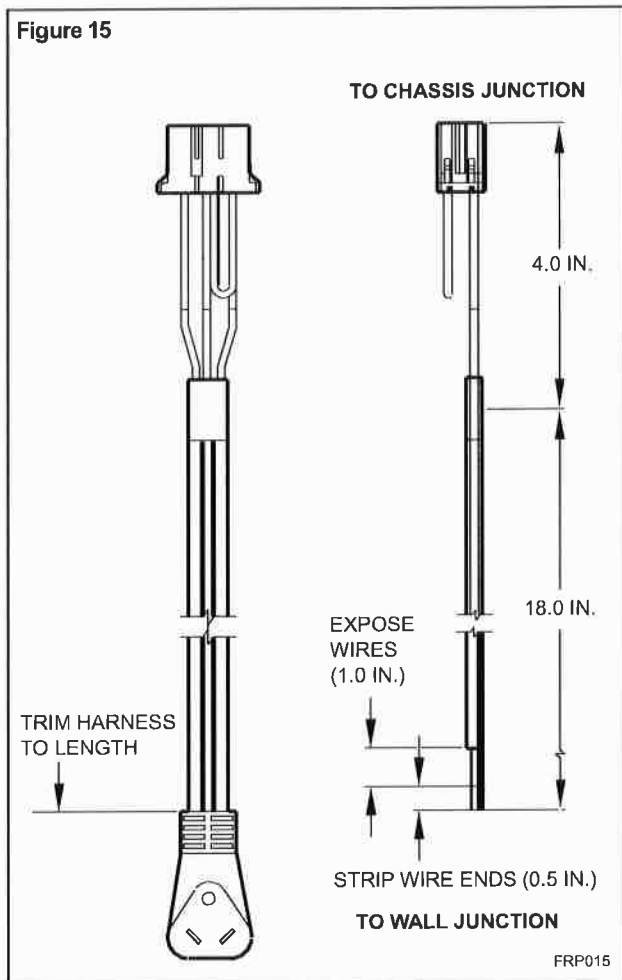
 WARNING	
	<p>Electrical Shock Hazard</p> <p>Turn off electrical power before service or installation.</p> <p>ALL electrical connections and wiring MUST be installed by a qualified electrician and conform to the National Code and all local codes which have jurisdiction.</p> <p>Failure to do so can result in property damage, personal injury and/or death.</p>

Figure 15



3. Route the cut ends of harness through the conduit connector assembly and flex conduit sleeve. Be sure to use the supplied conduit bushing to prevent damage to the cord by the conduit. The cord should pass through the Locknut, Spacer, Chassis Junction Box, Conduit Connector, Bushing, then the Conduit Sleeve. See Figure 17.
4. Route the cut ends of the power cord through the elbow connector at the other end of the conduit. Tighten screws on elbow connect or to secure conduit sleeve.
5. Fasten and secure the elbow connector to the wall junction box cover with locknut. Place and mount the wall junction box with the four wall mounting screws making sure to pass the wall lines through the junction box. Connect and join all wall lines with the stripped ends using wire nuts. Tighten both screws of the wall junction box cover to junction box.

Figure 16

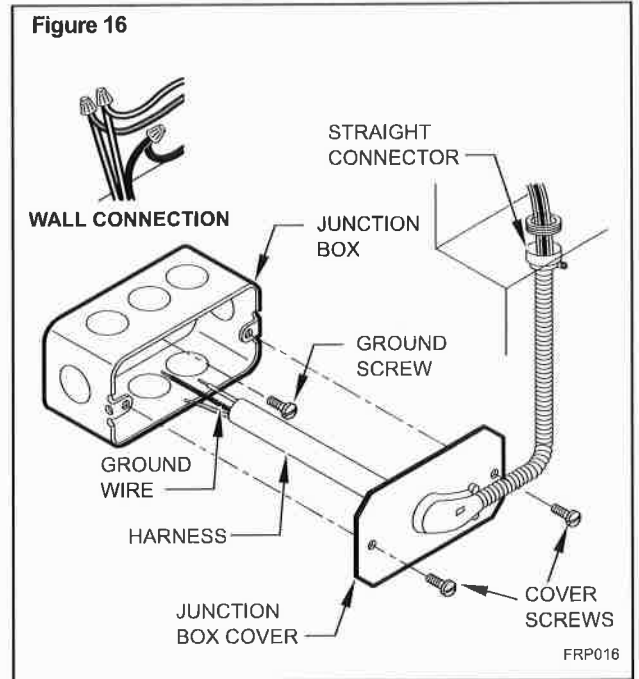
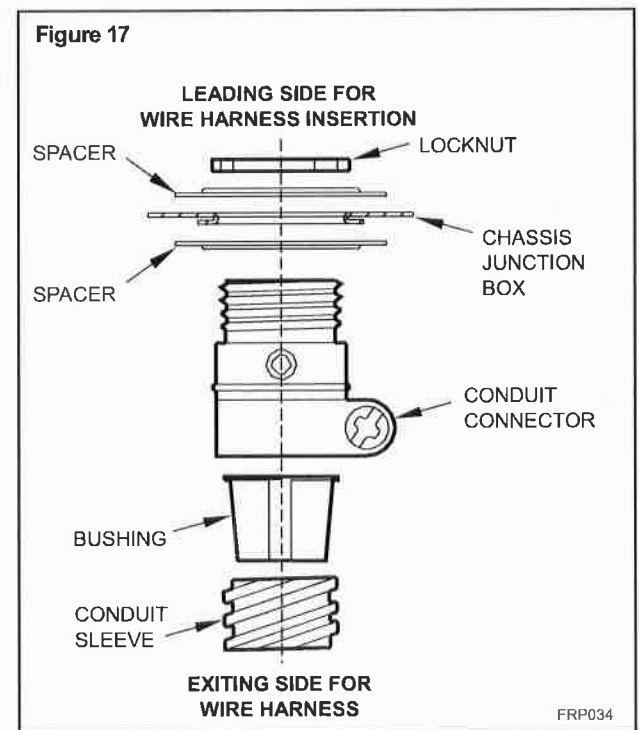


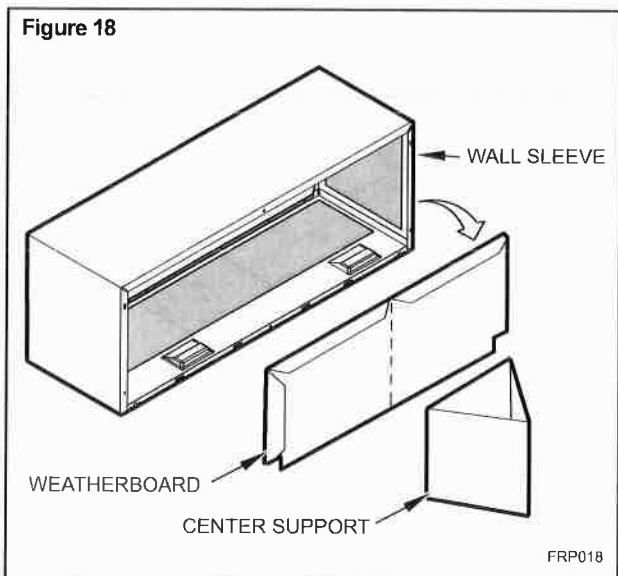
Figure 17



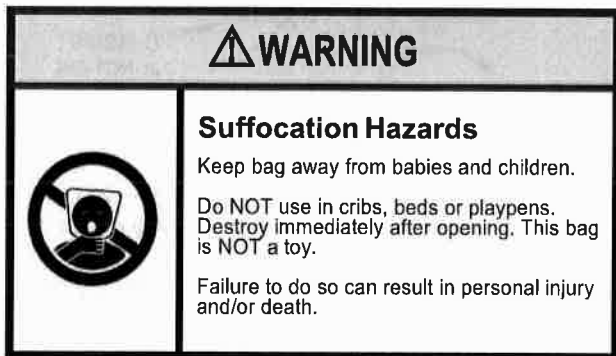
Chassis Install Preparation

Check to be sure the wall sleeve, extension (if used), grille, and drain kit are installed properly before chassis installation.

1. Remove the weatherboard and center support from the sleeve (if still in place). Be sure an outdoor grille is attached.



NOTE: Use a wall sleeve adapter kit (PXSE) if installing a P-Series chassis in a T-Series sleeve.

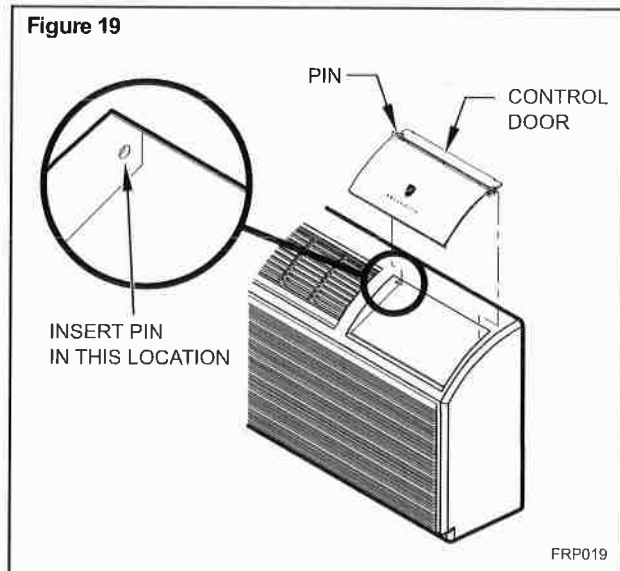


2. Remove the front cover contained in a protective plastic bag from chassis. Remove the bag and dispose of it properly.

If the control door is not installed, follow these steps:

- a. From the front cover, slide the right control door pin into the hole on the right side of the front cover.
- b. Slide the left door pin into the hole on the left side of the front cover opening.
- c. Snap cover into place.

NOTE: To avoid breaking the door or hinge pins, do not apply excessive force when installing.



IMPORTANT: When installing a Friedrich PTAC into an existing sleeve, it is important to ensure that the unit is installed completely. Inspection of the air seal between the condenser air baffles and around the indoor mounting flange is recommended.

In some cases additional gaskets or baffling may be required.

CAUTION

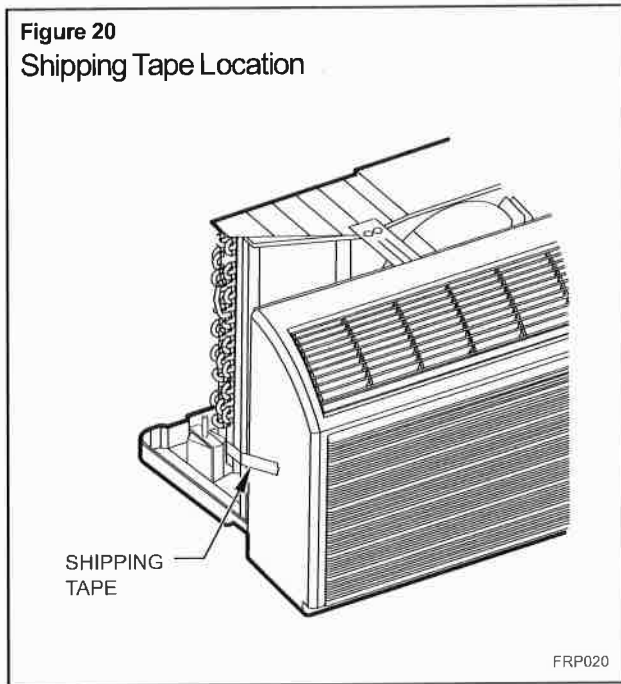
Unit Damage Hazard

Failure to follow this caution may result in equipment damage or improper operation.

Failure to remove shipping tape and screw will prevent fresh air vent door from opening and may result in damage to vent door cable.

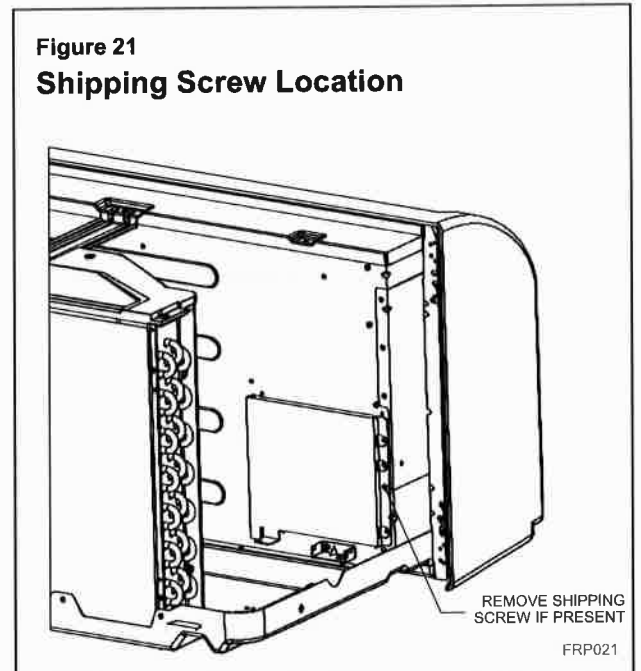
3. Carefully remove shipping tape from the front panel and vent door. See Figure 20

Figure 20
Shipping Tape Location



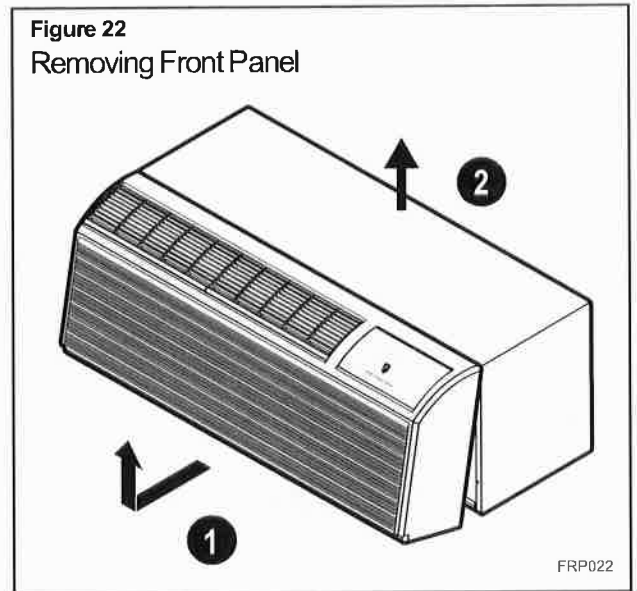
4. Remove shipping screw from the vent door, if present. See Fig 21.

Figure 21
Shipping Screw Location



5. Remove front panel. See Figure 22.

Figure 22
Removing Front Panel



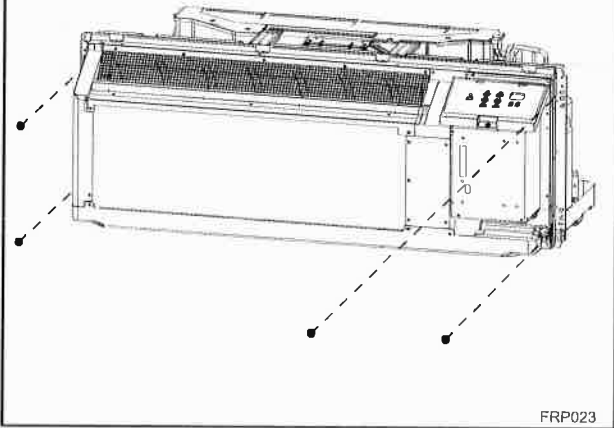
Pull out at the bottom to release it from the tabs (1). Then lift up (2).

NOTE: If the unit is mounted flush to the floor, the service cord **MUST** be rerouted at the bottom of the front cover on the side closest to the receptacle. A notch **MUST** be made in the front cover side where the cord exits the unit. It is the responsibility of the installer to create an exit notch.

Chassis Installation

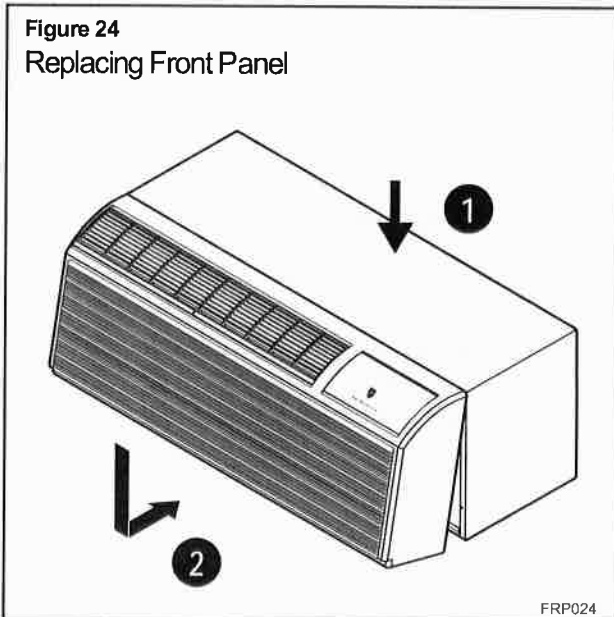
1. Lift unit level and slide unit into wall sleeve until seal rests firmly against front of wall sleeve.

Figure 23
Securing Unit



2. Locate the four supplied chassis mounting screws. Insert the screws through the chassis mounting flange holes that are aligned with the speed nuts in the wall sleeve. Tighten all four screws (two per side).

Figure 24
Replacing Front Panel



3. Place tabs over top rail (1). Push inward at bottom until panel snaps into place (2).
4. Reinstall front panel. See Figure 24.

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.

NOTICE

Copper refrigerant tubes are NOT handles.
Do NOT use tubing to lift or move chassis.

To remove the front cover, pull the bottom end forward and lift it up to clear the L bracket across the top of the chassis.

5. Plug the cord (if applicable) into the appropriate receptacle. Restore power to the unit.