



# OWNER'S MANUAL

## INSTALLATION INSTRUCTIONS

VISITEZ NOTRE SITE WEB POUR LA VERSION FRANÇAISE DE CE MANUEL  
VISITE NUESTRA PÁGINA WEB PARA LA VERSIÓN EN ESPAÑOL DE ESTE MANUAL  
<https://www.williamscomfortprod.com/products/furnaces/>

# ELECTRIC FORSAIRE™

## COUNTERFLOW WALL HEATER

MODEL NUMBERS:  
3144030

SAVE THIS MANUAL FOR FUTURE REFERENCE.

READ THIS OWNER'S MANUAL CAREFULLY BEFORE YOU  
INSTALL YOUR NEW WILLIAMS WALL FURNACE.



31,400 BTU/hr.

**⚠ WARNING:** This product can expose you to chemicals including epichlorohydrin which is known to the State of California to cause cancer and birth defects and/or other reproductive harm. For information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

**⚠ WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or for additional information consult a qualified installer or service agency.

**⚠ WARNING:** If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- If you smell smoke:

### DANGER OF ELECTRICAL SHOCK

- Do not touch heater.
- Immediately shutdown main electrical supply to heater.
- Extinguished any open flame.
- Contact a qualified installer or service agency.

# WARRANTY

The manufacturer, Williams Furnace Co., warrants this wall furnace or heater to the original purchaser under the following conditions: **ANY WARRANTY CONSIDERATIONS ARE CONTINGENT ON INSTALLATION BY A QUALIFIED INSTALLER (CONTRACTOR). SELF-INSTALLATION IS PROHIBITED AND WILL INVALIDATE YOUR WARRANTY.**

## LIMITED ONE-YEAR WARRANTY

1. Any part thereof which proves to be defective in material or workmanship within one year from date of original purchase for use will be replaced at the Manufacturer's option, FOB to its factory.
2. No liability is assumed by the Manufacturer for removal or installation labor costs, nor for freight or delivery charges.

## LIMITED EXTENDED WARRANTY

1. In addition to the above limited one year warranty on the complete unit, any combustion chamber which burns out or rusts under normal installation, use and service conditions during a period of nine years following expiration of the one-year warranty period will be exchanged for a like or functionally similar part.
2. No liability is assumed by the Manufacturer for removal or installation labor costs, nor for freight or delivery charges.

## LIMITATIONS

1. THIS LIMITED WARRANTY IS THE ONLY WARRANTY MADE BY THE MANUFACTURER, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE LIMITED TO THE SAME ONE YEAR TERM AS THE EXPRESS WARRANTY. UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR CONTINGENT DAMAGES OR EXPENSES ARISING DIRECTLY OR INDIRECTLY FROM ANY DEFECT IN THE PRODUCT OR ANY COMPONENT OR FROM THE USE THEREOF. THE REMEDIES SET FORTH HEREIN ARE THE EXCLUSIVE REMEDIES AVAILABLE TO THE USER AND ARE IN LIEU OF ALL OTHER REMEDIES.

Some states do not allow limitation on how long an implied warranty lasts, and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

2. This warranty does not include any charge for labor or installation.
3. This warranty does not extend to painted surfaces or to damage or defects resulting from accident, alteration, misuses or abuse or improper installation.
4. This warranty does not cover claims which do not involve defective workmanship or materials.

## DUTIES OF THE CONSUMER

1. The heating equipment must be installed by a qualified installer and operated in accordance with the installation and homeowner's instructions furnished with the equipment.
2. Any travel, diagnostic costs, service labor, and labor to repair the defective unit will be the responsibility of the owner.
3. A bill of sale, canceled check, payment record or permit should be kept to verify purchase date to establish the warranty period.
4. Have the installer enter the requested information in the space below.

## GENERAL

1. The manufacturer neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with said equipment.
2. Service under this warranty should be obtained by contacting your dealer. Provide the dealer with the model number, serial number, and purchase date verification.
3. If, within a reasonable time after contacting your dealer, satisfactory service has not been received, contact: Customer Service Department, 250 West Laurel Street, Colton, CA 92324 for assistance.
4. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

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# INSTALLATION RECORD

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Original Purchaser \_\_\_\_\_

Address \_\_\_\_\_

City and State \_\_\_\_\_ Zip \_\_\_\_\_

Dealer \_\_\_\_\_

Address \_\_\_\_\_

City and State \_\_\_\_\_ Zip \_\_\_\_\_

Installation Date \_\_\_\_\_ Name \_\_\_\_\_ Signature \_\_\_\_\_

(Dealer or authorized representative who certifies that this appliance is installed in accordance with Manufacturer's instructions and local codes.)

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# SAFETY RULES

**⚠ WARNING:** Read these rules and the instructions carefully. Failure to follow these rules and instructions could cause a malfunction of the furnace. This could result in death, serious bodily injury and/or property damage.

INSTALLATION MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH THE NATIONAL ELECTRICAL CODE, ANSI/NFPA NO. 70 - 1993.

1. USE ONLY MANUFACTURER'S REPLACEMENT PARTS. USE OF ANY OTHER PARTS COULD CAUSE INJURY OR DEATH.
2. DO NOT install this heater in an alcove.
3. DO NOT install this heater in a travel trailer or recreational vehicle.
4. This heater is not intended for use in a bathroom, laundry areas and similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.
5. MAINTAIN all clearances specified in section "Locating Wall Heater and Thermostat."
6. Provide adequate air circulation around cabinet inside the open room.
7. ALLOW heater to cool before servicing.  
Always shut-off electricity to heater when working on it. This will prevent any electrical shocks or burns.
8. DUE TO HIGH TEMPERATURES, locate the heater out of traffic and away from furniture and draperies

**⚠ WARNING:** ANY SAFETY SCREEN, GUARD OR PARTS REMOVED FOR SERVICING AN APPLIANCE MUST BE REPLACED PRIOR TO OPERATING THE APPLIANCE TO AVOID PROPERTY DAMAGE, BODILY INJURY OR DEATH.

9. ALERT children and adults to the hazards of high surface temperature and to keep away to avoid burns or clothing ignition.
10. CAREFULLY supervise young children when they are in the same room with the heater.
11. DO NOT place clothing or other flammable material on or near heater.
12. INSTALLATION and REPAIR must be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that the circulating air passages of the appliance be kept clean.
13. BEFORE INSTALLING: To avoid electrical shock, turn off electrical circuits that pass through the wall where you are going to install the heater.

14. BE AWARE of good safety practices by wearing personal protective equipment such as gloves and safety glasses to avoid being injured by sharp metal edges in or around heater and while cutting or drilling holes in wood and/or sheet metal.
15. This heater includes a visual alarm to warn that parts of the heater are getting excessively hot. If the alarm illuminates, immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred. **DO NOT OPERATE THE HEATER WITH THE ALARM ILLUMINATING.**

**⚠ WARNING:** IF YOU SMELL SMOKE:  
DANGER OF ELECTRICAL SHOCK.

1. DO NOT TOUCH HEATER!
2. IMMEDIATELY SHUTDOWN MAIN ELECTRICAL SUPPLY TO HEATER.
3. EXTINGUISH ANY OPEN FLAME.
4. CONTACT A QUALIFIED INSTALLER OR SERVICE AGENCY.

# INTRODUCTION

Please read our instructions before you install and use your heater. This will help you obtain the full value from this heater. It will also help you avoid any needless service costs if the problem is something we cannot control and cannot cover in our Warranty.

Always consult your local Heating Inspector, Building Department or Electric Utility company regarding regulations, codes or ordinances which apply to the installation of an Electric Heater.

## DESCRIPTION

Your electric counterflow wall heater is shipped ready to install on an exterior or interior wall. The heater may be recessed up to 5-3/8 inches with studs spaced 16 inches center-to-center, or may be mounted directly to the wall surface.

Air is drawn in through a grille at the top of the heater by a single speed fan pushing it down over the heating element and discharged into the room through a grille near the floor.

The heating element uses 240V line voltage to produce a heating output of 31,400 BTU/hr.

The heater is fully automatic by utilizing a wall mounted thermostat for temperature control.

The heater cabinet is constructed of heavy gauge steel with a baked-on finish.

## TOOLS NEEDED

- Hand drill or properly grounded electric drill #33, 1/8", 3/16" and 1/2" drill bit (metal)
- 6 ft. folding rule or tape measure
- Screwdrivers (medium-sized Flat and Phillips blade)
- Screwdriver
- Pliers (wire cutting)
- Hammer.
- Stud locator or small finish nails.
- Tin snips
- Key hole or sabre saw
- Hack saw
- Gloves and safety glasses

## MATERIALS

- Electrical wiring supplies as needed
- For supply connections use 6 AWG or larger wires suitable for at least 60 C (140 F).
- Use copper wire only.
- 2"x 4" x length as required. Refer to "Close Off Stud Space," on **page 8**.

## HELPFUL INSTALLATION INFORMATION

The following booklets will help you in making the installation:

Check at the library or they may be purchased from the source listed below. ANSI/NFPA 70-1993 or current edition "National Electrical Code."

## OPTIONAL ACCESSORIES

### TRIP STRIP ACCESSORY 4701

Provides finished edge at sides of wall heater. Neutral beige steel.

### REAR OUTLET KIT 6501

Allows you route some heated air to a second room behind the heater. Finished wall of second room must be within 10 inches of heater. Built-in damper permits you shut off air flow to second room if desired.

# INSTALLING YOUR FURNACE

The following steps are all needed for proper installation and safe operation of your heater.

If you have any doubts as to any requirements, check with local authorities for local and state codes affecting the installation.

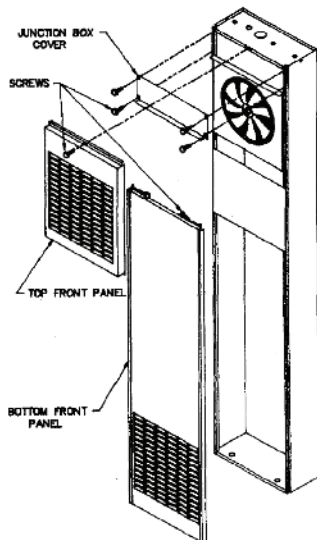
Always obtain professional help where needed.

## UNPACK YOUR HEATER

The shipping carton contains the heater and the items

1. With heater still in carton, lift straight up on top of heater. Remove top trim cover with its packing and the hardware package containing thermostat, wire, Allen wrench, screws and metal anchors used for surface mount installation. Set package aside where it cannot be lost or damaged.
2. Remove heater from carton and lay heater on its back. Remove remaining cardboard packing supports from around heater and set aside.
3. Remove screw from top front panel; raise top of panel 1/2 inch, gently tug panel toward top of cabinet and remove panel from the cabinet. Set top front panel and screw aside where they cannot be lost or damaged.
4. Check the fan blade to ensure that it spins freely.
5. Remove four screws securing the junction box cover above the fan. Cover is marked "TOP". Set cover and screws aside where they cannot be lost or damaged. Electrical junction box and transformer are accessible now. See section on electrical wiring.
6. Remove two screws at top of bottom front panel; raise top of panel 1/2 inch, gently tug panel toward top of cabinet and remove panel from cabinet. Set bottom front panel and screws aside where they cannot be lost or damaged.
7. Examine all packing materials carefully. Look for loose parts before discarding. Properly dispose of shipping materials.

FIGURE 1



## Locating Wall Heater and Thermostat *(sold separately)*

Consider the following points before attempting to install the heater:

1. Heater may be surface-mounted or recessed on any interior or exterior wall if you are not using the optional rear outlet.
2. If you are using the optional rear outlet, you must install on an interior wall.
3. Maximum depth of recess is 5-3/8 inches.
4. Check the clearances needed. The side of the heater must be at least 6-inches from a corner or wall divider **(Figure 2)**.
5. Try to place the heater near the center of the space to be heated for good air circulation. Do not install where a door or draperies could swing over heater or optional rear outlet. Do not put in a closet, alcove, hallway or other confined space.
6. Be sure that electrical wiring can be brought to the heater.
7. To provide adequate clearance and service access, the front of the heater must face the open room.
8. Choose a location for the thermostat *(sold separately)* about 5-feet above the floor on an inside wall. The thermostat wire supplied with your heater is 13 feet long, which should be enough to run up through the attic so the thermostat can be a maximum of 16 feet from heater measured in a straight line, or approximately 12 feet from the heater if the wire is run under the floor. The thermostat should be sensing average room temperature, avoid the following:

### HOT SPOTS:

Concealed pipes or ducts  
Fireplaces  
Registers  
TV sets  
Radios  
Lamps  
Direct sunlight  
Kitchen

### COLD SPOTS:

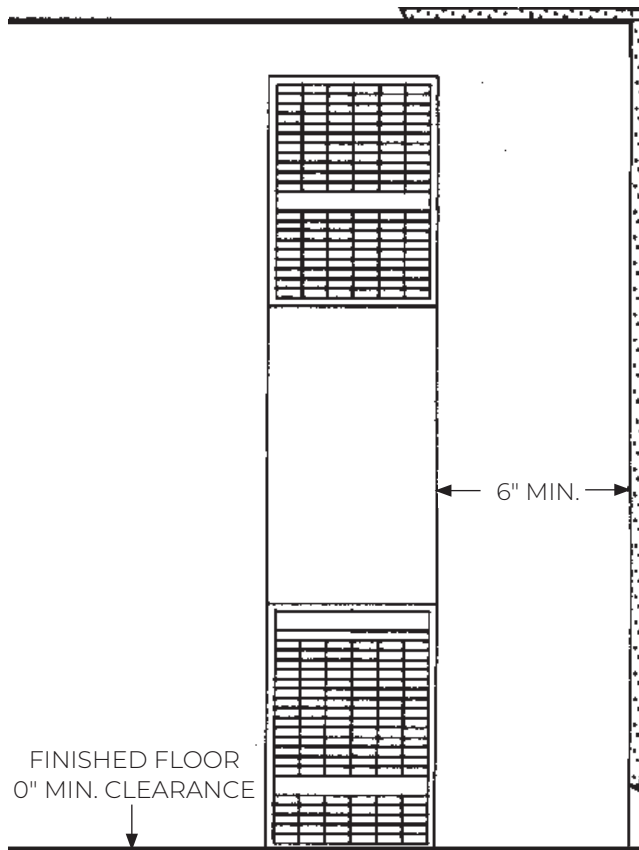
Concealed pipes or ducts  
Stairwells-drafts  
Doors-drafts  
Unheated rooms on other side of wall

### DEAD SPOTS:

Behind doors  
Corners and alcoves

9. After picking a location that meets the requirements, inspect the wall. Make sure there are no pipes, wiring, or anything else that would interfere with heater or thermostat installation. If required, move them or pick a new location.

**FIGURE 2**



## Recessed Mount Installation

**BEFORE YOU BEGIN:** To avoid electrical shock, turn off electrical circuits that pass through the wall where you are going to install the heater.

If you intend to use the optional rear outlet, turn to **page 11** for rear outlet installation procedure before you begin to install the heater. Use only the optional grille and boot extension supplied by the manufacturer.

### FIND THE STUDS

Use a stud locator or small finishing nails. Repeatedly drive and remove a nail into the wall in the area of the stud until you find it. Then find one side. Leave the nail there. Drive another nail just on the other side of the same stud. Inside edge of the other stud should be about 14½ inches from the one found. Drive finishing nail on inside edge of this stud.

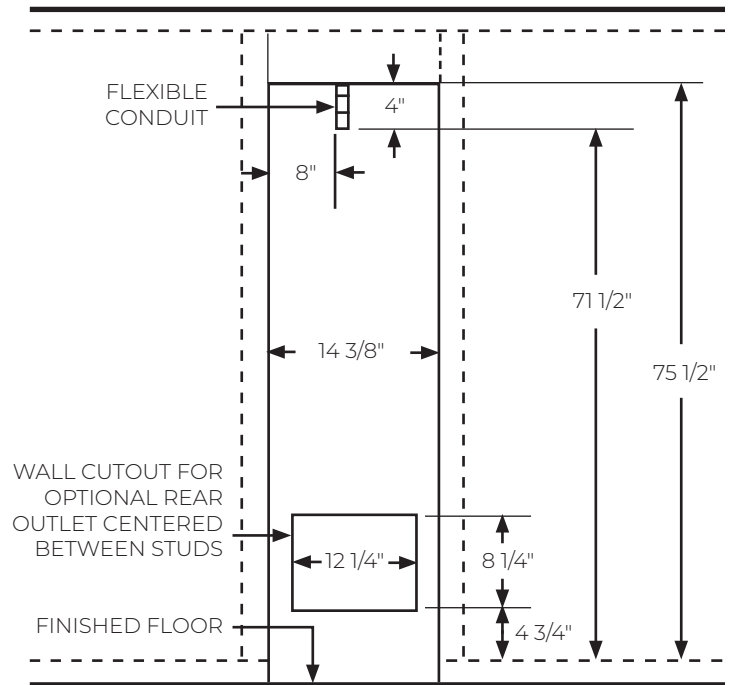
### NOTE

IF STUDS ARE NOT ON 16-INCH-CENTERS, **SEE CLOSE OFF STUD SPACE, PAGE 8.**

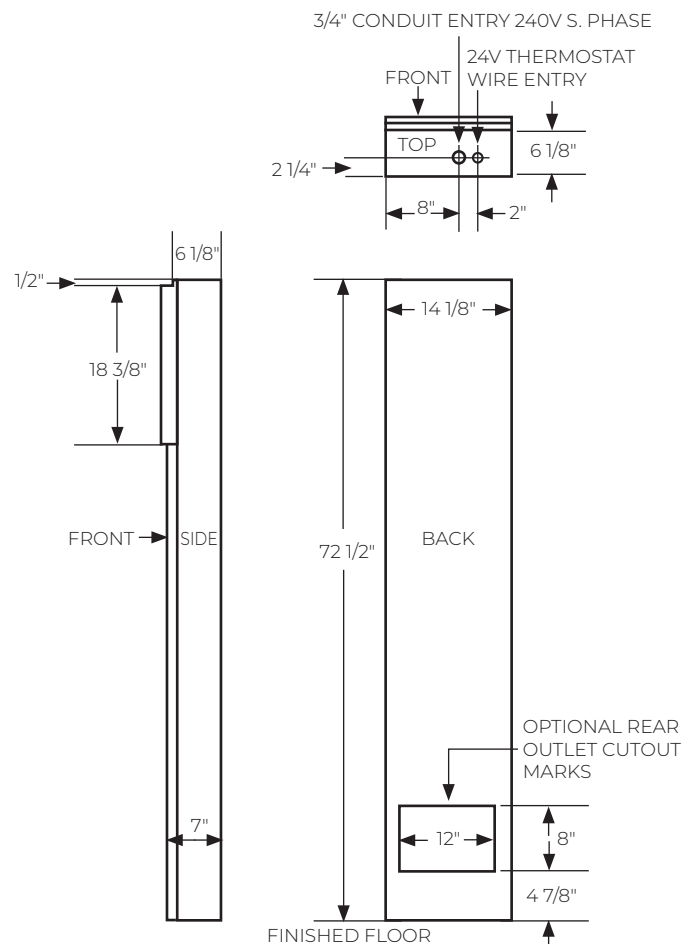
### CUT WALL OPENING

Lay out and cut the required opening(s) in wall per **Figure 3**. The vertical height of the opening shown is 3-inches greater than the height of the heater to allow space for connection of wiring after the heater is installed.

**FIGURE 3 - CUT WALL OPENING**



**FIGURE 4 - ELECTRICAL ROUGH-IN**



# INSTALLING YOUR FURNACE

## ELECTRICAL SUPPLY ROUGH-IN

1. To properly route the conduit, electrical power supply wires and the thermostat wiring to heater top, you may make entry holes in the ceiling wall plate above the heater.
2. If impractical to bring wiring to the heater from the attic space, you may drill the entry holes through either wall stud above the heater and route the conduit and wiring from an adjoining stud space, crawl space or basement to a point above the heater to match the openings in **Figure 4**.
3. At your selected location, drill a 1-inch hole for the electrical conduit and a ½-inch hole for the thermostat wires.
4. Install the conduit and allow it to extend 4-inches below the top of the heater wall opening. (This will allow 1-inch of conduit to extend inside the heater cabinet.) **See Figure 3**

## NOTE

Flexible conduit may be used only if approved by your local codes and ordinances. If you have any doubt, consult your local Electrical or Building Inspector.

5. The electrical supply wires, ground wire and the thermostat wires may now be routed to the heater location. See sections "Thermostat Installation" **page 9**, and "Electrical Wiring" on **page 15**.
6. Be sure to leave enough excess wire at the heater to make the connections inside the heater junction box.
7. If it is more convenient for you to do so, you may pull the wiring to the heater after it is mounted.

## CLOSE OFF STUD SPACE (IF REQUIRED)

If studs are not on 16-inch-centers, cut the hole for the heater next to an existing stud and frame in the other side using a 2 x 4 and spacer blocks as required. **See Figure 5**.

If the distance from the top of the cutout to the ceiling wall plate is more than 18-inches, it is recommended that it be closed off.

Nail a 2 x 4 long enough to go between the studs at the top of the opening to close off the stud space.

## Surface-Mount Installation

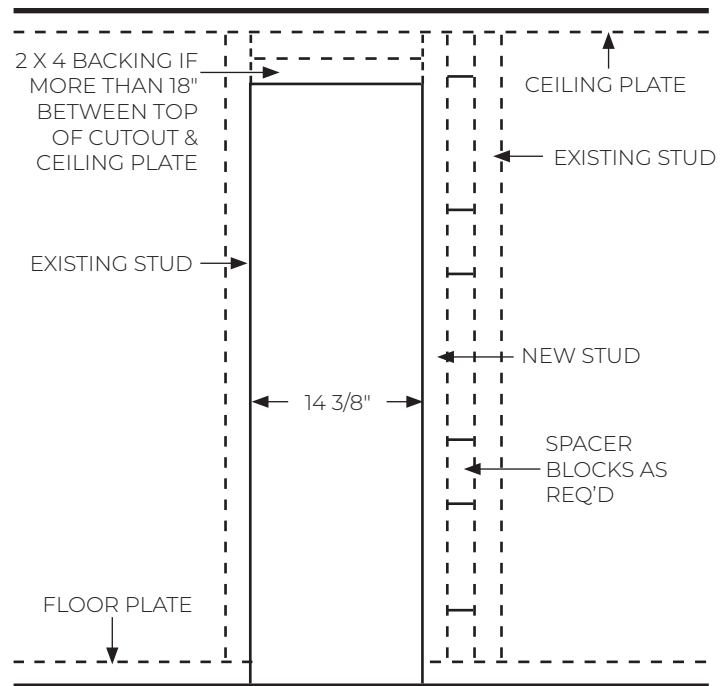
**BEFORE YOU BEGIN:** To avoid electrical shock turn off electrical circuits that pass through the wall where you are going to install the heater.

If you intend to use the optional rear outlet, turn to **page 11** for rear outlet installation procedure before you begin to install the heater. Use only the optional grille and boot extension supplied by the manufacturer.

## FIND THE STUDS

1. Find two studs at spot where heater is to be placed. Use a stud locator or small finishing nails. Repeatedly drive and remove a nail into the wall in the area of the stud until you find it. Then find one side. Leave the nail

**FIGURE 5 - CLOSE OFF STUD SPACEN**



there. Drive another nail just on the other side of the same stud.

2. Inside edge of the other stud should be about 14½ inches from the one found. Drive finishing nail on inside edge of this stud.

## CUT WALL OPENING

If you intend to use the optional rear outlet, cut the 8¾ inch by 12½ inch opening **ONLY** as shown in **Figure 3** on **page 7**. Also see optional rear outlet installation on **page 11**.

## ELECTRICAL SUPPLY ROUGH-IN

1. If impractical to route the wiring to the heater from the attic, you may make entry holes through either wall stud above the heater and route the conduit and wiring from an adjoining stud space, crawl space or basement.
2. To properly route the conduit, electrical power supply wires and thermostat wires to the heater top, you must also make entry holes in the wall board above the heater location.
3. The electrical supply openings should be located at 2-inches above heater top to match openings shown in **Figure 4** on **page 7**.
4. At selected locations, drill a 1-inch hole for the electrical supply wiring and a ½ inch hole for the thermostat wires.
5. Route the flexible conduit to the 1-inch hole in the wallboard and allow it to extend at least 1-inch below the heater top (71½-inches from the finished floor). **See Figure 3** on **page 7**.



## NOTE

Flexible conduit may be used only if approved by your local codes and ordinances. If you have any doubt, consult your local Electrical or Building Inspector.

6. The electrical supply wires, ground wire and the thermostat wires may now be routed to the heater location. See sections "Thermostat Installation" on **page 9**, and "Electrical Wiring" on **page 15**.
7. Be sure to leave enough excess wire at the heater to make the connections inside the heater junction box.
8. If it is more convenient for you to do so, you may pull the wiring to the heater after it is mounted.

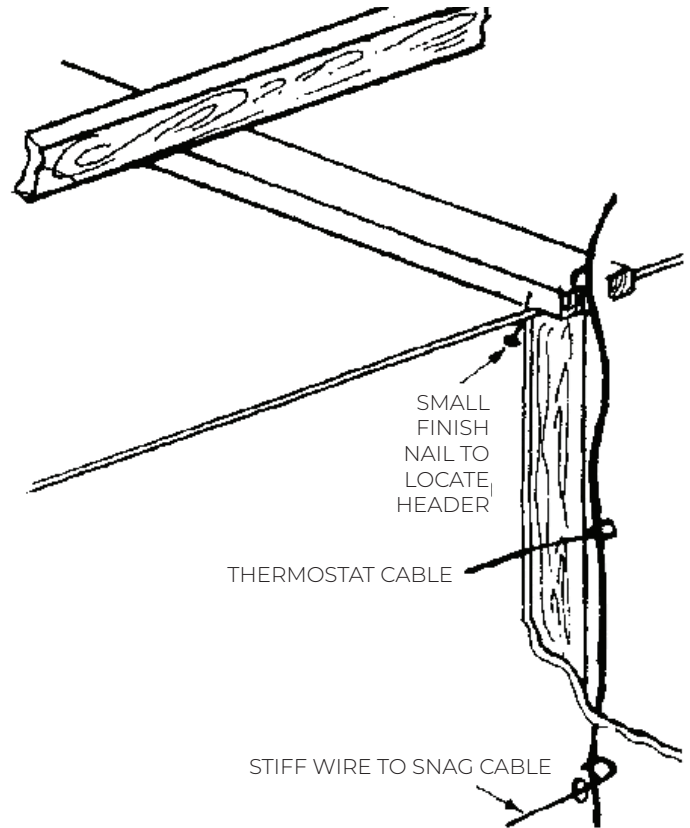
## Thermostat Installation

*(sold separately)*

1. If an old thermostat is being replaced, is in a satisfactory location and the wiring appears to be in good condition, use existing wiring. If in doubt, use new wire.
2. If a new thermostat location is chosen, or if this is a new installation, thermostat cable must first be run to the location selected. All wiring must agree with local codes and ordinances. These instructions discuss pulling the thermostat wire from the attic, but it may be run from a basement or crawl space using similar methods.
3. Before drilling hole in wall at selected location, drive a small finishing nail through the ceiling in the corner of the wall and ceiling above the thermostat location. Pull the nail out and push a small stiff wire through the hole so it can be found in the attic. Drill a ½-inch hole through the ceiling wall plate.
4. Probe for obstructions in the partition. Then drill ½-inch hole through wall at selected location for thermostat.
5. From the attic, feed the thermostat wire or a stiff wire through wall until even with thermostat location.
6. Snag thermostat wire through hole and pull wire through hole in the wall so that 6 inches of wire protrudes.
7. Route wire to wall heater.

### MOUNTING THE THERMOSTAT

1. To remove thermostat cover, grasp cover and pull straight outward. Carefully remove and discard the packing tab protecting the switch and contacts.
2. Connect thermostat wires to the terminal screws on the back of thermostat base.
3. Push any excess wire back through hole in wall and plug hole with insulation to prevent drafts from affecting thermostat operation.
4. Be sure to level thermostat for best appearance, fasten thermostat base to wall through mounting holes with screws provided.
5. Replace the thermostat cover.



# MOUNTING YOUR HEATER

## NOTE

If you are using the optional rear outlet, follow the installation instructions on **page 11** before proceeding.

1. If recessed mounted, clear recess of all debris.
2. Place heater into position. Be sure to drop flex conduit through hole provided in top of heater.

### 3. FASTEN HEATER TOP (*Recessed Mounting*)

Fasten heater top to studs through holes provided into top flanges using (2) long screws provided (**Figure 7**).

### (*Surface mounting*)

Fasten heater top to wall using (2) metal anchors (packed in plastic bag with thermostat) by placing them over the back flange of heater top and screwing to wall with (2) long screws provided (**Figure 7**).

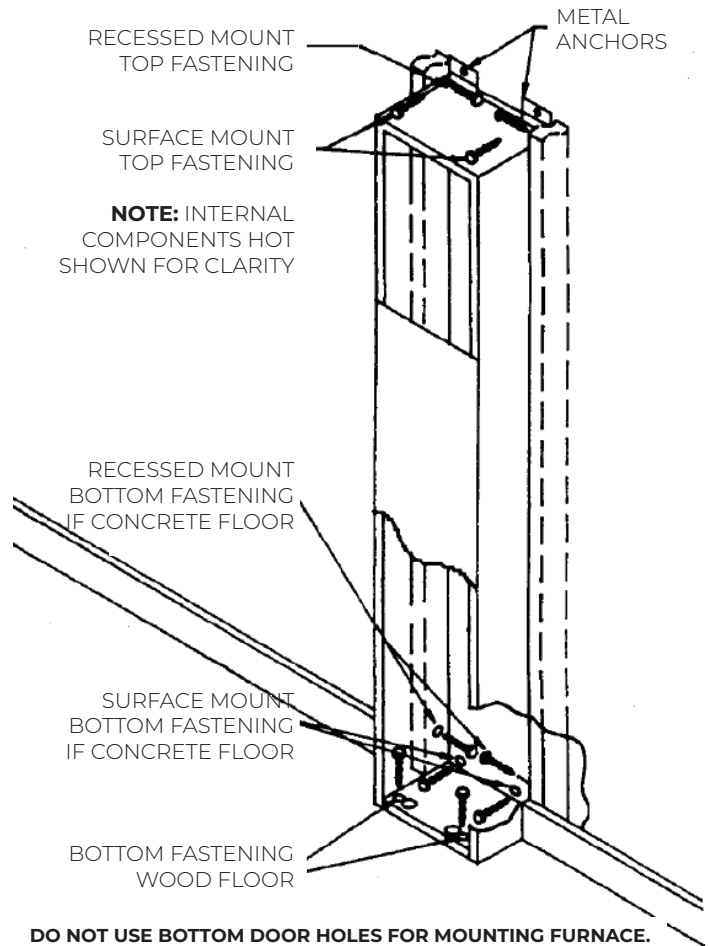
## NOTE:

All fasteners are not furnished, and all holes are not pre-drilled because of the different requirements of various types of wall construction. Suitable fasteners which will meet your particular situation are available at your local hardware store.

### 4. FASTEN HEATER BOTTOM (*Surface and Recessed Mount*)

Drill (2) holes in the bottom of the heater cabinet near each side. Fasten the heater through these holes to the floor. If you have concrete flooring, use an alternate fastening location per **Figure 7**.

**FIGURE 7 - HEATER MOUNTING**



# INSTALL THE REAR OUTLET ACCESSORY

## RECESSED MOUNT HEATER

1. Cut 8- $\frac{1}{4}$  inch x 12- $\frac{1}{4}$  inch hole in wall as shown in **Figure 3 on page 7**.
2. Cut 8 inch x 12 inch opening in back of cabinet following scored lines stamped on the cabinet. **See Figure 4 on page 7**.
3. Mount heater in recess. (See Mounting Your Heater on **page 10**.)
4. Place plaster ground in opening and nail into studs (**Figure 8**).

IN NEW CONSTRUCTION install plaster ground before wall finish is applied.

### NOTE:

5. In drywall construction, the plaster ground may be omitted.
6. Center grille over hole in rear wall and mark location of holes in grille on wall.
7. Using a  $\frac{1}{8}$ -inch diameter drill, drill (2) holes through plaster (or drywall) and cabinet for attaching grille.
8. Attach grille with screws provided (**Figure 9**). The 10-inch boot is not required for recessed installation.

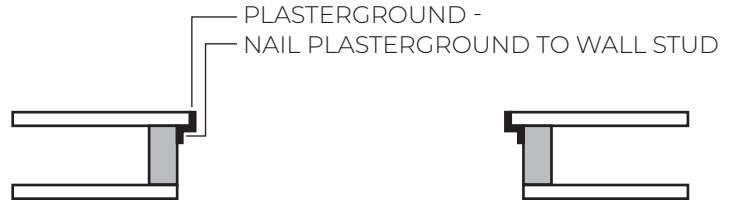
## SURFACE MOUNT HEATER

1. Cut 8- $\frac{1}{4}$  inch x 12- $\frac{1}{4}$  inch hole in wall as shown in **Figure 3 on page 7**.
2. Cut 8 inch x 12 inch opening in back of cabinet following scored lines stamped on the cabinet. **See Figure 4 on page 7**.
3. Place boot against cabinet with inner side of boot exactly on the edges of the hole.
4. Mark screw locations, remove boot and drill #33 holes for sheet metal screws.
5. Attach boot to back of heater with screws provided.
6. Place plaster ground in opening and nail into studs (**Figure 8**).

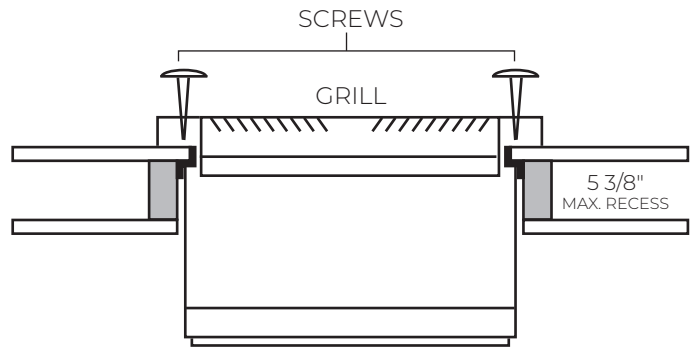
In new construction install plaster ground before wall finish is applied.

7. Place heater, with boot attached, through hole in wall and mark end of boot so it can be cut off flush with outer wall.
8. Remove heater from wall and cut boot where marked.
9. Place heater with trimmed boot attached, through holes in wall and mount the heater. (See Mounting Your Heater on **page 10**.)
10. Center grille over hole in rear wall and mark location of holes in grille on wall.
11. Using a  $\frac{1}{8}$ -inch diameter drill, drill (2) holes through plaster ground and plaster (or drywall).
12. Attach grille with screws provided (**Figure 10**).

**FIGURE 8 - PLASTER GROUND POSITION**

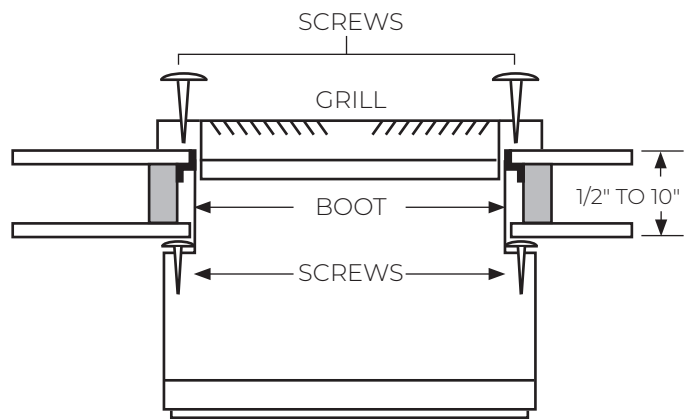


**FIGURE 9 - RECESSED MOUNTING**



RECESSED MOUNTING (10" BOOT NOT REQUIRED)

**FIGURE 10 - SURFACE MOUNTING**



SURFACE MOUNTING  
(BOOT TRIMMED FLUSH WITH WALL)

# ELECTRICAL CONNECTIONS

**WARNING:**  
**DANGER OF PROPERTY DAMAGE,  
BODILY INJURY OR DEATH.**

TURN OFF ELECTRIC POWER AT FUSE BOX OR SERVICE PANEL BEFORE MAKING ANY ELECTRICAL CONNECTIONS.

INSULATE WHERE NECESSARY.

ALL LINE VOLTAGE AND GROUND CONNECTIONS MUST BE COMPLETED BEFORE ELECTRICAL POWER IS RESTORED.

**CAUTION**

Label all wires prior to disconnection when servicing wiring, errors can cause improper and dangerous operation. Verify proper operation after servicing.

All electrical work must conform to your local codes and ordinances or in their absence, with National Electrical Code, NFPA70/ANSI C1-1993. If you are not familiar with wiring codes in general, have a competent electrician do this job.

**ELECTRIC POWER SUPPLY**

Run a separate 240 volt, single phase, 60 cycle, 50 ampere circuit from a separate circuit breaker or fuse in your service entrance panel to the heater junction box.

Do not run supply wires inside the heater cabinet, except from the top of cabinet down to junction box.

**JUNCTION BOX**

Power supply connections are made inside the junction box located in the upper end of the cabinet. See **Figure 11** and **Figure 1** on page 6.

**ELECTRICAL CONNECTION**

Connect 240V conduit to top of heater as shown in **Figure 11**.

Pull supply wires through conduit and into junction box. Attach 240V supply wires to "LINE" connection at terminal board. Refer to wiring diagram on junction box cover plate. If you have any doubt regarding electrical hookup or compliance with code or ordinance, consult your electrical inspector or a licensed electrician.

**GROUNDING**

Provide ground connection from the unit's terminal board to a grounded connection in the electrical service panel or a properly driven and electrically grounded ground rod.

**LOW VOLTAGE CONNECTIONS**

Run thermostat wire to the heater. See Thermostat Installation on **page 9**.

Connect the thermostat wires to the two (thermostat) wires extending inside the junction box. Refer to wiring

diagram on junction box cover plate and **Figure 11**.

When heater mounting has been completed, see **steps 1, 2 and 3** below.

Refer to **Figure 1, page 6**.

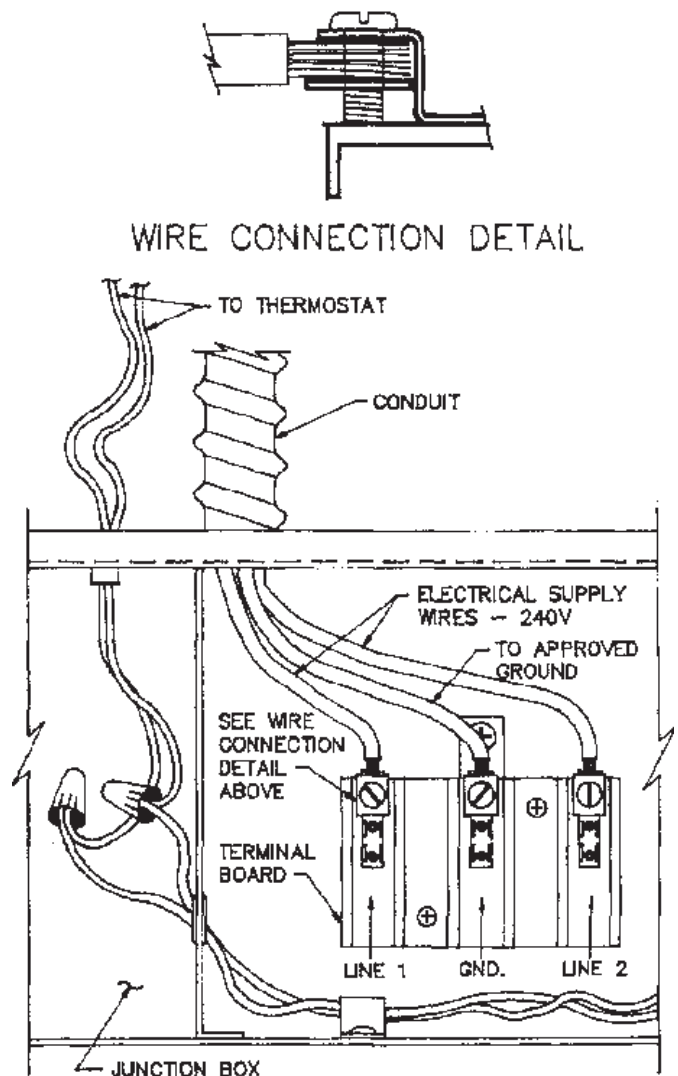
1. Replace junction box cover plate. Tighten screws securely.
2. Replace bottom front panel
3. Replace top front panel.

**NOTE**

For supply connections use 6 AWG or larger wires suitable for at least 60 C (140 F).

Use copper wire only.

**FIGURE 11 - WIRING CONNECTIONS**



**NOTE: ALL WIRING NOT SHOWN**

# INSTALLING YOUR TRIM STRIP ACCESSORY 4701

## TRIM STRIP ACCESSORY 4701

When desired, optional Trim Strip Kit may be used to cover the crack between heater and wall. See **Figure 12**.

Place strips tight against heater with other edge against wall surface and fasten to wall with escutcheon pins provided. Cut off trim strips to fit each heater as required.

## NOTE

Quarter-round wood molding may be used for trim if desired.

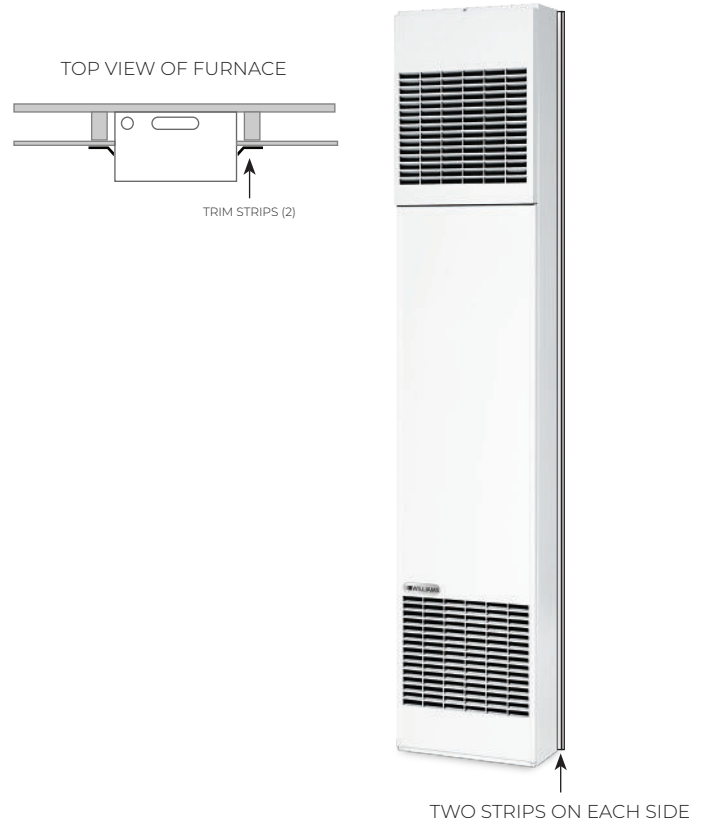
## TRIM COVER (SURFACE MOUNT)

1. To conceal the heater wiring, set top trim cover inside the flanges of heater top.
2. Fasten to the heater cabinet with (2) short screws provided.

## TRIM COVER (RECESSED MOUNT)

1. Trim off the back edges of the top trim cover (a little at a time) until it fits between the front cabinet flange and the wall.
2. When trimmed to your satisfaction, set in place on heater top and drill (2) #33 holes through top trim cover and heater side flanges.
3. Fasten cover to heater with (2) short screws provided.

**FIGURE 12 - TRIM STRIP**



# OPERATING YOUR HEATER

The heater is controlled by means of 24 volt, wall-mounted thermostat. When the thermostat circuit is energized, low voltage relays are actuated which close circuits to the heating element and blower motor. The relay actuates after thermostat calls for “turn on” or “turn off”.

Protection against overheating is provided by means of a limit switch located near heating elements, which acts to open relay circuits controlling the heated elements if circulating air volume is decreased. The limit switch automatically restores operation when temperatures reach a normal level. As an additional safeguard, each heating element is equipped with fuse limiters to protect against excessive and prolonged current surges. If these protectors open the heating circuit, the heat limiter must be replaced by your Service Technician who will determine and correct the cause of failure.

Air volume may be adjusted at the operational rear grilles, if so equipped. Do not attempt to reduce flow of air from main panel (front) grille. To do so would cause shut-down through the high limit control. For best heating results, do not obstruct air flow by placing furniture in front of outlets. Make sure the free flow of air returning to the blower is not reduced by closing doors between heated spaces.

## Caring for Your Heater

### ANNUAL UPKEEP NEEDED

Heating Element and Optional Rear Outlet  
Keep clean at all times. Clean all foreign materials from rear outlet and top of heating element. Use a soft brush or vacuum cleaner.

For access to heating element, remove (2) screws (**Figure 1 on page 6**) and grasp face panel near bottom and pull up and out.

After cleaning back of optional rear outlet and heating element, replace face panel.

### MOTOR AND FAN

For maximum motor life of fan, the manufacturer recommends the fan be inspected yearly, dust blown out of the ventilating holes and a few drops of #20 non-detergent oil added to bearing cavity (**Figure 13**).

To get to the motor:

1. Take out four screws holding fan shroud to side flanges of cabinet and remove shroud (**Figure 1 on page 6**).
2. Before removing the fan blade, remember its position by examining the blade nut and the amount of shaft visible. Scribe or mark the motor shaft in order to reinstall the fan blade to its original place on the shaft.
3. Using wrench provided, loosen 5/32-inch “Allen head” set screw holding fan blade to motor shaft and remove the fan blade.
4. To replace fan blade, reverse steps 1-3 above.

### WARNING

#### DANGER OF BODILY INJURY OR DEATH

TURN OFF ELECTRIC POWER SUPPLY AT DISCONNECT SWITCH, FUSE BOX OR SERVICE PANEL BEFORE REMOVING ANY DOORS OR ACCESS OR SERVICE PANELS FROM UNIT.

### APPLIANCE AREA

For better circulation and more effective heating, do not place obstructive furniture closer than 4 feet to the front of the cabinet or 2-feet to the side of the cabinet.

### CAUTION

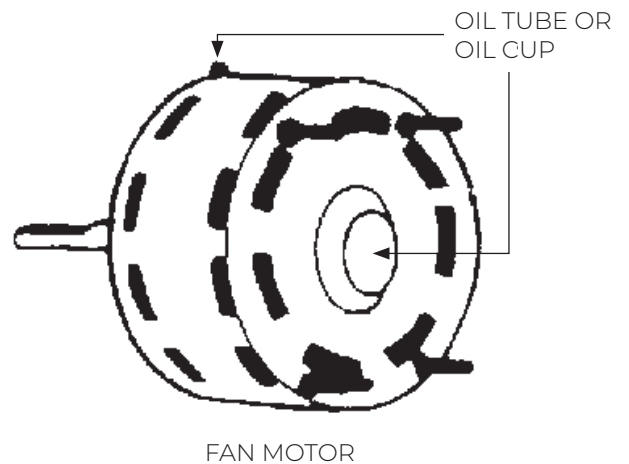
SOURCE OF POSSIBLE IGNITION HIGH TEMPERATURE, KEEP COMBUSTIBLE MATERIAL AWAY FROM FRONT OF HEATER

The appliance area must be kept clear and free from combustible material, gasoline and other flammable vapor and liquids.

### CABINET FINISH

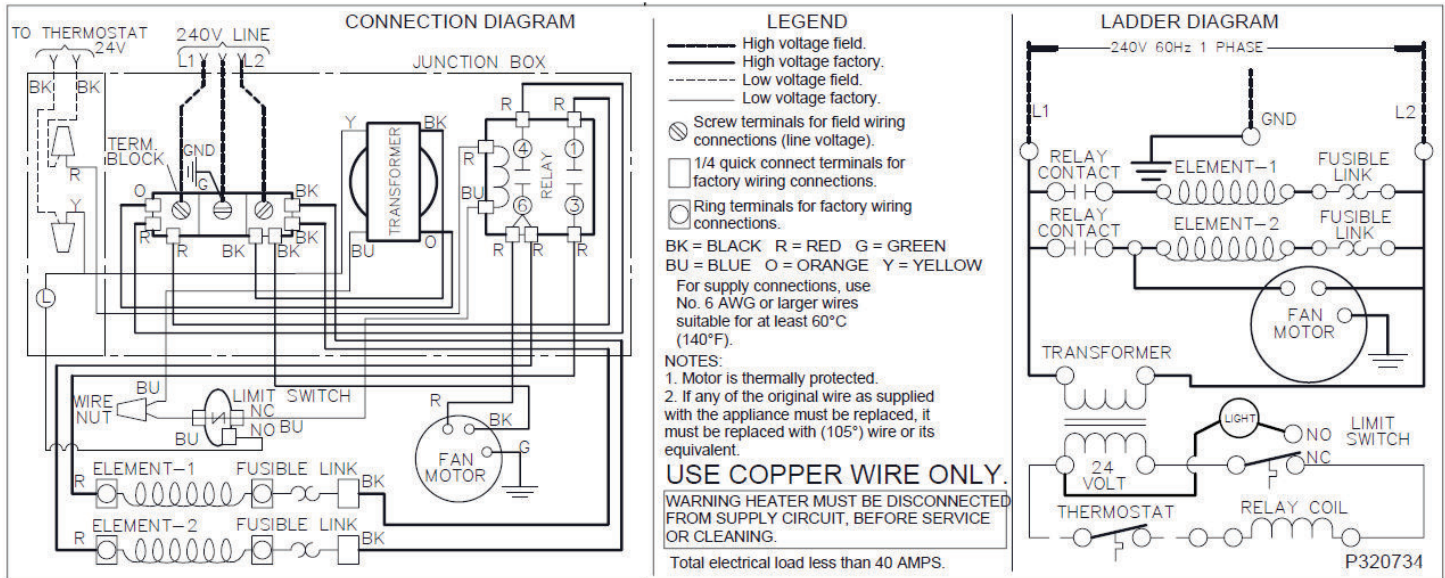
Clean cabinet with damp rag. Never use abrasive cleaners. Cabinets are finished in heat resistant baked enamel - **DO NOT refinish with wall paint.**

FIGURE 13 - MOTOR OIL HOLE



# WIRING AND TECHNICAL INFORMATION

## MODEL 3144030



## TECHNICAL INFORMATION

| SPECIFICATIONS AND DIMENSIONS |          |
|-------------------------------|----------|
| Model                         | 3144030  |
| Voltage                       | 240      |
| Hz                            | 60 A.C.  |
| kW                            | 9.2      |
| AMP                           | 38.3     |
| BTU/hr.                       | 31,400   |
| Width                         | 14-1/8"  |
| Depth                         | 7"       |
| Height                        | 72-1/2"  |
| Total Amperes                 | 39.0 FLA |
| Fuse Size                     | 50 Amp   |
| Wire Gauge*                   | 6AWG     |

\*Max. recommended run 200 feet with 6.5 volt drop.

The efficiency rating of this appliance is a product thermal efficiency rating determined under continuous operating conditions was determined independent of any installed system.

| MOTOR AND FAN DATA                |         |
|-----------------------------------|---------|
| Voltage                           | 240 1Ø  |
| Hz                                | 60 A.C. |
| HP (approx.)                      | 1/40    |
| RPM (approx.)                     | 1,000   |
| CFM (approx.)                     | 375     |
| FLA                               | .6      |
| CONTROL DATA                      |         |
| THERMOSTAT - 24V WALL MOUNTED     |         |
| RELAY - 24V FULL ON               |         |
| TRANSFORMER - 24V / 240V CLASS II |         |

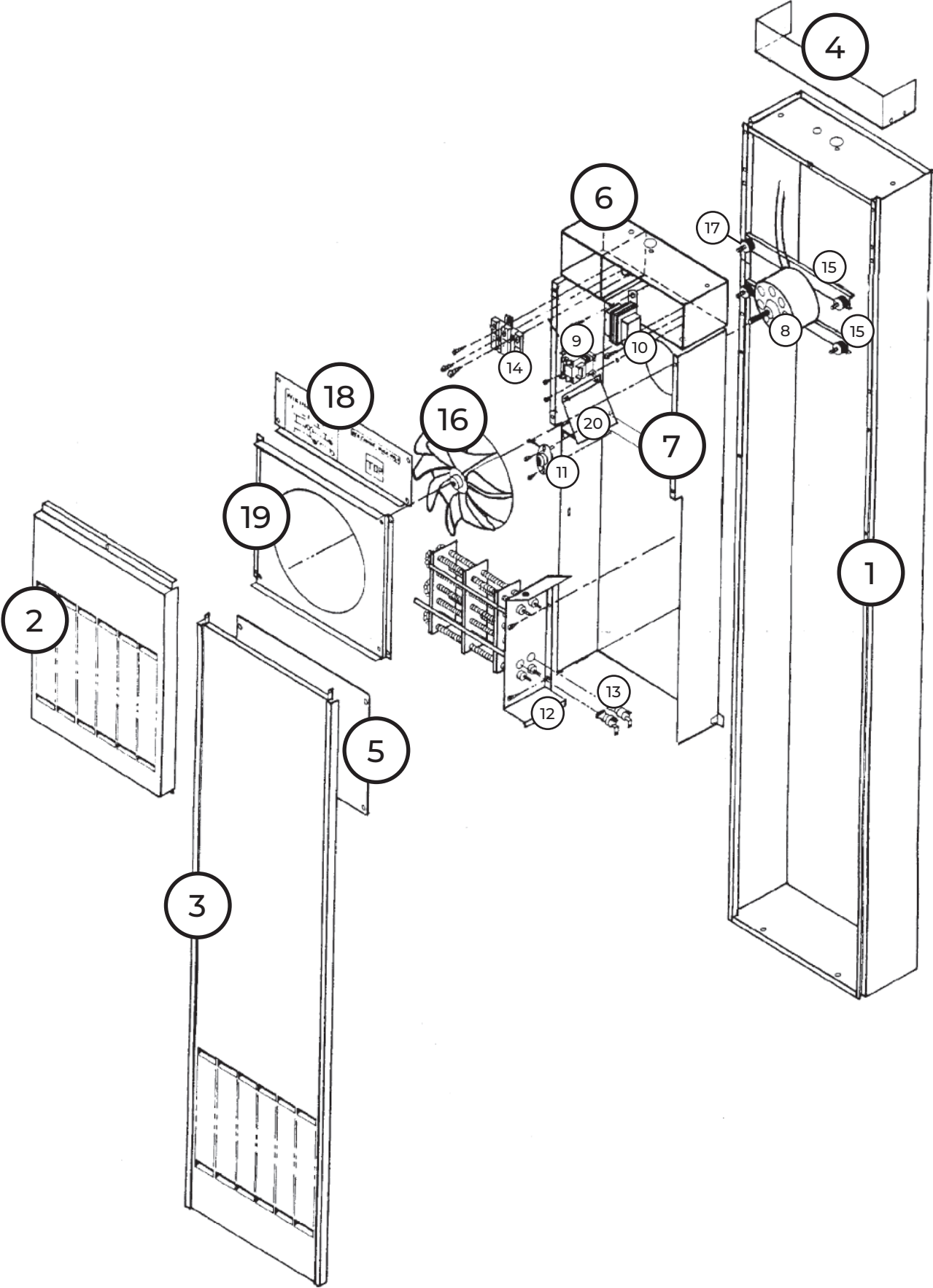
# FURNACE ASSEMBLY REPLACEMENT PARTS 300 MODEL

| MODEL NUMBER |
|--------------|
| 3144030      |

| REF. NO.                                   | REPLACEMENT PART DESCRIPTION | 3144030 |
|--------------------------------------------|------------------------------|---------|
| 1                                          | Outer Casing                 | 16C01   |
| 2                                          | Top Front Panel              | 16B01   |
| 3                                          | Bottom Front Panel           | 16C03   |
| 4                                          | Top Trim Cover               | 16A07   |
| 5                                          | Element Cover                | 16A04   |
| 6                                          | Junction Box Assembly        | 16B15   |
| 7                                          | Element Casing Body Assembly | 16C04   |
| 8                                          | Motor                        | P021504 |
| 9                                          | Relay                        | P154700 |
| 10                                         | Transformer                  | P154802 |
| 11                                         | Limit Switch                 | P323366 |
| 12                                         | Heating Element              | P155001 |
| 13                                         | Fuse-Limiter (2 req.)        | P323665 |
| 14                                         | Terminal Block               | P154400 |
| 15                                         | Motor Support (2 req.)       | 16A06   |
| 16                                         | Fan Blade                    | P200600 |
| 17                                         | Vibration Isolator (4 req.)  | P022800 |
| 18                                         | Junction Box Cover           | 16A03   |
| 19                                         | Orifice Plate                | 16B05   |
| 20                                         | Side Baffle Assembly         | 16A18   |
| Thermostat not included with these models. |                              |         |



# EXPLODED VIEW WITH PARTS



# SERVICE RECORD

| DATE | MAINTENANCE PERFORMED | COMPONENTS REQUIRED |
|------|-----------------------|---------------------|
|      |                       |                     |

# HINTS AND INFORMATION

If your heater fails to work correctly, you may avoid inconvenience and the cost of a service call by checking the following points before you call for service.

## FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance. Always disconnect heater circuit switch before opening heater for inspection or service.

## POSSIBLE CAUSE

## WHAT TO DO

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### If your heater is not heating or not giving enough heat:

Thermostat is not set correctly:

Reset thermostat to desired setting.

Air flow restricted:

Check that doors, drapes or furniture are not blocking louvers.

### If fan does not run:

Fuse is blown:

Replace fuse.

Blower motor not connected to electric power:

Connect to electric power.

### If blower is noisy:

Housing rattling:

Tighten screws.

Blower fan dirty:

Clean blower fan.

Blower fan bent:

Straighten or replace.

Motor needs oiling:

Oil motor (**Page 15**)

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## How to Order Repair Parts

When ordering repair parts, always give the following information:

1. Model number
2. Mfg. Date code / Serial Number
3. Part number
4. Part description

All parts listed herein may be ordered from your equipment supplier. The model number of your Williams wall heater will be found on the name plate.

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