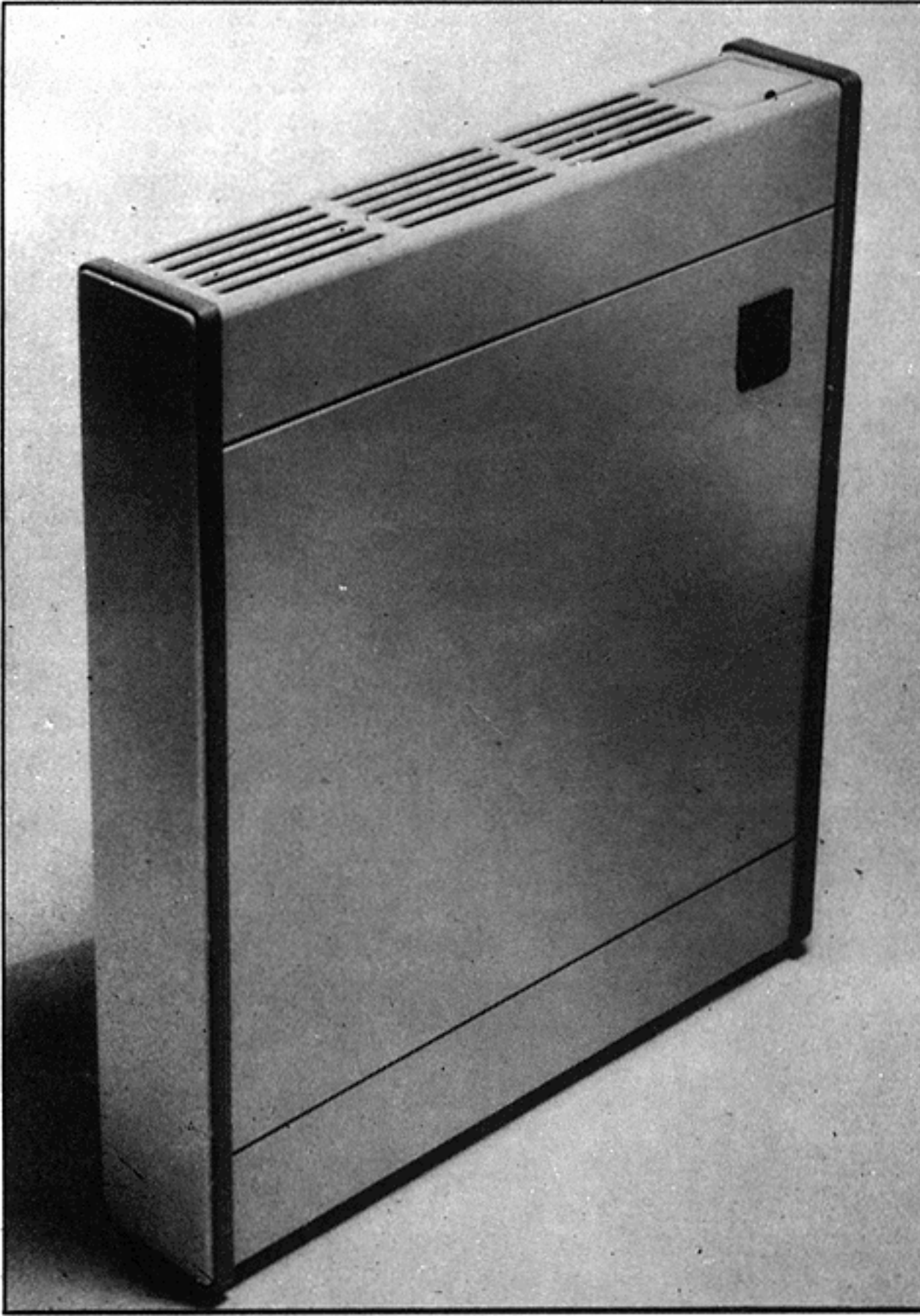




# ECONOTHERM



## DIRECT VENT ROOM HEATERS



**MODELS MV 112 - 120 - 130**

**GRAVITY DIRECT VENT  
WALL FURNACES**

### INSTALLATION AND OPERATING INSTRUCTION MANUAL

Complete instructions for safe installation, operation and servicing of units manufactured for use with natural gas and liquefied petroleum gases. Model numbers with the suffix LP are for use with LP/PROPANE gas only. These furnaces are not convertible.

#### OWNER'S MANUAL

**Caution:** Read these printed instructions prior to starting the installation of this unit.

**Attention:** Heaters installed in the state of MA must be installed by a licensed plumber or gas fitter.

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

#### FOR YOUR SAFETY

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

#### What to do if you smell gas:

- Open windows.
- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone.
- Follow the gas supplier's instructions.
- If you can not reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or gas supplier.

**ATTENTION:** NATURAL GAS FURNACES ARE NOT APPROVED FOR INSTALLATION IN MOBILE HOMES, TRAILERS OR RECREATIONAL VEHICLES.

Manufactured for:

**Controlled Energy Corporation**

Fiddler's Green

Waitsfield, VT 05673

September 1993



# Models MV112 - 120 - 130

## Installation and Owner's Manual



### Introduction:

Your purchase of an ECOTHERM gas fired direct vent wall furnace will reward you with many years of satisfying safe operation. As with any appliance however, the continued safe and satisfactory operation of this unit depends to a great extent, on its proper installation and maintenance. Read these instructions thoroughly before starting the installation. If you encounter any problems with these instructions, whether you cannot understand them, or do not feel comfortable installing this unit, contact a qualified service technician or the gas supplier for assistance or call the national distributor Controlled Energy Corporation at 1-800-642-3111.

### • **WARNING:**

*This unit is design certified by the American Gas Association and the Canadian Gas Association to provide safe, trouble-free operation throughout the expected life of the unit. Any alteration, modification or adjustment not specifically mentioned in this owner's manual is NOT recommended by the manufacturer, distributor or certifying agency, and may result in the unsafe operation of this unit. Responsibility for these modifications rests solely with the individual or company who performed the change. This unit must be installed in strict accordance with these instructions, and all applicable local codes, if any. In the absence of local codes, refer to these instructions and the latest edition of the National Fuel Gas Code, ANSI Z 223.1 (NFPA#54). These publications are available from the American National Standards Institute, 1430 Broadway, NEW YORK, NY 10018, or from the National Fire Protection Association, Batterymarch Park, Quincy, Mass, 02269. In Canada follow the current code Can-1-B149*

### Qualified Service Agency

A qualified service agency is defined as any individual, firm, corporation or company, which either in person or through representatives, is engaged in and is responsible for: (1) the installation or replacement of gas piping or (2) the connection, installation, repair or servicing of equipment, who is experienced in such work, familiar with all precautions required, and has complied with all the requirements of the authority/authorities having jurisdiction.

### ECOTHERM SPECIFICATIONS:

MODEL	MV-130	MV-120	MV-112
INPUT-BTU PER HOUR, MAXIMUM	14,000	8,400	5,600
INPUT-BTU PER HOUR, MINIMUM	6,000	3,800	2,312
MANIFOLD GAS PRESSURE (NAT)	3.5" W.C	3.5" W.C	3.5" W.C
* MINIMUM GAS SUPPLY PRESSURE (NAT)	7.0" W.C	7.0" W.C	7.0" W.C
* MAXIMUM GAS SUPPLY PRESSURE (NAT)	10.5" W.C	10.5" W.C	10.5" W.C
MANIFOLD GAS PRESSURE (LP)	10.5" W.C	10.5" W.C	10.5" W.C
* MINIMUM GAS SUPPLY PRESSURE (L.P)	11.0" W.C	11.0" W.C	11.0" W.C
* MAXIMUM GAS SUPPLY PRESSURE (LP)	13.0" W.C	13.0" W.C	13.0" W.C
GAS INLET PIPING	3/8" NPT	3/8" NPT	3/8" NPT
MINIMUM WALL THICKNESS (IN./MM)	6.0/151	6.0/151	6.0/151
MAXIMUM WALL THICKNESS (IN./MM)	12.0/305	12.0/305	12.0/305
HEIGHT (IN./MM)	24.4/620	24.4/620	24.4/620
WIDTH (IN./MM)	27.3/688	21.2/538	15.3/388
DEPTH (IN./MM)	6.75/170	6.75/170	6.75/170
SHIPPING WEIGHT (LBS/KG)	55.0/25	41.8/19	33/15

\*For purposes of input adjustment.

### Safety information for users of L.P./propane/nat. gas

These gases are flammables, and can cause fires and explosions. They are naturally odorless, but a special odorant is added to them to alert you to their presence should a gas leak occur. Not everyone is familiar with the safety precautions covering the use of the gas. These precautions will help you safeguard your family and your property from an accident. Read these instructions carefully and make sure that everyone in your household knows the correct action to take in the event of a leak in the gas system.

*IF YOU DO NOT UNDERSTAND THIS INFORMATION, OR IF YOU FEEL YOU NEED ADDITIONAL INFORMATION, CONTACT YOUR GAS SUPPLIER.*

### Gas Odor - WARNING

The odorant put into the gas by your gas supplier will allow you to detect the distinctive smell of gas in the event of a gas leak.

IF YOU SMELL GAS ANYWHERE IN OR AROUND YOUR HOUSE OR APARTMENT, THIS ODOR INDICATES IT IS TIME TO TAKE IMMEDIATE ACTION IN ORDER TO REDUCE OR ELIMINATE THE RISK OF INJURY AND OR PROPERTY DAMAGE. KNOW AND MAKE SURE OTHERS IN YOUR HOUSEHOLD KNOW THE FOLLOWING STEPS TO TAKE IN THE EVENT OF AN GAS LEAK:

- Do not operate electric switches, light matches, or use your phone. Do not do anything that could create an open flame or sparks, resulting in the ignition of leaking gas.
- Get everyone out of the building or area. Do that IMMEDIATELY. Close all gas supply valves.
- Propane/L.P.gas is heavier than air and may settle in low areas such as basements. When you have reason to suspect a gas leak, keep out of the basement or any other area you suspect may contain uncontained gas. Stay out until firefighters or other authorities declare them safe to reoccupy.



- Use a neighbor's telephone and call a qualified gas service technician, or the gas supplier AND the fire department.

Even if the odor of gas fades and you cannot detect the smell of the gas, DO NOT turn on any appliance. Do not re-enter the building or area until it has been declared safe to enter by the fire department or other authority.

- The qualified gas service technician OR the fire department should check for escaped gas. They have the equipment to safely air out the building or area before you re-enter the affected area. A properly trained and qualified gas service technician, or gas supplier, must repair the system leak and then relight the gas appliance(s) for you.

### • **WARNING: GAS "ODOR FADE"**

Some people, such as the elderly, ill, and physically impaired cannot detect the strong chemical smell which the gas suppliers use to identify this gas. In addition, smoking or allergies can affect your ability to detect this gas smell. Your gas supplier can provide you, free of charge, a "Scratch and Sniff" brochure which allows ALL members of the household to become familiar with the smell of gas. Take advantage of this opportunity and call your gas supplier for this informational brochure.

The odorant in gas is colorless (as is propane/L.P. gas), and can fade under certain circumstances. Underground piping can leak, causing the gas to be filtered through the dirt before it reaches the surface. In addition, propane/L.P. gas is subject to odor fade due to oxidation (rusting) of the inside of the propane/L.P. storage tank or the inside of iron gas piping systems. The odorant in escaping gas can also be absorbed into all types of common household items such as drapes, carpeting, masonry and clothing. It is also possible for propane/L.P. gas to become layered or "stratified". This condition results in a difference of intensity of the propane/L.P. odor at different levels within the same room. As noted before, propane/L.P. gas is heavier than air, so it is most likely that the strongest concentration of gas will be at the lowest level in the room.

- **If you detect any gas odor, immediately take all necessary action to protect your family and property by following these instructions.**

### Locating the ECOTHERM:

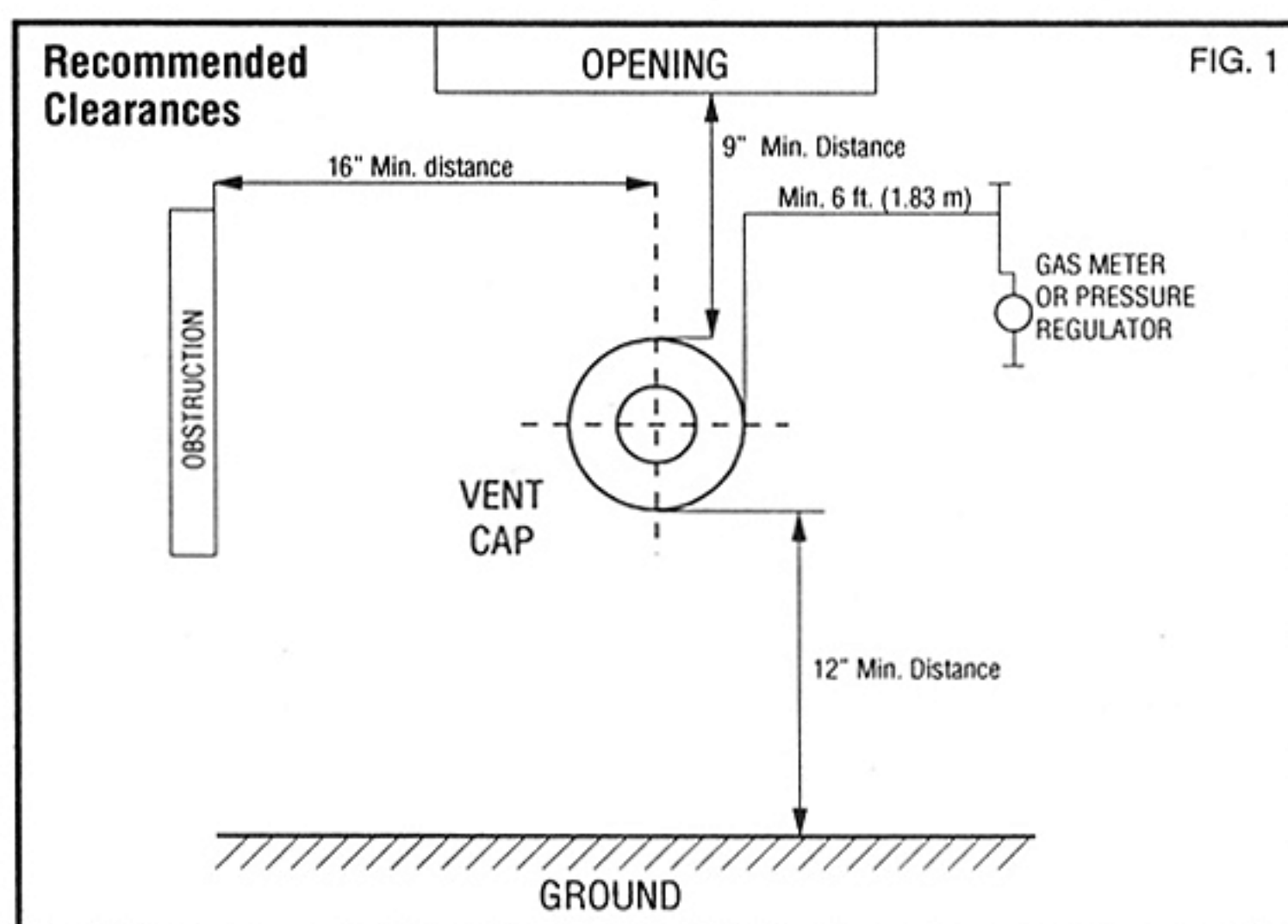
**This is a heating appliance**

- The EcoTherm should be located at least 6" away from furniture and draperies.
- Young children should be supervised when they are in the same room as the EcoTherm.
- Clothing or paper or other similar materials should not be placed on the EcoTherm.
- Keep burner and gas control compartment clean.
- Do not put anything around the heater that will obstruct the circulation of air around the EcoTherm.
- Please refer to most recent "Installation Codes" for proper clearances.

When choosing a location for your ECOTHERM direct vent wall furnace, please remember that the vent cap supplied with the unit must be installed WITHOUT alteration, with the exception of cutting the vent tubes to length,

as directed in these instructions. In addition, the finished vent cap must be located at least 9" (228mm) from any opening through which flue gases could enter a building. The bottom of the vent cap AFTER installation must be at least 12" (305mm) above ground level, on the outside wall. The minimum distance from the CENTER of the vent cap to the nearest outside corner or other obstruction is 16" (407mm).

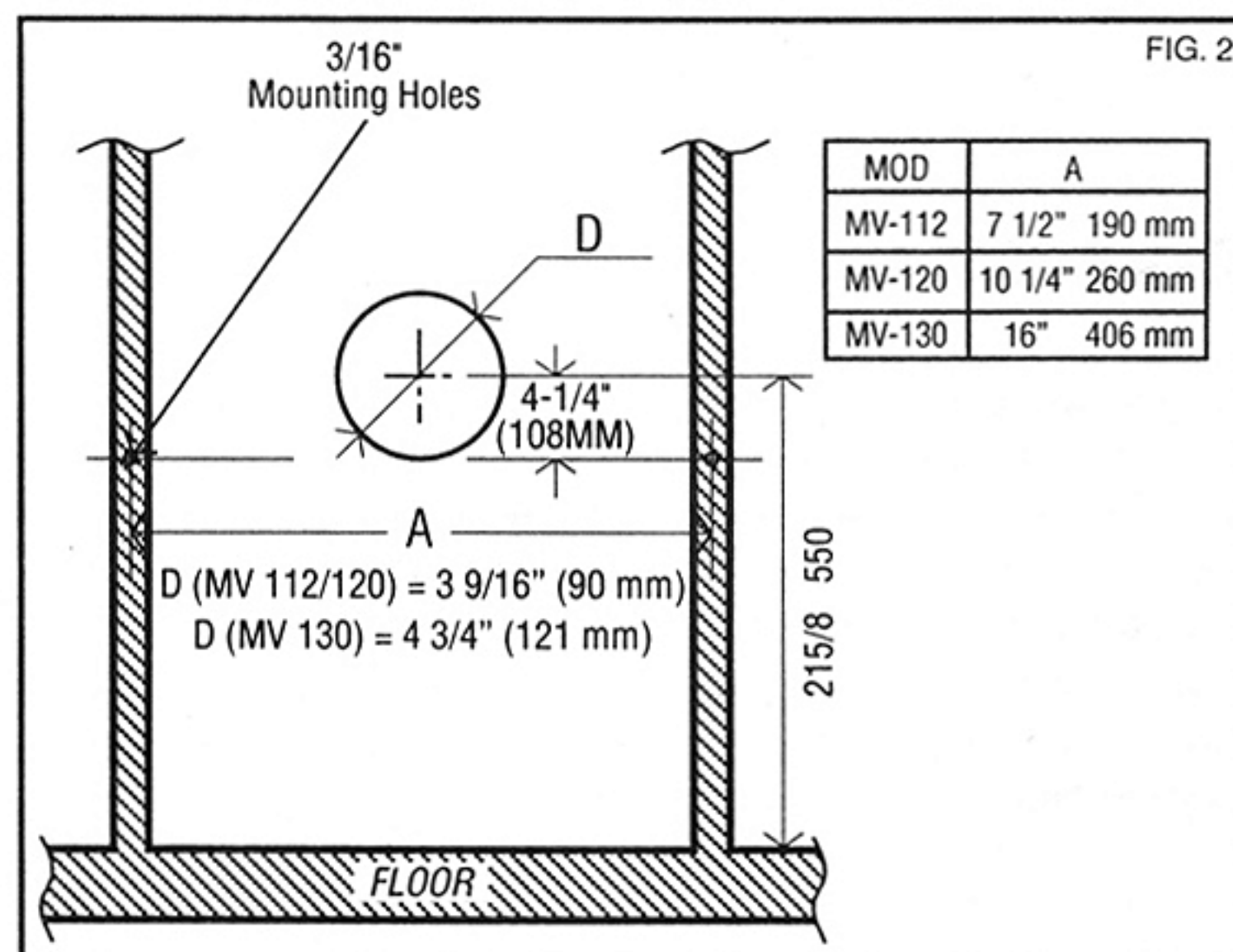
**WARNING:** The nearest point of the vent cap must be a minimum horizontal distance of 6 FEET (1,83M) from any gas pressure regulator or gas meter (with the exception of the pressure regulator provided with this unit).



Since this appliance is a direct vent (balanced flue) design, all combustion and ventilation air is drawn from outside of the structure. No special precautions are necessary inside the structure.

**INSTALLATION IN RESIDENTIAL GARAGES:** Gas utilization equipment in residential garages shall be installed so that all burners and burner ignition devices are located not less than 18 inches above the floor. Such equipment shall be located, or protected, so it is not subject to physical damage by a moving vehicle.

To assist in cutting the openings in the inside wall to properly mount the ECOTHERM, a template is furnished in the carton with the unit. The template illustrates all of the openings and mounting holes, and their

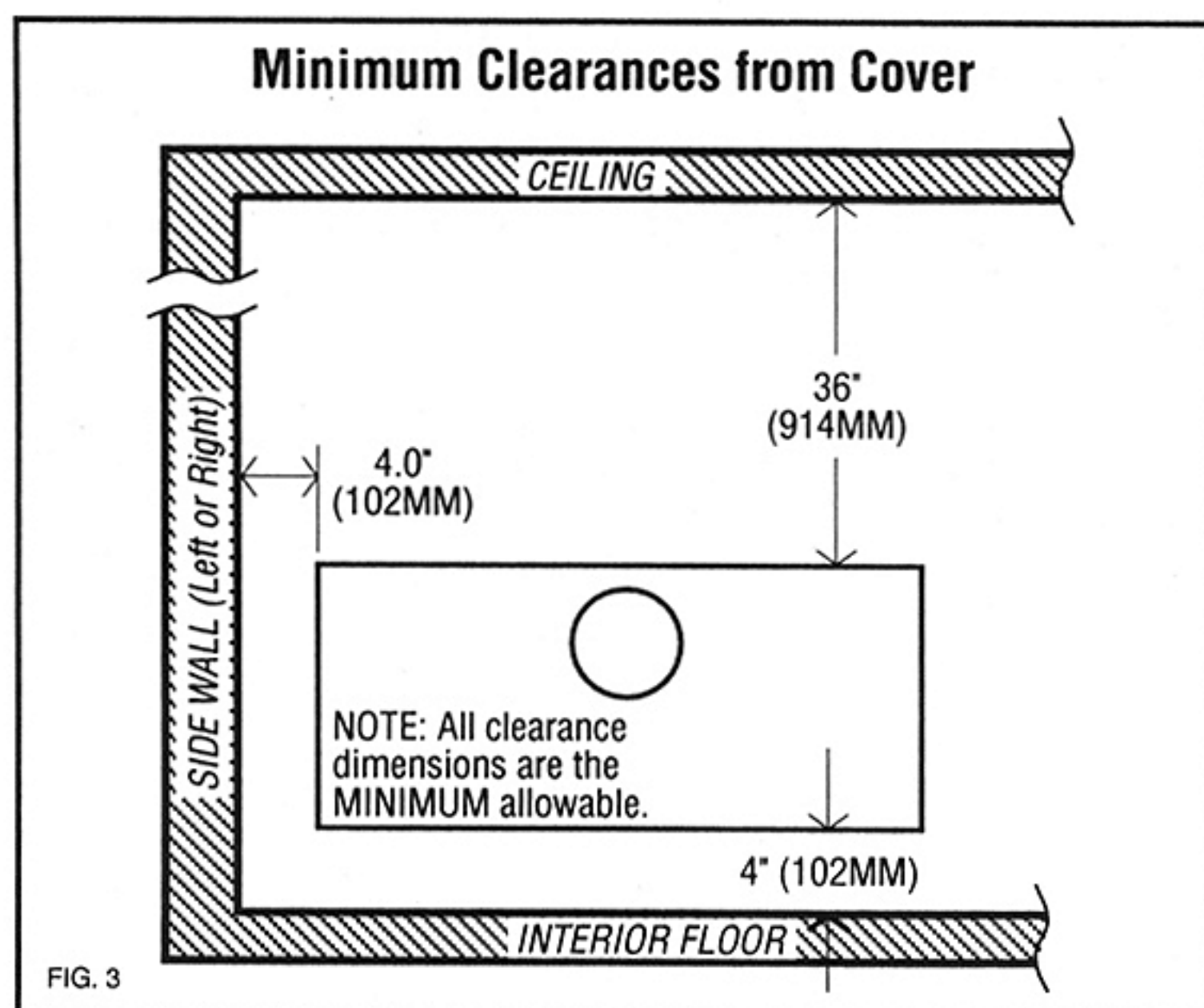




correct location. The ECOTHERM is mounted on the wall with a special bracket provided. The heater is then secured to the bracket. The illustration above (FIG. 2) gives you the required dimensional information for mounting the unit, in the event that the template is unusable or lost.

The template must be located so that the ECOTHERM will be installed BETWEEN the wall studs. It is NOT permissible to cut the wall studs in order to install this unit. In addition, the wall studs are to be used to mount the MV 130 unit. To install the MV112 an MV120 on non solid walls use hollow wall anchors (see table on figure 2) The bottom edge of the template is to be located directly on the floor surface or floor covering such as carpeting or tile to provide the correct minimum clearances from the bottom of the unit to combustible materials.

SIDES (INCHES/MM)	4.0"/(102 mm)
BACK OF UNIT	0/(0)
TOP OF UNIT TO CEILING	36"/(914 mm)
FLOOR OR FLOOR MATERIALS	4.0" (102 mm)

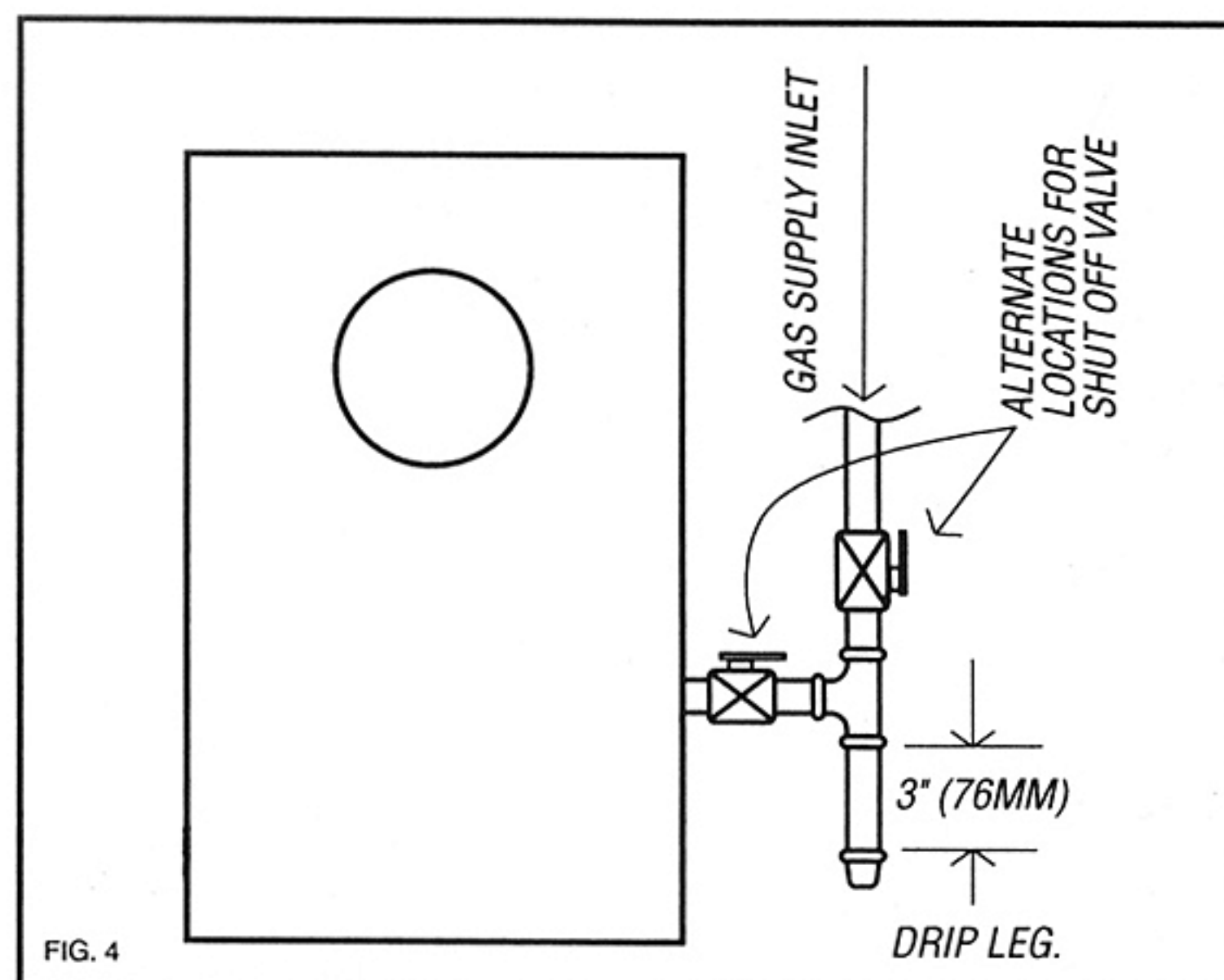


See the table and figure 3 for the minimum clearances from the cover. These clearances are necessary for protection against fire, and to provide adequate clearance for servicing. NEVER reduce the clearances from the finished unit to adjacent combustible materials.

## Gas Supply:

The template supplied for use in the installation of the ECOTHERM shows a recommended location for the gas supply piping. If desired, (and in accordance with all applicable building and plumbing codes) the gas piping can be brought into the room through the floor underneath the unit. In Canada if copper tubing is to be used from cylinder to the unit, the copper tubing must be internally tinned.

Most local codes require that a shutoff valve be installed upstream of the appliance, to allow for turning off the gas supply for servicing. Check with your local code authorities to see if this is required in your area BEFORE you begin installing the gas piping. In addition, it is necessary for you to install a plugged 1/8" NPT pressure tapping, accesible for test gage



connection, immediately upstream of the gas control for this unit. Most areas also require a sediment trap or "drip leg", to be installed in the gas piping just before the piping enters the unit. See FIG. 4 above for guidelines, or refer to the latest edition of the National Gas Fuel Code, ANSI Z223.1 for details.

## Pressure testing of the gas supply piping system:

The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 PSIG.

The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal or less than 1/2 PSIG.

## High Altitudes

Orifice size must be reduced for high altitude use or carbon monoxide may be generated and excessive heat will seriously damage the unit. When the altitude is over 4500 feet above sea level, contact CEC or your gas company for the proper burner orifice.

## Preparing the site for installation:

After ensuring that the location you have selected for the ECOTHERM complies with the requirements outlined in this manual in the section titled "Locating the Unit", you should check to see that you have all the required tools to complete the job. The tools required are:

- Carpenters level,
- Drill (power or hand),
- Medium size flat screwdriver,
- Medium size Phillips screwdriver.
- Jig saw with several wood and masonry blades,
- Metal hack saw,



- Outdoor caulking,
- Pipe joint compound (which is resistant to the action of propane/L.P. gas), and
- Soapy water solution (to check for gas leaks).

## **This is a heating appliance:**

DO NOT OPERATE THIS APPLIANCE WITHOUT FRONT PANEL INSTALLED. Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies. • Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns. • Young children should be carefully supervised when they are in the same room as the appliance. • Clothing or other flammable material should not be placed on or near the appliance. • If the cover is removed for servicing, it must be replaced prior to operating the appliance. • Keep burner and control compartment clean.

**Installation and repair should be done by a qualified service person.** The appliance should be inspected before use and at least once annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that control compartments, burners, and circulating air passageways of the appliance be kept clean. • Don't put anything around the heater that will obstruct the flow of air. • Keep the appliance area clear and free from combustible material, gasoline and other flammable vapors and liquids. • Examine venting system periodically and replace damaged parts. • Examine burners periodically, clean and replace damaged parts. • Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control which has been under water.

## **Installing the EcoTherm**

### **Cutting the vent hole**

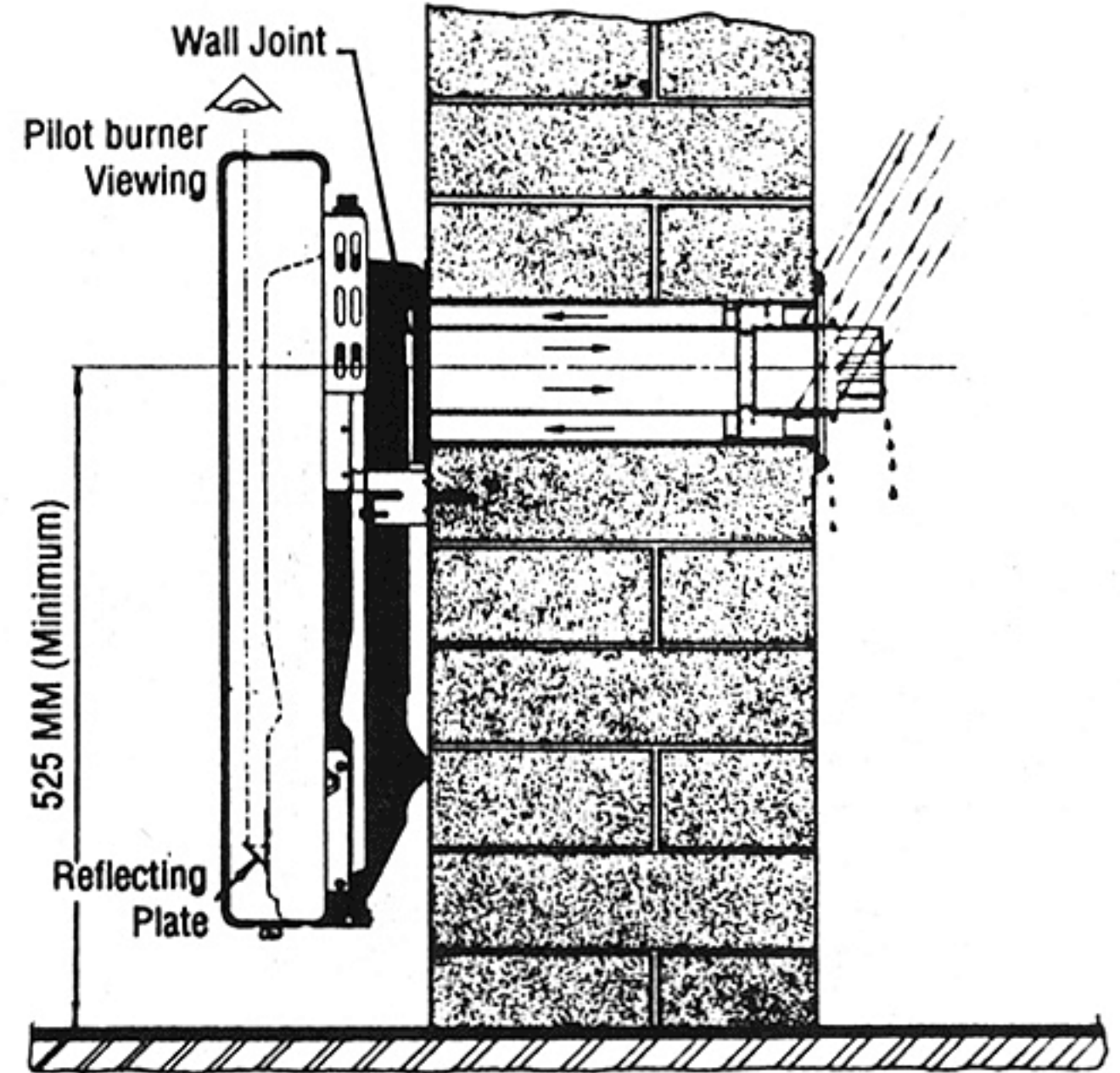
Begin the installation by locating the wall studs on the inside wall of the structure. Find the centerlines between the studs where you want the unit to be mounted. Refer to the following illustration, FIG 5 for a side view of how the finished installation should look. This appliance is certified for installation on walls which are a minimum of 6" (152 mm) thick, and a maximum of 12" (305 mm) thick. The vent kit supplied with the unit will accommodate walls up to this thickness.

If the outside wall is less than 6" thick, construct a support box on the outside of the wall to increase the total wall thickness to 6" or more as shown in FIG. 6.

Once you have located the centerline between the studs, place the template provided with this unit flat and level against the wall and mark the indicated location for the large diameter opening in the center of the template for the vent piping assembly. Refer to FIG. 2 for the correct dimensions for these openings if the template is unusable or lost.

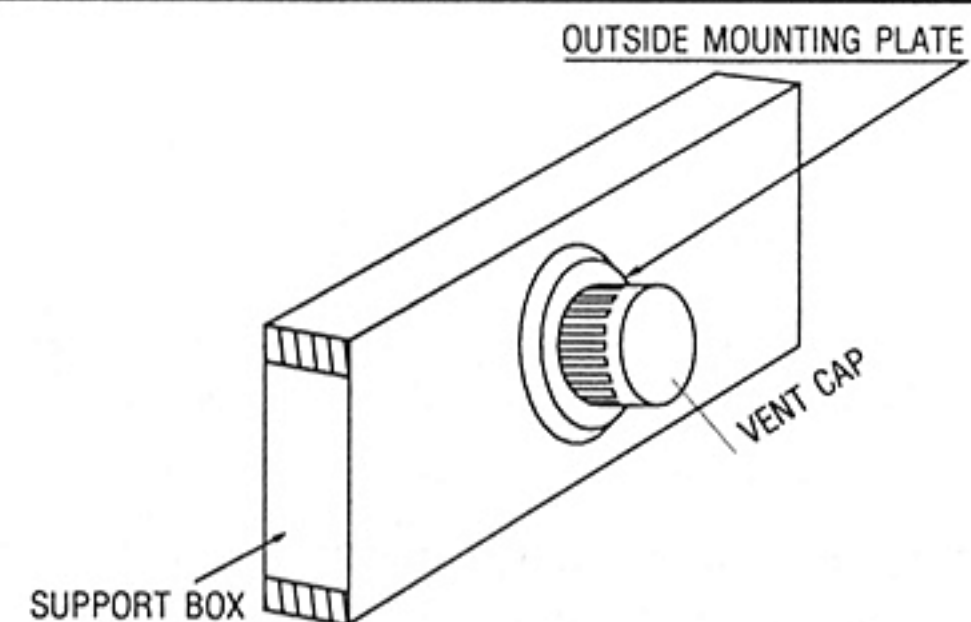
Cut a proper diameter opening according to fig. 2 pag. 3 in the inside and outside walls. Ensure that this opening is large enough to allow the larger diameter vent pipe to pass through without bending. In addition, make sure that the two holes (in the inside and the outside wall) are concentric to one another. If the opening in the outside wall is higher than the opening in the inside wall, the vent assembly will not be parallel to the ground, and water from rain or lawn sprinklers could enter the vent cap. Use a carpenter's level to confirm this.

FIG. 5



If the vent cap is to be installed on shingles or clapboards or it appears that a projection within 6" of the air inlet section could shield the air inlet or the outside wall is less than 6" thick, the entire vent should be supported away from the wall. (see fig. 6)

FIG. 6



The outside dimensions of the support box should match the overall dimensions of the wall support plate. All joints can then be sealed and painted. Do not exceed the maximum length of 12".

## **Marking and cutting the vent pipes to the proper length.**

From the outside of the building, push the vent pipe through the hole until the vent cap flange is against the outer wall. From the inside of the building, place the wall support plate over the open end of the vent pipe and push the plate firmly against the wall. With the inner vent pipe removed, use your carpenter's level to verify that the pipe is level.



Making certain that the vent cap is still tight to the outer wall and that the mounting plate is tight to the inner wall, use a pencil to trace all the way around the vent pipe at the mounting plate. (NOTE: this just marks the wall position -this is not where you will cut the pipe)

Remove the pipe from the wall. Measure 7/16 inch out from the mark at the mounting plate position; mark several locations around the pipe. Use these markings as your guide for your cut line. A sheet of "legal size" paper wrapped around and taped into position can help you get a good cut line. Measure the length of pipe you will be removing from the outer pipe - this is the same length you will remove from the inner pipe. Mark your inner pipe at the end away from the groove. Remember, you will remove the same amount from the inner pipe as you do from the outer pipe.

Use a hack saw or tin snips to cut your outer flue pipe at the cut line (7/16 inch longer than the length to the mounting plate). Many people find tin snips easier than a hack saw for the outer tube. Cut a good, straight line, being careful not to crimp or deform the tube.

With a hack saw or tin snips, cut the same amount off the inner tube as you did from the outer tube. Note that the inner tube is thicker metal than the outer tube and may be more difficult to cut, especially with tin snips. Make certain that you cut the end opposite the groove.

## Installing the vent assembly and wall support plate

The back of the flange on the vent cap assembly has a groove which is to be filled with exterior caulking in order to prevent rain water or small insects from entering the structure from the vent assembly. See Fig. 7.

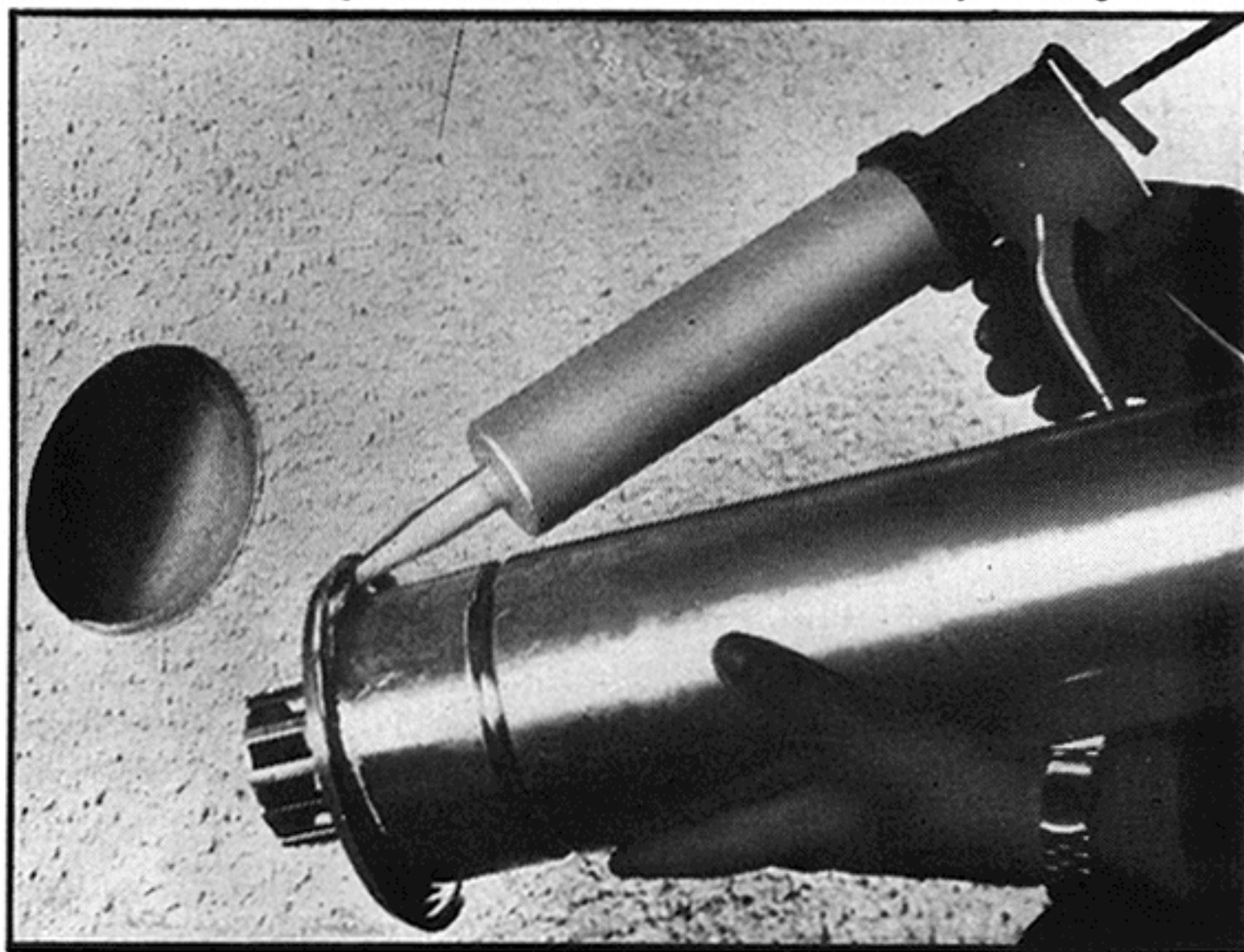


FIG. 7

Insert the large diameter vent assembly through the outside wall into the inside of the structure. Press the caulking into the outer wall surface.

Place the wall support plate over the open end of the vent pipe and push the plate firmly against the interior wall. Level the plate with the carpenter's level, and mark the mounting holes with a pencil. Remove the wall support plate from the vent pipe and drill the two holes with the appropriate drill bit. Place the wall support over the vent pipe and again, firmly press the plate against the wall surface. Using two screws, affix the plate to the wall.

**NOTE:** Use hollow wall fasteners for models MV120 and MV112. Model MV130 must be mounted on the wall studs.

As shown in Fig. 8, place the large diameter metal band around the vent pipe, and push this band over the exposed length of vent pipe, until it stops against the wall support plate. Tighten the band with the flat screwdriver so that the vent pipe cannot move either in or out of the wall. Insert the small diameter vent pipe grooved end first into the larger diameter pipe, ensuring that it is firmly pushed into the aluminium vent cap.

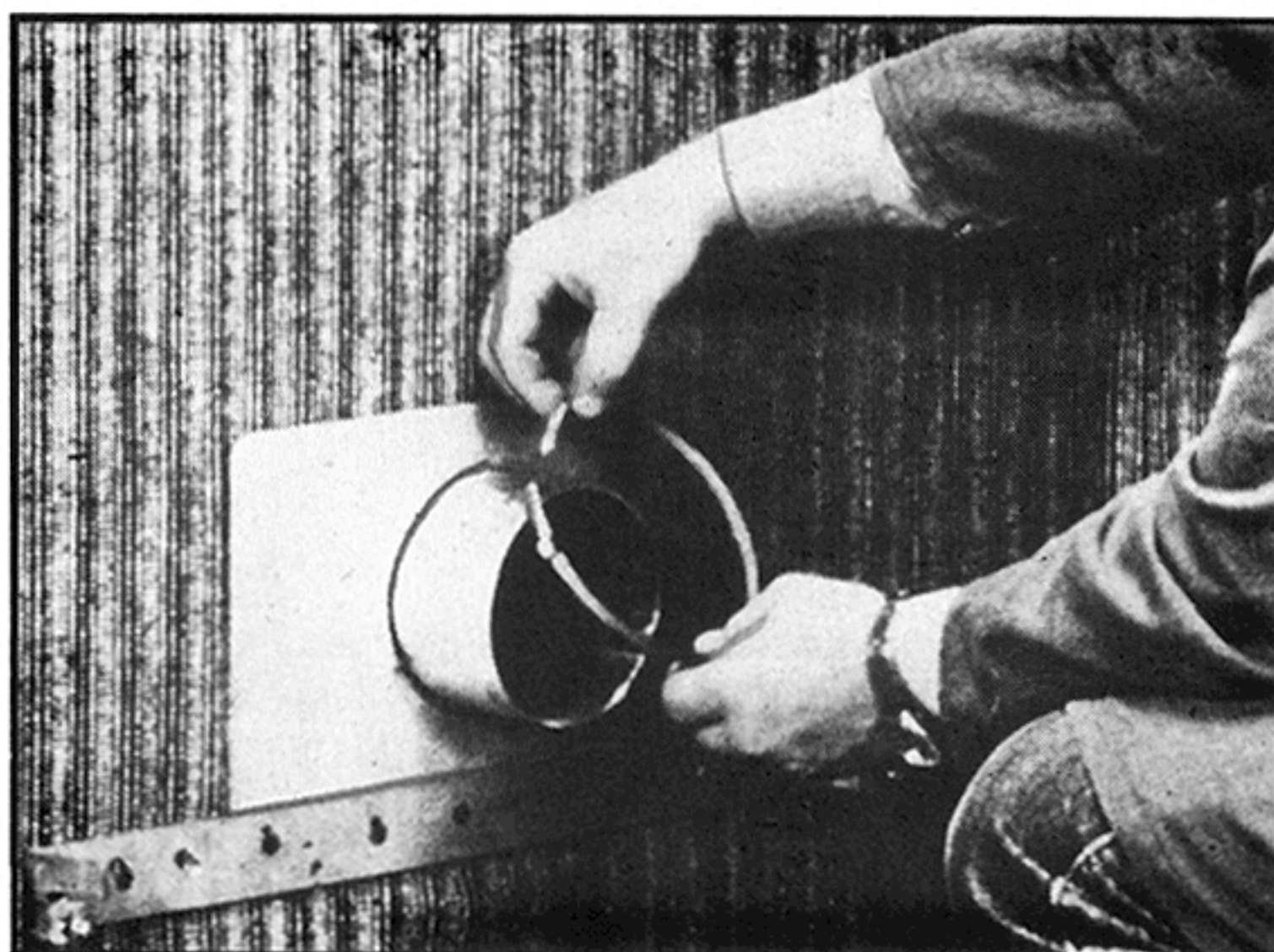


FIG. 8

## Mounting the EcoTherm

Unpack the unit from the carton. Remove the cover and lay it aside until needed. Remove the small piece of wood from the rear of the unit and discard. Four small adhesive foam pads are included with the unit and can be found in the accessory bag. Place the foam pads on the four raised "bumps" on the rear of the unit. These foam pads will protect the wall surfaces from damage. See Fig. 9.

Hang the unit on the wall support bracket, taking extreme care to ensure that the small diameter vent pipe is securely engaged with the similar sized opening in the rear of the unit. The larger diameter vent pipe must also slide over the outside flanged opening. **WARNING:** The heater will not function properly if these connections are bad. Special care should be taken to place the lighting instructions, which are contained on a piece of sheet metal hanging from the back of the unit, so that they may be read when necessary. These instructions are for current and future use. Make sure they remain accessible after the unit's installation. Secure the unit to the wall support bracket with the two screws provided. See Fig. 10.

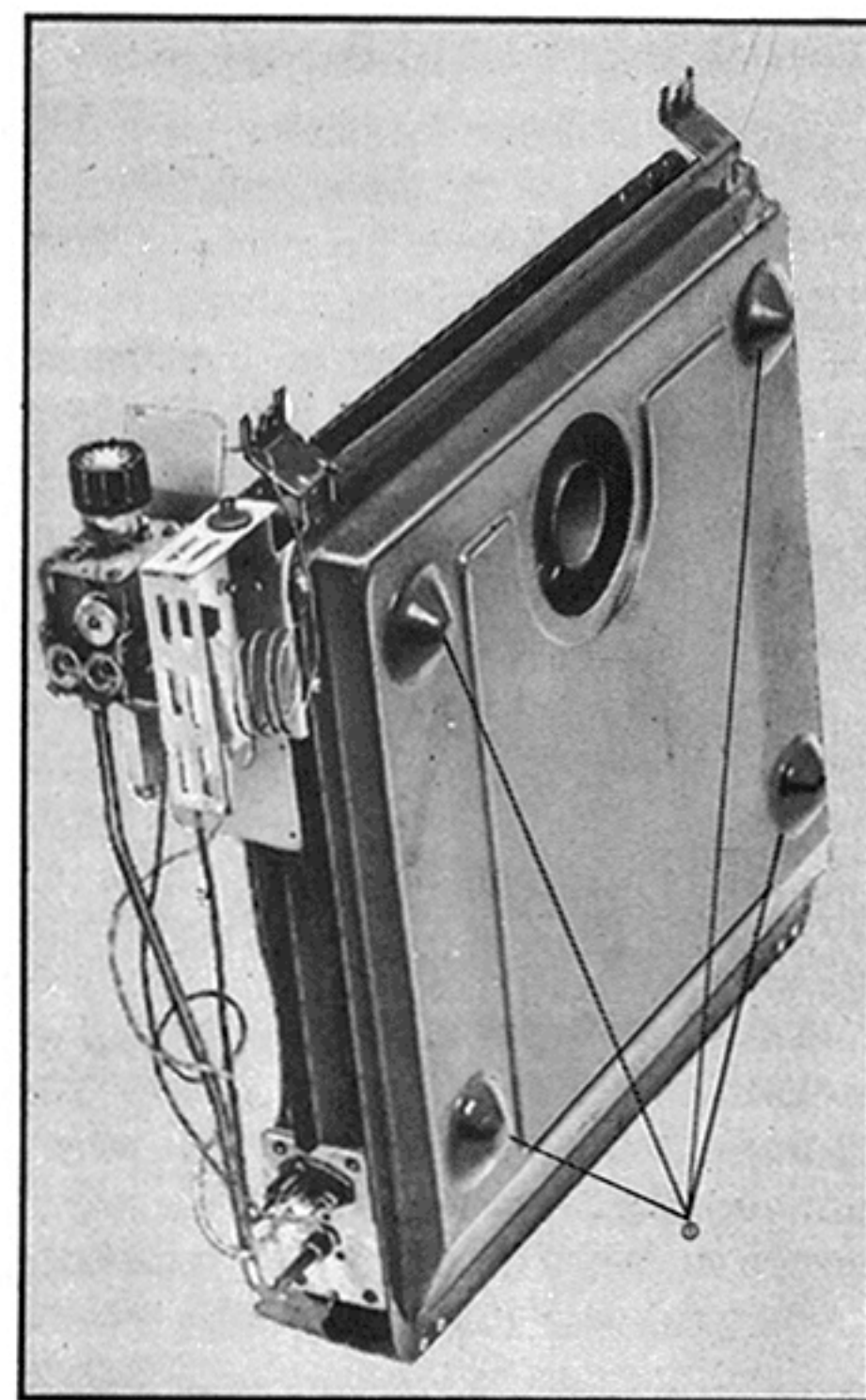


FIG. 9



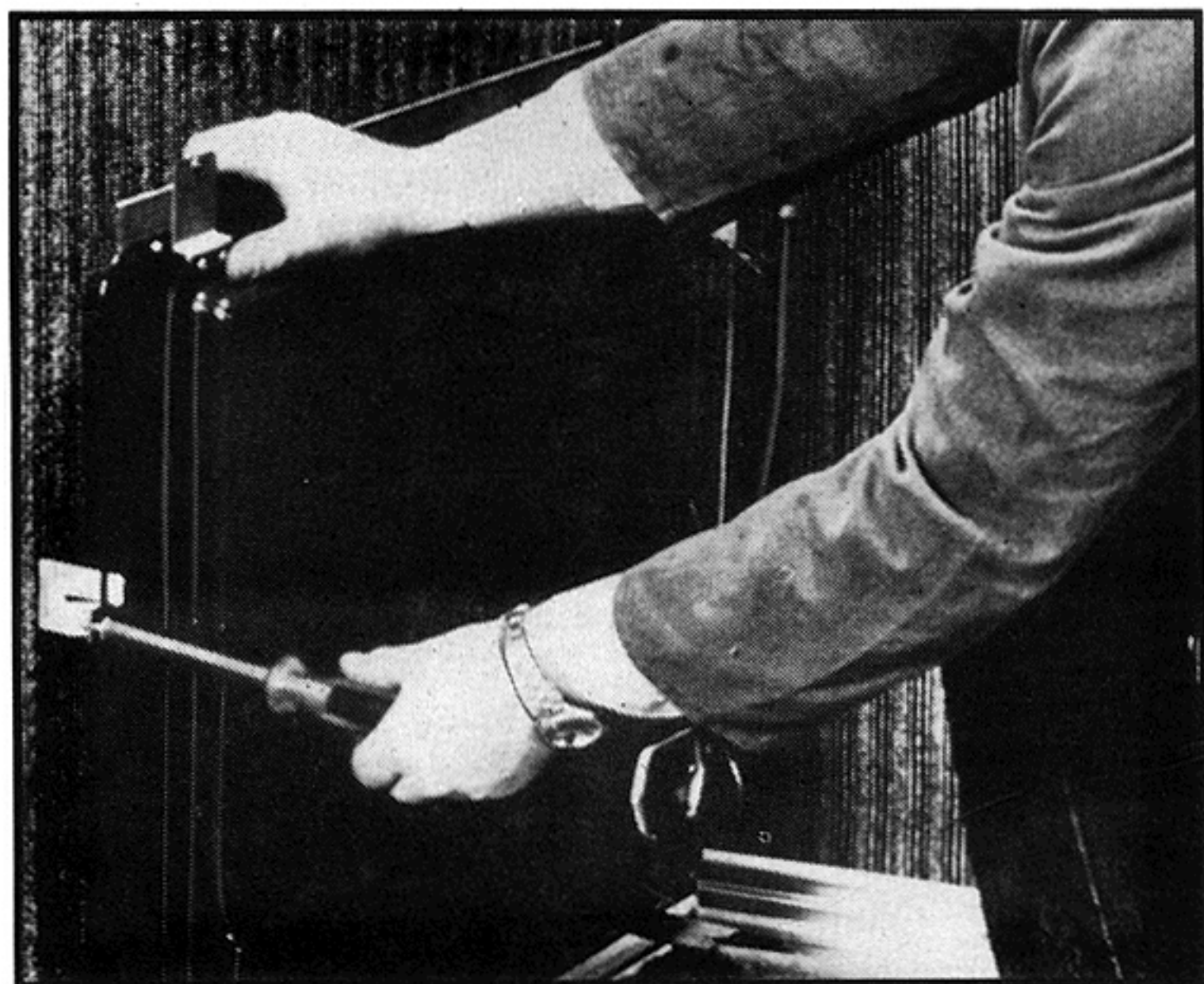


FIG. 10

## CONNECTING THE GAS SUPPLY

Connect the gas piping to the gas inlet on the right side of the unit. Please refer to the cautionary remarks noted in the beginning of this manual. If local codes permit the use of a flexible metal gas connector, it must be of the type approved for this use by displaying a certification symbol in accordance with ANSI Z.21.24 covering Appliance Connectors of Corrugated Metal Tubing and Fittings:

### -OR-

If local codes permit the use of a flexible gas connector of other than all-metal construction, it must be of the type approved for this use by displaying a certification symbol in accordance with ANSI Z21.45 covering Assembled Flexible Appliance Connectors of other than All-Metal Construction.

## Check for leaks:

After connecting the gas supply piping to the gas control on the heater, the connections must be checked thoroughly for leaks. With the shut-off valve on the supply piping near the heater (if installed) turned ON, but the gas control knob supplied with the heater OFF, apply liberal amounts of a soapy water solution to all of the piping joints. A gas leak will cause bubbles to form. Note any leaks in the piping system, then shut off the gas at the shut-off valve (if installed), or at the gas meter or propane/L.P. tank serving the structure. Fix the leaking joint and retest the joints as directed above.

**• If your heater is equipped for use with propane / L.P. gas, please read the special instructions in the front of this owners manual.**

Once the supply is checked and does not reveal any leaks, you can finish the installation by placing the cover on the unit. Secure the cover with the two wing nuts at the bottom of the unit which you removed when unpacking.  
See Fig. 11.

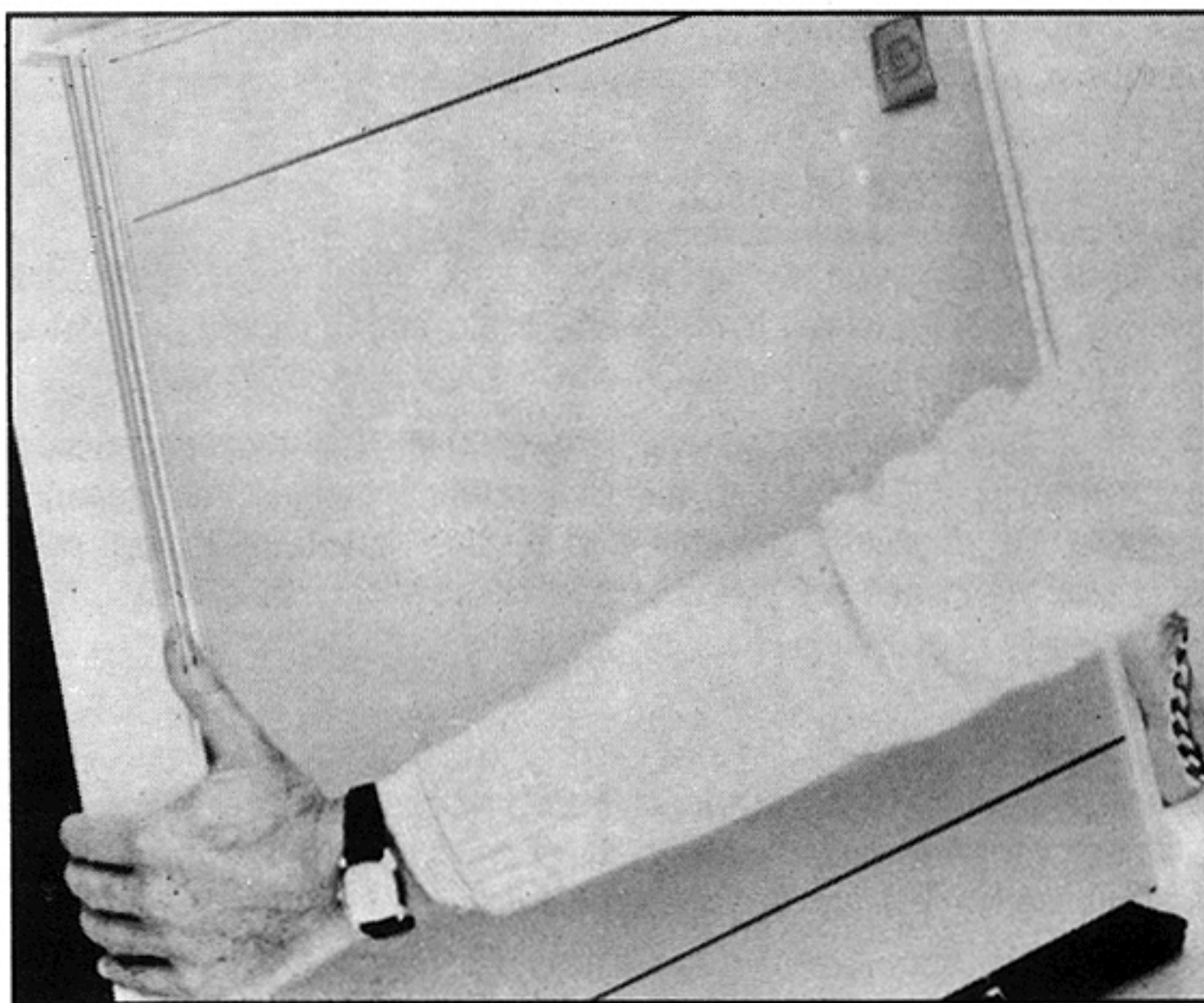


FIG. 11

The pilot and main burner lighting instructions for this unit can be found in this manual as full page instructions which direct you through the complete safe lighting and operation of the gas control system. Please use and follow these instructions. In addition, the same instructions can be found on a sheet metal plate which hangs on a chain at the rear of the unit.

## • WARNING:

*Do not operate this appliance with the pilot/main burner observation windows removed, cracked or broken. Replacement of these windows should be done by a licensed or qualified service person.*

***Never operate your ECOTHERM with the cover removed. This appliance generates heat and the inner panels, when exposed, can cause severe burns and/or property damage.***

## Manufactured home installation:

Installation must conform with the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280, or, when such a standard is not applicable, the Standard for Manufactured Home Installations, ANSI A225.1/NFPA 501A. Installations in Canada must conform to the current standard CSAZ 240.4 Gas Equipped Recreational Vehicles and Mobile Housing.

## Thermostat functions:

The ECOTHERM is equipped with a modulating thermostatic control for your comfort. The term "modulating" means that the gas flow to the burner is constantly being adjusted either higher or lower depending on the temperature of the room. Position LO on the thermostat dial is the lowest temperature setting. Position HI on the thermostat dial is the highest temperature setting.

Choose the setting that provides the most comfort for you. Excessively



high temperature settings can cause you to constantly re-adjust the thermostat, and lose valuable energy efficiency.

## Maintenance instructions:

Do not use this heater if any part has been under water. Immediately call a qualified service technician to inspect the heater and to replace any part of the control system and any gas control which has been under water.

As with all fuel burning appliances, it is important for the continued safe, efficient operation of the unit that you conduct periodic maintenance functions. We suggest that before each heating season, or at least once every year, you review and perform the following MINIMUM service:

### WARNING:

*The following instructions are designed to direct a qualified service technician through the proper periodic maintenance and repair which may be required throughout the expected life of this unit. NO attempt should be made by the homeowner to perform these functions.*

1. Remove the cover from the unit by removing the two wing nuts at the bottom of the unit.
2. The gas supply should be turned OFF at the shutoff valve in the supply piping leading to the appliance (if installed), or at the gas meter or propane/L.P. tank. The gas to the unit should be disconnected so the unit can be removed from the wall.
3. Remove the two screws which hold the unit to the wall support plate and lift the unit away from the wall.
4. Carefully examine the interior of the vent pipes, both large and small diameter. If you notice any blockage or obstruction that was not a part of the unit when installed, clean the pipes and prepare them for reinstallation.
5. Look inside the openings of the rear of the unit and check for any foreign

materials. Remove any objects which may block or obstruct the free flow of combustion and ventilation air. You will only be able to see a portion of the interior of the unit from this angle.

6. The main burner and pilot burner can be removed from the unit for cleaning by first loosening the compression fittings that supply gas to both the main burner and pilot. **Note: Before removing either the pilot assembly or main burner assembly be sure to have replacement gaskets on hand. See paragraph #8. See Fig. 12.** After removing the compression nuts, unscrew the thermocouple (Fig. 12, item 2) from the base of the pilot and remove it from the pilot assembly. Remove the four screws which hold the main burner/pilot in place (Fig. 12, item 3), and withdraw the burner/pilot from the unit. First check the pilot for dirt, lint, or a black powdery carbon deposit. If any is noted, brush it off completely using a soft bristled brush or blow it out. Do not attempt to pass anything through the pilot orifice. Next, check the entire burner for dirt, lint or carbon deposits. Again, if any is noted, clean with a soft brush.

7. Inspect the interior of the combustion chamber for dirt, lint or carbon deposits. If any are found, loosen them with a long handled brush and remove the residue from the heater with a vacuum cleaner.

8. In preparation for replacing the main burner/pilot into the heater, check the condition of the gasket on the mounting plate. If the gasket appears damaged or worn, replace it ONLY with a gasket available from Controlled Energy, Inc. The Controlled Energy address is at the back of this manual. Install the assembly in the heater and resecure the assembly to the heater chassis with the four screws removed in step 6 above.

9. Re-connect the main burner and pilot gas lines which were disconnected in step 6 above. Re-install the thermocouple in the pilot bracket.

10. Replace the heater on the wall support bracket, taking extreme care to ensure that the small diameter vent pipe is firmly engaged with the vent outlet at the rear of the heater. The large diameter vent pipe will slide over the appropriate opening. Resecure the unit to the bracket with the two screws removed earlier.

11. Re-connect the gas supply piping AND REPEAT THE LEAK TEST PROCEDURE FOUND IN THE SECTION OF THIS MANUAL TITLED "CHECK FOR LEAKS". In addition, it will be necessary for you to check the gas connections inside the unit for leaks.

After testing the gas connections to the unit, place the pilot burner into operation by following the instructions found in this manual or on the hanging tag behind the unit. Check all joints to the pilot gas line with a soapy water solution. Bubbles on any of the joints indicated a leak is present and must be repaired. Turn OFF the gas to the unit when performing any repairs to the gas piping system. After the pilot lines are checked turn the main

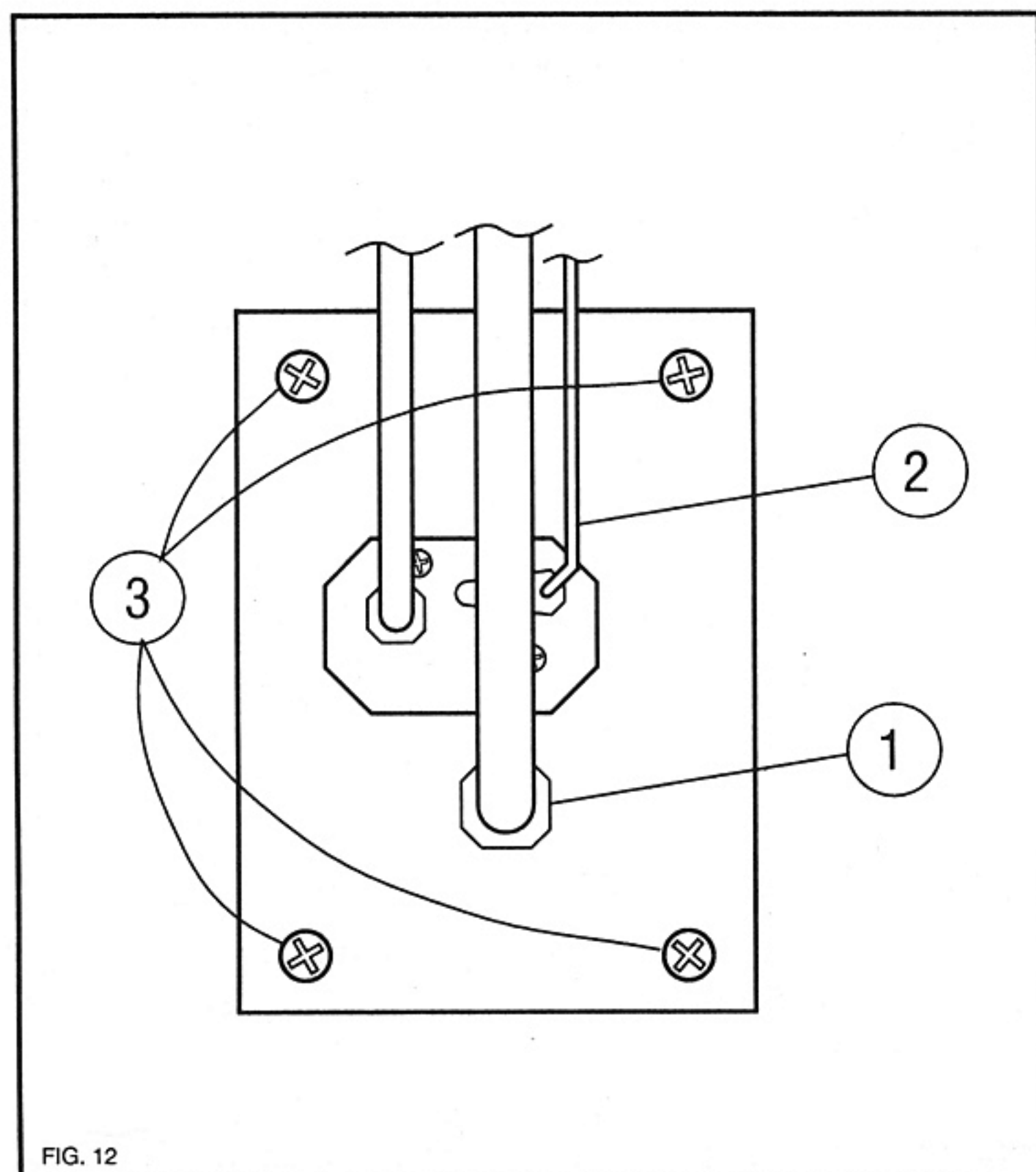


FIG. 12

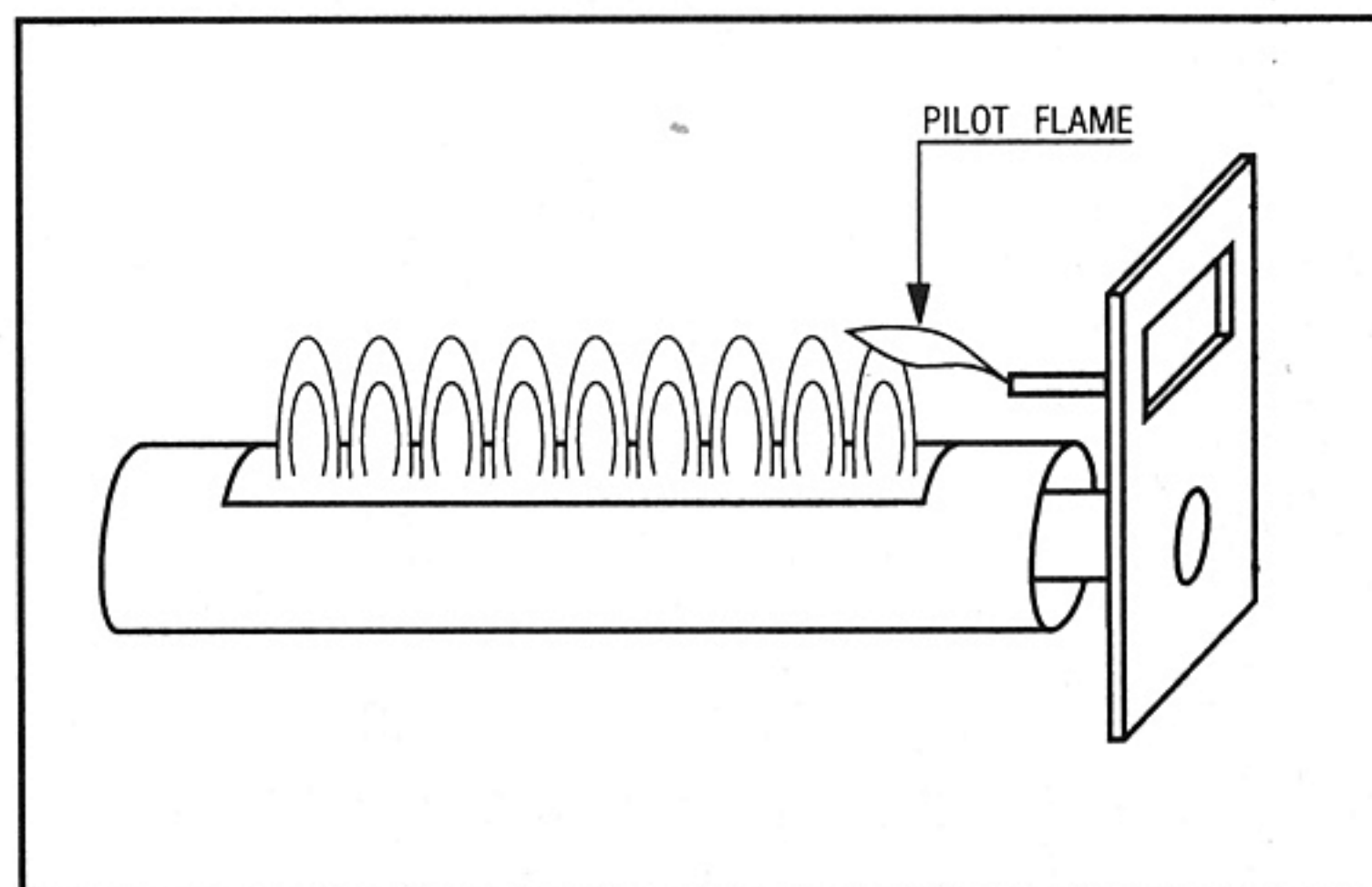


FIG. 13



burner ON and again check all joints in the piping system for leaks with soapy water. Repair any joints which indicate a leak is present.

12. While the main burner is ON, check the pilot and burner flames to see that they are burning a clean blue color, See Fig. 13 for an approximation of the correct flame pattern. If your unit is not burning cleanly, or if you are not sure, turn the unit OFF and contact a qualified service technician or the gas supplier or call Controlled Energy at 1-800-642-3111.

Before completing your periodic maintenance checkout, ensure that the appliance area is kept clear and free from combustible materials, gasoline and other flammable vapors and liquids. Also, check to see that the flow of combustion and ventilation air around the vent cap on the outside of the structure is not obstructed.

## Replacement parts:

Replacement parts for the ECOTHERM may be obtained by contacting Controlled Energy or your gas service person. Refer to Fig. 14 to identify the required parts.

PART NAME	#	PART NUMBER		
		MV-130	MV-120	MV-112
VENT KIT (6" TO 12")	1	R 55 197-0	R 55 196-1	R 55 196-1
VENT BAND	2	R 55 101-5	R 55 100-7	R 55 100-7
COMBUSTION CHAMBER	3	R 55 305-1	R 55 306-9	R 55 308-5
COVER	4	R 55 312-3	R 55 311-5	R 55 310-7
MAIN BURNER ASSEMBLY	5	R 55 159-7	R 55 158-9	R 55 157-1
PILOT BURNER NAT. GAS	6	R 55 149-0	R 55 149-0	R 55 149-0
PILOT BURNER L.P. GAS	6	SAME	SAME	SAME
THERMOCOUPLE	7	R 55 300-0	R 55 300-0	R 55 300-0
GAS CONTROL NATURAL	8	R 55 301-8	R 55 301-8	R 55 301-8
GAS CONTROL L.P. GAS	8	SAME	SAME	SAME
PIEZO IGNITER	9	R 55313-1	R 55313-1	R 55313-1
PIEZO WIRE	10	R 55 107-4	R 55 107-4	R 55 107-4
PILOT IGNITER ELECTRODE	11	R 55 115-5	R 55 115-5	R 55 115-5
GASKET FOR VIEWING WINDOW	12	R 55 137-6	R 55 137-6	R 55 137-6
MICA FOR VIEWING WINDOW	13	R 55 139-2	R 55 139-2	R 55 139-2
FRAME FOR VIEWING WINDOW	14	R 55 138-4	R 55 138-4	R 55 138-4
MIRROR FOR VIEWING WINDOW	15	R 55 121-0	R 55 121-0	R 55 121-0
PILOT TUBING	16	R 55 302-6	R 55 302-6	R 55 302-6
MAIN BURNER TUBING	17	R 55 186-8	R 55 186-4	R 55 186-4
WALL SUPPORT PLATE	18	R 55 164-3	R 55 307-7	R 55 309-3
PILOT BURNER GASKET	19	R 55 135-0	R 55 135-0	R 55 135-0
MAIN BURNER GASKET	20	R 55 136-0	R 55 136-8	R 55 136-8
BURNER ORIFICE NATURAL	21	R 55 129-5	R 55 127-9	R 55 125-2
BURNER ORIFICE L.P. GAS	21	R 55 130-9	R 55 128-7	R 55 126-1
INJECTOR PILOT NATURAL	22	R 55 131-7	R 55 131-7	R 55 131-7
INJECTOR PILOT L.P. GAS	22	R 55 132-5	R 55 132-5	R 55 132-5
MINIMUM RATE SCREW NAT.	23	R 55 303-4	R 55 314-0	R 55 142-2
MINIMUM RATE SCREW L.P.G.	23	R 55 304-2	R 55 314-0	R 55 141-4

**• Use only factory authorized replacement parts. Substitutions can cause improper operation, injury, death and/or property damage.**

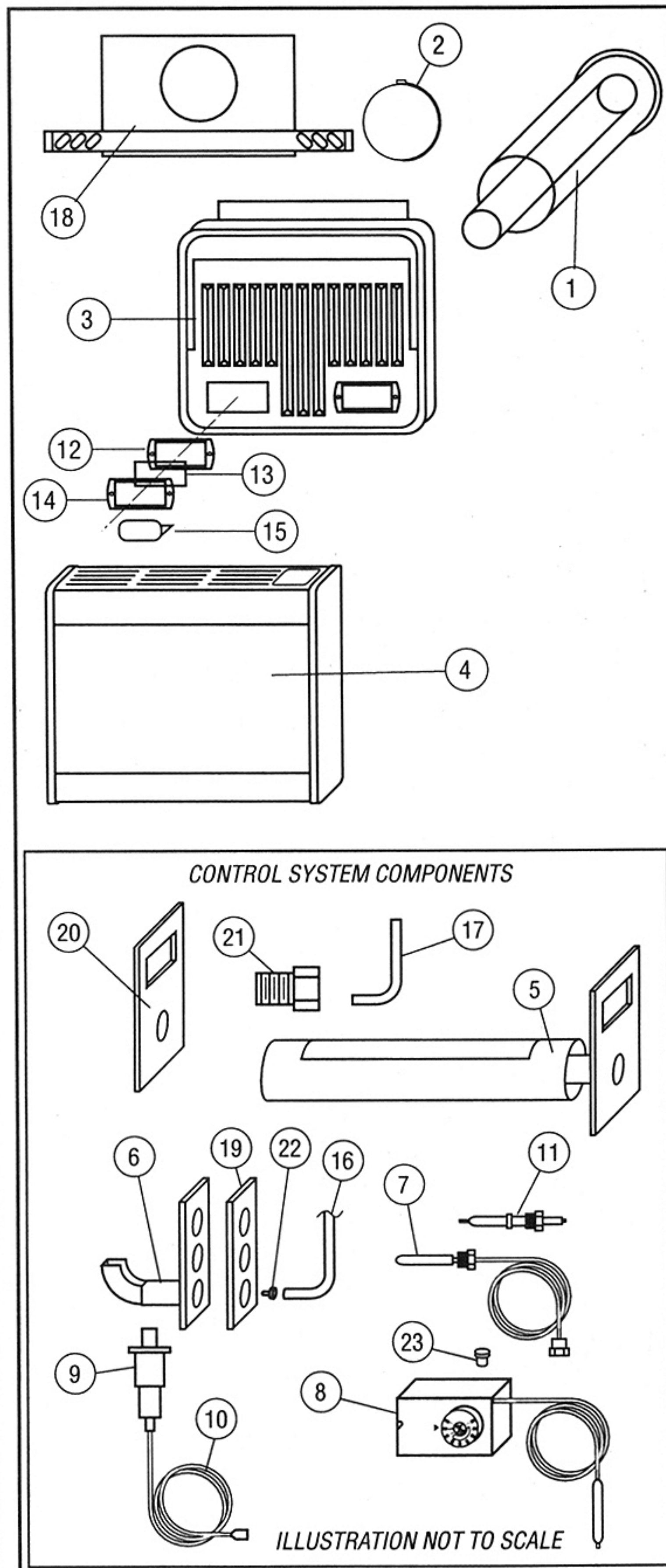


FIG. 14



• **WARNING:** if you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

A. This appliance has a pilot which must be lighted by hand. When lighting the pilot, follow these instructions exactly.

B. BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle to the floor.

**What to do if you smell gas**

- \* Do not try to light any appliance.
- \* Do not touch any electrical switch; do not use any phone in your building.
- \* Immediately call your gas supplier from a neighbor's phone.

Follow the gas supplier's instructions.

\* If you cannot reach your gas supplier, call the fire department.

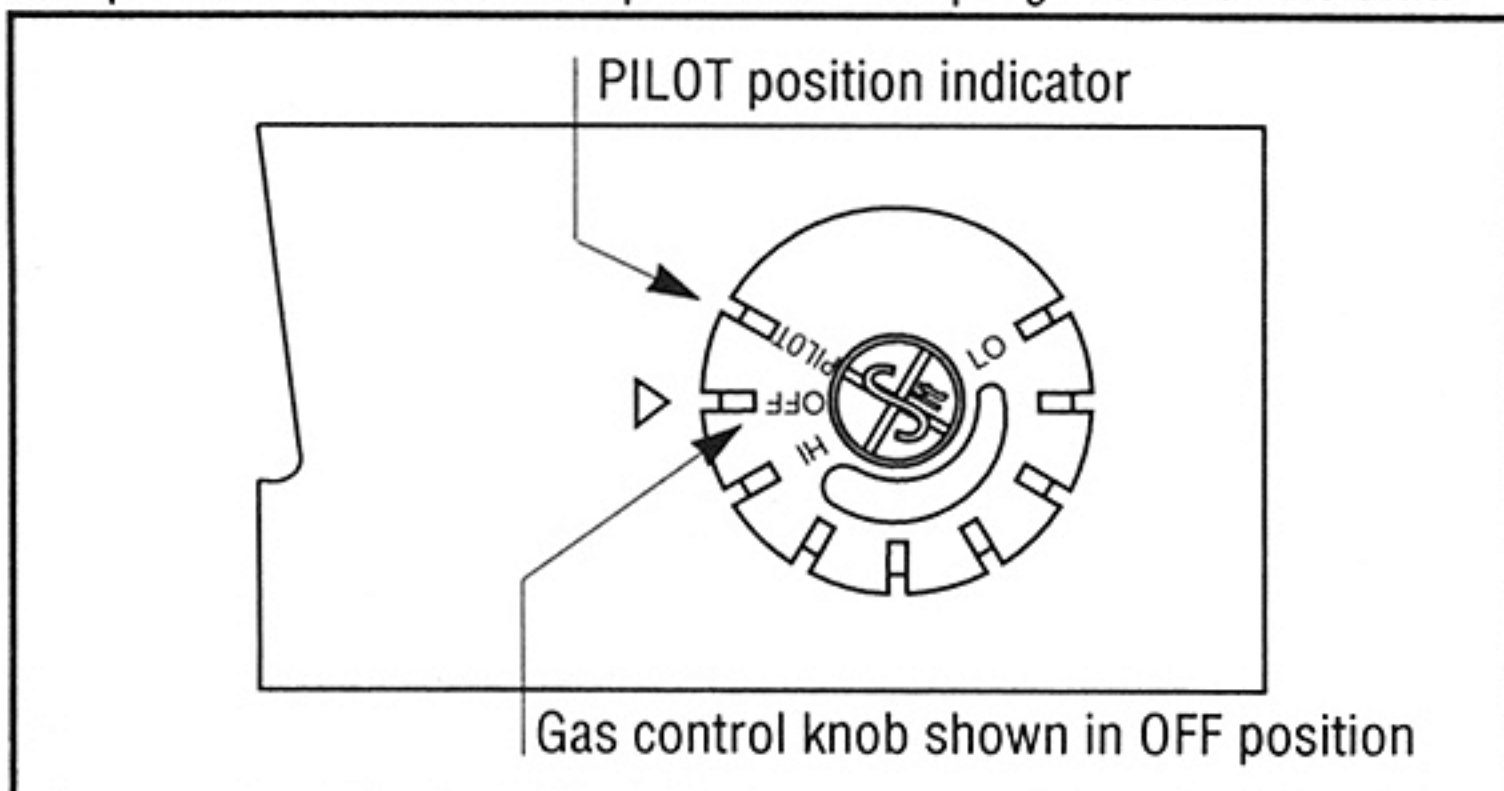
C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

**Lighting Instructions**

1. ¡STOP! Read the safety information above on this label.

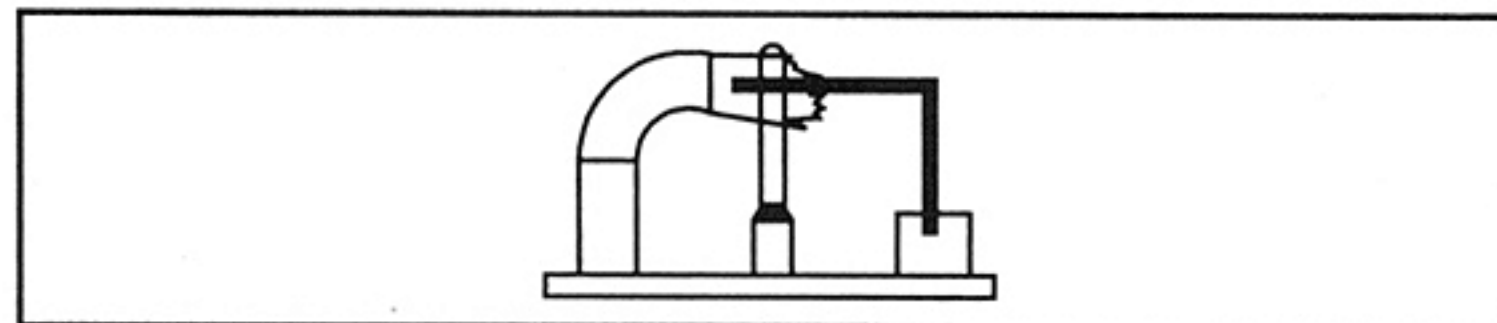
2. Open the control access panel on the top right side of the unit.



3. Turn the gas control knob clockwise to the (OFF) position.

4. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP. Follow "B" in the safety information above on this label. If you don't smell gas, go to the next step.

5. Locate the red push button Piezo Igniter directly behind the gas control knob.



6. Turn the gas control knob counter-clockwise to the pilot position. Depress the gas control knob and push the Piezo Igniter several times, until the pilot is lit. The pilot flame can be observed by looking down the inside of the heater cover, on the right hand side near the bottom. A small reflector will allow you to see if the pilot is lit. Removal of the outer cover of the heater will allow direct visual observation of the pilot burner.

7. Continue to depress the gas control knob for at least 30 seconds, or until the pilot remains lit when you release the gas control knob. When you release the knob, it should pop back up. Pilot should remain lit. If it goes out, repeat steps 1 through 7.

\* If the knob does not pop up when released, stop and immediately call your service technician or gas supplier.

\* If the pilot will not stay lit after several tries, turn the gas control knob to the OFF position and call your service technician or gas supplier.

8. Replace the cover (if removed).

9. Turn the gas control knob counter-clockwise to the desired temperature setting. Close the control access door.

**To turn off gas to appliance**

1. Open the control access panel of the top right side of the unit.

2. Turn the gas control knob clockwise to the OFF position. Do not force.

NOTE: If for any reason you need to turn OFF the control knob,

you **must** wait five (5) minutes before re-lighting the heater otherwise, gas will not flow through the gas valve.

3. Close the control access panel.



## Troubleshooting chart

SYMPTOM	PROBABLE CAUSE
1. Pilot will not light	A. Gas is not turned on, or air is in gas line. B. Gas control, is not set properly. C. Inadequate gas supply. D. Piezo igniter is damaged. E. Pilot orifice clogged. F. Excess gas pressure to heater.
2. Pilot will not stay lit when knob is released	A. Gas control knob not held down long enough. B. Thermocouple not functioning.
3. Main burner won't light	A. Thermostat turned too low. B. Gas in not turned on. C. Gas supply piping too small. D. Defective gas control valve. E. Gas control knob turned to "pilot" position.
4. Main burner won't stay lit	A. Blocked flue passageway. B. Improper seal at vent connections at rear of unit. C. Improper gas supply. D. Broken thermostat bulb or capillary. E. Gas control valve malfunctioning.
5. Rooms will not maintain temperature	A. The heater is too small for the space. B. Mis-adjustment of thermostat. C. Insufficient gas supply. D. Excessive air leaks in room. E. Improperly calibrated thermostat. F. Broken or damaged thermostat bulb or capillary.

***For technical assistance or to order replacement parts, please contact your gas service person or Controlled Energy's Service Department at 1-800-642-3111.***

Manufactured by:  
**Rheem S.A.**

Av. del Libertador 6550 Piso 11  
 (C1428ARV) Buenos Aires, Argentina  
 Tel: 54-11-4896-6000  
 Fax: 54-11-4896-6073 / 4780-5410  
[www.rheem.com.ar](http://www.rheem.com.ar)

Distributed by:  
**Controlled Energy Corporation**

Fiddlers Green  
 Waitsfield, Vermont, 05673  
 1-800-642-3111  
 802-496-4436  
 Fax 802-496-6924



## **Five Year Limited Warranty**

### **General**

Ecotherm room heaters are warranted by the Manufacturer (SAIAR S.A.) through Controlled Energy Corp. Controlled Energy Corp. (CEC) will repair or replace at CEC's sole option any part which fails in normal use and service within the applicable periods specified below, in accordance with the terms of this warranty. The CEC replacement will be warranted for the unexpired portion of the original warranty. This warranty will be valid only for room heaters in possession of the original purchaser as recorded on the warranty card.

### **Limited One Year Warranty**

- 1) CEC will repair or replace —at its sole option— any part(s) which prove(s) defective in materials or workmanship within one year of the original installation, as verified by CEC.
- 2) No liability is assumed by CEC for removal or installation labor costs, nor for freight or delivery charges.

### **Limited Extended Warranty**

- 1) In addition to the limited One-year warranty, CEC will replace any heat exchanger which fails under normal conditions of installation, use and service during a period of four years following the expiration of the One-year warranty. Replacement heat exchangers will be functionally similar and will be provided to the warranty holder at a cost equal to 1/5th of the current price for each year of service from the original date of installation, as verified by CEC.
- 2) No liability is assumed by CEC for removal or installation labor costs, nor for freight or delivery charges.

### **Shipping costs**

In addition to supplying the replacement part(s), CEC will pay transportation costs for these parts to a convenient delivery point near you selected by CEC, such as a local Ecotherm dealer or distributor.

### **Service labor costs**

This warranty does not cover any labor costs associated with service, removal, or re-installation of part(s). All such costs must be borne by the Purchaser.

### **Exceptions**

This warranty will not apply:

1. to defects or malfunctioning resulting from failure to properly install, operate, or maintain the unit in accordance with the printed instructions provided;

2. to damage or abuse, accident, neglect, or freezing and other acts of nature;
3. to damage resulting from operation with the thermocouple removed;
4. to failures of the heat exchanger resulting from the operation of the heater in a corrosive atmosphere;
5. to defects or damage caused by any attachment or modification, including any energy saving device.
6. to failures or damage caused by operation with an improper orifice for the elevation.

**Note: The heater must not be subject to gas pressures greater than those shown on the rating plate, which must not be altered, defaced, or removed.**

### **How to make a claim**

Any claim for warranty service should be made to your local dealer or distributor, or to CEC. If to CEC, please contact the service department:

Controlled Energy Corp.  
Fiddlers Green  
Waitsfield, Vermont 05673  
Phone: 800-642-3111

In most cases, the dealer or distributor will be able to promptly honor your claim and subsequently notify CEC. However, **all replacements are made subject to validation by CEC of in-warranty coverage.** The damaged or defective item must be made available in exchange for the replacement.

### **Miscellaneous**

No one is authorized to make any other warranties on behalf of CEC. **It is expressly understood that the replacement warranty of CEC shall be in lieu of any and all other warranties, express or implied, including warranties of merchantability or fitness for a particular use or purpose, and further that CEC shall not be liable for any loss or damage directly or indirectly arising from the use of the heater, or for any consequential damages arising from such use.** CEC's sole liability with the respect to any defect shall be for the replacement of the defective part(s). Some states do not allow such limitations and exclusions, so the above may not apply to you.

This warranty gives specific legal rights. You may also have other rights which vary from state to state. In the event that the warranty service is required, reasonable proof of the effective date of installation and operation must be provided; otherwise, it may not be possible to honor this warranty.



**Controlled Energy Corp.**

Fiddler's Green • Waitsfield, VT 05673

802 496-4436 • 800 642-3111

Fax 802 496-6924

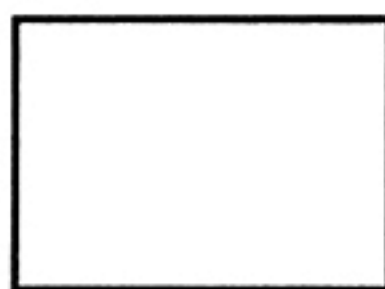


\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CONTROLLED ENERGY CORP.**

Fiddler's Green, Box 19

Waitsfield, Vermont 05673



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**WARRANTY CARD**

Purchaser's Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Telephone \_\_\_\_\_

Ecotherm Room Heater: Model: \_\_\_\_\_

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

Used for any special applications? \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Telephone \_\_\_\_\_

Purchase Date \_\_\_\_\_ New Installation \_\_\_\_\_ or Retrofit \_\_\_\_\_

Residence is: (rural, urban) \_\_\_\_\_

Number in household \_\_\_\_\_

Location of Installation \_\_\_\_\_

Type of gas used \_\_\_\_\_

Installed by: (plumber, self, gas service person, friend, etc.) \_\_\_\_\_

Heard about this from: \_\_\_\_\_

Reason for buying: \_\_\_\_\_

Any comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_