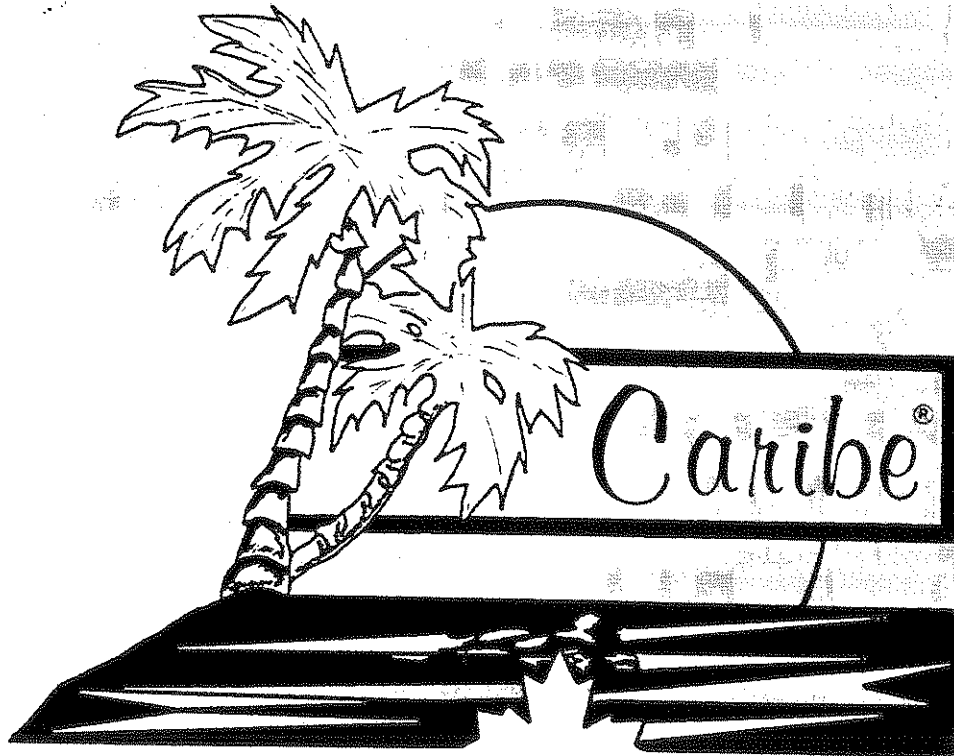


INSTALLATION, OPERATION AND SERVICE INSTRUCTIONS

Model H - 35



ROBERTS GORDON
CANADA INC.

DIRECT VENT RADIANT WALL FURNACE

FOR YOUR SAFETY

If you smell gas:

1. Open windows
2. Don't touch electrical switches
3. Extinguish any open flame
4. Immediately call your gas supplier

CONSIGNES DE SÉCURITÉ

Si vous sentez une odeur de gaz:

1. Ouvrez les fenêtres
2. Ne touchez pas aux interrupteurs électriques.
3. Éteignez toute flamme nue
4. Contactez immédiatement votre compagnie de gaz

FOR YOUR SAFETY

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

CONSIGNES DE SÉCURITÉ

Il est interdit d'utiliser des liquides inflammables ou dégageant des vapeurs inflammables, à proximité de tout appareil fonctionnant au gaz.

FIELD CONVERTIBILITY

"The conversion shall be carried out in accordance with the requirements of the provincial authorities having jurisdiction and in accordance with the requirements of the CAN1-B149.1 and .2 INSTALLATION CODES."

TRANSFORMATION

"Toute transformation doit être effectuée conformément aux directives des autorités provinciales compétentes et aux NORMES D'INSTALLATION CAN1-B149.1 ET .2."

CAUTION: Never store a propane gas cylinder inside a building or in the vicinity of any gas burning apparatus.

IMPORTANT: This heater is designed for heating indoor spaces. These instructions, the layout drawing, local codes and ordinances, and applicable standards such as apply to gas piping, electrical wiring, venting, etc., must be thoroughly understood before proceeding with the installation. This appliance should be located out of traffic and away from furniture and draperies. The heat exchanger and safety grille (if used) may reach extremely high temperatures. Care must be taken when the unit is operating to prevent burns. Children should be carefully supervised when in the same room as the appliance. Clothing or other flammable material should not be placed on or near this unit. Installation, repair and periodic inspection should be done by a qualified service person. It is imperative that circulating air passageways, burners etc. be kept clean.

WARNING: An annual inspection and test, conducted prior to the start of the heating season by qualified gas service personnel, is recommended to verify that the automatic gas ignition system, all associated components and the appliance combustion chamber components operate according to the manufacturer's specifications. Components that have been physically damaged, improperly replaced or otherwise fail to perform their function according to manufacturers specifications must be replaced immediately to avoid creating a fire, explosive and/or toxic hazards that can result in property damage, personal injury or death.

INSTALLER — Please take time to read and understand these instructions prior to any installation.

OWNER - Keep this manual in a safe place to provide your serviceman with helpful information if the need arises.

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TABLE OF CONTENTS

	Page
Introduction	1
General Specifications	2
Installation	3 & 4
Venting	5 & 9
Gas Piping	11
Wiring	12 & 13
Service Instructions	14, 15 & 16
Replacement Parts	17, 18 & 19
Field Conversion	20

INTRODUCTION

GENERAL

Your new *Paribc* direct vent radiant wall furnace comes complete with all required components and venting apparatus excluding assembly hardware. The carton contains the complete heater assembly, 2" flue pipe, 4" air supply duct and vent terminal. Any component shortages or damaged pieces should be brought to the immediate attention of the Roberts-Gordon distributor supplying this equipment. Take care to lift the heater only by its suspension points during unpacking and installation otherwise damage to the reflector may occur.

STANDARDS AND APPLICABLE CODES

Installation must comply with local codes and recommendations of the local utility and the appropriate installation codes B149.1 and .2 "Installation Codes for Gas Burning Appliances and Equipment".

WIRING

Burner units must be electrically grounded in accordance with the Canadian Electrical Code, CSA Standard C22.1 Part 1.

INSTALLER QUALIFICATIONS

All heaters and associated gas piping should be installed in accordance with applicable specifications and this installation made only by firms (or individuals) well qualified in this type of work. Consult local building inspectors.

INSTALLER RESPONSIBILITY

Paribc heaters are installed on the basis of information given in a layout drawing, which together with these instructions and the cited codes and regulations, comprise the basic information needed to complete the installation. The installer must supply all needed material that is not furnished as standard equipment, and it is the installer's responsibility to see that such materials, as well as the installation methods used, result in a job that is completed in a workmanlike fashion and in compliance with all applicable codes.

GENERAL SPECIFICATIONS

General specifications for Caribe heaters are as follows:

RATING:

Model H-35 (Natural & L.P. Gas) - 35,000 BTU/Hr. Input

0-4500 feet above sea level

GAS INLET PRESSURE:

Gas	Minimum	Maximum
Natural	4.5" W.C.	14.0" W.C.
L.P.	11.0" W.C.	14.0" W.C.

GAS PRESSURE AT MANIFOLD:

Natural Gas	3.5" W.C.
L.P. Gas	10.5" W.C.
Gas Connection Size	1/2" NPT
Weight of Heater	80 lbs.

ELECTRICAL RATING:

Model H-35	
120 V - 60Hz 2.6 AMP (run)/5.0 AMP (Start)	
Balanced Flue	2" I.D., 4" O.D.

DIMENSIONS:

Refer to Figure 2 on page 6 of these instructions for dimensional information.

STANDARD EQUIPMENT INCLUDES:

Complete heater assembled, consisting of: a burner, steel combustion chamber, reflector, fully automatic controls, motor with thermal overload switch, balanced air rotor, 3" O.D. baffled radiant tube, vent terminal and balanced flue comprised of a 2" flue pipe and 4" air supply duct.

OPTIONS:

Decorative safety grille, vent extension, 90° vent elbow kit.

INSTALLING THE HEATER

IMPORTANT: The type of gas appearing on the heater nameplate must be the type of gas used. Read all accompanying literature carefully before proceeding with installation. Allow for adequate clearances around air openings in the heater, and all clearances to combustible materials. Provide for accessibility for service, combustion and ventilating air supply as specified in CAN1-B149.1 and .2 Installation Codes.

In all cases, minimum hanging height shall be 7' from the finished flooring of structure or top of tile and/or carpeting.

IMPORTANT: Heaters should be placed so they will be readily accessible for maintenance purposes.

HANGING THE HEATER: (Horizontal and 45° angle).

There are two (2) formed hangers supplied to support the heater and reflector. One (1) must be located within 6" of the control housing. The other may be located 6' to 8' from the first hanger, see Figure 2. These suspension points should be used as the only suspension points. Suitable hanging hardware with a minimum 150 lb. rating should be used. For instructions on mounting height and heater location, refer to installation instructions detailed in this manual.

MINIMUM CLEARANCE TO COMBUSTIBLES: (From Heater Surfaces)

Caution must be used when running the system near combustible materials such as wood, paper, rubber, etc. Consideration should be given to partitions, storage racks, building construction, etc. Figure 1, page 4, gives MINIMUM clearances.

WARNING: Minimum clearance from heater must be maintained from vehicles parked below heater as shown on page 4.

NOTE: In all situations, clearances to combustibles must be maintained. Signs should be posted in storage areas to specify MAXIMUM stacking height to maintain clearance to combustibles.

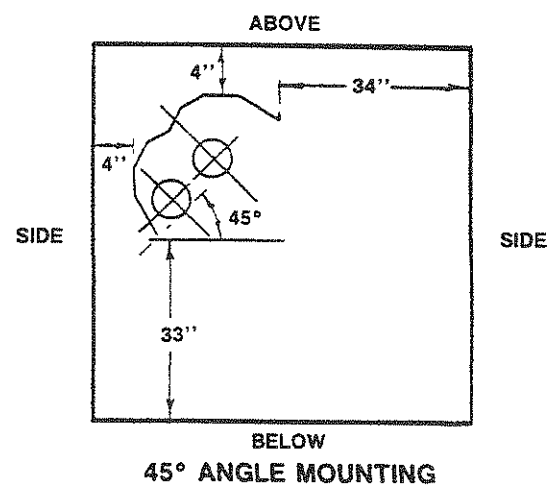
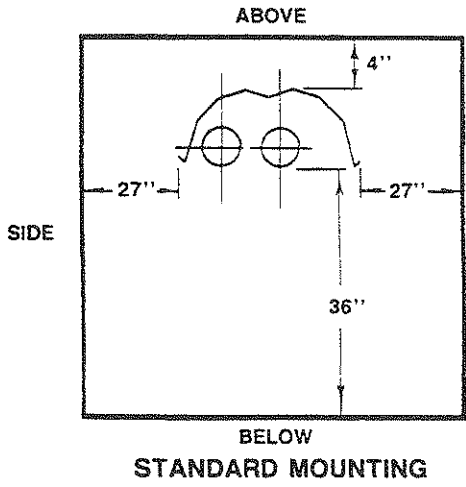
BROODERS: Clearances are the same when used for brooders.

CAUTION:

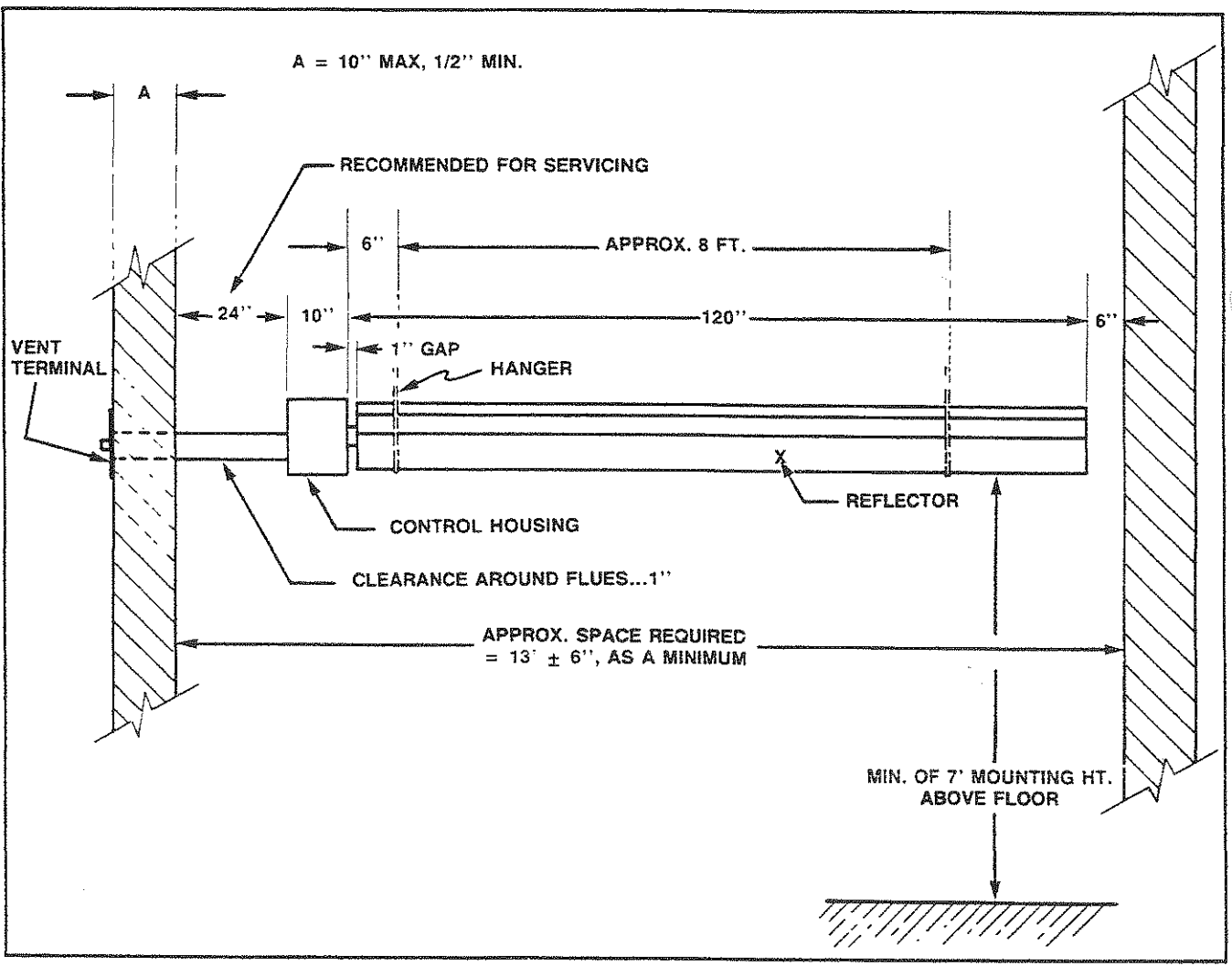
HOT WHILE IN OPERATION. DO NOT TOUCH.

ATTENTION:

CHAUD PENDENT LE FONCTIONNEMENT, NE TOUCHEZ PAS



THESE CLEARANCES SHALL BE MAINTAINED FROM THE TOP SURFACE OF CARPET, TILE ETC.



Caribic CLEARANCE TO COMBUSTIBLES

Figure 1

VENTING

GENERAL REQUIREMENTS

The complete vent assembly is shown in figure 3. This is a horizontally vented unit with a maximum balanced flue length of 10 feet and a minimum of 30" from the outside of the wall. See figure 3. It is recommended that 24" clearance be maintained from the inside of the wall to facilitate installation and servicing of the unit. The 2" diameter flue pipe, 4" air supply duct and a vent terminal are supplied with the heater. See Figure 4.

A slope of 1/4" downward toward the vent terminal over the total length is desirable to permit drainage of moisture out of the vent.

Cut a hole in the building wall to accommodate the vent terminal. Apply caulking compound to the rear of the vent terminal flange and attach the terminal to the wall using screws through the 4 holes provided. See figure 3.

Fit the 2" diameter flue pipe with expanded end, to the heater outlet pipe. Measure the distance from the expanded end, to the outside of the vent terminal, see Figure 3. This is dimension "L". Add 6" to this dimension and cut the 2" diameter pipe to length. This pipe is slid through the 2" diameter opening in the vent terminal. Before attaching the pipe to the heater, the 4" diameter air supply duct must be cut to size and installed. Cut this duct to dimension "L" minus 4", see Figure 3. If two (2) pieces of duct are necessary, make allowance for joint overlap. Slide the 4" diameter duct over the 2" diameter pipe and push it into the vent terminal. This allows connection of the 2" diameter pipe to the heater.

Connect the 2" flue pipe to the heater and secure with sheet metal screws. Seal joints with General Electric RTV-106 high temperature adhesive sealant or equivalent.

Slide the 4" air supply duct over the collar on the heater and secure all joints with screws and tape. See Figure 3.

In all cases do not install vent terminal:

- Less than 3 feet from any building opening.
- Less than 6 feet from the combustion air opening of any other appliances.
- Over a gas utility meter or service regulator.
- The venting must be installed in accordance with CAN1-B149.1 and B149.2 installation codes.

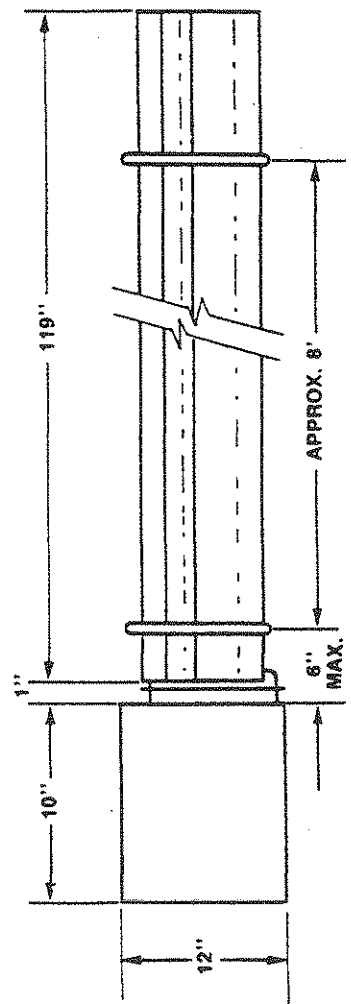
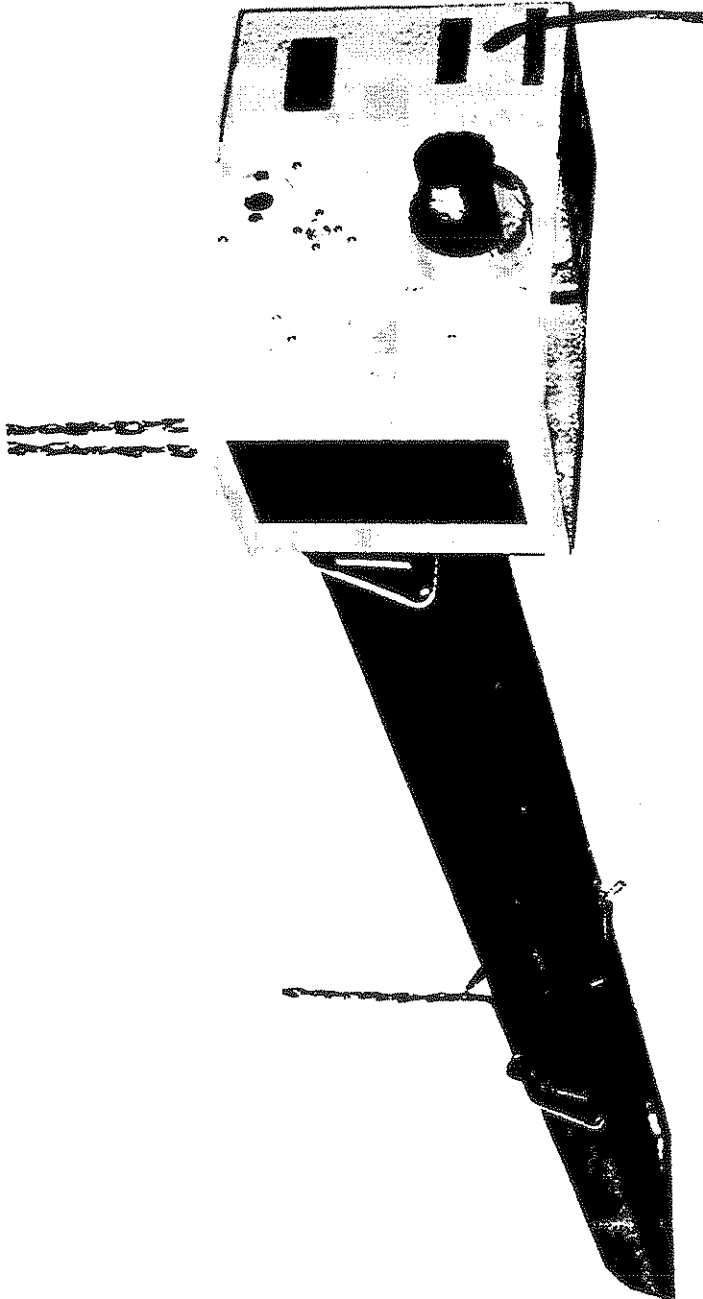
Partial information has been supplied, however, it is the responsibility of the installer to make the installation in strict accordance with codes and provide assurance of proper and safe operation.

In the case of a building overhang above the vent terminal, an optional vent extension P/N 91414200 is offered to direct the moist combustion gases away from the building. See figure 4.

Maximum wall thickness 10".

Minimum wall thickness 1/2".

To be used with vent terminal part no. 02823400.



General View
Figure 2

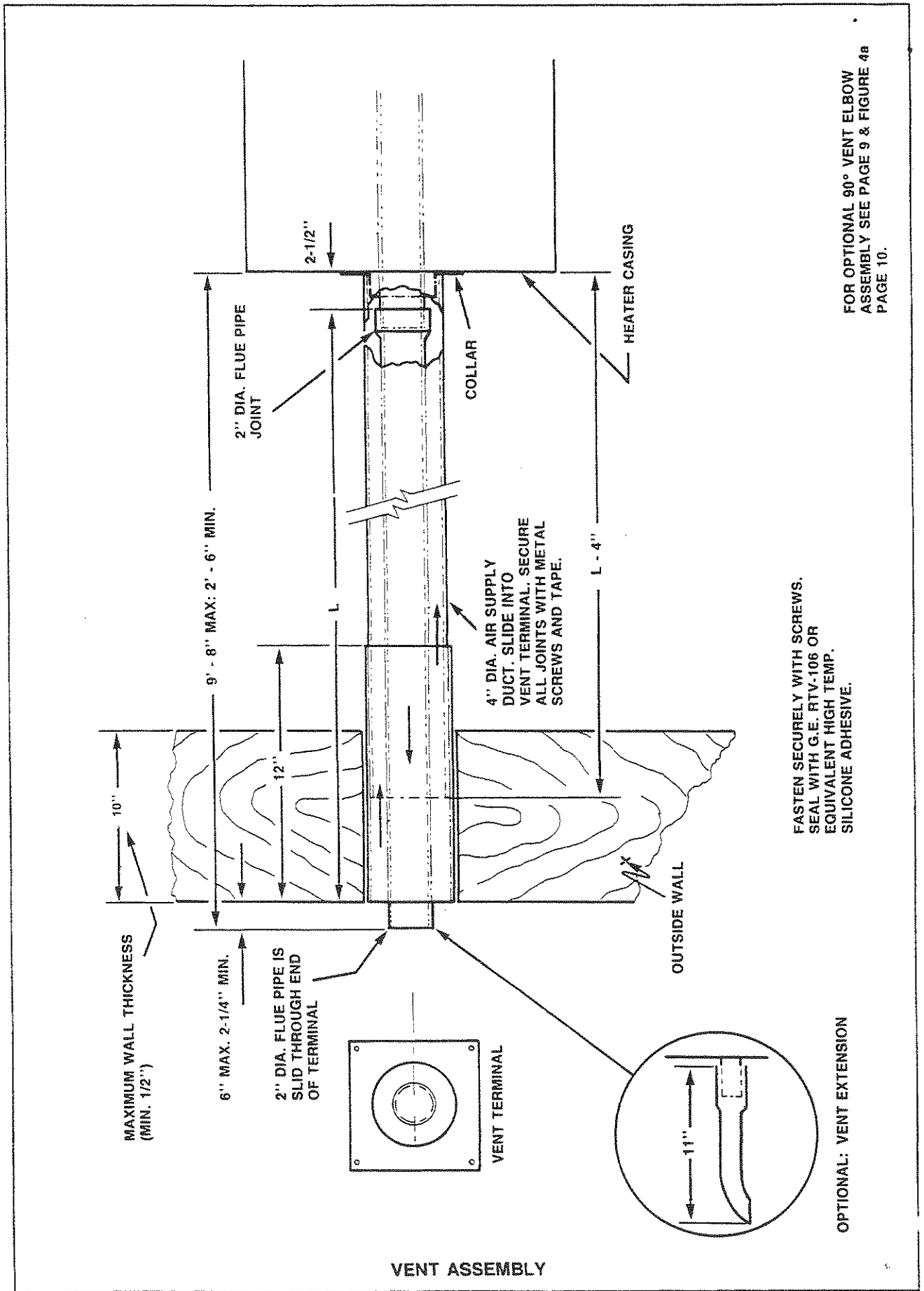


Figure 3

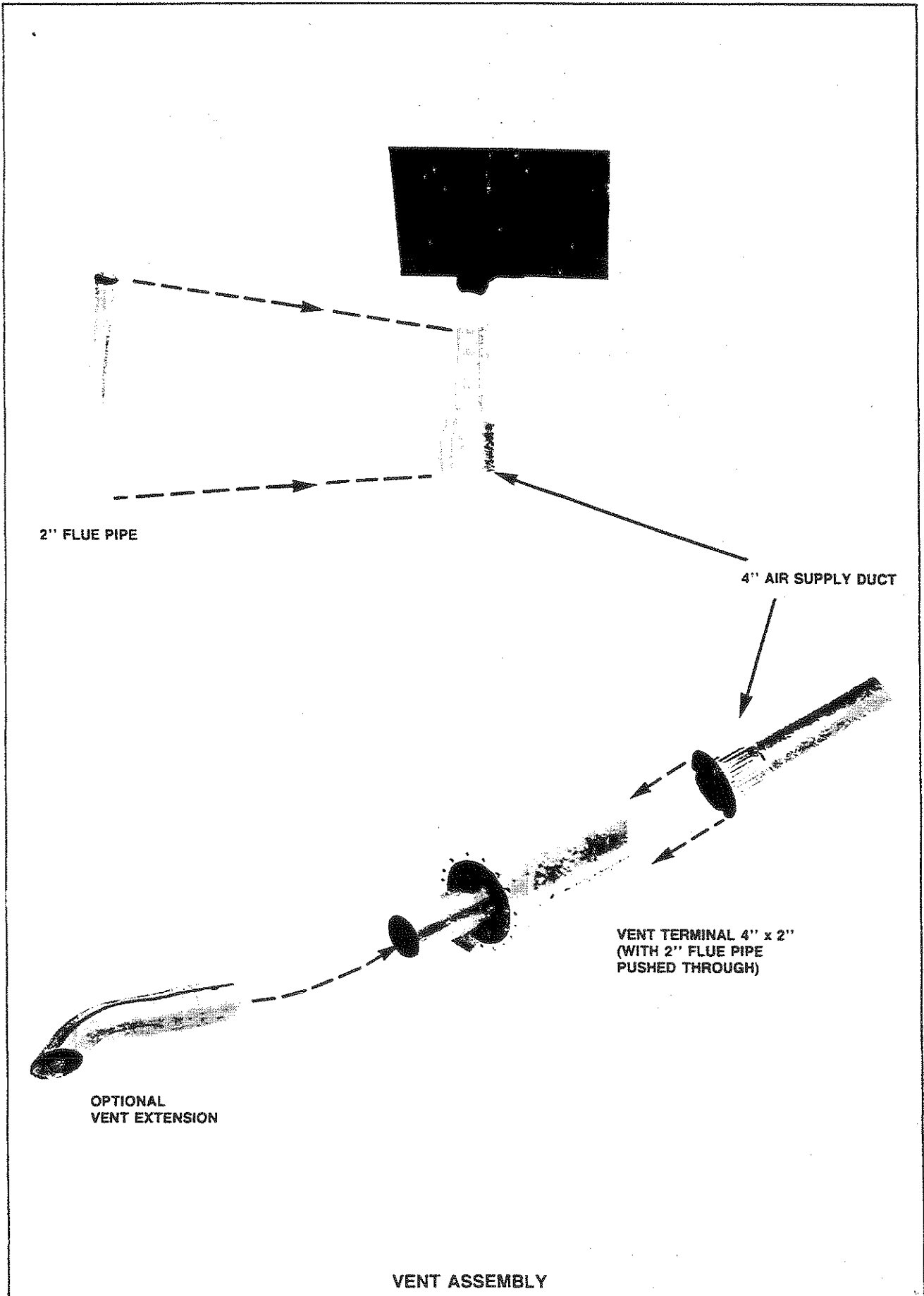


Figure 4

VENTING WITH 90° ELBOW KIT PART NO. 02810400

Cut a hole in the building wall to accommodate the vent terminal. Apply caulking compound to the rear of the vent terminal flange and attach the terminal to the wall using screws through the 4 holes provided.

Measure the distance from the heater to the centerline of the vent terminal (Dimension "Z"). After determining Dim. "Z" subtract 9-1/2". The resulting number (Dimension "A") is the length of the 2" flue pipe. Cut the 2" pipe to this length.

Assemble "A" length of 2" flue pipe to one side of the elbow using screws and sealant.

Slide expanded end over 2" flue pipe extending from unit, confirm that the elbow is positioned correctly and drill required holes for screws. Do not assemble at this time.

Before attaching this pipe to the heater the 4" air supply duct must be cut to size and installed. To do this, add 5-1/2" to dimension "A". The resulting number (Dimension "B") is the length of 4" air supply duct needed. Cut the 4" duct to this length. If two pieces are necessary, make an allowance for the joint overlap.

Slide the 4" duct over the 2" pipe towards the elbow as far as possible. Attach the 2" pipe to the heater flue pipe with sealant and fasten with screws in the previously drilled holes.

Slide the 4" air supply duct over the collar on the heater and secure the joint with screws and tape. Place the 4" elbow over the 2" duct elbow and secure the joint as previously described.

By adding 6" to the distance from the end of the 2" elbow to the outside of the wall (Dimension "Y"), the final length of 2" flue pipe required (Dimension "C") is determined.

Measure the distance from the end of the 4" elbow to the end of the vent terminal (Dimension "X"). Add 6" to this dimension. The resulting number (Dimension "D") is the length of the 4" air supply duct. Cut the 4" duct to this length. If two pieces are necessary, make an allowance for the joint overlap.

Slide the 4" duct deeply into the vent terminal, fit the 2" pipe through the 2" opening in the vent terminal and connect to the elbow with screws and sealant.

Pull the 4" duct back to the elbow and secure both the joint at the elbow and at the vent terminal with screws and tape.

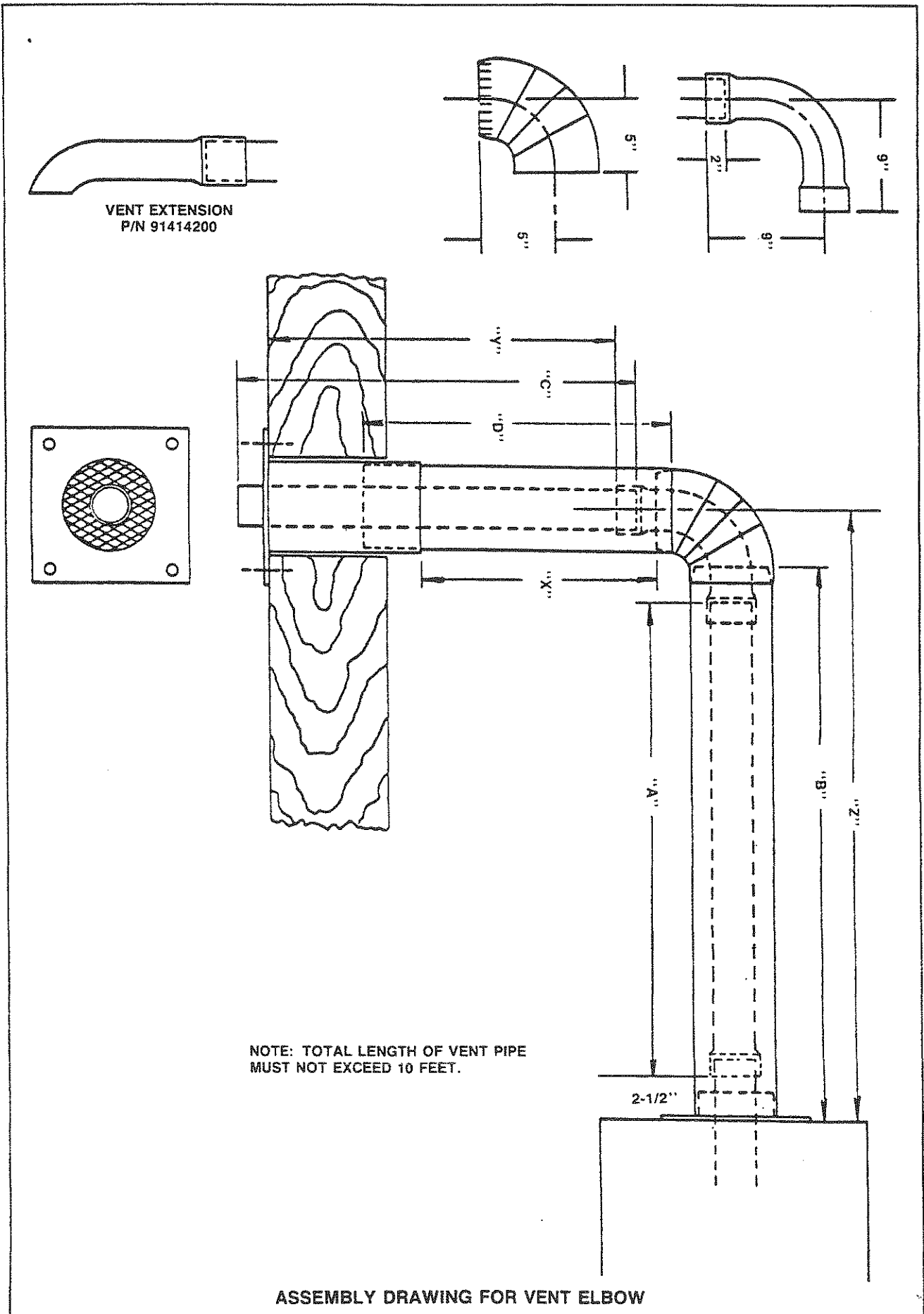


FIGURE 4a

GAS PIPING

All gas piping and connections shall be made in accordance with CAN1-B149.1 and B149.2 - "Installation codes for gas burning appliances" and/or local codes.

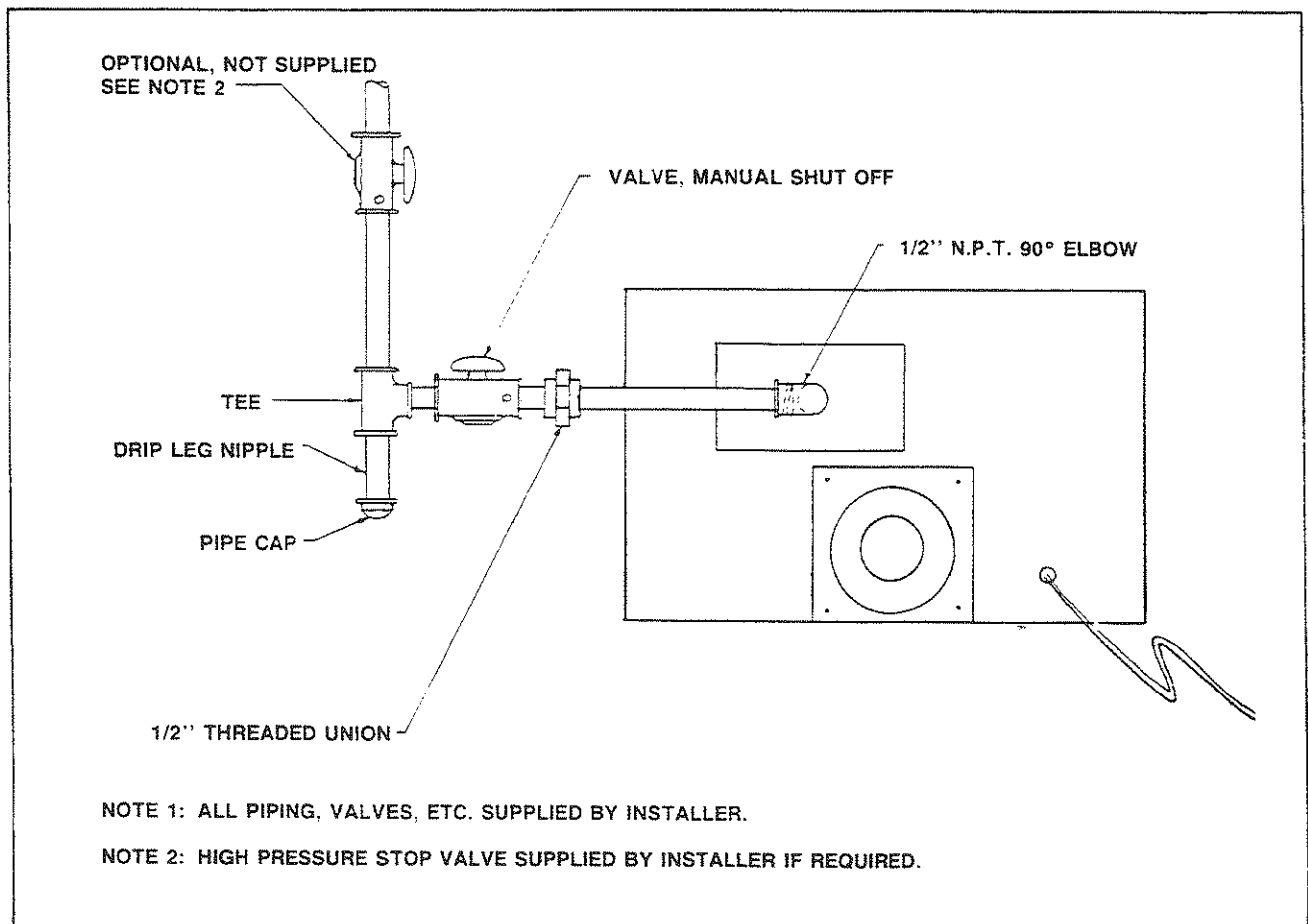
A drip leg consisting of a tee, nipple, and pipe cap, which forms a trap for dirt and moisture, must be attached to the gas line as shown in Figure 5. A 1/8" N.P.T. plugged tapping, accessible for a test gauge connection, must be supplied immediately upstream of the gas supply connection of the appliance.

GAS PIPING SIZING:

The gas line which feeds the heater(s) must be large enough to supply the required gas. If there is any question, check with the gas company. (supplier)

CAUTION:

For high pressure testing of gas piping, COMPLETELY DISCONNECT ALL BURNER UNITS AND THE SHUT-OFF COCKS SUPPLIED WITH SAME; then install pipe cap on system and conduct test. Failure to follow this procedure will exceed pressure rating of both the burner gas controls and the stop cock, and will require the complete replacement of these parts.



GAS CONNECTION DIAGRAM

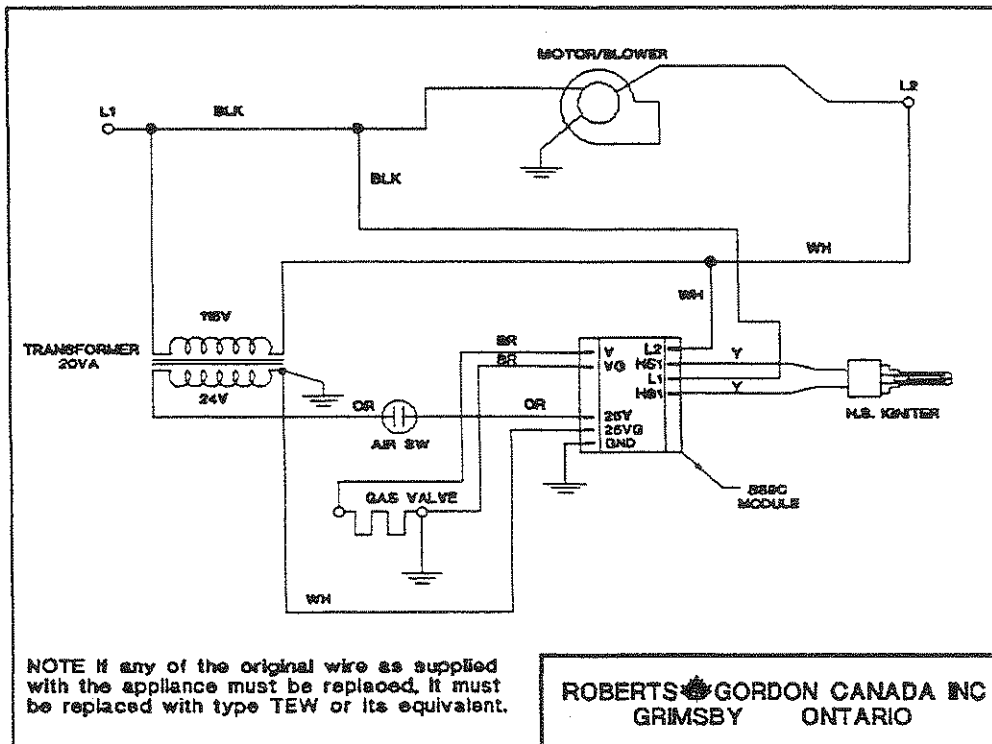
FIGURE 5

WIRING DIAGRAMS

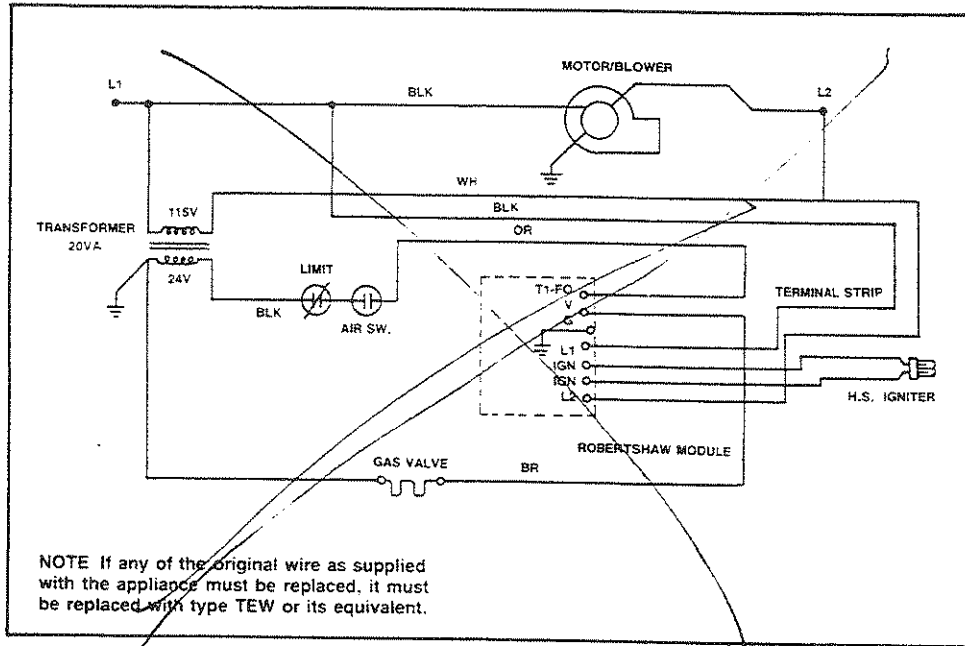
INTERNAL WIRING:

All electrical wiring and connections shall be made in accordance with the CSA standard C22.1
Canadian Electrical Code Part 1 and/or local codes.

Diagram 6



Honeywell



Robertshaw

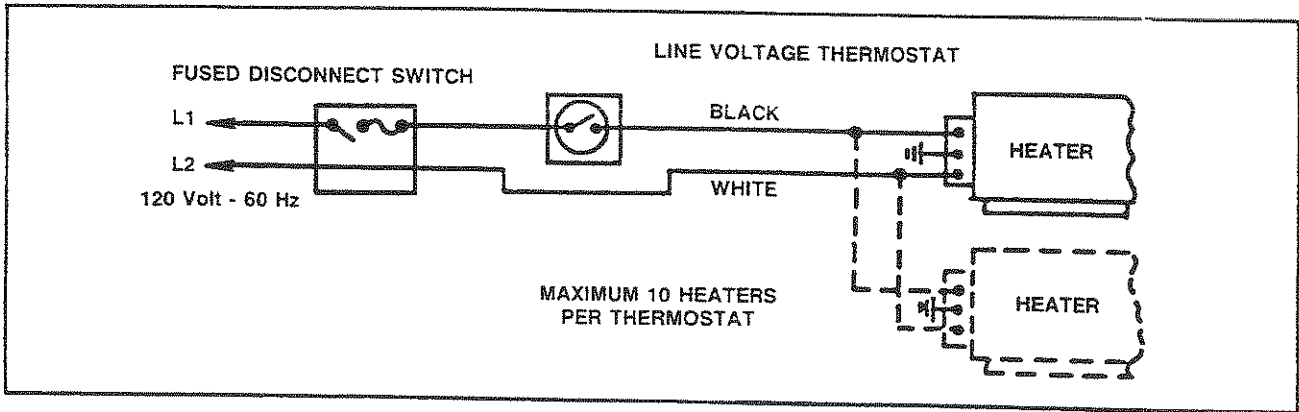
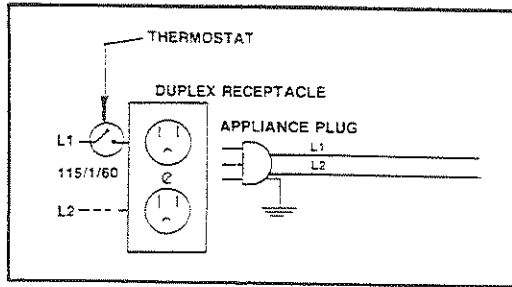
Figure 8

FIELD WIRING:

Heaters are normally controlled by thermostats as shown in Figure 9.

All electrical wiring and connections must be made in accordance with the CSA Standard C22.1 and/or local codes.

It is important that correct polarity be maintained. If this rule is not followed, the unit will not fire.



WIRING OF LINE VOLTAGE THERMOSTAT

FIGURE 9

SERVICE INSTRUCTIONS

SEQUENCE OF OPERATION

1. The thermostat on call for heat, energizes the blower motor.
2. When the motor reaches nominal running R.P.M., the air proving switch closes, energizing the ignition module which energizes the hot surface ignitor and opens the redundant gas valve, after a 30 sec. warm-up (approx.).
3. Once the flame is sensed, i.e. when main flame is established, the ignitor stops glowing.
4. If the flame is not established during the trial for ignition (6 sec.), the system closes the valve.
5. If the flame is extinguished during the duty cycle, the system will provide at least one retry for ignition before going into lockout.
6. After lockout, control must be reset by turning down the thermostat for five seconds and then raising it again to the desired temperature, or unplugging the appliance cord, and then plugging it in again.

LIGHTING INSTRUCTIONS

CAUTION: Be sure that main manual gas valve and electric current are off. Wait 5 minutes.

1. Set thermostat below room temperature.
2. Turn on main manual gas valve.
3. Turn on electric current.
4. Set thermostat to desired setting.

NOTE: Refer to installation instructions for additional data.

SHUT DOWN INSTRUCTIONS

1. Turn off electric current.
2. Turn off main manual gas valve.

Caribe® - TROUBLE SHOOTING GUIDE - DIRECT VENT RADIANT WALL FURNACE

H.S.I. Control: (Hot Surface Ignition).

Caution: Before opening control housing cover for any type of service, be sure that the gas has been shut off at the heater and the electrical supply cord to the heater is unplugged.

No Power (Heater Plugged in):

1. Check to see that the thermostat is calling for heat.
2. Check fusing in electrical supply to heater.
3. Check for 115V at receptacle.

Blower Motor Fails to Run:

1. Check for broken motor wire or loose connection.
2. Does unit run if air switch is jumpered out? (i.e. glow is visible). This could indicate that the motor is not running due to the thermal overload tripping or the fan wheel is jammed or seized. Replace fan/motor assembly.

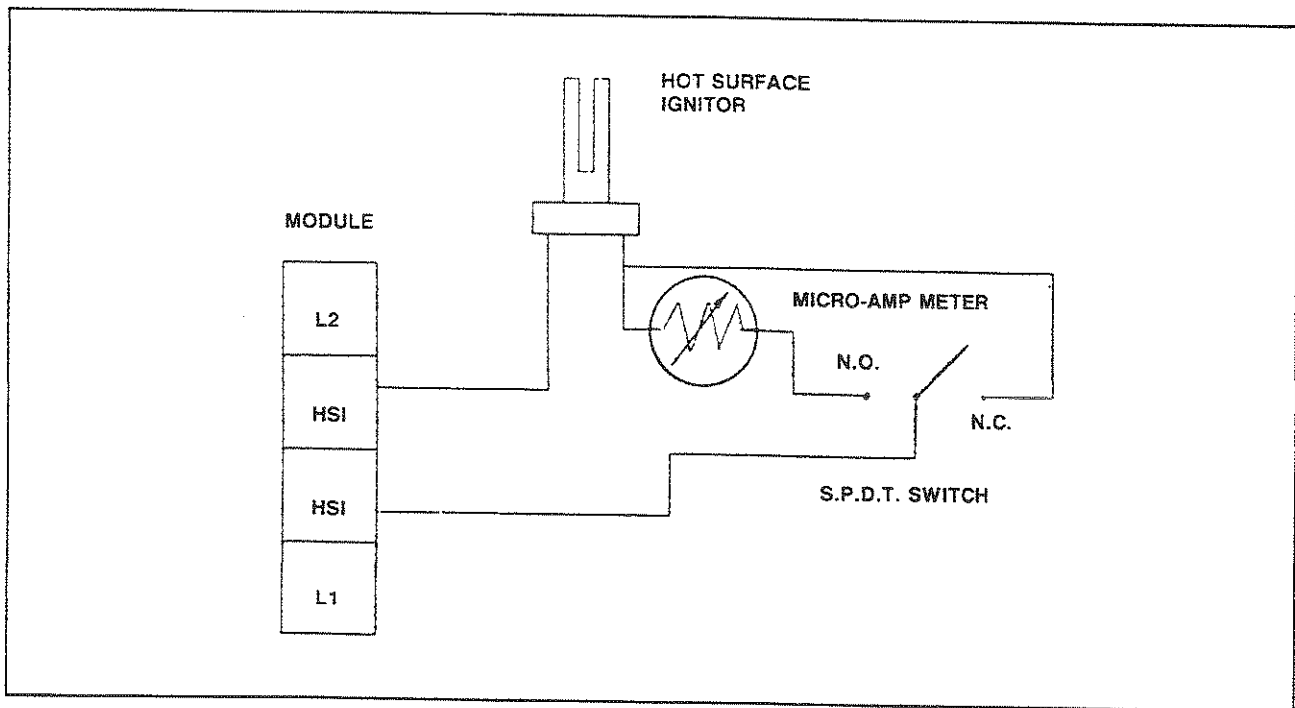
Burner Lights and Then Goes Out:

This unit uses local flame sensing (i.e. once the burner is lit, the ignitor then becomes the sensor). If the ignitor porcelain base or wiring becomes damaged in usage, the burner will not stay lit. Replace hot surface ignitor.

Check that L1 (Hot) and L2 (Neutral) are wired to the proper terminals. If L1 and L2 are interchanged, the module will not detect the flame, and will go into safety shutdown.

Checking Flame Signal Current:

1. Break the lead to the ignitor closest to the L1 terminal and install a S.P.D.T. switch through the N.C. terminal.
2. Install meter in series with the N.O. terminal of the switch, and the hot surface ignitor.
3. Close the switch to the meter only after the ignition voltage is off; i.e. unit is firing.
4. Flame signal should be a steady 2-4 μA (microamps).



CHECKING FLAME SIGNAL CURRENT

Figure 10

MAINTENANCE

For best performance, maintenance procedures should be performed before each heating season.

1. **BE SURE GAS AND ELECTRICAL SUPPLY TO HEATER ARE OFF BEFORE PERFORMING ANY SERVICE OR MAINTENANCE.**
2. A qualified service agency should be contacted for service and other than routine maintenance.
3. Outside surfaces of the heater reflector may be cleaned by wiping with a damp cloth.
4. Check to see that the supply air duct/flue pipe is not obstructed in any way.
5. The fan, as supplied, has sealed bearings requiring no lubrication.
6. Check condition of burner and ignition system.
7. Check that the appliance area has remained free of combustible materials, gasoline and other flammable material.

CONTROL HOUSING

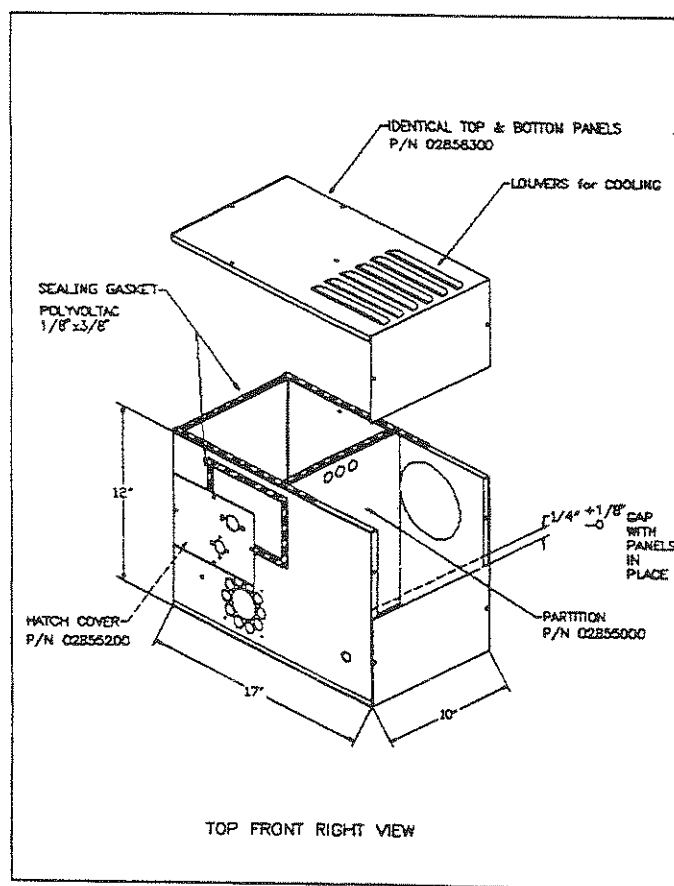


Diagram 10A

Caribe'

Parts List

ITEM	Description	PART NO.	QTY.
1a	Gas Valve Honeywell Nat. VR 8205 A-2008 B	90032400	1
b	Gas Valve Honeywell LPG. VR 8205 A-2016	90032401	of
c	Gas Valve Robertshaw Nat.	P.O.A.	
d	Gas Valve Robertshaw LPG.	P.O.A.	
2	Ignition Module - H.S.I. Honeywell	90436500	1
3	Motor/Blower Assembly-Magnetek	90708600	1
4	Ignitor Assembly	90435600	1
5	Transformer AT120B1010 Honeywell	90435700	1
6	Supply Cord and Plug (moulded) 3 Conductor	52620	1
7	Heat Exchanger Assembly 16 ga. X 3" dia. "U"	02822400	1
8	Flue Baffle Assembly	02823800	1
9	Flue Pipe Assembly	02823300	1
10	Burner Assembly	02823901	1
11a	Orifice Nat. Gas	91219600	1
b	Orifice LPG	91219601	of
13	Reflector 118"	02757600	1
14	End Cap	77205	1
15	Safety Grille 116" X 15"	02822300	*
16	Reflector Support & Hanger	02858000	1
	"U" Clip Package	91107720	1
18	Vent Terminal 4" X 2"	02823400	1
19	Vent Extension	91414200	*
20	Air Switch FS 5148-446	90435900	1
22	2" Diameter Vent Pipe X 9'-6"	91413700	1
23	4" Diameter Air Supply Duct X 5' long (2)	91414000	1
24	Ring Viewer Package	58086	1
28	Air Inlet Gasket	02856400	1
29	Burner Tube Gasket	02856100	1
30	Blower Tube Gasket	02856200	1
	Conversion Kit - Natural Gas to Propane	02810200	*
	Conversion Kit - Propane to Natural Gas	02810201	*
	1/2" Shut off Valve 460L	90101900	1
	90° Vent Elbow Kit	02810400	*

* Optional Equipment

REPLACEMENT PARTS

1



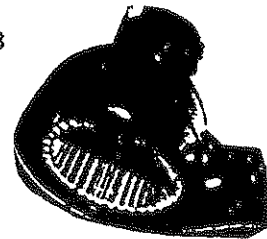
GAS VALVE
NAT. 90032400
LPG. 90032401

2



IGNITION MODULE - H.S.I.
90436500

3



MOTOR/BLOWER ASSEMBLY
90708600

4



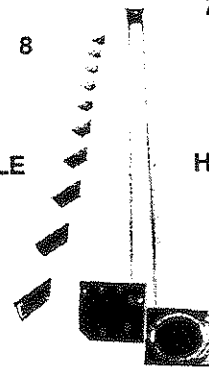
IGNITOR
90435600

5



TRANSFORMER
90435700

8



FLUE BAFFLE
02823800

7

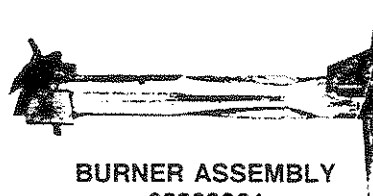
HEAT EXCHANGER ASSEMBLY
02822400

9



FLUE PIPE ASSEMBLY
02823300

10



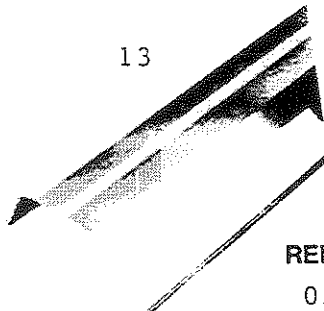
BURNER ASSEMBLY
02823901

11



ORIFICE
#35 NAT. GAS 91219600
#52 LPG 91219601

13



REFLECTOR
02757600

14

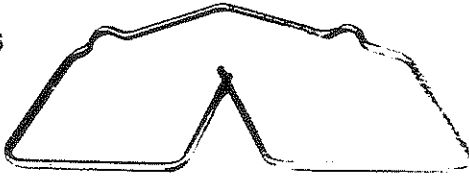


END CAP
77205

Figure 11

REPLACEMENT PARTS

16



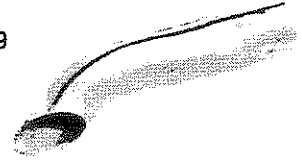
REFLECTOR SUPPORT & HANGER
02858000

18



VENT TERMINAL
02823400

19



VENT EXTENSION
91414200
(optional)

20



AIR SWITCH
90435900

22

exhaust connector



*91414100
2" dia. coupling*

2" DIAMETER FLUE PIPE X 9'6"
91413700



23



4" DIAMETER AIR SUPPLY DUCT X 5' LONG (2)
91414000

24



RING VIEWER PACKAGE
58086

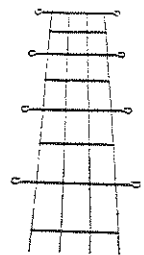
28

AIR INLET GASKET
02856400

29

BURNER TUBE GASKET
02856100

15



SAFETY GRILLE
02822300
(optional)

30

BLOWER TUBE GASKET
02856200

convert this unit to the alternate fuel.

THE CONVERSION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROVINCIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE CAN1-B149.1 and .2 INSTALLATION CODES.

When Converting This Product:

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Installer must be a trained, experienced service technician.
3. After installation is complete, check for gas leaks before heater is placed in automatic operation.

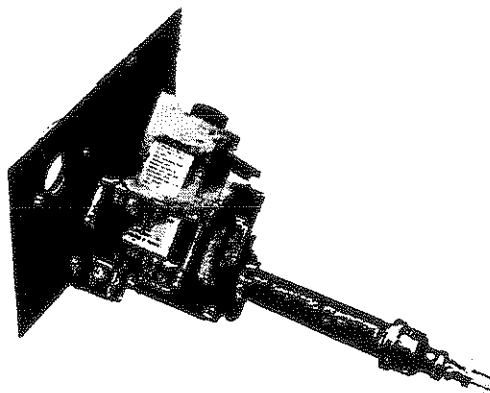
WARNING:

Failure to follow these instructions could result in a fire or explosion causing property damage, personal injury or loss of life.

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

To avoid dangerous accumulation of fuel gas, turn off gas supply at the appliance service valve before starting the conversion and perform a gas leak test after completion of the conversion.

1. Disconnect the gas supply from the heater.
2. Remove the housing cover.
3. Remove the screws holding the gas control access hatch in position.
4. Remove wires from the gas valve.
5. Pull gas control assembly through the access hatch.
6. Install the orifice supplied in the conversion kit. This orifice is #35 drill size for natural gas or #52 drill size for propane.
7. Convert the gas valve to the appropriate fuel. This must be done in accordance with the control manufacturer's instructions provided with the conversion kit.
WHEN ORDERING A CONVERSION KIT, THE CONTROL VALVE MANUFACTURER MUST BE SPECIFIED.
EXAMPLE: HONEYWELL, ROBERTSHAW OR WHITE-RODGERS.
8. Re-assemble the heater. Make certain all screws are tightened and all wires are connected.
9. Perform gas leak test.
10. Check gas valve outlet pressure with a manometer or by clocking the meter.
11. Replace all covers and fasten securely.
12. Complete the conversion data label and affix to the heater adjacent to the rating plate.



GAS CONTROL ASSEMBLY